

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 782 (KEYESPORT RD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	1

FEDERAL AID PROJECT
PROJECT NO. 97272

BRIDGE REPLACEMENT & REHABILITATION PROGRAM DETAIL PLANS FOR

PROPOSED BRIDGE

**F.A.S. 782 (KEYESPORT ROAD) OVER FLAT BRANCH
SECTION 05-00084-00-BR & SECTION 05-00079-00-BR**

CLINTON & BOND COUNTY

PROJECT: BRS-782(118)

JOB NO: C-98-339-06

INDEX OF SHEETS

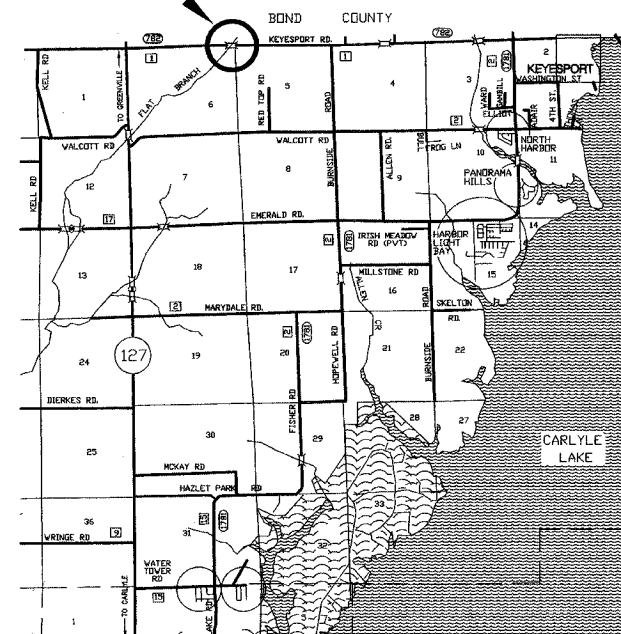
1. COVER SHEET
2. SUMMARY OF QUANTITIES AND TYPICAL CROSS SECTIONS
3. PLAN AND PROFILE OF EXISTING AND PROPOSED ROADWAY
4. DETOUR MAP
5. GENERAL PLAN AND ELEVATION
6. ABUTMENT DETAILS
7. PIER DETAILS
8. P.P.C. DECK BEAM SUPERSTRUCTURE
9. P.P.C. DECK BEAM DETAILS
10. STANDARD CR-TSM
11. EXISTING PLANS: GENERAL PLAN AND ELEVATION
12. EXISTING PLANS: DECK BEAMS
13. EXISTING PLANS: SUBSTRUCTURE

HIGHWAY STANDARDS: 280001-02
630001-06
630301-03
631032-02
635006-02
702001-06
BLR 21-6

PROJECT LOCATION

THE EXISTING STRUCTURE IS A THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE ON SPILL THRU ABUTMENTS AND PILE BENT PIERS. THE EXISTING STRUCTURE IS 114'-6" BACK TO BACK OF ABUTMENTS AND IS 27'-0" OUT TO OUT OF THE EXISTING DECK.

PROPOSED STRUCTURE NO. 014-3000 STATION 66+73 THREE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAMS, (17" DEPTH) ON SPILL THRU PILE BENT ABUTMENTS, MEASURING 114'-6" BK./BK. OF THE ABUTMENTS WITH A 28'-0" CLEAR ROADWAY WIDTH.



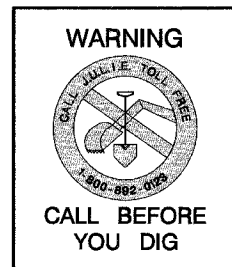
LOCATION MAP

NET LENGTH OF PROJECT = 580 FEET OR 0.110 MILES

GRAPHIC SCALE



1 INCH = 1 MILE



DESIGN CLASSIFICATION

DESIGN GUIDELINES 3R
MAJOR COLLECTOR
CURRENT A.D.T. = 1,300
DESIGN SPEED = 50' M.P.H.
DESIGN A.D.T. = 1,500 (2025)

UTILITIES:

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

ELECTRIC:

SOUTHWESTERN ELECTRIC COOP, INC.
GREENVILLE, IL
(618) 664-1025

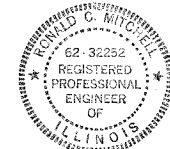
WATER

CARLYLE NORTH WATER CO.
CARLYLE, IL
(618) 594-2508

SEWER

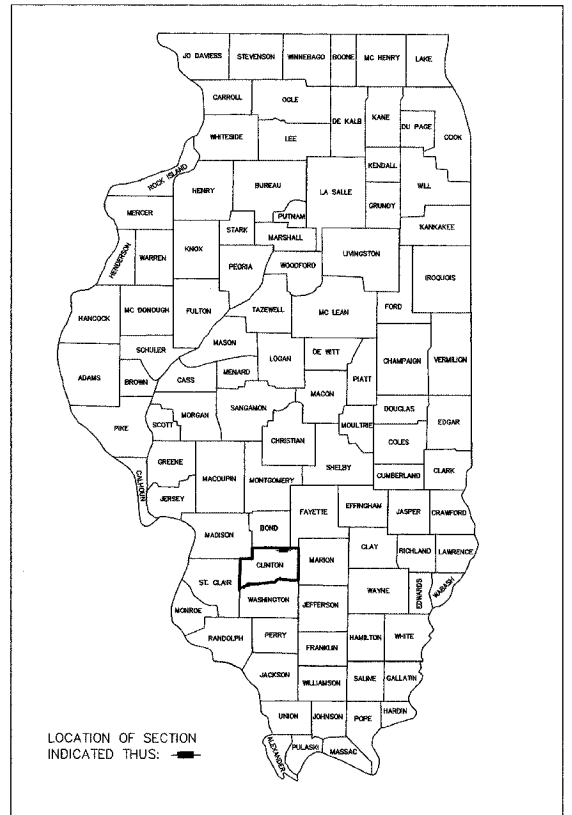
VILLAGE OF KEYESPORT
KEYESPORT, IL
(618) 749-5511

THESE PLANS WERE PREPARED BY ME OR BY A FULL TIME MEMBER OF MY STAFF WORKING UNDER MY PERSONAL SUPERVISION.



Ronald C. Mitchell DATE 1/31/06
COUNTY ENGINEER
ILLINOIS P.E. # 62-32252 EXPIRES 11/30/07

CONTRACT NO: 97272



LOCATION OF SECTION INDICATED THUS:

APPROVED: *Ronald C. Mitchell* 1-31-06 2006
CLINTON COUNTY ENGINEER

APPROVED: *JANUARY 31/06* 2006
BOND COUNTY ENGINEER

PASSED: *2-16* 2006
Dennis Obertus
DISTRICT ENGINEER OF LOCAL ROADS & STREETS

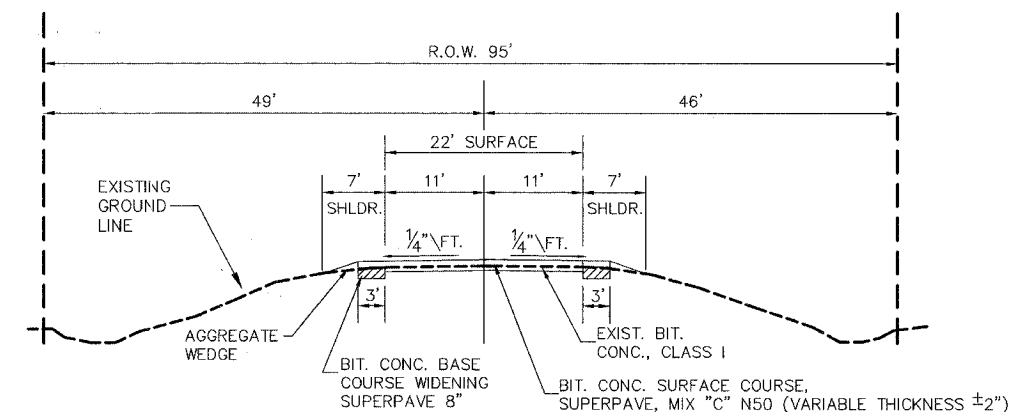
APPROVED: *2-16* 2006
Mary C. Lamie
MARY C. LAMIE, P.E.
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

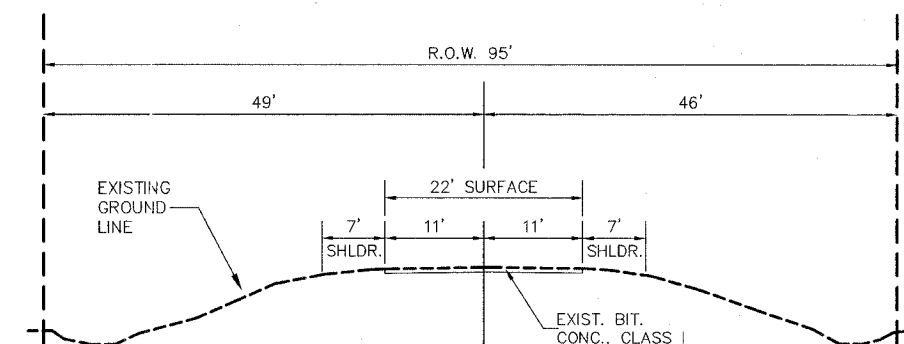
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S 782 (KEYESPORT RD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	7	2

CONTRACT NO. 97272

LOCATION OF WORK				ROAD STA.	BRIDGE STA.
				63+90 TO 69+70	66+73
SUMMARY OF QUANTITIES					
CODE NO.	ITEM	UNIT	QUANTITY	1000	X080-2A
20200500	EARTH EXCAVATION (WIDENING)	CU. YD.	71.0	71.0	
40600200	BITUMINOUS MATERIALS PRIME COAT	TON	0.5	0.5	
48101200	AGGREGATE SHOULDERS, TYPE B	TON	40.0	40.0	
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1.0		1.0
50300225	CONCRETE STRUCTURES	CU. YD.	13.0		13.0
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5")	SQ. FT.	54.0		54.0
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS, 17" DEPTH	SQ. FT.	3,157.0		3,157.0
50800205	REINFORCEMENT BARS (EPOXY COATED)	POUND	1,400.0	50.0	1,350.0
50901005	STEEL BRIDGE RAIL, TYPE SM	FOOT	226.0		226.0
51500100	NAME PLATE	EACH	1.0		1.0
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ. YD.	356.0		356.0
58300100	PORTLAND CEMENT MORTAR FARING COURSE	FOOT	678.0		678.0
63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	425.0	425.0	
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4.0	4.0	
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	4.0	4.0	
67100100	MOBILIZATION	L. SUM	1.0		
78201000	TERMINAL MARKERS - DIRECT APPLIED	EACH	4.0	4.0	
X3560120	BITUMINOUS CONCRETE BASE COURSE WIDENING, SUPERPAVE 8"	SQ. YD.	160.0	160.0	
X4066414	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50	TON	330.0	285.0	45.0
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	2.0		2.0
Z0013825	CONTROLLED LOW-STRENGTH MATERIAL	CU. YD.	16.0	16.0	



TYPICAL PROPOSED ROADWAY CROSS SECTION



TYPICAL EXISTING ROADWAY CROSS SECTION

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION (WIDENING)	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA. 63+90 TO STA. 69+70	71	0	+71
TOTAL	71	0	+71

MIXTURE REQUIREMENTS - SUPERPAVE PROJECT

ROUTE	C.H. 1 (F.A.S. 782)
SECTION	05-00084-00-BR 05-00079-00-BR
COUNTY	CLINTON
CONTRACT	97272

MIXTURE USE	SURFACE	WIDENING
AC/PG	PG 64-22	PG 64-22
RAP % (MAX)	0%	0%
DESIGN AIR VOIDS	4.0% @ Ndes=50	2.0% @ Ndes=50
MIX COMPOSITION (GRADATION MIXTURE)	IL 9.5/IL 12.5	IL 19.0
FRICTION AGG.	MIXTURE C	BASE COURSE

DESCRIPTION: C.H. 1 OVER FLAT BRANCH
3 MILES WEST OF
KEYESPORT

20 YR. ESAL'S: 0.4

GENERAL NOTES

- ALL ELEVATION REFER TO U.S.G.S. MEAN SEA LEVEL
- IF SECTION OR SUB-SECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION AND THEIR TRUE LOCATION IS NOT GUARANTEED TO BE AS SHOWN ON THE PLANS. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND CARRY ON HIS OPERATIONS ACCORDINGLY.
- THE STANDARD WITH THE REVISED NUMBER LISTED IN THE INDEX OF SHEETS, INCLUDED IN THE PLANS SHALL HOLD PRECEDENCE OVER THE STANDARD NUMBERS LISTED IN THE SPECIAL PROVISIONS OR PLANS OF THE CONTRACT.
- FINAL SEEDING OF DISTURBED AREAS WILL BE DONE BY OTHERS.
- ALL PAVEMENT MARKING SHALL BE DONE BY OTHERS.

EXTRA BARS FOR TEST SAMPLES

BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	SHAPE	WEIGHT (POUNDS)
h ₄ (E)	1	#4	5'-4"	---	10
p(E)	1	#6	28'-0"	---	40
TOTAL					50

* THESE BARS SHALL BE IDENTICAL TO AND DELIVERED WITH THE BARS OF THE SAME MARK LISTED IN THE BRIDGE SHEETS. ONE BAR OF EACH OF THESE MARKS WILL BE SELECTED BY THE ENGINEER TO BE USED AS A TEST SAMPLE.

