

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
960	38 B-1	JOHNSON	23	1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

FAS ROUTE 960 (US 45)
SECTION 38 B-1
JOHNSON COUNTY

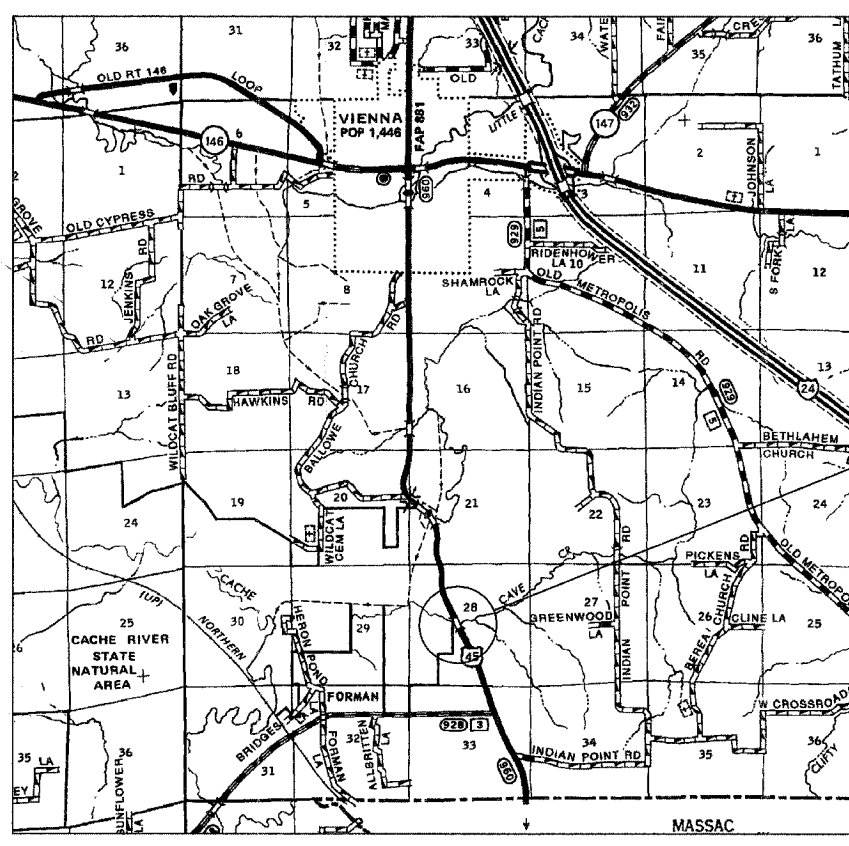
PROJECT: **ACF-0960(106)**
**PPC DECK BEAM SUPERSTRUCTURE REPLACEMENT
OVER CAVE CREEK**
C-99-048-04

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3

D-99-032-04



LOCATION OF SECTION INDICATED THIS: - [thick black line] -



PROJECT LOCATION:
US 45 OVER CAVE CREEK
STR NO. 044-0010(E)
STR STA 213+64.78

TRAFFIC DATA

2005 ADT = 3650
7.7% TRUCKS
POSTED SPEED = 55 MPH

0 50' 100' 1" = 100' PLAN, CROSS SECTIONS

0 50' 100' 1" = 50' PLAN, PROFILE, CROSS SECTIONS

0 50' 100' 1" = 20' PLAN, PROFILE

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

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123 or www.julie1call.com

VIENNA TOWNSHIP
CONTRACT NO. 98890

GROSS LENGTH = 93 FT
NET LENGTH = 93 FT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Aug 8 2007
Max J. Rame
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

October 12, 2007
Eric E. Hagan
ENGINEER OF DESIGN AND ENVIRONMENT

October 12, 2007
Milton R. See
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

7/30/2007
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PROJECT ENGINEER: DAVID P. CHASE
SOUND LEADER: T. WAYNE HALL STREAS

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
960	38 B-1	JOHNSON	23	2
STA.		TO STA.		
FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

PRIOR TO PLACEMENT OF THE FINAL PAVEMENT MARKINGS THE RESIDENT ENGINEER SHOULD CONTACT THE BUREAU OF OPERATIONS AND ARRANGE FOR INSPECTION AND APPROVAL OF THE PAVEMENT MARKING LAYOUT.

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE A CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK. THE CONTRACTOR, HOWEVER, WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK. CONSTRUCTION PLANS ARE AVAILABLE FOR REVIEW AT THE DISTRICT 9 OFFICE.

IN ADDITION TO THE REQUIREMENTS OF ARTICLE 107.16 THE CONTRACTOR SHALL PROTECT THE SURFACE OF ALL BRIDGE DECK AND BRIDGE APPROACH PAVEMENTS IN A MANNER SATISFACTORY TO THE ENGINEER BEFORE ANY EQUIPMENT IS ALLOWED TO CROSS THE STRUCTURE. PROTECTION SHALL BE PROVIDED FOR ALL EQUIPMENT AS DEFINED IN ARTICLE 101.17 REGARDLESS IF TRACK MOUNTED OR WHEELED.

AT ALL LOCATIONS WHERE PROPOSED HOT MIX ASPHALT OR CONCRETE PAVEMENT JOINS AN EXISTING HOT MIX ASPHALT OR CONCRETE PAVEMENT, A SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT SHALL BE INCLUDED IN THE TYPE OF PAVEMENT BEING CONSTRUCTED.

QUANTITIES SHOWN IN THE PLANS FOR BRIDGE DECK GROOVING AND PROTECTIVE COAT INCLUDE ALL AREAS COVERED BY THE CONCRETE WEARING SURFACE, 5".

PROTECTIVE COAT SHALL BE APPLIED, TO ALL AREAS IN WHICH THE CONCRETE WEARING SURFACE, 5" IS CONSTRUCTED, IN ACCORDANCE WITH ARTICLE 503.19 OF THE STANDARD SPECIFICATIONS. THE PROTECTIVE COAT SHALL BE APPLIED REGARDLESS OF THE CURING METHOD USED. THE RATE OF APPLICATION FOR EACH COAT ON SAW CUT GROOVED AREAS SHALL BE 25 SQUARE YARDS PER GALLON OF MIXTURE.

TREES SHALL BE PRESERVED THROUGHOUT THIS SECTION AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. GENERALLY, TREES OUTSIDE THE CLEAR ZONE, AND WHICH DO NOT INTERFERE WITH CONSTRUCTION, SHALL NOT BE DISTURBED.

ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE LEFT IN PLACE UNTIL REMOVAL IS REQUIRED TO CONSTRUCT FINAL GRADE LINES.

THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION.

THE QUANTITY OF TEMPORARY PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION FOR STAGE I AND STAGE II CONSTRUCTION.

THE ADVANCE DETECTOR LOOPS ARE TYPICALLY LOCATED 300 FEET IN ADVANCE OF THE STOP BAR. THE BUREAU OF OPERATIONS SHOULD APPROVE THE LOOP LOCATIONS PRIOR TO INSTALLATION.

THE CENTERLINE PAVEMENT MARKING SHOULD BE REMOVED FROM THE STOP BAR TO THE SAND ATTENUATORS OR DRUMS. EDGE LINE PAVEMENT MARKING SHOULD BE REMOVED IF A 10 FOOT LANE WIDTH CANNOT BE MAINTAINED. TEMPORARY EDGE LINES SHOULD BE INSTALLED WHEN THE EDGE LINES ARE REMOVED.

VERTICAL PANELS SHOWN ON STANDARD 701321 WILL NOT BE REQUIRED ON THE STAGE II NEW BRIDGE RAILING. THE BARRIER WALL REFLECTORS SHALL BE INSTALLED PRIOR TO OPENING TO TRAFFIC.

ANY TIME THE CONCRETE BARRIER IS NOT IN THE PROPER POSITION, FLAGGERS SHALL BE IN PLACE TO CONTROL TRAFFIC. THE TEMPORARY TRAFFIC SIGNALS SHALL BE SET TO FLASH ALL RED.

TRIM EDGES OF EXISTING HOT MIX ASPHALT SURFACE FLUSH WITH EXISTING PAVEMENT PRIOR TO CONSTRUCTING NEW BASE COURSE WIDENING.

FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

ALL HOT-MIX ASPHALT	2.016 TONS/CU YD
ALL AGGREGATE	2.05 TONS/CU YD
HOT MIX ASPHALT MATERIALS:	
ON PAVEMENT	0.09 GAL/SQ YD
AGGREGATE (PRIME COAT)	0.0015 TONS/SQ YD
GROUT FOR RIPRAP	0.11 CU YD/SQ YD

"NARROW BRIDGE" SIGNS WITH ADVISORY TAGS " 11 FT 6 IN (STAGE I) AND 10 FT 6 IN (STAGE II)" SHALL BE ERECTED BETWEEN ONE ROAD CONSTRUCTION AHEAD AND THE SIGNAL AHEAD SIGNS.

COMMITMENTS: NONE AS OF AUGUST 17, 2007, REFER TO COMMITMENT FILE FOR ANY COMMITMENTS AFTER THIS DATE.

STANDARDS

000001-04	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-03	TEMPORARY EROSION CONTROL SYSTEMS
420001-00	PAVEMENT JOINTS
515001-02	NAME PLATE FOR BRIDGES
630001-07	STEEL PLATE BEAM GUARDRAIL
631032-03	TRAFFIC BARRIER TERMINAL, TYPE 6 A
635011-01	REFLECTOR MARKER & MOUNTING DETAILS
701001-01	OFF-ROAD OPERATIONS, 2L 2W, MORE THAN 4.5 m (15') AWAY
701006-02	OFF-ROAD OPERATIONS, 2L 2W, 4.5 m (15') TO PAVEMENT EDGE
701011-01	OFF-ROAD MOVING OPERATIONS, 2L 2W, DAY ONLY
701201-02	LANE CLOSURE, 2L 2W, DAY ONLY, ON-ROAD TO 600 mm (24") OFF-ROAD, FOR SPEEDS ≥ 45 MPH
701301-02	LANE CLOSURE, 2L 2W, SHORT TIME OPERATIONS
701321-00	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-02	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
702001-00	TRAFFIC CONTROL DEVICES
704001-03	TEMPORARY CONCRETE BARRIER
780001-01	TYPICAL PAVEMENT MARKINGS

INDEX OF SHEETS

1	COVER SHEET
2	INDEX OF SHEETS; GENERAL NOTES; STANDARDS; AND MIX REQ
3	SUMMARY OF QUANTITIES
4	TYPICAL SECTION AND SCHEDULES OF QUANTITIES
5	PLAN-PROFILE
6	STAGE CONSTRUCTION PLAN
7	WIDE LOAD DETOUR
8	EROSION CONTROL PLAN
9	REFLECTOR AND TERMINAL MARKER
10-11	CROSS SECTIONS
12-23	STRUCTURE PLANS

MIXTURE REQUIREMENTS

LOCATION(S):	HOT-MIX ASPHALT BASE COURSE WIDENING, 10'
MIXTURE USE(S):	WIDENING
AC/PG:	PG64-22
RAP % (MAX):	10
DESIGN AIR VOIDS:	4.0 %, 90 GYRATION
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-19.0
FRICTION AGGREGATE	NONE

Prepared By:	<i>Joe S. DeFuria</i> DISTRICT 9 OFFICE PLANS ENGINEER
Examined By:	<i>James Travis Emery</i> DISTRICT LAND ACQUISITION ENGINEER
Examined By:	<i>Camie Nelson</i> DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By:	<i>Marvin Hammer</i> DISTRICT OPERATIONS ENGINEER
Examined By:	<i>Joseph Lewis</i> DISTRICT CONSTRUCTION ENGINEER
Examined By:	<i>Bruce W. Padden</i> DISTRICT MATERIALS ENGINEER
Examined By:	<i>John Smith</i> DISTRICT PROJECT IMPLEMENTATION ENGINEER
Examined By:	<i>Samuel L. Johnson</i> ASSISTANT REGIONAL ENGINEER
Approved By:	<i>Mike C. Rami</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
DATE:	Aug 8 2007

F.A.S. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
960	38 B-1	JOHNSON	23	3
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

SUMMARY OF QUANTITIES

RURAL - JOHNSON COUNTY HBP FUNDING 80% FEDERAL; 20% STATE CONSTRUCTION TYPE CODE X080-2A SN 044-0010			
CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	32
25000210	SEEDING, CLASS 2A	ACRE	0.1
25000350	SEEDING, CLASS 7	ACRE	0.1
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	9
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	9
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	9
25100115	MULCH, METHOD 2	ACRE	0.1
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	20
28000400	PERIMETER EROSION BARRIER	FOOT	504
35600716	HOT - MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	116
42000500	PORTLAND CEMENT CONCRETE PAVEMENT 10'	SQ YD	33.2
42001200	PAVEMENT FABRIC	SQ YD	33.2
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1
50300260	BRIDGE DECK GROOVING	SQ YD	251
50300300	PROTECTIVE COAT	SQ YD	281
50400105	PRECAST CONCRETE BRIDGE SLAB	SQ FT	299
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21' DEPTH)	SQ FT	1735
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3390
50800515	BAR SPLICERS	EACH	60
50901050	STEEL RAILING, TYPE SM	FOOT	185
51500100	NAME PLATES	EACH	1
54002020	EXPANSION BOLTS 3/4 INCH	EACH	48
59000200	EPOXY CRACK INJECTION	FOOT	33
*63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	25
*63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
*63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	3
63200310	GUARDRAIL REMOVAL	FOOT	338
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	7
67100100	MOBILIZATION	L SUM	1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1

RURAL - JOHNSON COUNTY HBP FUNDING 80% FEDERAL; 20% STATE CONSTRUCTION TYPE CODE X080-2A SN 044-0010			
CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	2
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70106700	TEMPORARY RUMBLE STRIP	EACH	12
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	2
70300100	SHORT - TERM PAVEMENT MARKING	FOOT	68
70300220	TEMPORARY PAVEMENT MARKING - LINE 4''	FOOT	666
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	245
70400100	TEMPORARY CONCRETE BARRIER	FOOT	262.5
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	262.5
*78001110	PAINT PAVEMENT MARKING - LINE 4''	FOOT	1830
*78200405	GUARDRAIL MARKERS	EACH	4
*78200500	BARRIER WALL MARKERS	EACH	2
*78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	3
78300100	PAVEMENT MARKING REMOVAL	SQ FT	469
X0324744	REMOVAL OF EXISTING PRECAST CONCRETE UNITS	SQ FT	299
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	19.6
X5030305	CONCRETE WEARING SURFACE, 5''	SQ YD	271
Z0030250	IMPACT ATTENUATORS, TEMP (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
X8620020	UNINTERRUPTIBLE POWER SUPPLY	EACH	1

*SPECIALTY ITEMS

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MISC. SCHEDULE

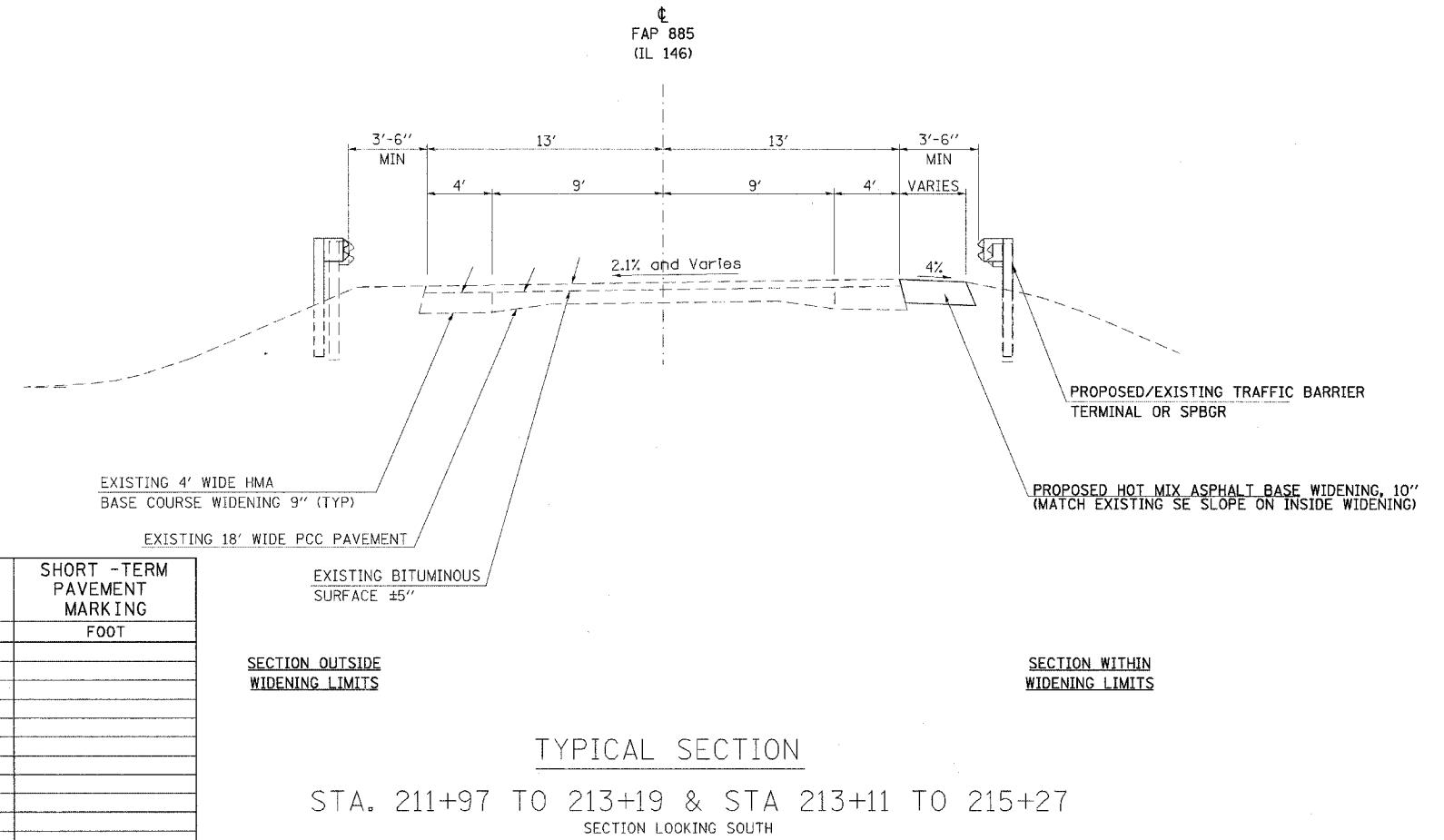
SN 044-0010 LOCATION STATION TO STATION	EARTH EXCAVATION	HMA BASE COURSE WIDENING, 10' "	PERIMETER EROSION BARRIER
	CU YD	SQ YD	FOOT
FAP 960 (US 45)			
STAGE 1			
STA 212+19 TO STA 213+50 LT			131
STA 214+10 TO STA 215+38 LT			128
STA 212+40 TO STA 213+35 LT	8.6	31	
STA 214+26 TO STA 214+90 LT	6.4	23	
STAGE 2			
STA 211+88 TO STA 213+18 RT			130
STA 213+79 TO STA 214+94 RT			115
STA 212+40 TO STA 213+05 RT	7.0	26	
STA 213+97 TO STA 214+90 RT	10.0	36	
TOTALS	32	116	504

