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- 2 Summary of Quantities, General Notes, and Typical Sections
- 3 Plan and Profile
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LIST OF STANDARDS

STANDARD 000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
STANDARD 280001-07	TEMPORARY EROSION CONTROL SYSTEMS
STANDARD 515001-03	NAME PLATE FOR BRIDGES
STANDARD 630001-10	STEEL PLATE BEAM GUARDRAIL
STANDARD 630301-06	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
STANDARD 701901-05	TRAFFIC CONTROL DEVICES
STANDARD 725001	OBJECT AND TERMINAL MARKERS
STANDARD BLR-21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
STANDARD BLR-22-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES 2-L, 2-W, RURAL, ROAD CLOSED TO THRU TRAFFIC
STANDARD BLR-27-1	TRAFFIC BARRIER TERMINAL TYPE 5A

ROADWAY CLASSIFICATION: LOCAL ROAD, (NON-URBAN)
 DESIGN ADT = 50
 DESIGN SPEED: 30 MPH
 DESIGN GUIDELINES: RURAL
 VARIANCES GRANTED: NONE

JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS
 J.U.L.I.E. Telephone No. Toll Free 1-800-892-0123

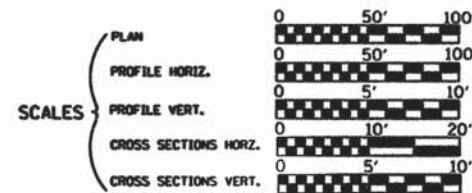
CONTRACT NO. : 95790

AECOM
 345 EAST ASH AVENUE, SUITE B
 DECATUR, ILLINOIS 62526
 PH. 217-875-4800

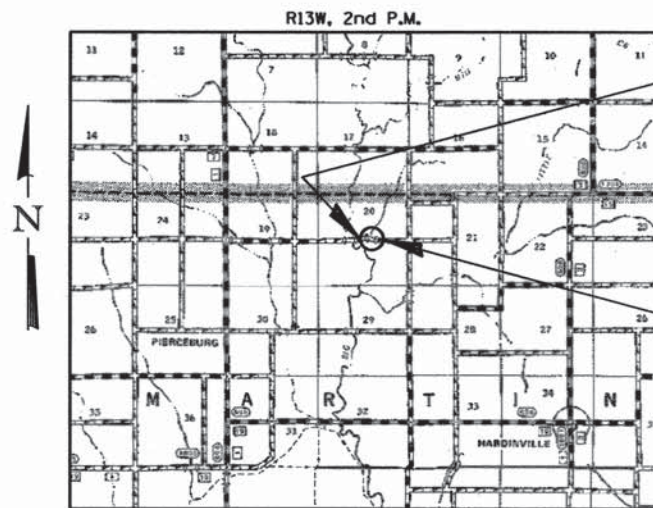
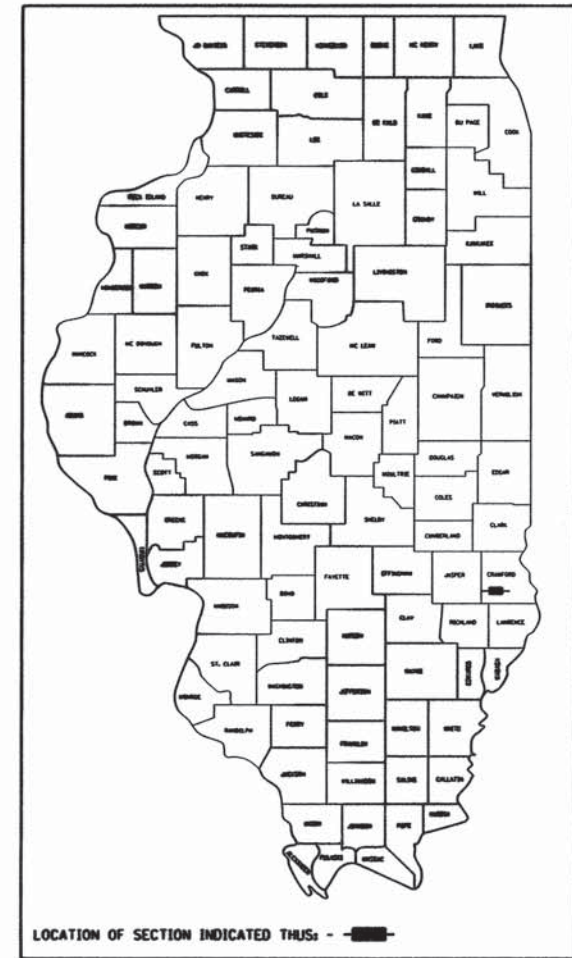
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANS FOR PROPOSED LOCAL AGENCY IMPROVEMENT

RTE. NO.	SECTION	COUNTY	TOTAL SHEET
T.R. 221	05-05117-00-BR	CRAWFORD	14
FED. ROAD DIST. NO.	ILLINOIS	PROJECT	BROS-0033(055)

CONTRACT NO. 95790



STP-BRIDGE PROGRAM T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-05117-00-BR CRAWFORD COUNTY PROJECT BROS-0033(055) C-97-021-16



IMPROVEMENT BEGINS
 STA. 21+90.00

EXIST. STR. NO. 017-3505
 PROP. STR. NO. 017-3522

IMPROVEMENT ENDS
 STA. 27+05.00

IMPROVEMENT CONSISTS OF THE REMOVAL OF A SINGLE SPAN C.I.P. CONCRETE SLAB BRIDGE ON CLOSED CONCRETE ABUTMENTS WITH CONCRETE WINGWALLS, 0-0 DECK = 19'-2", BK.-BK. ABUTMENTS = 24'-0" AND THE CONSTRUCTION OF A SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE ON CONCRETE SPILL THRU ABUTMENTS. TOTAL LENGTH = 49'-0", WIDTH = 28'-0" O.-O. DECK AND NECESSARY APPROACH ROADWAY WORK.

LAYOUT



Total and Net Length of Improvement 515.00 Feet = 0.098 Miles

APPROVED March 25 2016
Justin R. Child COUNTY ENGINEER

APPROVED April 4 2016
Ronald W. Lipp ROAD COMMISSIONER

PASSED 4-6 2016
Mr. [Signature] DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW 4-6 2016
Jeffrey M. [Signature] REGION FOUR ENGINEER

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION



Keith W. Bentin
 Illinois Professional No. 43789

3/24/2016
 Date

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 221	05-05117-00-BR	CRAWFORD	14	2
FED. ROAD DIST. NO.	ILLINOIS	PROJECT:	BROS-0033(555)	

CONTRACT NO. 95790

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	85
20100500	TREE REMOVAL, ACRES	ACRE	0.25
20200100	EARTH EXCAVATION	CU YD	120
20300100	CHANNEL EXCAVATION	CU YD	181
20400800	FURNISHED EXCAVATION	CU YD	641
25000200	SEEDING, CLASS 2	ACRE	0.4
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	36
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	36
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	36
25100115	MULCH, METHOD 2	ACRE	0.4
28000305	TEMPORARY DITCH CHECKS	FOOT	14
28000400	PERIMETER EROSION BARRIER	FOOT	162
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	540
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	26.4
50300280	CONCRETE ENCASMENT	CU YD	3.4
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SO FT	1316
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3340
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	94
51201400	FURNISHING STEEL PILES HP10X42	FOOT	454
51202305	DRIVING PILES	FOOT	454
51203400	TEST PILE STEEL HP10X42	EACH	1
51500100	NAME PLATES	EACH	1
Δ 63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	112.5
Δ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
Δ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
67100100	MOBILIZATION	L SUM	1
Δ 72501000	• TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2810208	• STONE RIPRAP, CLASS A4 (SPECIAL)	TON	137

• SEE SPECIAL PROVISIONS
 Δ SPECIALTY ITEMS

GENERAL NOTES

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

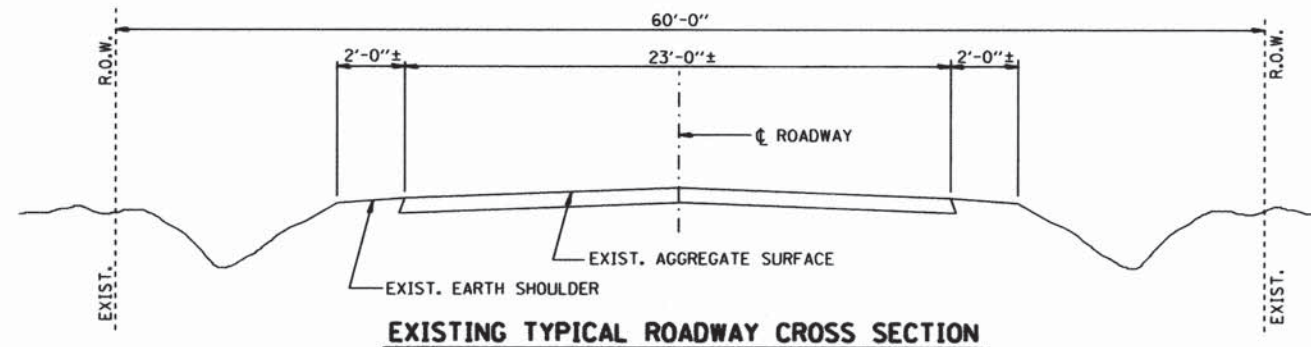
REMOVAL OF EXISTING PAVEMENT MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITY FACILITIES. HE SHALL ALSO OBTAIN FROM THE RESPECTIVE UTILITY COMPANIES DETAILED INFORMATION RELATIVE TO THE LOCATION OF THEIR FACILITIES AND THE WORKING SCHEDULES OF THE UTILITY COMPANIES FOR THEIR MARKING OF THE EXACT LOCATION.

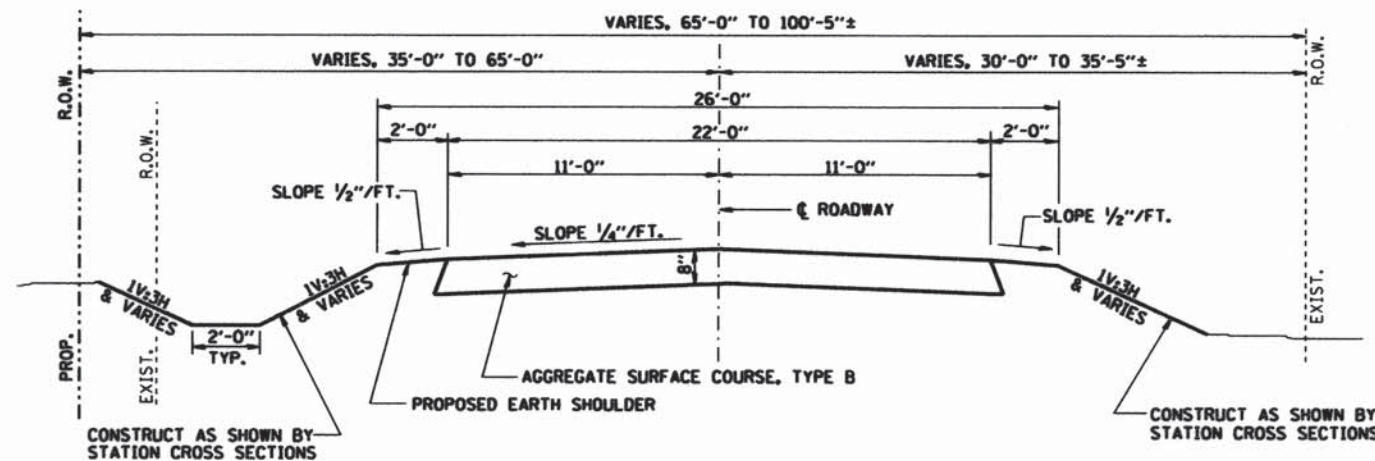
LAYOUT OF EROSION CONTROL ITEMS MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.

