

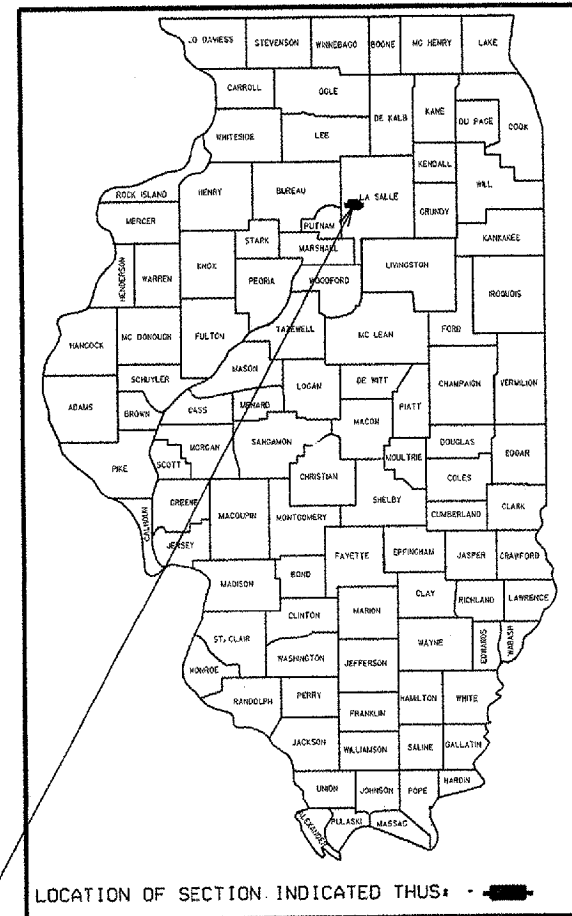
COUNTY HIGHWAY	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
16	08-00647-00-BR	LASALLE	13	1
FED. ROAD DIST. NO.7		ILLINOIS	PROJECT BROS-099(35)	

CONTRACT NUMBER 87350 +3(16)

**INDEX OF SHEETS**

1. COVER SHEET
2. SUMMARY OF QUANTITIES
3. PLAN AND PROFILE
4. CROSS SECTIONS
5. GENERAL PLAN & ELEVATION
6. ABUTMENT SHEET
7. STANDARD CS-3033-70R
8. STANDARD CB-3033-36
9. STANDARD CRTSM
10. STANDARD CN
11. STANDARD CX1
- 12-12g BORINGS
13. APPROACH SLAB DETAIL
- 14-15 EXISTING BRIDGE GP&E SHEET  
(FOR INFORMATION ONLY)

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**PLANS FOR PROPOSED BRIDGE IMPROVEMENT**  
**HIGHWAY BRIDGE PROGRAM**  
**LASALLE COUNTY HIGHWAY 16**  
**SECTION 08-00647-00-BR**  
**PROJECT BROS-099 (35)**  
**JOB NO C-93-061-07**



**HIGHWAY STANDARDS**

- 000001-04 ABBREVIATIONS AND SYMBOLS
- 280001-03 TEMP EROSION CONTROL SYS
- 515001-02 NAME PLATES FOR BRIDGES
- 630001-07 STEEL PLATE BEAM GUARDRAIL
- 631032-03 TRAFFIC BARRIER TERM TY 6A
- 630301-04 TRAFFIC BARRIER TERM TY 1 SPECIAL

**TRAFFIC CONTROL STANDARDS**

- 702001-06 TRAFFIC CONTROL DEVICES
- BLR 21-6 TYPICAL APPLICATIONS OF TRAFFIC CONTROL DEVICES

**UTILITIES**

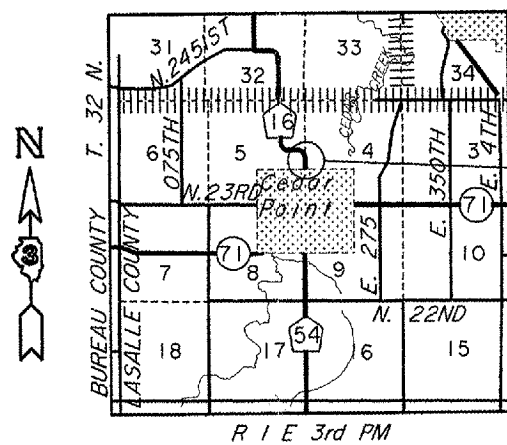
- SBC/AT&T TELEPHONE 815-722-4389
- NICOR GAS 815-433-3850
- AMEREN POWER 815-224-6275

**DESIGN DESIGNATION**

MINOR COLLECTOR  
 DESIGN SPEED 40 MPH  
 PRESENT ADT = 270 (2007)  
 DESIGN TRAFFIC = 350 (2027)  
 DHV: 44

THE COUNTY WILL NOTIFY ALL EMERGENCY AND PUBLIC SERVICES PRIOR TO CLOSURE

CONTRACT NUMBER 87350



**PROPOSED STRUCTURE NUMBER 050-3584**

THE CONSTRUCTION OF A PREC. PREST. CONC. DECK BM. BRIDGE ON PILE BENT SPILL THRU ABUTS. 1 SPAN @ 69'-0" SKEWED 10° RT. FWD. 30 FT. ROADWAY 71'-6" TOT. LENGTH AND THE NECESSARY SHAPING AND BITUM. SURFACING OF APPROACH ROADWAYS.

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

LAWRENCE J. KINZER DATE 7-5-07  
 COUNTY ENGINEER

I.R.P.E. #62-40162 II-30-07 EXP.

THE ACCEPTANCE OF THIS PROJECT IS BASED ON THE MINIMUM DESIGN CRITERIA FOR A FEDERAL AID 3-R PROJECT



GROSS LENGTH 225 FT. 0.043 MI.  
 OMISSIONS  
 NET LENGTH 225 FT. 0.043 MI.

PASSED: 07/18 2007  
  
 DISTRICT ENGINEER OF ROADS AND STREETS  
 APPROVED: 07/18/07  
  
 DEPUTY DIRECTOR, REGION 2 ENGINEER  
 STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ROUTE NUMBER	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 16	08-00647-00-BR	LASALLE	13	2
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BROS-099(35)	
CONTRACT NO. 87350				

### SUMMARY OF QUANTITIES

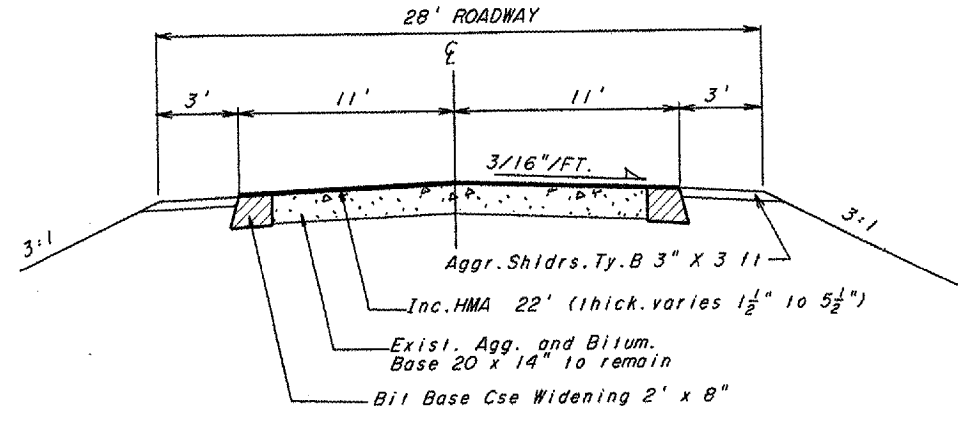
Const. Code  
x087-2A

### GUARDRAIL SCHEDULE

STA TO STA	LOC	REMOVE SPBGR	TBT TY-1 SP	TBT TY 6A
14+90.0 - 16+66.0	LT	176		
15+78.9 - 16+28.9	LT		1 EACH	1 EACH
16+28.9 - 16+72.64	LT			1 EACH
17+42.64 - 17+86.38	LT		1 EACH	
17+86.38 - 18+36.38	LT			1 EACH
17+33.5 - 18+60.0	LT	126.5		
14+90.0 - 16+66.0	RT	176		
15+73.61 - 16+23.61	RT		1 EACH	1 EACH
16+23.31 - 16+67.35	RT			1 EACH
17+37.36 - 17+81.10	RT		1 EACH	
17+81.10 - 18+31.10	RT			1 EACH
17+33.5 - 18+60.0	RT	126.5		
TOTAL		605	4 EACH	4 EACH

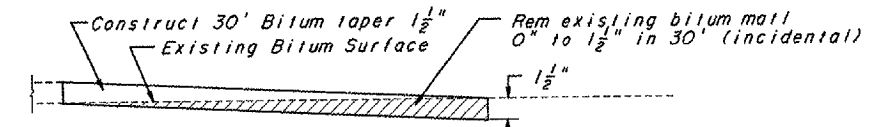
### BITUM. MIXTURE REQUIREMENTS

LOCATION:	08-00647-00-BR	
MIXTURE USE:	BC WIDENING B	INCIDENTAL HMA
PG GRADE:	PG58-22	PG64-22
MAX RAP %:	25 %	15 %
DESIGN AIR VOIDS:	4.0 % @ N50	4.0 % @ N50
MIXTURE COMPOSITION:	IL-19.0	IL-9.5
ERUCTION AGGREGATE:		MIXTURE "C"
PLANT CONTROL:	CLASS I	CLASS I



### TYPICAL SECTION

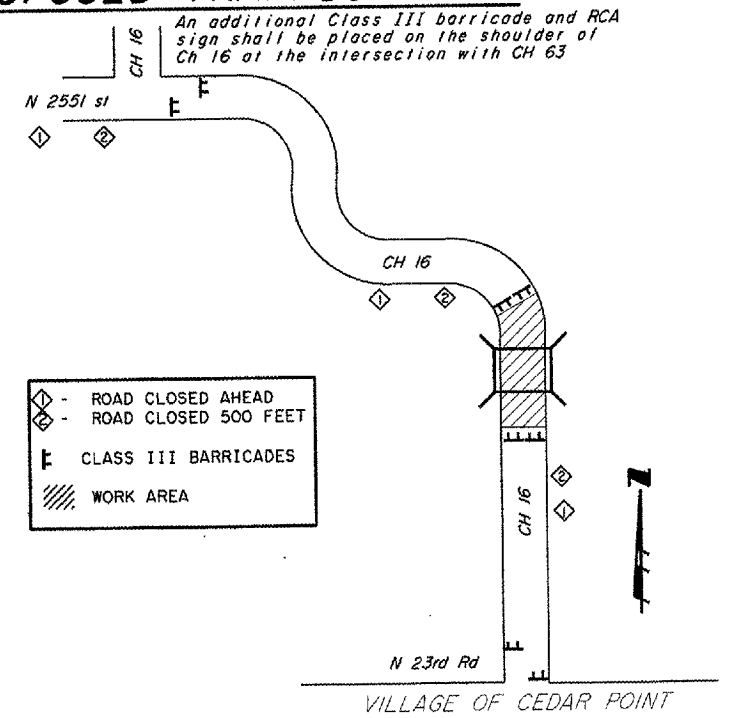
STA 16+25 to STA 18+50



### BUTT JOINT DETAIL

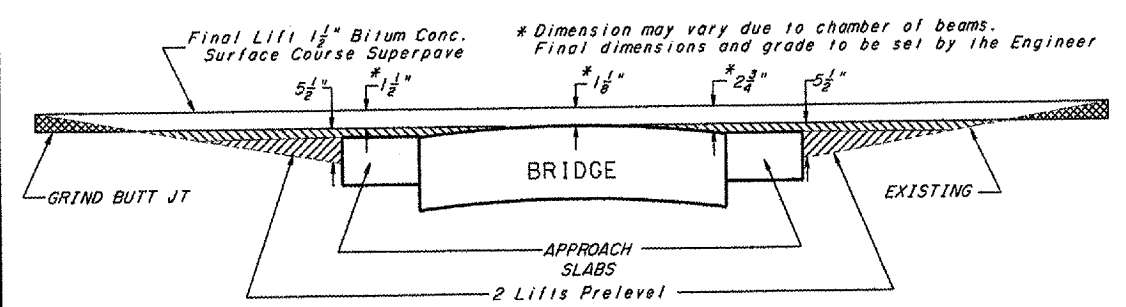
STA 16+00 AHD 73.3 SY  
STA 18+50 BK 73.3 S SY

### PROPOSED TRAFFIC PLAN



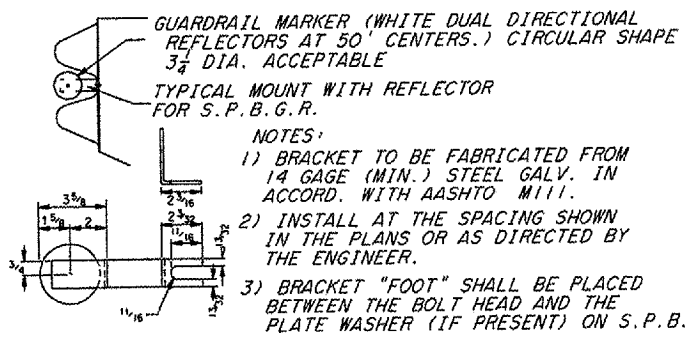
Pay Item#	Item	Unit	Quantity
25000400	NITROGEN FERT NUTR	POUND	11
25000500	PHOSPHORUS FERT NUTR	POUND	11
25000600	POTASSIUM FERT NUTR	POUND	11
* 20400800	FURNISHED EXCAV	CU YD	141
20700110	POROUS GRAN EMBANK	TON	60
21101615	TOPSOIL F & P 4	SQ YD	691
25000200	SEEDING CL 2	ACRE	0.12
25100630	EROSION CONTR BLANKET	SQ YD	691
28000400	PERIMETER EROS BAR	FOOT	300
* 28100810	STONE DMP RIP RAP C A5 SP	TON	430
28200200	FILTER FAB	SQ YD	470
31101200	SUB GRAN MAT B 4	SQ YD	84
* 35650300	BASE CSE WID 8	SQ YD	55
* 40800050	INCIDENTAL HMA SURF	TON	122
42001300	PROTECTIVE COAT	SQ YD	48
* 42001400	BR APPROACH PAVT SPL	SQ YD	80
* 48101200	AGGREGATE SHLDS B	TON	33
* 50100100	REM EXIST STRUCT	EACH	1
50300225	CONC STRUCT	CU YD	30
* 50400605	P P CONC DK BM 33 DP	SQ FT	2100
50800205	REINF BARS, EPOXY CTD	POUND	3020
50901050	STEEL BR RAIL TYPE SM	FOOT	140
51201005	FUR MET SHELL PILES 12	FOOT	440
51202305	DRIVING PILES	FOOT	440
51203200	TEST PILE MET SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
58100200	WATERPRF MEMBRANE SYS	SQ YD	234
58300100	PC MORTAR FAIRING CSE	FOOT	630
63100167	TA BAR TRM TI SPL TAN	EACH	4
63100087	TRAF BAR TRM T6A	EACH	4
* 63200310	GUARDRAIL REMOV	FOOT	605
* 70101800	TRAF CONT & PROT SPL	L SUM	1
67100100	MOBILIZATION	L SUM	1

\* SEE SPECIAL PROVISIONS



### INCIDENTAL HMA SURFACING

GRIND BUTT JOINTS, BITUM MAT'L PRIME RC 70, PRELEVELING AND TEMPORARY PAVEMENT MARKING ARE INCIDENTAL TO "INCIDENTAL HMA SURFACING"



