6-17-05 Letting, Item 070

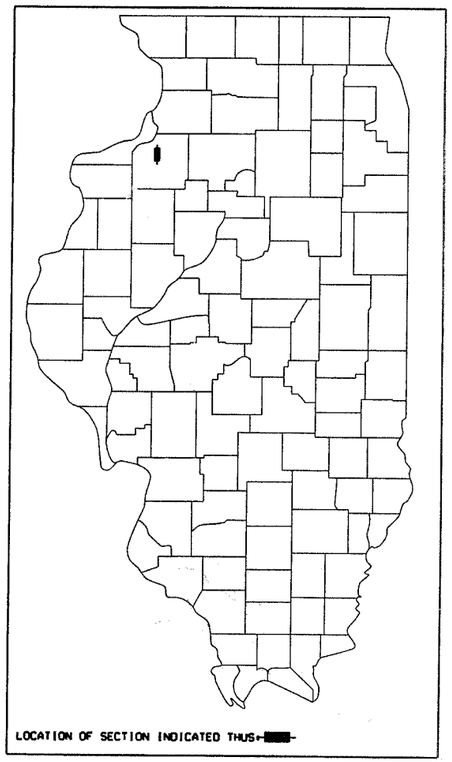
85359

TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	1
SECTION: 04-18125-00-BR				

INDEX OF SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR
PROPOSED LOCAL AGENCY IMPROVEMENT
FEDERAL AID BRRP PROJECT
HENRY COUNTY
OSCO ROAD DISTRICT TR 116
SECTION 04-18125-00-BR
PROJECT BROS-073(52) JOB NO C-92-074-04
CONTRACT 85359



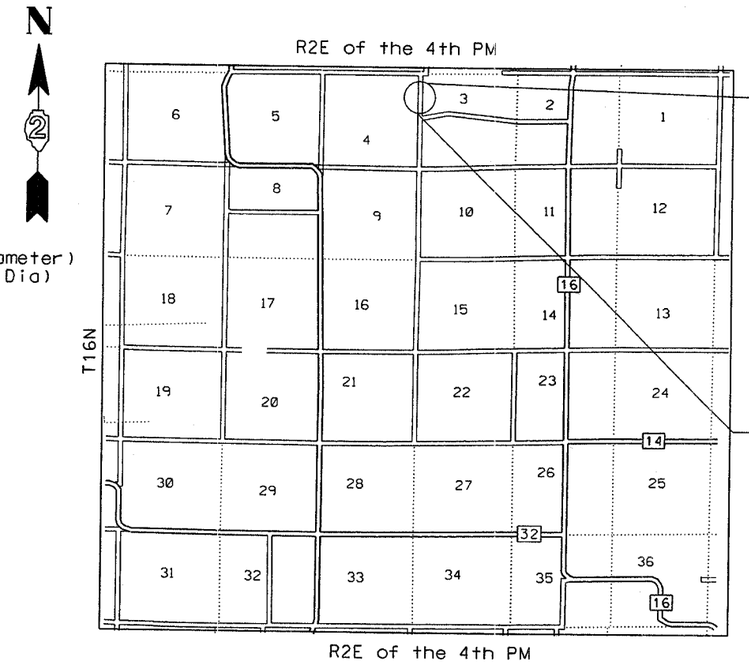
TRAFFIC CONTROL STANDARDS

702001-05 BLR 21-6
280001-02

SCHEDULE OF QUANTITIES

CONSTRUCTION TYPE CODE X081-2A

CODE	QUANTITY	UNIT	DESCRIPTION
20100110	13	Unit	Tree Removal (6-15 Units Diameter)
20100210	25	Unit	Tree Removal (over 15 Units Dia)
20200100	123	Cu Yd	Earth Excavation
20300100	183	Cu Yd	Channel Excavation
20400800	640	Cu Yd	Furnished Excav
25000330	0.68	Acre	Seeding Cl 6
25000400	61	Pound	Nitrogen Fert Nutr
25000500	61	Pound	Phosphorus Fert Nutr
25000600	61	Pound	Potassium Fert Nutr
25100120	1.4	Ton	Mulch Method 2
28000300	4	Each	Temp Ditch Checks
28100707	498	Sq Yd	Stone Dump Rip CL A4
35101400	517	Ton	Agg Base Cse B
50100100	1	Each	Rem Exist Struct
50200100	31	Cu Yd	Structure Excavation
50300225	18.2	Cu Yd	Conc Structures
50400505	1438	Sq Ft	P P Conc Dk Bm 27 Dp
50800105	1980	Pound	Reinforcement Bars
50900205	120	Foot	Steel Railing Ty S1
51201400	168	Foot	Fur Steel Piles HP 10x42
51202700	168	Foot	Driving Steel Piles
51203400	1	Each	Test Pile Steel HP 10x42
51204315	2.1	Cu Yd	Concrete Encasement
51204600	7	Each	Metal Shoes
51500100	1	Each	Name Plates
542D0220	34	Foot	P Cul Cl D 1 15



LOCATION MAP

NET LENGTH OF SECTION = 625 FEET = 0.12 MILES

Section includes construction of a single span (60') bridge with precast prestressed concrete deck beams (27" deep), skewed 10° right ahead on concrete pile bent abutments. Also included are aggregate base approach roadways.

SCALES

PLAN	1"= 50'
PROFILE HORI.	1"= 50'
PROFILE VERT.	1"= 5'
CROSS SECTION	1"= 5'

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

RURAL LOCAL ROAD (ADT 0-250) (ACTUAL 150) DESIGN SPEED = 30 mph

STEVEN L. BRANDAU 42625 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS
Expires 11/30/05

THESE PLANS WERE PREPARED BY ME OR BY THE FULL TIME MEMBERS OF MY STAFF.

STEVEN L. BRANDAU
P.E. 42625

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

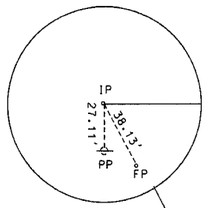
APPROVED April 12th, 2005
COUNTY ENGINEER

PASSED April 19th 2005
DISTRICT ENGINEER OF LOCAL ROADS & STREETS

APPROVED April 19th 2005
DISTRICT ENGINEER

85359

TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	2
SECTION: 04-18125-00-BR				



POT 1
@ Sta. 200+00

BM #1-16 P. Nail in P.P.
Sta. 205+75 22' Rt.
Elev. 159.26

BM #2-16 P. Nail in P.P.
Sta. 203+81 26' Rt.
Elev. 165.08

(33')-33' from ℄ to R.O.W.

⊕ -Bench Mark

COORDINATES

	Northings	Eastings
POT 1	10000.00	10000.00
POT 2	10991.79	10000.00
Sta.202+75	10275.00	9999.14
Sta. 209+00	10900.00	10000.03

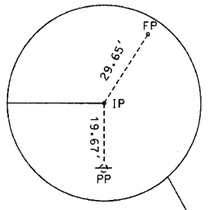
Seeding Quantities

Seeding Class 6 0.68 Acre
Phosphorus Fert. Nutr. 61 lbs.
Nitrogen Fert. Nutr. 61 lbs.
Potassium Fert. Nutr. 61 lbs.