**SUMMARY OF QUANTITIES
TYPICAL ROADWAY CROSS SECTIONS
F.A.S 782 (KEYESPORT ROAD)
OVER FLAT BRANCH
SECTION 05-00084-00-BR
SECTION 05-00079-00-BR
CLINTON & BOND COUNTY**

BENCHMARK: U.S.G.S. CHISEL SQUARE, TOP OF MNG ON NORTH END OF WEST ABUTMENT. STA. 66+17.08, 14.06' LT. ELEVATION 468.83

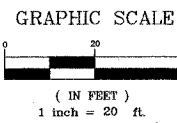
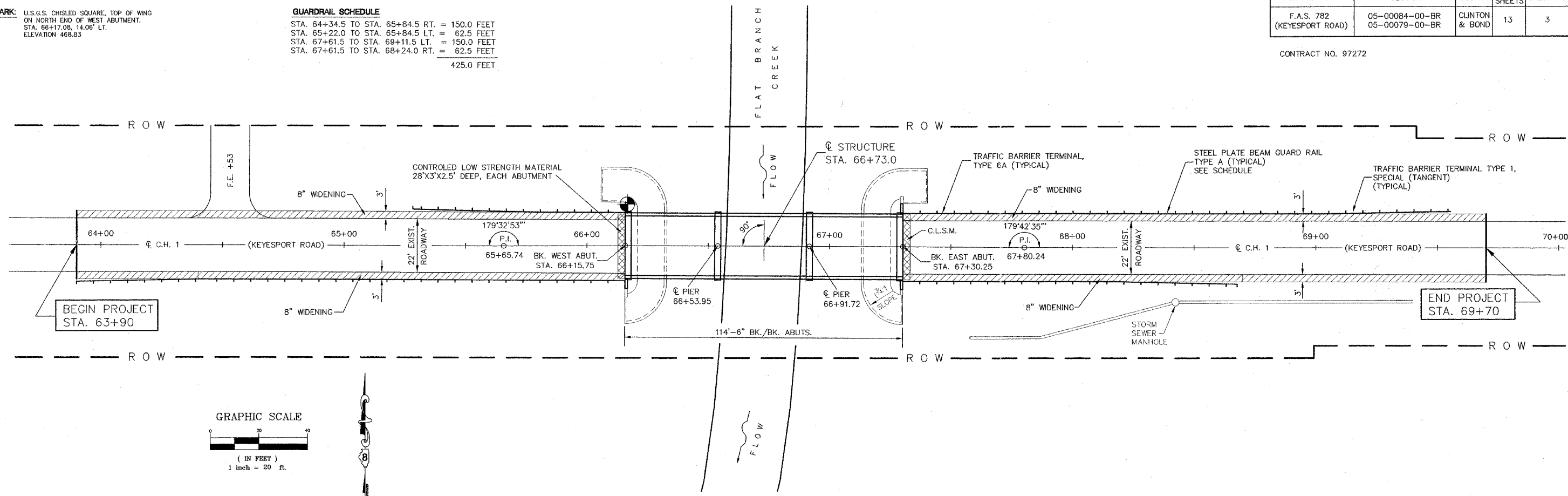
GUARDRAIL SCHEDULE

STA. 64+34.5 TO STA. 65+84.5 RT. = 150.0 FEET
 STA. 65+22.0 TO STA. 65+84.5 LT. = 62.5 FEET
 STA. 67+61.5 TO STA. 69+11.5 LT. = 150.0 FEET
 STA. 67+61.5 TO STA. 68+24.0 RT. = 62.5 FEET
 = 425.0 FEET

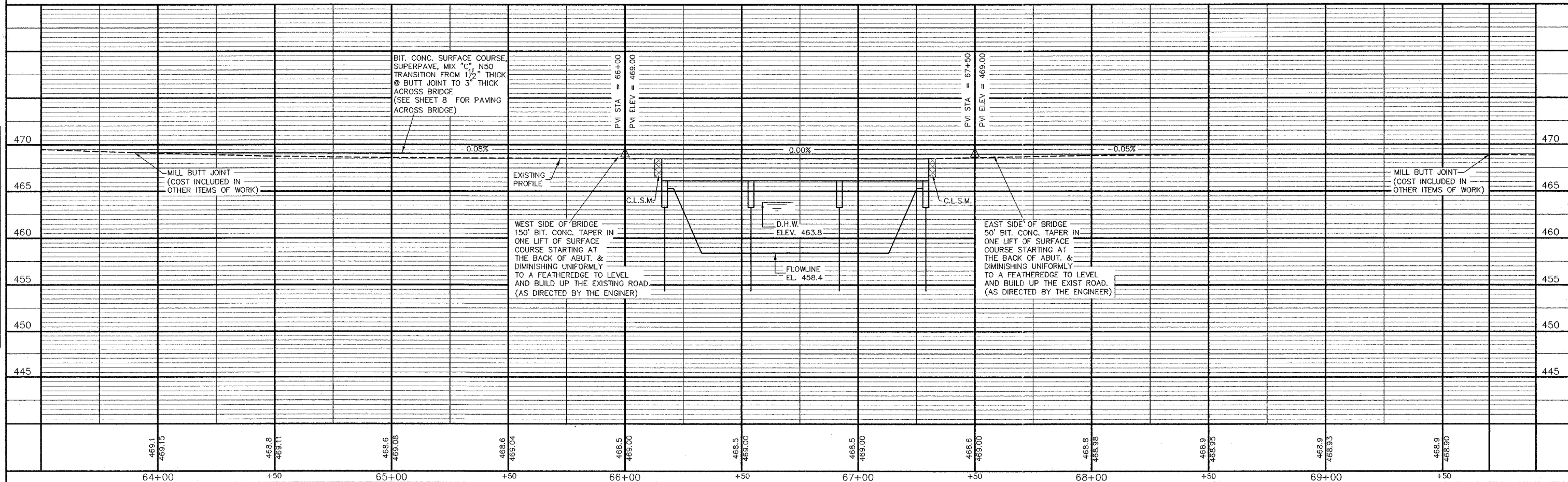
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 782 (KEYSPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	3

CONTRACT NO. 97272

PLAN	SURVEYED	DATE
	GRADES CHECKED	
	ALIGNMENT CHECKED	
	RT. OF WAY CHECKED	
	NOTE BOOK NO.	
	BY	

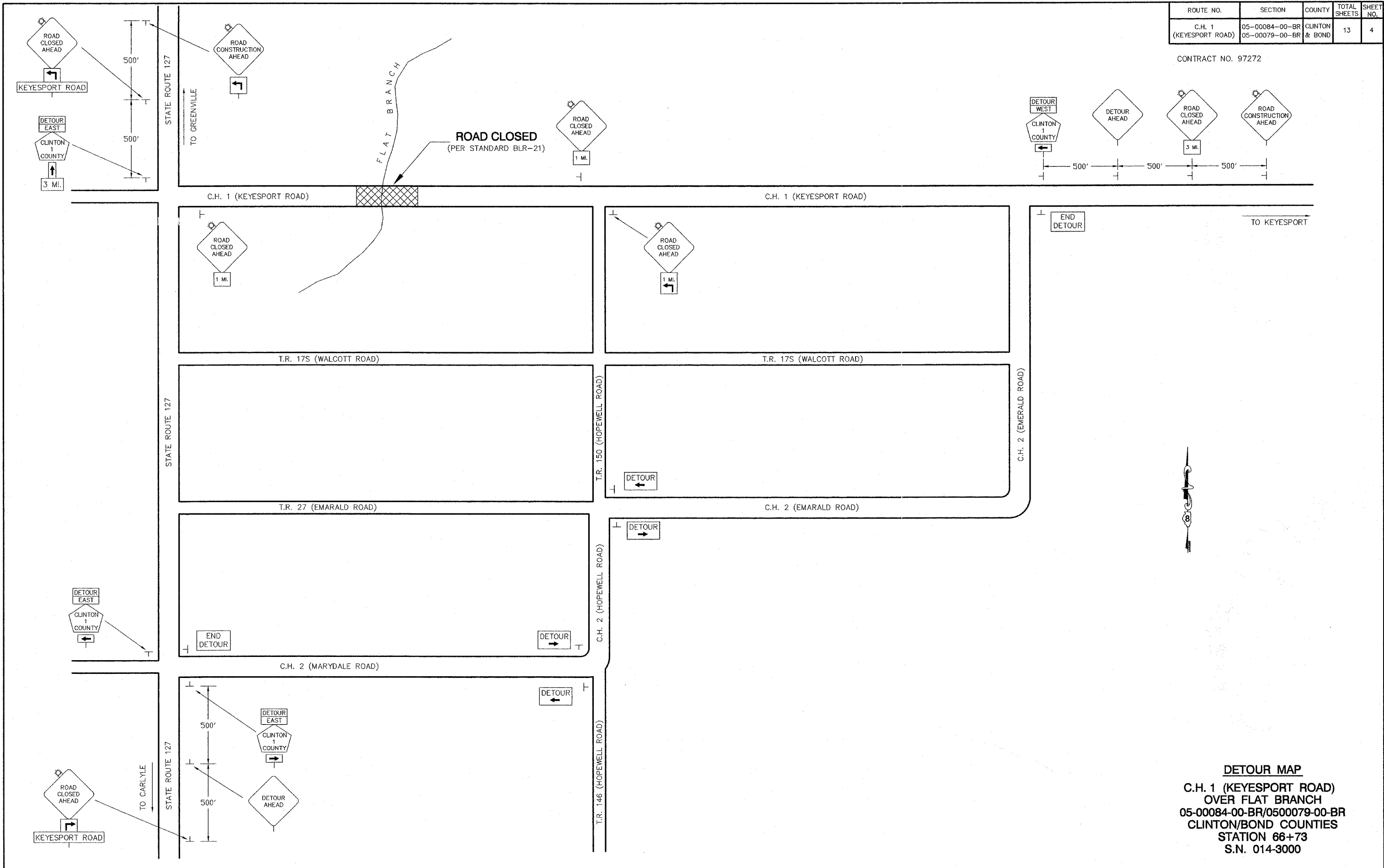


PROFILE	SURVEYED	DATE
	GRADES CHECKED	
	B.M.'S NOTED	
	STRUCTURE INDICATING CHECKED	
	NOTE BOOK NO.	
	BY	



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 1 (KEYESPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	4

CONTRACT NO. 97272



DETOUR MAP
C.H. 1 (KEYESPORT ROAD)
OVER FLAT BRANCH
05-00084-00-BR/0500079-00-BR
CLINTON/BOND COUNTIES
STATION 66+73
S.N. 014-3000

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S 782 (KEYESPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	5

CONTRACT NO. 97272

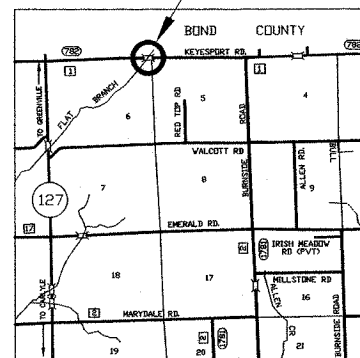
EXISTING STRUCTURE

THE EXISTING STRUCTURE IS A THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE ON CONCRETE SPILL THRU ABUTMENTS CAST ON 12" PRECAST PILES. THE EXISTING CONCRETE PIER CAPS ARE CAST ON 14" PRECAST CONCRETE PILES. THE EXISTING SUPERSTRUCTURE CONSISTS OF 21 INCH DEEP PRECAST PRESTRESSED CONCRETE DECK BEAMS WITH SPAN LENGTHS OF 37'-0 1/2", 37'-11" AND 37'-0 1/2". THE OUT TO OUT WIDTH OF THE DECK IS 27'-0" AND IT PROVIDES A 24'-6" CLEAR ROADWAY WIDTH BETWEEN CURBS. CONCRETE SLOPEWALLS ARE CONSTRUCTED AT BOTH ABUTMENTS. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING DECK AND BRIDGE RAIL IN ACCORDANCE WITH SECTION 501 OF THE STANDARD SPECIFICATIONS.

SALVAGE

THE EXISTING ABUTMENTS, ABUTMENT PILES, PIER CAPS, PIER PILES AND SLOPEWALLS SHALL BE SAVED AND PROTECTED TO BE USED IN THE CONFIGURATION OF THE NEW STRUCTURE. SEE SPECIAL PROVISIONS.

STRUCTURE LOCATION



LOCATION MAP

FLAT BRANCH
REBUILT 2006 BY
CLINTON/BOND COUNTY
SECTION 05-00084-00-BR
SECTION 05-00079-00-BR
F.A.S. RT. 782, STATION 66+73
STR. 014-3000, LOADING HS-20-44

NAME PLATE

LOCATE NAME PLATE AS SHOWN IN PLAN VIEW. (SEE STD. CN)

DESIGN STRESSES

PRECAST PRESTRESSED UNITS

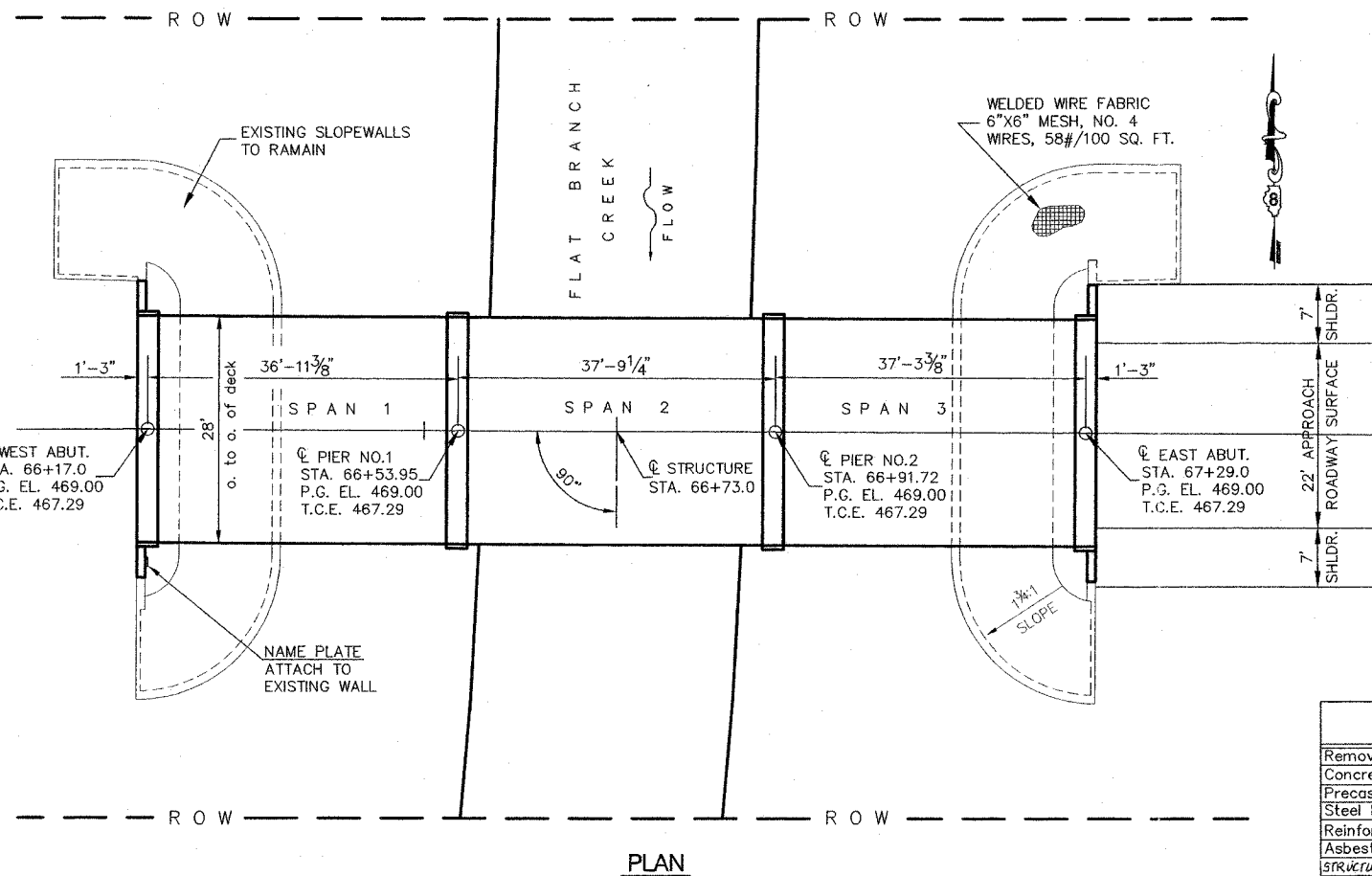
$f_c = 5,000$ p.s.i.
 $f_{ci} =$ SEE DECK BEAM DETAILS
 $f_s = 270,000$ p.s.i.
 $f_s = 189,000$ p.s.i.

