

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1, 104B-2	FRANKLIN	56	1

58

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

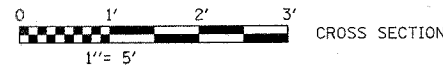
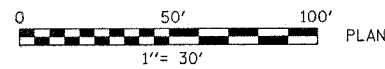
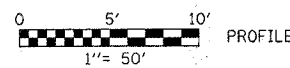
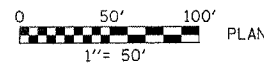
FAP ROUTE 869 (ILLINOIS 14)  
SECTION 104B-1, 104B-2  
FRANKLIN COUNTY

C-99-063-02

PROJECT: F-0869(029)

**STRUCTURE REPLACEMENTS OVER  
ANDY CREEK AND TRIBUTARY TO ANDY CREEK**

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

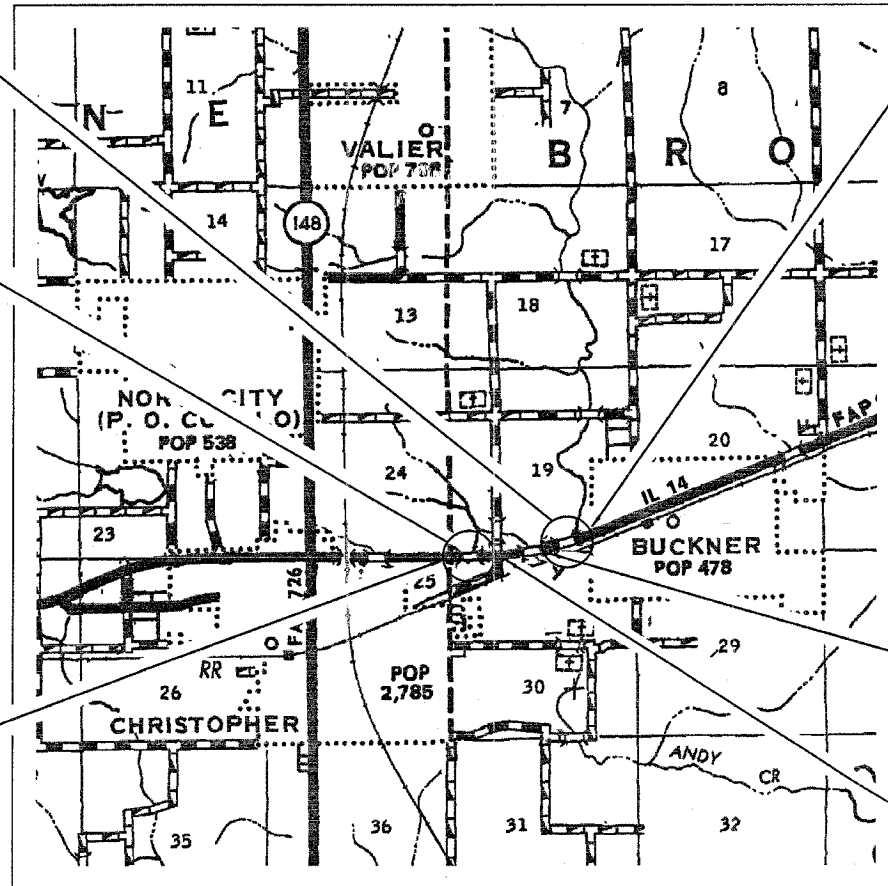


**TRAFFIC DATA**

2008 ADT = 6140  
7.5% TRUCKS  
POSTED SPEED = 55 MPH

PROPOSED BRIDGE OVER ANDY CREEK  
STRUCTURE NO. 028-0076  
SINGLE SPAN STEEL W36 BRIDGE;  
87'-0" BK TO BK ABUTMENTS; 0° SKEW  
¢ STRUCTURE STA 603+80.00  
EXISTING SN 028-0017

PROPOSED CULVERT OVER TRIBUTARY TO  
ANDY CREEK  
STRUCTURE NO. 028-2016  
DOUBLE BARREL 10'X10' CULVERT;  
43'-0" OUT TO OUT @ RIGHT ANGLES; 5° SKEW  
¢ STRUCTURE STA 579+10.00  
EXISTING SN 028-0065



(028-0076) ENDS  
STA 604+59.50

(028-0076) BEGINS  
STA 603+00.50

(028-2016) BEGINS  
STA 578+72.50

(028-2016) ENDS  
STA 579+37.50

GROSS LENGTH OF PROJECT = 224'-0"

SN 028-2016  
ROADWAY LENGTH = 42'-6"  
CULVERT LENGTH = 22'-6"  
NET LENGTH OF PROJECT = 65'-0"

SN 028-0076  
ROADWAY LENGTH = 72'-0"  
BRIDGE LENGTH = 87'-0"  
NET LENGTH OF PROJECT = 159'-0"

D-99-004-05



LOCATION OF SECTION INDICATED THIS: — ■ —

PROJECT ENGINEER: DAVID PICHE (618)-351-5227  
DESIGNER: T. WAYNE HALSTEAD

BROWNING TOWNSHIP

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

CONTRACT NO. 98775

COUNTY: FRANKLIN SECTIONS: 104B-1, 104B-2 ROUTE: FAP 869 (IL 14)

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED May 8, 2007  
Man C. Rami  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

June 29, 2007  
Eric E. Harsh  
ENGINEER OF DESIGN AND ENVIRONMENT

June 29, 2007  
Milton R. Soes, P.E.  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS**

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-1, 104B-2	FRANKLIN	56	2
STA.	TO STA.			
FED. ROAD DIST. NO. ...	ILLINOIS	FED. AID PROJECT		

**GENERAL NOTES**

THE THICKNESS OF BITUMINOUS MIXTURE SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE BITUMINOUS MIXTURE IS PLACED.

FACTORS USED FOR QUANTITY CALCULATIONS ARE AS FOLLOWS:

ALL ASPHALT:	2.016 TONS/CU. YD.
ALL AGGREGATE:	2.05 TONS/CU. YD.
RIPRAP (A4 & A5)	1.50 TONS/CU YD
RIPRAP (A1)	1.85 TONS/CU YD

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 BITUMINOUS OR CONCRETE PAVEMENT JOINS AN EXISTING BITUMINOUS 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 THE BRIDGE, THE BRIDGE APPROACH PAVEMENTS, AND THE BRIDGE APPROACH PAVEMENT CONNECTORS (PCC).

PROTECTIVE COAT SHALL BE APPLIED TO THE BRIDGE, THE BRIDGE APPROACH PAVEMENTS, AND THE BRIDGE APPROACH PAVEMENT CONNECTORS (PCC) 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.

REMOVAL OF EXISTING 10.5" TO 16.5" THICK BRIDGE APPROACH PAVEMENTS IS INCLUDED IN THE QUANTITY FOR PAVEMENT REMOVAL - 390 SQ YD.

ALL OBSTRUCTIONS WHICH ARE WITHIN THE CLEAR ZONE SHOWN ON THE TYPICAL SECTION, AND ARE NOT SHIELDED BY THE PROPOSED GUARDRAIL, SHALL BE REMOVED BETWEEN STATIONS 576+50 - 581+70 AND STATIONS 600+42 - 606+80. TYPICAL OBSTRUCTIONS ARE HEADWALLS, FOUNDATIONS, EXT. WHICH PROJECT 100 mm (4 IN.) OR MORE ABOVE THE GROUNDLINE; AND TREES WHICH WILL MATURE TO A DIAMETER OF 100 mm (4 IN.) OR GREATER.

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 OF BOTH STRUCTURES.

THE DISTRICT BUREAU OF OPERATIONS SHALL BE NOTIFIED AT LEAST 10 DAYS PRIOR TO PLACEMENT OF THE FINAL PAVEMENT MARKINGS. THE BUREAU OF OPERATIONS WILL THEN DETERMINE THE ACTUAL LIMITS TO BE STRIPED AS "NO PASSING" ZONES.

COST OF REMOVING "HOT-MIX ASPHALT BASE COURSE WIDENING, 10'" USED FOR STAGE I TRAFFIC IS INCLUDED IN "PAVED SHOULDER REMOVAL-SQ YD."

THE "HOT-MIX ASPHALT BASE COURSE WIDENING, 10'" CONSTRUCTED IN PRE-STAGE I ON PROPOSED STRUCTURE 028-2016 MAY BE INCORPORATED INTO THE FINAL "HOT-MIX ASPHALT SHOULDERS, 8'" DURING STAGE II CONSTRUCTION IF APPROVED BY THE ENGINEER. SUCH CHANGE WILL NOT BE A CAUSE FOR ADDITIONAL COMPENSATION, BUT THE CONTRACTOR WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

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 PARAPET. 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.

THE ALGEBRAIC DIFFERENCE BETWEEN THE PAVEMENT AND SHOULDER SLOPES SHALL NOT EXCEED 8%. THE SHOULDER ON THE OUTSIDE OF SUPERELEVATED CURVES SHALL BE FLATTENED ACCORDINGLY.

ON ALL SUPERELEVATED CURVES, THE PROPOSED BASE COURSE WIDENING SHALL BE CONSTRUCTED WITH A SLOPE CONFORMING TO THE RATE OF SUPERELEVATION OF THE EXISTING PAVEMENT.

TRIM EDGES OF EXISTING BITUMINOUS CONCRETE SURFACE FLUSH WITH EXISTING PAVEMENT PRIOR TO CONSTRUCTING NEW BASE COURSE WIDENING.

THE "HOT-MIX ASPHALT BASE COURSE WIDENING, 10'" CONSTRUCTED IN PRE-STAGE I ON PROPOSED STRUCTURE 028-2016 MAY BE INCORPORATED INTO THE FINAL "HOT-MIX ASPHALT SHOULDERS, 8'" DURING STAGE II CONSTRUCTION IF APPROVED BY THE ENGINEER. SUCH CHANGE WILL NOT BE A CAUSE FOR ADDITIONAL COMPENSATION, BUT THE CONTRACTOR WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

COMMITMENTS: NONE AS OF MAY 11, 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
420001-06	PAVEMENT JOINTS
420101-03	7.2 M (24') JOINTED PCC PAVEMENT
420401-05	BRIDGE APPROACH PAVEMENT
421001-01	REINFORCEMENT FOR CONTINUOUSLY REINFORCED PCC PAVEMENT
482006-02	BITUMINOUS SHOULDER ADJACENT TO RIGID PAVEMENT
515001-02	NAME PLATE FOR BRIDGES
630001-07	STEEL PLATE BEAM GUARDRAIL
630201-04	PCC/HMA STABILIZATION AT STEEL PLATE BEAM GUARDRAIL
630301-04	SHOULDER WIDENING FOR TYPE 1, (SPECIAL) GUARDRAIL TERMINALS
631031-06	TRAFFIC BARRIER TERMINAL, TYPE 6
631032-03	TRAFFIC BARRIER TERMINAL, TYPE 6 A
635011-01	REFLECTOR MARKER & MOUNTING DETAILS
701006-02	OFF-ROAD OPERATIONS, 2L 2W, 4.5 m (15') TO PAVEMENT EDGE
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
701321-08	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-02	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
702001-06	TRAFFIC CONTROL DEVICES
704001-03	TEMPORARY CONCRETE BARRIER
780001-01	TYPICAL PAVEMENT MARKINGS

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Prepared By:	<i>James J. ...</i> DISTRICT STUDIES & PLANS ENGINEER
Examined By:	<i>James J. ...</i> DISTRICT LAND ACQUISITION ENGINEER
Examined By:	<i>Carrie Nelson</i> DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By:	<i>James J. ...</i> DISTRICT OPERATIONS ENGINEER
Examined By:	<i>James J. ...</i> DISTRICT CONSTRUCTION ENGINEER
Examined By:	<i>James J. ...</i> DISTRICT MATERIALS ENGINEER
Examined By:	<i>James J. ...</i> DISTRICT PROJECT IMPLEMENTATION ENGINEER
Examined By:	<i>James J. ...</i> ASSISTANT REGIONAL ENGINEER
Approved By:	<i>James J. ...</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
DATE	May 9 2007

**GENERAL NOTES, INDEX OF SHEETS, STANDARDS - SN 028-2016 & SN 028-0076  
IL 14 OVER ANDY CREEK AND TRIBUTARY TO ANDY CREEK**

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-1, 104B-2	FRANKLIN	56	3
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

## SUMMARY OF QUANTITIES

CODE NUMBER	ITEM DESCRIPTION	UNIT	RURAL - FRANKLIN COUNTY		
			TOTAL	HBP FUNDING	
				80% FEDERAL;	20% STATE
				CONSTRUCTION TYPE CODE	
	X071-2A	X028-2A			
	SN 028-0076	SN 028-2016			
20200100	EARTH EXCAVATION	CU YD	1338	622	716
20300100	CHANNEL EXCAVATION	CU YD	233	196	37
20700220	POROUS GRANULAR EMBANKMENT	CU YD	413		413
20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	162	162	
25000200	SEEDING, CLASS 2	ACRE	0.6	0.4	0.2
25000350	SEEDING, CLASS 7	ACRE	0.6	0.4	0.2
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	96	64	32
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	72	48	24
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	72	48	24
25000700	AGRICULTURAL GROUND LIMESTONE	TON	1.2	0.8	0.4
25100115	MULCH, METHOD 2	ACRE	1.2	0.8	0.4
25100630	EROSION CONTROL BLANKET	SQ YD	223	153	70
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	60	40	20
28000300	TEMPORARY DITCH CHECKS	EACH	11	6	5
28000400	PERIMETER EROSION BARRIER	FOOT	1909	945	964
28100107	STONE RIPRAP, CLASS A4	SQ YD	784	784	
28100109	STONE RIPRAP, CLASS A5	SQ YD	160		160
28100201	STONE RIPRAP, CLASS A1	TON	192		192
28200200	FILTER FABRIC	SQ YD	944	784	160
35600716	HOT - MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	294	97	197
40600982	HOT - MIX ASPHALT REMOVAL - BUTT JOINT	SQ YD	178	178	
40600990	TEMPORARY RAMP	SQ YD	39	39	
40603320	HOT - MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	15	15	
42000501	PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)	SQ YD	159		159
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	276	276	
42001300	PROTECTIVE COAT	SQ YD	332	332	
42001420	BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)	SQ YD	56	56	
44000100	PAVEMENT REMOVAL	SQ YD	390	284	106
44004250	PAVED SHOULDER REMOVAL	SQ YD	1117	515	602
48203029	HOT - MIX ASPHALT SHOULDERS, 8"	SQ YD	1474	638	836
48203037	HOT - MIX ASPHALT SHOULDERS, 10"	SQ YD	586	288	298

CODE NUMBER	ITEM DESCRIPTION	UNIT	RURAL - FRANKLIN COUNTY		
			TOTAL	HBP FUNDING	
				80% FEDERAL;	20% STATE
				CONSTRUCTION TYPE CODE	
	X071-2A	X028-2A			
	SN 028-0076	SN 028-2016			
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	2	1	1
50200100	STRUCTURE EXCAVATION	CU YD	194	194	
50300100	FLOOR DRAINS	EACH	5	5	
50300225	CONCRETE STRUCTURES	CU YD	40.7	40.7	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	142.3	142.3	
50300260	BRIDGE DECK GROOVING	SQ YD	372	372	
50300280	CONCRETE ENCASEMENT	CU YD	6.0	6.0	
50300300	PROTECTIVE COAT	SQ YD	464	464	
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1	1	
50500505	STUD SHEAR CONNECTORS	EACH	2226	2226	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	63,460	34,260	29260
50800515	BAR SPLICERS	EACH	503	367	136
X0325701	STEEL RAILING, TYPE 2399	FOOT	46		46
51201600	FURNISHING STEEL PILES HP12X53	FOOT	856	856	
51202305	DRIVING PILES	FOOT	856	856	
51203600	TEST PILE STEEL HP12X53	EACH	2	2	
51500100	NAME PLATES	EACH	2	1	1
52100520	ANCHOR BOLTS, 1" DIAMETER	EACH	28	28	
54003000	CONCRETE BOX CULVERTS	CU YD	148.5		148.5
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	95	95	
60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	136	136	
* 63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	575	275	300
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4	
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4		4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	5	2	3
* 63100169	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (FLARED)	EACH	1	1	
63200310	GUARDRAIL REMOVAL	FOOT	707	353	354
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	14	7	7
67100100	MOBILIZATION	L SUM	1	0.5	0.5
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	2	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.5	0.5

\* SPECIALTY ITEMS

5/9/2007 c:\projects\98775\98775.dwg 50,0000 / IN.

## SUMMARY OF QUANTITIES - SN 028-2016 & SN 028-0076 IL 14 OVER ANDY CREEK AND TRIBUTARY TO ANDY CREEK

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	1048-1, 1048-2	FRANKLIN	56	4
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

## SUMMARY OF QUANTITIES

### MIXTURE REQUIREMENTS

CODE NUMBER	ITEM DESCRIPTION	UNIT	RURAL - FRANKLIN COUNTY		
			TOTAL	HBP FUNDING	
				80% FEDERAL;	20% STATE
				CONSTRUCTION TYPE CODE X071-2A SN 028-0076	X028-2A SN 028-2016
QUANTITY	QUANTITY	QUANTITY			
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	0.5	0.5
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	4	2	2
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	2	1	1
70106700	TEMPORARY RUMBLE STRIP	EACH	12	12	
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	2	1	1
70300100	SHORT - TERM PAVEMENT MARKING	FOOT	154	82	72
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	2720	1474	1246
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	1235	669	566
70400100	TEMPORARY CONCRETE BARRIER	FOOT	762.5	437.5	325
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	600	300	300
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2696	1899	797
* 78200405	GUARDRAIL MARKERS	EACH	34	16	18
* 78200500	BARRIER WALL MARKERS	EACH	6	6	
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	8	4	4
78300100	PAVEMENT MARKING REMOVAL	SQ FT	311	174	137
XX006661	UNINTERRUPTIBLE POWER SUPPLY	EACH	2	1	1
X0323988	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	1438	603	835
X6330103	REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL, TANGENT	EACH	2	1	1
XT050167	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	2	1	1
Z0030250	IMPACT ATTENUATORS, TEMP (NON-REDIRECTIVE), TEST LEVEL 3	EACH	4	2	2
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	4	2	2

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

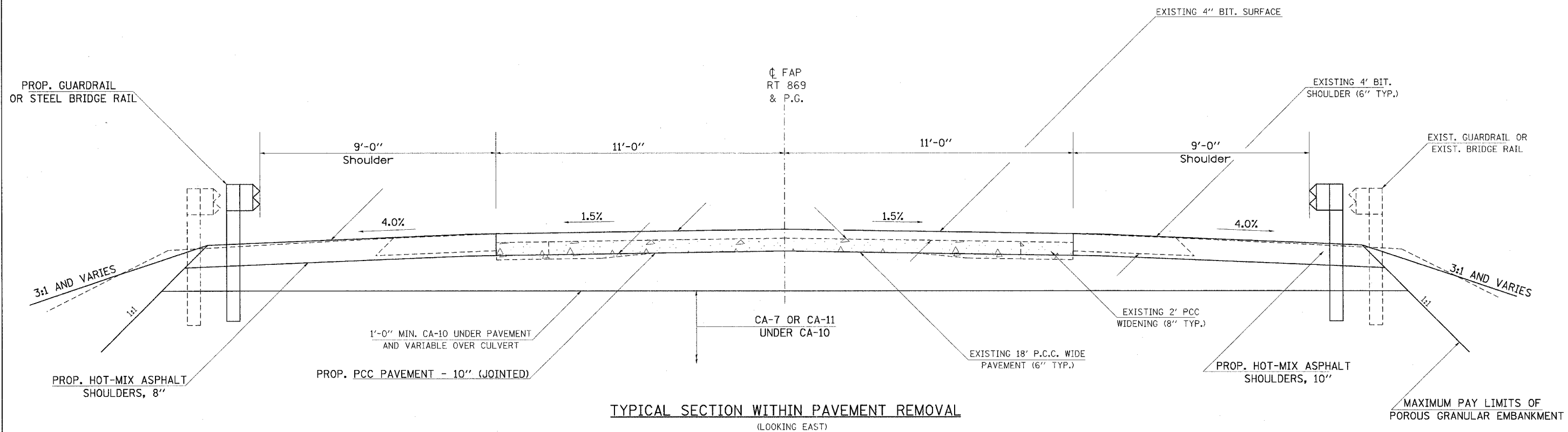
LOCATION(S):	HOT-MIX ASPHALT SHOULDERS, 8' & 10'
MIXTURE USE(S):	SHOULDERS
AC/PG:	PG58-22
RAP % (MAX):	50
DESIGN AIR VOIDS:	2.0 %, 30 GYRATION
MIXTURE COMPOSITION: (GRADATION MIXTURE)	BITUMINOUS AGGREGATE MIXTURE
FRICTION AGGREGATE	NONE

LOCATION(S):	HOT-MIX ASPHALT SURFACE COURSE, MIX C, N90
MIXTURE USE(S):	BUTT JOINTS
AC/PG:	PG64-22
RAP % (MAX):	10
DESIGN AIR VOIDS:	4.0 %, 90 GYRATION
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-9.5 MM OR IL 12.5 MM
FRICTION AGGREGATE	C SURFACE

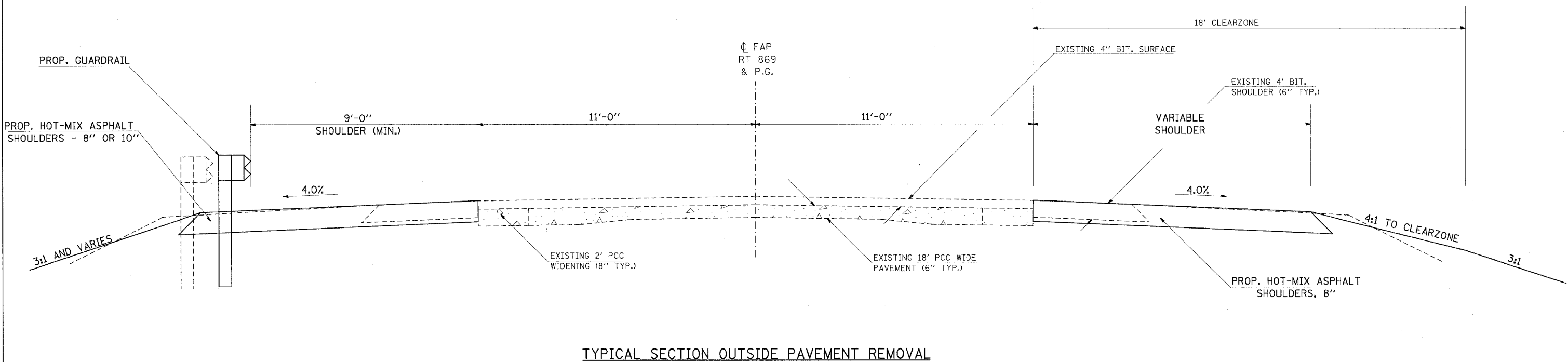
\*SPECIALTY ITEMS



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1	FRANKLIN	56	5
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



TYPICAL SECTION WITHIN PAVEMENT REMOVAL  
(LOOKING EAST)



TYPICAL SECTION OUTSIDE PAVEMENT REMOVAL

SECTION WITHIN GUARDRAIL OR TRAFFIC BARRIER TERMINAL LIMITS

SECTION OUTSIDE GUARDRAIL LIMITS

E:\1\2007  
 028\028\104B-1\104B-1-05.dgn  
 10/20/07  
 10:50:40 AM  
 10/20/07

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-1	FRANKLIN	55	6
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

### EARTHWORK SCHEDULE

SN 028-2016 LOCATION STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION (UNSUITABLE)	SHRINKAGE FACTOR FOR EARTH EXCAVATION	EXCAVATION TO BE USED IN EMBANKMENT, ADJUSTED FOR SHRINKAGE	** EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	%	CU YD	CU YD	CU YD
FAP 869 (IL 14)						
STA 576+36 TO STA 581+88	• 261	37	25	196	113	83 (WASTE)
FROM P.G.E. @ BOX	455					455 (WASTE)
TOTALS	716	37			113	538 (WASTE)

• CUTS FROM CROSS SECTIONS      \*\* FILLS FROM CROSS SECTIONS

### REMOVAL SCHEDULE

SN 028-2016 LOCATION STATION TO STATION	GUARDRAIL REMOVAL	PAVEMENT REMOVAL	PAVED SHOULDER REMOVAL
	FOOT	SQ YD	SQ YD
FAP 869 (IL 14)			
PRE STAGE I			
STA 577+65 LT TO STA 578+94 LT			57.4
STA 579+16 LT TO STA 580+40 LT			55.3
STAGE I			
SW QUADRANT	138		
SE QUADRANT	39		
STA 578+72.50 RT TO STA 578+94 RT		29	
STA 579+16 RT TO STA 579+37.50 RT		29	
STA 576+36 RT TO STA 578+94 RT			114.7
STA 579+16 RT TO STA 581+12 RT			87.2
STAGE II			
NW QUADRANT	39		
NE QUADRANT	138		
STA 577+09 LT TO STA 577+65 LT			24.9
STA 577+65 LT TO STA 578+94 LT			100
STA 579+16 LT TO STA 580+40 LT			97
STA 580+40 LT TO STA 581+88 LT			65.8
STA 578+72.50 LT TO STA 578+94 LT		24	
STA 579+16 LT TO STA 579+37.50 LT		24	
TOTALS	354	106	602

### EROSION CONTROL SCHEDULE

SN 028-2016 LOCATION STATION TO STATION	STONE RIPRAP CLASS A5	FILTER FABRIC	EROSION CONTROL BLANKET	TEMPORARY DITCH CHECKS	PERIMETER EROSION BARRIER
	SQ YD	SQ YD	SQ YD	EACH	FOOT
FAP 869 (IL 14)					
STAGE I					
STA 576+36, 34' RT TO STA 578+83, 40' RT					265
STA 579+30, 37' RT TO STA 580+25, 37' RT					202
STA 578+86 RT				1	
STA 579+28 RT				1	
STA 578+91 RT TO STA 579+37 RT	120	120			
STAGE II					
STA 577+09, 55' LT TO STA 578+90, 46' LT					221
STA 579+37, 42' LT TO STA 580+00, 42' LT					276
STA 578+94 LT				1	
STA 579+32 LT				1	
STA 578+83 LT TO STA 579+29 LT	80	80			
STA 580+25 LT TO STA 581+81 LT			70		
STA 580+25 LT				1	
TOTALS	200	200	70	5	964

### TERMINALS AND GUARDRAIL SCHEDULE

SN 028-2016 LOCATION STATION TO STATION	TRAFFIC BARRIER TERMINALS		SPBGR TYPE A	GUARDRAIL MARKER	TERMINAL MARKER DIRECT APPLIED	TRAFFIC BARRIER TERMINALS	
	TYPE 1 SPECIAL TANGENT	TYPE 6A				TEMPORARY TYPE 1 SPL.	REMOVE AND RELOCATE
	EACH	EACH	FOOT	EACH	EACH	EACH	EACH
FAP 869 (IL 14)							
PRE STAGE I							
STA 578+21 LT TO STA 578+71 LT						1	
STAGE I							
STA 576+91 RT TO STA 577+41 RT	1			1	1		
STA 577+41 RT TO STA 578+54 RT			112.5	3			
STA 578+54 RT TO STA 578+99 RT		1					
STA 578+18 RT TO STA 579+64 RT		1					
STA 579+64 RT TO STA 580+01 RT			37.5	2			
STA 580+01 RT TO STA 580+51 RT	1			2	1		
STEEL BRIDGE RAILING RT				1			
STAGE II							
STA 577+69 LT TO STA 578+19 LT				2	1		1
STA 578+57 LT TO STA 579+02 LT		1					
STA 578+19 LT TO STA 578+57 LT			37.5	2			
STA 579+21 LT TO STA 579+68 LT		1					
STA 579+68 LT TO STA 580+80 LT			112.5	3			
STA 580+80 LT TO STA 581+30 LT	1			1	1		
STEEL BRIDGE RAILING LT				1			
TOTALS	3	4	300	18	4	1	1

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	4B-1	FRANKLIN	56	7
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

### SEEDING AND FERTILIZING SCHEDULE

SN 028-2016 LOCATION STATION TO STATION	SEEDING CLASS 2	SEEDING CLASS 7	NITROGEN (N)	PHOSPHOROUS (P)	POTASSIUM (K)	MULCH METHOD 2	AGRICULTURAL GROUND LIMESTONE	TEMPORARY EROSION CONTROL SEEDING
	ACRES	ACRES	POUND	POUND	POUND	ACRES	TON	POUND
FAP 869 (IL 14)								
STA 577+09 LT TO STA 581+88 LT	0.1	0.1	16	12	12	0.2	0.2	10
STA 576+36 RT TO STA 581+12 RT	0.1	0.1	16	12	12	0.2	0.2	10
<b>TOTALS</b>	<b>0.2</b>	<b>0.2</b>	<b>32</b>	<b>24</b>	<b>24</b>	<b>0.4</b>	<b>0.4</b>	<b>20</b>

### PAVING SCHEDULE

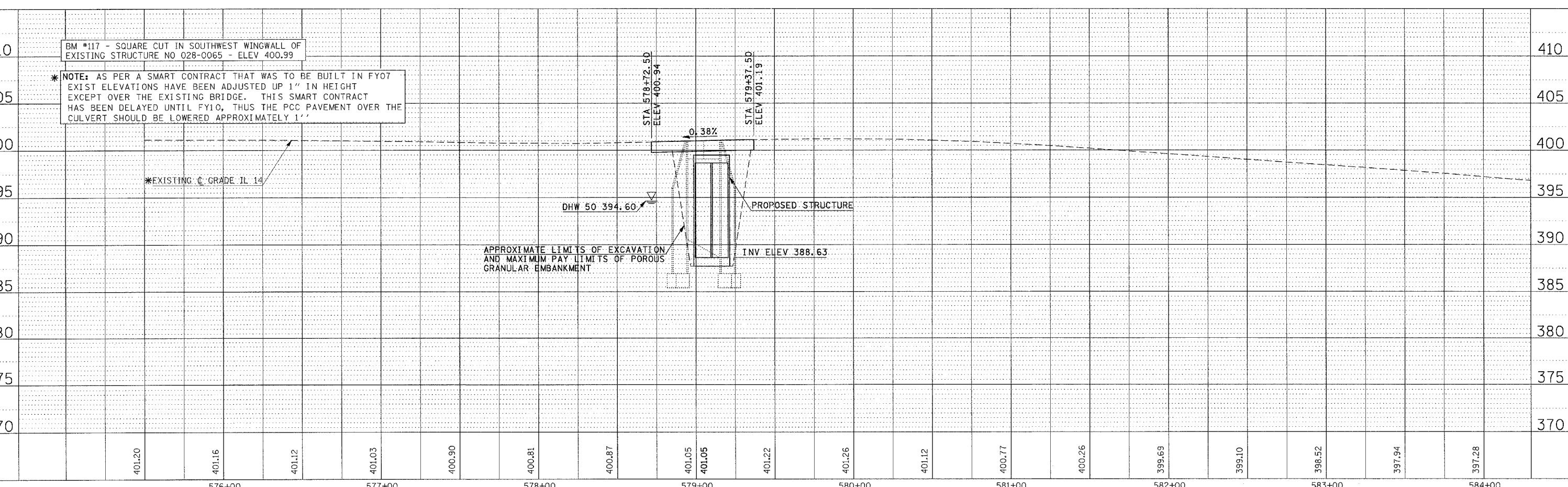
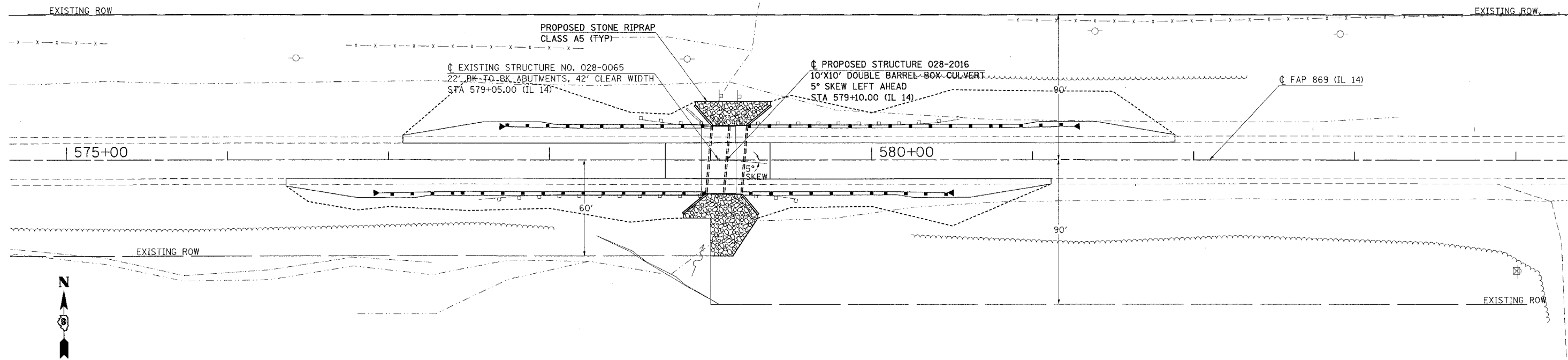
SN 028-2016 LOCATION STATION TO STATION	HOT-MIX ASPHALT SHOULDERS SUPERPAVE - 8''	PCC PAVEMENT 10'' (JOINTED)	HOT-MIX ASPHALT SHOULDERS SUPERPAVE - 10''	HOT-MIX ASPHALT BASE COURSE WIDENING - 10''
	SQ YD	SQ YD	SQ YD	SQ YD
FAP 869 (IL 14)				
<b>STAGE I</b>				
STA 576+36 RT TO STA 577+75 RT	158.3			
STA 577+75 RT TO STA 580+30 RT			298	
STA 580+30 RT TO STA 581+12 RT	82.7			
STA 578+72.50 RT TO STA 579+37 RT		86.8		
<b>TOTAL ON RIGHT SIDE</b>	<b>241.0</b>	<b>86.8</b>	<b>298.0</b>	<b>0.0</b>
<b>PRE STAGE I</b>				
STA 577+65 LT TO STA 578+94 LT				100
STA 579+16 LT TO STA 580+40 LT				97
<b>STAGE II</b>				
STA 577+09 LT TO STA 581+88 LT	595			
STA 578+72 LT TO STA 579+37 LT		72.2		
<b>TOTAL ON LEFT SIDE</b>	<b>595</b>	<b>72.2</b>	<b>0.0</b>	<b>197</b>
<b>TOTALS</b>	<b>836</b>	<b>159</b>	<b>298</b>	<b>197</b>

### MARKING SCHEDULE

SN 028-2016 LOCATION STATION TO STATION	TEMP PVT MK LINE 4''		PAINT PVT MK LINE 4''		SHORT - TERM PAVEMENT MARKING
	WHITE	YELLOW	WHITE	YELLOW	
	FOOT	FOOT	FOOT	FOOT	
FAP 869 (IL 14)					
<b>PRE STAGE I</b>					
STA 577+42 LT TO STA 580+66 LT	324				
STA 577+42 CL TO STA 580+66 CL		324			
<b>STAGE I</b>					
STA 577+55 RT TO STA 580+54 RT	299				
STA 577+55 CL TO STA 580+54 CL		299			
<b>POST STAGE II</b>					
STA 577+42 LT TO STA 580+66 LT			324		
STA 577+55 RT TO STA 580+54 RT			299		
STA 575+50 CL TO STA 582+45 CL				174	72
<b>TOTALS</b>	<b>623</b>	<b>623</b>	<b>623</b>	<b>174</b>	<b>72</b>

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F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-1	FRANKLIN	56	8
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



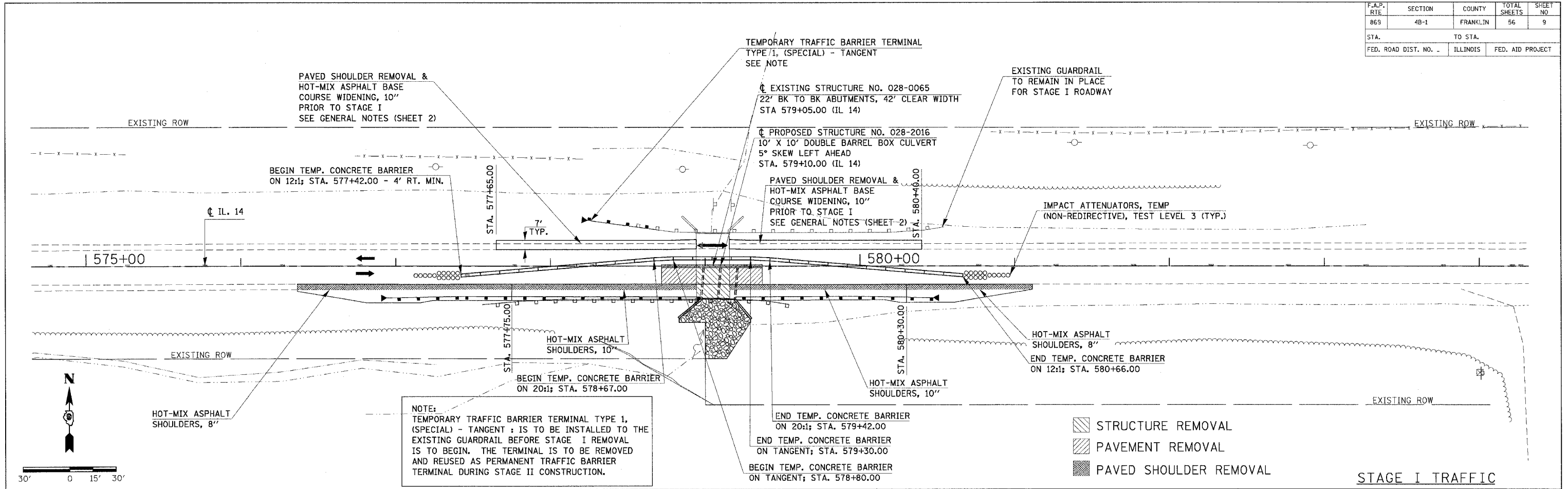
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PROFILE	DATE
BY	
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# PLANPROFILE - SN 028-2016 IL 14 OVER TRIBUTARY TO ANDY CREEK

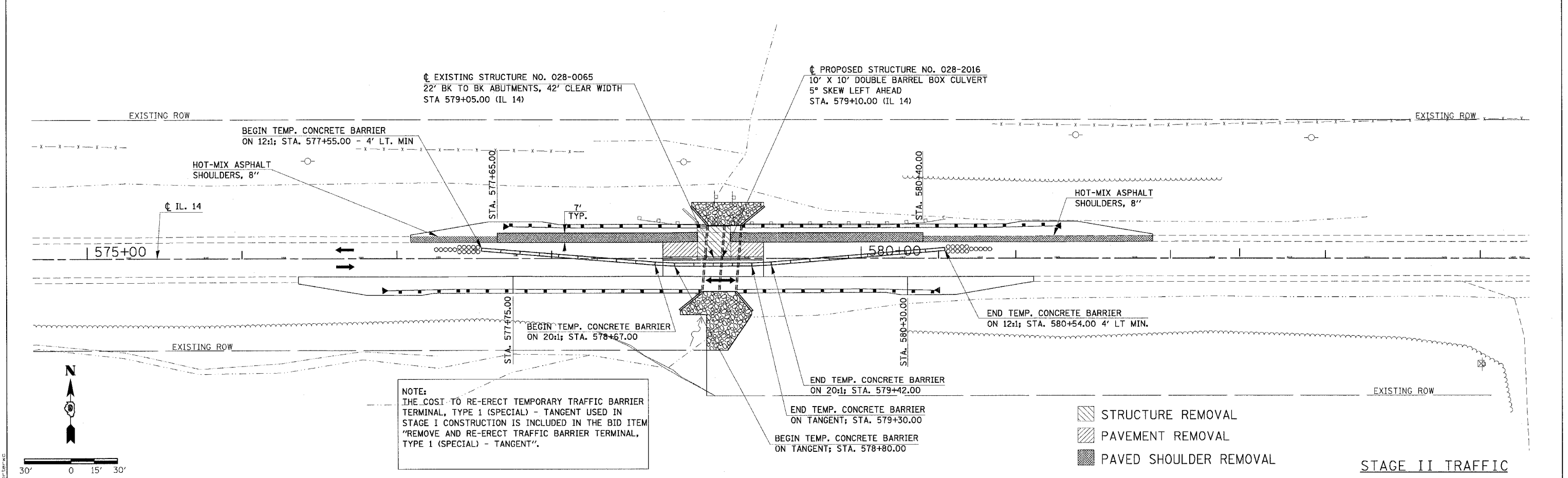
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869	4B-1	FRANKLIN	56	9
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	



**NOTE:**  
 TEMPORARY TRAFFIC BARRIER TERMINAL TYPE 1, (SPECIAL) - TANGENT IS TO BE INSTALLED TO THE EXISTING GUARDRAIL BEFORE STAGE I REMOVAL IS TO BEGIN. THE TERMINAL IS TO BE REMOVED AND REUSED AS PERMANENT TRAFFIC BARRIER TERMINAL DURING STAGE II CONSTRUCTION.