### GUARDRAIL REFLECTOR DETAIL

B- REQUIRED @ 50' CTS INCIDENTAL TO COST OF TBT TY 1 SPEC

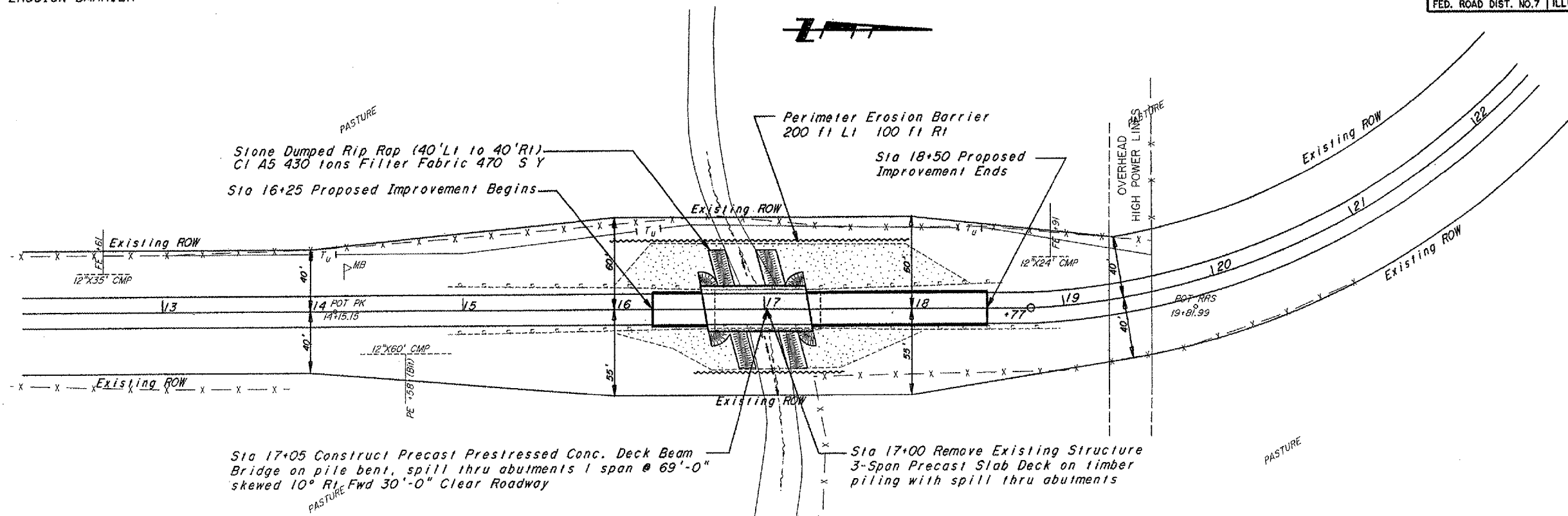
# SUMMARY OF QUANTITIES

DRAWN DRW

SEEDING CL 2 & EROS. CNTRL. BLKT  
PERIMETER EROSION BARRIER

SECTION 5, T. 32 N., R. 1 E. of the 3rd P.M.

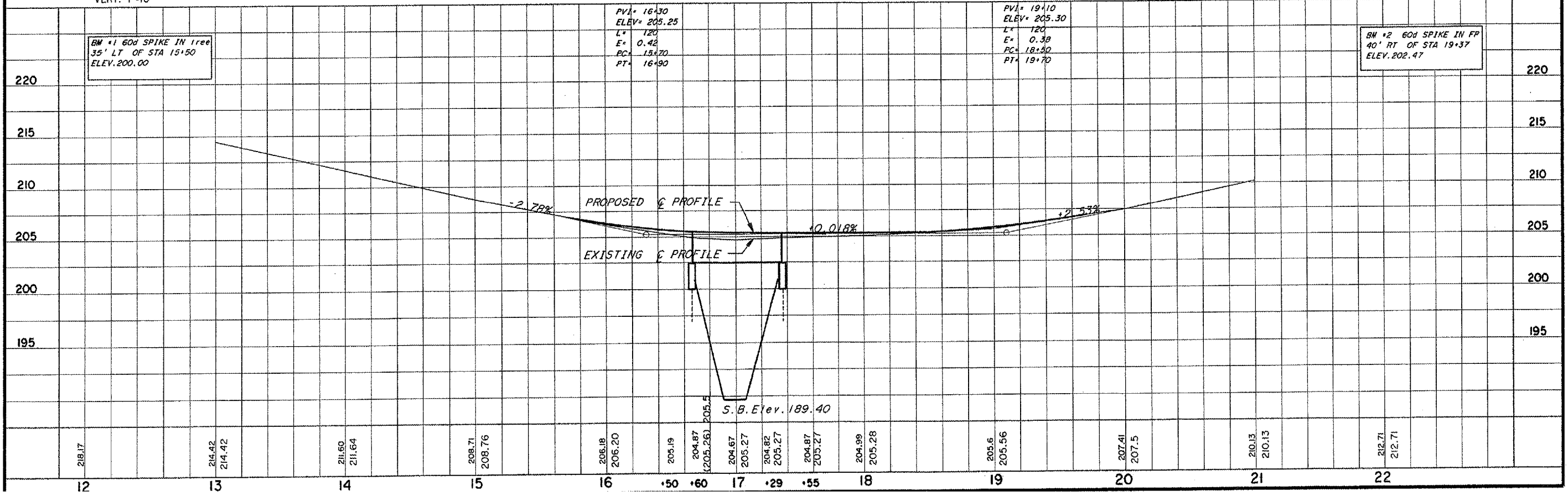
ROUTE NUMBER	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 16	06-00647-00-BR	LASALLE	13	3
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BROS-099(35)	
CONTRACT NO. 87350				



**CURVE #1**  
 P.I. STA= 19+00.  
 $\Delta = 89^{\circ}55'00''$   
 $D = 12'00'00''$   
 $R = 477.91$   
 $T = 477.91$   
 $L = 750$   
 $E = 197.47$   
 $S.E. = 0.08$   
 P.C. STA= 18+83.66  
 P.T. STA= 26+33.66

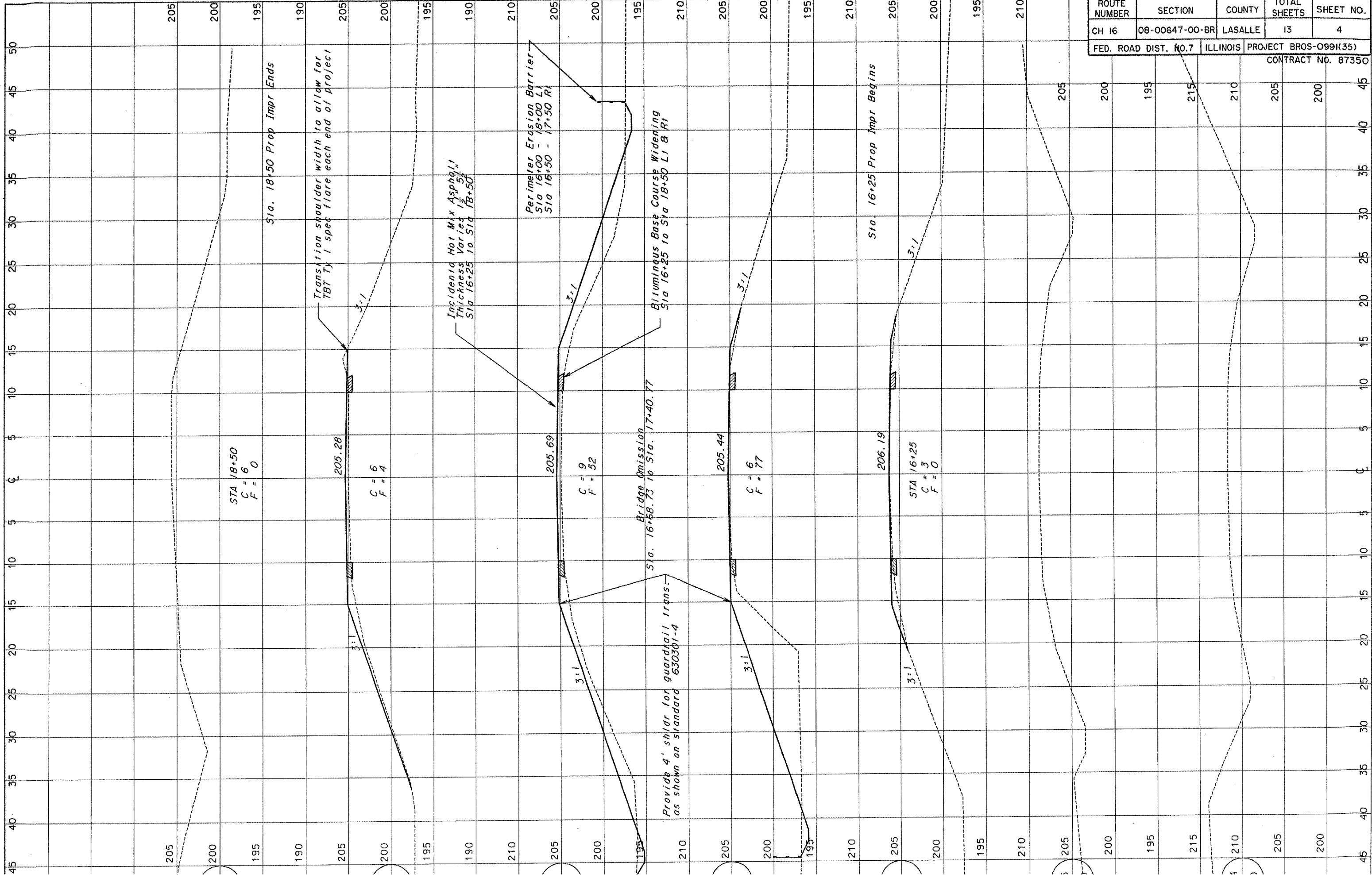
SECTION 4, T. 32 N., R. 1 E. of the 3rd P.M.

PLAN SCALES: HOR. 1"=80'  
 VERT. 1"=80'  
 PROFILE SCALES: HOR. 1"=80'  
 VERT. 1"=10'



DRAWN  
REV.  
REV.  
PLAN

DRAWN  
REV.  
REV.  
PROFILE



ROUTE NUMBER	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 16	08-00647-00-BR	LASALLE	13	4
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT BROS-O99K(35)		
CONTRACT NO. 87350				

B.M. #1 60d in Tree Lt. Sta. 15+50 Elev. 200.00  
 Existing Structure-3 span Precast Conc Slab Deck  
 w/ Steel Railing on timber pile bent piers and  
 abutments. 24' Roadway 70' Total Length  
 Salvage-None

ROUTE NUMBER	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 16	08-00647-00-BR	LASALLE	13	5
FED. ROAD DIST. NO.7 ILLINOIS PROJECT BROS-099(35)			CONTRACT NO. BT350	

**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Incidental Hot Mix Asphalt	Ton	40			40
Waterproofing Membrane System	Sq. Yd.	234			234
Concrete Structures	Cu. Yd.			30.0	30.0
Precast Prestressed Conc. Deck Beams (33" Depth)	Sq. Ft.	2100			2100
Steel Bridge Rail, Type SM	Foot	140			140
Reinf. Bars (Epoxy Coated)	Pound			3020	3020
Furnish Metal Shell Piles 12"	Foot			440	440
Driving Piles	Foot			440	440
Test Pile Metal Shell	Each			2	2
Name Plates	Each	1			1
Stone Dumped Rip-Rap C1 A5 Spec	Ton			430	430
Filter Fabric	Sq. Yd.			470	470
Protective Coat	Sq. Yd.	48			48
Porous Granular Embankment	Ton			60	60
P.C. Mortar Fairing Course	Foot	630			630

**GENERAL NOTES**

The Standard Spec. for Road and Bridge Const. adopted Jan. 1 2007 shall apply to this project.

Class SI Concrete shall be used throughout except in the deck beams

The Contractor shall drive 2 test piles, as specified in a permanent location as directed by the Engineer, before ordering the remaining piles

The test piles shall be driven to 110% of the Nominal Required Bearing indicated in the pile data information

Metal Shell pile shall be according to ASTM A 252 Grade 3

The layout of the Rip-Rap may be varied to suit existing ground conditions as directed by the Engineer. Bedding will not be required.

Protective Coat shall be applied to the sides of the deck and on the exposed surfaces of the wingwalls in accordance with Article 503.19.

**PILE DATA (2-Abuts.)**

Type and Size 12" Metal Shell (0.25")  
 Nominal Required Bearing 270 kips  
 Allowable Resistance Avail. 90 kips  
 Estimated Length 44 Feet  
 Number Required 12  
 Includes 2 Test Piles

**DESIGN STRESSES**

Deck Beams f'c = 5000 psi  
 f'ci = 4000 psi  
 f's = 270000 psi  
 f'si = 201960 psi