APPLICATION RATES

GRANULAR MATERIALS	2.05	TONS/CU. YD.
STONE RIPRAP	1.50	TONS/CU. YD.
NITROGEN FERTILIZER NUTRIENT	90	LBS./ACRE
PHOSPHORUS FERTILIZER NUTRIENT	90	LBS./ACRE
POTASSIUM FERTILIZER NUTRIENT	90	LBS./ACRE
MULCH METHOD 2	2	TONS/ACRE

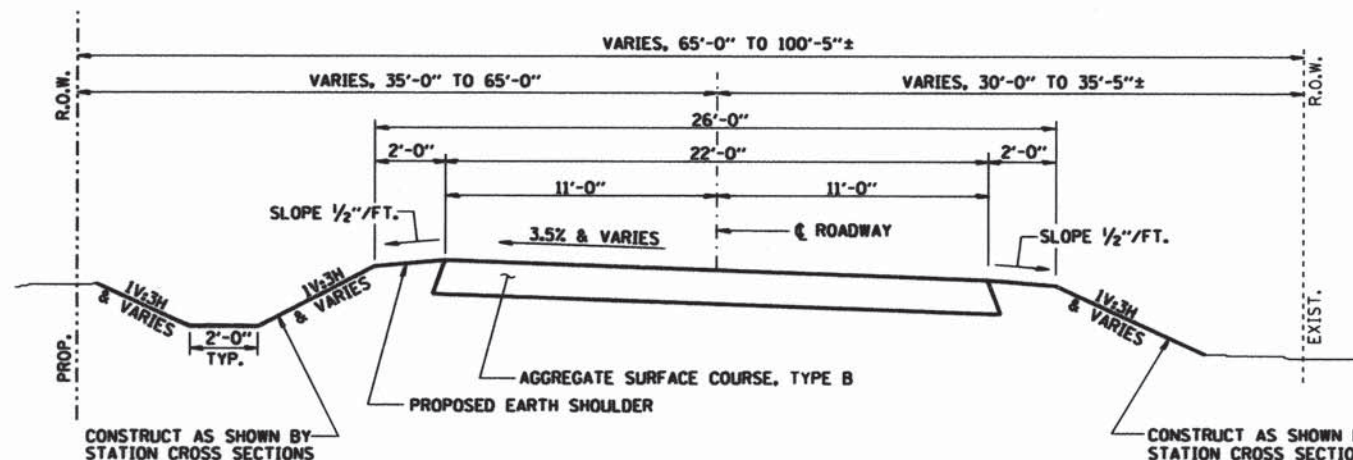


EXISTING TYPICAL ROADWAY CROSS SECTION



PROPOSED TYPICAL ROADWAY CROSS SECTION (NORMAL CROWN)

NORMAL CROWN: STA. 21+90.00 TO 21+90.08
 STA. 26+09.66 TO 27+05.00
 TRANSITION TO EXISTING WIDTH: STA. 26+55.00 TO STA. 27+05.00



PROPOSED TYPICAL ROADWAY CROSS SECTION (SUPERELEVATION)

TANGENT RUNOUT: STA. 21+90.08 TO 22+15.08
 STA. 25+84.66 TO 26+09.66
 SUPERELEVATION RUNOFF: STA. 22+15.08 TO 22+74.08
 STA. 25+25.66 TO 25+84.66
 FULL SUPERELEVATION: STA. 22+74.08 TO 25+25.66
 TRANSITION FROM EXISTING WIDTH: STA. 21+90.00 TO STA. 22+40.00
 TRANSITION TO EXISTING WIDTH: STA. 26+55.00 TO STA. 27+05.00

GENERAL DATA

Date	Designed MJP	T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-05117-00-BR CRAWFORD COUNTY STA. 24+74.31 PROP. STR. NO. 017-3522
Revisions	Drawn BKN	
	Checked KWB	
	Approved KWB	

Prepared by: **AECOM** 345 East Ash Avenue
 Decatur, IL 62526 URS Job No. 36433511

BENCHMARK:
RAILROAD SPIKE SET IN TOP OF 18" STUMP
STA. 28+04.38, 50.74' LT.
ELEV. 443.92

EXISTING STRUCTURE NO. 017-3505
SINGLE SPAN C.I.P. CONCRETE SLAB BRIDGE ON CLOSED
CONCRETE ABUTMENTS WITH CONCRETE WINGWALLS.
24'-0" BK.-BK. ABUTMENTS
19'-2" O.-O. DECK

STA. 24+74.31, SPECIAL BRIDGE DESIGN,
SINGLE SPAN PPC DECK BEAM BRIDGE,
SPAN OF 45'-10" ON CONC. PILE BENT ABUT'S
LENGTH = 49'-0" BK.-BK. ABUT'S,
WIDTH = 28'-0" O.-O. DECK
NO SKEW

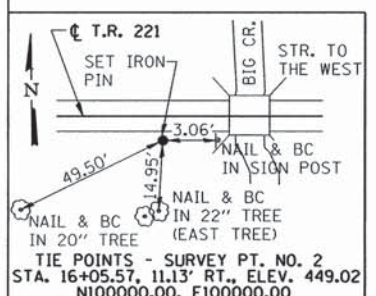
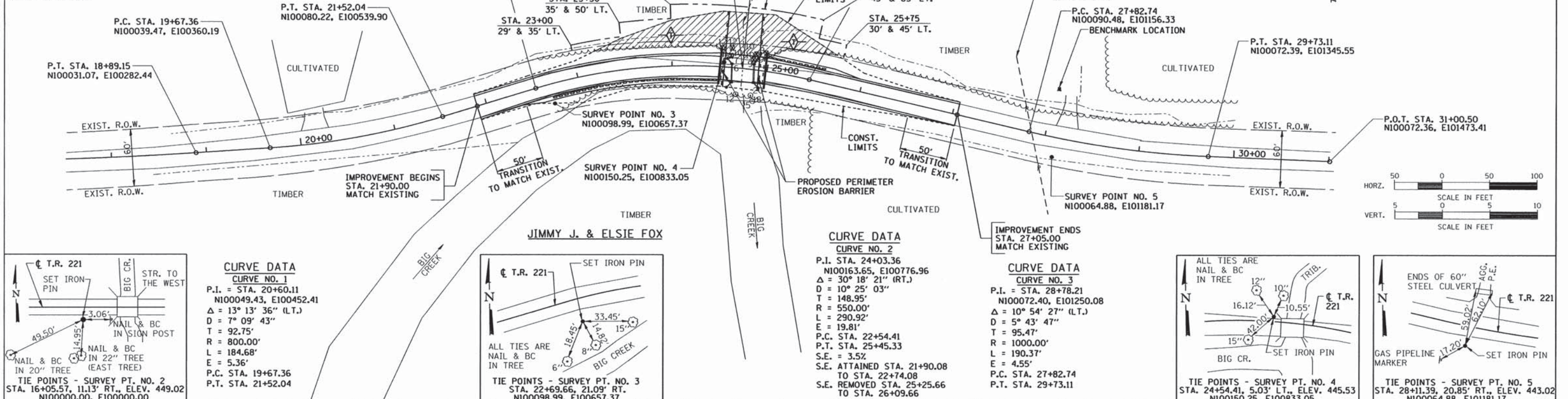
P.T. STA. 25+45.33
N100135.44, E100923.22

**ANITA JEAN GRIFFIN
& EDITH M. LORD**

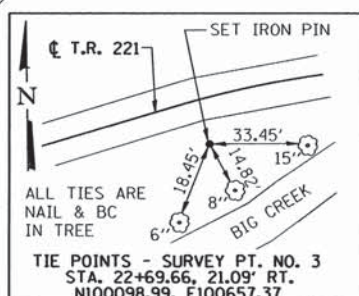
LEGEND

- TEMPORARY DITCH CHECK (TYP.)
(SEE STD. 280001)
- PERIMETER EROSION BARRIER
- TREE REMOVAL, ACRES

RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 221	05-0517-00-BR	CRAWFORD	14	3
STA. 17+52.20		TO STA. 31+00.50		
FED. ROAD DIST. NO.		ILLINOIS PROJECT: BROS-0033055J		
CONTRACT NO. 95790				



CURVE DATA
CURVE NO. 1
P.I. = STA. 20+60.11
N100049.43, E100452.41
Δ = 13° 13' 36" (LT.)
D = 7° 09' 43"
T = 92.75'
R = 800.00'
L = 184.68'
E = 5.36'
P.C. STA. 19+67.36
P.T. STA. 21+52.04

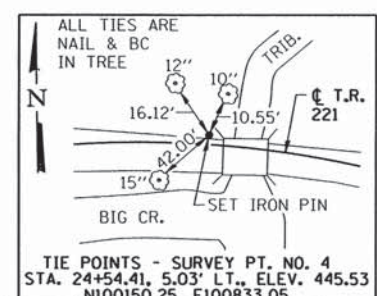


ALL TIES ARE
NAIL & BC
IN TREE

TIE POINTS - SURVEY PT. NO. 3
STA. 22+69.66, 21.09' RT.
N100098.99, E100657.37

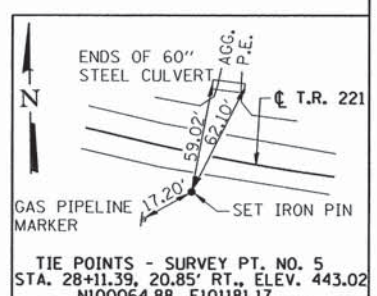
CURVE DATA
CURVE NO. 2
P.I. STA. 24+03.36
N100163.65, E100776.96
Δ = 30° 18' 21" (RT.)
D = 10° 25' 03"
T = 148.95'
R = 550.00'
L = 290.92'
E = 19.81'
P.C. STA. 22+54.41
P.T. STA. 25+45.33
S.E. = 3.5%
S.E. ATTAINED STA. 21+90.08
TO STA. 22+74.08
S.E. REMOVED STA. 25+25.66
TO STA. 26+09.66

CURVE DATA
CURVE NO. 3
P.I. = STA. 28+78.21
N100072.40, E101250.08
Δ = 10° 54' 27" (LT.)
D = 5° 43' 47"
T = 95.47'
R = 1000.00'
L = 190.37'
E = 4.55'
P.C. STA. 27+82.74
P.T. STA. 29+73.11



ALL TIES ARE
NAIL & BC
IN TREE

TIE POINTS - SURVEY PT. NO. 4
STA. 24+54.41, 5.03' LT., ELEV. 445.53
N100150.25, E100833.05



TIE POINTS - SURVEY PT. NO. 5
STA. 28+11.39, 20.85' RT., ELEV. 443.02
N100064.88, E101181.17

Station	Elevation	Notes	Vertical Curve Data	Profile	Other Data
18+00	444.99				
19+00	444.51				
20+00	444.07				
21+00	443.98				
22+00	443.87				
23+00	443.67				
24+00	443.55				
25+00	443.63				
26+00	443.66				
27+00	443.69				
28+00	443.78				
29+00	443.87				
30+00	443.87				
31+00	443.87				

EARTHWORK SUMMARY
EARTH EXCAVATION = 120 CU. YD.
CHANNEL EXCAVATION = 181 CU. YD.
FURNISHED EXCAVATION = 641 CU. YD.

FOR INFORMATION ONLY, NOT A PAY ITEM
MATERIAL REQUIRED FOR EMBANKMENT = 867 CU. YD.
ESTIMATED EXCAVATED MATERIAL THAT
WILL NOT BE SUITABLE FOR FILL = 0 CU. YD.

FURNISHED EXCAVATION REQUIRED =
867 - (120 + 181 - 0) (0.75 SHRINKAGE) = 641 CU. YD.

TEMPORARY DITCH CHECKS
STA. 24+00, LT. = 8 FOOT
STA. 25+25, LT. = 6 FOOT
TOTAL = 14 FOOT

PERIMETER EROSION BARRIER
TO BE CONSTRUCTED AT LOCATIONS SHOWN
ON PLANS. LAYOUT MAY VARY AS DIRECTED
BY THE ENGINEER.

TOTAL = 162 FOOT

TREE REMOVAL, ACRES
HATCHED AREA IN PLAN VIEW
TOTAL = 0.25 ACRES

TREE REMOVAL (6 TO 15 UNITS DIAMETER)
MARKED WITH X IN PLAN VIEW
TOTAL = 85 UNITS

SEEDING, CLASS 2
AREA INSIDE OF CONSTRUCTION
LIMITS, LESS ROADWAY.
TOTAL = 0.4 ACRES

NITROGEN FERTILIZER NUTRIENT
TOTAL = 36 POUNDS

PHOSPHORUS FERTILIZER NUTRIENT
TOTAL = 36 POUNDS

POTASSIUM FERTILIZER NUTRIENT
TOTAL = 36 POUNDS

MULCH, METHOD 2
TOTAL = 0.4 ACRES

STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS

S.W. QUADRANT = 112.5 FOOT
TOTAL = 112.5 FOOT

IMPROVEMENT BEGINS
STA. 21+90.00
MATCH EXISTING
ELEV. 443.94±

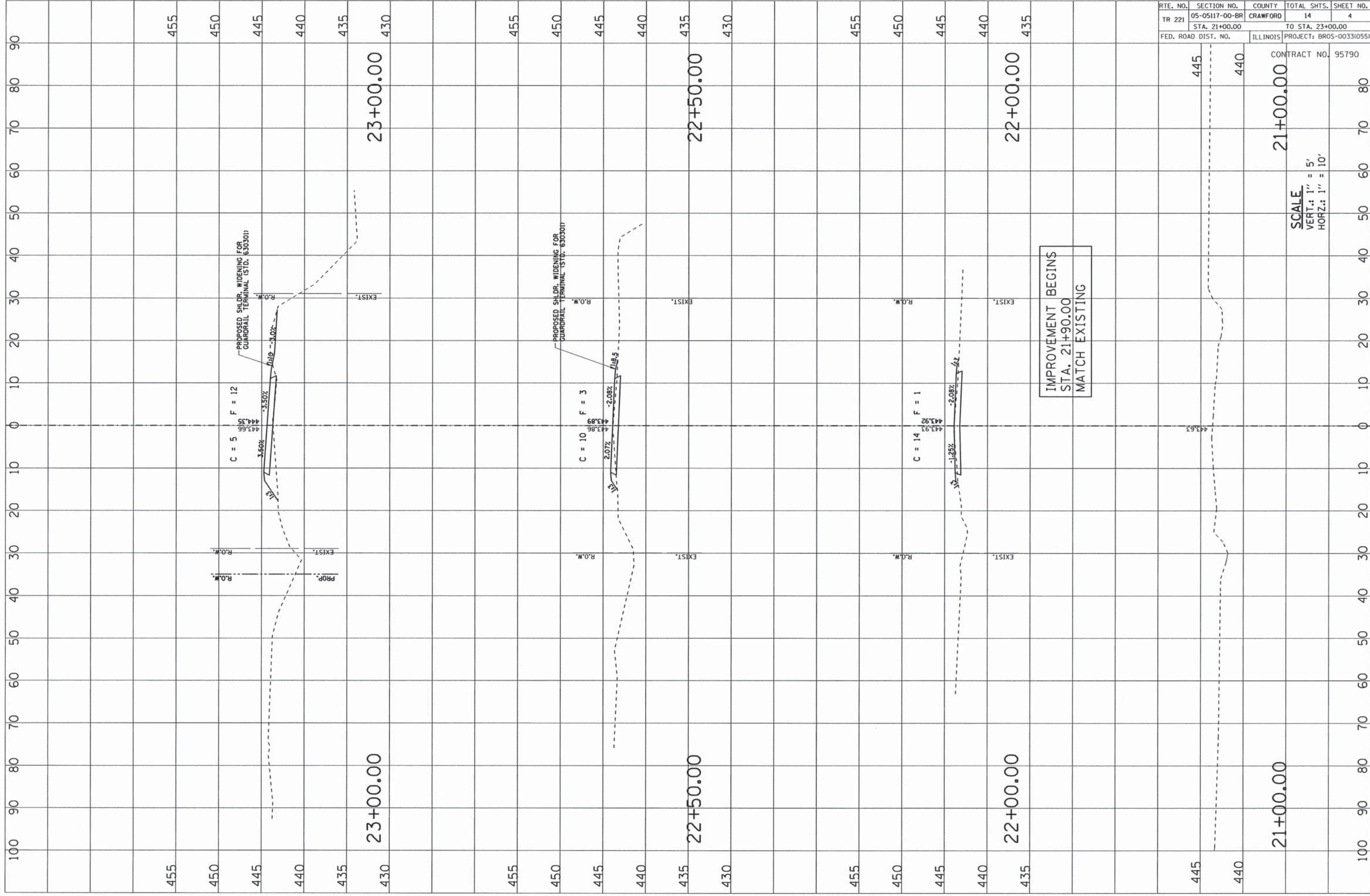
IMPROVEMENT ENDS
STA. 27+05.00
MATCH EXISTING
ELEV. 443.75±

