

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	=	SHELBY	24	1
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 09-00267-00-BR				

# INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	STANDARDS, GENERAL NOTES, & SUMMARY OF QUANTITIES
3	SCHEDULE OF QUANTITIES
4	TYPICAL SECTIONS, ENTRANCE DETAILS RIPRAP LAYOUT DETAILS & LAYOUT TIES
5	PLAN
6	PROFILE
7-13	CROSS SECTIONS
14-24	BRIDGE PLANS

## IDOT HIGHWAY STANDARDS

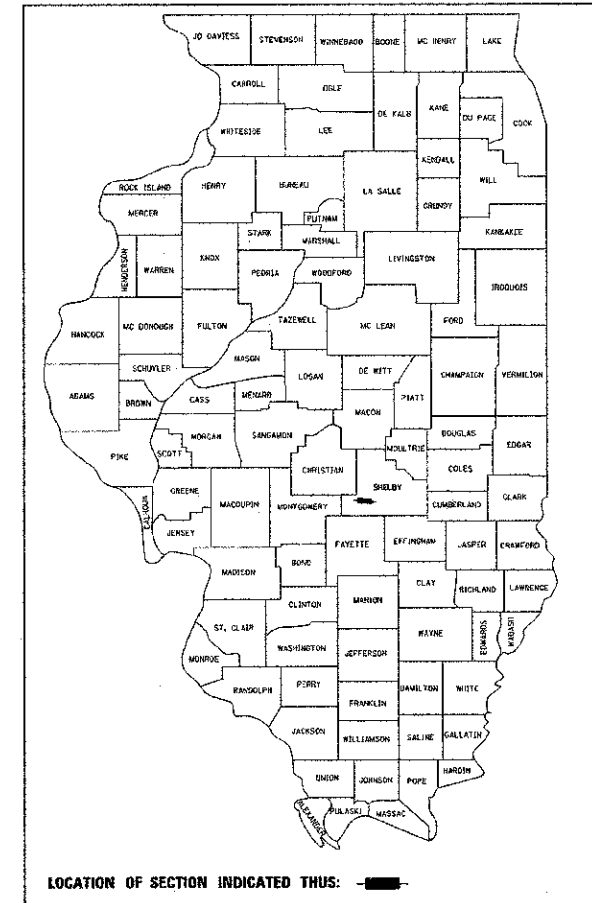
SEE SHEET 2 FOR  
STANDARDS, GENERAL NOTES & SUMMARY OF QUANTITIES

# STATE OF ILLINOIS 03-08-13 LETTING ITEM 117 DEPARTMENT OF TRANSPORTATION

# PLANS FOR PROPOSED SURFACE TRANSPORTATION RURAL PROGRAM

COUNTY HIGHWAY 12  
SECTION 09-00267-00-BR  
COLD SPRING ROAD DISTRICT  
SHELBY COUNTY  
STRUCTURE NO. 087-3574  
PROJECT NO. RS-0173(179)  
JOB NUMBER C-97-021-13

CONTRACT No. 95700

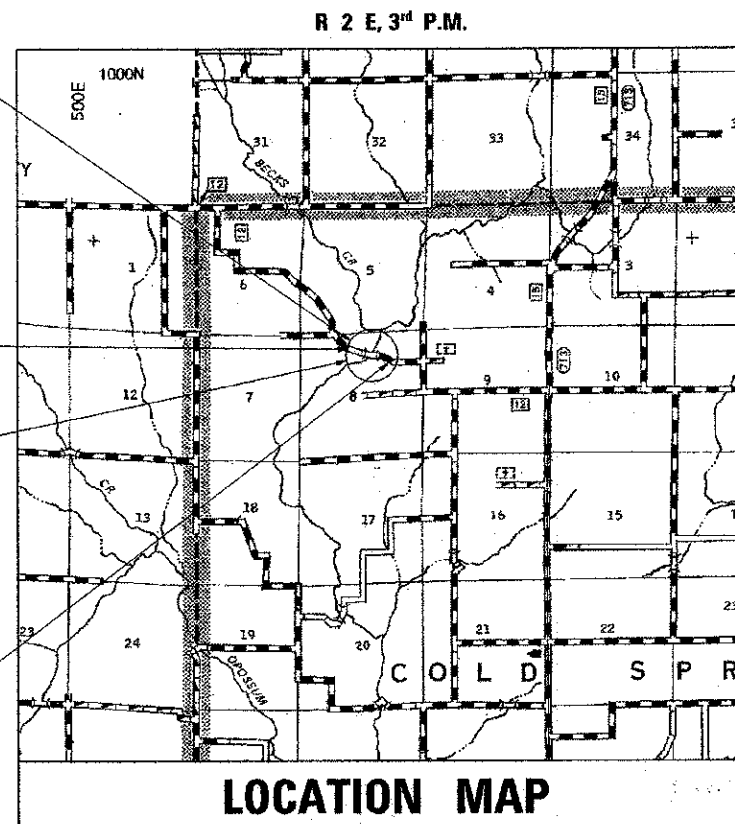


### EXISTING STRUCTURE NO. 087-3302

TWO SPAN STEEL BEAM BRIDGE  
W/ OIL & CHIP SURFACE. THE  
STRUCTURE IS 83'-0" BK. TO BK.  
OF ABUTMENTS WITH AN 18'-0"  
WIDTH AND IS SKEWED FORWARD LEFT.  
THE ABUTMENTS ARE TIMBER BACKWALLS  
SUPPORTED BY TIMBER PILES. WINGWALLS  
ARE TIMBER. THERE IS A STEEL RAILING  
ON EACH SIDE OF BRIDGE.

### STA. 9+95.00 SPECIAL BRIDGE DESIGN

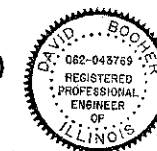
3 - SPAN 27" P.P.C. DECK BEAM BRIDGE  
ON PILE BENT ABUTMENTS AND PIERS.  
130'-0" BK TO BK OF ABUTMENTS  
24'-0" CLEAR WIDTH, SKEW = 30° FWD LT  
STRUCTURE NO. 087-3574



## LOCATION MAP

APPROXIMATE SCALE: 0 1 2 MILES

NET LENGTH OF PROJECT = 1,500.00 FEET (0.284 MILES)  
HIGHWAY CLASSIFICATION = MINOR COLLECTOR (NON URBAN)  
CURRENT ADT = 225  
DESIGN SPEED = 30 MPH



DAVID BOOHER, ILLINOIS P.E. 062-043769  
EXPIRES 11/30/2013

1-2-2013  
DATE

## SCALES

PLAN	0	50	100
PROFILE HORIZ.	0	50	100
PROFILE VERT.	0	5	10
CROSS SECTIONS HORIZ.	0	10	20
CROSS SECTIONS VERT.	0	5	10

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD  
ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT  
CONFORM TO STANDARD SCALES. WHEN MAKING MEASUREMENTS  
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

**ie** CONSULTANTS, INC.  
6420 SOUTH SIXTH STREET RD  
SPRINGFIELD, ILLINOIS 62712  
TEL. (217) 529-8027  
FAX (217) 529-4543  
WWW.IE-CONSULTANTS.COM

CALL **J.U.L.I.E.** (JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS)  
48 Hours (2 working days) Before You Dig.  
TOLL FREE: 1 (800) 892-0123 OR 811

APPROVED 1-03 2013  
*[Signature]*  
COUNTY ENGINEER, SHELBY COUNTY

PASSED 1/16 2013  
*[Signature]*  
DISTRICT SEVEN ENGINEER OF  
LOCAL ROADS & STREETS

Releasing For  
Bid Based on  
Limited Review

1/16 2013  
*[Signature]*  
DEPUTY DIRECTOR OF HIGHWAYS,  
REGION FOUR ENGINEER  
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

THE STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

## UTILITY CONTACTS

<b>CONSOLIDATED COMMUNICATIONS.</b> <b>MR. GERRY MEYERS</b> <b>121 SOUTH 17th STREET</b> <b>MATTOON, IL 61938</b> <b>(217) 235-3311</b>	<b>SHELBY ELECTRIC COOPERATIVE.</b> <b>MR. JIM MATLOCK</b> <b>P.O. BOX 560</b> <b>SHELBYVILLE, IL 62565</b> <b>(217) 774-3986</b>
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## IDOT HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
542401-01	METAL END SECTIONS FOR PIPE CULVERTS
630001-10	STEEL PLATE BEAM GUARDRAIL
630301-06	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-02	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 27-1	TRAFFIC BARRIER TERMINAL TYPE 5A

### GENERAL NOTES

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER IN REGARD TO THE EXACT LENGTHS OF PIPE CULVERTS PRIOR TO ORDERING THESE ITEMS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS.

ALL DISTURBED EARTH SURFACES WITHIN THE LIMITS OF THE RIGHT-OF-WAY AND EASEMENTS SHALL BE SEEDED AS DIRECTED BY THE ENGINEER.

BITUMINOUS PRIME COAT SHALL BE MC-30.

BITUMINOUS COVER & SEAL COAT SHALL BE HFE-150.

### ESTIMATED QUANTITIES

ITEM	RATE OF APPLICATION	QUANTITIES
SEEDING CLASS 2	= 200 LBS./ACRE	= 300 POUNDS
NITROGEN FERTILIZER NUTRIENTS	= 90 LBS./ACRE	= 135 POUNDS
PHOSPHORUS FERTILIZER NUTRIENTS	= 90 LBS./ACRE	= 135 POUNDS
POTASSIUM FERTILIZER NUTRIENTS	= 90 LBS./ACRE	= 135 POUNDS
MULCH METHOD 2	= 2 TONS/ACRE	= 3 TONS
BITUMINOUS MATERIAL (PRIME COAT)	= 0.375 GAL/SY	= 1,256 GALLONS
BITUMINOUS MATERIALS (COVER & SEAL COATS)	= 0.35 GAL/SY	= 3,197 GALLONS
COVER COAT AGGREGATE	= 25 LBS/SY	= 77 POUNDS
SEAL COAT AGGREGATE	= 25 LBS/SY	= 39 POUNDS

### EARTHWORK SUMMARY

EARTH EXCAVATION.....886 CU YD (IN PLACE)  
STRUCTURE EXCAVATION.....173 CU YD (IN PLACE)  
CHANNEL EXCAVATION.....544 CU YD (IN PLACE)  
TOTAL FILL REQ'D..... 4,012 CU YD (IN PLACE)

ESTIMATE OF FILL FROM EARTH EXC = 664 CU YD  
ESTIMATE OF FILL FROM STRUCT EXC = 87 CU YD  
ESTIMATE OF FILL FROM CHANNEL EXC = 272 CU YD  
FURNISHED EXCAVATION REQUIRED = 2,989 CU YD

## SUMMARY OF QUANTITIES

CODE NO.	DESCRIPTION	UNITS	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	69
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	135
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	886
20300100	CHANNEL EXCAVATION	CU YD	544
20400800	FURNISHED EXCAVATION	CU YD	2,989
20800150	TRENCH BACKFILL	CU YD	42
25000200	SEEDING, CLASS 2	ACRE	1.5
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	135
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	135
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	135
25100115	MULCH, METHOD 2	ACRE	1.5
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	300
28000305	TEMPORARY DITCH CHECKS	FOOT	412
28000400	PERIMETER EROSION BARRIER	FOOT	1,590
28000500	INLET AND PIPE PROTECTION	EACH	2
28100207	STONE RIPRAP, CLASS A4	TON	1,232
28200200	FILTER FABRIC	SQ YD	640
35100100	AGGREGATE BASE COURSE, TYPE A	TON	1,433
40300100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1,256
40300300	BITUMINOUS MATERIALS (COVER AND SEAL COATS)	GALLON	3,197
40300500	COVER COAT AGGREGATE	TON	77
40300600	SEAL COAT AGGREGATE	TON	39
50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1
50100400	REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1
50104400	CONCRETE HEADWALL REMOVAL	EACH	2
50105220	PIPE CULVERT REMOVAL	FOOT	40
50200100	STRUCTURE EXCAVATION	CU YD	74
50200300	COFFERDAM EXCAVATION	CU YD	219
50201121	COFFERDAM (TYPE 2) (LOCATION-1)	EACH	1
50201122	COFFERDAM (TYPE 2) (LOCATION-2)	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	104.6
50300280	CONCRETE ENCASEMENT	CU YD	3.6
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	3,061
50800105	REINFORCEMENT BARS	POUND	9,220
50900205	STEEL RAILING, TYPE S1	FOOT	258
51201400	FURNISHING STEEL PILES HP10X42	FOOT	502
51202305	DRIVING PILES	FOOT	152
51203400	TEST PILE STEEL HP10X42	EACH	2
51500100	NAME PLATES	EACH	1
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	34
542D1093	PIPE CULVERTS, CLASS D, TYPE 2 48"	FOOT	86
54215559	METAL END SECTIONS 24"	EACH	2
54215583	METAL END SECTIONS 48"	EACH	2
63000001	STEEL PLATE BEAM GUARD RAIL, TYPE A, 6 FOOT POSTS	FOOT	25
63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
67100100	MOBILIZATION	L SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2810206	STONE RIPRAP, CLASS A3 (SPECIAL)	TON	44
X2810208	STONE RIPRAP, CLASS A4 (SPECIAL)	TON	380
Z0065000	SETTING PILES IN ROCK	EACH	14
542D0220	PIPE CULVERTS, CLASS D, TYPE 1, 15"	FOOT	48

\* SPECIAL PROVISIONS  
Δ SPECIALTY ITEMS

FILE NAME =	USER NAME = RrkG	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>STANDARDS, GENERAL NOTES &amp; SUMMARY OF QUANTITIES</b>	C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6:\509213\GND\ Sheets\9013-General Note.dgn		DRAWN -	REVISED -			12	09-00267-00-BR	SHELBY	24	2
PLOT SCALE = 10,000 / 1"		CHECKED -	REVISED -			CONTRACT No. 95700				
PLOT DATE = 1/2/2013		DATE -	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

TREE REMOVAL SCHEDULE					
LOCATION	OFFSET	RT/LT	20100110	20100210	20100500
			TREE REMOVAL (6 TO 15 UNITS DIA) (UNIT)	TREE REMOVAL (OVER 15 UNITS DIA) (UNIT)	TREE REMOVAL, ACRES (ACRE)
9+41	35'	LT		21	
9+43	36'	RT			
9+51	36'	RT			
9+47	33'	LT		46	
9+78	26'	LT	12		
9+80	29'	LT	12		
10+00	37'	LT			
10+01	46'	LT			
10+11	39'	RT			
10+16	30'	RT		30	
10+21	56'	LT			
10+72	30'	LT		18	
10+74	29'	LT	10		
14+54	30'	RT	15		
14+55	32'	RT		18	
14+80	31'	RT	8		
14+81	32'	RT	12		
10+80	12+20	LT			0.022
10+80	13+05	RT			0.014
12+78	13+30	LT			0.02
13+15	14+25	RT			0.044
TOTALS			69	136	0.100
USE			69	135	0.1

