8-4-06 Letting, Item 070

ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
T.R. 87	05-12124-00-BR	9	1
CONTRACT 87329	ILLINOIS	FED. AID PROJ.- BROS-011(68)	

INDEX OF SHEETS

STANDARDS:

515001-02	NAME PLATE FOR BRIDGES
702001-06	TRAFFIC CONTROL DEVICES
BLR 21-6	TRAFFIC CONTROL FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITIES

ELECTRIC: AMEREN IP
P. O. BOX 1428
LASALLE, IL 61301
(815) 224-6238

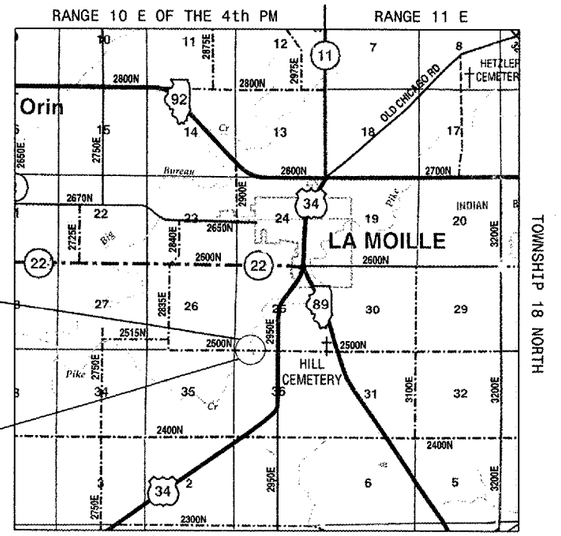
TELEPHONE: VERIZON COMMUNICATIONS
P. O. BOX B
KEWANEE, IL 61443
(309) 853-6360

CALL BEFORE YOU DIG
J.U.L.I.E. 800-892-0123

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

LAMOILLE ROAD DISTRICT
SECTION 05-12124-00-BR
PROJECT NUMBER BROS-011(68)
BUREAU COUNTY
T.R. ROUTE 87
JOB NUMBER C-93-084-06



LOCATION MAP

NET LENGTH OF SECTION = 500 FEET = 0.095 MILES
CLASSIFICATION - LOCAL ROAD
ADT = 0-250
CURRENT ADT <150

SUMMARY OF QUANTITIES

CONSTRUCTION CODE TYPE: X081-2A

CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	196
20300100	CHANNEL EXCAVATION	CU YD	370
20400800	FURNISHED EXCAVATION	CU YD	510
* 25001000	SEEDING, CLASS 2 SPECIAL	ACRE	0.40
* 28101300	DUMPED RIPRAP SPECIAL	TON	369
40200800	AGGREGATE SURFACE COURSE TYPE B	TON	585
50100100	REMOVAL OF EXISTING STRUCTURE	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	18.6
50400605	PRECAST PRESTRESS CONCRETE DECK BEAMS 33" DEPTH	SQ FT	1,864
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,080
* 50900205	STEEL RAILING TYPE S-1	FOOT	156
* 51201000	FURNISH METAL PILE SHELLS 12"	FOOT	405
51202600	DRIVING & FILLING SHELLS	FOOT	405
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
* 542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	60
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	592
67100100	MOBILIZATION	L SUM	1

* SEE SPECIAL PROVISIONS

SCALES

PLAN ---------- 0' 25' 50'
PROFILE HORIZ. ---------- 0' 25' 50'
PROFILE VERT. ---------- 0' 2.5' 5'
CROSS SECTIONS ---------- 0' 5' 10'

CONTRACT NO. 87329

"I CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF ILLINOIS."

DATE: 4/24/06
Jeffrey E. Peacock
COUNTY ENGINEER
ILL. REG. PROF. ENG.# 062-044399
LICENSE RENEWAL DATE: 11/30/2007

LICENSED PROFESSIONAL ENGINEER
JEFFREY E. PEACOCK
062-044399
STATE OF ILLINOIS

APPROVED 4-26-06 2006
Richard Dean
ROAD DISTRICT COMMISSIONER

APPROVED 4/24/06 2006
Jeffrey E. Peacock
COUNTY ENGINEER

APPROVED 05-02- 2006
Kenneth R. Long
DISTRICT ENGINEER OF LOCAL ROADS & STREETS

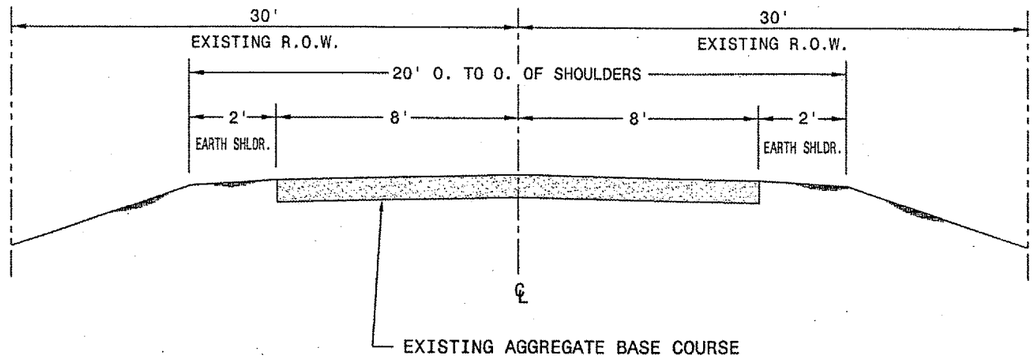
APPROVED 05-02- 2006
Gregory Mounts
DEPUTY DIRECTOR DISTRICT ENGINEER/ REGION 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

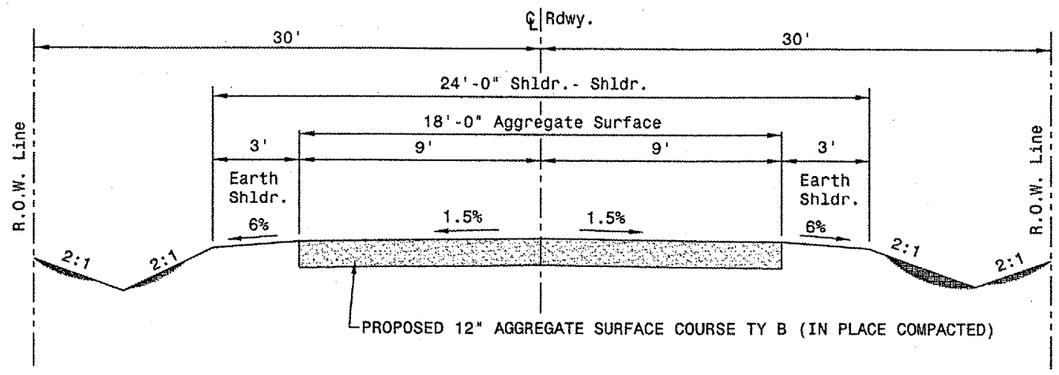
ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
T.R. 87	05-12124-00-BR	9	2
CONTRACT 87329	ILLINOIS	FED. AID PROJ.- BRGS-011(68)	

