CONTRACT NO. 95453

Total Sheets 10

INDEX OF SHEETS

3-10-06 Letting, Item 111

STANDARDS: 280001–02 – EROSION CONTROL
702001–05 – TRAFFIC
BLR 21–6 – TRAFFIC
BLR 22–4 – TRAFFIC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
FEDERAL–AID B.R.R. PROGRAM

LAWRENCE COUNTY
SECTION 05–08132–00–BR
PETTY ROAD DISTRICT
STRUCTURE NO. 051–3277
PROJECT NO. BROS–101(22)
JOB NO. C–97–025–06
TR 31

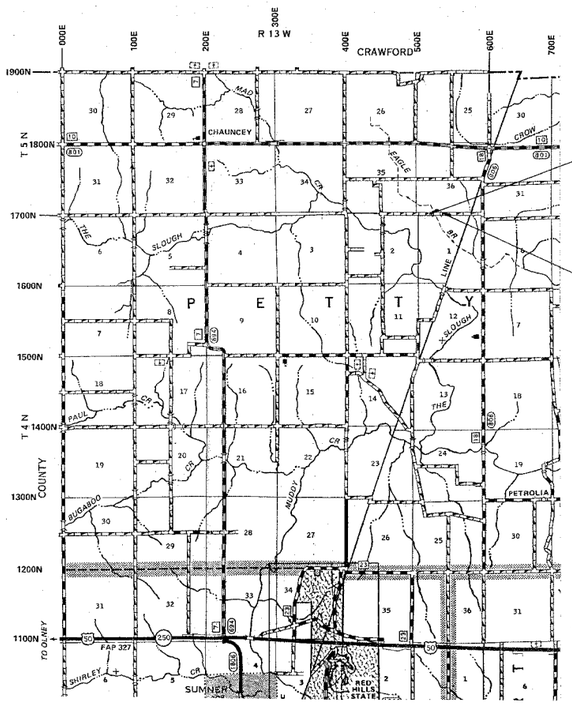
SCALES

PLAN	1 INCH = 50 FEET
PROFILE HORZ.	1 INCH = 50 FEET
PROFILE VERT.	1 INCH = 10 FEET
CROSS SECTION	1 INCH = 5 FEET

SUMMARY OF QUANTITIES

X0080-28

QTY	UNIT	ITEM	CODE NO
200	TON	AGGREGATE SURFACE COURSE, TYPE B (CA-6)	XX003658
85	TON	AGGREGATE SURFACE COURSE, TYPE B (CA-9)	XX003659
89	UNIT	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	20100110
117	CU YD	EARTH EXCAVATION	20200100
76	CU YD	CHANNEL EXCAVATION	20300100
83	CU YD	FURNISHED EXCAVATION	20400800
3	CU YD	TRENCH BACKFILL	20800150
0.35	ACRE	SEEDING, CLASS 2 (SPECIAL)	25001000
6	EACH	TEMPORARY DITCH CHECKS	28000300
80	FOOT	PERIMETER EROSION BARRIER	28000400
101	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
21	TON	STONE RIPRAP DITCH	28102600
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
23.0	CU YD	CONCRETE STRUCTURES	50300225
1400	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	50400405
2480	POUND	REINFORCEMENT BARS	50800105
100	FOOT	STEEL RAILING, TYPE S1	50900205
540	FOOT	FURNISHING METAL PILE SHELLS 12"	51201000
540	FOOT	DRIVING AND FILLING SHELLS	51202600
1	EACH	TEST PILE METAL SHELLS	51203200
2.6	CU YD	CONCRETE ENCASEMENT	51204315
1	EACH	NAME PLATES	51500100
120	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 15"	542D0220
40	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 18"	542D0223
1	L SUM	MOBILIZATION	67100100
1	L SUM	TRAFFIC CONTROL AND PROTECTION	70101700



LOCATION MAP

APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 475 L.F. = 0.090MILES

SECTION 05–08132–00–BR
BEGINS STA. 1+50

STA. 3+92 – STANDARD BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED CONCRETE DECK
BEAM BRIDGE. 1 SPAN @ 50'. 28' RDWY., SKEW = 30° RF
EXISTING STR. NO. 051–3051
PROPOSED STR. NO. 051–3277

SECTION 05–08132–00–BR
ENDS STA. 6+25

FUNCTIONAL CLASS: RURAL LOCAL ROAD
ADT = 75
DESIGN SPEED = 30 MPH

CONTRACT NO. 95453

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NO. 1–800–892–0123

PROFESSIONAL DESIGN FIRM #184–000832

Michael L. Connor 10/26/2005
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 31350
LICENSE EXPIRES NOVEMBER 30, 2007

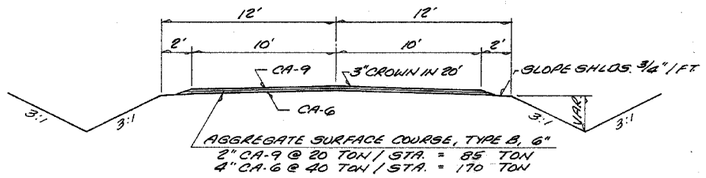
APPROVED 10/27, 2005
LOCAL AGENCY REPRESENTATIVE

PASSED 12-23, 2005
Maureen E. Kastl
DISTRICT SEVEN ENGINEER
OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW
12/23, 2005
Christine M. Reed
DEPUTY DIRECTOR OF HIGHWAYS
REGION FOUR ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

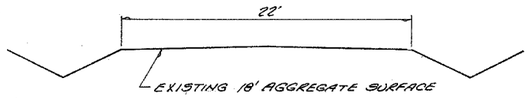
CONTRACT NO. 95453

F.A.S. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
	05-08132-00-BR	LAWRENCE	10	2
STA. 0+00	TO STA. 8+00			
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

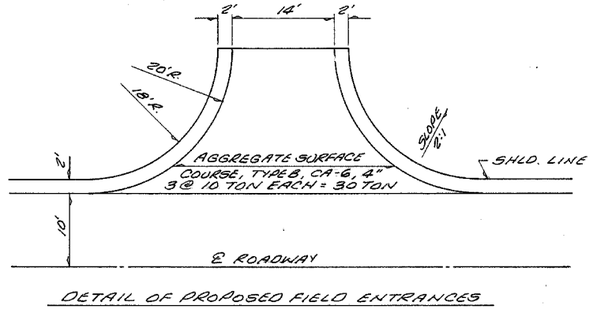


AGGREGATE SURFACE COURSE, TYPE B, 6"
2" CA-9 @ 20 TON / STA. = 85 TON
4" CA-6 @ 40 TON / STA. = 170 TON

TYPICAL CROSS SECTION OF PROPOSED IMPROVEMENT



TYPICAL CROSS SECTION OF EXISTING ROADWAY



DETAIL OF PROPOSED FIELD ENTRANCES

EARTHWORK SCHEDULE

EARTH EXCAVATION	=	117 CU. YD.
EARTH EXCAVATION ADJUSTED 25%	=	88 CU. YD.
CHANNEL EXCAVATION	=	76 CU. YD.
CHANNEL EXCAVATION ADJUSTED 25%	=	57 CU. YD.
EMBANKMENT	=	228 CU. YD.
FURNISHED EXCAVATION	=	83 CU. YD.

SEEDING CLASS 2 (SPECIAL)

LT. & RT. STA. 1+50 TO 6+25 = 0.35 ACRES

PERIMETER EROSION BARRIER

20' @ EACH COR. BRIDGE ON TOE OF CHANNEL SLOPE = 80 FT.