MARKING SCHEDULE

SN 044-0010 LOCATION STATION TO STATION	TEMP PVT MK LINE 4' "		PAINT PVT MK LINE 4' "		PAVEMENT MARKING REMOVAL SQ FT	SHORT -TERM PAVEMENT MARKING FOOT
	WHITE FOOT	YELLOW FOOT	WHITE FOOT	YELLOW FOOT		
FAP 960 (US 45)						
PRE STAGE I						
STA 210+37 TO STA 212+90 CL(DOUBLE)					167	
STA 214+40 TO STA 216+93 CL(DOUBLE)					167	
STA 212+40 TO STA 214+90 RT					83	
STA 212+00 TO STA 215+30 CL		83				
STA 212+40 TO STA 214+90 RT	250					
STAGE I						
STA 212+40 TO STA 213+33 LT					31	
STA 214+27 TO STA 214+90 LT					21	
STA 212+00 TO STA 215+30 CL		83				
STA 212+40 TO STA 214+90 LT	250					
POST STAGE II						
STA 210+37 TO STA 216+93 CL						68
STA 210+37 TO STA 216+93 CL(DOUBLE)				1330		
STA 212+40 TO STA 214+90 LT			250			
STA 212+40 TO STA 214+90 RT			250			
TOTALS	500	166	500	1330	469	68

TERMINALS AND GUARDRAIL SCHEDULE

SN 044-0010 LOCATION STATION TO STATION	TRAFFIC BARRIER TERMINALS		SPBGR TYPE A FOOT	BARRIER WALL MARKERS EACH	GUARDRAIL MARKER EACH	TERMINAL MARKER DIRECT APPLIED EACH
	TYPE 1 SPECIAL TANGENT EACH	TYPE 6A EACH				
FAP 960 (US 45)						
STAGE 1						
NE QUADRANT	1	1	12.5		1	1
SE QUADRANT BRIDGE		1		1	1	
STAGE 2						
NW QUADRANT	1	1	12.5		1	1
SW QUADRANT BRIDGE	1	1		1	1	1
TOTALS	3	4	25	2	4	3



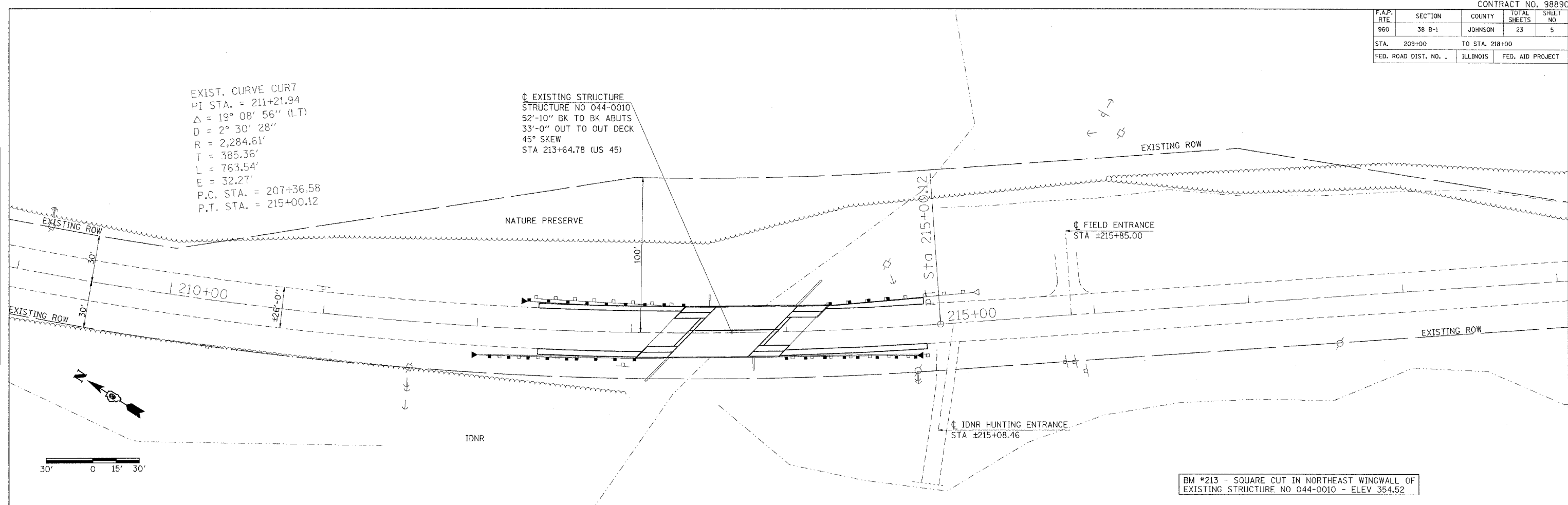
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F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
960	38 B-1	JOHNSON	23	5
STA. 209+00		TO STA. 218+00		
FED. ROAD DIST. NO. .		ILLINOIS	FED. AID PROJECT	

EXIST. CURVE CUR7
 PI STA. = 211+21.94
 $\Delta = 19^\circ 08' 56''$ (L.T.)
 $D = 2^\circ 30' 28''$
 $R = 2,284.61'$
 $T = 385.36'$
 $L = 763.54'$
 $E = 32.27'$
 P.C. STA. = 207+36.58
 P.T. STA. = 215+00.12

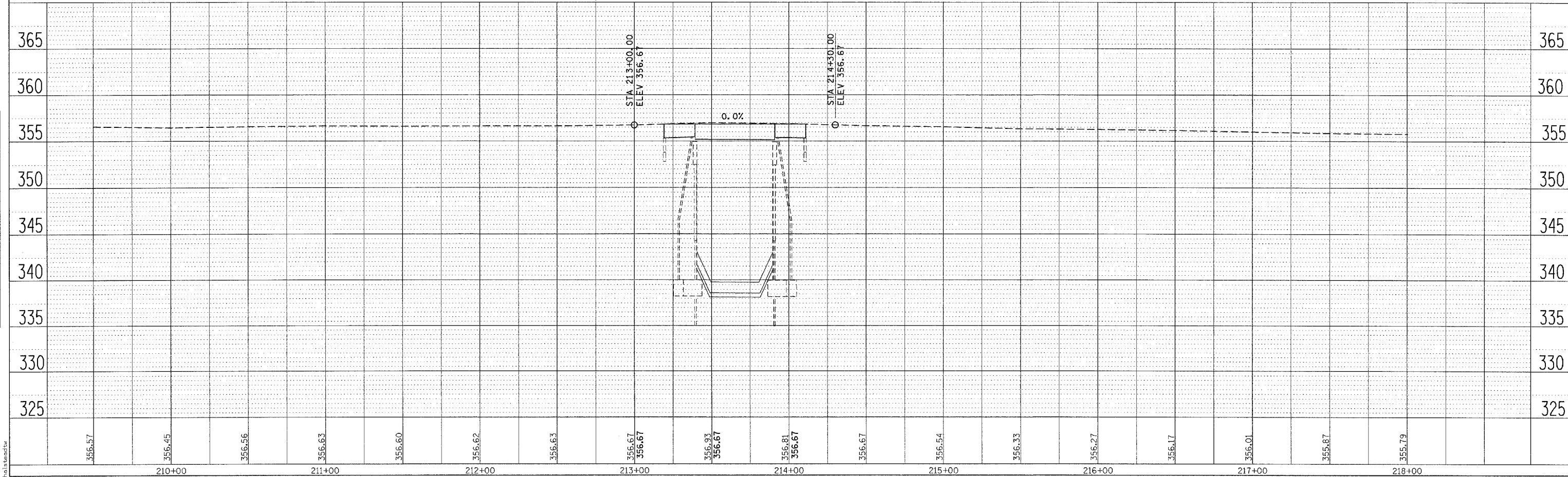
EXISTING STRUCTURE
 STRUCTURE NO 044-0010
 52'-10" BK TO BK ABUTS
 33'-0" OUT TO OUT DECK
 45° SKEW
 STA 213+64.78 (US 45)

PLAN	SURVEYED	BY	DATE
	ALIGNED		
	CHECKED		
	NOTE BOOK		
	NO.		



BM #213 - SQUARE CUT IN NORTHEAST WINGWALL OF
 EXISTING STRUCTURE NO 044-0010 - ELEV 354.52

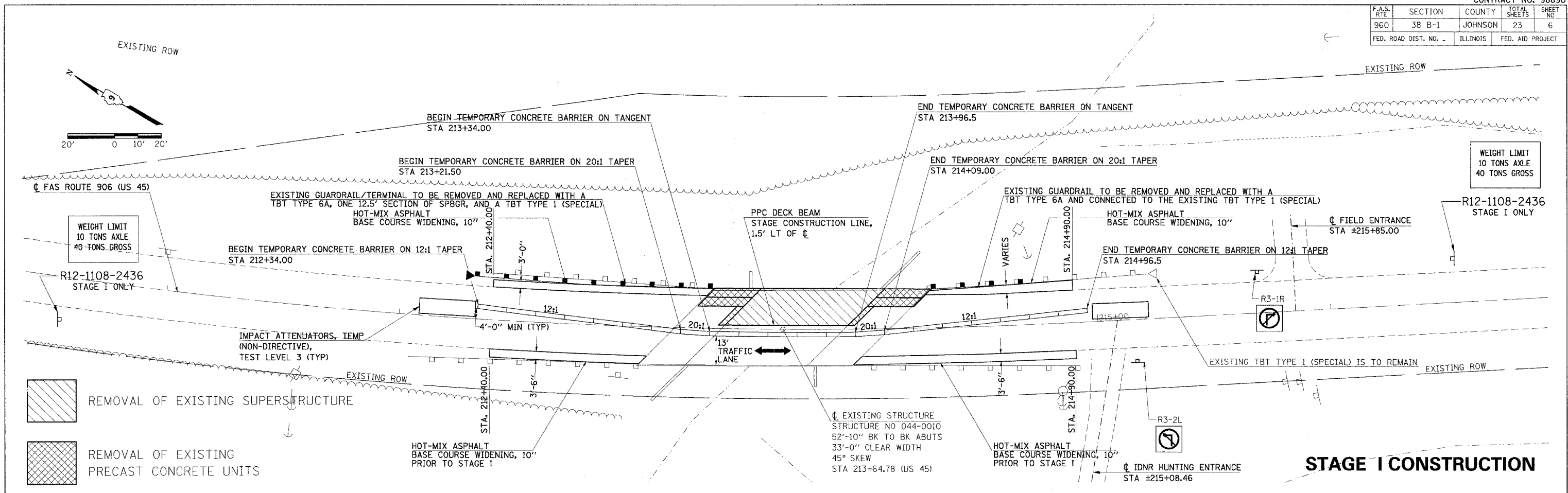
PROFILE	SURVEYED	BY	DATE
	GRADES		
	CHECKED		
	NOTE BOOK		
	NO.		



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 30.0000' / IN.
 Plot Scale

**PLANPROFILE - SN 044-0010
 US 45 OVER CAVE CREEK**

F.A.S. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
960	3B B-1	JOHNSON	23	6
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	



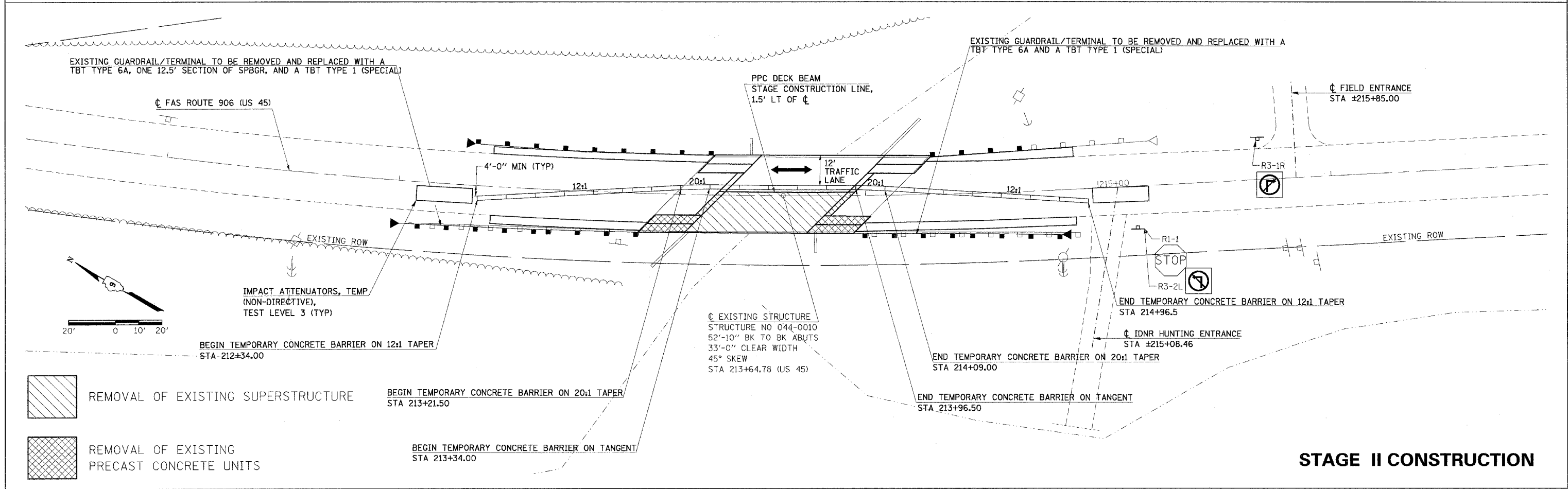
WEIGHT LIMIT
10 TONS AXLE
40 TONS GROSS

R12-1108-2436
STAGE I ONLY

WEIGHT LIMIT
10 TONS AXLE
40 TONS GROSS

R12-1108-2436
STAGE I ONLY

STAGE I CONSTRUCTION



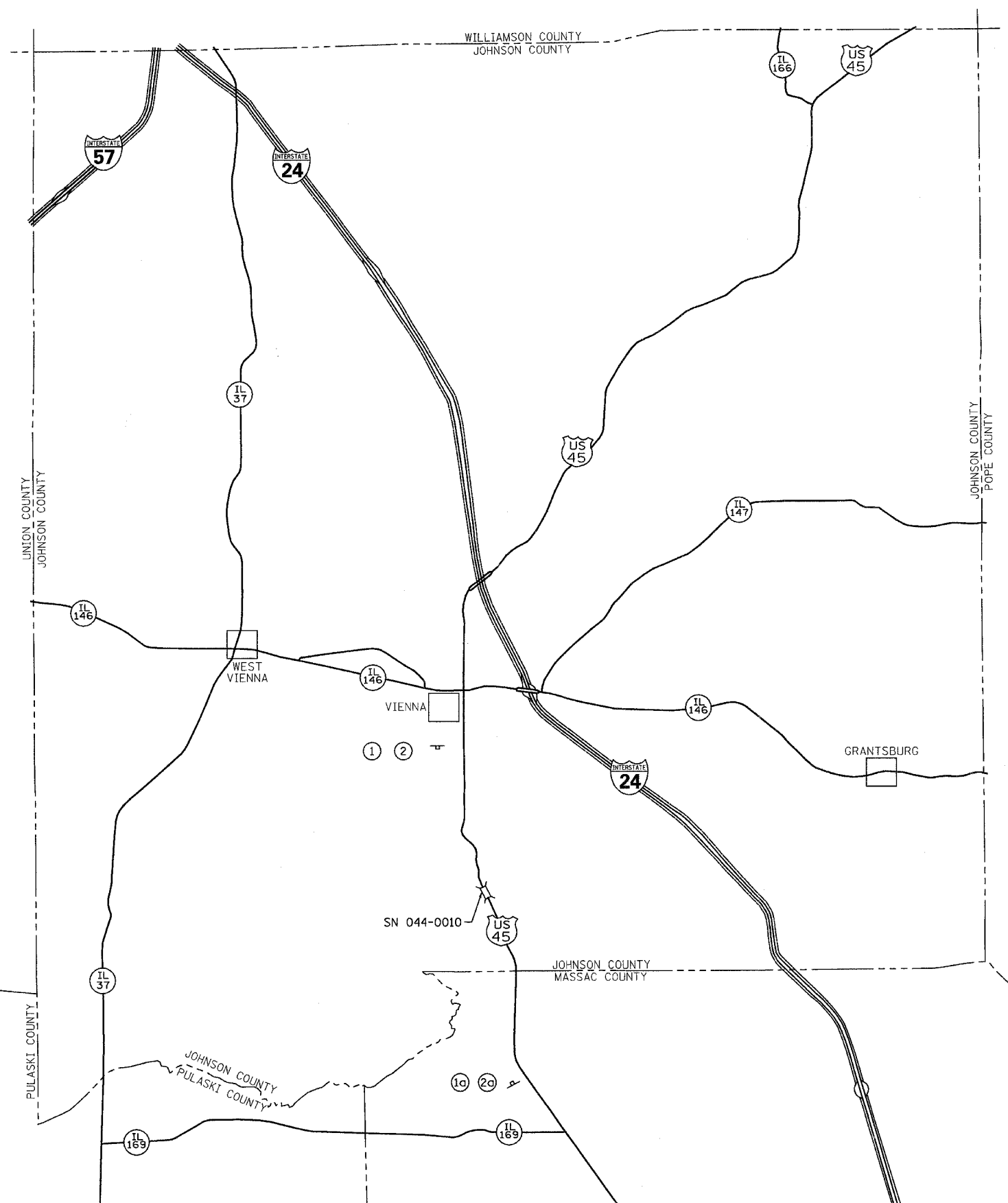
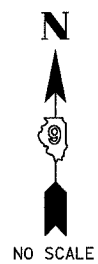
STAGE II CONSTRUCTION

**STAGE CONSTRUCTION - 044-0010
US 45 OVER CAVE CREEK**

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F.A.S. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
960	3B B-1	JOHNSON	23	7
FED. ROAD DIST. NO. ...		ILLINOIS	FED. AID PROJECT	

DETOUR SIGNING FOR LANE WIDTH RESTRICTION



STAGE I ONLY

①

WIDE LOADS OVER 11'-6"		
DETOUR VIA		
WEST ILLINOIS	SOUTH ILLINOIS	EAST ILLINOIS
146	37	169

60" x 90"

⑩

WIDE LOADS OVER 11'-6"		
DETOUR VIA		
WEST ILLINOIS	NORTH ILLINOIS	EAST ILLINOIS
169	37	146

60" x 90"

STAGE II ONLY

②

WIDE LOADS OVER 10'-6"		
DETOUR VIA		
WEST ILLINOIS	SOUTH ILLINOIS	EAST ILLINOIS
146	37	169

60" x 90"