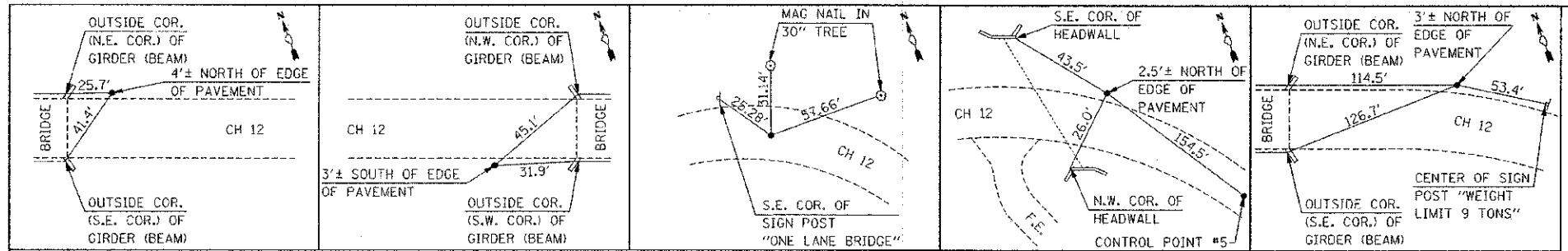
EROSION CONTROL SCHEDULE														
STATION	TO	STATION	LT/RT	AVG	DITCH	DROP	1 DITCH	DITCH	28000305	28000400	28000500	X2810206	X2810208	
				DITCH										LENGTH
				(%)	(FOOT)	(FOOT)	PER 2 FT	(EACH)	(FOOT)	(FOOT)	(EACH)	(TON)	(TON)	
5+40			LT											
13+66			RT											
2+50		9+50	RT							720				
5+75		9+50	LT							395				
10+80		12+80	LT							175				
14+00		17+00	RT							300				
7+65			LT				1	1	15					
8+50		9+75	LT	0.40%	125	0.50	0.3	1	15					
10+70		11+50	RT	3.50%	80	2.80	1.4	2	30			43.16		
11+80		12+50	RT	0.40%	100	0.40	0.2	0	0					
12+82		13+22	LT	0.00%	40	0.00	0	0						52.27
13+20		13+80	RT	10.00%	40	4.00	2	2	32					28.90
13+60		13+70	RT	0.00%	10	0.00	0	0						23.33
13+70		14+00	RT	15.00%	30	4.50	2.3	2	32					21.67
14+00		17+00	RT	10.00%	300	30.00	15	15	240					216.74
17+00		17+50	RT	9.60%	50	4.80	2.4	3	48					36.12
TOTAL									412	1,590	2	43.16	379.03	
USE									412	1,590	2	44	380	

PAVING SCHEDULE											
STA	TO	STA	LT/RT	AREA	DEPTH	WIDTH	35100100	40300100	40300300	40300500	40300600
				FROM CAD			AGGREGATE	BITUMINOUS	BITUMINOUS	COVER COAT	SEAL COAT
				(SQ FT)	(INCH)	(FOOT)	(TON)	(GALLON)	(GALLON)	(TON)	(TON)
C.H. 12											
2+50.00		9+30.00	LT & RT		8	20	688.4	623.3	1585.7	37.8	18.9
10+80.00		17+50.00	LT & RT		8	20	688.5	632.5	1610.0	38.3	19.2
F.E.											
6+63.00			LT	661	6		25.1				
P.E.											
12+92.00			RT	531	6		20.2				
TOTALS							1,432.2	1,255.8	3196.7	76.1	38.1
USE							1,433	1,256	3,197	77	39

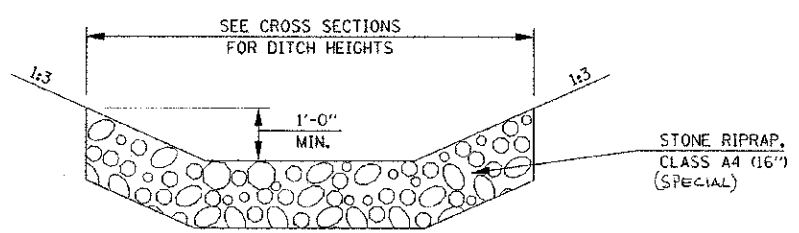
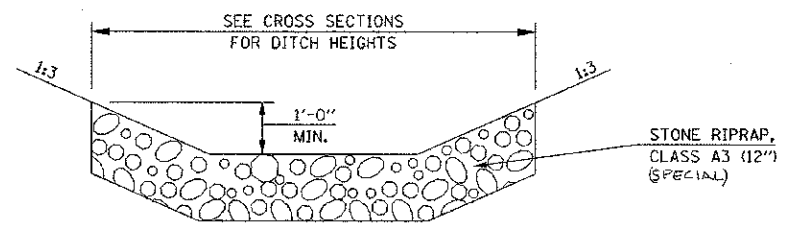
SEEDING SCHEDULE												
STA	TO	STA	LT/RT	AREA (CALC'D. IN CADD)			25000200	25000400	25000500	25000600	25100115	26000250
				SF = SLOPE FACTOR	SEEDING,	NITROGEN	PHOSPHORUS	POTASSIUM	MULCH,	TEMP.		
				(SQ FT)	(SF)	(ACRE)	(ACRE)	(POUND)	(POUND)	(POUND)	(ACRE)	(POUND)
(2 APPS)												
2+50		9+30	RT	11,370	1.054	0.29	0.29	26.1	26.1	26.1	0.29	58
2+50		9+30	LT	15,010	1.054	0.37	0.37	33.3	33.3	33.3	0.37	74
10+60		17+50	RT	20,220	1.054	0.49	0.49	44.1	44.1	44.1	0.49	98
10+60		17+50	LT	14,160	1.054	0.35	0.35	31.5	31.5	31.5	0.35	70
TOTALS							1.50	135.0	135.0	135.0	1.50	300
USE							1.5	135	135	135	1.5	300

DRAINAGE SCHEDULE										
STA	LT/RT	20800150	50100400	50104400	50105220	542D0229	542D1093	54215559	54215583	542D0220
		TRENCH	REMOVAL OF	CONCRETE	PIPE	PIPE	PIPE	METAL END	METAL END	PIPE
		BACKFILL	EXISTING	HEADWALL	CULVERT	CULVERTS,	CULVERTS,	SECTIONS	SECTIONS	CULVERTS
		(CU YD)	STRUCTURES	REMOVAL	REMOVAL	CL. D, TY 1	CL. D, TY 2	24"	48"	CL. D, TY 1
			No. 2			24"	48"			15"
			(EACH)	(EACH)	(FOOT)	(FOOT)	(FOOT)	(EACH)	(EACH)	(FOOT)
5+39	AR	2.9			40		34			
13+30	AR	39.1	1	2			86		2	
14+20	RT									48
TOTALS		42	1	2	40	34	86	2	2	48

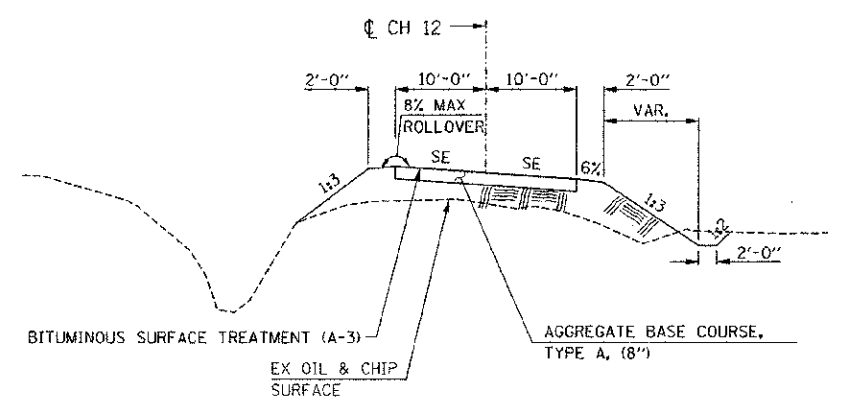
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Gr\589013\CADD Sheets\9813-Schedules.dwg		DRAWN -	REVISED -			12	09-00267-00-BR	SHELBY	24	3	
PLOT SCALE = 1/8"=1'-0"		CHECKED -	REVISED -			CONTRACT No. 95700					
PLOT DATE = 1/2/2013		DATE -	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					



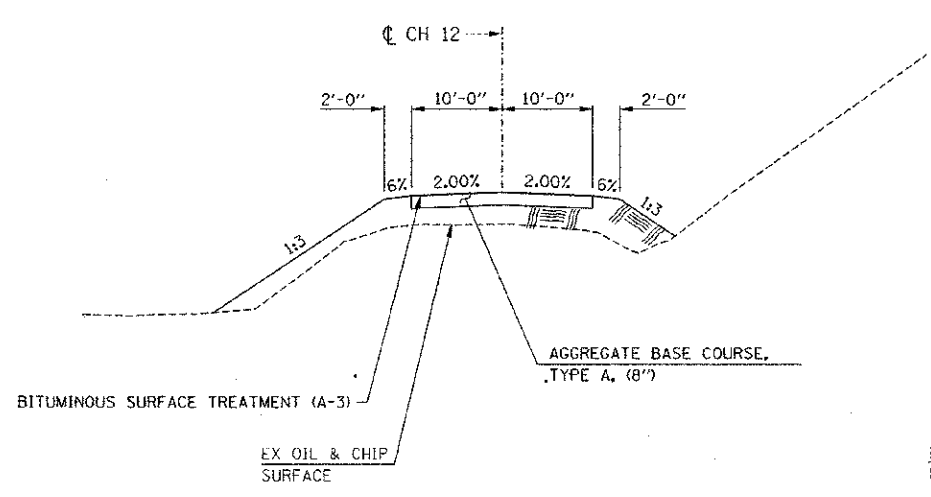
C.P. #1	C.P. #2	C.P. #5	C.P. #7	C.P. #753
STA 10+72.55, 7.53' LT	STA 9+21.79, 13.03' RT	STA 14+99.48, 0.95' LT	STA 13+46.65, 16.79' LT	STA 11+60.93, 15.58' LT
SET 5/8" REBAR	SET 5/8" REBAR	SET 5/8" REBAR	SET 5/8" REBAR	SET 5/8" REBAR
X COOR.= 5152.16	X COOR.= 4999.995	X COOR.= 5572.79	X COOR.= 5425.40	X COOR.= 5240.84
Y COOR. = 5000.77	Y COOR. = 5000.00	Y COOR. = 4927.59	Y COOR. = 4974.04	Y COOR. = 4997.26



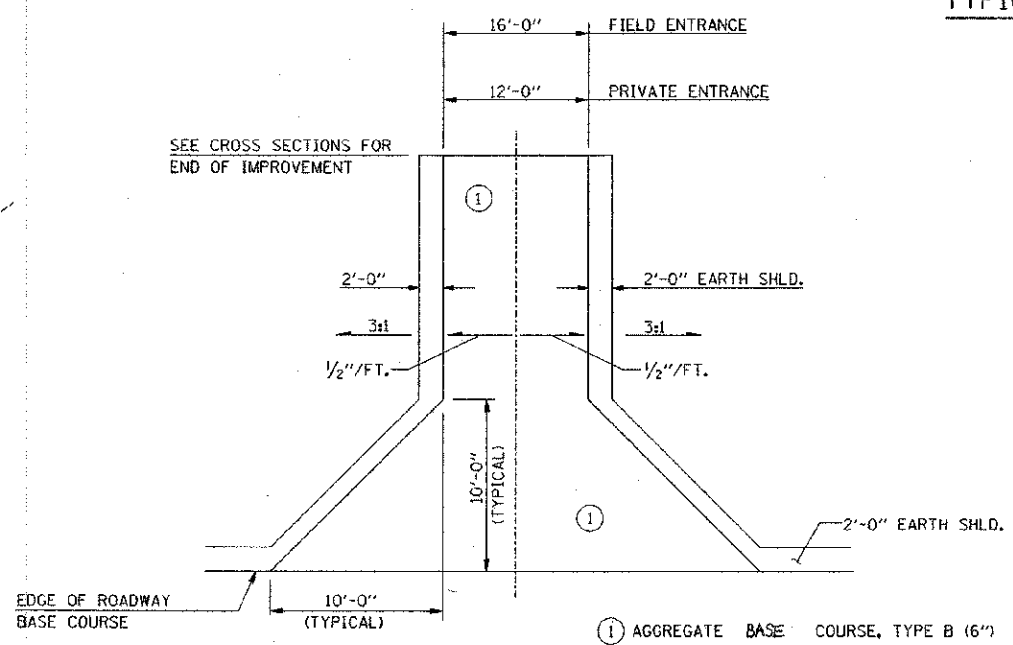
TYPICAL STONE RIPRAP - DITCH LINING  
(SEE SHEET 3 OF 24 FOR SCHEDULE)



PROPOSED SUPERELEVATED TYPICAL SECTION CH 12



PROPOSED TYPICAL SECTION CH 12



ENTRANCE DETAIL

FILE NAME = G:\S09013\CADD Sheets\9013-Typical Sections.dgn	USER NAME = RrakG	DESIGNED -	REVISED -
PLOT SCALE = 10,0000' / 1" =		DRAWN -	REVISED -
PLOT DATE = 1/2/2013		CHECKED -	REVISED -
		DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS, ENTRANCE DETAIL,  
RIPRAP DETAIL & LAYOUT TIES