TEMPORARY DITCH CHECKS

LT. STA. 1+50 =	1 EACH
RT. STA. 3+10 =	1 "
LT. & RT. STA. 5+40 =	2 "
RT. STA. 5+50 =	1 "
LT. STA. 6+05 =	1 "
TOTAL =	6 EACH

UTILITIES:

PIPELINE & ELECTRIC: NATIONAL ENERGY
R.R. 4
LAWRENCEVILLE, IL.
PH. 618-943-5514
CELL 812-291-0379

EMMETT X. BUNYAN
PARCEL NO. 1

MARJORIE PAULINE MEEK
SELF DECLARATION TRUST
PARCEL NO. 2

P.O.T. STA. 1+00
I.P.
SUR. ℄
26.50°
226.5'
I.P.
I.P.

P.O.T. STA. 8+00
I.P.
SUR. ℄
8°-50'
12.15'
I.P.
P.K. IN POWER POLE

N

STA. 3+92 - STD. BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED CONC. DECK BEAM BRIDGE
1 SPAN @ 50', 28' ROWY, SKEW = 30° R.F.
PROPOSED STRUCTURE NO. 051-3277

ABANDONED PIPELINE

EAGLE

PROPOSED RIGHT-OF-WAY LINE

P.O.T. STA. 1+00

SEC. 05-08132-00-BR
BEGINS STA. 1+50

OIL FIELD TANKS WITHIN DIKE

ANCHOR +28-32.7'
POWER POLE +23-23.3'

OIL FIELD TANKS WITHIN DIKE

F.E.L. STA. 5+81
P-15" x 40' CL.D, TY.1

P.O.T. STA. 8+00

EXISTING R-O-W LINE

SURVEYED CENTERLINE

F.E.R. STA. 3+34
P-15" x 40' CL.D, TY.1

ANCHOR +71-81'
BRACE POLE +80-22'

POWER POLE +09-22'
F.E.R. STA. 5+93
P-15" x 40' CL.D, TY.1

A.R. STA. 3+95
EXISTING I-BEAM BRIDGE WITH CLOSED CONCRETE ABUTMENTS AND CONCRETE WINGS AND DECK
1 SPAN @ 26', SKEW: 0°
EXIST. STR. NO. 051-3051
1 EACH REMOVAL OF EXISTING STRUCTURES

BRANCH

ABANDONED PIPELINE

A.R. STA. 5+46
P-15" x 40' CL.D, TY.1
U.S.F.L. 430.70 20' LT
D.S.F.L. 430.50 20' RT.
TRENCH BACKFILL = 3 C.Y.

SEC. 05-08132-00-BR
ENDS STA. 6+25

CONSTRUCT TRANSITION
FROM EXIST. ROWY. TO PROP. 24' ROWY.
STA. 1+50 TO STA. 2+0
STA. 5+75 TO STA. 6+25
FROM PROP. 24' ROWY. TO PROP. 28' BRIDGE
STA. 3+09 TO STA. 3+59
STA. 4+25 TO STA. 4+75
QUANTITIES INCLUDED IN THOSE LISTED

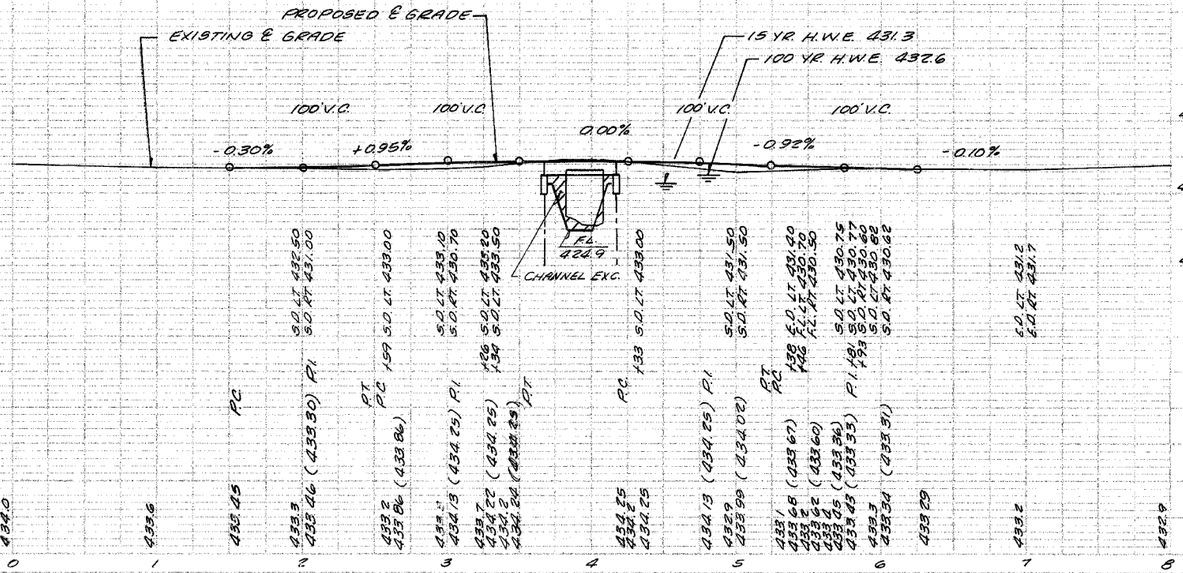
B.M. #1 ELEV. 434.57
P-K IN POWER POLE
1 60' LT. STA. 3+40

B.M. #2 ELEV. 433.14
P-K IN POWER POLE
22' RT. STA. 6+09

TREE REMOVAL (6-15 UNITS DIA.) = 89 UNITS DIA.

STONE RIPRAP DITCH

RT. STA. 3+54 TO STA. 3+98	= 13 TON
LT & RT. STA. 5+46	= 8 TON
TOTAL	= 21 TON



CONTRACT NO. 95433

P.A.S. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
	25-08132-00-BR	LAWRENCE	10	3
STA. 0400		TO STA. 8400		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

435 / 5 — 433.99 — S.D. 431.50 — S.D. 431.50 — C = 6, F = 22

435 / 4 + 33 — 434.25 — S.D. 432.00 — C = 9, F = 8

435 / 3 + 34 & F.E.R. — 434.24 — S.D. — S.D. 430.50

435 / 3 + 26 TOP LEVEE LT. — 434.22 — S.D. 433.

