

010-0220

SQUAD LEADER: MICHAEL LEROY

#190 3-11-05 FAS 516 Champaign Co (240B)BR

3-11-05 Letting, Item 090 DEPARTMENT OF TRANSPORTATION

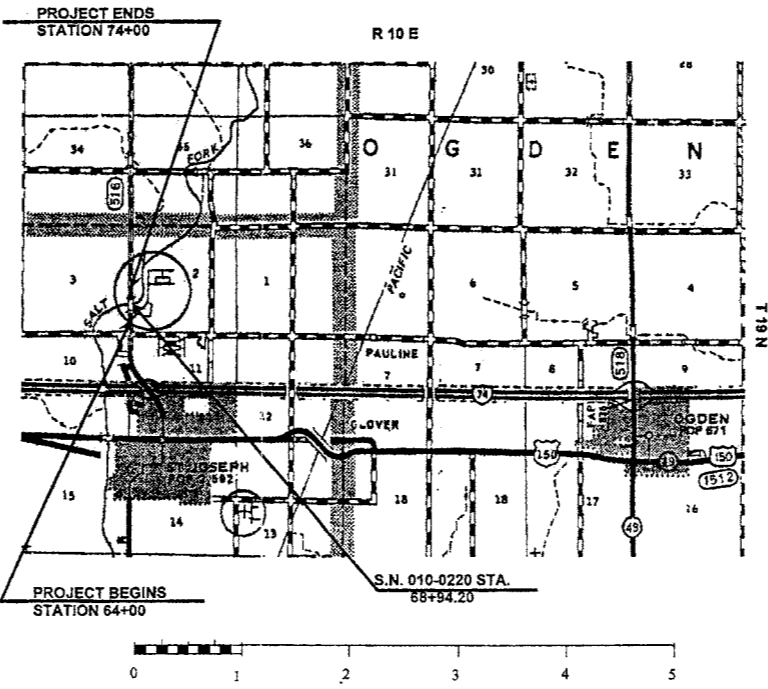
FOR INDEX OF SHEETS, SEE SHEET NO. 2  
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3

100%  
9-19-2005

STATE OF ILLINOIS  
DIVISION OF HIGHWAYS  
PLANS FOR PROPOSED  
HIGHWAY IMPROVEMENT

FAS ROUTE 516 (ST. JOE RD.)  
SECTION (240B)BR  
CHAMPAIGN COUNTY  
PROJECT BRS-516 (110)

C-95-062-01  
BRIDGE SUPERSTRUCTURE REPLACEMENT  
OVER SALT FORK RIVER 1 MI. NORTH OF ST. JOSEPH



DESIGN DESIGNATION  
N.A.

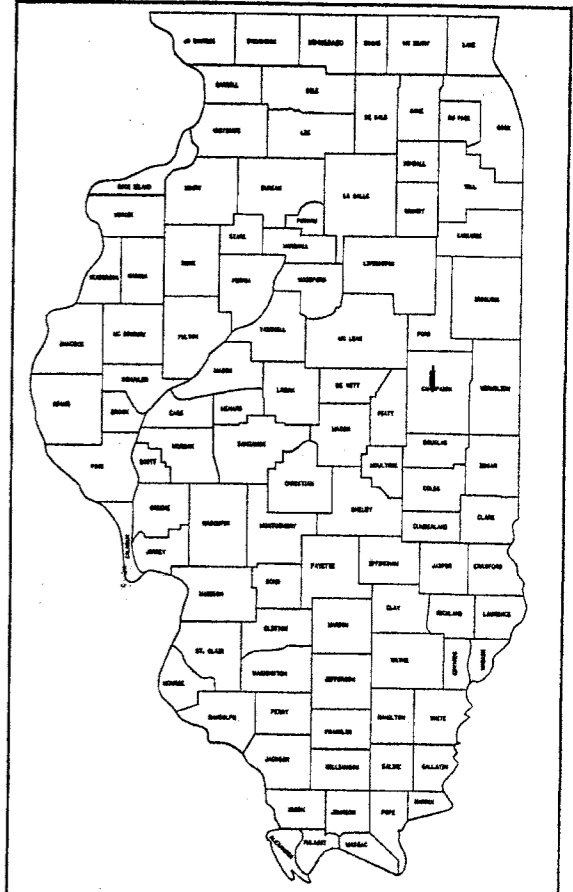
CONTRACT NO. 70184 010-0220

FAS ROUTE 516 SECTION (240B)BR CHAMPAIGN COUNTY

TOTAL LENGTH OF SECTION & PROJECT = 1,000 FEET = 0.189 MILES  
NET LENGTH OF SECTION & PROJECT = 1,000 FEET = 0.189 MILES

FAS ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
516	(240B)BR	CHAMPAIGN	22	1

CONTRACT NO. 70184  
D-95-037-01



LOCATION OF SECTION INDICATED THUS: -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED 12/21/2005

Joseph Grand  
DEPUTY DIRECTOR OF HIGHWAYS, REGION THREE ENGINEER

February 4, 2005  
Mike Hine  
ENGINEER OF DESIGN AND ENVIRONMENT

February 4, 2005  
Victor Madenka  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

FOR UNDERGROUND UTILITY  
LOCATIONS CALL  
TOLL FREE J.U.L.I.E. TELEPHONE NO.  
1-800-892-0123

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED \_\_\_\_\_

DIVISION ADMINISTRATOR DATE

PRINTED BY AUTHORITY OF THE STATE OF ILLINOIS

5-217

c:\projects\vd50370\typicals.dgn

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
516	(240)BIBR	CHAMPAIGN		2

CONTRACT NO. 70184

## INDEX OF SHEETS

1	COVER SHEET
2	INDEX OF SHEETS/HIGHWAY STANDARDS/ GENERAL NOTES
3	SUMMARY OF QUANTITIES
4	EXISTING AND PROPOSED ROADWAY TYPICALS
5	EXISTING AND PROPOSED BRIDGE TYPICALS
6-8	PLAN AND PROFILE SHEETS
9-17	BRIDGE PLANS
18	DETAIL, SIDEROAD RETURNS
18	DETAIL, PRIVATE ENTRANCE, COMMERCIAL ENTRANCE OR SIDEROAD
18	BUTT JOINT DETAIL
19-21	STRIPING DETAIL
22	DETOUR SIGNING DETAIL

## HIGHWAY STANDARDS IN THE PLANS

000001-04	ABBREVIATIONS AND SYMBOLS
001006	DECIMAL OF AN INCH AND A FOOT
280001-02	TEMPORARY EROSION CONTROL SYSTEMS
420401-05	BRIDGE APPROACH PAVEMENT
515001-02	NAME PLATES FOR BRIDGES
702001-05	TRAFFIC CONTROL DEVICES
780001-01	TYPICAL PAVEMENT MARKINGS
BLR22-4	TYP. APPL. OF T.C.D. FOR RURAL LOC. HWYS. (2-LANE 2 WAY RURAL TRAFF.) (RD. CLOSED TO THRU TRAFF.)

## GENERAL NOTES

G.N. -100  
ENGLISH UNITS OF MEASUREMENT SHALL GOVERN OVER AND SUPERSEDE ANY METRIC UNITS SHOWN IN THIS CONTRACT. WHERE INCLUDED, METRIC UNITS ARE FOR INFORMATION ONLY.

G.N. -1004.03  
REVISE ARTICLE 1004.03 (c) NOTE 5/ OF THE STANDARD SPECIFICATIONS TO READ:

'5/ GRADATION CA-16 SHALL BE USED IN LIEU OF CA-13 WHEN THE SURFACE COURSE IS LESS THAN 1 3/4 INCHES IN THICKNESS. CA-13 OR CA-16 MAY BE USED WHEN THE SURFACE COURSE IS 1 3/4 INCHES OR MORE IN THICKNESS.'

G.N. -105.09A  
ALL ELEVATIONS SHOWN IN THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988. (NAVD 88)

G.N. -107.31  
UTILITY LINES WERE PLOTTED FROM INFORMATION FURNISHED BY THE VARIOUS UTILITY COMPANIES INVOLVED (QUALITY LEVEL C &/OR QUALITY LEVEL D) AND THE ACCURACY SHOULD BE CONSIDERED APPROXIMATE ONLY.

UTILITY COMPANIES MAY BE ADJUSTING THEIR FACILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL COOPERATE WITH THESE ORGANIZATIONS WHILE THESE ADJUSTMENTS ARE BEING PERFORMED. J.U.L.I.E. - JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS SYSTEM (800)892-0123.

G.N. -201  
TREES THAT INTERFERE WITH THE CONSTRUCTION OPERATIONS SHALL BE REMOVED AS DIRECTED BY THE ENGINEER. ANY TREE DUE TO ITS LOCATION AND DEEMED SUITABLE FOR SAVING BY THE ENGINEER SHALL BE PROTECTED DURING CLEARING AND SUBSEQUENT CONSTRUCTION OPERATIONS.

G.N. -550  
BEFORE ORDERING STORM SEWERS, THE CONTRACTOR SHALL CONSULT THE ENGINEER FOR THE EXACT LENGTHS.

G.N. -406H

### MIXTURE REQUIREMENTS

The following mixture requirements are applicable for this project:

Location(s):	FAS 516 STA. 64+00 TO STA. 74+00	FAS 516 STA. 64+00 TO STA. 74+00
Mixture Use(s):	BINDER COURSE	SURFACE COURSE & INCID.
AC/PG:	PG 64-22	PG 64-22
RAP %: (Max)**	25%	15%
Design Air Voids:	4.0% @ Ndes=50	4.0% @ Ndes=50
Mixture Composition: (Gradation Mixture)	IL 19.0	IL 9.5
Friction Aggregate:	N.A.	Mix C

SUMMARY OF QUANTITIES

RURAL  
STA. 64+00  
TO  
STA. 74+00  
80% FEDERAL  
20% STATE

CONSTRUCTION TYPE CODE

X080-2A

CODE NO.	PAY ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	42.0
20700220	POROUS GRANULAR EMBANKMENT	CUYD	81.0
25000200	SEEDING CLASS 2	ACRE	1.0
25000400	NITROGEN FERTILIZER	POUND	90.0
25000500	PHOSPHORUS FERTILIZER	POUND	90.0
25000600	POTASSIUM FERTILIZER	POUND	90.0
25100105	MULCH METHOD 1	ACRE	1.0
28000900	FENCE EROSION CONTROL	FOOT	400.0
28100107	STONE RIPRAP, CLASS A-4	SQYD	664.0
28200100	FILTER FABRIC FOR USE WITH RIPRAP	SQYD	664.0
40600100	BITUMINOUS MATERIALS PRIME COAT	GAL	214.0
40600980	BITUMINOUS SURFACE REMOVAL, BUTT JOINT	SQYD	160.0
40800010	BITUMINOUS MATERIALS PRIME COAT	GALLON	25.0
40800040	INCIDENTAL BITUMINOUS SURFACE	TON	35.0
42001165	BRIDGE APPROACH PAVEMENT	SQYD	174.0
42001300	PROTECTIVE COAT	SQYD	442.0
42001430	BRIDGE APPROACH PAVEMENT CONNNECTOR (FLEXIBLE)	SQYD	32.0
44000025	BITUMINOUS SURFACE REMOVAL, SPECIAL	SQYD	270.0
44000100	PAVEMENT REMOVAL	SQYD	240.0
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1.0
50104000	BRIDGE RAIL REMOVAL	EACH	253.0
50200100	STRUCTURE EXCAVATION	CUYD	81.7
50300225	CONCRETE STRUCTURES	CUYD	1.0
50300260	BRIDGE DECK GROOVING	SQYD	576.0
50301200	CONCRETE WEARING SURFACE	SQYD	418.0
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQFT	3,975.0
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1,330.0
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5,450.0
*50901005	STEEL BRIDGE RAIL, TYPE SM	FOOT	265.0
51500100	NAME PLATES	EACH	1.0
55022000	STORM SEWER CLASS 2 REINFORCED CONCRETE PIPE CLASS 3, 24"	FOOT	20.0
63100070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	4.0
*63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL, TANGENT	EACH	4.0
*63301210	REMOVE AND RE-ERECT STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	98.0
67000400	ENGINEERS FIELD OFFICE TYPE A	CAL MO	6.0
67100100	MOBILIZATION	L SUM	1.0
*78001110	PAINT PAVEMENT MARKING, LINE 4"	FOOT	2,300.0
*78201000	TERMINAL MARKER, DIRECT APPLIED,	EACH	4.0
X0322379	CONCRETE SEALER	SQYD	52.1
X4066414	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX C, N50	TON	179.0
X4066614	BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, IL-19.0, N50	TON	278.0
X7013015	TRAFFIC CONTROL AND PROTECTION, FOR ROAD CLOSURE	L SUM	1.0
XX005369	TRAFFIC CONTROL AND PROTECTION, TEMPORARY DETOUR	L SUM	1.0

\*SPECIALTY ITEMS

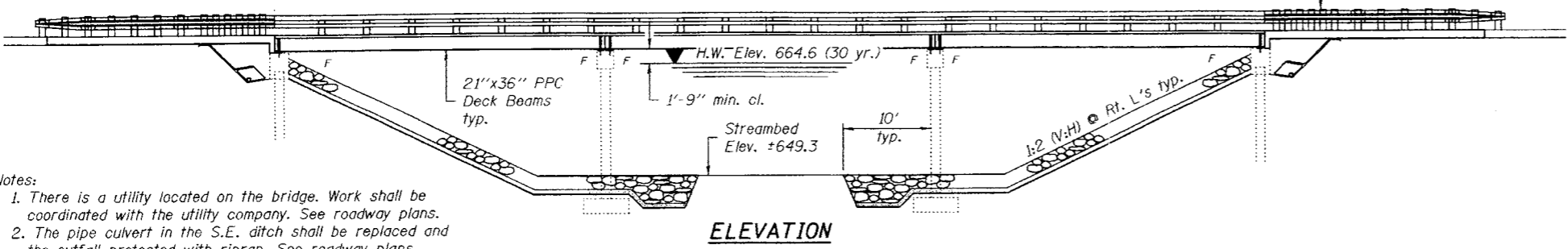
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
FAS 516	(240B) BR	CHAMPAIGN	9	9 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. ROAD PROJECT		

Bench Mark: Chiseled square on northeast wingwall of S.N. 010-0220 21.95 ft. Right of Station 69+64.48 Elevation 668.19.  
Existing Structure: S.N. 010-0220 was built in 1971 as CH-S-12, Section 240-B MFT at Sta. 3+80.00. The structure consists of 3 simple span PPC-deck beams on pile bent abutments and multi-column piers on spread footings. The bk. to bk. abutments dimension measures 134'-0 1/4" while the 0-0. width measures 33'-0". The existing superstructure shall be replaced with PPC deck beams. Road closure shall be used during construction.

No salvage

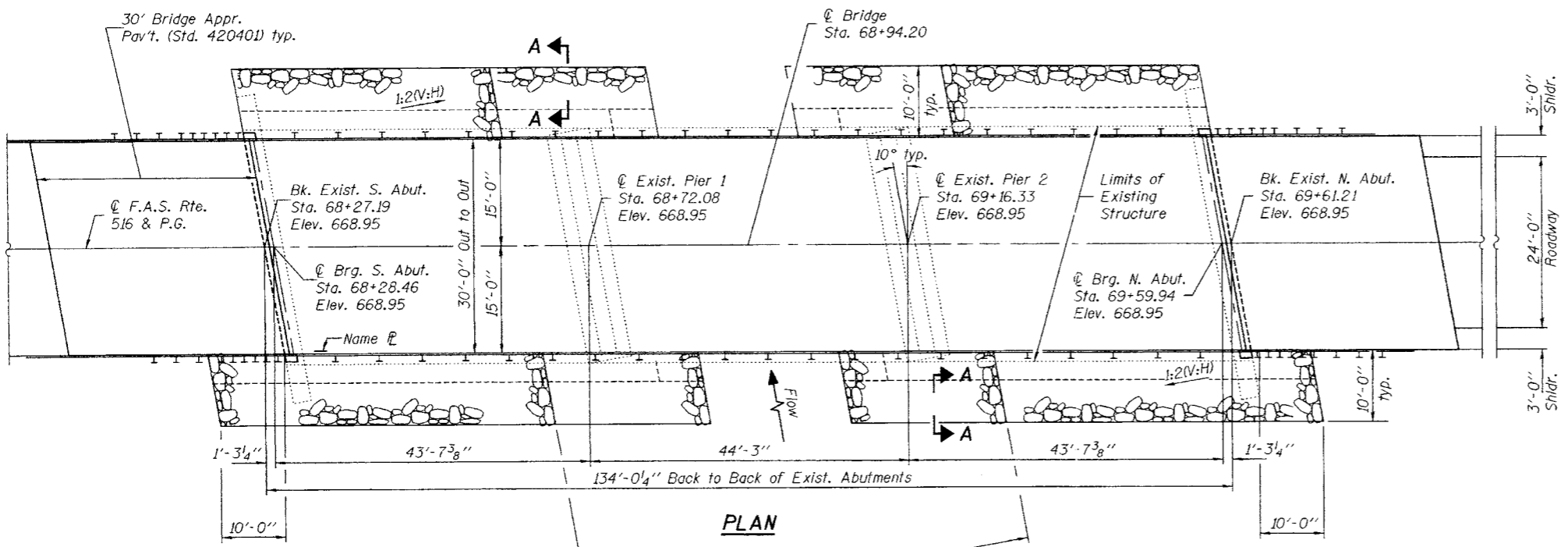
Traffic Barrier Terminal  
Std. 631032 Type 6A  
(typ. all four corners)



ELEVATION

- Notes:
1. There is a utility located on the bridge. Work shall be coordinated with the utility company. See roadway plans.
  2. The pipe culvert in the S.E. ditch shall be replaced and the outfall protected with riprap. See roadway plans.

- Index of Sheets
1. General Plan
  2. General Data
  3. Type SM Steel Bridge Rail Side Mounted
  4. Superstructure
  - 5-6. Superstructure Details
  7. South Abutment
  8. North Abutment
  9. Piers



PLAN

STATION 68+94.20  
BUILT 200 BY  
STATE OF ILLINOIS  
FAS ROUTE 516 - SEC (240B)BR  
LOADING HS20  
STR. NO. 010-0220

NAME PLATE  
See Std. 515001

Existing Name Plate shall be cleaned and relocated adjacent to new Name Plate. Cost included with Name Plates.

- \*Existing Beam Removal and Proposed Beam Erection Sequence:
1. Six adjacent existing beams shall be removed.
  2. Five new beams shall be installed and doweled into position.
  3. Remaining five existing beams shall be removed.
  4. Remaining five new beams shall be installed and doweled into position.

\*In lieu of the noted beam removal and erection sequence, the Contractor has the option to brace piers both laterally and longitudinally prior to the deck beam removal process. The braces shall stay in place until all new deck beams are doweled into position. This is to prevent the development of excessive stresses during construction. The cost is included in Removal of Existing Superstructures.