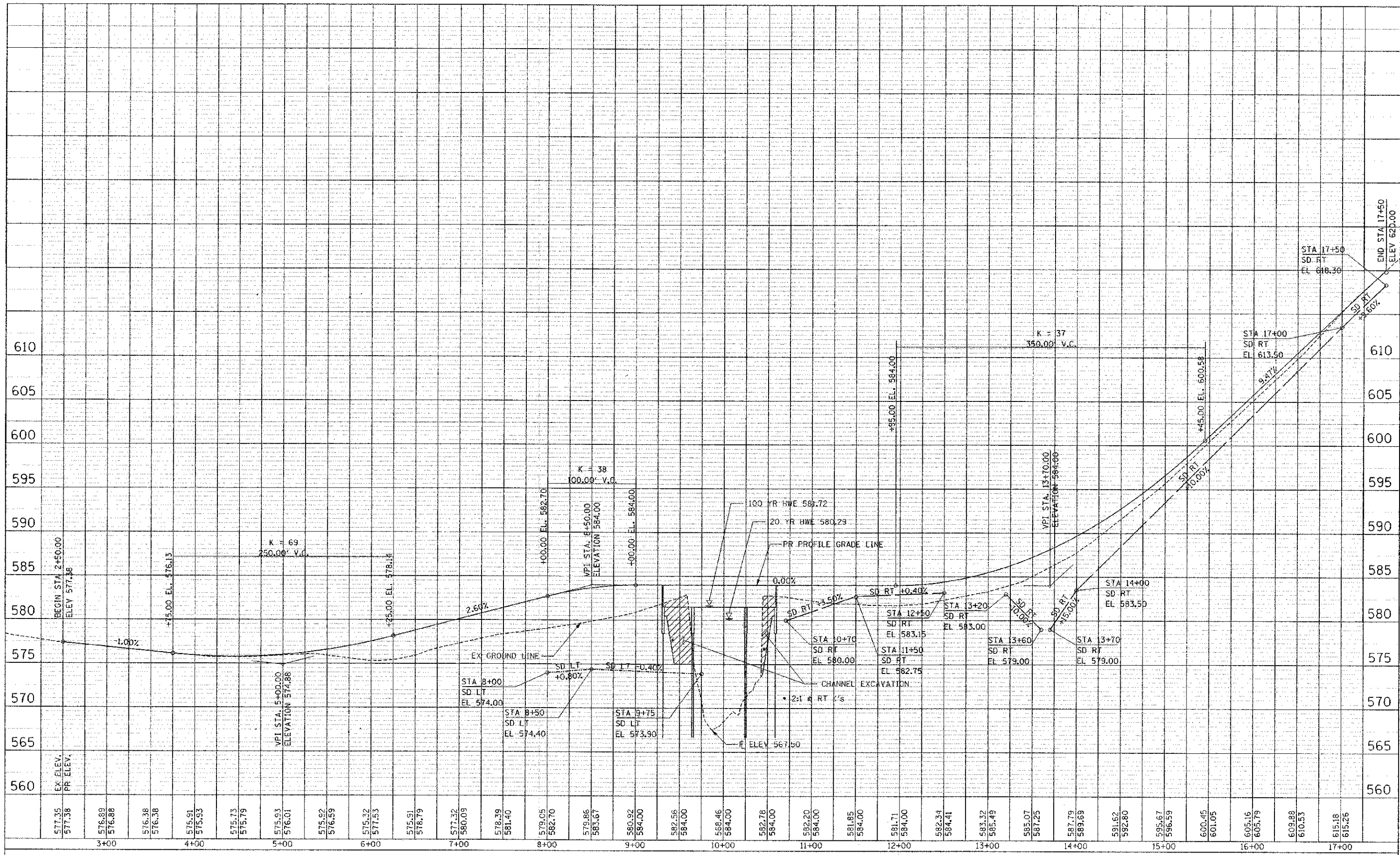
SCALE: SHEET NO. OF SHEETS STA. TO STA.

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00267-00-BR	SHELBY	24	4
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT No. 95700	



DATE	
BY	
PLAN	
NO. OF SHEETS	
NO. OF SHEETS CHECKED	
NO. OF SHEETS REVISIONS	
NO. OF SHEETS APPROVED	
NO. OF SHEETS REVISIONS	
NO. OF SHEETS APPROVED	

DATE	
BY	
PROFILE	
NO. OF SHEETS	
NO. OF SHEETS CHECKED	
NO. OF SHEETS REVISIONS	
NO. OF SHEETS APPROVED	
NO. OF SHEETS REVISIONS	
NO. OF SHEETS APPROVED	



FILE NAME = G:\S08\13\CA00 Sheets\013-Profile.dgn  
 USER NAME = RickG  
 DESIGNED -  
 DRAWN -  
 CHECKED -  
 DATE -

DESIGNED -	REVISD -
DRAWN -	REVISD -
CHECKED -	REVISD -
DATE -	REVISD -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**ROADWAY PROFILE  
 CH 12 OVER BECKS CREEK**

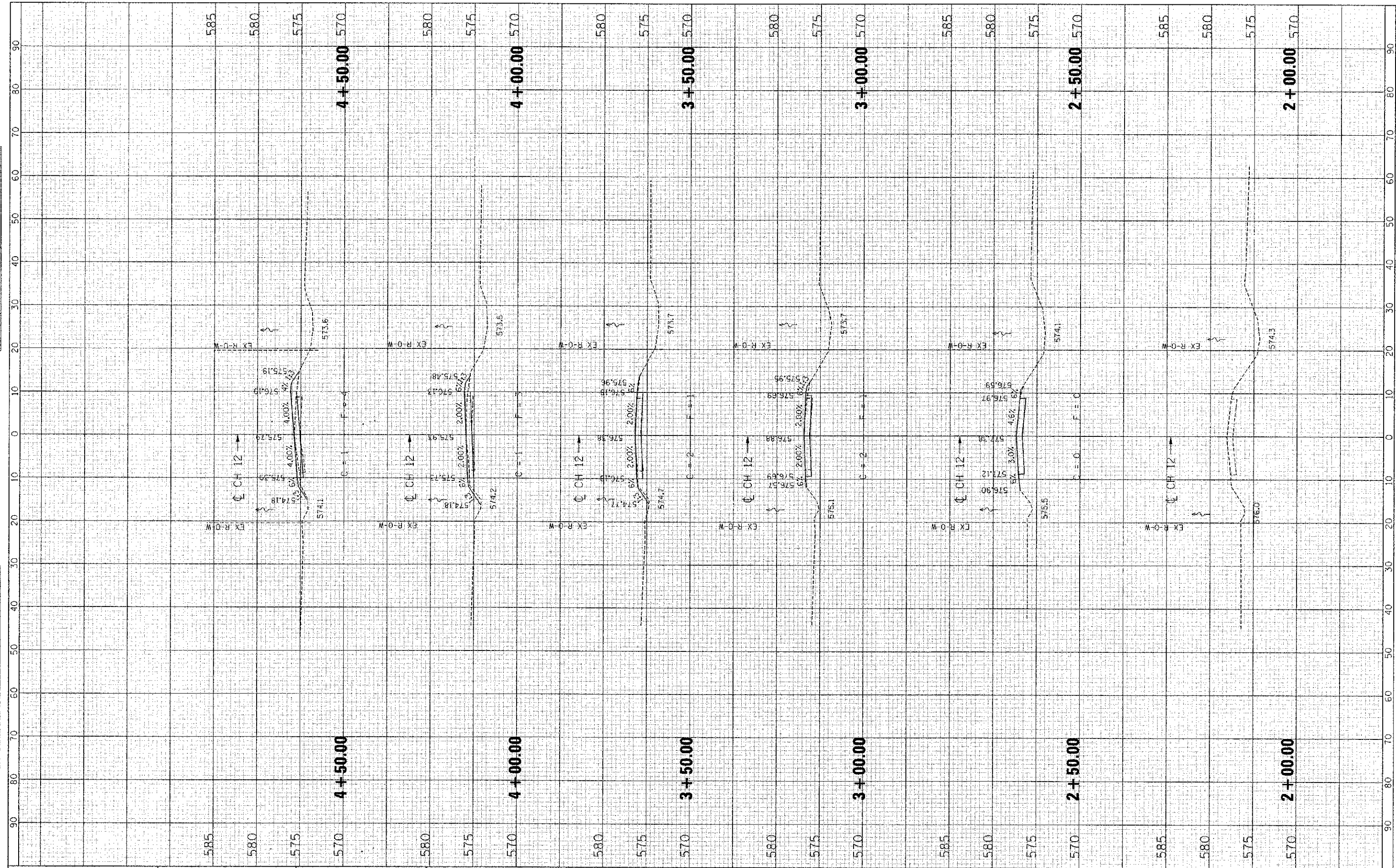
C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00267-00-BR	SHELBY	24	6
CONTRACT No. 95700				
ILLINOIS FED. AID PROJECT				

SCALE: SHEET NO. OF SHEETS STA. TO STA.



FINAL SURVEY	DATE
SURVEYED	
NOTED	
PLOTTED	
AREAS CHECKED	

ORIGINAL SURVEY	DATE
SURVEYED	
NOTED	
PLOTTED	
AREAS CHECKED	



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USER NAME = RucG	DESIGNED -	REVISED -
PLOT SCALE = 10.0000' / 1"	DRAWN -	REVISED -
PLOT DATE = 1/2/2013	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS - CH 12**

SCALE: SHEET NO. OF SHEETS STA. 2+00.00 TO STA. 4+50.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00000-00-BR	SHELBY	24	7
ILLINOIS FED. AID PROJECT			CONTRACT No. 95700	





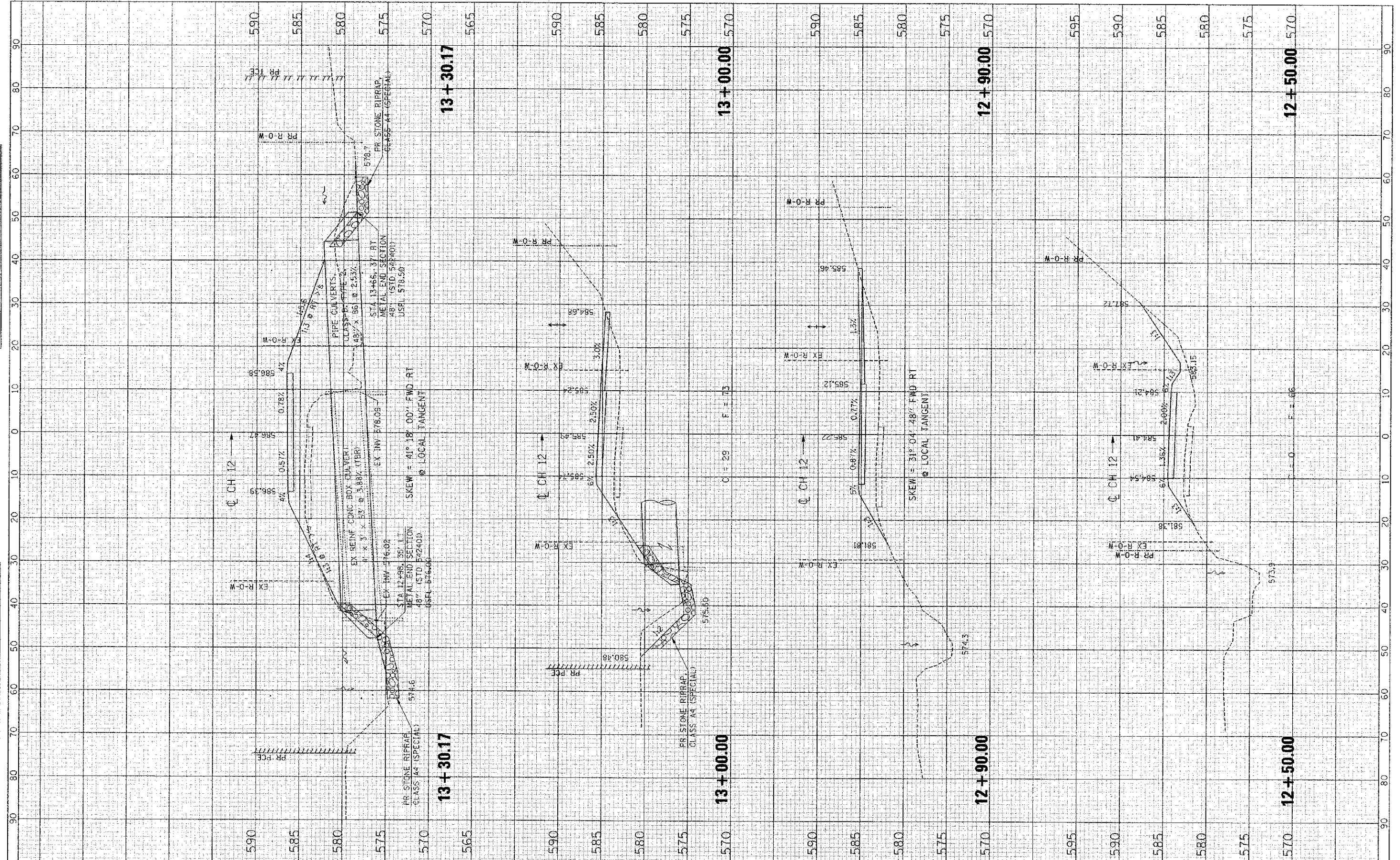






FINAL	SURVEYED	BY	DATE
REVISED	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		

ORIGINAL	SURVEY	BY	DATE
REVISED	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		



FILE NAME =  
 C:\S09013\CADD Sheets\013-XS\_CH12.dwg

USER NAME = RuckG	DESIGNED -	REVISED -
PLOT SCALE = 10.0000' / 1"	DRAWN -	REVISED -
PLOT DATE = 1/2/2013	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