⑳

WIDE LOADS OVER 10'-6"		
DETOUR VIA		
WEST ILLINOIS	NORTH ILLINOIS	EAST ILLINOIS
169	37	146

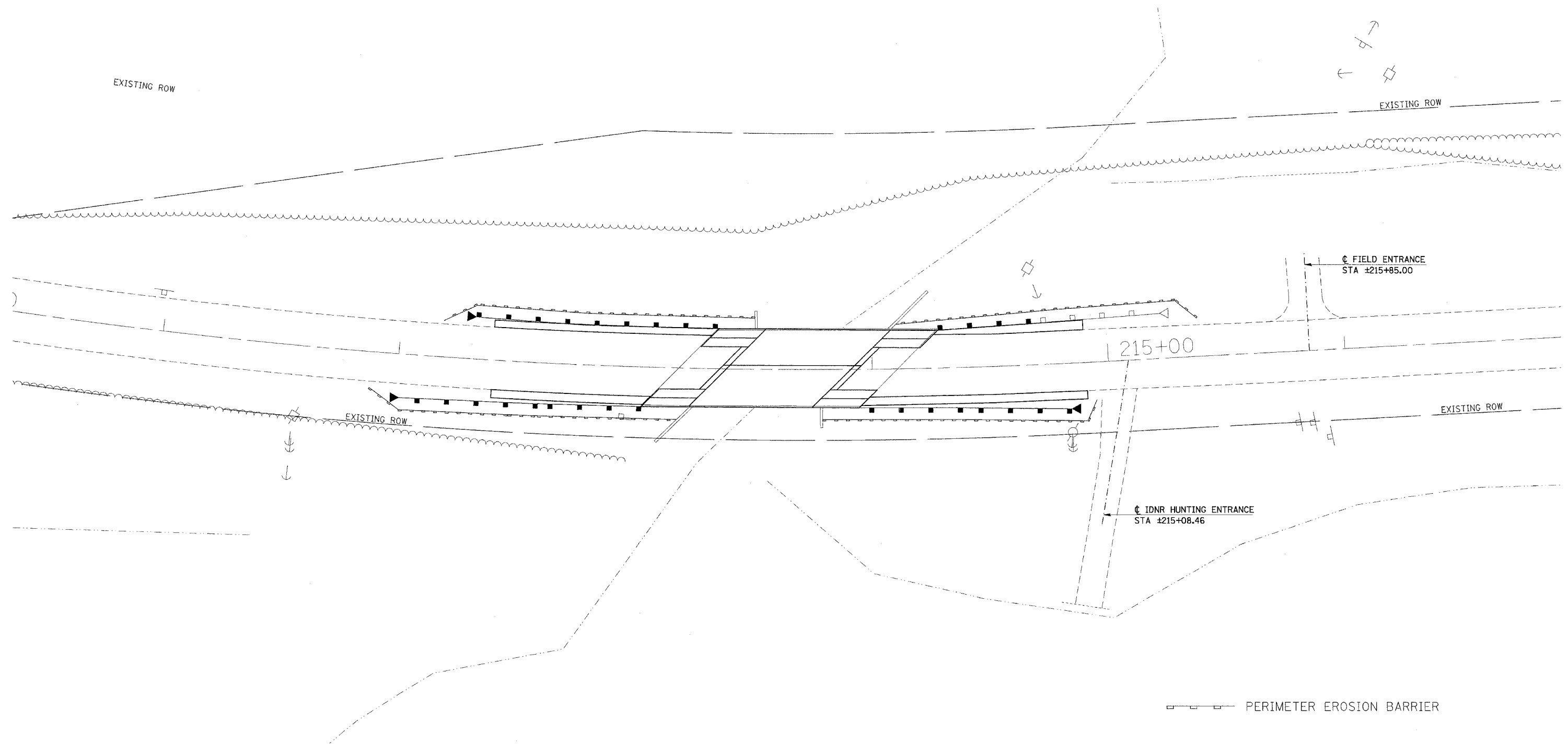
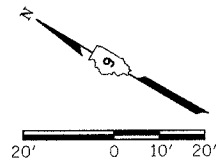
60" x 90"

NOTES

1. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN, AND REMOVE THE POSTS AND SIGNS AT THE LOCATIONS SHOWN AND AS DIRECTED BY THE RESIDENT ENGR./TECH. ALL SIGNS SHALL BE POST MOUNTED.
2. THE CONTRACTOR SHALL GIVE I.D.O.T. BUREAU OF OPERATIONS, PERMITS SECTION, TWO WEEKS NOTICE BEFORE IMPLEMENTING ANY LANE WIDTH RESTRICTIONS.
3. THE ABOVE NOTED WORK, INCLUDING SIGNS, POSTS, HARDWARE, AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR TRAFFIC CONTROL AND PROTECTION, STD 701321 AND NO OTHER COMPENSATION WILL BE ALLOWED.

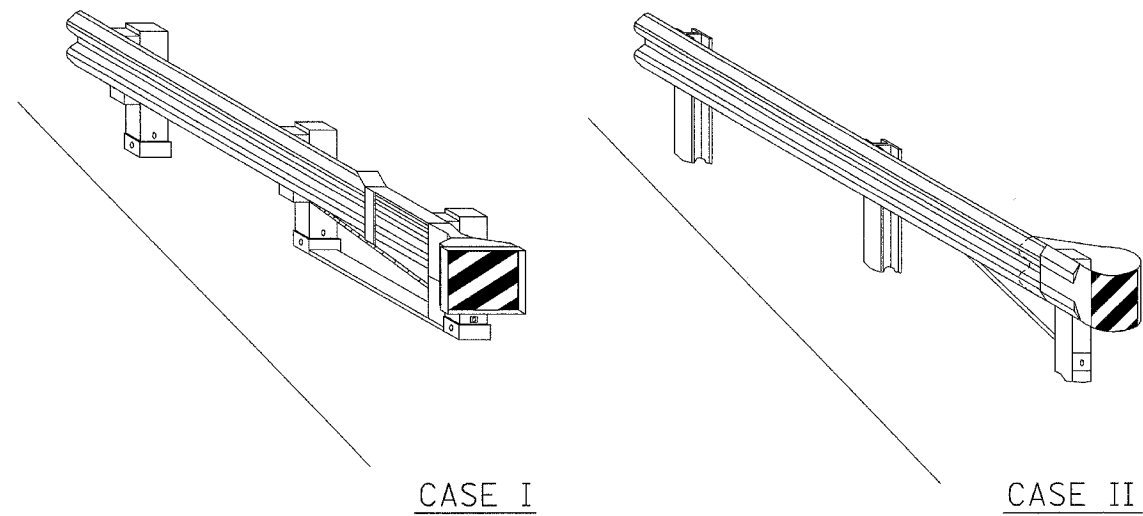
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F.A.S. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
960	3B B-1	JOHNSON	23	8
FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		



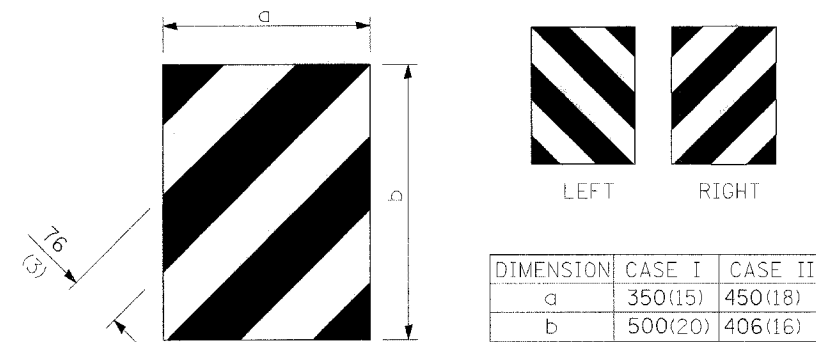
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F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
960	38 B-1	JOHNSON	23	9
STA.	TO STA.			
FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		



CASE I

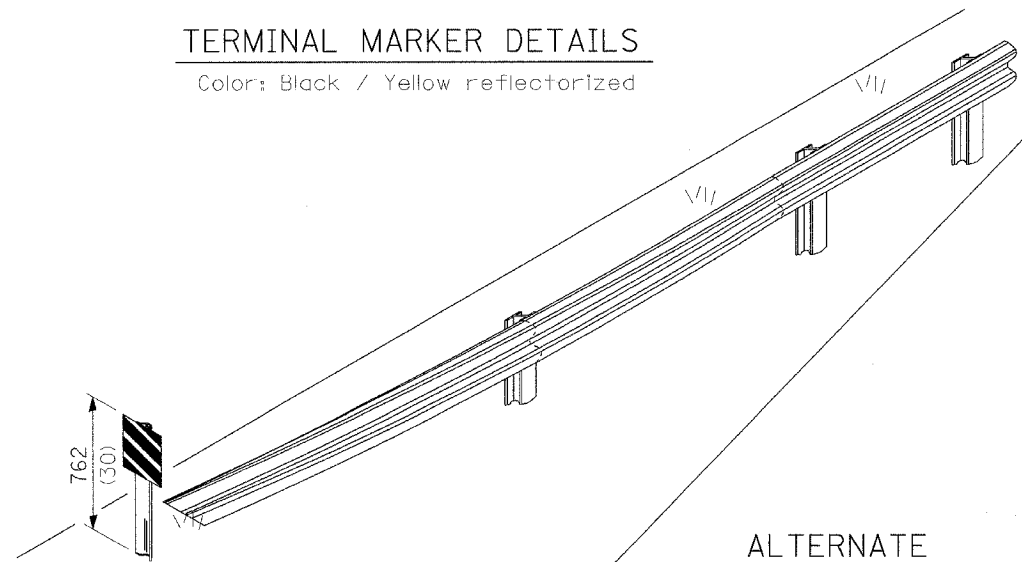
CASE II



DIMENSION	CASE I	CASE II
a	350(15)	450(18)
b	500(20)	406(16)

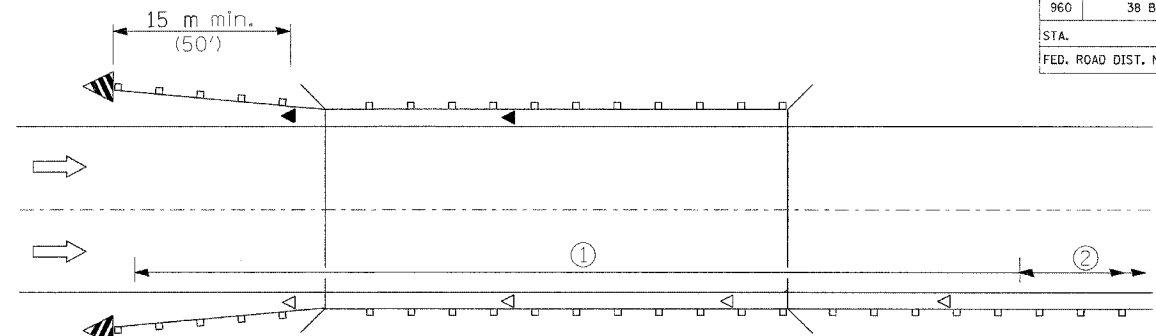
TERMINAL MARKER DETAILS

Color: Black / Yellow reflectorized



ALTERNATE

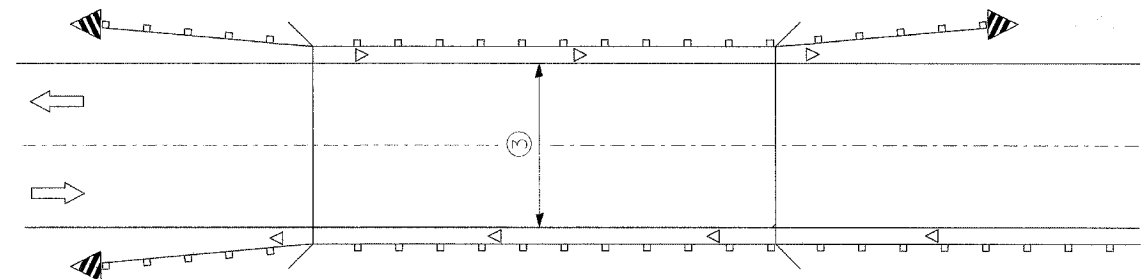
Post mount only with twisted or sloping terminal where sheeting cannot be applied directly to terminal.



① Spacing 24 m (80 ft.) max. for first 122 m (400 ft.) or curve spacing shown in Standard 635001, whichever is less (min. 4 reflectors regardless of length).

② After 122 m (400 ft.), transition to normal delineator spacing shown in Standard 635001, and continue as required.

ONE-WAY TRAFFIC

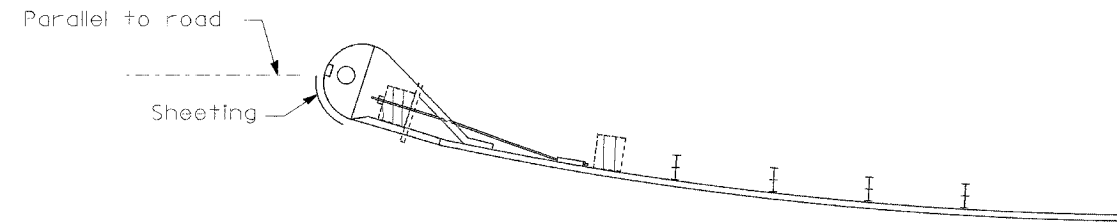


③ Bidirectional silver/silver should be used in lieu of monodirectional silver on both sides of two-lane bridges where the pavement is less than 610 (24) wider than the pavement approaching the bridge.

- ◁ Monodirectional silver
- ▶ Monodirectional amber
- ▤ Terminal Marker - Black/Yellow Left or Right as appropriate

TWO-WAY TRAFFIC

GUARDRAIL / BARRIER WALL / BRIDGE RAIL REFLECTORS



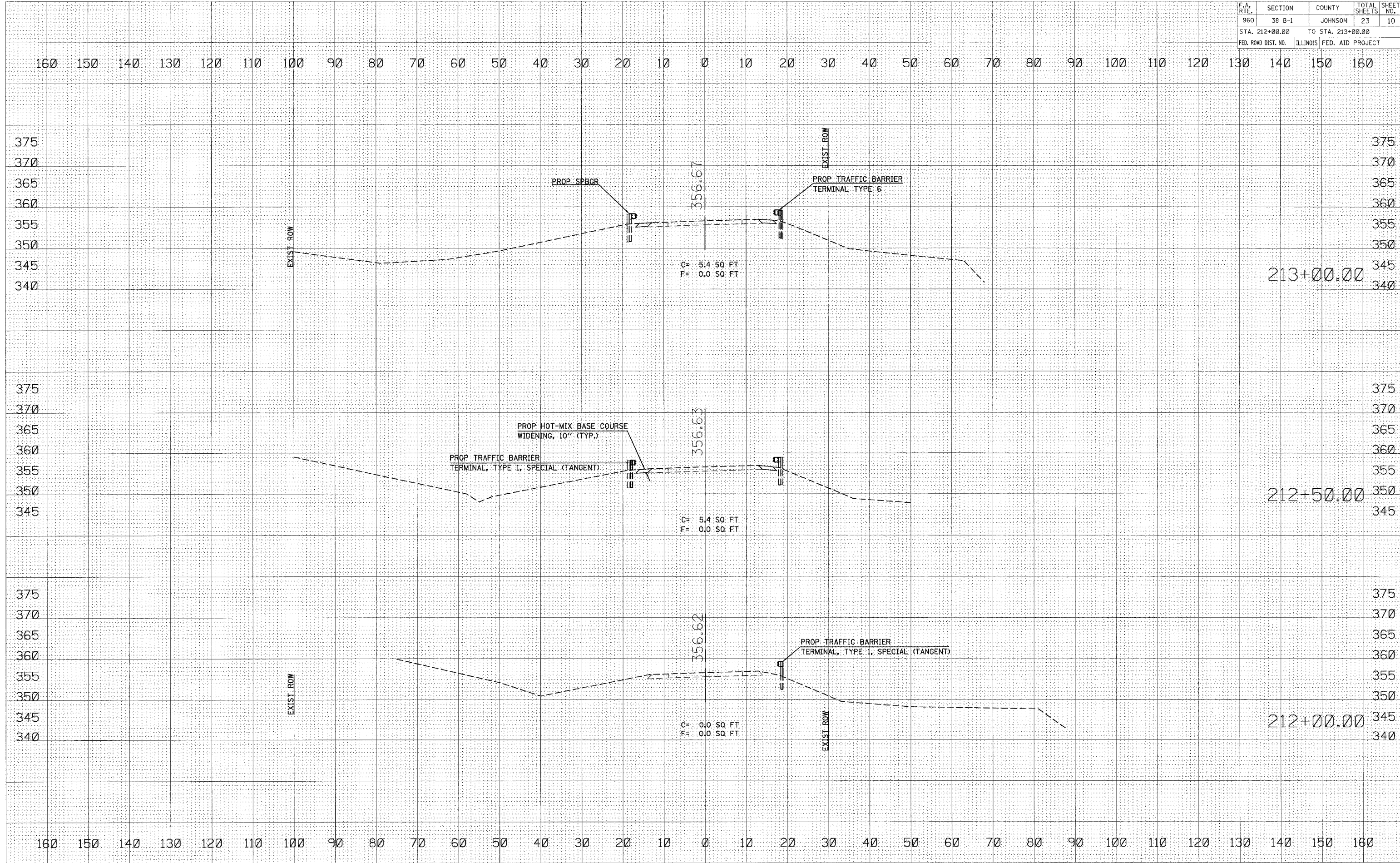
SHEETING POSITION: CASE II

All dimensions are in millimeters (inches) unless otherwise shown.

REFLECTOR AND TERMINAL MARKER PLACEMENT

DETAIL

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
960	38 B-1	JOHNSON	23	10
STA. 212+00.00		TO STA. 213+00.00		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



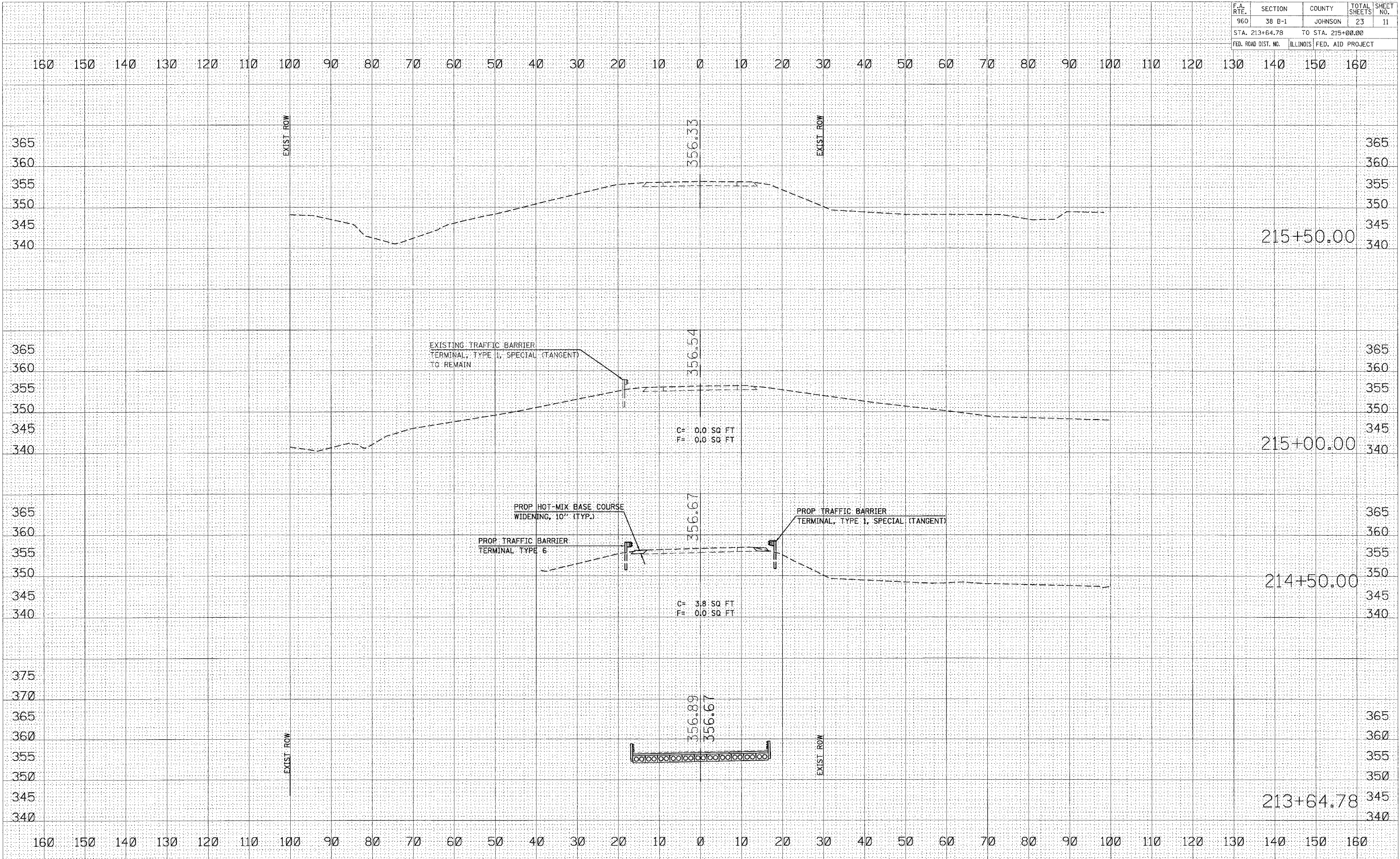
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REVIEWED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
FINAL SURVEY	
NOTE BOOK	
NO.	