APPLICATION RATES USED IN QUANTITY CALCULATIONS

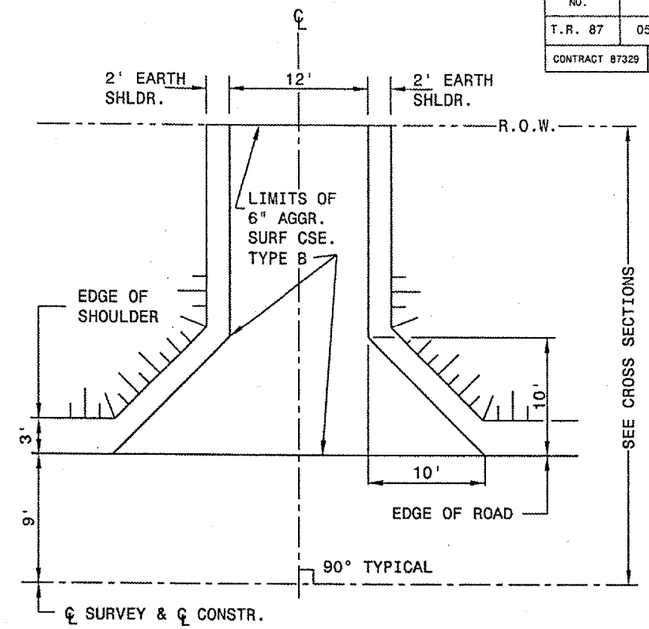
GRANULAR MATERIALS	2.05 TONS/CU. YD.
STONE CL A 5	1.5 TONS/CU. YD.



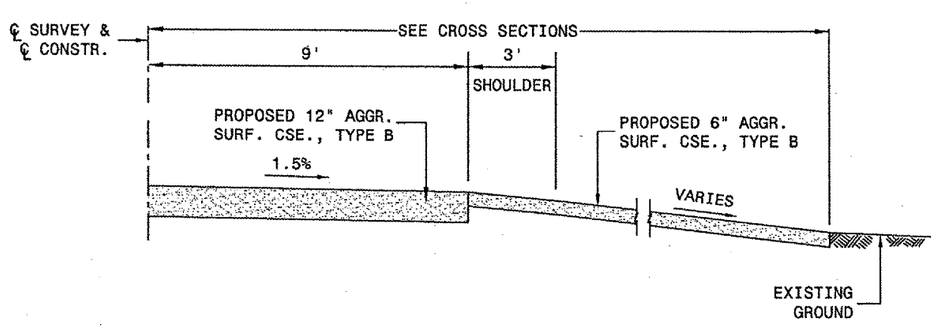
TYPICAL EXISTING ROADWAY CROSS SECTION



TYPICAL PROPOSED ROADWAY CROSS SECTION



TYPICAL FIELD ENTRANCE PLAN



TYPICAL SECTION THRU ENTRANCE

EARTHWORK QUANTITIES

LOCATION	EARTH EXCAVATION	EMBANKMENT	FURNISHED EXCAVATION	CHANNEL EXCAVATION	EXCAVATION FOR RIPRAP
	CU. YD.	CU. YD.	CU. YD.		
			C = (B)-[(A)-(A X 0.25)]		
	(A)	(B)	(C)		
STA. 7+50-9+63	113	334	249		
STA. 9+63-10+41.5				370	302
STA. 10+41.5-12+50	83	323	261		
TOTAL	196	657	510	370	302
	PAY ITEM	INFO ONLY	PAY ITEM	PAY ITEM	INFO ONLY

MISCELLANEOUS DETAILS

SECTION 05-12124-00-BR

LAMOILLE ROAD DISTRICT TR 87

BUREAU COUNTY

STATION 10+02.29

ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
T.R. 87	05-12124-00-BR	9	3
CONTRACT 87329	ILLINOIS	FED. AID PROJ.- BROS-011(68)	

SITE INFORMATION

BENCHMARK: CENTERLINE OF EXISTING BRIDGE AND ROAD - ELEV.: 100.00

CONTROL PT. #1: P.O.T. STA. 6+84.62
SET IRON PIN

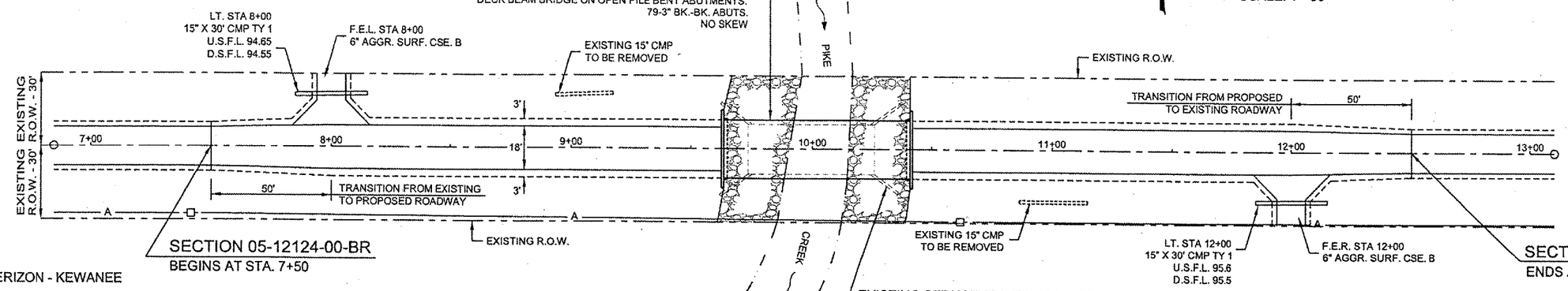
CONTROL PT. #2: P.O.T. STA. 13+10.24
SET IRON PIN

S.W. 1/4, SEC. 25, T-18-N, R-10-E, 4th P.M.

N

0 25' 50'

SCALE: 1"=50'



UTILITIES

TELEPHONE: VERIZON - KEWANEE
309-853-6293

POWER: ILLINOIS POWER - LA SALLE
815-224-6238

THE LOCATIONS OF UTILITY FACILITIES AS SHOWN ON THESE PLANS ARE AN ESTIMATE AND NOT INTENDED AS FIELD LOCATIONS FOR CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES PRIOR TO CONSTRUCTION AND CALLING J.U.L.I.E. AT 800-892-0123 FOR CONFIRMATION OF EXISTING UTILITY LOCATIONS.

