

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 11	05-00101-00-BR	JASPER	12	1
CONTRACT NO. 95472		ILLINOIS	PROJECT	R 5-079(132)

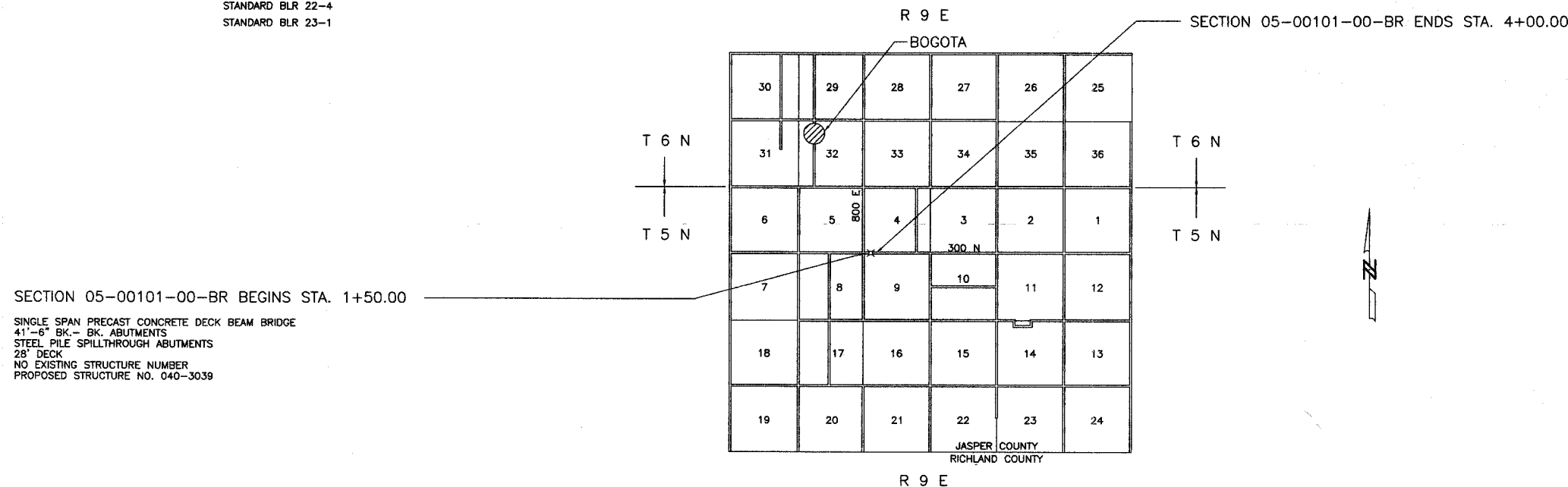
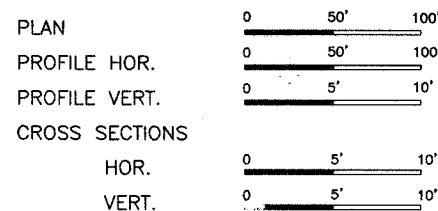
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
SURFACE TRANSPORTATION RURAL PROJECT
SECTION 05-00101-00-BR JASPER COUNTY
PROJECT R S-079(132)
JOB NO. C-97-100-06
C.H. 11

Joint Utility Locating Information for Excavators
JULIE 1-800-892-0123

INDEX OF SHEETS

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- STANDARD DRAWINGS
- STANDARD 000001-04
 - STANDARD 280001-02
 - STANDARD 630001-06
 - STANDARD 631026-02
 - STANDARD 668001
 - STANDARD 702001-06
 - STANDARD BLR 21-6
 - STANDARD BLR 22-4
 - STANDARD BLR 23-1



SINGLE SPAN PRECAST CONCRETE DECK BEAM BRIDGE
41'-6" BK - BK ABUTMENTS
STEEL PILE SPILLTHROUGH ABUTMENTS
28' DECK
NO EXISTING STRUCTURE NUMBER
PROPOSED STRUCTURE NO. 040-3039

FUNCTIONAL CLASSIFICATION - RURAL MINOR COLLECTOR
ADT = 150
DESIGN SPEED = 40 MPH

CONTRACT NO. 95472

NET LENGTH SECTION 05-00101-00-BR = 250.00 Ft. = 0.047 Mi.

Roger A. Charbit
Ill. Reg. Prof. Eng. #29115
5/10/06
Lic. Expires 11/30/06

CHARLESTON ENGINEERING INC. 5186
105 N. KITCHELL
P.O. BOX 397
OLNEY, ILLINOIS 62450
PH. 618-392-0736
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

APPROVED 5-12 2006
Richard A. Patterson
COUNTY ENGINEER

PASSED 6/5 2006
Manuel Koel
DISTRICT SEVEN ENGINEER OF LOCAL ROADS AND STREETS

Releasing For Bid Based on Limited Review
6/5 2006
Christina M. Reed
DEPUTY DIRECTOR OF HIGHWAYS
REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

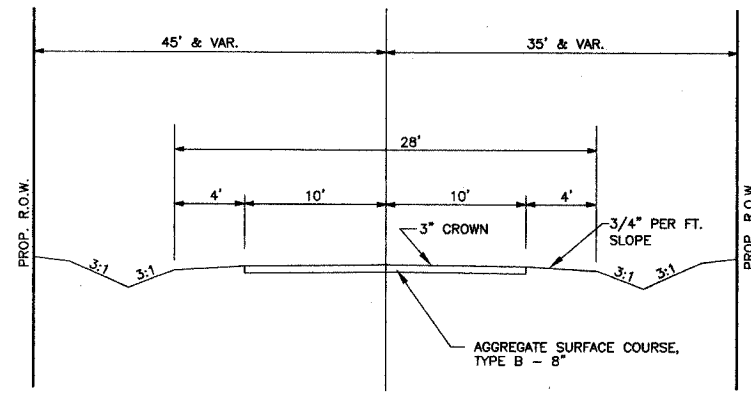
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 11	05-00101-00-BR	JASPER	12	2
CONTRACT NO. 95472		ILLINOIS	PROJECT BROS-079(132)	

DESIGN DATA

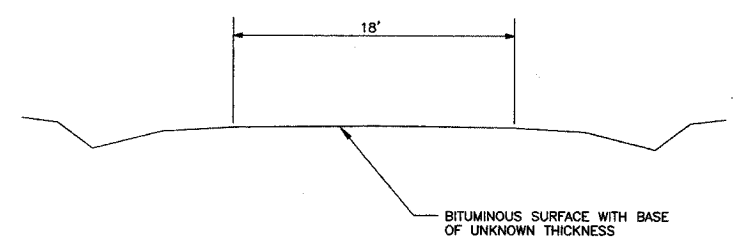
RURAL MINOR COLLECTOR
ADT = 150

GENERAL NOTES

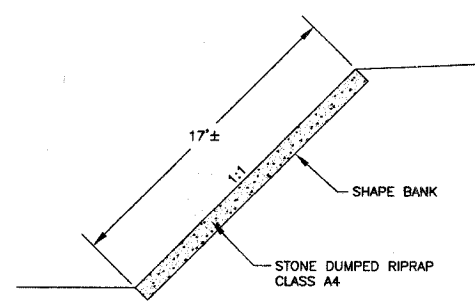
- SEEDING: THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 250 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR SEEDING CLASS 2 (SPECIAL).
 - SPRING SEEDING SHALL EXTEND FROM JANUARY 1 TO JUNE 30
 - FALL SEEDING SHALL EXTEND FROM JULY 1 TO DECEMBER 31
 - FERTILIZER NUTRIENTS SHALL BE APPLIED AT THE RATE OF 100 LB/ACRE
 - MULCHING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 251 OF THE STANDARD SPECIFICATIONS AND SHALL BE DONE BY METHOD 2, PROCEDURE 2 AT THE RATE OF 2 TONS PER ACRE.
- NO PAYMENT FOR OVERHAUL WILL BE MADE ON THIS SECTION.



