TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	1
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		
PROJECT# BROS-193(36)		CONTRACT# 99323		
JOB # C-99-544-07		LICK CREEK		

LEC JOB # H07IL009WH & H07IL010WH

323 W. 3RD ST.
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62863
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47670
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LAMIE ENGINEERING CO.

PROFESSIONAL
DESIGN FIRM
LAND SURVEY &
PROFESSIONAL
ENGINEERING
CORPORATION
184-000887
(62-032435)(35-002769)

AARON M. MEFFORD
56284
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
6-23-08
DATE
11-30-09
EXPIRES

INDEX OF SHEETS

9-19-08 Letting, Item 038

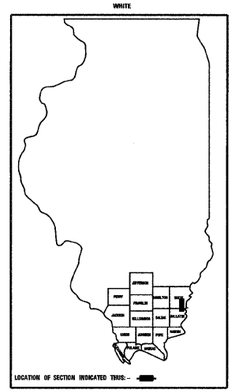
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FEDERAL AID – H.B.P. PROJECT

T.R. 140 WHITE COUNTY SECTION 07–08135–00–BR

PROJECT NO. BROS–193(36) JOB NO. C–99–544–07

CONTRACT # 99323 LICK CREEK & LICK CREEK TRIB.



THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED IN THE PROPOSAL:

000001-05	STANDARD SYMBOLS, ABBREVIATIONS & PATTERNS
280001-04	TEMPORARY EROSION CONTROL SYSTEMS
701901	TRAFFIC CONTROL DEVICES
B.L.R. 21-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
B.L.R. 22-5	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO-WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)

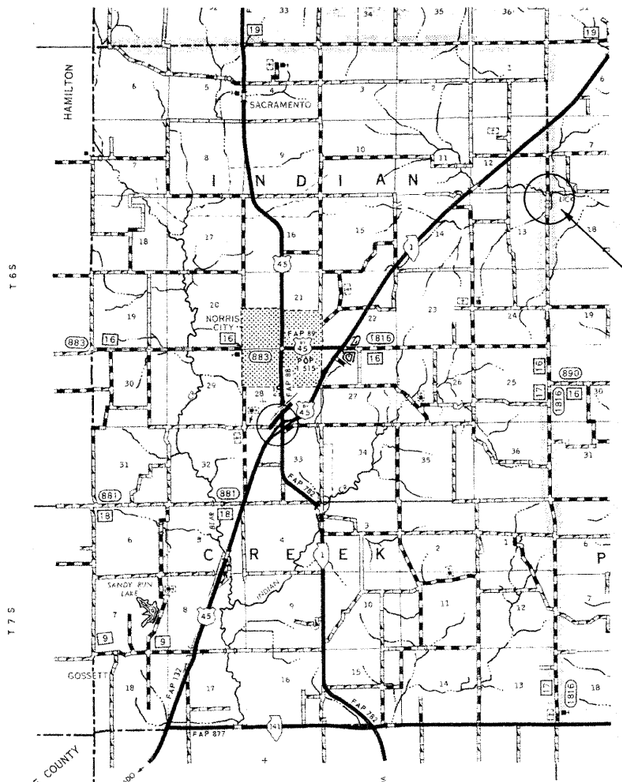
SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.40
20200100	EARTH EXCAVATION	CU YD	1097.00
20200200	ROCK EXCAVATION	CU YD	344.00
20300100	CHANNEL EXCAVATION	CU YD	315.00
20400800	FURNISHED EXCAVATION	CU YD	47.00
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.90
28000300	TEMPORARY DITCH CHECKS	EACH	4.00
28001000	AGGREGATE (EROSION CONTROL)	TON	28.00
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	480.00
28102600	STONE RIPRAP DITCH	TON	154.00
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	730.00
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	2.00
50300225	CONCRETE STRUCTURES	CU YD	36.40
50300280	CONCRETE ENCASEMENT	CU YD	4.80
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	2640.00
50800105	REINFORCEMENT BARS	POUND	4600.00
* 50900205	STEEL RAILING, TYPE S1	FOOT	220.00
51201400	FURNISHING STEEL PILES HP10X42	FOOT	124.00
51201710	FURNISHING STEEL PILES HP12X84	FOOT	376.00
51202305	DRIVING PILES	FOOT	376.00
51500100	NAME PLATES	EACH	2.00
67100100	MOBILIZATION	L SUM	1.00
Z0065000	SETTING PILES IN ROCK	EACH	8.00
28000400	PERIMETER EROSION BARRIER	FOOT	1000.00

* SPECIALTY ITEMS

DESIGN DESIGNATION:
DESIGN SPEED: 30 MPH
HIGHWAY CLASS - LOCAL ROAD
EXISTING STRUCTURE NO.: 097-3070/097-3069
PROPOSED STRUCTURE NO.: 097-3262/097-3261
CURRENT A.D.T. = 80
CONTRACT NO. 99323

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1–800–892–0123



GROSS LENGTH	1660.00 FT	0.314 MILES
OMISSIONS	475.00 FT	0.090 MILES
NET LENGTH	1185.00 FT	0.224 MILES

PLAN 1"= 50' 0 50' 100'
PROFILE 1"= 50' 0 50' 100'
PROFILE VERT. 1"= 5' 0 5' 10'
CROSS SECTION 1"= 5' 0 5' 10'

SECTION 07-08135-00-BR
BEGINS STATION 1+00

STATION 5+00, STRUCTURE NO. 097-3262
A 60' LONG SINGLE SPAN PRECAST
PRESTRESSED CONCRETE DECK BEAM
BRIDGE (27" DEPTH), 24' ROADWAY, 4.00%
GRADE, 10° RT. FWD. SKEW.

STATION 14+79.55, STRUCTURE NO. 097-3261
A 50' LONG SINGLE SPAN PRECAST
PRESTRESSED CONCRETE DECK BEAM
BRIDGE (27" DEPTH), 24' ROADWAY, 0.00%
GRADE, 0° SKEW.

SECTION 07-08135-00-BR
ENDS STATION 17+60

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED 6/24/08
Brian A. Ka
COUNTY ENGINEER

PASSED 7/8/08
Dennis W. Hillebra
ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW: 7/9/08
Mary C. Lamie
MARY C. LAMIE, P.E.
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

SHEET TITLE:
TITLE SHEET

SCALE:	VARIES
BY:	AMM
DATE:	62308
REV:	

1 OF 19 SHEETS

SHEET NO. 1

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	2
FED. ROAD DIST. NO. 9	ILLINOIS	INDIAN CREEK TWP		
PROJECT # BROS-193(36)		CONTRACT # 99323		

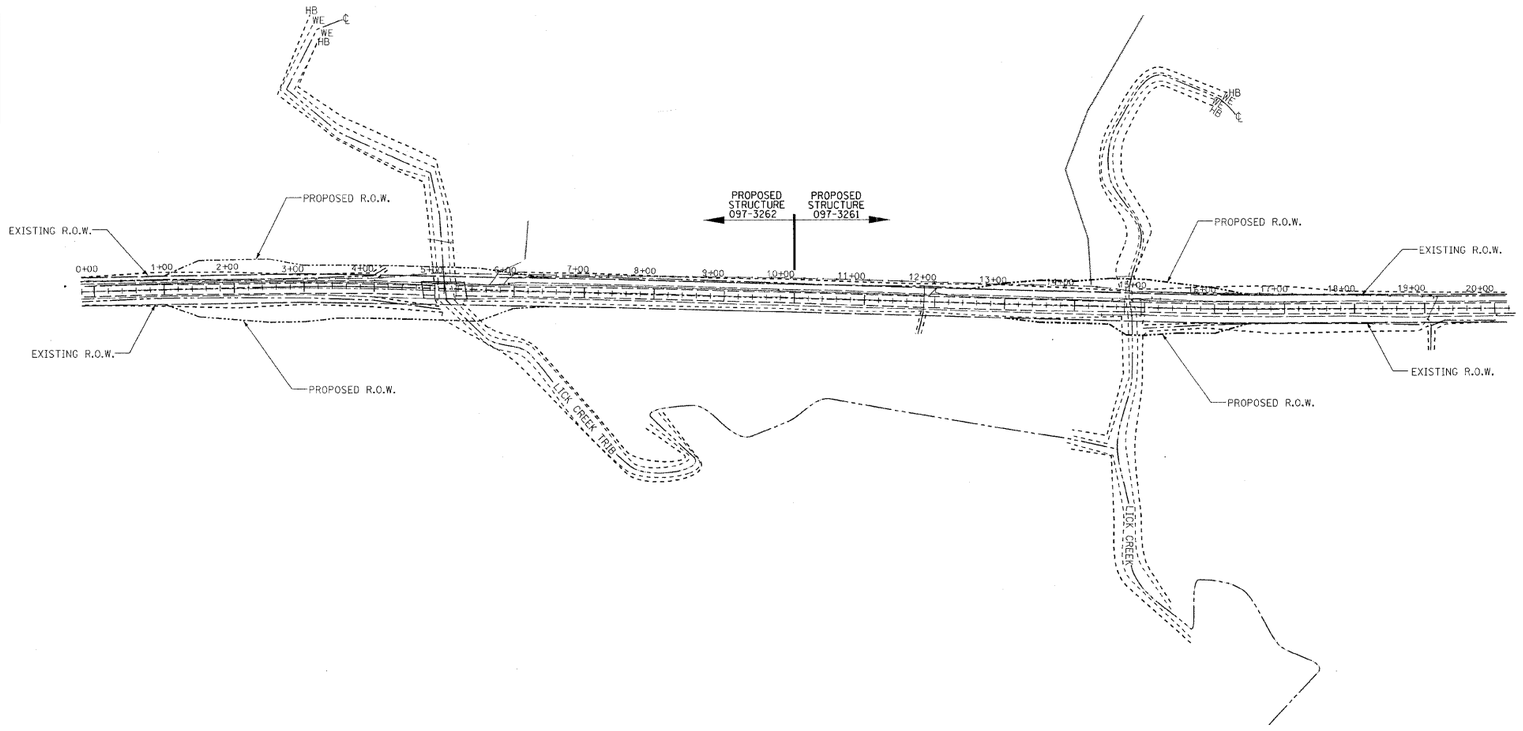
LEC JOB # H07IL009WH & H07IL010WH

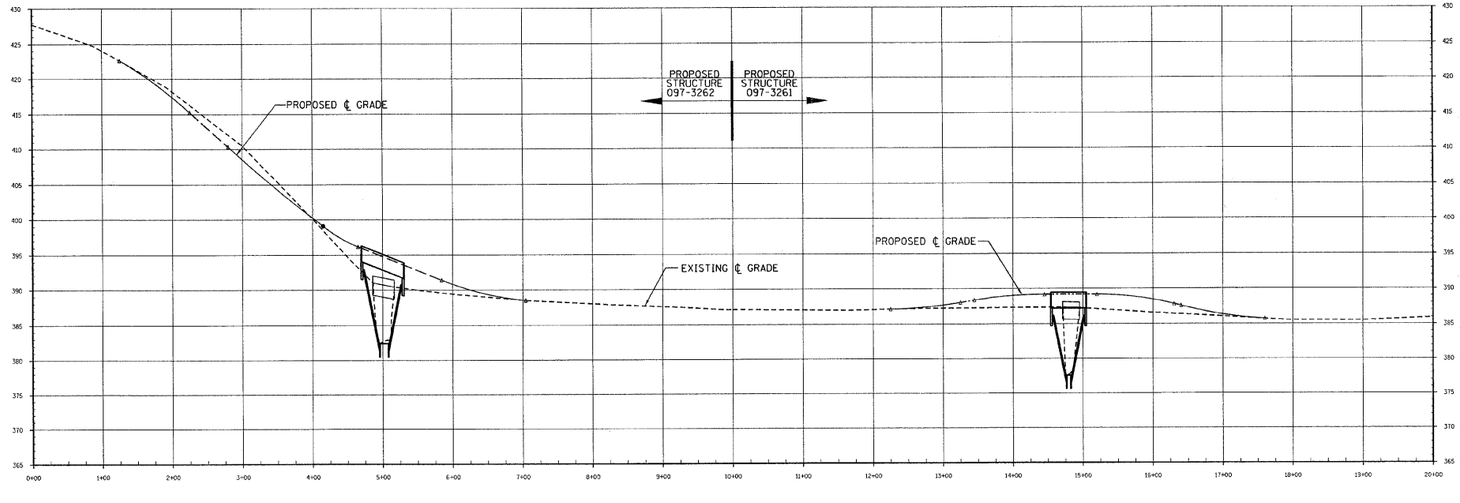
GENERAL NOTES:

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2007.

TWO PROJECTS HAVE COMBINED FOR ONE CONSTRUCTION PROJECT. UNDER THIS CONTRACT TWO BRIDGES WILL BE BUILT.

SECTION NUMBER	EXISTING STRUCTURE	PROPOSED STRUCTURE
07-08135-00-BR	097-3069	097-3261
07-08136-00-BR	097-3070	097-3262





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TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

SHEET TITLE:

PLAN & PROFILE

SCALE:	VARIES
BY:	AMM
DATE:	3/2/06
REV:	

2 OF 19 SHEETS

SHEET NO.
2

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	3
FED. ROAD DIST. NO. 9	ILLINOIS	LICK CREEK TRIBUTARY		
PROJECT # BROS-193(36)		CONTRACT # 99323		

LEC JOB # H07IL005WH & H07IL010WH

GENERAL NOTES:

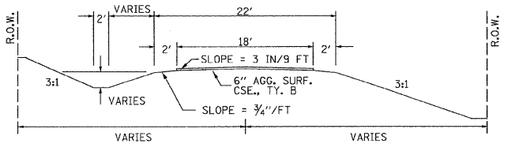
THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2007.

THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 60 FOOT LONG SINGLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

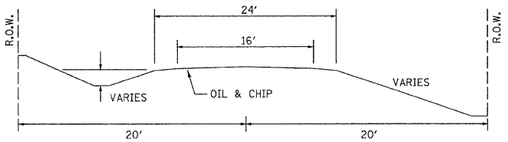
ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

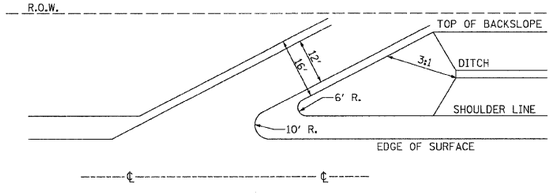
TYPICAL CROSS SECTION PROPOSED



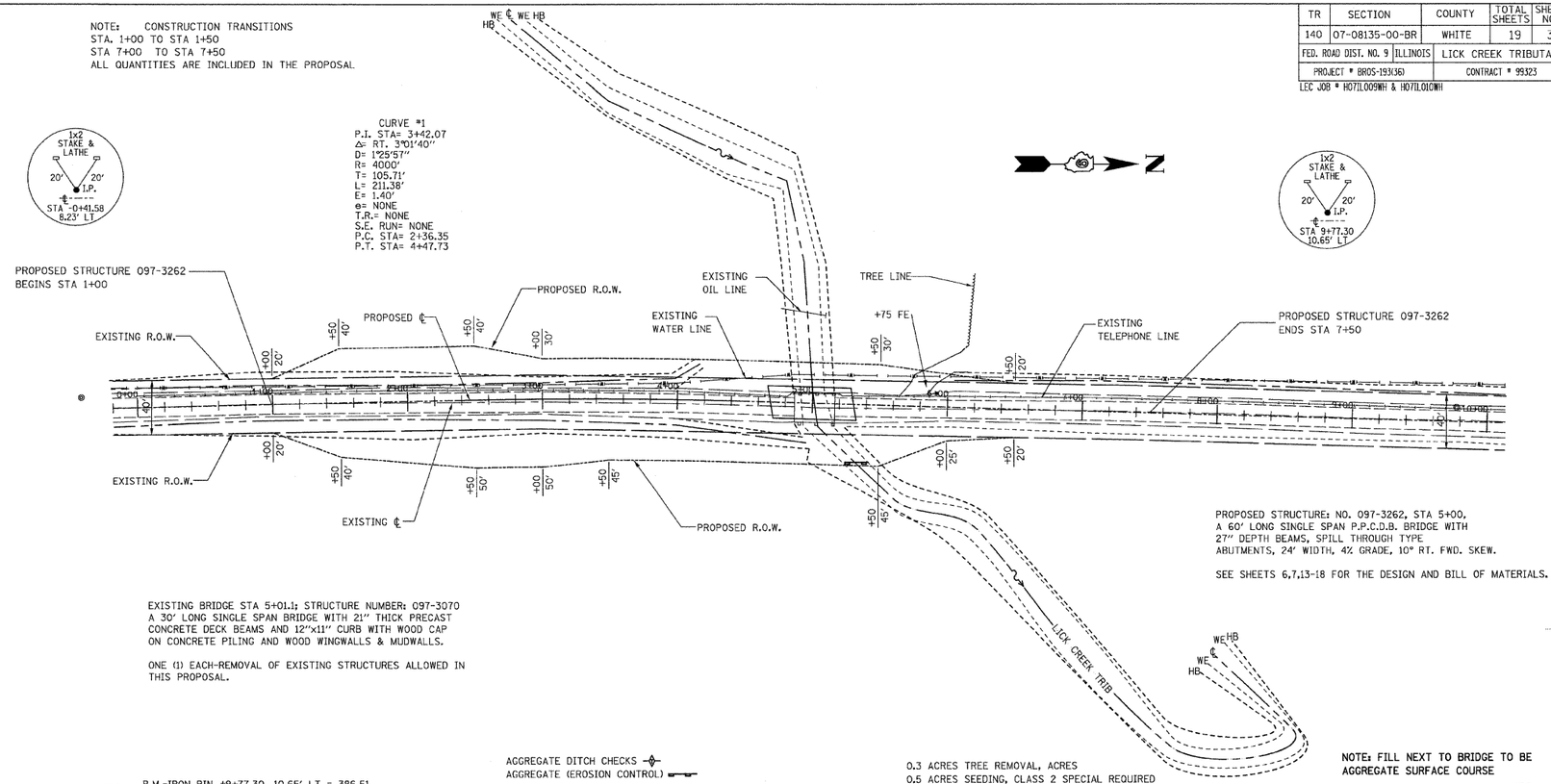
TYPICAL CROSS SECTION EXISTING



FIELD ENTRANCE DETAIL



NOTE: CONSTRUCTION TRANSITIONS
STA. 1+00 TO STA 1+50
STA 7+00 TO STA 7+50
ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL



EXISTING BRIDGE STA 5+01.1; STRUCTURE NUMBER: 097-3070
A 30' LONG SINGLE SPAN BRIDGE WITH 21" THICK PRECAST CONCRETE DECK BEAMS AND 12"x11" CURB WITH WOOD CAP ON CONCRETE PILING AND WOOD WINGWALLS & MUDWALLS.

ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES ALLOWED IN THIS PROPOSAL.

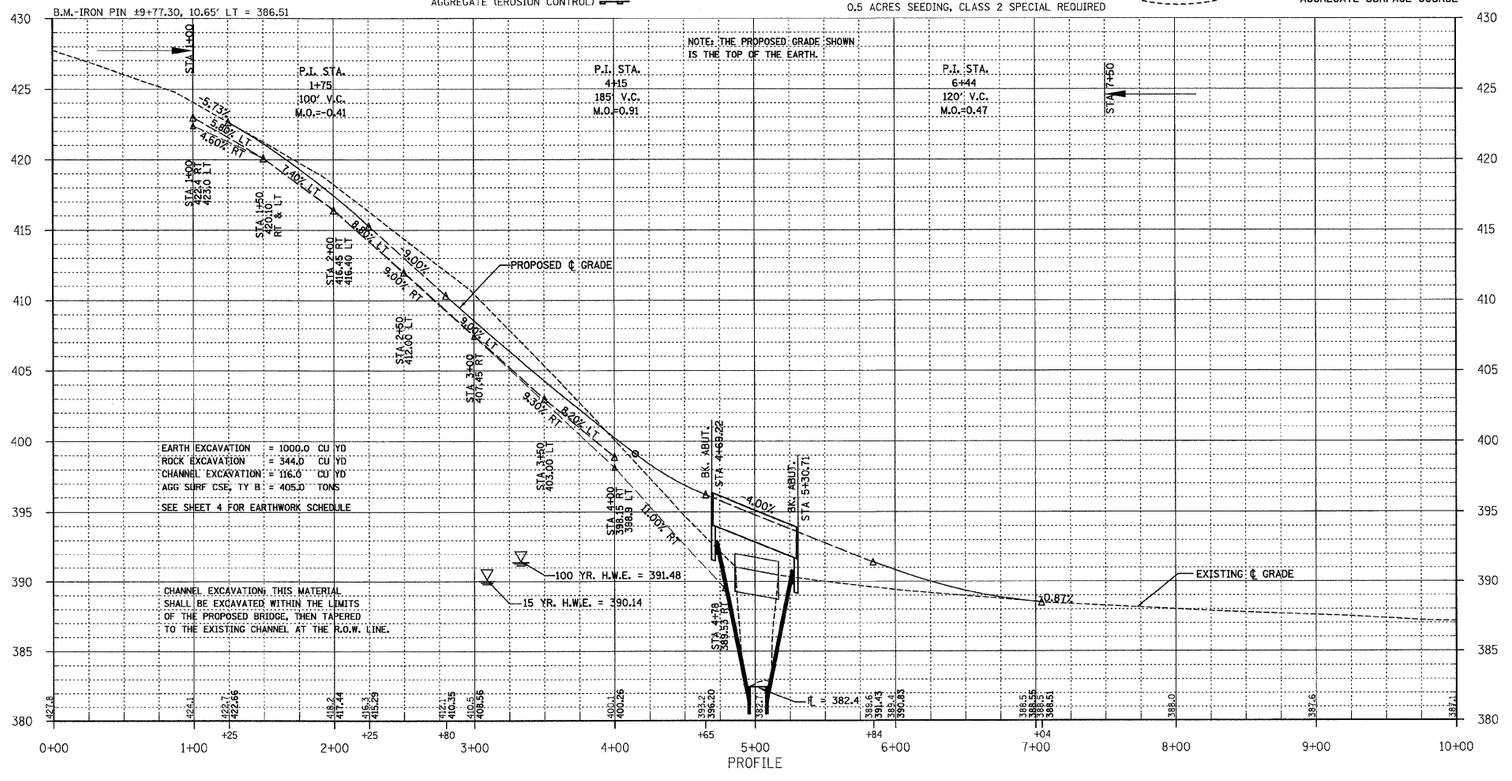
PROPOSED STRUCTURE: NO. 097-3262, STA 5+00.
A 60' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH 27" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS, 24' WIDTH, 4% GRADE, 10° RT. FWD. SKEW.

SEE SHEETS 6,7,13-18 FOR THE DESIGN AND BILL OF MATERIALS.

AGGREGATE DITCH CHECKS
AGGREGATE (EROSION CONTROL)

0.3 ACRES TREE REMOVAL, ACRES
0.5 ACRES SEEDING, CLASS 2 SPECIAL REQUIRED

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE



UTILITIES:
J.U.L.I.E. 1-800-892-0123

VERIZON
1-618-395-6191

GALLATIN-WHITE WATER DISTRICT
1-618-962-3265

NOTE: CONSTRUCT SPECIAL DITCH

STA 1+00 TO STA 4+00 LT
STA 1+00 TO STA 4+78 RT

NOTE: CONSTRUCT STONE RIPRAP DITCH

STA 1+47 TO STA 1+53 RT & LT (0.62 TON/LIN FT)
STA 1+97 TO STA 2+03 RT & LT (0.62 TON/LIN FT)
STA 2+47 TO STA 2+53 RT & LT (0.62 TON/LIN FT)
STA 2+97 TO STA 3+03 RT & LT (0.62 TON/LIN FT)
STA 3+47 TO STA 3+53 RT & LT (0.62 TON/LIN FT)
STA 4+00 TO STA 4+78 RT & LT (0.62 TON/LIN FT)
134 TON STONE RIPRAP DITCH ALLOWED IN PROPOSAL.

SEE SHEET NO. 19 FOR STONE RIPRAP DITCH DETAIL.

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56284
REGISTERED PROFESSIONAL ENGINEER
OF
ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
6-23-08
DATE
11-30-09
EXPIRES

TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

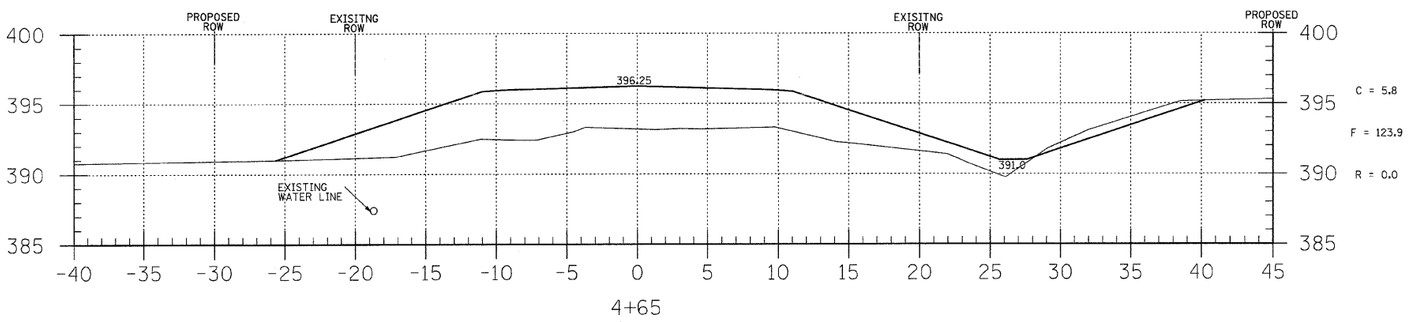
SHEET TITLE:

PLAN & PROFILE

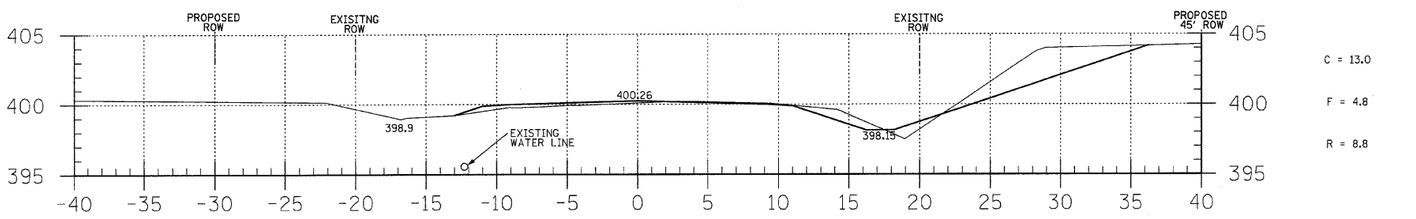
SCALE:	VARIES
BY:	AMM
DATE:	121407
REV:	

3 OF 19 SHEETS

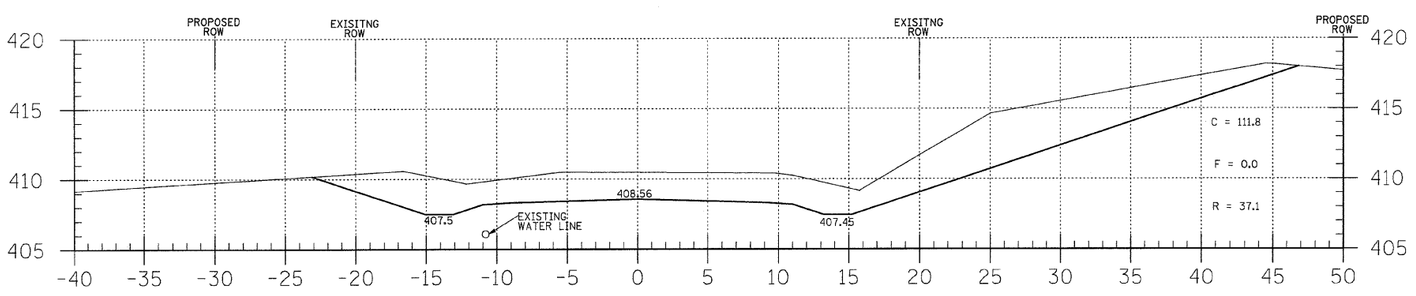
SHEET NO. 3



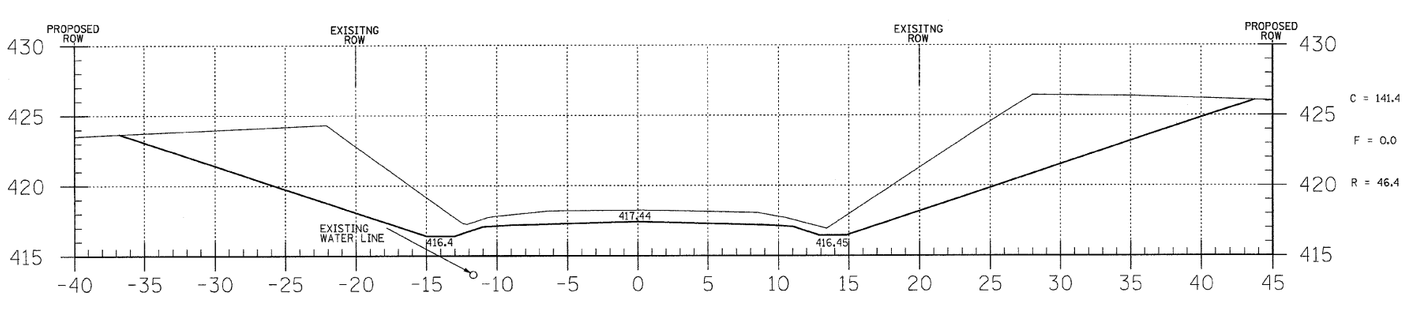
4+65



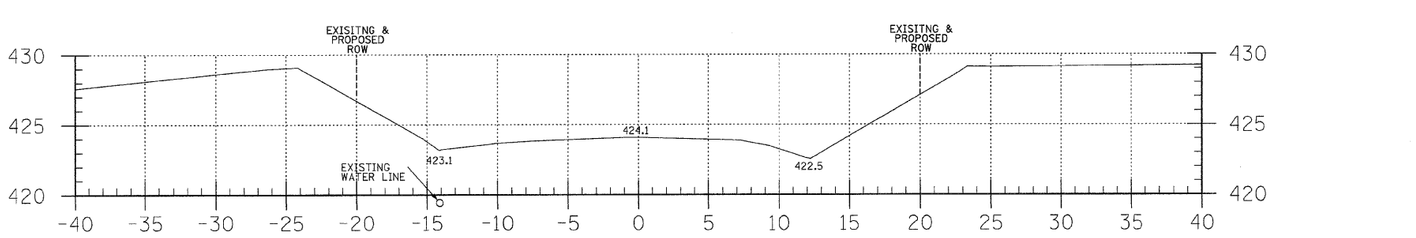
4+00



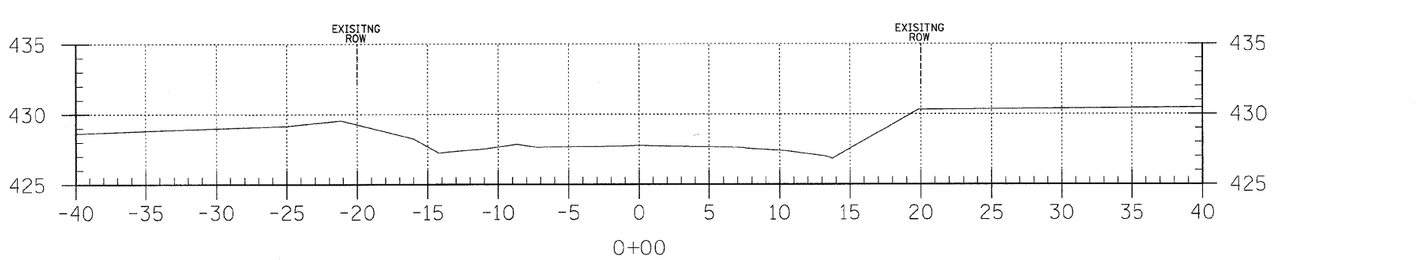
3+00



2+00



1+00



0+00

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	ROCK EXCAVATION	CHANNEL EXCAVATION	ESTIMATED UNSUITABLE MATERIAL	SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 0+00 TO 4+69.2	998.6	344.1	0.0	0.0	1007.0	129.0	+878.0
STA 4+69.2 TO 5+30.7	0.0	0.0	115.7	57.8	43.4	0.0	+43.4
STA 5+30.7 TO 10+00	1.1	0.0	0.0	0.0	0.8	330.2	-329.4
1 FIELD ENTRANCE	0.0	0.0	0.0	0.0	0.0	35.9	-35.9
TOTAL	999.7	344.1	115.7	57.8	1051.2	495.1	556.1

T.R. 140 | SECTION 07-08135-00-BR | COUNTY WHITE | TOTAL SHEETS 19 | SHEET NO. 4

FED. ROAD DIST. NO. 9 | ILLINOIS | LICK CREEK TRIBUTARY

PROJECT # BRDG-19216 | CONTRACT # 93123

LEE JOB # HOTLOG98A & HOTLOG98H

SHEET NO. 4 | 4 OF 19 SHEETS

SCALE: 1" = 5' | BY: AMM | DATE: 3/08 | REV:

CROSS-SECTIONS

SHEET TITLE:

TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
DATE 6-23-08
11-30-09 EXPIRES

AARON M. MEFFORD
056284
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

PROFESSIONAL DESIGN FIRM
LAND SURVEY & ENGINEERING
CORPORATION
184-002887
(62-02439)(05-02705)

LAMAC ENGINEERING CO.