CAST IN PLACE CONCRETE

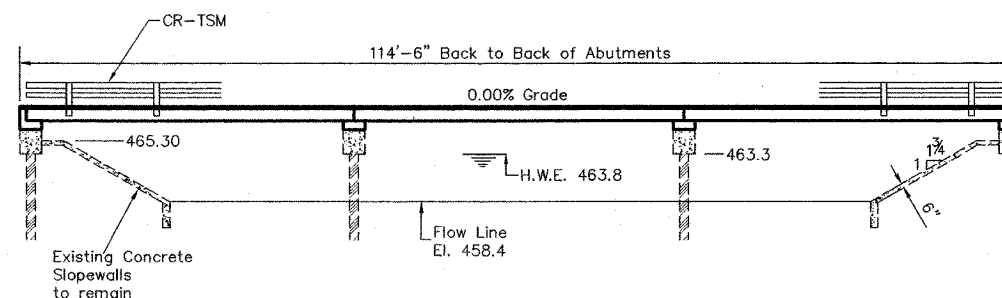
$f_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (REINF.)

LOADING HS 20-44 LOAD FACTOR DESIGN

ALLOW 25 P.S.F. FOR FUTURE WEARING SURFACE
A.A.S.H.T.O. SEISMIC HORIZONTAL ACCELERATION COEFFICIENT: 8.9% OF GRAVITY
DESIGN SPECIFICATION: 2002 A.A.S.H.T.O.
S.P.C. = A, SOIL PROFILE COEFF. S = 1.0



PLAN



ELEVATION

GENERAL NOTES

- See Special Provisions for boring logs.
- Width of pier and abutment caps shown were field measured at 28'-6" not 28'-0" as shown in the existing plans.
- Keyway surfaces shall be cleaned to remove form oil or other bond breaking materials prior to shipment of beams. Cleaning shall be done by sandblasting the keyway areas between the top of the beam and the bottom edge of the key.
- Class SI concrete shall be used throughout except in the deck beams.
- Span distances are taken from field measurements of the existing structure not from the existing plans.
- Existing plans used a different benchmark and should be adjusted upwards by 3.42' to match an existing U.S.G.S. benchmark on this site.
- The Contractor shall repair, at his/her own expense, any damage to the existing slopewall resulting from the removal of the existing superstructure or any other operation of the Contractor.

TOTAL BILL OF MATERIALS

ITEM	UNIT	SUPER	SUB.	Total
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		13.0	13.0
Precast Prestressed Conc. Deck Beams - 17" Depth	Sq. Ft.	3,157.0		3,157.0
Steel Bridge Rail, Type SM	Foot	226.0		226.0
Reinforcement Bars, Epoxy Coated	Pound		1,350.0	1,350.0
Asbestos Bearing Pad Removal	Each		2.0	2.0
STRUCTURAL REPAIR OF CONCRETE (Depth Equal to or Less Than 5")	Sq. Ft.		54.0	54.0
Name Plate	Each			1.0
Bit. Conc. Surf. Cse., Superpave, Mix "C", N50	Ton	45.0		45.0
Portland Cement Mortar Fairing Course	Foot	678.0		678.0
Waterproofing Membrane System	Sq. Yd.	356.0		356.0

INDEX OF BRIDGE SHEETS

- GENERAL PLAN AND ELEVATION
- ABUTMENT DETAILS
- PIER DETAILS
- P.P.C. DECK BEAM SUPERSTRUCTURE
- P.P.C. DECK BEAM DETAILS
- STANDARD CR-TSM
- EXISTING PLANS: GENERAL PLAN & ELEVATION
- EXISTING PLANS: DECK BEAMS
- EXISTING PLANS: SUBSTRUCTURE

GENERAL PLAN & ELEVATION

F.A.S. 782 (KEYESPORT ROAD)
OVER FLAT BRANCH
SECTION 05-00084-00-BR
SECTION 05-00079-00-BR
CLINTON & BOND COUNTY
S.N. 014-3000



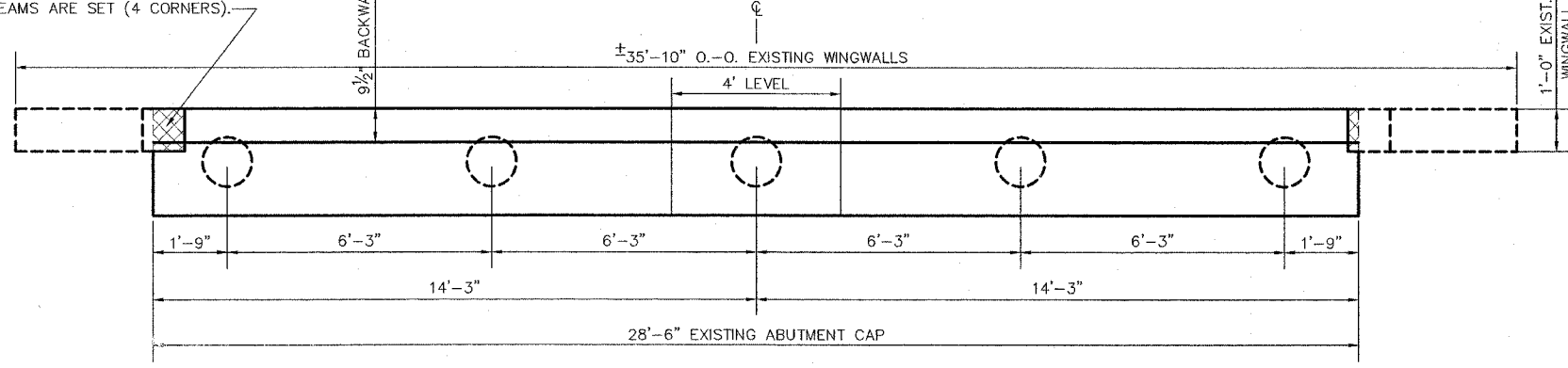
"I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH REQUIREMENTS OF THE CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY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

Expires 11-30-2006

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 782 (KEYESPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	6

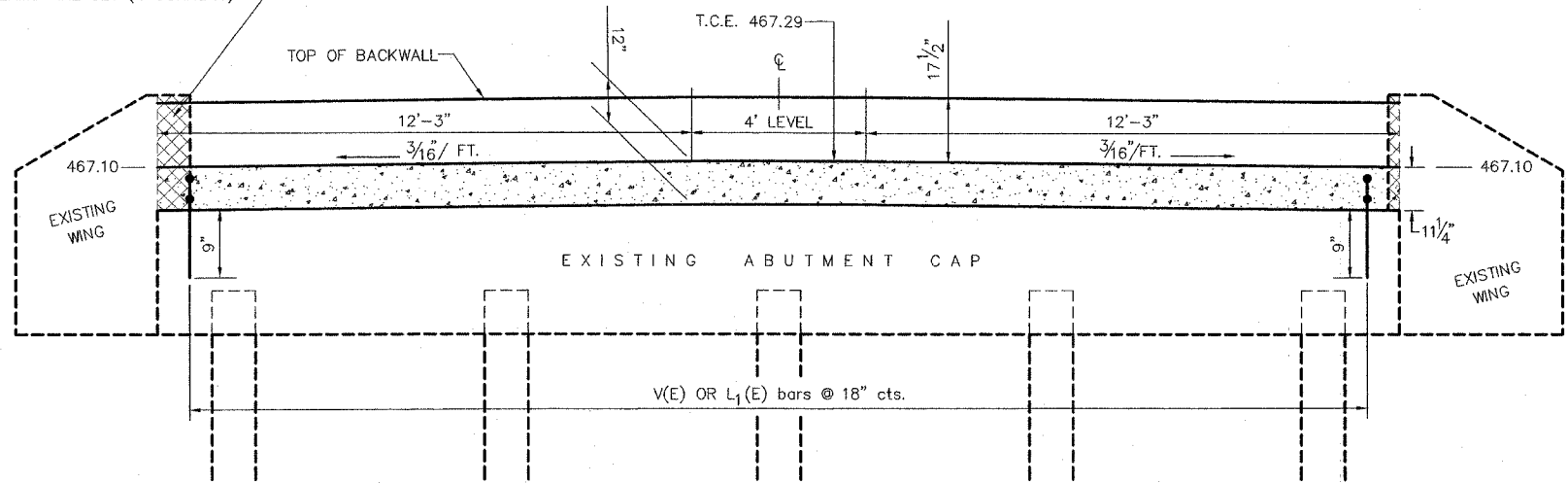
CONTRACT NO. 97272

SAW CUT EXISTING WING WALL FLUSH WITH THE END OF THE EXISTING ABUTMENT CAP AND REMOVE (3 CORNERS). FIELD POUR NEW WING WITH THE BACKWALL AFTER DECK BEAMS ARE SET (4 CORNERS).

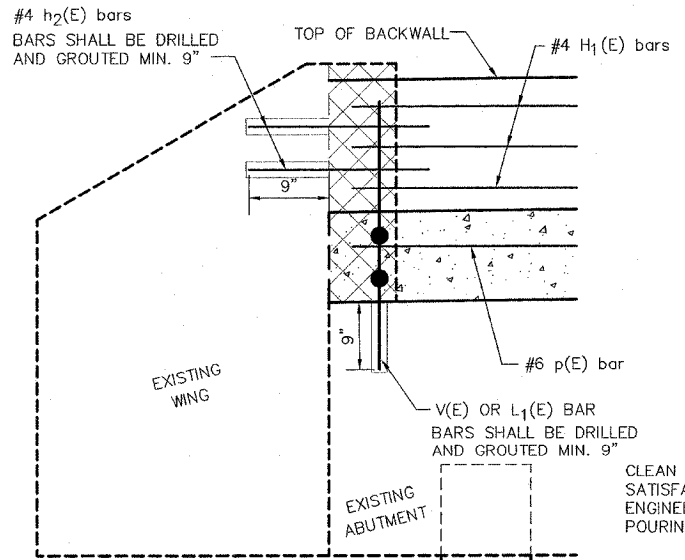


PLAN

SAW CUT EXISTING WING WALL FLUSH WITH THE END OF THE EXISTING ABUTMENT CAP AND REMOVE (3 CORNERS). FIELD POUR NEW WING WITH THE BACKWALL AFTER DECK BEAMS ARE SET (4 CORNERS).

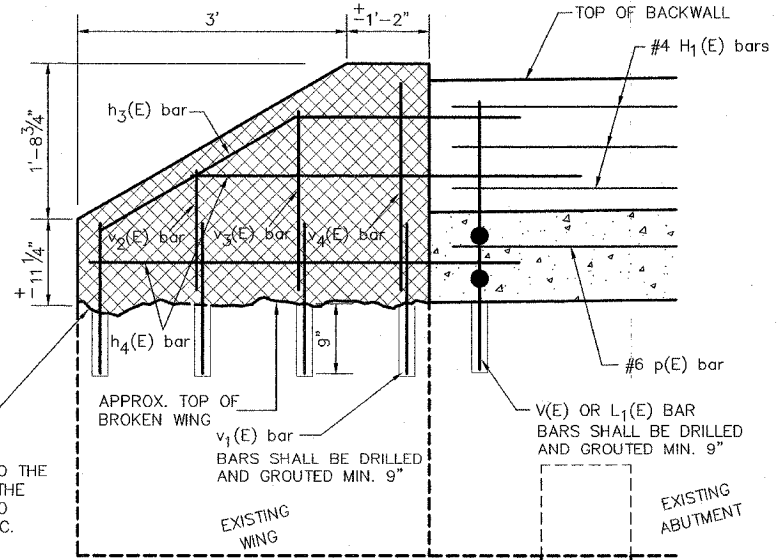


ELEVATION

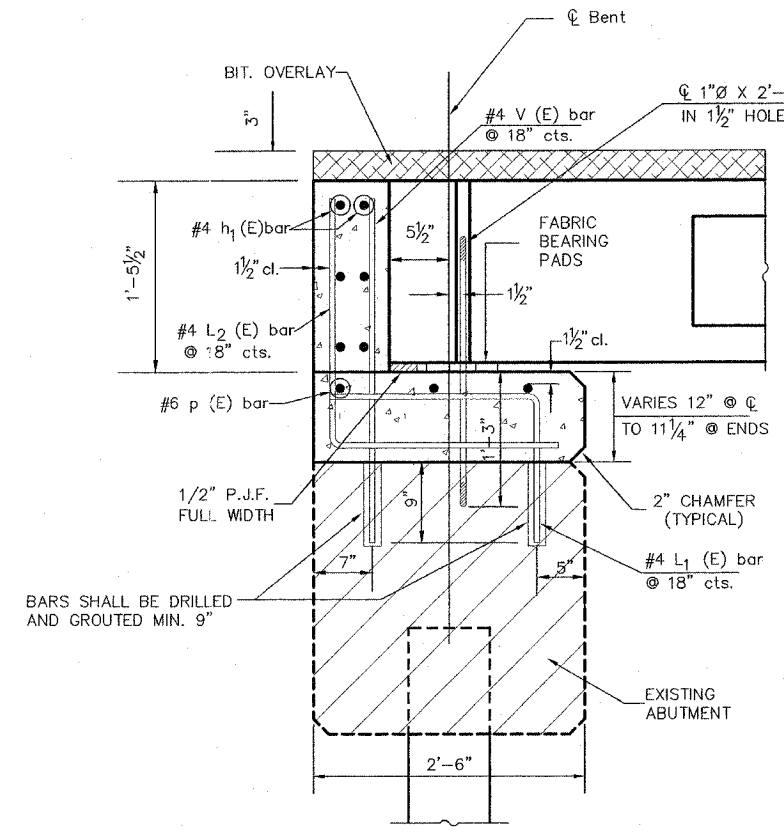


WING DETAIL
N.W., S.W., S.E. WINGS

CLEAN SURFACE TO THE SATISFACTION OF THE ENGINEER PRIOR TO POURING NEW CONC.

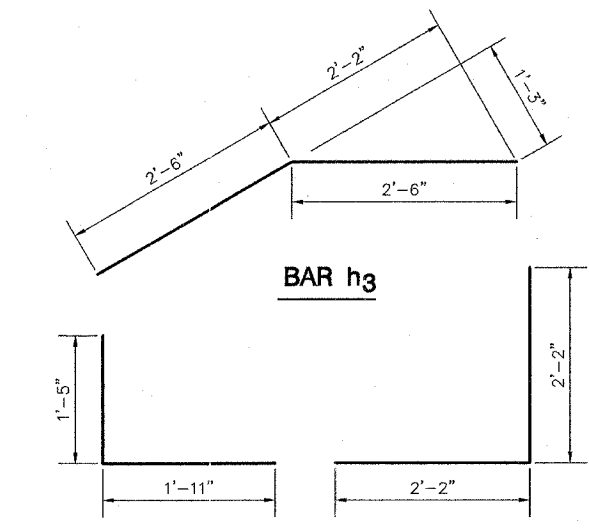


WING DETAIL
N.E. WING



SECTION THRU ABUTMENT

(AT RIGHT ANGLES)



NOTE:

Reinforcement bars shall conform to A.A.S.H.T.O. M-31 or M-322, Grade 60. All reinforcement bars shall be epoxy coated.

L₁(E), V(E), V₁(E), V₂(E), and H₂(E) bars shall be drilled and epoxy grouted in accordance with section 584 of the standard specifications.