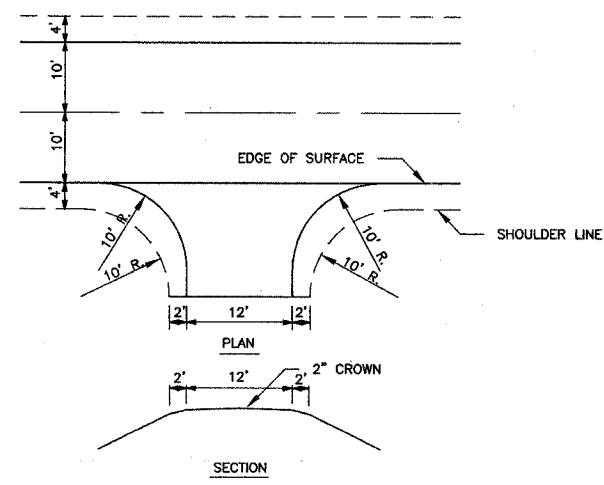
TYPICAL SECTION
PROPOSED



TYPICAL SECTION
EXISTING

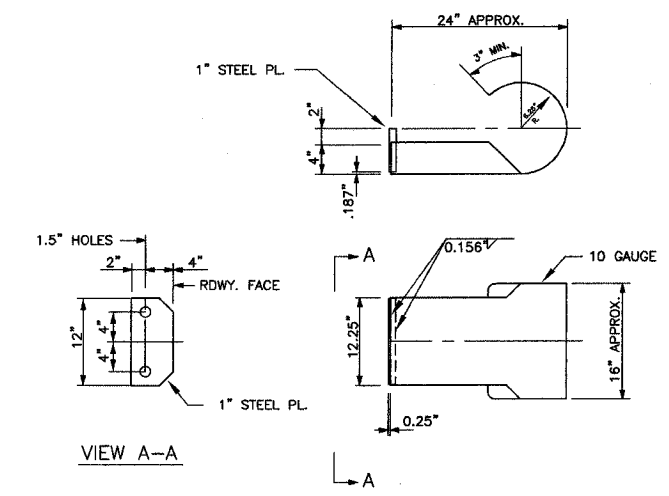


STREAM BANK DETAIL



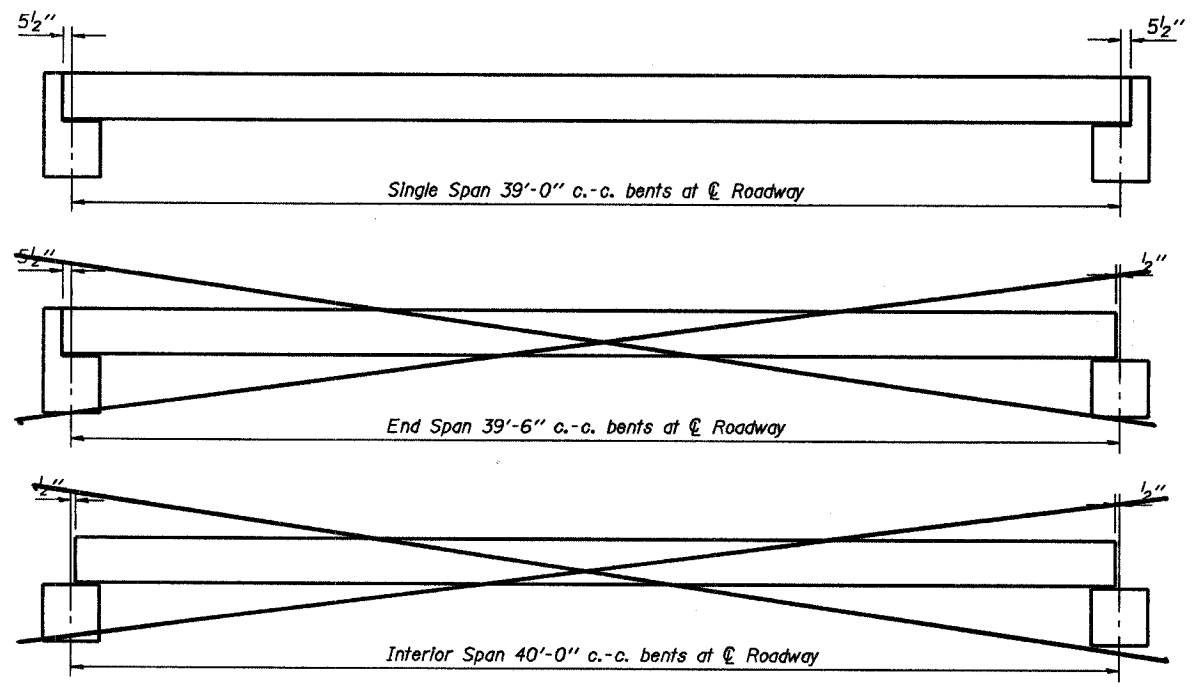
FIELD ENTRANCE DETAIL

SUMMARY OF QUANTITIES			YOYO-2A
CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	360
20300100	CHANNEL EXCAVATION	CU YD	360
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.40
28000300	TEMPORARY DITCH CHECKS	EACH	4
28000900	FENCE (EROSION CONTROL)	FOOT	250
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	205
35101400	AGGREGATE BASE COURSE, TYPE B	TON	80
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	200
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	19.8
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1120
50800105	REINFORCEMENT BARS	POUND	2520
50900205	STEEL RAILING, TYPE S1	FOOT	80
51201400	FURNISHING STEEL PILES HP 10X42	FOOT	270
51202700	DRIVING STEEL PILES	FOOT	270
51203400	TEST PILE STEEL HP 10X42	EACH	1
51204315	CONCRETE ENCASEMENT	CU YD	2.6
51500100	NAME PLATES	EACH	1
542A0229	PIPE CULVERTS, CLASS A, TYPE 1 24"	FOOT	113
63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
66600105	FURNISHING AND ERECTING RIGHT-OF-WAY MARKERS	EACH	8
67100100	MOBILIZATION	L. SUM	1
LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2

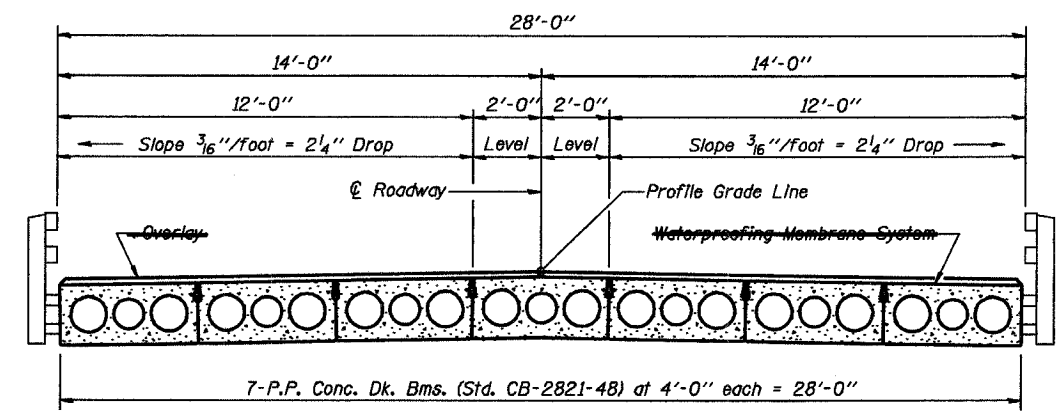


CURLED END SECTION DETAILS

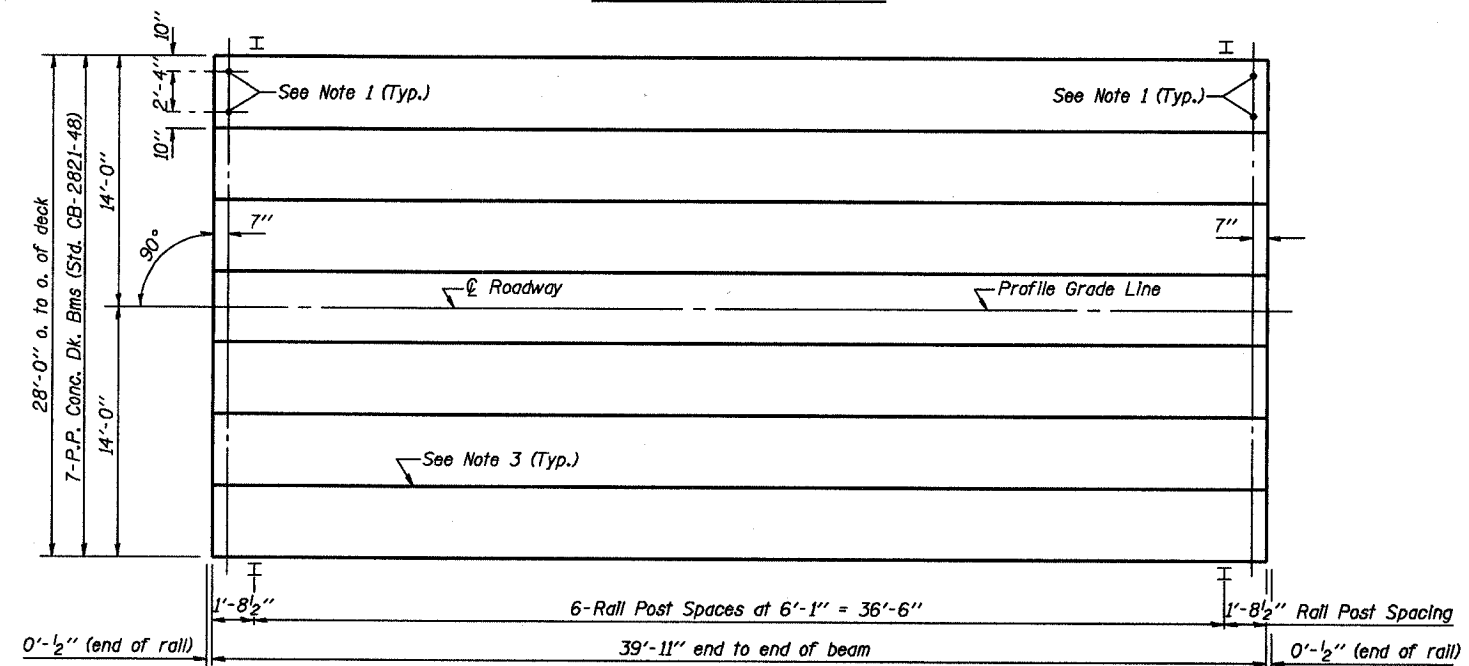
2 REQUIRED - COST INCIDENTAL TO
"STEEL RAILING, TYPE S-1"