435 / 3 — 434.13 — S.D. 433.10 — S.D. 430.70 — C = 6, F = 25

435 / 2 + 59 TOP LEVEE LT. — 433.86 — S.D. 433.00

435 / 2 — 433.46 — S.D. 432.50 — S.D. 431.00 — C = 7, F = 12

435 / 1 — 432.40 — 431.10

435 / 8 — 435 / 7 — 431.2 — 431.7

435 / 6 — 433.34 — S.D. 430.82 — S.D. 430.62 — C = 15, F = 1

435 F.E.R. / 5 + 43 — 433.36 — S.D. 430.60

435 F.E.L. / 5 + 81 — 433.40 — S.D. 430.77

435 TOP LEVEE LT. / 5 + 12 — 433.45 — S.D. 430.75

435 A.R.P. / 5 + 46 — 433.62 — P-18" x 40' CL. D, TY. I — F.L. 430.70 — F.L. 430.50

435 TOP LEVEE LT. / 5 + 38 — 433.68 — 431.40

40 30 20 10 E 10 20 30 40 — 40 30 20 10 E 10 20 30 40

CONTRACT NO. 95453

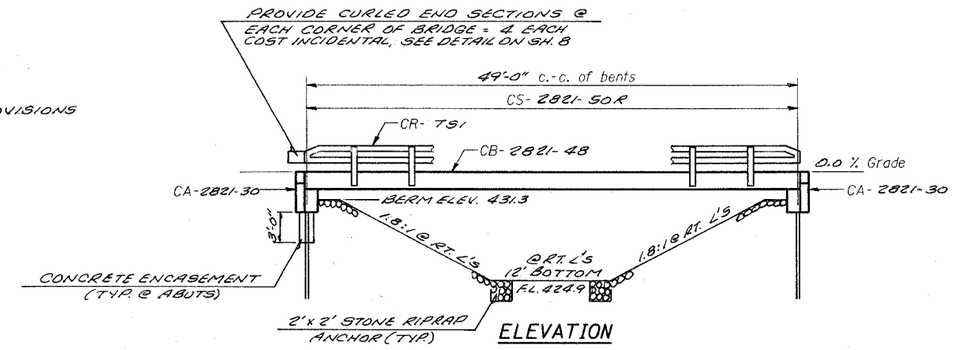
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	LAWRENCE	10	4
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

* 05-08132-00-BR

~~D.H.~~

~~Existing Structure~~

Salvage- SEE SPECIAL PROVISIONS



STONE DUMPED RIPRAP CLASS AA = 101 TONS
MINIMUM THICKNESS = 12"

GENERAL NOTES

1. The Contractor shall drive 1 test piles, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
2. See Special Provisions for boring logs.
3. ~~A Calcium Nitrite Corrosion Inhibiter, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.~~

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub. Piers	Sub. Abuts.	Total
Removal of Existing Structures	Each				1
~~Bituminous Concrete Surface Course, Class I~~	~~Ton~~				
~~Waterproofing Membrane System~~	~~Sq. Yd.~~				
Concrete Structures	Cu. Yd.			23.0	23.0
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1400			1400
~~Steel Bridge Rail, Type SM~~	~~Foot~~				
Steel Railing, Type S-1	Foot	100			100
Reinforcement Bars	Pound			2480	2480
Furnishing METAL PILE SHELLS 12"	Foot			540	540
Driving & FILLING SHELLS	Foot			540	540
Test Piles METAL SHELLS	Each			1	1
Name Plates	Each			1	1
~~Class SI~~ Concrete Encasement	Cu. Yd.			2.6	2.6
STONE DUMPED RIPRAP, CLASS AA	TON				101

NOTE:
The Article or Section numbers referencing the Standard Specifications for Road and Bridge Construction as shown on the standard bridge plan sheets included with the contract plans should be interpreted as referring to the current edition of the Standard Specification (Adopted January 1, 1997) as shown in the "Article/Section No. Reference Table".

ARTICLE/SECTION NO. REFERENCE TABLE

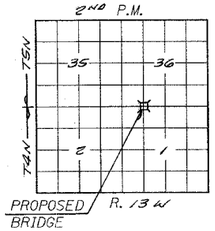
Previous No.	Current No.
504.06	504.06
505.04	505.04
706.05	1006.05
706.32	1006.32
760.07	1060.07

INDEX OF SHEETS

STATION 3+92
EAGLE BRANCH CREEK
SEC. 05-08132-00-BR BUILT 200
PROJ. NO. BROS-101(22)
LAWRENCE COUNTY
LOADING HS20
STR. NO. 051-3277

LETTERING FOR NAME PLATE

Locate Name Plate at SOUTHWEST Corner of Bridge (See Std. CN)



LOCATION SKETCH

PILE DATA (2-ABUTS.)

Type METAL PILE SHELL 12"
Capacity 33 Tons
Estimated Length 60 Feet
Number Required 10 (Includes 1 Test Pile located in Bent #1) WEST ABUT.

DESIGN SPECIFICATIONS

1996 AASHTO,
HS20-44 Loading. Load Factor Design.

WATERWAY INFORMATION

Drainage Area = 1.76 SQ. MI. Low Grade Elev. = 433.2 @ Sta. 7+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	223	139	150	431.3	0	0	431.3	431.3
Base	100	339	173	190	432.6	0	0	432.6	432.6
Overtopping									
Max. Calc.	500								

GENERAL PLAN & ELEVATION
TR ROUTE 31
OVER EAGLE BRANCH
SECTION 05-08132-00-BR
LAWRENCE COUNTY
STATION 3+92

GP-1R (11-1-95)

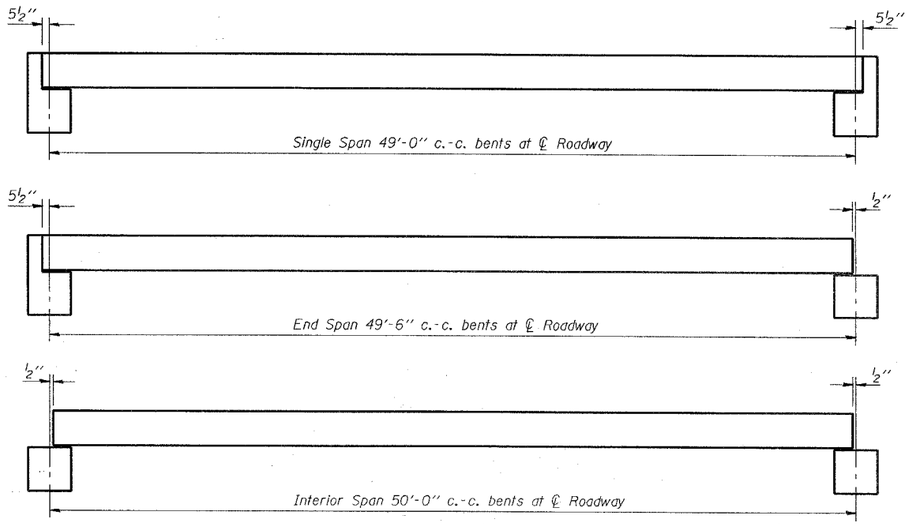
I-3

Mon Nov 4 09:17:57 1996 C:\PLOT\queue\D7C68401.ocf roy /usr/project/bridge/engspec.prf

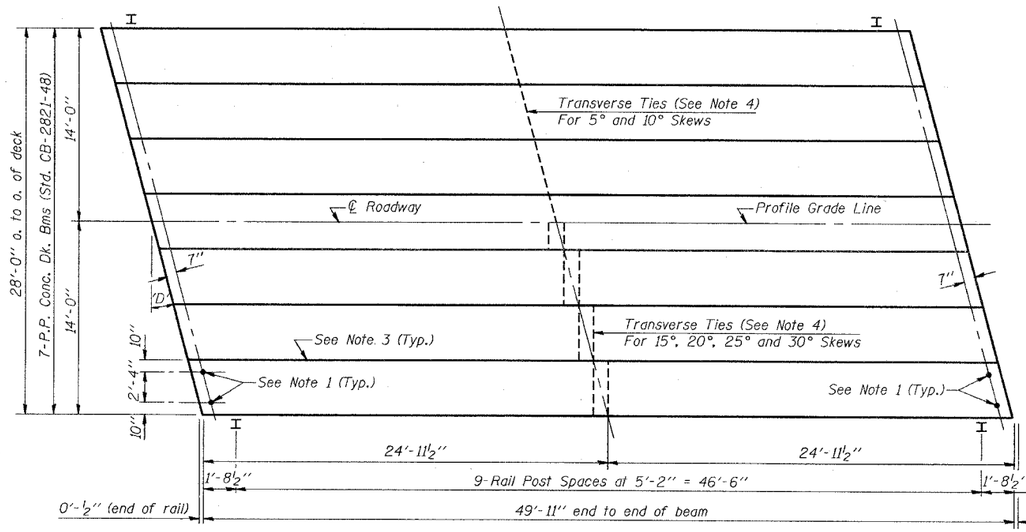
CONTRACT NO. 95453

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	LAWRENCE	10	5
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