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

PLOT DATE = 6/6/2007
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PLOT SCALE = 1/8" = 1'-0"
USER NAME = halsvorbis

CROSS SECTIONS - US 45 OVER CAVE CREEK

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
960	38 B-1	JOHNSON	23	11
STA. 213+64.78		TO STA. 215+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



DATE
BY
SUPERVISOR
SURVEY
TEMPLATE
NOTE BOOK
AREAS CHECKED
NO.

DATE
BY
SUPERVISOR
SURVEY
TEMPLATE
NOTE BOOK
AREAS CHECKED
NO.

PLOT DATE = 8/25/2007
FILE NAME = c:\pds\plots\9822204\9822204-ma-55-note book
PLOT SCALE = 10.0000' / IN.
USER NAME = malstach

Bench Mark: A chiseled square on NE corner of NE wingwall of S.N. 044-0010, El. 354.524

Existing Structure: S.N. 044-0010, built in 1924 under S.B.I. Route 1, Section 38B, was originally a RC T-beam bridge. The superstructure was replaced and widened with PPC deck beams in 1972 under S.B.I. Route 1, Section 38 B-DR. The existing structure is a single span 21' x 36" PPC-deck beam bridge with closed cantilever abutments on untreated timber piles, 52'-10" back to back abutments, 33'-0" out to out, with a 45 degree skew.

The existing deck beams, bridge railing, and approach shoulder beams including railing are to be removed and replaced. Traffic to be maintained utilizing stage construction.

No Salvage.

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
F.A.S. 960	38 B-1	JOHNSON	23	12
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract # 98890

INDEX OF SHEETS

1. General Plan
2. General Data
3. Stage Construction Details
4. Steel Railing, Type SM
5. Approach Details
6. Superstructure
7. Superstructure Details-1
8. Superstructure Details-2
9. Abutments
10. Bar Splicer Assembly Details
11. Temporary Concrete Barrier
12. Concrete Repair

LOADING HS20-44 (NEW CONSTRUCTION)

No allowance for future wearing surface.

DESIGN SPECIFICATIONS (NEW CONSTRUCTION)

2002 AASHTO

DESIGN STRESSES

FIELD UNITS

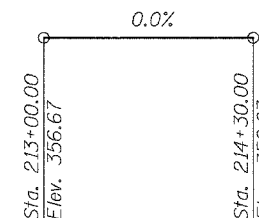
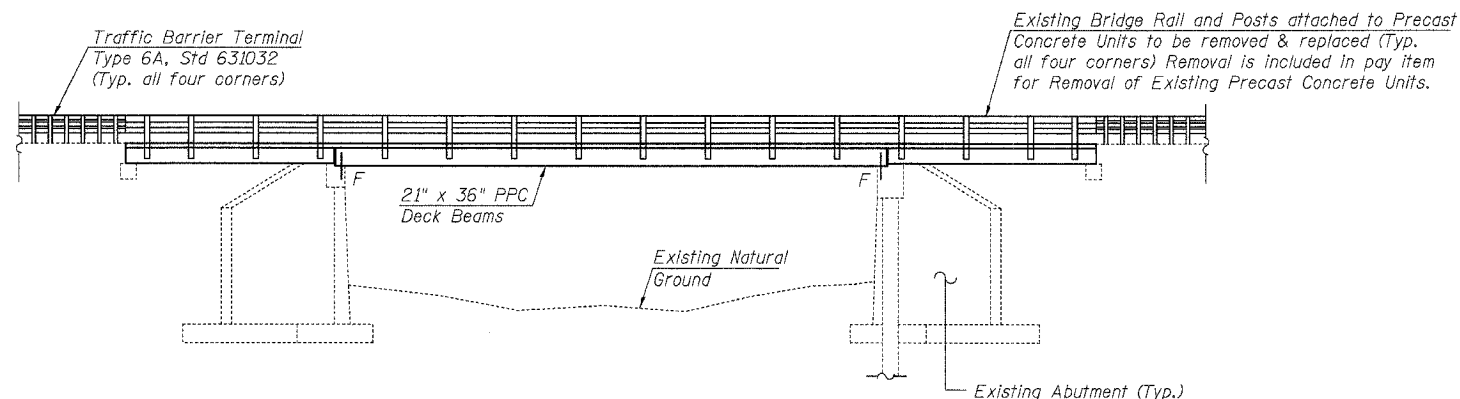
$f'_c = 5,000$ psi (Concrete Wearing Surface)
 $f_y = 60,000$ psi (Reinforcement)

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi
 $f'_{ci} = 4,000$ psi
 $f'_s = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax. strands)
 $f'_{si} = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax. strands)

SEISMIC DATA

Seismic Performance Category (SPC) = B
 Bedrock Acceleration Coefficient (A) = 13.6%g
 Site Coefficient (S) = 1.5



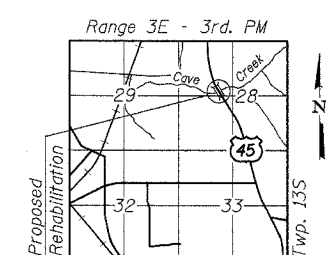
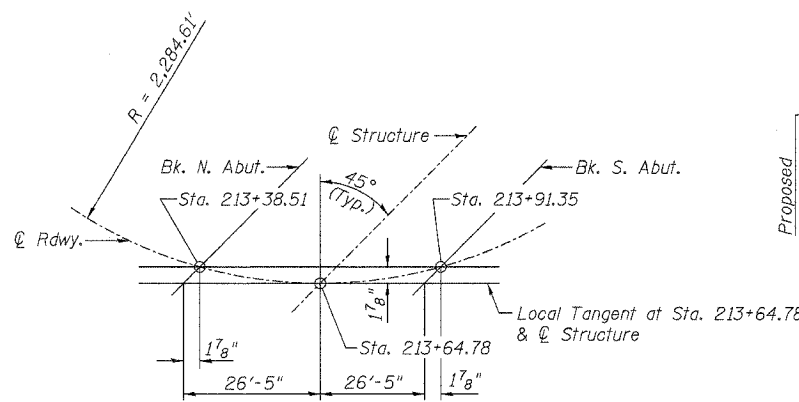
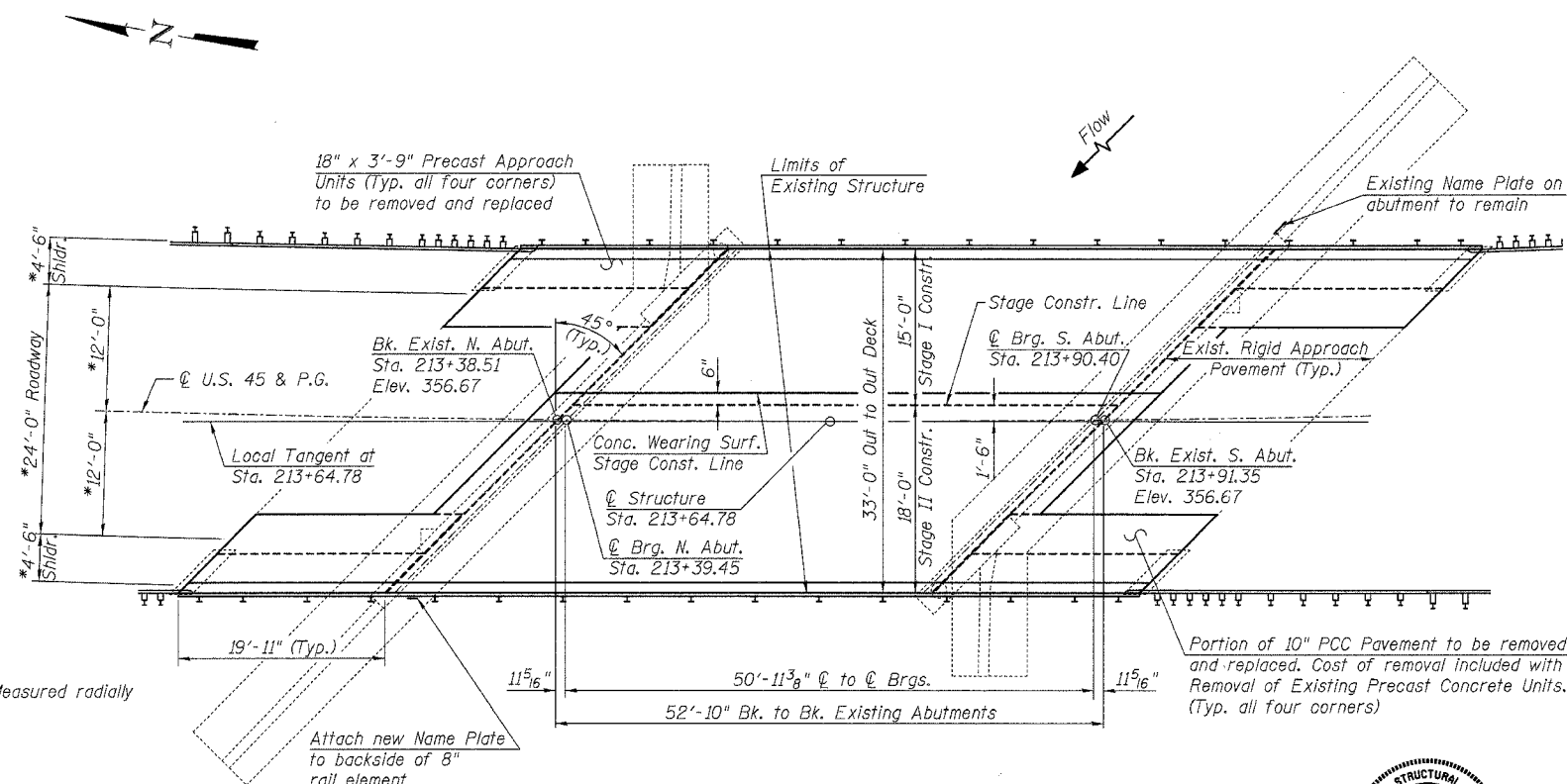
CURVE DATA

$\Delta = 19^\circ 08' 56"$ (LT)
 $D = 2^\circ 30' 28"$
 $T = 385.36'$
 $L = 763.54'$
 $E = 32.27'$
 $R = 2284.61'$
 $S.E. = 0.0211'$
 $P.C. = \text{Sta. } 207+36.58$
 $P.T. = \text{Sta. } 215+00.12$
 $P.I. = \text{Sta. } 211+21.94$

STATION 213+64.78
 REBUILT 20 BY
 STATE OF ILLINOIS
 F.A.S. RT. 960 SEC. 38 B-1
 LOADING HS20
 STR. NO. 044-0010

NAME PLATE

(See Std. 515001)



APPROVED
 FOR STRUCTURAL ADEQUACY ONLY
 (Signature)
 ENGINEER OF BRIDGES AND STRUCTURES

(Signature)
 Michael T. Haley
 Licensed Structural Engineer
 State of Illinois No. 81-5991
 Expires 11/30/2008
 8-16-07 Date

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL PLAN
 U.S. ROUTE 45 OVER
 CAVE CREEK
 F.A.S. ROUTE 960 - SECTION 38 B-1
 JOHNSON COUNTY
 STA. 213+64.78
 STRUCTURE NO. 044-0010

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ROUTE NO.	SECTION	QUANTITY	DATE	SHEET	SHEET NO. 2 12 SHEETS
F.A.S. 960	38 B-1	JOHNSON	23	13	
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

Contract # 98890

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructure	Each	1	-	1
**Bridge Deck Grooving	Sq. Yd.	251	-	251
**Protective Coat	Sq. Yd.	281	-	281
Precast Concrete Bridge Slab	Sq. Ft.	299	-	299
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1735	-	1735
Reinforcement Bars, Epoxy Coated	Pound	3390	-	3390
Bar Splicers	Each	60	-	60
Steel Railing, Type SM	Foot	185	-	185
Name Plates	Each	1	-	1
Epoxy Crack Injection	Foot	-	33	33
Concrete Wearing Surface, 5"	Sq. Yd.	271	-	271
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	-	19.6	19.6
Portland Cement Concrete Pavement (10")	Sq. Yd.	33.2	-	33.2
Pavement Fabric	Sq. Yd.	33.2	-	33.2
Expansion Bolts, 3/4" φ	Each	48	-	48
*Removal of Existing Precast Concrete Units	Sq. Ft.	299	-	299

* Includes removal of the attached bridge railing and removal of portion of existing approach pavement.

** Includes area of Concrete Wearing Surface on approach shoulders.

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to existing plans are subject to routine variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.

The minimum thickness of Concrete Overlay is 5" and varies as required to adjust for the profile grade and beam camber.

A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the fascia deck beam on the side exposed to view, and the adjacent side underneath for a distance extending 9 in. Cost included with PPC Deck Beams (21" Depth).

The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A 780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to the manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the exterior face and 9" in on the underside of the fascia beams. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam.

No instream work will be allowed on this project.

The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal and replacement of the superstructure.

If the contractor's procedure for existing beam removal or placement of new beams involves placement of cranes or other heavy equipment on new beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new beams. To distribute load to multiple beams and protect the concrete, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. Prior to placement of the timber mats the following shall be done: placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys. A temporary means of lateral restraint will be required for fascia beams at expansion ends of beams to prevent movement of the beams.

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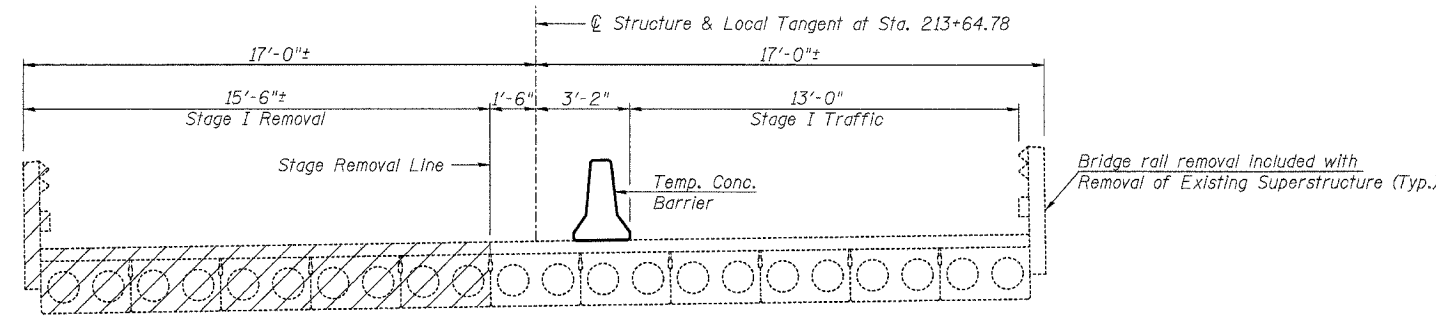
Lin Engineering, Ltd.
Consulting Engineers
Chatham, Illinois

Designed By: DL S Checked By: MTH Drawn By: AJP
Date: 03/2007 File: 044-0010.dgn

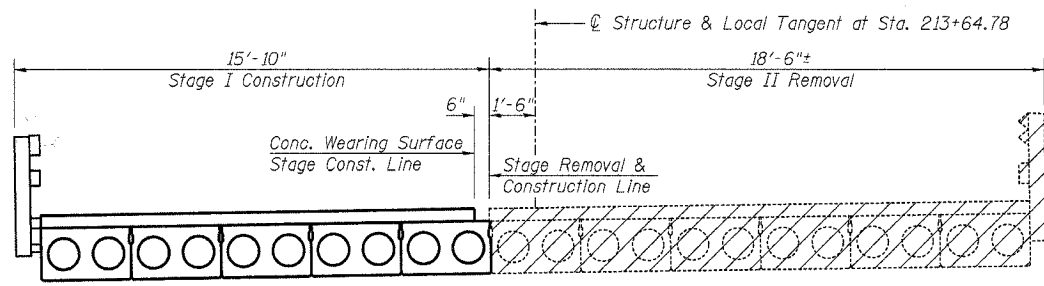
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL DATA
U.S. ROUTE 45 OVER
CAVE CREEK
F.A.S. ROUTE 960 - SECTION 38 B-1
JOHNSON COUNTY
STA. 213+64.78
STRUCTURE NO. 044-0010