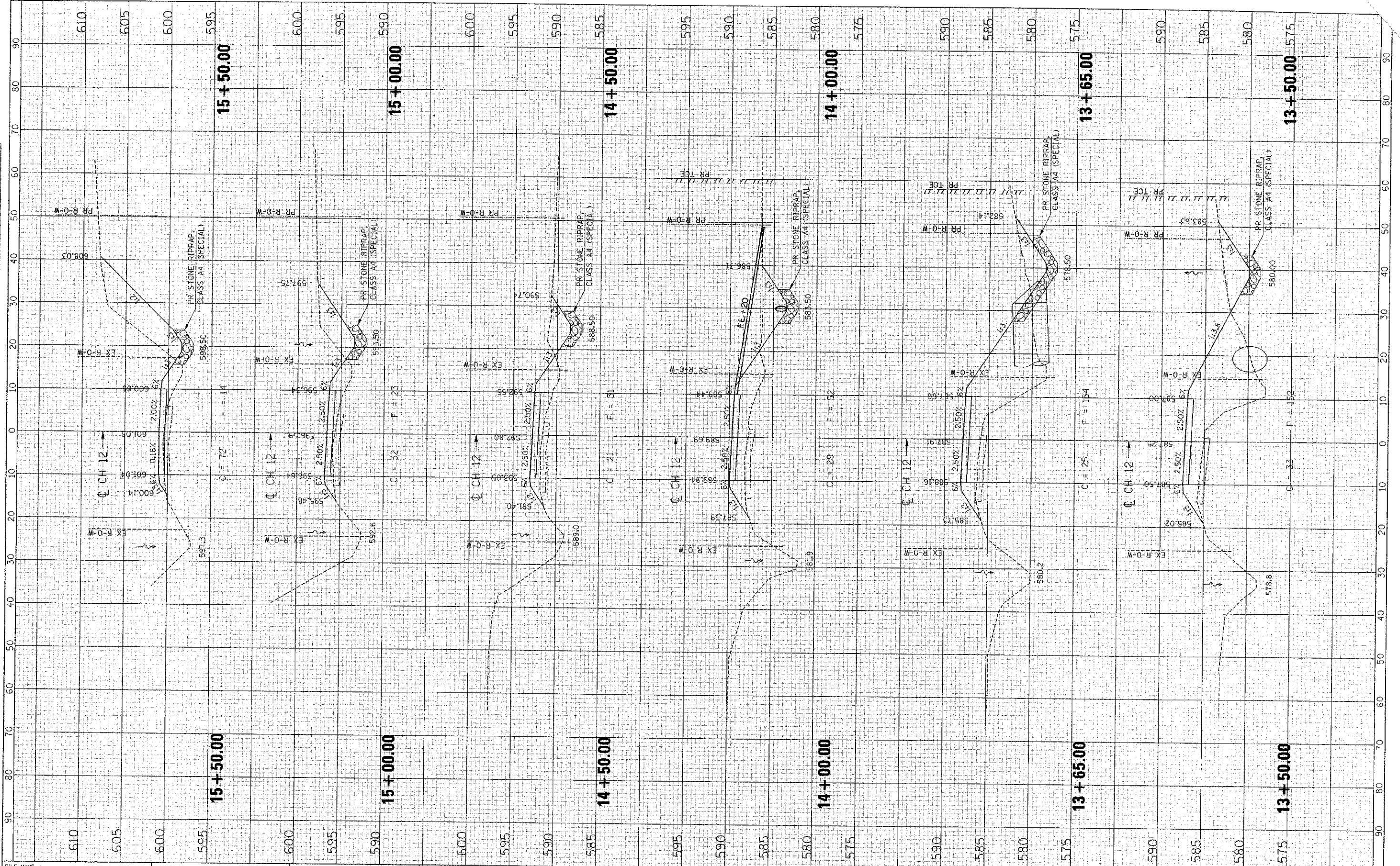
**CROSS SECTIONS - CH 12**

SCALE: SHEET NO. OF SHEETS STA. 12+50.00 TO STA. 13+30.17

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00000-00-BR	SHELBY	24	11
CONTRACT No. 95700			ILLINOIS FED. AID PROJECT	

DATE	
BY	
SURVEY	
FINAL	
NO. CHECKED	
AREAS	
TEMPLATE	
NOTE BOOK	
NO.	

NO.	
AREAS	
TEMPLATE	
NOTE BOOK	
NO.	
NO.	



FILE NAME: D:\S99613\CADD\Shosta\9013-XS\_CH12.dgn

USER NAME = Rukig	DESIGNED -	REVISED -
PLOT SCALE = 1/8" = 1'	DRAWN -	REVISED -
PLOT DATE = 1/2/2013	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS - CH 12**

SCALE: SHEET NO. OF SHEETS STA. 13+50.00 TO STA. 15+50.00

C.H. RTE. 12	SECTION 09-00000-00-BR	COUNTY SHELBY	TOTAL SHEETS 24	SHEET NO. 12
CONTRACT No. 95700			ILLINOIS FED. AID PROJECT	





B.M. No. 1 - Disk in concrete abutment stamped "SCHD",  
NW corner of bridge, sta. 20+21.12. 12.79' LT  
Elev. 572.63

Existing structure SN 087-3302 is a two span steel beam bridge  
with an oil & chip surface.  
The structure measures 83'-0" bk to bk of abutments,  
has a 0'-0" clear span and a 18'-0" clear deck width.  
The substructure is closed timber abutments on timber piles  
with and timber planking walls.  
Skew = 20° Fwd. Lt.

**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	E. Abut.
	578.77	565.60	571.16	578.77

BECK'S CREEK  
BUILT 20\_\_ BY  
SHELBY COUNTY  
SEC. 09-00267-00-BR  
CH 12 STA. 9+95.00  
LOADING HL-93  
STR. NO. 087-3574

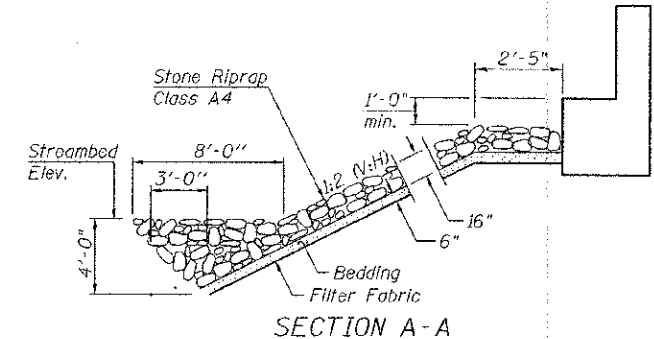
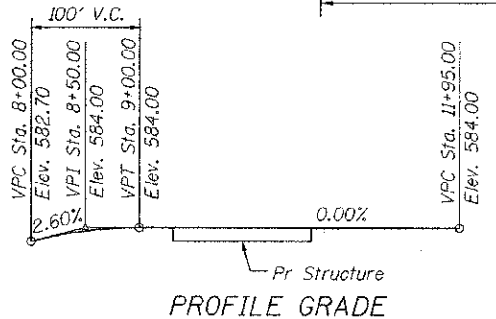
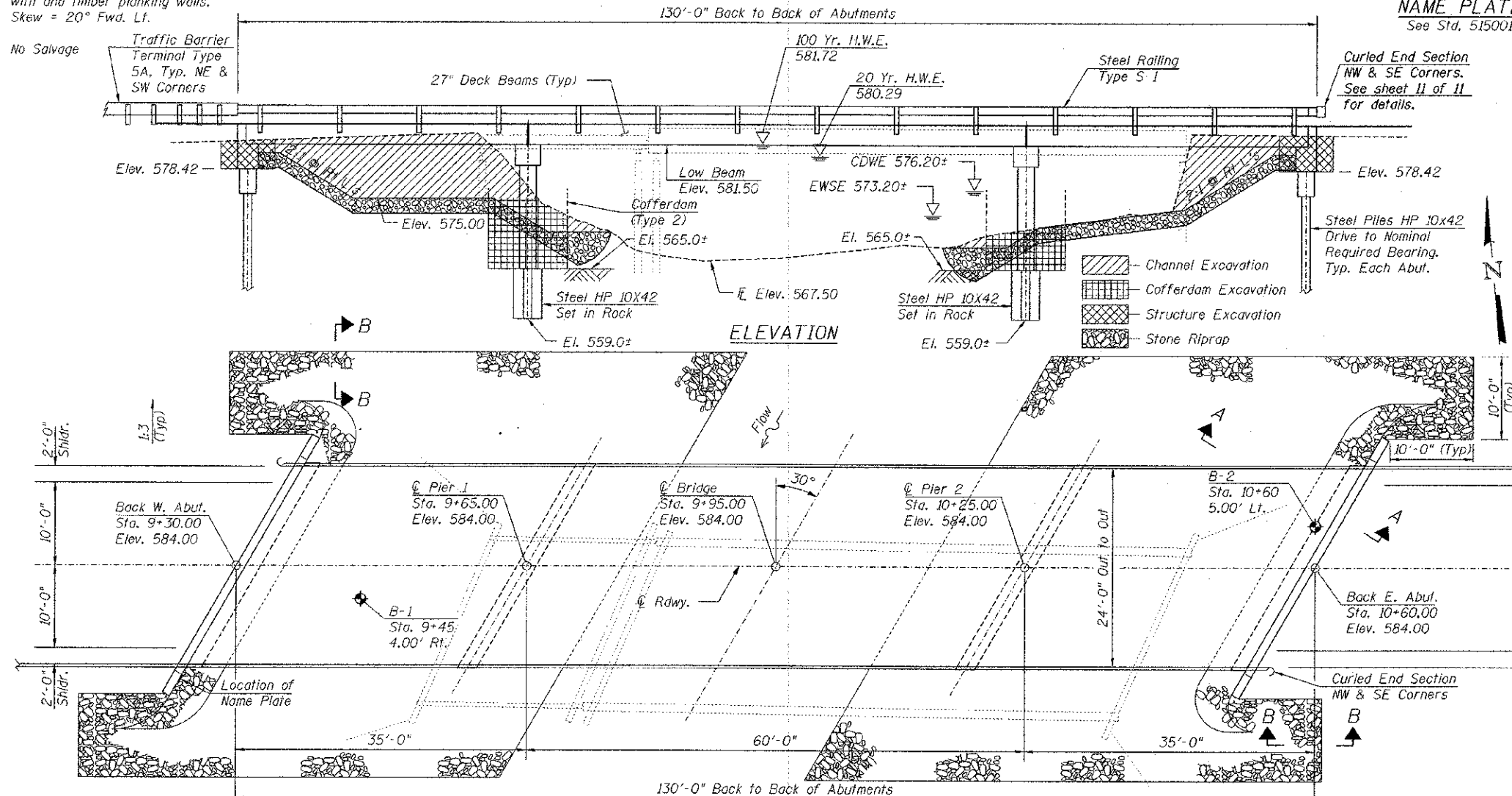
**WATERWAY INFORMATION**

Drainage Area	33.70	Sq. Mi.
Required Opening (20 yr.)	776	Sq. Ft.
Provided Opening	839	Sq. Ft.
Present Opening	839	Sq. Ft.
20 yr. Discharge	5,620	cfs
100 yr. Discharge	8,370	cfs
Created head at Bridge (100 yr.)	< 1.0	Ft.
Created Head 1000' upstream (100 yr.)	< 0.5	Ft.

**NAME PLATE**  
See Std. 515001

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
CHANNEL EXCAVATION	CU YD		544	544
STONE RIPRAP, CLASS A4	TON		1,232	1,232
FILTER FABRIC	SQ YD		640	640
REMOVAL OF EXISTING STRUCTURES No. 1	EACH		1	1
STRUCTURE EXCAVATION	CU YD		74	74
CONCRETE STRUCTURES	CU YD		104.6	104.6
CONCRETE ENCASEMENT	CU YD		3.6	3.6
PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	3,061		3,061
REINFORCEMENT BARS	POUND		9,220	9,220
STEEL RAILING, TYPE S1	FOOT	258		258
FURNISHING STEEL PILES HP10X42	FOOT		502	502
DRIVING PILES	FOOT		152	152
TEST PILE STEEL HP10X42	EACH		2	2
NAME PLATES	EACH		1	1
SETTING PILES IN ROCK	EACH		14	14
COFFERDAM EXCAVATION	CU YD		219	219
COFFERDAM (TYPE 2) (LOCATION 1)	EACH		1	1
COFFERDAM (TYPE 2) (LOCATION 2)	EACH		1	1

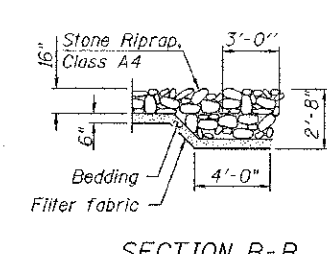


**DESIGN SPECIFICATIONS**  
AASHTO LRFD Bridge Design Specifications, 5th Edition with 2010 Interims

**DESIGN STRESSES**

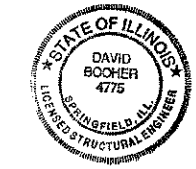
FIELD UNITS	PRECAST UNITS
f'c = 3,500 psi	f'c = 6,000 psi
fy = 60,000 psi (Reinforcement)	f'ci = 5,000 psi
	f's = 270,000 psi
	f'si = 189,000 psi

**LOADING HL-93**  
Allow 50#/sq. ft. for future wearing surface.



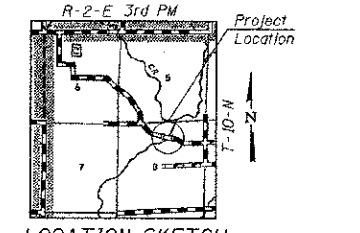
**GENERAL NOTES**

See Proposal for Boring Data.  
The contractor shall drive one Test Pile at a permanent location at each Abutment. The Test Piles shall be driven to 110% of the Nominal Required Bearing specified in production locations at the structures specified or approved by the Engineer before ordering the remainder of the piles.  
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.  
Reinforcement bars designated (E) shall be epoxy coated.  
Seal coat thickness design is based on the Estimated Water Surface Elevation (EWSE). Cofferdam design details and proposed changes in seal coat thickness shall be submitted to the Engineer for approval with the cofferdam design.