*05-08132-00-BR

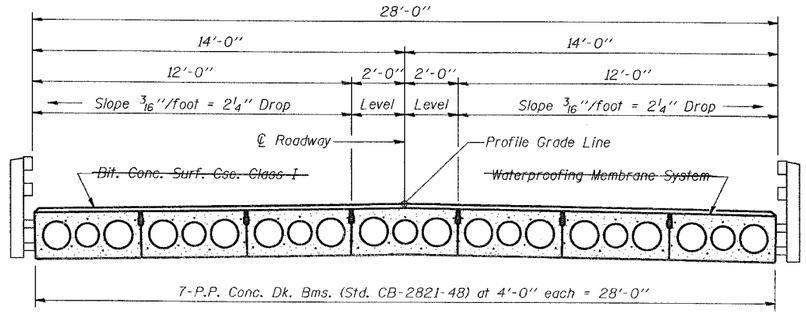


TYPICAL ELEVATIONS

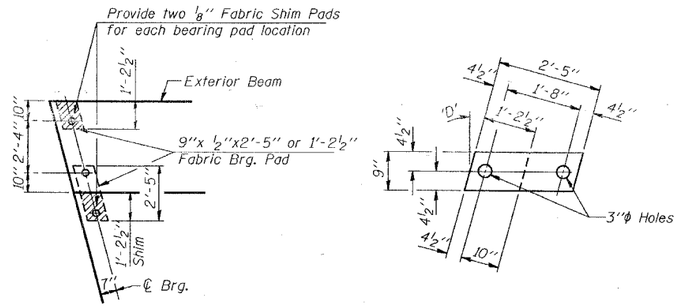


PLAN

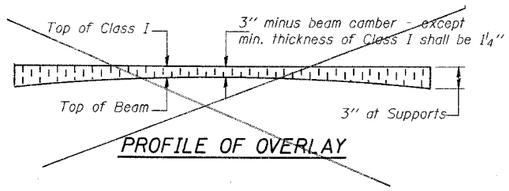
('D' = Designated Skew Angle)



CROSS SECTION



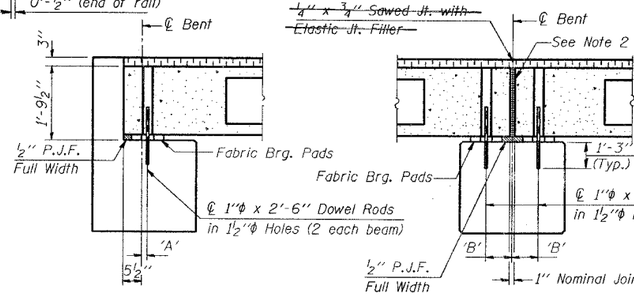
½" FABRIC BRG. PAD DETAILS



PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

'D'	5°	10°	15°	20°	25°	30°
A	1½"	1⅝"	1¾"	1⅞"	2¼"	2⅝"
B	7½"	7⅝"	7¾"	8"	8¼"	8⅝"



SECTION AT ABUTS.

(Along ℄ Beams)

SECTION AT PIERS

(Along ℄ Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 21" Dp.	1400 Sq. Ft.
Steel Railing	100 Ft.
~~Bit. Conc. Surf. Crse. Class I~~	~~19.0 Tons~~
~~Waterproofing Membrane System~~	~~155.6 Sq. Yds.~~

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 ℄ Pier shall be filled with non-shrink grout.
3. Longitudinal keys shall be grouted WITH NON-SHRINK GROUT
4. The 1" ϕ 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.

Illinois Department of Transportation

PASSED NOVEMBER 1, 1995
Engineer of Bridge Design

APPROVED NOVEMBER 1, 1995
Engineer of Bridges and Structures

ISSUED 1-1-96

P.P.C. DECK BEAM SUPERSTRUCTURE

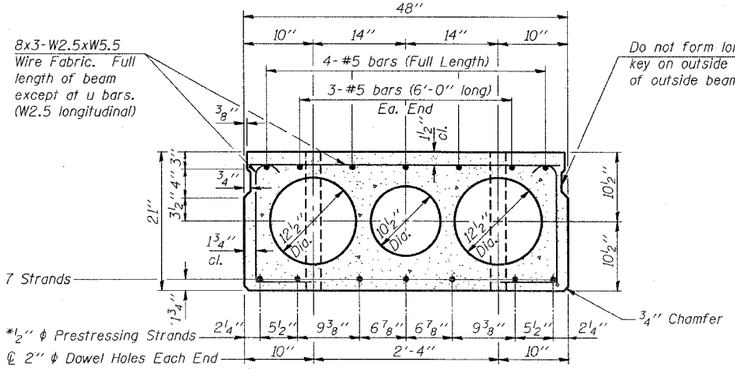
28' RDWY.	21" BMS.	50' SPAN	RIGHT

STANDARD CS-2821-50R

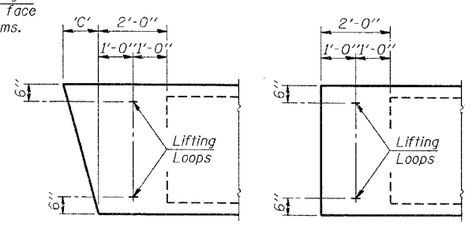
CONTRACT NO. 95453

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	LAWRENCE	10	6
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

* 05-08132-00-BR

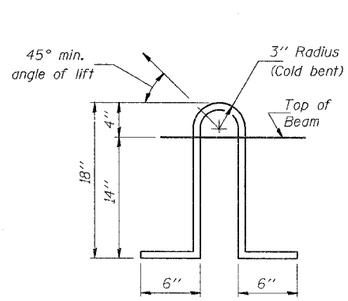


CROSS SECTION
(30' SPAN)



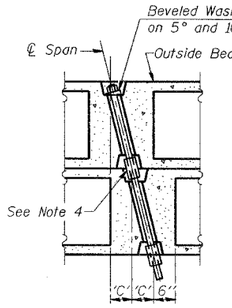
END BLOCK DETAILS

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.

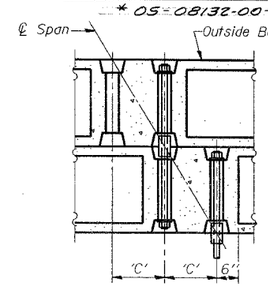


LIFTING LOOP DETAIL

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



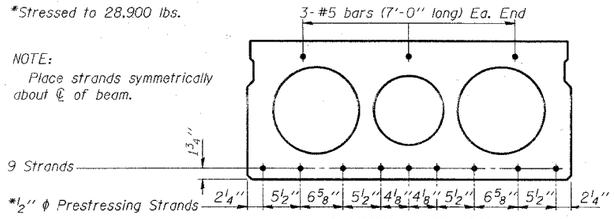
PARTIAL PLAN TRANSVERSE TIE ASSEMBLY
('D'=0°, 5° and 10°)



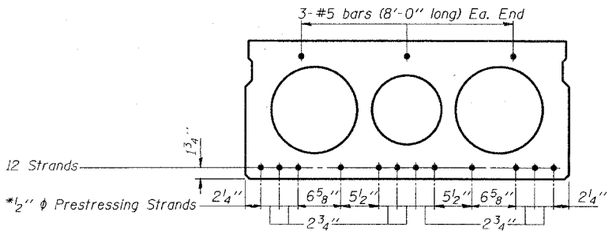
PARTIAL PLAN TRANSVERSE TIE ASSEMBLY
('D'=15°, 20°, 25° and 30°)

*Stressed to 28.900 lbs.