LOADING HS20-44 (New Construction)  
Allow 25#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS (New Construction)  
2002 AASHTO

DESIGN STRESSES

FIELD UNITS  
f<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f<sub>c</sub> = 5,000 psi  
f<sub>ci</sub> = 4,000 psi  
f<sub>s</sub> = 270,000 psi (1/2" low lax. strands)  
f<sub>si</sub> = 201,960 psi (1/2" low lax. strands)

SEISMIC DATA

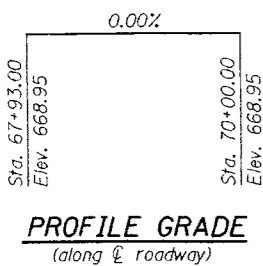
Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 4.8%  
Site Coefficient (S) = 1.0

WATERWAY INFORMATION

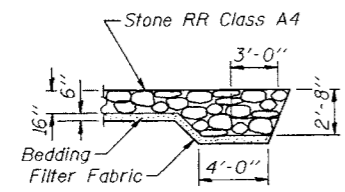
Proposed Low Grade Elev. 668.03 @ Sta. 71+00  
Existing Low Grade Elev. 668.03 @ Sta. 71+00

Drainage Area = 141.5 sq. mi.		Existing Low Grade Elev. 668.03 @ Sta. 71+00		
Flood Yr.	Q C.F.S.	Opening Sq. Ft.	Nat. Head - Ft.	Headwater El.
		Exist.	Exist.	Exist.
		Prop.	Prop.	Prop.
Design	30	7359	1334	664.6
Base	100	9353	1457	665.6
Overtopping				
Max. Calc.	500	11817	1555	666.7

10 year velocity through existing and proposed bridge = 4.79 fps



PROFILE GRADE  
(along roadway)



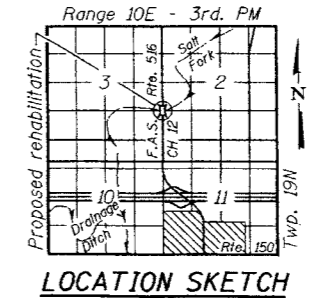
SECTION A-A

DESIGNED	Stephen M. Ryan
CHECKED	Chad Long
DRAWN	WDC & BMC
CHECKED	SMR/ECC

EXAMINED  
January 28, 2005  
PASSED  
Ralph E. Anderson  
ENGINEER OF BRIDGES AND STRUCTURES



EXPIRES 11-30-2006



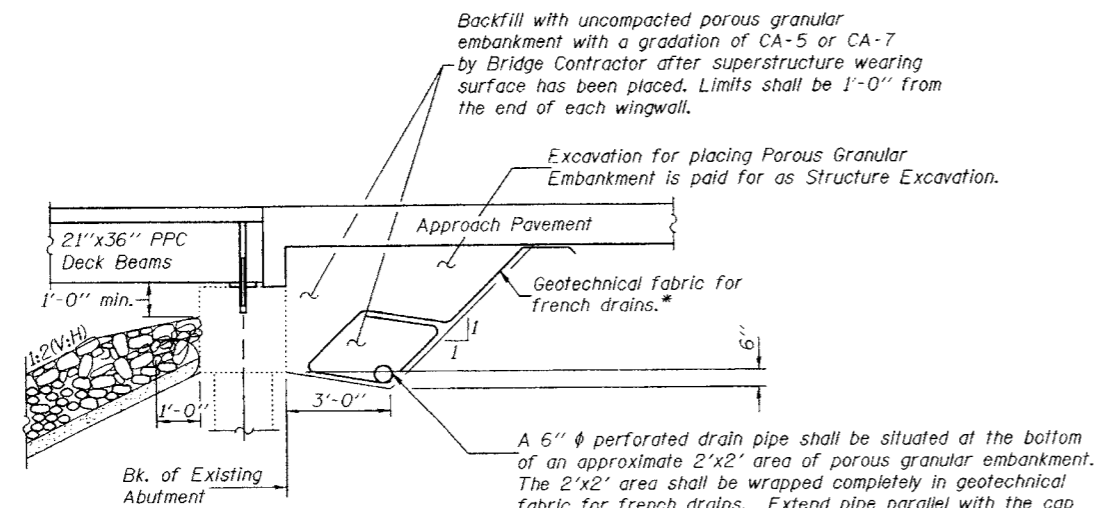
LOCATION SKETCH

GENERAL PLAN  
CH 12 OVER  
SALT FORK RIVER  
F.A.S. ROUTE 516 - SECTION (240B)BR  
CHAMPAIGN COUNTY  
STATION 68+94.20  
STRUCTURE NO. 010-0220

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FAS 516	(240B) BR	CHAMPAIGN	10	2
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		9 SHEETS

Contract No. 70184



**SECTION THRU ABUTMENTS**

(@ Rt. L's)

Approach Pavement shall be poured after superstructure wearing surface has been placed.

\* Included in the cost of Porous Granular Embankment.

A 6"  $\phi$  perforated drain pipe shall be situated at the bottom of an approximate 2'x2' area of porous granular embankment. The 2'x2' area shall be wrapped completely in geotechnical fabric for french drains. Extend pipe parallel with the cap until intersecting with the sideslope. Pipes shall drain onto concrete headwalls (Article 601.05 of the Standard Specifications and Highway Standard 601101). \*

**GENERAL NOTES**

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.

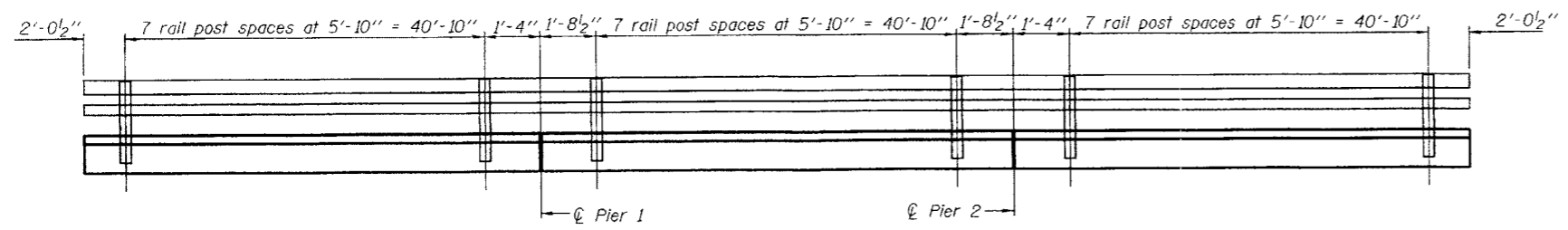
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.

All construction joints shall be bonded.  
Concrete sealer shall be applied to exterior vertical face of each fascia beam.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	Each	1		1
Concrete Structures	Cu. Yd.		1.0	1.0
Stone Riprap, Class A4	Sq. Yd.		664	664
Filter Fabric for use with Riprap	Sq. Yd.		664	664
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	3975		3975
Reinforcement Bars, Epoxy Coated	Pound	5230	220	5450
Concrete Wearing Surface	Sq. Yd.	418		418
Bridge Deck Grooving	Sq. Yd.	411.5		411.5
Protective Coat	Sq. Yd.	442		442
Concrete Sealer	Sq. Yd.	52.1		52.1
Steel Bridge Rail, Type SM	Foot	265		265
Name Plates	Each	1		1
Structure Excavation	Cu. Yd.		81.7	81.7
Porous Granular Embankment	Cu. Yd.		81.0	81.0
Furnishing and Erecting Structural Steel	Pound	1330		1330



**RAIL POST SPACING**

DESIGNED	SMR
CHECKED	CCC
DRAWN	BECKY M. CURRY
CHECKED	SMR & CCC

January 28, 2005  
EXAMINED *Thomas J. Donagale*  
ENGINEER OF BRIDGE DESIGN  
PASSED *Ronald E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

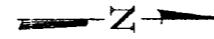
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F.A.S. ROUTE 516 - SECTION (240B)BR  
CHAMPAIGN COUNTY  
STATION 68+94.20  
STRUCTURE NO. 010-0220



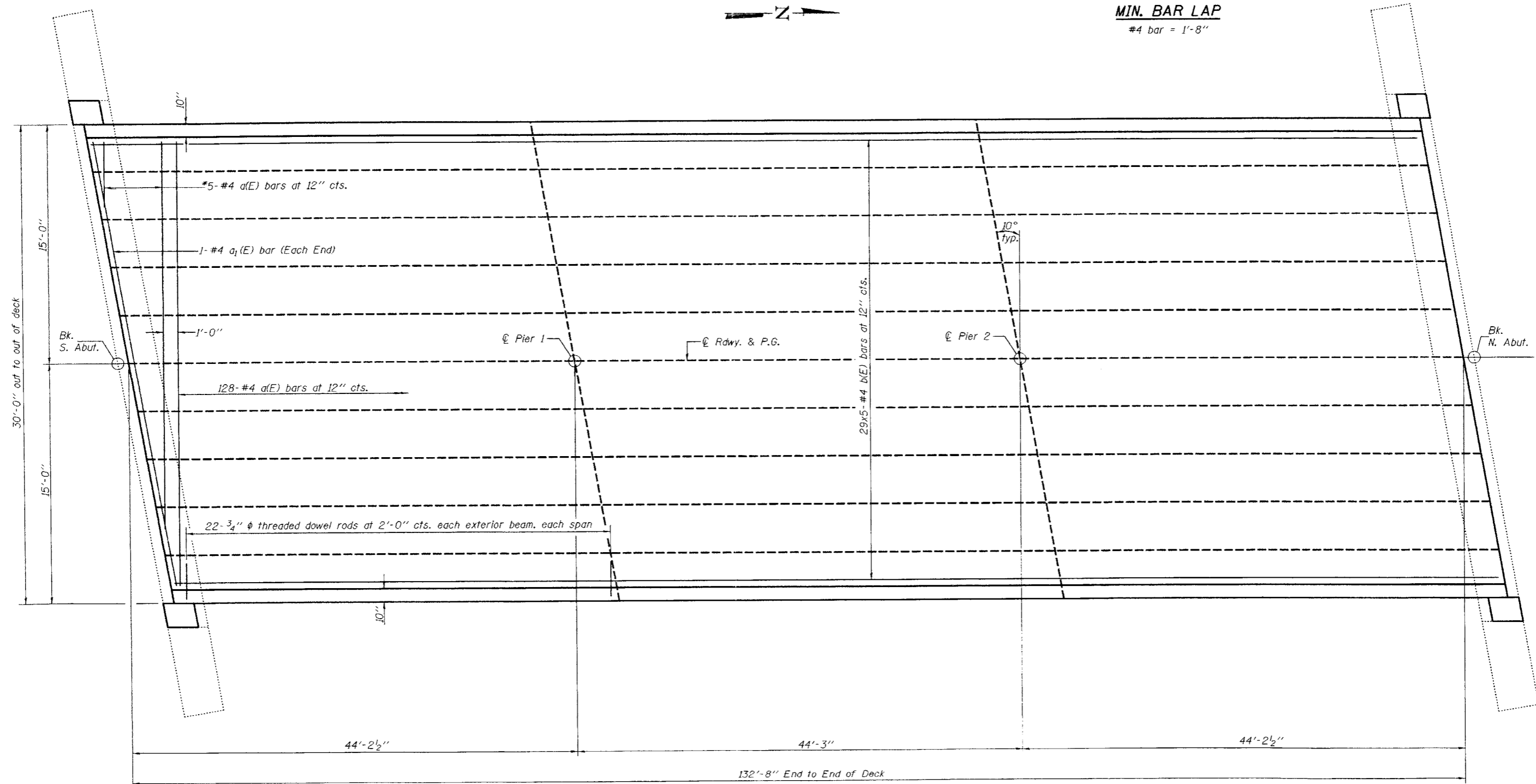
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
FAS 516	(240B) BR	CHAMPAIGN	12	9
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract No. 70184



MIN. BAR LAP  
#4 bar = 1'-8"



PLAN

DESIGNED	SMR
CHECKED	CCC
DRAWN	BECKY M. CURRY
CHECKED	SMR & CCC

January 28, 2005  
 EXAMINED *Thomas J. Damagala*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

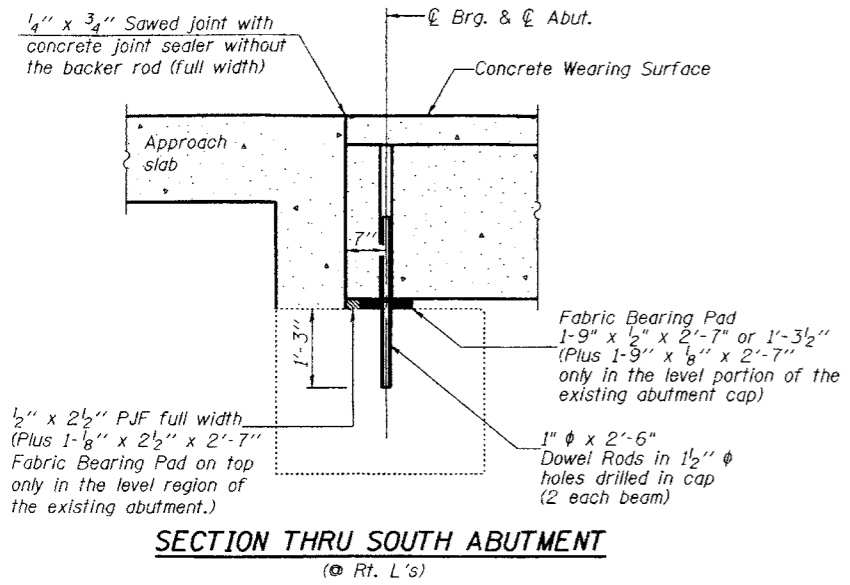
\*Order a(E) bars full length.  
Cut to fit skew and use  
remainder of bars in opposite  
end.

Note:  
Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 29x5-#4 etc. indicates 29 lines of bars with 5 lengths per line.  
For remainder of superstructure details, see sheets 5 and 6 of 9.

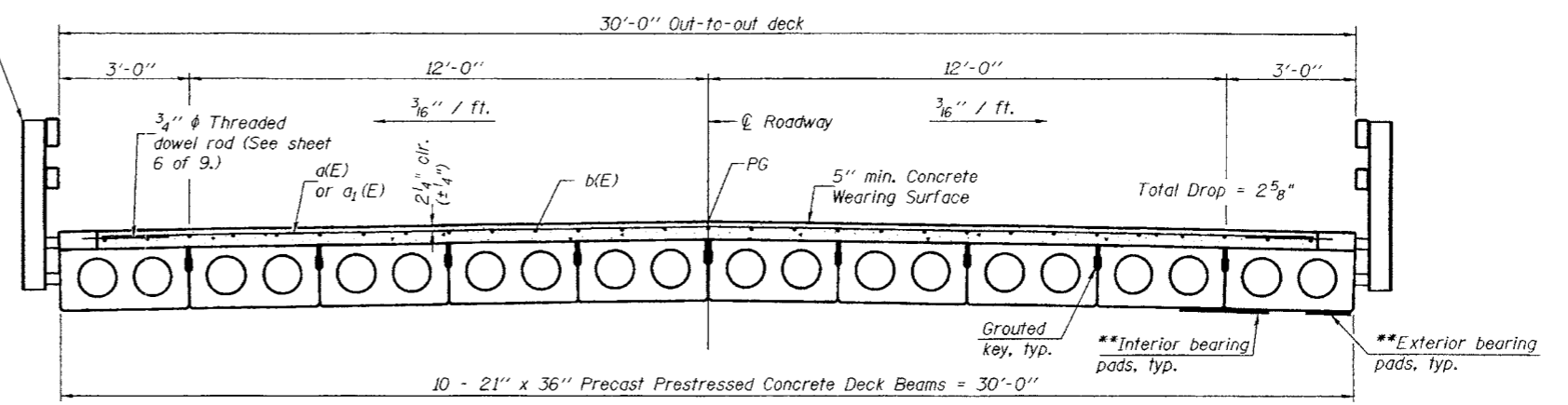
**SUPERSTRUCTURE**  
**F.A.S. ROUTE 516 - SECTION (240B)BR**  
**CHAMPAIGN COUNTY**  
**STATION 68+94.20**  
**STRUCTURE NO. 010-0220**

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

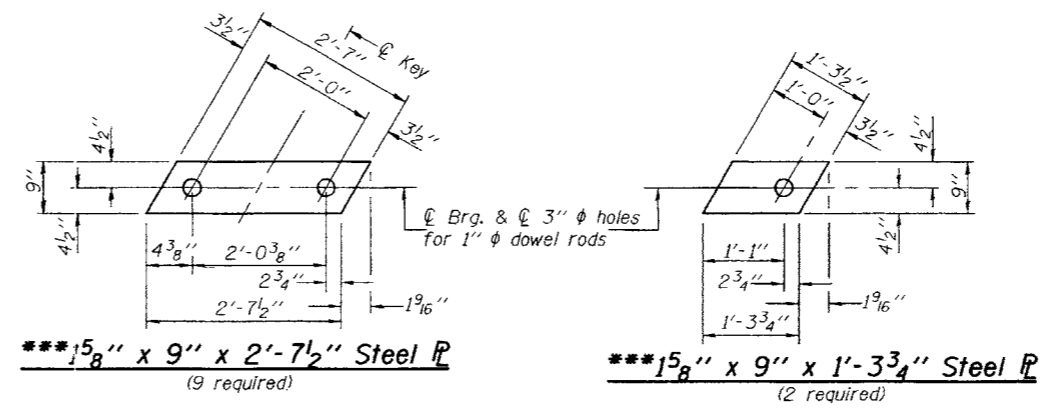
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET	SHEET NO. 5
FAS 516	(240B) BR	CHAMPAIGN		13	9 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract No. 70184		



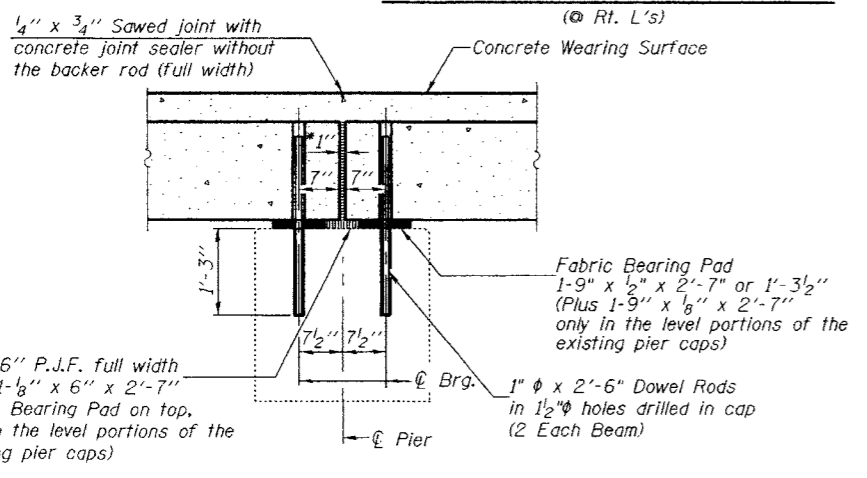
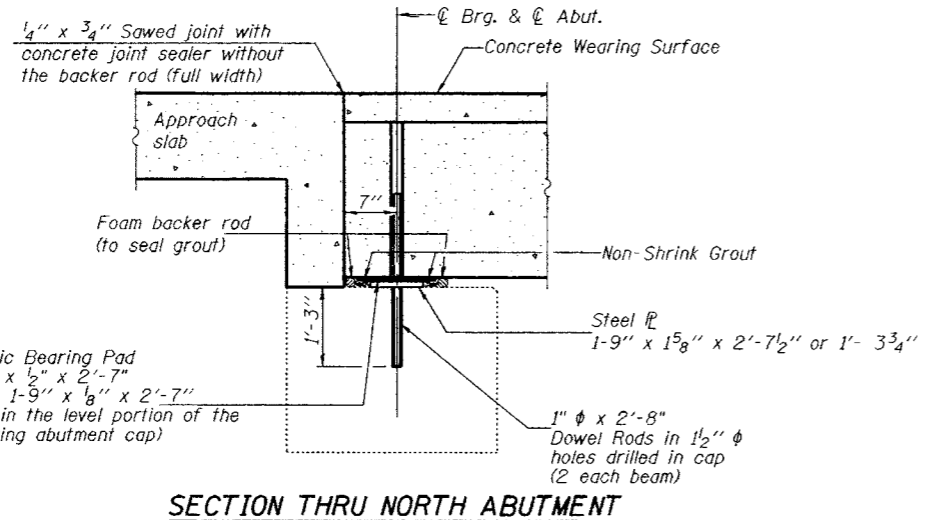
Steel Bridge Rail, Type SM  
See sheet 3 of 9 for details.