BILL OF MATERIAL FOR EAST ABUTMENT

Bar	No.	Size	Length	Shape
h ₁ (E)	6	#4	28'-0"	—
h ₂ (E)	4	#4	2'-0"	—
h ₃ (E)	2	#4	5'-0"	—
h ₄ (E)	4	#4	5'-4"	—
L ₁ (E)	18	#4	3'-4"	L
L ₂ (E)	18	#4	4'-4"	L
p(E)	3	#6	28'-0"	—
v(E)	18	#4	2'-11"	—
v ₁ (E)	8	#4	1'-8"	—
v ₂ (E)	2	#4	1'-4"	—
v ₃ (E)	2	#4	2'-0"	—
v ₄ (E)	2	#4	2'-6"	—
Concrete Structures			4.0 Cu. Yds.	
Reinforcement Bars			410 Lbs.	

BILL OF MATERIAL FOR WEST ABUTMENT

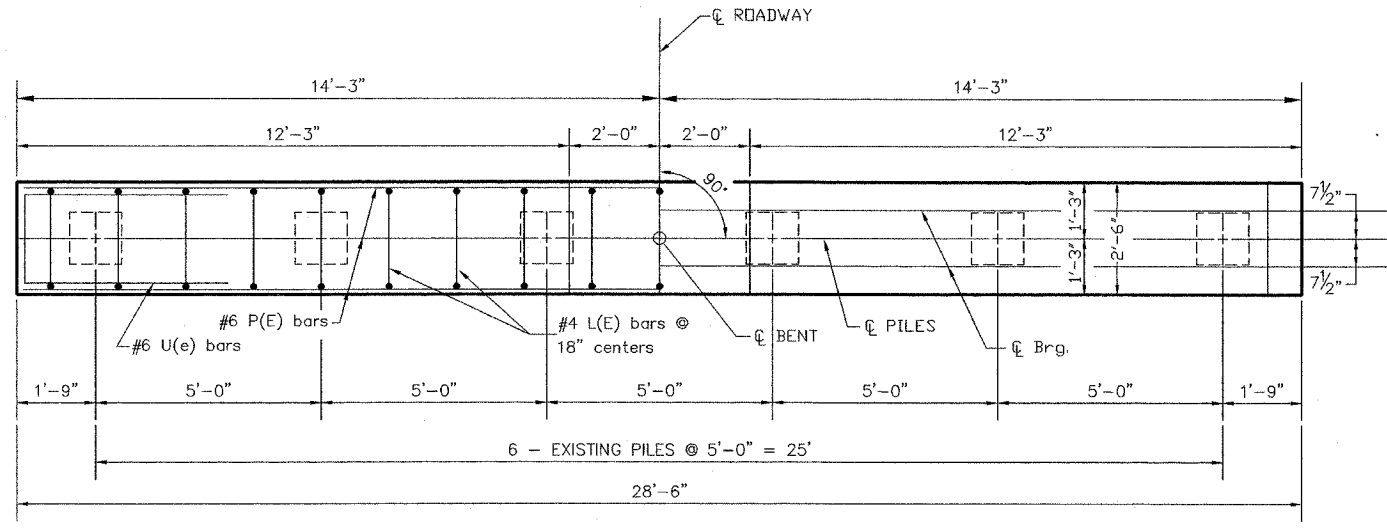
Bar	No.	Size	Length	Shape
h ₁ (E)	6	#4	28'-0"	—
h ₂ (E)	8	#4	2'-0"	—
L ₁ (E)	18	#4	3'-4"	L
L ₂ (E)	18	#4	4'-4"	L
p(E)	3	#6	28'-0"	—
v(E)	18	#4	2'-11"	—
Concrete Structures			4.0 Cu. Yds.	
Reinforcement Bars			380 Lbs.	

ABUTMENT DETAILS

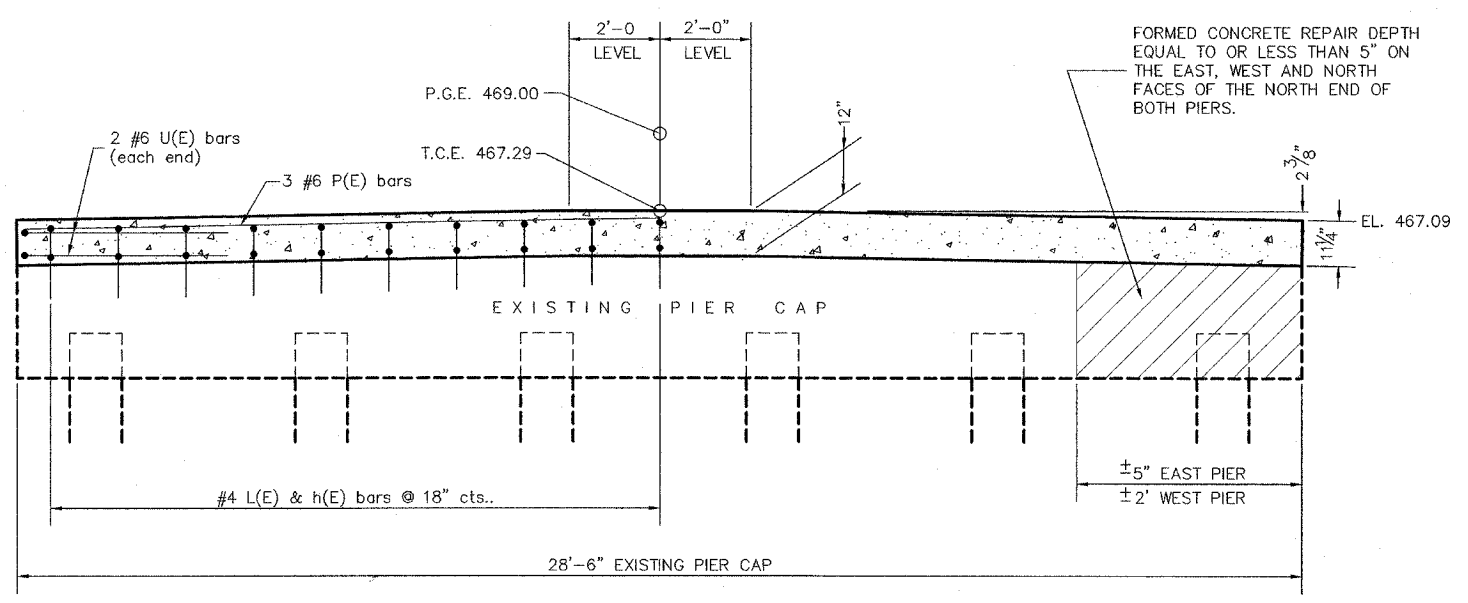
F.A.S. 782 (KEYESPORT ROAD)
OVER FLAT BRANCH
05-00084-00-BR & 05-00079-00-BR
CLINTON & BOND COUNTY
STATION 66+73
S.N. 014-3000

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 782 (KEYSPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	7

CONTRACT NO. 97272



PLAN



ELEVATION

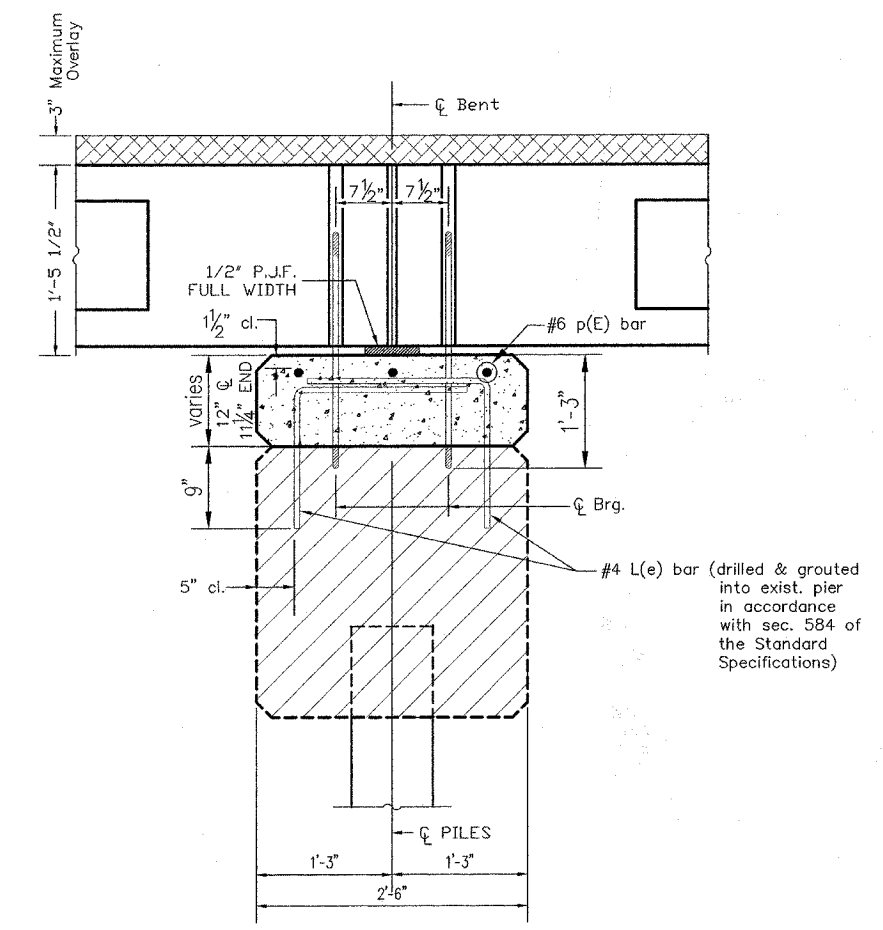
DESIGN STRESSES

$f'_c = 3,500$ PSI
 $f_y = 60,000$ PSI

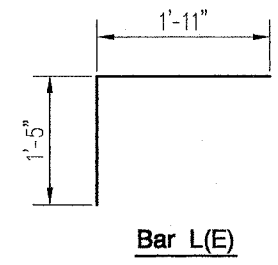
NOTE:

Reinforcement bars shall conform to A.A.S.H.T.O. M-31 or M-322, Grade 60. All reinforcement bars shall be epoxy coated.

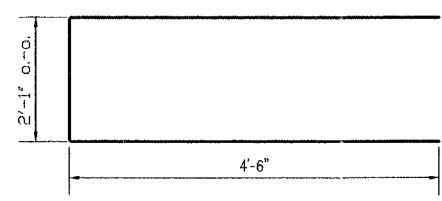
L(E) bars shall be drilled and epoxy grouted in accordance with Section 584 of the Standard Specifications.



**SECTION THRU PIER
(AT RIGHT ANGLES)**



Bar L(E)



Bar u(E)

Bar	No.	Size	Length	Shape
L(E)	38	#4	3'-4"	L
p(E)	3	#6	28'-0"	—
u(E)	4	#6	11'-1"	U
Concrete Structures			2.5 Cu. Yds.	
Reinforcement Bars			280 Lbs.	

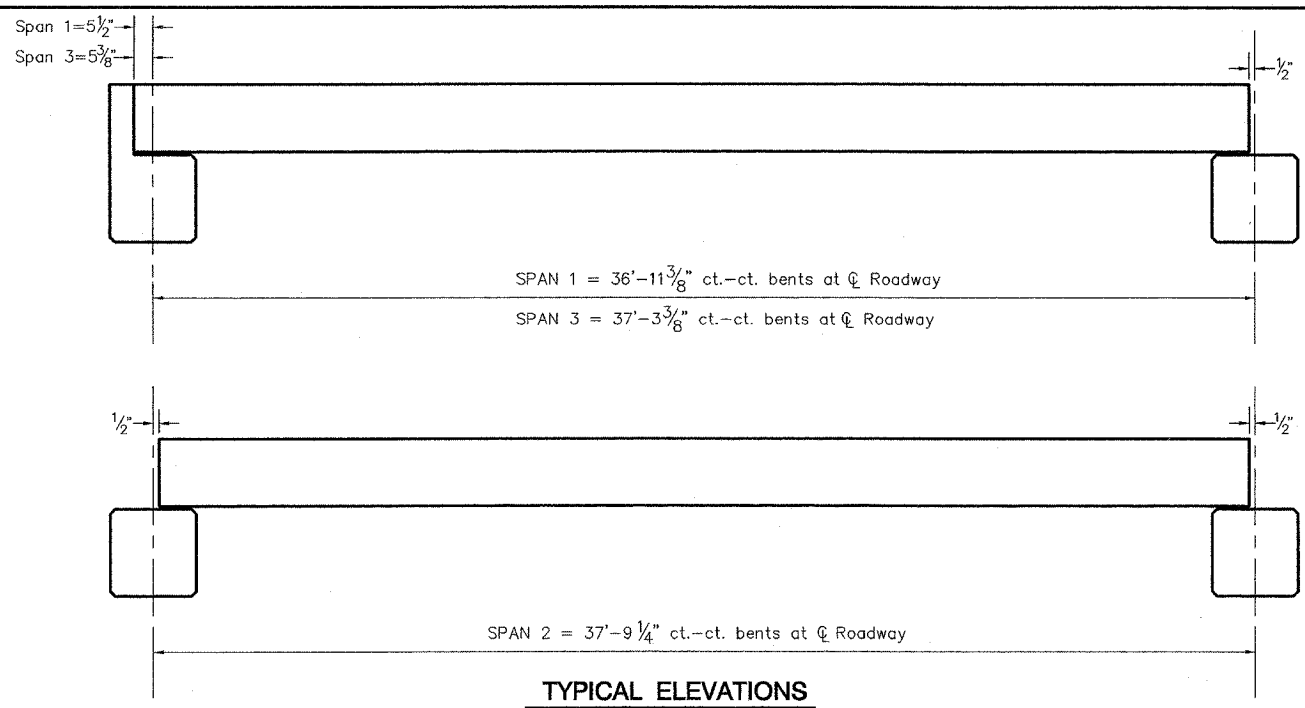
**BILL OF MATERIAL
FOR ONE PIER**

PIER DETAILS

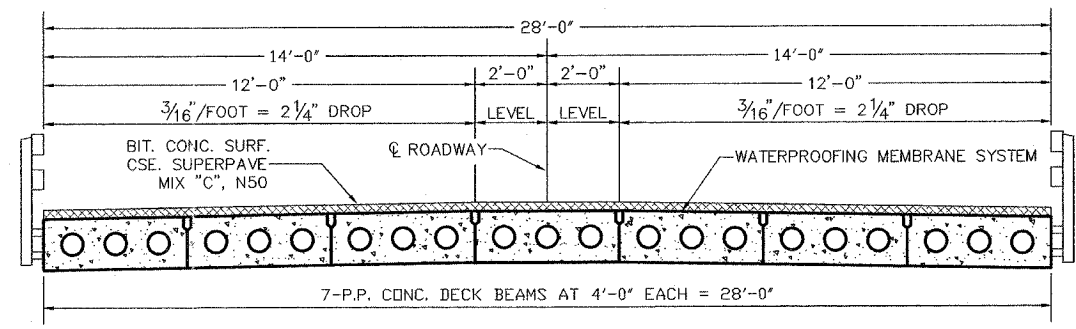
F.A.S. 782 (KEYSPORT ROAD)
OVER FLAT BRANCH
05-00084-00-BR & 05-00079-00-BR
CLINTON & BOND COUNTY
STATION 66+73
S.N. 014-3000

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 782 (KEYSPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	8