David Booher, Illinois S.E. 081-004775 Date Expires 11-30-2014  
1-2-2013

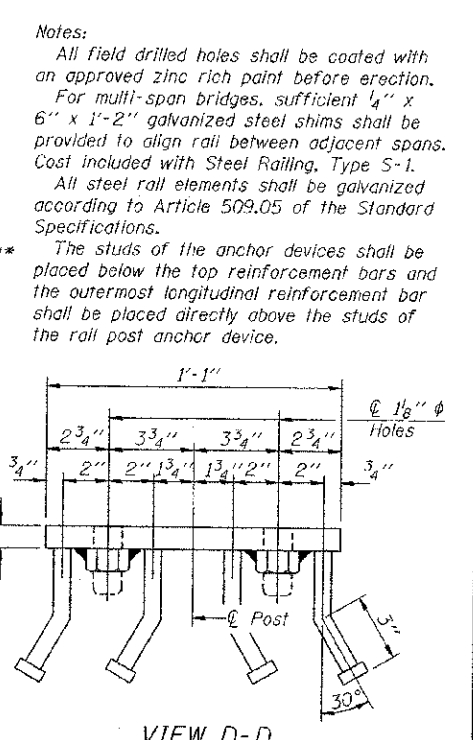
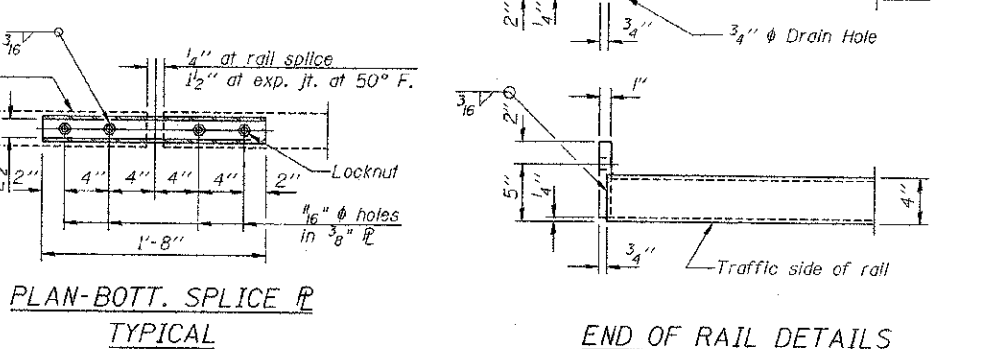
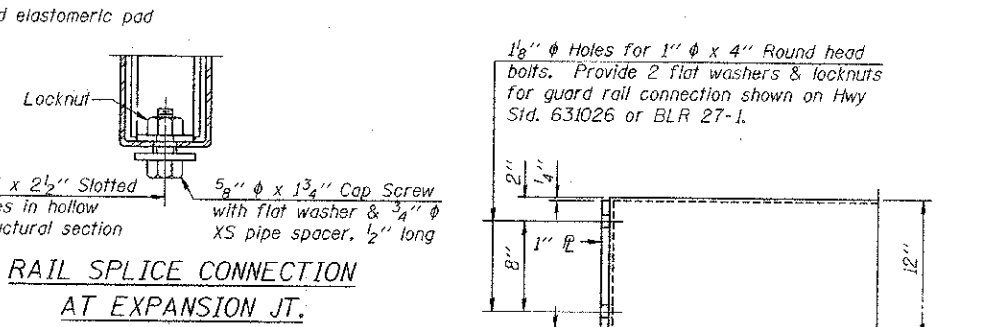
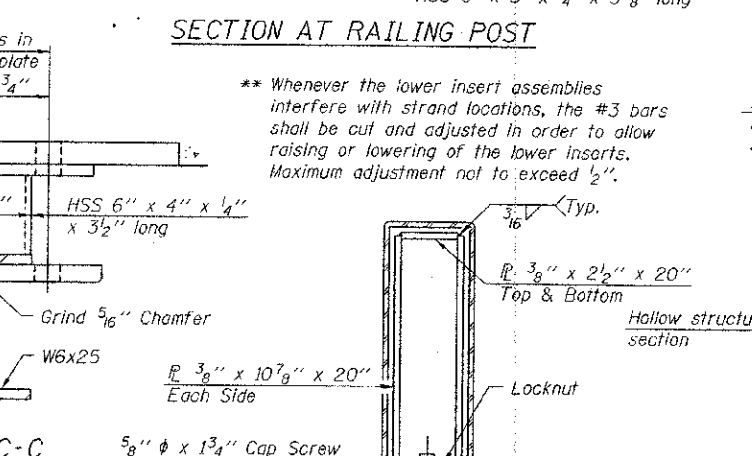
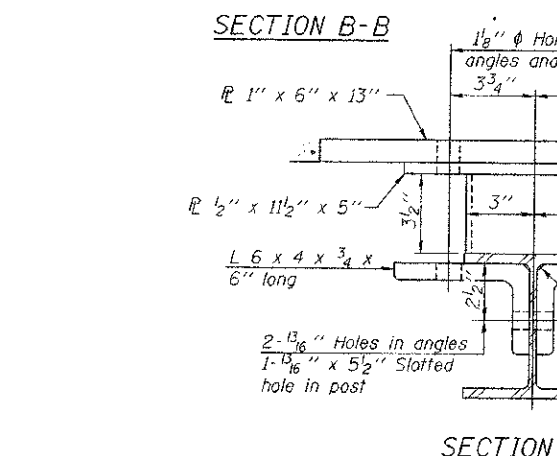
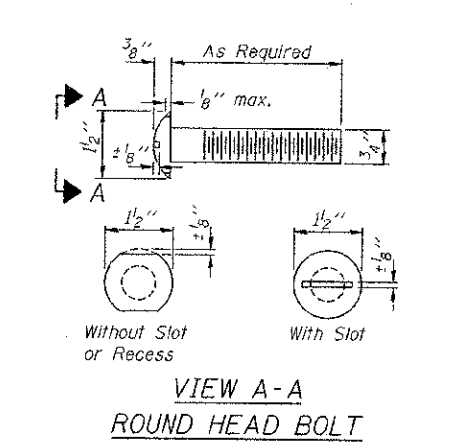
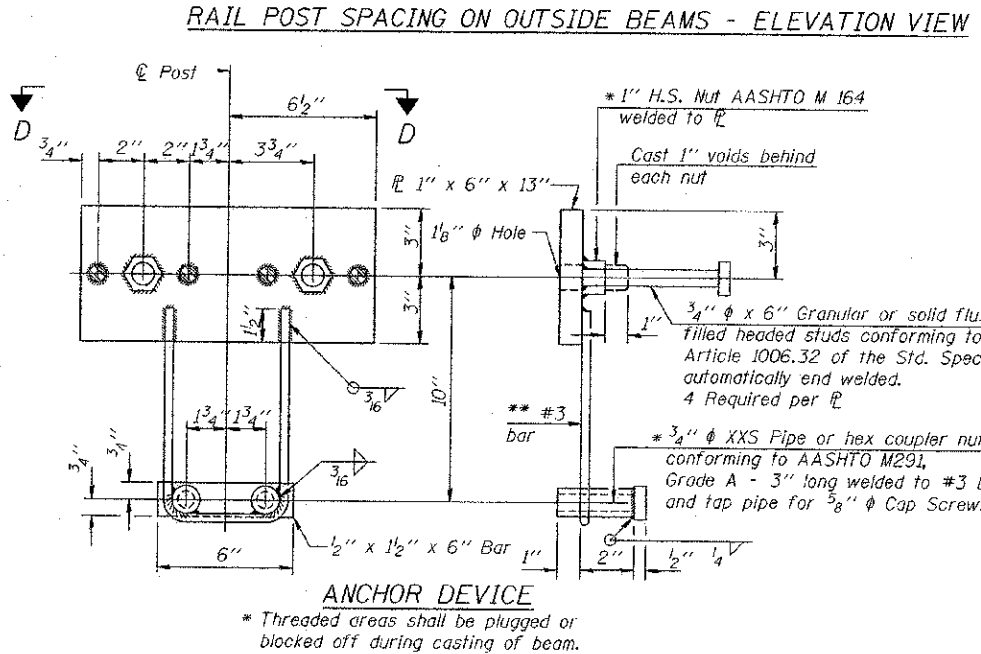
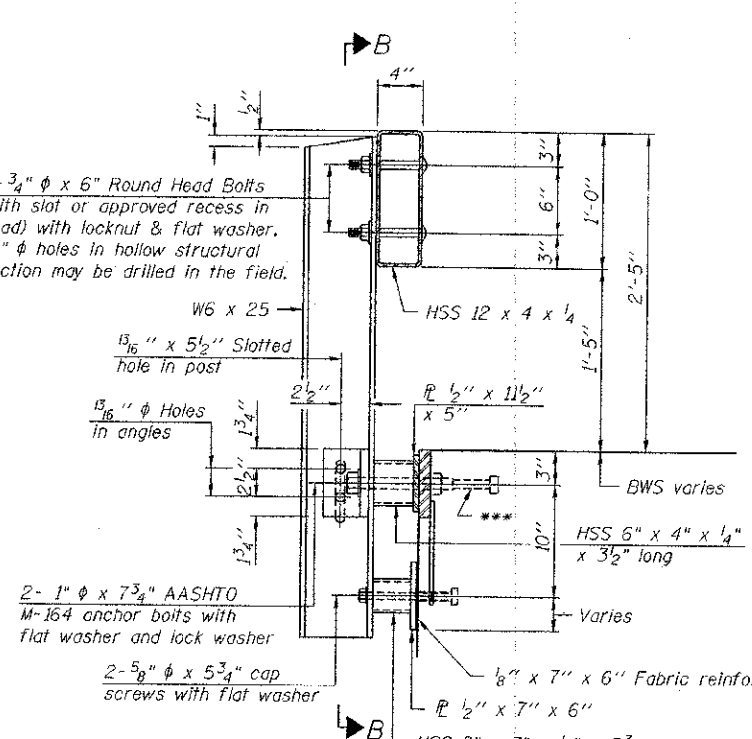
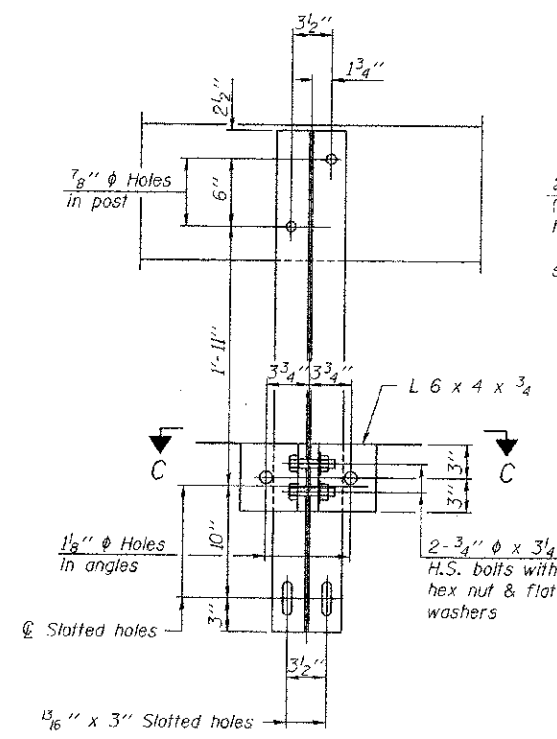
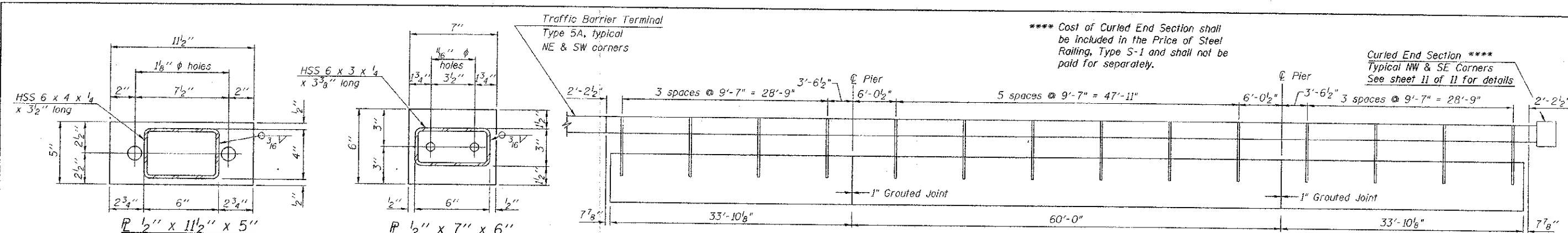
I certify that to the best of my knowledge, information, and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Bridge Design Specifications".



**ie consultants**  
IE CONSULTANTS, INC.  
8420 SOUTH SIXTH STREET RD  
SPRINGFIELD, ILLINOIS 62712  
TEL. (217) 529-8027  
FAX (217) 529-4543  
IESPRINGFIELD@IE-CONSULTANTS.COM  
WWW.IE-CONSULTANTS.COM

FILE NAME	USER NAME	DESIGNED	REVISIONS	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND DETAILS STRUCTURE NO. 087-3574	C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		SCD				12	09-00267-00-BR	SHELBY	24	14
		DRB								
		JEB								
		SCD								

SHEET NO. 1 OF 11 SHEETS  
CONTRACT NO. 95700  
ILLINOIS FED. AID PROJECT



**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	258

**ie** CONSULTANTS, INC.  
 6420 SOUTH SIXTH STREET RD  
 SPRINGFIELD, ILLINOIS 62712  
 TEL. (217) 529-8027  
 FAX (217) 529-4543  
 IESPRINGFIELD@IE-CONSULTANTS.COM  
 WWW.IE-CONSULTANTS.COM

R-23A 7-1-10 (10'-9" Maximum Post Spacing)

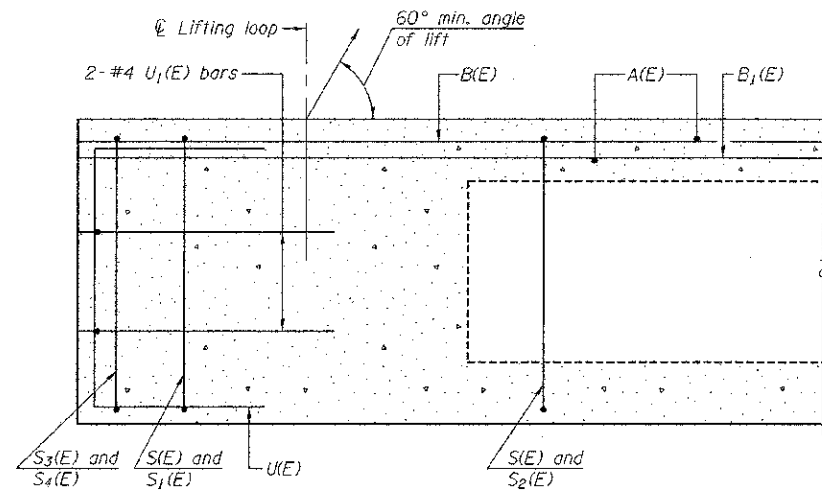
FILE NAME	USER NAME	DESIGNED	REVISIONS
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		DRB	
		JEB	
		SCD	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