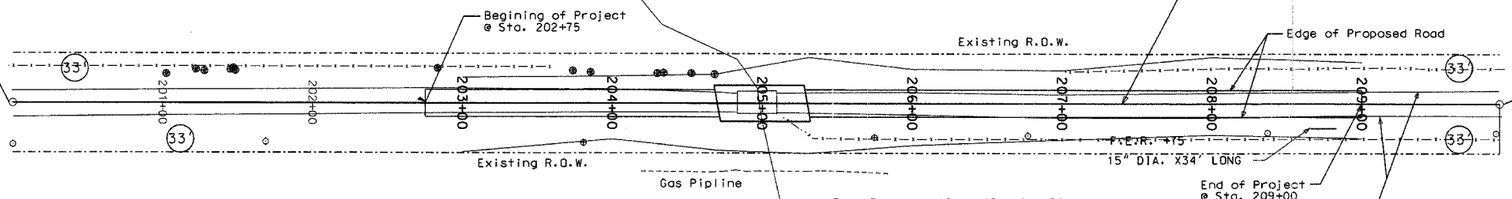
Aggregate Base Course, Type-B
Sta. 202+75 to 209+00 517 Tons

Existing Structure is a 26' bridge on closed concrete abutments, with concrete sides

Proposed Structure is a 60' precast prestressed concrete deck beam bridge on concrete abutments.



POT 2
@ Sta. 209+91.785

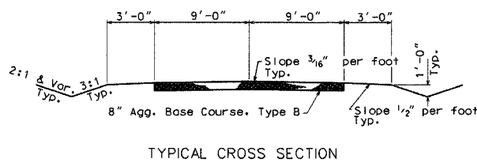


Tree Removal (Over 15 Units Dia.)

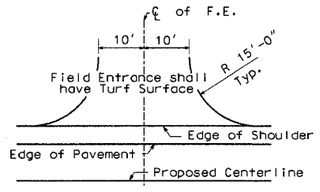
Sta. 204+68 19' Lt. 25 Units

Tree Removal (6 to 15 Units Dia.)

Sta. 204+30 20' Lt. 13 Units
(Removal To Be Determined By Engineer)



TYPICAL CROSS SECTION



FIELD ENTRANCE DETAIL

SCALES:
1" = 50' HOR
1" = 5' VER

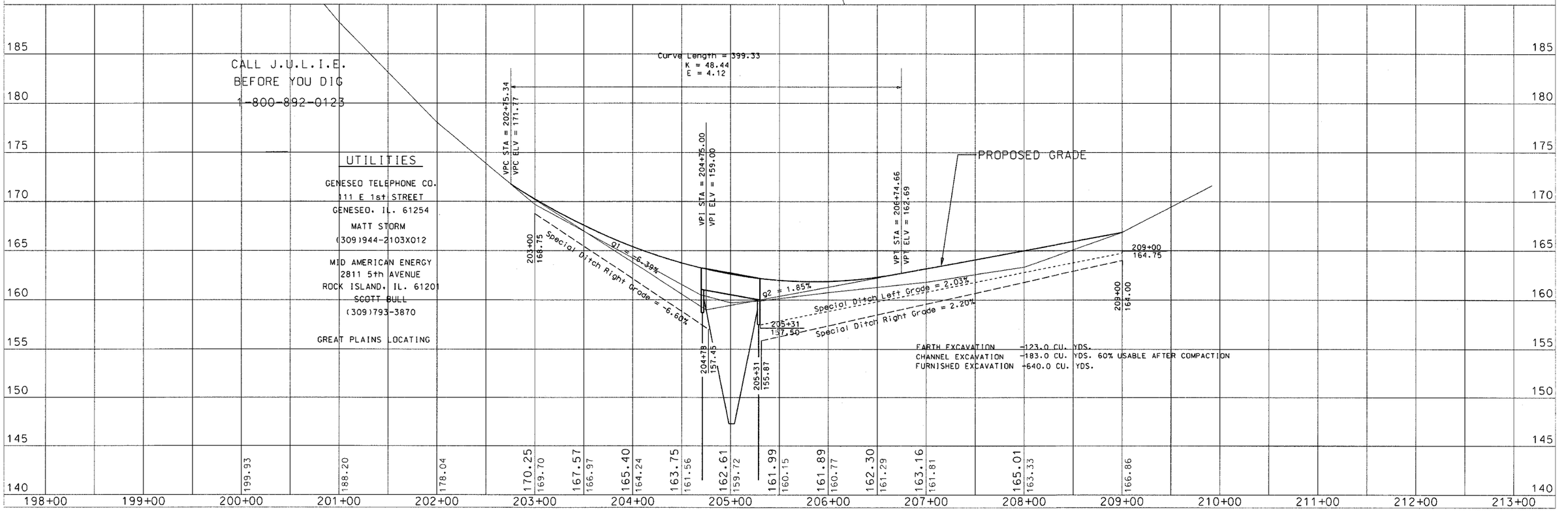
CALL J.U.L.I.E.
BEFORE YOU DIG
1-800-892-0123

UTILITIES

GENESEO TELEPHONE CO.
111 E 1st STREET
GENESEO, IL. 61254
MATT STORM
(309)944-2103X012

MID AMERICAN ENERGY
2811 5th AVENUE
ROCK ISLAND, IL. 61201
SCOTT BULL
(309)793-3870

GREAT PLAINS LOCATING



85359

TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	3
SECTION:	04-18125-00-BR			

204 + 00

DESIGN EL =165.40

FILL AREA =48
CUT AREA =1

204 + 07

207 + 00

DESIGN EL =163.16

FILL AREA =40
CUT AREA =1

206 + 00

DESIGN EL =161.89

FILL AREA =35
CUT AREA =3

203 + 00

DESIGN EL =170.25

FILL AREA =16
CUT AREA =6

205 + 31

DESIGN EL =162.17

FILL AREA =77
CUT AREA =12

202 + 00

FILL AREA =0
CUT AREA =0

204 + 69

DESIGN EL =163.26

FILL AREA =88
CUT AREA =1

85359

TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR116	OSCO	HENRY	11	4
SECTION:	04-18125-00-BR			