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323 W. 3RD. ST.
MT. CARMEL, IL 62863
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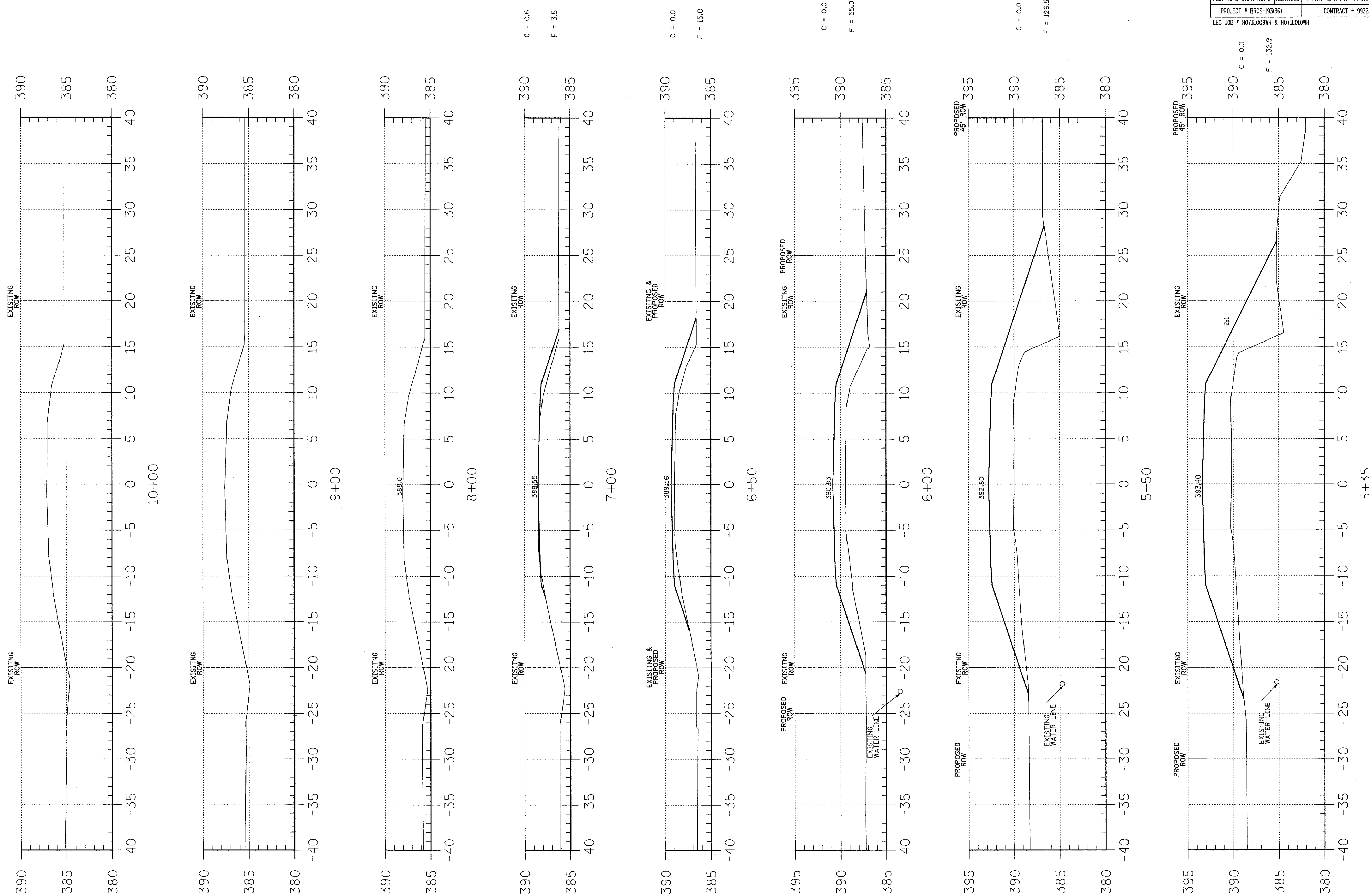
FAX: (618)-263-3827

T.R.	SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR		WHITE	19	5
FED. ROAD DIST. NO. 9		ILLINOIS	LICK CREEK TRIBUTARY		
PROJECT # BROS-193(36)			CONTRACT # 99323		

LEC JOB # H07IL009WH & H07IL010WH



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AARON M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

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NAME
SIGNATURE
6-23-08
DATE
11-30-09
EXPIRES

TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

SCALE:	1" = 5'
BY:	AMM
DATE:	3/12/08
REV:	

5 OF 19 SHEETS

SHEET NO.
5

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	6
FED. ROAD DIST. NO. 9	ILLINOIS	LICK CREEK TRIBUTARY		
PROJECT • BROS-193(36)		CONTRACT NO. 99323		

LEC JOB • H07IL009WH & H07IL010WH

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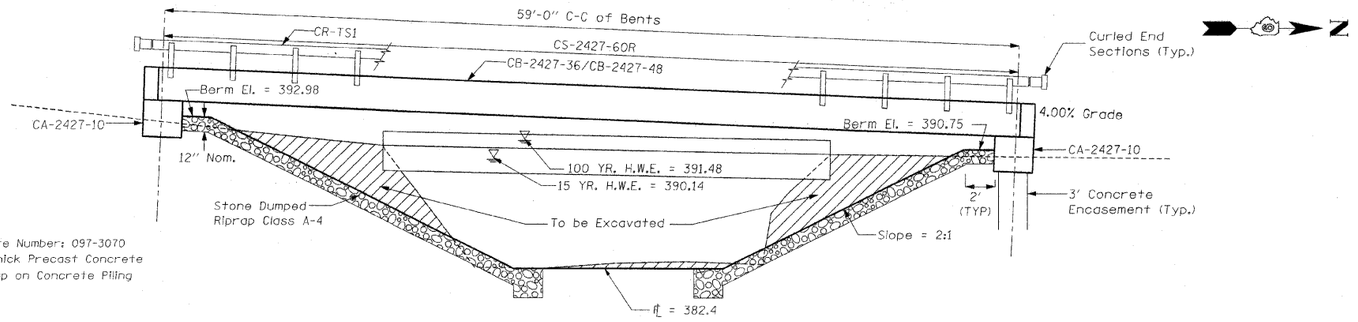
LAMC ENGINEERING CO.

PROFESSIONAL
LAND SURVEYING
FIRM:
048-000082
PROFESSIONAL
ENGINEERING
CORPORATION:
184-000887

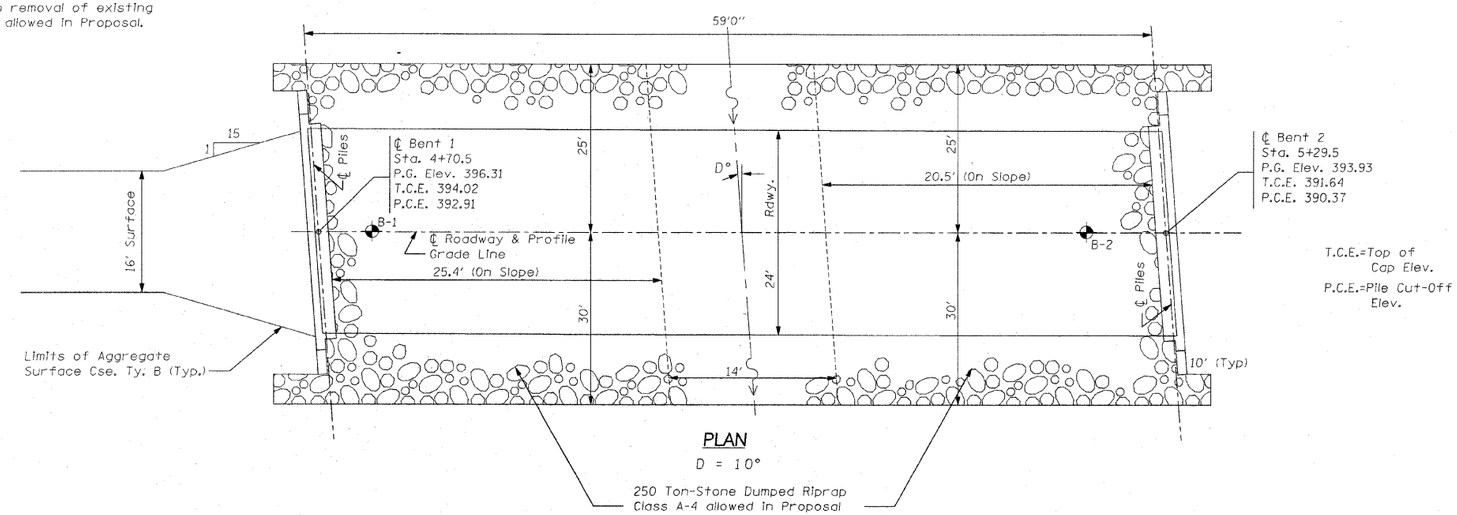
B.M.- I.P. ±9+77.30, 10.65' LT.
Elev. = 386.51



ELEVATION

Existing Bridge Sta 5+01.1; Structure Number: 097-3070
A 30' Single Span Bridge with 21" Thick Precast Concrete Deck and 12"x11" Curb with Wood Cap on Concrete Piling and Wood Wingwalls & Mudwalls.

One (1) each removal of existing structures allowed in Proposal.



PLAN

D = 10°

T.C.E.=Top of Cap Elev.

P.C.E.=Pile Cut-Off Elev.

GENERAL NOTES

1. ~~The Contractor shall drive one test pile, 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 corrosion inhibitor, as covered in the Special Provisions, shall be used in the concrete for Precast Prestressed Concrete Deck Beams.~~
4. The Hot-Mix Asphalt Surf. Cse. and the Waterproofing Membrane System shown in these Plans shall not be provided.
5. The Steel H-Piles shall be according to AASHTO M270 Grade 50.
6. ~~2-3/4"Ø shear studs will be required per pile which will be encased within the concrete cap.~~

Item	Unit	Super	Sub. Piers	Sub. Abuts.	Total
Removal of Existing Structures	L Sum				1
~~Hot Mix Asphalt Surf. Cse.~~	~~Tons~~				
~~Waterproofing Membrane System~~	~~Sq.Yds.~~				
Concrete Structures	Cu.Yds.			18.2	18.2
P.P. Conc. Dk. Bm. 27" Dp.	Sq.Ft.	1440			1440
Steel Railing, Type S1	Lin.Ft.	120		-	120
Reinforcement Bars	Lbs.			2300	2300
Furnishing Steel Piles HP10X42	Lin.Ft.			124	124
~~Driving Piles~~	~~Lin.Ft.~~				
~~Test Pile Steel HP10X42~~	~~Each~~				
Name Plates	Each			1	1
Concrete Encasement	Cu.Yds.			2.1	2.1
Setting Piles in Rock	Each			8	8
~~Stud Shear Connectors~~	~~Each~~			~~16~~	~~16~~

NOTE: Four (4) Curled End Sections required. Item to be included in the Steel Railing.

NOTE: All items deemed fit for use on other County projects shall become the property of the County. These items shall be stored along the R.O.W. at no additional cost to the project.

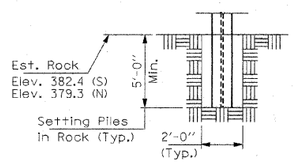
STATION 5+00
LICK CREEK TRIBUTARY
SEC. 07-08135-00-BR BUILT 20
PROJECT NO. BROS-193(36)
WHITE COUNTY
LOADING HS 20-44
STR. NO. 097-3262

LETTERING FOR NAME PLATE

Locate Name Plate at the Southeast Corner of the Bridge (See Sd. CN)

ABUT. PILE DATA

Type:	Steel Piles HP10X42
Nominal Required Bearing:	SET IN ROCK
Allowable Resistance Available:	SET IN ROCK
Estimated Length:	15 Feet/Pile (SOUTH PILE)
	16 Feet/Pile (NORTH PILE)
Number Required:	8



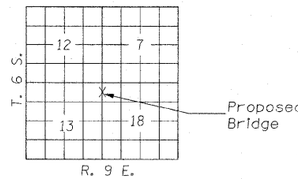
ROCK SOCKET DETAIL

DESIGN SPECIFICATIONS

2002 AASHTO
HS 20-44 Loading, Load Factor Design

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.10g
Site Coefficient (S) = 1.0



LOCATION SKETCH

INDEX OF SHEETS

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, 2007) 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
1006.05	1006.05
1006.32	1006.32
1060.07	1060.07
STD 631026	STD 631026

WATERWAY INFORMATION

Drainage Area = 2.8 Sq. Mi. Low Grade Elev. = 388.51 At Sta. 7+04

Flood	Freq. Yr.	Q C.F.S.	Opening Sq.Ft. Exist.	Opening Sq.Ft. Prop.	Natural H.W.E.	Head-Ft. Exist.	Head-Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1105	146.9	225.6	390.14		0.09		390.23
Base	100	1819	146.9	298.8	391.48	1.00	0.16	392.48	391.64
Max. Calc.	500	2418							

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

Steven W Meggenson 5/5/08
ILLINOIS STRUCTURAL ENGINEER 081-6064

LICENSED STRUCTURAL ENGINEER
STEVEN W. MEGGINSON
081-6064
SPRINGFIELD, IL
STATE OF ILLINOIS

Expires 11-30-08

AARON M. MEFFORD
NAME
SIGNATURE
6-23-08
DATE
11-30-09
EXPIRES

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF
ILLINOIS

GENERAL PLAN & ELEVATION

TOWNSHIP ROUTE 140
OVER LICK CREEK TRIBUTARY
SECTION 07-08135-00-BR
WHITE COUNTY
STATION 5+00

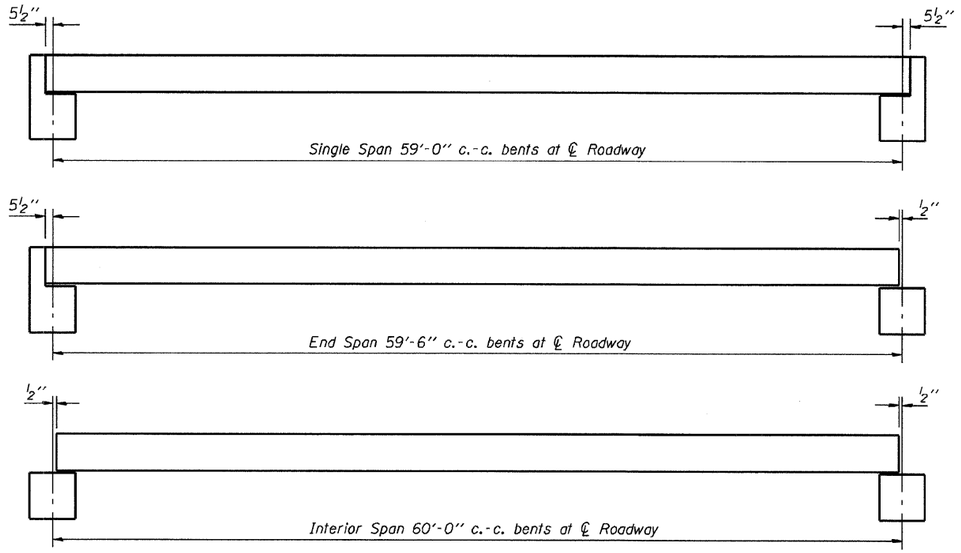
TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

SHEET TITLE:
SN 097-3262
GENERAL PLAN AND ELEVATION

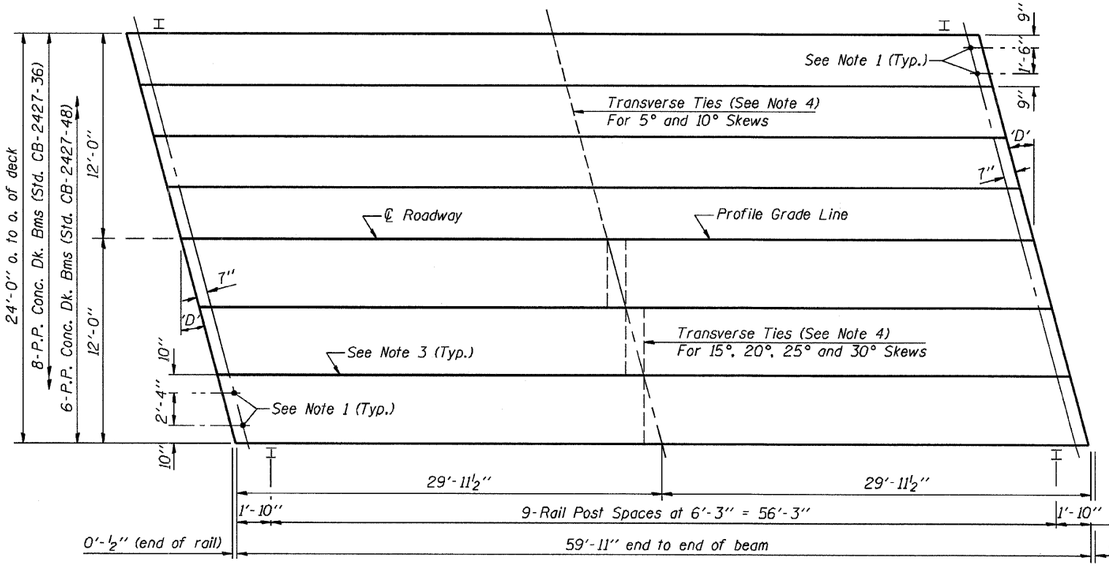
SCALE:	NONE
BY:	A.M.M.
DATE:	122007
REV:	

6 OF 19 SHEETS

SHEET NO. 6

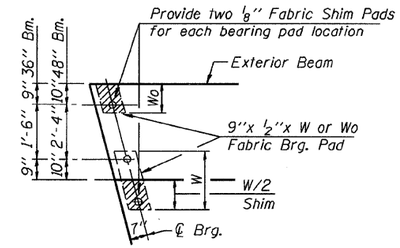


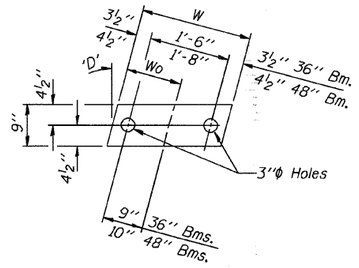
TYPICAL ELEVATIONS



PLAN

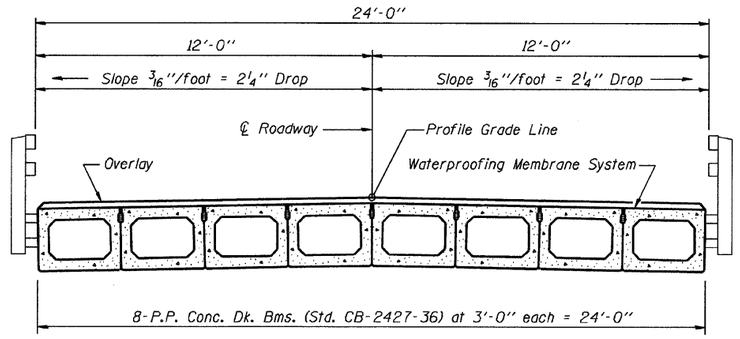
('D' = Designated Skew Angle)



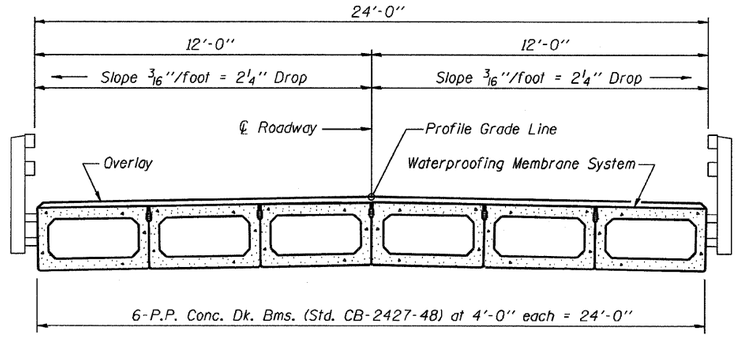


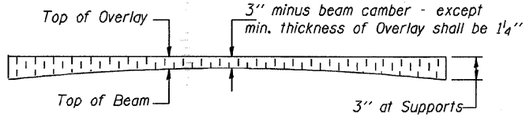
Beam	W	Wo
36"	2'-1"	1'-0½"
48"	2'-5"	1'-2½"

½" FABRIC BRG. PAD DETAILS



CROSS SECTION





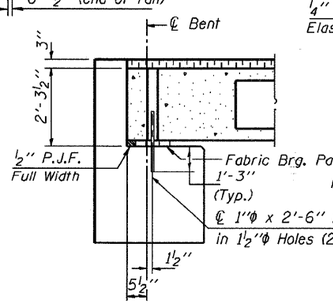
PROFILE OF OVERLAY

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"

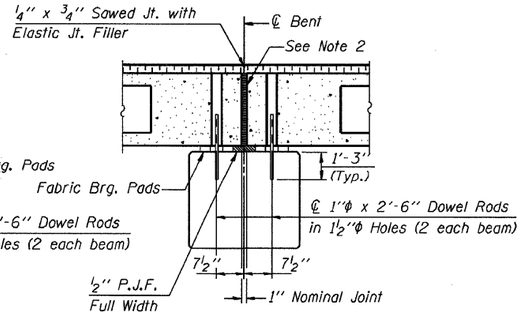
NOTES

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.
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.