- STRUCTURE REMOVAL
- PAVEMENT REMOVAL
- PAVED SHOULDER REMOVAL

STAGE I TRAFFIC



**NOTE:**  
 THE COST TO RE-ERECT TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) - TANGENT USED IN STAGE I CONSTRUCTION IS INCLUDED IN THE BID ITEM "REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) - TANGENT".

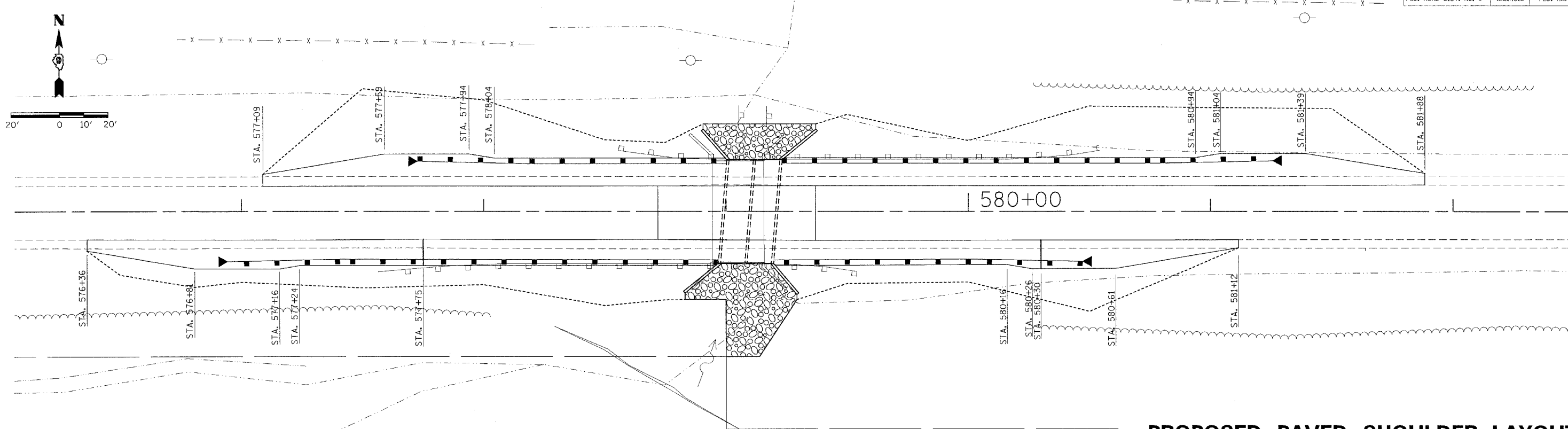
- STRUCTURE REMOVAL
- PAVEMENT REMOVAL
- PAVED SHOULDER REMOVAL

STAGE II TRAFFIC

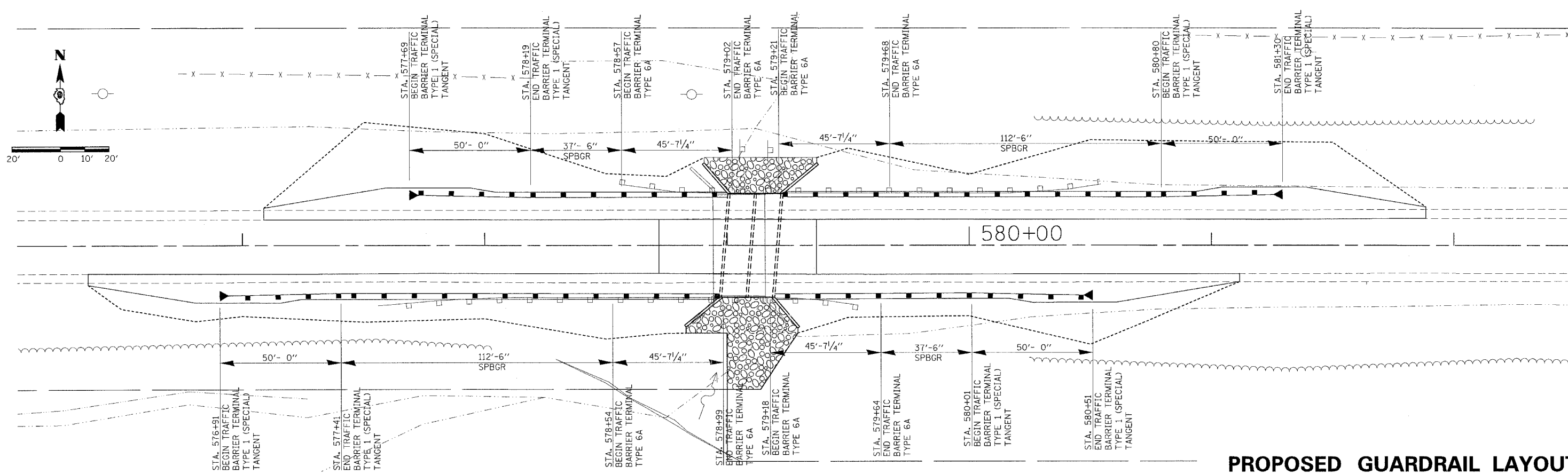
**STAGE CONSTRUCTION - SN 028-2016  
 IL 14 OVER TRIBUTARY TO ANDY CREEK**

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F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-1	FRANKLIN	56	10
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



**PROPOSED PAVED SHOULDER LAYOUT**



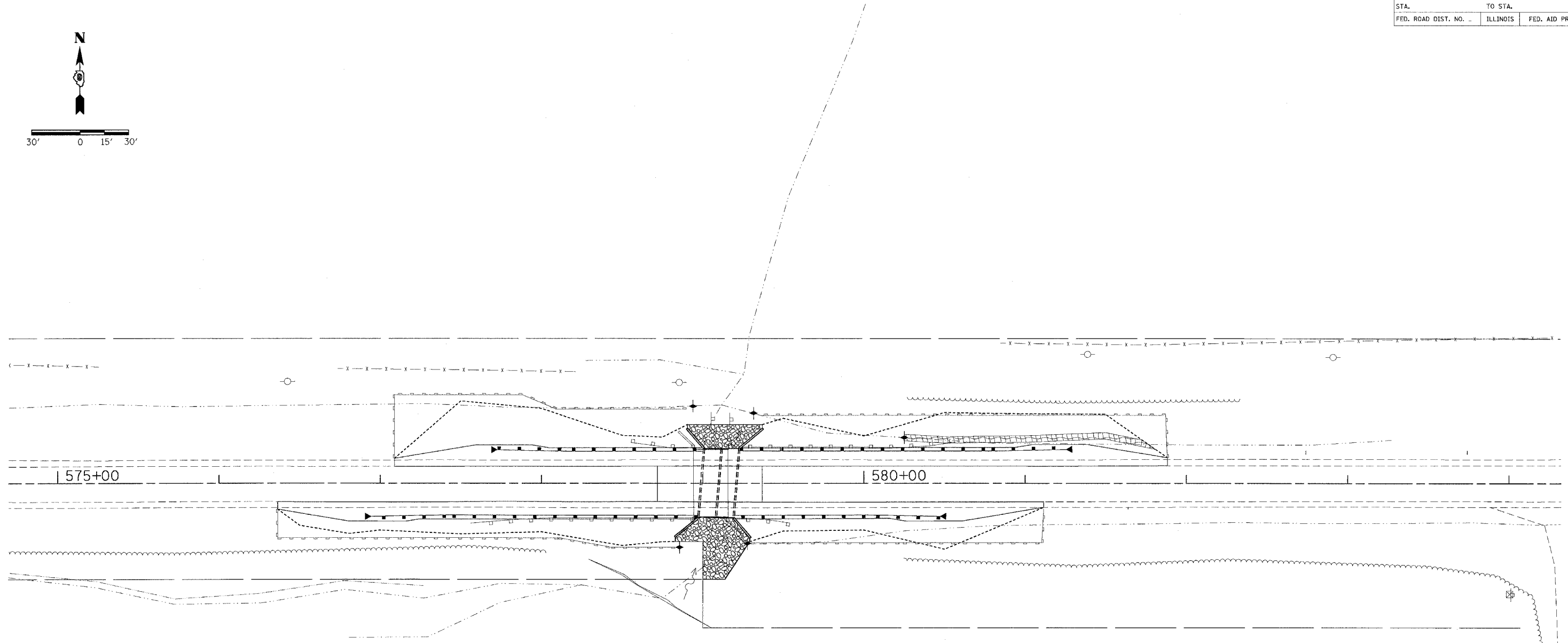
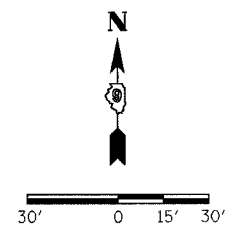
**PROPOSED GUARDRAIL LAYOUT**



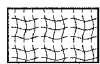

**PAVED SHOULDER / GUARDRAIL LAYOUT - SN 028-2016  
IL 14 OVER TRIBUTARY TO ANDY CREEK**

5/14/2007  
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19,9960 / IN  
BDM:bar



F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
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STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



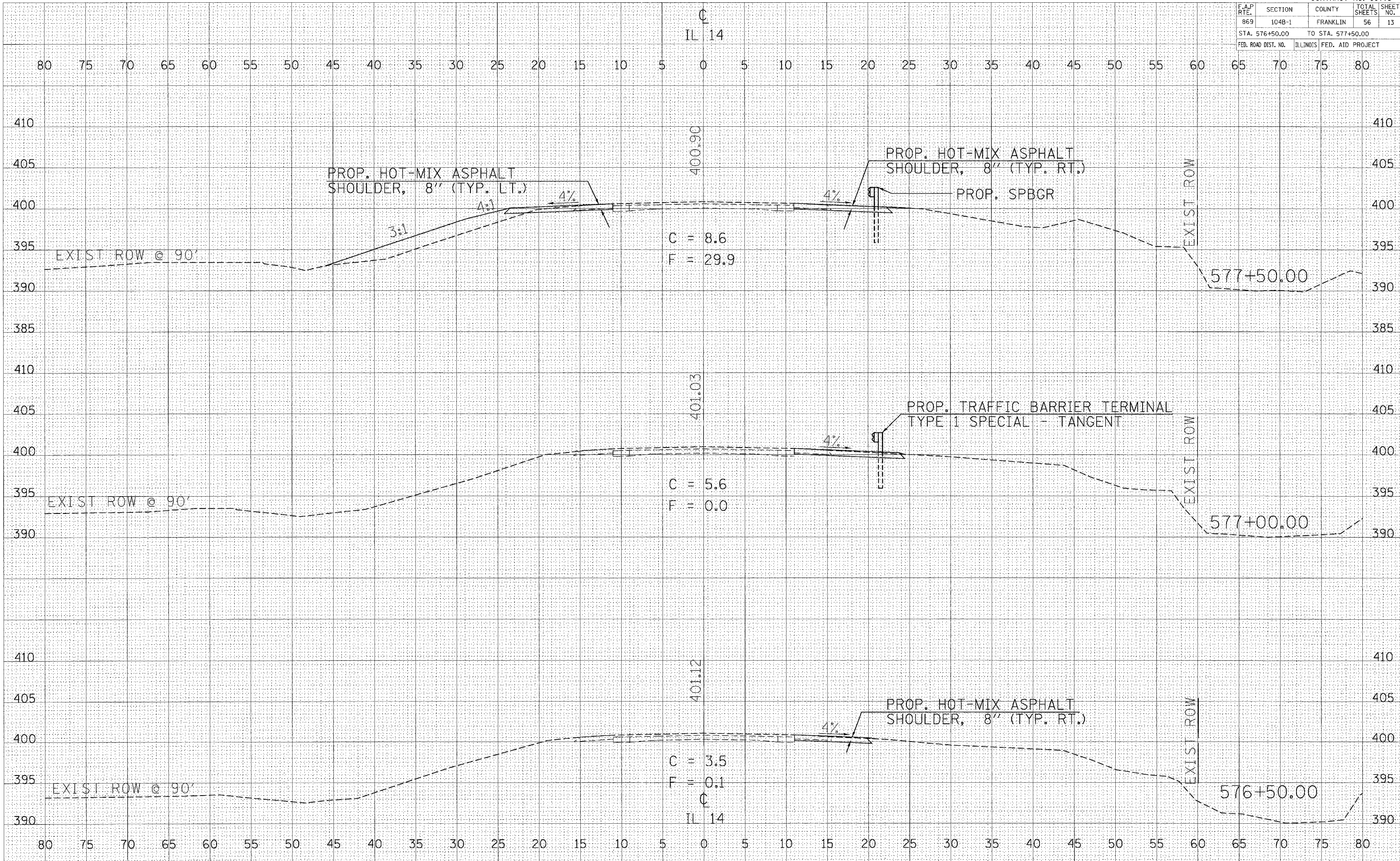
-  TEMPORARY DITCH CHECKS
-  PERIMETER EROSION BARRIER
-  EROSION CONTROL BLANKET
-  RIPRAP, CLASS A5

5/4/2007  
C:\Users\j502475\Documents\98775.dgn  
30.0000 / IN  
pdr:smc

**EROSION CONTROL - SN 028-2016  
IL 14 OVER TRIBUTARY TO ANDY CREEK**



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1	FRANKLIN	56	13
STA. 576+50.00		TO STA. 577+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



**CROSS SECTIONS - STA 576+50 TO STA 577+50  
IL 14 OVER TRIBUTARY TO ANDY CREEK**

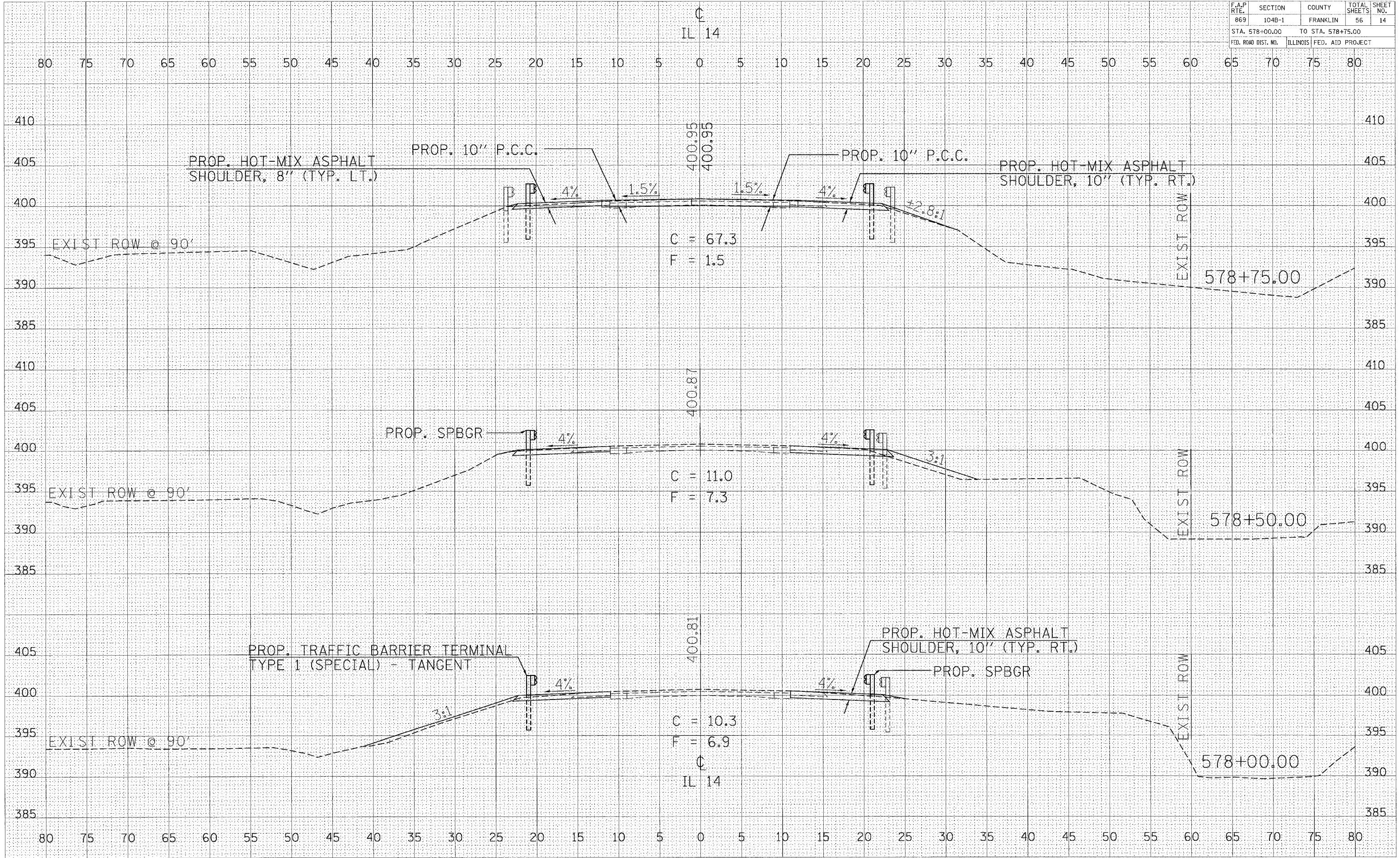
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 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 TEMPLATE \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_

BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 TEMPLATE \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_

ORIGINAL SURVEY PLOTTED TEMPLATE  
 PLOT DATE = 5/4/2007  
 PLOT SCALE = 1" = 40'  
 USER NAME = jbr1400



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1	FRANKLIN	56	14
STA. 578+00.00		TO STA. 578+75.00		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			



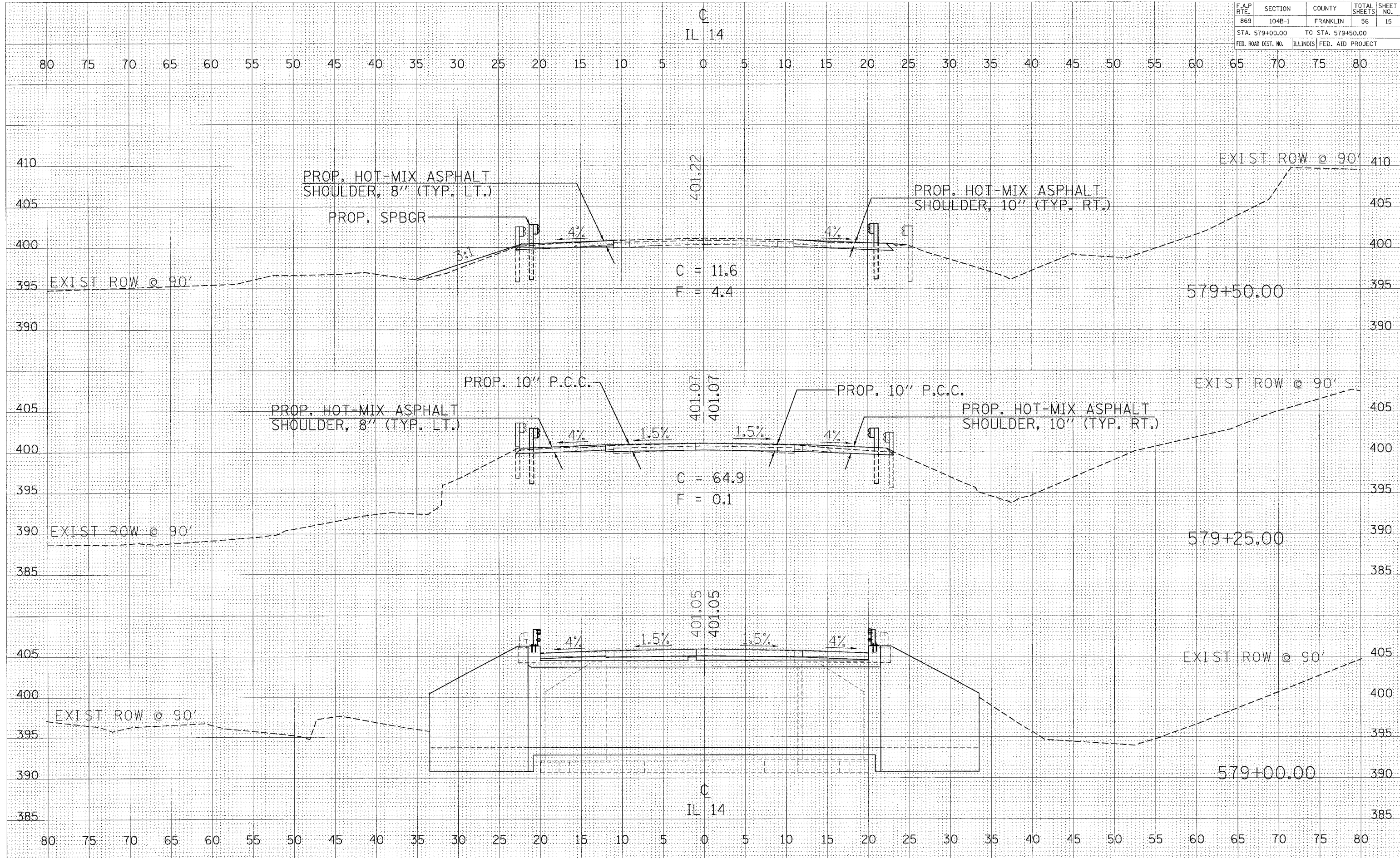
**CROSS SECTIONS - STA 578+00 TO STA 578+75  
IL 14 OVER TRIBUTARY TO ANDY CREEK**

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 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_ TEMPLATE: \_\_\_\_\_  
 NO. \_\_\_\_\_ AREAS CHECKED: \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_ TEMPLATE: \_\_\_\_\_  
 NO. \_\_\_\_\_ AREAS CHECKED: \_\_\_\_\_

PLOT DATE = 5/17/2007  
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1	FRANKLIN	56	15
STA. 579+00.00		TO STA. 579+50.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



CROSS SECTIONS - STA 579+00 TO STA 579+50  
IL 14 OVER TRIBUTARY TO ANDY CREEK

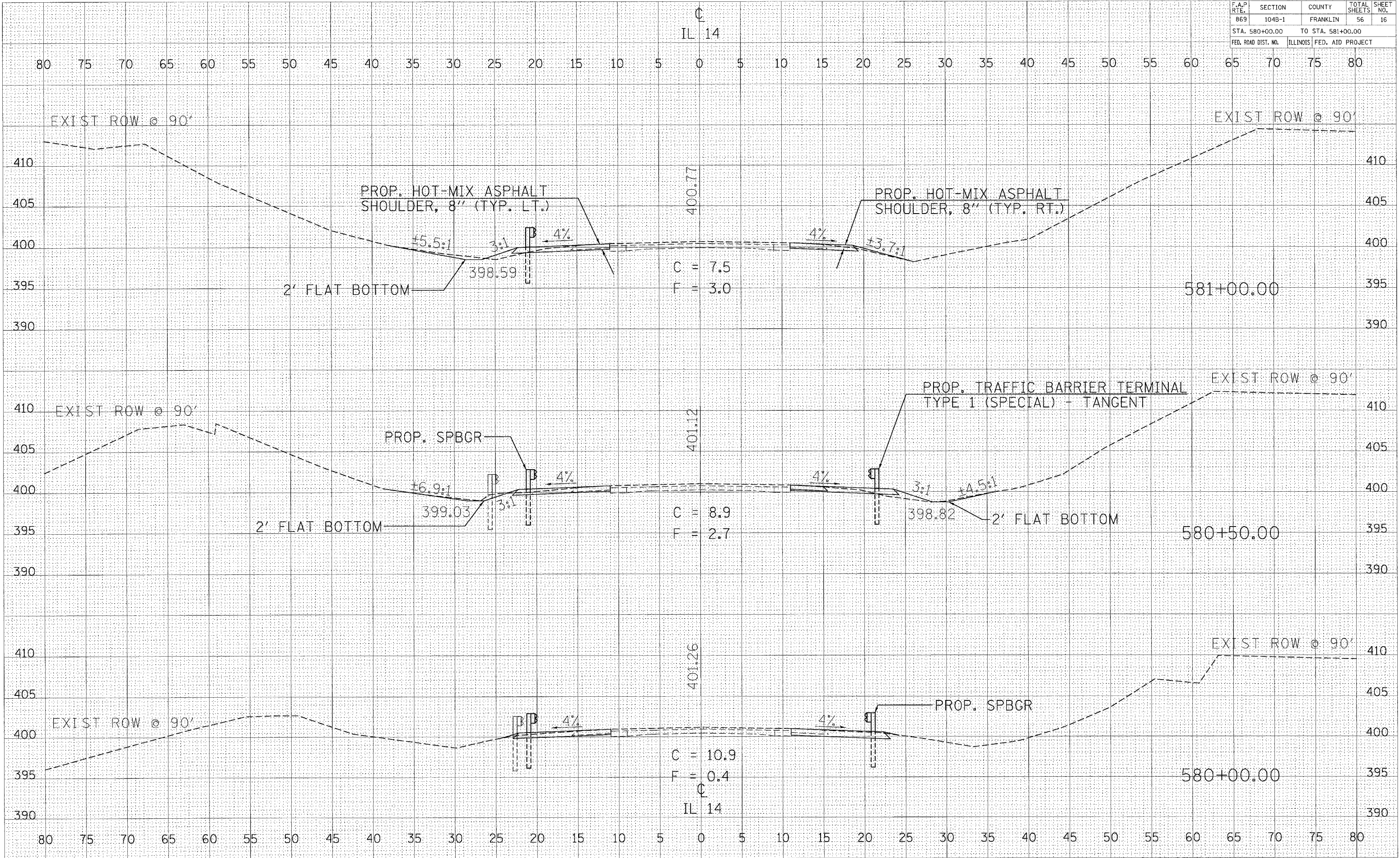
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BY: \_\_\_\_\_  
REVISIONS:  
SURVEY PLOTTED  
TEMPLATE  
NOTE BOOK  
AREAS CHECKED

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
REVISIONS:  
SURVEY PLOTTED  
TEMPLATE  
NOTE BOOK  
AREAS CHECKED

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PLOT SCALE = 1/8" = 1'-0"  
USER NAME = portarwo



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1	FRANKLIN	56	16
STA. 580+00.00		TO STA. 581+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



BY \_\_\_\_\_ DATE \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 TEMPLATE \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_

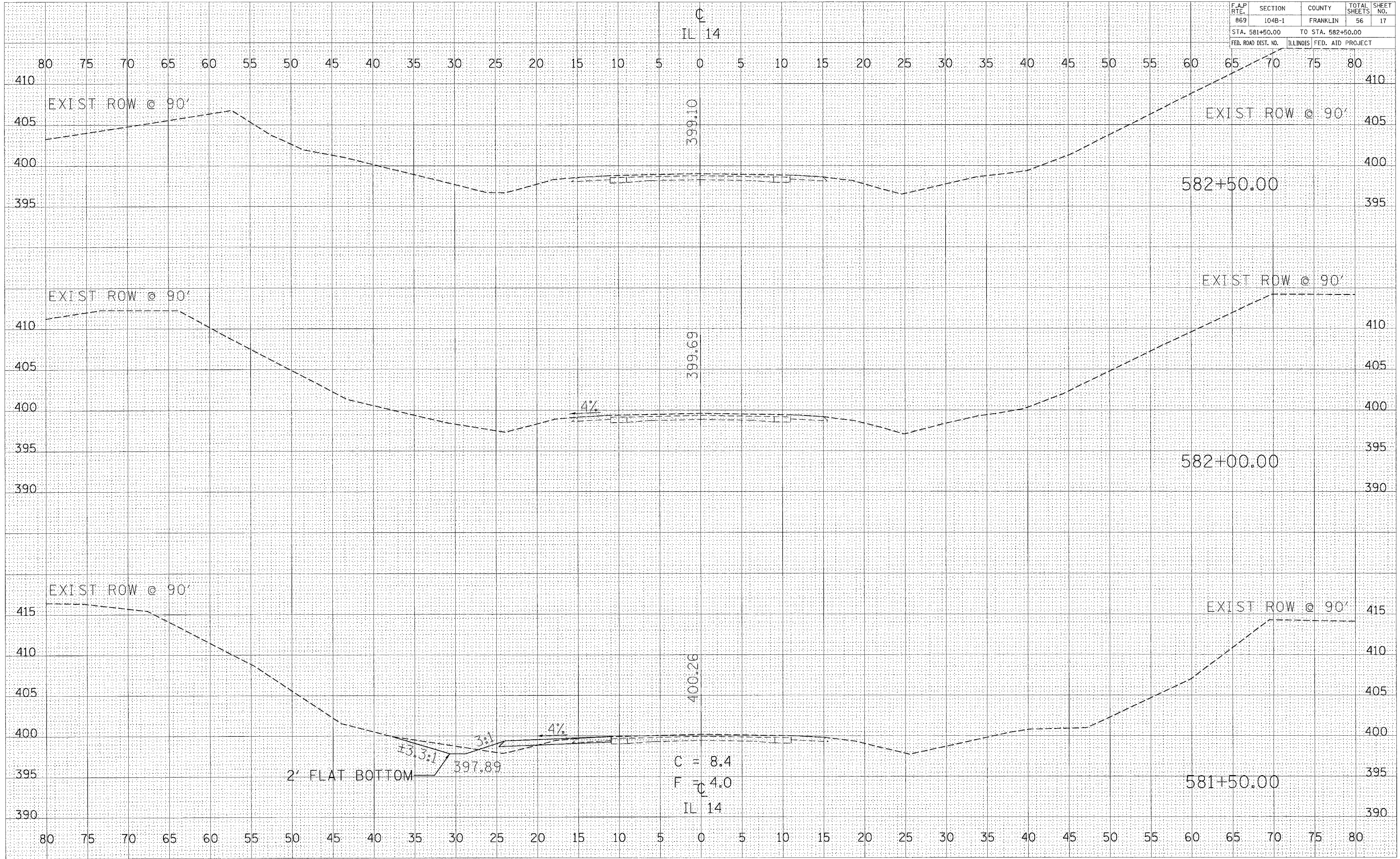
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 AREAS CHECKED \_\_\_\_\_

DATE: 5/4/2007  
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 USER: jones  
 PLOT: 1/1

**CROSS SECTIONS - STA 580+00 TO STA 581+00  
 IL 14 OVER TRIBUTARY TO ANDY CREEK**



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1	FRANKLIN	56	17
STA. 581+50.00		TO STA. 582+50.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



**CROSS SECTIONS - STA 581+50 TO STA 582+50  
IL 14 OVER TRIBUTARY TO ANDY CREEK**

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 SURVEY NO. \_\_\_\_\_  
 ORIGINAL SURVEY NO. \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 SURVEY NO. \_\_\_\_\_  
 ORIGINAL SURVEY NO. \_\_\_\_\_

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 PLOT SCALE = 1/8" = 100'  
 USER NAME = portland

**BENCHMARK**

Square cut on S.W. wingwall of 028-0065,  
Elev. 400.99

**EXISTING STRUCTURE**

028-0065. Built in 1925 as S.B.I. Route 14, Section 4B  
at Station 579+05 as a 1-span R.C. slab bridge, closed  
abutments, spread footing, 1947 superstructure replacement,  
and widening.

**PROPOSED STRUCTURE**

Existing structure to be removed and replaced with a  
double barrel 10'x10' box culvert. Traffic to be  
maintained using stage construction with one lane of  
traffic open at all times.  
No salvage of existing structure.

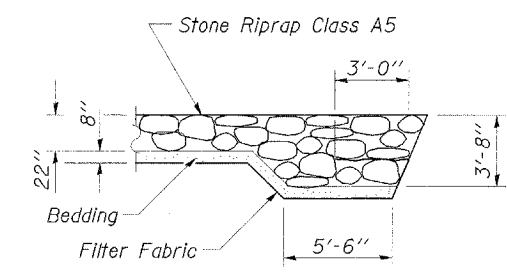
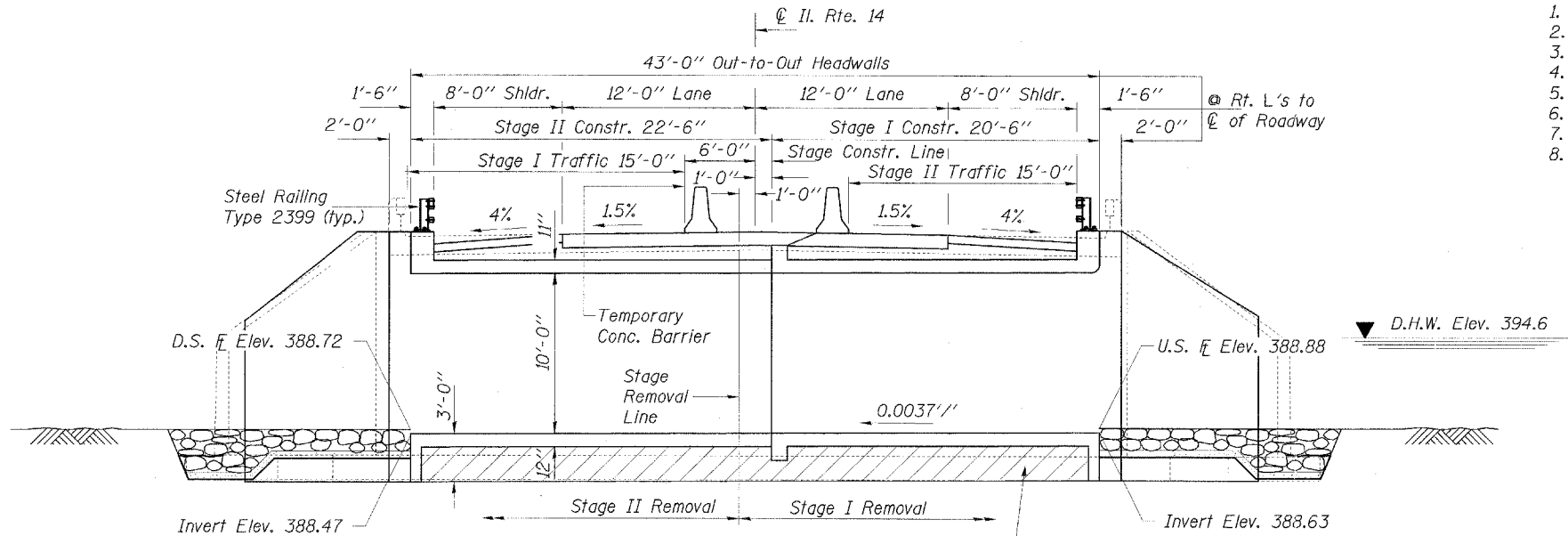
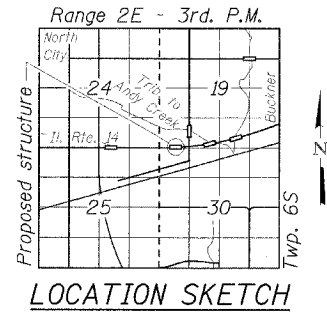
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1	FRANKLIN	56	18
STA.		TO STA.		
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
Contract #98775				SHEET 1 OF 8

**INDEX OF SHEETS**

SHEET NO.	TITLE
1.	General Plan
2.	Stage Construction Details
3.	Temporary Concrete Barrier
4.	Box Culvert Details - 1
5.	Box Culvert Details - 2
6.	Steel Railing, Type 2399 details
7.	Bar Splicer Assembly Details
8.	Boring Logs

STATION 579+10.00  
BUILT 200\_ BY  
STATE OF ILLINOIS  
F.A.P. RT 869 SEC. 104B-1  
LOADING HS 20  
STR. NO. 028-2016

**NAME PLATE**  
See Std. 515001



**SECTION A-A**

**LOADING HS20-44**  
Allow 50#/sq. ft. for future  
wearing surface.

**DESIGN SPECIFICATIONS**  
2002 AASHTO "Standard Specifications  
for Highway Bridges"

**DESIGN STRESSES**

**FIELD UNITS**  
f<sub>c</sub>' = 3,500 psi  
f<sub>y</sub> = 60,000 psi (reinforcement)

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Porous Granular Embankment	Cu. Yd.	413
Stone Riprap, Class A1	Ton	192
Stone Riprap, Class A5	Sq. Yd.	160
Filter Fabric	Sq. Yd.	160
Removal of Existing Structures	Each	1
Reinforcement Bars, Epoxy Coated	Pound	29,260
Steel Railing, Type 2399	Foot	46
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	148.5
Bar Splicers	Each	136
Temporary Soil Retention System	Sq. Ft.	835

**WATERWAY INFORMATION**

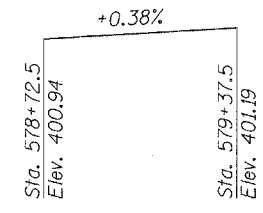
Exist. Low Grade Elev. 400.71 @ Sta. -  
Drainage Area = 2.52 sq. mi. Prop. Low Grade Elev. 400.7 @ Sta. -

Flood	Freq. Yr.	Q C.F.S.	Opening	Sq. Ft.	Nat. Exist.	Prop. H.W.E.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
10	10	770	88.4	104.4	394.1	1.8	0.9	395.9	395.0	
Design	50	1,150	98.4	114.4	394.6	3.0	1.8	397.6	396.4	
Base	100	1,310	102.4	118.4	394.8	3.5	2.2	398.3	397.0	
Overtopping										
Max. Calc.	500	1,680	110.4	126.4	395.2	4.6	3.3	399.8	398.5	

10-Year Velocity through Existing Bridge = 8.71 fps  
10-Year Velocity through Prop. Bridge = 7.38 fps

**BORING DATA**

Boring No.	Station	Offset
1-S	579+32.11	17' Lt.
2-S	578+82.68	16' Rt.