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

175
170
165

209 + 91.78

FILL AREA =0
CUT AREA =0

209 + 00

DESIGN EL =166.86

FILL AREA =7
CUT AREA =21

208 + 75

DESIGN EL =166.40

FILL AREA =29
CUT AREA =12

208 + 00

DESIGN EL =165.01

FILL AREA =46
CUT AREA =8

70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70

85359

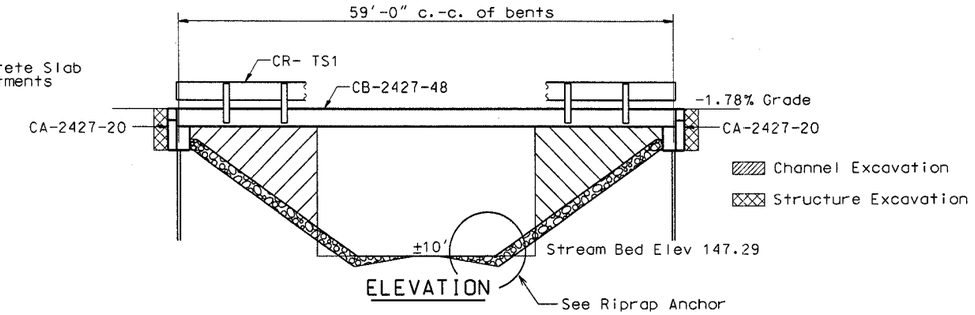
TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	5
SECTION: 04-18125-00-BR				

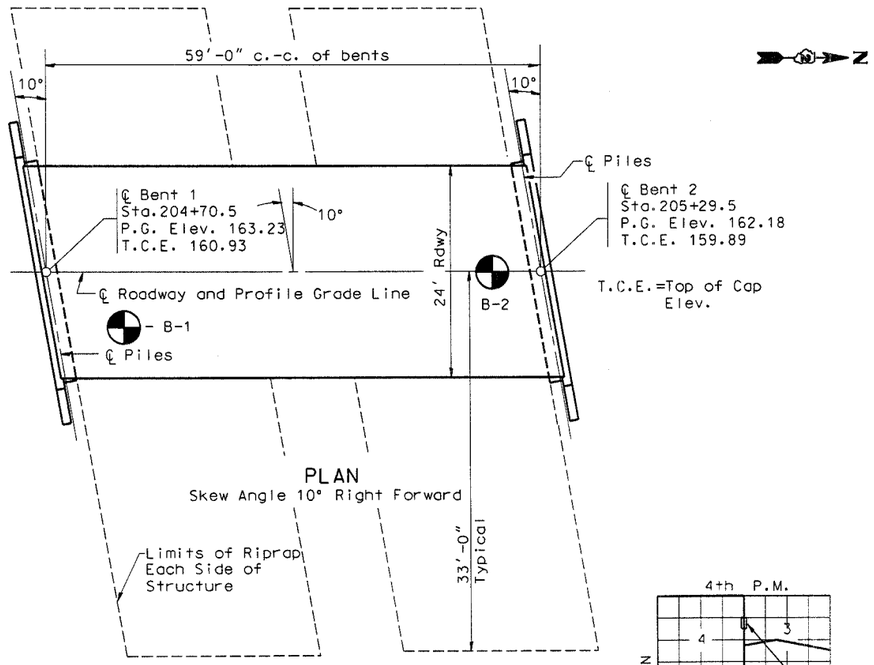
B.M. #1 - 16P Nail In Power Pole
Sta. 205+75, 22.5' R
Elev. 159.26

B.M. #2 - 16P Nail In Power Pole
Sta. 203+81, 26' R
Elev. 165.08

Existing Structure- A Single Span Concrete Slab Structure (26') on Closed Concrete Abutments

All salvageable materials shall become the property of the the Henry County Highway Department





GENERAL NOTES

1. The Contractor shall drive 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 inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.
4. The Abutments shall not be backfilled until the deck beams are in place and the dowel pins have been grouted and cured
5. Reinforcement bars shall conform to AASHTO M-31, M-42 or M-53, Grade 60

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub. Abuts.	Total
Removal of Existing Structures	Each			1
Channel Excavation	Cu. Yd.		183.0	183.0
Structure Excavation	Cu. Yd.		31.0	31.0
Stone Dumped Riprap, Class A4	Sq. Yd.		498	498
Concrete Structures	Cu. Yd.		18.2	18.2
Precast Prest. Concrete Deck Beams (27" Depth)	Sq. Ft.	1438		1438
Steel Railing, Type S-1	Foot	120		120
Reinforcement Bars	Pound		1980	1980
Furnishing Steel Piles HP 10x42	Foot		168	168
Driving Steel Piles	Foot		168	168
Test Piles Steel HP 10x42	Each		1	1
Metal Shoes	Each		7	7
Name Plates	Each	1		1
Concrete Encasement	Cu. Yd.		2.1	2.1

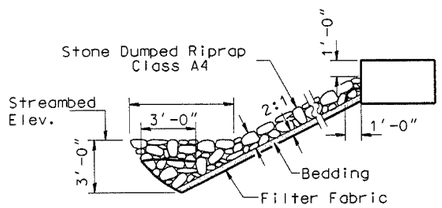
I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for this style of structure and complies with the requirements of the AASHTO Standard Specifications for Highway Bridges.

LICENSED STRUCTURAL ENGINEER
KEITH E. BRANDAU
81-4905
CHAMPAIGN
STATE OF ILLINOIS

4/6/05
Keith E. Brandau Date
Illinois Structure No. 4905
License Expires 11/30/2006

PILE DATA (2-ABUTS.)

Type Steel HP 10x42 Piles
Capacity Refusal
Estimated Length 24 Feet
Number Required 8 (Includes 1Test Pile located in Bent #1



STONE DUMPED RIPRAP ANCHOR DETAIL

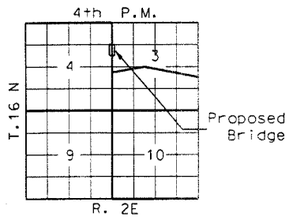
STATION 205+00
MINERAL CREEK
SEC. 04-18125-00-BR BUILT 2005
OSCO ROAD DIST.
HENRY COUNTY
LOADING HS20
STR. NO. 037-3357

LETTERING FOR NAME PLATE

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

DESIGN SPECIFICATIONS

2002 AASHTO, with applicable Interm Specifications, HS20-44 Loading. Load Factor Design



LOCATION SKETCH

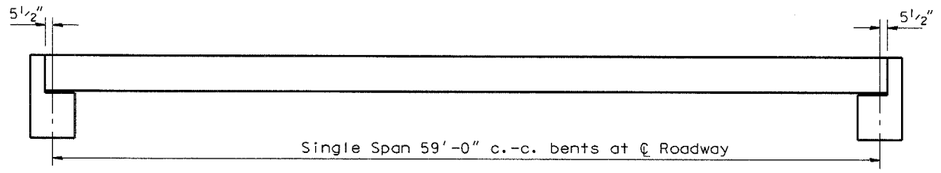
WATERWAY INFORMATION

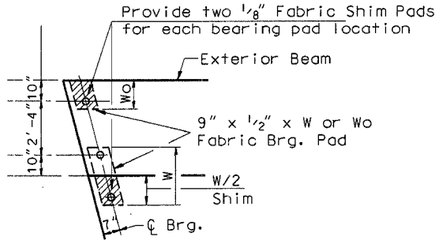
Drainage Area = 6.7 Sq. Mi. Low Grade Elev. = 161.88 @ Sta. 206+00