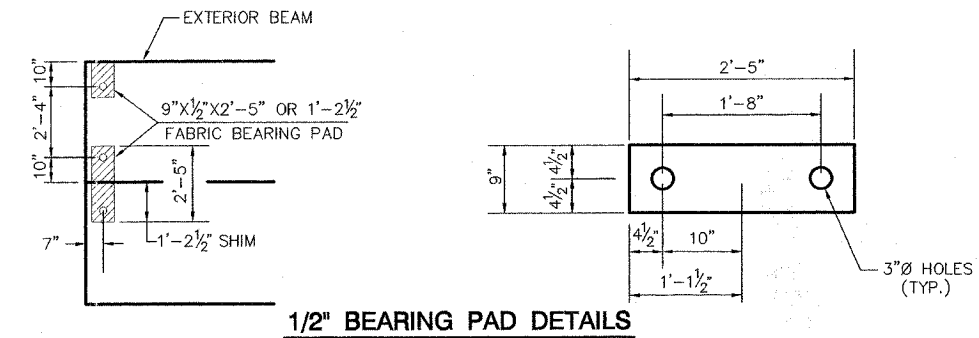
CONTRACT NO. 97272



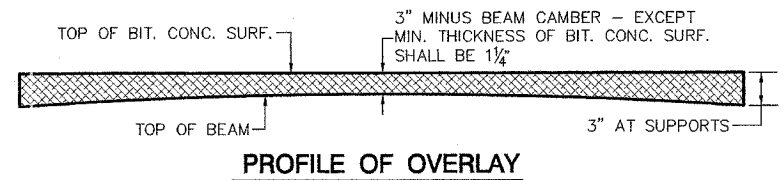
TYPICAL ELEVATIONS



CROSS SECTION



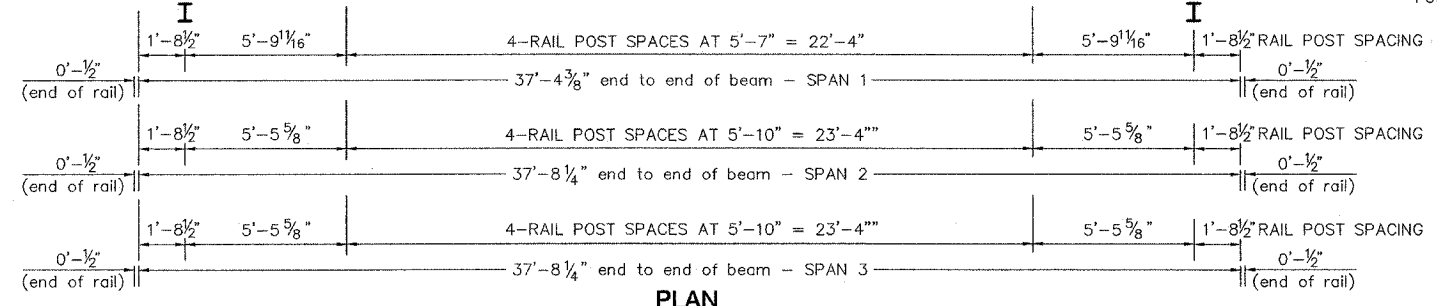
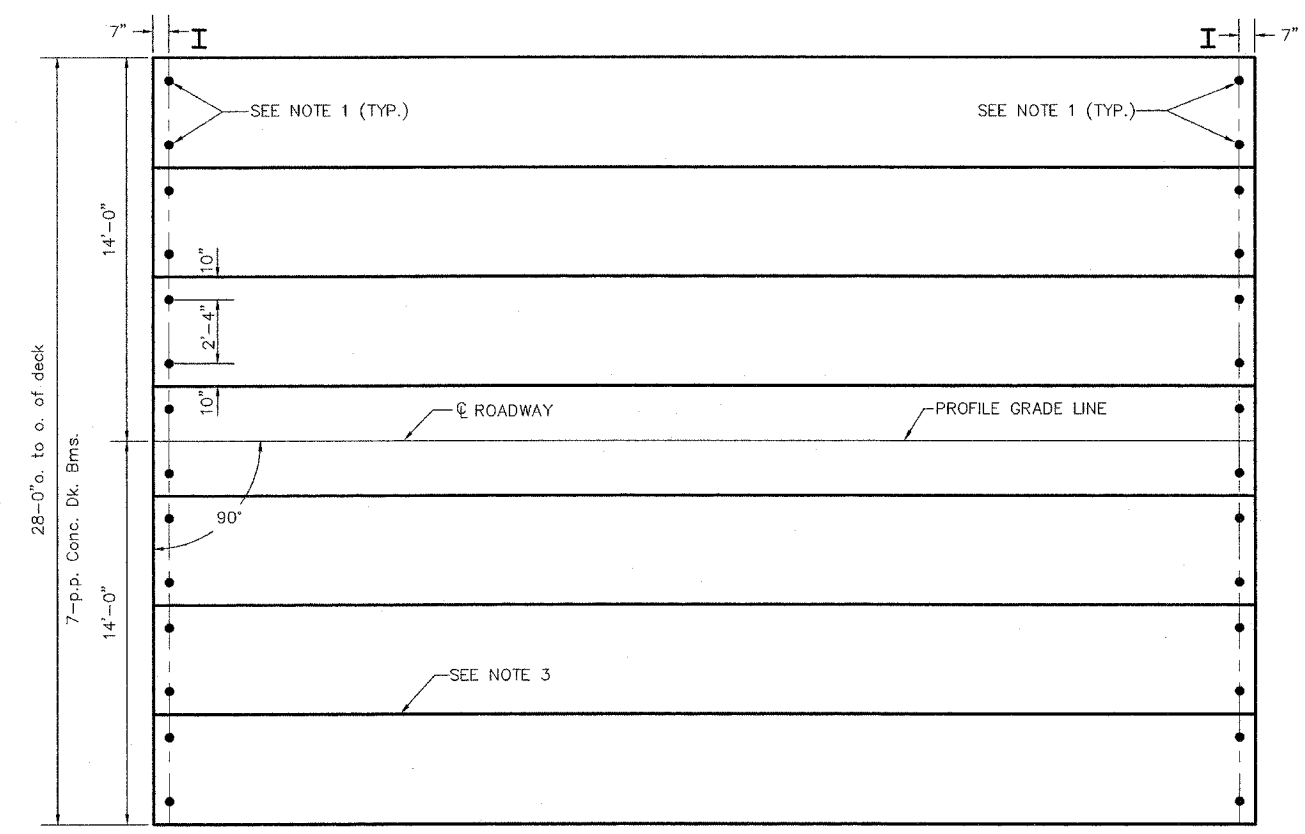
1/2" BEARING PAD DETAILS



PROFILE OF OVERLAY

NOTES

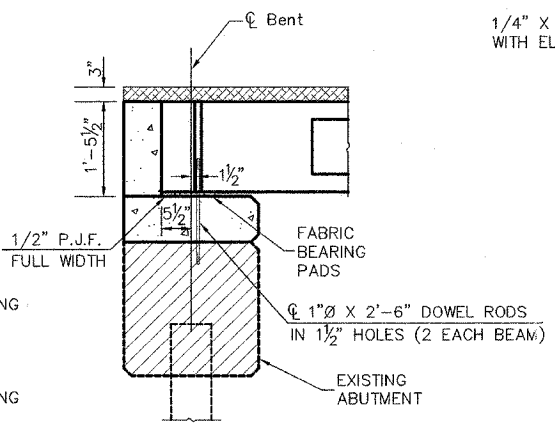
1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Nominal 1" joint at ϕ Pier shall be filled with non-shrink grout.
3. Longitudinal keys shall be grouted.



PLAN

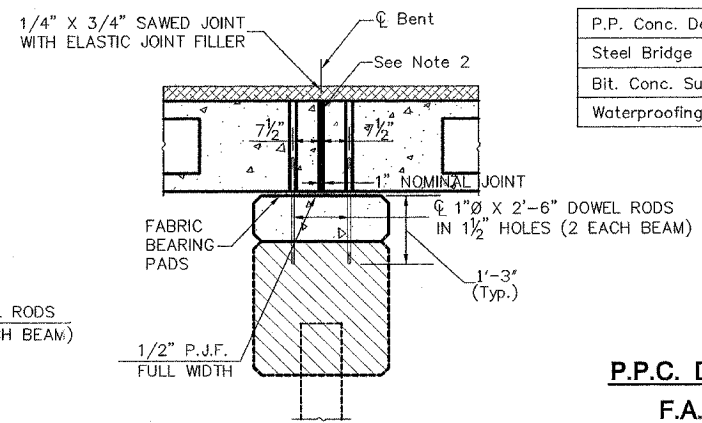
QUANTITIES FOR STRUCTURE

P.P. Conc. Deck Bm. 17" Dp.	3,157 Sq. Ft.
Steel Bridge Rail, Type SM	226 Ft.
Bit. Conc. Surf. Cse. Mix "C", N50	45.0 Tons
Waterproofing Membrane System	356.0 Sq. Yds.



SECTION AT ABUTS.

(ALONG ϕ BEAMS)



SECTION AT PIERS

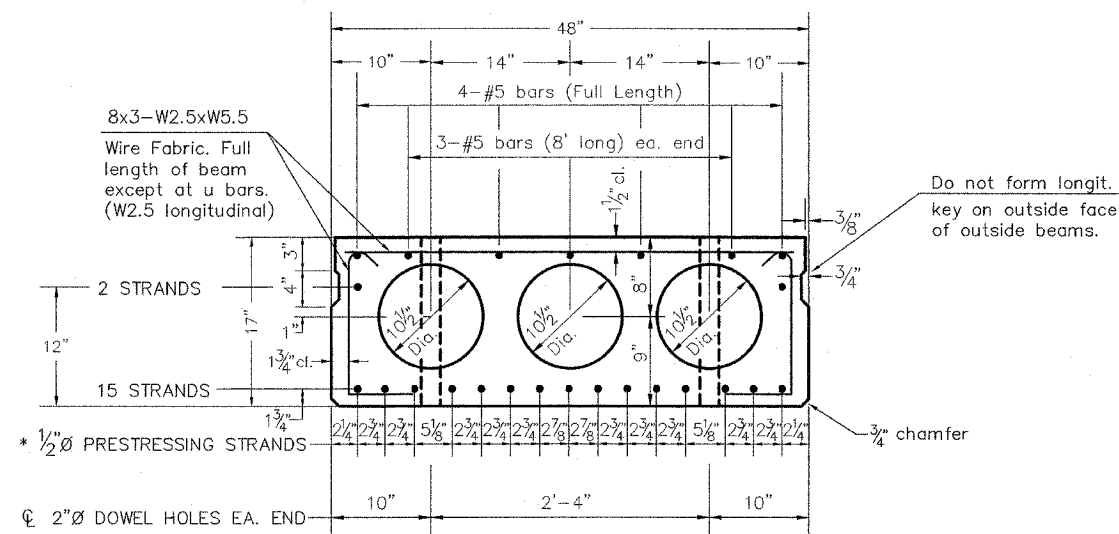
(ALONG ϕ BEAMS)

P.P.C. DECK BEAM SUPERSTRUCTURE

F.A.S 782 (KEYSPORT ROAD)
OVER FLAT BRANCH
05-00084-00-BR & 05-00079-00-BR
CLINTON & BOND COUNTY
STATION 66+73
S.N. 014-3000

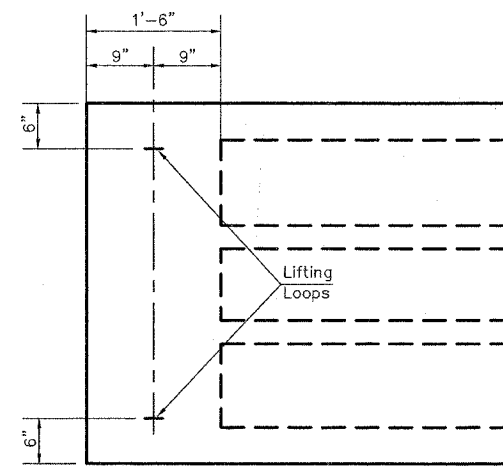
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 782 (KEYSPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	9

CONTRACT NO. 97272



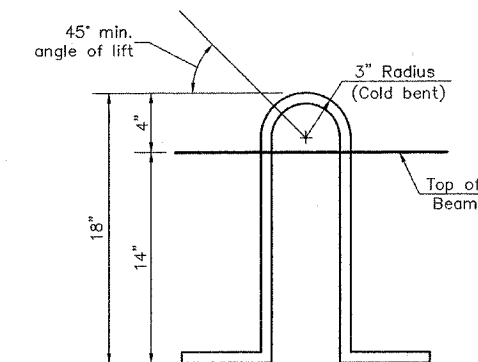
CROSS SECTION

* STRESSED TO 28,900 LBS.



CROSS SECTION

Each beam shall have four Lifting Loops, two at each end of beam cast in locations shown above. Loops shall be burned off after beams have been erected.



LIFTING LOOP DETAIL

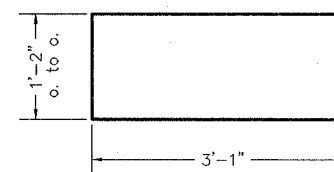
Lifting loops shall be two 1/2 inch diameter-270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.

NOTES

1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2 inch and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to AASHTO M-31 or M-322, 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 surfaces 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 finish surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of 1/4 inch.
6. 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 the top of the beam and the bottom edge of the key.

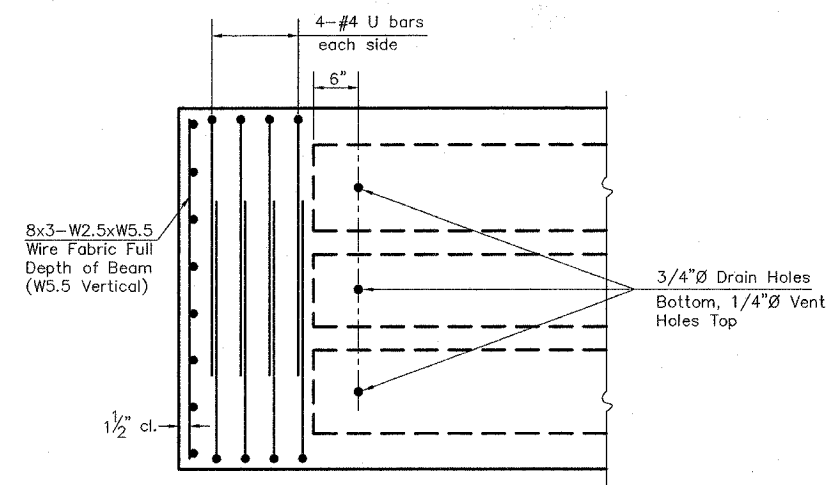
DESIGN STRESSES

$f'_c = 5,000$ p.s.i.
 $f'_{ci} = 4,000$ p.s.i.
 $f'_s = 270,000$ p.s.i. (1/2 inch Strand)
 $f_{si} = 201,960$ p.s.i. (1/2 inch Strand)
 $f_y = 60,000$ p.s.i.