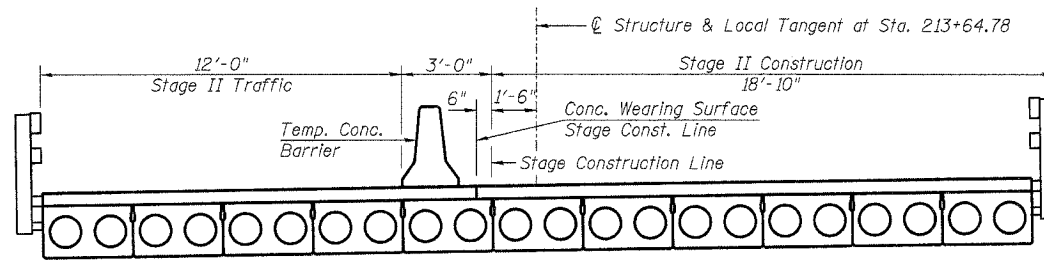
Contract # 98890



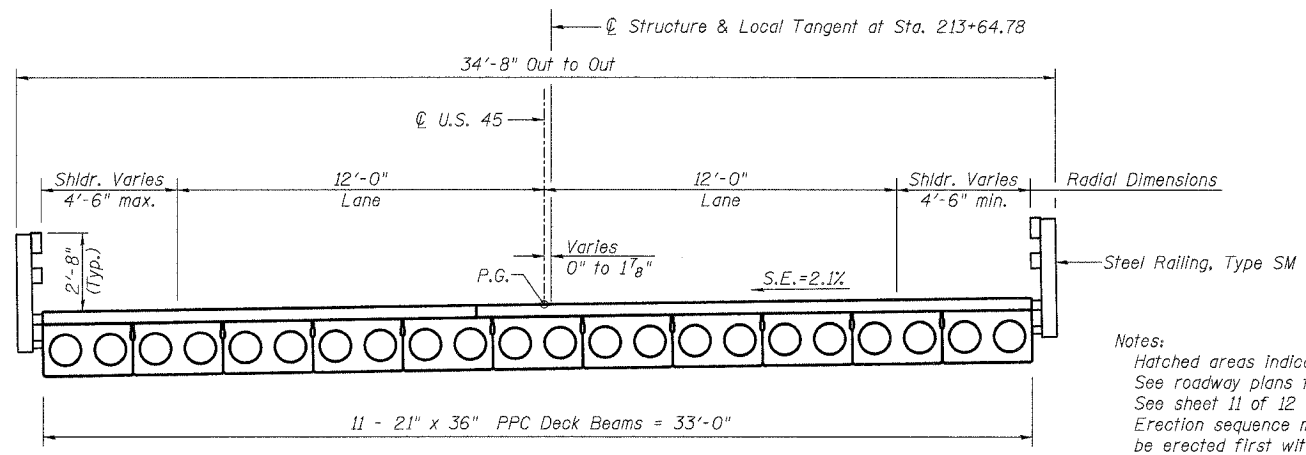
STAGE I REMOVAL & TRAFFIC
(Looking South)



STAGE I CONSTRUCTION & STAGE II REMOVAL
(Looking South)

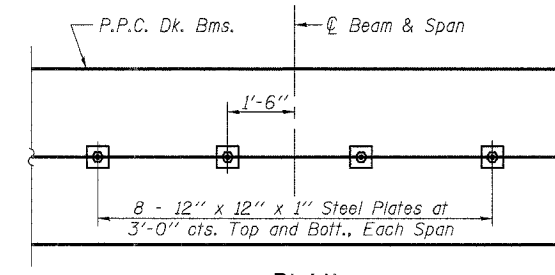


STAGE II CONSTRUCTION & TRAFFIC
(Looking South)

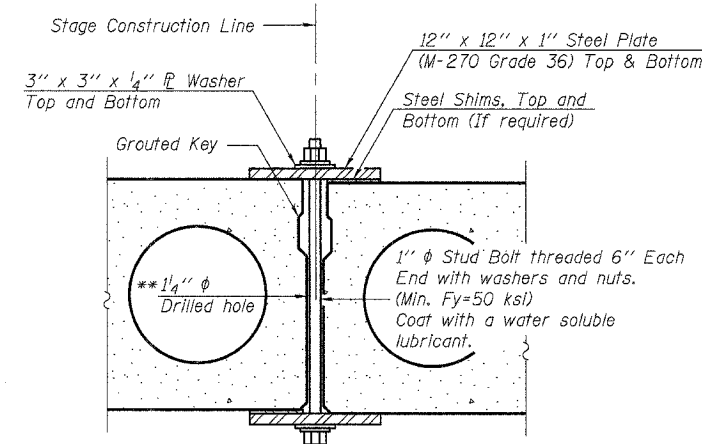


PROPOSED CROSS SECTION
(Looking South)

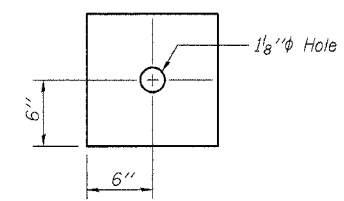
Notes:
Hatched areas indicate removal of existing superstructure.
See roadway plans for quantity of Temporary Concrete Barrier.
See sheet 11 of 12 for details of Temporary Concrete Barrier.
Erection sequence may require that deck beams at centerline be erected first with transverse ties already installed.
All cross section dimensions at right angles to Local tangent unless noted otherwise.



PLAN



SECTION



CLAMPING PLATE

SHEAR KEY CLAMPING DETAILS AT STAGE CONST. JT.
Cost included with Precast Prestressed Concrete Deck Beams (21" Depth).

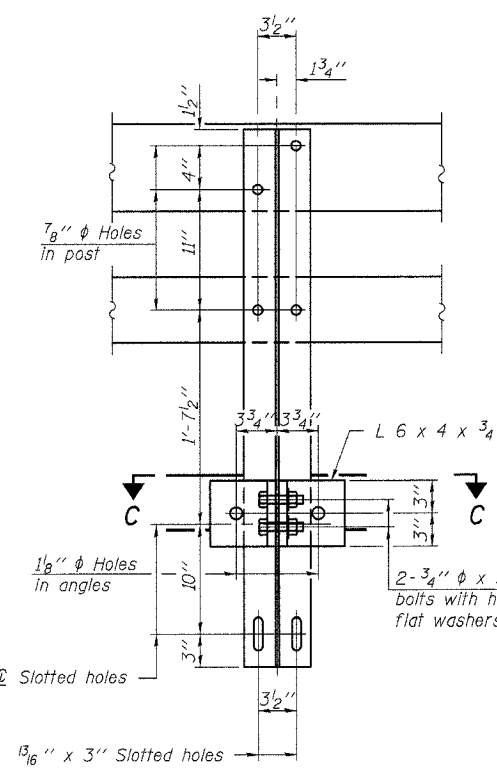
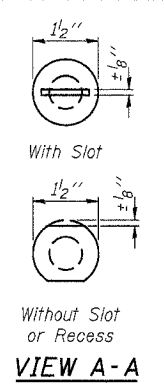
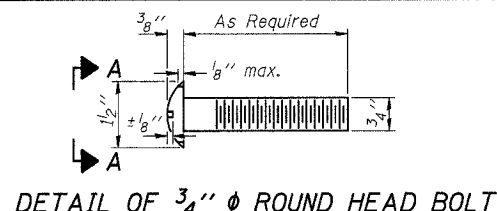
** As an alternate to the drilled holes, the Contractor may request the Fabricator to cast 2" diameter semi-circular recesses in the sides of each beam adjacent to the stage construction line. These recesses should align to form a hole at the appropriate locations for the clamping device bolts. If the Contractor elects to use this alternate, the details shall be identified on the shop drawings.

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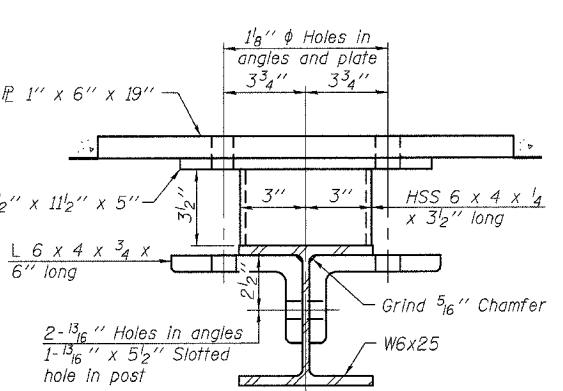
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
STAGE CONSTRUCTION DETAILS
U.S. ROUTE 45 OVER
CAVE CREEK
F.A.S. ROUTE 960 - SECTION 38 B-1
JOHNSON COUNTY
STA. 213+64.78
STRUCTURE NO. 044-0010

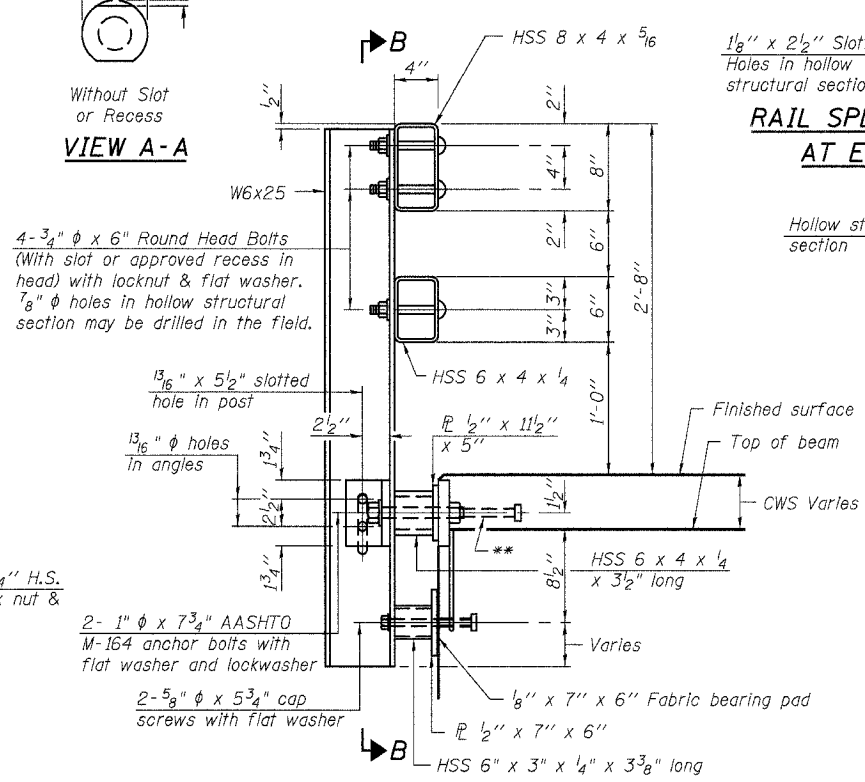
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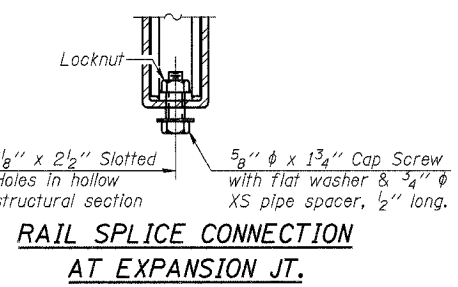
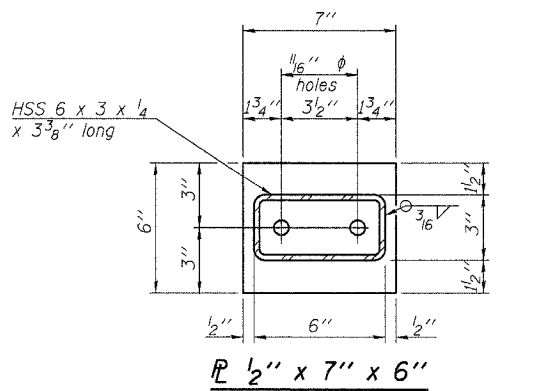
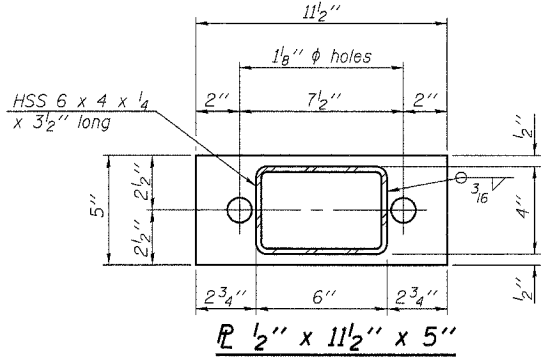
SECTION B-B



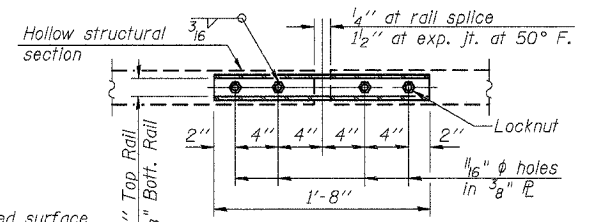
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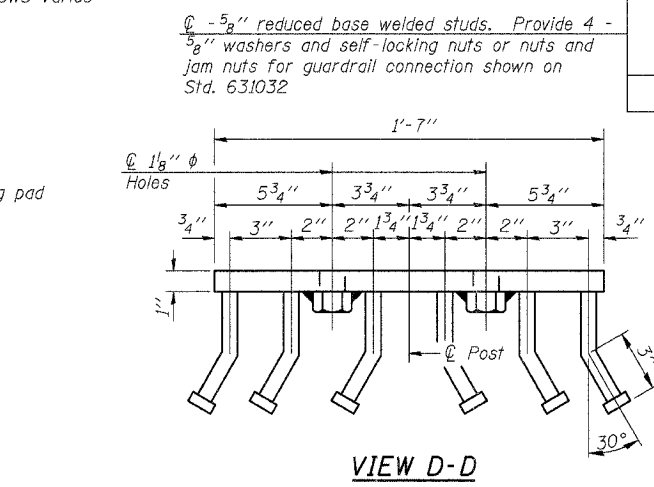
SECTION AT RAIL POST



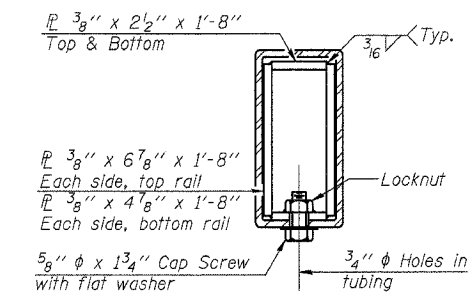
RAIL SPLICE CONNECTION AT EXPANSION JT.



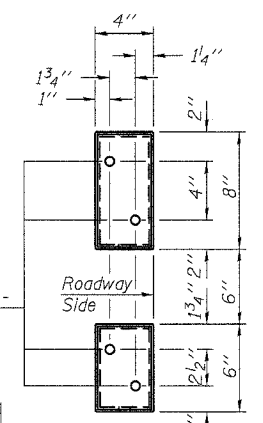
PLAN-BOTT. SPLICE P TYPICAL



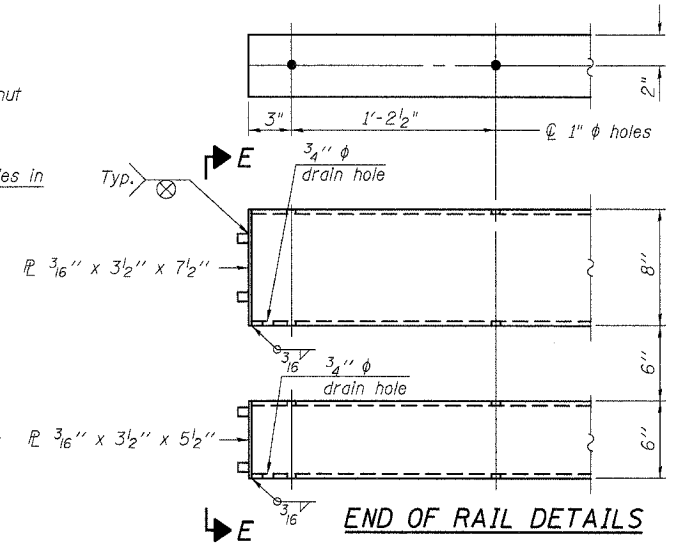
VIEW D-D



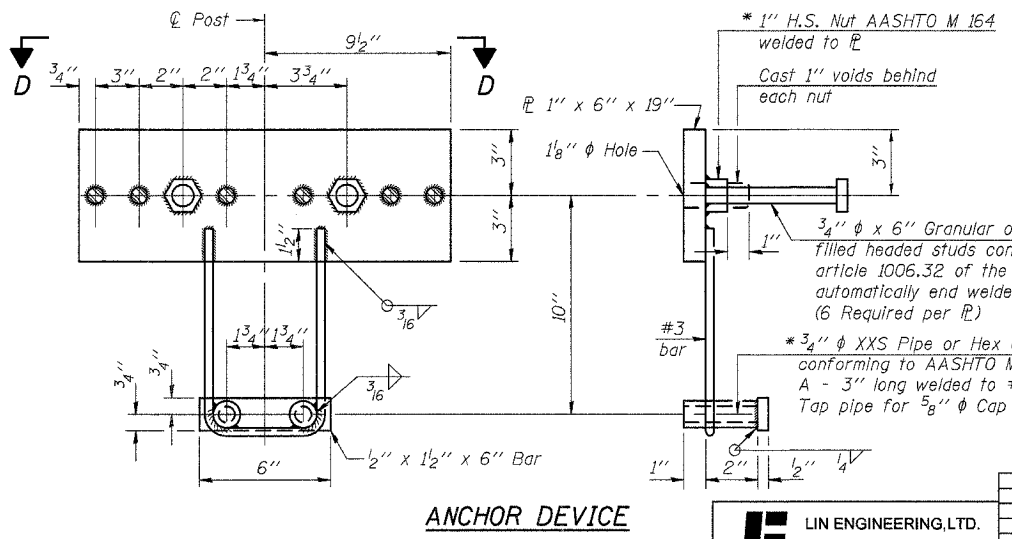
SECTION AT RAIL SPLICE



VIEW E-E



END OF RAIL DETAILS



ANCHOR DEVICE

Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 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 Bridge Rail, Type SM.
 Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
 ** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.
 See Sheet 7 of 12 for rail post spacing.
 See Sheet 2 of 12 for connection to Precast Approach Units.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	185

ILLINOIS DEPARTMENT OF TRANSPORTATION
STEEL RAILING, TYPE SM
 U.S. ROUTE 45 OVER
 CAVE CREEK
 F.A.S. ROUTE 960 - SECTION 38 B-1
 JOHNSON COUNTY
 STA. 213+64.78
 STRUCTURE NO. 044-0010

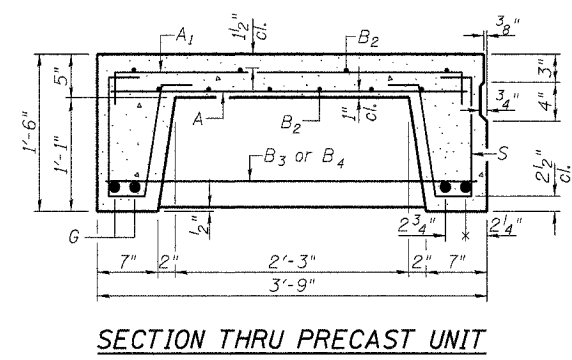
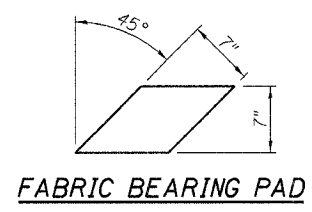
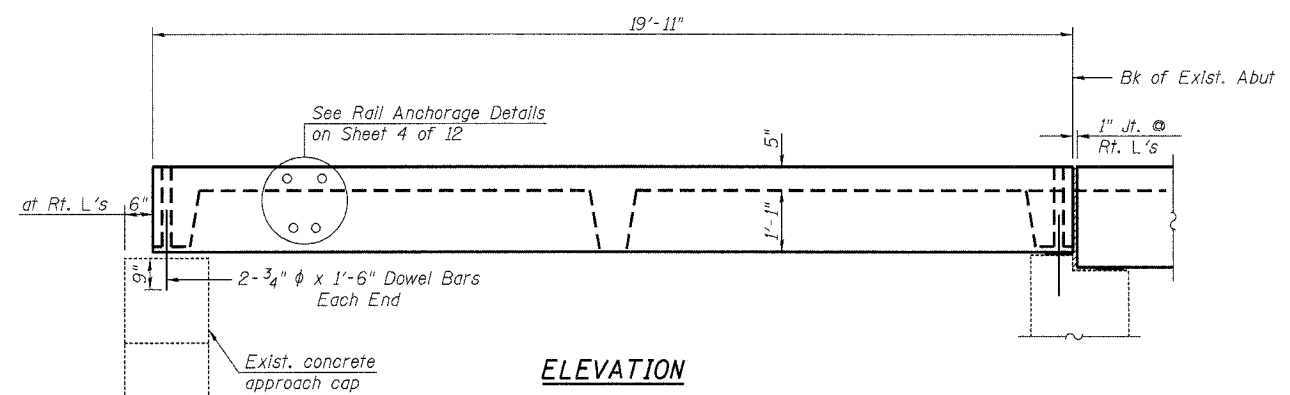
REVISIONS