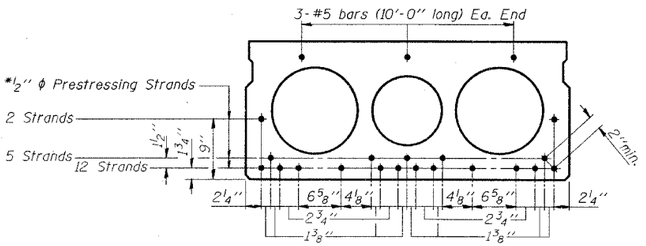
NOTE:
Place strands symmetrically about ℄ of beam.



CROSS SECTION
(35' SPAN)



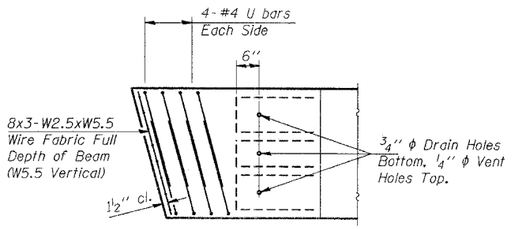
CROSS SECTION
(40' SPAN)



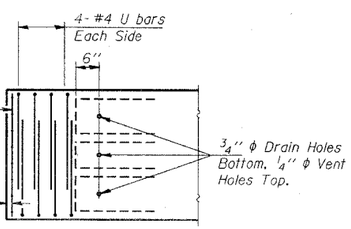
CROSS SECTION
(50' SPAN)

DIMENSION 'C'

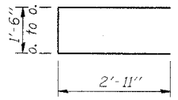
Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	4 1/4	8 1/2	12 7/8	17 1/2	22 3/8	27 3/4



END REINFORCEMENT
(SKEWED)



END REINFORCEMENT
(RIGHT ANGLE)



BAR U

DESIGN STRESSES

f'_c = 5,000 p.s.i.

f'_{ci} = (See Required Release Strength Table)

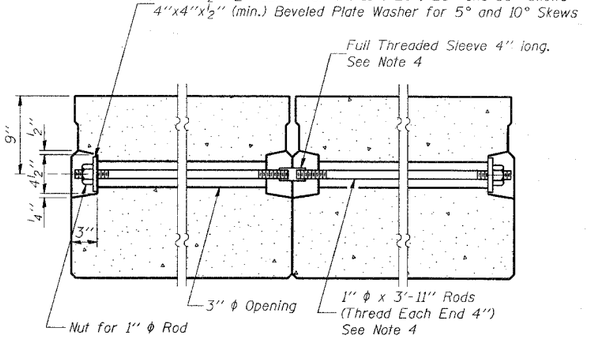
f'_s = 270,000 p.s.i. (1/2'' ϕ Strand)

f_{si} = 189,000 p.s.i. (1/2'' ϕ Strand)

f_y = 60,000 p.s.i.

REQUIRED RELEASE STRENGTH

Span	f'_{ci} (psi)
30'	4,000
35'	4,000
40'	4,000
50'	4,000



SECTION ALONG TRANSVERSE TIE ASSEMBLY
(REQUIRED FOR 50' SPAN ONLY)

NOTES

1. Prestressing steel shall be uncoated high strength, stress relieved 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2'' and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to AASHTO M-31, M-42 or M-53, Grade 60.
4. On 0°, 5° and 10° skews, alternate approved transverse tie rods of increased segmental length are acceptable.
5. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
6. When Waterproofing Membrane System is specified, the top surface of the beams shall be finished in accordance with Article 504.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of 1/4''.
7. Low-relaxation strands may be substituted for the stress relieved strands. The initial prestressing force applied to each strand shall be the same as for the stress relieved strands (28,900 lbs.).
8. 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 [illegible]mm and the bo[illegible]ge of the key.

Illinois Department of Transportation

PASSED NOVEMBER 1, 1995
Engineer of Bridge Design

APPROVED NOVEMBER 1, 1995
Engineer of Bridges and Structures

ISSUED 1-1-81

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

P.P.C. DECK BEAM DETAILS

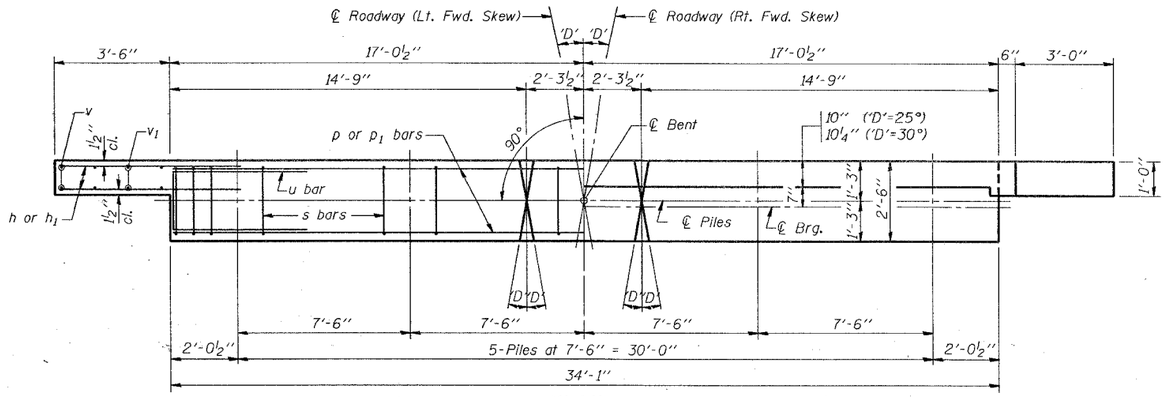
28' ROADWAY | 21'' x 48'' BEAMS

STANDARD CB-2821-48

CONTRACT NO. 95433

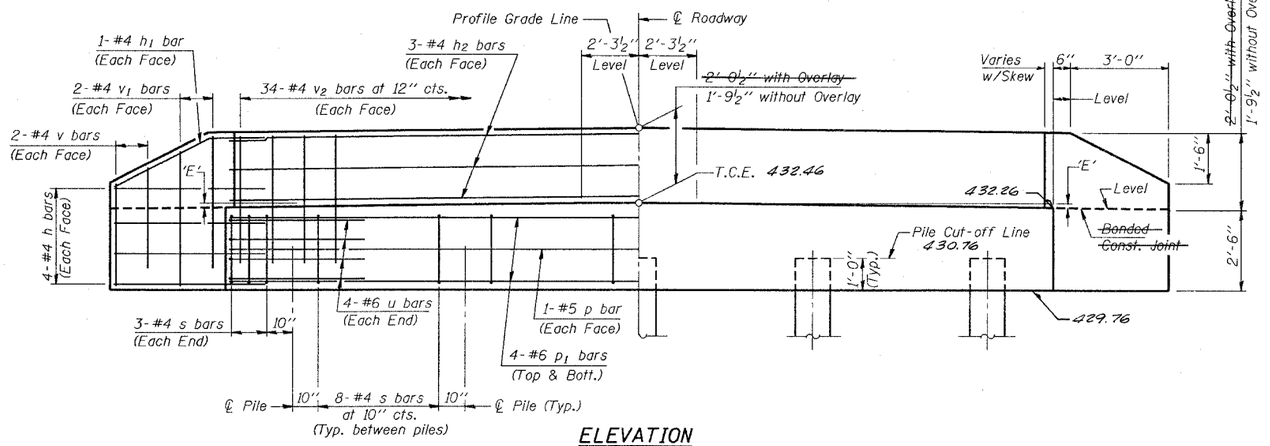
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	LAWRENCE 10		7
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