BAR U

MIN. BAR LAP
#5 BARS = 1'-8"



END REINFORCEMENT

(RIGHT ANGLE)

TRANSVERSE STRAND PLACEMENT GUIDELINES

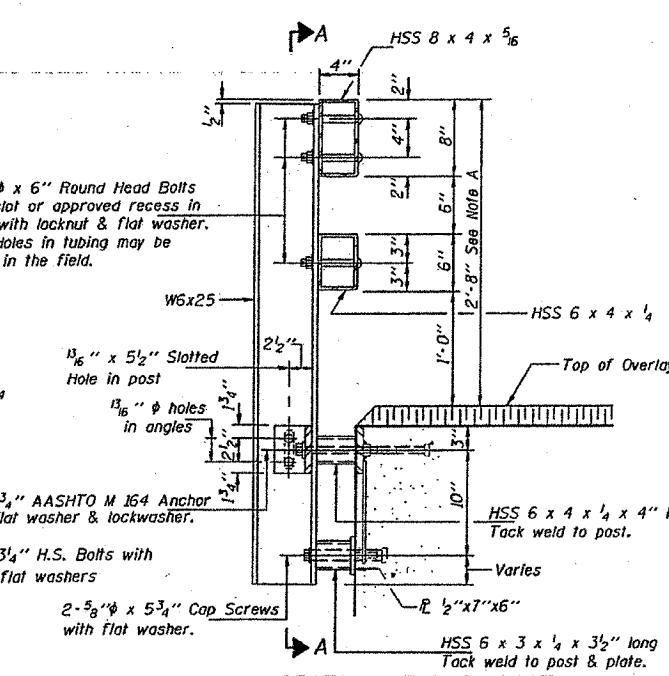
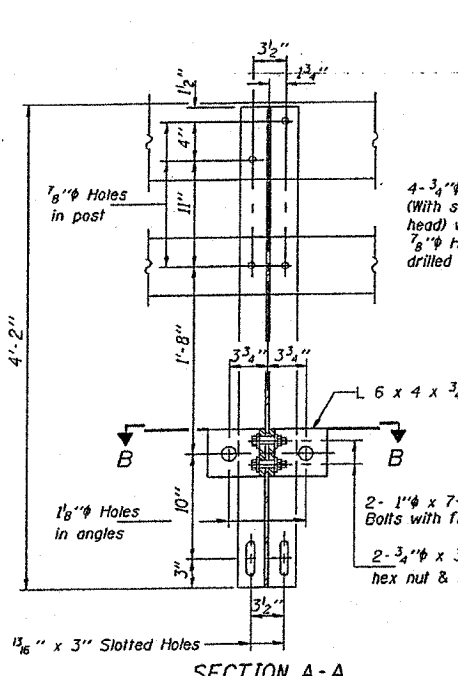
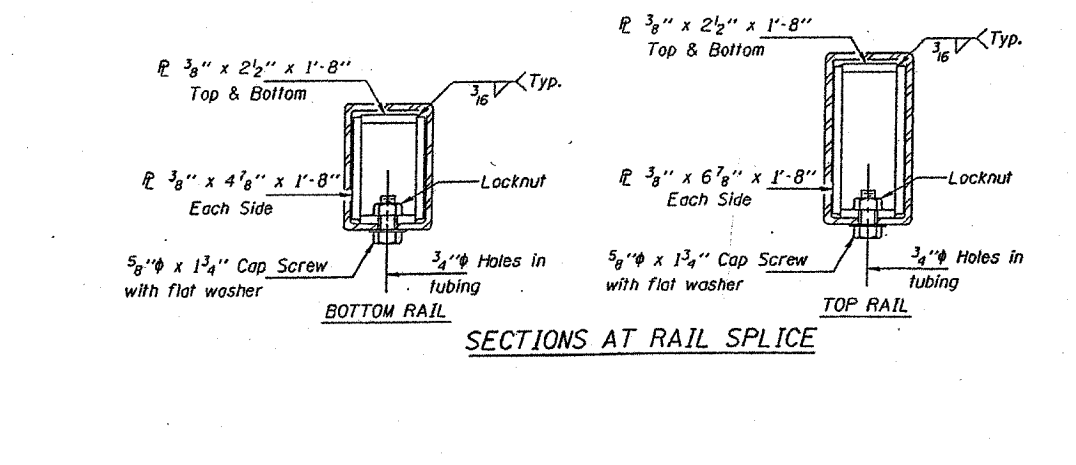
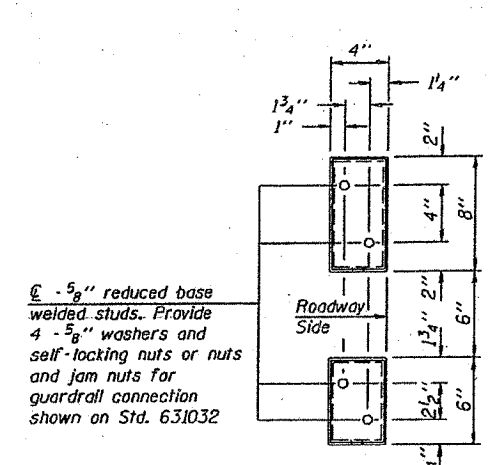
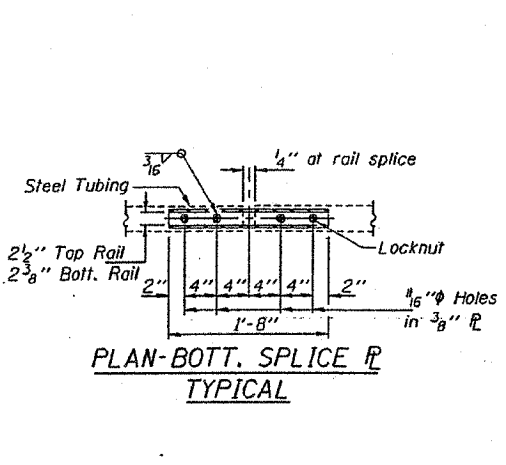
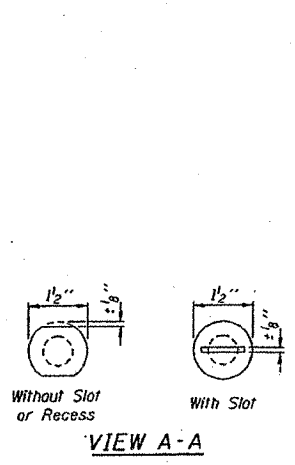
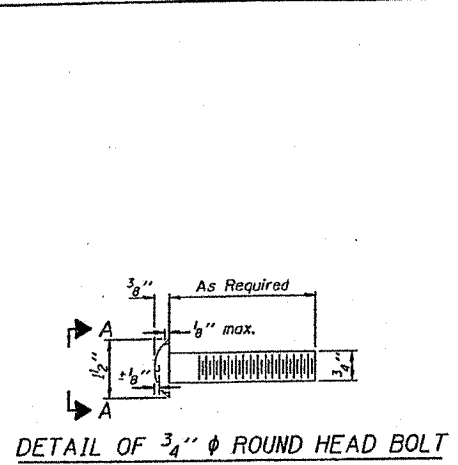
1. Place strands symmetrically about centerline of beam.
2. The minimum distance from center to center of strands in all directions shall be 2 inches.
3. The minimum clearance from strand to dowel hole shall be 1/2 inch.
4. The minimum clearance from strand to void shall be 1 1/2 inches.

Vertical placement of strands shall not adjusted to satisfy the above guidelines.

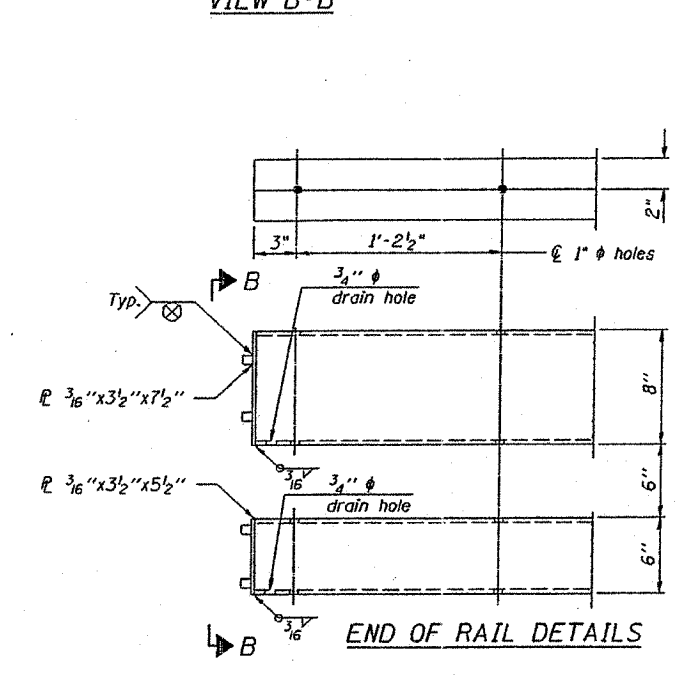
P.P.C. DECK BEAM DETAILS
F.A.S. 782 (KEYSPORT ROAD)
OVER FLAT BRANCH
05-00084-00-BR & 05-00079-00-BR
CLINTON & BOND COUNTY
STATION 66+73
S.N. 014-3000

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S 782 (KEYSPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	10

CONTRACT NO. 97272



Note A:
Where no overlay is to be provided, adjust top of rail to lay parallel to grade 2'-10" max. above top of beam



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 requirements 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 according to AASHTO M 232.

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

Railing shall be according to 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 SM.

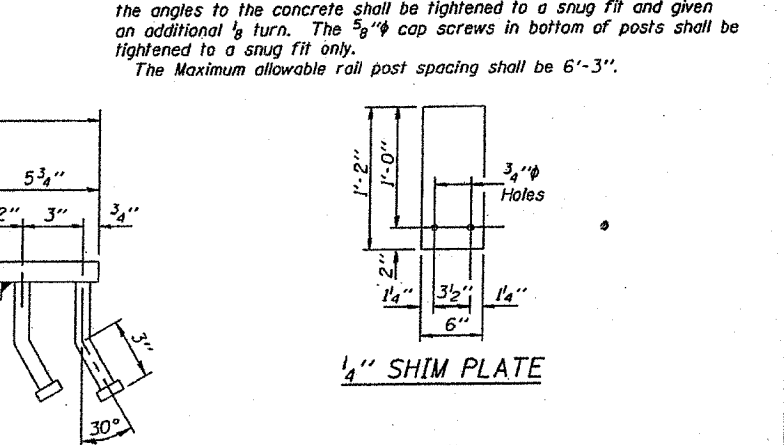
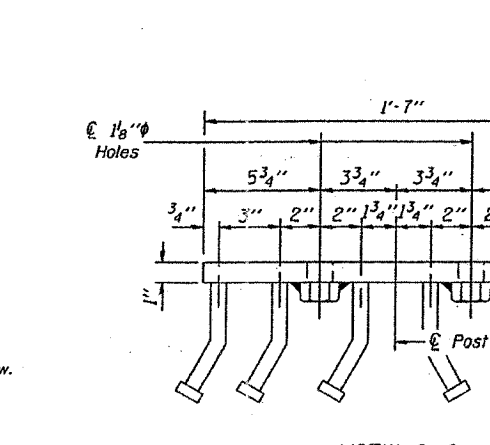
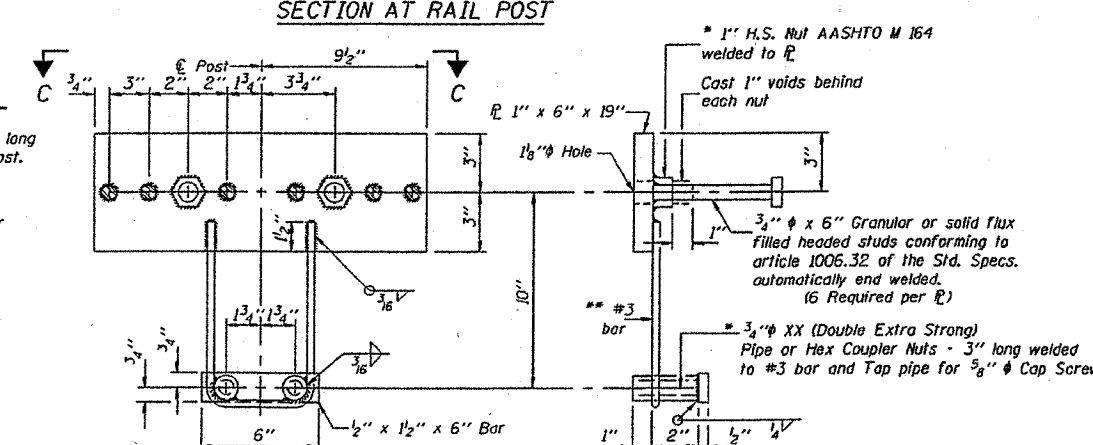
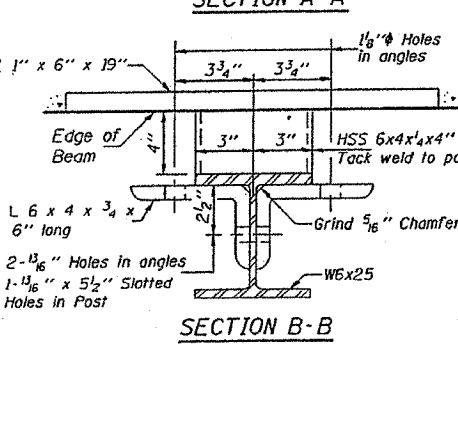
All field drilled holes shall be coated with an approved zinc rich paint before erection.

For multi-span bridges, sufficient 1/2" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with STEEL BRIDGE RAIL, TYPE SM.

The 1/2" x 7" x 6" plates that come in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8" fabric bearing pads between the plates and concrete.

The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04(FX2) of the Standard Specifications. The 1" 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" cap screws in bottom of posts shall be tightened to a snug fit only.

The Maximum allowable rail post spacing shall be 6'-3".