NAME	DATE

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 Consulting Engineers
 Chatham, Illinois

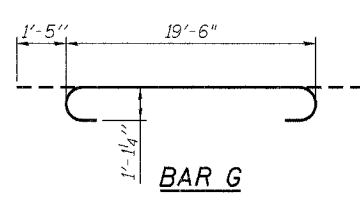
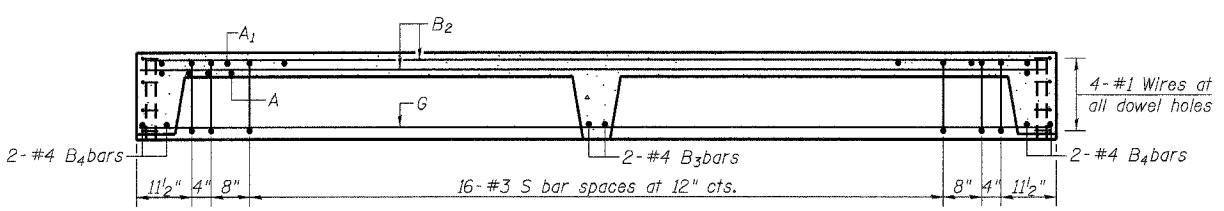
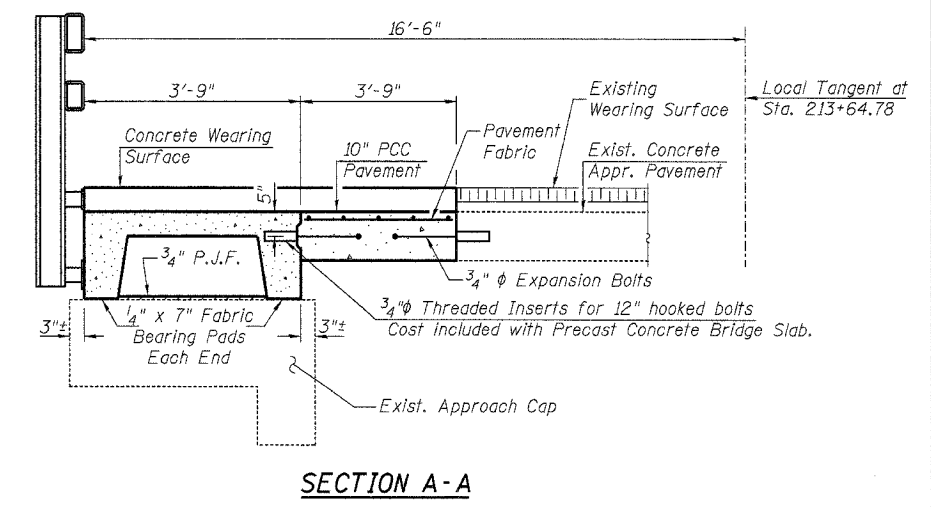
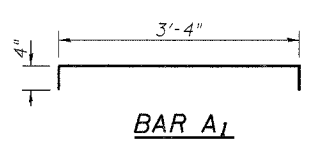
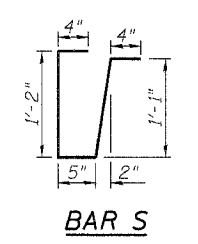
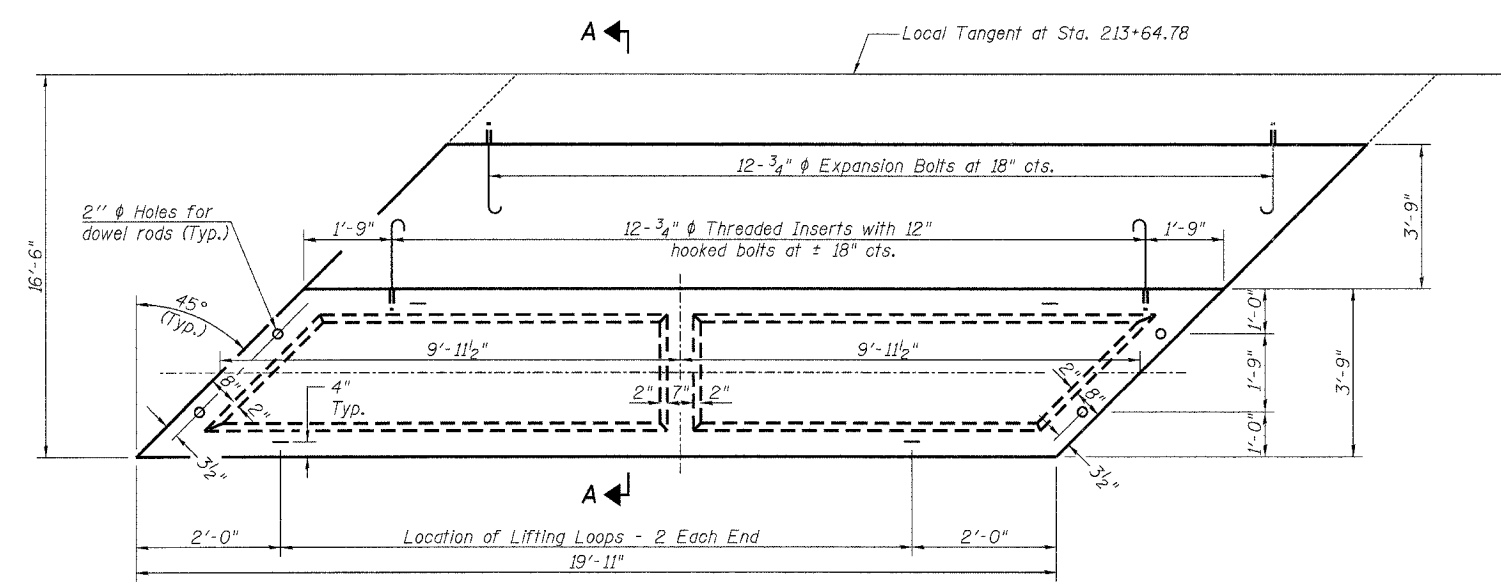
Designed By: DLS Checked By: MTH Drawn By: AJF
 Date: 03/2007 File: 044-0010.DWG

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 R-34CWS 11-1-06 (6'-3" Maximum Post Spacing) (5" minimum to 7 1/8" maximum CWS thickness)



BAR LIST (ONE UNIT)
Reinforcement to be cast into slab

Bar	No.	Size	Length	Shape
A	50	#4	3'-3"	—
A ₁	27	#4	4'-0"	—
B ₂	10	#4	19'-6"	—
B ₃	2	#4	3'-6"	—
B ₄	4	#4	5'-0"	—
G	4	#10	22'-4"	—
S	42	#4	3'-4"	—

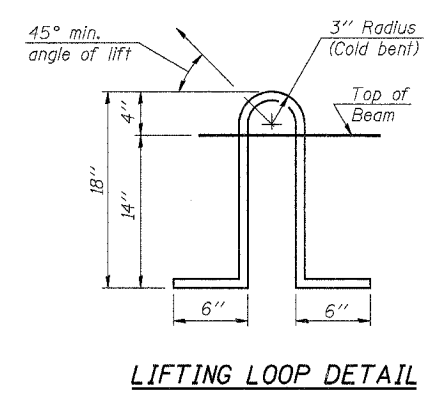
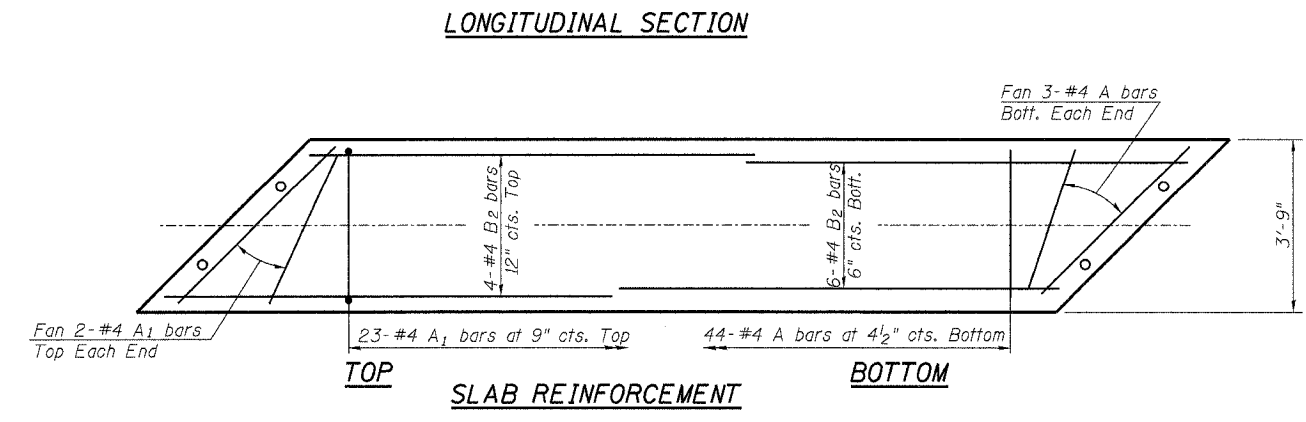


NOTES

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.
Lifting loops shall be 2-1/2" φ-270 ksi strands, as shown.
Anchor dowels grouted in place in existing holes.
Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast concrete bridge slabs.
Reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/4" φ hooked bolts is included in the cost of Precast Concrete Bridge Slab.
See Sheet 7 of 12 for location of rail anchorages.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	299
Portland Cement Concrete Pavement (10")	Sq. Yd.	33.2
Pavement Fabric	Sq. Yd.	33.2
Expansion Bolts, 3/4" φ	Each	48



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Consulting Engineers
Chatham, Illinois

Designed By: DCS
Checked By: MTH
Date: 03/2007

Drawn By: AJP
File: D44-001E.DWG

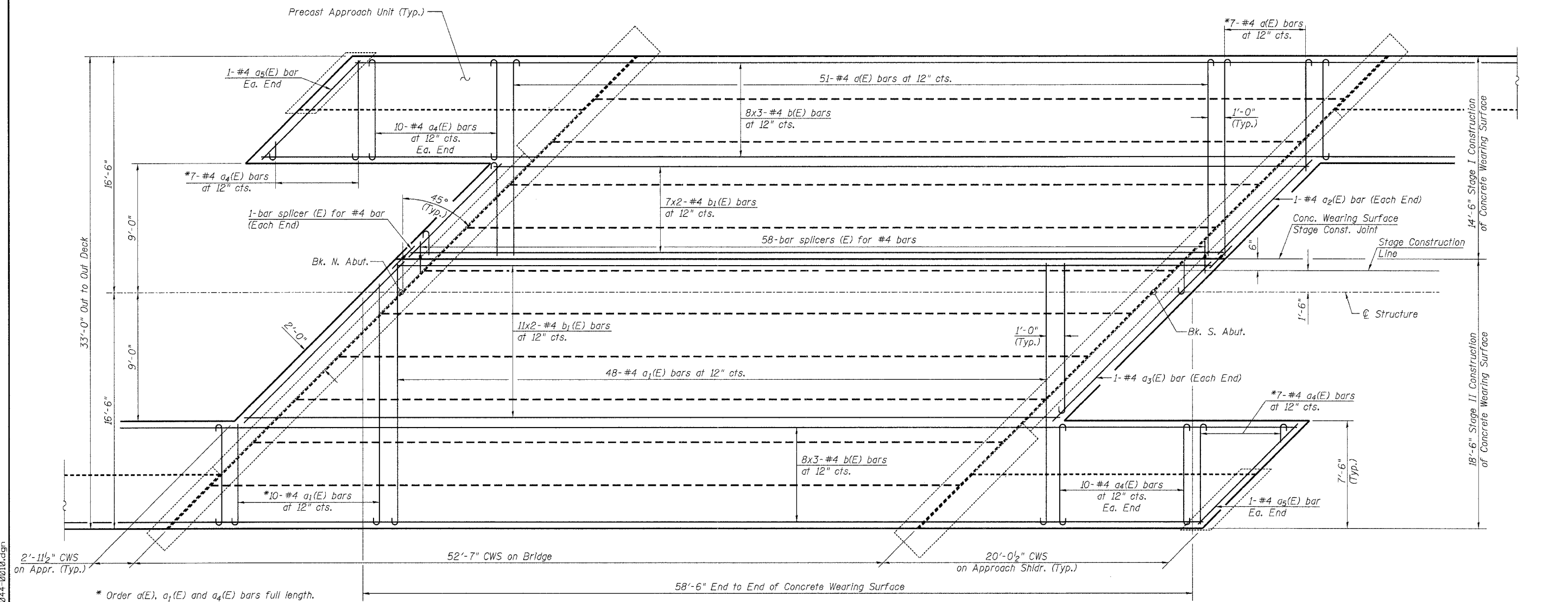
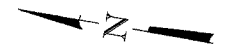
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
APPROACH DETAILS
U.S. ROUTE 45 OVER
CAVE CREEK
F.A.S. ROUTE 960 - SECTION 38 B-1
JOHNSON COUNTY
STA. 213+64.78
STRUCTURE NO. 044-0010

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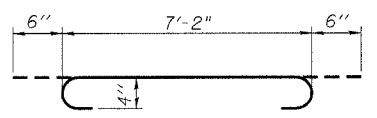
Contract # 98890

MIN. BAR LAP
#4 Bar = 1'-4"

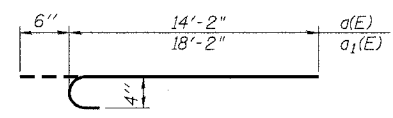


* Order a(E), a₁(E) and a₄(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

PLAN



BAR a₄(E)



BARS a(E) & a₁(E)

Notes:
For remainder of superstructure details, see Sheets 7 and 8 of 12.
Bars indicated thus 7x2-#4 etc. indicates 7 lines of bars with 2 lengths per line.
See Sheet 3 of 12 for shear key clamping details at Stage Construction Joint.

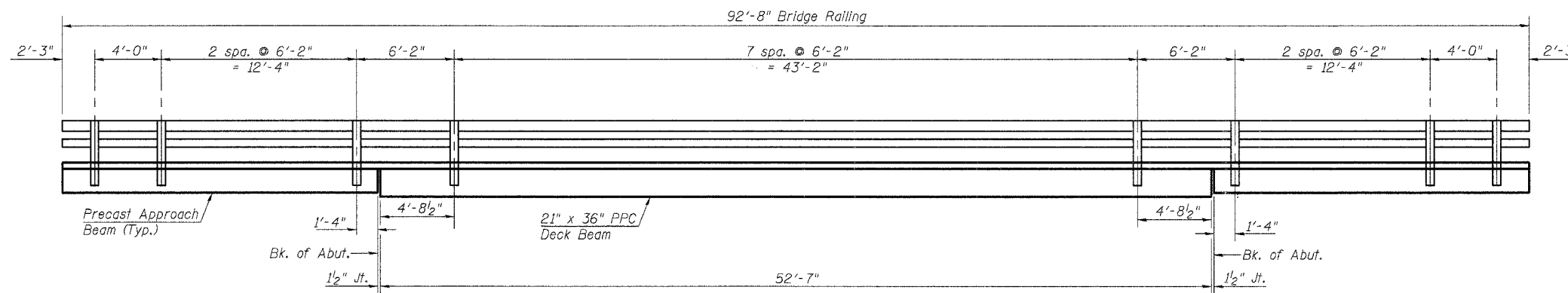
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LIN ENGINEERING, LTD.
Consulting Engineers
Chatham, Illinois