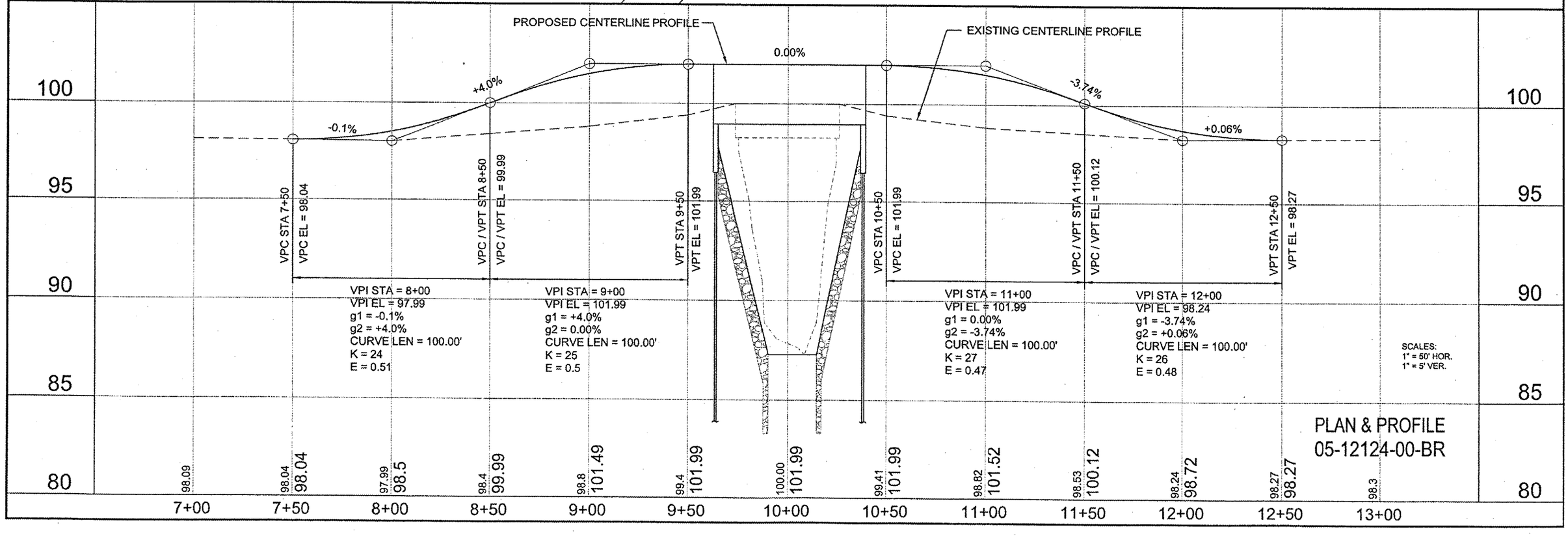
NOTES

REMOVAL AND DISPOSAL OF EXISTING PIPE CULVERTS SHALL BE CONSIDERED INCIDENTAL TO EARTH EXCAVATION.

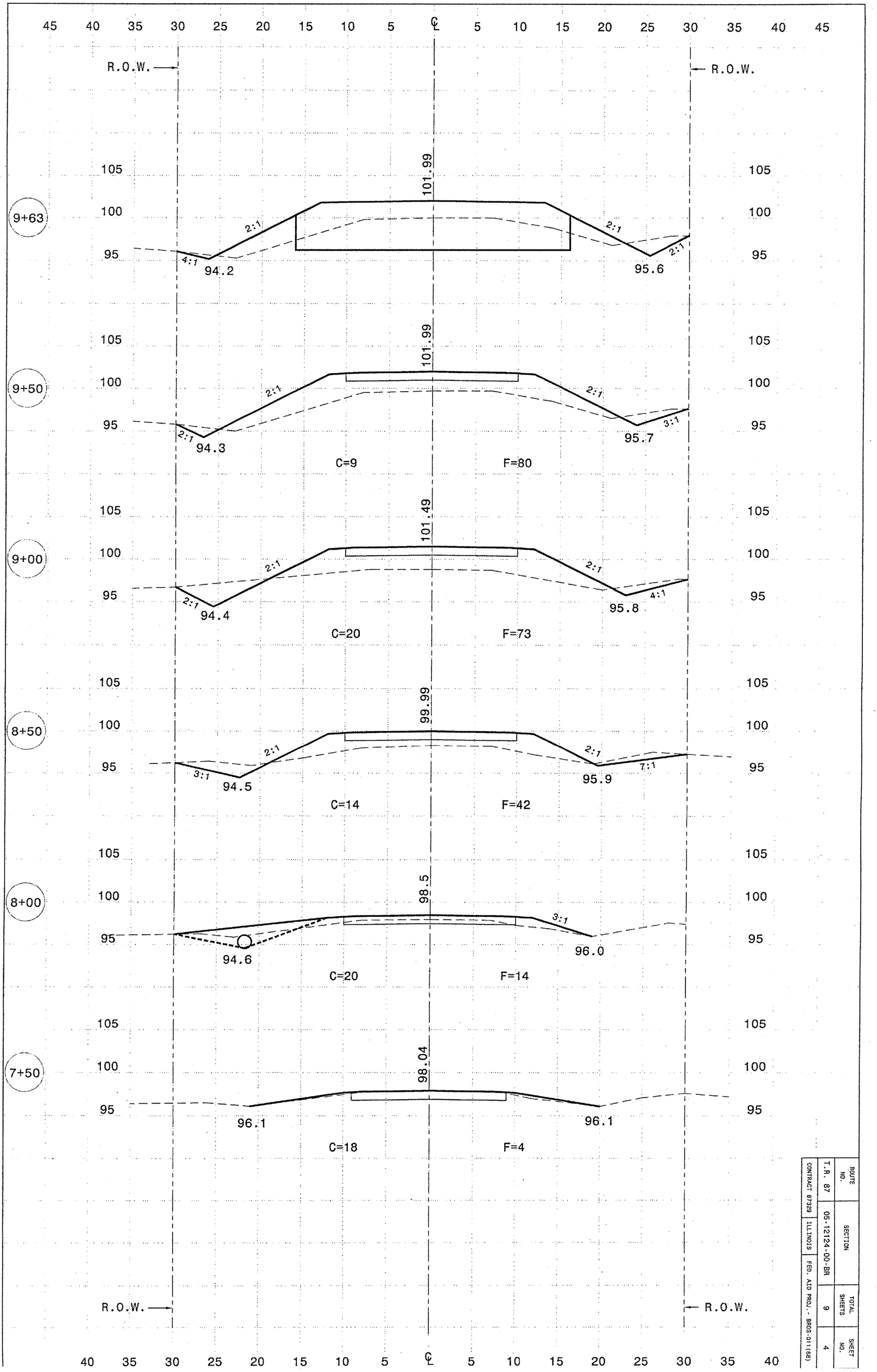
N.W. 1/4, SEC. 36, T-18-N, R-10-E, 4th P.M.