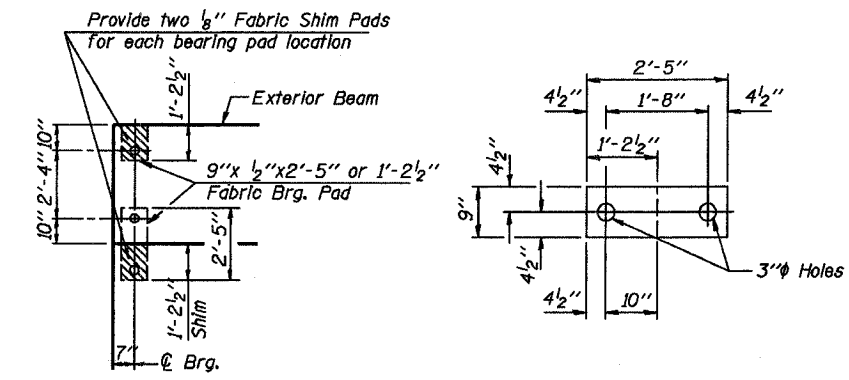
TYPICAL ELEVATIONS



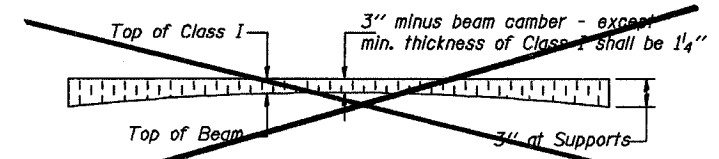
CROSS SECTION



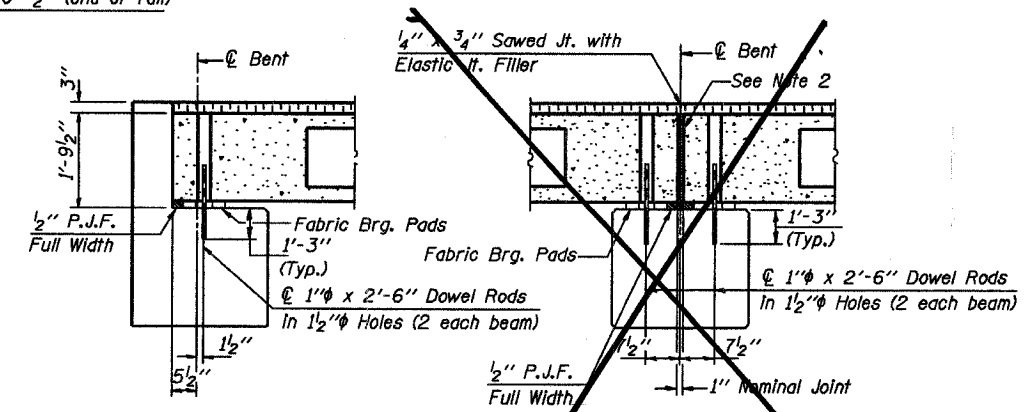
PLAN



1/2" FABRIC BRG. PAD DETAILS



PROFILE OF OVERLAY



SECTION AT ABUTS.
(Along C Beams)

SECTION AT PIERS
(Along C Beams)

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 C Pier shall be filled with non-shrink grout.
3. Longitudinal keys shall be grouted.

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 17" Dp.	1120 Sq. Ft.
Steel Rolling	80 Ft.
Waterproofing Membrane System	22 ft. Sq. Yds.
Portland Cement Mortar	240 Ft.
Feining Course	

Note: Quantity of overlay for one span - 181 Tons

P.P.C. DECK BEAM SUPERSTRUCTURE			
28' RDWY.	21" BMS.	40' SPAN	0° SKEW
STANDARD CS-2821-40			

Illinois Department of Transportation

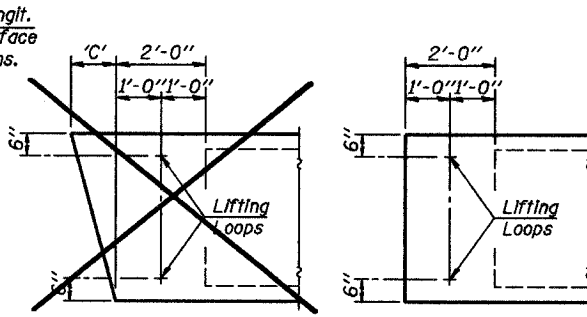
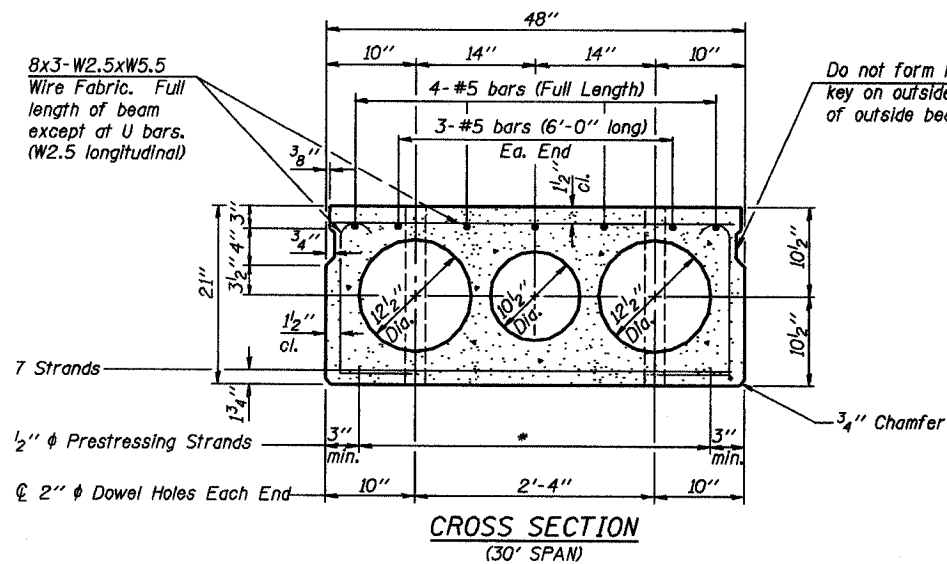
PASSED APRIL 4, 2005

Thomas S. Demagala
Engineer of Bridge Design

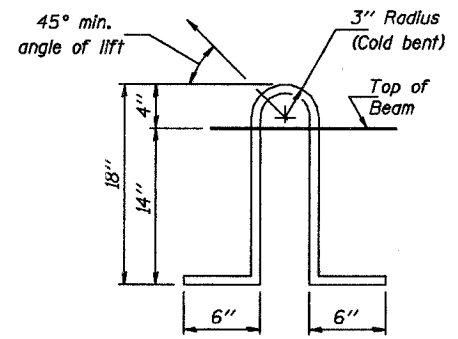
APPROVED APRIL 4, 2005

Ralph E. Anderson
Engineer of Bridges and Structures

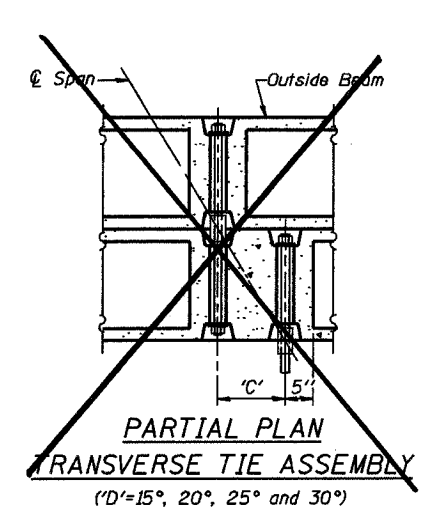
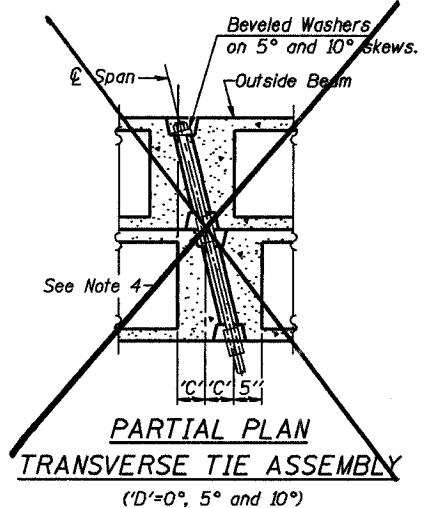
DESIGNED: T.S.D.
CHECKED: R.E.A.