Designed By: RLS Checked By: WTH Drawn By: AJF
Date: 03/2007 File: 044-0010.DWG

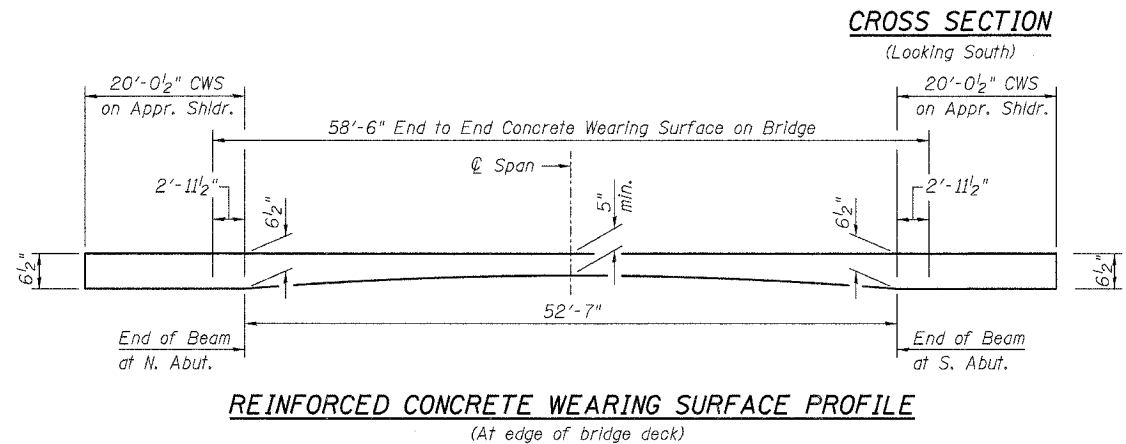
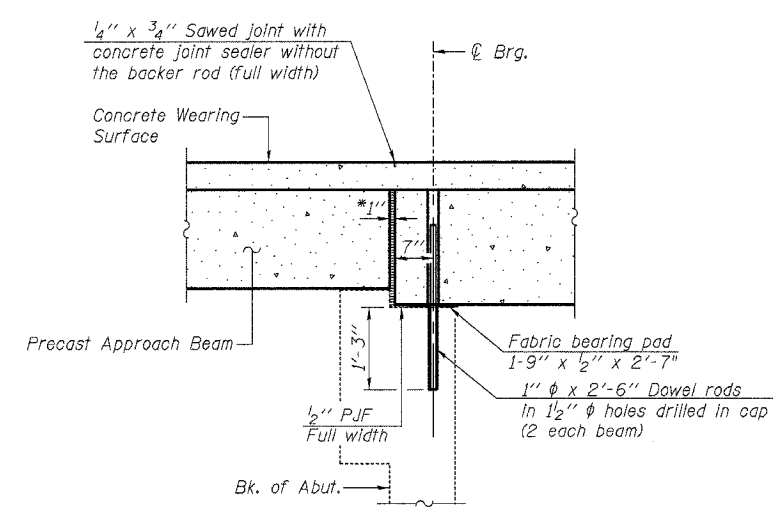
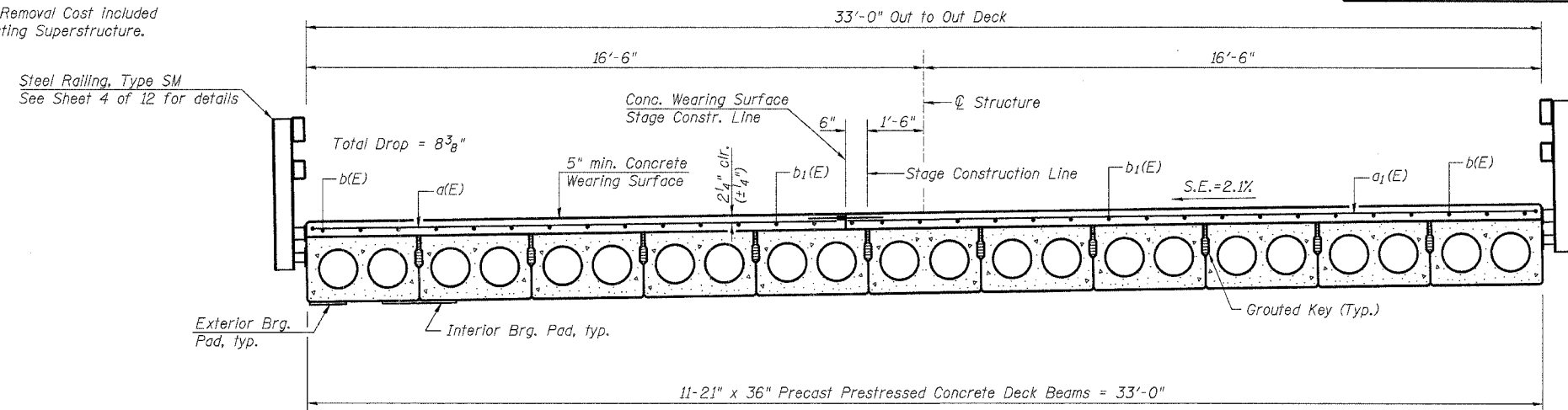
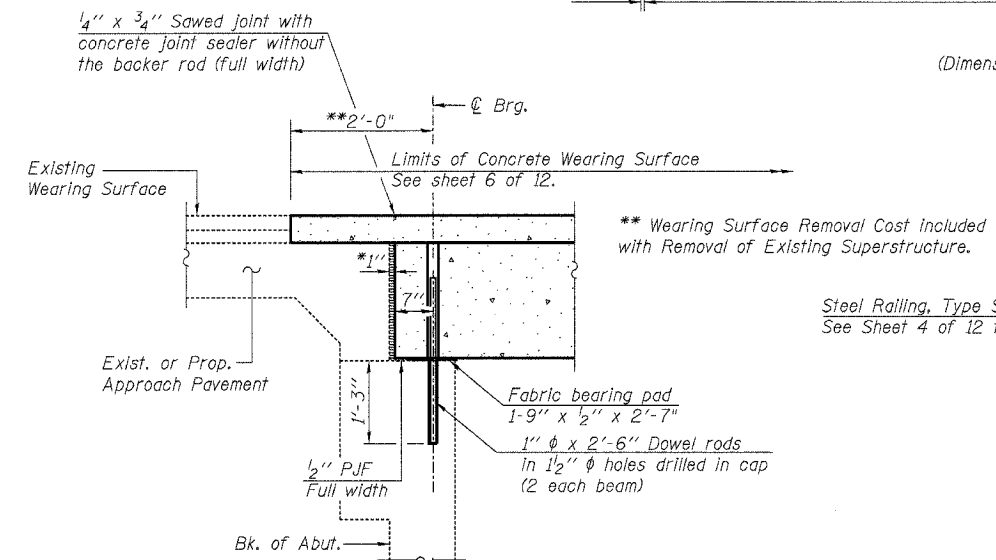
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE
U.S. ROUTE 45 OVER
CAVE CREEK
F.A.S. ROUTE 960 - SECTION 38 B-1
JOHNSON COUNTY
STA. 213+64.78
STRUCTURE NO. 044-0010



**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	58	#4	14'-8"	—
a ₁ (E)	58	#4	18'-8"	—
a ₂ (E)	2	#4	10'-0"	—
a ₃ (E)	2	#4	15'-8"	—
a ₄ (E)	54	#4	8'-2"	—
a ₅ (E)	4	#4	10'-3"	—
b(E)	48	#4	31'-9"	—
b ₁ (E)	36	#4	29'-10"	—
Bar Splicers			Each	60
Reinforcement Bars, Epoxy Coated			Pound	3390
Concrete Wearing Surface, 5"			Sq. Yd.	271



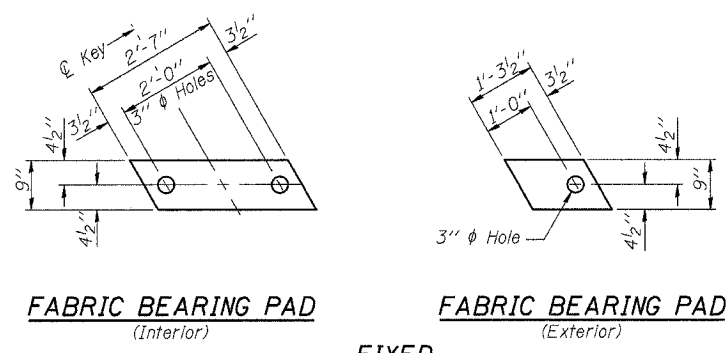
Notes:
 After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
 Dowel rods drilled in cap are included in the cost of Precast Prestressed Concrete Deck Beams (21" Depth).
 All horizontal dimensions are at right angles to beam ends, unless noted otherwise.
 Concrete wearing surface to be poured after grouting the shear keys.
 See sheet 8 of 12 for bearing pad details.

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS - 1
 U.S. ROUTE 45 OVER
 CAVE CREEK
 F.A.S. ROUTE 960 - SECTION 38 B-1
 JOHNSON COUNTY
 STA. 213+64.78
 STRUCTURE NO. 044-0010

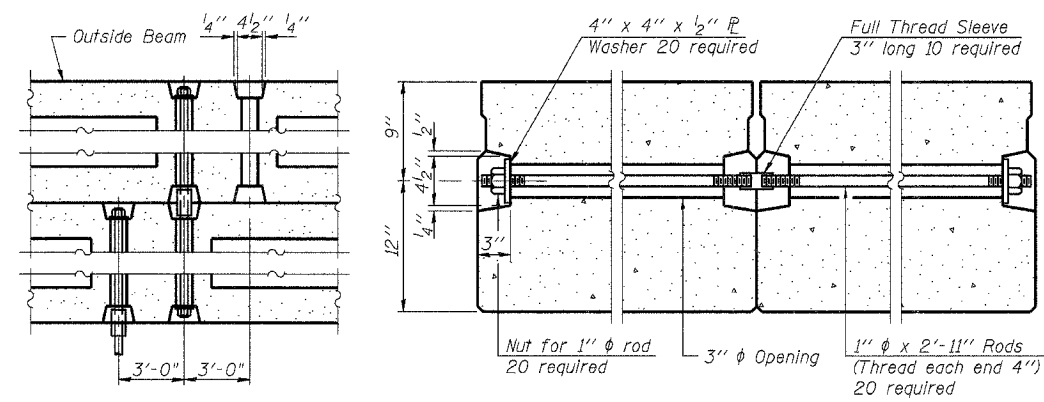
REVISIONS	NAME	DATE
LIN ENGINEERING, LTD. Consulting Engineers Chatham, Illinois		
Designed By: DLS	Checked By: WTH	Drawn By: AJP
Date: 03/2007	File: 044-0010.DGN	

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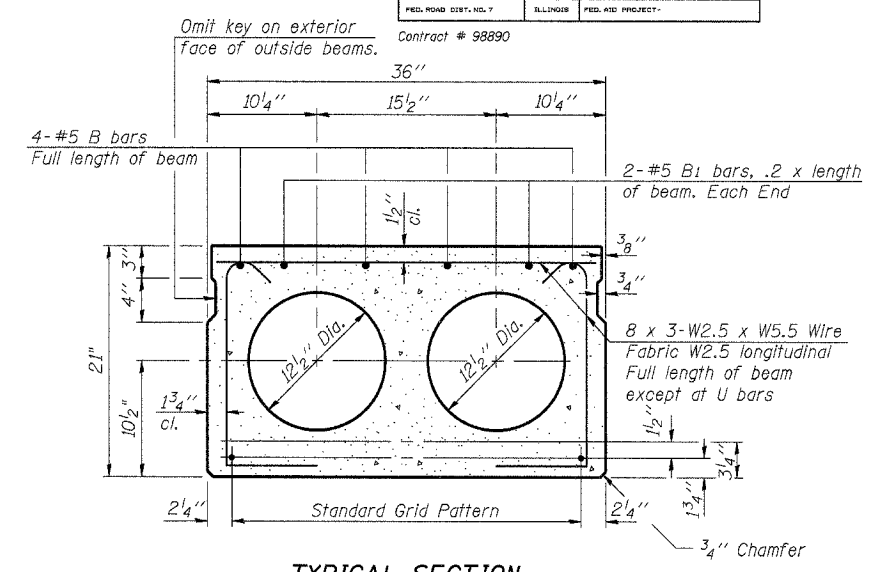
Contract # 98890



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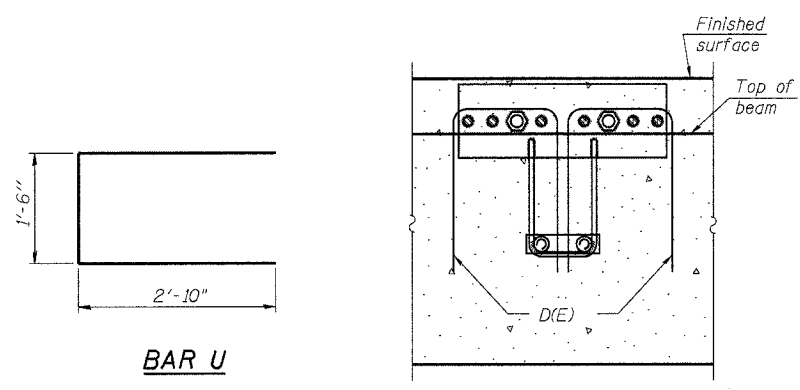
TYPICAL TRANSVERSE TIE ASSEMBLY



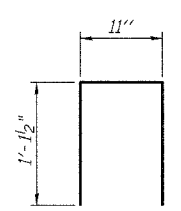
TYPICAL SECTION

1/2" φ Strands, Each Strand Stressed to 30,900 Lbs.
6-Strands 1 3/4" up, 8-Strands 3/4" up, 2-Strands 9" up

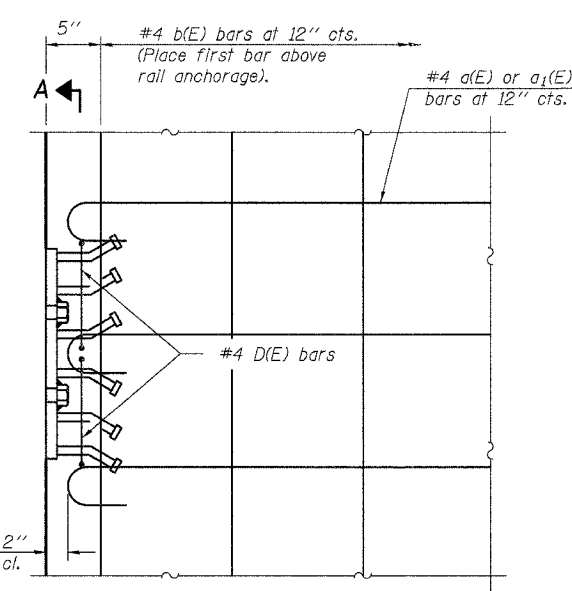
Note:
Place strands symmetrically about C of beam.



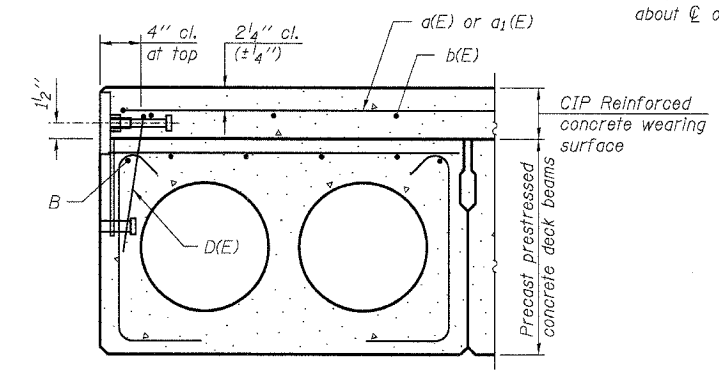
SECTION A-A



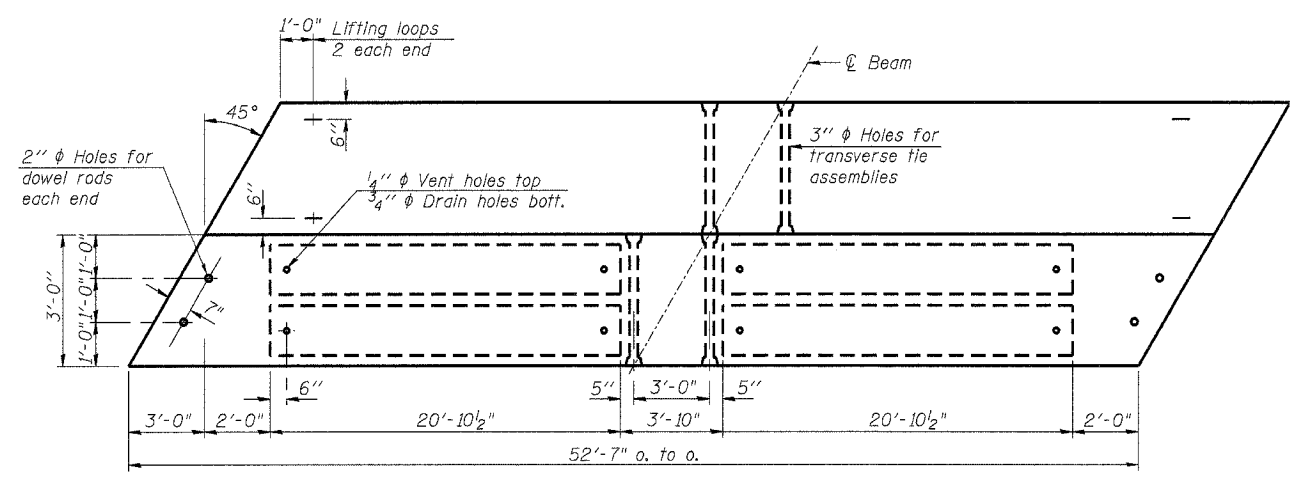
D(E) BAR



PLAN AT RAIL ANCHORAGE



SECTION THRU EXTERIOR BEAMS



PLAN

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. Lifting loops shall be 2-1/2" φ-270 ksi strands, as shown.

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 on outside shall be filled with grout after transverse tie assembly is in place.

Non prestressing steel shall conform to ASTM A 706 (1L MOD), Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/2" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

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 top of the beam and the bottom edge of the key.

Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Required Release Strength, f'cl, shall be 4000 p.s.i.

The rail anchorage shall be cast with the beam and the wearing surface shall be cast in the field. Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam. Drilling into the beam will not be permitted. Cost of rail anchorages shall be included with Precast Prestressed Concrete Deck Beams (21" Depth). See Sheet 7 of 12 for location of rail anchorages.

BAR LIST (ONE BEAM)

Bar	No.	Size	Length	Shape
B	4	#5	52'-4"	—
B1	4	#5	10'-7"	—
D	16	#4	3'-2"	—
U	12	#4	7'-2"	—

*At exterior beams only

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" Depth)	Sq. Ft.	1735
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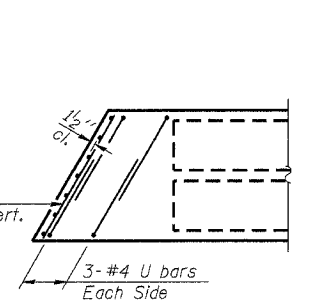
ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE DETAILS - 2
U.S. ROUTE 45 OVER
CAVE CREEK
F.A.S. ROUTE 960 - SECTION 38 B-1
JOHNSON COUNTY
STA. 213+64.78
STRUCTURE NO. 044-0010

Lin Engineering, Ltd.
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Chatham, Illinois

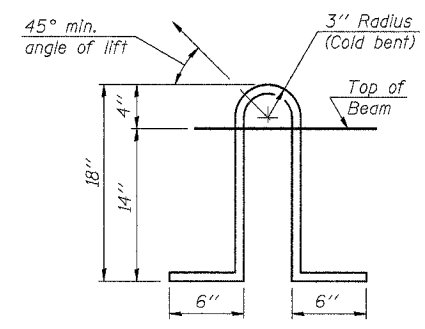
Designed By: DLS
Checked By: MTH
Date: 03/2007