Concrete Substructure f'c = 3500 psi  
 fy = 60000 psi

**DESIGN SPECIFICATIONS**

2002 AASHTO & Interims  
 HS20-44 Loading.  
 (Allows 50 P.S.F. Future Wearing Surface)

CEDAR CREEK  
 SEC. 08-00647-00-BR BUILT 2008  
 LA SALLE COUNTY  
 LOADING HS20-44  
 STR. NO. 050-3584

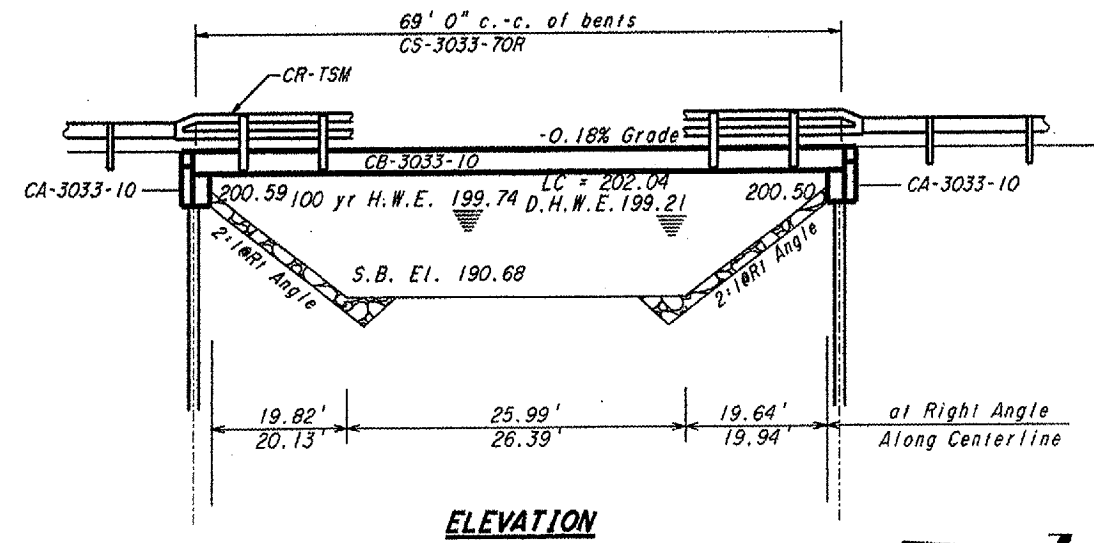
**LETTERING FOR NAME PLATE**

Locate Name Plate at Southwest Corner of Bridge

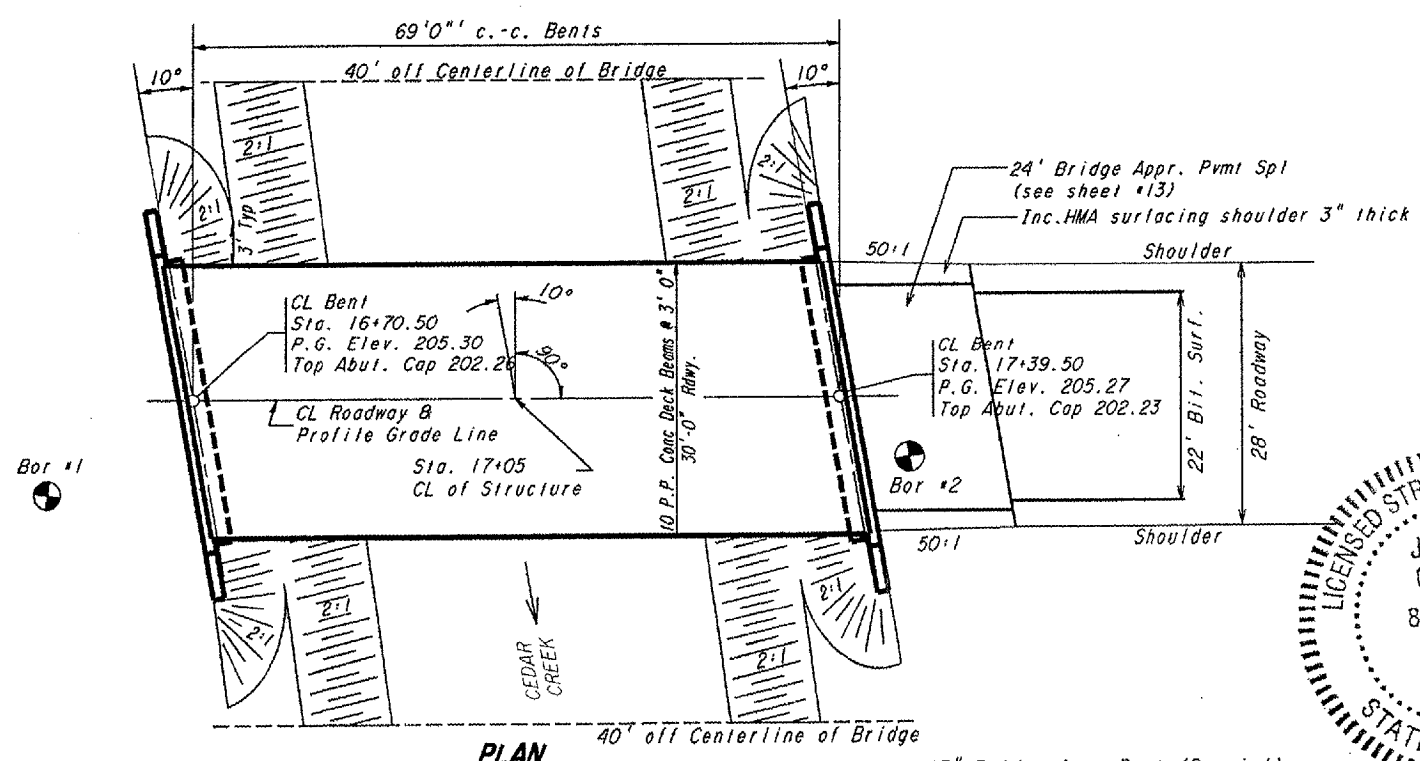
**INDEX OF SHEETS**

1. General Plan & Elevation
2. Abutment Details
3. Standard CS 3033-70R
4. Standard CB 3033-36
5. Standard CRTSM
6. Standard CN
6. Standard CXI

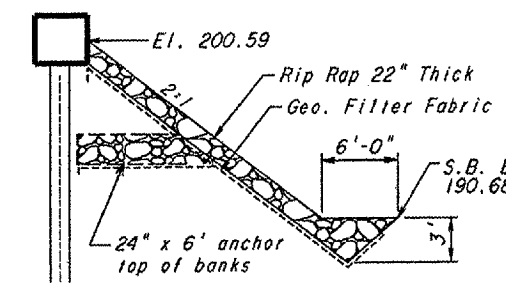
GENERAL PLAN & ELEVATION  
 LA SALLE COUNTY



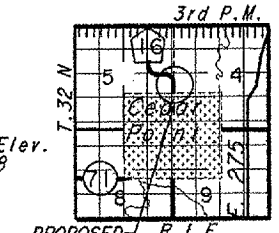
**ELEVATION**



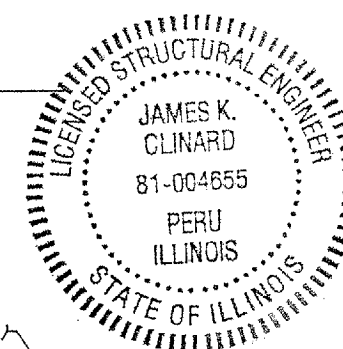
**PLAN**



**RIP-RAP DETAIL**  
 Bedding not required



**LOCATION SKETCH**



I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design load shown on the plans. The design is an economical one for the style of structure and complies with the current "AASHTO Standard Specifications for Highway Bridges".

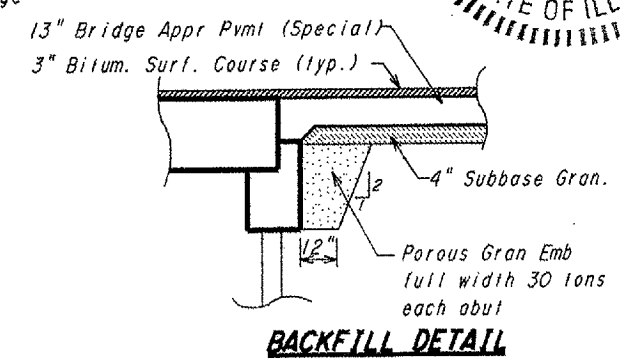
*James K. Clinard*  
 Date 6/1/07

These plans were prepared by me or by a full time member of my staff working under my personal supervision.  
*Lawrence J. Kinzer*  
 Lawrence J. Kinzer  
 La Salle County Engineer  
 I.R.P.E. No. 62-40162  
 Exp. Date 11-30-07



**WATERWAY INFORMATION**

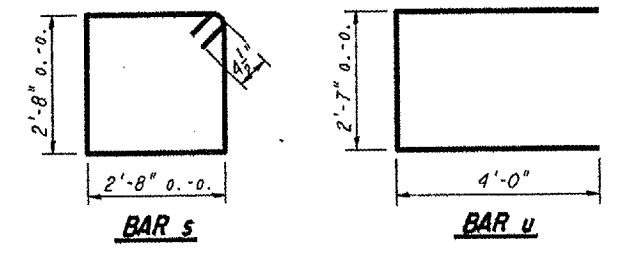
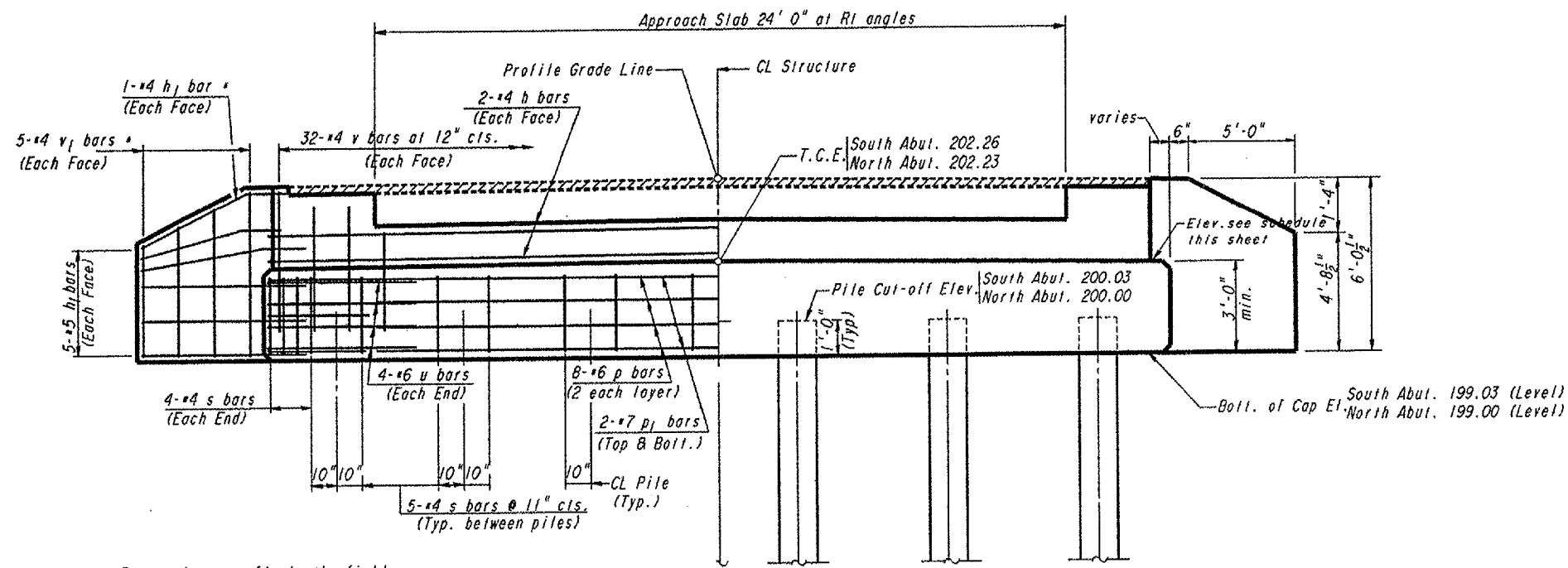
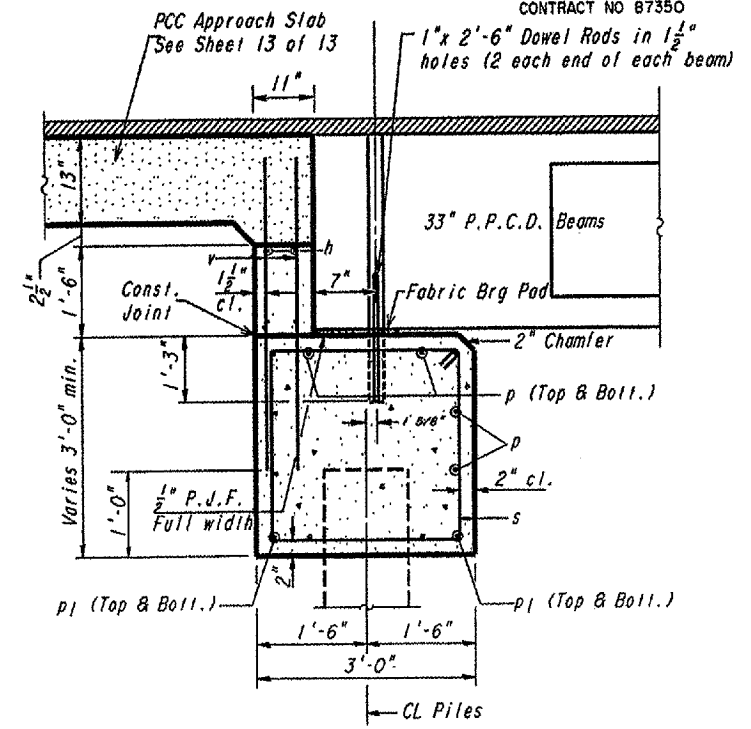
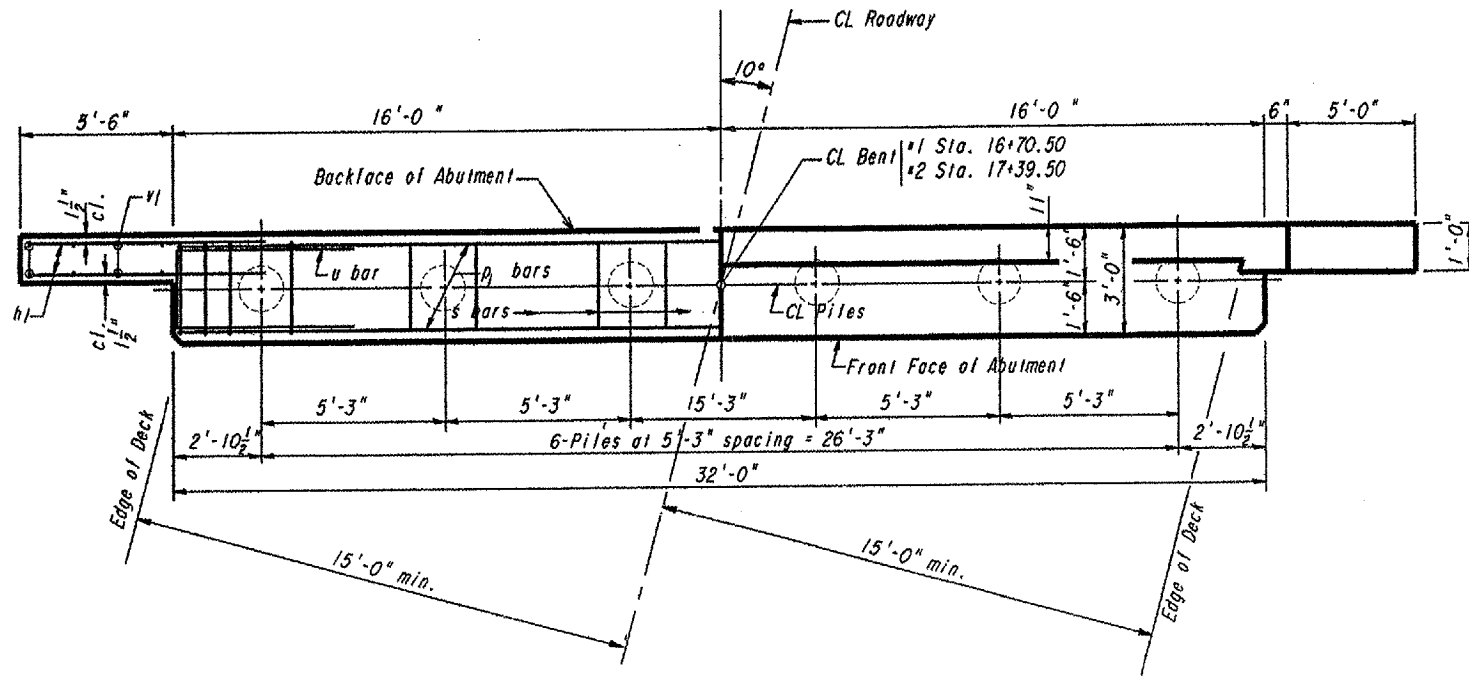
Drainage Area = 20.00		Low Grade Elev. = 205.25 @ Sta. 16+50							
Flood Yr.	Freq. C.F.S.	Q	Opening S.F.	Nat. H.W.E.	Head - Ft.	Headwater El.			
Design	20	2259	272	367.2	199.21	0.59	0.24	199.80	199.45
Base	100	3257	329	399.6	199.74	0.74	0.93	200.95	200.67
Overlapping Max. Calc.	500	4193							



**BACKFILL DETAIL**

ROUTE NUMBER	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 16	08-00647-00-BR	LASALLE	13	6
FED. ROAD DIST. NO.7		ILLINOIS PROJECT BROS-099(35)		

CONTRACT NO B7350



**BILL OF MATERIAL FOR ONE ABUTMENT**

Bar	No.	Size	Length	Shape
h	4	#4	31'-6"	—
h <sub>1</sub>	24	#5	6'-6"	—
p	8	#6	31'-8"	—
p <sub>1</sub>	4	#7	31'-8"	—
s	33	#4	11'-5"	□
u	8	#6	10'-7"	⊔
v	64	#4	4'-0"	—
v <sub>1</sub>	20	#4	5'-5"	—
Concrete Structures		15.0 Cu. Yd.		
Reinf Bars Epoxy Ct		1510 Pounds		

**DESIGN STRESSES**

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

**PILE DATA (2-ABUTS.)**

Type and Size      12" Metal Shell (0.25")  
Nominal Required Bearing      270 kips  
Allowable Resistance Avail.      90 kips  
Estimated Length      44 Feet  
Number Required      12 Includes 2 Test Piles