SECTION AT ABUTS.

(Along ℄ Beams)



SECTION AT PIERS

(Along ℄ Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1440 Sq. Ft.	
Steel Railing	120 Ft.	
Waterproofing Membrane System	160.0 Sq. Yds.	
Portland Cement Mortar	420 Ft.	36"
Fairing Course	300 Ft.	48"

Note: Quantity of overlay for one span = 18.0 Tons

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1981

P.P.C. DECK BEAM SUPERSTRUCTURE

24' RDWY.	27" BMS.	60' SPAN	RIGHT

STANDARD CS-2427-60R

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	8
FED. ROAD DIST. NO. 9	ILLINOIS	LICK CREEK		
PROJECT # BROS-193(36)		CONTRACT # 99323		

LEC JOB # H07IL009WH & H07IL010WH

323 W. 3RD ST.
P.O. BOX 160
MT. CARMEL, IL
62863
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FAX:
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405 W. STATE ST.
SUITE1
PRINCETON, IN
47670
PHONE:
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FAX:
(812)-385-2812

LAMC ENGINEERING CO.

PROFESSIONAL
DESIGN FIRM
LAND SURVEY &
PROFESSIONAL
ENGINEERING
CORPORATION
184-000887
(62-032435)(35-002769)

AARON M. MEFFORD
56284
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
6-23-08
DATE
11-30-09
EXPIRES

GENERAL NOTES:

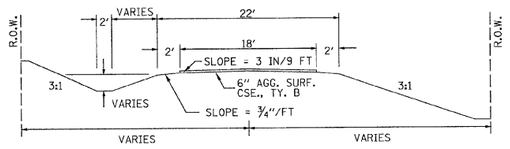
THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2007.

THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 50 FOOT LONG SINGLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

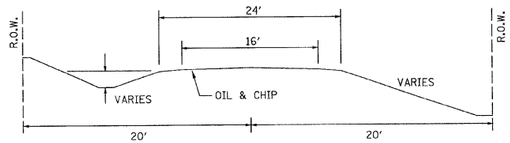
ALL ELEVATIONS ARE BASED ON U.S.G.S. MEAN SEA LEVEL DATUM.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

TYPICAL CROSS SECTION PROPOSED



TYPICAL CROSS SECTION EXISTING



UTILITIES:

J.U.L.I.E. 1-800-892-0123

VERIZON
1-618-395-6191

GALLATIN-WHITE WATER DISTRICT
1-618-962-3265

NOTE: PERIMETER EROSION BARRIER

STA 13+35 TO STA 14+25 RT

SHALL BE PLACED SO AS TO KEEP WETLAND PROTECTED DURING CONSTRUCTION.

NOTE: CONSTRUCT SPECIAL DITCH

STA 12+50 TO STA 14+63 LT
STA 14+97 TO STA 16+50 RT
STA 14+97 TO STA 16+50 LT

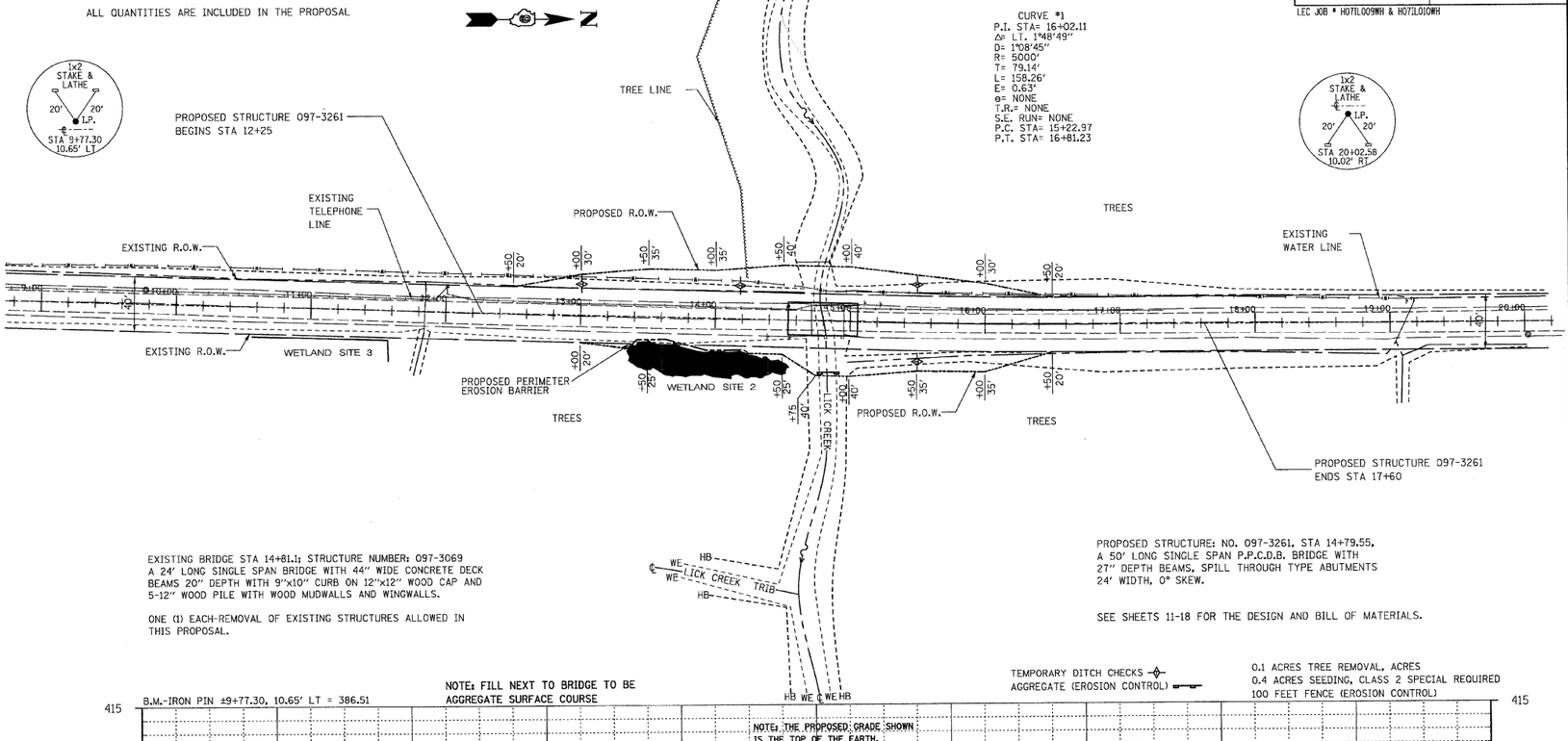
NOTE: CONSTRUCT STONE RIPRAP DITCH

STA 14+53 TO STA 14+63 LT (0.62 TON/LIN FT)
STA 14+97 TO STA 15+08 RT (0.62 TON/LIN FT)
STA 14+97 TO STA 15+08 LT (0.62 TON/LIN FT)
20 TON STONE RIPRAP DITCH ALLOWED IN PROPOSAL.

SEE SHEET NO. 19 FOR STONE RIPRAP DITCH DETAIL.

NOTE: CONSTRUCTION TRANSITION
STA. 12+25 TO STA 12+75
STA. 17+10 TO STA 17+60

ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL



EXISTING BRIDGE STA 14+81.1; STRUCTURE NUMBER: 097-3069
A 24' LONG SINGLE SPAN BRIDGE WITH 44" WIDE CONCRETE DECK BEAMS 20" DEPTH WITH 9"x10" CURB ON 12"x12" WOOD CAP AND 5-12" WOOD PILE WITH WOOD MUDWALLS AND WINGWALLS.

ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES ALLOWED IN THIS PROPOSAL.

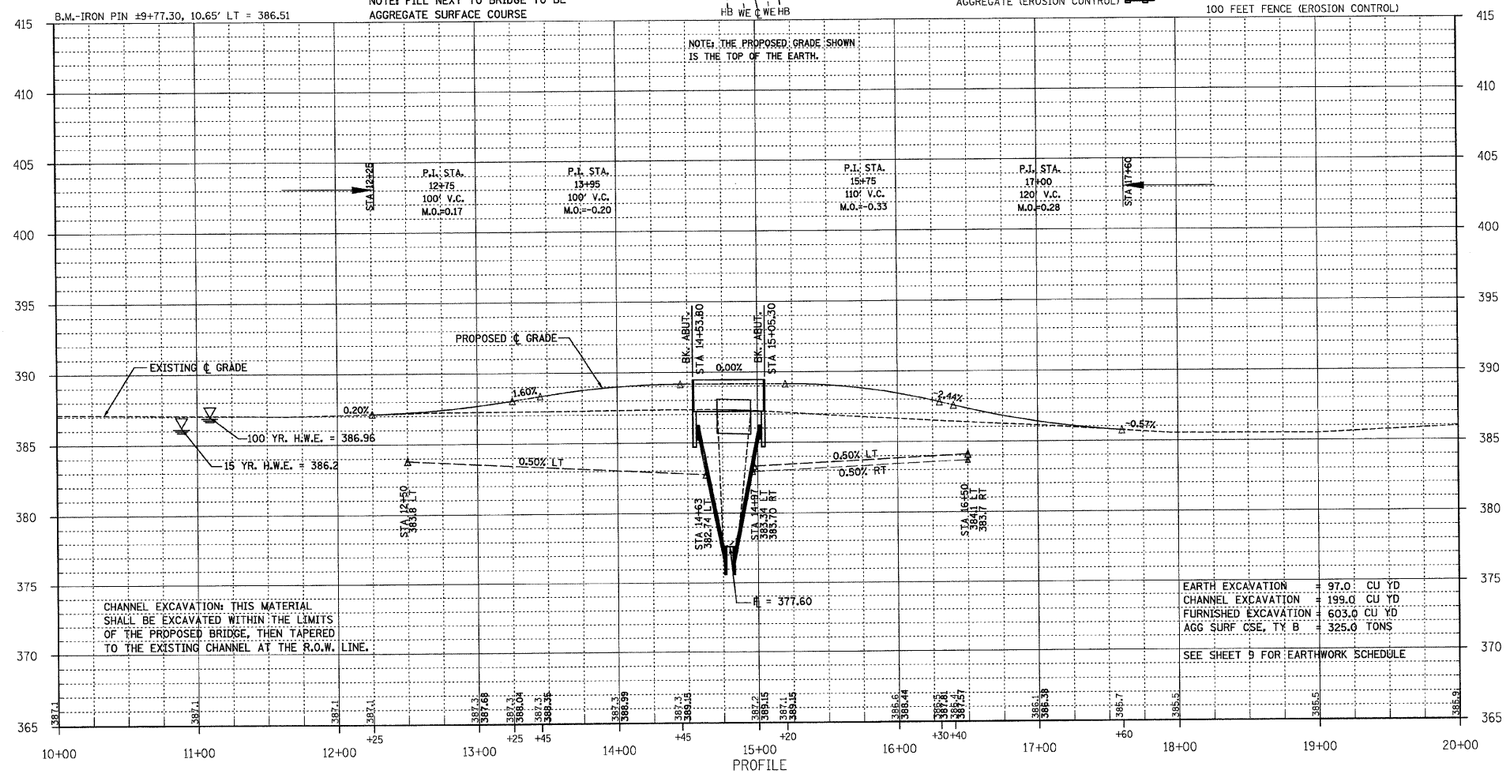
PROPOSED STRUCTURE: NO. 097-3261, STA 14+79.55,
A 50' LONG SINGLE SPAN P.P.C.D.B. BRIDGE WITH
27" DEPTH BEAMS, SPILL THROUGH TYPE ABUTMENTS
24' WIDTH, 0° SKEW.

SEE SHEETS 11-18 FOR THE DESIGN AND BILL OF MATERIALS.

NOTE: FILL NEXT TO BRIDGE TO BE AGGREGATE SURFACE COURSE

TEMPORARY DITCH CHECKS
AGGREGATE (EROSION CONTROL)

0.1 ACRES TREE REMOVAL, ACRES
0.4 ACRES SEEDING, CLASS 2 SPECIAL REQUIRED
100 FEET FENCE (EROSION CONTROL)



TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

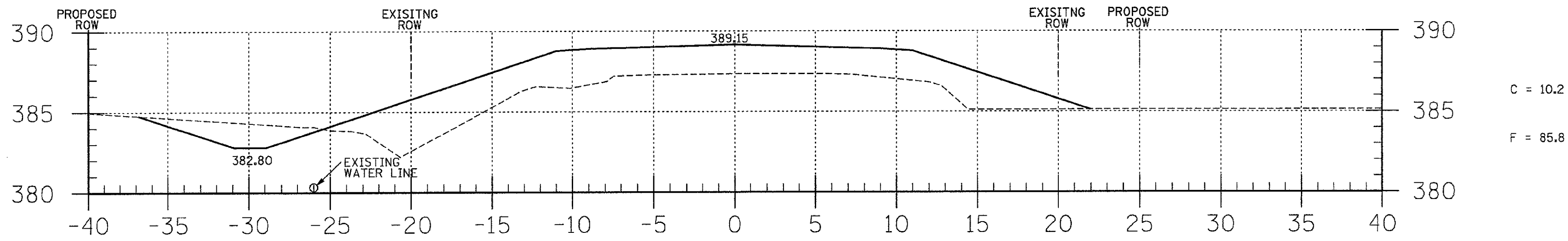
SHEET TITLE:

PLAN & PROFILE

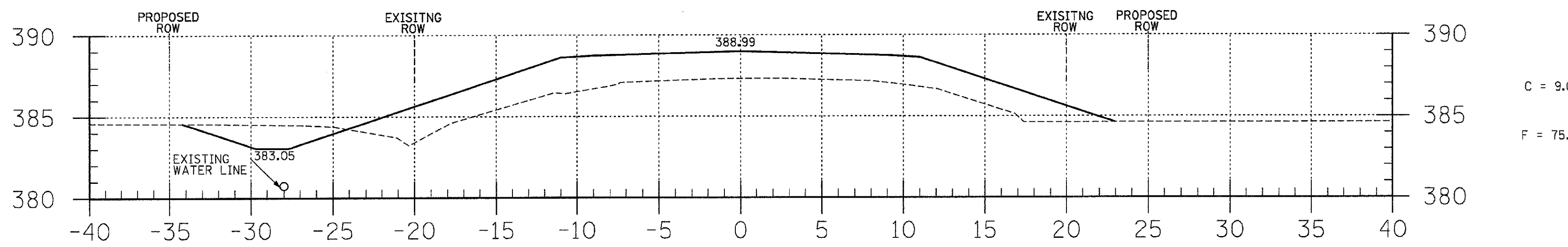
SCALE:	VARIES
BY:	AMM
DATE:	3/2/09
REV:	