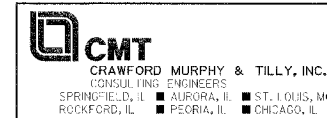
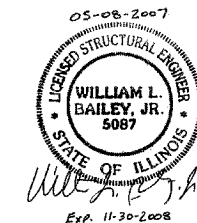


**PROFILE GRADE**

Design Scour Elevation (ft.)	Upstream	Downstream
	385.63	385.47

**APPROVED**  
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson (TSO)  
ENGINEER OF BRIDGES AND STRUCTURES

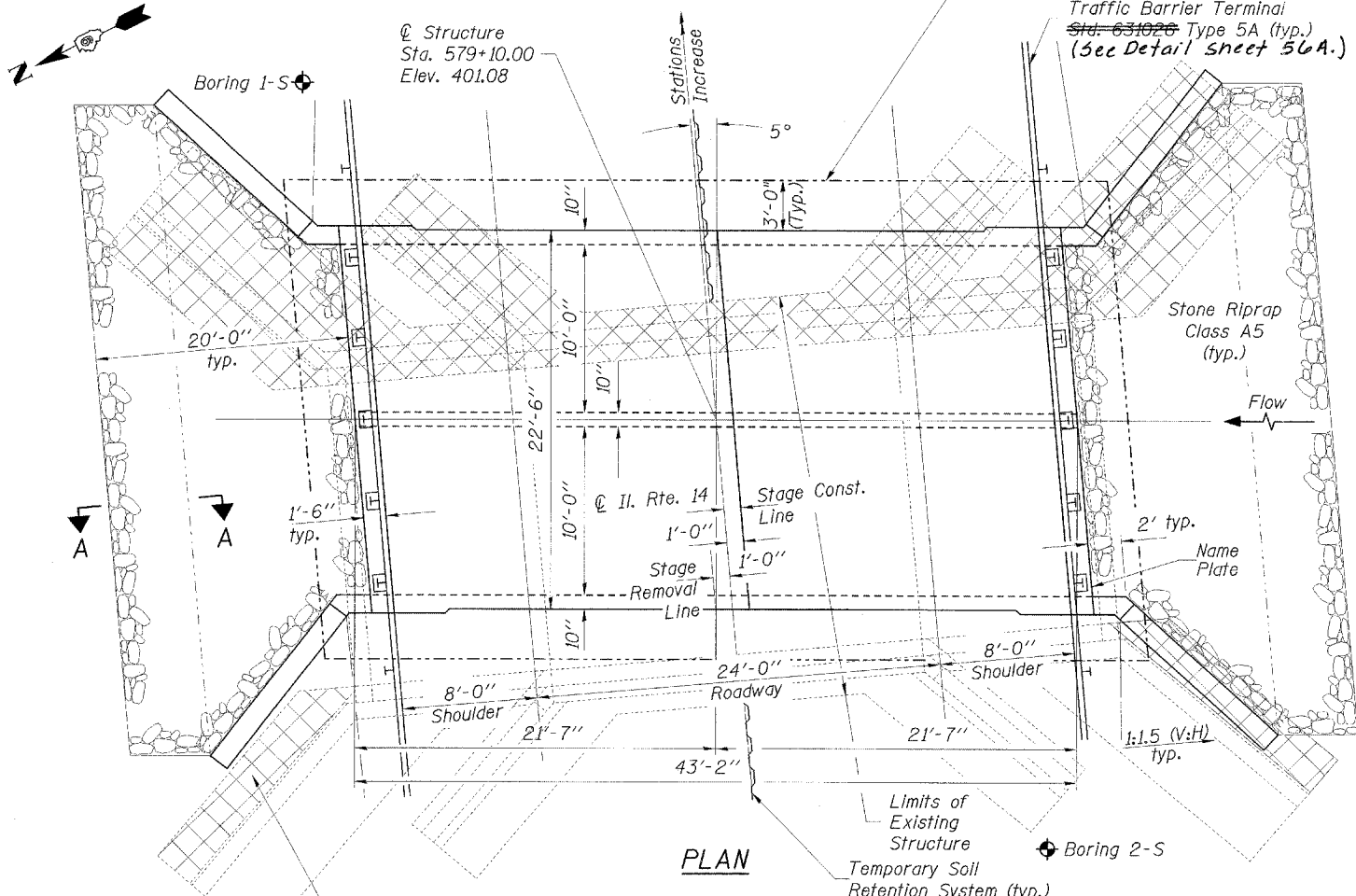


**GENERAL NOTES:**

- Reinforcement bars shall conform to the requirements of AASHTO M31 or M322 Grade 60.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
- All construction joints shall be bonded.
- Precast alternate is not allowed.
- Excavation behind existing abutment walls shall be done before removing the existing superstructure. The Contractor shall sawcut the existing abutments at the stage removal line before Stage 1 removal.
- A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.

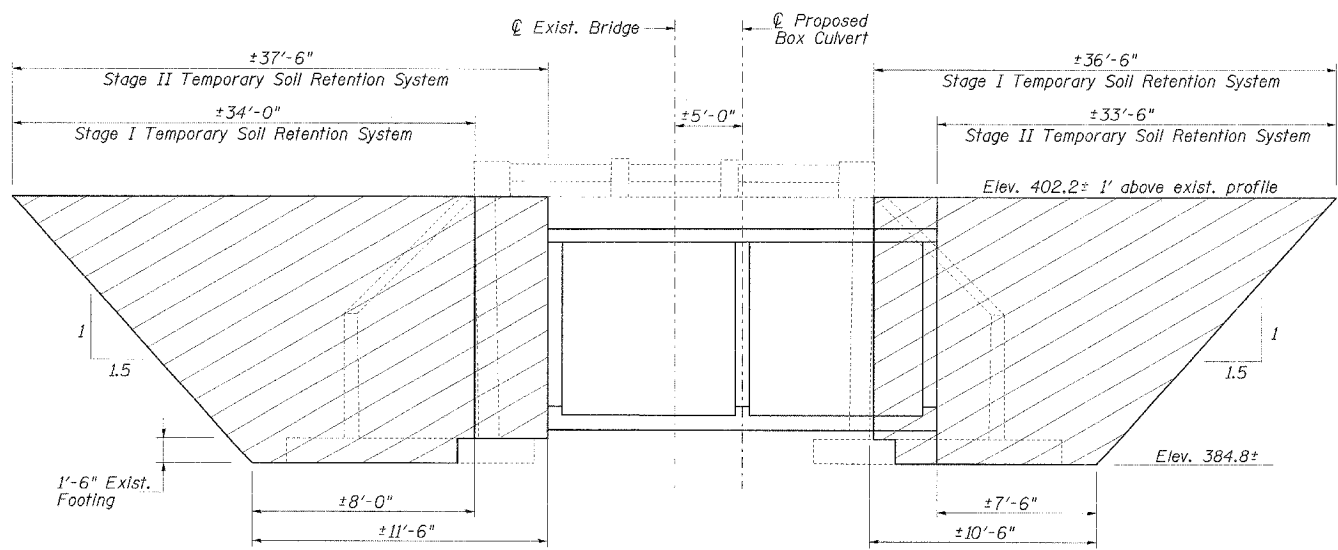
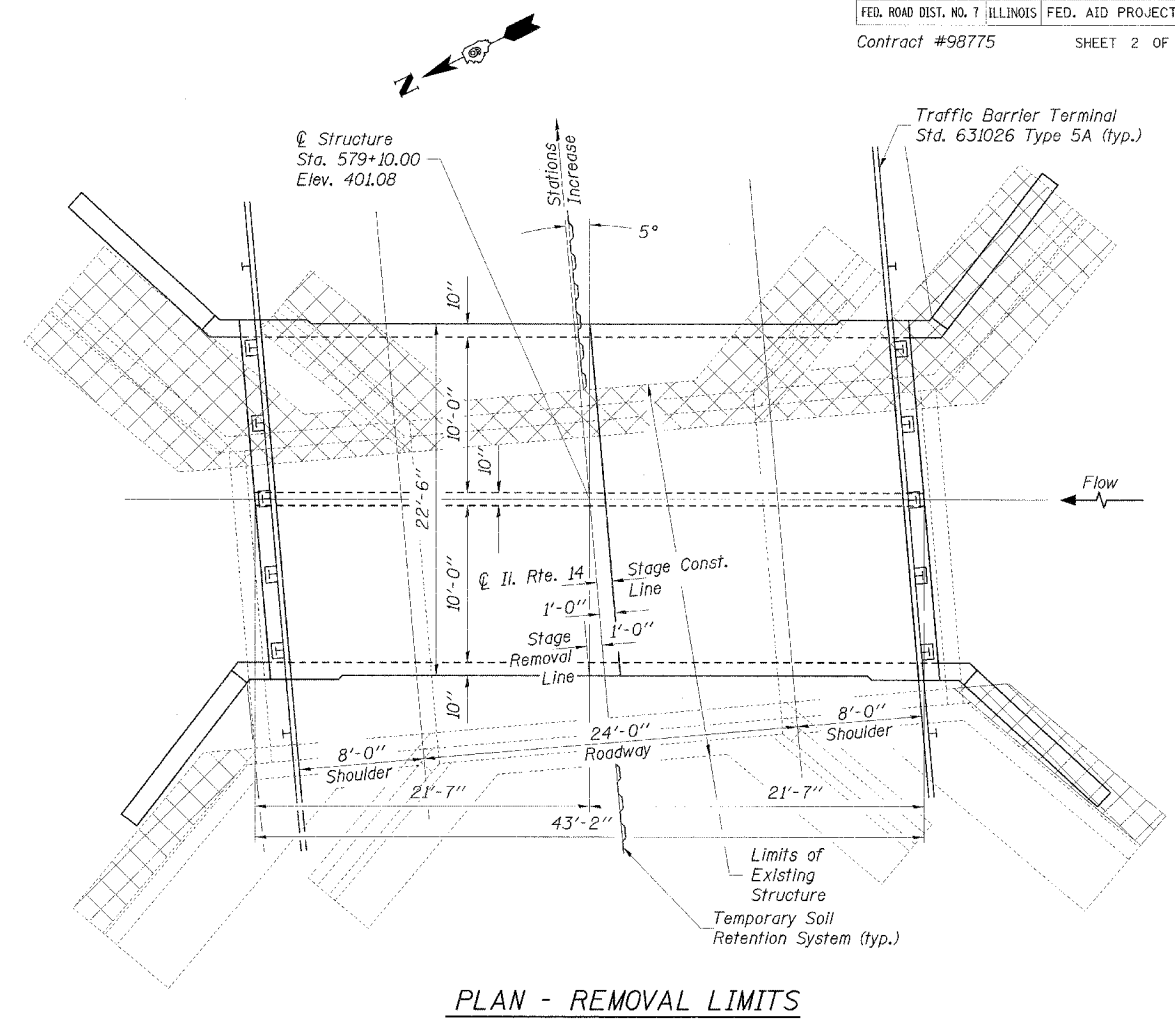
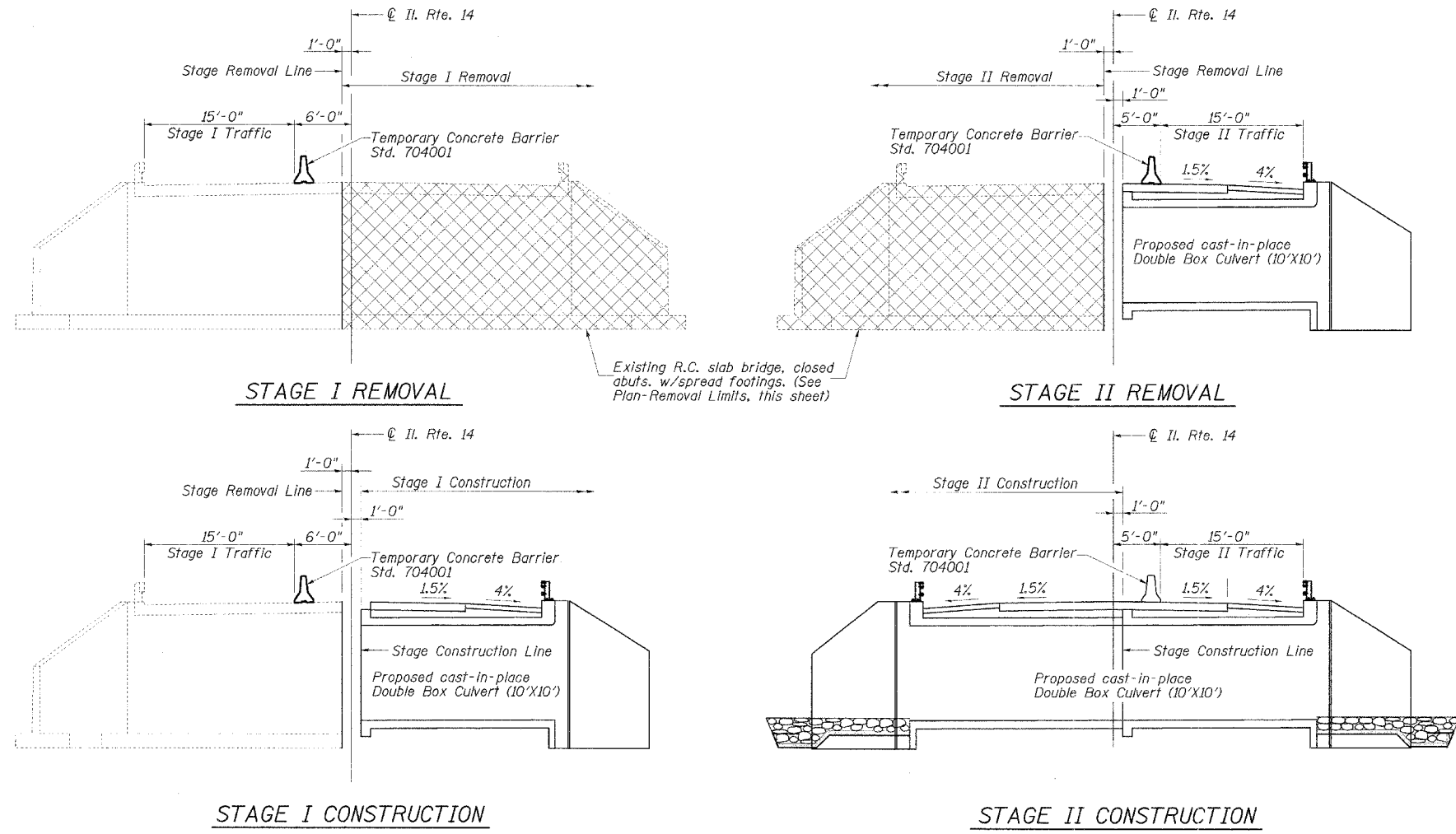
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL PLAN**  
F.A.P. ROUTE 869 (IL. RTE. 14)  
ILLINOIS ROUTE 14 OVER  
TRIBUTARY TO ANDY CREEK  
SECTION 104B-1 STA. 579+10.00  
STR. NO. 028-2016 - FRANKLIN COUNTY  
SCALE: NONE DRAWN BY: GLD  
DATE: 05/08/07 CHECKED BY: WLB



**PLAN**

Note: Cross-hatched portions indicate areas of existing concrete removal.



Indicates Pay Limits for Temporary Soil Retention System

**NOTES**

1. For details of Temporary Concrete Barrier see sheet 3 of 8.
2. For details of Steel Bridge Rail see sheet 6 of 8.
3. Hatched areas indicate areas of existing concrete removal to be paid for as "Removal of Existing Structures."

**NOTE:**  
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

REVISIONS	
NAME	DATE

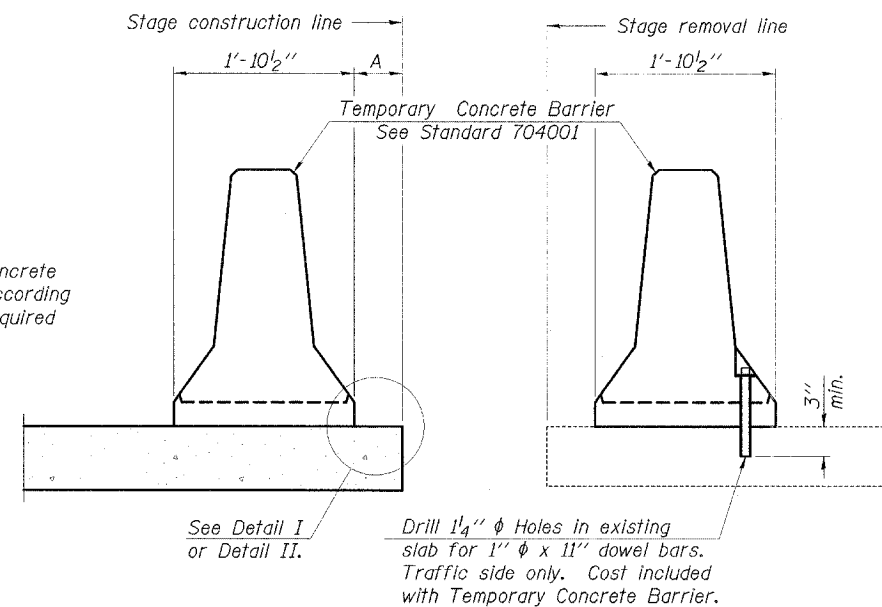
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STAGE CONSTRUCTION DETAILS**  
 F.A.P. ROUTE 869 (IL. RTE. 14)  
 ILLINOIS ROUTE 14 OVER  
 TRIBUTARY TO ANDY CREEK  
 SECTION 104B-1 STA. 579+10.00  
 STR. NO. 028-2016 - FRANKLIN COUNTY

SCALE: NONE DRAWN BY: GLD  
 DATE: 05/08/07 CHECKED BY: WLB



L:\MGT\10606660\10606660\Drawings\stage CONSTR. DTL S.DWG 5/28/2007

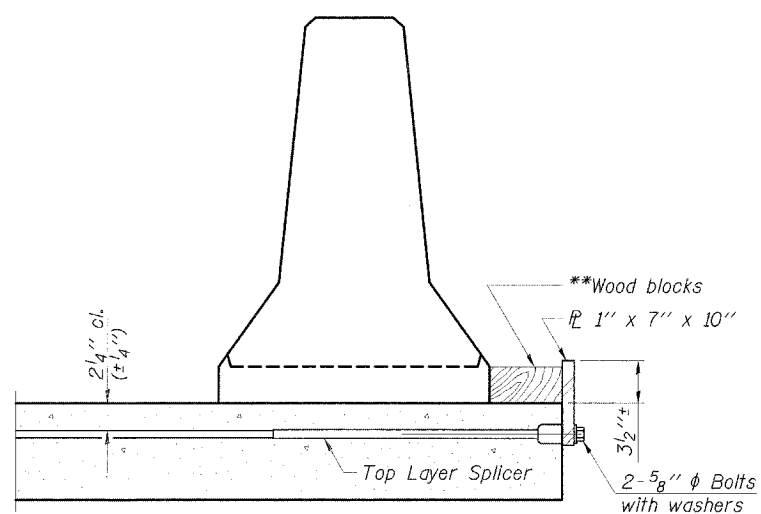
When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



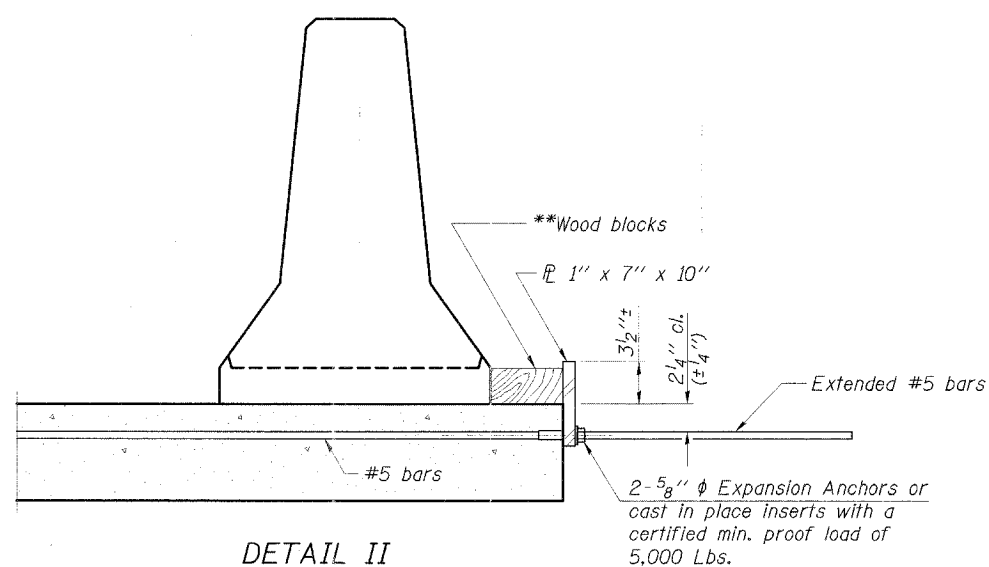
NEW SLAB

EXISTING SLAB

SECTIONS THRU SLAB



DETAIL I



DETAIL II

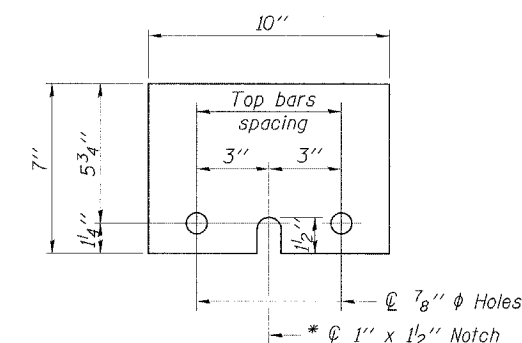
\*\* Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

NOTES

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

Detail II - With Extended Reinforcement Bars:  
Connect one (1) 1"x7"x10" steel PL to the concrete slab with 2-5/8" φ 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.



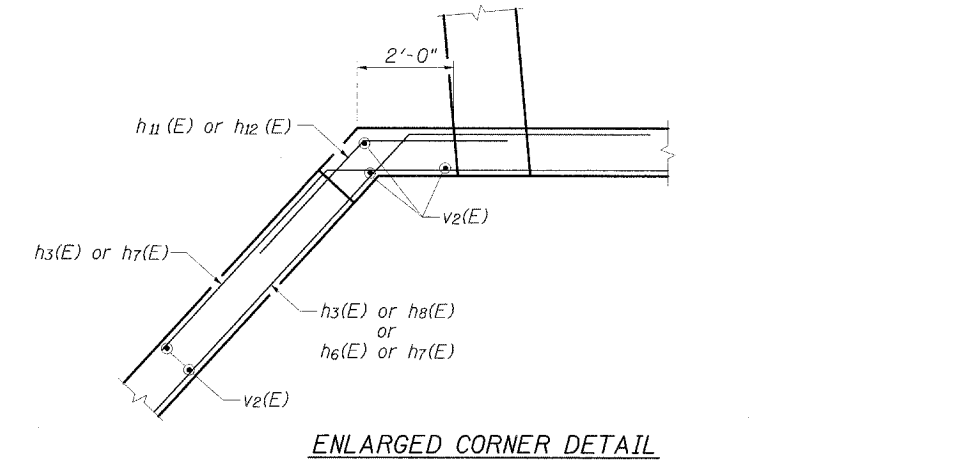
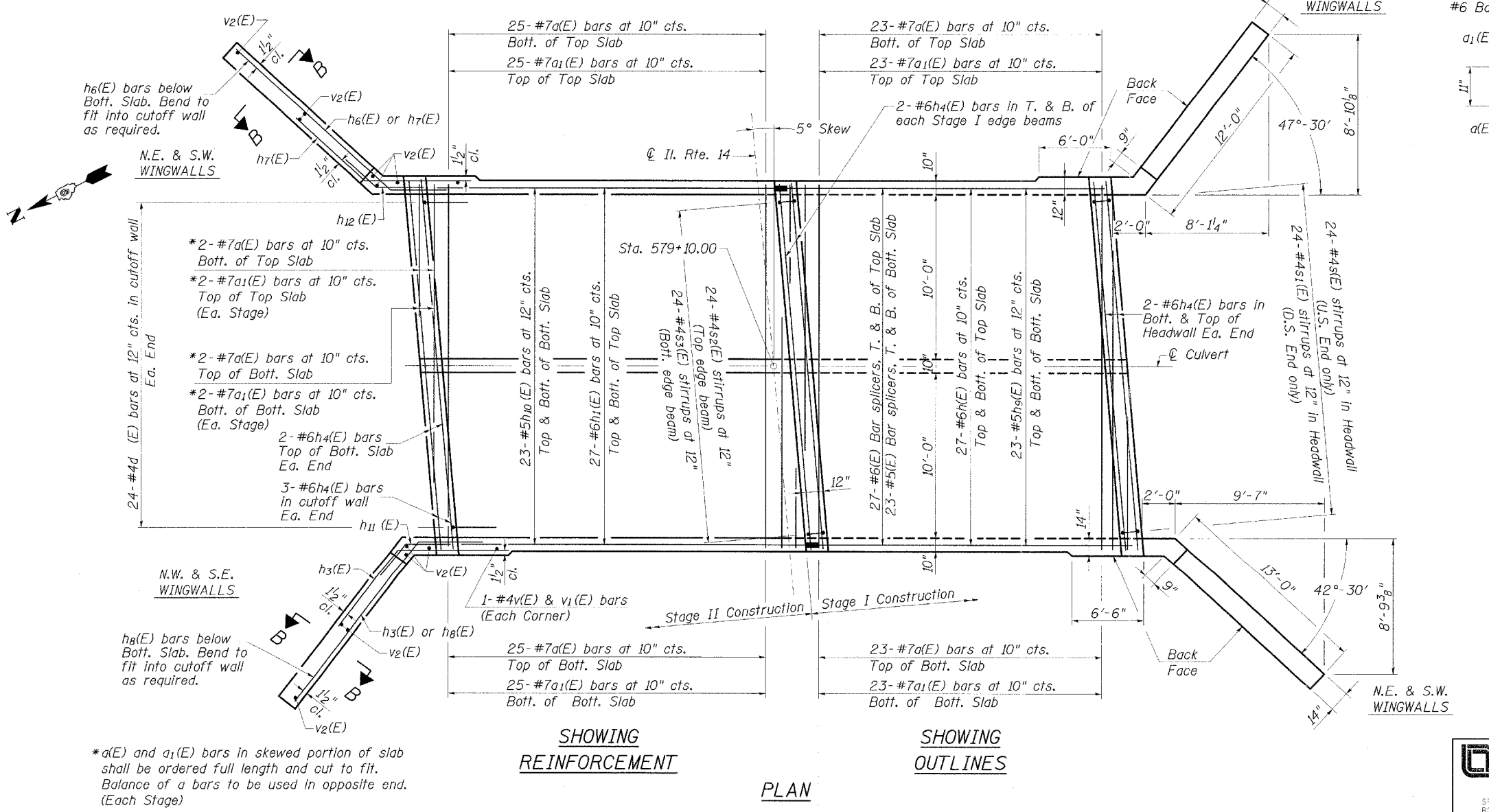
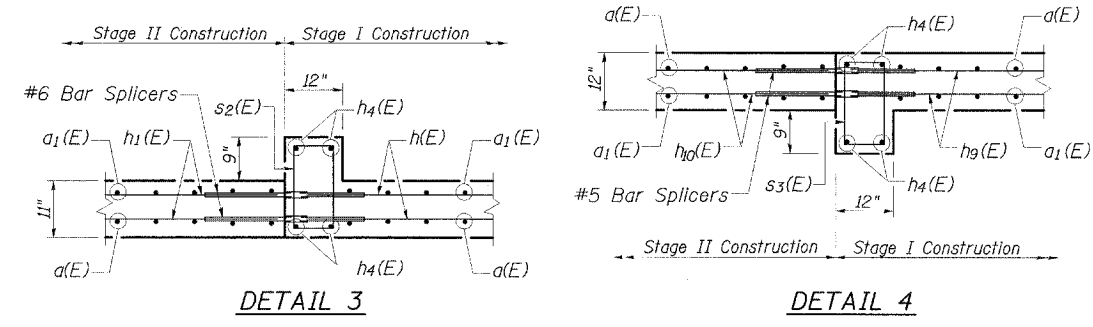
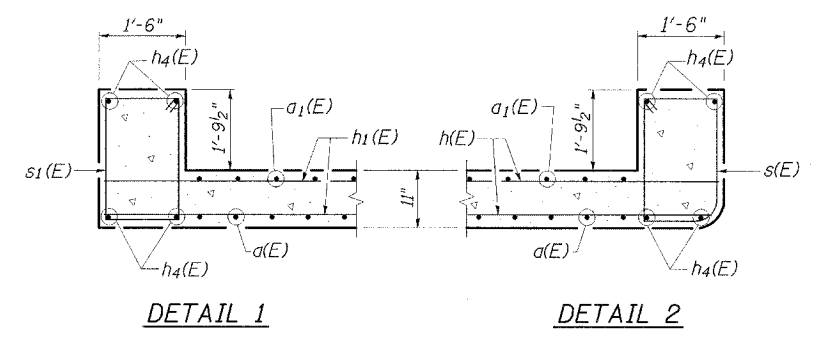
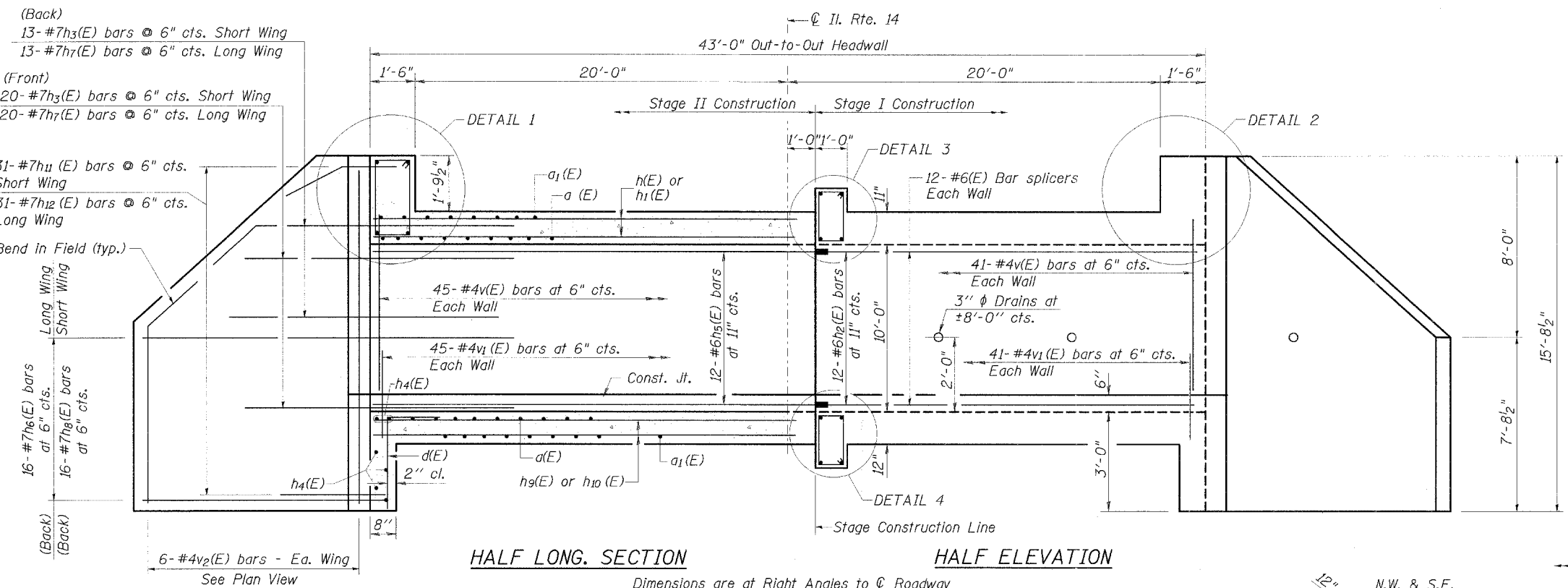
STEEL RETAINER PL 1" x 7" x 10"

\* Required only with Detail II

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CONCRETE BARRIER**  
 F.A.P. ROUTE 869 (IL. RTE. 14)  
 ILLINOIS ROUTE 14 OVER  
 TRIBUTARY TO ANDY CREEK  
 SECTION 104B-1 STA. 579+10.00  
 STR. NO. 028-2016 - FRANKLIN COUNTY  
 SCALE: NONE DRAWN BY: GLD  
 DATE: 05/08/07 CHECKED BY: WLB

**CMT**  
 CRAWFORD MURPHY & TILLY, INC.  
 CONSULTING ENGINEERS  
 SPRINGFIELD, IL ■ ALPHRA, IL ■ ST. LOUIS, MO  
 ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL



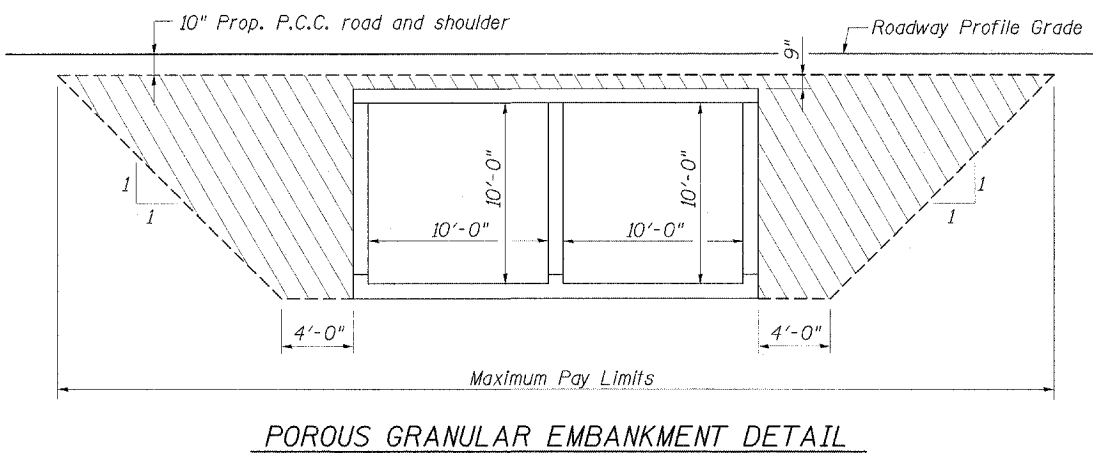
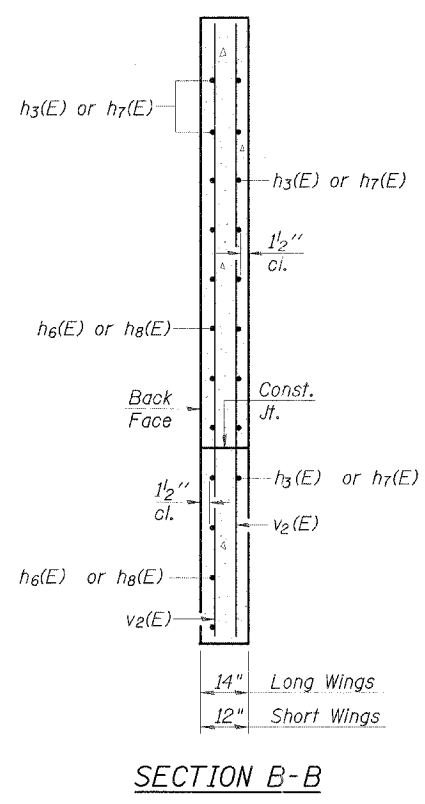
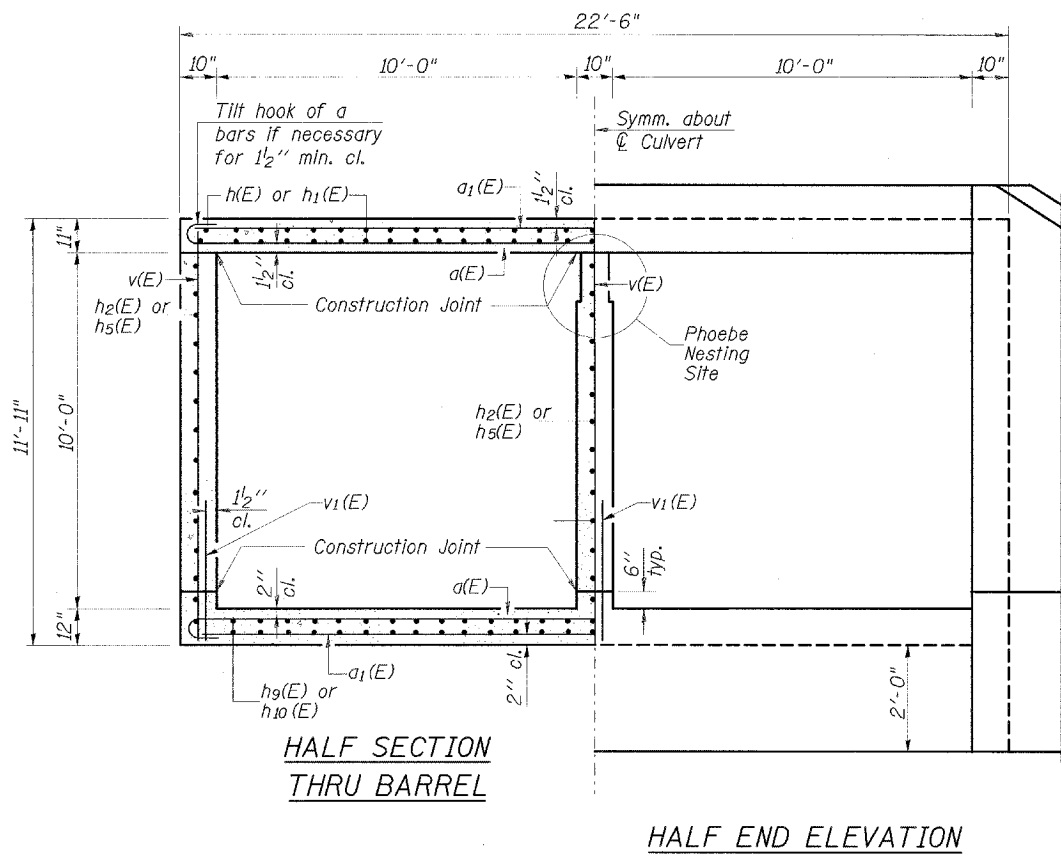
- NOTES:**
1. A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.
  2. See Sheet 5 of 8 for Section thru barrel, Section B-B and Culvert Bill of Material.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION BOX CULVERT DETAILS - 1 F.A.P. ROUTE 869 (IL. RTE. 14) ILLINOIS ROUTE 14 OVER TRIBUTARY TO ANDY CREEK SECTION 104B-1 STA. 579+10.00 STR. NO. 028-2016 - FRANKLIN COUNTY
NAME	DATE	
		SCALE: NONE DATE: 05/08/07

**CMT**  
CRAWFORD MURPHY & TILLY, INC.  
CONSULTING ENGINEERS  
SPRINGFIELD, IL ■ ALBANY, IL ■ ST. LOUIS, MO  
ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL

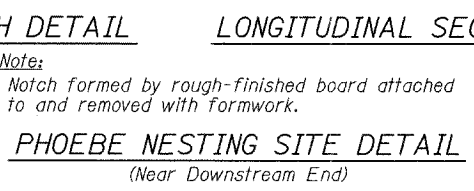
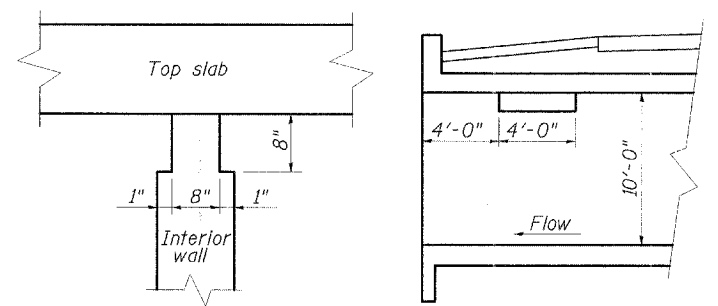
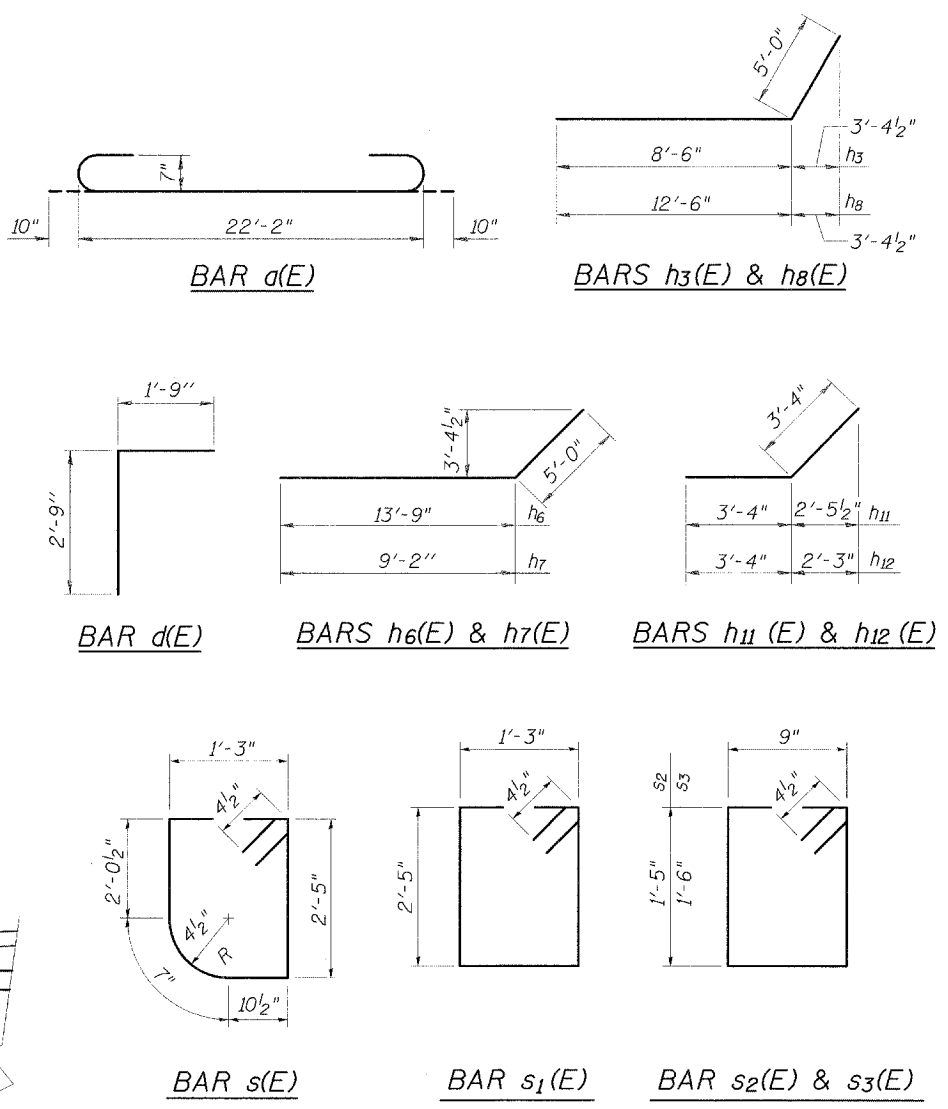
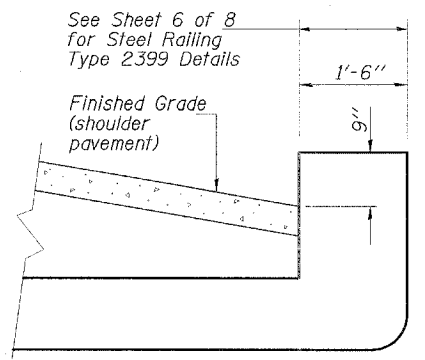
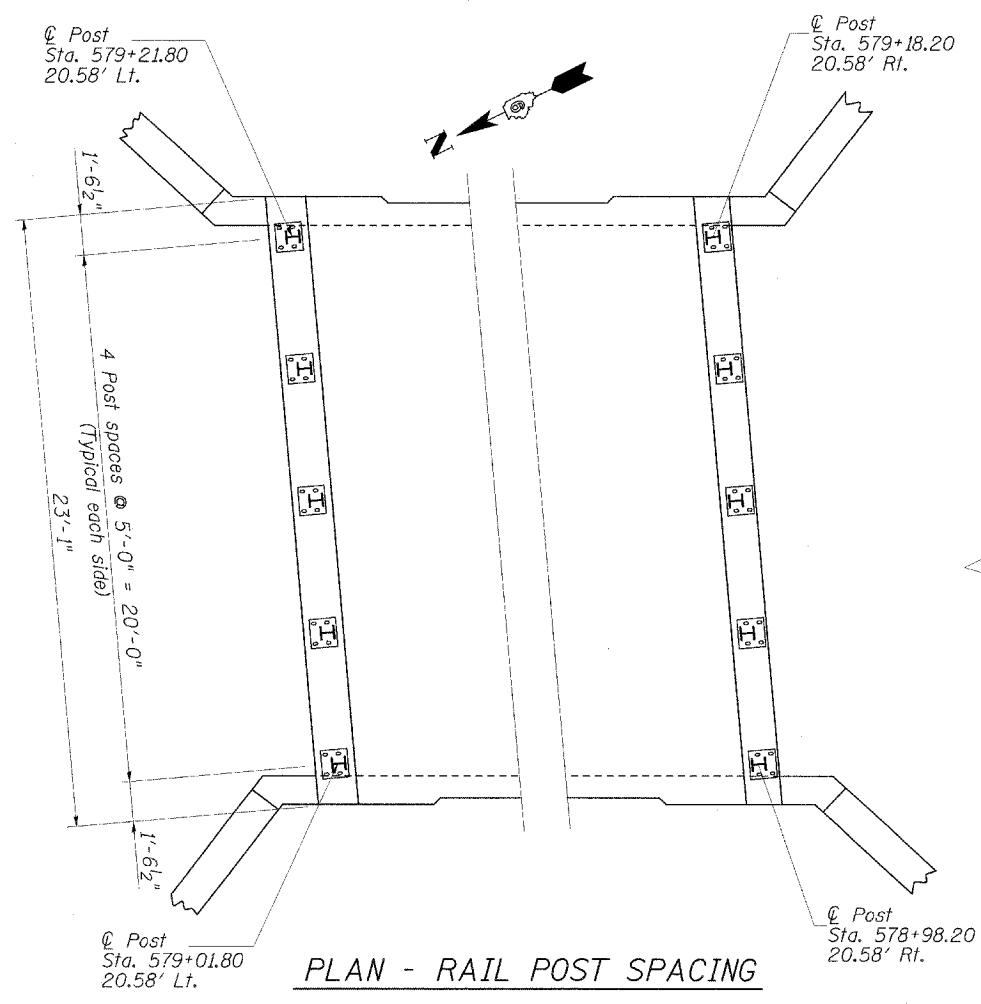
DRAWN BY: GLD  
CHECKED BY: WLW





**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
$a(E)$	104	#7	23'-10"	U
$a_1(E)$	104	#7	22'-2"	—
$d(E)$	48	#4	4'-6"	L
$h(E)$	54	#6	20'-3"	—
$h_1(E)$	54	#6	22'-3"	—
$h_2(E)$	36	#6	20'-3"	—
$h_3(E)$	66	#7	13'-6"	—
$h_4(E)$	26	#6	22'-3"	—
$h_5(E)$	36	#6	22'-3"	—
$h_6(E)$	32	#7	18'-9"	—
$h_7(E)$	66	#7	14'-2"	—
$h_8(E)$	32	#7	17'-6"	—
$h_9(E)$	46	#5	20'-3"	—
$h_{10}(E)$	46	#5	22'-3"	—
$h_{11}(E)$	62	#7	6'-8"	—
$h_{12}(E)$	62	#7	6'-8"	—
$s(E)$	24	#4	7'-11"	U
$s_1(E)$	24	#4	8'-1"	U
$s_2(E)$	24	#4	5'-1"	U
$s_3(E)$	24	#4	5'-3"	U
$v(E)$	262	#4	10'-0"	—
$v_1(E)$	262	#4	2'-8"	—
$v_2(E)$	24	#4	15'-4"	—
Stone Riprap, Class A5	Sq. Yd.		160	
Filter Fabric	Sq. Yd.		160	
Reinforcement Bars, Epoxy Coated	Pound		29,260	
Concrete Box Culverts	Cu. Yd.		148.5	
Bar Splicers	Each		136	
Porous Granular Embankment	Cu. Yd.		413	



**NOTES:**  
1. Work this sheet with sheet 4 of 8.

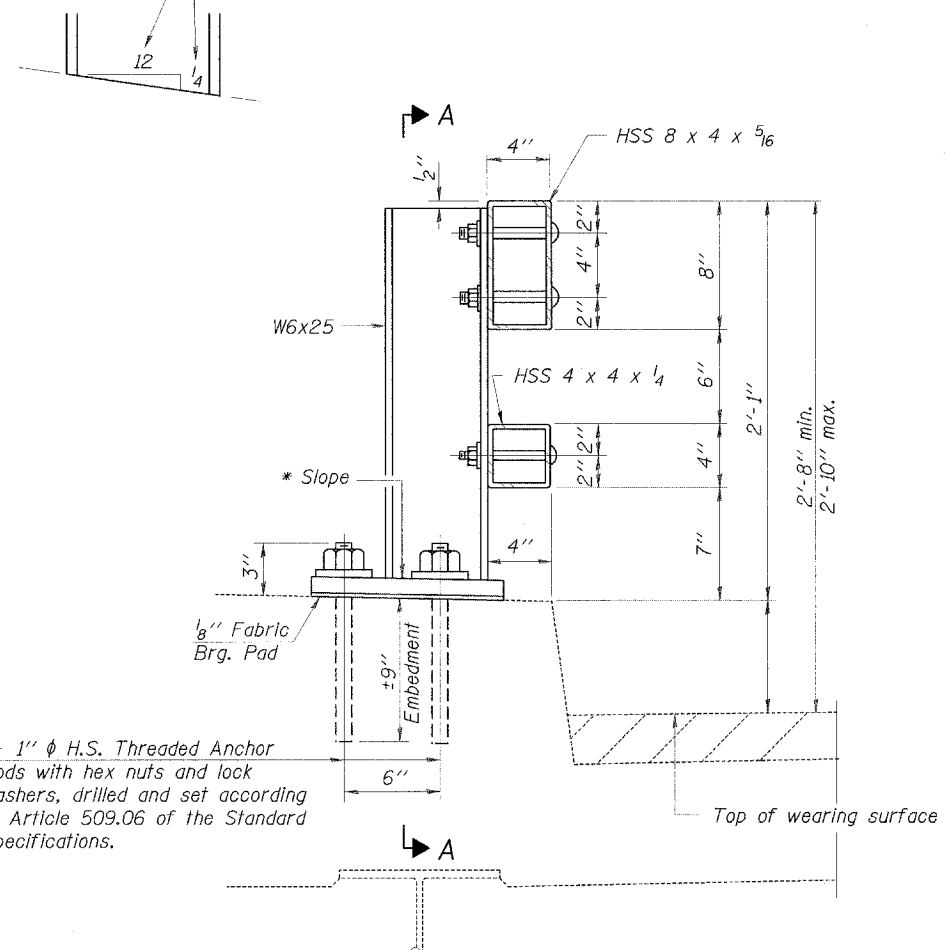
**CMT**  
CRAWFORD MURPHY & TILLY, INC.  
CONSULTING ENGINEERS  
SPRINGFIELD, IL ■ AURORA, IL ■ ST. LOUIS, MO  
ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL

REVISIONS	
NAME	DATE

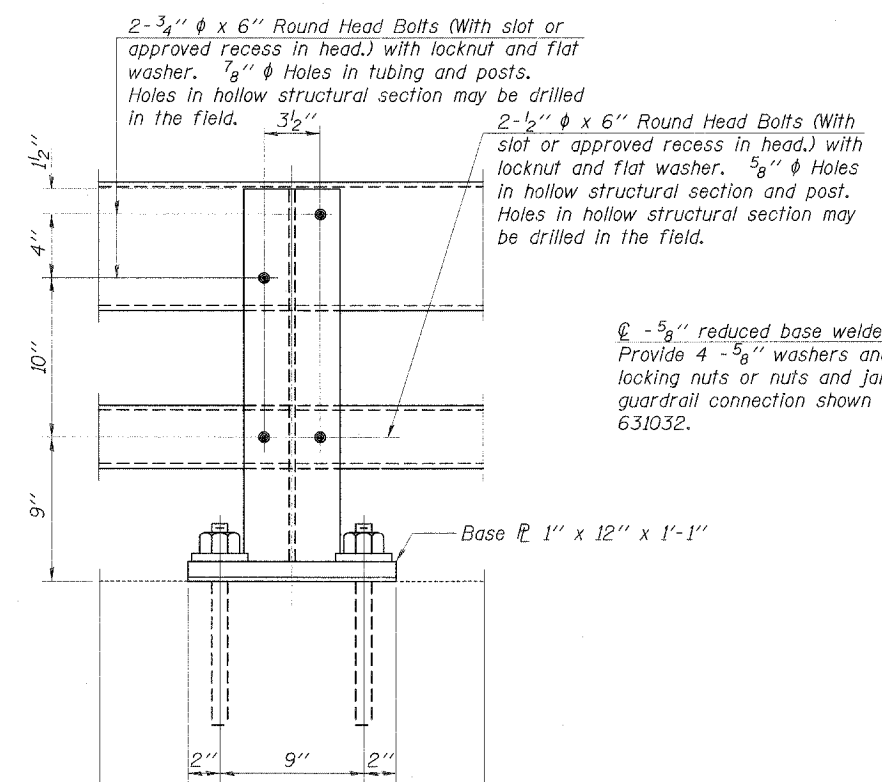
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BOX CULVERT DETAILS - 2**  
F.A.P. ROUTE 869 (IL. RTE. 14)  
ILLINOIS ROUTE 14 OVER  
TRIBUTARY TO ANDY CREEK  
SECTION 104B-1 STA. 579+10.00  
STR. NO. 028-2016 - FRANKLIN COUNTY  
SCALE: NONE DRAWN BY: GLD  
DATE: 05/08/07 CHECKED BY: WLB



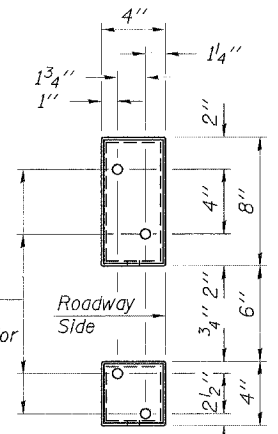
\* Cut bottom end of post to curb slope.



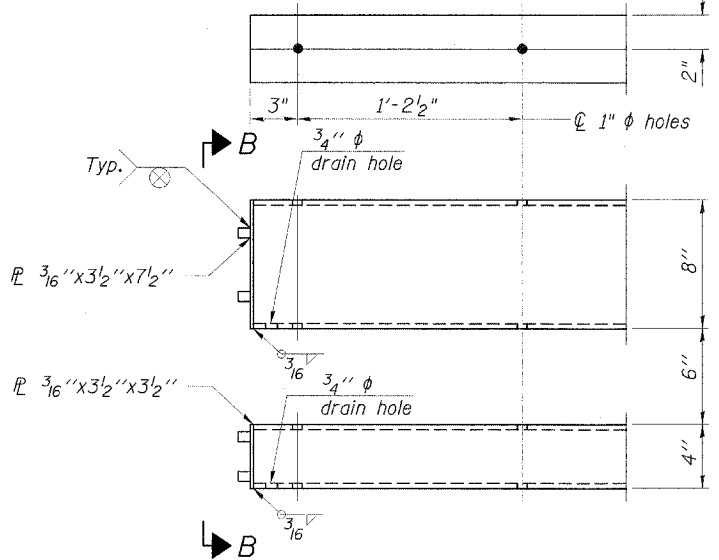
SECTION AT RAIL POST



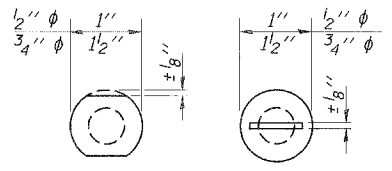
SECTION A-A



VIEW B-B

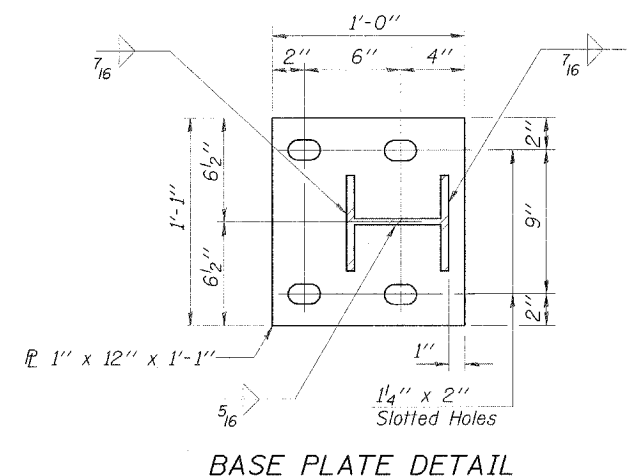


END OF RAIL DETAILS

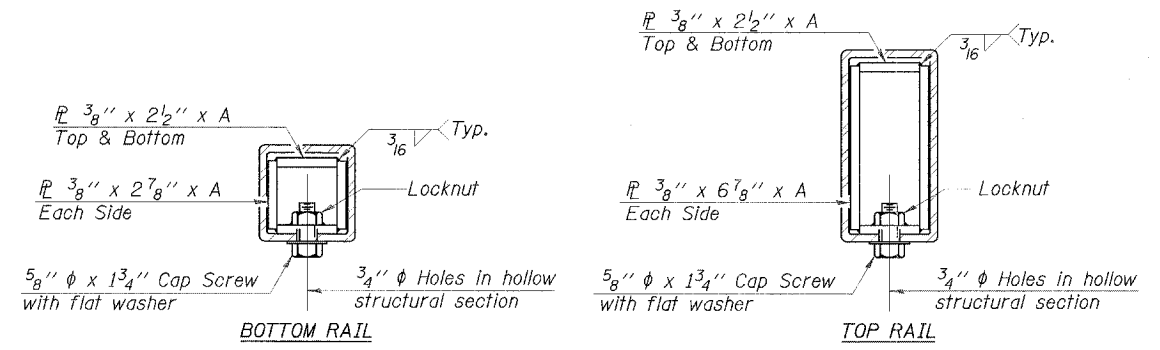


VIEW C-C

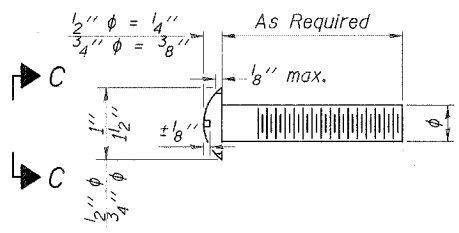
Notes:  
 All field drilled holes shall be coated with an approved zinc rich paint before erection.  
 Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.  
 Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow ralling movement.  
 Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



BASE PLATE DETAIL



SECTIONS AT RAIL SPLICE



DETAIL OF 1/2" & 3/4" ROUND HEAD BOLTS

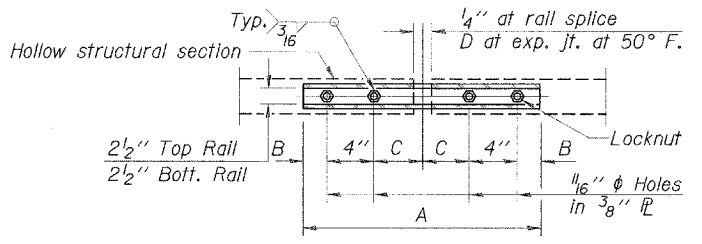
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	46

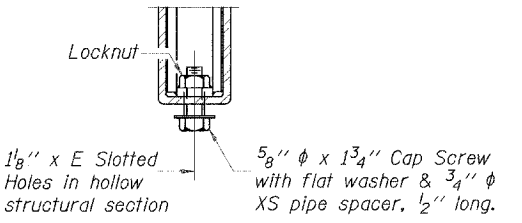
SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1 1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.



PLAN-BOTT. SPLICE TYPICAL



RAIL SPLICE CONNECTION AT EXPANSION JT.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 STEEL RAILING, TYPE 2399 DETAILS  
 F.A.P. ROUTE 869 (IL. RTE. 14)  
 ILLINOIS ROUTE 14 OVER  
 TRIBUTARY TO ANDY CREEK  
 SECTION 104B-1 STA. 579+10.00  
 STR. NO. 028-2016 - FRANKLIN COUNTY  
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**CMT**  
 CRAWFORD MURPHY & TILLY, INC.  
 CONSULTING ENGINEERS  
 SPRINGFIELD, IL ■ AURORA, IL ■ ST. LOUIS, MO  
 ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL

**NOTES**

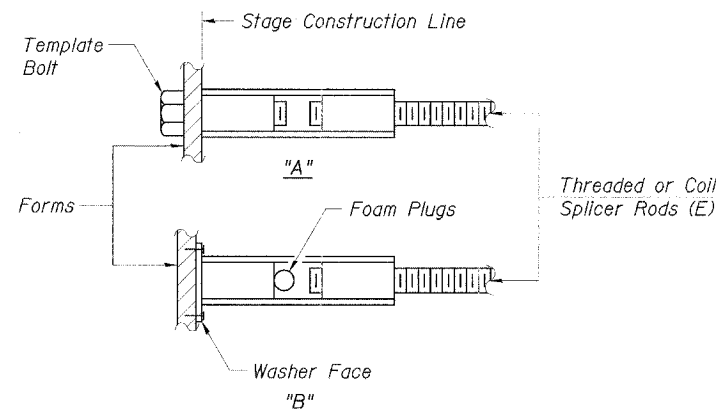
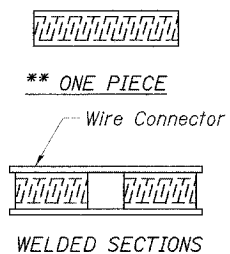
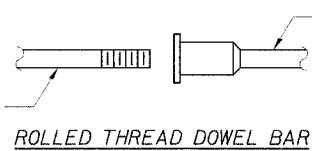
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.  
 Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.  
 All reinforcement bars shall be lapped and tied to 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

BAR SPLICER ASSEMBLIES			
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

The diameter of this part is equal or larger than the diameter of bar spliced.

The diameter of this part is the same as the diameter of the bar spliced.

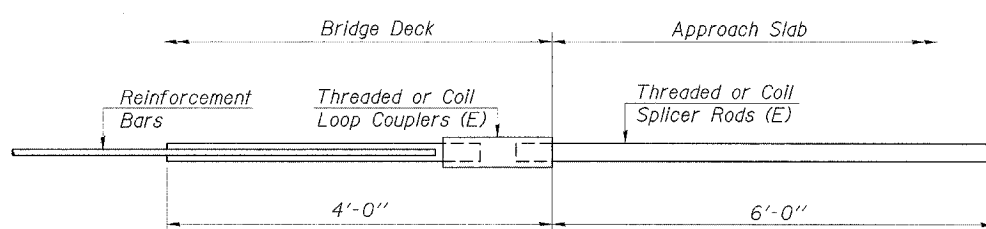


**INSTALLATION AND SETTING METHODS**

"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.

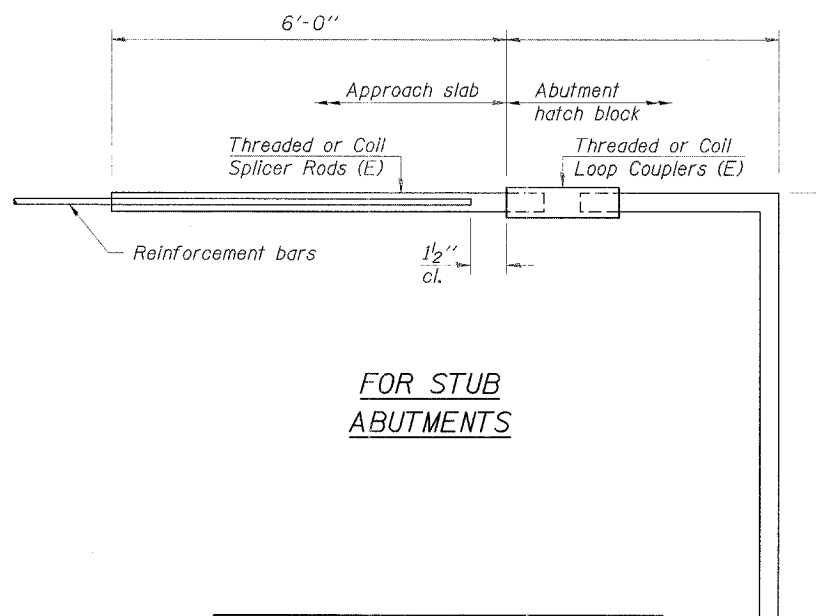
**BAR SPLICER ASSEMBLY ALTERNATIVES**

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



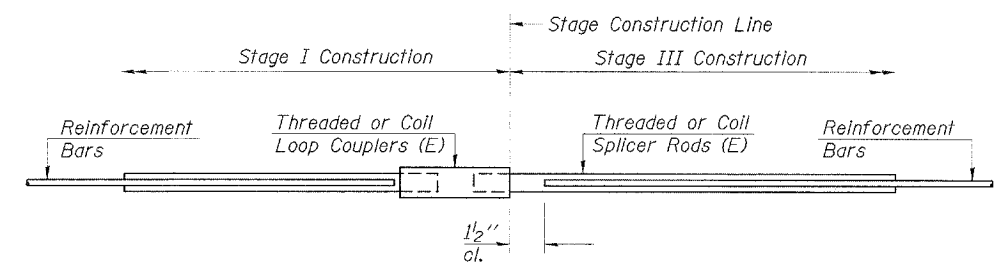
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



**FOR STUB ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0

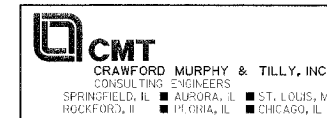


**STANDARD**

Bar Size	No. Assemblies Required	Location
#6(E)	54	Top Slab
#5(E)	46	Bottom Slab
#6(E)	36	Culvert Barrel Walls

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BAR SPLICER ASSEMBLY DETAILS**  
 F.A.P. ROUTE 869 (IL. RTE. 14)  
 ILLINOIS ROUTE 14 OVER  
 TRIBUTARY TO ANDY CREEK  
 SECTION 104B-1 STA. 579+10.00  
 STR. NO. 028-2016 - FRANKLIN COUNTY  
 SCALE: NONE DRAWN BY: GLD  
 DATE: 05/08/07 CHECKED BY: WLB



ILLINOIS DEPARTMENT OF TRANSPORTATION  
District Nine Materials

Bridge Foundation  
Boring Log

Sheet 1 of 2

ILL 14 Over Stream

Route: ILL 14 Structure Number: 028-0065

Date: 07/10/2001

Section: Franklin Location: 0.9 E. of Christopher

Bored By: Bryan Keller  
Checked By: Rob Graeff

Boring No 1-S

Station 24' E of E Abut

Offset 17' N CL

Ground Surface 99.6 Ft

D E P T H	B L O W	Qu tsf	W%	Surf Wat Elev: 88.5	D E P T H	B L O W	Qu tsf	W%
				Ground Water Elevation				
				when Drilling				
				At Completion				
				At: Hrs:				

Crushed Aggregate										
97.6										
Medium, moist, brown, Silty Clay A-6	1	0.9S	15							
95.1										
Stiff, moist, brown, Silty Clay A-6	5.0	1			30.0					
92.6										
Very stiff, moist, brown, Silty Clay A-6	2	2.7S	20							
90.1										
Hard, damp, reddish brown, Silty Clay A-6	10.0	6	4.1S	15						
87.6										
Hard, dry, grey, Weathered Clay Shale	10									
15.0					40.0					
82.1										
Hard, dry, grey, Clay Shale	100/9"									
79.6										
Hard, dry, grey, Clay Shale	20.0	100/6"			45.0					
Bottom of hole = 20.0 ft.										
No free water observed.										
Elevation referenced to center of existing structure over East Abutment at Pavement Grade; Assumed Elevation = 100.0 ft.										
25.0					50.0					

To convert "N" values to "N60" values multiply by 1.25

N-Std Pentr Test: 2" OD Sampler, 140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

ILLINOIS DEPARTMENT OF TRANSPORTATION  
District Nine Materials

Bridge Foundation  
Boring Log

Sheet 1 of 1

ILL 14 Over Stream

Route: ILL 14 Structure Number: 028-0065

Date: 07/16/2001

Section: Franklin Location: 0.9 E. of Christopher

Bored By: Bryan Keller  
Checked By: Rob Graeff

Boring No 2-S

Station 29' W of W Abut

Offset 16' S CL

Ground Surface 99.8 Ft

D E P T H	B L O W	Qu tsf	W%	Surf Wat Elev: 88.5	D E P T H	B L O W	Qu tsf	W%
				Ground Water Elevation				
				when Drilling				
				At Completion				
				At: Hrs:				

Crushed Aggregate and Cinders										
97.8										
Soft, very moist, brown, Silty Clay A-6	2	0.4B	22							
95.3										
Medium to stiff, very moist brown, Silty Clay A-6	5.0	1	1.0P	19						
92.8										
Medium, very moist, brown, Silty Clay A-6	1	0.6B	17							
90.3										
Soft, very moist, brown to grey, Silty Clay A-6	10.0	2	0.4B	26						
87.8										
Very stiff, moist, grey, Silty Clay A-6	1	3.2S	19							
85.3										
Hard, dry, grey, Weathered Clay Shale	15.0	4								
82.8										
Hard, dry, grey to brown, Clay Shale	100/11"									
79.3										
Hard, dry, grey to brown, Clay Shale with brown Creek Gravel Layers	20.0	100/12"								
Cored from 20.5 ft to 25.5 ft. 77% Recovery 63% RQD										
25.0					50.0					

N-Std Pentr Test: 2" OD Sampler, 140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

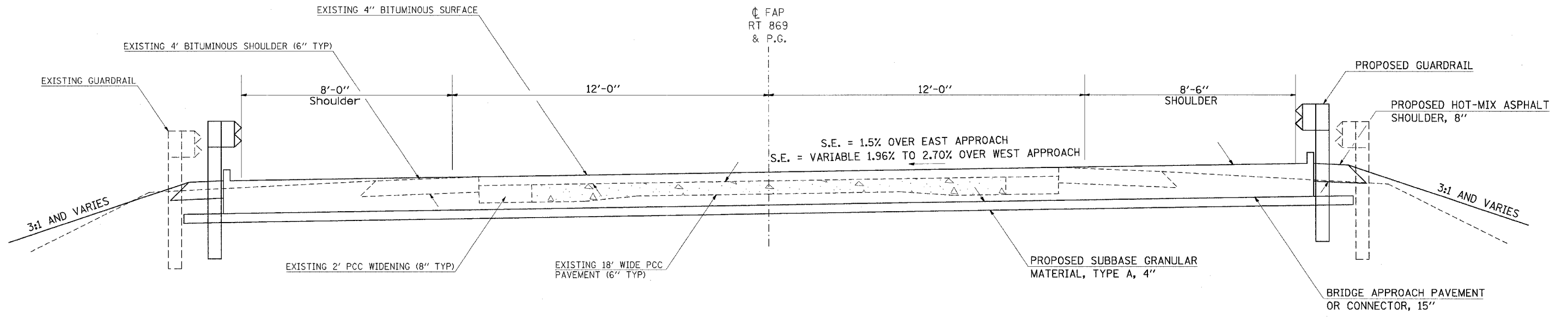
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-1	FRANKLIN	56	25
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		
Contract #98775				SHEET 8 OF 8

REVISIONS	
NAME	DATE

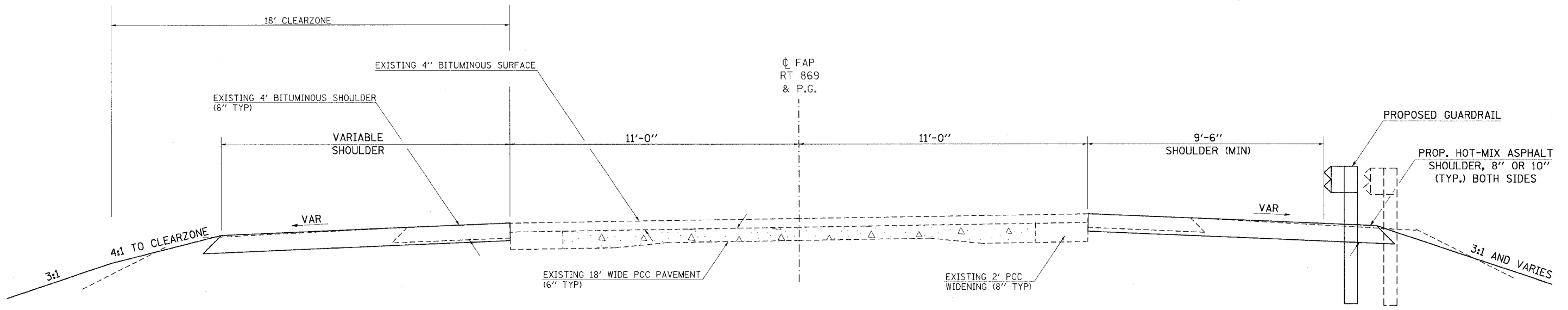


ILLINOIS DEPARTMENT OF TRANSPORTATION  
BORING LOGS  
F.A.P. ROUTE 869 (IL. RTE. 14)  
ILLINOIS ROUTE 14 OVER  
TRIBUTARY TO ANDY CREEK  
SECTION 104B-1 STA. 579+10.00  
STR. NO. 028-2016 - FRANKLIN COUNTY  
SCALE: NONE DRAWN BY: GLD  
DATE: 05/08/07 CHECKED BY: WLB

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-2	FRANKLIN	56	26
STA.	TO STA.			
FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		



**TYPICAL SECTION WITHIN PAVEMENT REMOVAL**  
(LOOKING EAST)



**TYPICAL SECTION OUTSIDE PAVEMENT REMOVAL**  
(LOOKING EAST)

5/4/2007  
c:\projects\980805\980805.dwg  
52.0638 / IN  
10/10/07

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-2	FRANKLIN	56	27
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

### EARTHWORK SCHEDULE

SN 028-0076 LOCATION STATION TO STATION	EARTH EXCAVATION	STRUCTURE EXCAVATION	CHANNEL EXCAVATION (UNSUITABLE)	SHRINKAGE FACTOR FOR EARTH & STRUCTURE EXCAVATION	EXCAVATION TO BE USED IN EMBANKMENT, ADJUSTED FOR SHRINKAGE	** EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)	SHRINKAGE FACTOR FOR BORROW EXCAVATION	BORROW EXCAVATION
	CU YD		CU YD	%	CU YD	CU YD	CU YD	%	CU YD
FAP 869 (IL 14)									
STA. 600+48 TO STA. 606+36	117			25	88	640	-552 (SHORTAGE)	25	34
STA. 603+40 TO STA. 603+57	252			25	189		189 (WASTE)		
STA. 603+60 TO STA. 604+00			196						
STA. 604+03 TO STA. 604+20	253			25	190		190 (WASTE)		
STRUCTURE		194		25	146		146 (WASTE)		
TOTALS	622	194	196		613	640	-27 (SHORTAGE)		34

NOTE: 34 CU YD OF BORROW EXCAVATION SHALL BE PROVIDED BY A PORTION OF THE 538 CU YD OF WASTE FROM CONSTRUCTING SN 028-2016. COST INCLUDED IN EARTH EXCAVATION.