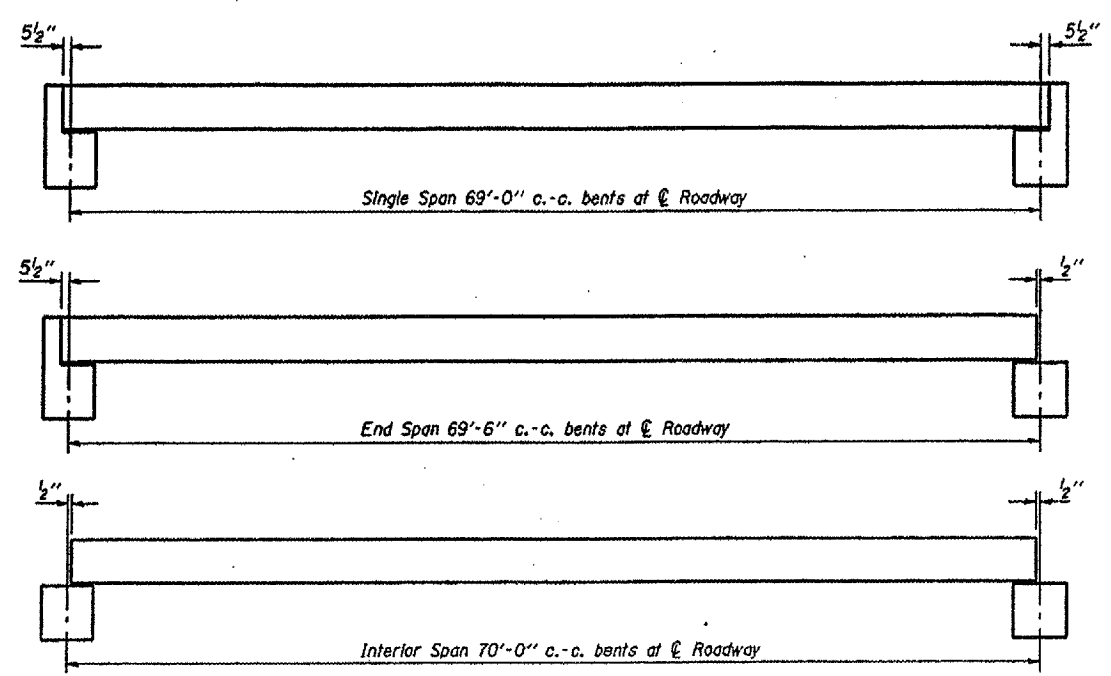
**TOP OF CAP ELEVATIONS**

LOCATION	15.23' LI*	Centerline	15.23' RI*
South Abut Sta. 16+70.50	202.03	202.26	202.03
North Abut Sta. 17+39.50	202.00	202.23	202.00

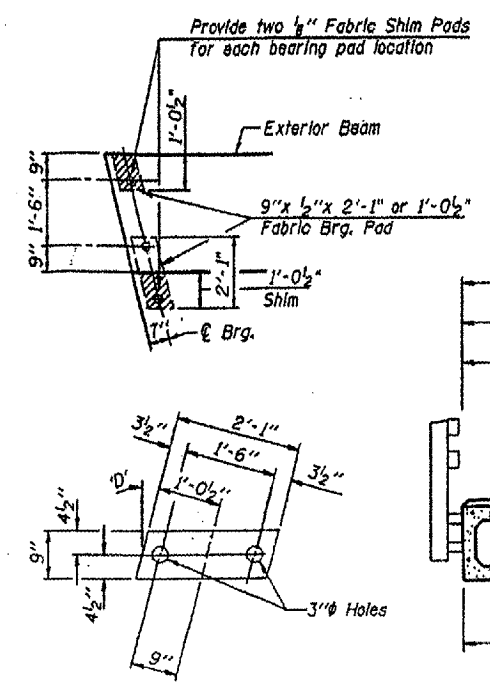
\* Measured along skew

**ABUTMENT DETAIL**

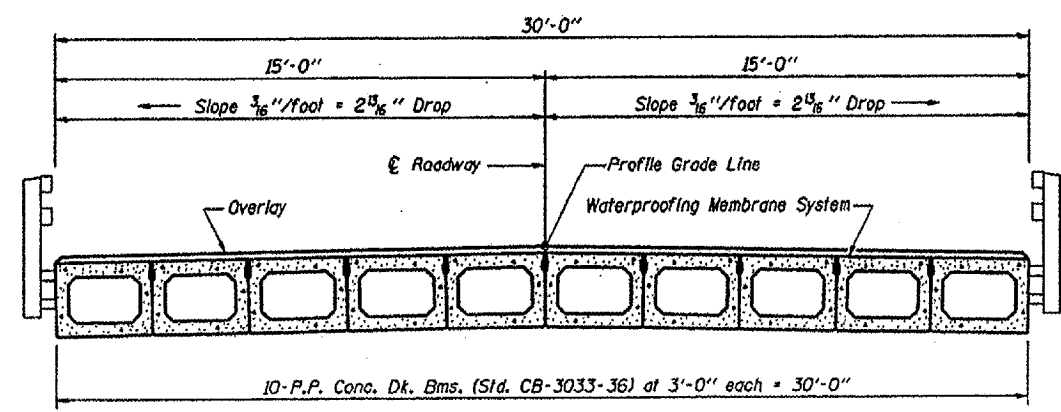
Sheet 7  
87350



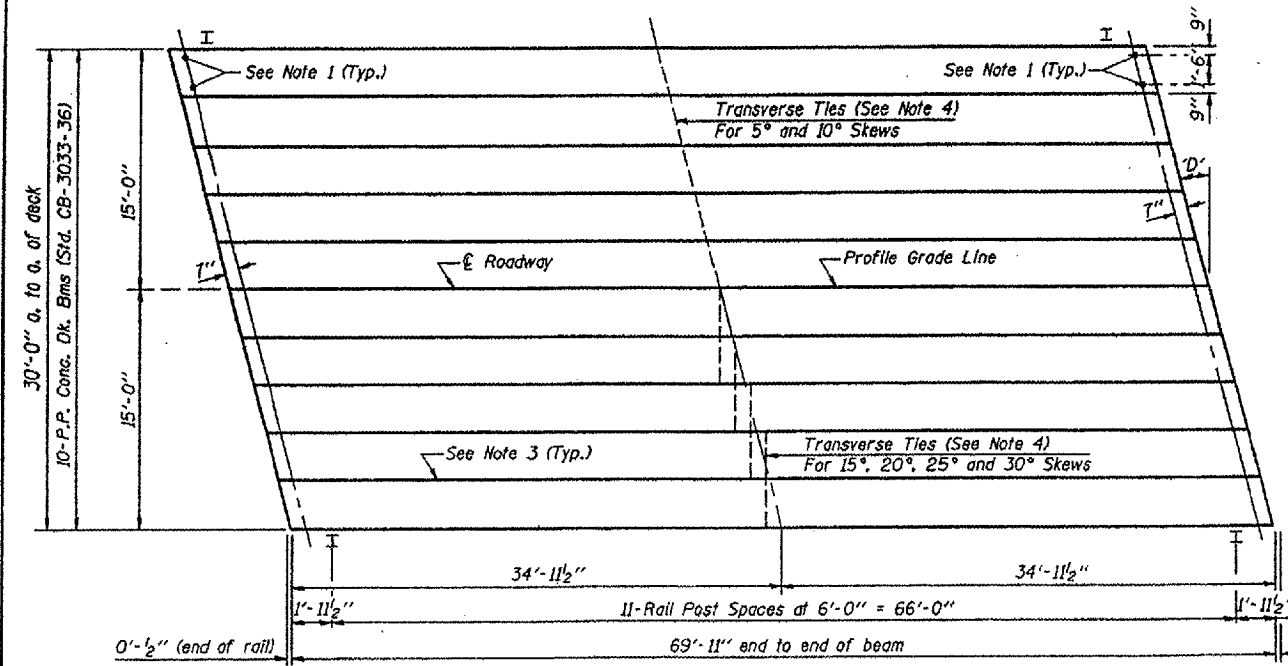
TYPICAL ELEVATIONS



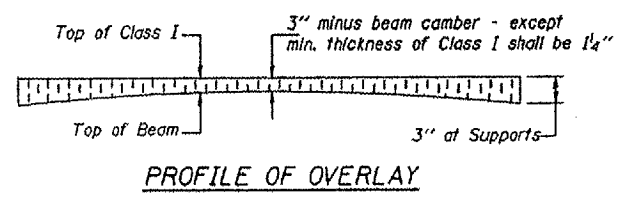
1/2" FABRIC BRG. PAD DETAILS



CROSS SECTION



PLAN  
("D" = Designated Skew Angle)

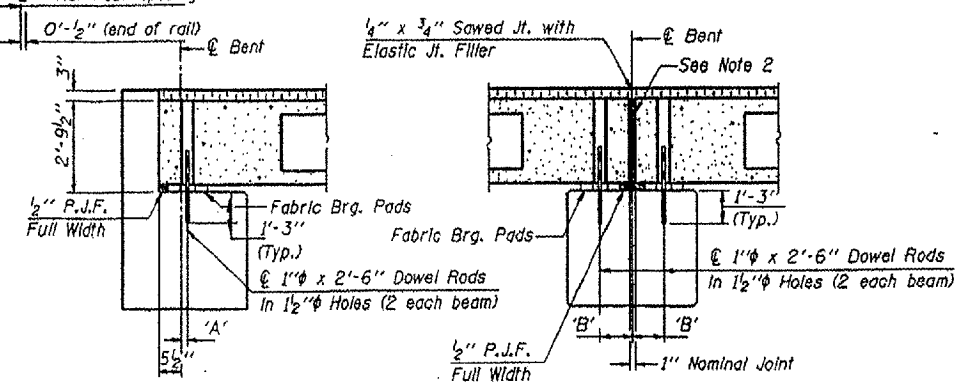


PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

'D'	5°	10°	15°	20°	25°	30°
A	1 1/2"	1 3/8"	1 3/4"	1 7/8"	2 1/4"	2 5/8"
B	7 1/2"	7 3/8"	7 3/4"	8"	8 1/4"	8 5/8"

- NOTES**
- 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.
  - Nominal 1" joint at <math>\text{\textcircled{C}}</math> Pier shall be filled with non-shrink grout.
  - Longitudinal keys shall be grouted.
  - The 1" <math>\phi</math> rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.



SECTION AT ABUTS.  
(Along <math>\text{\textcircled{C}}</math> Beams)

SECTION AT PIERS  
(Along <math>\text{\textcircled{C}}</math> Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 33" Dp.	2100 Sq. Ft.
Steel Railing	140 Ft.
Waterproofing Membrane System	233.3 Sq. Yds
Portland Cement Mortar Fairing Course	630 Ft.

Note: Quantity of overlay for one span = 29.8 Tons

P.P.C. DECK BEAM SUPERSTRUCTURE			
30' RDWY.	33" BMS.	70' SPAN	RIGHT
STANDARD CS-3033-70R			

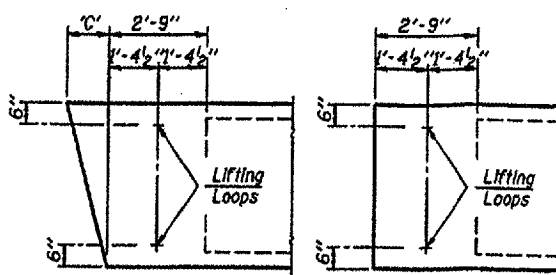
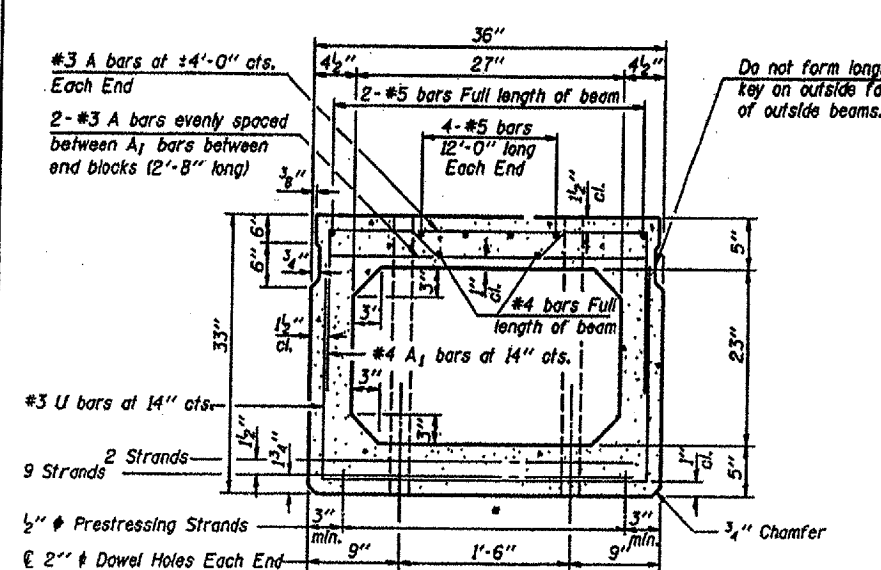
Illinois Department of Transportation

PASSED APRIL 4, 2005

Thomas S. Nematollahi  
Engineer of Bridge Design

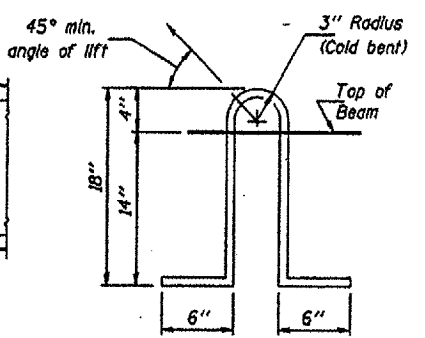
APPROVED APRIL 4, 2005

Ralph E. Anderson  
Engineer of Bridges and Structures



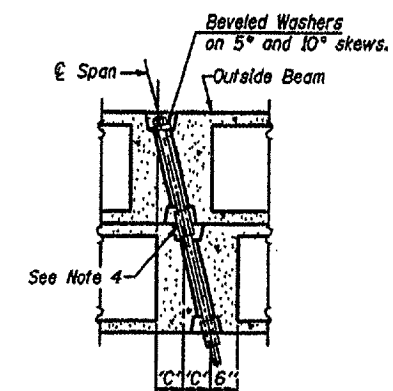
**END BLOCK DETAILS**

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.

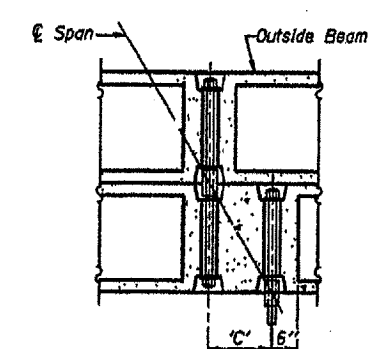


**LIFTING LOOP DETAIL**

Lifting loops shall be 3/2" φ - 270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.