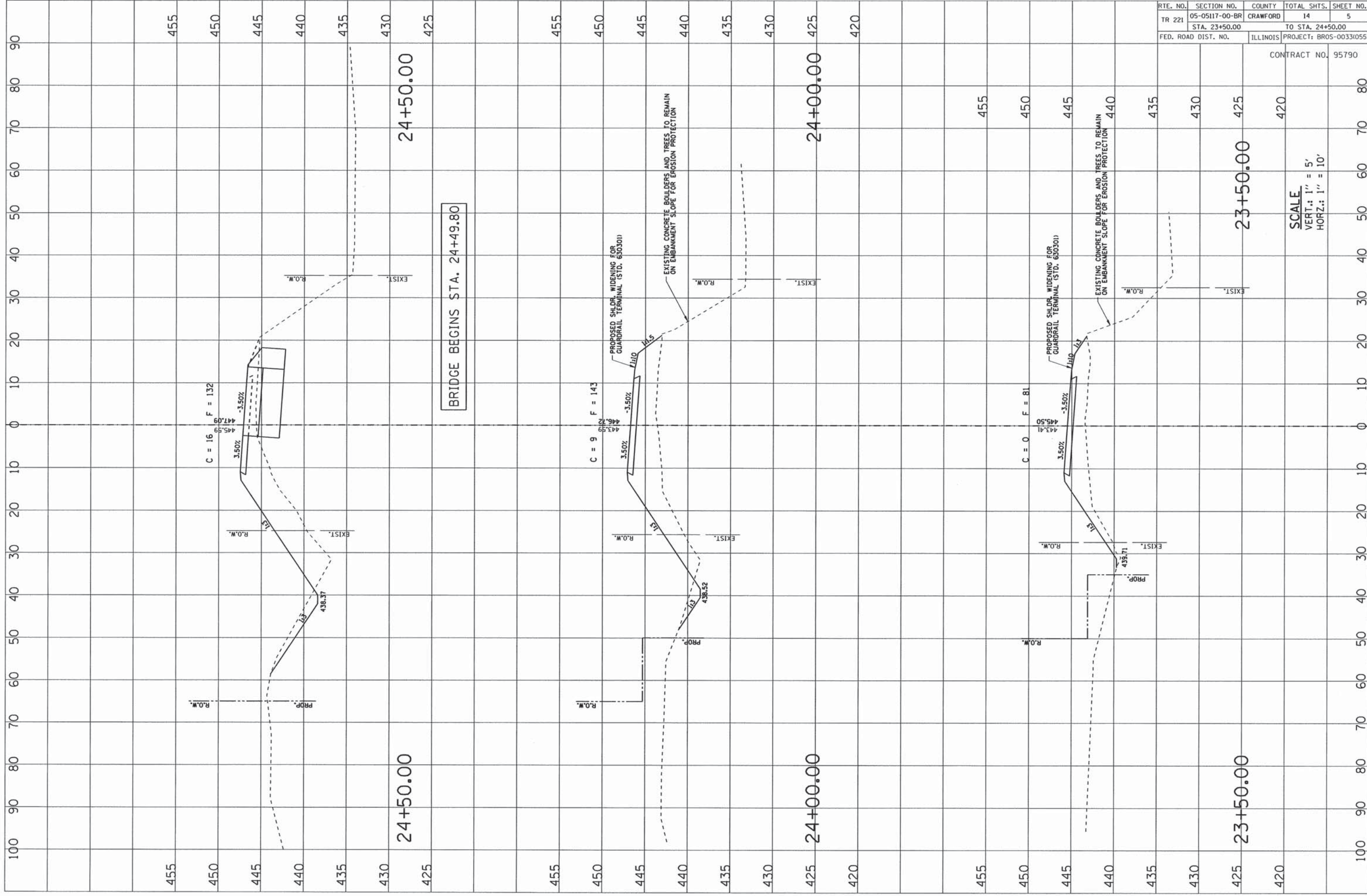
TRAFFIC BARRIER TERMINAL, TYPE 5A

S.W. QUADRANT = 1 EA.
N.E. QUADRANT = 1 EA.
TOTAL = 2 EA.

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

S.W. QUADRANT = 1 EA.
N.E. QUADRANT = 1 EA.
TOTAL = 2 EA.





RT. NO.	SECTION NO.	COUNTY	TOTAL SHTS.	SHEET NO.
TR 221	05-05117-00-BR	CRAWFORD	14	5
STA. 23+50.00		TO STA. 24+50.00		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT: BR05-0033(055)	

CONTRACT NO. 95790

SCALE
 VERT.: 1" = 5'
 HORZ.: 1" = 10'

BRIDGE BEGINS STA. 24+49.80

24+50.00

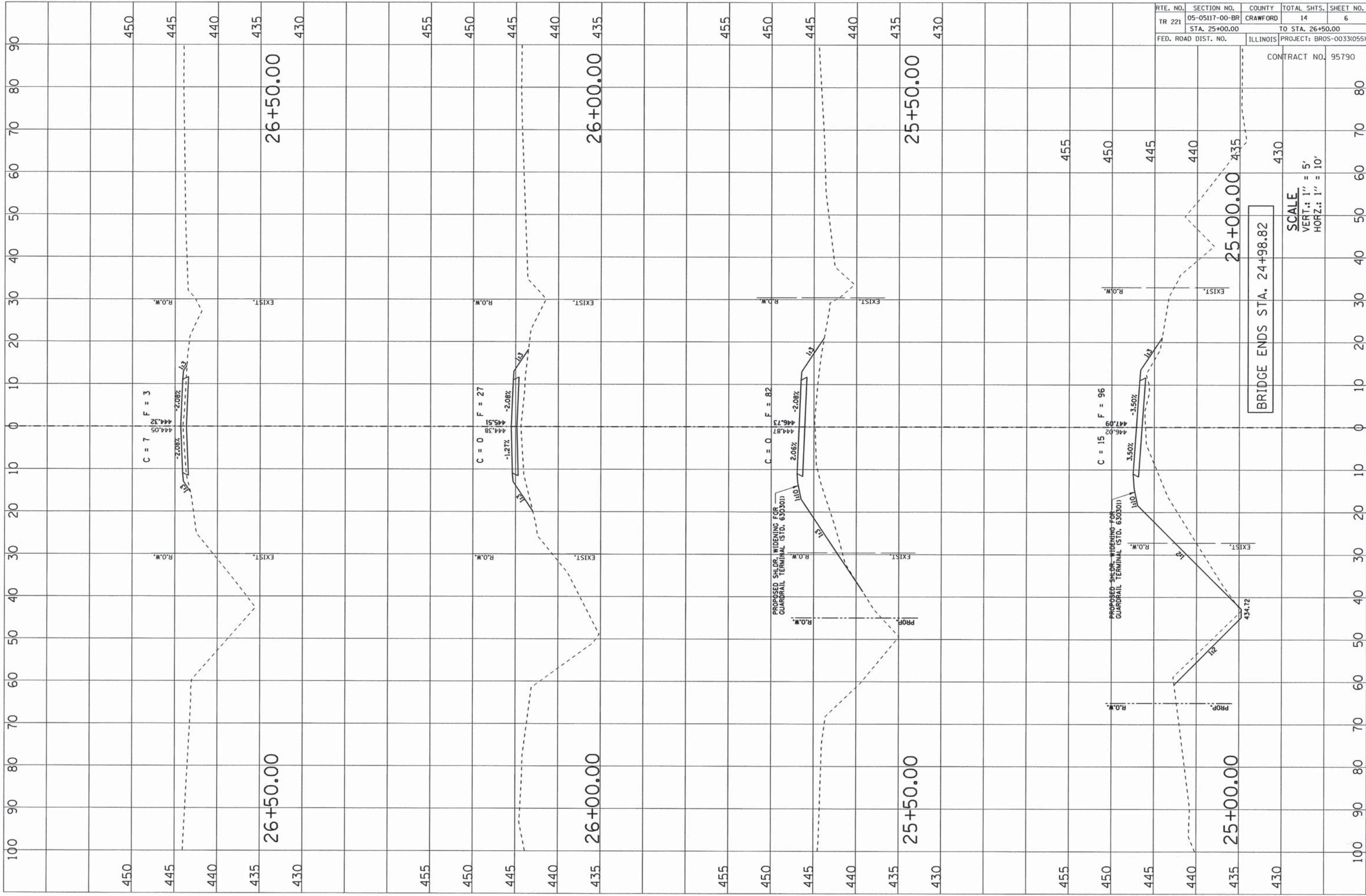
24+50.00

24+00.00

24+00.00

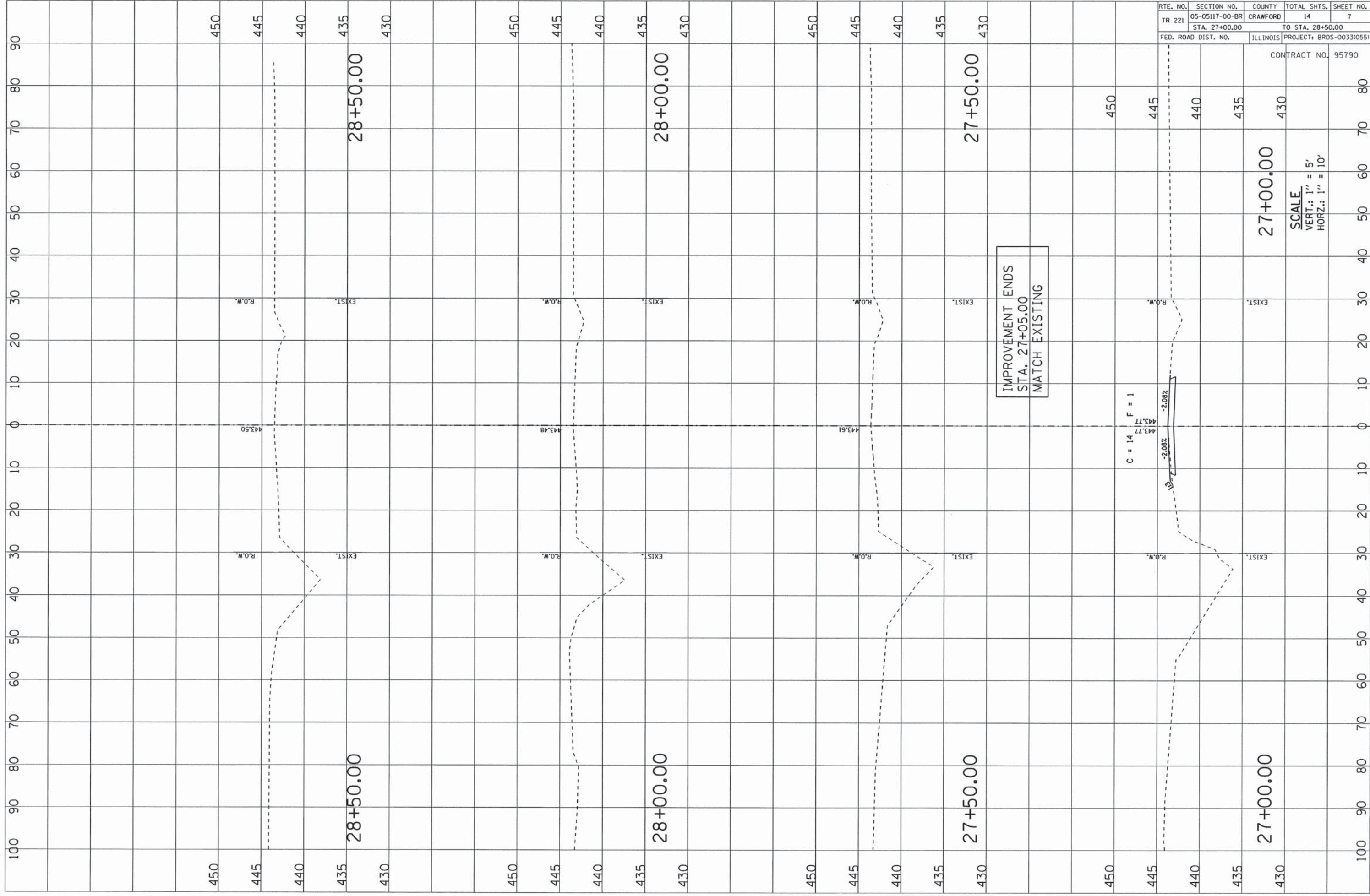
23+50.00

23+50.00



RTE. NO.	SECTION NO.	COUNTY	TOTAL SHTS.	SHEET NO.
TR 221	05-05117-00-BR	CRAWFORD	14	6
	STA. 25+00.00		TO STA. 26+50.00	
FED. ROAD DIST. NO.		ILLINOIS	PROJECT: BR05-00330(05)	