### EROSION CONTROL SCHEDULE

SN 028-0076 LOCATION STATION TO STATION	STONE RIPRAP CLASS A4	FILTER FABRIC	TEMPORARY DITCH CHECKS	PERIMETER EROSION BARRIER	EROSION CONTROL BLANKET
	SQ YD	SQ YD	EACH	FOOT	SQ YD
FAP 869 (IL 14)					
STAGE 1					
STA. 600+48, 16' RT TO STA. 603+38, 60' RT				338	
STA. 604+28, 58' RT TO STA. 606+36, 16' RT				221	
STA. 603+41 RT			1		
STA. 604+25 RT			1		
STA. 604+88 RT			1		
STA. 605+67 RT			1		45
STA. 605+25 RT TO STA. 606+26.50 RT					
STA. 603+28 RT TO STA. 604+34 RT	366	366			
STAGE 2					
STA. 601+41, 16' LT TO STA. 603+35, 45' LT				212	
STA. 604+22, 55' LT TO STA. 605+78, 16' LT				174	
STA. 603+38 LT			1		
STA. 604+20 LT			1		
STA. 601+50 LT TO STA. 602+50 LT					108
STA. 603+25 LT TO STA. 604+33 LT	395	395			
TOTALS	761	761	6	945	153

### REMOVAL SCHEDULE

SN 028-0076 LOCATION STATION TO STATION	GUARDRAIL REMOVAL	PAVEMENT REMOVAL	PAVED SHOULDER REMOVAL
	FOOT	SQ YD	SQ YD
FAP 869 (IL 14)			
PRE STAGE I			
STA 602+50 LT TO STA 603+58 LT			49
STA 604+01 LT TO STA 605+10 LT			49
STAGE I			
SW QUADRANT	138		
SE QUADRANT	38		
STA 603+01 RT TO STA 603+59 RT		64	
STA 604+01 RT TO STA 604+59 RT		64	
STA 600+47 RT TO STA 603+59 RT			139
STA 604+01 RT TO STA 606+36 RT			104
STAGE II			
NW QUADRANT	39		
NE QUADRANT	138		
STA 603+01 LT TO STA 603+59 LT		78	
STA 604+01 LT TO STA 604+59 LT		78	
STA 601+41 LT TO STA 602+50 LT			48
STA 602+50 LT TO STA 603+58 LT			48
STA 604+01 LT TO STA 605+10 LT			48
STA 605+10 LT TO STA 605+78 LT			30
TOTALS	353	284	515

### TERMINALS AND GUARDRAIL SCHEDULE

SN 028-0076 LOCATION STATION TO STATION	TRAFFIC BARRIER TERMINALS			SPBGR TYPE A	GUARDRAIL MARKER	TERMINAL MARKER DIRECT APPLIED	TRAFFIC BARRIER TERMINALS	
	TYPE 1 SPECIAL TANGENT	TYPE 6	TYPE 1 SPECIAL FLARED				TEMPORARY TYPE 1 SPL.	REMOVE AND RELOCATE
	EACH	EACH					EACH	EACH
FAP 869 (IL 14)								
PRESTAGE 1								
STA. 602+82 LT TO STA. 603+32 LT							1	
STAGE 1								
STA. 601+20 RT TO STA. 601+70 RT	1				1	1		
STA. 601+70 RT TO STA. 602+94 RT				125	3			
STA. 602+94 RT TO STA. 603+39 RT		1						
STA. 604+21 RT TO STA. 604+66 RT		1						
STA. 604+66 RT TO STA. 605+16 RT				50	3			
STA. 605+16 RT TO STA. 605+66 RT	1				1	1		
STAGE 2								
STA. 601+92 LT TO STA. 602+42 LT					1	1		1
STA. 602+42 LT TO STA. 602+93 LT				50	3			
STA. 602+93 LT TO STA. 603+39 LT		1						
STA. 604+21 LT TO STA. 604+66 LT		1						
STA. 604+66 LT TO STA. 605+17 LT				50	3			
STA. 605+17 LT TO STA. 605+55 LT			1		1	1		
TOTALS	2	4	1	275	16	4	1	1

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-2	FRANKLIN	56	28
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

### MARKING SCHEDULE

SN 028-0076 LOCATION STATION TO STATION	TEMP PVT MK LINE 4''		PAINT PVT MK LINE 4''		SHORT -TERM PAVEMENT MARKING FOOT
	WHITE FOOT	YELLOW FOOT	WHITE FOOT	YELLOW FOOT	
FAP 869 (IL 14)					
PRE STAGE I					
STA 602+30 LT TO STA 605+30 LT	300				
STA 602+30 CL TO STA 605+30 CL		300			
STAGE I					
STA 601+62 RT TO STA 605+99 RT	437				
STA 601+62 CL TO STA 605+99 CL		437			
POST STAGE II					
STA 601+62 RT TO STA 605+99 RT			437		
STA 601+62 LT TO STA 605+99 LT			437		
STA 599+70 CL TO STA 607+90 CL				820	82
STA 599+70 CL TO STA 607+90 CL				205 (SKIPPED)	
TOTALS	737	737	874	1025	82

### SEEDING AND FERTILIZING SCHEDULE

SN 028-0076 LOCATION STATION TO STATION	SEEDING CLASS 2	SEEDING CLASS 7	NITROGEN (N)	PHOSPHOROUS (P)	POTASSIUM (K)	MULCH METHOD 2	AGRICULTURAL GROUND LIMESTONE	TEMPORARY EROSION CONTROL SEEDING
	ACRES	ACRES	POUND	POUND	POUND	ACRES	TON	POUND
STA 601+41 LT TO STA 605+78 LT	0.2	0.2	32	24	24	0.40	0.4	20
STA 600+47 RT TO STA 606+36 RT	0.2	0.2	32	24	24	0.40	0.4	20
TOTALS	0.4	0.4	64	48	48	0.80	0.80	40

### SHOULDER SCHEDULE

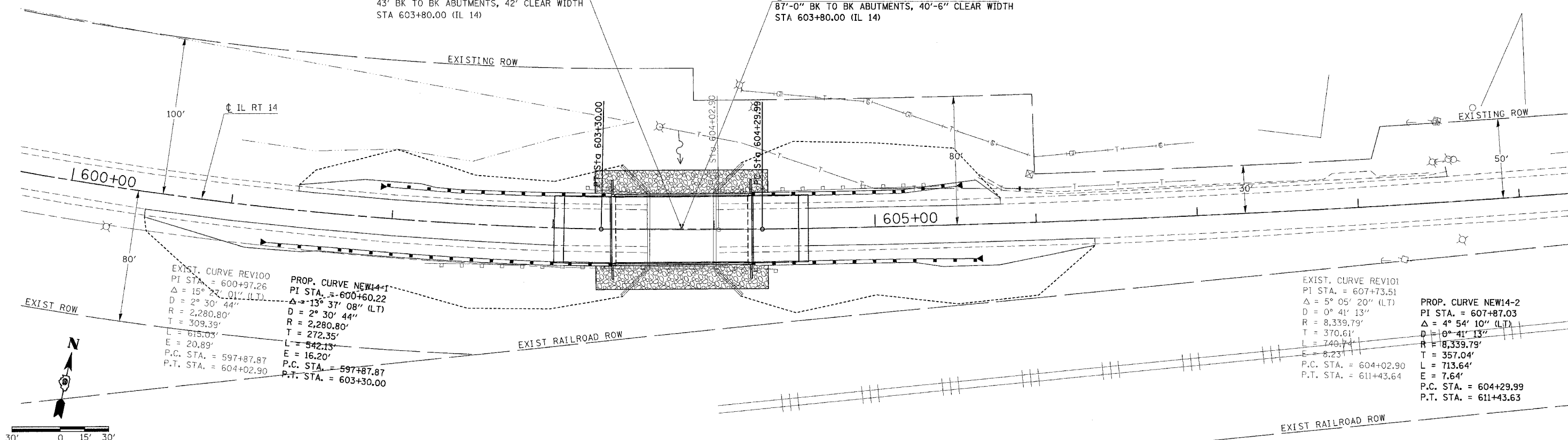
SN 028-0076 LOCATION STATION TO STATION	HOT-MIX ASPHALT SHOULDERS, 8''	HOT-MIX ASPHALT SHOULDERS, 10''	HOT-MIX ASPHALT BASE COURSE WIDENING - 10''
	SQ YD	SQ YD	SQ YD
FAP 869 (IL 14)			
STAGE I			
STA 600+47 RT TO STA 602+05 RT	219		
STA 602+05 RT TO STA 603+37 RT		143	
STA 604+24 RT TO STA 605+60 RT		145	
STA 605+60 RT TO STA 606+36 RT	89		
TOTAL ON RIGHT SIDE	308	288	0
PRE STAGE I			
STA 602+50 LT TO STA 603+58.5 LT			48
STA 604+01.5 LT TO STA 605+10 LT			49
STAGE II			
STA 601+41 LT TO STA 603+36 LT	174		
STA 604+23 LT TO STA 605+78 LT	156		
TOTAL ON LEFT SIDE	330	0	97
PROJECT TOTALS	638	288	97



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-2	FRANKLIN	56	29
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

EXISTING STRUCTURE NO. 028-0017  
43' BK TO BK ABUTMENTS, 42' CLEAR WIDTH  
STA 603+80.00 (IL 14)

PROPOSED STRUCTURE NO. 028-0076  
87'-0" BK TO BK ABUTMENTS, 40'-6" CLEAR WIDTH  
STA 603+80.00 (IL 14)

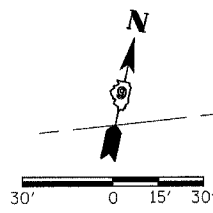


EXIST. CURVE REV100  
PI STA. = 600+97.26  
 $\Delta = 15^\circ 27' 01''$  (L.T.)  
D = 2° 30' 44"  
R = 2,280.80'  
T = 309.39'  
L = 615.03'  
E = 20.89'  
P.C. STA. = 597+87.87  
P.T. STA. = 604+02.90

PROP. CURVE NEW14-1  
PI STA. = 600+60.22  
 $\Delta = 13^\circ 37' 08''$  (L.T.)  
D = 2° 30' 44"  
R = 2,280.80'  
T = 272.35'  
L = 542.13'  
E = 16.20'  
P.C. STA. = 597+87.87  
P.T. STA. = 603+30.00

EXIST. CURVE REV101  
PI STA. = 607+73.51  
 $\Delta = 5^\circ 05' 20''$  (L.T.)  
D = 0° 41' 13"  
R = 8,339.79'  
T = 370.61'  
L = 740.74'  
E = 8.23'  
P.C. STA. = 604+02.90  
P.T. STA. = 611+43.64

PROP. CURVE NEW14-2  
PI STA. = 607+87.03  
 $\Delta = 4^\circ 54' 10''$  (L.T.)  
D = 0° 41' 13"  
R = 18,339.79'  
T = 357.04'  
L = 713.64'  
E = 7.64'  
P.C. STA. = 604+29.99  
P.T. STA. = 611+43.63



DATE	BY

PLAN

REVISIONS  
NO. DATE BY

NOTE BOOK  
NO. \_\_\_\_\_

ALIGNMENT CHECKED  
DATE FILE NAME

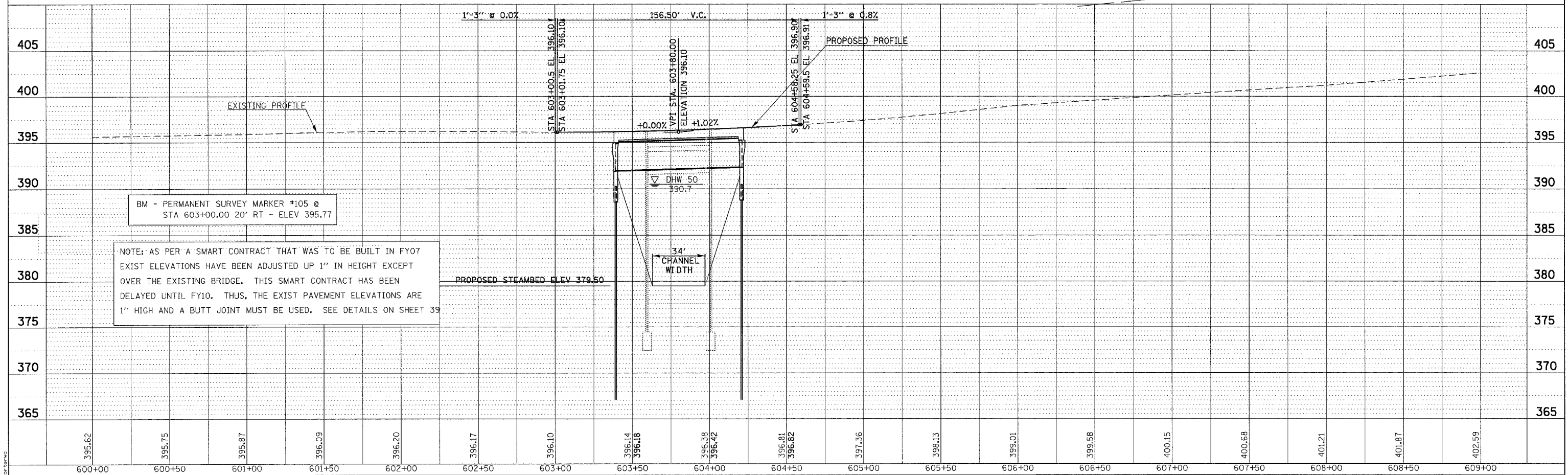
DATE	BY

PROFILE

REVISIONS  
NO. DATE BY

GRADES CHECKED  
STRUCTURE NOTATIONS CHKD

NOTE BOOK  
NO. \_\_\_\_\_



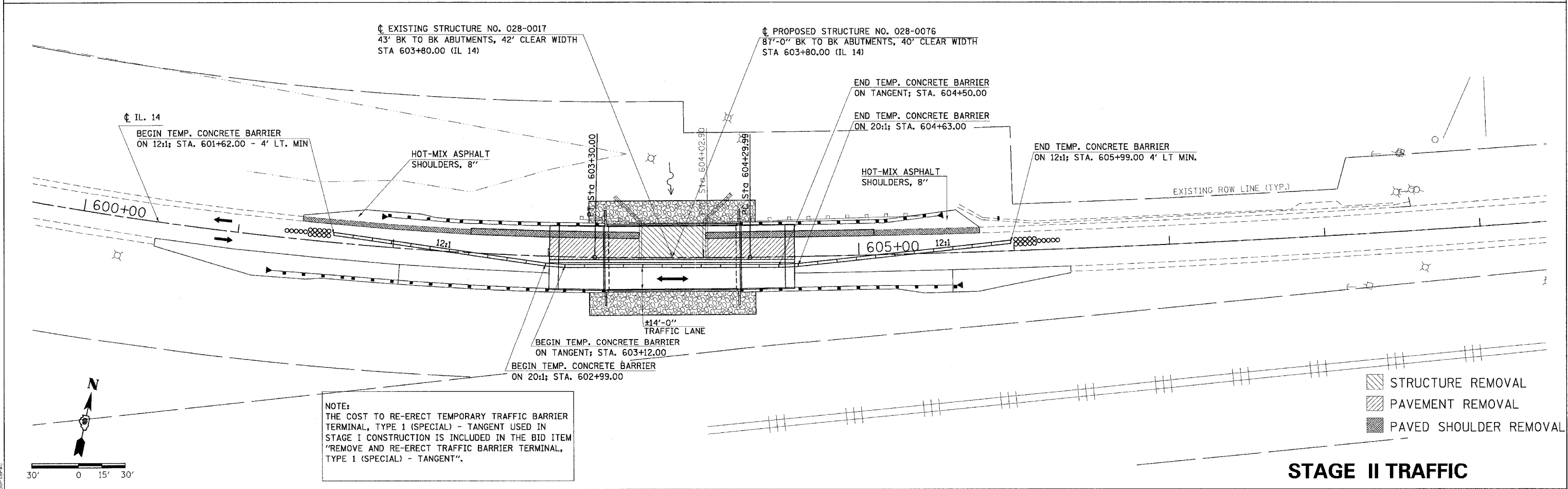
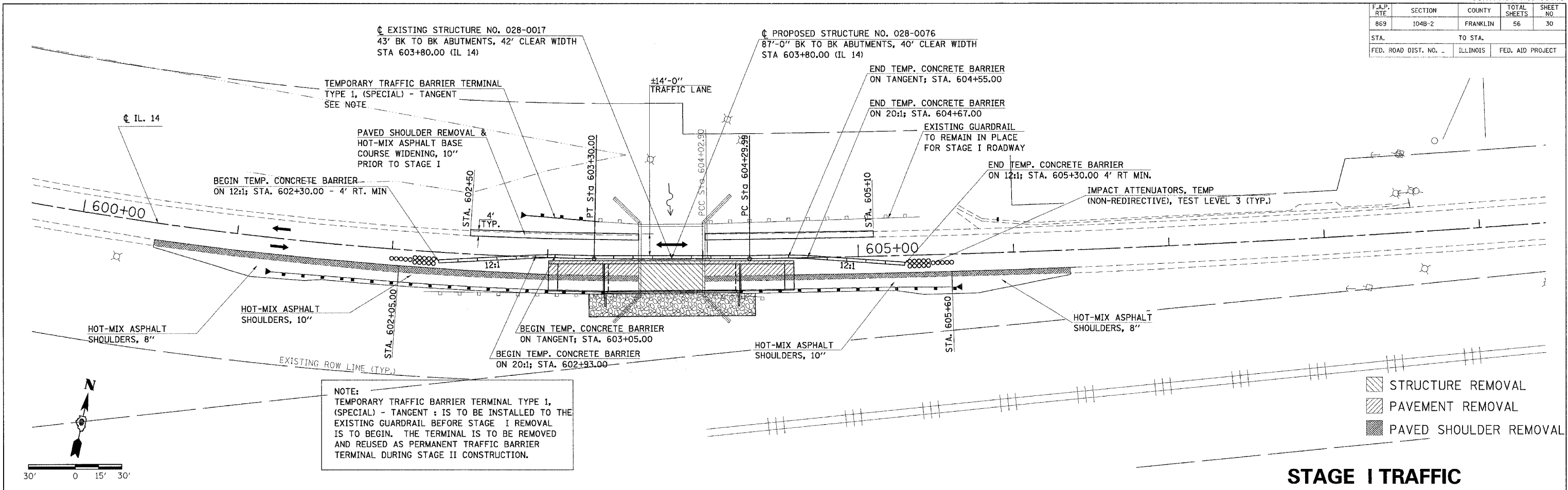
BM - PERMANENT SURVEY MARKER #105 @  
STA 603+00.00 20' RT - ELEV 395.77

NOTE: AS PER A SMART CONTRACT THAT WAS TO BE BUILT IN FY07  
EXIST ELEVATIONS HAVE BEEN ADJUSTED UP 1" IN HEIGHT EXCEPT  
OVER THE EXISTING BRIDGE. THIS SMART CONTRACT HAS BEEN  
DELAYED UNTIL FY10. THUS, THE EXIST PAVEMENT ELEVATIONS ARE  
1" HIGH AND A BUTT JOINT MUST BE USED. SEE DETAILS ON SHEET 39

5/14/2007  
c:\projects\104B-2\104B-2.dgn  
2:53:38 / / IN.  
PLAN

**PLANPROFILE - SN 028-0076  
IL 14 OVER ANDY CREEK**

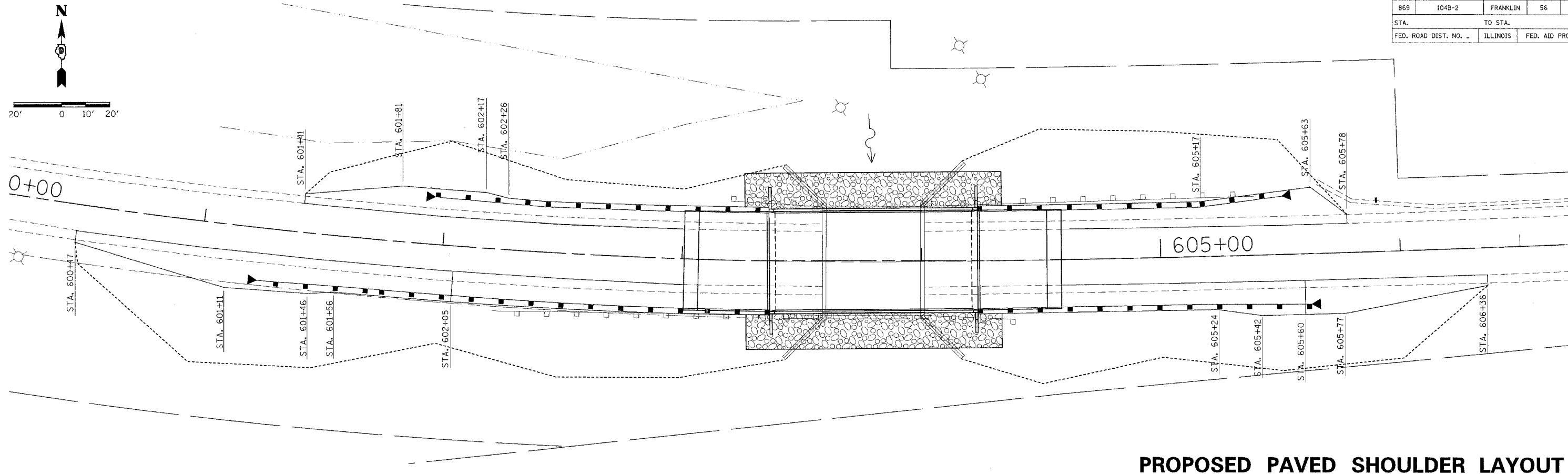
F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-2	FRANKLIN	56	30
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	



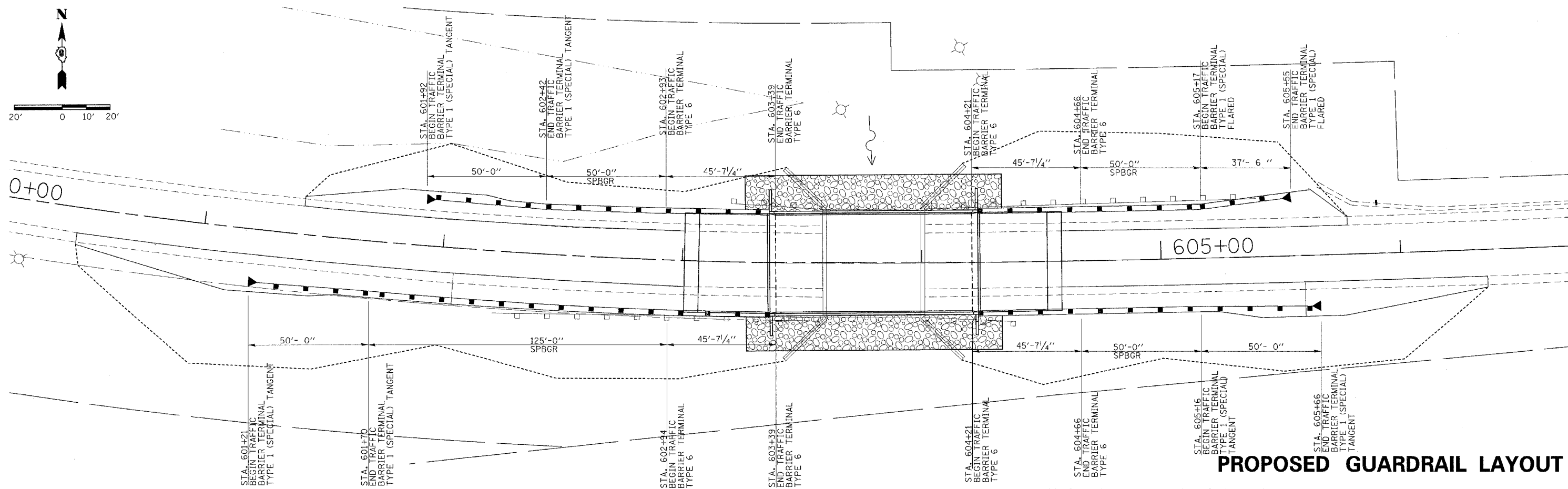
**STAGE CONSTRUCTION - SN 028-0076  
IL 14 OVER ANDY CREEK**

5/14/2007  
C:\pwork\104B-2\104B-2.dwg  
30.0325 / IN.  
pdp-tiemc

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-2	FRANKLIN	56	31
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	



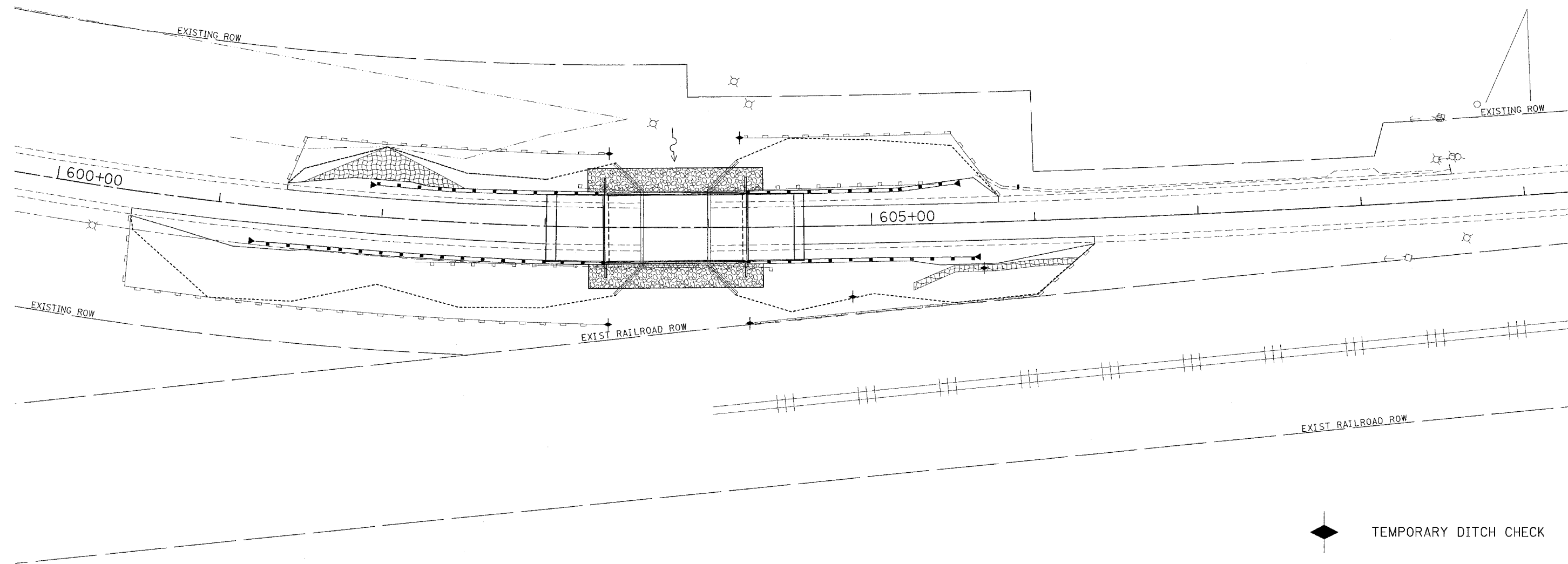
**PROPOSED PAVED SHOULDER LAYOUT**



**PROPOSED GUARDRAIL LAYOUT**

5/4/2007  
c:\prow\msta\490505\c980505epi.dgn  
28.0129 . / . IN.  
pcr

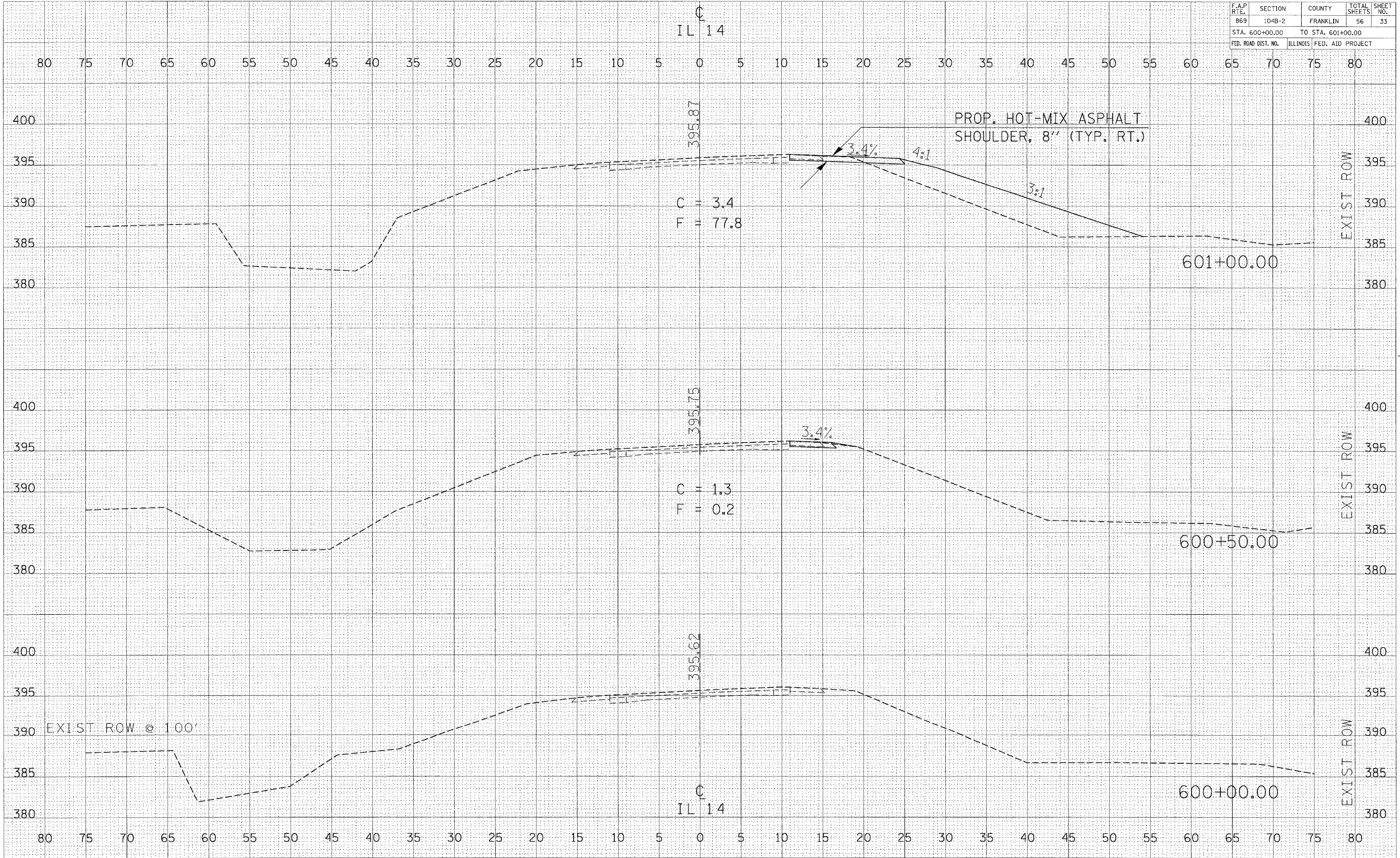
F.A.P. RITE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	104B-2	FRANKLIN	56	32
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	



**EROSION CONTROL - SN 028-0076  
IL 14 OVER ANDY CREEK**

5/1/2007  
 23/3/2007  
 23/3/2007  
 23/3/2007

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-2	FRANKLIN	56	33
STA. 600+00.00		TO STA. 601+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



C = 3.4  
F = 77.8

C = 1.3  
F = 0.2

PROP. HOT-MIX ASPHALT SHOULDER, 8'' (TYP. RT.)