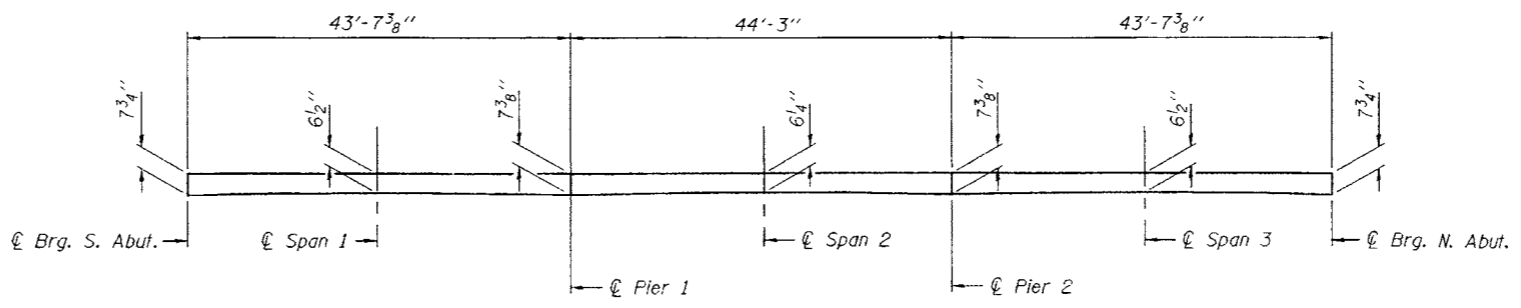
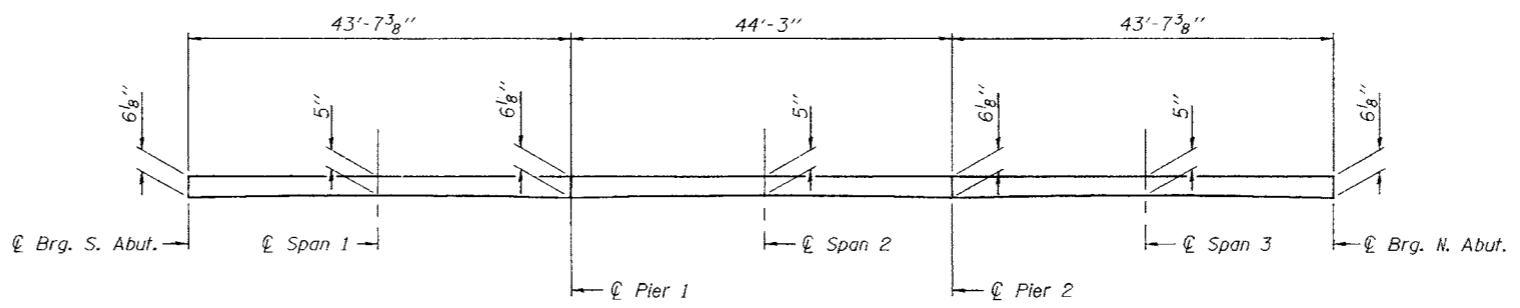
\*\*Steel plates required at North Abutment only.



Notes:  
After beams have been erected, holes shall be drilled into substructure and dowels rods placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys. See sheet 6 of 9 for fabric bearing pad details. Concrete wearing surface to be poured after grouting the shearkeys.  
Dowel rods drilled in cap are included in the cost of Precast Prestressed Concrete Deck Beams (21" depth). See sheet 8 of 9 for steel plate locations.  
\*\*\*Steel plates shall be galvanized according to AASHTO M11.



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



SUPERSTRUCTURE  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	133	#4	28'-1"	—
a1(E)	2	#4	28'-5"	—
b(E)	145	#4	27'-10"	—
Reinforcement Bars, Epoxy Coated			Pound	5230
Concrete Wearing Surface			Sq. Yd.	418
Furnishing and Erecting Structural Steel			Pound	1330

Reinforcement bars designated (E) shall be epoxy coated.

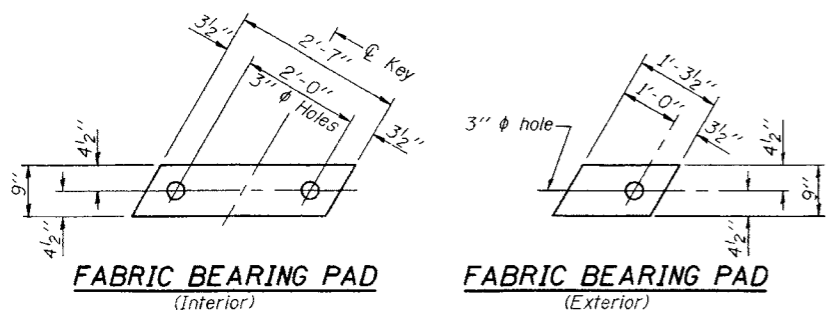
SUPERSTRUCTURE DETAILS  
F.A.S. ROUTE 516 - SECTION (240B)BR  
CHAMPAIGN COUNTY  
STATION 68+94.20  
STRUCTURE NO. 010-0220

DESIGNED	SMR	EXAMINED	January 28, 2005
CHECKED	CCC	PASSED	Thomas J. Romagosa ENGINEER OF BRIDGE DESIGN
DRAWN	BECKY M. CURRY		Ronald E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	SMR & CCC		

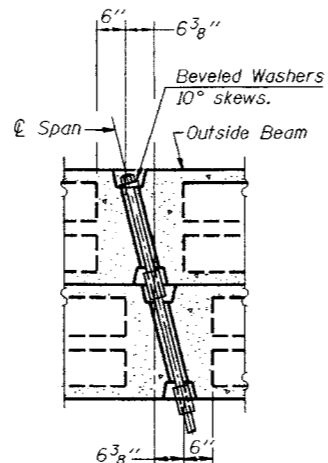
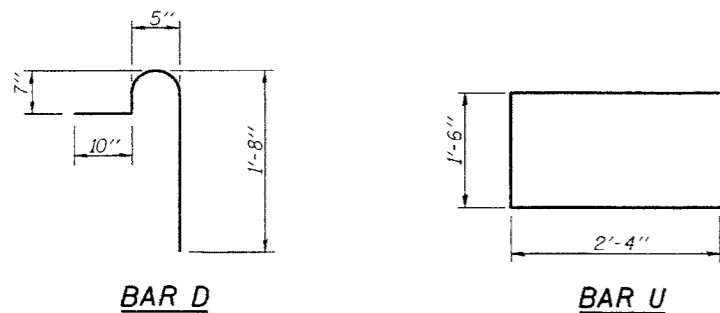
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET	SHEET NO. 6 9 SHEETS
FAS 516	(240B) BR	CHAMPAIGN		14	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract No. 70184

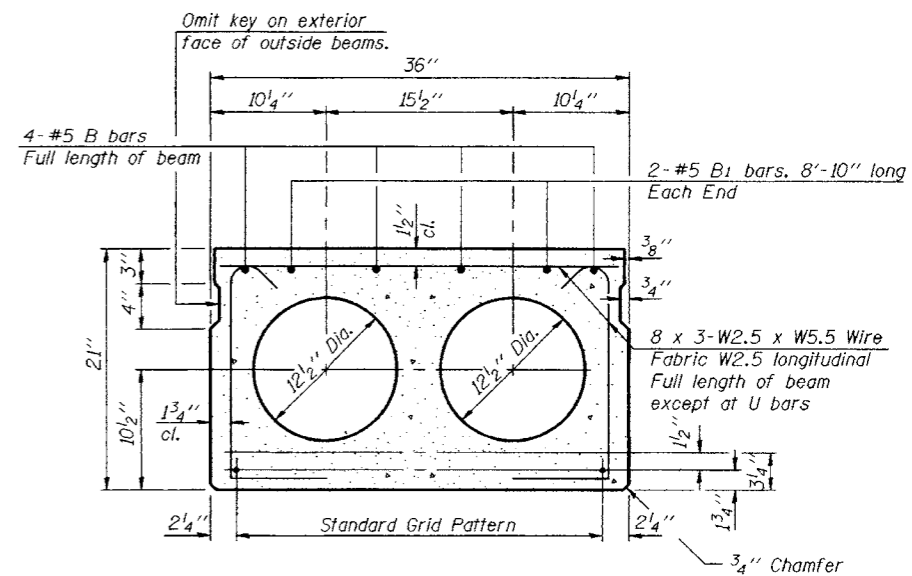
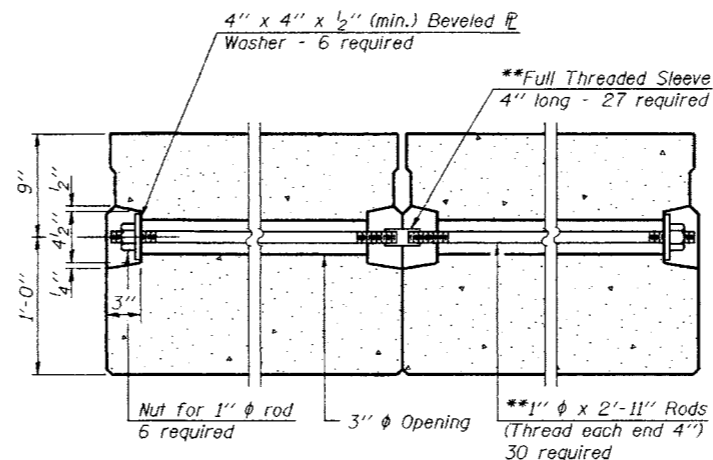


FIXED



TYPICAL TRANSVERSE TIE ASSEMBLY

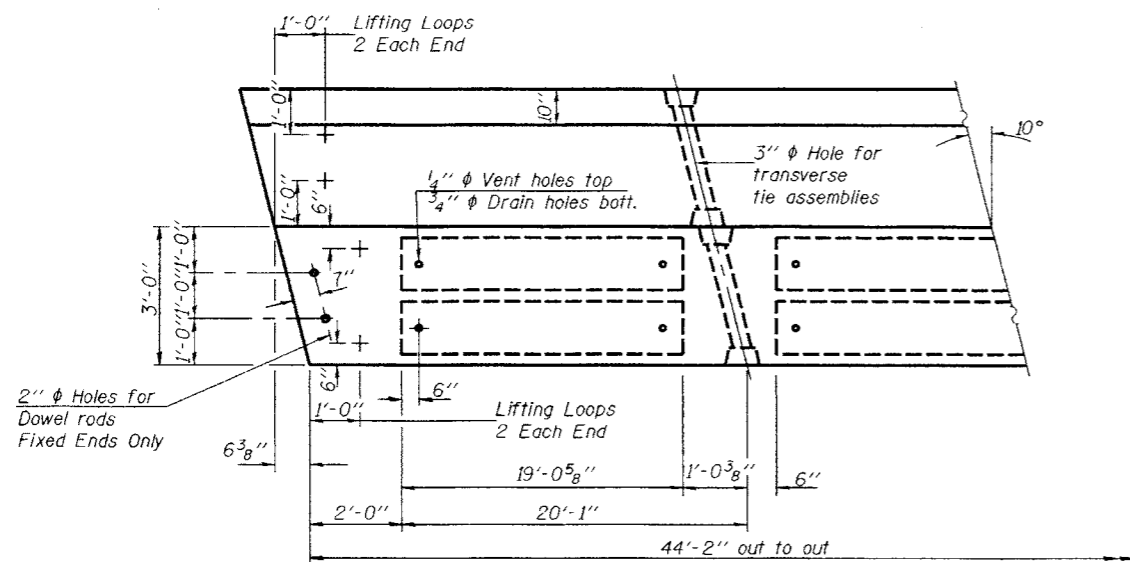
\*\*Alternate approved transverse tie rods of increased segmental length are acceptable.



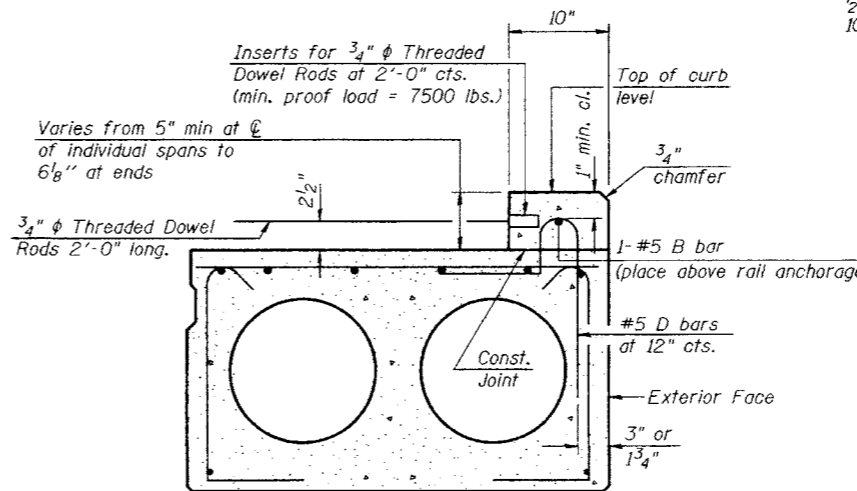
TYPICAL SECTION

1/2 inch diameter strands, each strand stressed to 30,900 lbs.  
10 strands 1 3/4 inch up, 1 strand 3/4 inch up, 2 strands 9 inch up

Note:  
Place strands symmetrically about centerline of beam.



PLAN



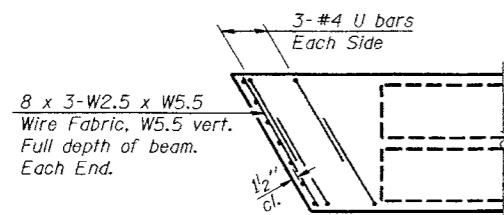
SECTION THRU EXTERIOR BEAMS

See Section Thru Interior Beams for strand pattern, dimensions and bar call outs.

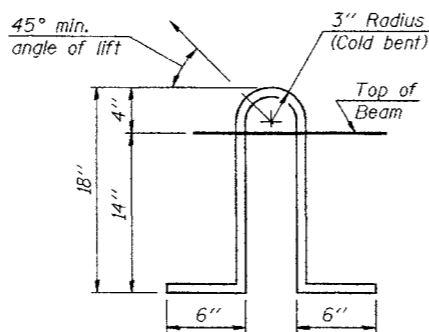
BAR LIST (ONE BEAM)

Bar	No.	Size	Length	Shape
B	4	#5	43'-10"	—
B	1	#5	43'-10"	—
B1	4	#5	8'-10"	—
D	44	#5	3'-4"	⌒
U	12	#4	6'-2"	⌒

\*At exterior beams only.



END PLAN



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2 inch and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2 - 1/2 inch diameter 270 ksi strands, as shown. The 1 inch diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Non prestressing steel shall conform to AASHTO M-31 or M-322 Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8 inch fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f'ci, shall be 4000 p.s.i. See sheet 2 of 9 for location of rail anchors. Bridge rail inserts shall be cast in precast beams and curbs. Curbs shall be cast by the precast prestressed concrete supplier after strands have been released and prior to shipping the beam. The concrete in the curb shall be the same as specified for the deck beams. The curb inserts and threaded dowel rods may be either epoxy coated or galvanized and the cost shall be included with Precast Prestressed Concrete Deck Beams.

DESIGNED	SMR
CHECKED	CCC
DRAWN	BECKY M. CURRY
CHECKED	SMR & CCC

January 28, 2005  
EXAMINED *Thomas J. Damgalab*  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGE DESIGN  
ENGINEER OF BRIDGES AND STRUCTURES

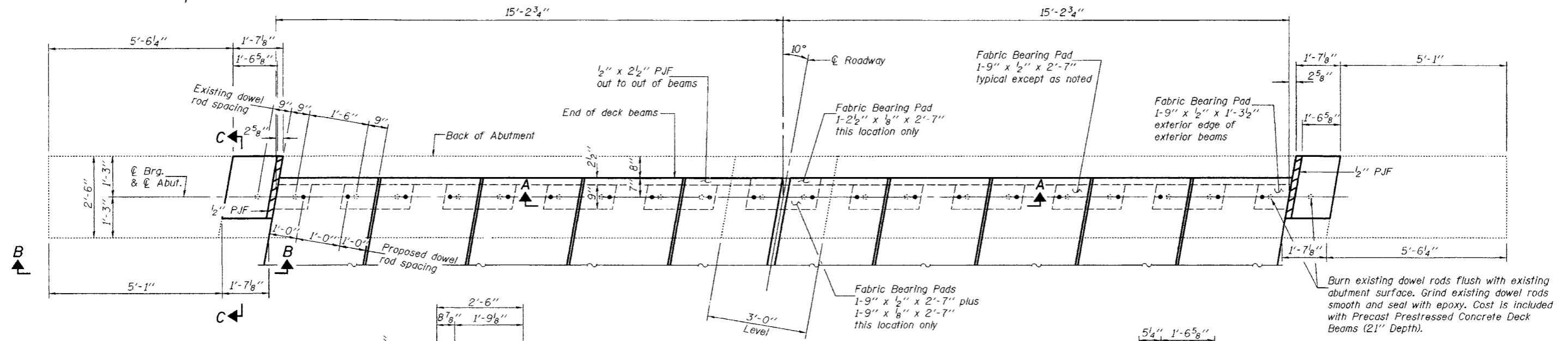
**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (21" Depth)	Sq. Ft.	3975
---	---------	------

**SUPERSTRUCTURE DETAILS**  
F.A.S. ROUTE 516 - SECTION (240B)BR  
CHAMPAIGN COUNTY  
STATION 68+94.20  
STRUCTURE NO. 010-0220

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

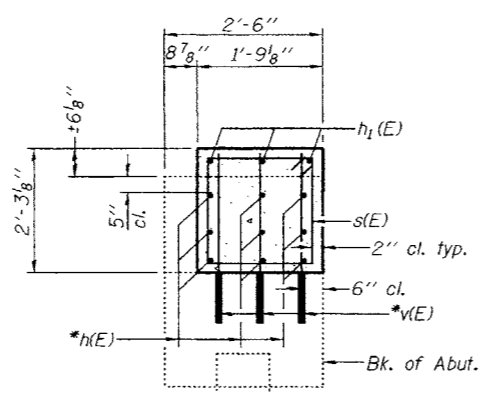
ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
FAS 516	(240B) BR	CHAMPAIGN	15	9 SHEETS
Contract No. 70184				



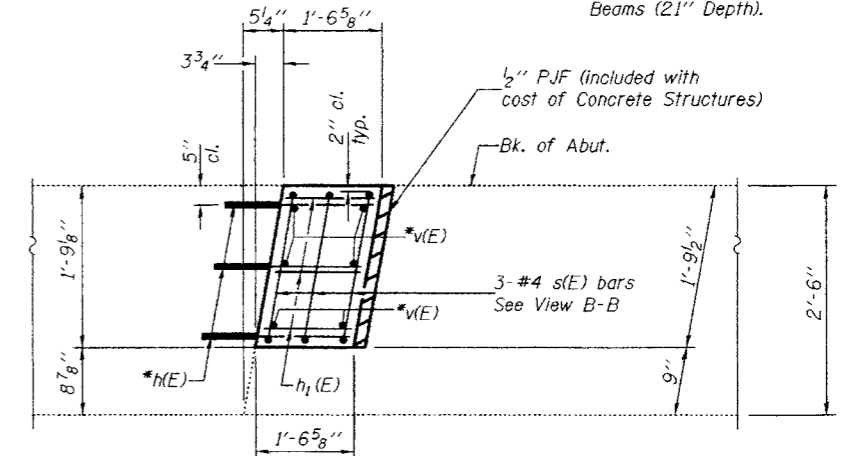
**PLAN**

(Concrete curb and concrete wearing surface not shown.)