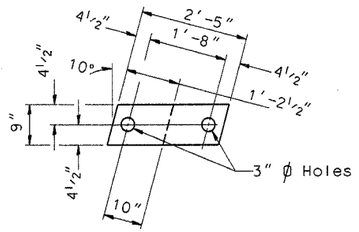
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1407	192	319	158.39	.51	.01	158.90	158.40
Base	100	2259	192	410	159.71	.33	.13	160.04	159.84
Overtopping									
Max. Calc.	500	2951							

GENERAL PLAN & ELEVATION
TR 116
OVER MINERAL CREEK
SECTION 04-18125-00-BR
HENRY COUNTY
STATION 205+00

TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	6
SECTION:	04-18125-00-BR			



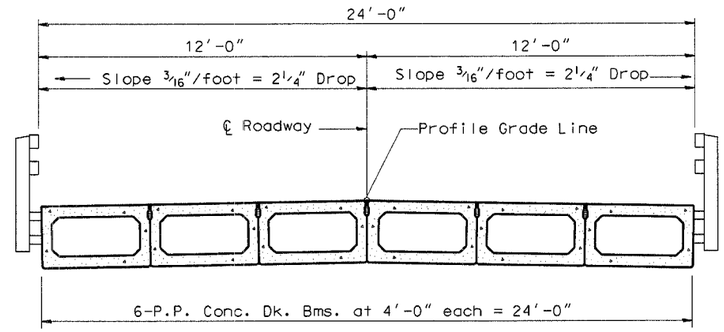




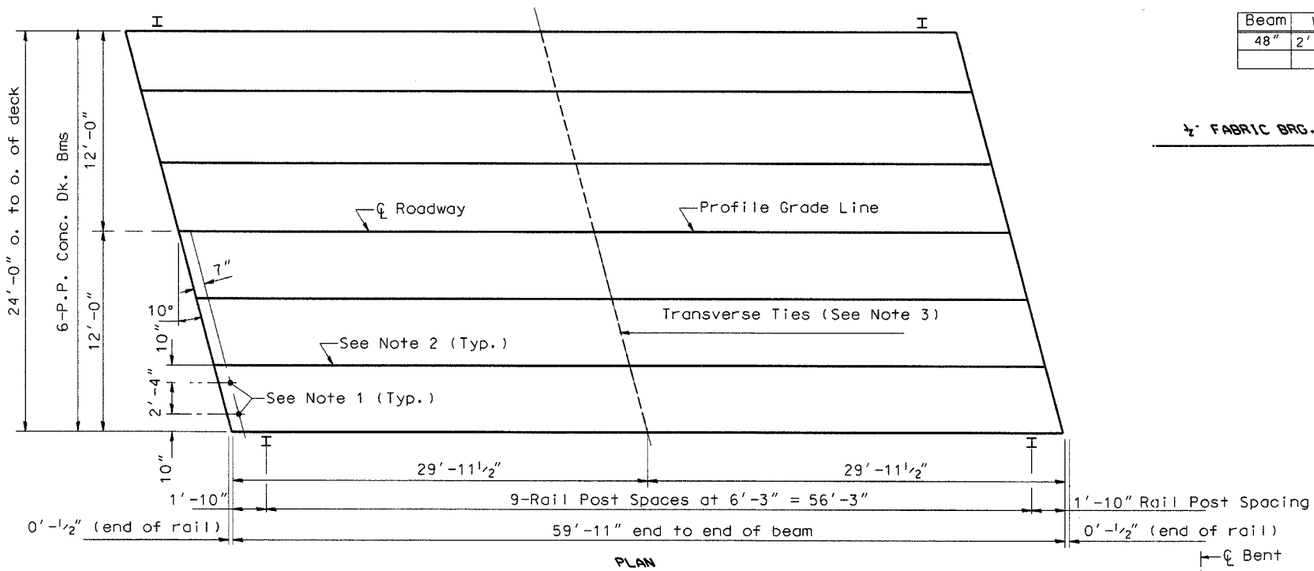
Beam	W	Wo
48"	2'-5"	1'-2½"

½" FABRIC BRG. PAD DETAILS

CROSS SECTION

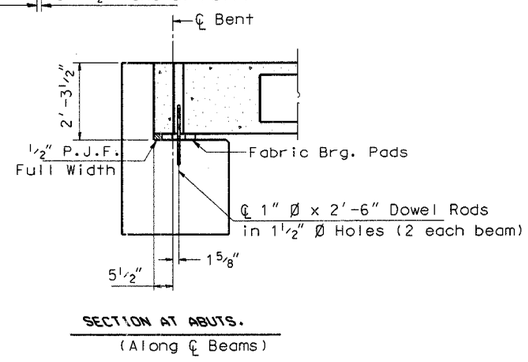


TYPICAL ELEVATIONS



PLAN

(10° = Designated Skew Angle)



SECTION AT ABUTS.

(Along ℄ 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. Longitudinal keys shall be grouted.
3. The 1" C 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.

QUANTITIES FOR ONE SPAN

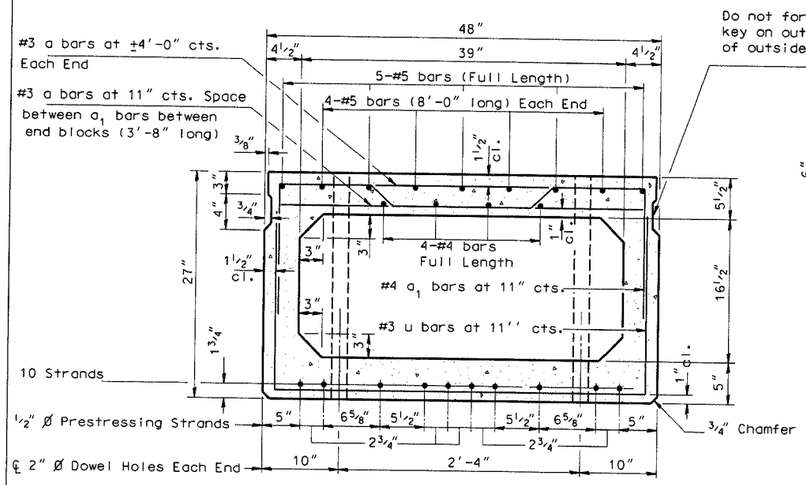
P.P. Conc. Dk. Bm. 27" Dp.	1438 Sq. Ft.
Steel Railing	120 Ft.

P.P.C. DECK BEAM
SUPERSTRUCTURE

24° ROWY.	27° BMS.	60° SPAN	RIGHT

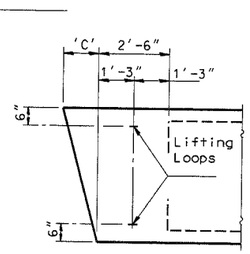
85359

TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	7
SECTION:	04-18125-00-BR			



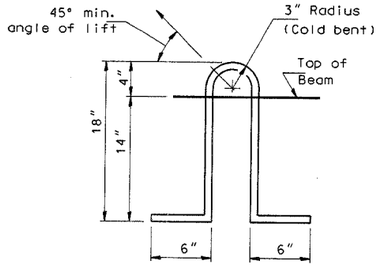
CROSS SECTION

(40' 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.