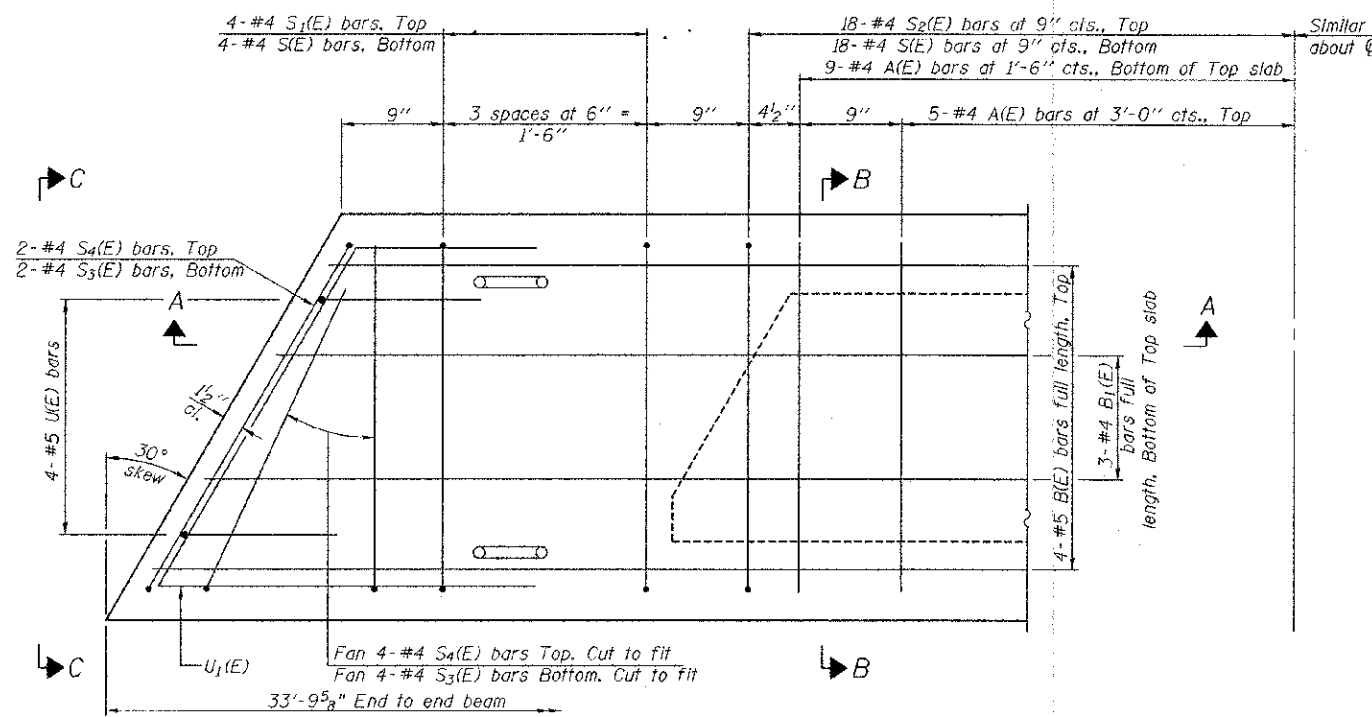
**STEEL RAILING, TYPE S-1**  
**STRUCTURE NO. 087-3574**  
 SHEET NO. 2 OF 11 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00267-00-BR	SHELBY	24	15

CONTRACT NO. 95700  
 ILLINOIS FED. AID PROJECT

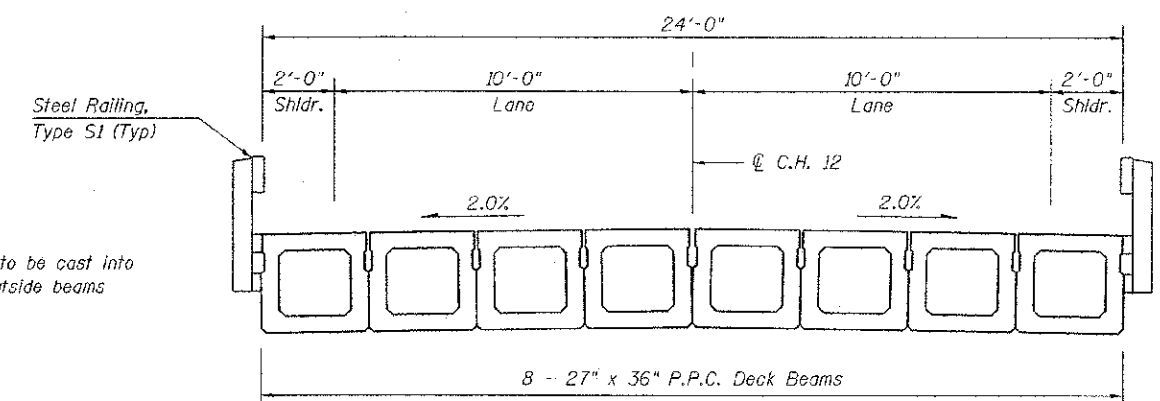


SECTION A-A



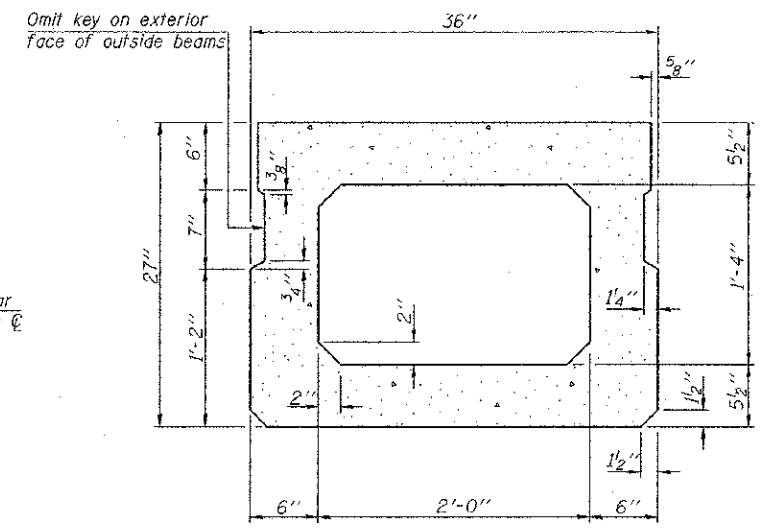
PLAN VIEW

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

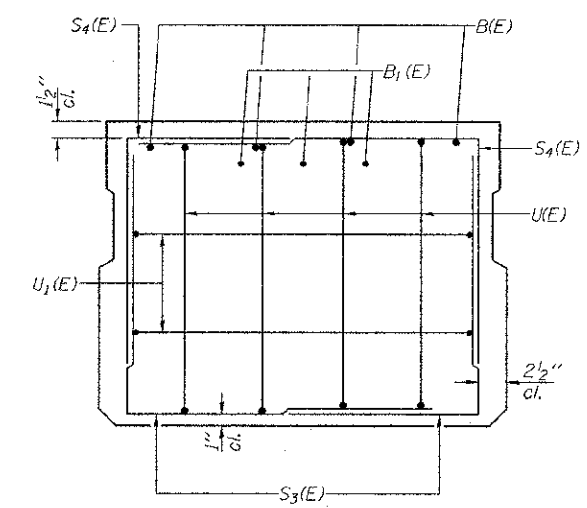


CROSS SECTION

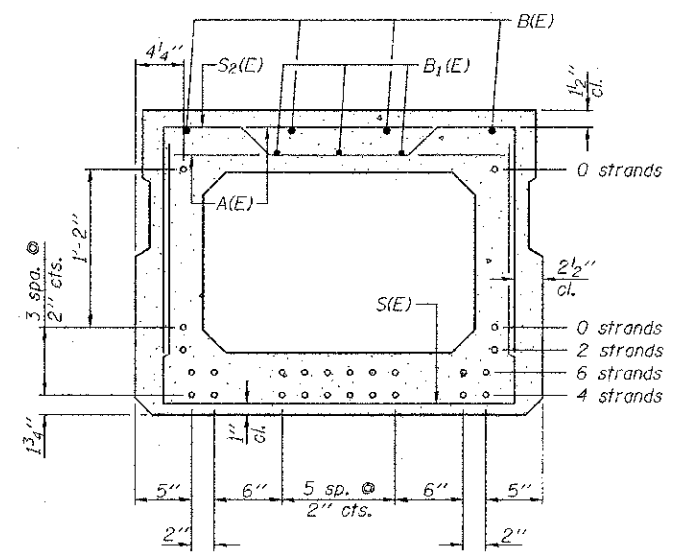
\* Rail Post Anchors to be cast into exterior face of outside beams



SECTION B-B (Showing dimensions)



VIEW C-C



SECTION B-B

(Showing reinforcement and permissible strand locations)  
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

MINIMUM BAR LAP  
#4 bar = 2'-0"  
#5 bar = 2'-6"

BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	28	#4	2'-7"	—
B(E)	4	#5	33'-3"	—
B1(E)	3	#4	33'-3"	—
S(E)	44	#4	6'-5"	⌈
S1(F)	8	#4	5'-11"	⌈
S2(E)	36	#4	6'-2"	⌈
S3(E)	12	#4	4'-7"	⌈
S4(E)	12	#4	4'-4"	⌈
U(E)	8	#5	4'-6"	⌈
U1(E)	4	#4	6'-10"	⌈

Note: See sheet 4 of 11 for additional details and Bill of Material.

PD-2736-L

7-1-10

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

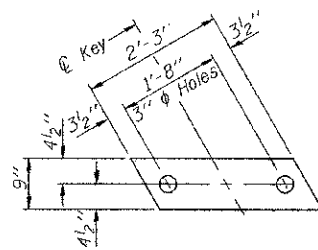
27" x 36" PPC DECK BEAM  
SPAN 1 & 3 - STRUCTURE NO. 087-3574

SHEET NO. 3 OF 11 SHEETS

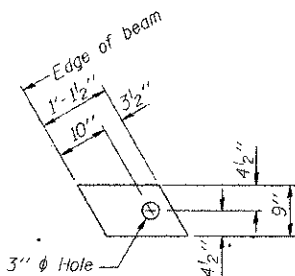
C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00267-00-BR	SHELBY	24	16

CONTRACT NO. 95700  
ILLINOIS FED. AID PROJECT





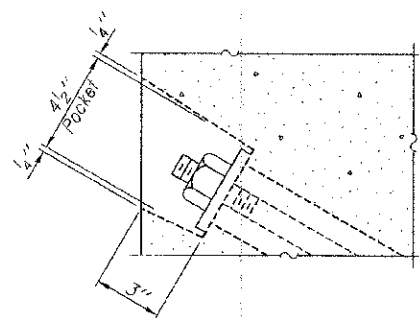
FABRIC BEARING PAD  
(Interior)



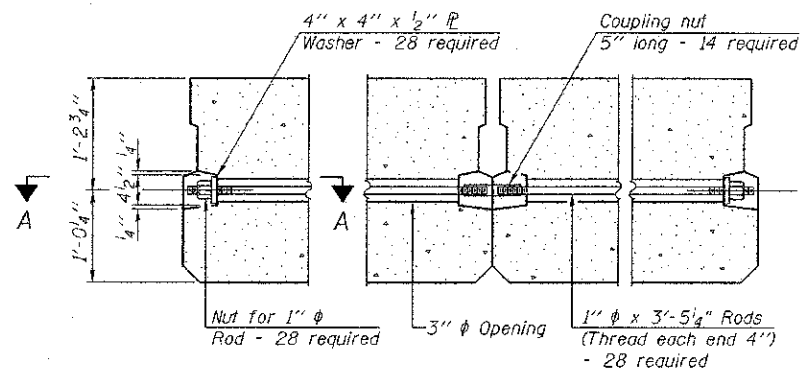
FABRIC BEARING PAD  
(Exterior)

FIXED

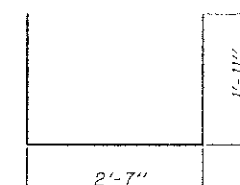
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



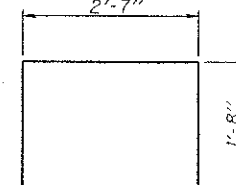
SECTION A-A



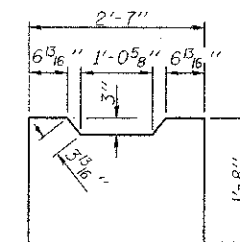
TYPICAL TRANSVERSE TIE ASSEMBLY



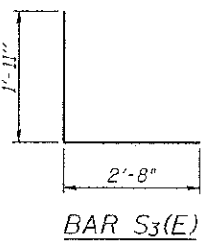
BAR S(E)



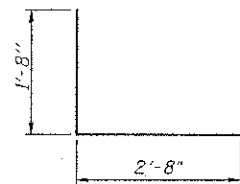
BAR S1(E)



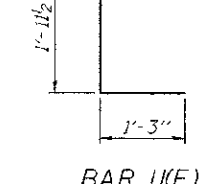
BAR S2(E)



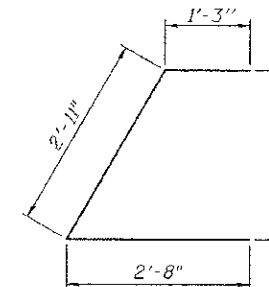
BAR S3(E)



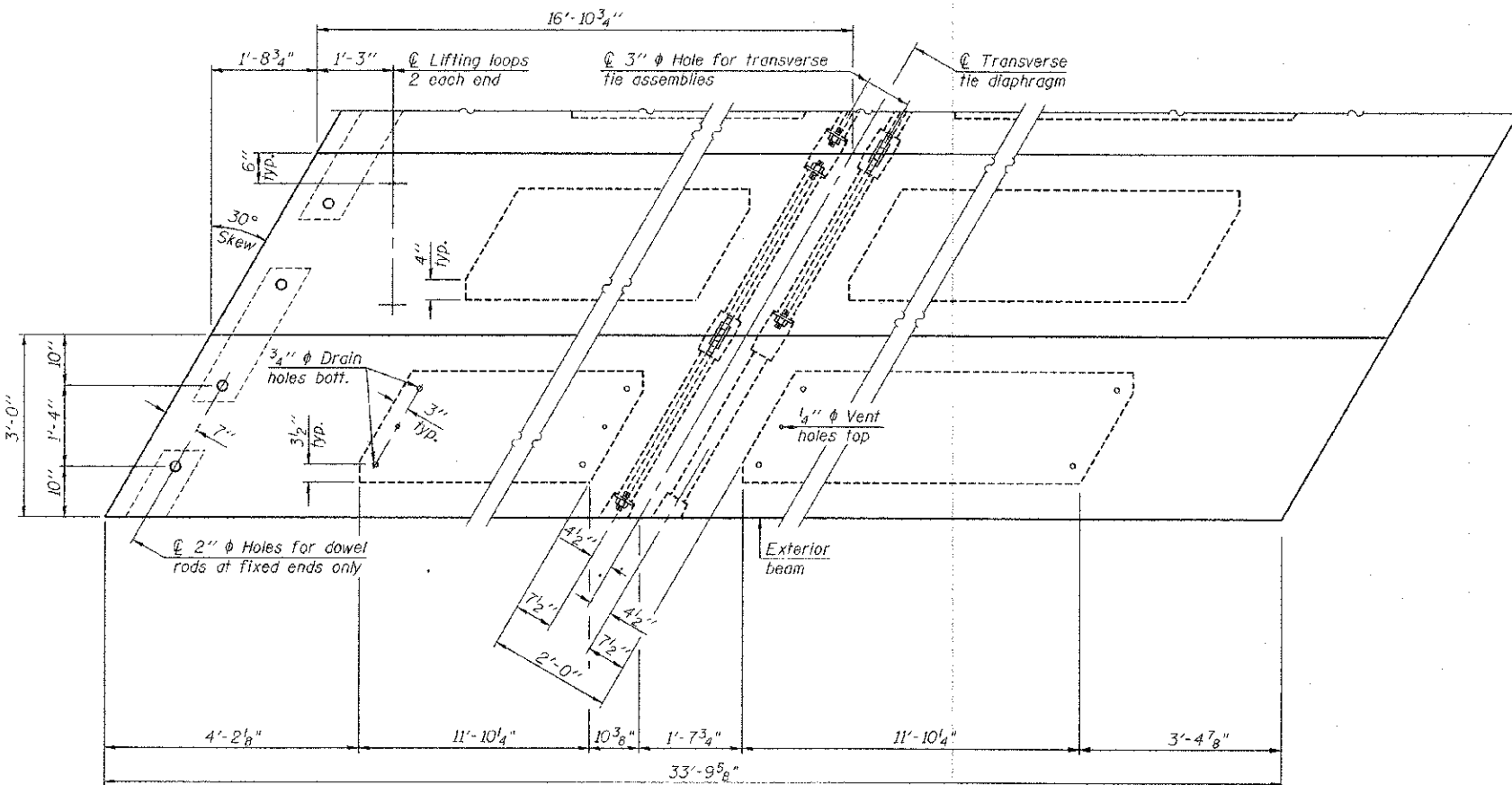
BAR S4(E)