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.

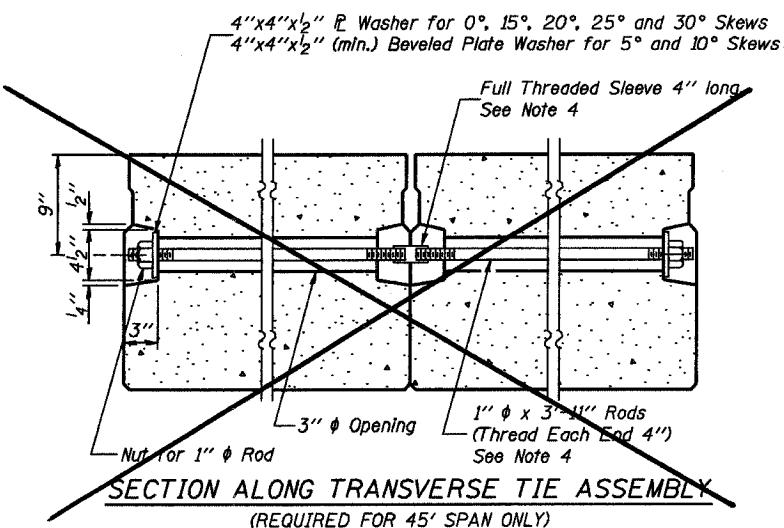
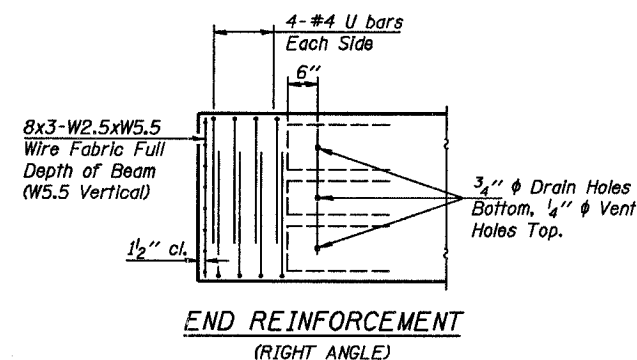
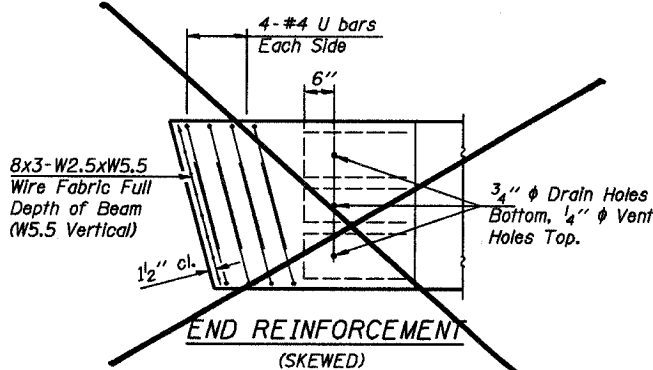
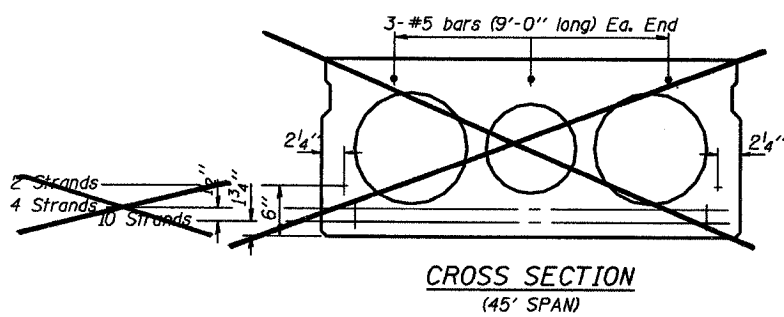
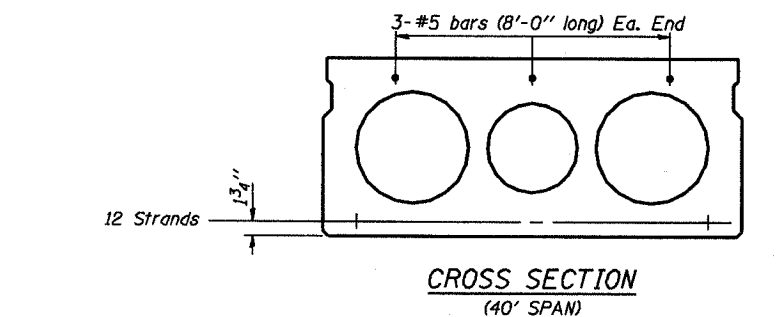
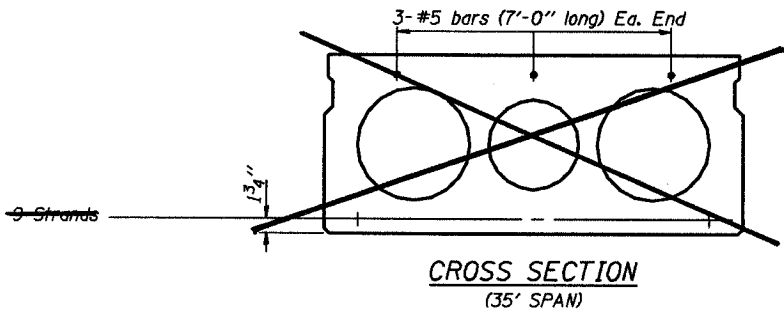


Lifting loops shall be 2. 1/2" ϕ -270 ksi strands, as shown. Alternate approved lifting devices are also acceptable.



DIMENSION 'C'

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	4 1/4	8 1/2	12 3/8	17 1/2	22 3/8	27 3/4



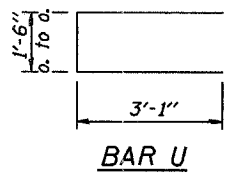
*** TRANSVERSE STRAND PLACEMENT GUIDELINES**

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.

MIN. BAR LAP

#5 bars = 1'-8"



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" ϕ Strand)
- $f_{el} = 201,960$ p.s.i. (1/2" ϕ Strand)
- $f_y = 60,000$ p.s.i.

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° skew, 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.