CONTRACT NO. 95790



RTE. NO.	SECTION NO.	COUNTY	TOTAL SHTS.	SHEET NO.
TR 221	05-05117-00-BR	CRAWFORD	14	7
STA. 27+00.00		TO STA. 28+50.00		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT: BROS-00331055)	

CONTRACT NO. 95790

SCALE
 VERT.: 1" = 5'
 HORZ.: 1" = 10'

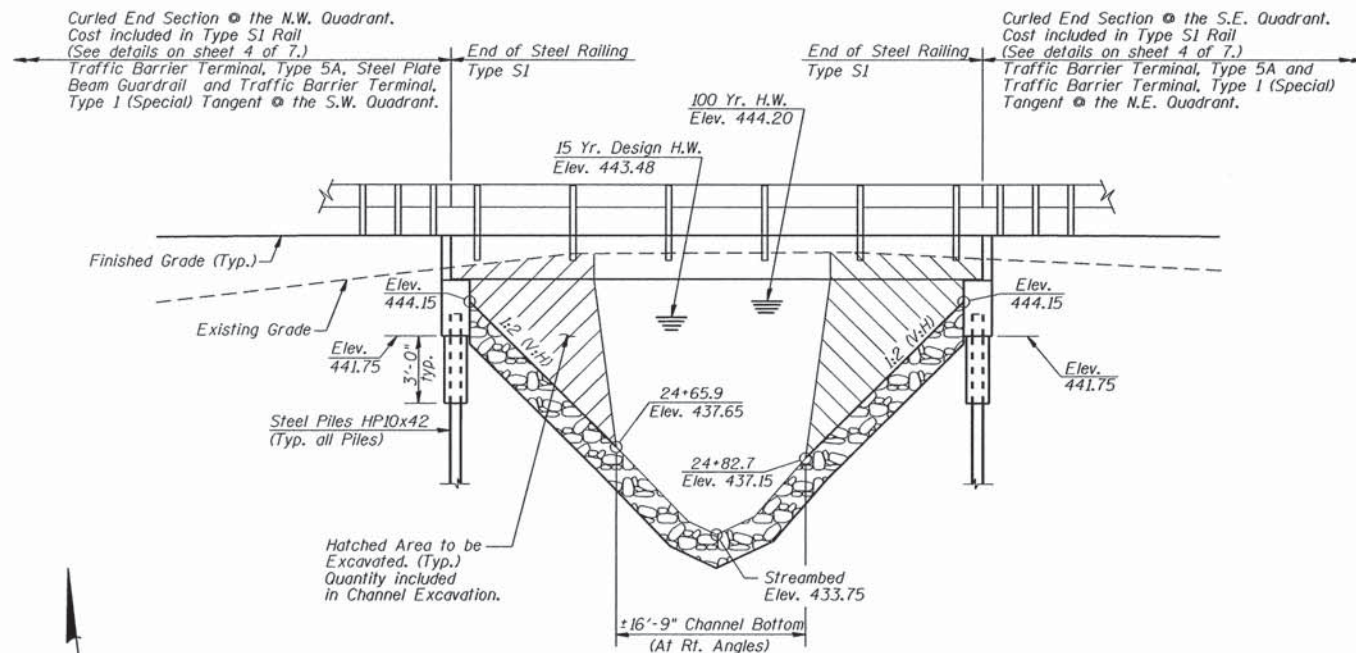
BENCHMARK:
RR Spike set in Top of 18" Stump
Sta. 28+04.38, 50.74' Lt.
Elevation = 443.92

EXISTING STRUCTURE (SN 017-3505):
Single Span C.I.P. Concrete Slab Bridge on Closed
Concrete Abutments with Concrete Wingwalls.
19'-2" O.-O. Deck. 24'-0" Bk.-Bk. Abuts. No Salvage.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 221	05-05117-00-BR	CRAWFORD	14	8
FED. ROAD DIST. NO.	ILLINOIS PROJECT: BROS-003310551		CONTRACT NO. 95790	

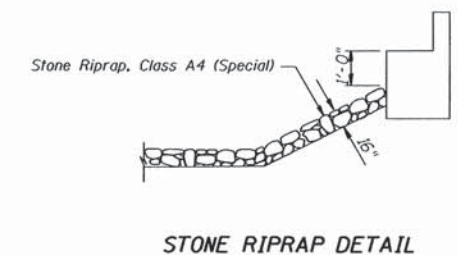
GENERAL NOTES

Layout of Riprap Slopes may be varied in the field to suit ground conditions as directed by the Engineer.
See Proposal for Boring Data.
Reinforcement Bars shall conform to the requirements of ASTM A 706, Grade 60 (See Special Provisions).
The Contractor shall drive one Steel Test Pile at a permanent location at the East Abutment, as directed by the Engineer before ordering the remainder of piles.
Excavation required for Abutment Construction shall be included in Concrete Structures. No additional compensation will be provided for Structure Excavation.

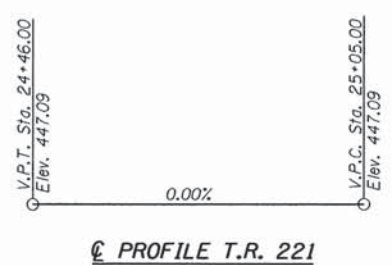


ELEVATION

NOTE:
Transition Shldr.'s from 2'-0" to Edge of Deck in 50' at all Quadrants. See Std. 630301-06 and Station Cross Sections for Shldr. Widening Transitions at the S.W. & N.E. Quadrants.



STONE RIPRAP DETAIL



PROFILE T.R. 221

**TRIBUTARY TO BIG CREEK
BUILT 2016, BY
CRAWFORD COUNTY
SECTION 05-05117-00-BR
T.R. 221 STA. 24+74.31
STR. NO. 017-3522 LOADING HL-93**

NAME PLATE
(See Std. 515001)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		181	181
Stone Riprap, Class A4 (Special)	Ton		137	137
Removal of Existing Structures	Each		1	1
Concrete Structures	Cu. Yd.		26.4	26.4
P.P.C. Deck Beams (21" Depth)	Sq. Ft.	1316		1316
Reinforcement Bars, Epoxy Coated	Pound		3340	3340
Steel Railing, Type S1	Foot	94		94
Furnishing Steel Piles HP10x42	Foot		454	454
Driving Piles	Foot		454	454
Test Pile Steel HP10x42	Each		1	1
Concrete Encasement	Cu. Yd.		3.4	3.4
Name Plates	Each		1	1

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design, 7th Edition with 2015 Interim Specifications
LOADING HL-93
Allowed 50# / sq. ft. for future wearing surface.

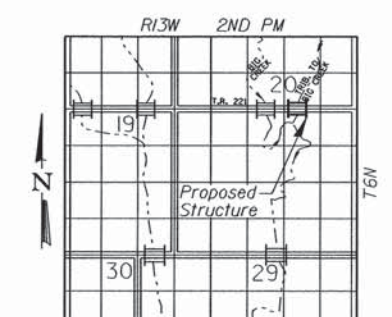
DESIGN STRESSES

FIELD UNITS
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i.
n = 9

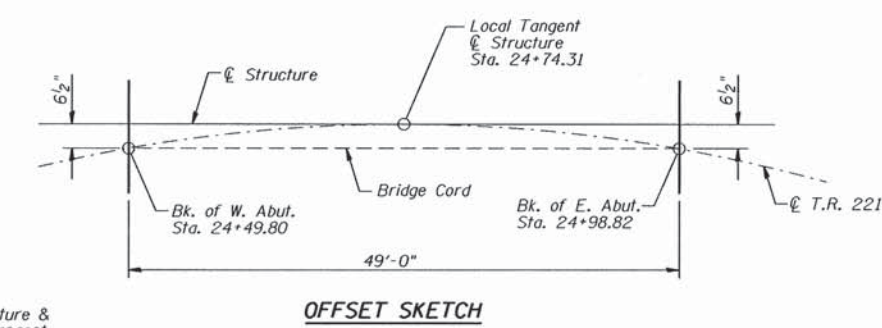
PPC UNITS
f'ci = 5,000 p.s.i.
f'cs = 6,000 p.s.i.
f's = 270,000 p.s.i. (1/2" φ low lax. strands)
f'si = 201,960 p.s.i. (1/2" φ low lax. strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.215g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.493g
Soil Site Class = D



LOCATION SKETCH



OFFSET SKETCH

DESIGN SCOUR ELEVATION TABLE

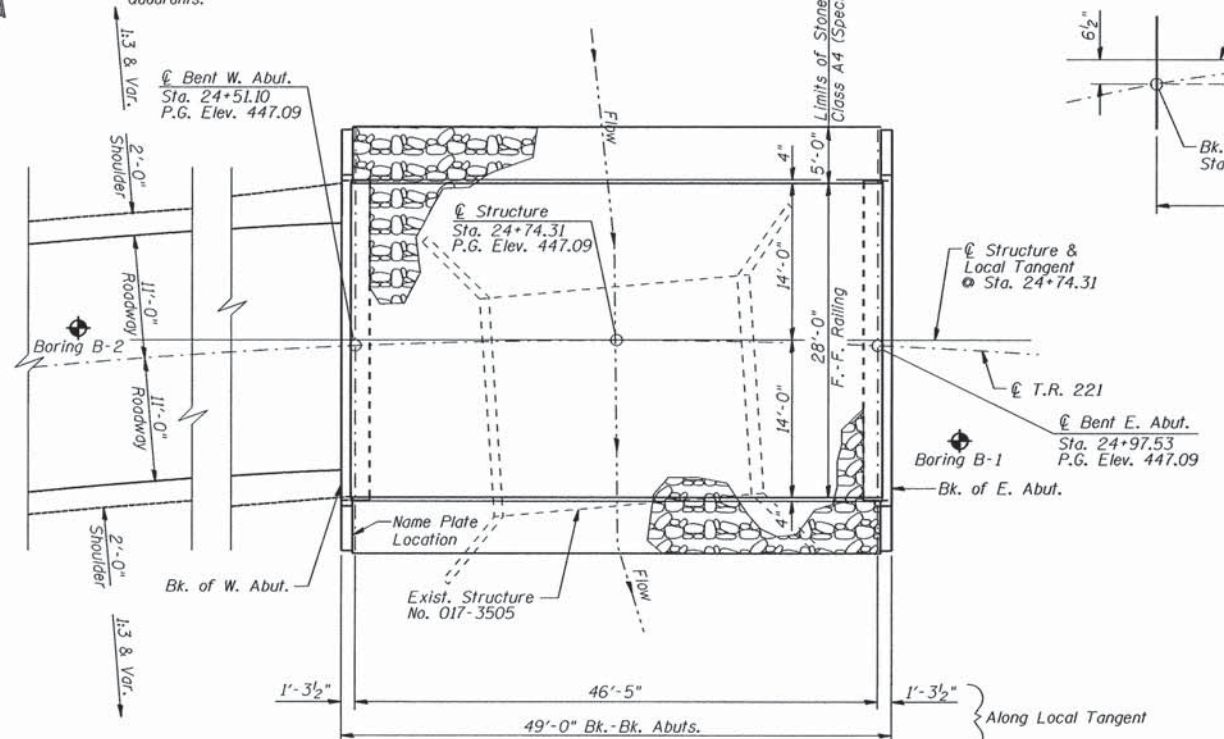
Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	441.75	441.75

WATERWAY INFORMATION

Drainage Area = 1.3 Sq. Mi. Existing Low Grade Elev. 443.41 @ Sta. 23+50.00
Proposed Low Grade Elev. 443.75 @ Sta. 27+05.00

Flood	Freq. Yr.	C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head-Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	362	99	121	440.96	0.00	0.00	440.82	440.85
Base	100	576	124	166	442.30	0.00	0.01	442.21	442.31
Overtopping									
Max. Calc.	500	748	141	202	443.16	0.00	0.09	443.09	443.25

Low Beam Elev. (Prop.) = 444.85
Backwater from Big Creek at confluence of Tributary controls.
15-Yr. HWE = 443.48
100-Yr. HWE = 444.20



PLAN



DATE: March 24, 2016
Keith W. Bentley
KEITH W. BENTLEY
ILL. STRUCTURAL NO. 4777

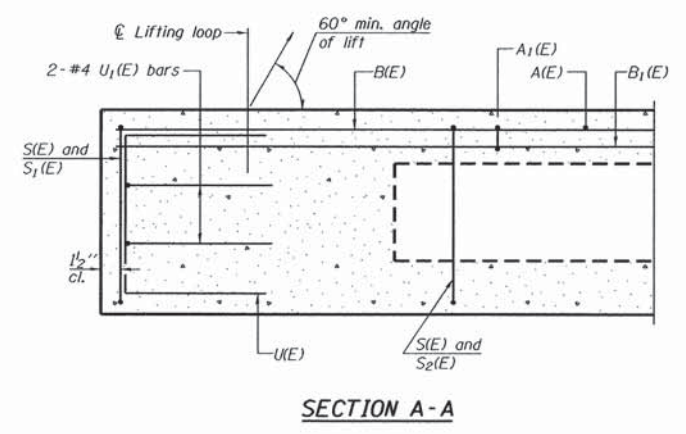
I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH REQUIREMENTS OF THE CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