BAR U(E)



BAR U1(E)

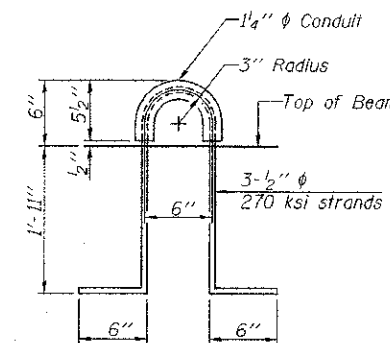


PLAN VIEW

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).  
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.  
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

Note: Connect beams in pairs with the transverse tie configuration shown.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,623
-------------------------------------------------	---------	-------

**ie** CONSULTANTS, INC.  
6420 SOUTH SIXTH STREET RD  
SPRINGFIELD, ILLINOIS 62712  
TEL. (217) 529-8027  
FAX (217) 529-4643  
IESPRINGFIELD@IE-CONSULTANTS.COM  
WWW.IE-CONSULTANTS.COM

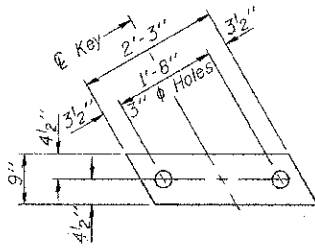
PD-2736-LD 7-1-10

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

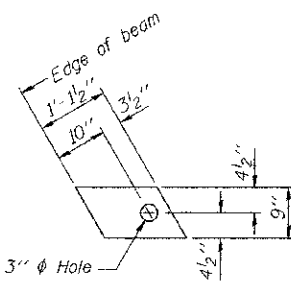
27" x 36" PPC DECK BEAM DETAILS  
SPANS 1 & 3 - STRUCTURE NO. 087-3574

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00267-00-BR	SHELBY	24	17
SHEET NO. 4 OF 11 SHEETS			CONTRACT NO. 95700	
ILLINOIS FED. AID PROJECT				





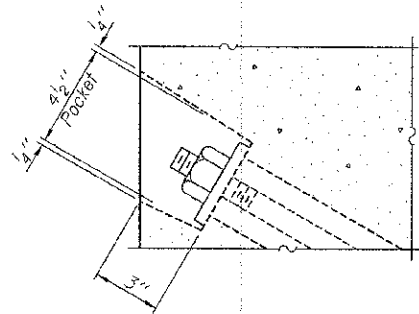
FABRIC BEARING PAD  
(Interior)



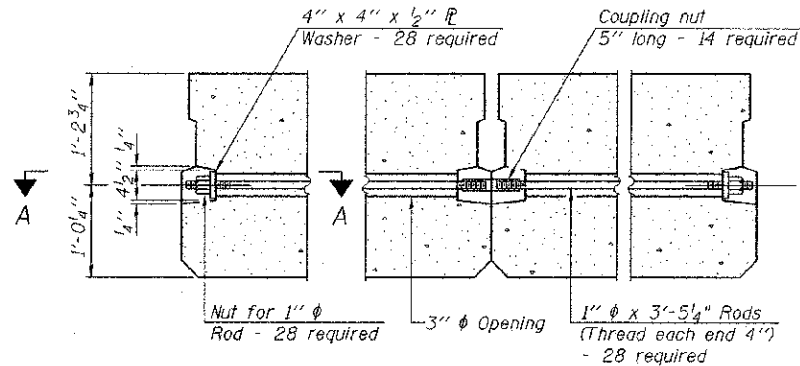
FABRIC BEARING PAD  
(Exterior)

**FIXED**

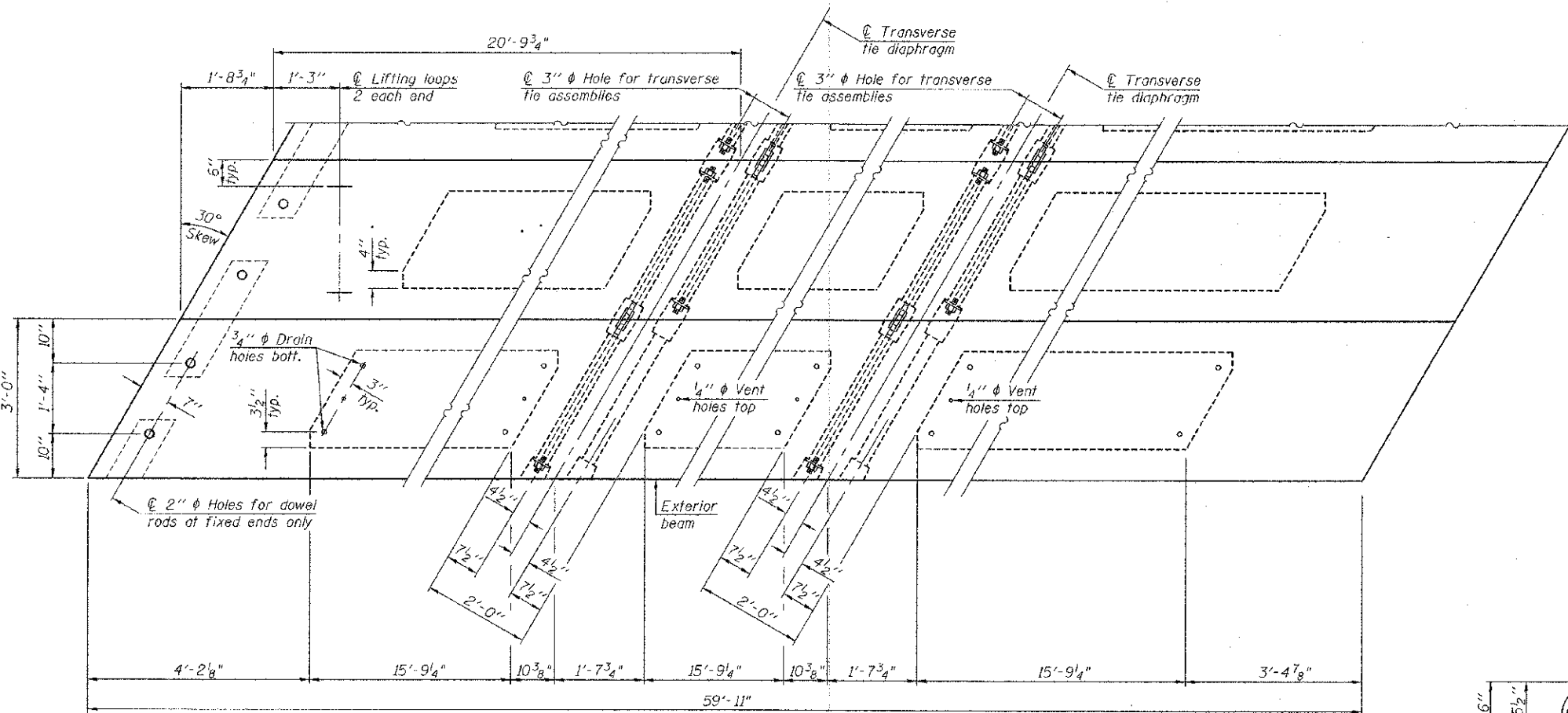
Notes:  
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A



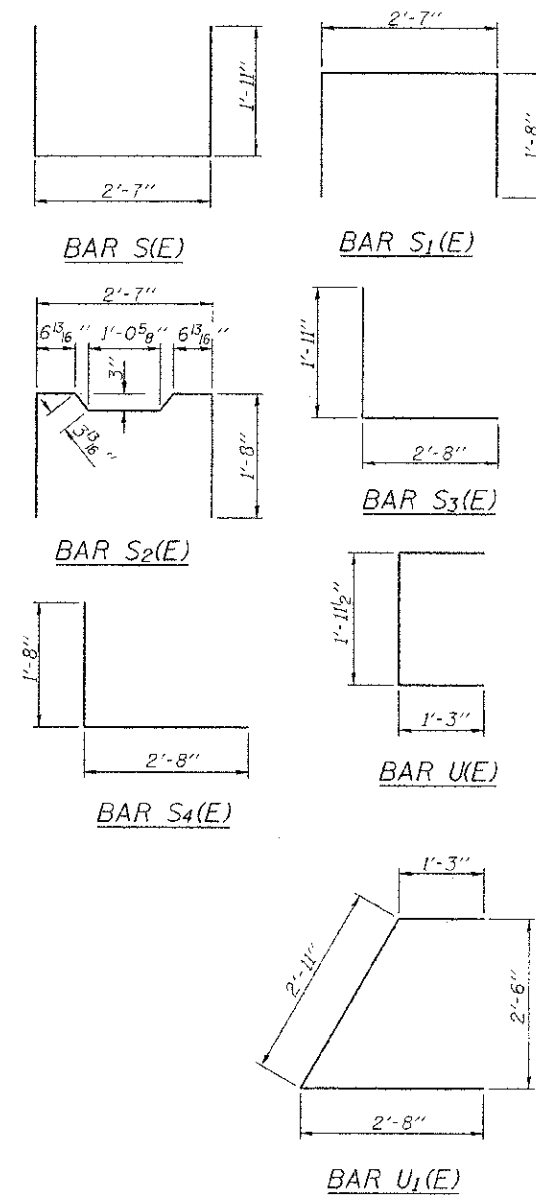
TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW

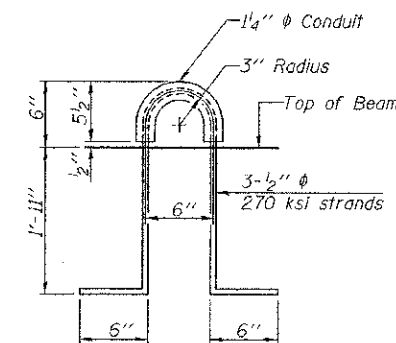
**NOTES**

Pressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 5/8" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).  
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.  
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,438
-------------------------------------------------	---------	-------



LIFTING LOOP DETAIL

Note: Connect beams in pairs with the transverse tie configuration shown.

**ie** CONSULTANTS, INC.  
6420 SOUTH SIXTH STREET RD  
SPRINGFIELD, ILLINOIS 62712  
TEL. (217) 529-8027  
FAX (217) 529-4543  
IESPRINGFIELD@IE-CONSULTANTS.COM  
WWW.IE-CONSULTANTS.COM

PD-2736-LD 7-1-10

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

27" x 36" PPC DECK BEAM DETAILS  
SPAN 2 - STRUCTURE NO. 087-3574

SHEET NO. 6 OF 11 SHEETS

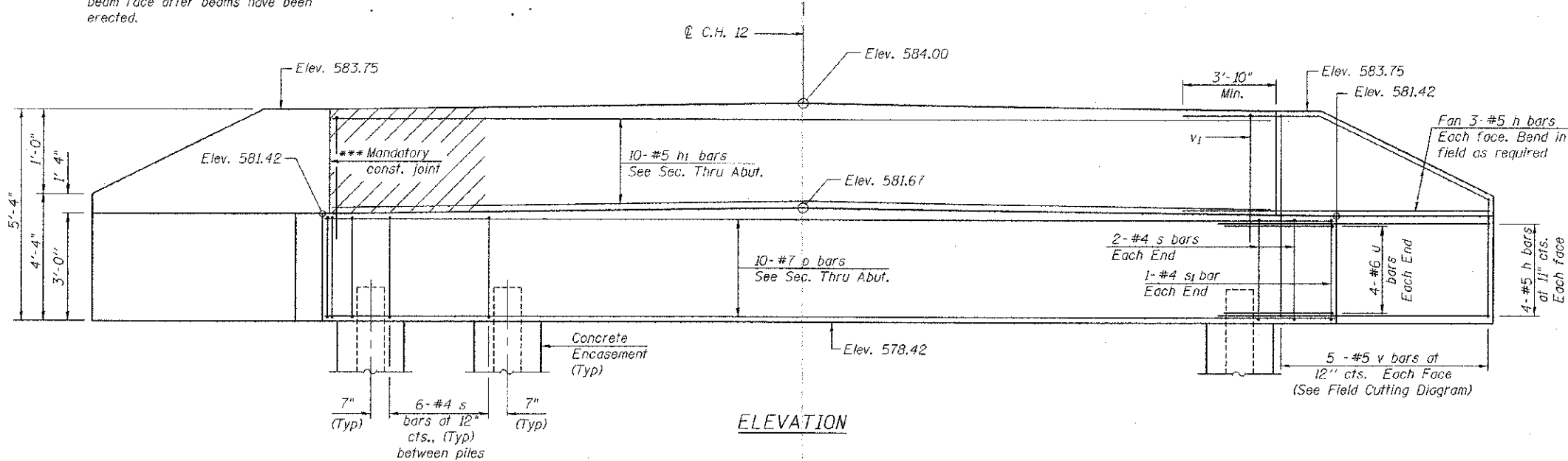
C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00267-00-BR	SHELBY	24	19
			CONTRACT NO. 95700	

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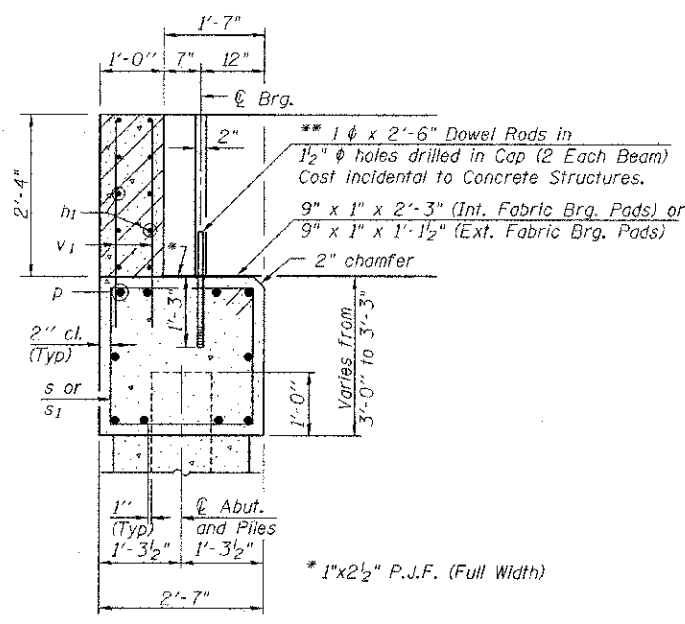




\*\*\* Cast top of wingwall flush with exterior beam face after beams have been erected.