* 05-08132-00-BR

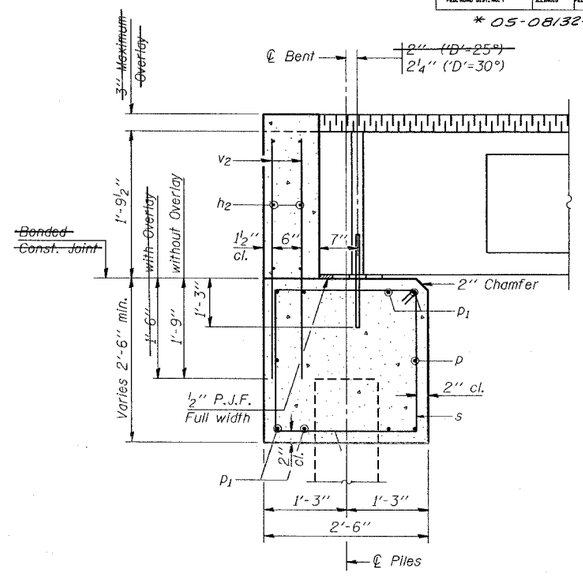


PLAN

('D'=Designated Skew Angle)



ELEVATION



SECTION THRU ABUTMENT

(At Right Angles)

DIMENSION 'E'

GRADE	'D'=25°		'D'=30°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2½"	2½"	2 3/8"	2 3/8"
Over 0% to 1%	2 1/8"	2 7/8"	2"	2 7/8"
Over 1% to 2%	1 3/8"	3 5/8"	1"	3 3/4"
Over 2% to 3%	5/8"	4 3/8"	1/8"	4 5/8"
Over 3% to 4%	0"	5 1/8"	———	———

NOTES

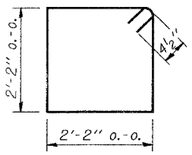
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.

MAXIMUM PILE LOADS

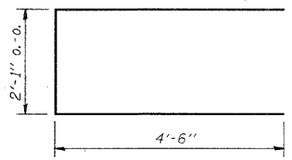
SPAN	TONS
30'	25
35'	27
40'	29
50'	33

DESIGN STRESSES

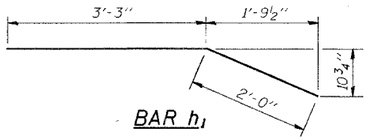
f'c = 3,500 psi
fy = 60,000 psi



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	33'-9"	——
p	2	#5	33'-9"	——
p1	8	#6	33'-9"	——
s	38	#4	9'-5"	□
u	8	#6	11'-1"	⊏
v	8	#4	2'-8"	——
v1	8	#4	3'-8"	——
v2	68	#4	3'-5"	——
Concrete Structures			11.5 Cu. Yds.	
Reinforcement Bars			1240 Lbs.	

Illinois Department of Transportation

PASSED November 1, 1995
Engineer of Bridge Design

APPROVED November 1, 1995
Engineer of Bridges and Structures

ISSUED 1-1-81

P.P.C. DECK BEAMS PILE BENT ABUTMENT

28' RDWY. | 21" BMS. | 'D'=25° OR 30°

STANDARD CA-2821-30

CONTRACT NO. 95453

STA.	TO STA.		
05-08/32-00-BR LAWRENCE		10	8
FED. ROAD DIST. NO.	ILLINOIS	PROJECT	

NOTES

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

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

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

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

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

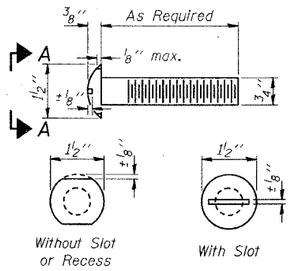
For multi-span bridges, sufficient $\frac{1}{4}$" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing, Type S-1.

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

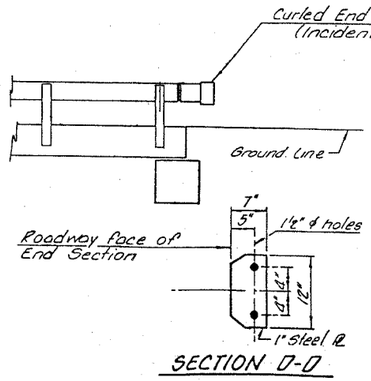
The $\frac{1}{2}$" x 7" x 6" plates that come in contact with concrete shall receive two coats of asphalt paint conforming to Section 760.07 Type II or place $\frac{1}{8}$" fabric bearing pads between the plates and concrete.

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

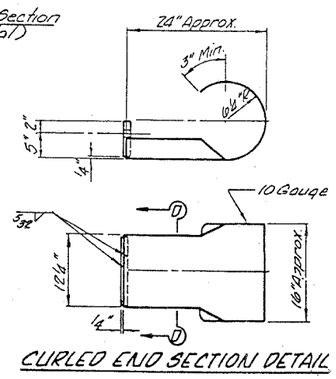
The maximum allowable rail post spacing shall be 10'-6". The rail post spacing shown elsewhere in the plans is based on the allowable spacing for another type of rail. When this type of rail is used, the number of posts may be decreased and the post spacing increased to provide equal post spaces of 10'-6" or less.