GENERAL PLAN AND ELEVATION

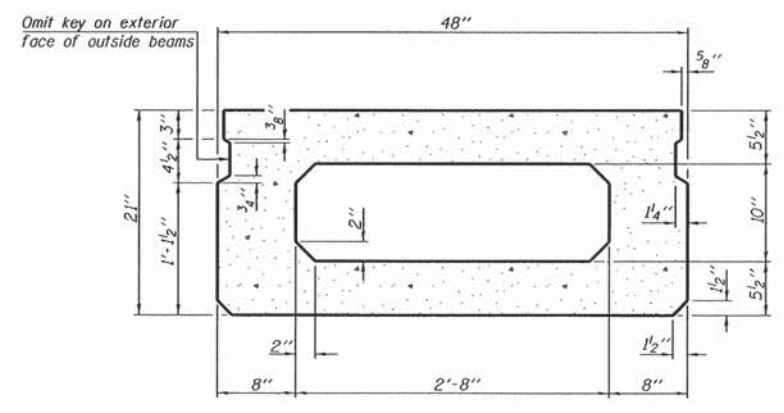
Date	Designed MJP	T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-05117-00-BR CRAWFORD COUNTY STA. 24+74.31 PROP. STR. NO. 017-3522	Sheet No.
Revisions	Drawn BKN		1
	Checked KWB		
	Approved KWB		of 7
Prepared by:	AECOM 345 East Ash Avenue Decatur, IL 62526		URS Job No. 36433511

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 221	05-05117-00-BR	CRAWFORD	14	9
FED. ROAD DIST. NO.	ILLINOIS PROJECT: BROS-003310551			

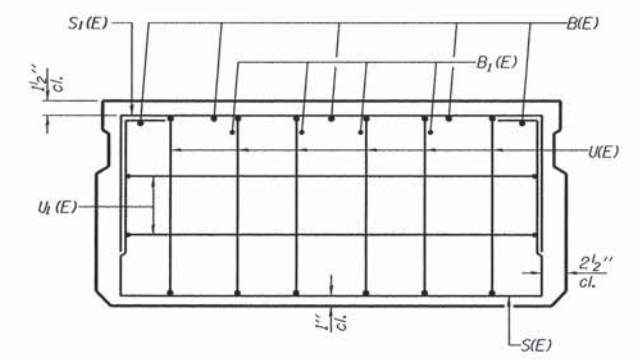
CONTRACT NO. 95790



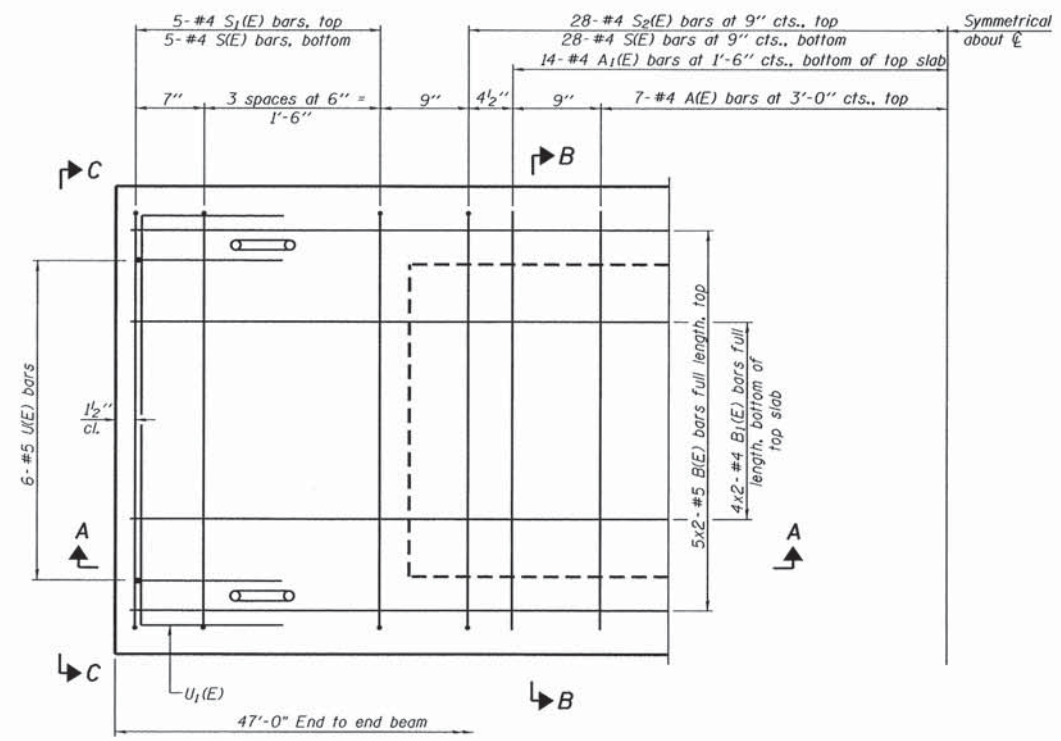
SECTION A-A



SECTION B-B
(Showing dimensions)

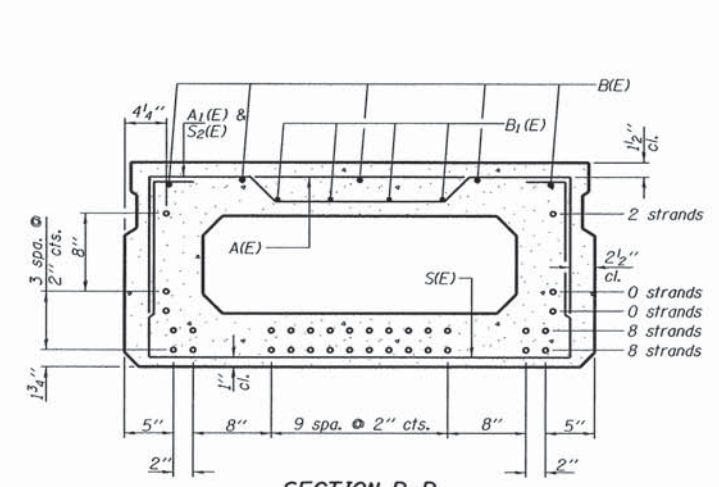


VIEW C-C



PLAN VIEW

Note: Spacing of S1(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION 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)	10	#5	24'-8"	—
B1(E)	8	#4	24'-5"	—
S(E)	66	#4	7'-5"	U
S1(E)	10	#4	5'-11"	U
S2(E)	56	#4	6'-2"	U
U1(E)	12	#5	4'-0"	U
U1(E)	4	#4	6'-0"	U

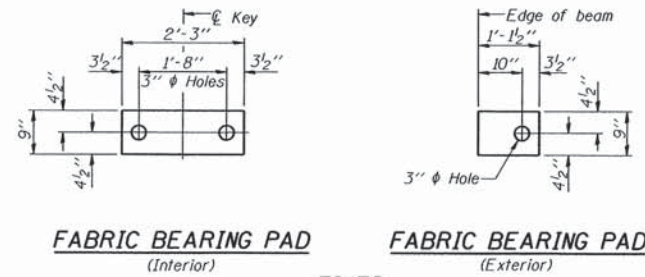
Note: See sheet 3 of 7 for additional details and Bill of Material.

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

SUPERSTRUCTURE		Sheet No.
Date	Designed MJP	T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-05117-00-BR CRAWFORD COUNTY STA. 24+74.31 PROP. STR. NO. 017-3522
Revisions	Drawn MJP	
	Checked KWB	
	Approved KWB	
Prepared by:	AECOM 345 East Ash Avenue Decatur, IL 62526	2 of 7
		URS Job No. 36433511

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 221	05-05117-00-BR	CRAWFORD	14	10
FED. ROAD DIST. NO.		ILLINOIS PROJECT: BROS-003310551		

CONTRACT NO. 95790



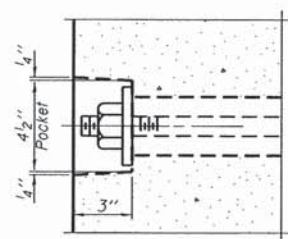
FABRIC BEARING PAD
(Interior)

FABRIC BEARING PAD
(Exterior)

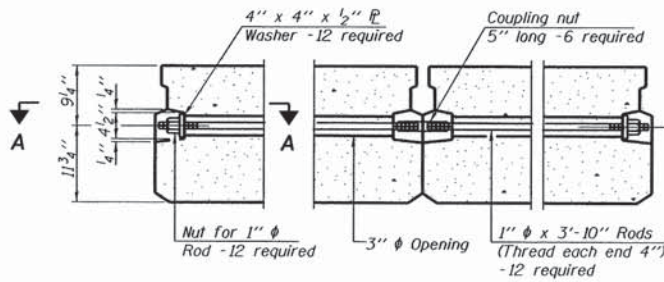
FIXED

Notes:

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



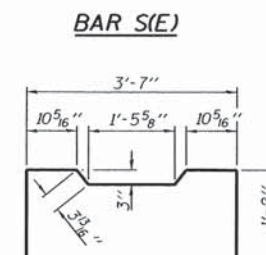
SECTION A-A



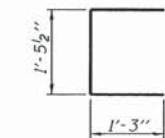
TYPICAL TRANSVERSE TIE ASSEMBLY



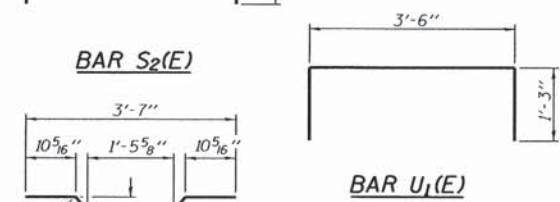
BAR S₁(E)



BAR S(E)



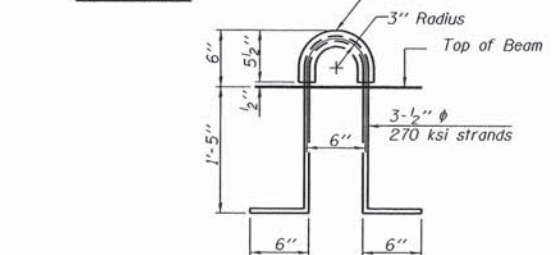
BAR U(E)



BAR S₂(E)

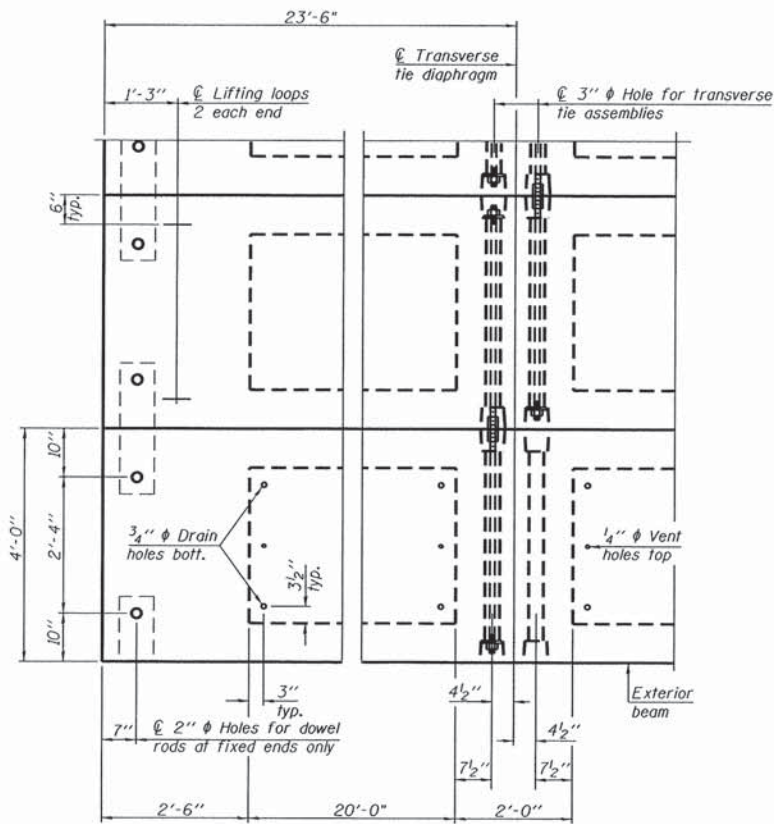


BAR U₁(E)



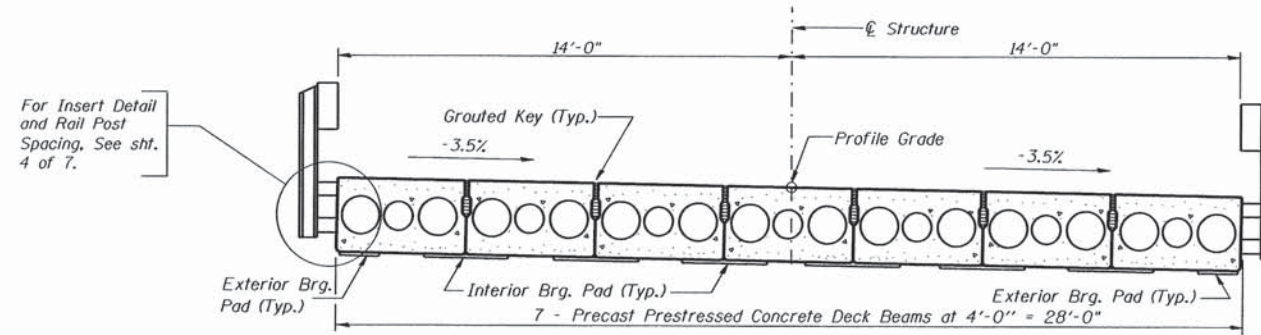
BAR A₁(E)

LIFTING LOOP DETAIL



PLAN VIEW

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



CROSS SECTION

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/2" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" 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.