Illinois Department of Transportation
 PASSED APRIL 4, 2005
 Thomas J. Nanninga
 Engineer of Bridge Design
 APPROVED APRIL 4, 2005
 Ralph E. Anderson
 Engineer of Bridges and Structures

ANCHOR DEVICE

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

** 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".

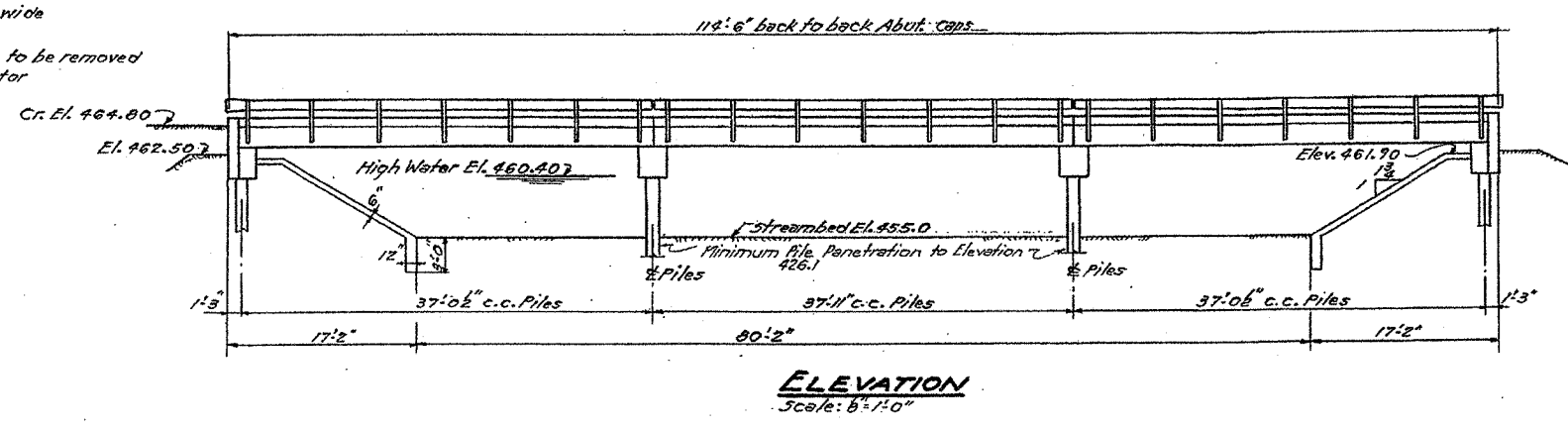
STEEL BRIDGE RAIL, TYPE SM
 STANDARD CR-TSM

CONTRACT NO. 97272

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
782	23G	CLINTON	27	25
PROJECT 5-82(G)				
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
782	23G	CLINTON	27	25

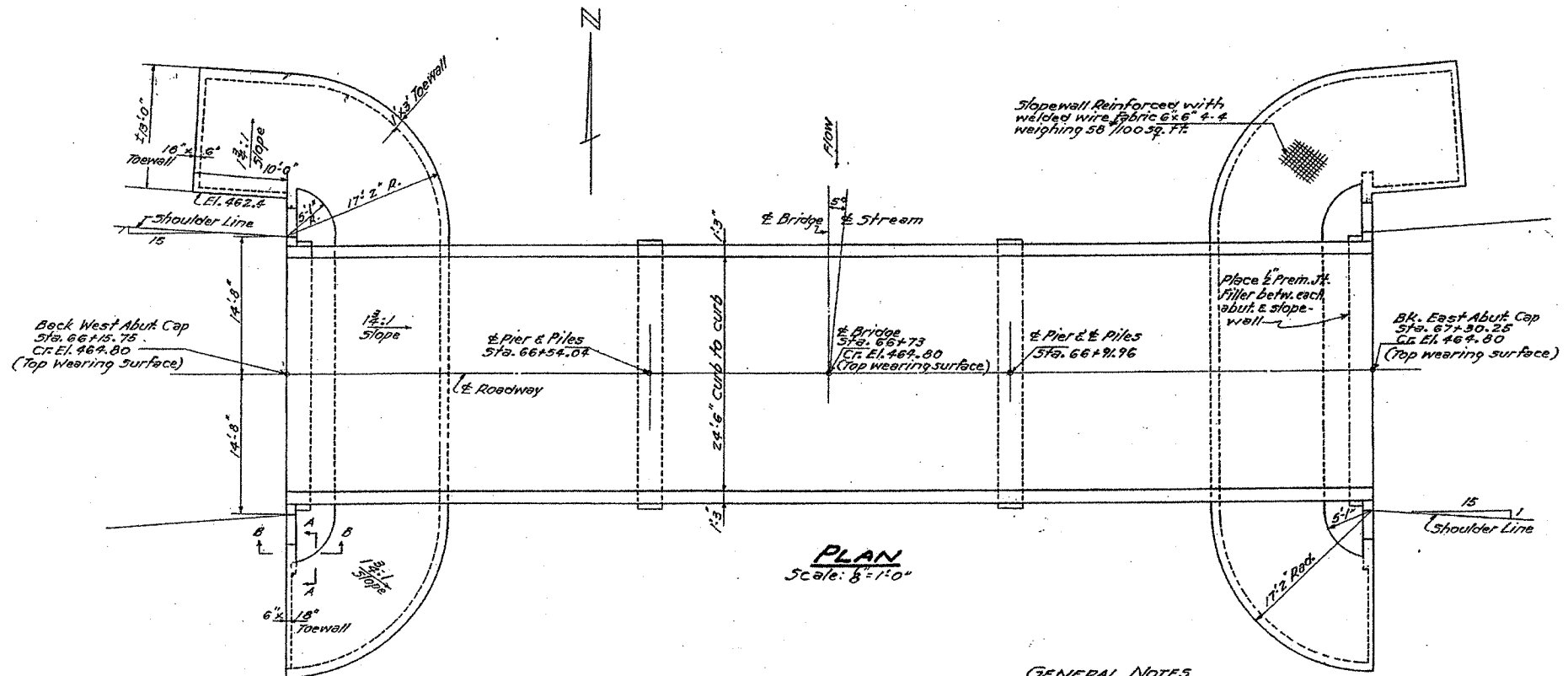
D.M. 9 S.W. Headwall of bridge Rt Sta. 66+43 Elev. 461.26

Existing Structure Data:
58' face to face of headwalls
4-35" W/12" @ 3'4" c.c.
4" Timber floor-14" wide
Timber Runways
Existing structure to be removed
by Bridge Contractor



BORING DATA

Elev.	Sta. 65+00 12' N. of R.W. Y.	Sta. 66+20 12' N. of R.W. Y.	Sta. 66+25 12' S. of R.W. Y.	Sta. 67+30 12' N. of R.W. Y.	Sta. 67+30 12' S. of R.W. Y.	Sta. 69+00 12' N. of R.W. Y.	Elev.
465	Gravel Fill	Gravel Fill	Fill	Fill	Fill	Fill	465
460	Red sandy clay	Gray mottled red silty clay	Gray mottled red silty clay	Gray red silty clay	Gray red silty clay	Gray red silty clay	460
455	Gray mottled red silty clay same fine sand	Red sand	Red sand	Red sand	Red sand	Red sand	455
450	Unstable samples not recognizable. Appr. to the clayey sand	Gray clayey red sand	Sandy gravel	Silty sand	Silty sand	Sandy gravel	450
445		Red sand	Red sand	Red sand	Red sand	Red sand	445
440		Gray sandy clay	Gray sandy clay	Silty sand	Silty sand	Silty sand	440
435		Sand	Sand	Sand	Sand	Sand	435
430	Limit of boring Exp.						430



STA. 66+73
FLAT BRANCH CREEK
BUILT 195
F.A.S. RT. 782 - SEC. 23 G.
P.A. PROJECT 5-82(G)
LOADING H15-512

NAME PLATE DETAIL

See Standard 2113 for details.
Locate on bridge rail between first two posts on S.W. corner of bridge. Drill 1/2" holes in rail to match holes in Name Plate for 3" bolts.

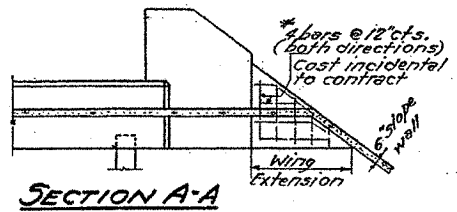
WATERWAY INFORMATION

Drainage Area 7500 Acres
Character: Level mostly Cultivated
Present Opening 207 Sq. Ft.
Reg'd Opening 450 Sq. Ft.
Proposed Opening 450 Sq. Ft.
Perpendicular to Stream

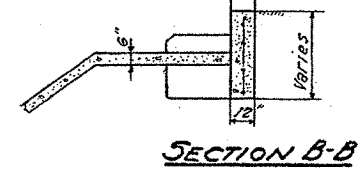
PLAN
Scale: 8"=1'0"

GENERAL NOTES

For item "Precast Prestressed Concrete Bridge Deck" see Special Provisions.
The Contractor shall drive two test piles in a permanent location as directed by the Engineer before casting the remainder of piles.
Layout of slope walls may be varied as necessary to conform to ground surface after embankment has been constructed as directed by the Engineer.
Excavation for slope wall will not be paid for separately but is considered incidental to cost of slope wall.
Class-X Concrete shall be used throughout except as noted.



SECTION A-A



SECTION B-B

Note: All slope wall dimensions are horizontal projections.

STRESSES

- f_c - 1400 psi Curbs
- f_c - 800 psi Substructure
- f_c - 2000 psi Beams
- f_s - 20000 psi Reinf. Bars
- f_{st} - 160000 psi Prest. Steel

TOTAL BILL OF MATERIAL

ITEM	SUPER.	SUB.	TOTAL
Precast Prestressed Conc. Bridge Deck	39.65		39.65
Metal Plate Bridge Rail	222.7		222.7
Name Plates		1	1
Class-X Concrete	10.0	31.8	41.8
Reinforcement Bars	310	3440	3750
12" Precast Concrete Piles (34' long)		306	306
14" Precast Concrete Piles (35' long)		385	385
Test Piles (12")		1	1
Test Piles (14")		1	1
Slope Wall	320		320
Removal of Existing Structures		1	1
Channel Excavation		560	560

PROJECT 5-82(G)
F.A. ROUTE 782-SEC. 23 G.
CLINTON COUNTY
STATION 66+73

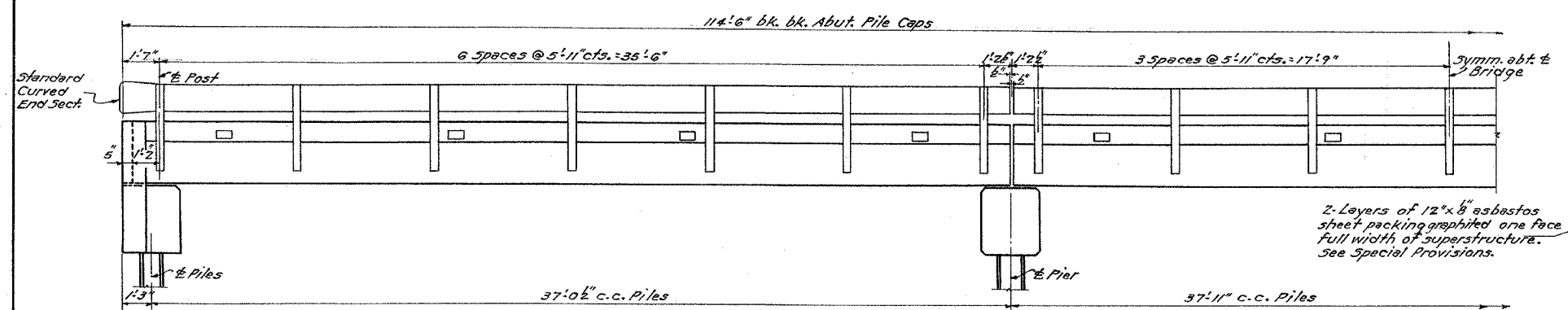
Loading H15-512-44

FOR INFORMATION ONLY

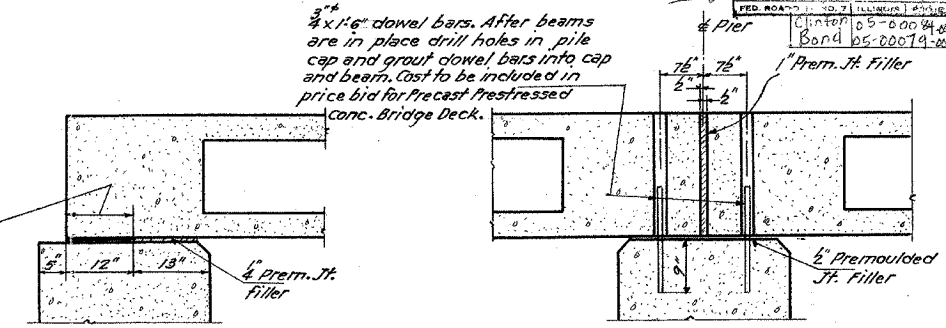
CONTRACT NO. 97272

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
782	23 G	CLINTON	27	26
FED. ROAD DIST. NO. 7			3-82(6)	
Clinton Bond 05-0084-00-BR 05-0079-00-BR			13	12