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NAME	DATE

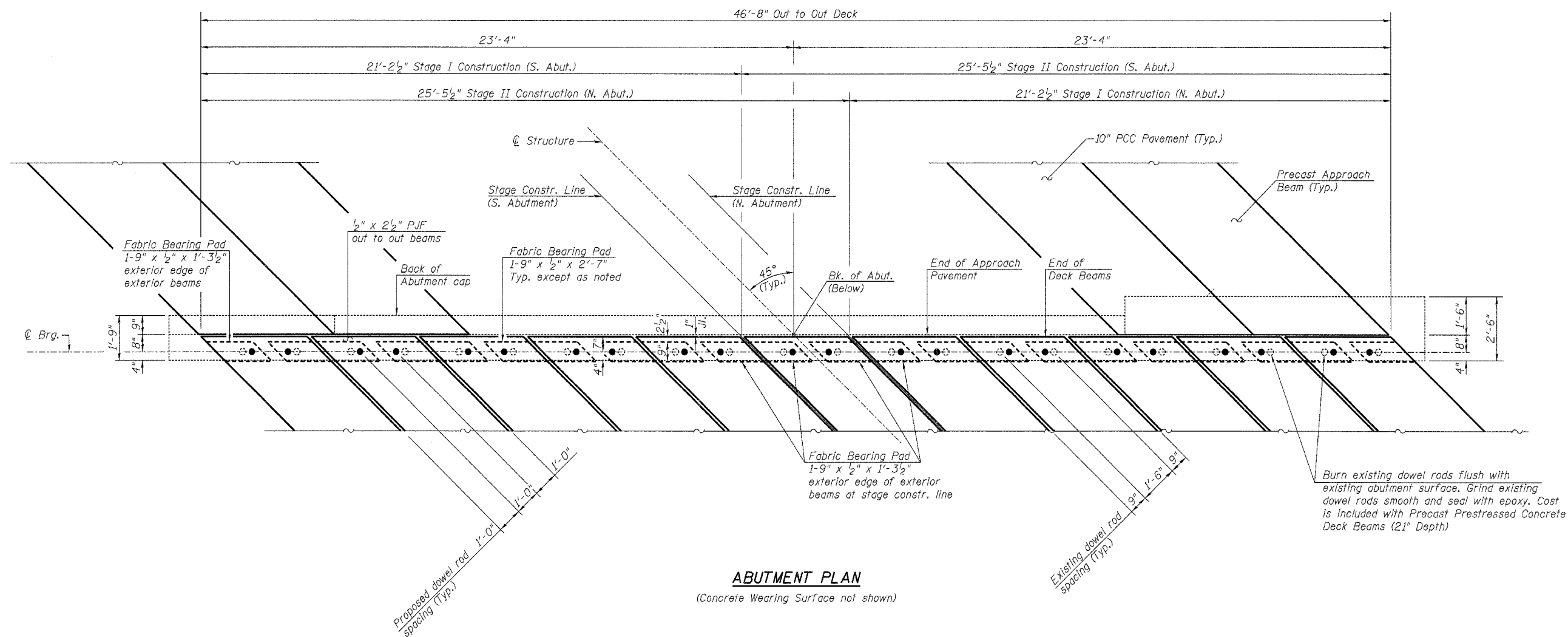
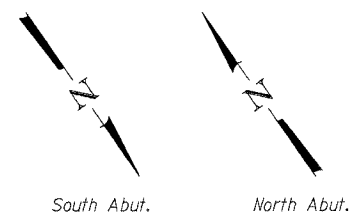
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END PLAN



LIFTING LOOP DETAIL



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Chatham, Illinois

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Date: 03/2007 File: 044-0010.DWG

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
ABUTMENTS
U.S. ROUTE 45 OVER
CAVE CREEK
F.A.S. ROUTE 960 - SECTION 38 B-1
JOHNSON COUNTY
STA. 213+64.78
STRUCTURE NO. 044-0010

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 960	38 B-1	JOHNSON	23	21
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

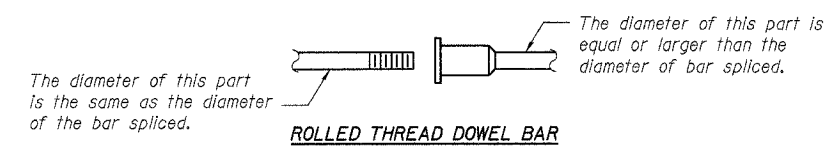
SHEET NO. 10
12 SHEETS

Contract # 98890

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

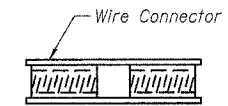
- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$
 - ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete



ROLLED THREAD DOWEL BAR



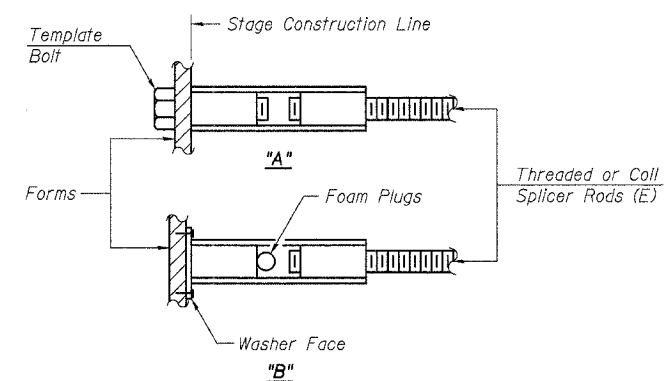
**** ONE PIECE**



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

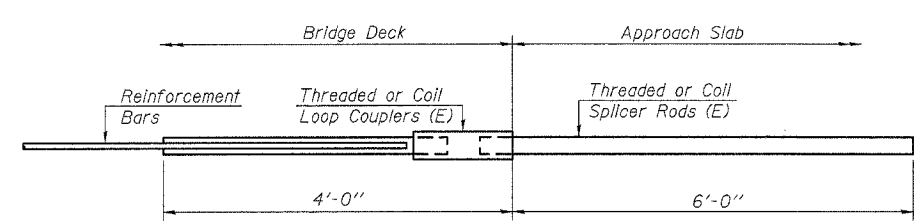
** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

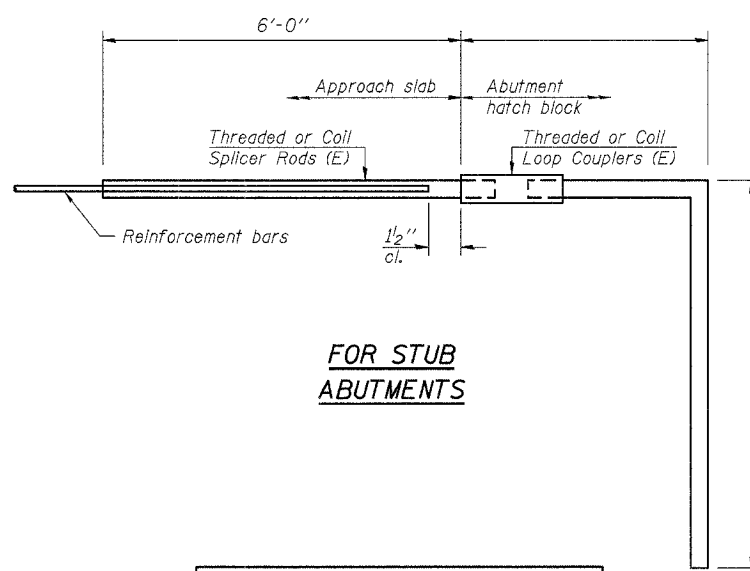
"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



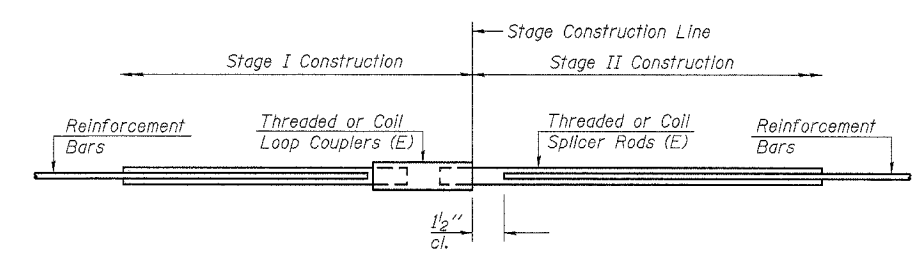
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



FOR STUB ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location
#4	60	Deck

ILLINOIS DEPARTMENT OF TRANSPORTATION
BAR SPLICER ASSEMBLY DETAILS
U.S. ROUTE 45 OVER
CAVE CREEK
F.A.S. ROUTE 960 - SECTION 38 B-1
JOHNSON COUNTY
STA. 213+64.78
STRUCTURE NO. 044-0010

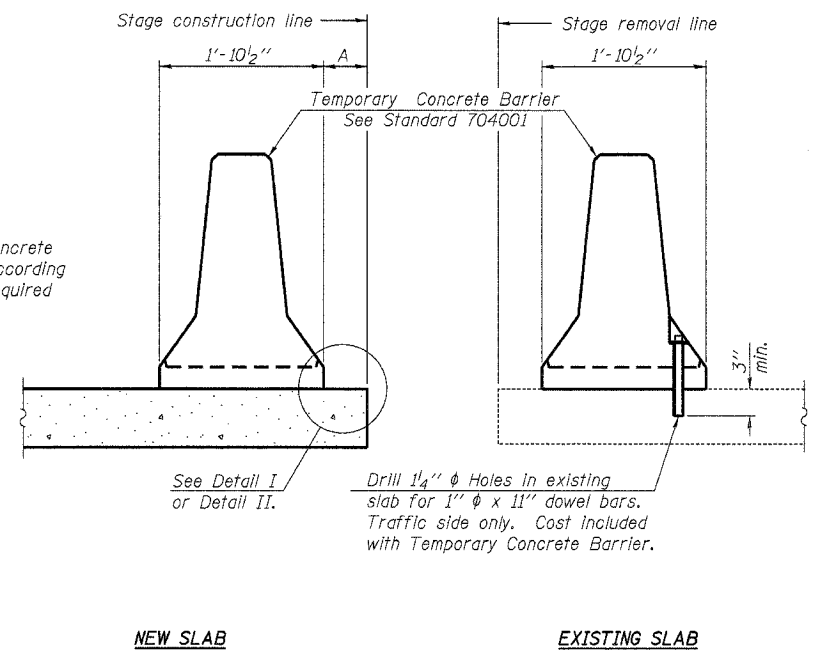
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Consulting Engineers
Chatham, Illinois

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Date: 03/2007 File: 044-0010.DGN

REVISIONS	
NAME	DATE

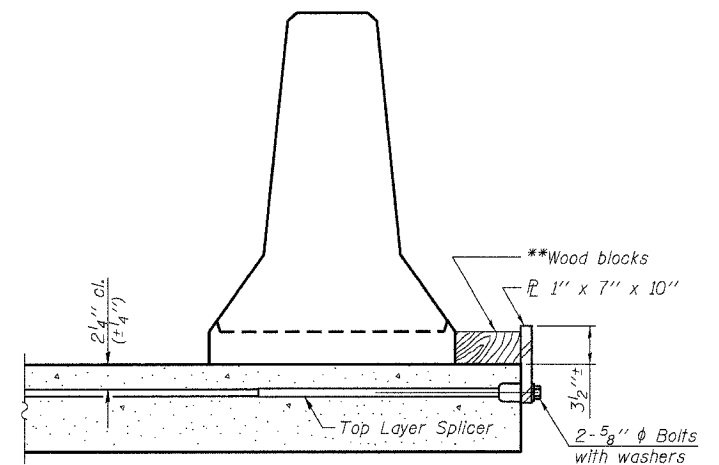
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Contract # 98890

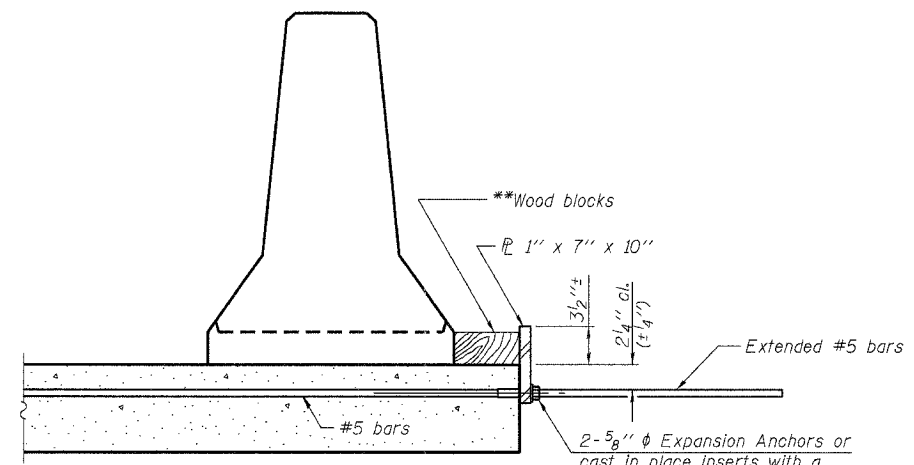


When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

SECTIONS THRU SLAB



DETAIL I



DETAIL II

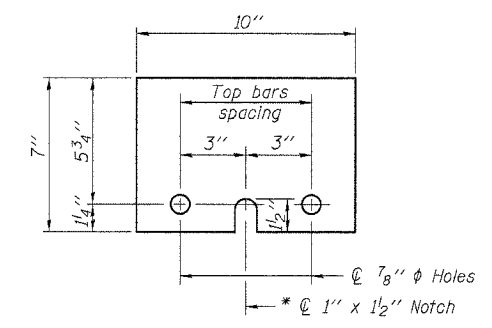
** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel R to the top layer of couplers with 2-5/8" phi bolts screwed to coupler at approximate C of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel R to the concrete slab with 2-5/8" phi Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate C of each barrier panel.

Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



STEEL RETAINER R 1" x 7" x 10"

* Required only with Detail II

ILLINOIS DEPARTMENT OF TRANSPORTATION
TEMPORARY CONCRETE BARRIER
 U.S. ROUTE 45 OVER
 CAVE CREEK
 F.A.S. ROUTE 960 - SECTION 38 B-1
 JOHNSON COUNTY
 STA. 213+64.78
 STRUCTURE NO. 044-0010

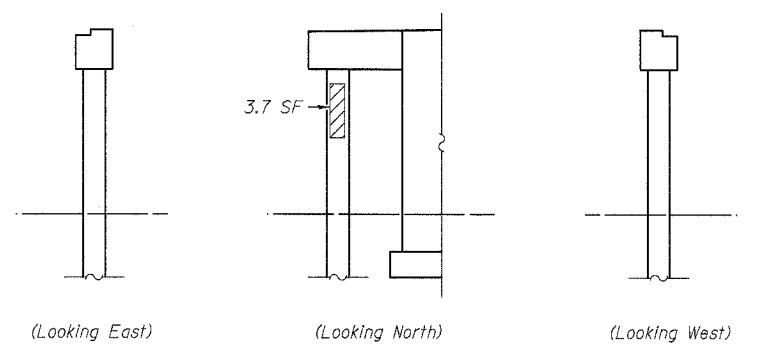
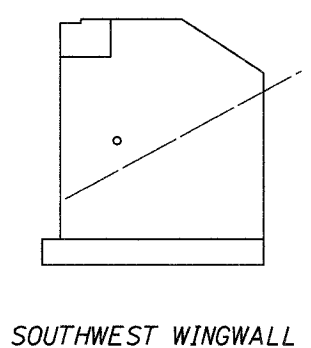
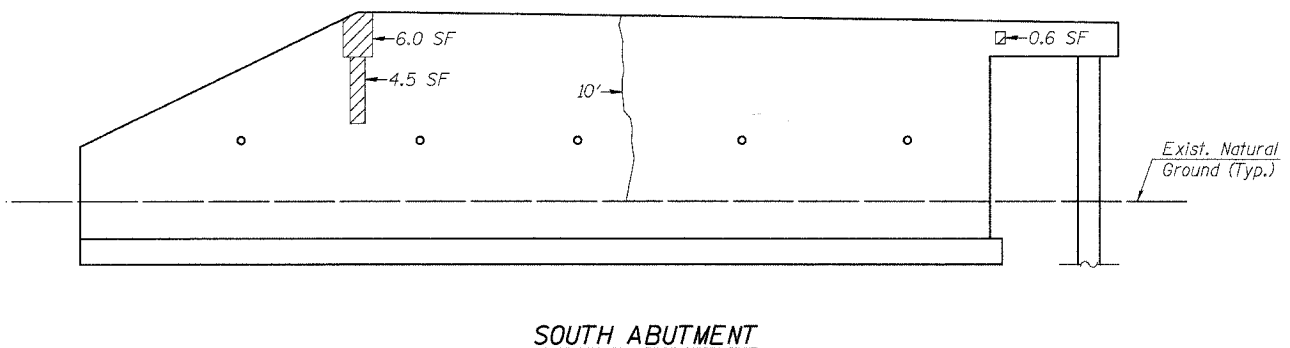
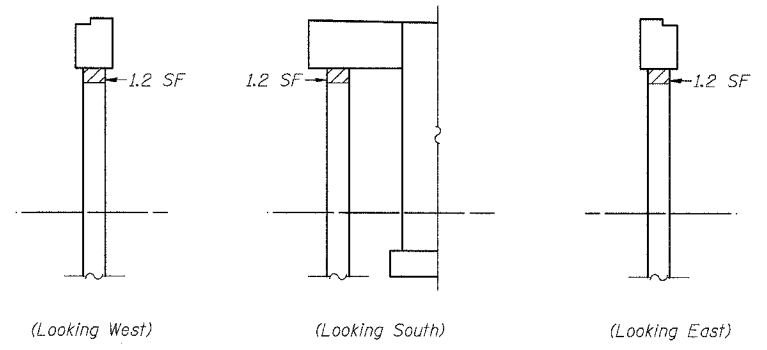
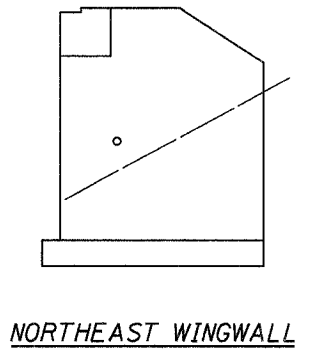
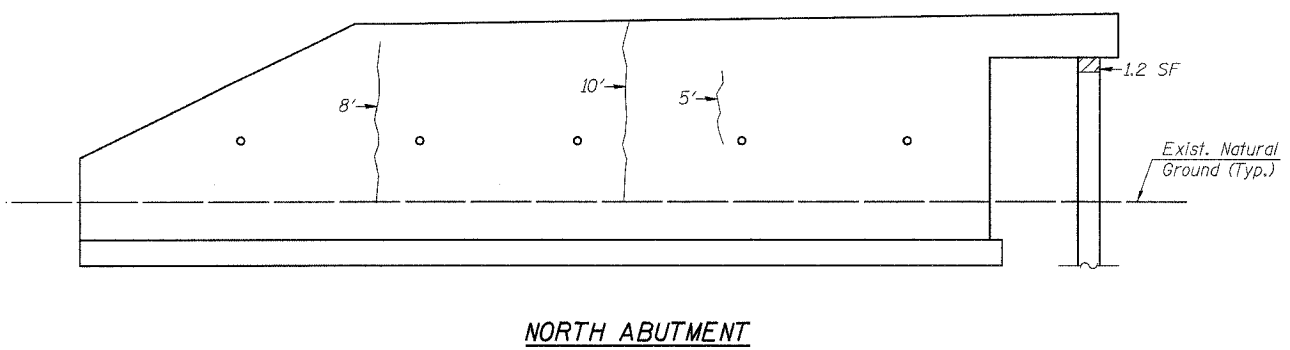
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 Chatham, Illinois

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 Date: 03/2007

Checked By: MTH
 File: 044-0010.DWG

Drawn By: AUF

REVISIONS	
NAME	DATE



LEGEND

- 10' Epoxy Crack Injection
- ▨ Structural Repair of Concrete (Depth equal to or less than 5 in.)

Notes:
 The quantities shown are for estimating purposes only. Area to be repaired will be determined by the Engineer at the time of Construction. Actual repair locations shall be shown on the as-built plans.

BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	33
Structural Repair of Concrete (Depth equal to or less than 5 in.)	Sq. Ft.	19.6

ILLINOIS DEPARTMENT OF TRANSPORTATION
CONCRETE REPAIR
 U.S. ROUTE 45 OVER
 CAVE CREEK
 F.A.S. ROUTE 960 - SECTION 38 B-1
 JOHNSON COUNTY
 STA. 213+64.78
 STRUCTURE NO. 044-0010

REVISIONS

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 Channah, Illinois

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