LEGEND

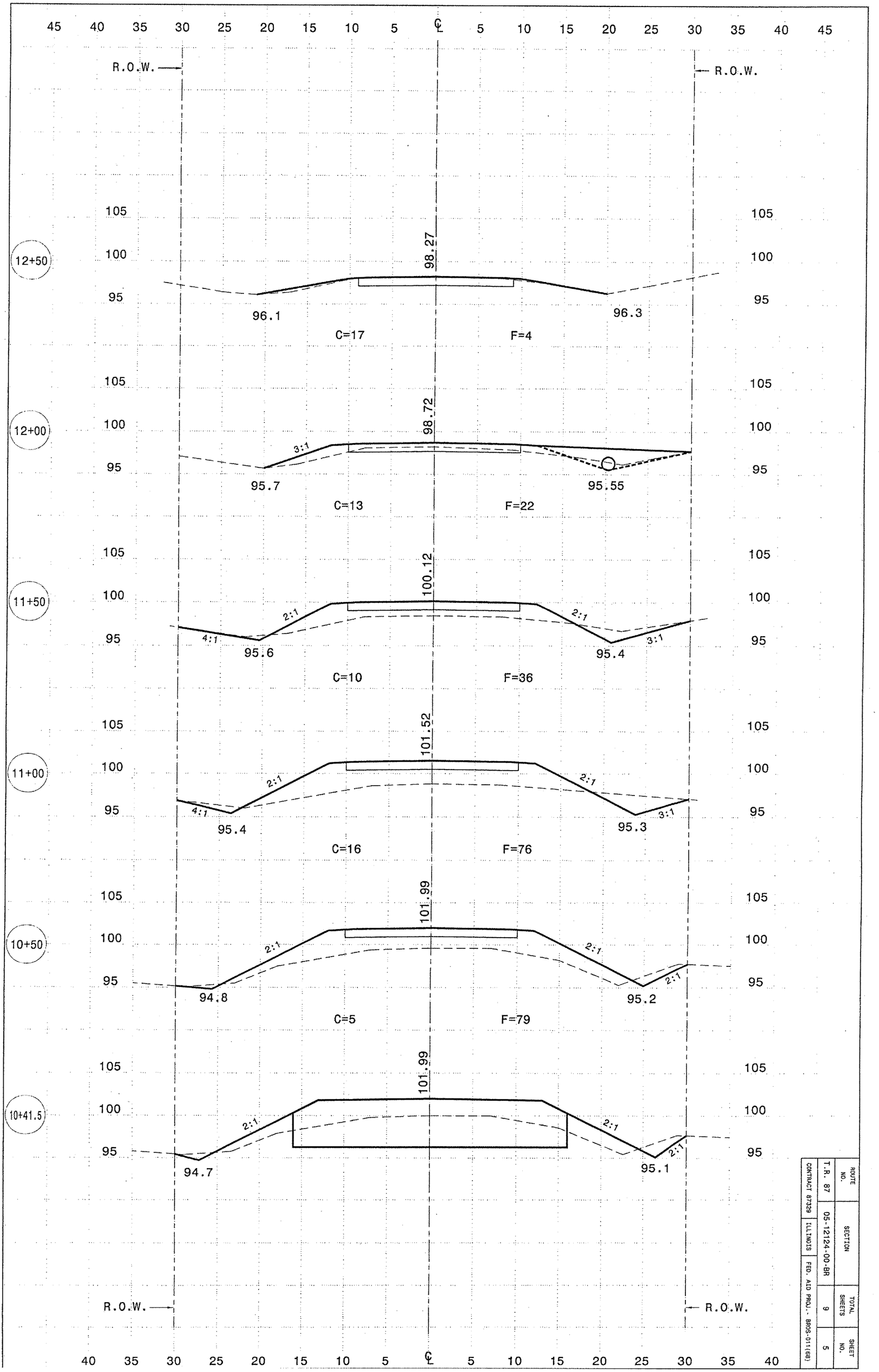
- Proposed Centerline
- Proposed Edge of Pavement
- Proposed Edge of Shoulder
- Existing R.O.W.
- Telephone Cable — T —
- Electrical Aerial Cable — A —
- Waterway



PLAN & PROFILE
05-12124-00-BR

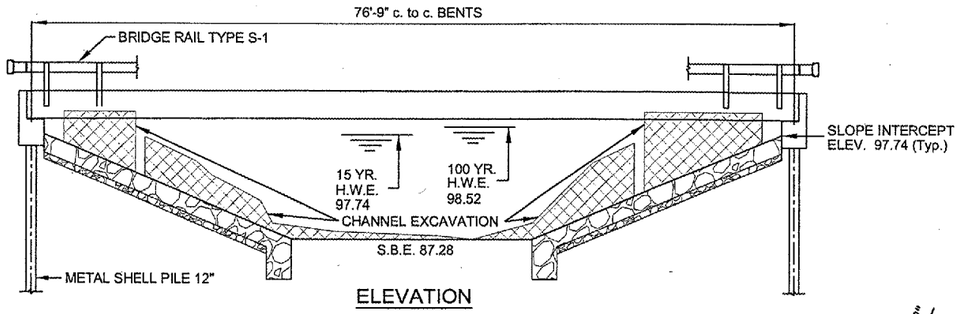


ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
T.R. 87	05-12124-00-BR	9	4
CONTRACT 87329	ILLINOIS	FED. AID PROJ. - BRGS-011(68)	



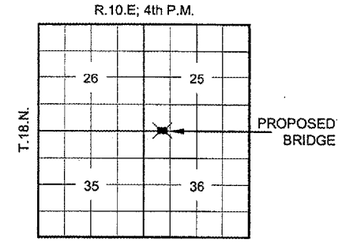
ROUTE NO.	T.R. 87
SECTION	05-12124-00-BR
TOTAL SHEETS	9
SHEET NO.	5
CONTRACT 87329	
ILLINOIS	
FED. AID PROJ.- BROS-011(68)	

B.M. - Centerline of existing structure, Elev. - 100.00
Existing Structure - C.I.P. Reinforced Concrete
Thru Girder Closed Abutment Bridge
16' Roadway, 49' Clear Span



ELEVATION

Note: In accordance with Article 502.15 of the Standard Specifications, the cost for structure excavation shall be considered as included in the contract unit price for Concrete Structures.



LOCATION SKETCH
LaMoille Township

GENERAL NOTES

1. The Contractor shall drive 1 test pile, at the West Abutment as directed by the Engineer before ordering the remaining piles.
2. See Special Provisions for boring logs.
3. A Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.
4. The abutments shall not be backfilled until the deck beams are in place and the dowel pins have been grouted and cured.
5. Reinforcement bars shall conform to AASHTO M-31, M-42 or M-53, Grade 60.

DESIGN SPECIFICATIONS

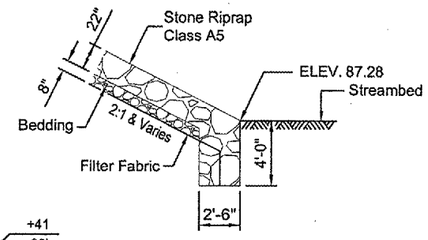
2002 AASHTO w/ Applicable Interims
HS20-44 Loading Load Factor Design
Includes 25 psf for future wearing surface

ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
T.R. 87	05-12124-00-BR	9	6
CONTRACT 87329	ILLINOIS	FED. AID PROJ.- BROS-011(68)	