Note: Concrete structures shown are to be poured after concrete wearing surface is in place and cured.

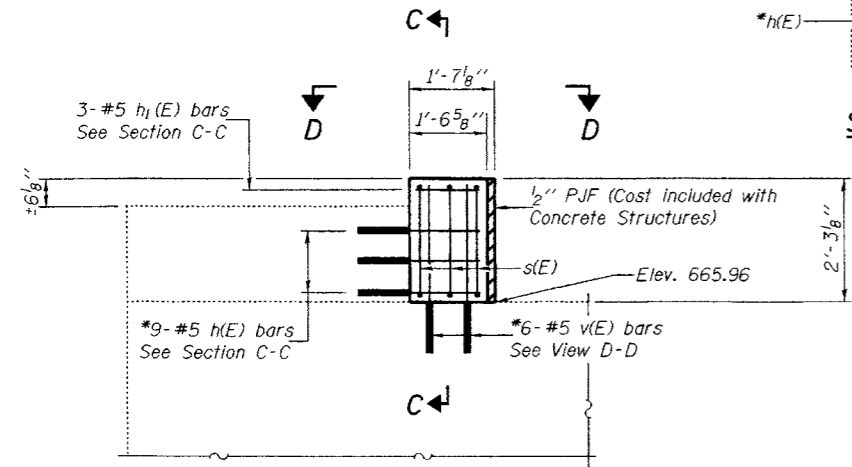


**SECTION C-C**



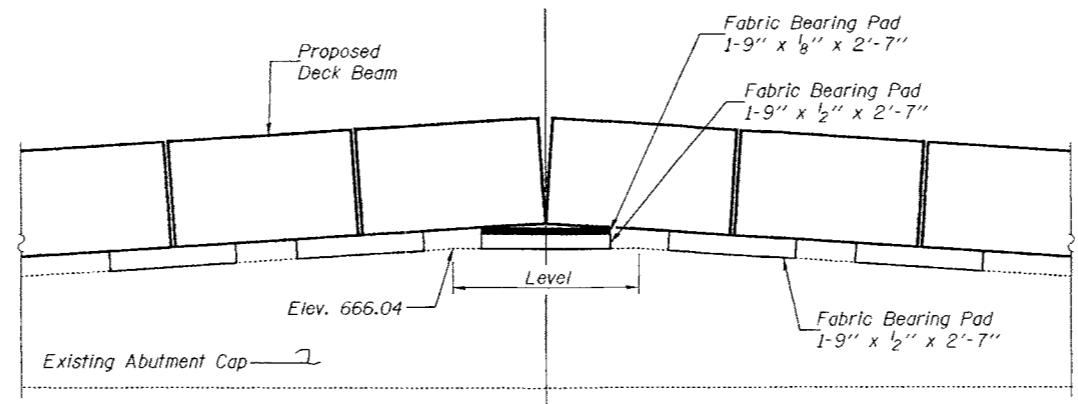
**VIEW D-D**

\* Epoxy grout h(E) and v(E) bars in 9" min. drilled holes according to Section 584 of Standard Specifications.



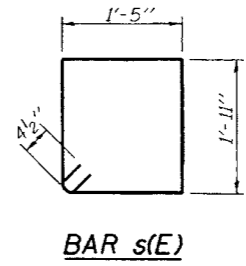
**VIEW B-B**

(Deck beam, concrete curb and concrete wearing surface not shown. East side shown. West side similar.)



**SECTION A-A**

(Concrete wearing surface and dowel rods not shown.)



**BAR s(E)**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	18	#5	2'-0"	—
h1(E)	6	#5	1'-3"	—
s(E)	6	#4	7'-5"	□
v(E)	12	#5	2'-10"	—
Reinforcement Bars, Epoxy Coated			Pound	110
Concrete Structures			Cu. Yd.	0.5

Reinforcement bars designated (E) shall be epoxy coated.

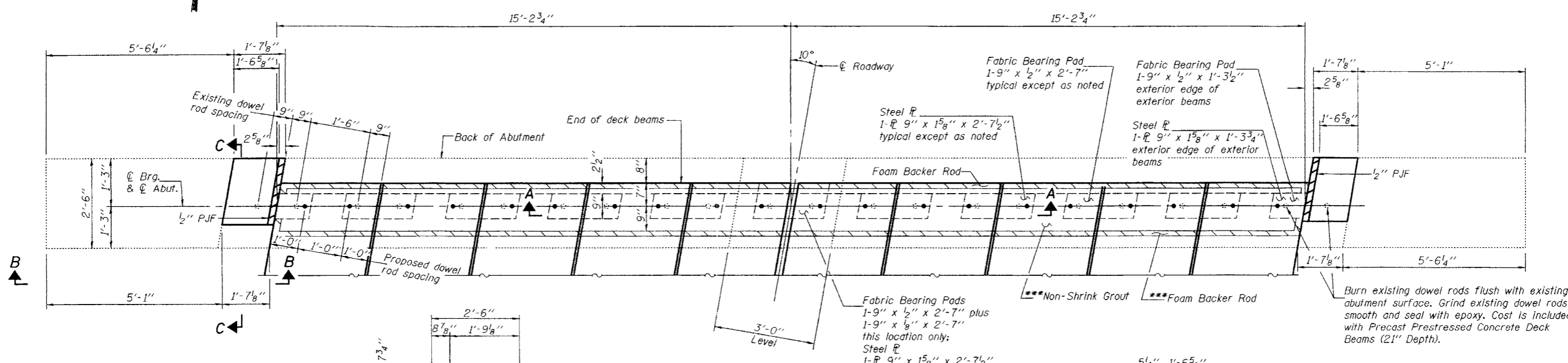
**SOUTH ABUTMENT**  
**F.A.S. ROUTE 516 - SECTION (240B)BR**  
**CHAMPAIGN COUNTY**  
**STATION 68+94.20**  
**STRUCTURE NO. 010-0220**

DESIGNED	SMR
CHECKED	CCC
DRAWN	BECKY M. CURRY
CHECKED	SMR & CCC

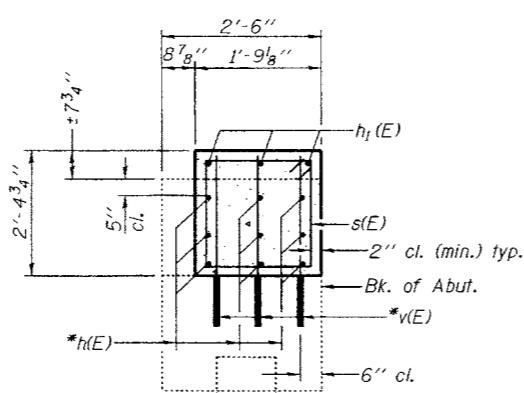
January 28, 2005  
EXAMINED *Thomas J. Demgalak*  
PASSED *Ralph E. Anderson*

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAS 516	(240B) BR	CHAMPAIGN	16	9 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract No. 70184	

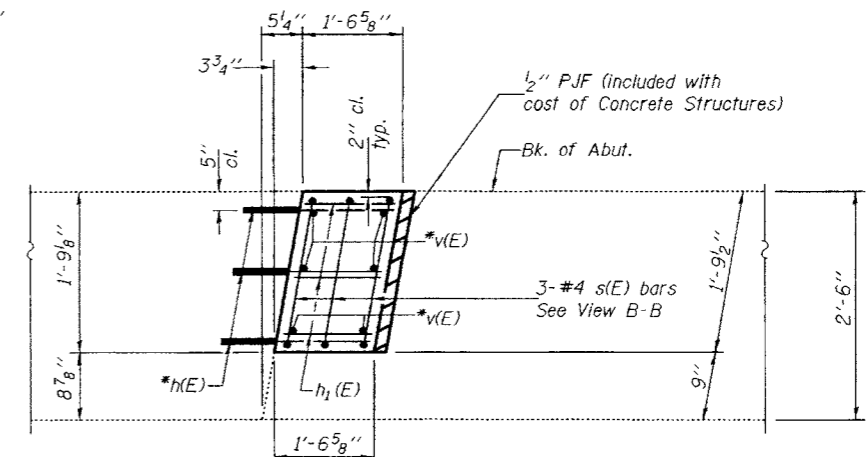


Note:  
Concrete structures shown are to be poured after concrete wearing surface is in place and cured.  
For steel plate details see sheet 5 of 9.

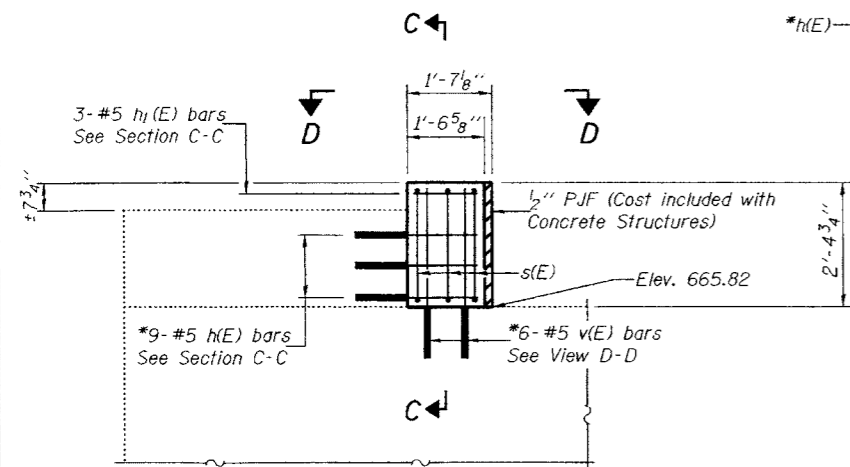


**PLAN**  
(Concrete curb and concrete wearing surface not shown.)

\* Epoxy grout h(E) and v(E) bars in 9" min. drilled holes according to Section 584 of Standard Specifications.  
\*\* Field verify prior to ordering materials.  
\*\*\* Cost included with Precast Prestressed Deck Beams (21" Depth).

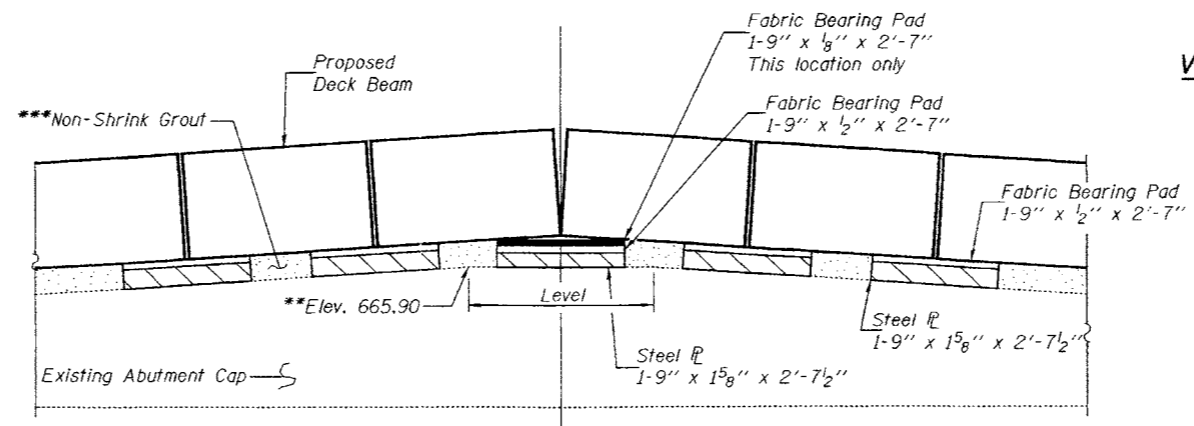


**VIEW D-D**



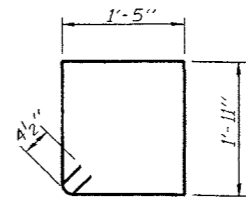
**VIEW B-B**

(Deck beam, concrete curb and concrete wearing surface not shown. West side shown, East side similar).



**SECTION A-A**

(Concrete wearing surface and dowel rods not shown.)



**BAR s(E)**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	18	#5	2'-0"	—
h1(E)	6	#5	1'-3"	—
s(E)	6	#4	7'-5"	□
v(E)	12	#5	2'-10"	—
Reinforcement Bars, Epoxy Coated		Pound	110	
Concrete Structures		Cu. Yd.	0.5	

Reinforcement bars designated (E) shall be epoxy coated.

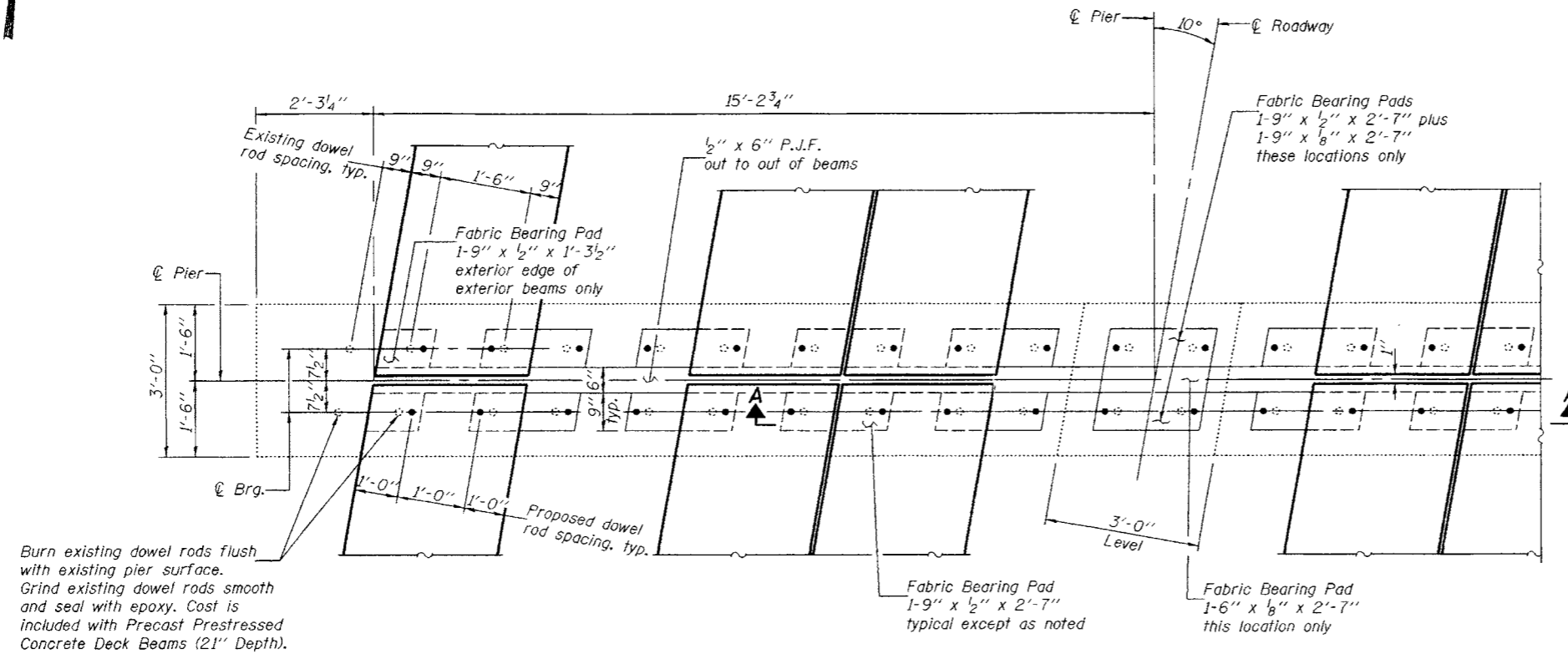
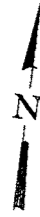
**NORTH ABUTMENT**  
F.A.S. ROUTE 516 - SECTION (240B)BR  
CHAMPAIGN COUNTY  
STATION 68+94.20  
STRUCTURE NO. 010-0220

DESIGNED	SMR
CHECKED	CCC
DRAWN	DECKY M. GURRY
CHECKED	SMR & CCC

January 28, 2005  
EXAMINED *Thomas J. Demigale*  
PASSED *Ralph E. Anderson*

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

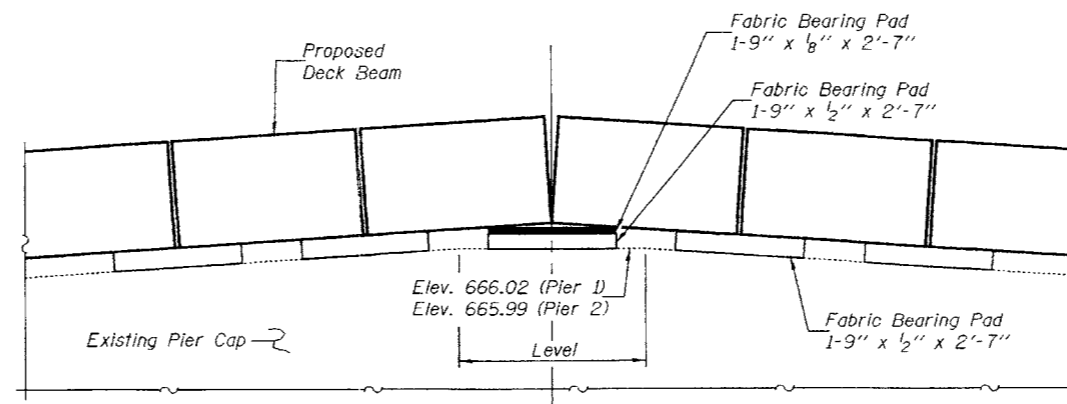
ROUTE NO.	SECTION	COUNTY	ISSUE SHEETS	SHEET NO.	SHEET NO. 9 9 SHEETS
FAS 516	(240B) BR	CHAMPAIGN		17	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract No. 70184		



Burn existing dowel rods flush with existing pier surface. Grind existing dowel rods smooth and seal with epoxy. Cost is included with Precast Prestressed Concrete Deck Beams (21" Depth).

**PLAN**

(Not all deck beams are shown.)  
(Concrete curb and concrete wearing surface not shown.)



**SECTION A-A**

(Concrete wearing surface and dowel rods not shown.)