Current Section

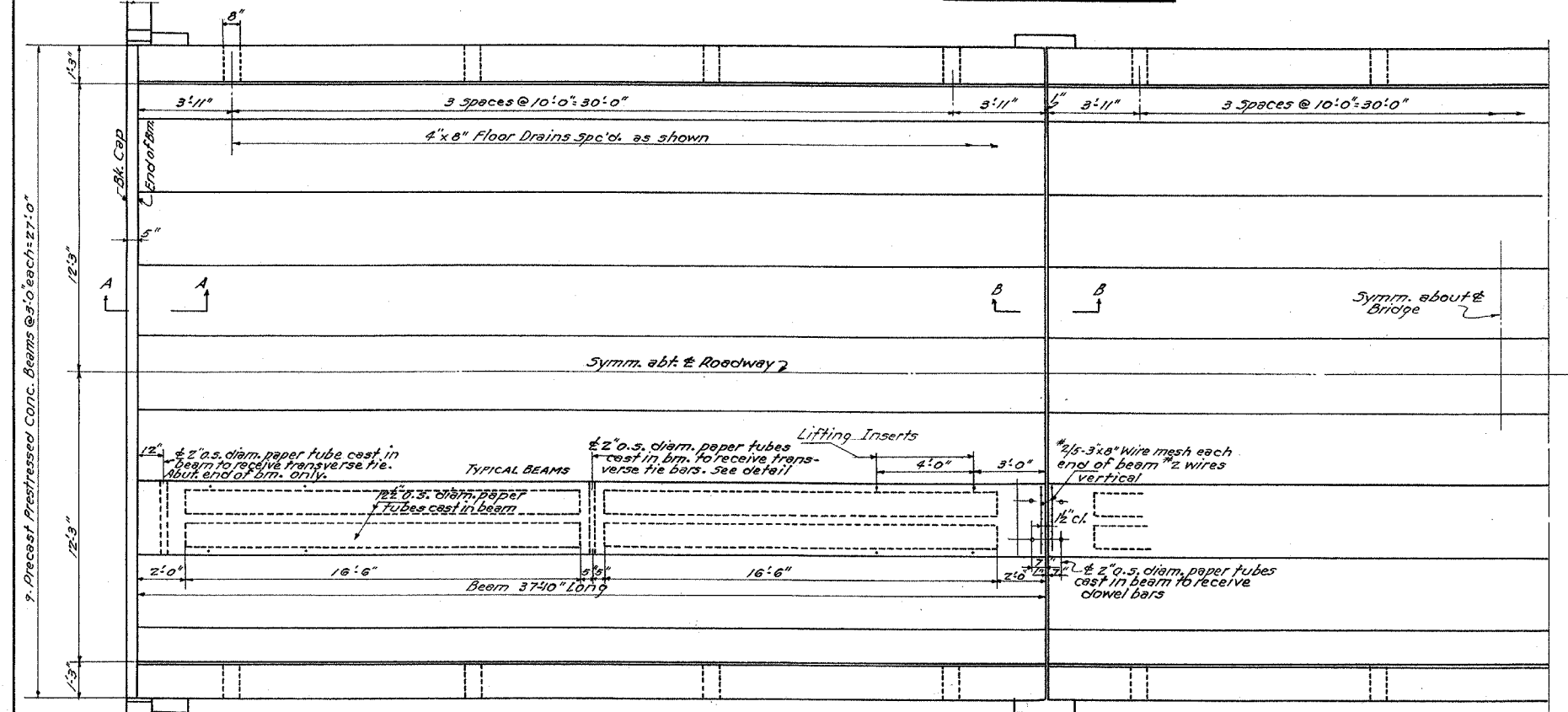


HALF ELEVATION

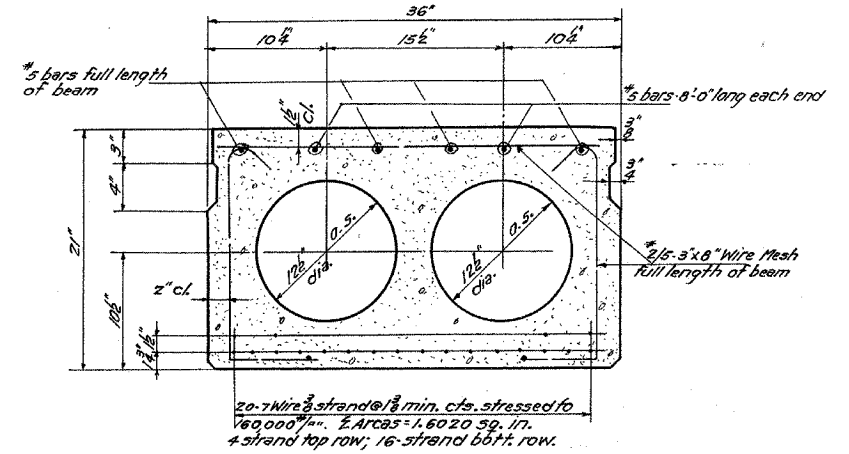


SECTION A-A

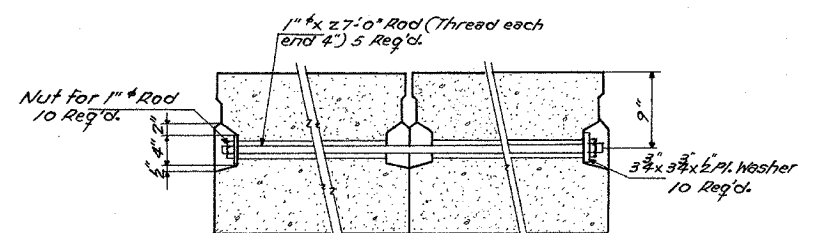
SECTION B-B



HALF PLAN

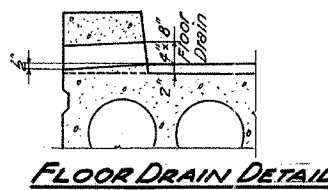


TYPICAL SECTION THRU BEAM

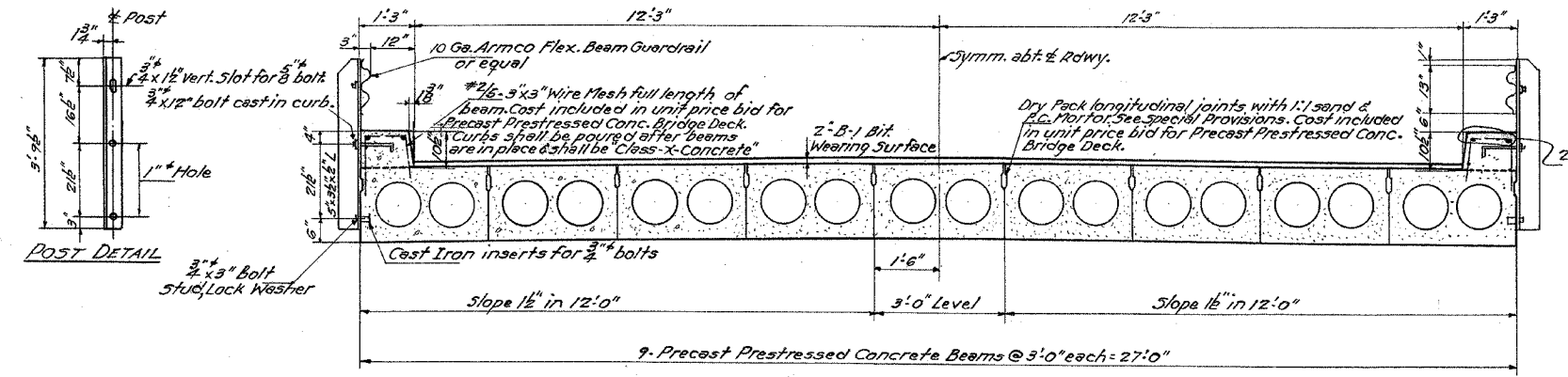


TYPICAL TRANSVERSE TIE ASSEMBLY

The cost of furnishing & assembling transverse ties is included in the unit price bid for Precast Prestressed Concrete Bridge Deck.



FLOOR DRAIN DETAIL



TYPICAL CROSS SECTION

BILL OF MATERIAL - SUPER.

Precast Prestressed Conc. Bridge Deck	Sq. Ft.	3065
Class-X Concrete	Cu. Yds.	10.0
Metal Plate Bridge Rail	Lin. Ft.	222.7
* Reinforcement	Lbs.	310

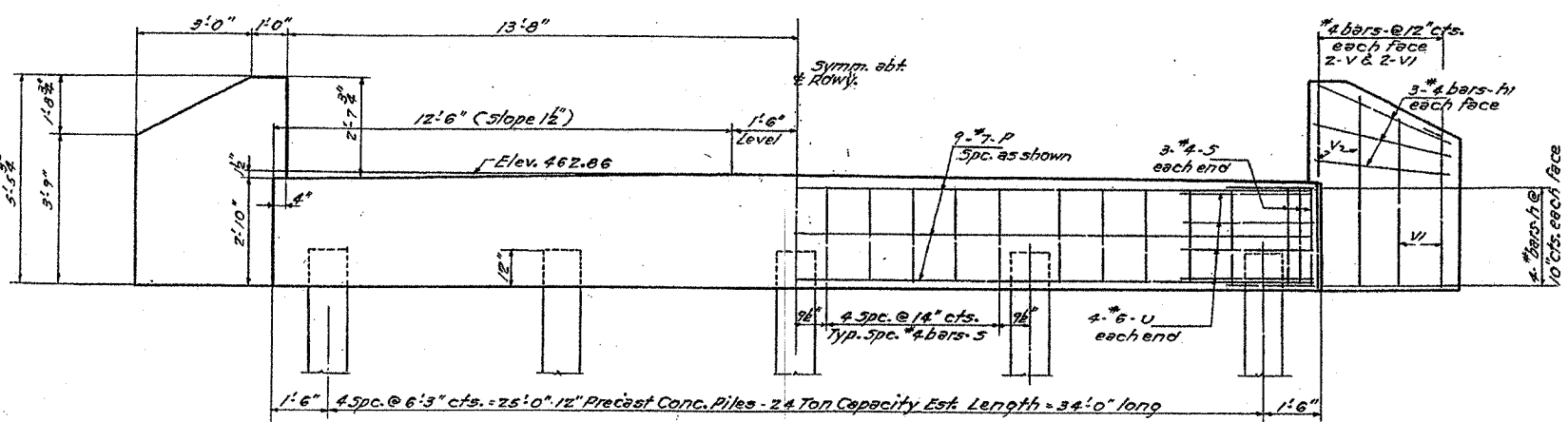
* 24 #4 bars 19'6" long in curb

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S 782 (KEYSPORT ROAD)	05-00084-00-BR 05-00079-00-BR	CLINTON & BOND	13	13

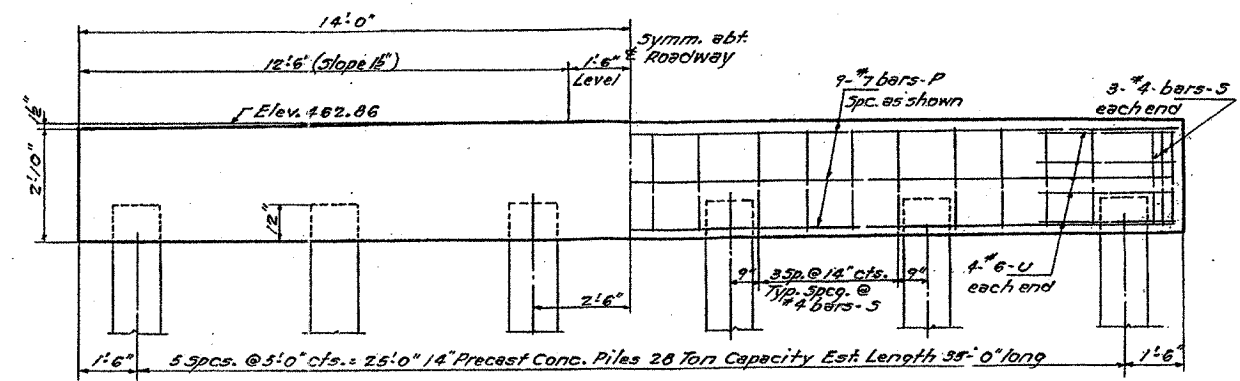
CONTRACT NO. 97272

Reference ONLY
Current Section

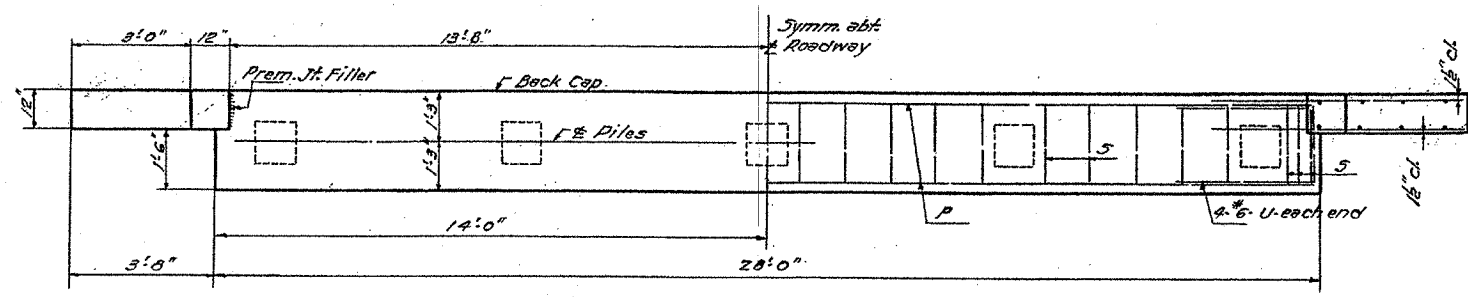
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
782	23 Q	CLINTON	27	27
FED. ROAD DIST. NO. 5-82(6)				
782	Clinton Bond	05-00084-00-BR 05-00079-00-BR	13	13



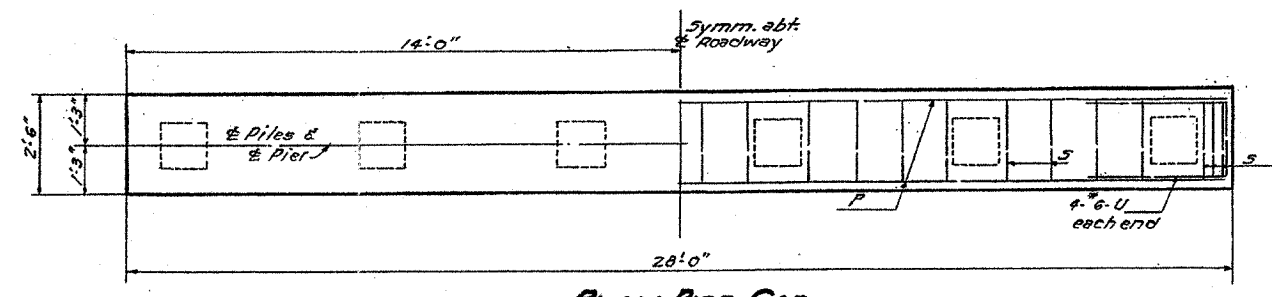
ELEVATION ABUTMENT CAP



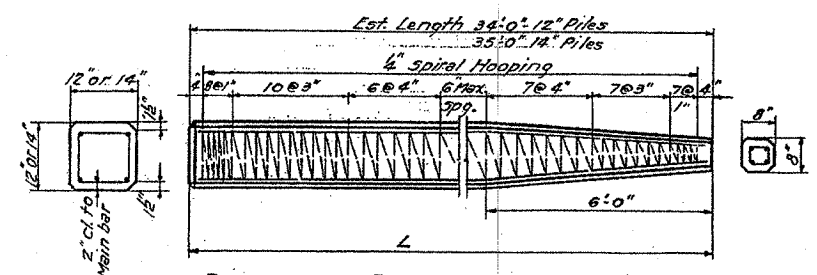
ELEVATION PIER CAP



PLAN ABUTMENT CAP

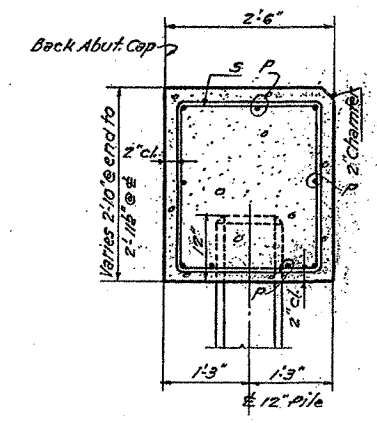


PLAN PIER CAP

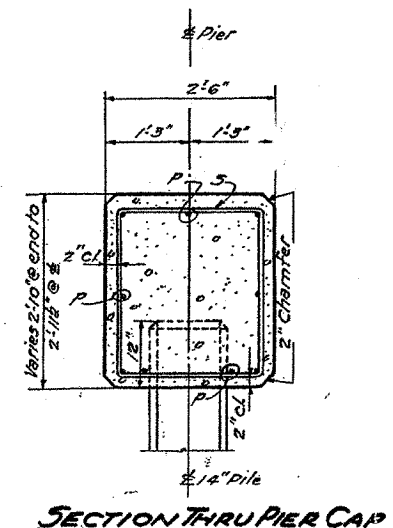


DETAIL OF PRECAST CONCRETE PILES

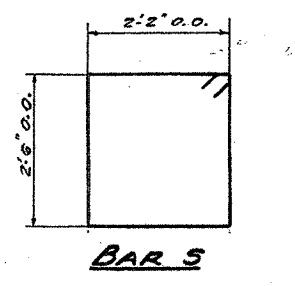
Note: to Contractor: For pile length up to 45' use two slings placed at a distance of 0.21L from each end.



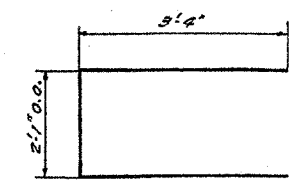
SECT. THRU ABUT. CAP



SECTION THRU PIER CAP



BAR S



BAR U

BILL OF MATERIAL - SUBSTR.

Bar	No.	Size	Length	Shape
P	36	#7	27'-6"	—
S	104	#4	10'-0"	□
U	32	#6	8'-9"	—
V	16	#4	5'-3"	—
VI	16	#4	4'-0"	—
h	32	#4	6'-6"	—
h1	24	#4	3'-9"	—
Class-X Concrete		Cu. Yds.	31.8	
Reinforcement Bars		Lbs.	3440	
12" Precast Concrete Piles (36')		Lin. Ft.	306	
14" Precast Concrete Piles (35 1/2')		Lin. Ft.	385	
Test Piles (12")		Each	1	
Test Piles (14")		Each	1	

PROJECT 5-82(6)
F.A.S. Rt. 782 - SECTION 23 Q
CLINTON COUNTY
STA. 66+73

FOR INFORMATION ONLY