8 OF 19 SHEETS

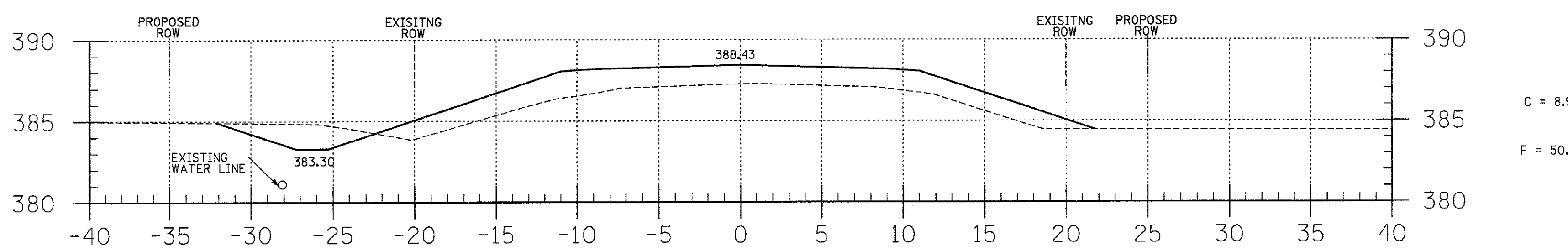
SHEET NO. 8



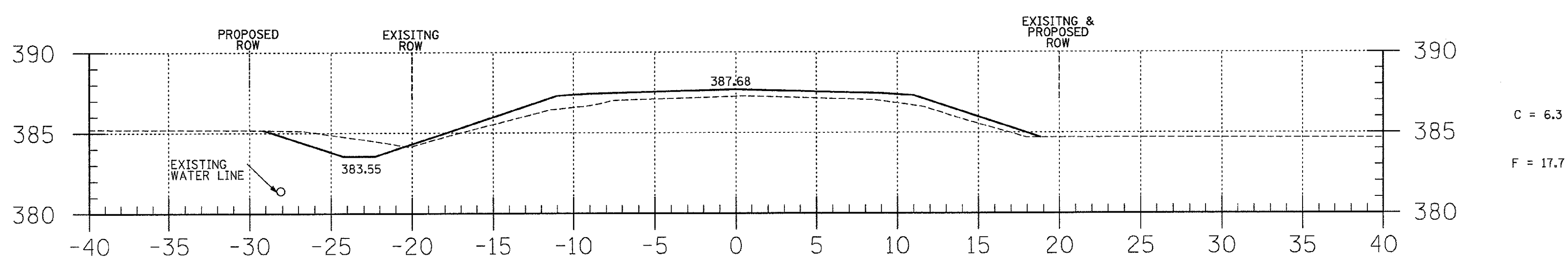
14+50



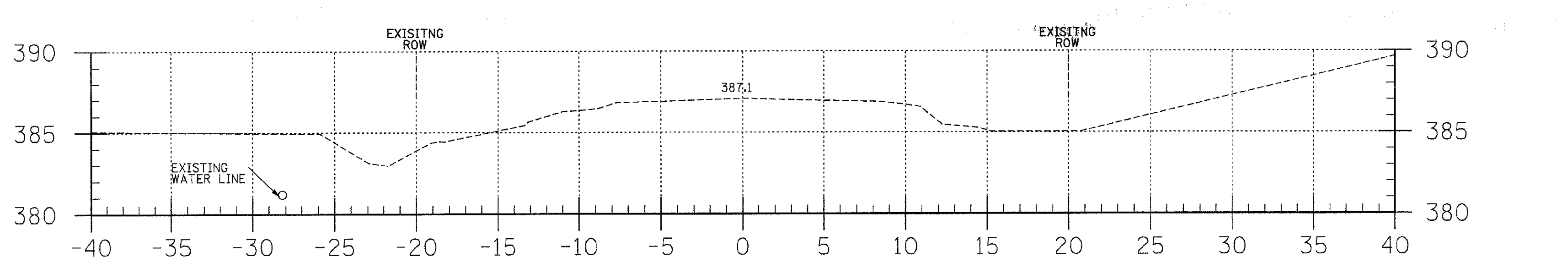
14+00



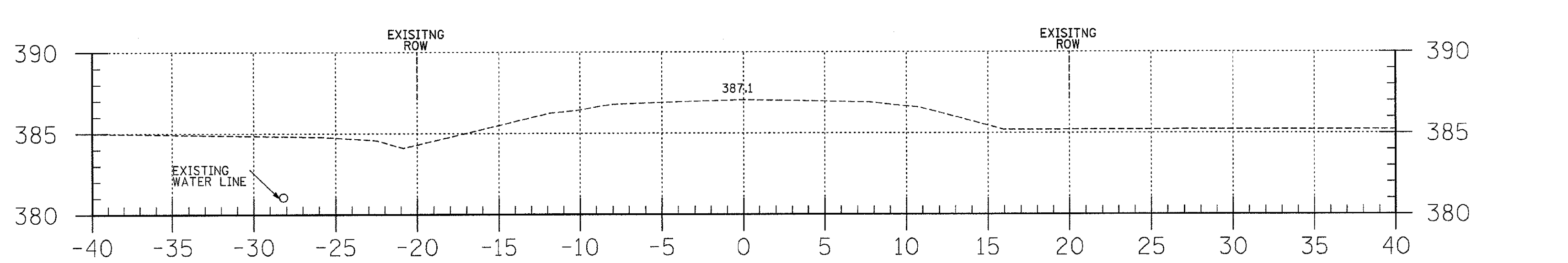
13+50



13+00



12+00



11+00

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	CHANNEL EXCAVATION	ESTIMATED UNSUITABLE MATERIAL	SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA 10+00 TO 14+53.8	54.3	0.0	0.0	40.7	351.5	-310.8
STA 14+53.8 TO 15+05.3	0.0	199.3	99.6	74.8	0.0	74.8
STA 15+05.3 TO 20+00	42.3	0.0	0.0	31.7	398.7	-367.0
TOTAL	96.6	199.3	99.6	147.2	750.2	-603.0

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	9
FED. ROAD DIST. NO. 9	ILLINOIS	LICK CREEK		
PROJECT # BROS-193(36)		CONTRACT # 99323		

LEC JOB # HOTIL009WH & HOTIL010WH

323 W. 3RD ST.
P.O. BOX 160
MT. CARMEL, IL
62863
PHONE:
(618)-262-8651
FAX:
(618)-263-3327

405 W. STATE ST.
SUITE1
PRINCETON, IN
47670
PHONE:
(812)-386-7611
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(812)-385-2812

LAMAC ENGINEERING CO.

PROFESSIONAL DESIGN FIRM
LAND SURVEY & PROFESSIONAL ENGINEERING CORPORATION
184-000887
(62-032435)(35-002769)

AARON M. MEFFORD 56284 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
6-23-08
DATE
11-30-09
EXPIRES

TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

SHEET TITLE: CROSS-SECTIONS

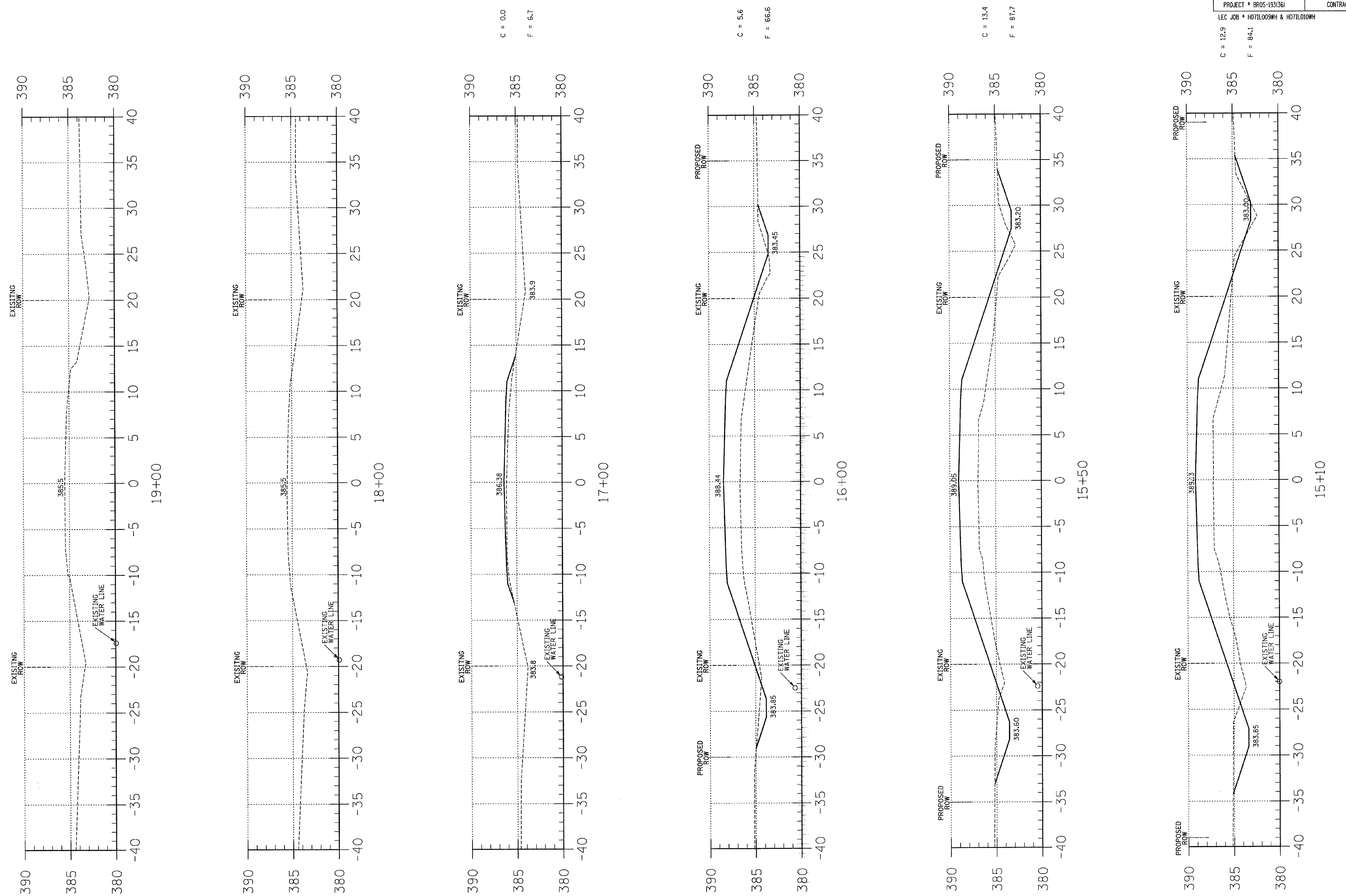
SCALE: 1" = 5'
BY: AMM
DATE: 3/12/08
REV:

9 OF 19 SHEETS

SHEET NO. 9

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	10
FED. ROAD DIST. NO. 9	ILLINOIS	LICK CREEK		
PROJECT # BROS-193(36)		CONTRACT # 99323		

LEC JOB # H07IL009WH & H07IL010WH



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AARON M. MEFFORD
NAME
SIGNATURE
6-23-08
DATE
11-30-09
EXPIRES

TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

SHEET TITLE:

CROSS-SECTIONS

SCALE:	1" = 5'
BY:	AMM
DATE:	31208
REV:	

10 OF 19
SHEETS

SHEET NO.
10

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	11
FED. ROAD DIST. NO. 9	ILLINOIS	LICK CREEK		
PROJECT * BROS-193(36)		CONTRACT * 99323		

LEC JKB * H07IL009NH & H07IL010NH

323 W. 3RD ST.
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405 W. STATE ST.
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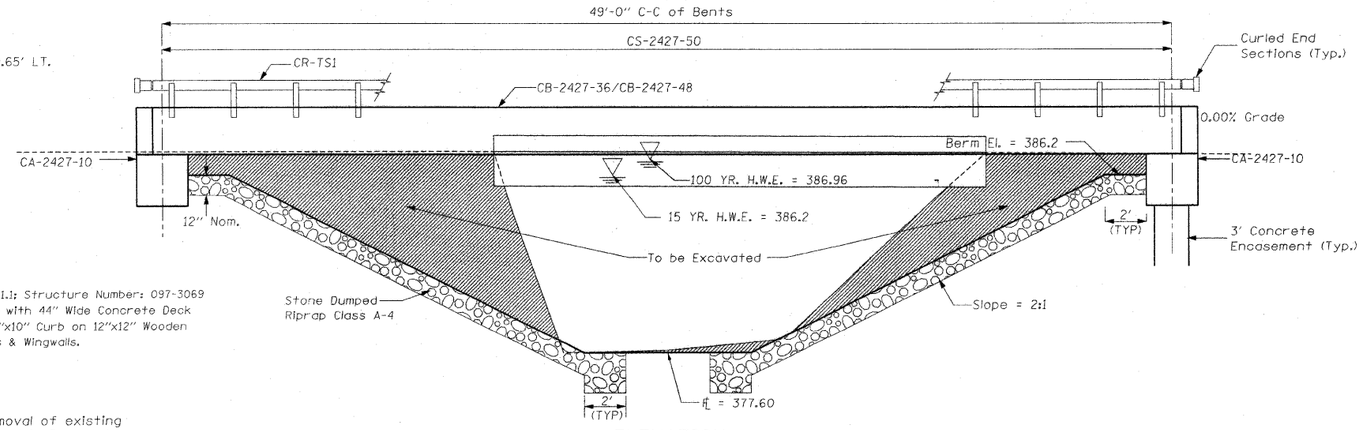
PRINCETON, IN
47670
PHONE:
(812)-386-7611
FAX:
(812)-385-2812

LAMAC ENGINEERING CO.

PROFESSIONAL LAND SURVEYING FIRM:
048-000082
PROFESSIONAL ENGINEERING CORPORATION:
184-000887

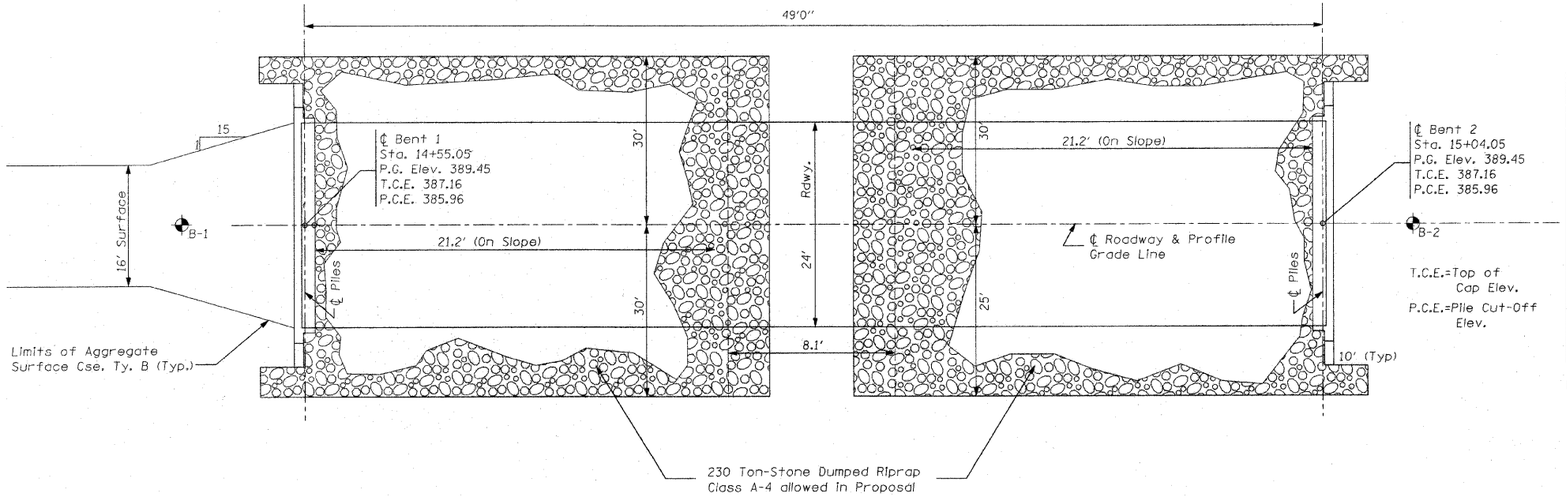
B.M.- I.P. ±9+77.30, 10.65' LT.
Elev. = 386.51



Existing Bridge Sta 14+81.1; Structure Number: 097-3069
A 24' Single Span Bridge with 44" Wide Concrete Deck Beams 20" Depth with 9"x10" Curb on 12"x12" Wooden Piling with Wood Mudwalls & Wingwalls.

One (1) each removal of existing structures allowed in Proposal.

ELEVATION



T.C.E.=Top of Cap Elev.
P.C.E.=Pile Cut-Off Elev.

NOTE: All items deemed fit for use on other County projects shall become the property of the County. These items shall be stored along the R.O.W. at no additional cost to the project.

STATION 14+79.55
LICK CREEK
SEC. 07-08135-00-BR BUILT 20
PROJECT NO. BROS-193(36)
WHITE COUNTY
LOADING HS 20-44
STR. NO. 097-3261

LETTERING FOR NAME PLATE

Locate Name Plate at the Southeast Corner of the Bridge (See Sd. CN)

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, 2007) 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
1006.05	1006.05
1006.32	1006.32
1060.07	1060.07
STD 631026	STD 631026

WATERWAY INFORMATION

Drainage Area = 3.7 Sq. Mi. Low Grade Elev. = 385.7 At Sta. 17+60

Flood	Freq. Yr.	Q C.F.S.	Opening Sq.Ft. Exist.	Opening Sq.Ft. Prop.	Natural H.W.E.	Head-Ft. Exist.	Head-Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1238	124	217.6	386.20		0.33		386.53
Base	100	2024	124	253.0	386.96	1.4	0.86	388.36	387.82
Max. Calc.	500	2681							

SOUTH ABUT. PILE DATA

Type:	Steel Piles HP12X84
Nominal Required Bearing:	562 Kips
Allowable Resistance Available:	76 Kips
Estimated Length:	43 Feet/Pile
Number Required:	4

NORTH ABUT. PILE DATA

Type:	Steel Piles HP12X84
Nominal Required Bearing:	579 Kips
Allowable Resistance Available:	76 Kips
Estimated Length:	51 Feet/Pile
Number Required:	4

DESIGN SPECIFICATIONS

2002 AASHTO
HS 20-44 Loading, Load Factor Design

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.10g
Site Coefficient (S) = 1.0

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

Steven W. Meggenson 5/5/08
ILLINOIS STRUCTURAL ENG. 6064

LICENSED STRUCTURAL ENGINEER
STEVEN W. MEGGINSON
081-6064
SPRINGFIELD, IL
STATE OF ILLINOIS

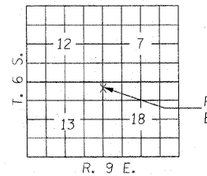
Expires 11-30-08

GENERAL NOTES

1. The Contractor shall drive one test pile, 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 Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for Precast Prestressed Concrete Deck Beams.
4. The Hot-Mix Asphalt Surf. Cse. and the Waterproofing Membrane System shown in these Plans shall not be provided.
5. The Steel H-Piles shall be according to AASHTO M270 Grade 50.