Illinois Department of Transportation

PASSED APRIL 4, 2005

Thomas J. Romagnolo
Engineer of Bridge Design

APPROVED APRIL 4, 2005

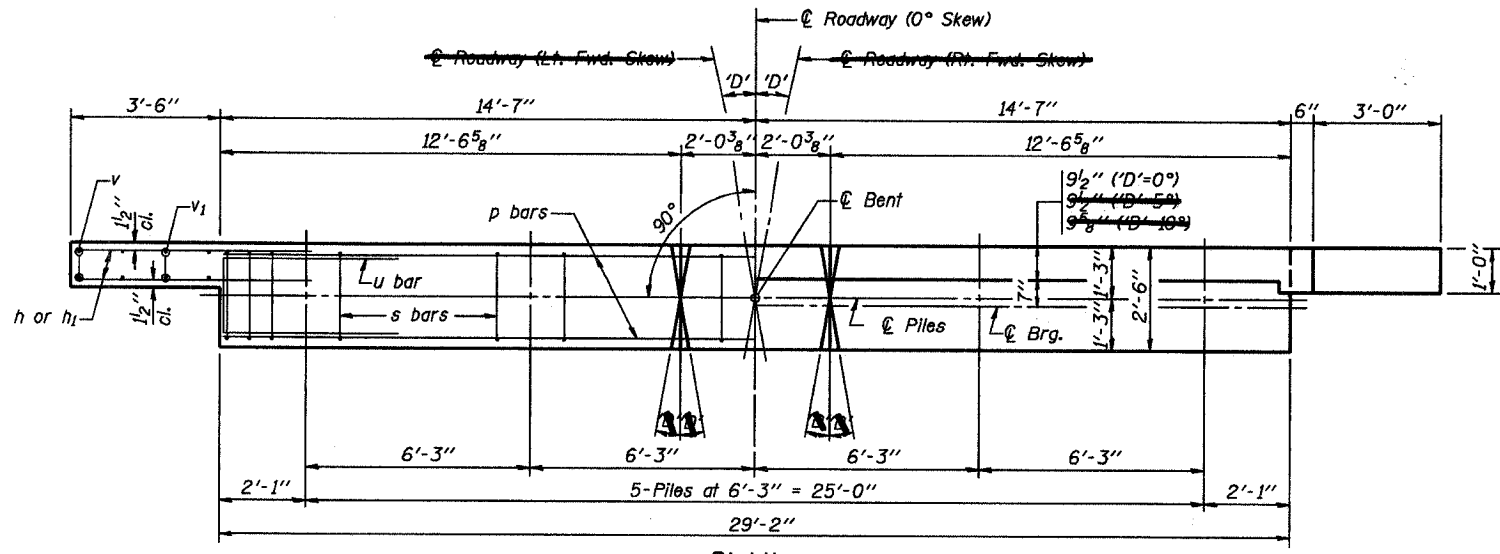
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1988

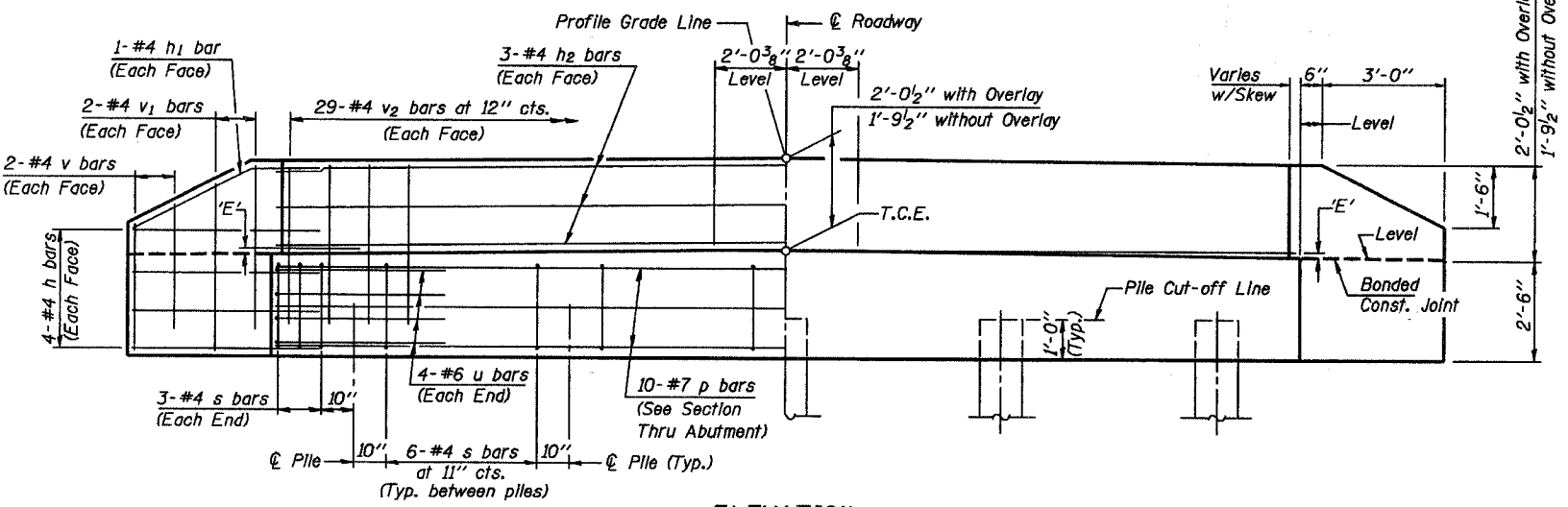
NOTE
The std. reinf. and dimensions shown on the 30' span cross section is typical for all spans, except as shown.

P.P.C. DECK BEAM DETAILS

28' ROADWAY	21" x 48" BEAMS
STANDARD CB-2821-48	



PLAN
('D' = Designated Skew Angle)



ELEVATION

DIMENSION 'E'

GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 3/8"	2 3/8"	2 1/4"	2 3/8"	2 1/2"	2 1/2"
Over 1% to 2%	2 3/8"	2 3/8"	2 1/2"	2 1/2"	1 7/8"	2 3/4"
Over 2% to 3%	2 3/8"	2 3/8"	2"	2 5/8"	1 3/8"	3"
Over 3% to 4%	2 3/8"	2 3/8"	1 7/8"	2 3/4"	1 3/8"	3 1/4"

NOTES

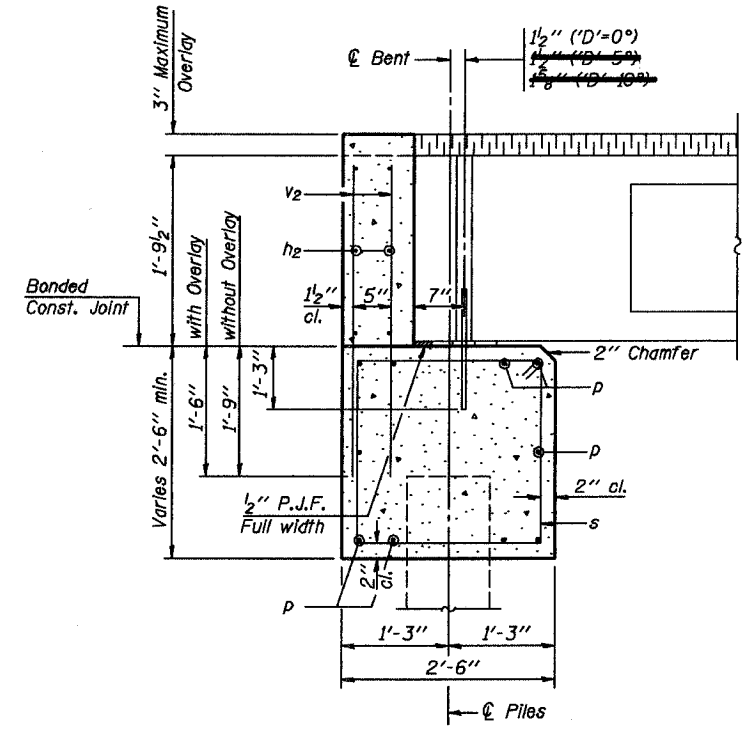
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

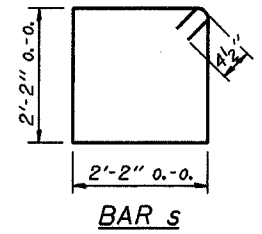
SPAN	TONS
30'	25
35'	27
40'	29
45'	31

DESIGN STRESSES

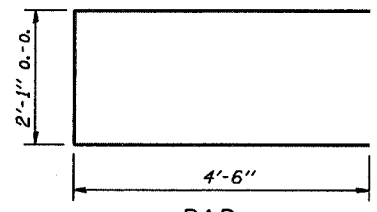
f'c = 3,500 psi
fy = 60,000 psi



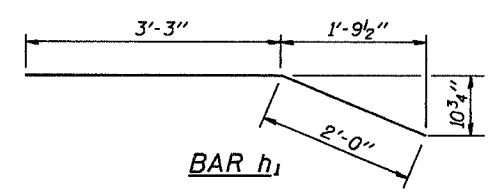
SECTION THRU ABUTMENT
(At Right Angles)