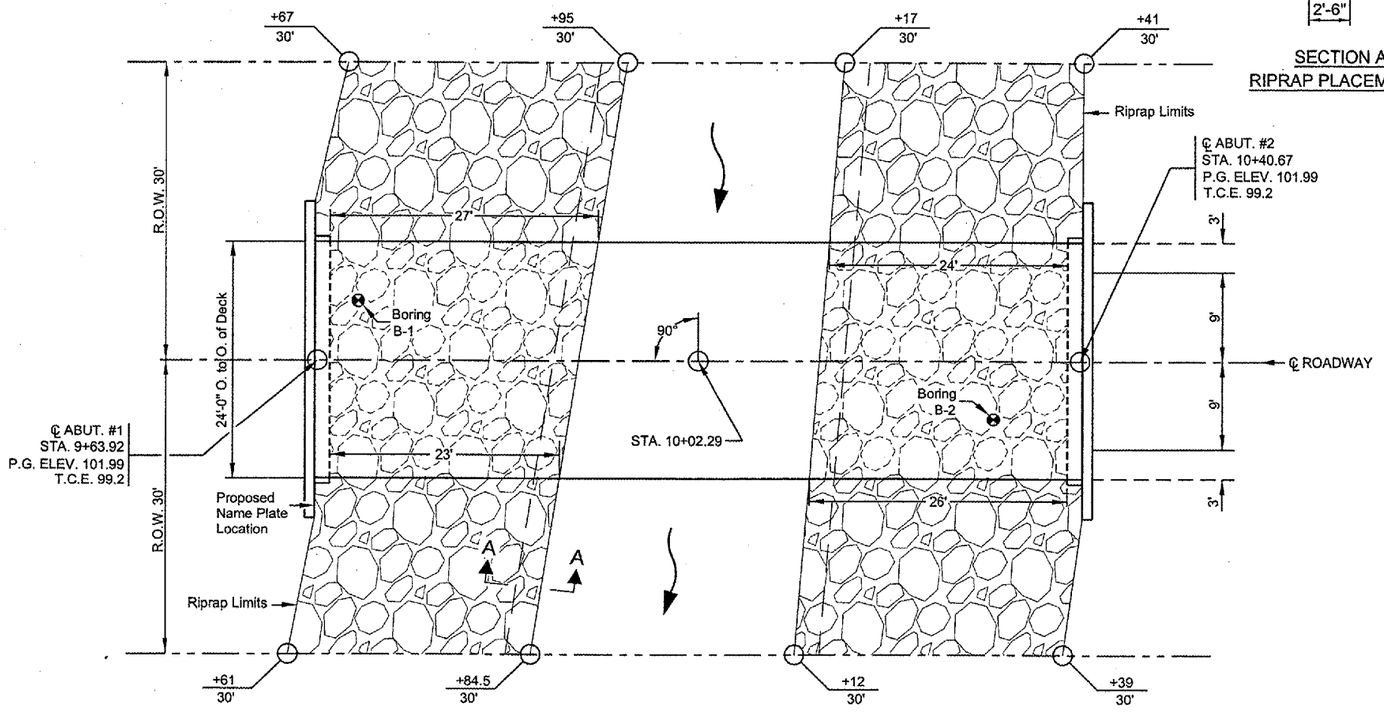
PIKE CREEK
BUILT 2007 BY
BUREAU COUNTY
LAMOILLE ROAD DISTRICT
TR 87 STA. 10+02.29
SECTION 05-12124-00-BR
STR. NO. 006-4410 LOADING HS-20

LETTERING FOR NAME PLATE

See Std. 515001-02



SECTION A-A
RIPRAP PLACEMENT DETAIL



PLAN

PILE DATA (2-ABUTS.)

Type	12" Metal Shell
Capacity	38 Tons
Estimated Length	45'
Number Required	10 (Includes 1 Test Pile located in Bent #1)

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.	Total
Removal of Existing Structures	Each			1
Channel Excavation	Cu. Yd.		370	370
Concrete Structures	Cu. Yd.		18.6	18.6
Dumped Riprap Special	Ton		369	369
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	1,864		1,864
Steel Railing Type S-1	Foot	156		156
Reinforcement Bars (Epoxy Coated)	Pound		2,080	2,080
Furnish Metal Pile Shells 12"	Foot		405	405
Driving & Filling Shells	Foot		405	405
Test Pile Metal Shells	Each		1	1
Name Plates	Each		1	1
Portland Cement Mortar Frg. Cse.	Foot	592		592

WATERWAY INFORMATION

Drainage Area = 25.44 sq. mi. Low Grade Elev. = 97.69 @ Sta. 14+41

Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1870	357	503	97.74	0.28	0.23	98.02	97.97
Base	100	2858	371	573	98.52	0.27	0.06	98.79	98.58

"I CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF ILLINOIS"

JEFFREY E. PEACOCK, P.E.
COUNTY ENGINEER
ILL. REG. PROF. ENG.# 62-044399 4/24/06
LICENSE RENEWAL DATE: 11/30/07

LICENSED PROFESSIONAL ENGINEER
JEFFREY E. PEACOCK
062-044399
STATE OF ILLINOIS

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

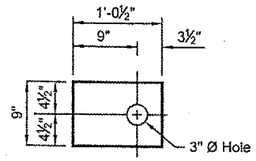
LICENSED STRUCTURAL ENGINEER
KEITH E. BRANDAU
081-004905
CHAMPAIGN
STATE OF ILLINOIS

Keith E Brandau 4/19/06

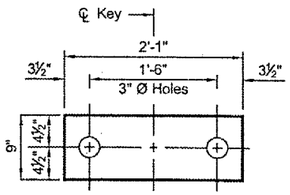
KEITH E. BRANDAU
ILLINOIS LICENSED
STRUCTURAL ENGINEER
NUMBER 081-004905
LICENSE EXPIRES 11/30/06

GENERAL PLAN & ELEVATION
T.R. 87
OVER PIKE CREEK
SECTION 05-12124-00-BR
STATION 10+02.29

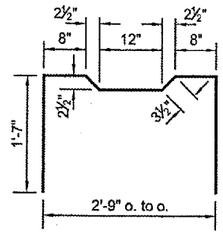
ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
T.R. 87	05-12124-00-BR	9	7
CONTRACT 87329	ILLINOIS	FED. AID PROJ. - BROS-011(68)	



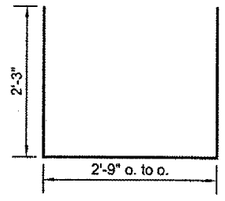
FABRIC BEARING PAD
(Exterior)
4 Required



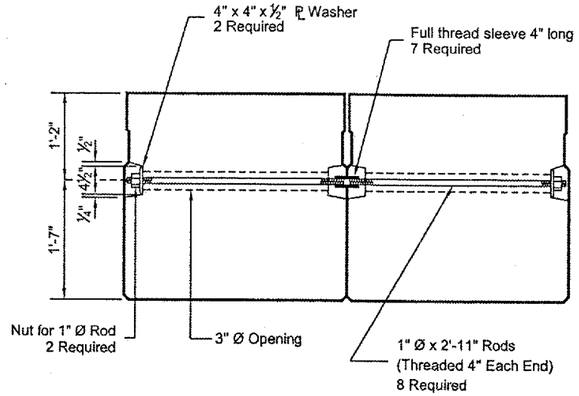
FABRIC BEARING PAD
(Interior)
14 Required