Item	Unit	Super	Sub. Piers	Sub. Abuts.	Total
Removal of Existing Structures	L Sum				1
Hot-Mix Asphalt Surf. Cse.	Tons				
Waterproofing Membrane System	Sq.Yds.				
Concrete Structures	Cu.Yds.			18.2	18.2
P.P. Conc. Dk. Bm. 27" Dp.	Sq.Ft.	1200			1200
Steel Railing, Type SI	Lin.Ft.	100			100
Reinforcement Bars	Lbs.			2300	2300
Furnishing Steel Piles HP12X84	Lin.Ft.			376	376
Driving Piles	Lin.Ft.			376	376
Name Plates	Each			1	1
Concrete Encasement	Cu.Yds.			2.7	2.7

NOTE: Four (4) Curled End Sections required. Item to be included in the Steel Railing.



LOCATION SKETCH

INDEX OF SHEETS

AARON M. MEFFORD
56284
REGISTERED PROFESSIONAL ENGINEER
OF ILLINOIS

AARON M. MEFFORD
NAME
SIGNATURE
6-23-08
DATE
11-30-09
EXPIRES

TOWNSHIP ROUTE 140
INDIAN CREEK TOWNSHIP
WHITE COUNTY, ILLINOIS

SHEET TITLE:
GENERAL PLAN AND ELEVATION

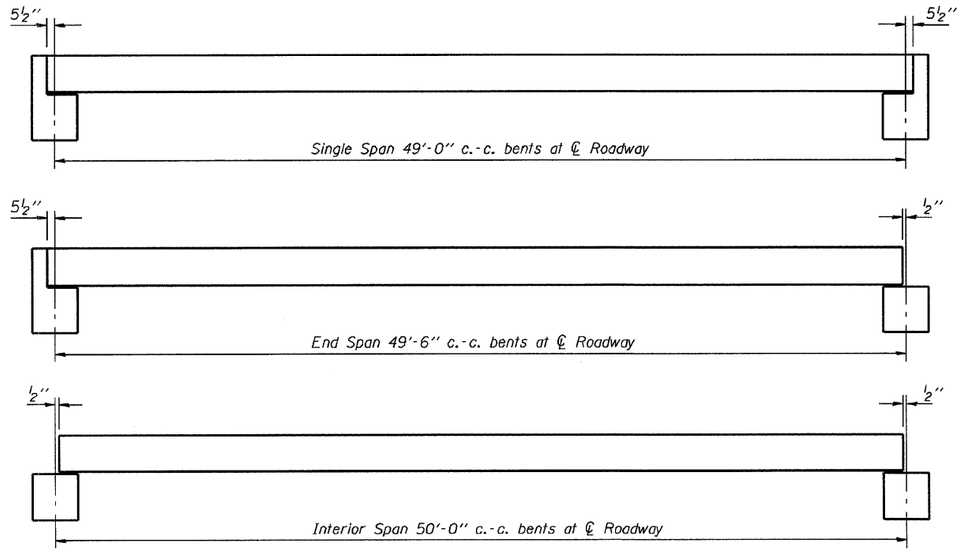
SCALE:	NONE
BY:	A.M.M.
DATE:	31308
REV:	

11 OF 19 SHEETS

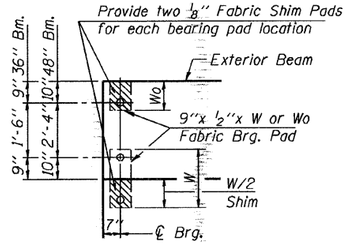
SHEET NO. 11

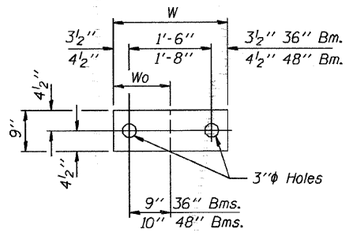
GENERAL PLAN & ELEVATION

TOWNSHIP ROUTE 140
OVER LICK CREEK
STRUCTURE # 097-3261
WHITE COUNTY
STATION 14+79.55



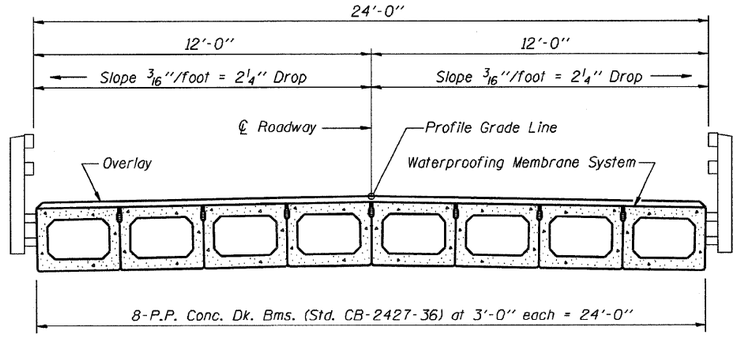
TYPICAL ELEVATIONS



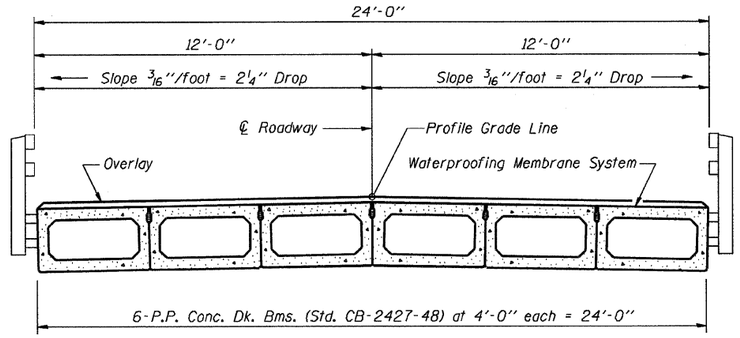


Beam	W	Wo
36"	2'-1"	1'-0½"
48"	2'-5"	1'-2½"

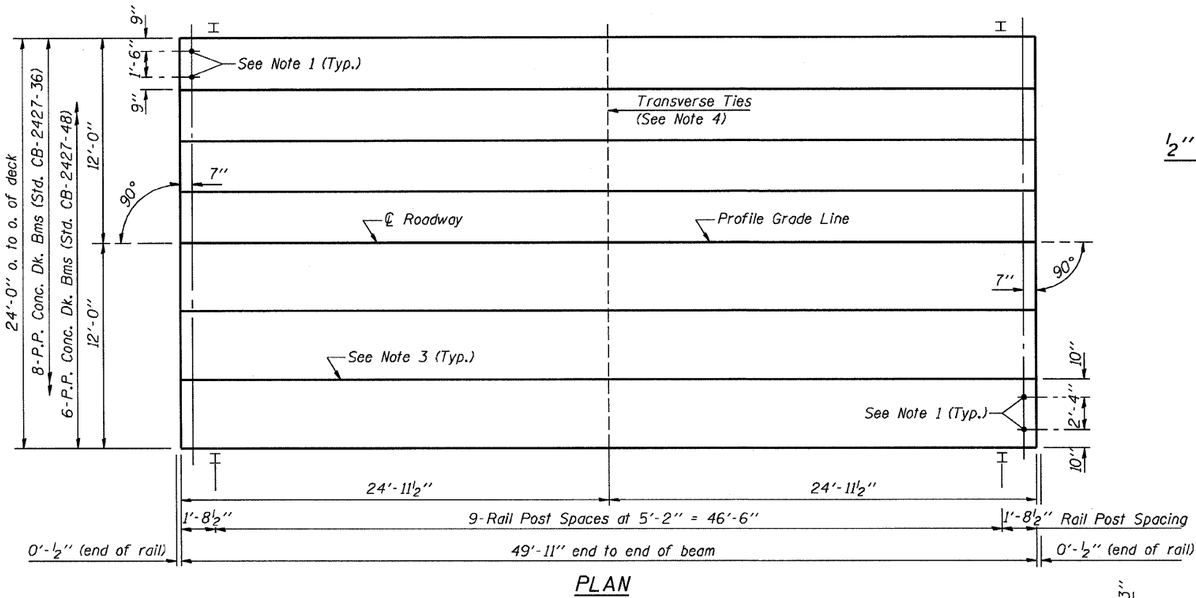
½" FABRIC BRG. PAD DETAILS



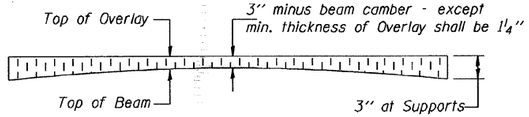
CROSS SECTION



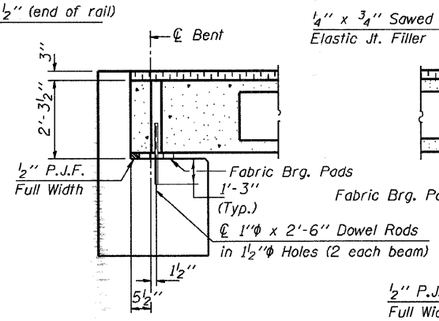
CROSS SECTION



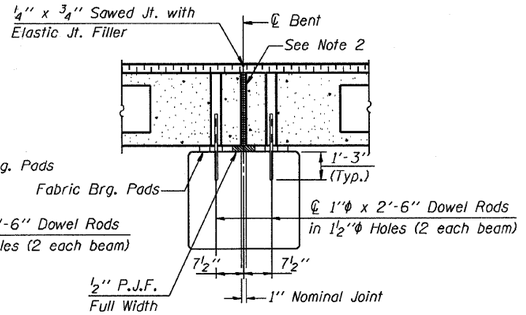
PLAN



PROFILE OF OVERLAY



SECTION AT ABUTS.
(Along ℄ Beams)



SECTION AT PIERS
(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. Nominal 1" joint at ℄ Pier shall be filled with non-shrink grout.
3. Longitudinal keys shall be grouted.
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.

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1200 Sq. Ft.	
Steel Railing	100 Ft.	
Waterproofing Membrane System	133.3 Sq. Yds.	
Portland Cement Mortar	350 Ft.	36"
Fairing Course	250 Ft.	48"

Note: Quantity of overlay for one span = 18.2 Tons

Illinois Department of Transportation

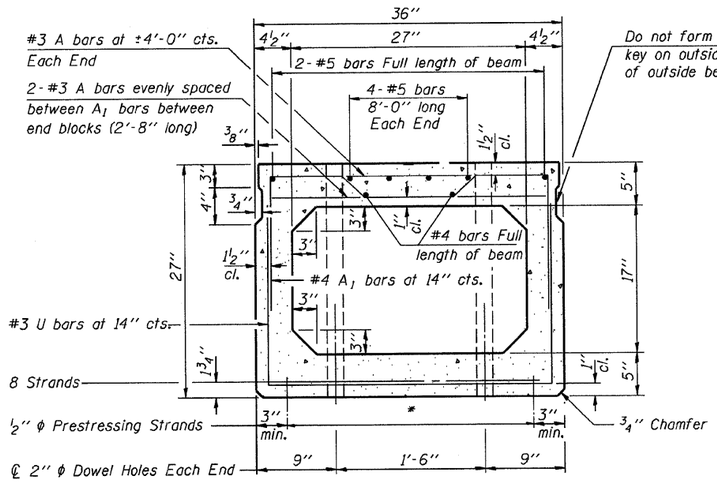
PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1981

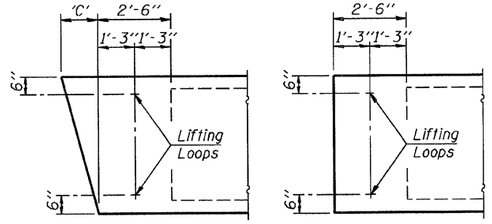
P.P.C. DECK BEAM SUPERSTRUCTURE

24' RDWY.	27" BMS.	50' SPAN	0° SKEW

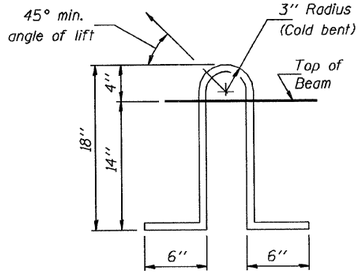
STANDARD CS-2427-50



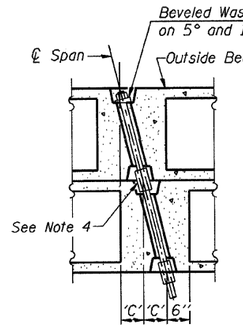
CROSS SECTION
(40' SPAN)



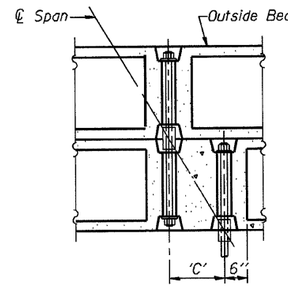
END BLOCK DETAILS
Each beam shall have four Lifting Loops, two at each end of beam cast in locations shown above. Loops shall be burned off after beams have been erected.



LIFTING LOOP DETAIL
Lifting loops shall be 2. ½"ϕ-270 ksi strands. as shown. Alternate approved lifting devices are also acceptable.



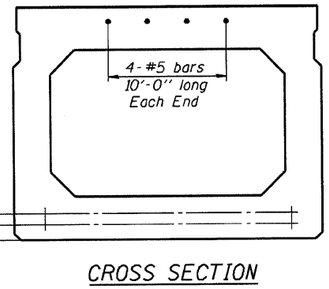
PARTIAL PLAN TRANSVERSE TIE ASSEMBLY
('D'=0°, 5° and 10°)



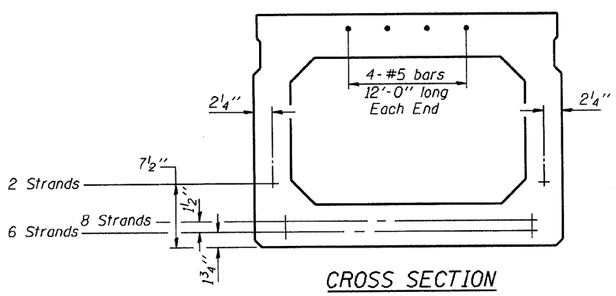
PARTIAL PLAN TRANSVERSE TIE ASSEMBLY
('D'=15°, 20°, 25° and 30°)

DIMENSION 'C'

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	3⅛	6⅜	9⅝	13⅛	16¾	20¾



CROSS SECTION
(50' SPAN)

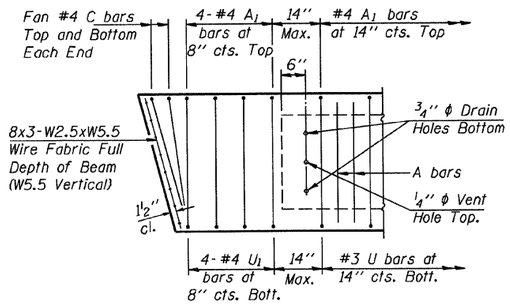


CROSS SECTION
(60' SPAN)

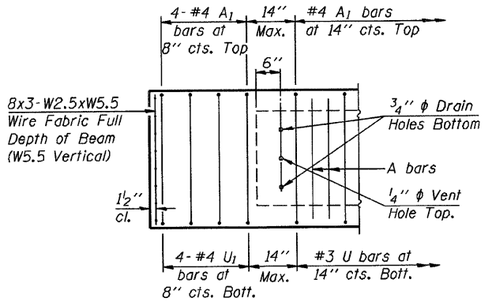
* TRANSVERSE STRAND PLACEMENT GUIDELINES

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 ½".
4. The minimum clearance from strand to void shall be 1½".

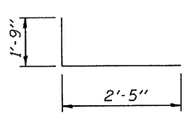
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



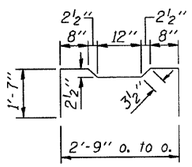
END REINFORCEMENT
(SKEWED)



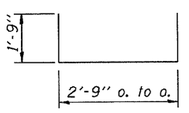
END REINFORCEMENT
(RIGHT ANGLE)



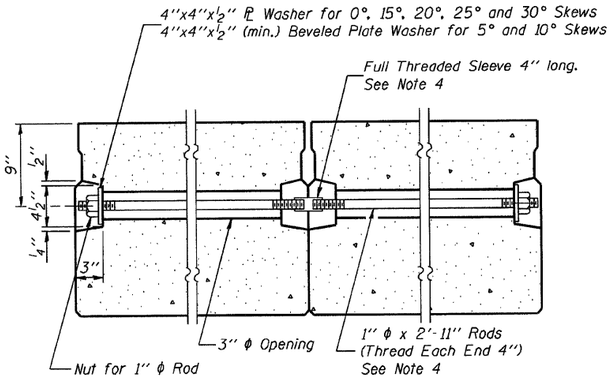
BAR C**



BAR A1



BARS U & U1



SECTION ALONG TRANSVERSE TIE ASSEMBLY
(REQUIRED FOR 50' & 60' SPANS ONLY)

NOTES

1. Prestressing steel shall be uncoated high strength, low relaxation 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 the requirements of AASHTO M-31 or M-322, Grade 60.
4. On 0°, 5° and 10° skews, alternate appoved 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 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 ¼".
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.

DESIGN STRESSES

f'_c = 5,000 p.s.i.
f'_{ci} = 4,000 p.s.i.
f'_s = 270,000 p.s.i. (½" ϕ Strand)
f_{si} = 201,960 p.s.i. (½" ϕ Strand)
f_y = 60,000 p.s.i.

MIN. BAR LAP

#4 bars = 1'-4"
#5 bars = 1'-8"

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1981

NOTE:
The std. reinf. and dimensions shown on the 40' span cross section is typical for all spans, except as shown.