**PARTIAL PLAN TRANSVERSE TIE ASSEMBLY**  
(D=0°, 5° and 10°)



**PARTIAL PLAN TRANSVERSE TIE ASSEMBLY**  
(D=15°, 20°, 25° and 30°)

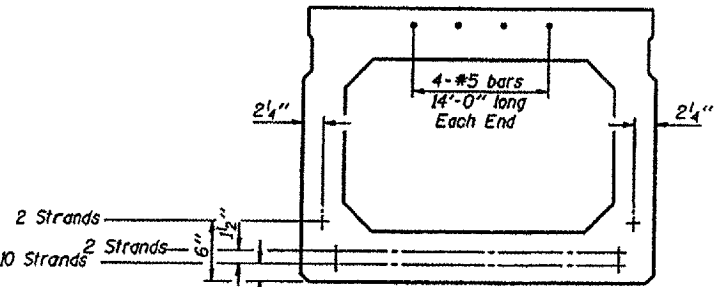
**DIMENSION 'C'**

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	3 1/2	6 3/8	9 3/8	13 3/8	16 3/4	20 3/4

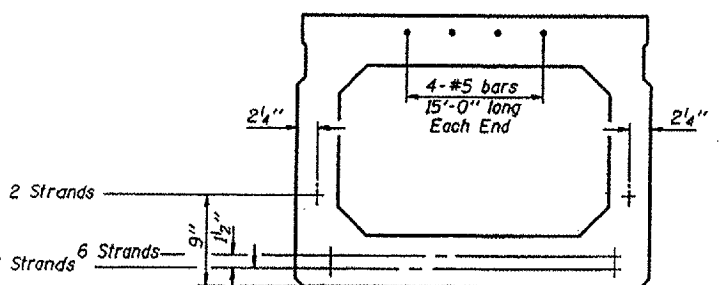
**\* TRANSVERSE STRAND PLACEMENT GUIDELINES**

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

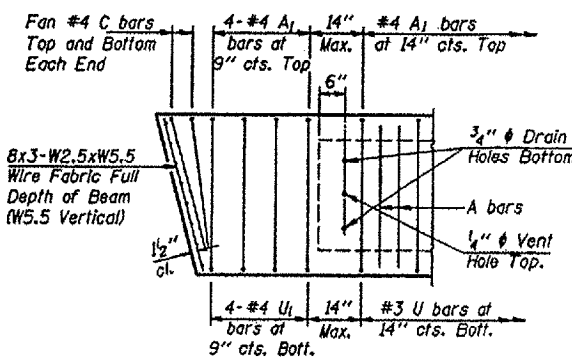
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



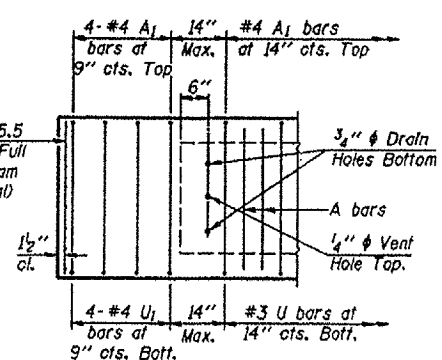
**CROSS SECTION (70' SPAN)**



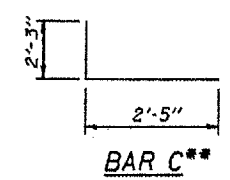
**CROSS SECTION (75' SPAN)**



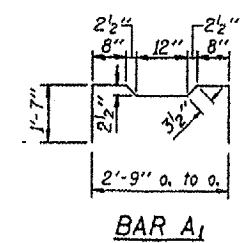
**END REINFORCEMENT (SKEWED)**



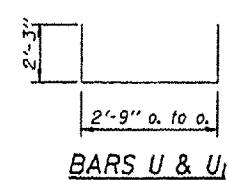
**END REINFORCEMENT (RIGHT ANGLE)**



**BAR C\*\***



**BAR A1**

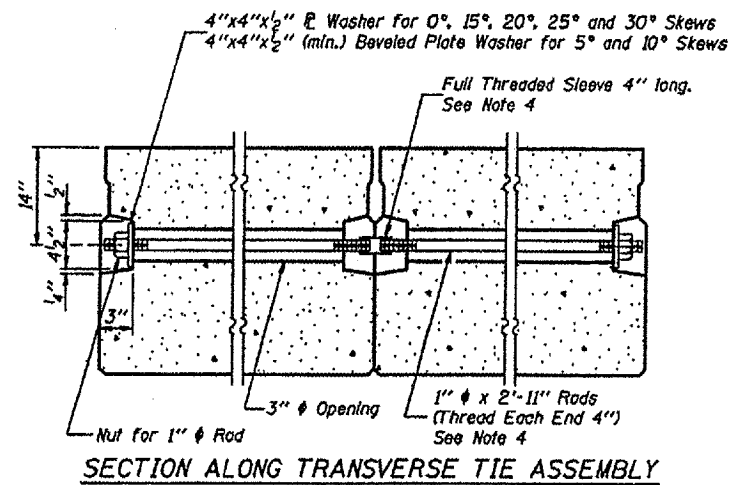


**BARS U & U1**

**DESIGN STRESSES**

- $f_c = 5,000$  p.s.i.
- $f_d = 4,000$  p.s.i.
- $f_s = 270,000$  p.s.i. (1/2" φ Strand)
- $f_{st} = 201,960$  p.s.i. (1/2" φ Strand)
- $f_y = 60,000$  p.s.i.

**MIN. BAR LAP**  
#4 bars = 1'-4"  
#5 bars = 1'-8"



**SECTION ALONG TRANSVERSE TIE ASSEMBLY**

**NOTES**

1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
4. On 0°, 5° and 10° skews, alternate approved transverse tie rods of increased segmental length are acceptable.
5. Roll Post anchor devices shall be cast into outside beam as elsewhere specified.
6. When a Waterproofing Membrane System is specified, the top surface of the beams shall be screeded with a straightedge and finished with a hand float. The finished 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".
7. 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.

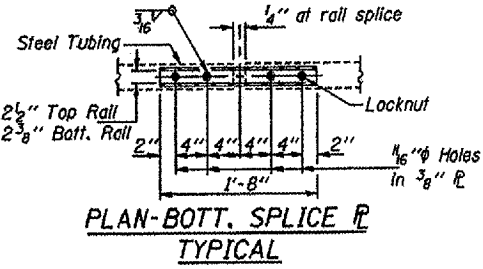
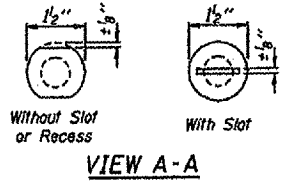
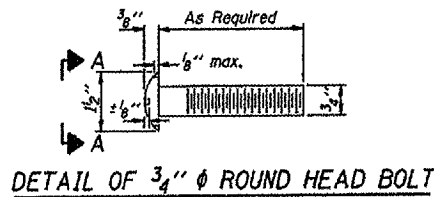
**NOTE:**  
The std. reinf. and dimensions shown on the 60' span cross section is typical for all spans, except as shown.

**\*\*NOTE:**  
The following number of C bars shall be used:  
Skew No.  
5° and 10° — 1  
15° and 20° — 2  
25° and 30° — 3

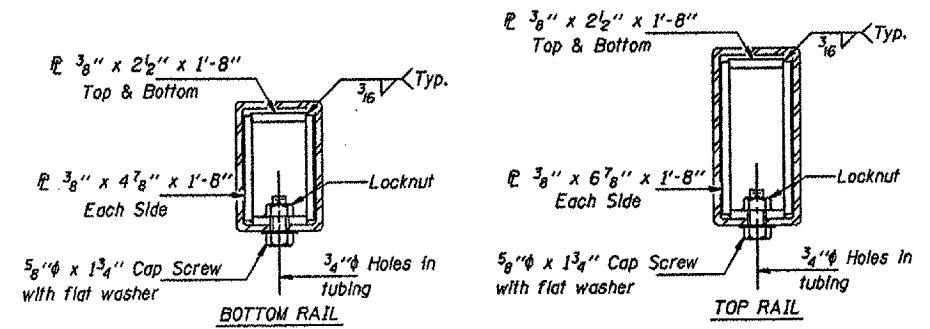
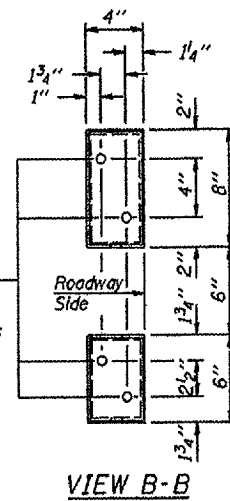
Illinois Department of Transportation  
PASSED APRIL 4, 2005  
Theresa S. Romanowski  
Engineer of Bridge Design  
APPROVED APRIL 4, 2005  
Ralph E. Anderson  
Engineer of Bridges and Structures

**P.P.C. DECK BEAM DETAILS**  
30' ROADWAY | 33" x 36" BEAMS  
STANDARD CB-3033-36

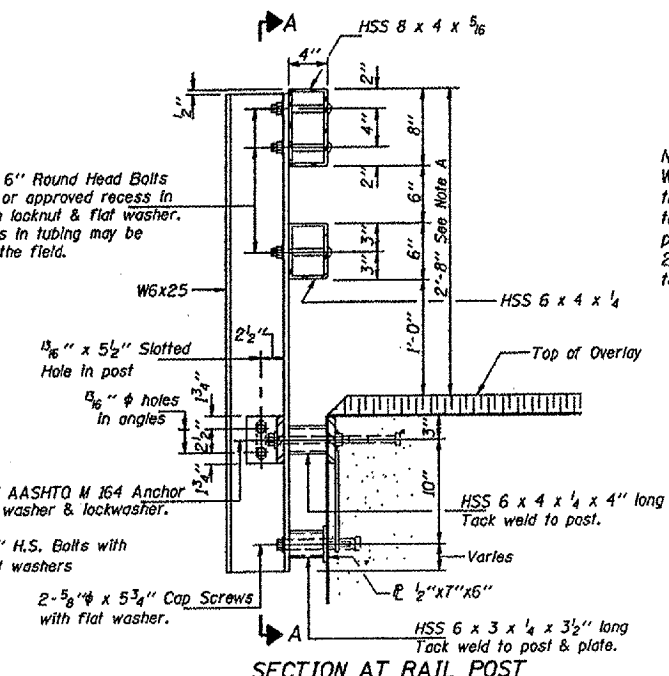
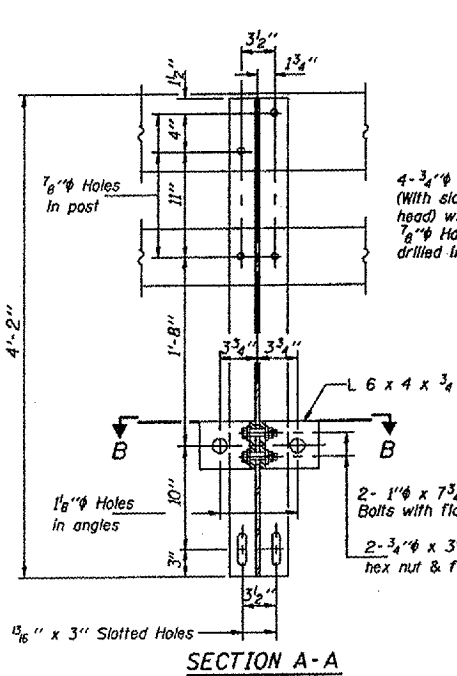




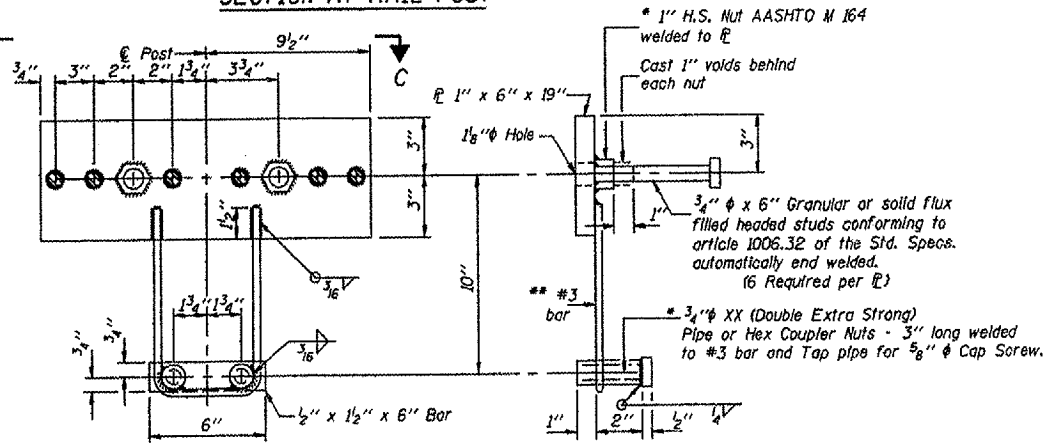
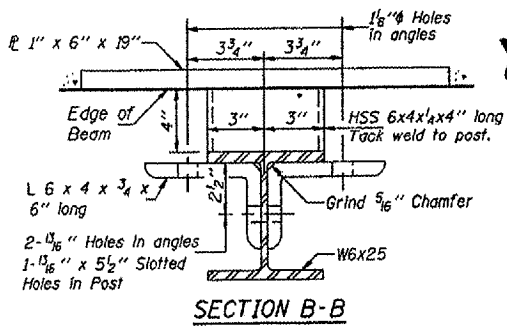
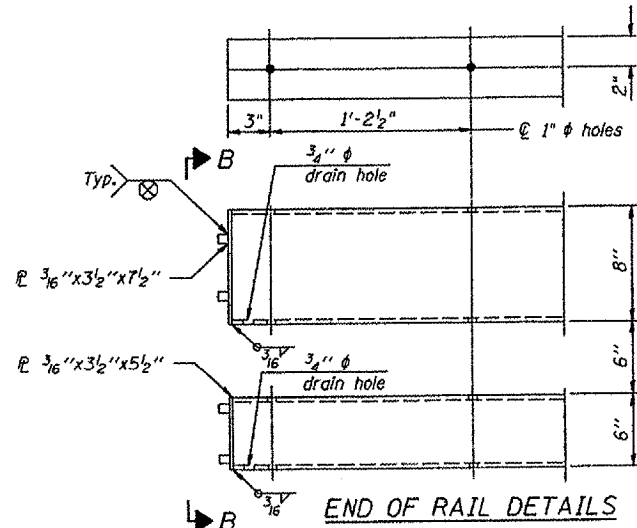
④ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



Sheet 9  
87350

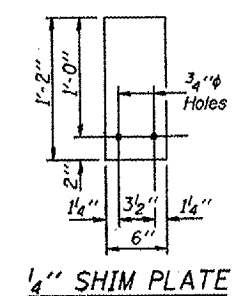
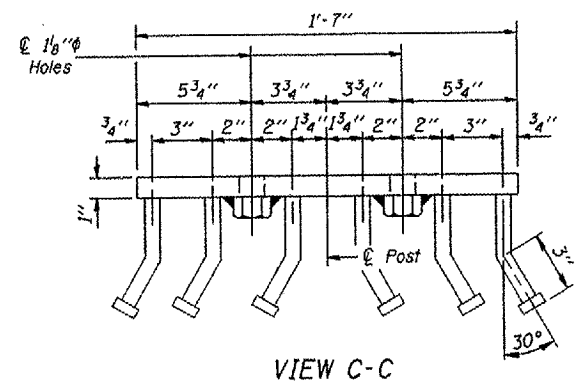


Note A:  
Where no overlay is to be provided, adjust top of rail to lay parallel to grade 2'-10" max. above top of beam



**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".

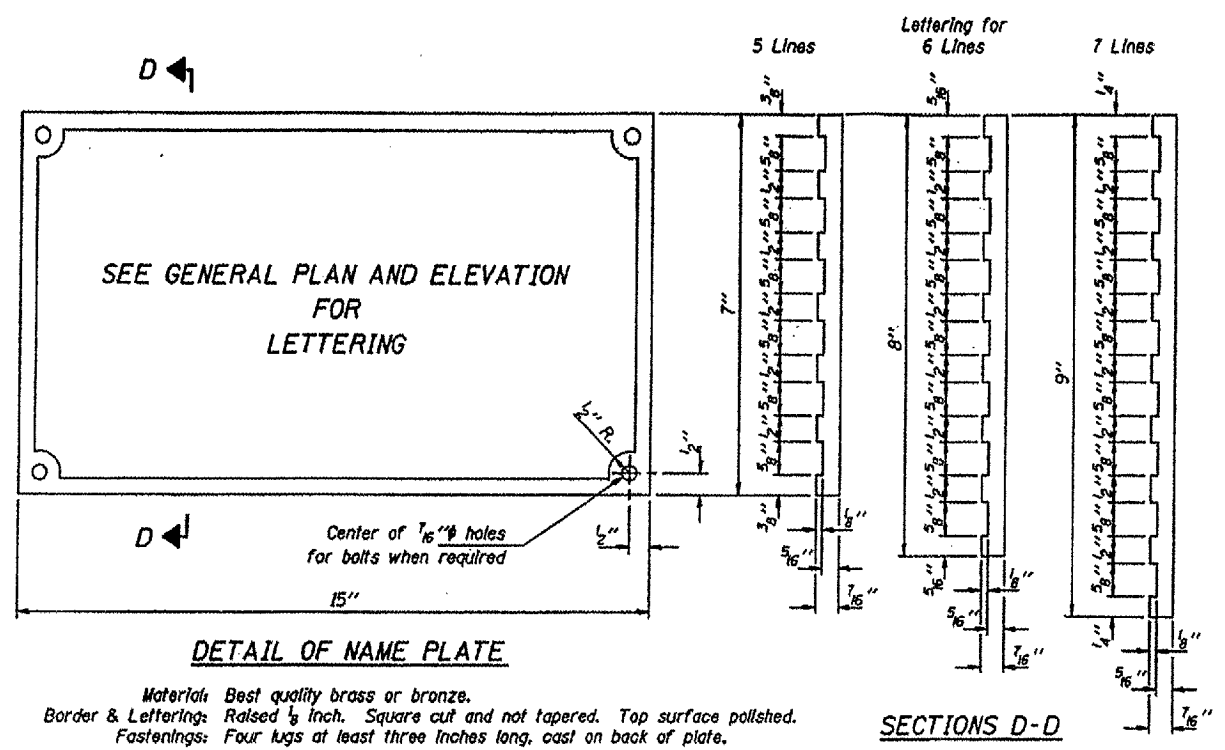


**NOTES**

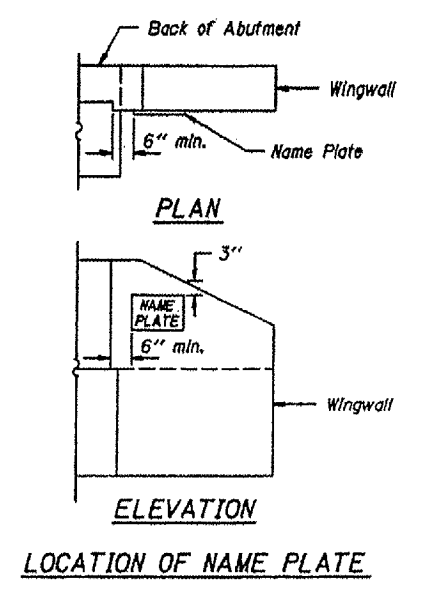
Hollow structural steel tubing shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.  
All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts 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 1/4" 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(F)(2) 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 1/2 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  
Theresa J. ...  
Engineer of Bridge Design  
APPROVED APRIL 4, 2005  
Robert E. ...  
Engineer of Bridges and Structures

STEEL BRIDGE RAIL, TYPE SM  
STANDARD CR-TSM



Materials: Best quality brass or bronze.  
 Border & Lettering: Raised  $\frac{1}{8}$  inch. Square cut and not tapered. Top surface polished.  
 Fastenings: Four lugs at least three inches long, cast on back of plate.