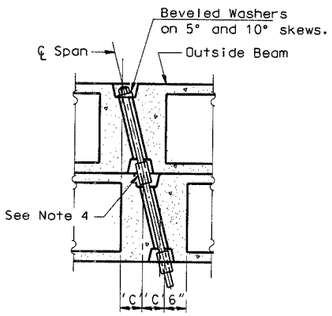


LIFTING LOOP DETAIL

Lifting loops shall be 3, ½" Ø-270 ksi strands. as shown. Alternate approved lifting devices are also acceptable.

DIMENSION 'C'

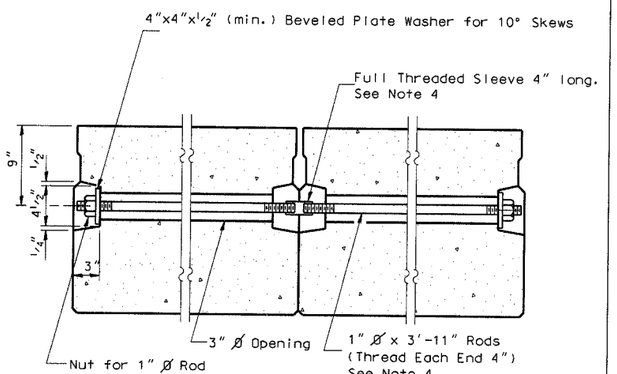
Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C'	0"	4¼"	8½"	12⅞"	17½"	22⅜"	27¾"



PARTIAL PLAN

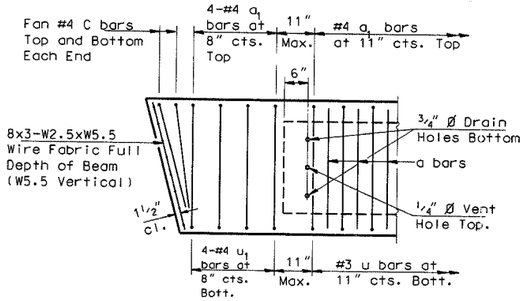
TRANSVERSE TIE ASSEMBLY

('D'=10°)

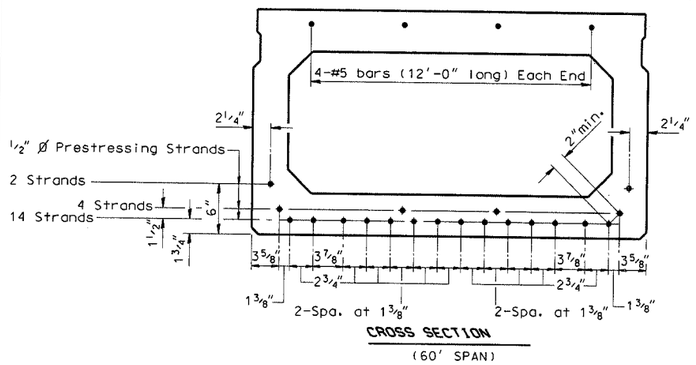


SECTION ALONG TRANSVERSE TIE ASSEMBLY

(REQUIRED FOR 60' SPANS)

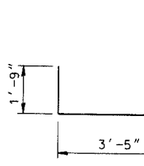


END REINFORCEMENT

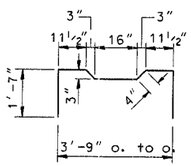


CROSS SECTION

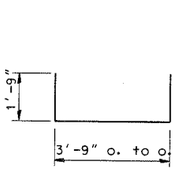
(60' SPAN)



BAR C**



BAR a1



BARS U & U1

NOTES

1. Prestressing steel shall be uncoated high strength, stress relieved 7-wire strand, Grade 270.
2. The nominal diameter shall be ½" 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 ¼".
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 the beam and the bottom edge of the key.

NOTE

The std. reinf. shown on the 40' 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

DESIGN STRESSES

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

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

f'_s = 270,000 p.s.i. (½"Ø Strand)

f_{si} = 189,000 p.s.i. (½"Ø Strand)

f_y = 60,000 p.s.i.