BILL OF MATERIAL

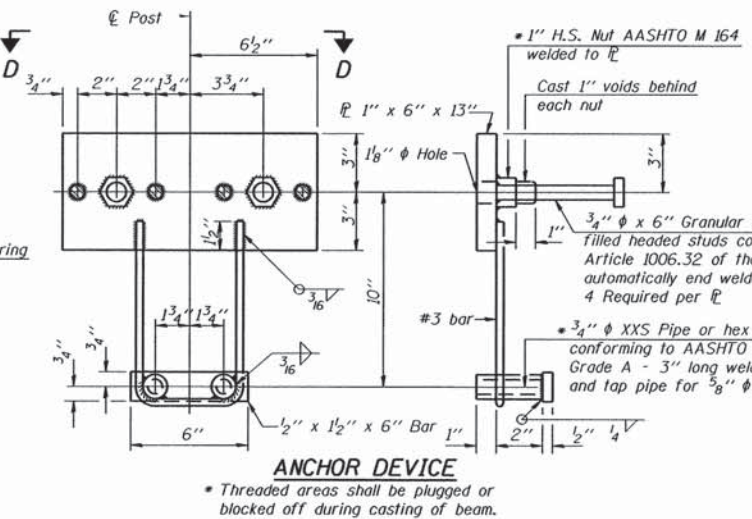
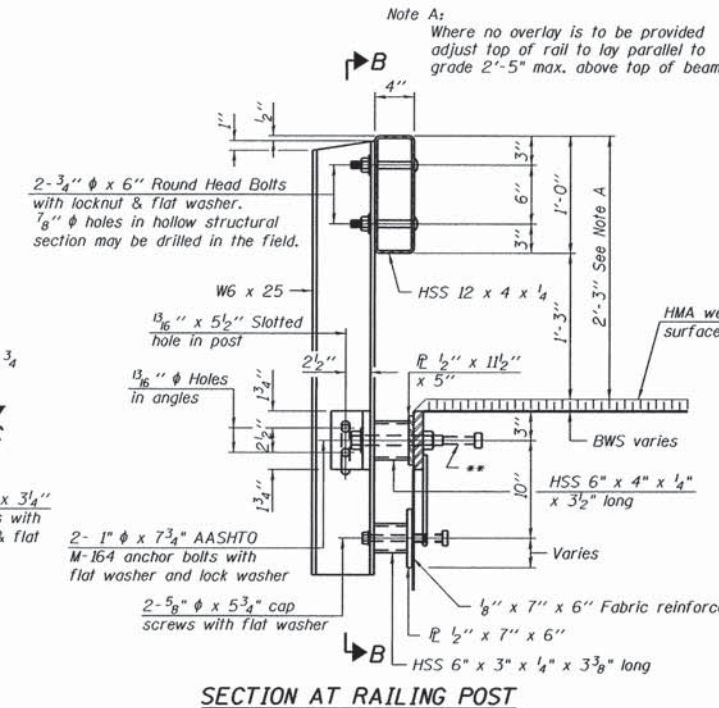
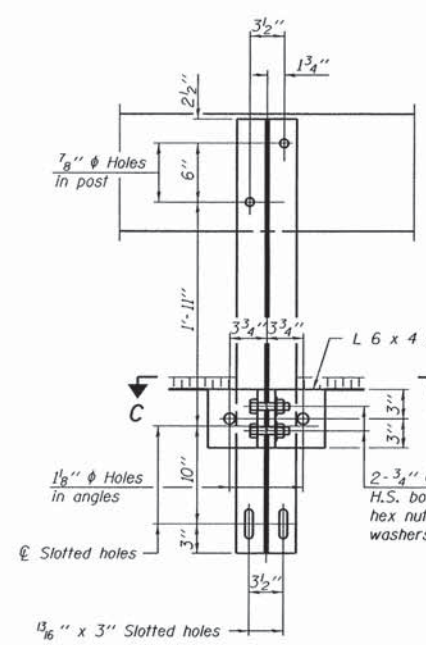
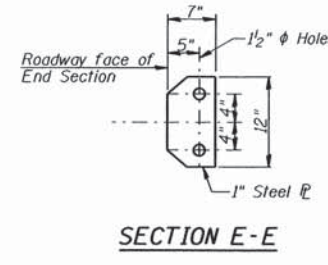
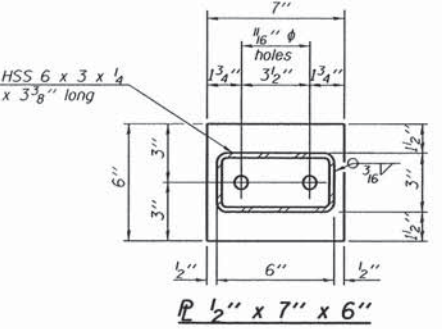
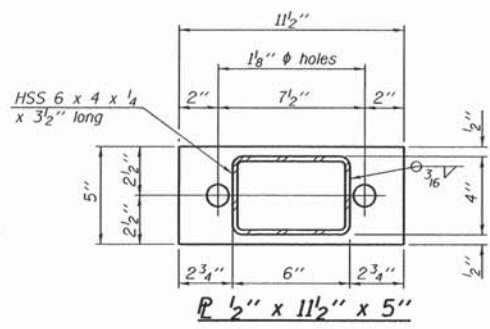
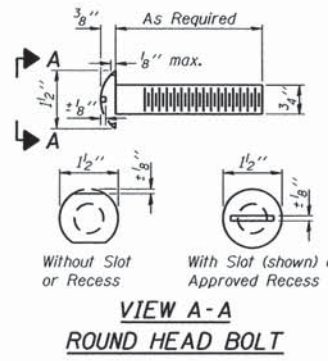
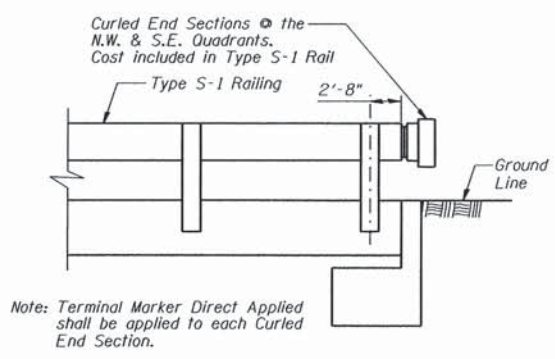
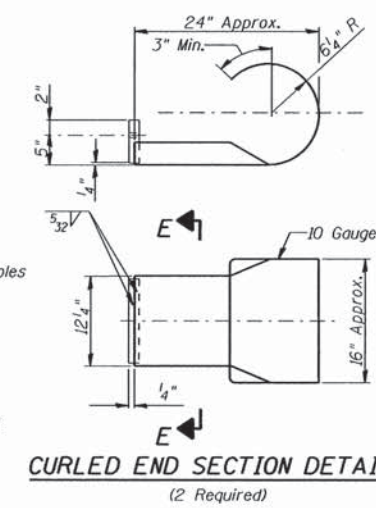
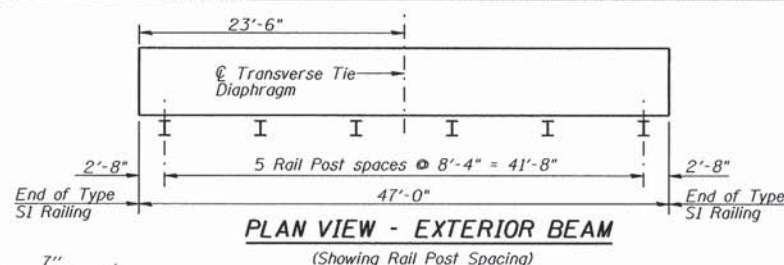
Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1316
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21" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 017-3522

SUPERSTRUCTURE DETAILS

Date	Designed MJP	T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-05117-00-BR CRAWFORD COUNTY STA. 24+74.31 PROP. STR. NO. 017-3522	Sheet No.
Revisions	Drawn MJP		3
	Checked KWB		
	Approved KWB		
Prepared by:	AECOM 345 East Ash Avenue Decatur, IL 62526		
		URS Job No.	36433511

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 221	05-05117-00-BR	CRAWFORD	14	II
FED. ROAD DIST. NO.	ILLINOIS PROJECT: BROS-003310551		CONTRACT NO. 95790	

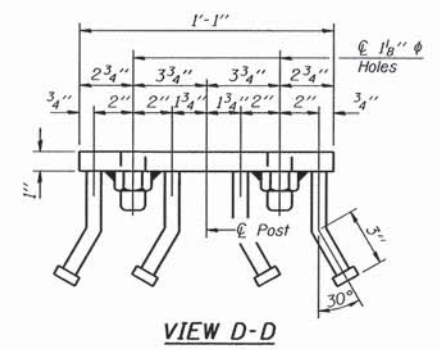
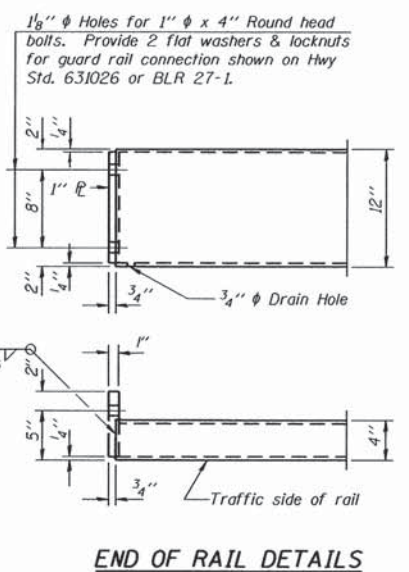
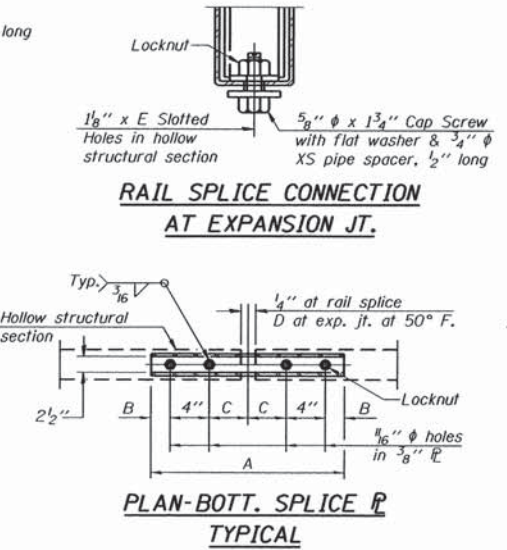
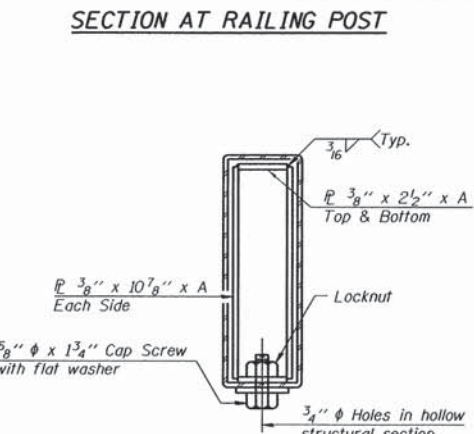
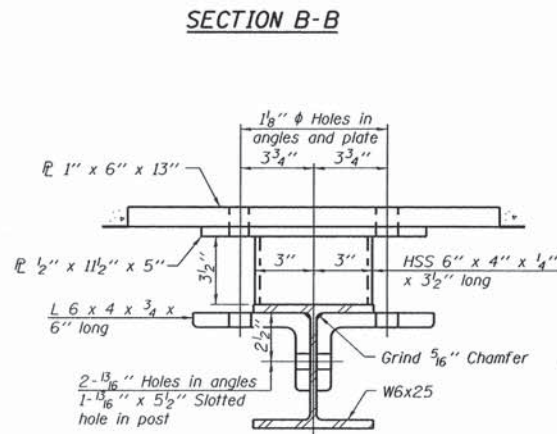


SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	

T = Total movement at expansion joint as shown on the design plans.