BAR s



BAR u



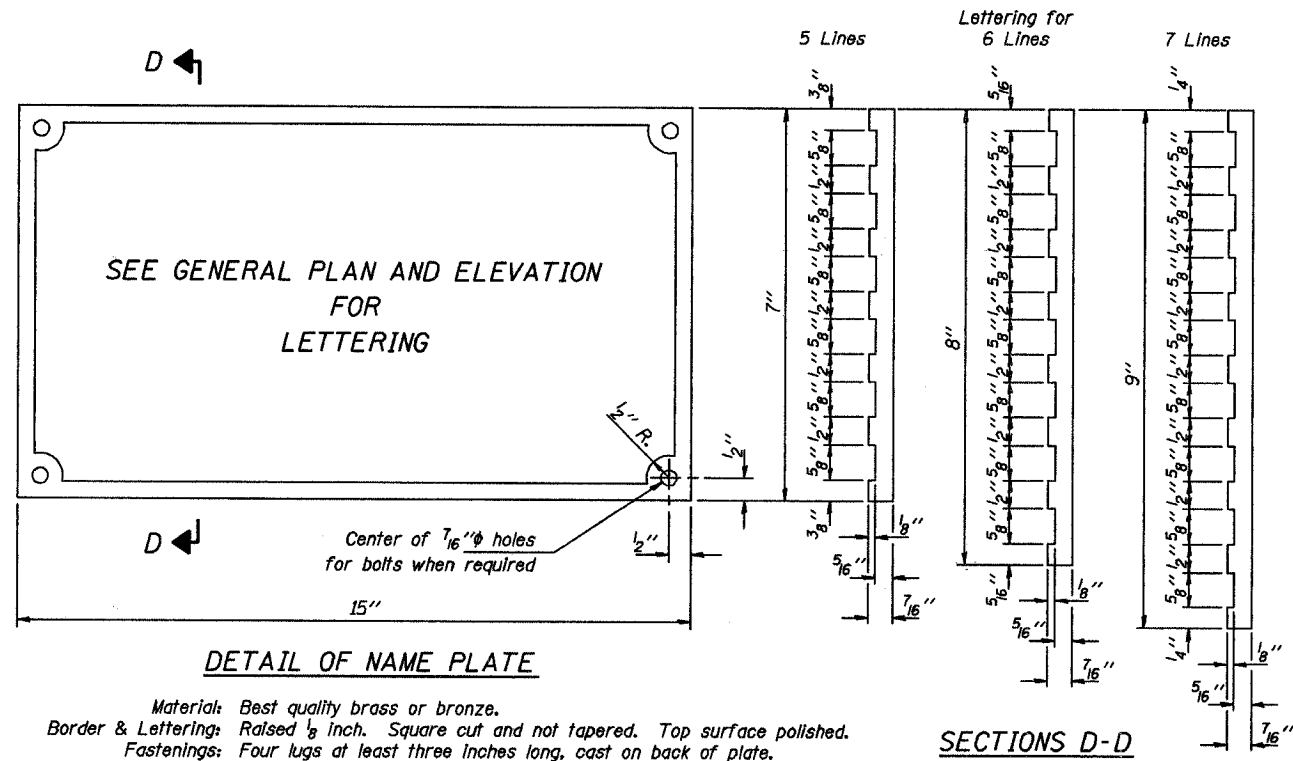
BAR h1

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	28'-10"	—
p	10	#7	28'-10"	—
s	30	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	2'-8"	—
v1	8	#4	3'-8"	—
v2	58	#4	3'-5"	—
Concrete Structures			9.9 Cu. Yds.	
Reinforcement Bars			1260 Lb.	

Illinois Department of Transportation
 PASSED APRIL 4, 2005
 Thomas S. Ramaa (Signature)
 Engineer of Bridge Design
 APPROVED APRIL 4, 2005
 Ralph E. Oakman (Signature)
 Engineer of Bridges and Structures

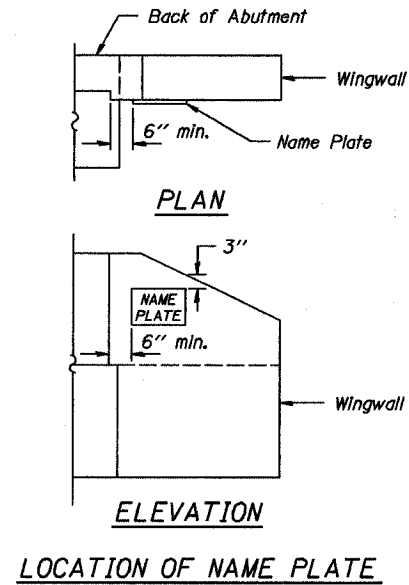
P.P.C. DECK BEAMS PILE BENT ABUTMENT	
28' RDWY.	21" BMS. 'D'=0°, 5° OR 10°
STANDARD CA-2821-10	



DETAIL OF NAME PLATE

Material: Best quality brass or bronze.
 Border & Lettering: Raised 1/2 inch. Square cut and not tapered. Top surface polished.
 Fastenings: Four lugs at least three inches long, cast on back of plate.

SECTIONS D-D



LOCATION OF NAME PLATE

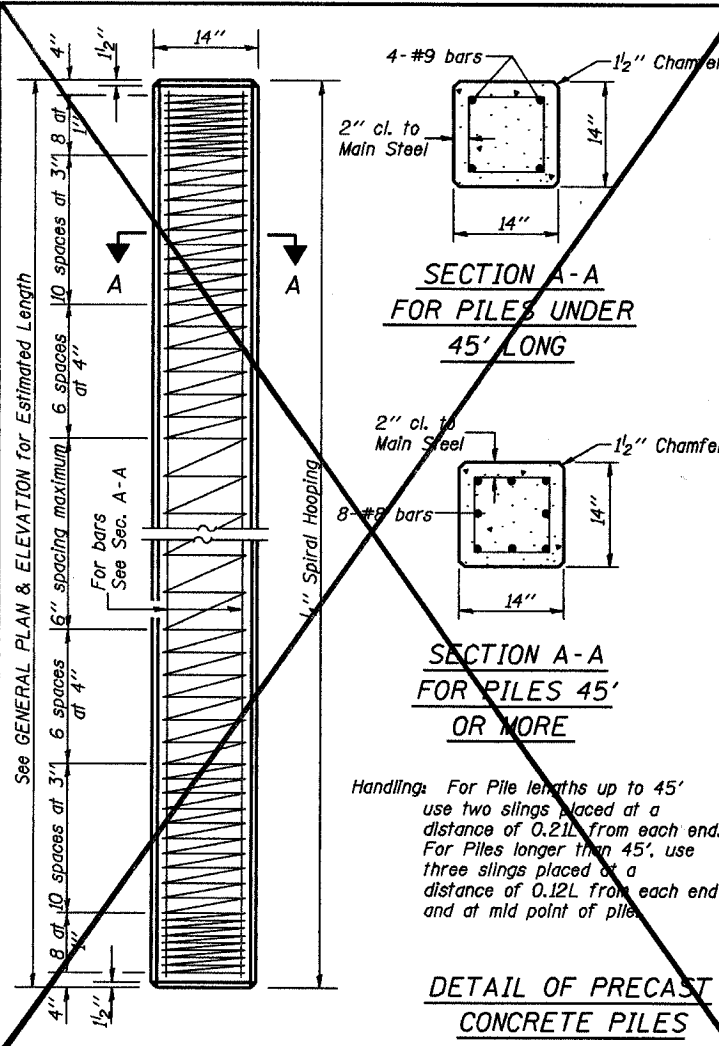
Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas S. Romagosa
 Engineer of Bridge Design