REQUIRED RELEASE STRENGTH

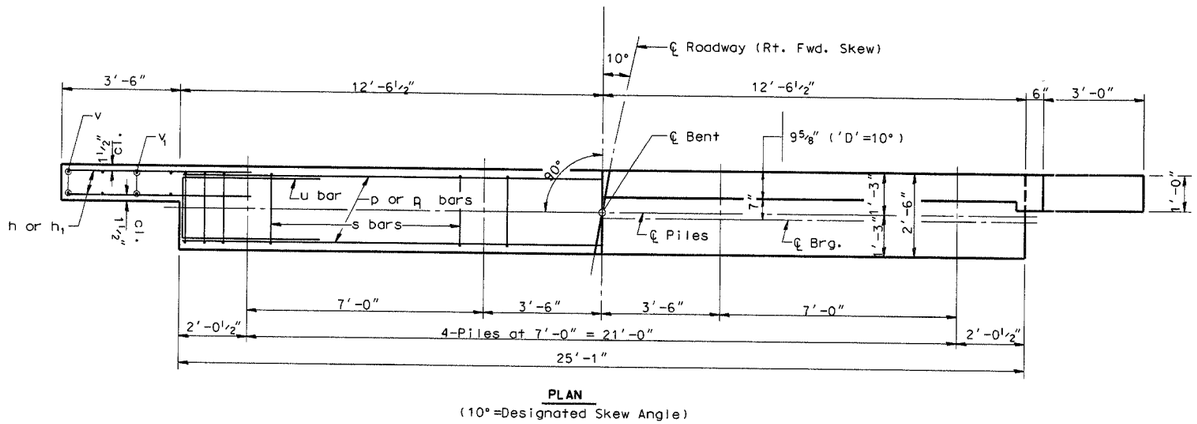
Span	f'ci (psi)
60'	4,000

P.P.C. DECK BEAM DETAILS

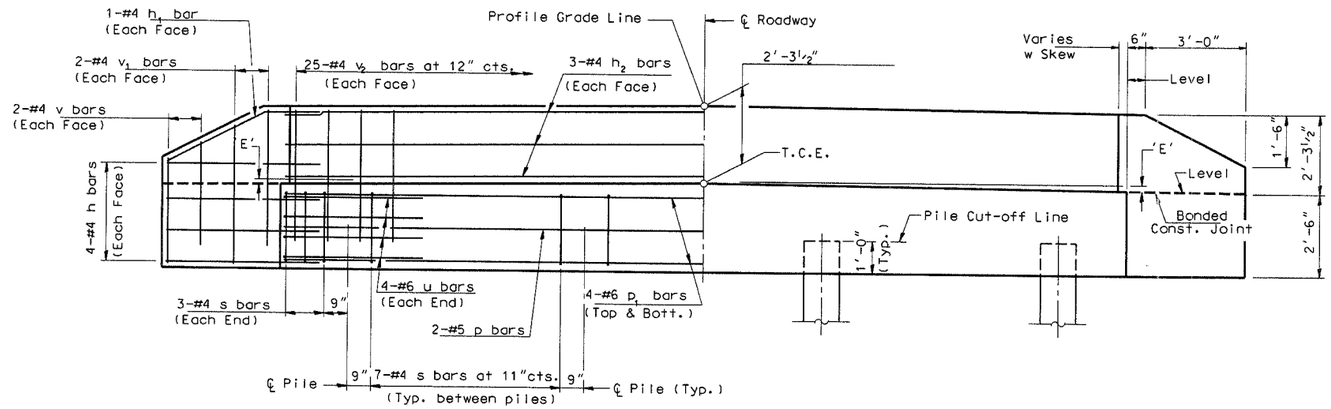
24' ROADWAY	27" X 48" BEAMS

85359

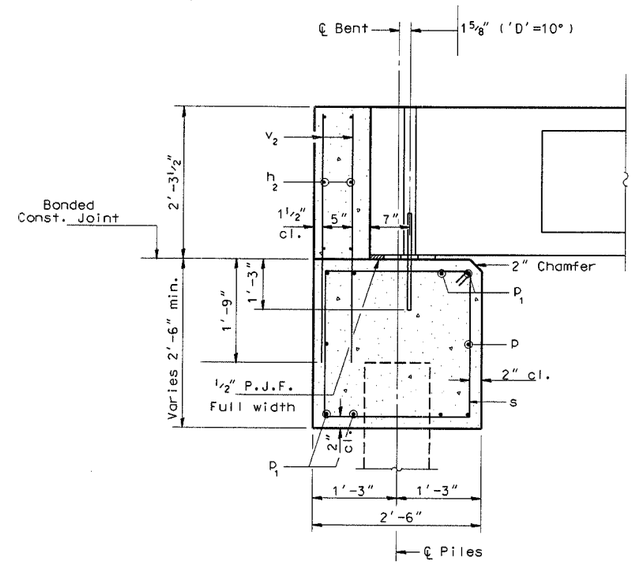
TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	8
SECTION: 04-18125-00-BR				



PLAN
(10° =Designated Skew Angle)



ELEVATION



SECTION THRU ABUTMENT
(At Right Angles)

DIMENSION 'E'

GRADE	'D'=10°	
	UPGRADE END	DOWNGRADE END
Over 1% to 2%	1⅞"	2¾"

NOTES

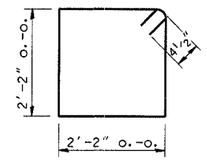
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.

MAXIMUM PILE LOADS

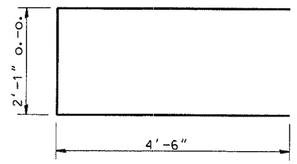
SPAN	TONS
40'	34
50'	38
60'	43

DESIGN STRESSES

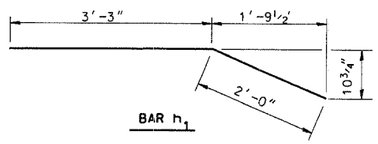
f'c = 3,500 psi
fy = 60,000 psi



BAR s



BAR u



BAR h_1

BILL OF MATERIAL
FOR ONE ABUTMENT

BAR	NO.	SIZE	LENGTH	SHAPE
H	18	#4	5'-8"	
H_1	4	#4	5'-3"	
H_2	6	#4	24'-8"	
P	2	#5	24'-8"	
P_1	8	#6	24'-8"	
S	27	#4	8'-5"	
U	8	#5	11'-1"	
V	8	#4	3'-2"	
V_1	8	#4	4'-2"	
V_2	58	#4	3'-11"	
CONCRETE STRUCTURES			9.1 CU. YDS.	
REINFORCEMENT BARS			998 LBS.	

P.P.C. DECK BEAMS
PILE BENT ABUTMENT

24' RDWY.	27" BMS.	'D'=10°

TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	9
SECTION:				

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.

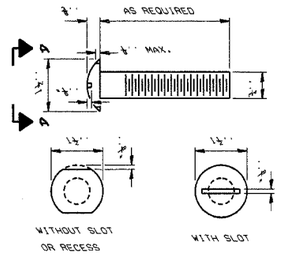
FOR MULTI-SPAN BRIDGES, SUFFICIENT ¼" X 6" X 1'-2" GALVANIZED STEEL SHIMS SHALL BE PROVIDED TO ALIGN RAIL BETWEEN ADJACENT SPANS. COST INCIDENTAL TO STEEL RAILING, TYPE S-1.

ALL FIELD DRILLED HOLES SHALL BE COATED WITH AN APPROVED ZINC RICH PAINT BEFORE ERECTION.

THE ½" X 7" X 8" PLATES THAT COME IN CONTACT WITH CONCRETE SHALL RECEIVE TWO COATS OF ASPHALT PAINT CONFORMING TO SECTION 1080.07 TYPE II OR PLACE ⅛" FABRIC BEARING PADS BETWEEN THE PLATES AND CONCRETE.

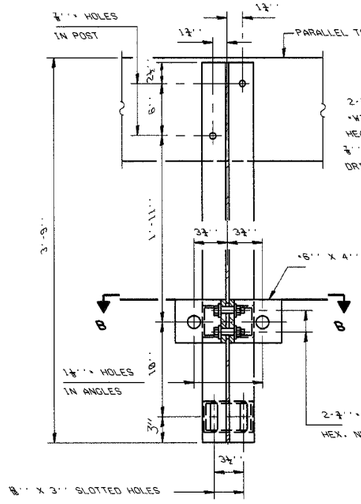
THE ¾" HIGH STRENGTH BOLTS USED TO CONNECT THE 6" X 4" X ¾" ANGLES TO THE POST SHALL BE TIGHTENED IN ACCORDANCE WITH ARTICLE 505.04 (F) (3) OF THE STANDARD SPECIFICATIONS. THE 1" HIGH STRENGTH BOLTS CONNECTING THE ANGLES TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ½ TURN. THE ⅜" 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.