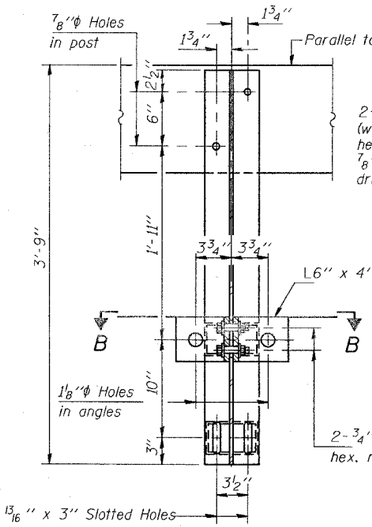
VIEW A-A
ROUND HEAD BOLT



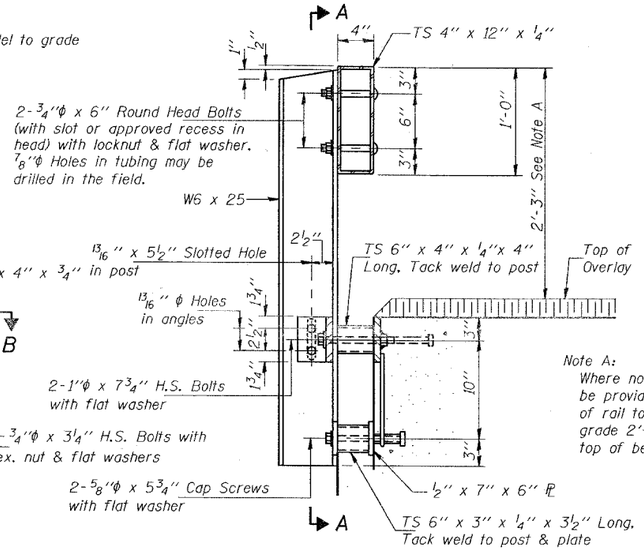
SECTION O-O



CURLED END SECTION DETAIL

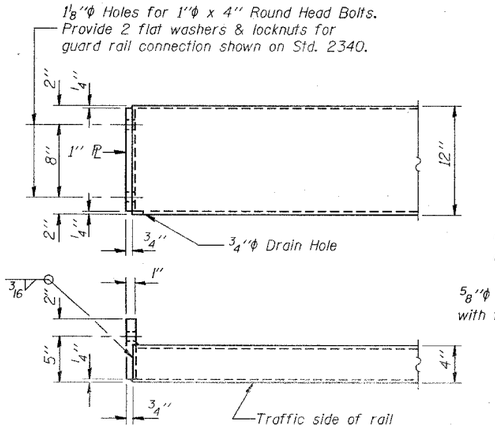


SECTION A-A

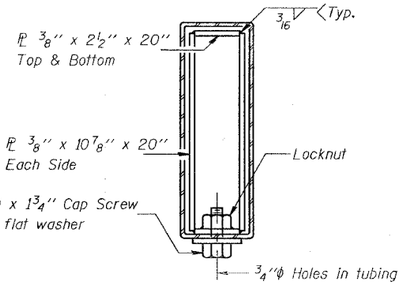


SECTION AT RAIL POST

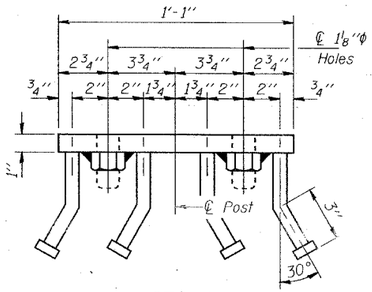
Note A:
Where no overlay is to be provided adjust top of rail to lay parallel to grade 2'-5" max. above top of beam.



END OF RAIL DETAILS



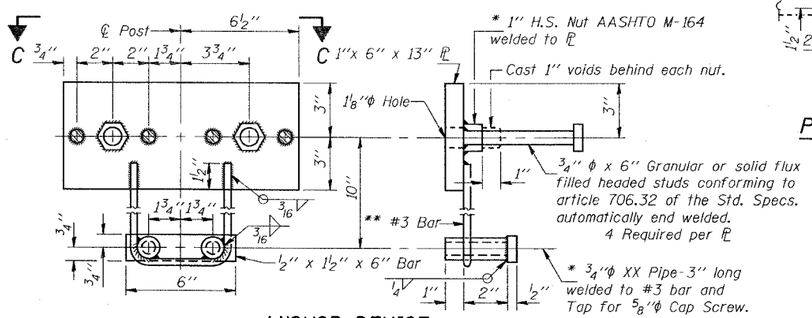
SECTION AT RAIL SPLICE



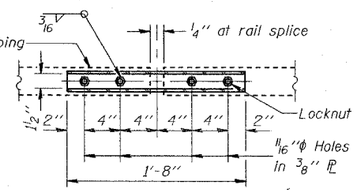
VIEW C-C

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

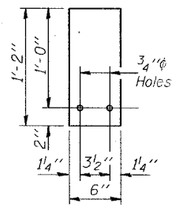
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed $\frac{1}{2}$".



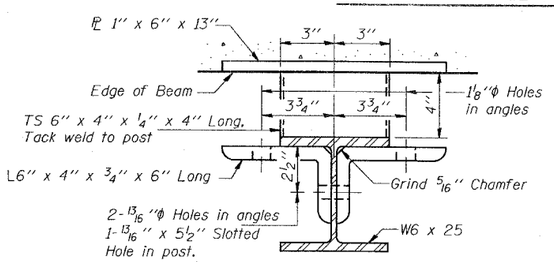
ANCHOR DEVICE



PLAN-BOTT. SPLICE PL
TYPICAL



1/4" SHIM PLATE



SECTION B-B

Illinois Department of Transportation

PASSED November 1, 1995
Engineer of Bridge Design

APPROVED November 1, 1995
Engineer of Bridges and Structures

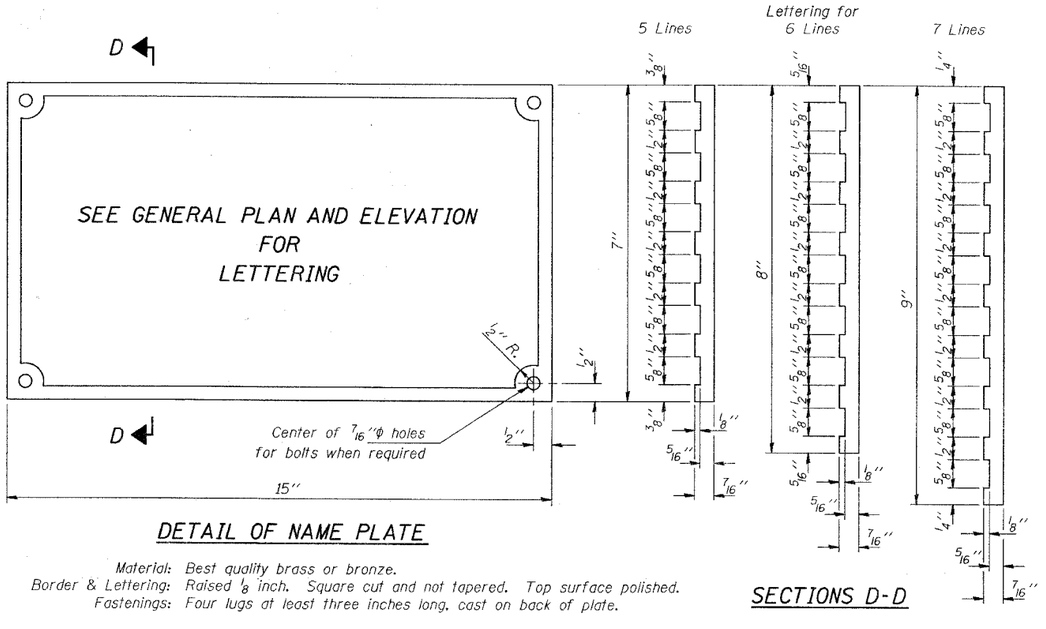
ISSUED 1-1-81

STEEL RAILING, TYPE S-1

STANDARD CR-TS1

CONTRACT NO. 95453

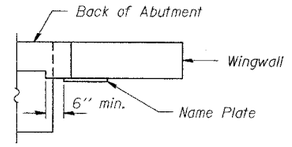
F.A.S. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
	05-08132-00-BR	LAWRENCE	10	9
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		



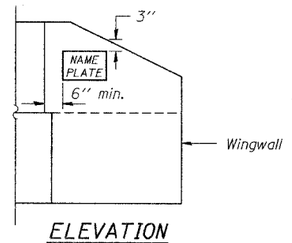
DETAIL OF NAME PLATE

Material: Best quality brass or bronze.
Border & Lettering: Raised 1/8 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