DESIGNED	SMR
CHECKED	CCC
DRAWN	BECKY M. CURRY
CHECKED	SMR & CCC

January 28, 2005  
EXAMINED *Thomas J. Duggan*  
ENGINEER OF BRIDGE DESIGN  
PASSED *Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

**PIERS**  
F.A.S. ROUTE 516 - SECTION (240B)BR  
CHAMPAIGN COUNTY  
STATION 68+94.20  
STRUCTURE NO. 010-0220

COUNTY HWY.	SECTION	COUNTY	TOTAL SHEETS	SHEET NUMBER
12	240-B-MFT	CHAMPAIGN	15	1

# CHAMPAIGN COUNTY ILLINOIS

## SECTION 240-B MFT

### COUNTY HIGHWAY - S-12

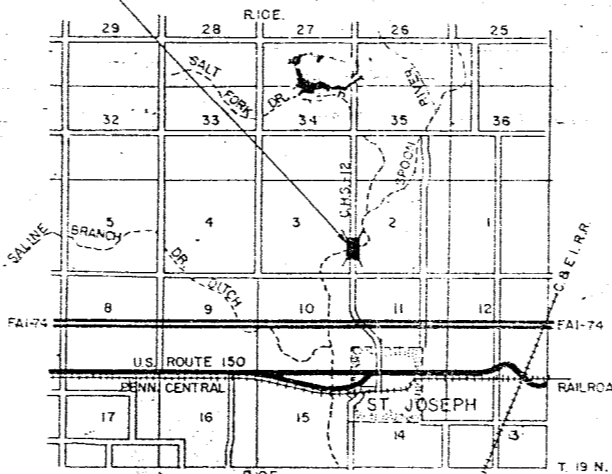
#### INDEX

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	ROADWAY PLAN & PROFILE
3, 4, 5, & 6.	ROADWAY & STREAM CROSS SECTIONS
7.	GENERAL PLAN & ELEVATION
8.	SUPERSTRUCTURE
9.	ABUTMENTS
10.	PIERS
11.	STANDARD 2208-2, & 2113-1
12.	STANDARD X-2
13.	STANDARD R-17
14.	STANDARD 2230-3
15.	STANDARDS 1527-4, 2217-2, 1538-3, & 1744-2

#### SUMMARY OF QUANTITIES

ITEM	UNIT	QUANTITY
EARTH EXCAVATION	CU. YD.	33
CHANNEL EXCAVATION	CU. YD.	1896
BORROW EXCAVATION	CU. YD.	589
BITUMINOUS AGGREGATE MIXTURE BASE COURSE	TON	255
BITUMINOUS MATERIALS (PRIME COAT)	GAL.	319
BITUMINOUS CONCRETE SURFACE COURSE, CLASS I	TON	100
LEVELING BINDER (MACHINE METHOD)	TON	75
CLASS B EXCAVATION FOR STRUCTURES	CU. YD.	145
*CLASS X CONCRETE	CU. YD.	106*
PRECAST PRESTRESSED CONCRETE DECK BEAMS, 21" DEPTH	SQ. FT.	4373
ALUMINUM RAILING	LIN. FT.	253
*REINFORCEMENT BARS	LB.	14972*
REMOVAL OF EXISTING STRUCTURES	EACH	1
BRIDGE DECK SEALANT	SQ. YD.	447
FURNISHING PRECAST CONCRETE PILES, 14"	LIN. FT.	308
DRIVING PRECAST CONCRETE PILES	LIN. FT.	308
NAME PLATES	EACH	1
STEEL PLATE BEAM GUARDRAIL, SINGLE RAIL	LIN. FT.	60
STORM SEWERS, TYPE 2, R.C.P., CLASS II 24"	LIN. FT.	126
MANHOLES, TYPE A, 4' DIA., TYPE 8 GRATE	EACH	1
FILLING EXISTING CATCH BASINS	EACH	1
CATCH BASINS, TYPE C, TYPE 8 GRATE	EACH	1
PIPE DRAINS, 12" C.S.	LIN. FT.	45
PIPE DRAINS, 18" C.S.	LIN. FT.	20
PIPE DRAINS, 30" C.S.	LIN. FT.	20
FURNISHING AND ERECTING R.O.W. MARKERS	EACH	7
*ALTERNATE (USING ROUND COLUMN)		
CLASS X CONCRETE	CU. YD.	105
REINFORCEMENT BARS	LB.	15,929

PROPOSED STRUCTURE STATION 3+80.00  
 PRECAST PRESTRESSED CONCRETE DECK BEAMS WITH  
 ABUTMENT CAPS ON PRECAST CONCRETE PILES,  
 AND CONCRETE PIERS, 3 SPANS, OPEN ABUTMENTS, 30° 0"  
 ROADWAY, 1'-6" PARAPETS, 44' SPANS, 10° SKEW.



LOCATION MAP

SCALE 1"=1 MI.

NET LENGTH= 250.00 LIN. FT.= 0.0473 MILES

DAILY & ASSOCIATES  
 ENGINEERS, INC.  
 CHAMPAIGN, ILLINOIS

Mar 10, 1970  
 DATE

Eugene J. Daily  
 EUGENE J. DAILY  
 ILL. REG. PROFESSIONAL ENGINEER NO. 20751  
 ILL. REG. STRUCTURAL ENGINEER NO. 2006



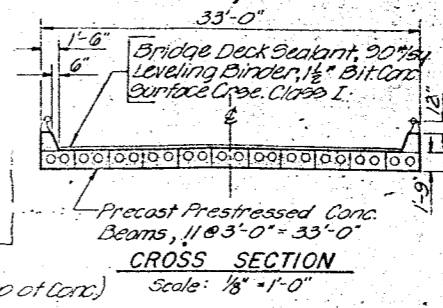
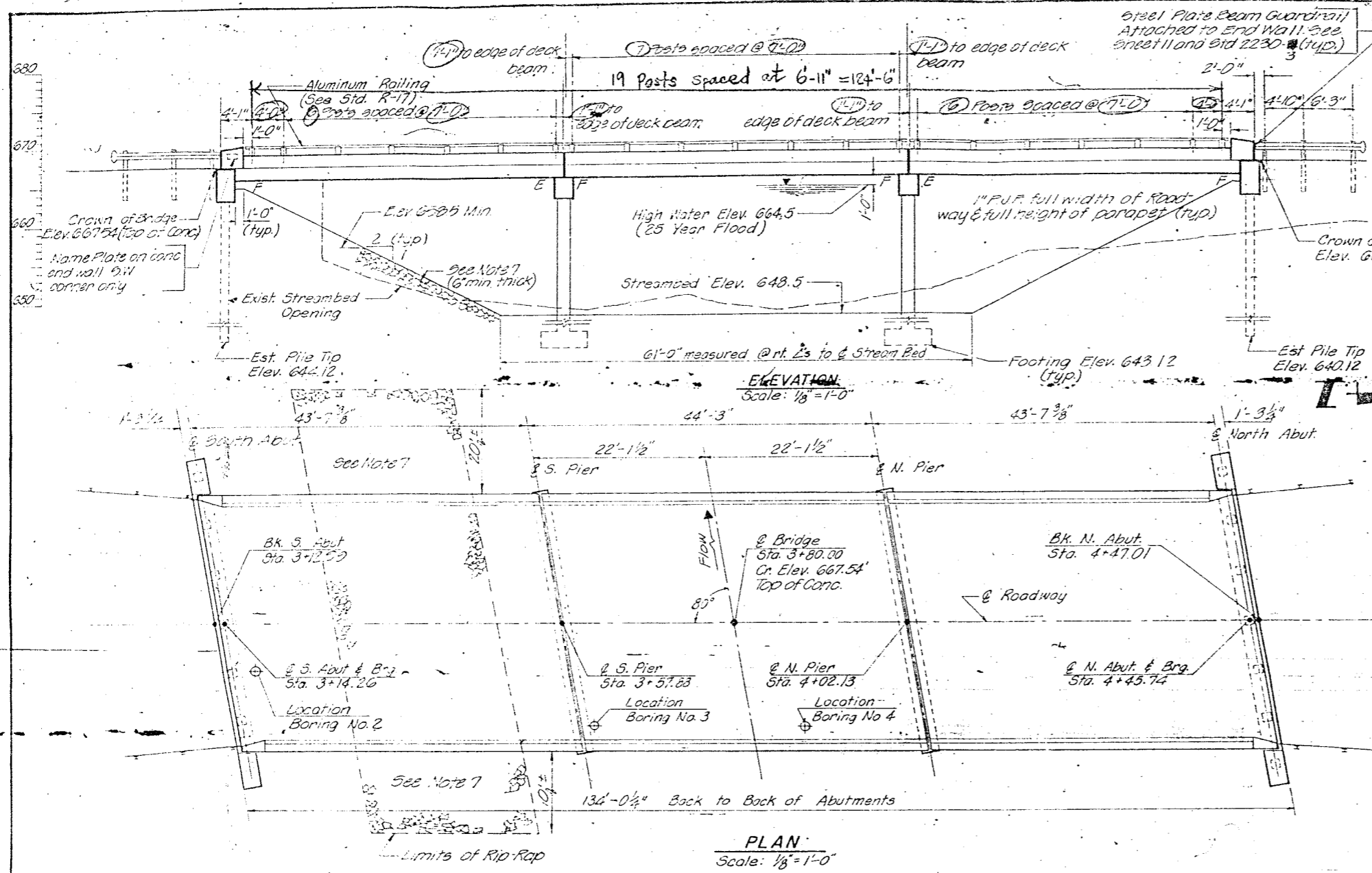
REEL P-1002  
 240-B MFT  
 3+80.00

COVER SHEET  
 SHEET 1 OF 15

010-0220

010-0220

UNAC. ACCE. FILE 708



STATION 3+80  
SALT FORK CREEK  
BUILT 19 BY  
CHAMPAIGN COUNTY  
SEC. 240-B MFT  
LOADING HS 20-44

**NAME PLATE**  
See Standard 2113-1

- NOTES**
- The "State of Illinois Standard Specifications for Road and Bridge Construction," adopted Aug. 1, 1968, shall apply.
  - Concrete: Class X Concrete shall be used throughout except for precast prestressed units. See the applicable specs. for concrete requirements for precast units.
  - Reinforcement Bars shall be grade 40 or grade 50 steel. All dimensions except bar bends are to center of bars. Minimum lap shall be 30 bar diameters, unless otherwise specified.
  - Backfill behind abutments shall not be placed until precast prestressed deck slabs have been dowelled into place.
  - All excavation for structures below proposed streambed shall be done ~~before~~ excavation for structures.
  - Piers shall be braced laterally and longitudinally until precast prestressed concrete deck beams have been dowelled into place to prevent development of excessive stresses during erection.
  - Conc. from exist. abut. and abut's shall be used as rip-rap & be extended as far as material is available. Cost shall be incidental to removal of existing structure.

**WATERWAY INFORMATION**

Drainage Area: 22.410 Acres  
Character: level, 83% cultivated, 10% pasture, 2% housing, 5% wooded  
Required Effective Opening Below High Water (25 year flood): 1300 sq. ft.  
Proposed Opening: 1415 sq. ft.  
Present Opening: 1415 sq. ft.  
Design Discharge (Q) = 6530 cfs

**DESIGN STRESSES**

$f_c = 1400 \text{ psi}$   
 $f_s = 20,000 \text{ psi}$   
 $f_c' = 5,000 \text{ psi}$  for precast prest. units  
 $f_s' = 173,000 \text{ psi}$  for prestressing steel  
 $n = 10$   
Loading: HS 20-44

**EXISTING STRUCTURE**  
Sta. 3+58.9: 25'-8" x 144" x 14" Conc. Deck, 3 spans on solid concrete piers on closed concrete abutments.

Bridge Contractor shall remove exist. structure in accordance with section 501 of the Standard Specifications. All materials are considered non-salvageable under this contract except portions of the existing concrete which may be broken up and used as rip-rap as noted on the plans or as directed by the Engineer, and shall be disposed of to the approval of the Engineer. The cost of placing rip-rap shall be considered incidental to removal of existing structures.

**QUANTITIES**

Item	Unit	Quantity
Removal of Exist. Structure	each	1
Class B Excavation for Struct.	cu. yd.	145
Aluminum Railing	lin. ft.	253
Name Plate	each	1
Bridge Deck Sealant	sq. yd.	25
Leveling Binder (Mech. Meth.)	ton	20
Bitum. Conc. Surf. Crse. Class I	ton	38

**SOIL BORINGS**

Note Change in the Scales

Boring No.	Station	Soil Description	Limit of Boring
BORING NO. 2	6' Rt. Sta. 3+18	Stiff Black Clay Backfill Soft-Medium Black Clay & Silty Clay Hard Brown Mottled Clay Loom Till Hard Gray Clay Loom Till with Sand & Silt Lenses Hard Gray Brown Clay Till	Elev. 636.3
BORING NO. 3	13' Rt. Sta. 3+62	Water Yel. Sand Hard gray clay loam till	Elev. 644.8
BORING NO. 4	13' Rt. Sta. 3+89	Water Yel. Sand little gravel Hard gray clay loam till	Elev. 644.8
BORING NO. 1	7' Rt. Sta. 4+85	Stiff Black Clay Medium Gray Brown Mottled Clay Free Water Loose Dark Gray Fine Sand Loam, Free Water Hard Gray Clay Loom Till Sand Lense (Elev. 644.9) Hard Gray Brown Clay Till	Elev. 636.8

**Notes:**

- Boring Data shown is that available and is shown for information only and implies no warranty as to subsol conditions. See Special Provisions.
- For Estimated Pile Tip Elevations see Elevation, this sheet.

N - Standard Penetration Test - Blows per ft. to drive a 2" O.D. Split Spoon Sampler 12" with a 140# hammer falling 30".  
Qu - Unconfined Compressive Strength - Tons/sq. ft.  
W - Water Content - % oven dry weight

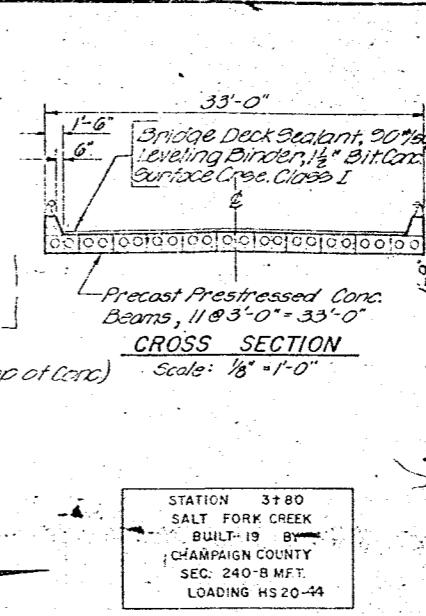
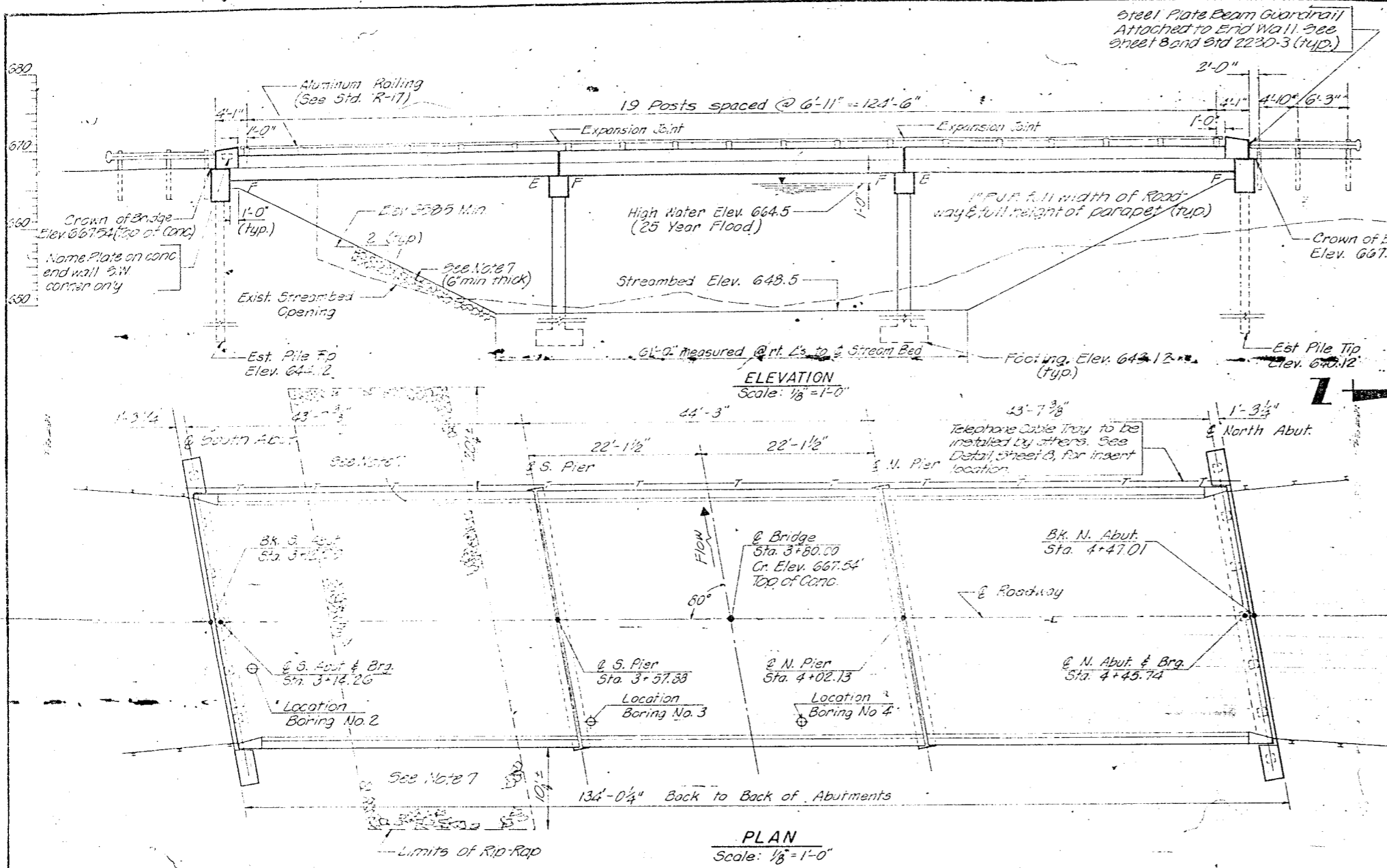
DATE OCT. 1969  
DESIGNED J.L.H.  
DRAWN T.H.B.  
CHECKED D.E.M.

**D/A**

**DAILY & ASSOCIATES ENGINEERS, INC.**  
CHAMPAIGN, ILLINOIS

**CHAMPAIGN COUNTY SECTION 240-B MFT STATION 3+80.00**

SHEET NO. 17  
OF 17



- NOTES**
- The "State of Illinois Standard Specifications for Road and Bridge Construction," adopted Aug. 1, 1963, shall apply.
  - Concrete: Class X Concrete shall be used throughout except for precast prestressed units. See the applicable specs. for conc. requirements for precast units.
  - Reinforcement Bars shall be grade 40 or grade 50 steel. All dimensions except bar bends are to center of bars. Minimum lap shall be 30 bar diameters, unless otherwise specified.
  - Backfill behind abutments shall not be placed until precast prestressed deck slabs have been doweled into place.
  - All excavation for structures below proposed streambed shall be Class B excavation for structures.
  - Piers shall be braced laterally and longitudinally until precast prestressed concrete deck beams have been doweled into place to prevent development of excessive stresses during erection.
  - Conc. from exist. pvt. and abut. shall be used as rip-rap if be extended as far as material is available. Cost shall be incidental to removal of existing structure.