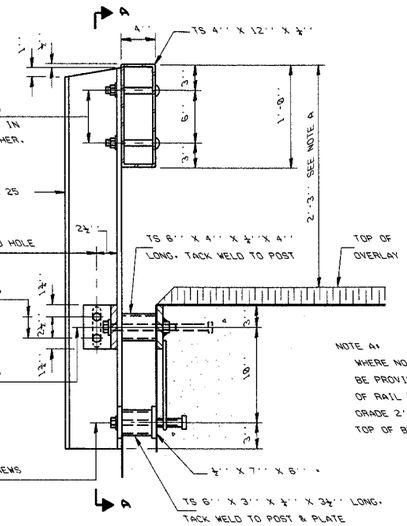


VIEW A-A

ROUND HEAD BOLT

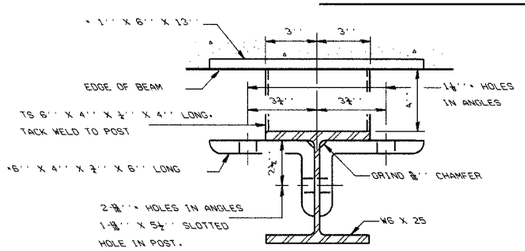


SECTION A-A

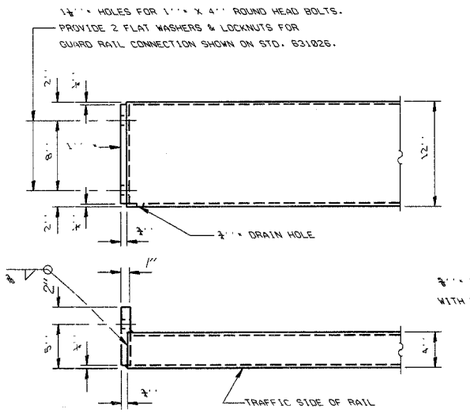


NOTE 4:
WHERE NO OVERLAY IS TO BE PROVIDED ADJUST TOP OF RAIL TO LAY PARALLEL TO GRADE 2'-5" MAX. ABOVE TOP OF BEAM.

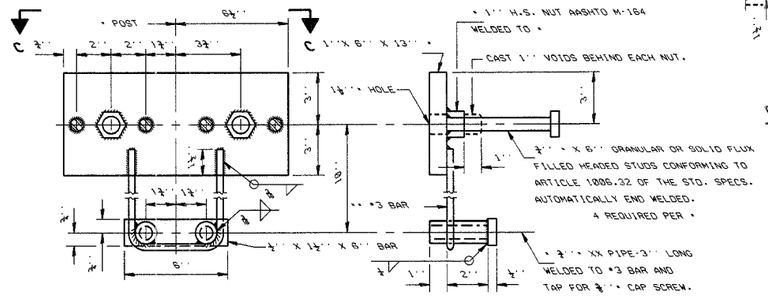
SECTION AT RAIL POST



SECTION B-B

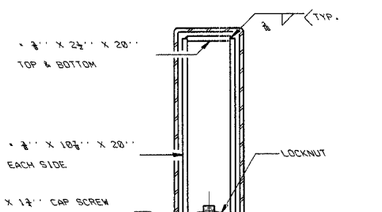


END OF RAIL DETAILS



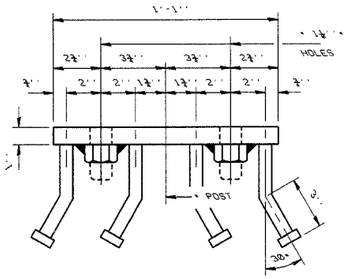
ANCHOR DEVICE

(#) 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 ½".

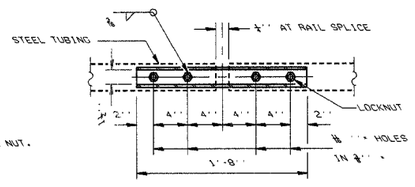


SECTION AT RAIL SPLICE

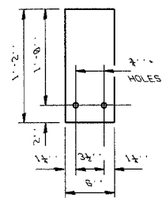
(*) THREADED AREAS SHALL BE PLUGGED OR BLOCKED OFF DURING CASTING OF BEAM.



VIEW C-C



PLAN-BOTT. SPLICE (*) TYPICAL



¾" SHIM PLATE

Illinois Department of Transportation

PASSED November 1, 1995
Engineer of Bridge Design

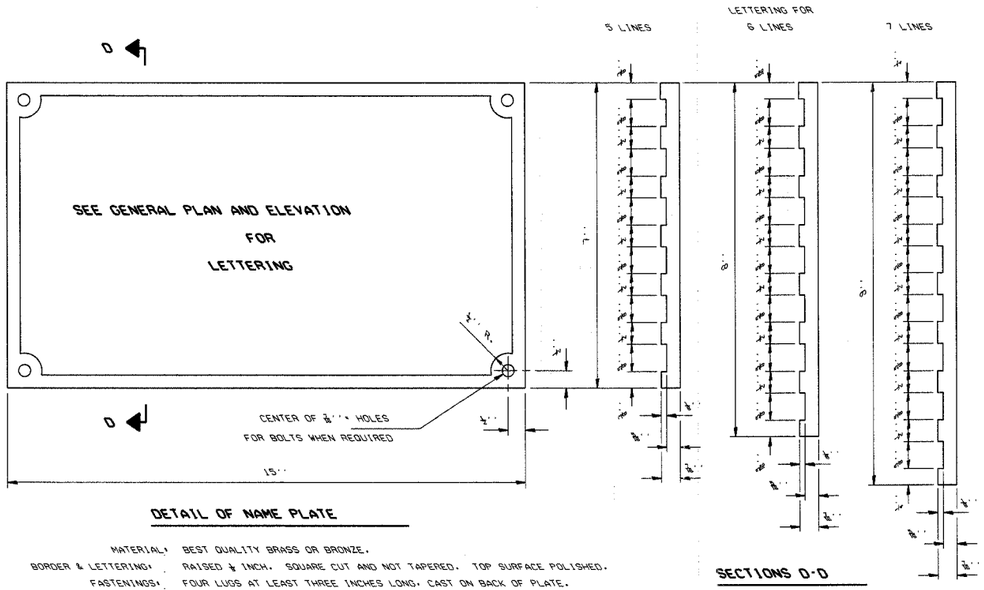
APPROVED November 1, 1995
Engineer of Bridges and Structures

ISSUED 1-1-81

STEEL RAILING, TYPE S-1

STANDARD CR-TS1

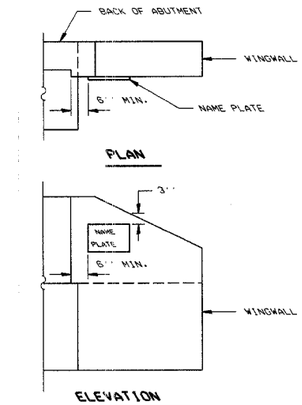
TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	10
SECTION: 04-18125-00-BR				



DETAIL OF NAME PLATE

MATERIAL: BEST QUALITY BRASS OR BRONZE.
BORDER & LETTERING: RAISED ¼ 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 November 1, 1995
Engineer of Bridge Design