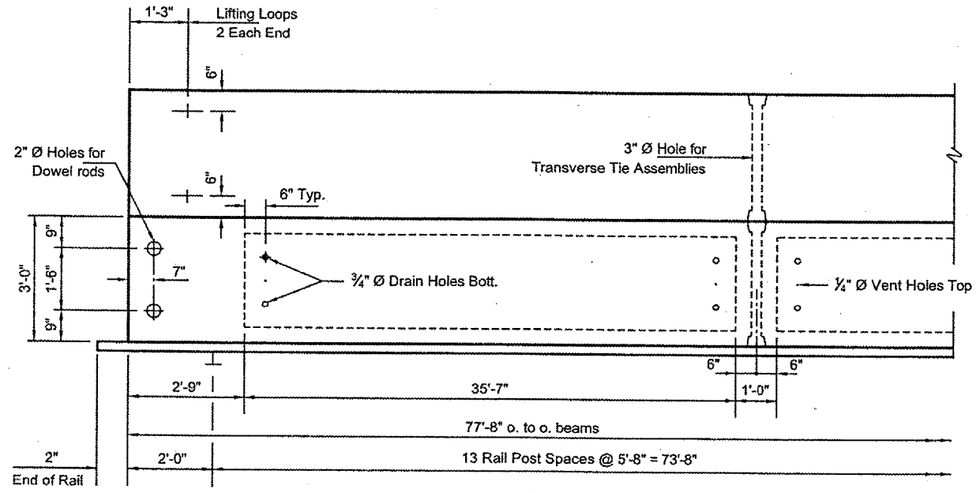
BAR A_1



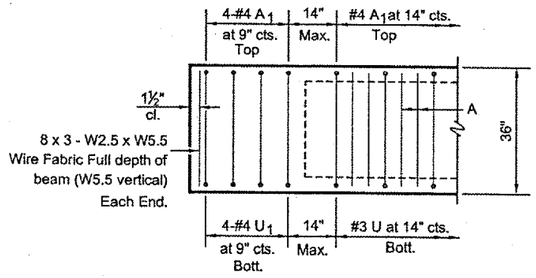
BARS U & U_1



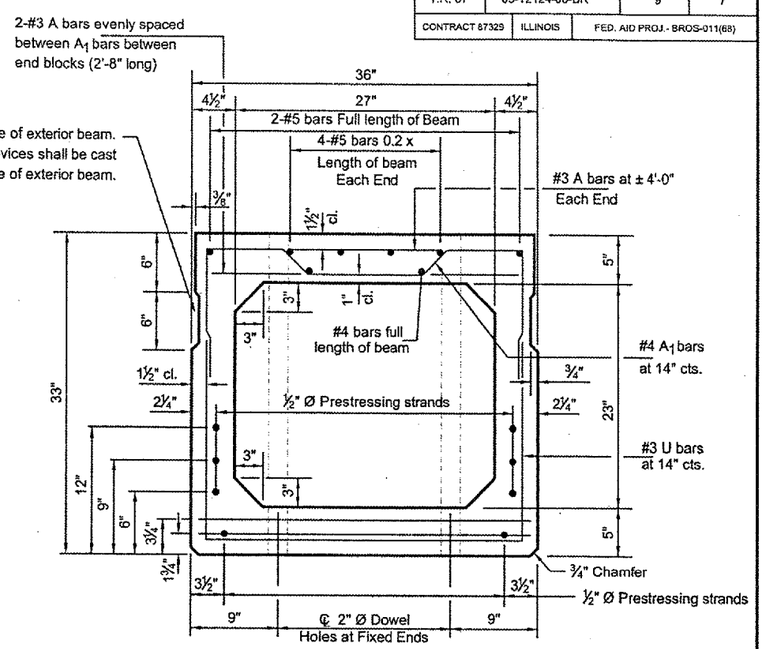
TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN

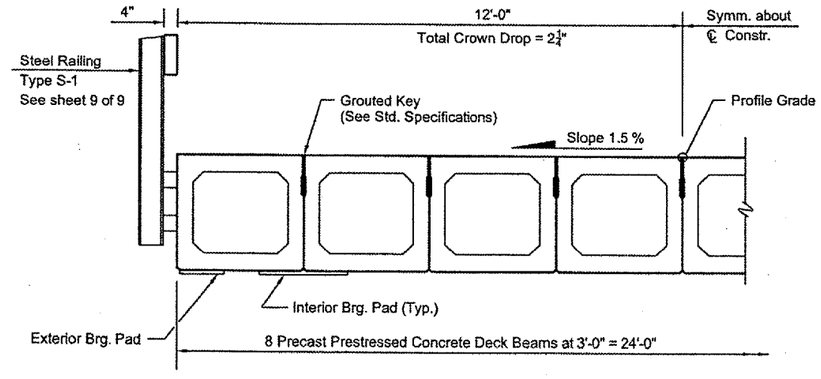


END ELEVATION



33" x 36" BEAM CROSS SECTION

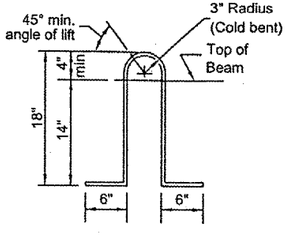
19 - ½" Ø Strands, Each Stressed to 30,9000 Lbs.
7 - Strands 1¾" up, 6 - Strands 3¼" up,
2 - Strands 6" up, 2 - Strands 9" up,
2 - Strands 12" up
Place strands symmetrical about ℄ of beam.



HALF CROSS SECTION

NOTES

1. Prestressing steel shall be uncoated high strength stress relieved 7-wire strand. Grade 270.
2. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to AASHTO M-31, M-42, or M-53, Grade 60.
4. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
5. When Waterproofing Membrane System is specified, the top surface of the beams shall be finished in accordance with Article 504.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the the top edge of keys shall be rounded or chamfered a minimum of 1/4".
6. Low relaxation strands may be substituted for the stress relieved strands. The initial prestressing force applied to each strand shall be the same as for the stress relieved strands (30,900 lbs.).
7. Keyway surfaces shall be cleaned to removed form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between the top of the beam and the bottom edge of the key.
8. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing.
9. The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set.
10. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.



DETAIL OF LIFTING LOOP

Lifting Loops shall be 7 wire stressed relieved or low relaxation, 3½" Ø - 270 ksi strands. Alternate lifting devices are acceptable upon approval by the Engineer.

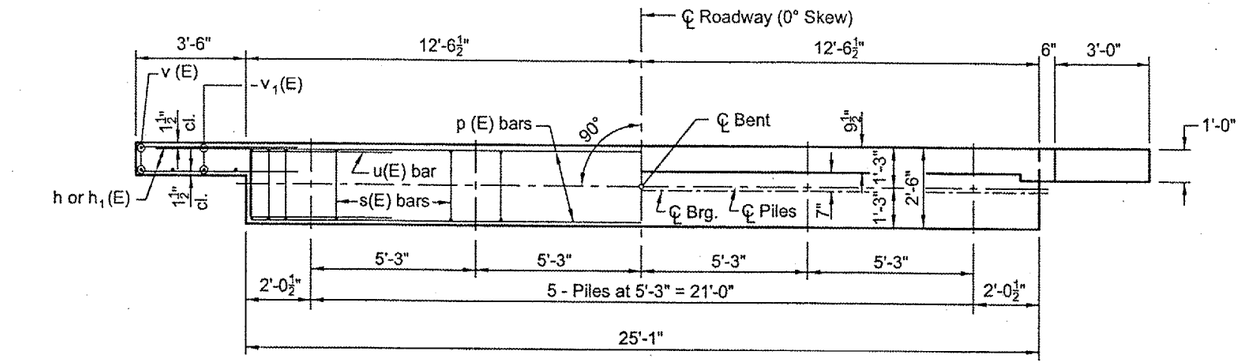
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq Ft	1,864
Portland Cement Mortar Fairing Course	Foot	592
Steel Railing, Type S-1	Foot	156