Illinois Department of Transportation

PASSED APRIL 4, 2005

Thomas J. [Signature]

Engineer of Bridge Design

APPROVED APRIL 4, 2005

Ralph E. [Signature]

Engineer of Bridges and Structures

506-1-2 (REVISED)

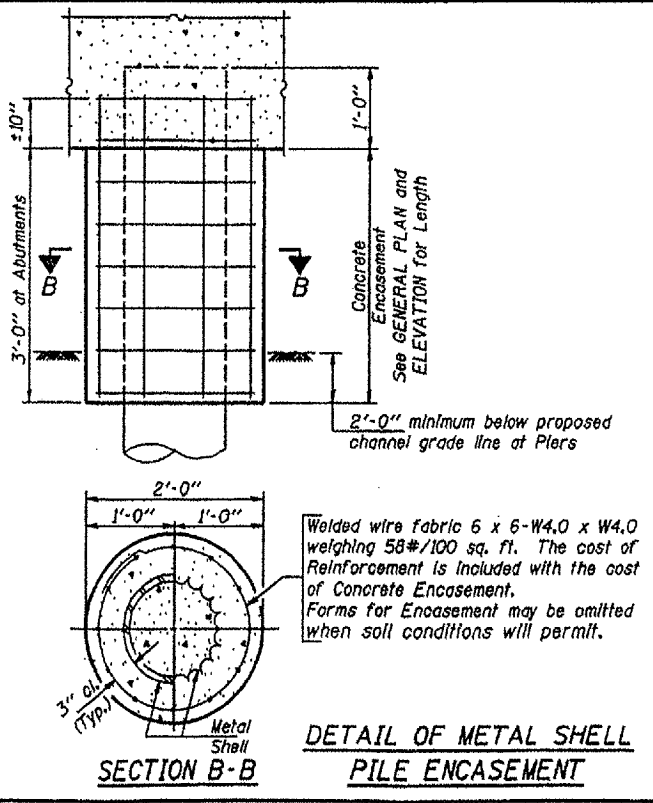
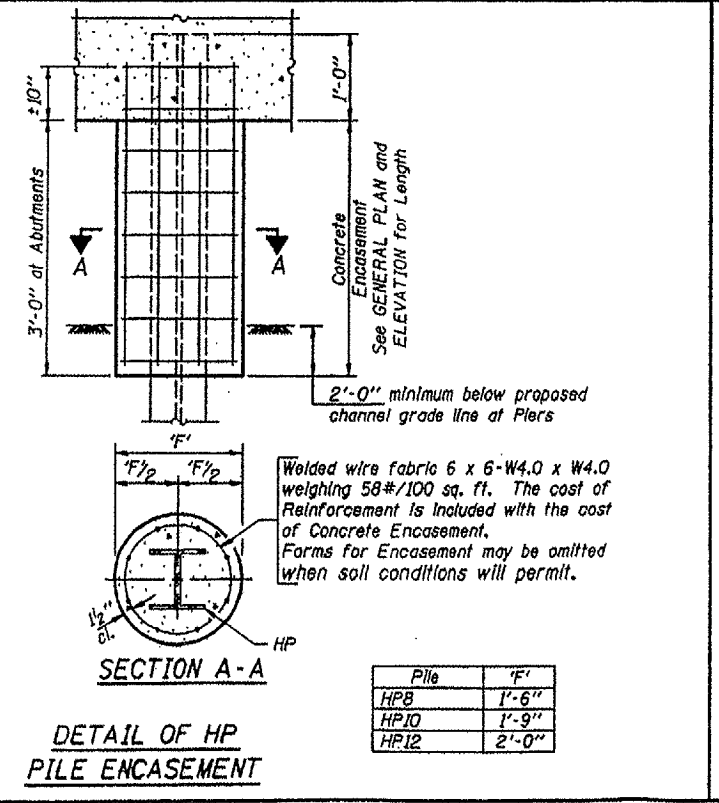
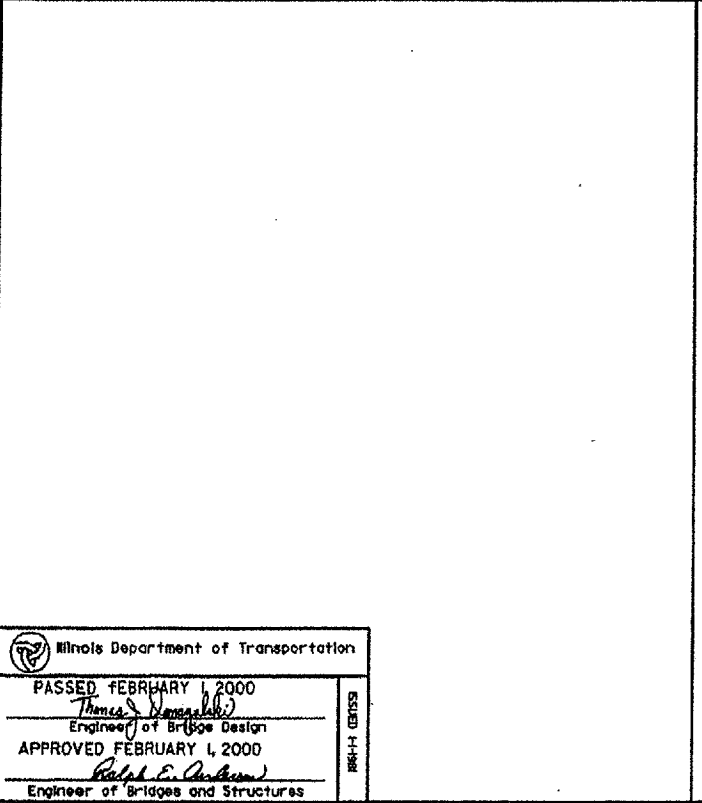
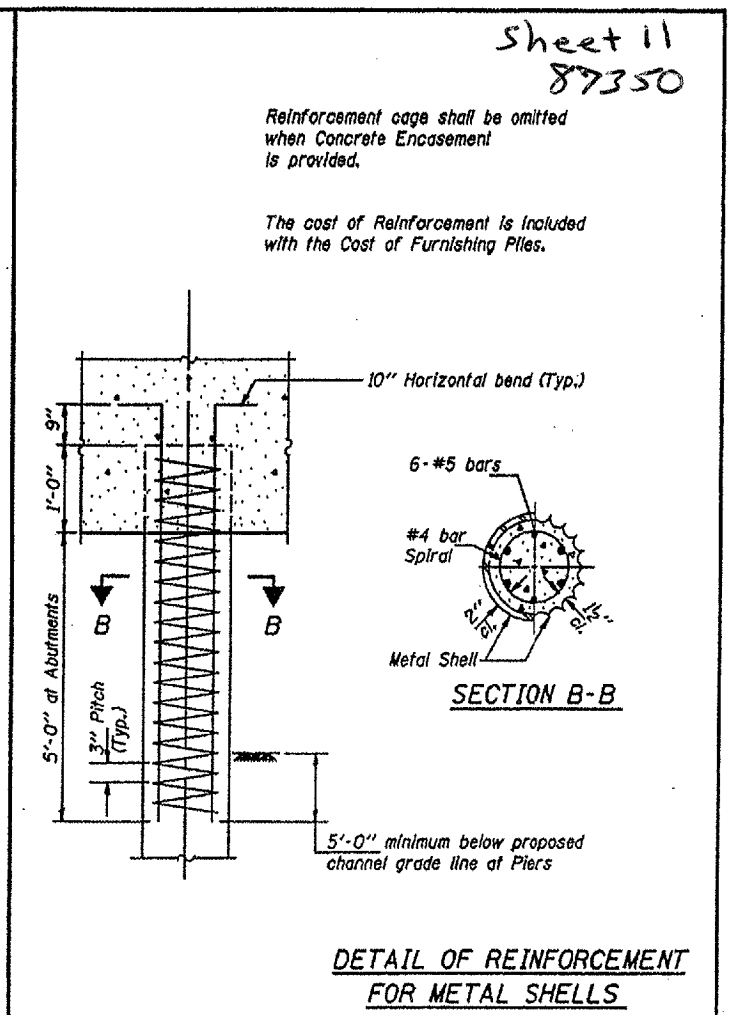
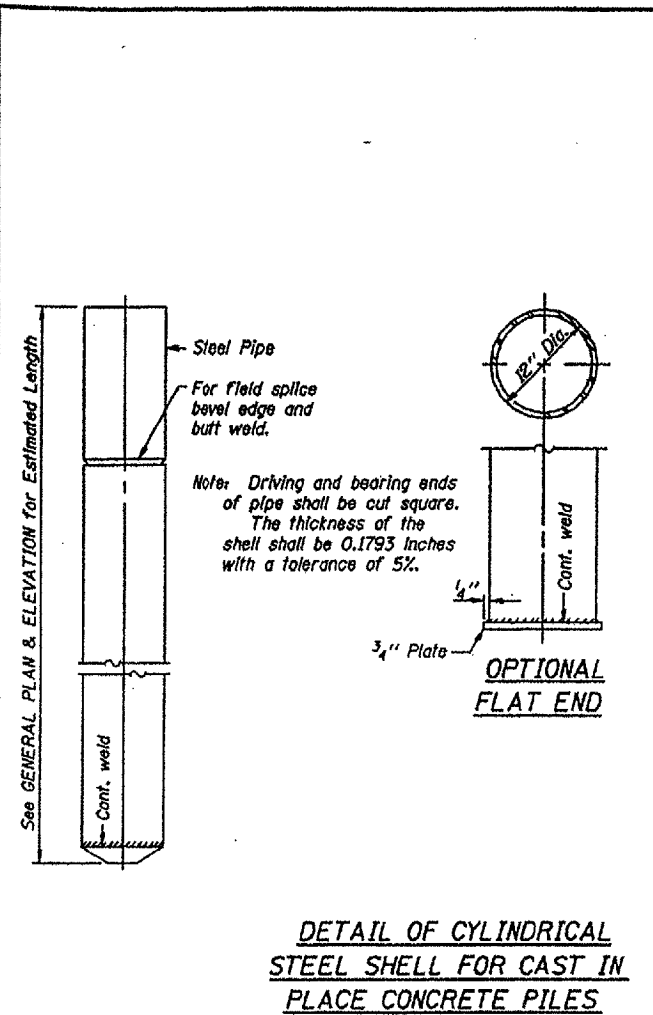
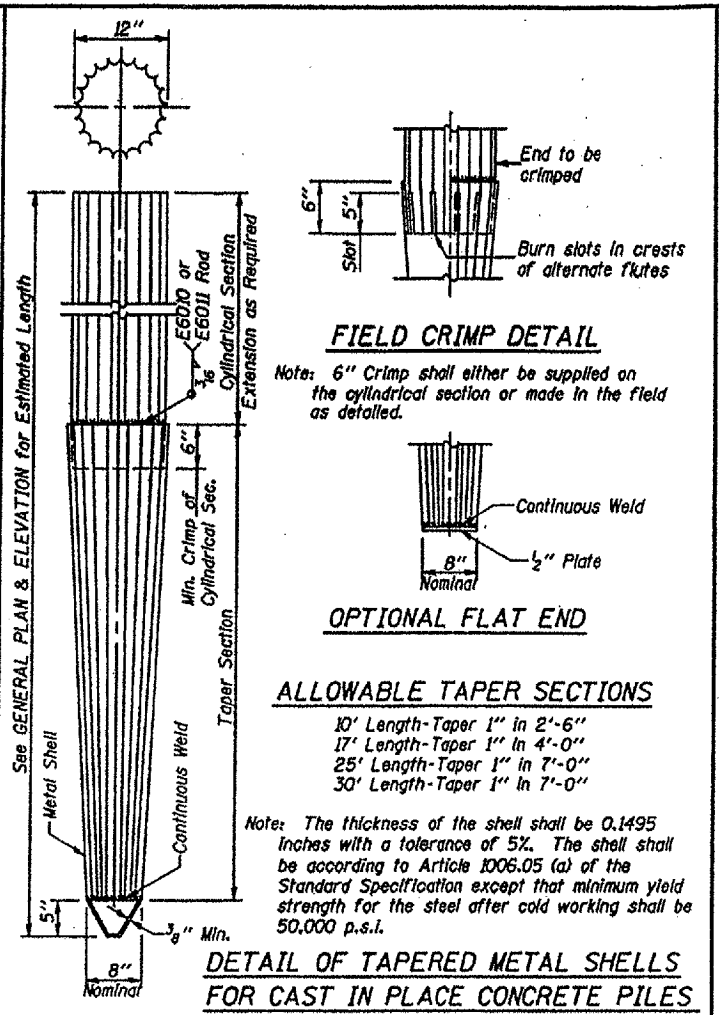
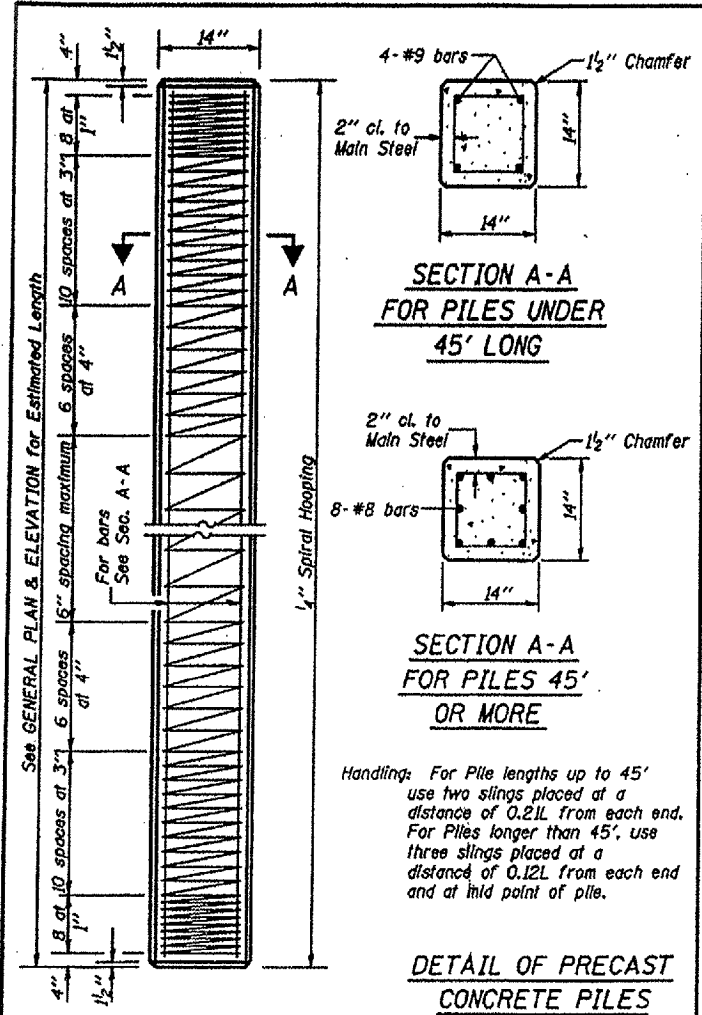
NAME PLATE

STANDARD CN

Sheet 11  
87350

Reinforcement cage shall be omitted when Concrete Encasement is provided.