**WATERWAY INFORMATION**

Drainage Area: 92,410 Acres  
 Character: level, 83% cultivated, 10% pasture, 2% housing, 5% wooded  
 Required Effective Opening Below High Water (25 year flood): 1300 sq. ft.  
 Proposed Opening: 1415 sq. ft.  
 Present Opening: 1415 sq. ft.  
 Design Discharge(Q) = 6530 cfs

**DESIGN STRESSES**

$f_c = 1400$  psi  
 $f_s = 20,000$  psi  
 $f_{c1} = 5,000$  psi for precast prest. units  
 $f_s = 173,600$  psi for prestressing steel  
 $n = 10$   
 Loading: HS 20-44

**EXISTING STRUCTURE**

Sta. 3+98.9: 25'-8" x 144" x 14" Conc. Deck, 3 Splice on solid concrete piers on closed concrete abutments.

Bridge Contractor shall remove exist. structure in accordance with section 501 of the Standard Specifications. All materials are considered non-salvageable under this contract except portions of the existing concrete which may be broken up and used as rip-rap as noted on the plans or as directed by the Engineer, and shall be disposed of to the approval of the Engineer. The cost of placing rip-rap shall be considered incidental to removal of existing structures.

Telephone Cable along West side of Existing Bridge Deck to be removed by others. Property of Illinois Bell Telephone Company, Champaign, Ill. 352-9954.

**QUANTITIES**

Item	Unit	Quantity
Removal of Exist. Structure	Each	1
Class B Excavation for structure	cu yd	145
Aluminum Railing	lin ft	253
Name Plate	Each	1
Bridge Deck Sealant	sq yd	447
Leveling Binder (Machine Method)	Ton	20
Bitum. Conc. Surf. Crse. Class I	Ton	38

**SOIL BORINGS**

Note Change in the Scales

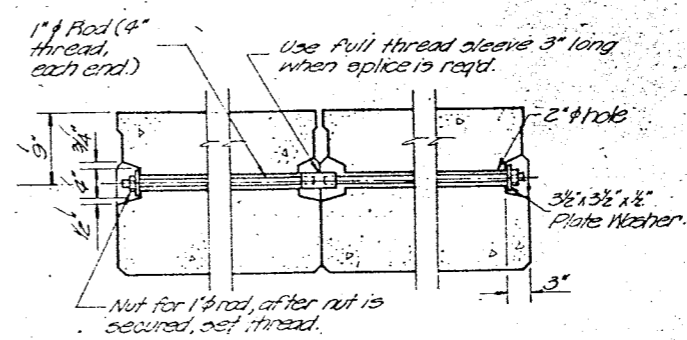
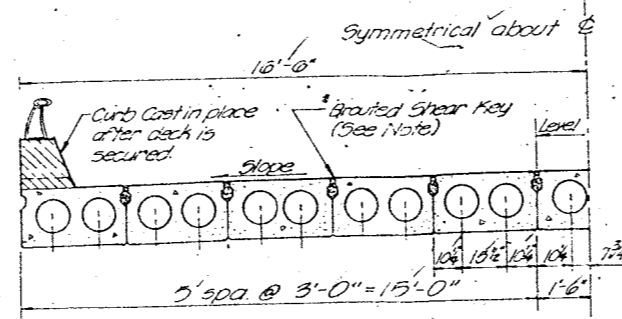
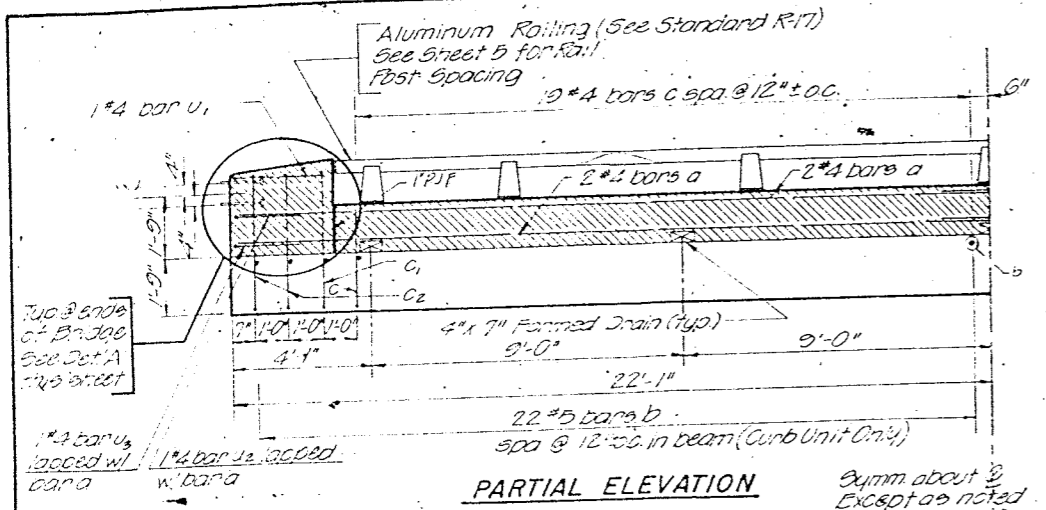
Boring No.	Location	Station	Limit of Boring Elev.
BORING NO. 2	6' Rt. Sta. 3+18		Elev. 636.3
BORING NO. 3	13' Rt. Sta. 3+62		Elev. 644.8
BORING NO. 4	13' Rt. Sta. 3+89		Elev. 644.8
BORING NO. 1	7' Rt. Sta. 4+83		Elev. 636.8

**Notes:**

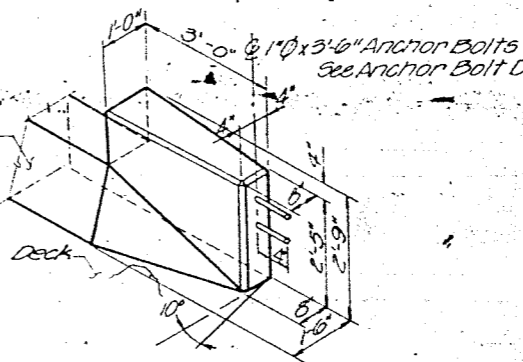
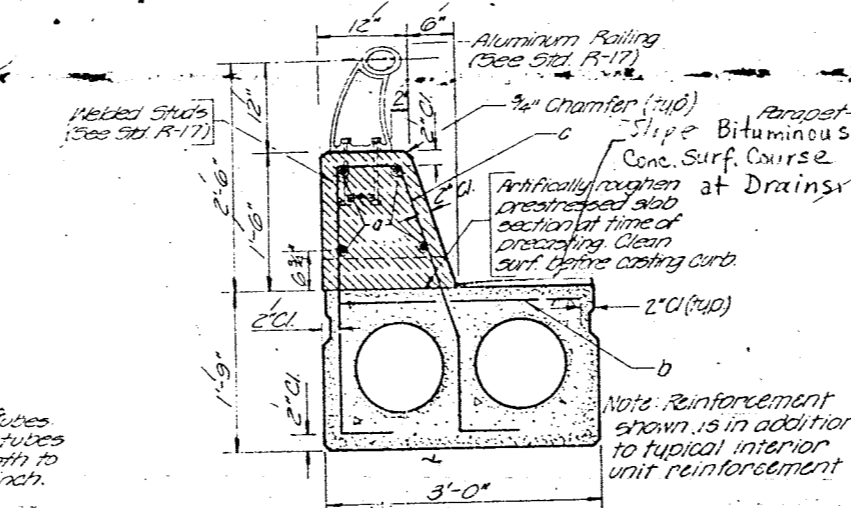
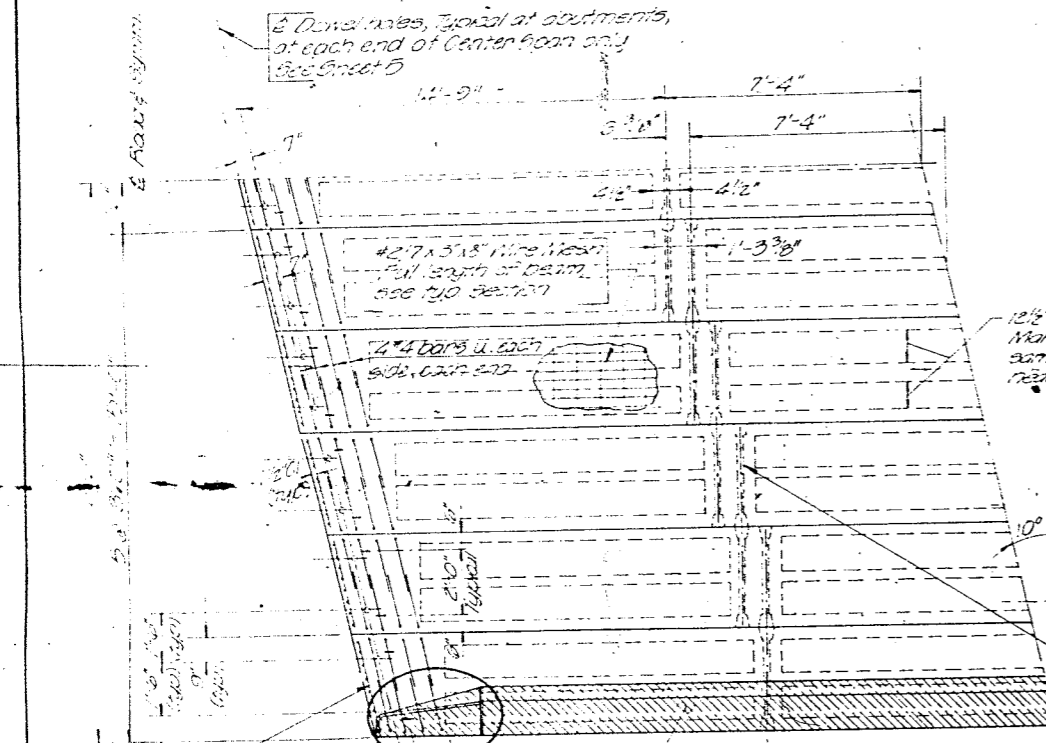
- Boring Data shown is that available and is shown for information only and implies no warranty as to subsoil conditions. See Special Provisions.
- For Estimated Pile Tip Elevations see Elevation, this sheet.

**Legend:**

- N - Standard Penetration Test - Blows per ft. to drive a 2" O.D. Split Spoon Sampler 12" with a 140# hammer falling 30".
- Qu - Unconfined Compressive Strength - Tons/sq. ft.
- W - Water Content - % oven dry weight

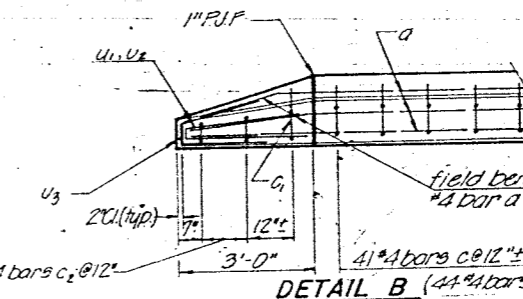
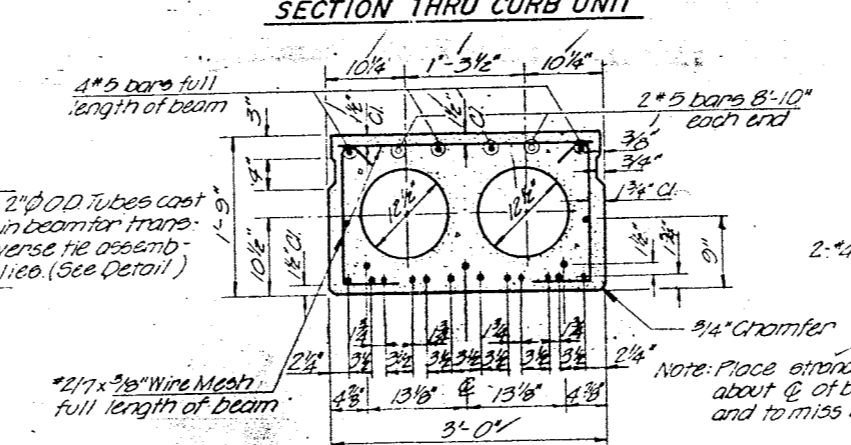
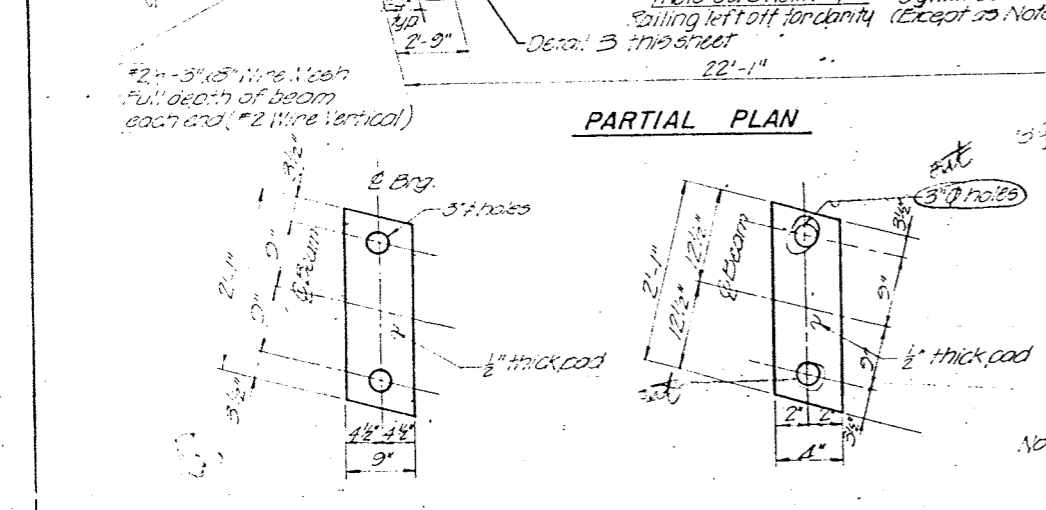


- NOTES**
- Prestressing steel shall be non-galvanized high strength, stress relieved 7 wire strand. The nominal diameter shall be  $7/16$ " and the nominal cross sec. area shall be 0.109 sq. in.
  - Pockets that receive the transverse tie bars on the outside beams shall be filled with grout after transverse tie assembly is in place.
  - After beams are in place the contractor shall drill holes into bridge seat & fitted bearings and grout dowels into beam and cap.
  - Longitudinal Shear Keys shall be dry packed with 1:1 sand & P.C. mortar.
  - Cost of reinforcement and accessories placed in beams, of bearing parts, of furnishing & assembling transverse ties, furnishing dowels, drilling, setting dowel holes, and of grouting longitudinal shear keys is included in the Contract Unit Price for "Prestressed Concrete Bridge Deck".
  - The 1#4 rods in the transverse tie assembly shall be tightened to a snug fit & the threads set.



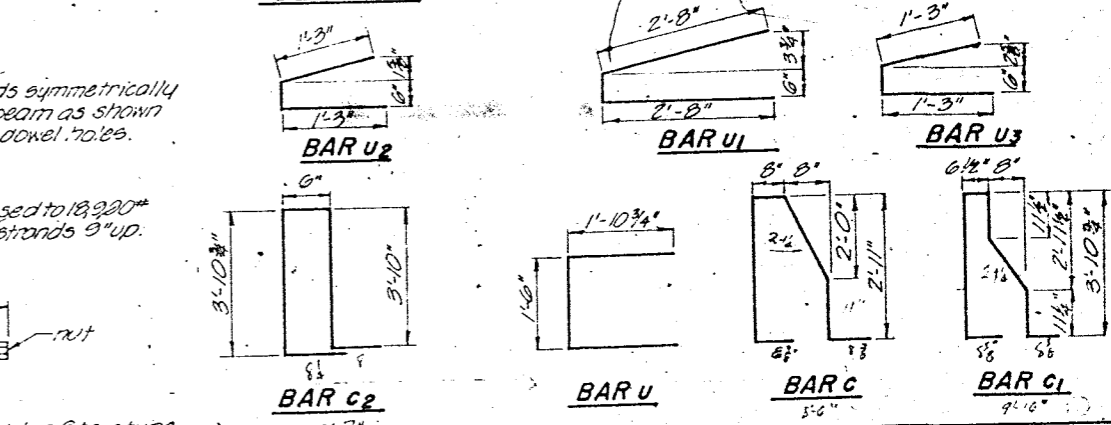
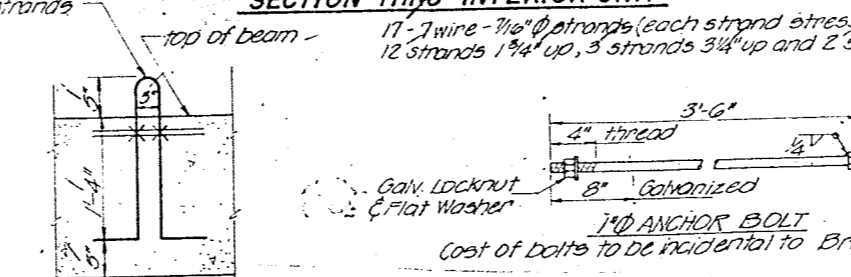
**BILL OF REINFORCEMENT**

Bar	Number	Size	Length	Grade
a	48	#4	22'-6"	
b	204	#5	2'-8"	
c	252	#4	8'-0"	
U <sub>1</sub>	4	#4	9'-10"	
U <sub>2</sub>	4	#4	3'-7"	
U <sub>3</sub>	4	#4	3'-0"	
U <sub>4</sub>	4	#4	3'-0"	



**SUPERSTRUCTURE QUANTITIES**

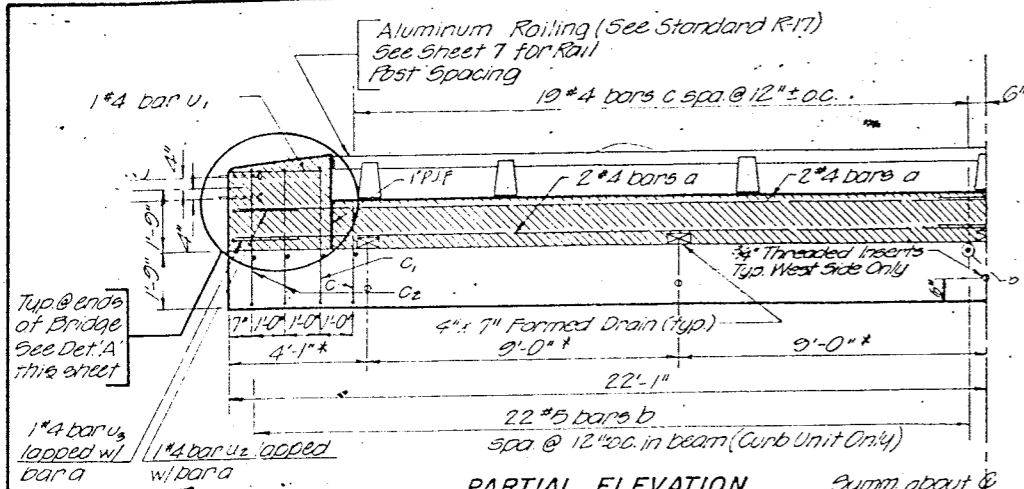
Item	Unit	Quantity
Class X' Conc. (Curbs)	Cu. Yds	18.61
Prec. Prest. Conc. Deck Beams	Sq. Ft.	4378
Reinforcement Bars (Curbs)	Lbs	2,211
Deck Bridge Deck		