APPROVED APRIL 4, 2005
Ralph E. Anderson
 Engineer of Bridges and Structures

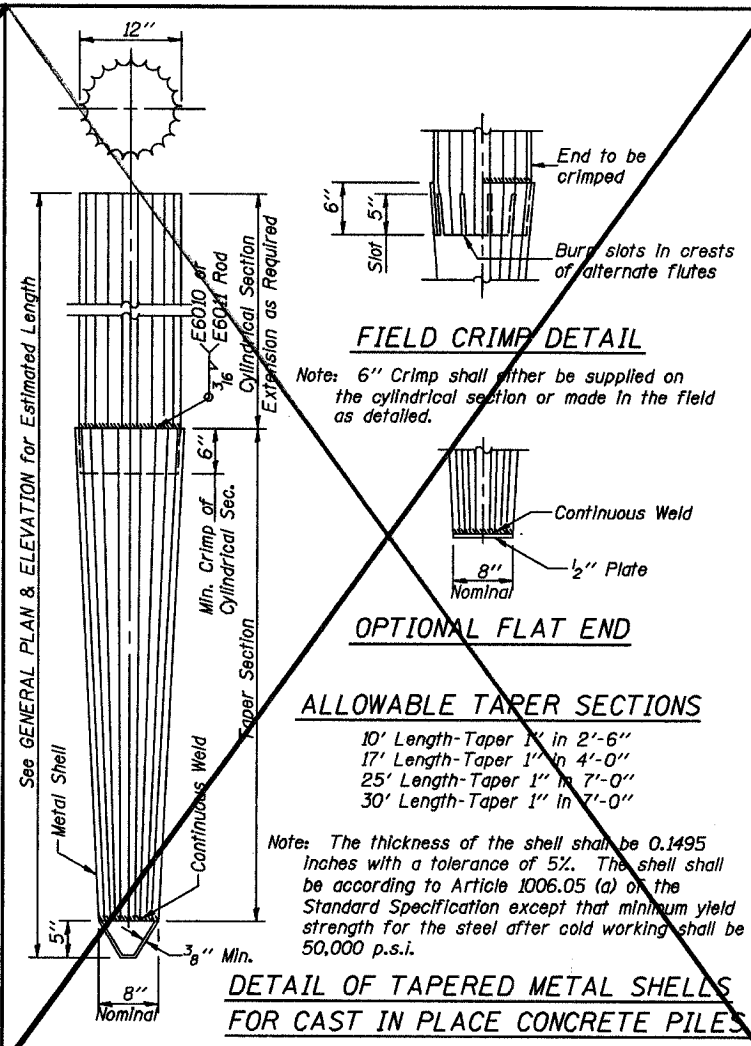
ISSUED 7-1-89B

NAME PLATE
STANDARD CN

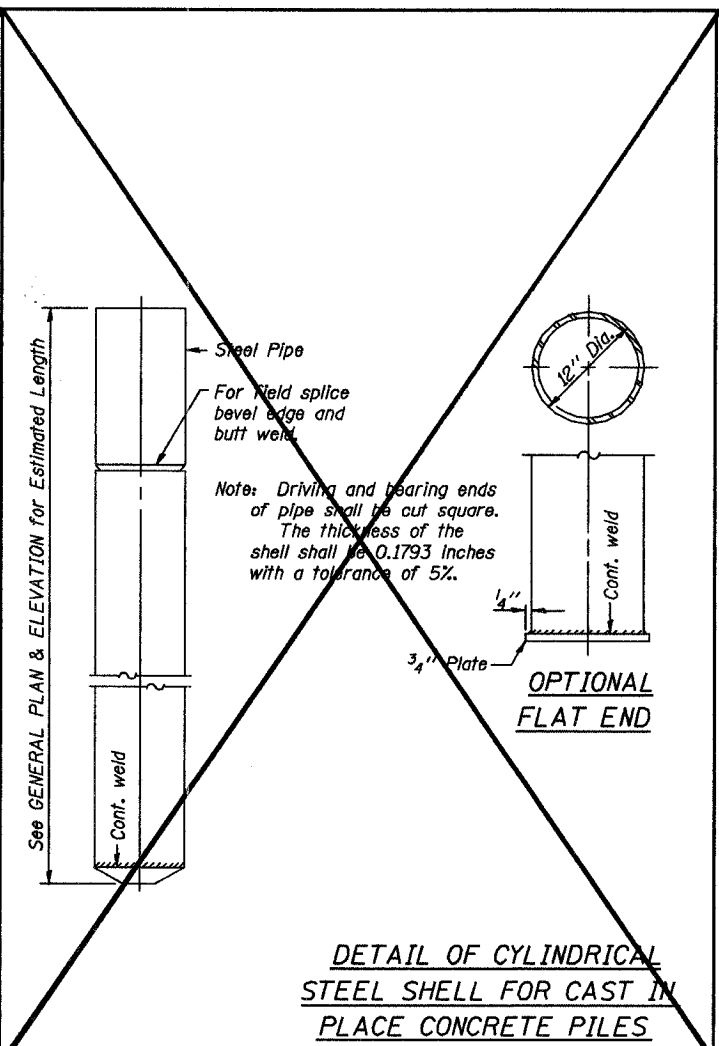


Handlings: For Pile lengths up to 45' use two slings placed at a distance of 0.21L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12L from each end and at mid point of pile.

DETAIL OF PRECAST CONCRETE PILES

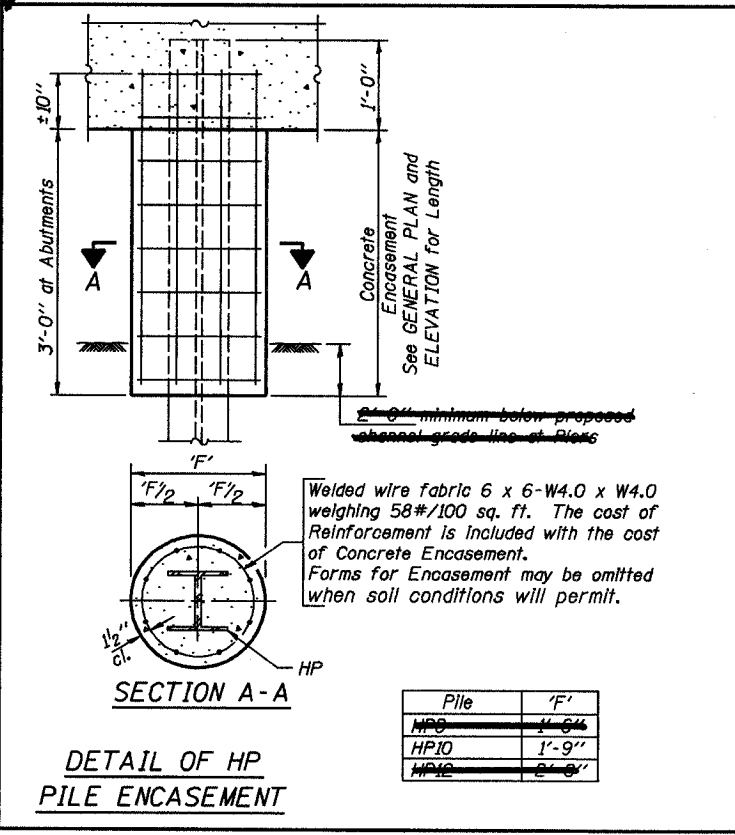


DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES

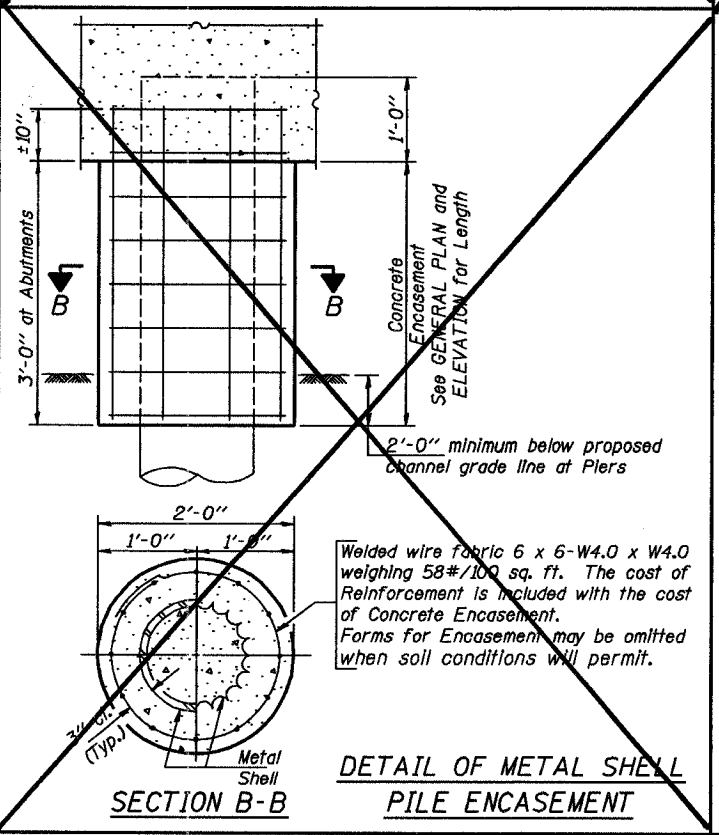


DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

DETAIL OF REINFORCEMENT FOR METAL SHELLS



DETAIL OF HP PILE ENCASEMENT



DETAIL OF METAL SHELL PILE ENCASEMENT

QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)

Pile Size	Item	Quantity
HP6	Concrete Encasement	0.065 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	0.067 C.Y.