The cost of Reinforcement is included with the Cost of Furnishing Piles.



**QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)**

Pile Size	Item	Quantity
HP8	Concrete Encasement	0.053 C.Y.
HP10	Concrete Encasement	0.086 C.Y.
HP12	Concrete Encasement	0.112 C.Y.

**(METAL SHELL PILES)**

Pile Size	Item	Quantity
12" Dia.	Concrete Encasement	0.087 C.Y.

PILE DETAILS

STANDARD CX-1

Illinois Department of Transportation

PASSED FEBRUARY 1, 2000

Thomas J. Mansueti  
Engineer of Bridge Design

APPROVED FEBRUARY 1, 2000

Ralph E. Anderson  
Engineer of Bridges and Structures

BORING LOG		Midwest Testing Services, Inc.	
Sheet 3 of 3		3705 Progress Blvd. Peru, IL 61354	
Boring No. B-1		Client: LaSalle County Highway Department	
Surface Elev. 100.2		Project Name: Eden Township Section 08-00647-00-BR	
Auger Depth 51'		Project Site: LaSalle County, Illinois	
Start Date 03/10/07		Location: South abutment 6' Rt. of centerline of road Station 16+58	
Finish Date 03/12/07		DRILLED BY: Jeff Sufanski Diedrich D-120	
DEPTH ELEV.	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
58.20	43		
57.20	44		
56.20	45		
55.20	46	Hard Gray Silty Clay Till	
54.20	47		
53.20	48		
52.20	49		
51.20	50		
50.20	51		
49.20	52		
48.20	53		
47.20	54		
46.20	55		
45.20	56		
44.20	57		
43.20	58		
42.20	59		
41.20	60		
40.20	61		
39.20	62		
38.20			

Groundwater Data: Static water level after auger removal 13' depth.  
Comments: \*\* Assumed center of existing bridge deck as 100.0.

BORING LOG		Midwest Testing Services, Inc.	
Sheet 2 of 3		3705 Progress Blvd. Peru, IL 61354	
Boring No. B-2		Client: LaSalle County Highway Department	
Surface Elev. 100.1		Project Name: Eden Township Section 08-00647-00-BR	
Auger Depth 61'		Project Site: LaSalle County, Illinois	
Start Date 03/10/07		Location: 6' Rt. of station 17+44	
Finish Date 03/10/07		DRILLED BY: Jeff Sufanski Diedrich D-120	
DEPTH ELEV.	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
79.10	22		
78.10	23		
77.10	24		
76.10	25		
75.10	26		
74.10	27		
73.10	28		
72.10	29		
71.10	30		
70.10	31		
69.10	32		
68.10	33		
67.10	34		
66.10	35		
65.10	36		
64.10	37		
63.10	38		
62.10	39		
61.10	40		
60.10	41		
59.10			

Groundwater Data: Static water level after auger removal at 13' depth.  
Comments: \*\* Assumed center of existing bridge deck as 100.0.

BORING LOG		Midwest Testing Services, Inc.	
Sheet 1 of 3		3705 Progress Blvd. Peru, IL 61354	
Boring No. B-2		Client: LaSalle County Highway Department	
Surface Elev. 100.1		Project Name: Eden Township Section 08-00647-00-BR	
Auger Depth 61'		Project Site: LaSalle County, Illinois	
Start Date 03/10/07		Location: 6' Rt. of station 17+44	
Finish Date 03/10/07		DRILLED BY: Jeff Sufanski Diedrich D-120	
DEPTH ELEV.	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
99.10	1		
98.10	2		
97.10	3		
96.10	4		
95.10	5		
94.10	6	SHiff Black And Brown Clay And Gravely Clay (FH)	
93.10	7		
92.10	8		
91.10	9		
90.10	10		
89.10	11		
88.10	12		
87.10	13		
86.10	14		
85.10	15		
84.10	16		
83.10	17		
82.10	18		
81.10	19		
80.10	20		

Groundwater Data: Static water table after auger removal at 13' depth.  
Comments: \*\* Assumed center of existing bridge deck as 100.0. = 20+4.67

BORING LOG		Midwest Testing Services, Inc.	
Sheet 3 of 3		3705 Progress Blvd. Peru, IL 61354	
Boring No. B-2		Client: LaSalle County Highway Department	
Surface Elev. 100.1		Project Name: Eden Township Section 08-00647-00-BR	
Auger Depth 61'		Project Site: LaSalle County, Illinois	
Start Date 03/10/07		Location: 6' Rt. of station 17+44	
Finish Date 03/10/07		DRILLED BY: Jeff Sufanski Diedrich D-120	
DEPTH ELEV.	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
58.10	43		
57.10	44		
56.10	45		
55.10	46		
54.10	47		
53.10	48		
52.10	49		
51.10	50		
50.10	51		
49.10	52		
48.10	53		
47.10	54		
46.10	55		
45.10	56		
44.10	57		
43.10	58		
42.10	59		
41.10	60		
40.10	61		
39.10	62		
38.10			

Groundwater Data: Static water table after auger removal at 13' depth.  
Comments: \*\* Assumed center of existing bridge deck as 100.0.

Sheet 12  
87350

**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354

Client: LaSalle County Highway Department  
 Project Name: Eden Township Section 08-00647-00-BR  
 Project Site: LaSalle County, Illinois

Phone: 815-223-6696  
 Fax: 815-223-6659  
 E-Mail: Midwest@TheRamp.net

Sheet 1 of 3

Boring No. B-1  
 Surface Elev. 100.2  
 Auger Depth 51'  
 Start Date 03/10/07  
 Finish Date 03/12/07  
 Rotary Depth NA

**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354

Client: LaSalle County Highway Department  
 Project Name: Eden Township Section 08-00647-00-BR  
 Project Site: LaSalle County, Illinois

Phone: 815-223-6696  
 Fax: 815-223-6659  
 E-Mail: Midwest@TheRamp.net

Sheet 2 of 3

Boring No. B-1  
 Surface Elev. 100.2  
 Auger Depth 51'  
 Start Date 03/10/07  
 Finish Date 03/12/07  
 Rotary Depth NA

Location: South abutment 6' Rt. of centerline of road  
 Station 16+58

DEPTH ELEV.	DESCRIPTION OF MATERIALS	Graphical Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
99.20			1								
98.20			2								
97.20			3	1	SS	2.3	15	S	12		
96.20			4								
95.20	Very Stiff To Stiff Brown And Black Gravelly Clay (Fill)		5	2	SS	--	18	--	15		
94.20			6								
93.20			7								
92.20			8	3	SS	1.2	8	B	22		
91.20			9								
90.20			10	4	SS	1.4	10	B	23		
89.20			11								
88.20	SHIF To Medium Black Clay		12								
87.20			13	5	SS	0.8	6	B	26		
86.20			14								
85.20			15	6	SS	1.1	7	B	24		
84.20			16								
83.20	Medium Brown Sand & Gravel		17								
82.20			18	7	SS	--	20	--	--		
81.20			19								
80.20	Very SHIF Pink And Gray Silty Clay Till		20	8	SS	3.9	25	B	14		

Groundwater Data: Static water level after auger removal 13' depth.  
 Comments: \*\* Assumed center of existing bridge deck as 100.0. = 20th 67' Actual

Location: South abutment 6' Rt. of centerline of road  
 Station 16+58

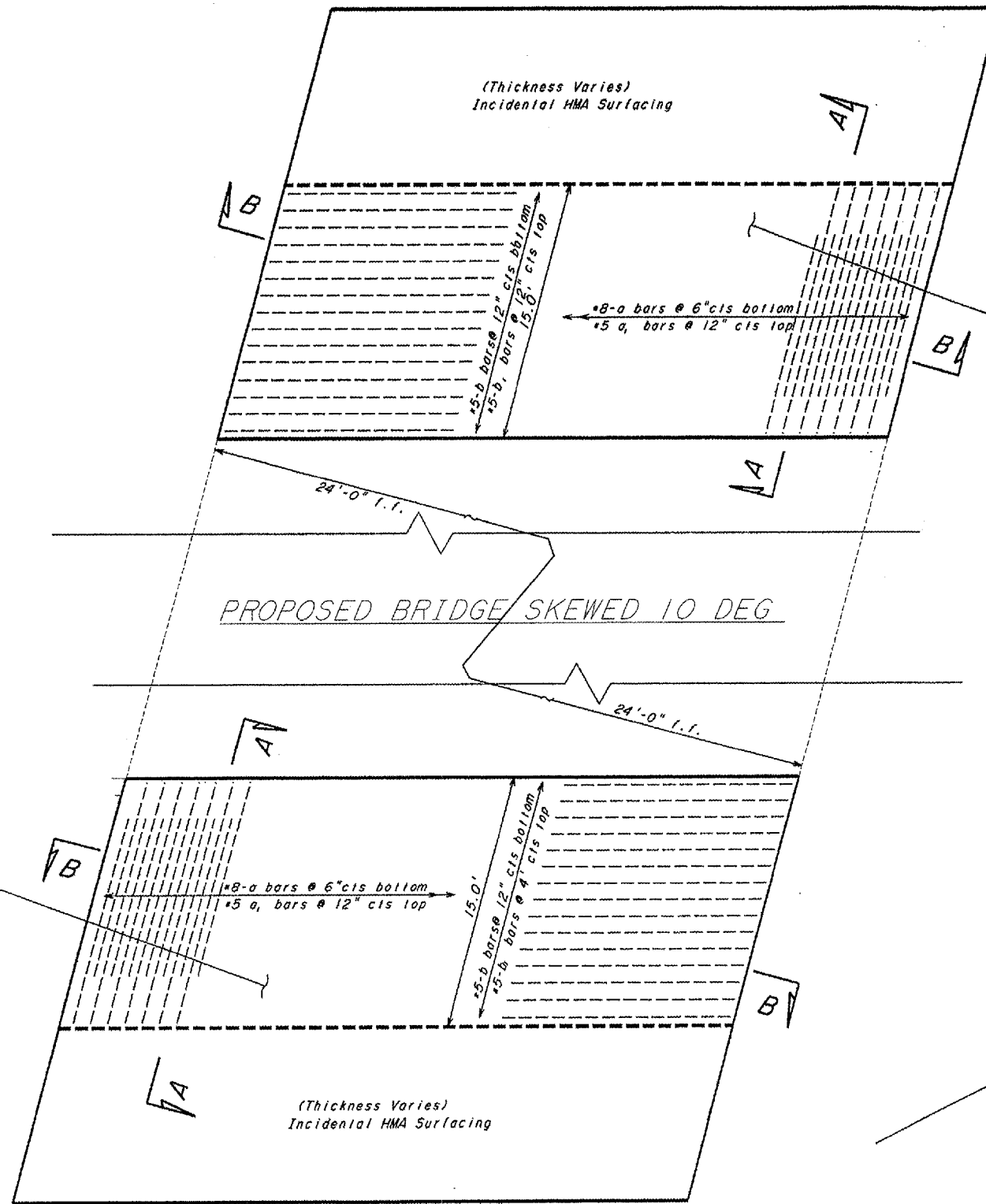
DEPTH ELEV.	DESCRIPTION OF MATERIALS	Graphical Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
79.20			21								
78.20			22								
77.20			23	9	SS	5.0	26	S	13		
76.20			24								
75.20	Hard Pink And Gray Silty Clay Till		25	10	SS	4.8	21	S	15		
74.20			26								
73.20			27								
72.20			28	11	SS	4.4	25	B	15		
71.20			29								
70.20			30	12	SS	3.6	18	B	15		
69.20	Very Stiff Pink Silty Clay Till		31								
68.20			32								
67.20			33	13	SS	3.5	19	B	17		
66.20			34								
65.20			35								
64.20			36	14	SS	4.3	19	B	16		
63.20	Hard Gray Silty Clay Till		37								
62.20			38	15	SS	4.5	21	B	15		
61.20			39								
60.20			40								
59.20	Very Stiff Gray Silty Clay Till		41	16	SS	3.6	18	B	17		

Groundwater Data: Static water level after auger removal 13' depth.  
 Comments: \*\* Assumed center of existing bridge deck as 100.0.

Sheet 12a.  
 87350

ROUTE NUMBER	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 16	08-00647-00-BR	LASALLE	13	13
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT BROS-099 (35)		CONTRACT NO. 87350

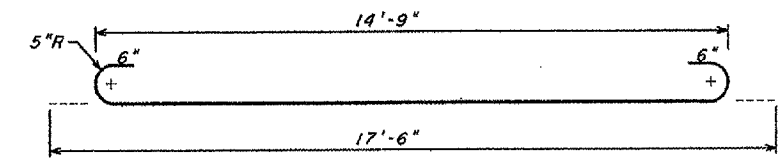
**PLAN EAST APPROACH PAVEMENT**



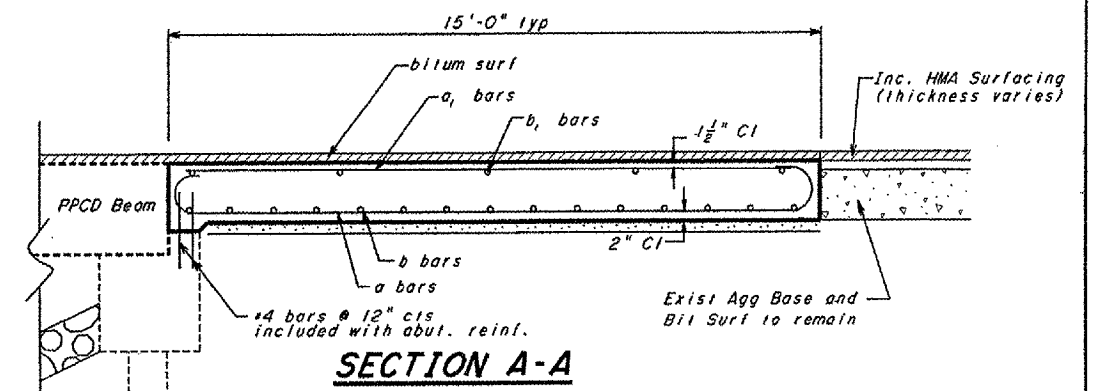
**PLAN WEST APPROACH PAVEMENT**

**BAR LIST**

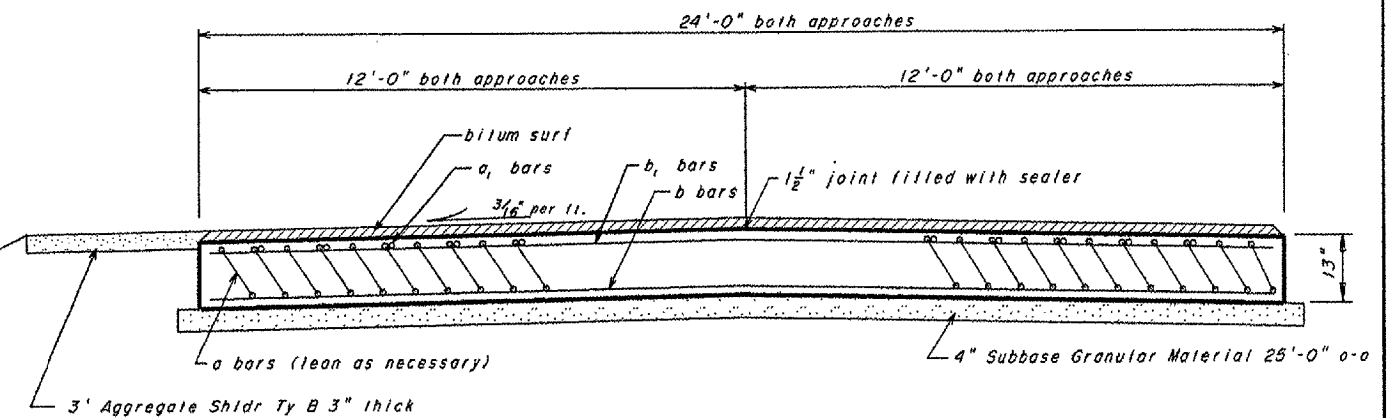
Bar	No. West	No. East	Size	Length	Shape
a (E)	48	48	8	17'-6"	
a (E)	24	24	5	14'-9"	
b (E)	16	16	5	24'-0"	
b, (E)	5	5	5	24'-0"	