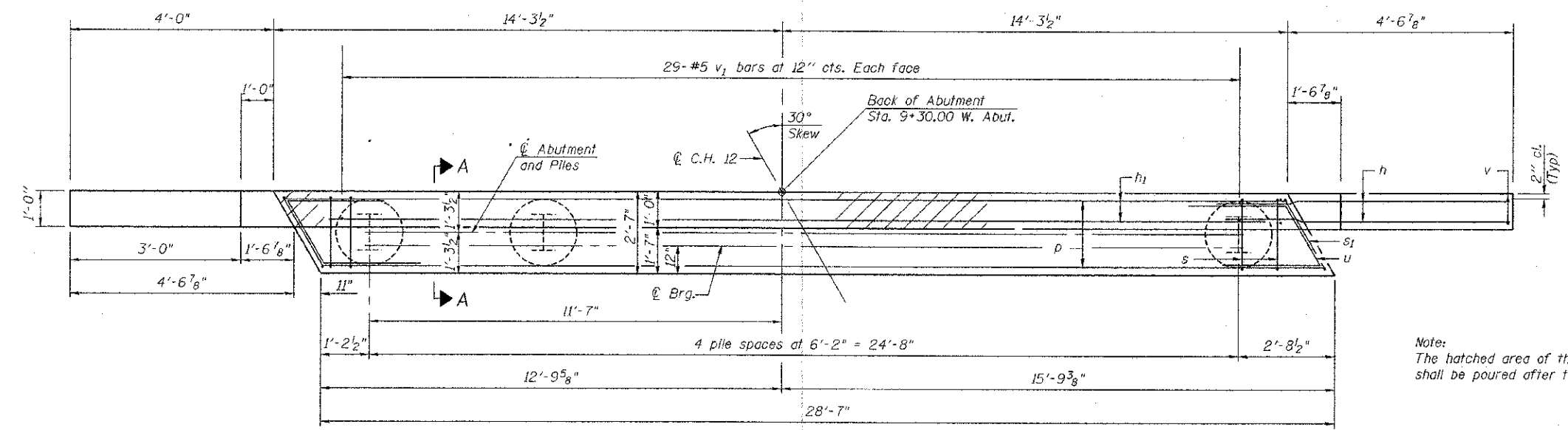


ELEVATION



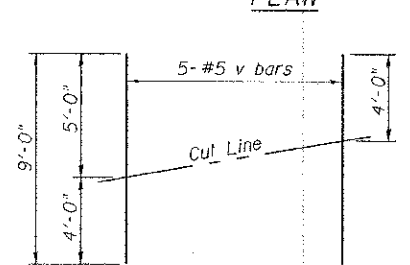
SECTION A-A  
(Dimensions are at Rt. L's)

\*\*\* Dowel Rods to be grouted after beams are in place and prior to grouting the shear keys.



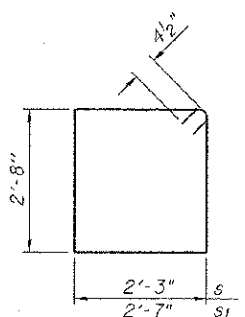
PLAN

**PILE DATA - W. ABUT.**  
 Type: HP 10 x 42  
 Nominal Required Bearing: 335 kips  
 Factored Resistance Available: 167 kips  
 Est. Length: 18'  
 No. Production Piles: 5 (Includes Test Pile)  
 No. Test Piles: 1

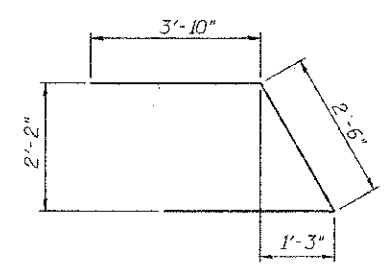


FIELD CUTTING DIAGRAM

Order v bars full length. Cut as shown and use remainder of bars in opposite face.



BARS s & s1



BAR u

**BILL OF MATERIAL - W. ABUT.**

Bar	No.	Size	Length	Shape
h	28	#5	8'-1"	—
h1	10	#5	28'-3"	—
p	10	#7	28'-3"	—
s	28	#4	10'-1"	□
s1	2	#4	11'-3"	□
u	8	#6	10'-2"	△
v	10	#5	9'-0"	—
v1	58	#5	4'-6"	—
ITEM		UNIT	QUANTITY	
Structure Excavation		Cu. Yd.	34	
Concrete Structures		Cu. Yd.	12.6	
Reinforcement Bars		Pound	1,810	
Furnishing Steel Piles		Foot	72	
HP 10 x 42		Foot	72	
Driving Piles		Foot	72	
Test Pile Steel		Each	1	
HP 10 x 42		Each	1	
Concrete Encasement		Cu. Yd.	1.8	

Notes:  
 For details of Piles and Concrete Encasement, see sheet 11 of 11.

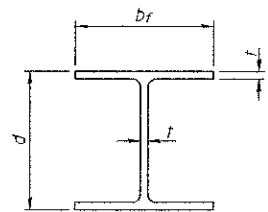
**ie** CONSULTANTS, INC  
 6420 SOUTH SIXTH STREET RD  
 SPRINGFIELD, ILLINOIS 62712  
 TEL. (217) 529-8027  
 FAX (217) 529-4543  
 IESPRINGFIELD@IE-CONSULTANTS.COM  
 WWW.IE-CONSULTANTS.COM

AD-2742-L 7-1-10

FILE NAME *	USER NAME *	DESIGNED - SCD	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEST ABUTMENT DETAILS STRUCTURE NO. 087-3574	C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED - DRB	REVISED -			12	09-00267-00-BR	SHELBY	24	21	
PLOT SCALE *		DRAWN - JEB	REVISED -			CONTRACT NO. 95700					
PLOT DATE *		CHECKED - SCD	REVISED -			ILLINOIS REG. AID PROJECT					

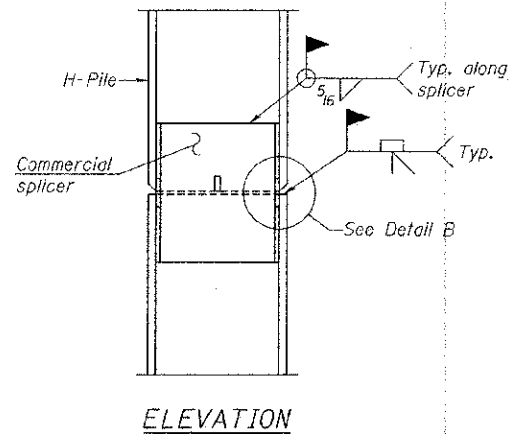




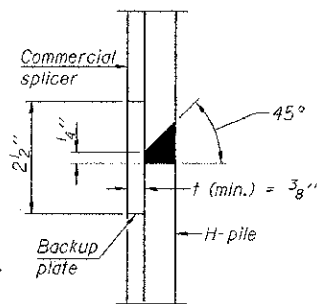


STEEL PILE TABLE

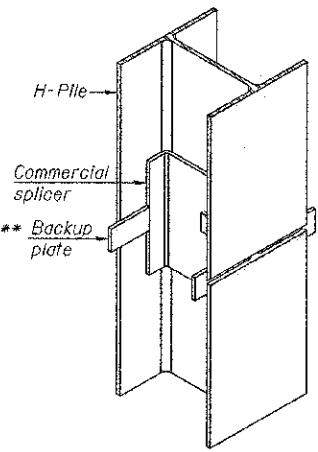
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

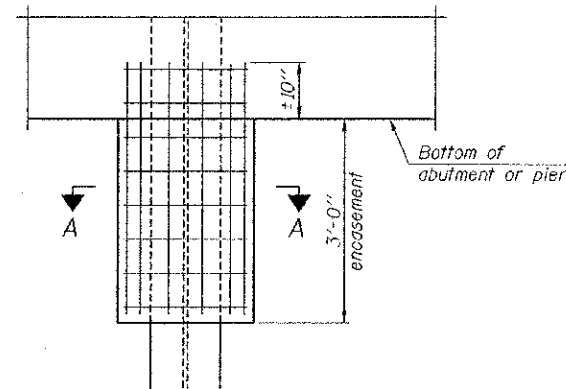


DETAIL "B"

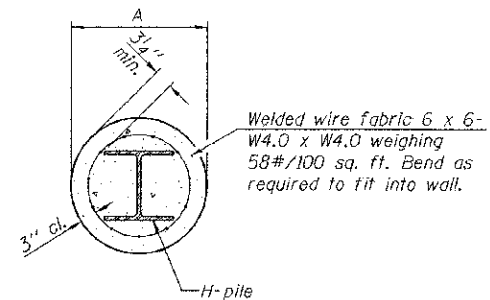


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



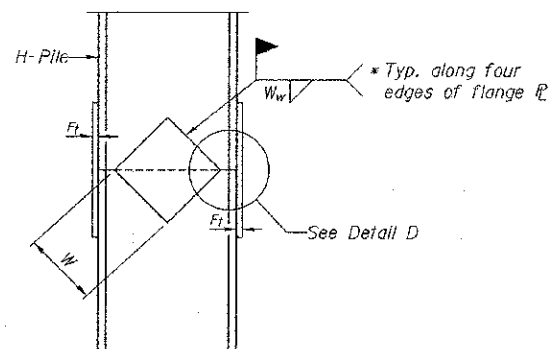
ELEVATION



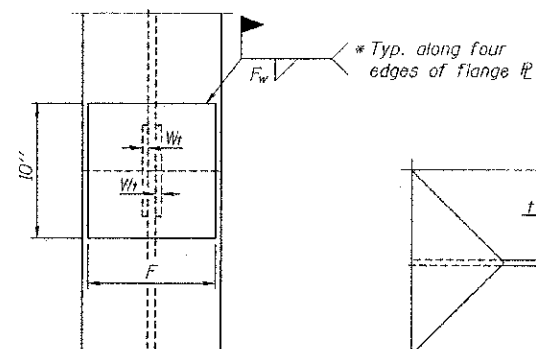
Note:  
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT



ELEVATION



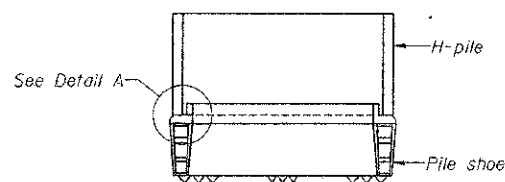
END VIEW

DETAIL D

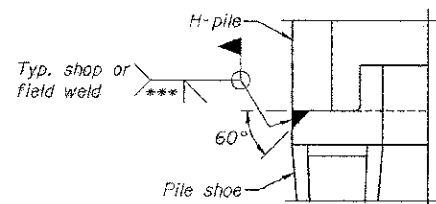
Designation	F	Ft	Fw	W	Wt	Ww
HP 10x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.

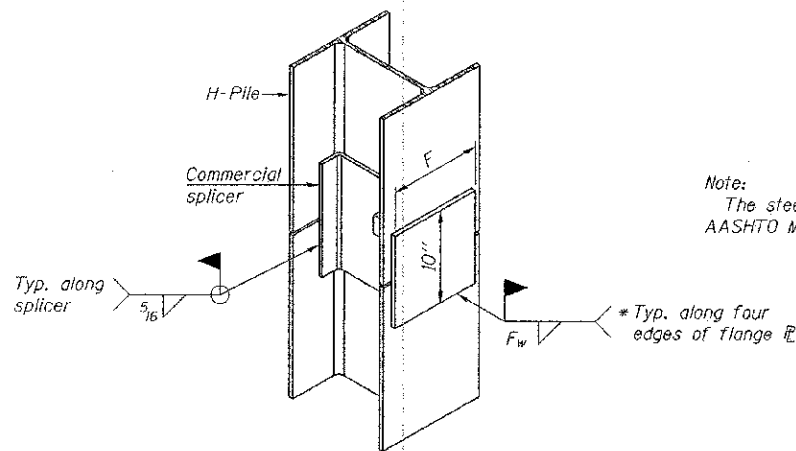


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



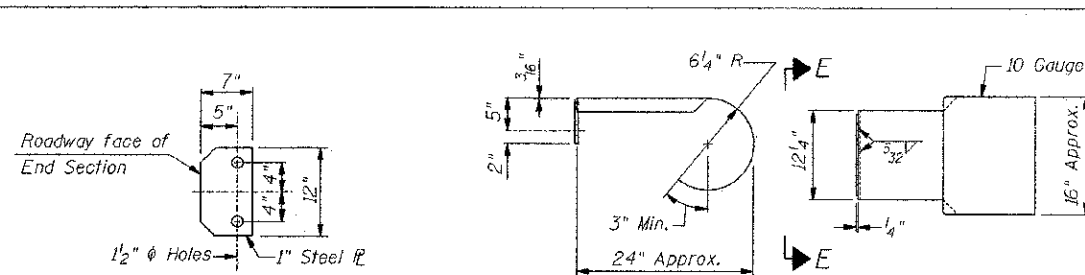
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

\* Interrupt welds 1/4" from end of web and/or each flange.

\*\* Remove portions of backup plates that extend outside the flanges.

\*\*\* Weld size per pile shoe manufacturer (5/16" min.).



SECTION E-E

CURLED END SECTION DETAILS

Cost of Curled End Section shall be included in the price of Steel Railing, Type S-1 and shall not be paid for separately.

See sheet 2 of 11 for Steel Railing Details.

**ie** CONSULTANTS, INC  
6420 SOUTH SIXTH STREET RD  
SPRINGFIELD, ILLINOIS 62712  
TEL. (217) 629-8027  
FAX (217) 629-4643  
IESPRINGFIELD@IE-CONSULTANTS.COM  
WWW.IE-CONSULTANTS.COM

F-HP 7-1-10

FILE NAME =	USER NAME =	DESIGNED - SCD	REVISED -
		CHECKED - DRB	REVISED -
		DRAWN - JEB	REVISED -
		CHECKED - SCD	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS  
STRUCTURE NO. 087-3574

SHEET NO. 11 OF 11 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00267-00-DR	SHELBY	24	24
			CONTRACT NO. 95700	
ILLINOIS FED. AID PROJECT				