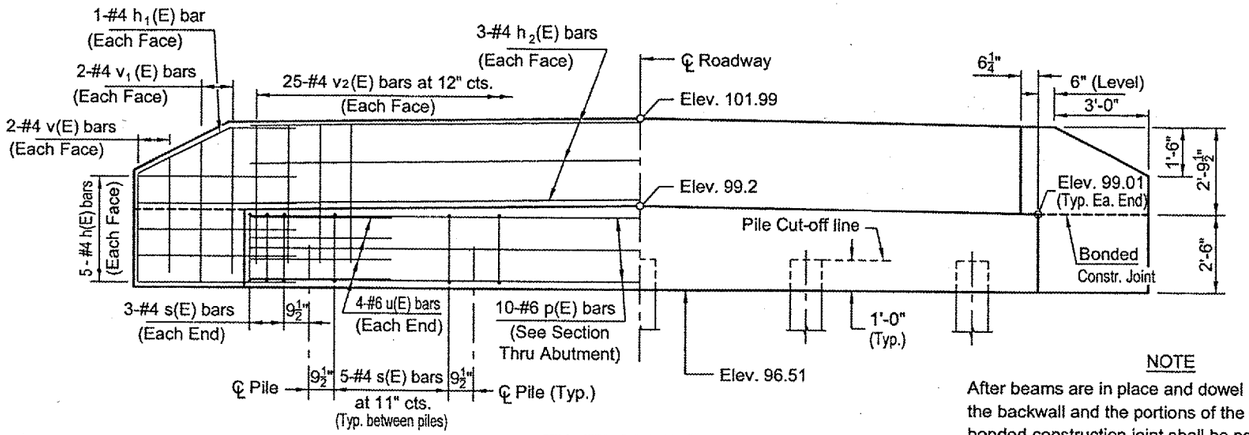
SUPERSTRUCTURE

SECTION 05-12124-00-BR
LAMOILLE ROAD DISTRICT TR 87
BUREAU COUNTY
STATION 10+02.29

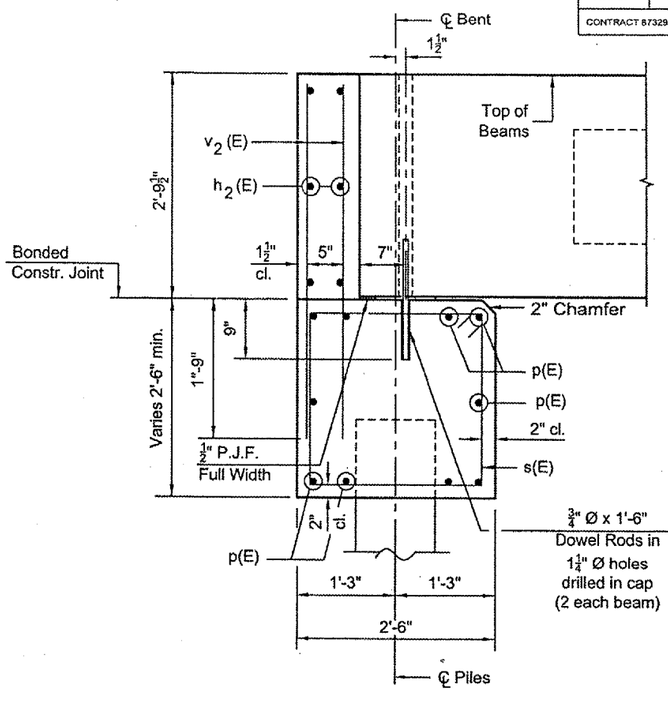
ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
T.R. 87	05-12124-00-BR	9	8
CONTRACT 87329	ILLINOIS	FED. AID PROJ. - BROS-011(68)	



PLAN



ELEVATION

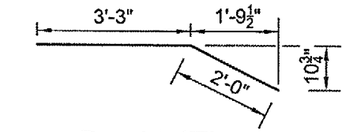


SECTION THRU ABUTMENT

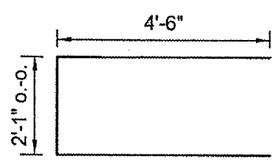
(At Right Angles)

NOTE

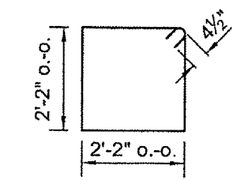
After beams are in place and dowel rods grouted, the backwall and the portions of the wingwall above the bonded construction joint shall be poured.



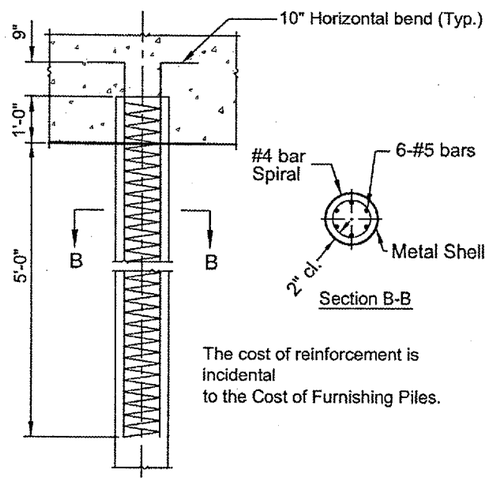
Bar h_1(E)



Bar u (E)

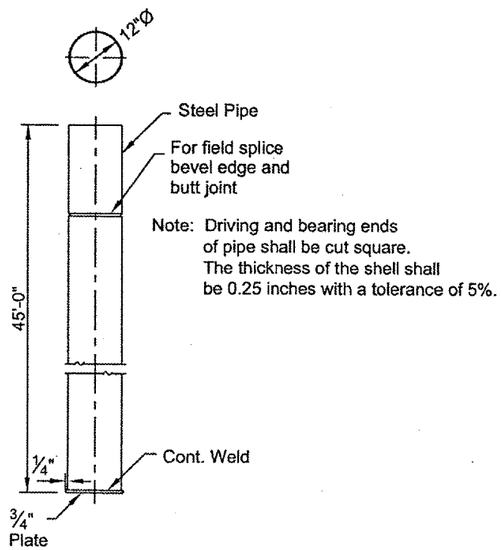


Bar s (E)



The cost of reinforcement is incidental to the Cost of Furnishing Piles.

DETAIL OF REINFORCEMENT FOR METAL SHELLS



Note: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.25 inches with a tolerance of 5%.

DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	40	#4	5'-0"	
h_1(E)	8	#4	5'-3"	
h_2(E)	12	#4	24'-9"	
p(E)	20	#6	24'-9"	
s(E)	52	#4	9'-5"	
u(E)	16	#6	11-1"	
v(E)	16	#4	3'-8"	
v_1(E)	16	#4	4'-8"	
v_2(E)	100	#4	4'-5"	
Concrete Structures			Cu. Yd.	18.6
Reinforcement Bars (Epoxy Ctd.)			Pound	2,080
Metal Pile Shells 12"			Foot	405
Test Pile Metal Shells			Each	1

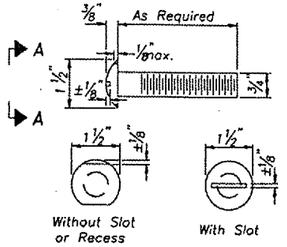
ABUTMENT

SECTION 05-12124-00-BR

TR 87

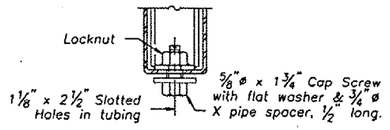
STATION 10+02.29

ROUTE NO.	SECTION	TOTAL SHEETS	SHEET NO.
T.R. 87	05-12124-00-BR	9	9
CONTRACT 87329	ILLINOIS	FED. AID PROJ.- BROS-011(68)	