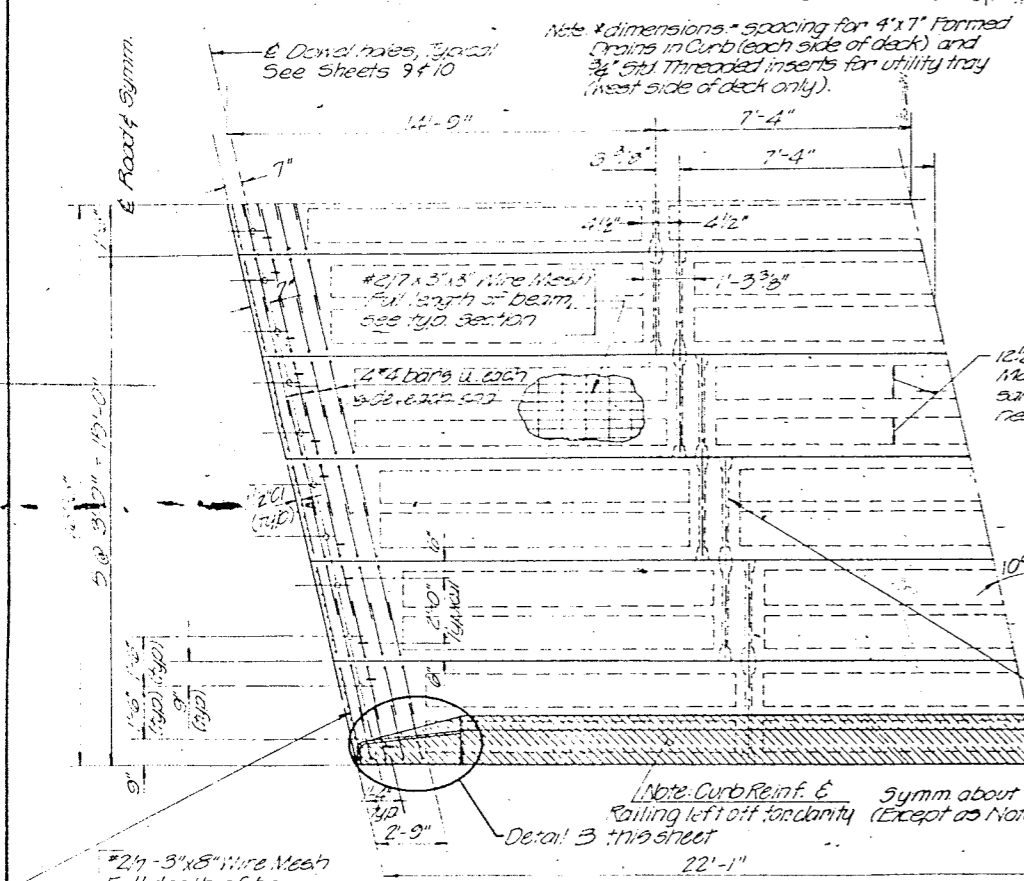
**SUPERSTRUCTURE**

CHAMPAIGN COUNTY	SHEET NO. 24
SECTION 241	STATION 3+80.00

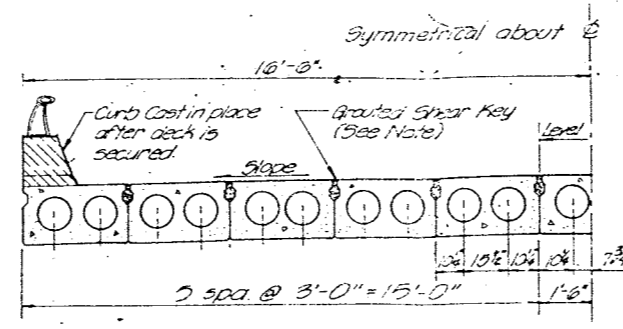
DATE: 11-00  
DRAWN: JLM  
CHECKED: JEM  
DAILY & ASSOCIATES ENGINEERS, INC.  
CHAMPAIGN, ILLINOIS



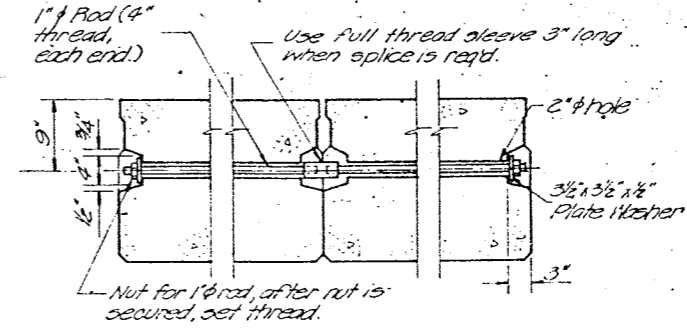
**PARTIAL ELEVATION** Symm about E Except as noted



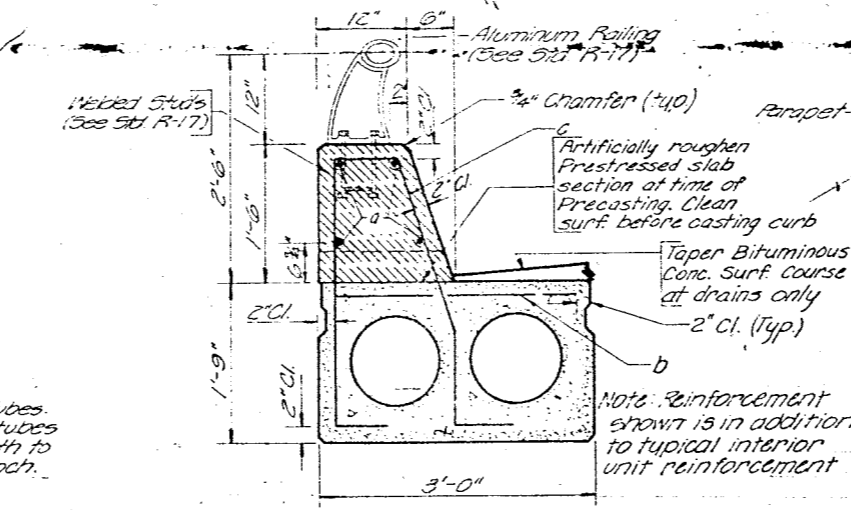
**PARTIAL PLAN**



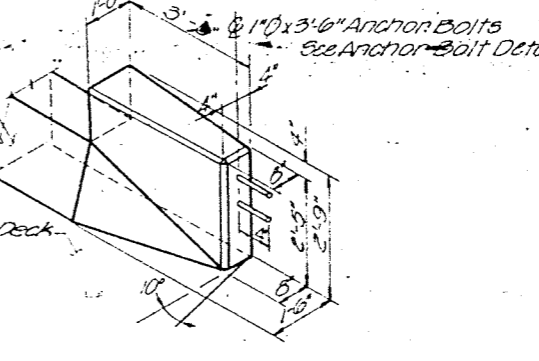
**SECTION THROUGH DECK**



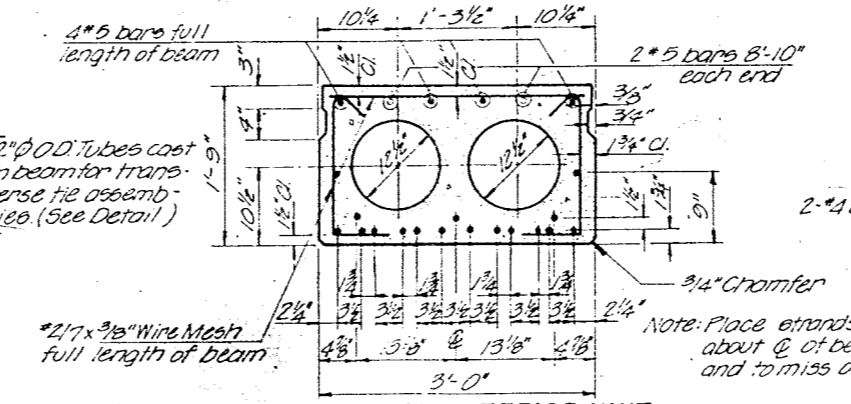
**TRANSVERSE TIE ASSEMBLY**



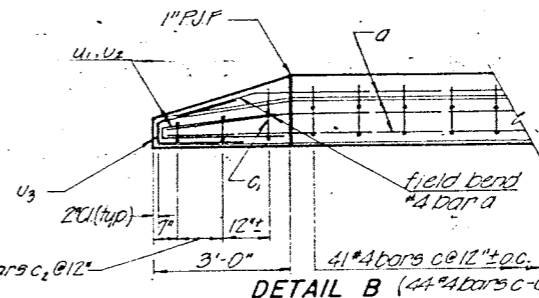
**SECTION THRU CURB UNIT**



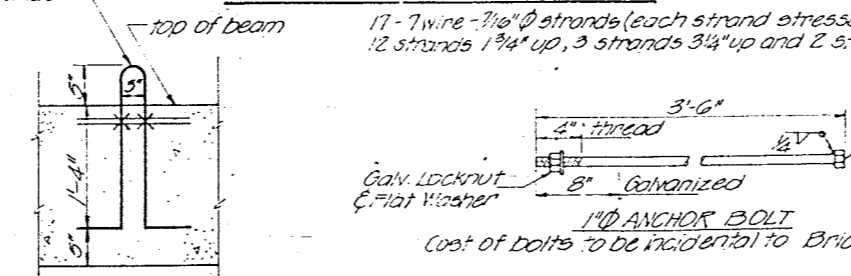
**DETAIL A** Note: Reinf. and Railing left off for clarity (Typical at ends of bridge only)



**SECTION THRU INTERIOR UNIT**



**DETAIL B** (4#4 bars c - Center Span)



**GUARDRAIL ANCHOR BOLT DETAIL**

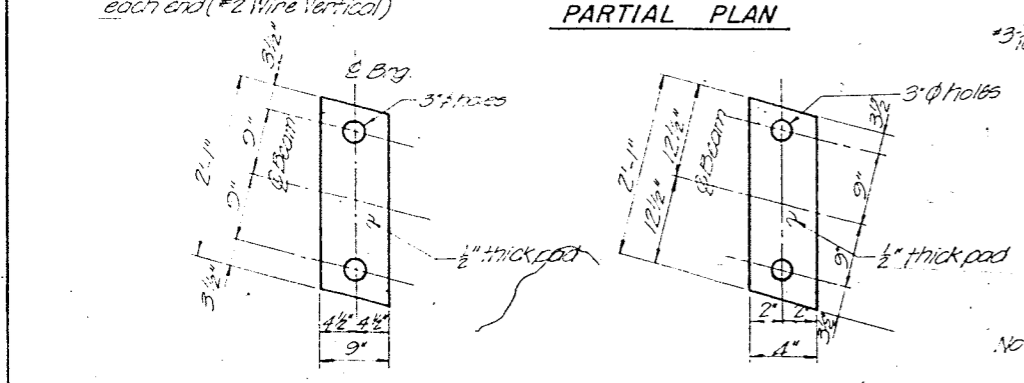
- NOTES**
1. Prestressing steel shall be non-galvanized high strength, stress relieved 7 wire strand. The nominal diameter shall be 7/16" and the nominal cross sec. area shall be 0.109 sq. in.
  2. Pockets that receive the transverse tie bars on the outside beams shall be filled with grout after transverse tie assembly is in place.
  3. After beams are in place the contractor shall drill holes into bridge seat & fixed bearings and grout dowels into beam and cap. Dowels of expansion bearings shall not be grouted. See Section A-A, Sheet 10.
  4. Longitudinal Shear Keys shall be dry packed with 1:1 sand & P.C. mortar.
  5. Cost of reinforcement and accessories (except beams, of drainage pipes, of furnishing & assembling transverse ties, of furnishing dowels, drilling & grouting dowel holes, and of grouting longitudinal shear keys) is included in the Contract Unit Price for "Precast Prestressed Concrete Bridge Deck".
  6. 3/4" Threaded Inserts shall be incidental to "Precast Prestressed Concrete Bridge Deck Beams".
  7. The 1# rods in the transverse tie assembly shall be tightened to a snug fit & the threads set.

**BILL OF REINFORCEMENT**

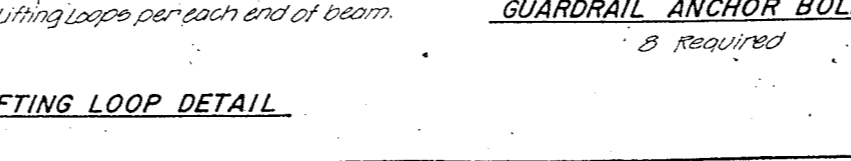
Bar	Number	Size	Length	Shape
a	48	#4	22'-6"	
b	204	#5	2'-8"	
c	252	#4	8'-0"	
c1	4	#4	9'-10"	
c2	8	#4	9'-7"	
U1	4	#4	5'-10"	
U2	4	#4	3'-0"	
U3	4	#4	3'-0"	

**SUPERSTRUCTURE QUANTITIES**

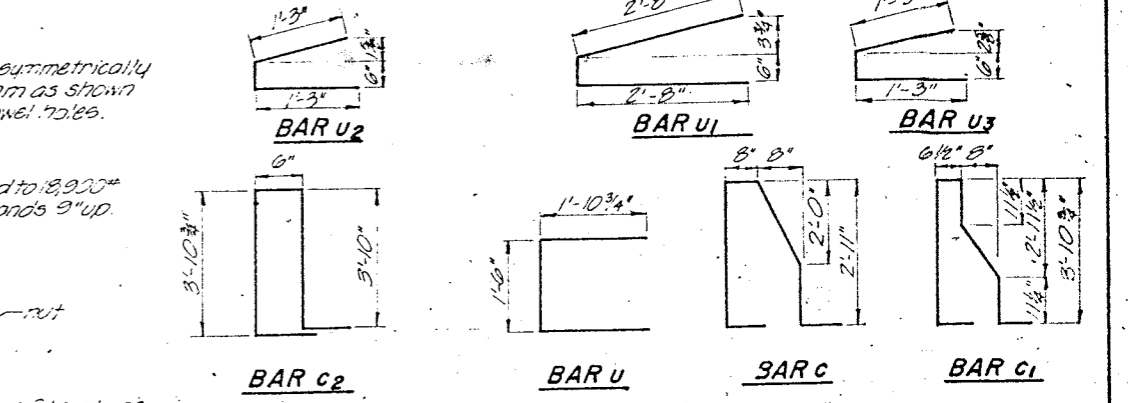
Item	Unit	Quantity
Class X Conc. (Curbs)	Cu Yds	18.6
Prec. Precast Conc. Deck Beams	Sq. Ft.	4373
Reinforcement Bars (Curbs)	Lbs	2,911



**FABRIC BEARING PAD** (for fixed bearing)  
**ELASTOMERIC BEARING PAD** (for expansion bearings, 22 req'd) See Sp. Prov.



**LIFTING LOOP DETAIL**



**SUPERSTRUCTURE**

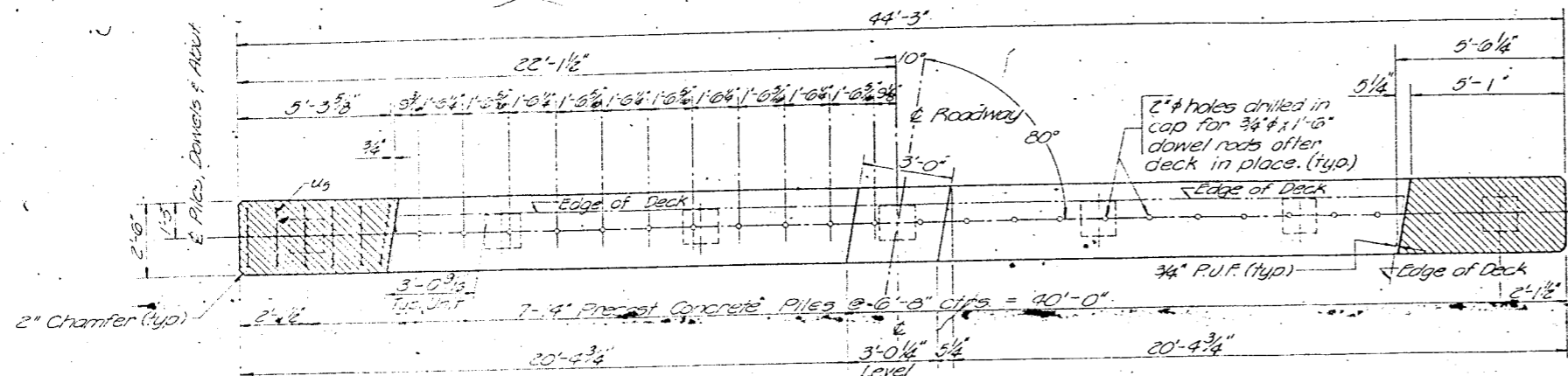
DATE 11-00  
DESIGNED JLH  
DRAWN RMY/PND  
CHECKED DEM

**D/A**

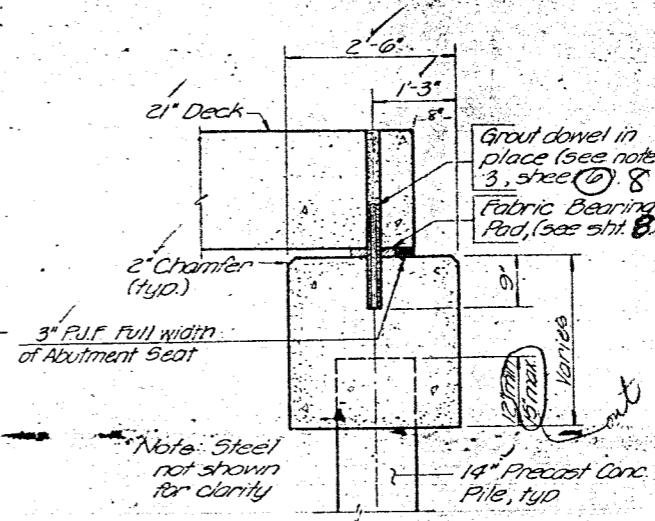
DAILY & ASSOCIATES ENGINEERS, INC.  
CHAMPAIGN, ILLINOIS

CHAMPAIGN COUNTY SECTION 240B NET STATION 3+80.00

SHEET NO. 8  
OF 15  
JOB NO. 2110



**ABUTMENT CAP PLAN**  
Scale: 3/8" = 1'-0"

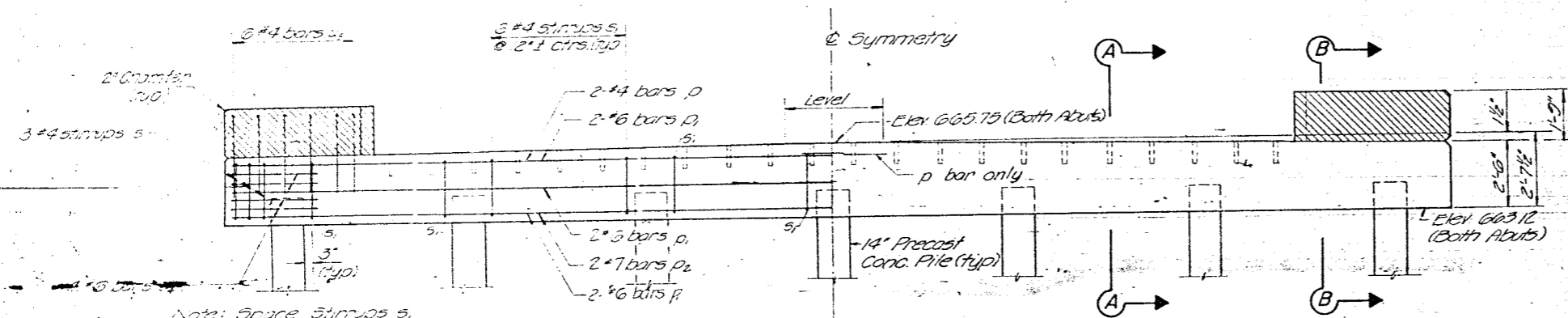
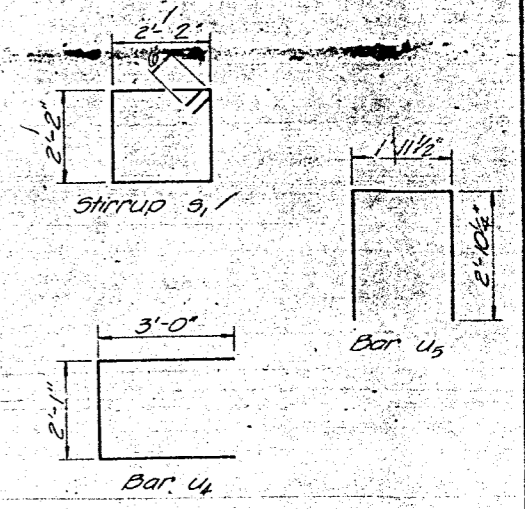