**BAR a**



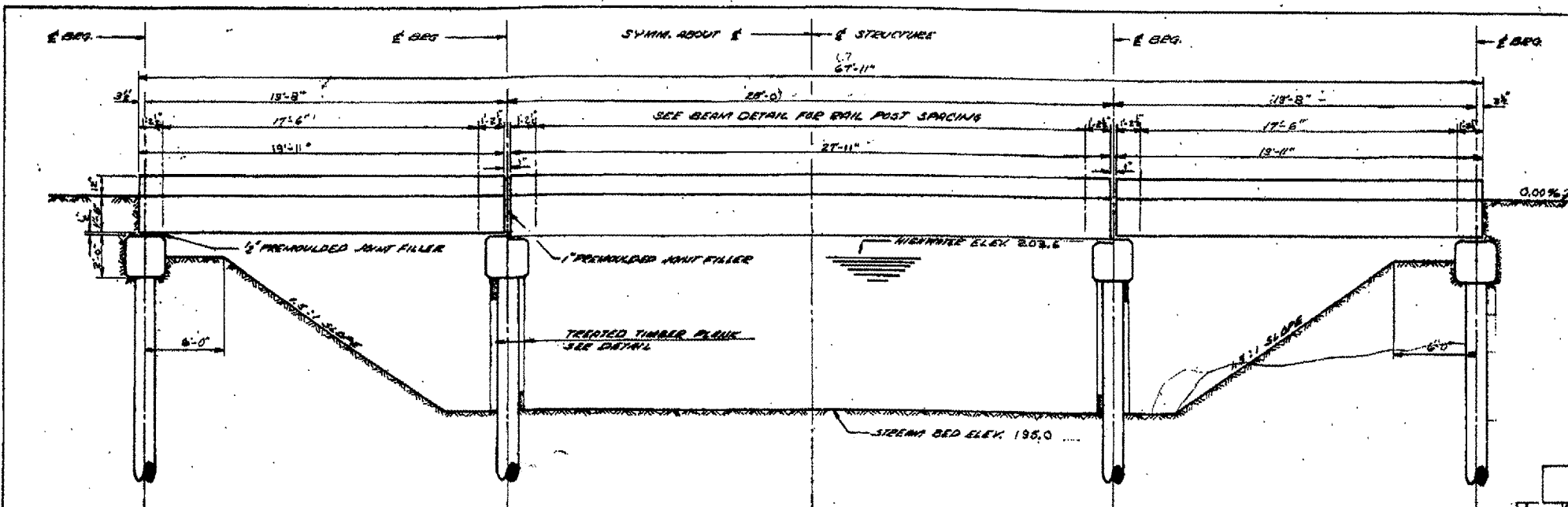
**SECTION A-A**



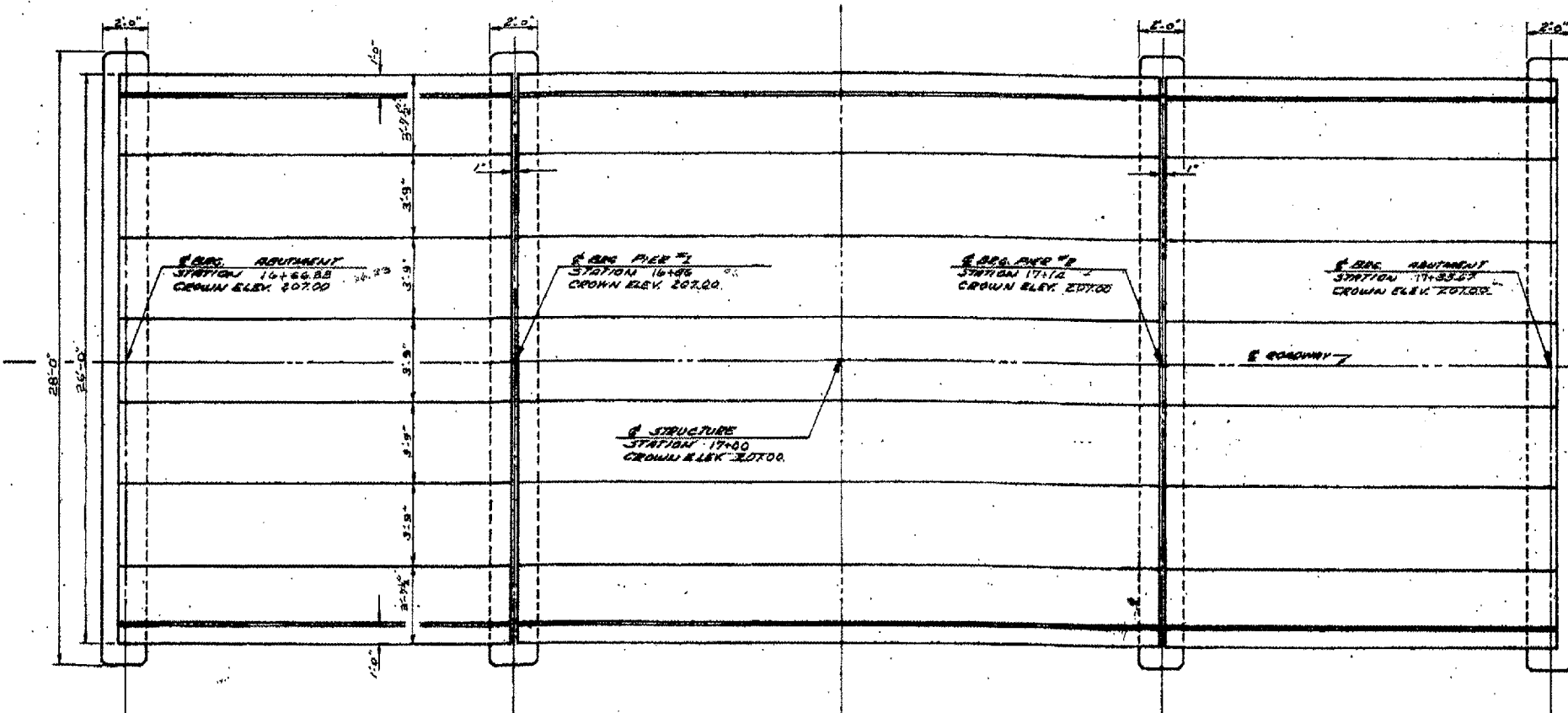
**SECTION B-B**

**APPROACH SLAB DETAILS**

31-44	LASALLE	10	2
-------	---------	----	---



ELEVATION



PLAN

**GENERAL NOTES**

SEE SPECIAL PROVISION FOR STEEL PRECAST CONCRETE CAPS

ALL PILES, HARDWARE AND TIMBER SHALL BE PRESERVED AND PAID FOR ACCORDING TO SEC. 17 OF THE STANDARD SPECIFICATIONS, STATE OF ILLINOIS.

ALL HARDWARE, NUTS, BOLTS AND PEGS SHALL BE HOT DWARDED GALVANIZED STEEL AND SHALL BE INCLUDED FOR PAYMENT AS HARDWARE.

SEE SPECIAL PROVISION FOR STEEL METAL PLATE BRIDGE PILE.

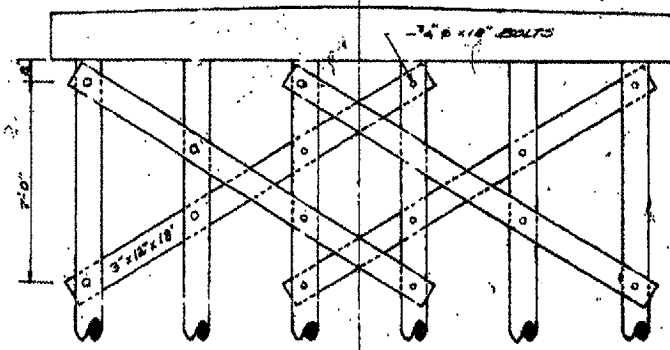
CONTRACTOR TO DRIVE 3 TEST PILES AS DIRECTED BY THE ENGINEER BEARING OBSERVING ESTIMATES OF PILES.

FOR PILING BACKFILL SEE ART. 50.10 OF THE STANDARD SPECIFICATIONS.

ALL PILES AND LUMBER SHALL BE CROCKED.

ALL STEEL AND LUMBER IN THE EXISTING STRUCTURE SHALL RETAIN THE PROPERTY OF THE COUNTY AND SHALL BE STAMPED AT THE BRIDGE SITE AS DIRECTED BY THE ENGINEER.

**DETAIL "X" BRACING**



**WATERWAY INFORMATION**

CHANNEL AREA	18,716 AC.
PROPOSED OPENING	329 3/4 FT.
REQUIRED OPENING	285 3/4 FT.
EXISTING OPENING	250 3/4 FT.
CHARACTER	LEVEL CIRCULAR

**PILE DATA**

TYPE - 12" x 6" CROCKED TIMBER

EXTENDED LENGTH - 25'-0"

NO. REQUIRED - 29 + 1 TEST PILE

MIN. CAP - PILES 18 3/4" DIA

                  - BOLTS 12 TH/PILE

**NAME PLATE**

SECTION 32-64-B  
BUILT 196 E BY  
LASALLE COUNTY  
CEDAR POINT  
STATION 17+00  
LOADING 175-518

SEE STD 2113

Existing Structure 050-2404 GPE sheet

Sheet 15  
87350

Existing Structure 850-3404 Abutment Sheet

**GENERAL NOTES**

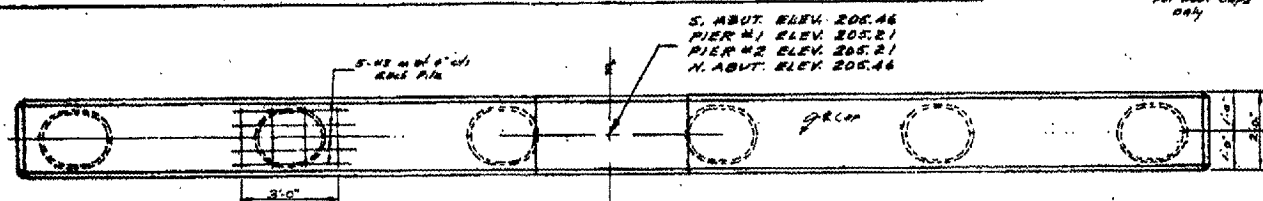
Precast concrete caps are 18" dia. made by 18" dia. 8" x 8" x 24" precast slabs and 12" finished 12" precast concrete piling.

Columns are to be added to the precast caps to provide a 1" base to the 6" of roadway for bridges with 20'3" roadway or 12" base to a post 1" from E. of roadway for bridges with 24'3" roadway (2'9" from center).

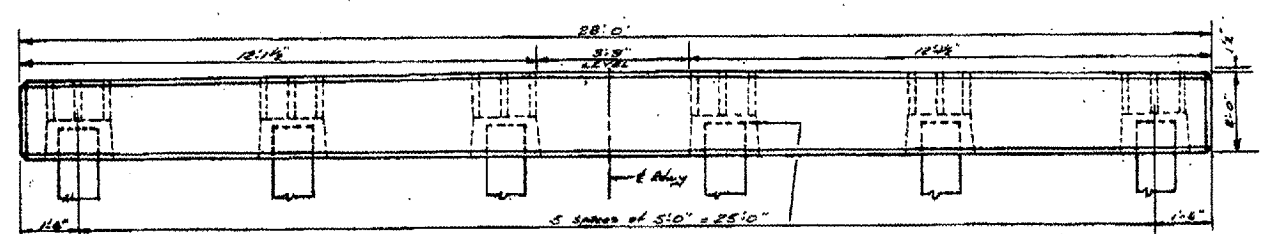
Inserts are Richmond Scaffolding Anchor 1" vertical spacing. PINS in 2" x 3" x 16" 3/8" rods in place to be removed shortly after construction. Piles to be placed in place only. Insert to be placed at 24" intervals. 1" dia. 1" long. 1" dia. to be provided to standard precast bridge slabs.

Grout Mixture  
Sand 1 Part  
Grout 1 Part

DOUBLE NUTS FOR ANCHORAGE CAPS ON E. OF CAP



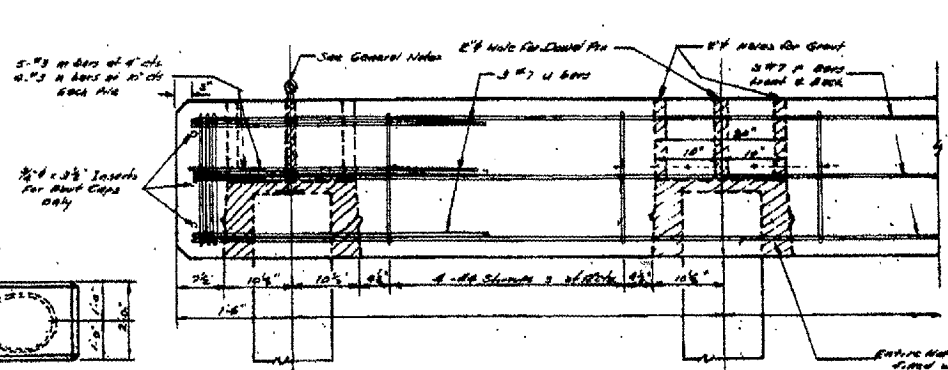
TOP VIEW



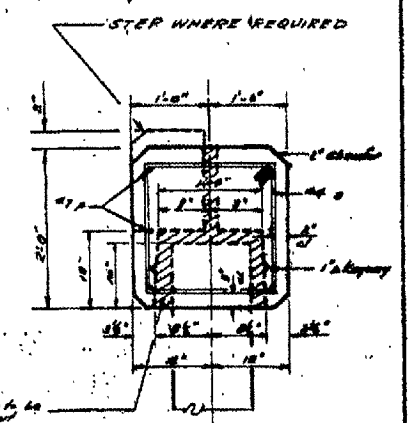
FRONT VIEW

CUT OFF S. ABUT. ELEV. 204.17  
CUT OFF PIER#1 ELEV. 203.92  
CUT OFF PIER#2 ELEV. 203.92  
CUT OFF N. ABUT. ELEV. 204.17

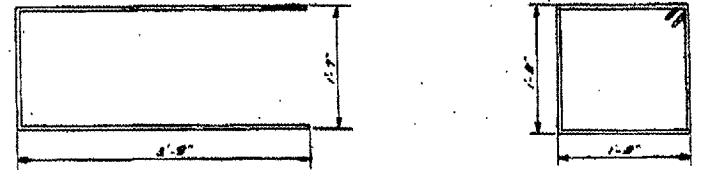
6 PILE - PRECAST CAP DETAILS



DETAIL OF REINFORCEMENT



END VIEW



BAR U

BAR S

LIST OF MATERIAL

Qty	Size	Ab.	Length	Notes
1	#4	24	25'-0"	
1	#4	24	25'-0"	
1	#4	4	25'-0"	
1	#4	24	25'-0"	
1	#4	4	25'-0"	

DESIGN STRESSES  
FC = 1800 PSI  
FT = 4500 PSI  
FS = 20000 PSI  
S = 0.1