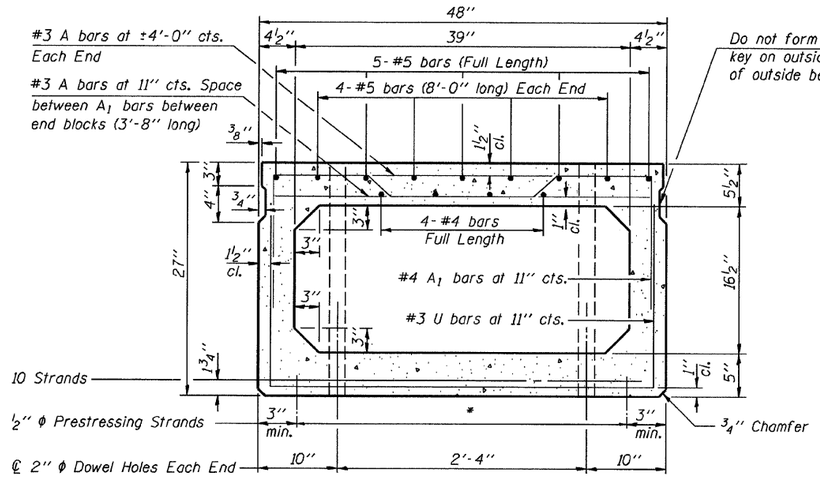
**NOTE:
The following number of C bars shall be used:

Skew	No.
5° and 10°	1
15° and 20°	2
25° and 30°	3

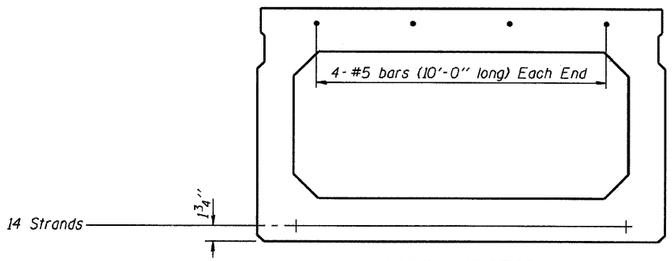
P.P.C. DECK BEAM DETAILS

24' ROADWAY | 27" x 36" BEAMS

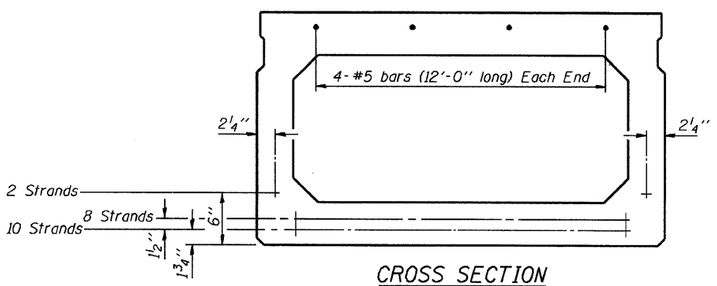
STANDARD CB-2427-36



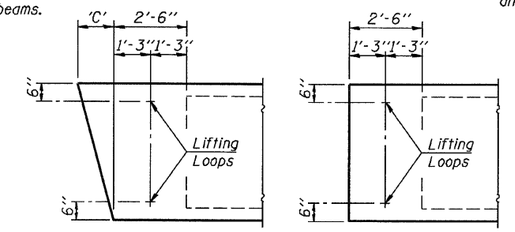
CROSS SECTION
(40' SPAN)



CROSS SECTION
(50' SPAN)

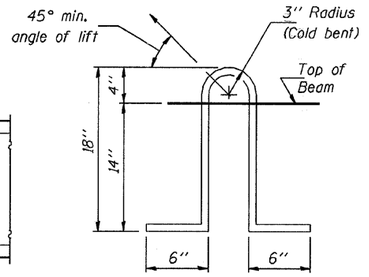


CROSS SECTION
(60' SPAN)



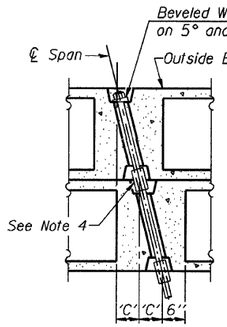
END BLOCK DETAILS

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.

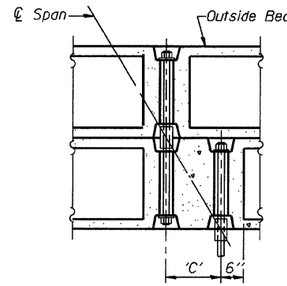


LIFTING LOOP DETAIL

Lifting loops shall be 3, ½"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	4¼	8½	12⅞	17½	22⅜	27¾

* 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".
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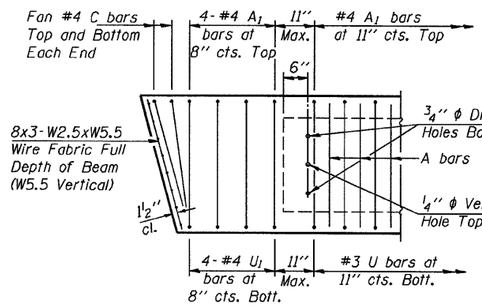
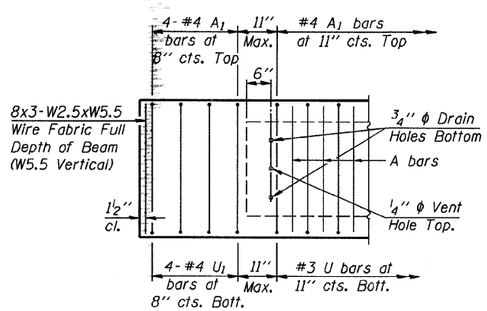
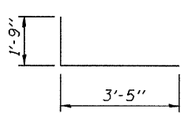


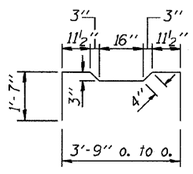
END REINFORCEMENT
(SKEWED)



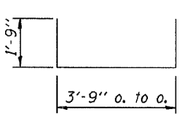
END REINFORCEMENT
(RIGHT ANGLE)



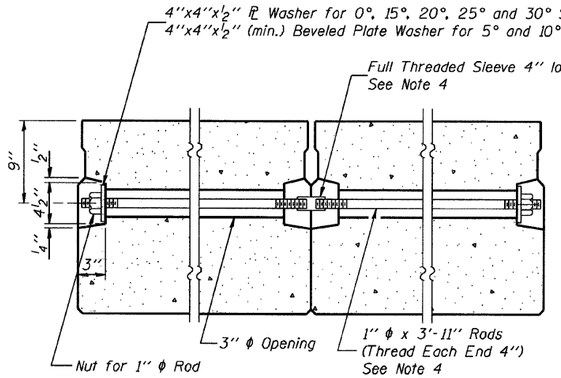
BAR C**



BAR A1



BARS U & U1



SECTION ALONG TRANSVERSE TIE ASSEMBLY
(REQUIRED FOR 50' & 60' SPANS ONLY)

NOTES

1. Prestressing steel shall be uncoated high strength, low relaxation 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 the requirements of AASHTO M-31 or M-322, Grade 60.
4. On 0°, 5° and 10° skews, alternate appoved 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 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 ¼".
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ISSUED 1-1-1981

NOTE
The std. reinf. and dimensions 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
15° and 20°	2
25° and 30°	3

DESIGN STRESSES

f'_c = 5,000 p.s.i.
f'_{ci} = 4,000 p.s.i.
f'_s = 270,000 p.s.i. (½" ϕ Strand)
f_{si} = 201,960 p.s.i. (½" ϕ Strand)
f_y = 60,000 p.s.i.

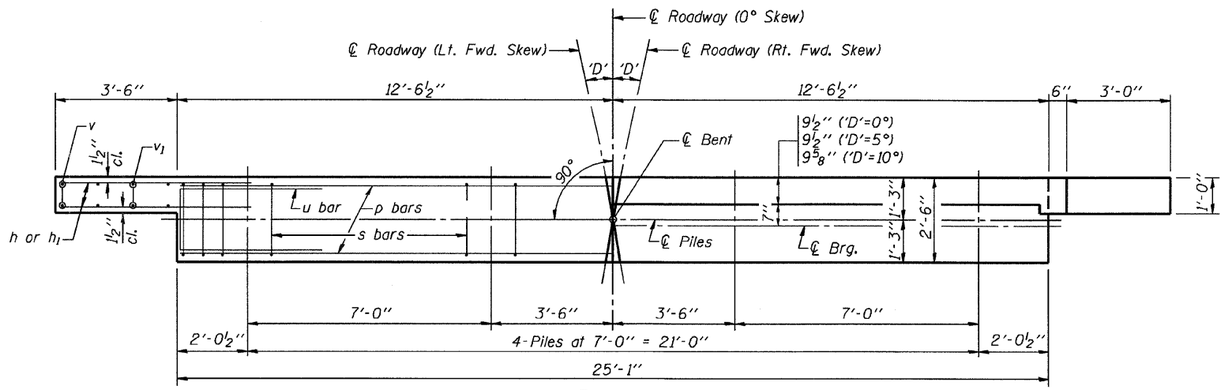
MIN. BAR LAP

#4 bars = 1'-4"
#5 bars = 1'-8"

P.P.C. DECK BEAM DETAILS

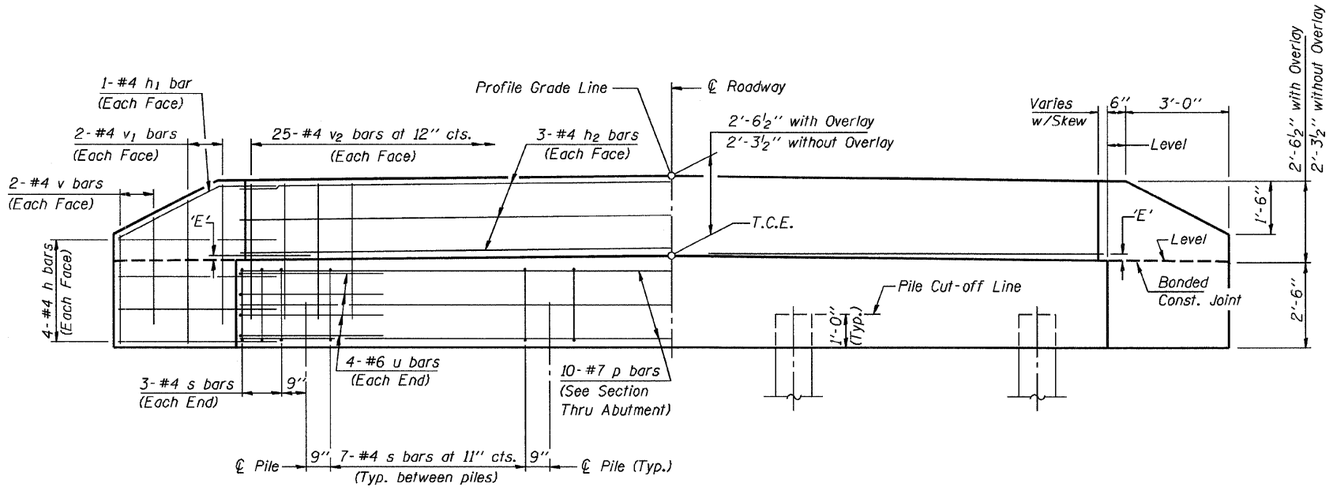
24' ROADWAY | 27" x 48" BEAMS

STANDARD CB-2427-48

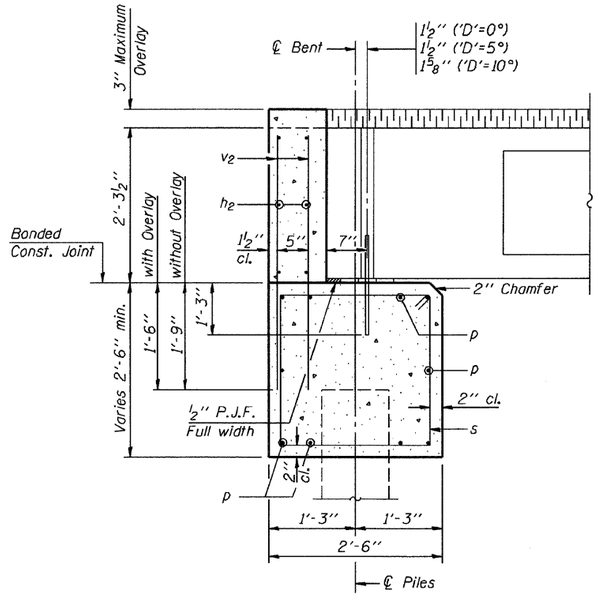


PLAN

('D'=Designated Skew Angle)

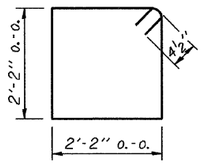


ELEVATION

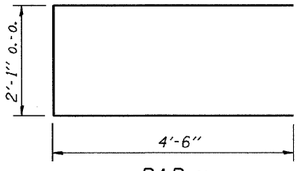


SECTION THRU ABUTMENT

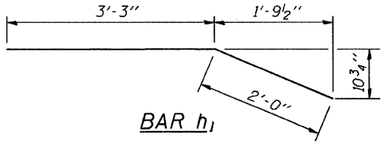
(At Right Angles)



BAR s



BAR u



BAR h_1

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	——
h1	4	#4	5'-3"	⟍
h2	6	#4	24'-9"	——
p	10	#7	24'-9"	——
				——
s	27	#4	9'-5"	□
u	8	#6	11'-1"	⊏
v	8	#4	3'-2"	——
v1	8	#4	4'-2"	——
v2	50	#4	3'-11"	——
Concrete Structures			9.1 Cu. Yds.	
Reinforcement Bars			1150 Lb.	

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 1/8"	2 1/2"
Over 1% to 2%	2 3/8"	2 3/8"	2 1/8"	2 1/2"	1 7/8"	2 3/4"
Over 2% to 3%	2 3/8"	2 3/8"	2"	2 5/8"	1 5/8"	3"
Over 3% to 4%	2 3/8"	2 3/8"	1 7/8"	2 3/4"	1 3/8"	3 1/4"

NOTES

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 the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
3. Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

SPAN	TONS
40'	34
50'	38
60'	43

DESIGN STRESSES

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

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
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APPROVED APRIL 4, 2005
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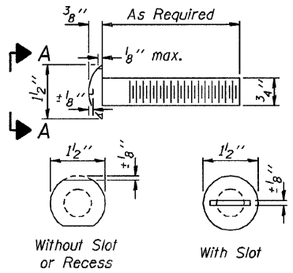
ISSUED 1-1-96

P.P.C. DECK BEAMS
PILE BENT ABUTMENT

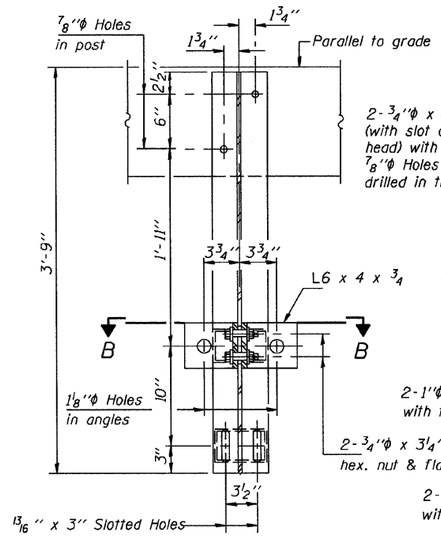
24' RDWY.	27" BMS.	'D'=0°, 5° OR 10°

STANDARD CA-2427-10

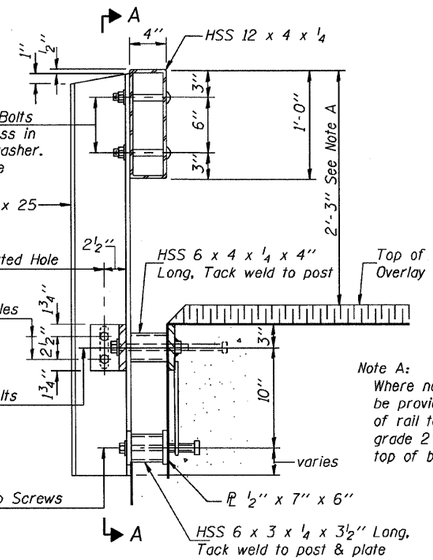


VIEW A-A

ROUND HEAD BOLT

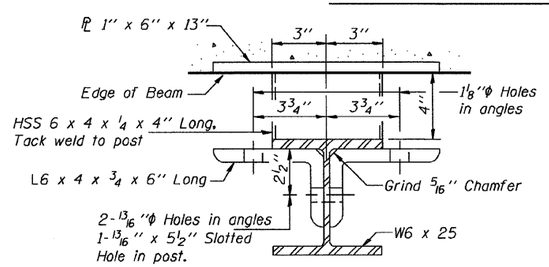


SECTION A-A

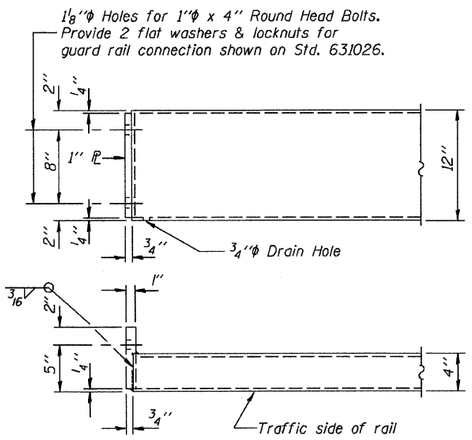


SECTION AT RAIL POST

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.