3.4%

4:1

3:1

601+00.00

3.4%

600+50.00

EXIST ROW @ 100'

600+00.00

IL 14

CROSS SECTIONS - STA 600+00 TO STA 601+00  
IL 14 OVER ANDY CREEK

FINAL SURVEY	DATE

ORIGINAL SURVEY	DATE

PLOT DATE = 6/4/2007  
 PLOT SCALE = 1" = 40.00'  
 USER NAME = pcr/terno



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-2	FRANKLIN	56	34
STA. 601+50.00		TO STA. 602+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

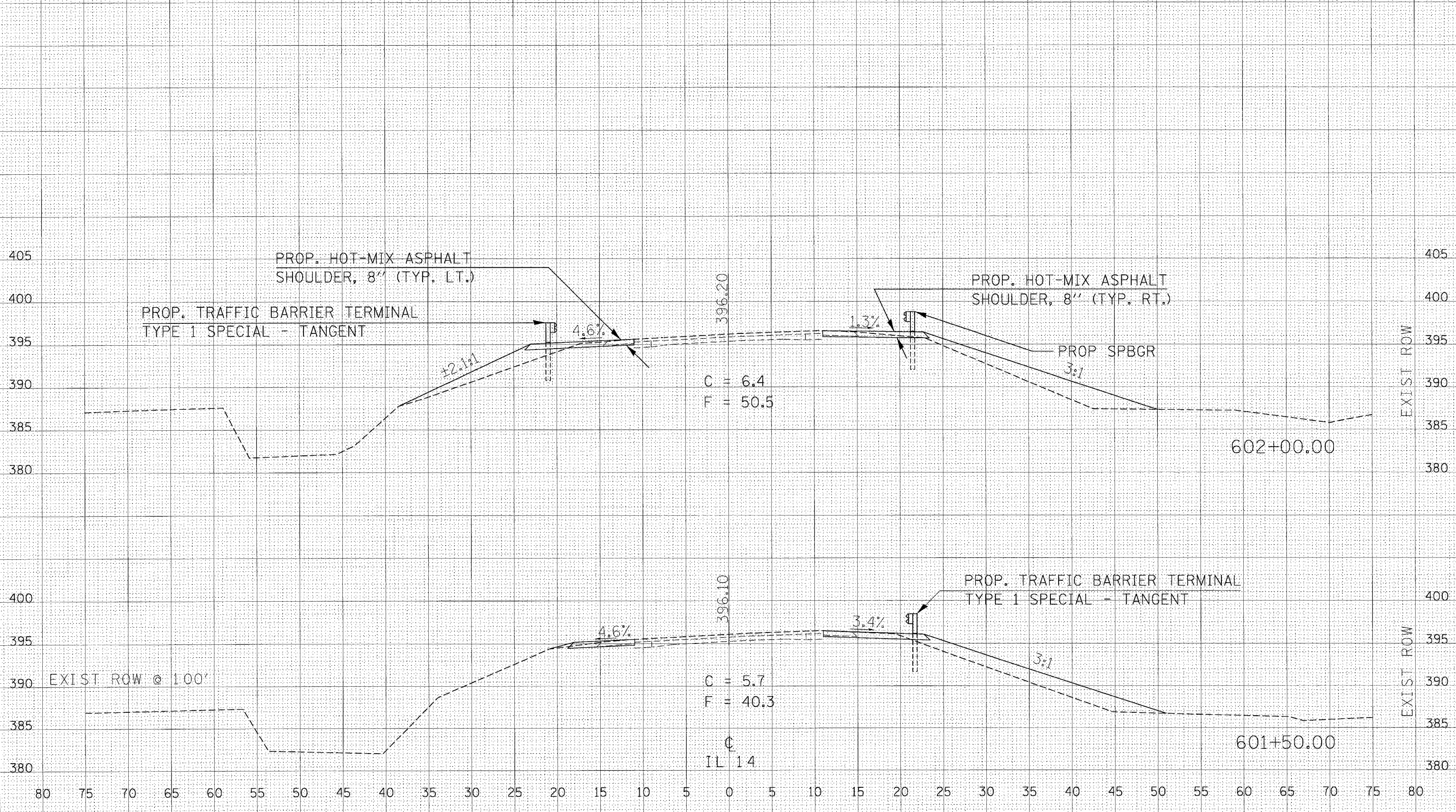
IL 14

80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

DATE \_\_\_\_\_ BY \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 SURVEY PLOTTED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 AREAS \_\_\_\_\_  
 NO. \_\_\_\_\_

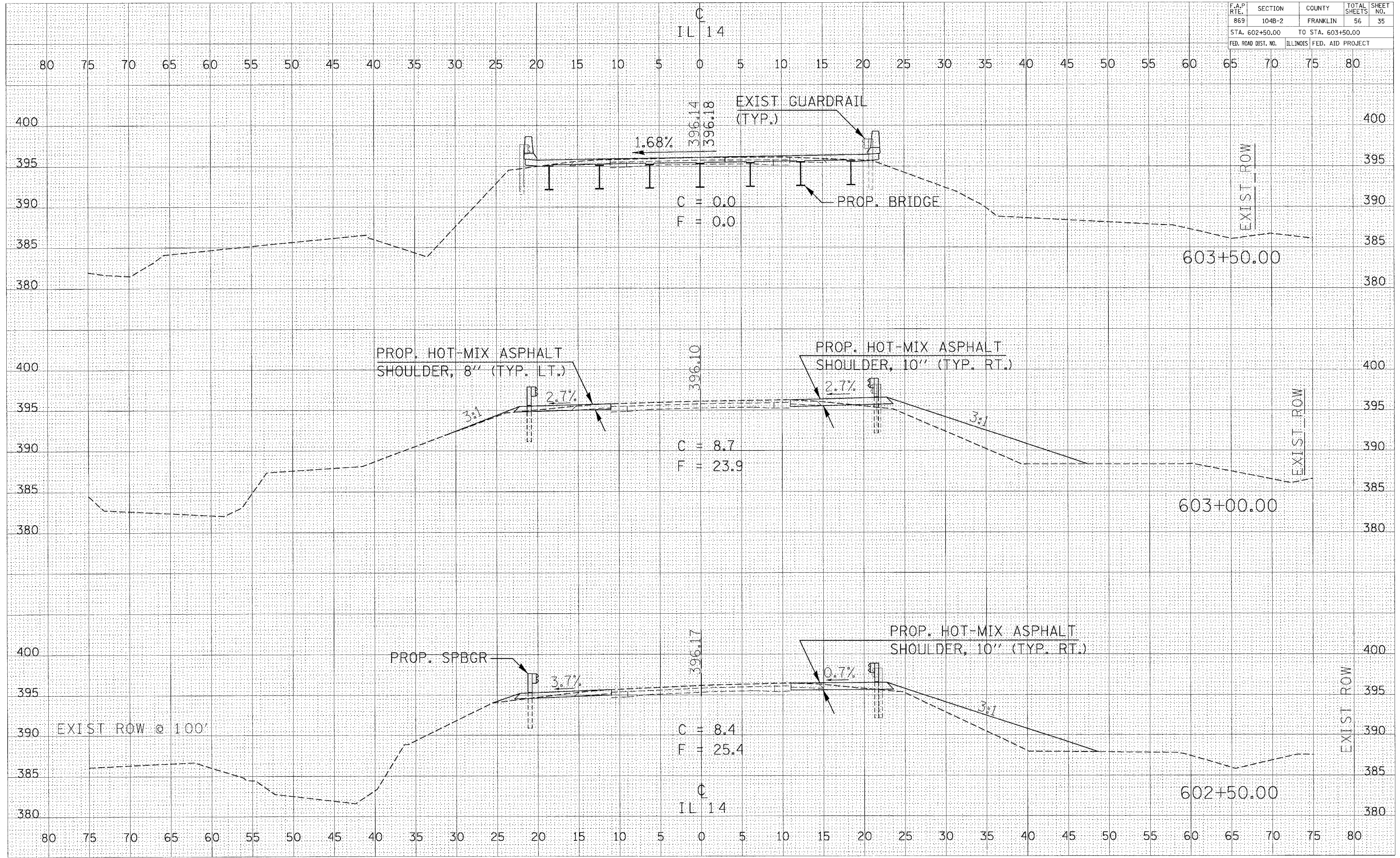
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 CHECKED \_\_\_\_\_  
 SURVEY PLOTTED \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 AREAS \_\_\_\_\_  
 NO. \_\_\_\_\_

PLOT DATE = 5/1/2007  
 FILE NAME = c:\p\proj\sta\98775\98775.dwg  
 PLOT SCALE = 5.0000 / IN.  
 USER NAME = portarnc



CROSS SECTIONS - STA 601+50 TO STA 602+00  
IL 14 OVER ANDY CREEK

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-2	FRANKLIN	56	35
STA. 602+50.00		TO STA. 603+50.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



**CROSS SECTIONS - STA 602+50 TO STA 603+50  
IL 14 OVER ANDY CREEK**

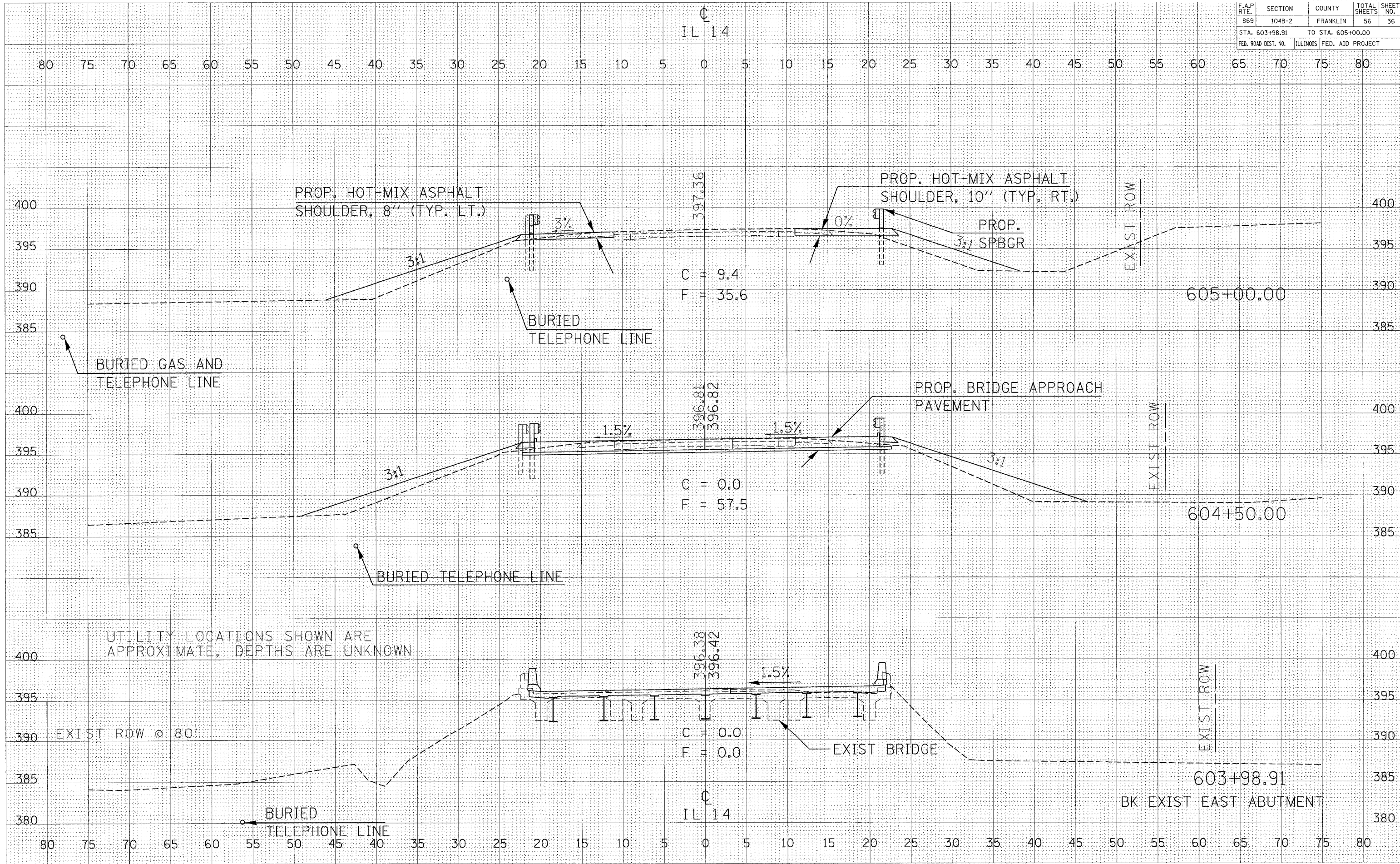
DATE	
BY	
FINAL SURVEY	
REVISIONS	
NOTED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
REVISIONS	
NOTED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

PLOT DATE = 8/4/2007  
 FILE NAME = c:\p\c\mca\af\98775\98775-11-1.dwg  
 PLOT SCALE = 5/8" = 1' IN.  
 USER NAME = portermc



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-2	FRANKLIN	56	36
STA. 603+98.91		TO STA. 605+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



CROSS SECTIONS - STA 603+98.91 TO STA 605+00 IL 14 OVER ANDY CREEK

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SUPPRESSED PLOTTED AREAS CHECKED  
 FINAL SURVEY NOTE BOOK NO. \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 UNREMOVED PLOTTED AREAS CHECKED  
 ORIGINAL SURVEY NOTE BOOK NO. \_\_\_\_\_

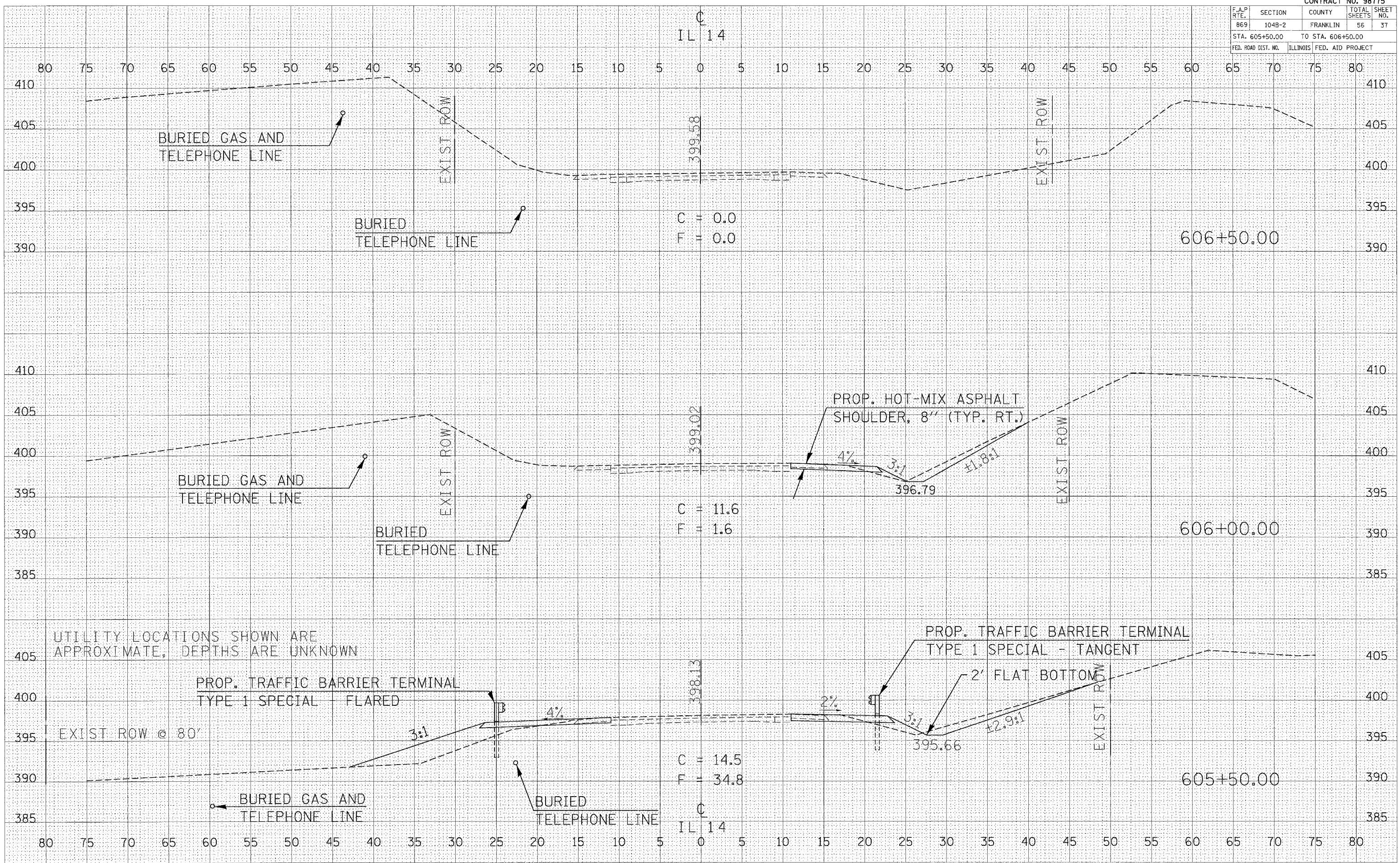
PLOT DATE: 5/1/2007  
 FILE NAME: c:\projects\98775\98775.dwg  
 PLOT SCALE: 1" = 40.00'  
 USER NAME: jperkins

CONTRACT NO. 98775				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	104B-2	FRANKLIN	56	37
STA. 605+50.00		TO STA. 606+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BY	DATE
FINAL SURVEY	DATE
NOTE BOOK	NO.
PLOTTED	DATE
TEMP. AREAS CHECKED	

BY	DATE
ORIGINAL SURVEY	DATE
NOTE BOOK	NO.
PLOTTED	DATE
TEMP. AREAS CHECKED	

PLOT DATE = 6/4/2007  
 FILE NAME = c:\projects\98775\98775.dwg  
 USER NAME = jmc  
 SCALE = 1" = 40'



UTILITY LOCATIONS SHOWN ARE APPROXIMATE. DEPTHS ARE UNKNOWN

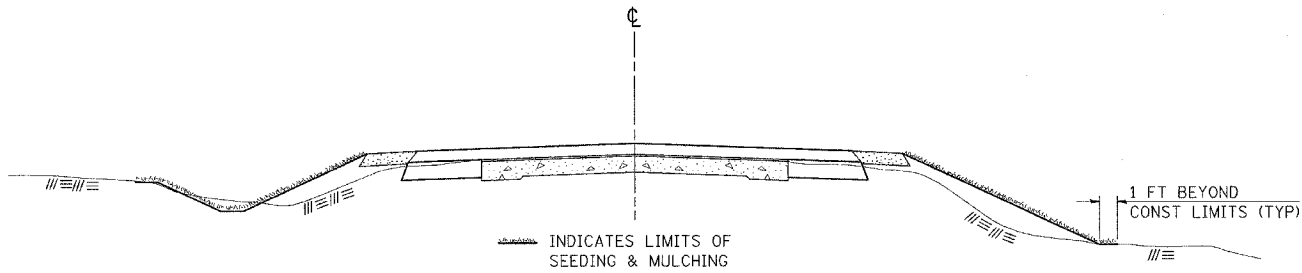
PROP. TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL - FLARED

PROP. TRAFFIC BARRIER TERMINAL TYPE 1 SPECIAL - TANGENT

2' FLAT BOTTOM

**CROSS SECTIONS - STA 605+50 TO STA 606+50  
IL 14 OVER ANDY CREEK**

# SEEDING & MULCHING



## GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

FERTILIZER NUTRIENTS AND LIMESTONE SHALL BE APPLIED TO ALL SEEDED AREAS.

THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS.

SECTIONS 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

STD. 9-12

REVISIONS	
REDRAWN	2-15-89
REVISED	8-15-94
REVISED	6-3-99
REVISED	

# DETAIL - BITUMINOUS SHOULDER

## AT GUARDRAIL TERMINAL

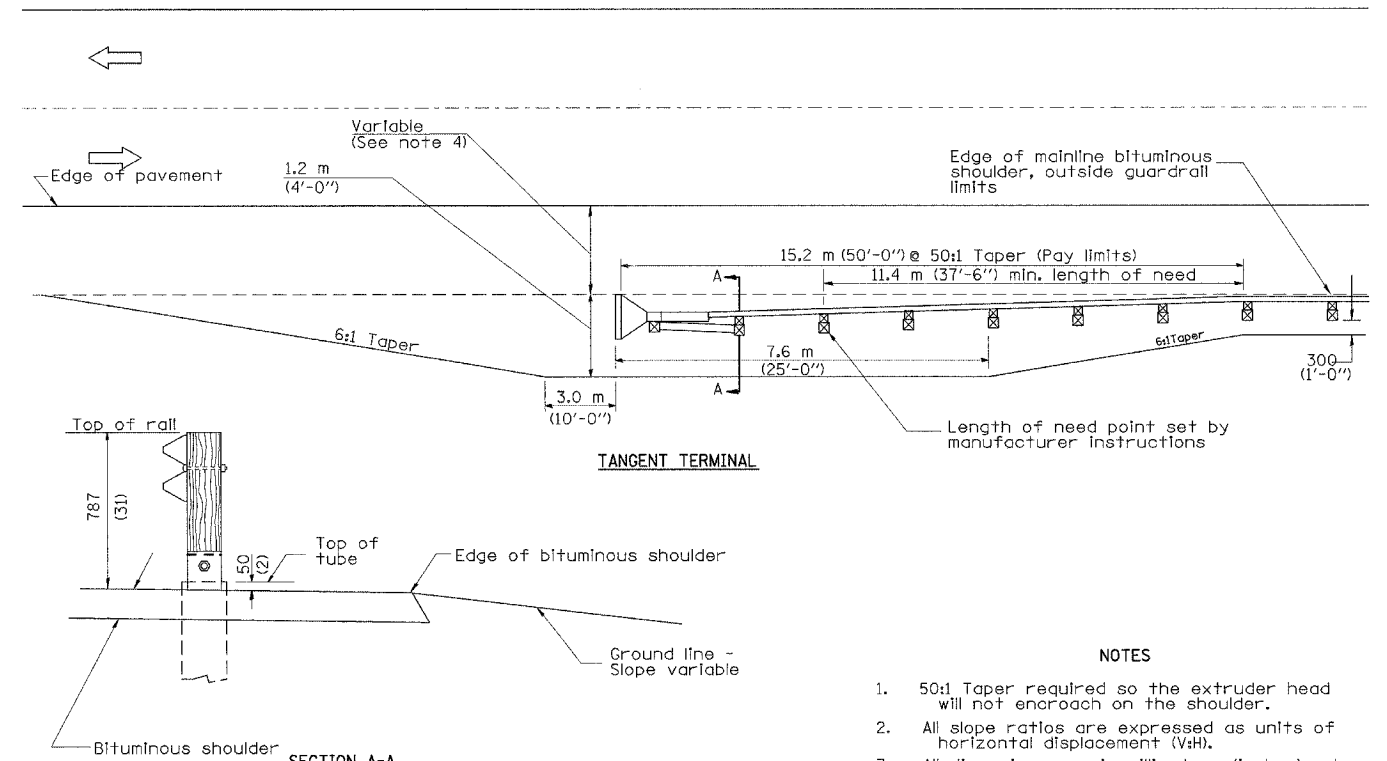
F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	1048-1, 1048-2	FRANKLIN	56	38

STA.	TO STA.
FED. ROAD DIST. NO. -	ILLINOIS

FED. AID PROJECT



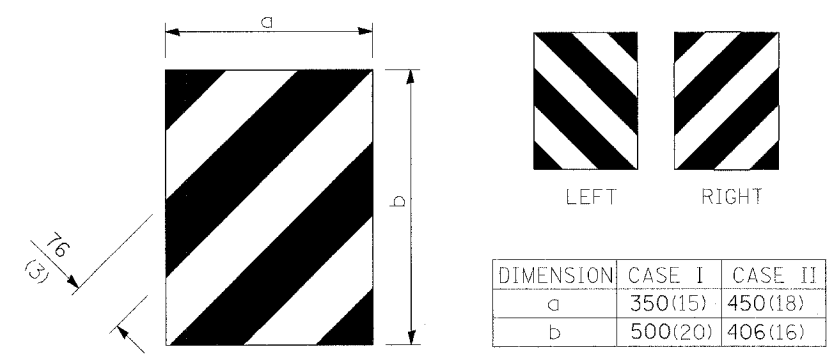
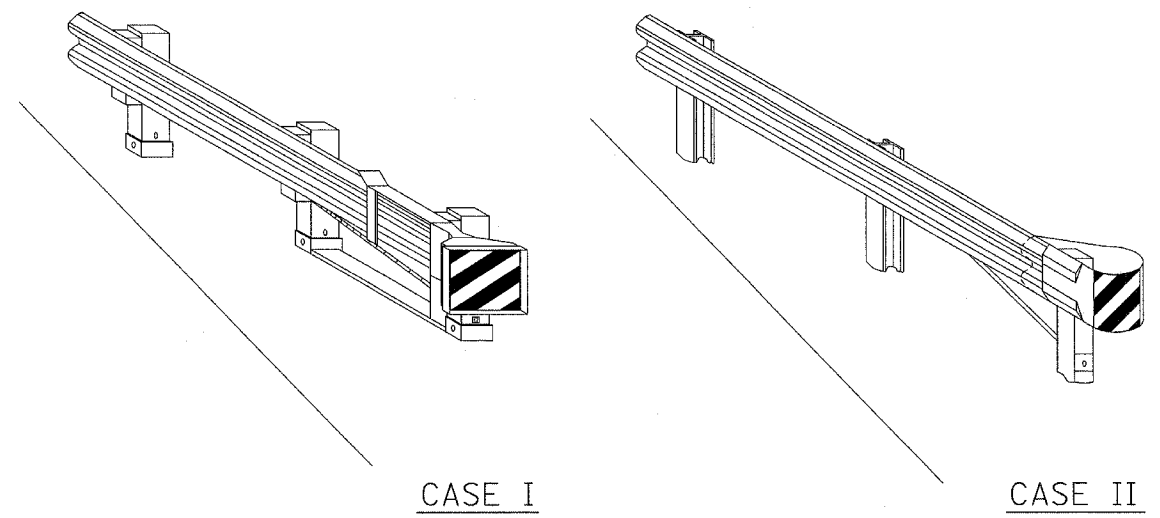
## NOTES

- 50:1 Taper required so the extruder head will not encroach on the shoulder.
- All slope ratios are expressed as units of horizontal displacement (V:H).
- All dimensions are in millimeters (Inches) unless otherwise shown.
- Edge of extruder head shall be placed at the outside edge of mainline bituminous shoulder.

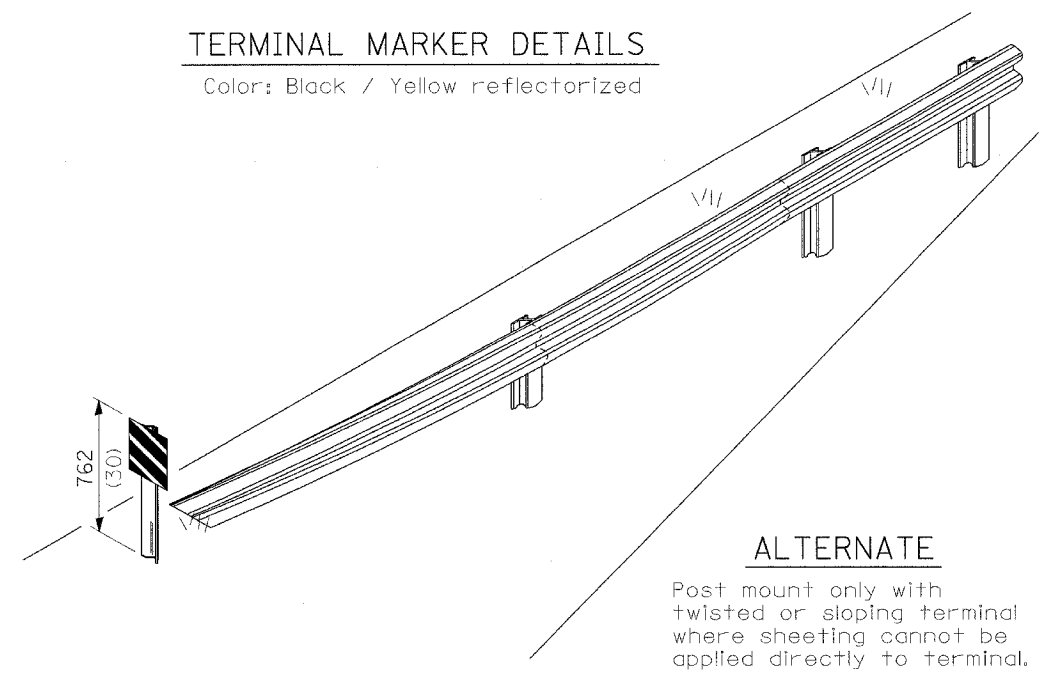




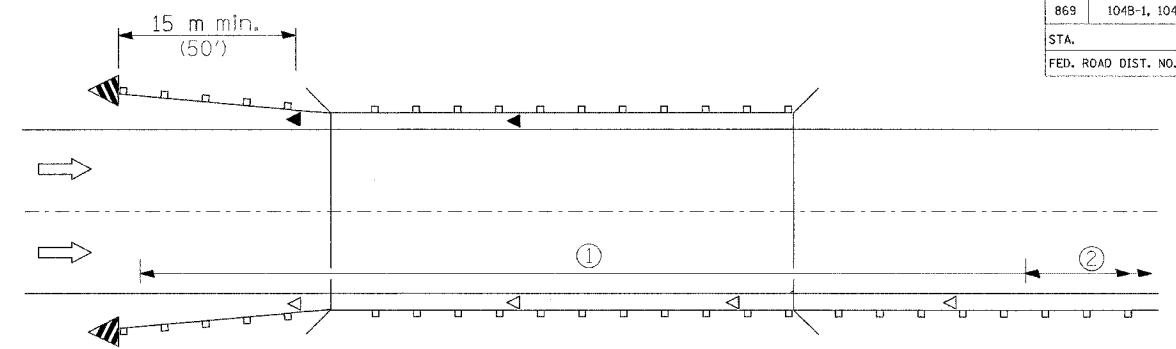
F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	1048-1, 1048-2	FRANKLIN	56	40
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	



**TERMINAL MARKER DETAILS**  
Color: Black / Yellow reflectorized

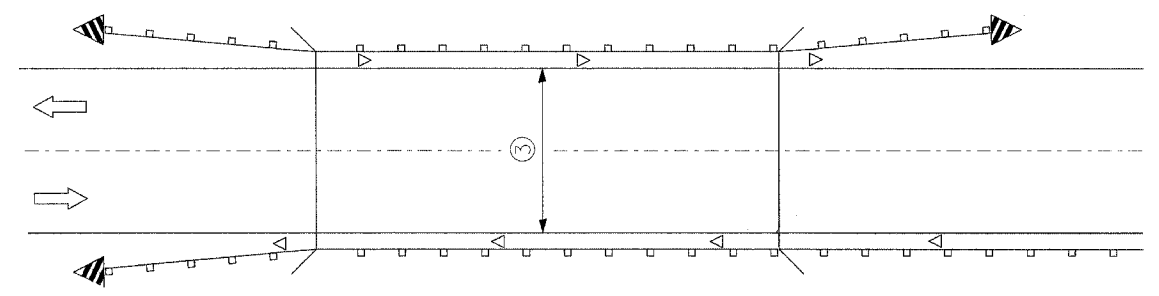


**ALTERNATE**  
Post mount only with twisted or sloping terminal where sheeting cannot be applied directly to terminal.



- 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.

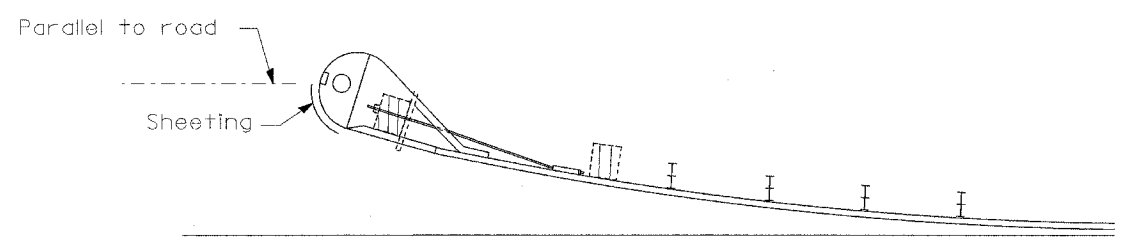
ONE-WAY TRAFFIC



- 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 REFLECTIORS**



SHEETING POSITION: CASE II

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

**REFLECTOR AND TERMINAL MARKER PLACEMENT**

**DETAIL**

**DETAIL - REFLECTOR AND TERMINAL MARKER PLACEMENT**

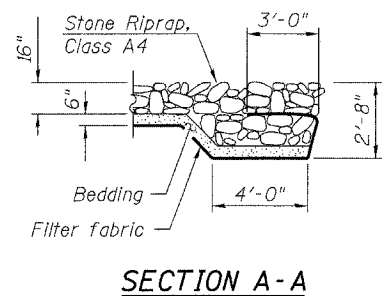
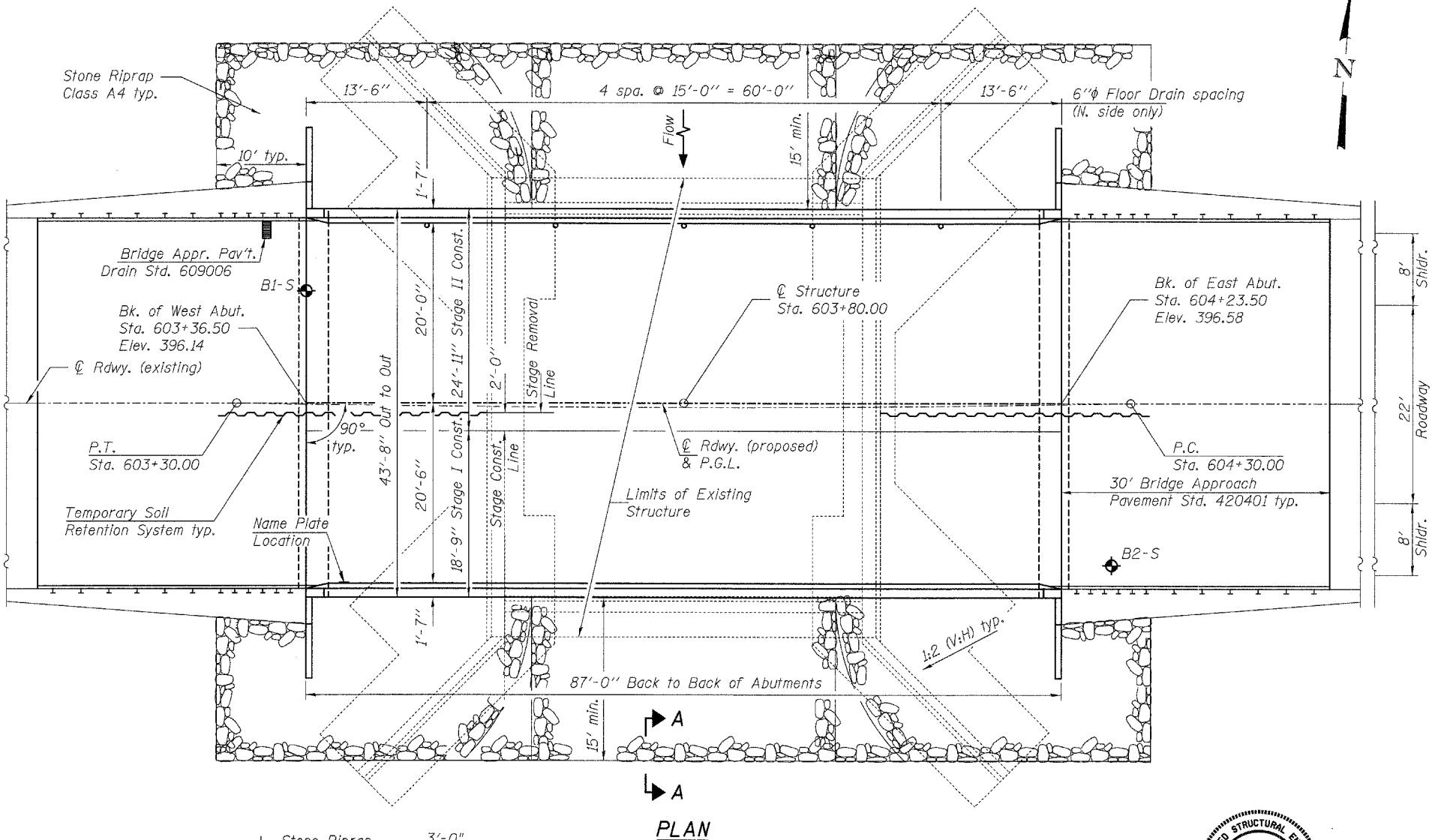
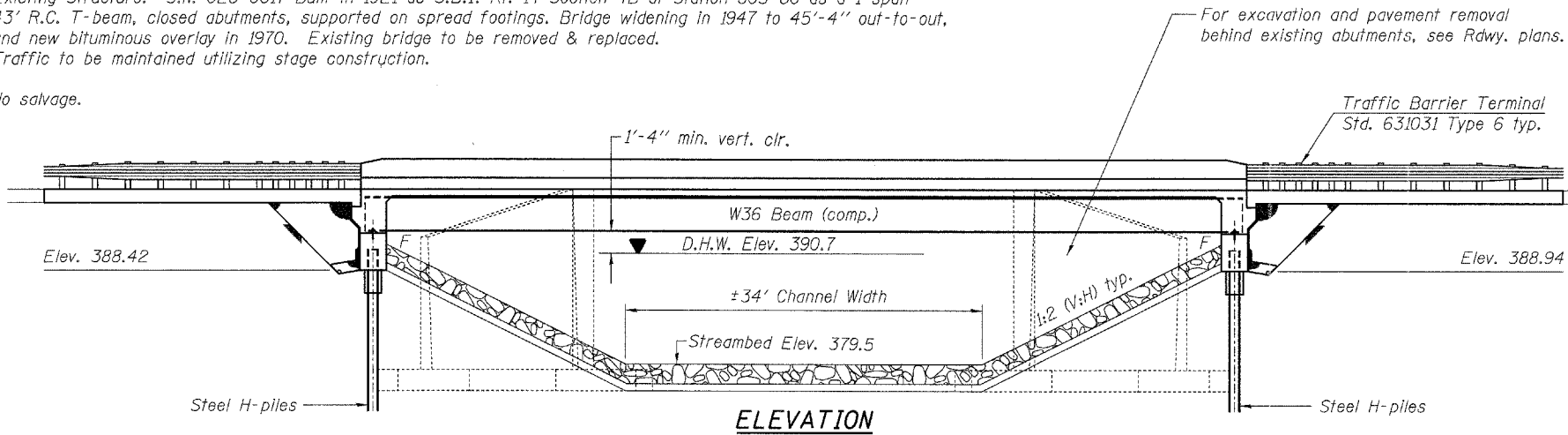
Bench Mark: Permanent survey marker 105 @ Sta. 603+00, 20 ft. Right Elev. 395.77'

Existing Structure: S.N. 028-0017 Built in 1921 as S.B.I. Rt. 14 Section 4B at Station 603+80 as a 1-span 43' R.C. T-beam, closed abutments, supported on spread footings. Bridge widening in 1947 to 45'-4" out-to-out, and new bituminous overlay in 1970. Existing bridge to be removed & replaced. Traffic to be maintained utilizing stage construction.

No salvage.

ROUTE NO.	SECTION	COUNTY	DATE	SHEET NO.	SHEET NO.
F.A.P. 869	104B-2	Franklin	56	41	16 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

Contract # 98775



PLAN

SECTION A-A

**APPROVED**  
FOR STRUCTURAL ADEQUACY ONLY

ENGINEER OF BRIDGES AND STRUCTURES



Michael T. Haley  
Licensed Structural Engineer  
State of Illinois No. 81-5991  
Expires 11/30/2008

5/8/07 Date

**INDEX OF SHEETS**

- General Plan
- General Notes & Details
- Stage Construction Details
- Deck Elevations
- Approach Pavement Elevations
- Superstructure
- Superstructure Details
- Concrete End Diaphragms
- Framing Plan & Steel Details
- West Abutment
- East Abutment
- Temporary Concrete Barrier
- Bar Splicer Assembly Details
- Steel Pile Details
- Soil Borings-1
- Soil Borings-2

**LOADING HL-93**

Allow 50#/sq. ft. for future wearing surface.

**DESIGN SPECIFICATIONS**

AASHTO LRFD Bridge Design Specifications  
U.S. 3rd. Edition 2004 w/2005 Interims

**DESIGN STRESSES**

**FIELD UNITS**

- $f'_c = 3,500$  psi
- $f_y = 60,000$  psi (reinforcement)
- $f_y = 50,000$  psi (Structural Steel M270 Grade 50)

**SEISMIC DATA**

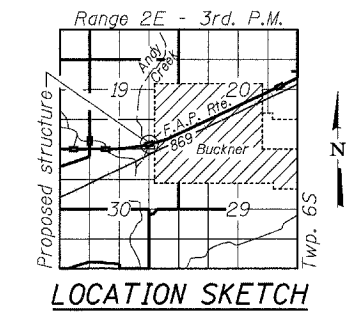
Seismic Performance Zone (SPZ) = 2  
Bedrock Acceleration Coefficient (A) = 11.5  
Site Coefficient (S) = 1.5

**WATERWAY INFORMATION**

Exist. Low Grade Elev. 395.4 @ Sta. 597+50  
Prop. Low Grade Elev. 395.4 @ Sta. 597+50  
Drainage Area = 16.83 sq. mi.