Notes:
 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 S1	Foot	94

STEEL RAILING

Date	Designed MJP	T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-05117-00-BR CRAWFORD COUNTY STA. 24+74.31 PROP. STR. NO. 017-3522	Sheet No.
Revisions	Drawn MJP		4
	Checked KWB		of 7
	Approved KWB		URS Job No. 36433511
Prepared by:	AECOM 345 East Ash Avenue Decatur, IL 62526		

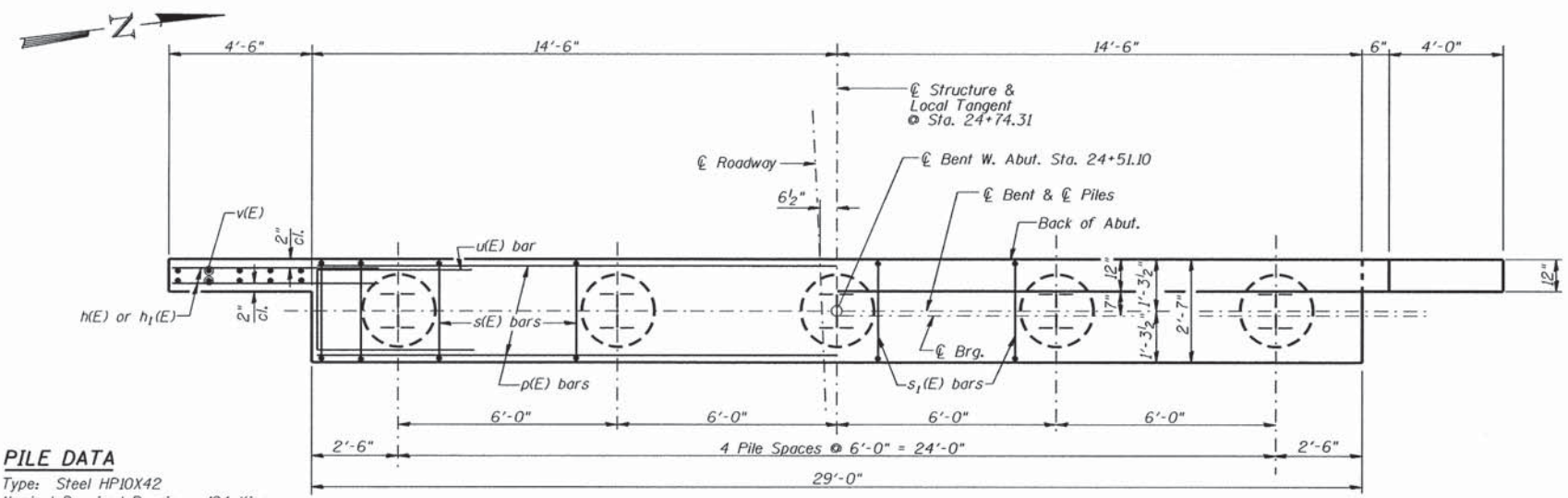
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 221	05-05117-00-BR	CRAWFORD	14	12
FED. ROAD DIST. NO.	ILLINOIS PROJECT: BROS-003310551		CONTRACT NO. 95790	

NOTES

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- 1" dia. x 2'-6" dowel rods in 1 1/2" dia. holes drilled in cap (2 each beam). Dowel rods to be grouted after beams are in place and allowed to cure (min. 24 hrs.) prior to grouting the shear keys. The grout shall be an approved non-shrink grout.
- Reinforcement bars designated (E) shall be Epoxy Coated.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.
- Space reinforcement in cap to miss dowel rods.

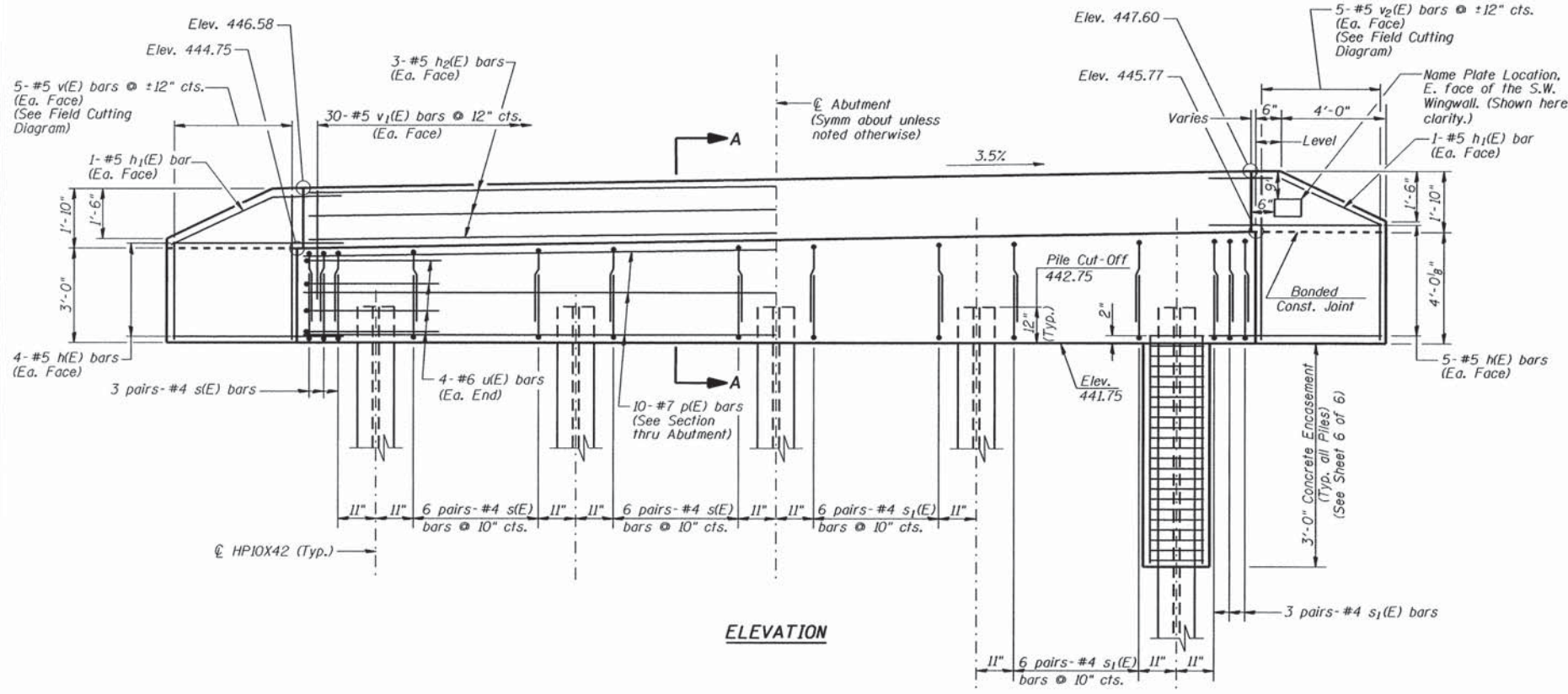
DESIGN STRESSES

$f'_c = 3,500 \text{ psi}$
 $f_y = 60,000 \text{ psi}$

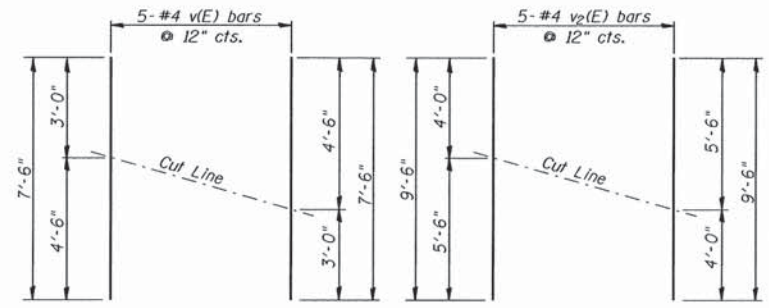


PLAN

PILE DATA
 Type: Steel HPIOX42
 Nominal Required Bearing: 194 Kips
 Factored Resistance Available: 107 Kips
 Estimated Length: 46'-0"
 No. Required: 5

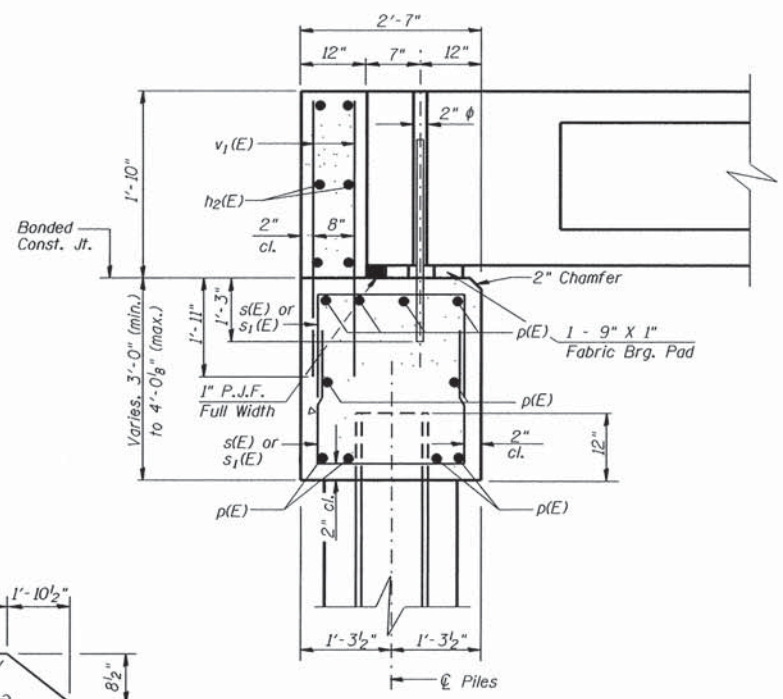


ELEVATION

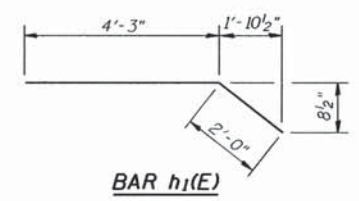


FIELD CUTTING DIAGRAM

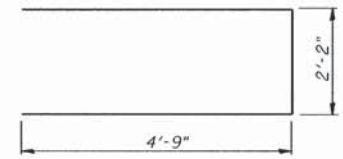
Order bars full length. Cut to fit as shown and use remainder of bars in other face.



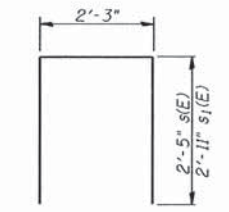
SECTION A-A
(At Rt. Angles)



BAR h1(E)



BAR u(E)



BAR s(E) & s1(E)

BILL OF MATERIAL WEST ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	18	#5	6'-0"	—
h1(E)	4	#5	6'-3"	—
h2(E)	6	#5	28'-8"	—
p(E)	10	#7	28'-8"	—
s(E)	30	#4	7'-1"	□
s1(E)	30	#4	8'-1"	□
u(E)	8	#6	11'-8"	—
v(E)	5	#5	7'-6"	—
v1(E)	60	#5	3'-8"	—
v2(E)	5	#5	9'-6"	—
Concrete Structures			Cu. Yd.	13.2
Reinforcement Bars, Epoxy Coated			Pound	1670
Furnishing Steel Piles HPIOX42			Foot	230
Driving Piles			Foot	230
Concrete Encasement			Cu. Yd.	1.7

WEST ABUTMENT

Date	Designed MJP	T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-05117-00-BR CRAWFORD COUNTY STA. 24+74.31 PROP. STR. NO. 017-3522	Sheet No.
Revisions	Drawn BKN		5
	Checked KWB		
	Approved KWB		
Prepared by:	AECOM 345 East Ash Avenue Decatur, IL 62526		

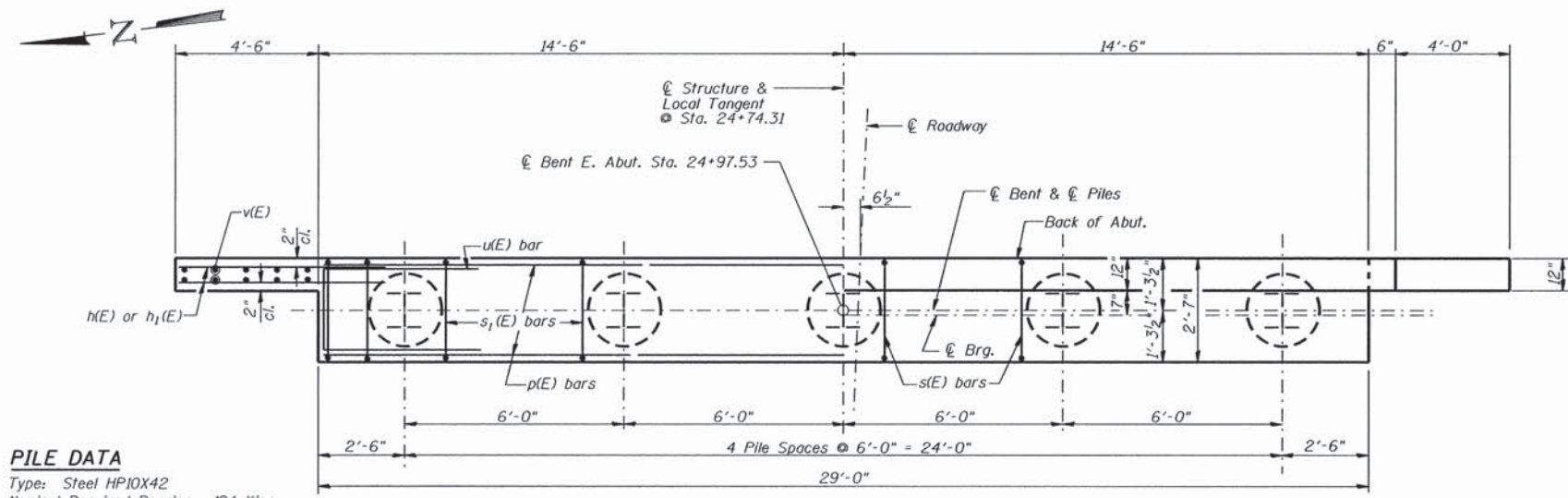
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 221	05-05117-00-BR	CRAWFORD	14	13
FED. ROAD DIST. NO.	ILLINOIS PROJECT: BROS-00331055		CONTRACT NO. 95790	

NOTES

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- 1" dia. x 2'-6" dowel rods in 1 1/2" dia. holes drilled in cap (2 each beam). Dowel rods to be grouted after beams are in place and allowed to cure (min. 24 hrs.) prior to grouting the shear keys. The grout shall be an approved non-shrink grout.
- Reinforcement bars designated (E) shall be Epoxy Coated.
- Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.
- Space reinforcement in cap to miss dowel rods.