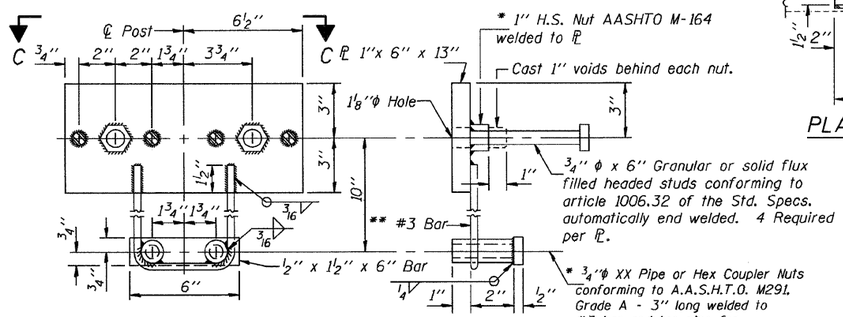


SECTION B-B



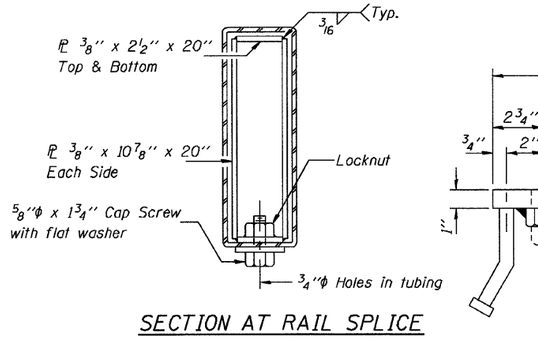
END OF RAIL DETAILS

** 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".

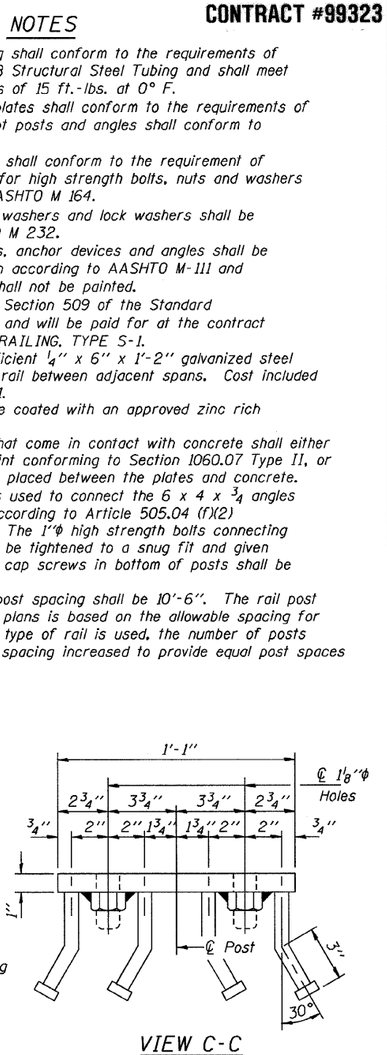


ANCHOR DEVICE

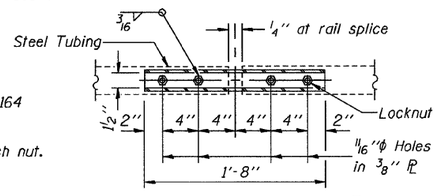
* Threaded areas shall be plugged or blocked off during casting of beam.



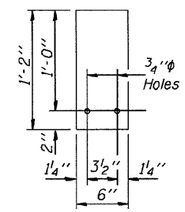
SECTION AT RAIL SPLICE



VIEW C-C



PLAN-BOTT. SPLICE PL
TYPICAL



1/4" SHIM PLATE

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A500 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 A307 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 S-1.

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 RAILING, TYPE S-1.

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

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

The 3/4"ϕ 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"ϕ high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8"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.

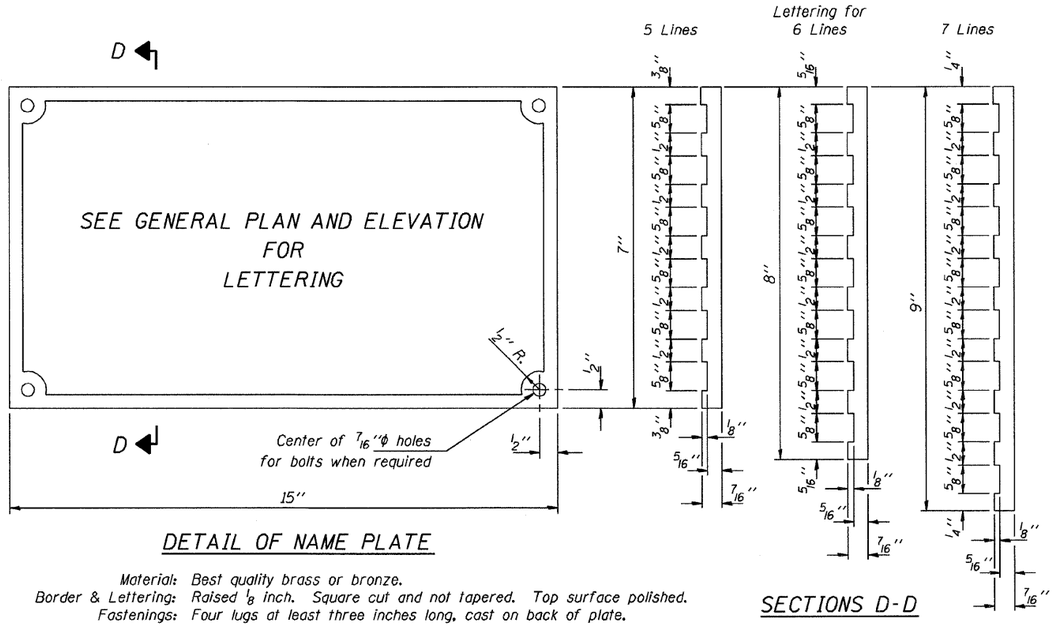
Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-1981

STEEL RAILING, TYPE S-1

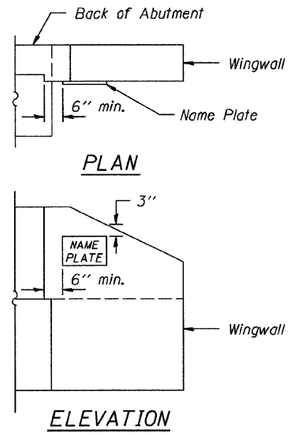
STANDARD CR-TS1



DETAIL OF NAME PLATE

SECTIONS D-D

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.



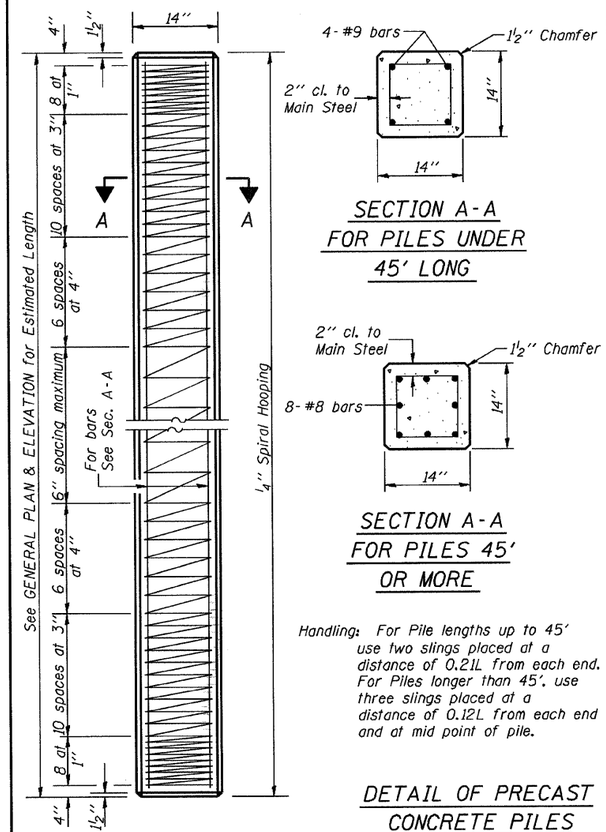
LOCATION OF NAME PLATE

Illinois Department of Transportation

PASSED APRIL 4, 2005
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED APRIL 4, 2005
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 7-1-95

NAME PLATE
STANDARD CN

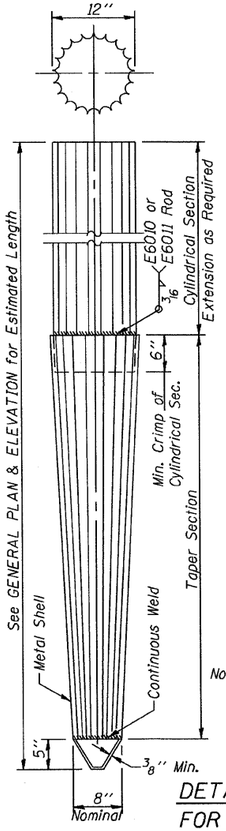


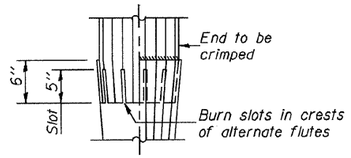
SECTION A-A
FOR PILES UNDER
45' LONG

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.

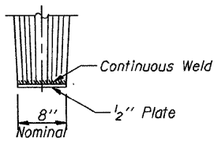
DETAIL OF PRECAST
CONCRETE PILES





FIELD CRIMP DETAIL

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



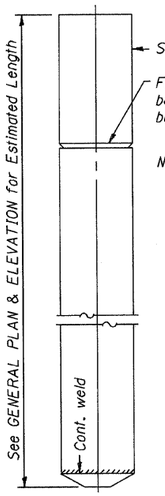
OPTIONAL FLAT END

ALLOWABLE TAPER SECTIONS

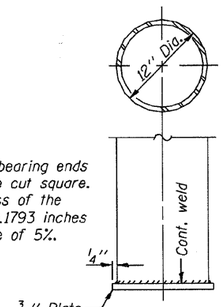
10' Length-Taper 1" in 2'-6"
17' Length-Taper 1" in 4'-0"
25' Length-Taper 1" in 7'-0"
30' Length-Taper 1" in 7'-0"

Note: The thickness of the shell shall be 0.1495 inches with a tolerance of 5%. The shell shall be according to Article 1006.05 (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%.

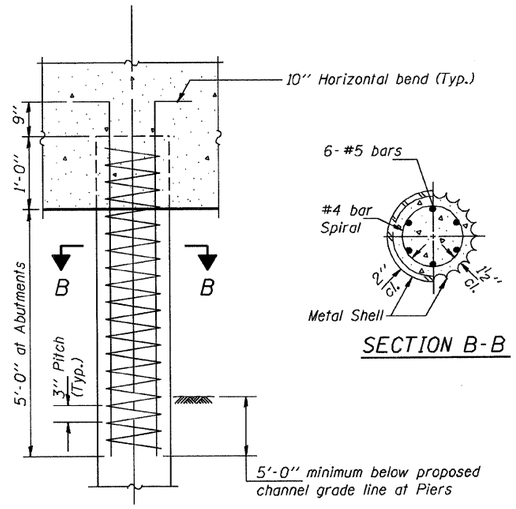


OPTIONAL
FLAT END

DETAIL OF CYLINDRICAL
STEEL SHELL FOR CAST IN
PLACE CONCRETE PILES

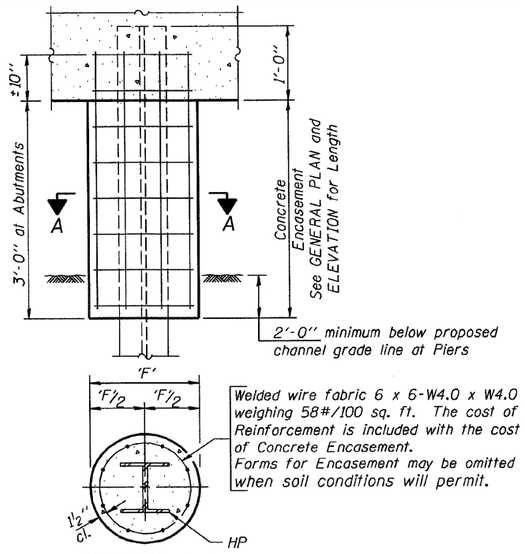
Reinforcement cage shall be omitted when Concrete Encasement is provided.

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



SECTION B-B

DETAIL OF REINFORCEMENT
FOR METAL SHELLS

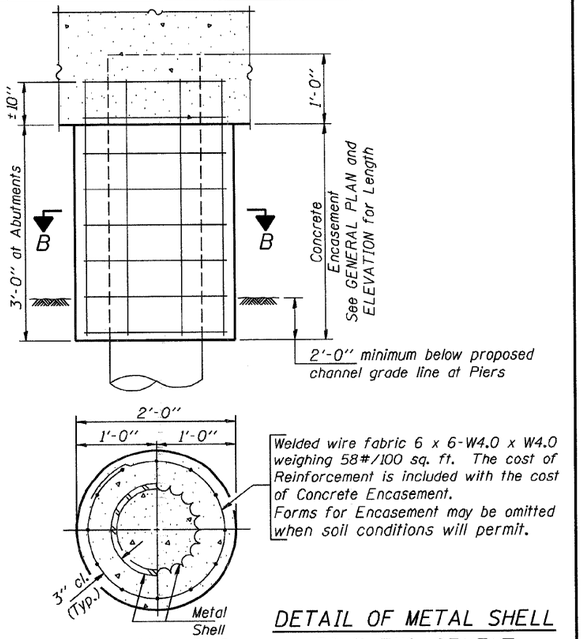


SECTION A-A

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

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

DETAIL OF HP
PILE ENCASEMENT



SECTION B-B

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

DETAIL OF METAL SHELL
PILE ENCASEMENT

QUANTITIES/FT. OF ENCASEMENT

(STEEL PILES)

Pile Size	Item	Quantity
HP8	Concrete Encasement	0.063 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.

Illinois Department of Transportation

PASSED FEBRUARY 1, 2000
Thomas J. Domagalski
Engineer of Bridge Design
APPROVED FEBRUARY 1, 2000
Ralph E. Anderson
Engineer of Bridges and Structures

ISSUED 1-1-98

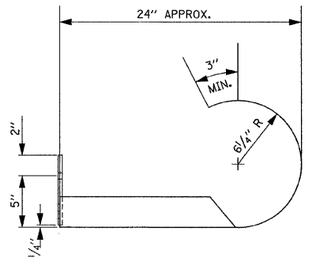
PILE DETAILS

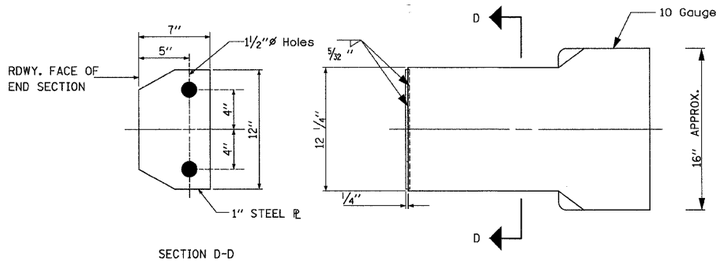
STANDARD CX-1

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
140	07-08135-00-BR	WHITE	19	19
FED. ROAD DIST. NO. 9	ILLINOIS	LICK CREEK		
PROJECT # BROS-193(36)		CONTRACT # 99323		

LEC JOB # H07IL005WH & H07IL010WH

CURLED END SECTION DETAIL





SECTION D-D

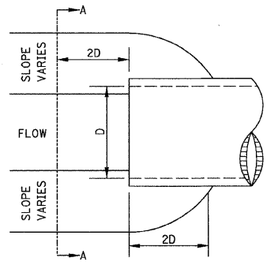
ALL OTHER STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M-183 EXCEPT POSTS AND ANGLES SHALL CONFORM TO A.A.S.H.T.O. M-223, GRADE 50.

BOLTS, CAP SCREWS, AND NUTS SHALL CONFORM TO THE REQUIREMENT OF A.S.T.M. DESIGNATION A-307 EXCEPT FOR HIGH STRENGTH BOLTS, NUTS, AND WASHERS NOTED WHICH SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION M-164.

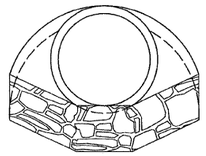
ALL BOLTS, NUTS, CAP SCREWS, WASHERS, AND LOCK WASHERS SHALL BE GALVINIZED IN ACCORDANCE WITH A.A.S.H.T.O. DESIGNATION M-232.

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

STONE RIPRAP DITCH DESIGN

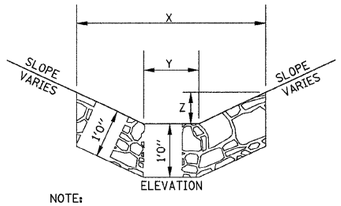


Plan



Section A-A

NOTE: FOR PLACEMENT, QUALITY GRADATION AND OTHER MISCELLANEOUS REQUIREMENTS FOR STONE RIPRAP DITCH-SEE SPECIAL PROVISIONS.



ELEVATION

NOTE:

BOTTOM OF DITCH — SLOPE

		1 1/2:1	2:1	3:1	
2 FT	X=	5 FT	6 FT	8 FT	
	Y=	2 FT	2 FT	2 FT	
	Z=	1 FT	1 FT	1 FT	
		0.40	0.48	0.62	TON/LIN. FT
3 FT	X=	6 FT	7 FT	9 FT	
	Y=	3 FT	3 FT	3 FT	
	Z=	1 FT	1 FT	1 FT	
		0.48	0.56	0.70	TON/LIN. FT
4 FT	X=	7 FT	8 FT	10 FT	
	Y=	4 FT	4 FT	4 FT	
	Z=	1 FT	1 FT	1 FT	
		0.56	0.64	0.78	TON/LIN. FT