Illinois Department of Transportation

PASSED FEBRUARY 1, 2000

Thomas J. Domagala
Engineer of Bridge Design

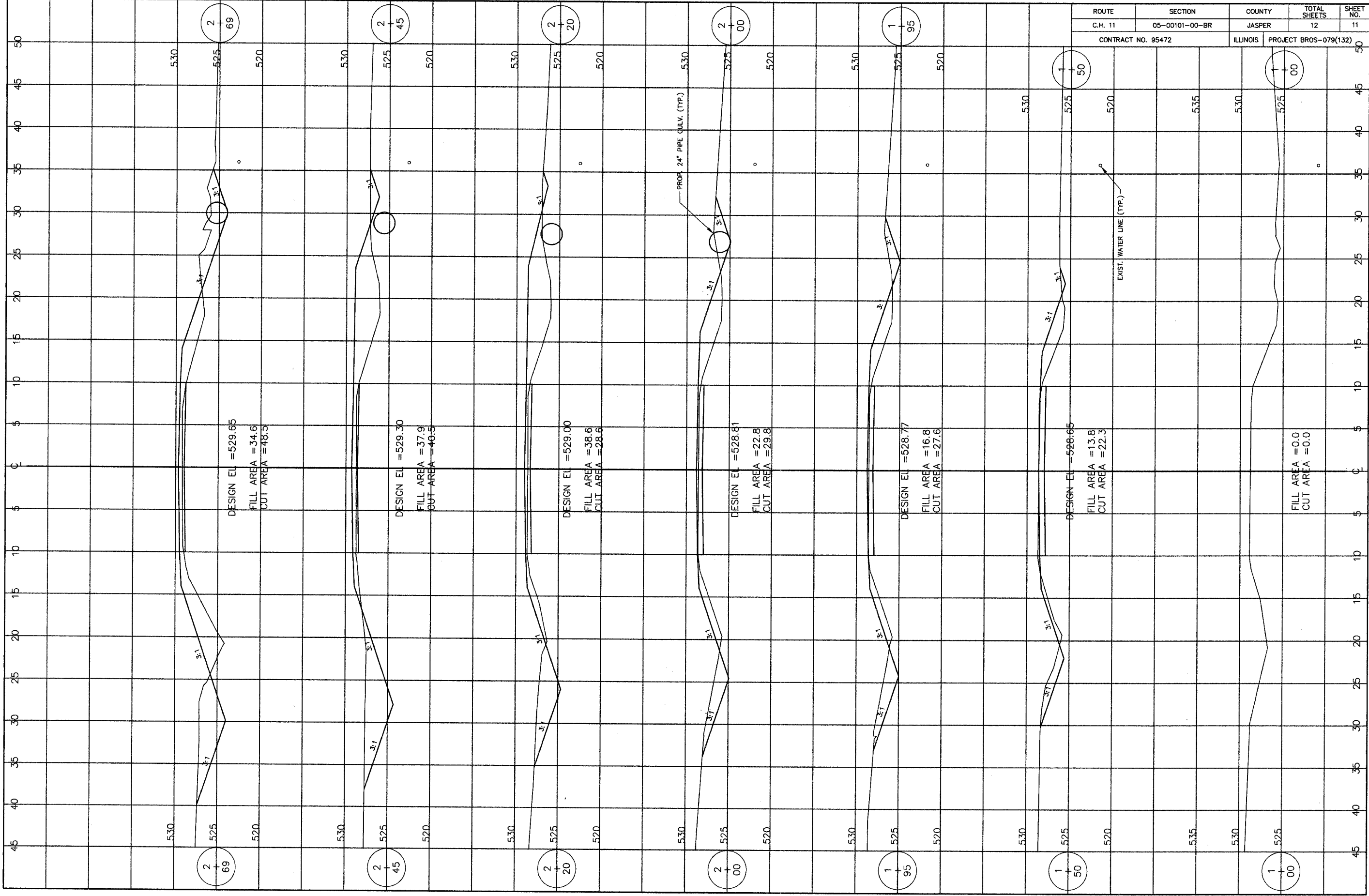
APPROVED FEBRUARY 1, 2000

Ralph E. Anderson
Engineer of Bridges and Structures

1064-H 02/15/00

PILE DETAILS

STANDARD CX-1



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 11	05-00101-00-BR	JASPER	12	11
CONTRACT NO. 95472		ILLINOIS	PROJECT BROS-079(132)	

DESIGN EL = 529.65
 FILL AREA = 34.6
 CUT AREA = 48.5

DESIGN EL = 529.30
 FILL AREA = 37.9
 CUT AREA = 46.5

DESIGN EL = 529.00
 FILL AREA = 38.6
 CUT AREA = 28.6

DESIGN EL = 528.81
 FILL AREA = 22.8
 CUT AREA = 29.8

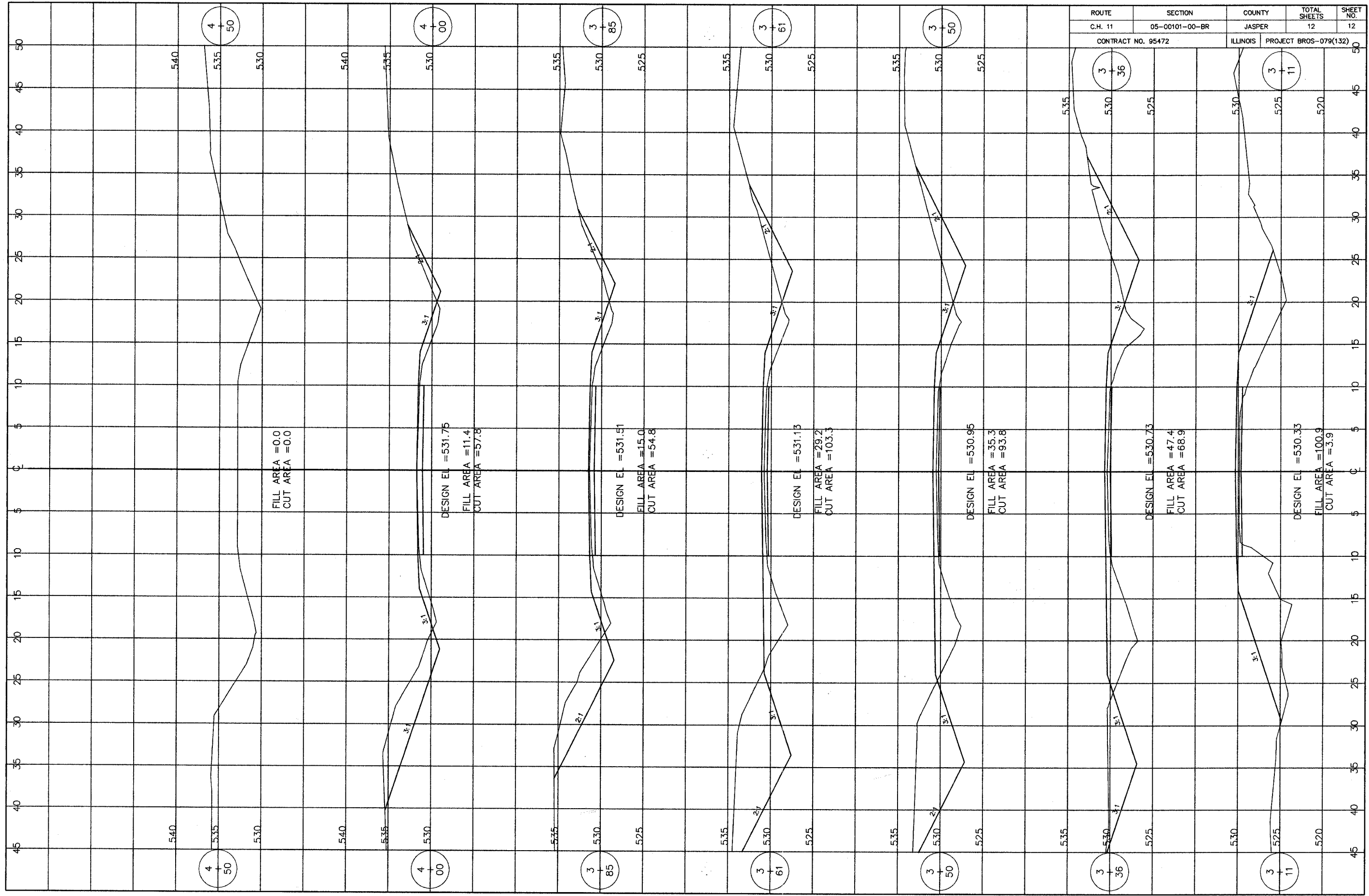
DESIGN EL = 528.77
 FILL AREA = 16.8
 CUT AREA = 27.6

DESIGN EL = 528.65
 FILL AREA = 13.8
 CUT AREA = 22.3

FILL AREA = 0.0
 CUT AREA = 0.0

PROF. 24" PIPE CULV. (TYP.)

EXIST. WATER LINE (TYP.)



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 11	05-00101-00-BR	JASPER	12	12

CONTRACT NO. 95472 ILLINOIS PROJECT BROS-079(132)