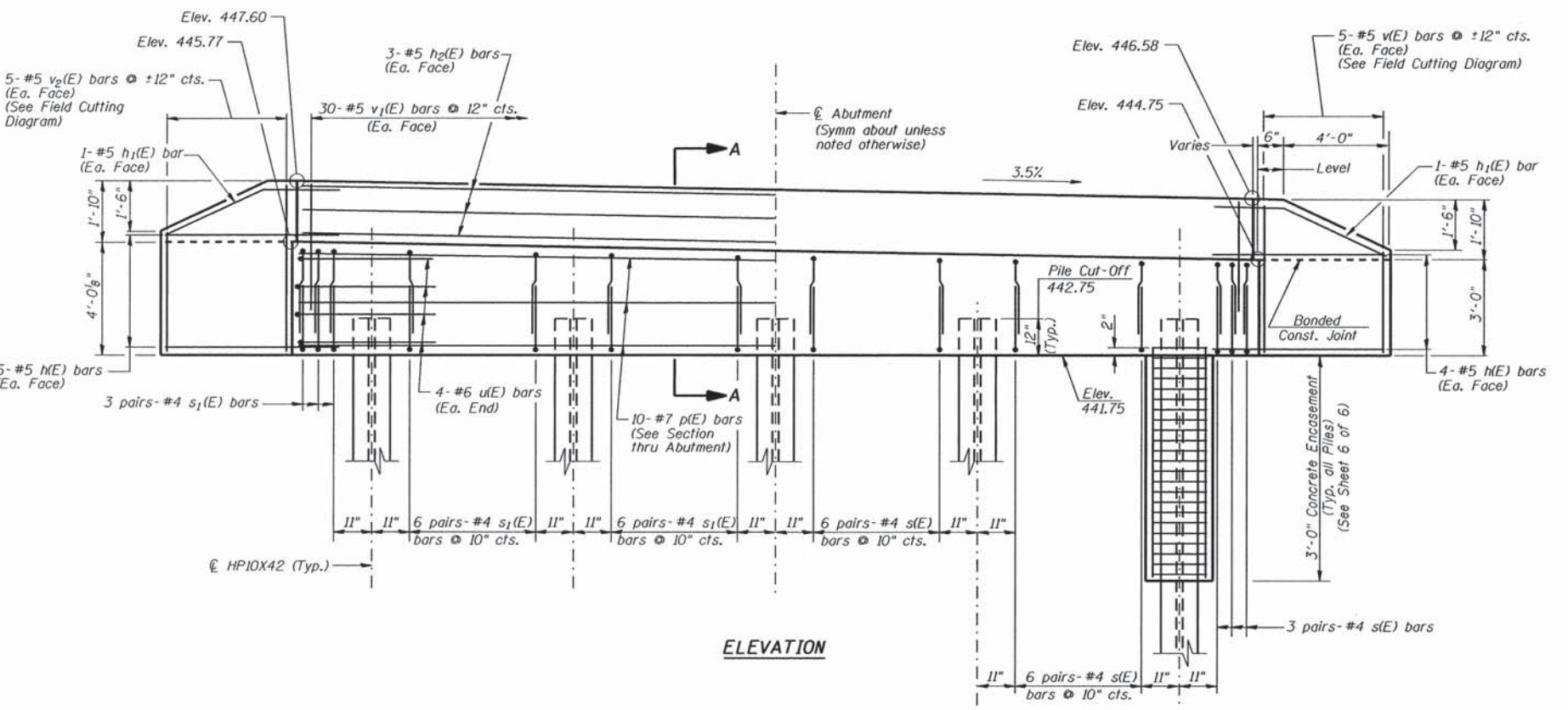
DESIGN STRESSES

$f'_c = 3,500 \text{ psi}$
 $f_y = 60,000 \text{ psi}$

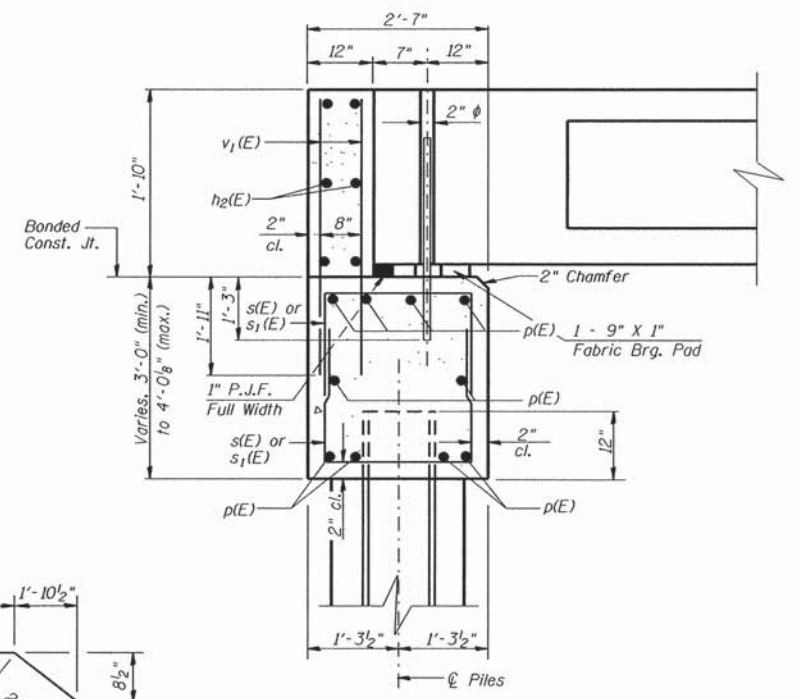


PLAN

PILE DATA
 Type: Steel HPI0X42
 Nominal Required Bearing: 194 Kips
 Factored Resistance Available: 107 Kips
 Estimated Length: 56'-0"
 No. Required: 4 Plus 1 Permanent Test Pile



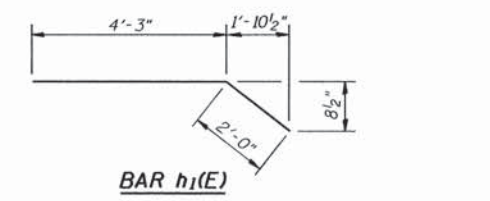
ELEVATION



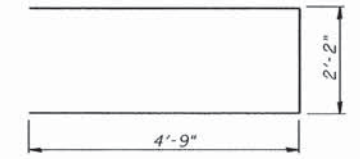
SECTION A-A
(At Rt. Angles)

BILL OF MATERIAL EAST ABUTMENT

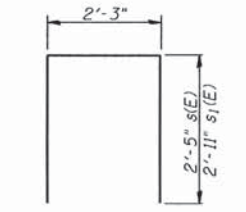
Bar	No.	Size	Length	Shape
h(E)	18	#5	6'-0"	—
h1(E)	4	#5	6'-3"	—
h2(E)	6	#5	28'-8"	—
p(E)	10	#7	28'-8"	—
s(E)	30	#4	7'-1"	□
s1(E)	30	#4	8'-1"	□
u(E)	8	#6	11'-8"	□
v(E)	5	#5	7'-6"	—
v1(E)	60	#5	3'-8"	—
v2(E)	5	#5	9'-6"	—
Concrete Structures		Cu. Yd.	13.2	
Reinforcement Bars, Epoxy Coated		Pound	1670	
Furnishing Steel Piles HPI0x42		Foot	224	
Driving Piles		Foot	224	
Concrete Encasement		Cu. Yd.	1.7	
Test Pile Steel HPI0x42		Each	1	



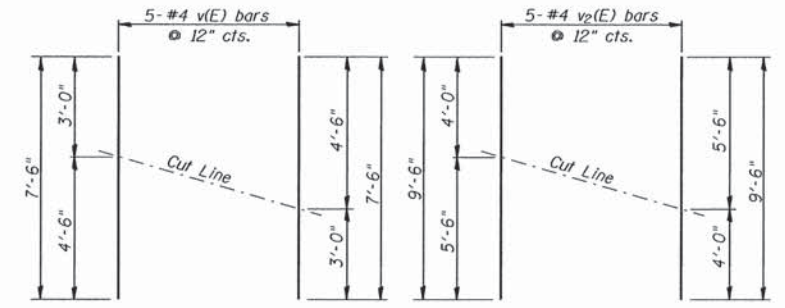
BAR h1(E)



BAR u(E)



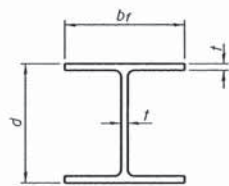
BAR s(E) & s1(E)



FIELD CUTTING DIAGRAM

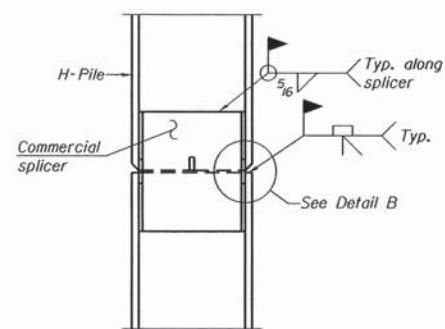
Order bars full length. Cut to fill as shown and use remainder of bars in other face.

EAST ABUTMENT		Date	Designed MJP	T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-05117-00-BR CRAWFORD COUNTY STA. 24+74.31 PROP. STR. NO. 017-3522	Sheet No.
Revisions	Drawn BKN				6
	Checked KWB				
	Approved KWB				
Prepared by: AECOM 345 East Ash Avenue Decatur, IL 62526					
				URS Job No.	36433511

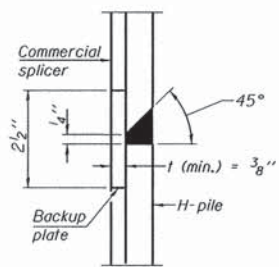


STEEL PILE TABLE

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/8"	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"	1/8"	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"

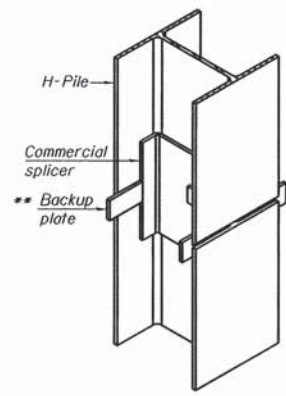


ELEVATION

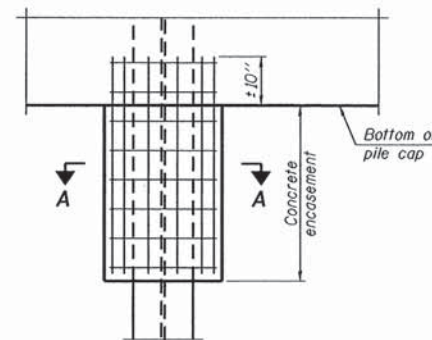


DETAIL "B"

WELDED COMMERCIAL SPLICE

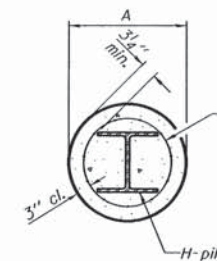


ISOMETRIC VIEW



ELEVATION

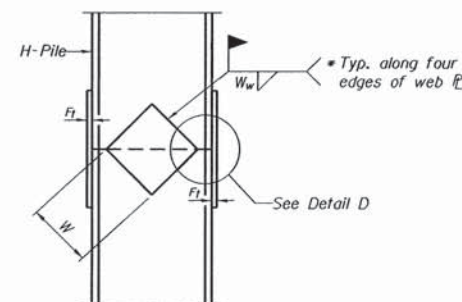
PILE ENCASEMENT



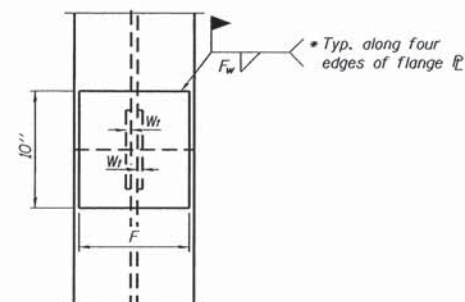
SECTION A-A

Welded wire fabric 6 x 6 - W4.0 x W4.0 weighing 58#/100 sq. ft. Bend as required to fit into wall.

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

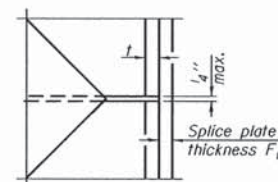


ELEVATION



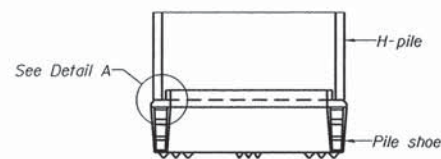
END VIEW

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

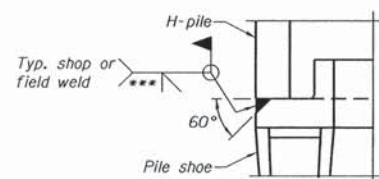


DETAIL D

WELDED PLATE FIELD SPLICE

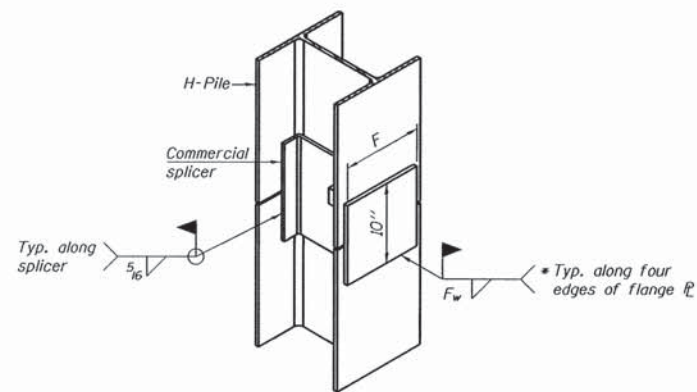


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

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

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

PILE DETAILS			
Date	Designed MJP	T.R. 221 OVER TRIBUTARY TO BIG CREEK SECTION 05-0517-00-BR CRAWFORD COUNTY STA. 24+74.31 PROP. STR. NO. 017-3522	Sheet No.
Revisions	Drawn MJP		7
	Checked KWB		of 7
	Approved KWB		URS Job No. 36433511
Prepared by:	AECOM 345 East Ash Avenue Decatur, IL 62526		