PLAN



ELEVATION

LOCATION OF NAME PLATE

Illinois Department of Transportation

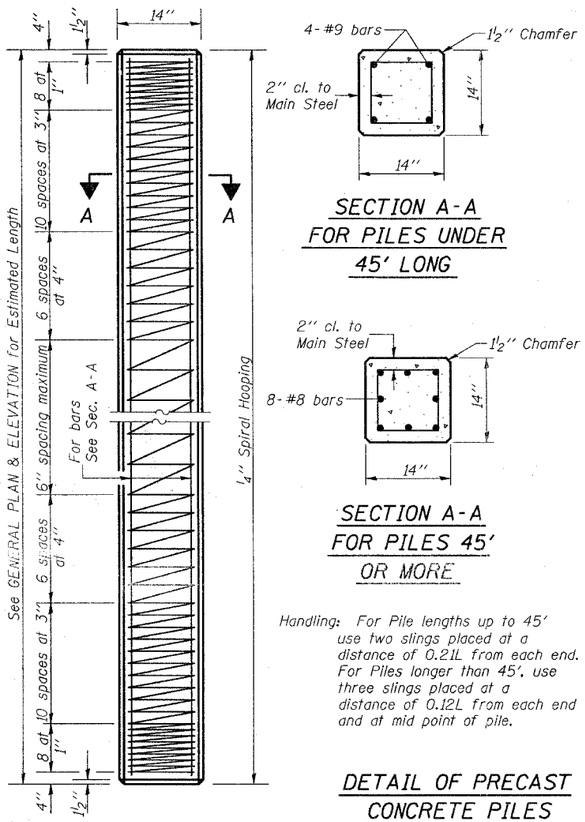
PASSED November 1, 1995
Engineer of Bridge Design
APPROVED November 1, 1995
Engineer of Bridges and Structures

ISSUED 7-1-95

NAME PLATE
STANDARD CN

CONTRACT NO. 95453

F.A.S. ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET
	05-08132-00-BR	LAWRENCE	10	10
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

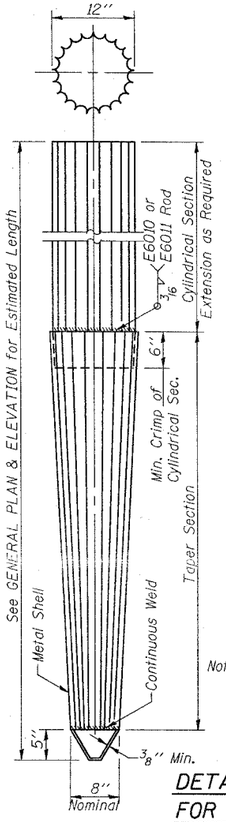


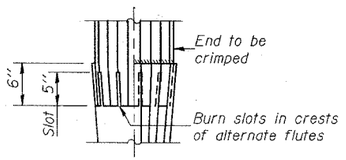
SECTION A-A FOR PILES UNDER 45' LONG

SECTION A-A FOR PILES 45' OR MORE

Handling: 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.

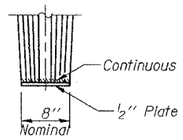
DETAIL OF PRECAST CONCRETE PILES





FIELD CRIMP DETAIL

Note: 6" Crimp shall either be supplied on the cylindrical section or made in the field as detailed.



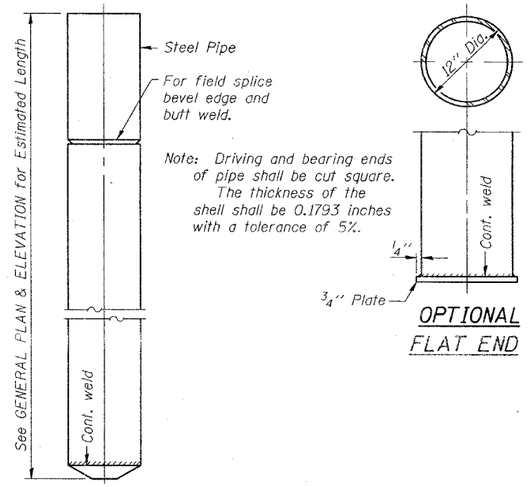
OPTIONAL FLAT END

ALLOWABLE TAPER SECTIONS

10' Length-Taper 1" in 2'-6"
17' Length-Taper 1" in 4'-0"
25' Length-Taper 1" in 7'-0"
30' Length-Taper 1" in 7'-0"

Note: The thickness of the shell shall be 0.1495 inches with a tolerance of 5%. The shell shall be in accordance with Article 706.05 (a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 50,000 p.s.i.

DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES



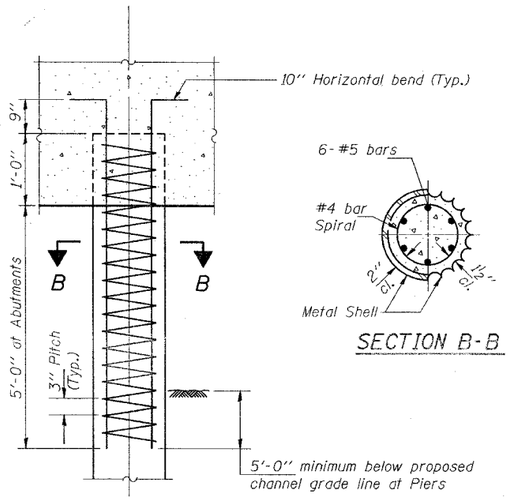
Note: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.1793 inches with a tolerance of 5%.

OPTIONAL FLAT END

DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

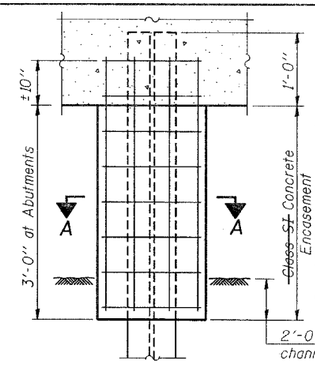
Reinforcement cage shall be omitted when ~~Class SI~~ Concrete Encasement is provided.

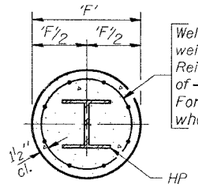
The cost of Reinforcement is incidental to the Cost of Furnishing Piles.



SECTION B-B

DETAIL OF REINFORCEMENT FOR METAL SHELLS



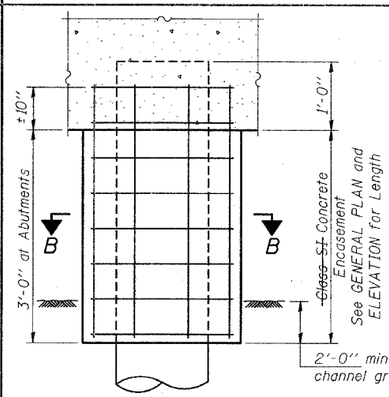


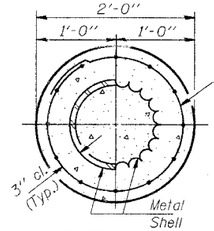
Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Reinforcement is incidental to the cost of ~~Class SI~~ Concrete Encasement. Forms for Encasement may be omitted when soil conditions will permit.

SECTION A-A

Pile	'F'
HP8	1'-6"
HP10	1'-9"
HP12	2'-0"

DETAIL OF HP PILE ENCASEMENT





Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Reinforcement is incidental to the cost of ~~Class SI~~ Concrete Encasement. Forms for Encasement may be omitted when soil conditions will permit.

SECTION B-B

DETAIL OF METAL SHELL PILE ENCASEMENT

QUANTITIES/LIN. FT. OF ENCASEMENT

(STEEL PILES)

Pile Size	Item	Quantity
HP8	~~Class SI~~ Concrete Encasement	0.063 C.Y.
HP10	~~Class SI~~ Concrete Encasement	0.086 C.Y.
HP12	~~Class SI~~ Concrete Encasement	0.112 C.Y.

(METAL SHELL PILES)

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

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ISSUED 1-1-18

PILE DETAILS

STANDARD CX-1