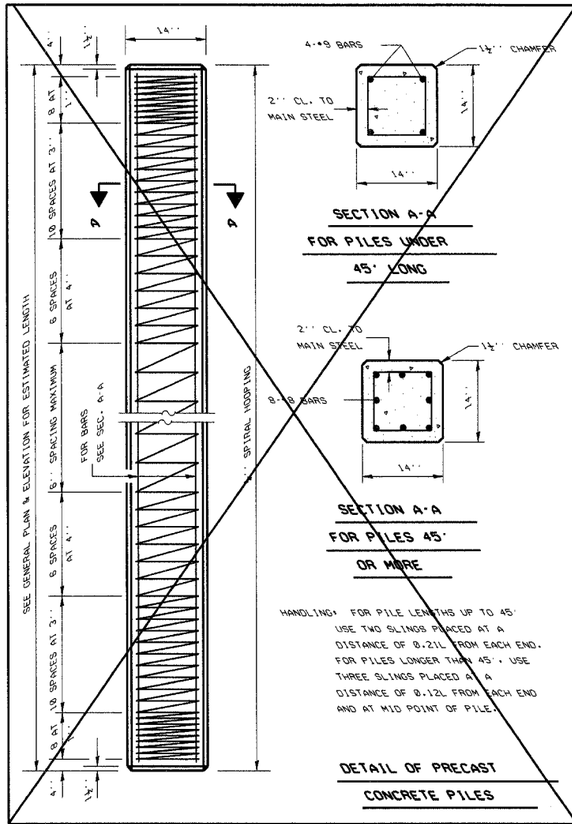
APPROVED November 1, 1995
Engineer of Bridges and Structures

ISSUED 7-1-95

NAME PLATE

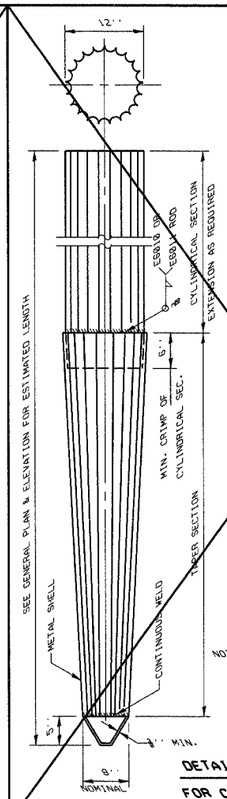
STANDARD CN

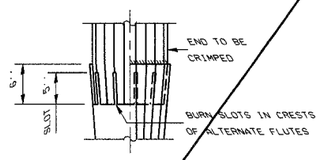
TR RTE	ROAD DISTRICT	COUNTY	TOTAL SHEETS	SHEET NO.
TR 116	OSCO	HENRY	11	11
SECTION: 04-18125-00-BR				



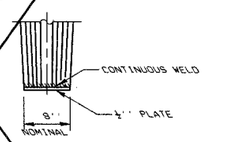
HANDLING: FOR PILE LENGTHS UP TO 45' USE TWO SLINGS PLACED AT A DISTANCE OF 0.21L FROM EACH END. FOR PILES LONGER THAN 45', USE THREE SLINGS PLACED AT A DISTANCE OF 0.12L FROM EACH END AND AT MID POINT OF PILE.

DETAIL OF PRECAST CONCRETE PILES





NOTE: 8" CRIMP SHALL EITHER BE SUPPLIED ON THE CYLINDRICAL SECTION OR MADE IN THE FIELD AS DETAILED.

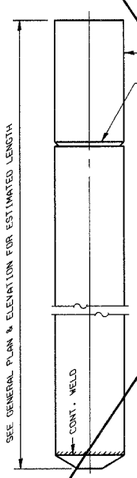


ALLOWABLE TAPER SECTIONS

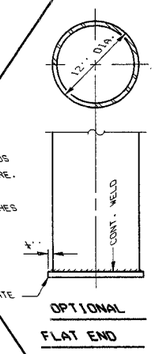
10' LENGTH-TAPER 1" IN 2'-6"
17' LENGTH-TAPER 1" IN 4'-0"
25' LENGTH-TAPER 1" IN 7'-0"
30' LENGTH-TAPER 1" IN 7'-0"

NOTE: THE THICKNESS OF THE SHELL SHALL BE 0.1495 INCHES WITH A TOLERANCE OF 5%. THE SHELL SHALL BE IN ACCORDANCE WITH ARTICLE 708.05 "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

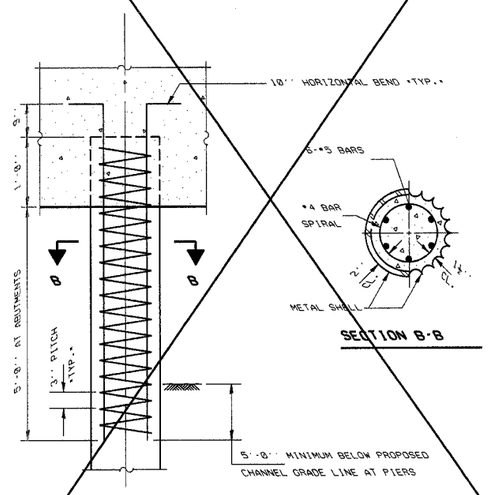


NOTE: DRIVING AND BEARING ENDS OF PIPE SHALL BE CUT SQUARE. THE THICKNESS OF THE SHELL SHALL BE 0.1793 INCHES WITH A TOLERANCE OF 5%.



DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

10" HORIZONTAL BEND "TYP."

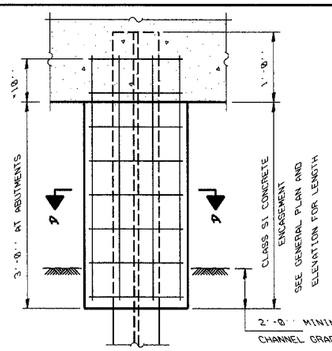


5'-0" MINIMUM BELOW PROPOSED CHANNEL GRADE LINE AT PIERS

DETAIL OF REINFORCEMENT FOR METAL SHELLS

THE COST OF REINFORCEMENT IS INCIDENTAL TO THE COST OF FURNISHING PILES.

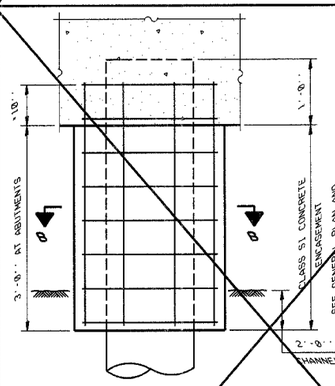
REINFORCEMENT CAGE SHALL BE OMITTED WHEN CLASS SI CONCRETE ENCASEMENT IS PROVIDED.



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.

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.

DETAIL OF METAL SHELL PILE ENCASEMENT

QUANTITIES-LIN. FT. OF ENCASEMENT

"STEEL PILES"

PILE SIZE	ITEM	QUANTITY
HP8	CLASS SI CONCRETE ENCASEMENT	0.083 C.Y.
HP10	CLASS SI CONCRETE ENCASEMENT	0.096 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.

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

PILE DETAILS

STANDARD CX-1

V11-1