Flood	Freq. Yr.	Structure Number	Q-C.F.S.		Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater E.I.	
			Exist.	Prop.	Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
10	10	028-0076	1,380	1,575	418.7	532.8	389.4	0.1	0.1	389.5	389.5
		028-2013	880	685	209.3	209.3					
		Total	2,260	2,260	628.0	742.1					
Design	50	028-0076	2,054	2,475	469.0	631.9	390.7	0.3	0.1	391.0	390.8
		028-2013	1,226	805	209.3	209.3					
		Total	3,280	3,280	678.3	841.2					
Base	100	028-0076	2,366	2,860	488.4	671.8	391.2	0.4	0.1	391.6	391.3
		028-2013	1,344	850	209.3	209.3					
		Total	3,710	3,710	697.7	881.1					
Max. Calc.	500	028-0076	2,932	3,690	512.5	769.0	392.4	1.0	0.0	393.4	392.4
		028-2013	1,768	1,010	209.3	209.3					
		Total	4,700	4,700	721.8	978.3					

10-Year Velocity Through Existing Bridge = 3.3 fps    10-Year Velocity Through Prop. Bridge = 3.5 fps



Design Scour Elevation (feet)	W. Abutment	E. Abutment
	388	389

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL PLAN**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

**REVISIONS**

NAME	DATE

**LIN ENGINEERING, LTD.**  
Consulting Engineers  
Chatham, Illinois

Designed By: JGT    Checked By: MTH    Drawn By: AJF  
Date: 12/06    File: 028-0076.DGN

Contract # 98775

**GENERAL NOTES**

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 7/8 in.  $\phi$ , holes 5/16 in.  $\phi$ , unless otherwise noted.

Calculated weight of Structural Steel = 95760 lbs. (AASHTO M270, Grade 50)  
6795 lbs. (AASHTO M270, Grade 36)

No field welding is permitted except as specified in the contract documents.

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.

The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provision for "Cleaning and Painting New Metal Structures".

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

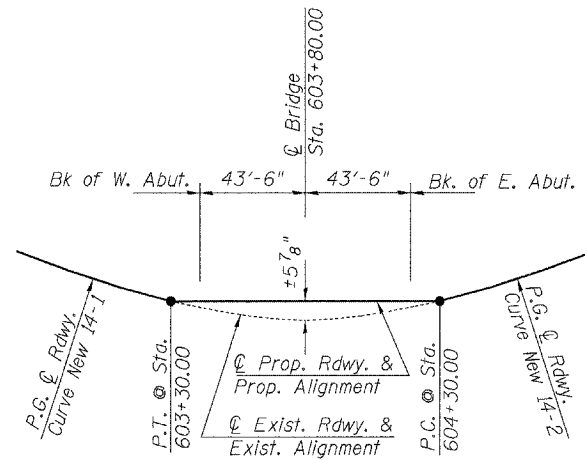
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.

**TOTAL BILL OF MATERIAL**

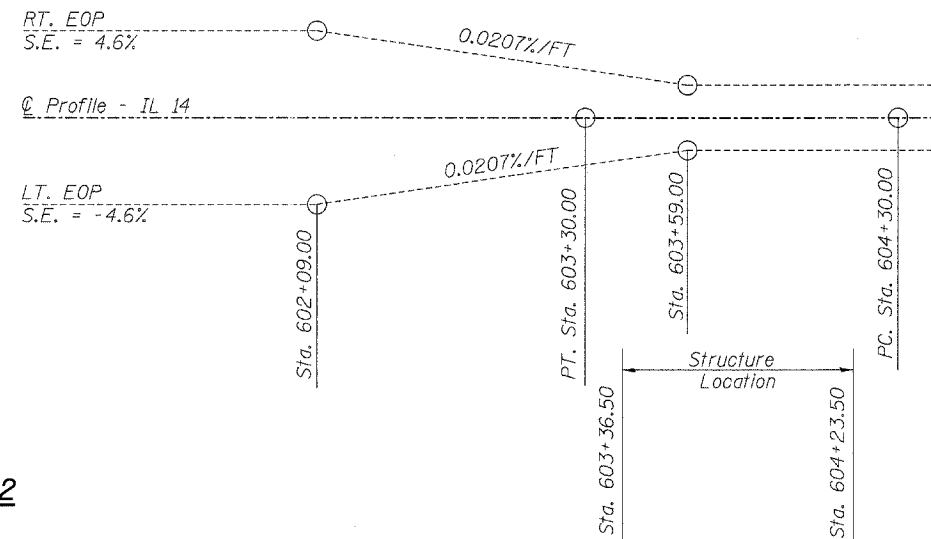
ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures	Each	1	-	1
Structure Excavation	Cu. Yd	-	194	194
Geocomposite Wall Drain	Sq. Yd.	-	95	95
Pipe Underdrains for Structures 4"	Foot	-	136	136
Temporary Soil Retention System	Sq. Ft.	-	603	603
Porous Granular Embankment (Special)	Cu. Yd	-	162	162
Concrete Structures	Cu. Yd	-	40.7	40.7
Concrete Superstructure	Cu. Yd	142.3	-	142.3
Bridge Deck Grooving	Sq. Yd.	372	-	372
Reinforcement Bars, Epoxy Coated	Pound	27840	6360	34200
Bar Splicers	Each	343	24	367
Furnishing and Erecting Structural Steel	Lump Sum	1	-	1
Stud Shear Connectors	Each	2226	-	2226
Protective Coat	Sq. Yd	464	-	464
Floor Drains	Each	5	-	5
Test Pile Steel HP 12x53	Each	-	2	2
Driving Piles	Foot	-	856	856
Furnishing Steel Piles HP 12x53	Foot	-	856	856
Name Plates	Each	1	-	1
Stone Riprap, Class A4	Sq. Yd	-	784	784
Filter Fabric	Sq. Yd.	-	784	784
Concrete Encasement	Cu. Yd.	-	6.0	6.0
Anchor Bolts 1" $\phi$	Each	-	28	28

STATION 603+80.00  
BUILT 20 BY  
STATE OF ILLINOIS  
F.A.P. RT. 869 SEC. 104B-2  
LOADING HL-93  
STR. NO. 028-0076

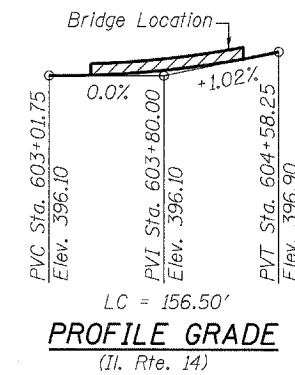
**NAME PLATE**  
See Std. 515001



**PROPOSED HORIZONTAL ALIGNMENT**



**SUPERELEVATION TRANSITION SKETCH**



**PROFILE GRADE**  
(Il. Rte. 14)

**CURVE DATA-CURVE NEW 14-1**

$\Delta = 13^\circ 37' 08''$  (LT)  
D = 2° 30' 44"  
T = 272.35'  
L = 542.13'  
E = 16.20'  
R = 2280.8'  
P.C. = Sta. 597+87.87  
P.T. = Sta. 603+30.00  
P.I. = Sta. 600+60.22

**CURVE DATA-CURVE NEW 14-2**

$\Delta = 4^\circ 54' 10''$  (LT)  
D = 0° 41' 13"  
T = 357.04'  
L = 713.64'  
E = 7.64'  
R = 8339.79'  
P.C. = Sta. 604+30.00  
P.T. = Sta. 611+43.63  
P.I. = Sta. 607+87.03

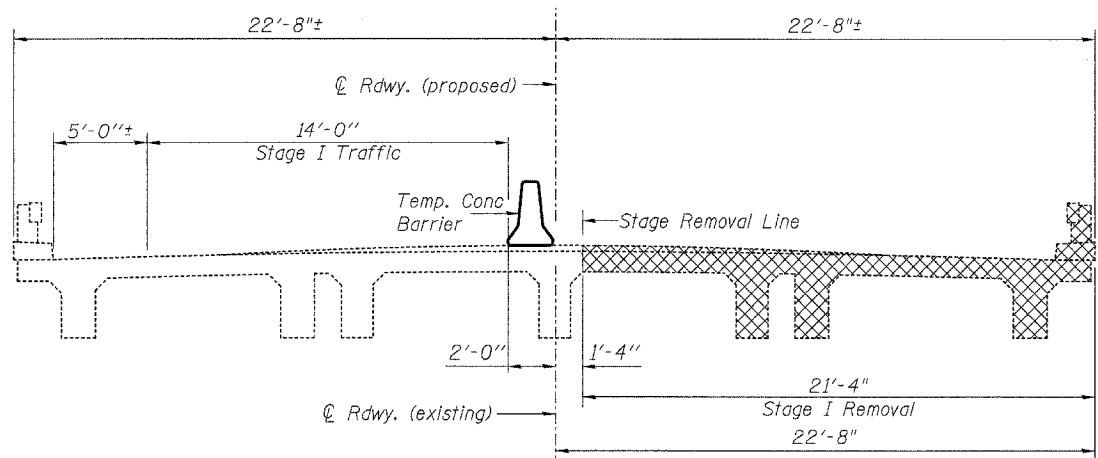
REVISIONS	
NAME	DATE

**Lin Engineering, Ltd.**  
Consulting Engineers  
Chatham, Illinois

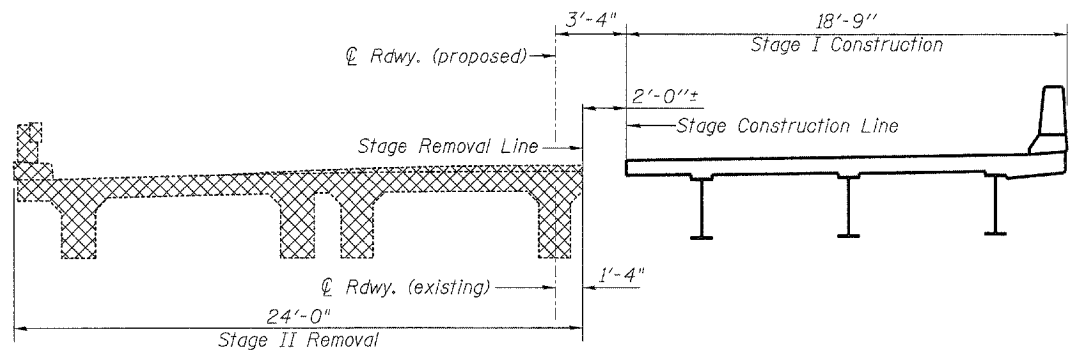
Designed By: JBY    Checked By: MTH    Drawn By: A.JF  
Date: 12/06    File: 028-0076.DGN

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**GENERAL NOTES & DETAILS**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

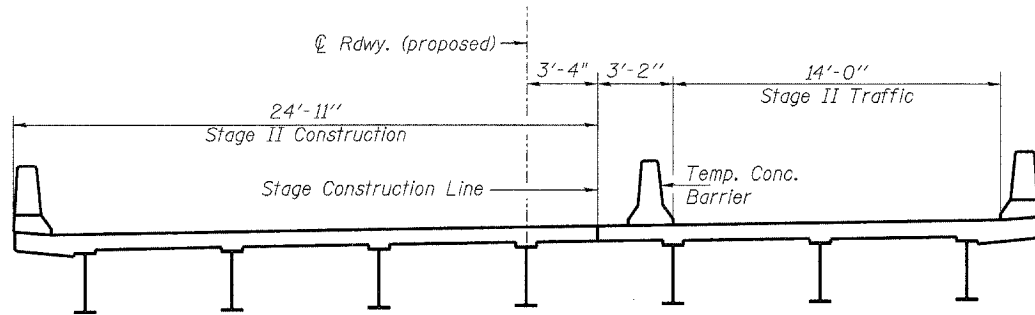
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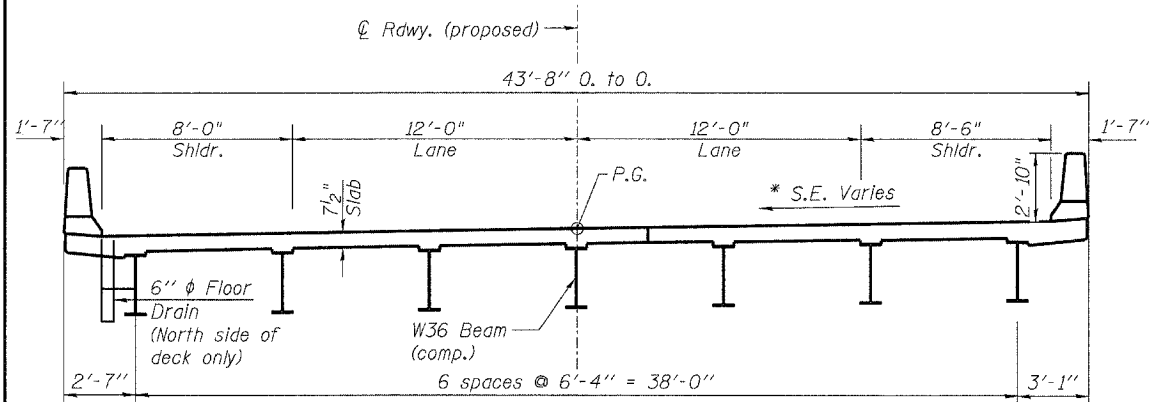
**STAGE I REMOVAL & TRAFFIC**  
(Looking East)



**STAGE I CONSTRUCTION & STAGE II REMOVAL**  
(Looking East)

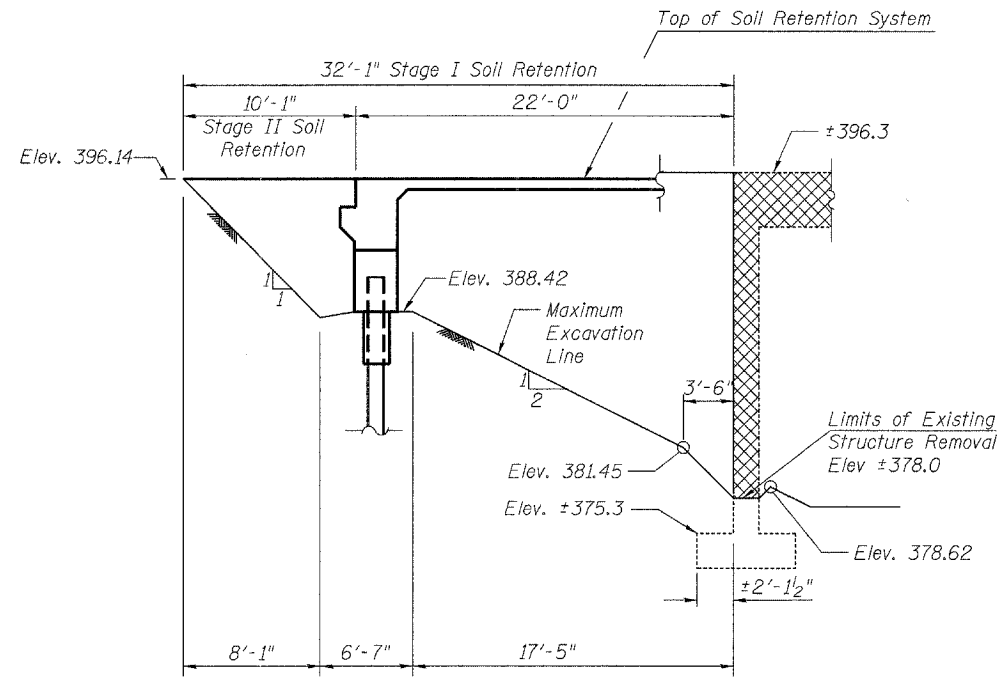


**STAGE II CONSTRUCTION & TRAFFIC**  
(Looking East)

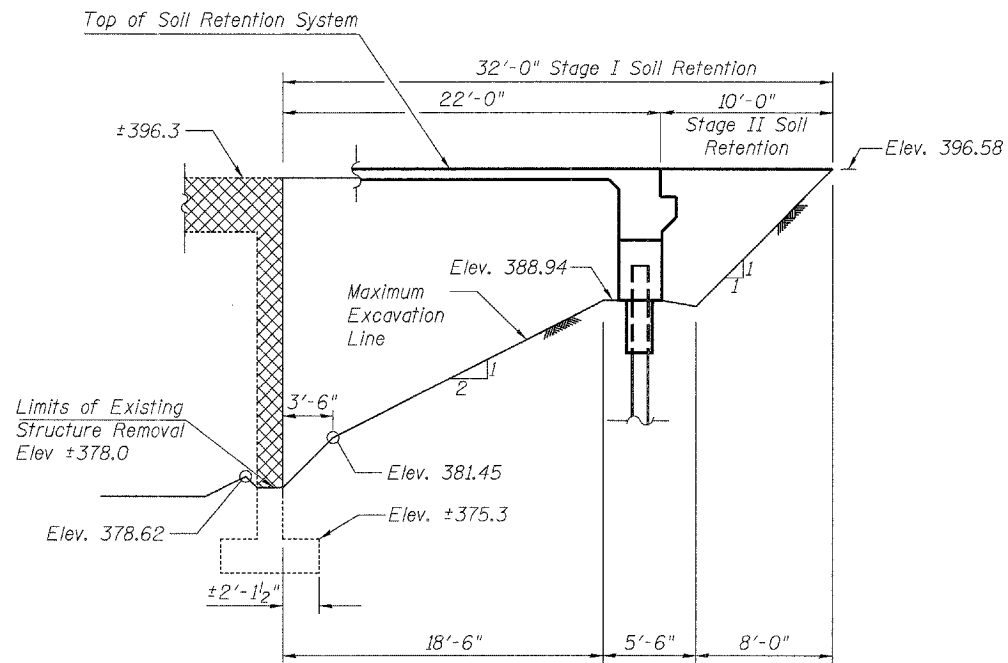


**PROPOSED CROSS SECTION**  
(Looking East)

\*Varies from 1.965% at the West Abutment to 1.5% at Station 603+59.00  
Constant 1.5% from Station 603+59.00 to the East Abutment



**TEMPORARY SOIL RETENTION SYSTEM AT WEST ABUT.**



**TEMPORARY SOIL RETENTION SYSTEM AT EAST ABUT.**

**Notes:**

- A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
- Location of Stage Removal & Construction lines is also applicable to existing abutments.
- Cross-hatched areas indicate removal of existing structures.
- Removal of existing bridge railing and bituminous wearing surface is included with the Removal of Existing Structure.
- See roadway plans for quantity of Temporary Concrete Barrier.
- See sheet 12 of 16 for details of Temporary Concrete Barrier.

REVISIONS	
NAME	DATE

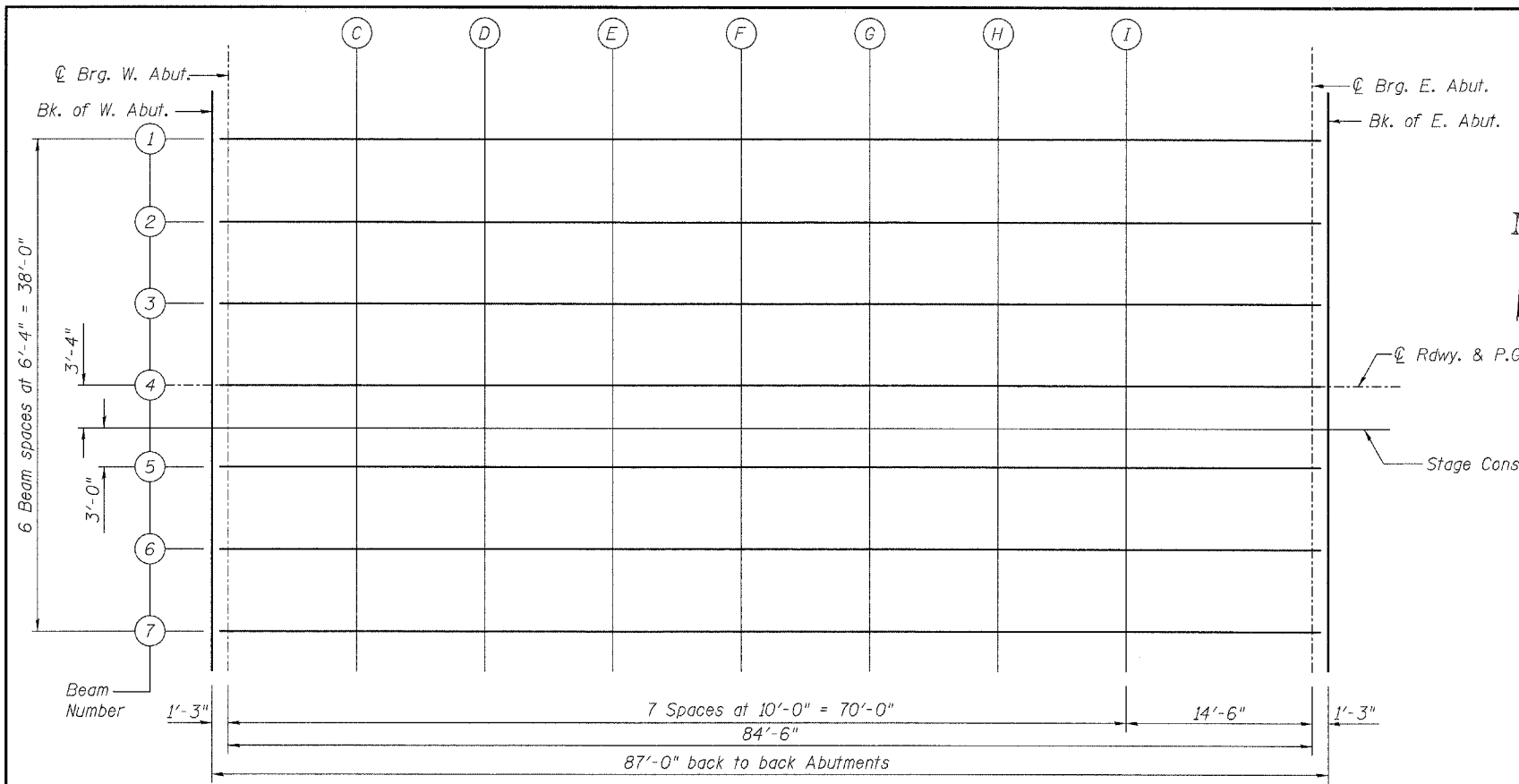
**LIN ENGINEERING, LTD.**  
Consulting Engineers  
Chatham, Illinois

Designed By: JGT  
Checked By: MTH  
Date: 12/06

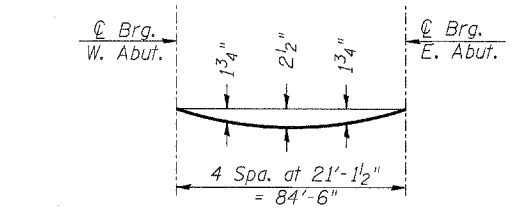
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ILLINOIS DEPARTMENT OF TRANSPORTATION  
**STAGE CONSTRUCTION DETAILS**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

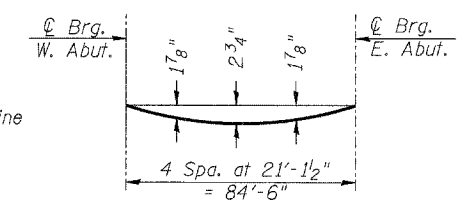




**PLAN**

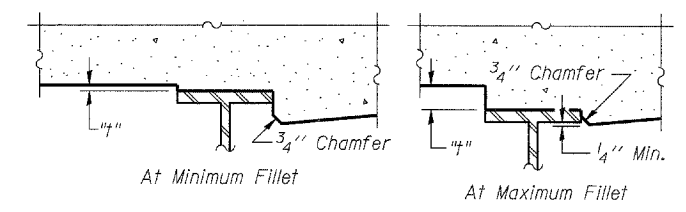


**DEAD LOAD DEFLECTION DIAGRAM**  
(Beam 1)  
(Includes weight of concrete only.)



**DEAD LOAD DEFLECTION DIAGRAM**  
(Beams 2-7)  
(Includes weight of concrete only.)

Note:  
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.



To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "f" above top flange of beams.

**FILLET HEIGHTS**

**BEAM 1**

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	603+36.50	-19.00	395.77	395.77
☉ Brg. W. Abut.	603+37.75	-19.00	395.77	395.77
C	603+47.75	-19.00	395.84	395.92
D	603+57.75	-19.00	395.91	396.05
E	603+67.75	-19.00	395.96	396.14
F	603+77.75	-19.00	396.00	396.21
G	603+87.75	-19.00	396.06	396.25
H	603+97.75	-19.00	396.12	396.28
I	604+07.75	-19.00	396.18	396.29
☉ Brg. E. Abut.	604+22.25	-19.00	396.29	396.29
Bk. of E. Abut.	604+23.50	-19.00	396.30	396.30

**BEAM 2**

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	603+36.50	-12.67	395.89	395.89
☉ Brg. W. Abut.	603+37.75	-12.67	395.90	395.90
C	603+47.75	-12.67	395.95	396.04
D	603+57.75	-12.67	396.01	396.16
E	603+67.75	-12.67	396.05	396.26
F	603+77.75	-12.67	396.10	396.32
G	603+87.75	-12.67	396.15	396.37
H	603+97.75	-12.67	396.21	396.39
I	604+07.75	-12.67	396.28	396.40
☉ Brg. E. Abut.	604+22.25	-12.67	396.38	396.38
Bk. of E. Abut.	604+23.50	-12.67	396.39	396.39

**BEAM 3**

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	603+36.50	-6.33	396.01	396.01
☉ Brg. W. Abut.	603+37.75	-6.33	396.02	396.02
C	603+47.75	-6.33	396.06	396.15
D	603+57.75	-6.33	396.11	396.26
E	603+67.75	-6.33	396.15	396.35
F	603+77.75	-6.33	396.19	396.42
G	603+87.75	-6.33	396.25	396.46
H	603+97.75	-6.33	396.31	396.49
I	604+07.75	-6.33	396.37	396.49
☉ Brg. E. Abut.	604+22.25	-6.33	396.48	396.48
Bk. of E. Abut.	604+23.50	-6.33	396.49	396.49

**BEAM 4, ☉ ROADWAY & P.G.**

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	603+36.50	0.00	396.14	396.14
☉ Brg. W. Abut.	603+37.75	0.00	396.14	396.14
C	603+47.75	0.00	396.17	396.25
D	603+57.75	0.00	396.20	396.36
E	603+67.75	0.00	396.24	396.45
F	603+77.75	0.00	396.29	396.51
G	603+87.75	0.00	396.34	396.56
H	603+97.75	0.00	396.40	396.58
I	604+07.75	0.00	396.47	396.59
☉ Brg. E. Abut.	604+22.25	0.00	396.57	396.57
Bk. of E. Abut.	604+23.50	0.00	396.58	396.58

**STAGE CONSTRUCTION LINE**

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	603+36.50	3.33	396.20	396.20
☉ Brg. W. Abut.	603+37.75	3.33	396.21	396.21
C	603+47.75	3.33	396.23	396.31
D	603+57.75	3.33	396.25	396.41
E	603+67.75	3.33	396.29	396.50
F	603+77.75	3.33	396.34	396.56
G	603+87.75	3.33	396.39	396.61
H	603+97.75	3.33	396.45	396.63
I	604+07.75	3.33	396.52	396.64
☉ Brg. E. Abut.	604+22.25	3.33	396.62	396.62
Bk. of E. Abut.	604+23.50	3.33	396.63	396.63

**BEAM 5**

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	603+36.50	6.33	396.26	396.26
☉ Brg. W. Abut.	603+37.75	6.33	396.27	396.27
C	603+47.75	6.33	396.28	396.36
D	603+57.75	6.33	396.30	396.45
E	603+67.75	6.33	396.34	396.54
F	603+77.75	6.33	396.38	396.61
G	603+87.75	6.33	396.44	396.65
H	603+97.75	6.33	396.50	396.68
I	604+07.75	6.33	396.56	396.68
☉ Brg. E. Abut.	604+22.25	6.33	396.67	396.67
Bk. of E. Abut.	604+23.50	6.33	396.68	396.68

**BEAM 6**

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	603+36.50	12.67	396.39	396.39
☉ Brg. W. Abut.	603+37.75	12.67	396.39	396.39
C	603+47.75	12.67	396.39	396.47
D	603+57.75	12.67	396.40	396.55
E	603+67.75	12.67	396.43	396.64
F	603+77.75	12.67	396.48	396.70
G	603+87.75	12.67	396.53	396.75
H	603+97.75	12.67	396.59	396.77
I	604+07.75	12.67	396.66	396.78
☉ Brg. E. Abut.	604+22.25	12.67	396.76	396.76
Bk. of E. Abut.	604+23.50	12.67	396.77	396.77

**BEAM 7**

Location	Station	Offset (ft)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	603+36.50	19.00	396.51	396.51
☉ Brg. W. Abut.	603+37.75	19.00	396.51	396.51
C	603+47.75	19.00	396.50	396.58
D	603+57.75	19.00	396.49	396.65
E	603+67.75	19.00	396.53	396.73
F	603+77.75	19.00	396.57	396.80
G	603+87.75	19.00	396.63	396.84
H	603+97.75	19.00	396.69	396.87
I	604+07.75	19.00	396.75	396.87
☉ Brg. E. Abut.	604+22.25	19.00	396.86	396.86
Bk. of E. Abut.	604+23.50	19.00	396.87	396.87

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**DECK ELEVATIONS**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

**REVISIONS**

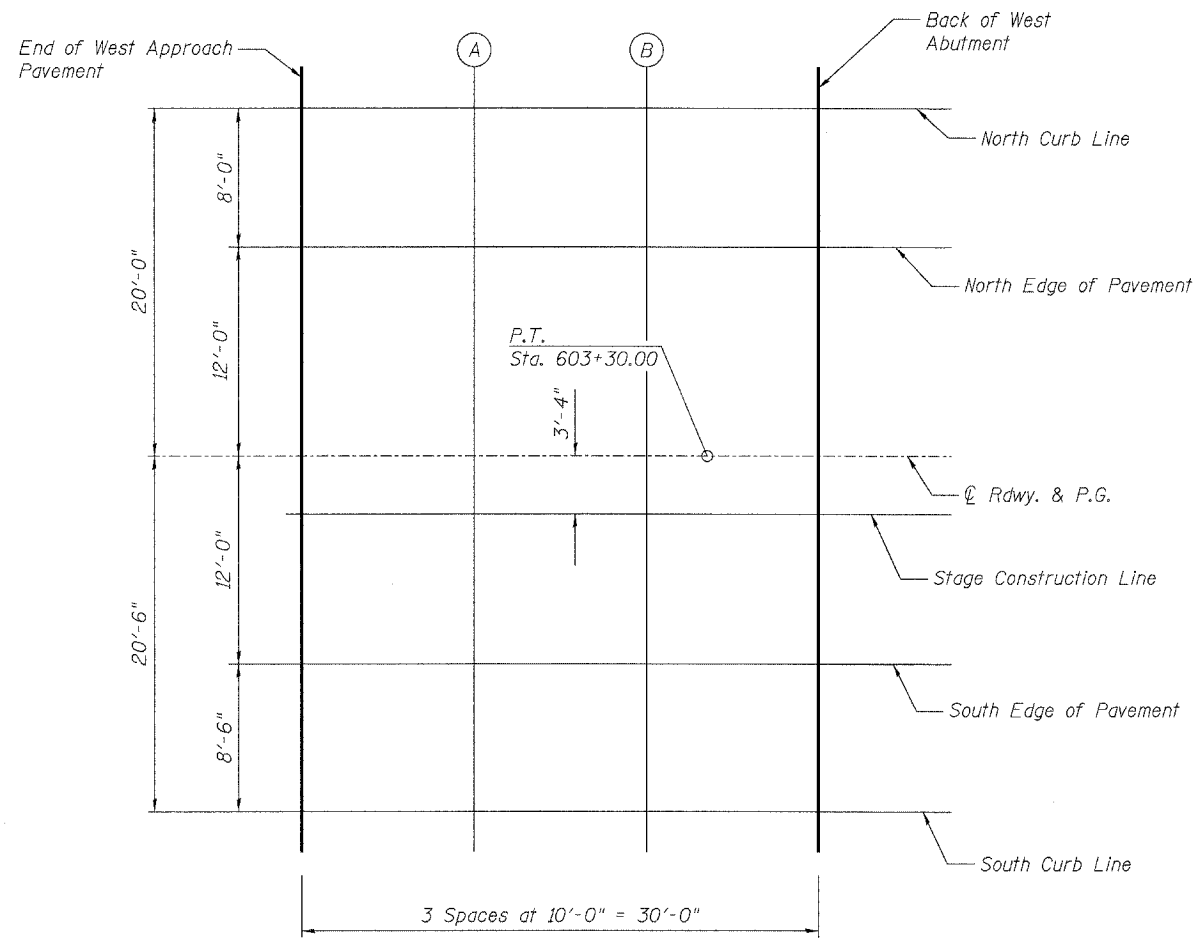
NAME	DATE

**LIN ENGINEERING, LTD.**  
Consulting Engineers  
Chatham, Illinois

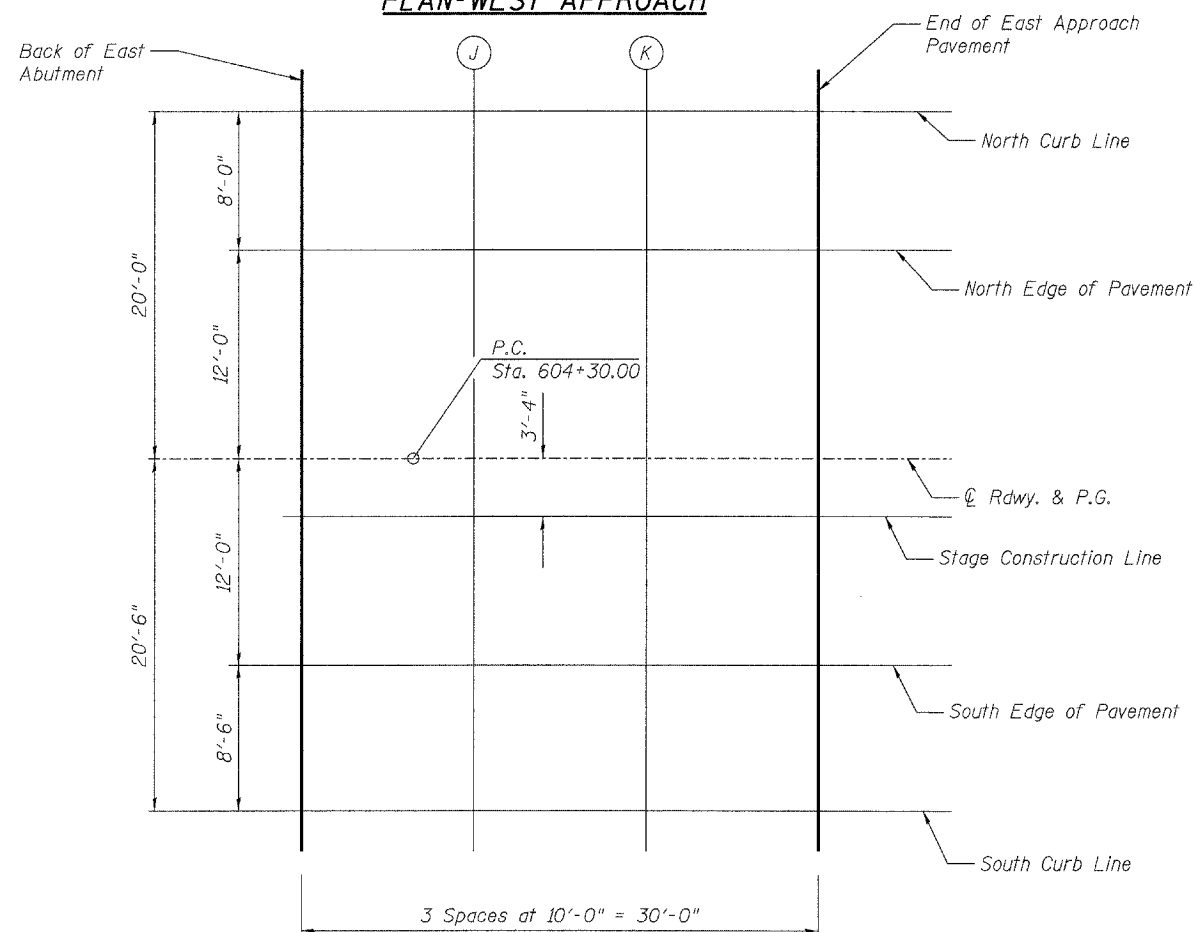
Designed By: JCY    Checked By: MTH    Drawn By: AJF  
Date: 12/06    File: 028-0076.DGN

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Contract # 98775



**PLAN-WEST APPROACH**



**PLAN-EAST APPROACH**

**NORTH CURB LINE**

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	603+06.27	-20.00	395.58
A	603+16.37	-20.00	395.63
B	603+26.47	-20.00	395.69
Bk. W. Abut.	603+36.50	-20.00	395.75
Bk. E. Abut.	604+23.50	-20.00	396.28
J	604+33.51	-20.00	396.37
K	604+43.53	-20.00	396.46
End E. Appr. Pav't	604+53.56	-20.00	396.55

**NORTH EDGE OF PAVEMENT**

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	603+06.36	-12.00	395.79
A	603+16.42	-12.00	395.82
B	603+26.48	-12.00	395.86
Bk. W. Abut.	603+36.50	-12.00	395.90
Bk. E. Abut.	604+23.50	-12.00	396.40
J	604+33.51	-12.00	396.49
K	604+43.52	-12.00	396.58
End E. Appr. Pav't	604+53.53	-12.00	396.67

**PROFILE GRADE & ̄ ROADWAY**

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	603+06.50	0.00	396.10
A	603+16.50	0.00	396.11
B	603+26.50	0.00	396.12
Bk. W. Abut.	603+36.50	0.00	396.14
Bk. E. Abut.	604+23.50	0.00	396.58
J	604+33.50	0.00	396.67
K	604+43.50	0.00	396.75
End E. Appr. Pav't	604+53.50	0.00	396.85

**STAGE CONSTRUCTION LINE**

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	603+06.54	3.33	396.18
A	603+16.52	3.33	396.18
B	603+26.51	3.33	396.19
Bk. W. Abut.	603+36.50	3.33	396.20
Bk. E. Abut.	604+23.50	3.33	396.63
J	604+33.50	3.33	396.71
K	604+43.49	3.33	396.80
End E. Appr. Pav't	604+53.49	3.33	396.90

**SOUTH EDGE OF PAVEMENT**

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	603+06.64	12.00	396.41
A	603+16.58	12.00	396.39
B	603+26.52	12.00	396.38
Bk. W. Abut.	603+36.50	12.00	396.38
Bk. E. Abut.	604+23.50	12.00	396.76
J	604+33.49	12.00	396.85
K	604+43.48	12.00	396.93
End E. Appr. Pav't	604+53.47	12.00	397.03

**SOUTH CURB LINE**

Location	Station	Offset (ft)	Theoretical Grade Elevations
End W. Appr. Pav't.	603+06.73	20.50	396.63
A	603+16.63	20.50	396.59
B	603+26.53	20.50	396.56
Bk. W. Abut.	603+36.50	20.50	396.54
Bk. E. Abut.	604+23.50	20.50	396.89
J	604+33.49	20.50	396.97
K	604+43.47	20.50	397.06
End E. Appr. Pav't	604+53.44	20.50	397.16

Note:  
Offsets on the curved portion of approaches are measured radially.