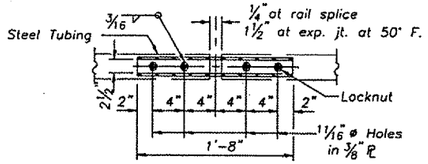


VIEW A-A

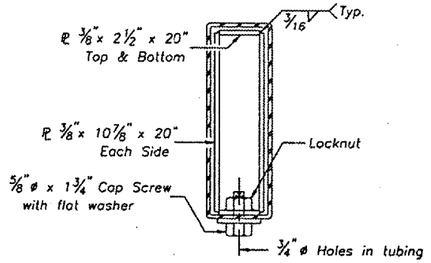
ROUND HEAD BOLT



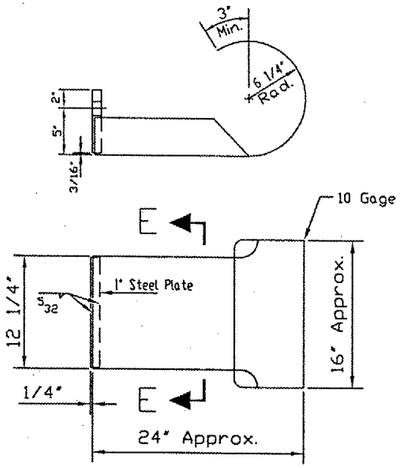
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE PLATE TYPICAL

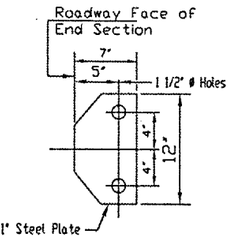


SECTIONS AT RAIL SPLICE

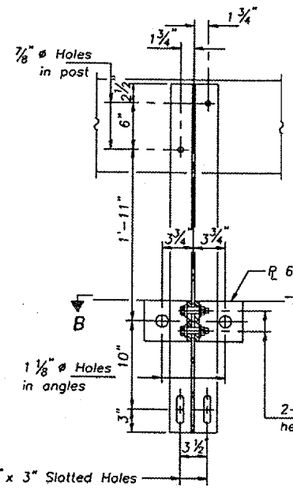


CURLED END SECTION DETAILS

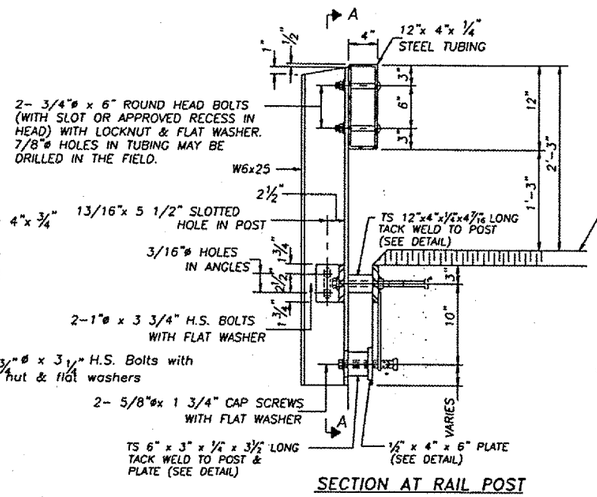
(4 Required)



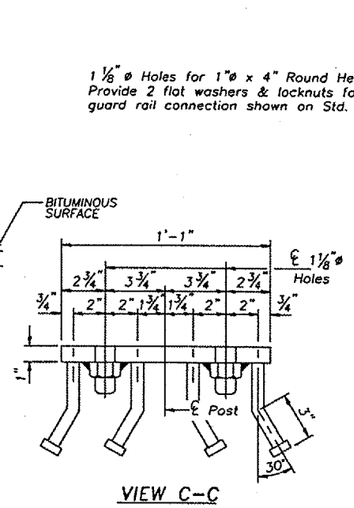
SECTION E-E



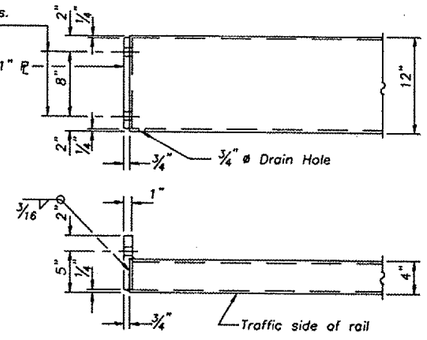
SECTION A-A



SECTION AT RAIL POST



VIEW C-C



END OF RAIL DETAILS

** 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".

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A-500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M-270 Grade 36 except posts and angles shall conform to AASHTO M-270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHTO M-232.

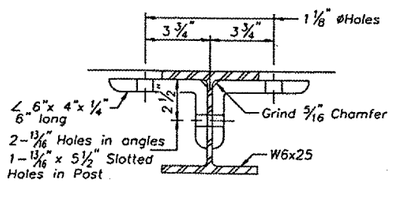
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S-1.

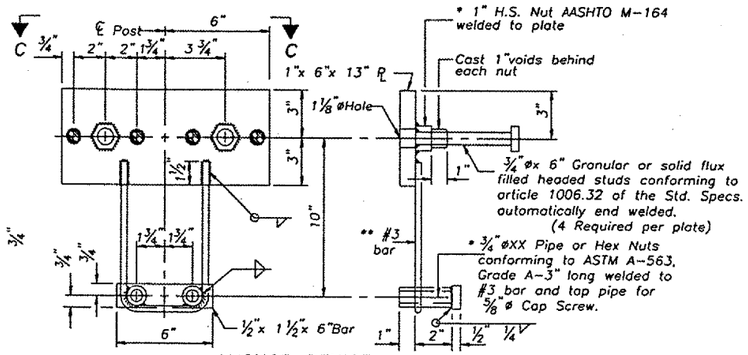
All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8" fabric bearing pad between the post and concrete.

The 3/4"ø high strength bolts used to connect the 6"x 4"x 3/4" angles to the post shall be tightened in accordance with Article 505.04(f)(3) of the Standard Specifications. The 1"ø high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8"ø cap screws in bottom of posts shall be tightened to a snug fit only.

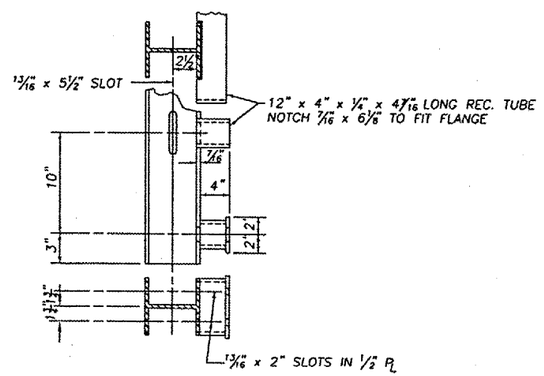


SECTION B-B



ANCHOR DEVICE

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



SPACER DETAIL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	156

STEEL RAILING TYPE S1
SECTION 05-12124-00-BR
LAMOILLE ROAD DISTRICT
BUREAU COUNTY
STATION 10+02.29

R-23A 5-11-95 (10'-9" Maximum Post Spacing)