**SECTION A-A**  
Scale: 3/4" = 1'-0"

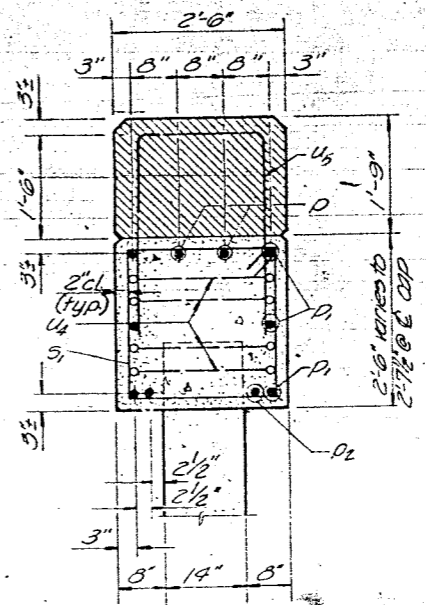
**BILL OF REINFORCEMENT (2 ABUTS)**

Mark	Type	Size	No. Reqd	Length
D	—	#4	0	22'-6"
P <sub>1</sub>	—	#6	12	43'-9"
P <sub>2</sub>	—	#7	4	43'-9"
S <sub>1</sub>	—	#4	72	9'-8"
U <sub>4</sub>	—	#6	16	8'-1"
U <sub>5</sub>	—	#4	24	7'-8"

**BAR BENDS**



**ABUTMENT CAP ELEVATION**  
Scale: 3/8" = 1'-0"



**SECTION B-B**  
Scale: 3/4" = 1'-0"

**QUANTITIES (2 ABUTS)**

Item	Unit	Quantity
Class X Conc.	Cu Yd	23.8
Reinforcement Bars	Pounds	2,150
For Prec Conc Pile 14"	Lin Ft	308
Driv Prec Conc Pile	Lin Ft	308

**PILE DATA**

Type	No. Abut. (14" Conc.)	No. Abut. (14" Conc.)
No. Required	7	7
Min. Capacity	34 tons	34 tons
Length*	20'-0"	24'-0"

\*The length designated is estimated to be in excess of the actual length required. The type of soil and uniformity indicate a test pile is not warranted.

**ABUTMENTS**

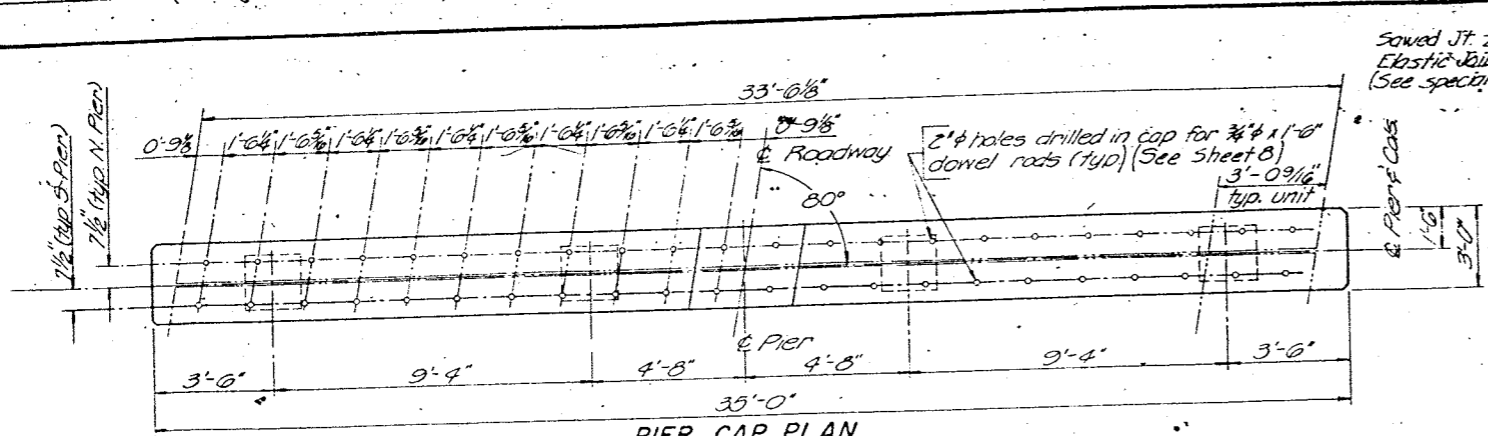
CHAMPAIGN COUNTY  
SECTION 240 B MFT  
STATION 3+80.00

SHEET NO. 9  
OF 15  
JOB NO. 9511

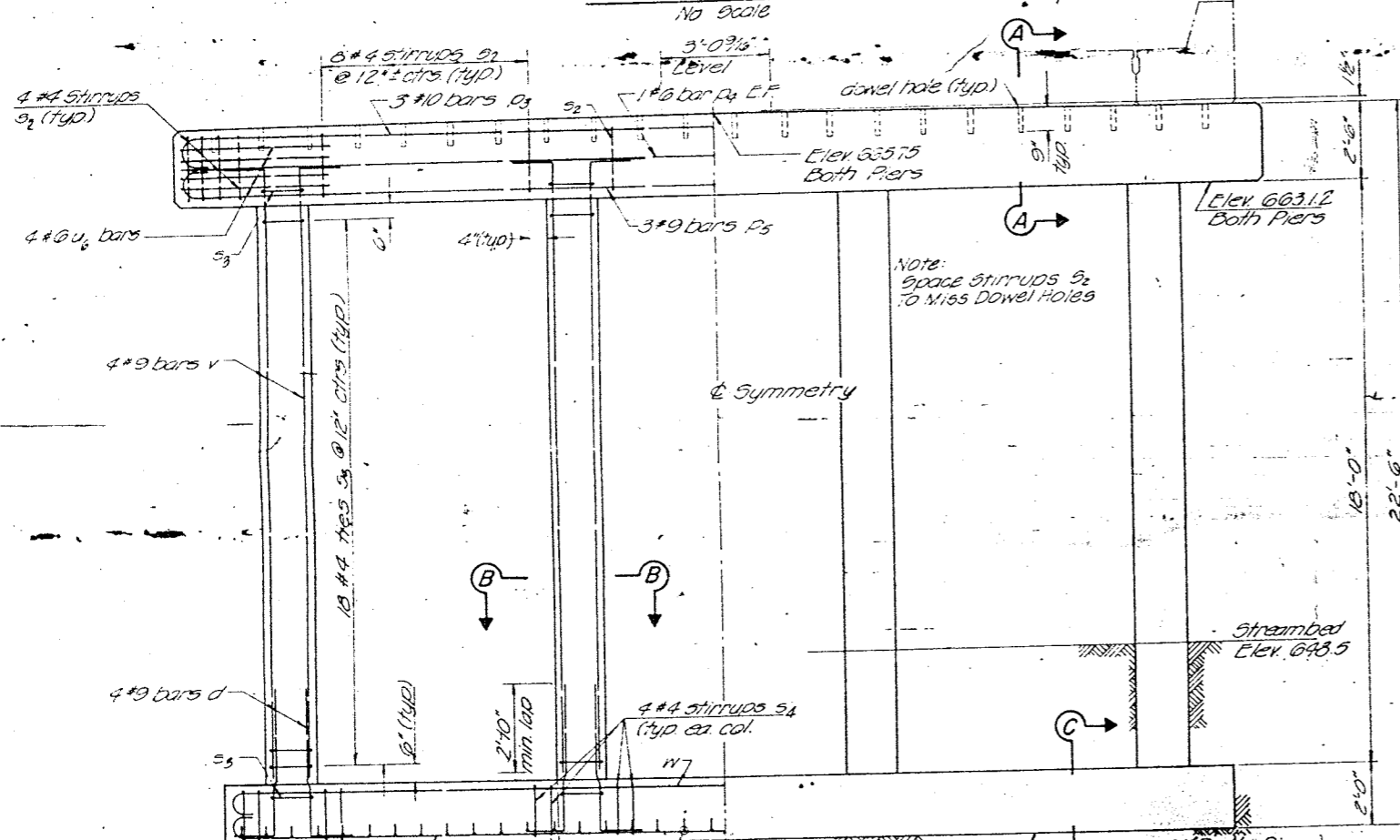
DATE 10-5-69  
DESIGNED U.L.H.  
DRAWN P.H. STNY  
CHECKED DEM.

**D/A**

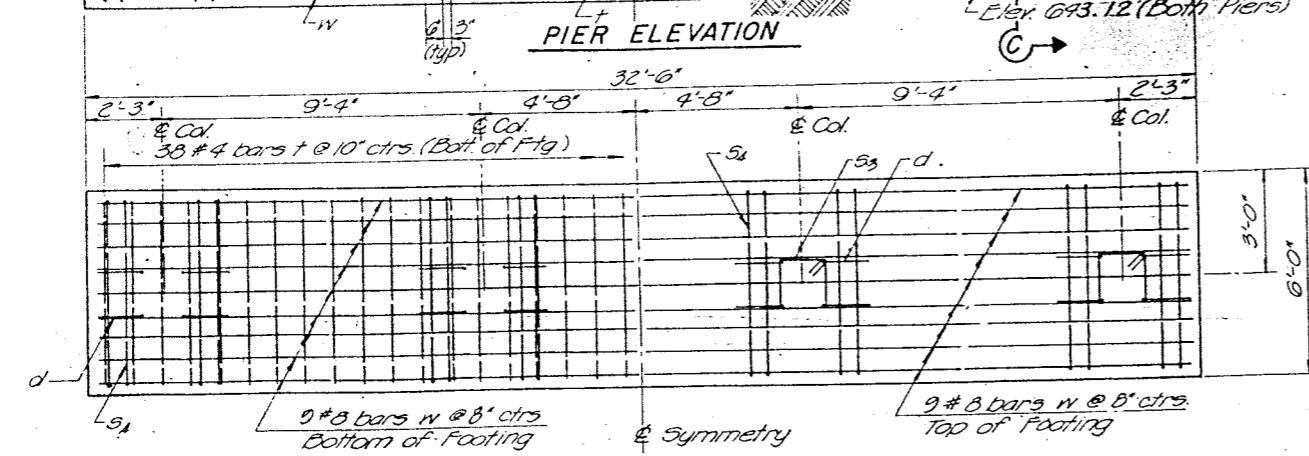
DAILY & ASSOCIATES  
ENGINEERS, INC.  
CHAMPAIGN, ILLINOIS



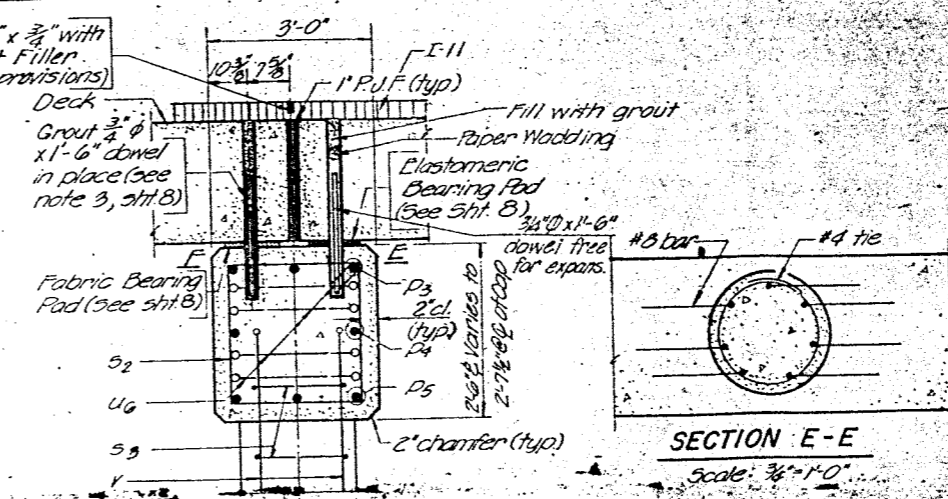
**PIER CAP PLAN**  
No Scale



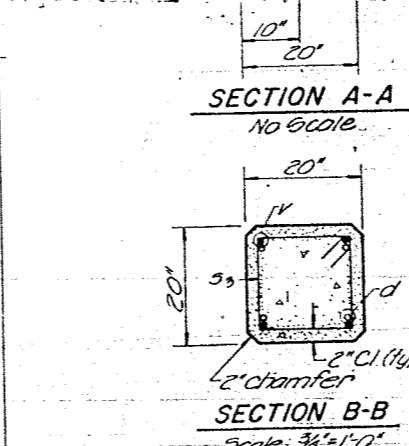
**PIER ELEVATION**



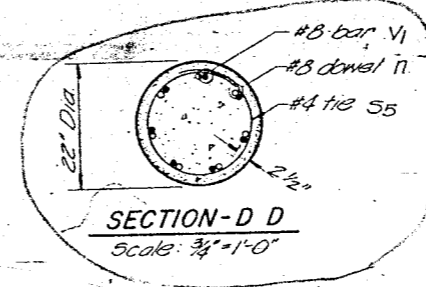
**PIER FOOTING PLAN**  
Scale: 3/8" = 1'-0"



**SECTION E-E**  
Scale: 3/8" = 1'-0"

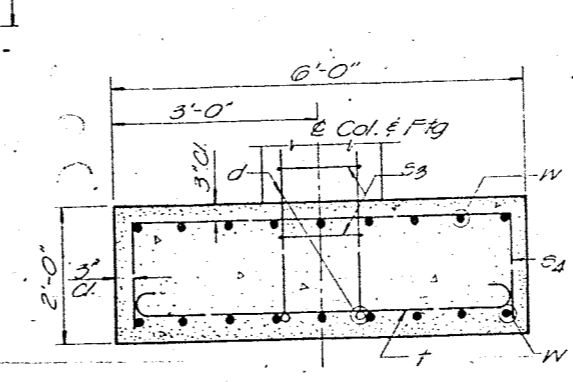


**SECTION A-A**  
No Scale

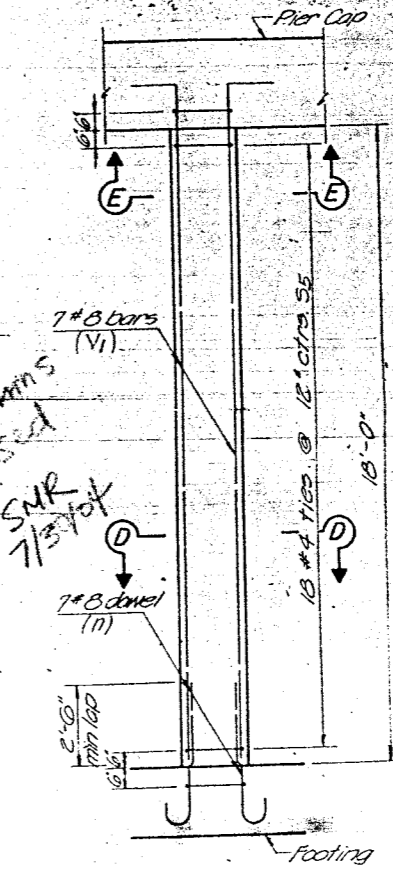


**SECTION B-B**  
Scale: 3/8" = 1'-0"

Note: Max. Soil Pressure under footing = 2.8 Kips/Sq. Ft.



**SECTION C-C**  
Scale: 3/8" = 1'-0"



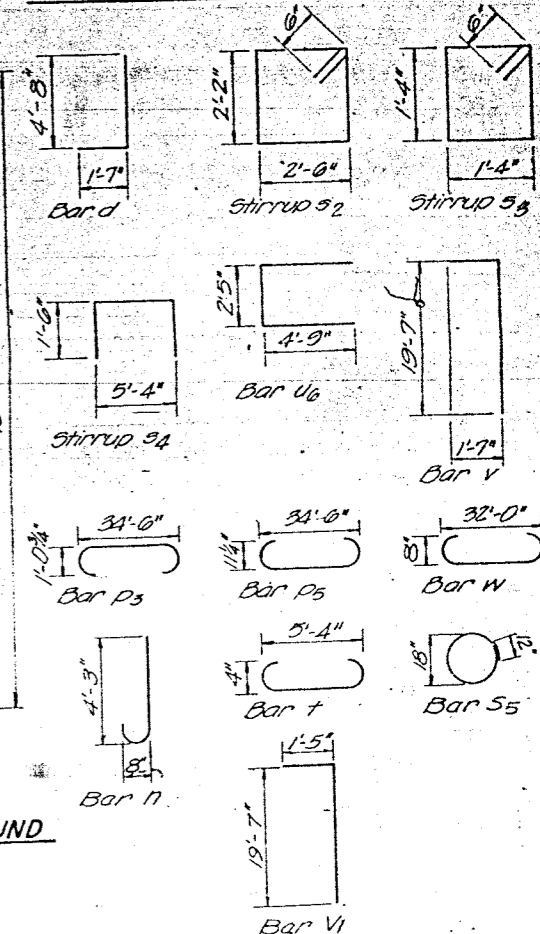
**ALTERNATE COLUMN, ROUND**  
Scale: 3/8" = 1'-0"

**BILL OF REINFORCEMENT (2 PIERS)**

Mark	Type	Size	No. Reqd.	Length
W	U	#8	36	33'-10"
P3	U	#10	6	37'-4"
P4	U	#6	4	54'-0"
P5	U	#9	6	37'-0"
S2	S	#4	64	10'-4"
S4	S	#4	32	8'-4"
UG	U	#6	16	11'-11"
T	U	#4	10	6'-4"
d	U	#9	32	56
v	U	#9	32	56
S3	S	#4	160	180

△ Deduct if Alternate Round Column is used.  
△ Deduct if Square Column is used.

**BAR BENDS**  
Note: Use A.C.I. Standard Hooks for all 180° Bends



**QUANTITIES (2 PIERS)**

Item	Unit	Quantity
Class X Concrete	Cu Yd.	63.6
Reinforcement Bars	Pound	19,011

**QUANTITIES ALT. USING ROUND COL.**

Class X Concrete	Cu Yd.	62.9
Reinforcement Bars	Pound	10,968

DATE Oct. 1969  
DESIGNED J.L.H.  
DRAWN R.M.Y.F.W.S.  
CHECKED DEM

**D/A**

**DAILY & ASSOCIATES ENGINEERS, INC.**  
CHAMPAIGN, ILLINOIS

CHAMPAIGN COUNTY  
SECTION #240 B MFT  
STATION 3+80.00

PIERS

SHEET NO. 10  
OF 15