**REVISIONS**

NAME	DATE

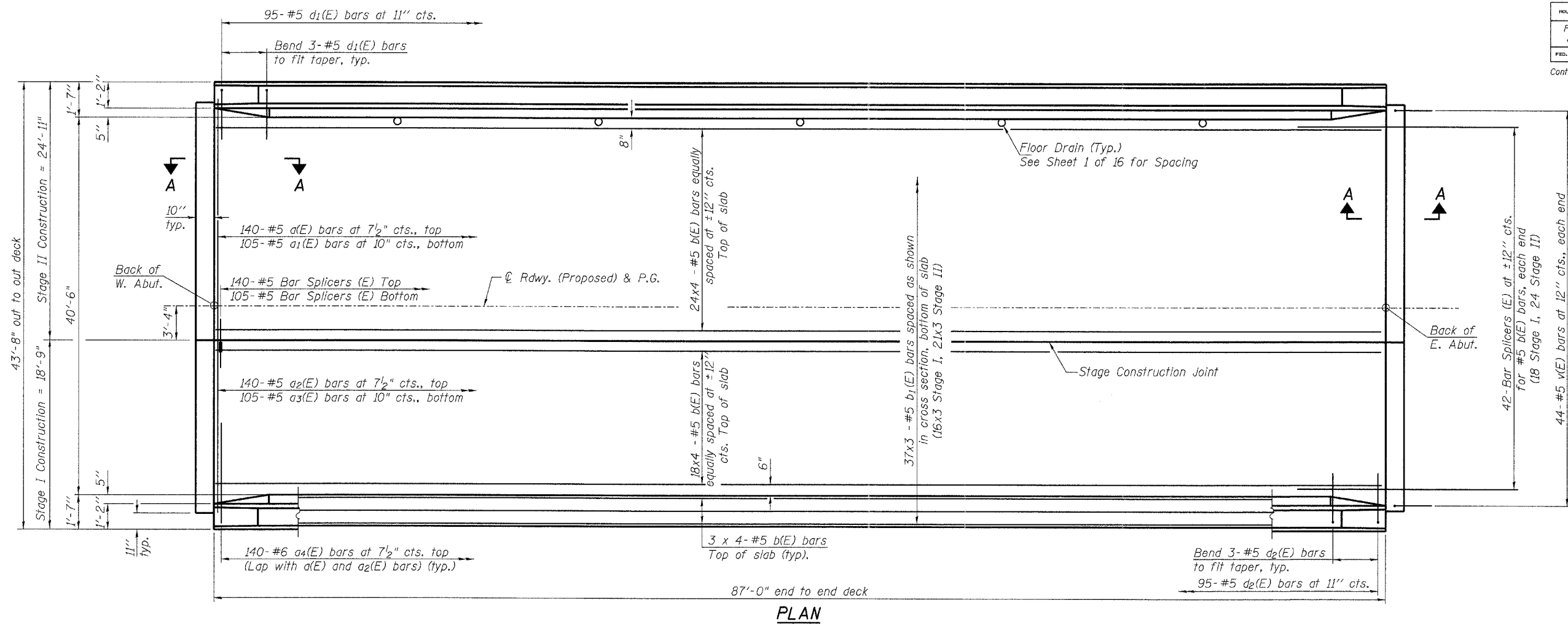
**LIN ENGINEERING, LTD.**  
Consulting Engineers  
Chatham, Illinois

Designed By: JBY    Checked By: MTH    Drawn By: AJF  
Date: 12/06    File: 028-0076.DGN

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**APPROACH PAVEMENT ELEVATIONS**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

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Contract # 98775



Notes:

See Sheet 7 of 16 for superstructure details and Bill of Material.

Bars indicated thus 37 x 3-#5 etc. indicates 37 lines of bars with 3 lengths per line.

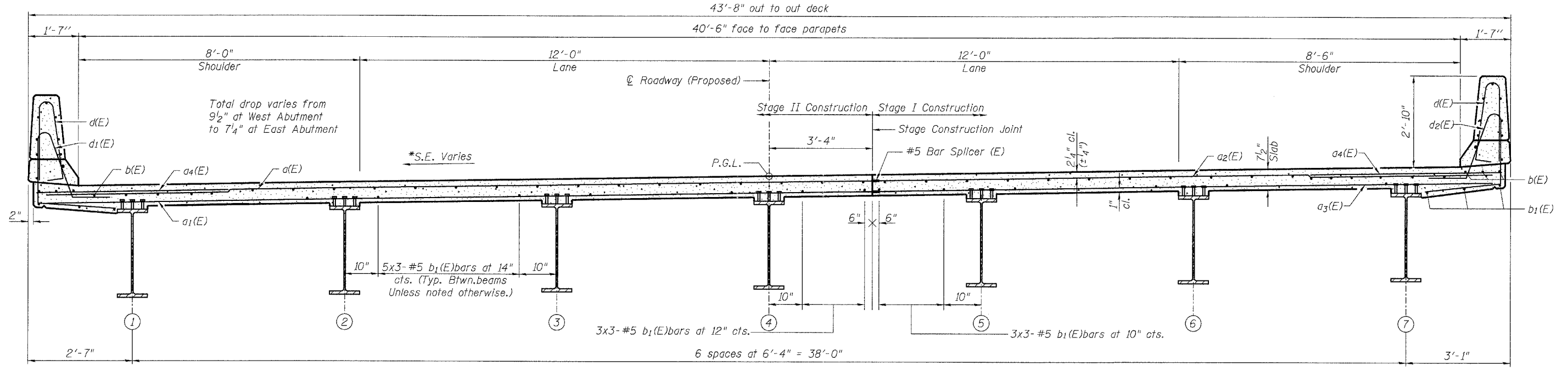
See Sheet 7 of 16 for parapet reinforcement.

See Sheet 8 of 16 for section A-A.

See Sheet 13 of 16 for Bar Splicer Details.



**MIN. BAR LAP**  
#5 bar = 1'-8"



\* Varies from 1.965% at the West Abutment to 1.5% at Station 603+59.00. Constant 1.5% from Station 603+59.00 to the East Abutment.

**REVISIONS**

NAME	DATE

**Lin Engineering, Ltd.**  
Consulting Engineers  
Chatham, Illinois

Designed By: JGY    Checked By: MTH    Drawn By: AUF  
Date: 12/06    File: 028-0076.DGN

ILLINOIS DEPARTMENT OF TRANSPORTATION

**SUPERSTRUCTURE**

**ILLINOIS ROUTE 14 OVER**

**ANDY CREEK**

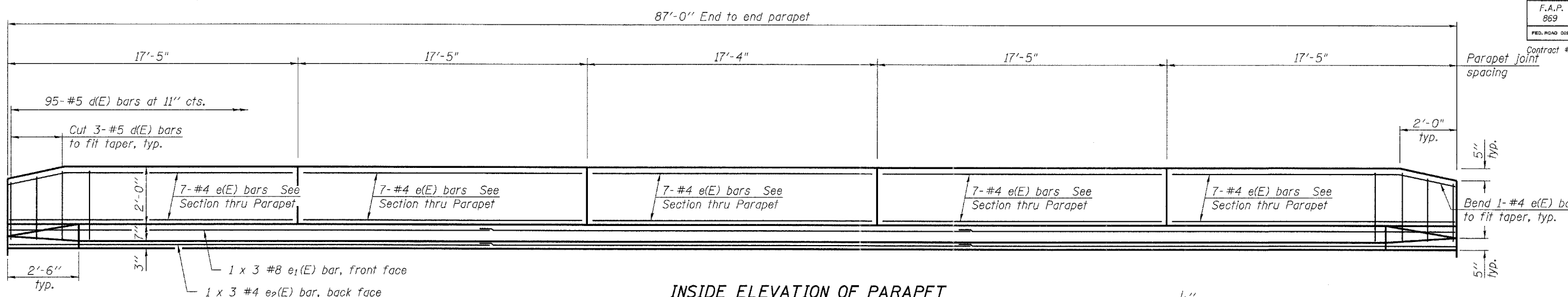
**F.A.P. ROUTE 869 - SECTION 104B-2**

**FRANKLIN COUNTY**

**STATION 603+80.00**

**STRUCTURE NO. 028-0076**

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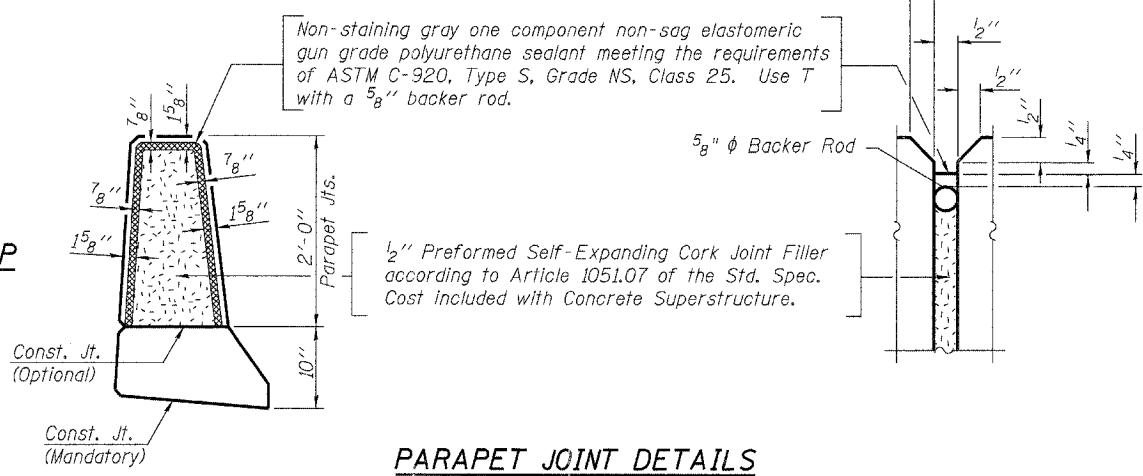


### SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	140	#5	24'-3"	—
a1(E)	105	#5	23'-9"	—
a2(E)	140	#5	18'-1"	—
a3(E)	105	#5	17'-7"	—
a4(E)	280	#6	6'-0"	—
b(E)	192	#5	22'-11"	—
b1(E)	111	#5	30'-0"	—
d(E)	190	#5	5'-7"	┘
d1(E)	95	#5	7'-5"	┘
d2(E)	95	#5	7'-10"	┘
e(E)	70	#4	17'-2"	—
e1(E)	6	#8	31'-3"	—
e2(E)	6	#4	29'-10"	—
m(E)	4	#6	17'-7"	—
m1(E)	4	#6	23'-9"	—
m2(E)	6	#6	18'-6"	—
m3(E)	6	#6	24'-8"	—
m4(E)	10	#6	5'-3"	—
m5(E)	4	#6	2'-3"	—
m6(E)	2	#6	2'-7"	—
m7(E)	2	#6	1'-10"	—
m8(E)	28	#6	8'-3"	—
s(E)	96	#5	5'-9"	┘
s1(E)	84	#4	9'-10"	┘
v(E)	88	#5	3'-4"	┘
Reinforcement Bars, Epoxy Coated		Pound	27840	
Concrete Superstructure		Cu. Yds.	142.3	
Floor Drains		Each	5	

Bars indicated thus 1 x 3 - #5 etc. indicates 1 line of bars with 3 lengths per line.

### INSIDE ELEVATION OF PARAPET

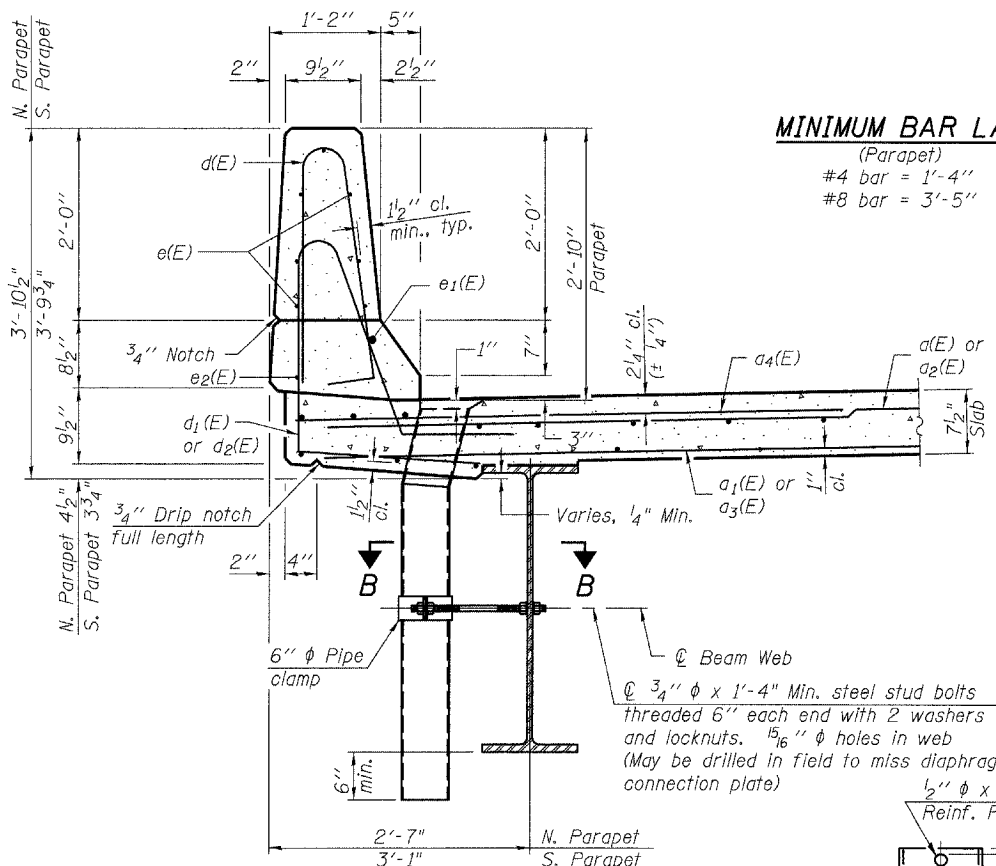


### PARAPET JOINT DETAILS

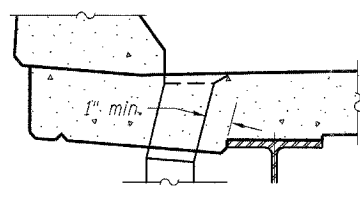
Notes:  
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Steel Structures Painting Council's Spec. SSPC-SPI prior to painting.  
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

### MINIMUM BAR LAP (Parapet)

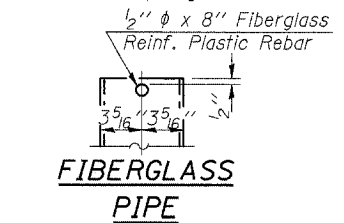
#4 bar = 1'-4"  
#8 bar = 3'-5"



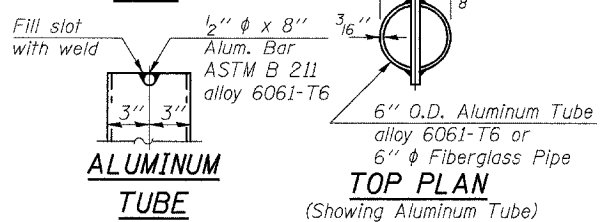
### SECTION THRU PARAPET (North Parapet Shown)



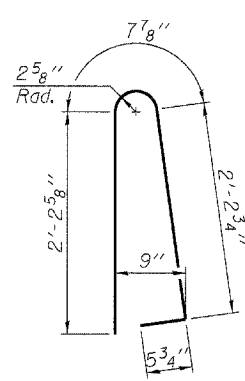
### DRAIN DETAIL



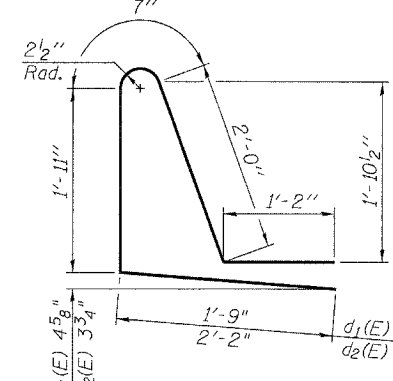
### FIBERGLASS PIPE



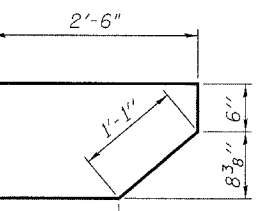
### ALUMINUM TUBE TOP PLAN (Showing Aluminum Tube)



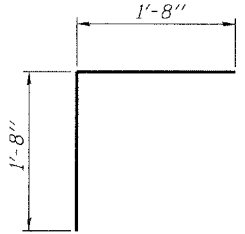
### BAR d(E)



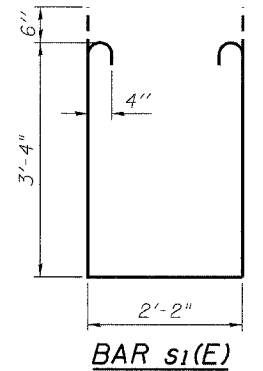
### BARS d1(E) AND d2(E)



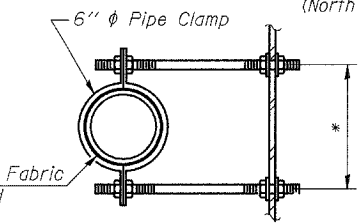
### BAR s(E)



### BAR v(E)

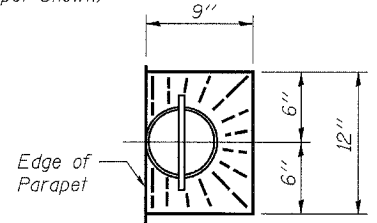


### BAR s1(E)



### SECTION B-B

\* Dimension as required by Pipe Clamp



### TOP PLAN

REVISIONS	
NAME	DATE

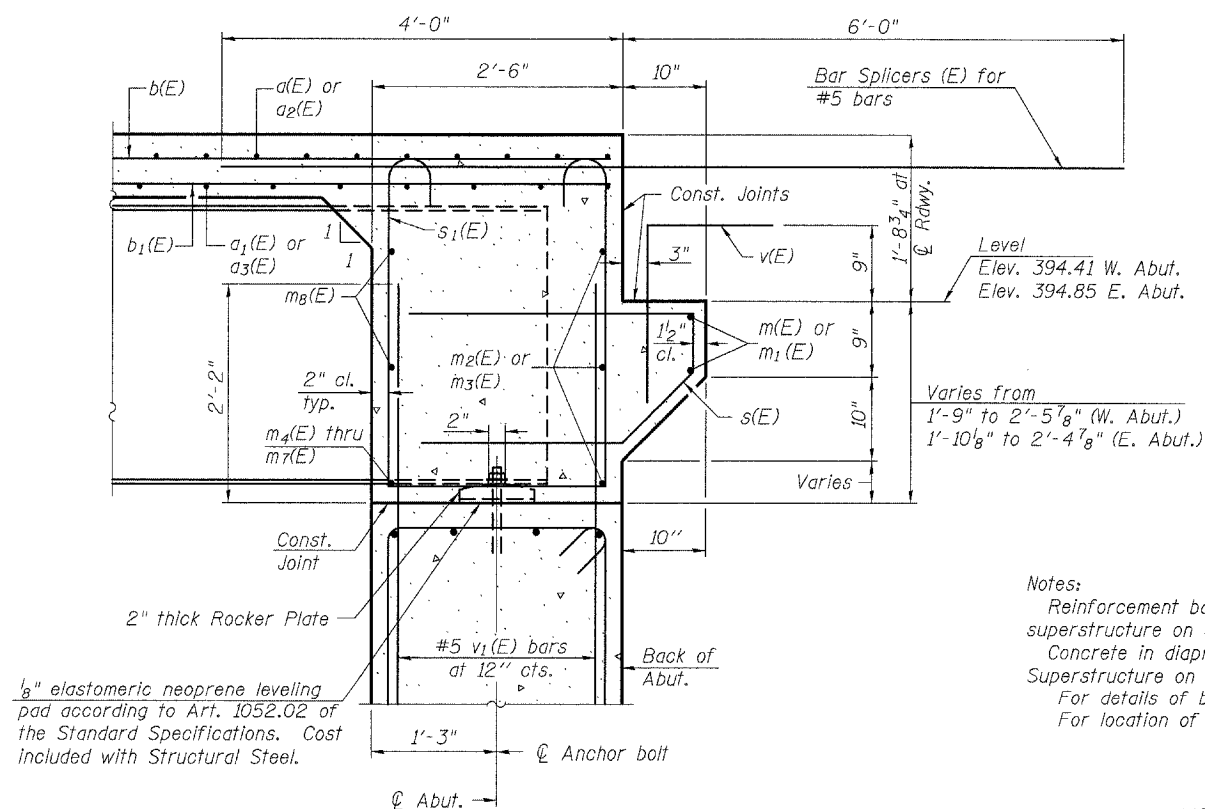
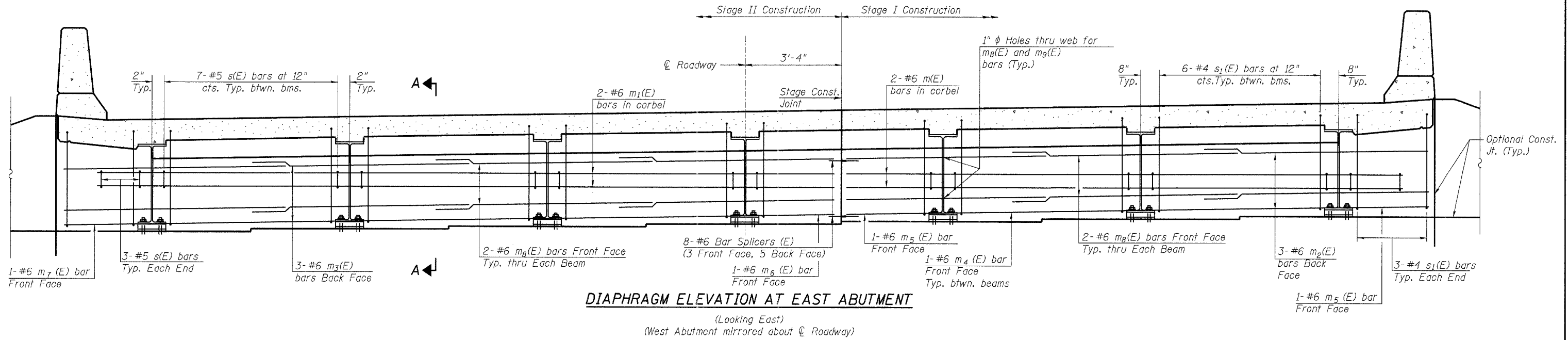
**LIN ENGINEERING, LTD.**  
Consulting Engineers  
Chatham, Illinois

Designed By: JGF    Checked By: MTH    Drawn By: AJF  
Date: 12/06    File: 028-0076.DGN

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**SUPERSTRUCTURE DETAILS**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

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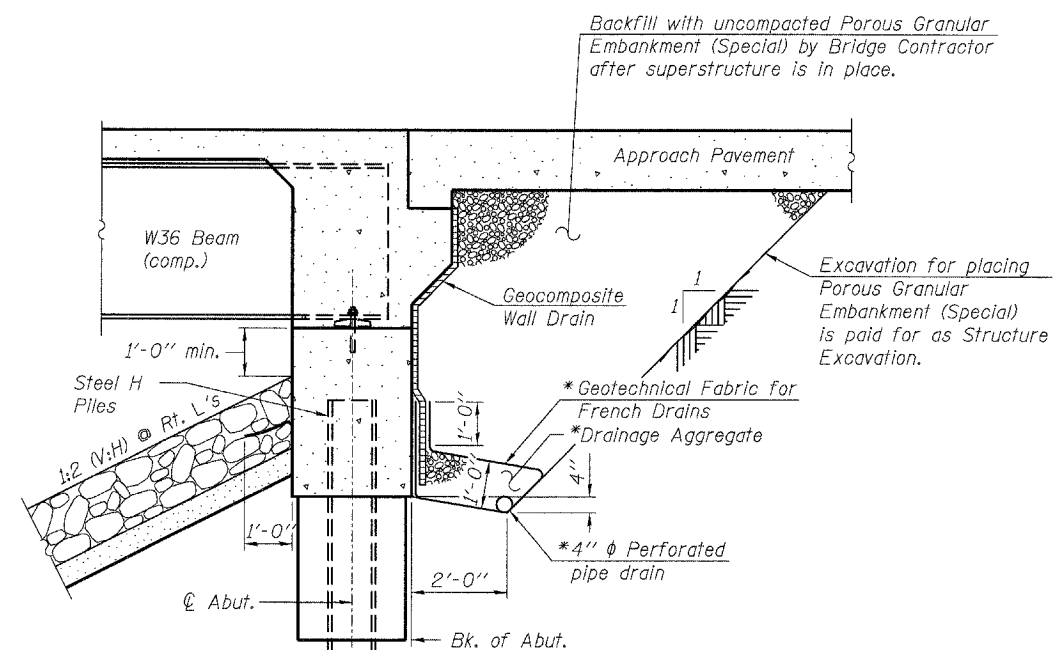
Contract # 98775



$\frac{1}{8}$ " elastomeric neoprene leveling pad according to Art. 1052.02 of the Standard Specifications. Cost included with Structural Steel.

**MIN. BAR LAP**  
#6 bar = 2'-9"

Notes:  
Reinforcement bars in diaphragm are billed with superstructure on sheet 7 of 16.  
Concrete in diaphragm is included with Concrete Superstructure on sheet 7 of 16.  
For details of bars s(E) & s1(E) see sheet 7 of 16.  
For location of holes thru web, see sheet 9 of 16.



\* Included in the cost of Pipe Underdrains for Structures.

Note:  
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**CONCRETE END DIAPHRAGMS**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

**LIN ENGINEERING, LTD.**  
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Chatham, Illinois

REVISIONS	
NAME	DATE

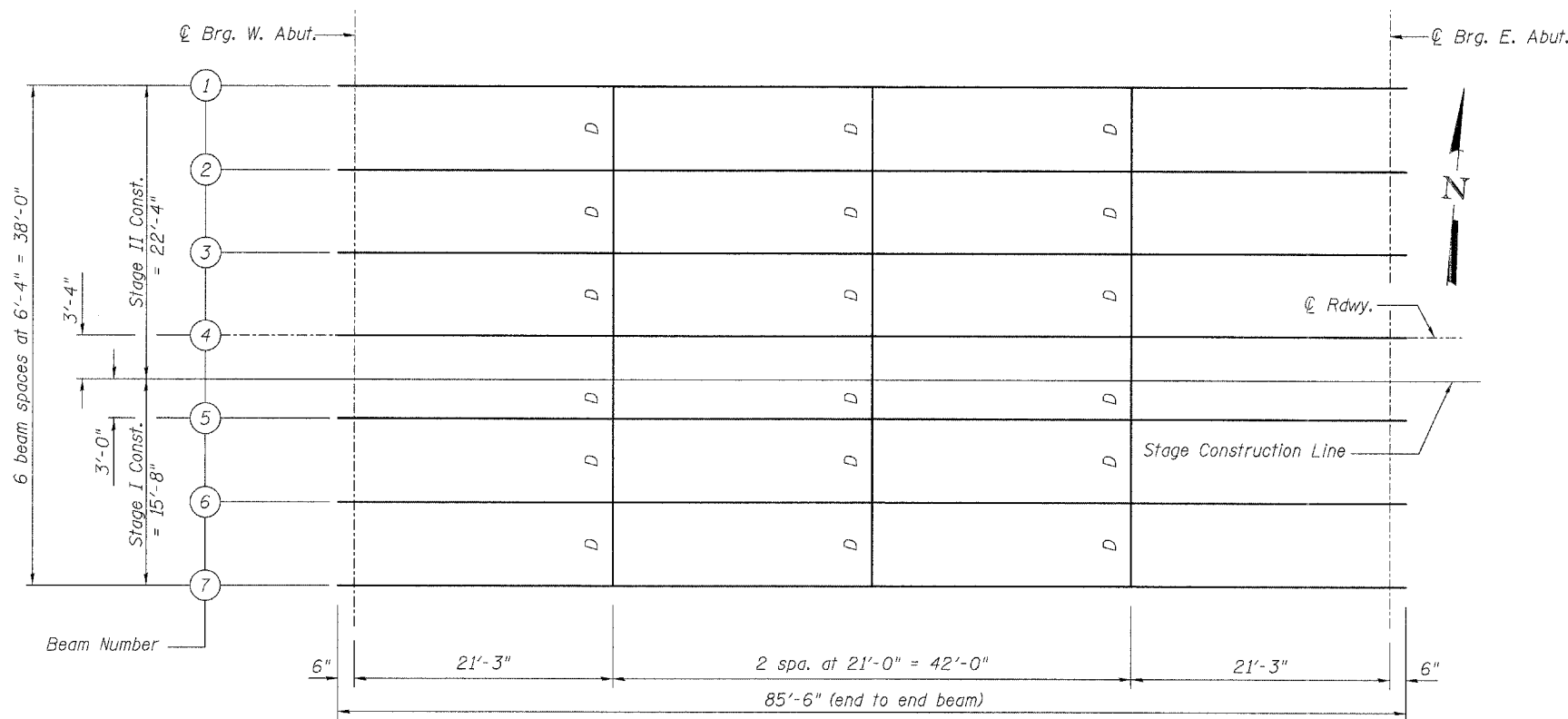
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Checked By: MTH  
Date: 12/06

Drawn By: AJF  
File: 028-0076.DGN

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Contract # 98775



**FRAMING PLAN**

		0.5 Span
$I_s$	(in <sup>4</sup> )	9750
$I_c(n)$	(in <sup>4</sup> )	24016
$I_c(3n)$	(in <sup>4</sup> )	17392
$S_s$	(in <sup>3</sup> )	542
$S_c(n)$	(in <sup>3</sup> )	773
$S_c(3n)$	(in <sup>3</sup> )	694
DC1	(k/')	0.798
M <sub>DC1</sub>	(k)	713
DC2	(k/')	0.129
M <sub>DC2</sub>	(k)	115
DW	(k/')	0.289
M <sub>DW</sub>	(k)	258
$M_L + imp$	(k)	1224
$M_u$ (Strength I)	(k)	3564
$\phi_r M_n$	(k)	3851
$f_s$ DC1	(ksi)	15.79
$f_s$ DC2	(ksi)	1.99
$f_s$ DW	(ksi)	4.46
$f_s$ 1.3(L+I)	(ksi)	24.70
$f_s$ (Service II)	(ksi)	46.94
$f_s$ (Total)(Strength I)	(ksi)	62.16
$V_f$	(k)	28.2

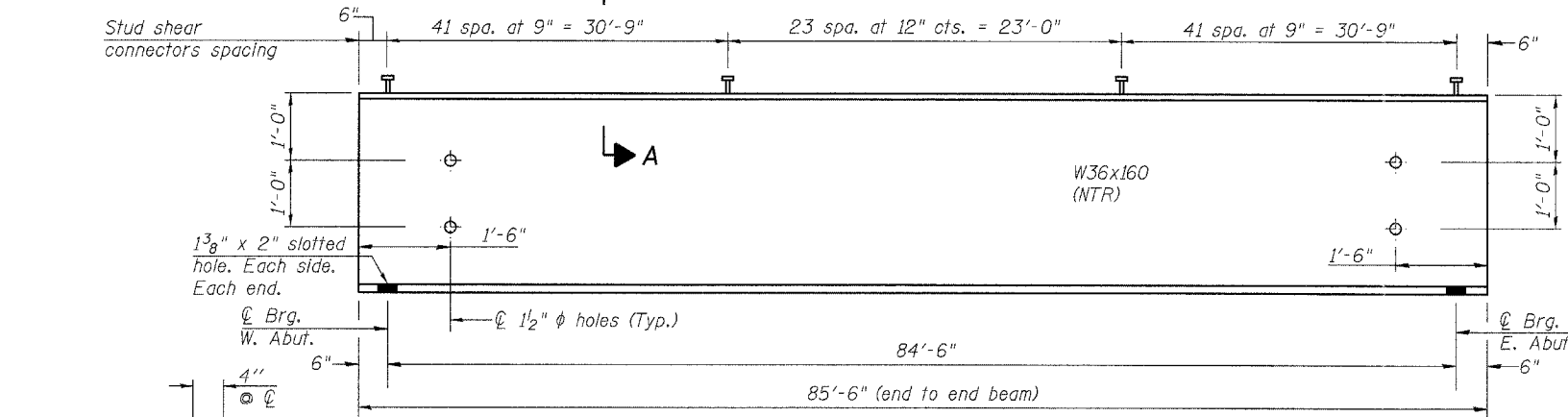
$I_s, S_s$ : Non-composite moment of inertia and section modulus of the steel section used for computing  $f_s$  (Total-Strength I, and Service II) due to non-composite dead loads (in<sup>4</sup> and in<sup>3</sup>).

$I_c(n), S_c(n)$ : Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing  $f_s$  (Total-Strength I, and Service II) due to short-term composite live loads (in<sup>4</sup> and in<sup>3</sup>).

$I_c(3n), S_c(3n)$ : Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing  $f_s$  (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).

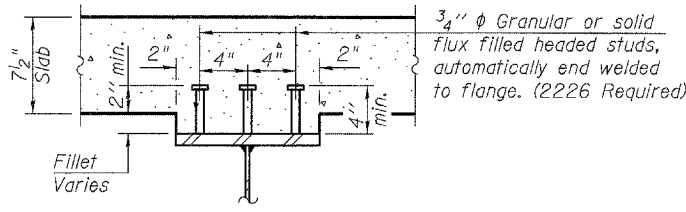
DC1: Un-factored non-composite dead load (kips/ft.).  
M<sub>DC1</sub>: Un-factored moment due to non-composite dead load (kip-ft.).  
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).  
M<sub>DC2</sub>: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).  
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).  
M<sub>DW</sub>: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).  
 $M_L + imp$ : Un-factored live load moment plus dynamic load allowance (Impact) (kip-ft.).  
 $M_u$  (Strength I): Factored design moment (kip-ft.).  
 $\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).  
 $f_s$  (Service II): Sum of stresses as computed from the moments below (ksi).  
 $f_s$  (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $V_f$ : Factored shear range computed according to Article 6.10.10.

	Abut.
R <sub>DC1</sub>	(k) 33.7
R <sub>DC2</sub>	(k) 5.5
R <sub>DW</sub>	(k) 12.2
R <sub>L + imp</sub>	(k) 78.0
R <sub>Total</sub>	(k) 129.4

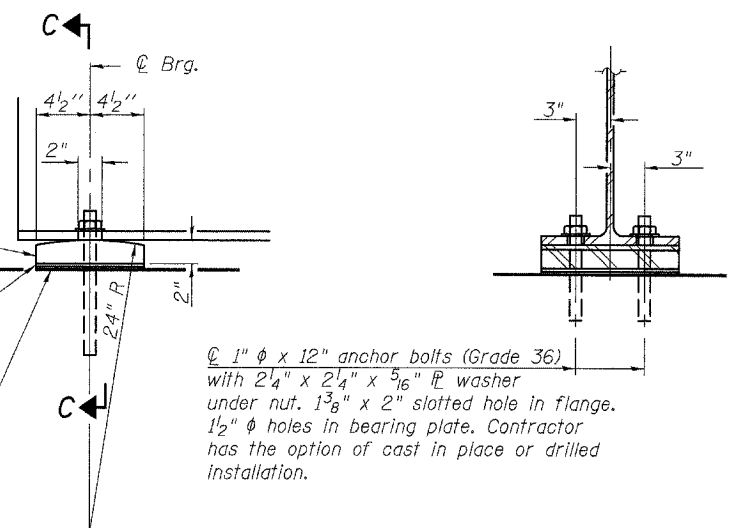


**BEAM ELEVATION**

"NTR" denotes members to which notch toughness requirements are applicable.



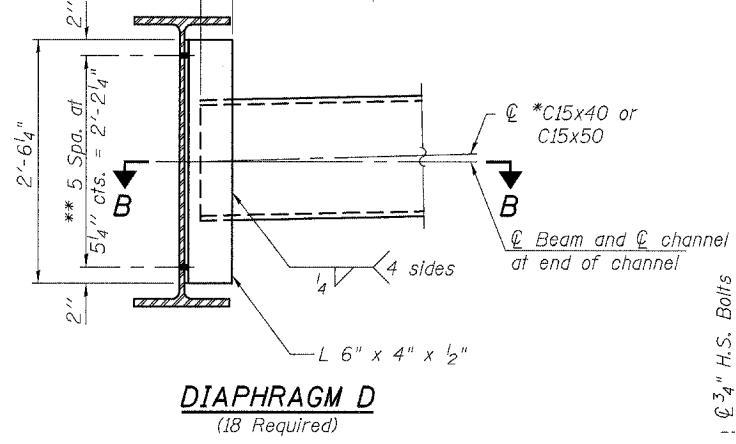
**SECTION A-A**



**ELEVATION AT ABUTMENT**

**SECTION C-C**

**FIXED BEARING**



**DIAPHRAGM D**  
(18 Required)

Note:  
Two hardened washers required for each set of oversized holes and 5/16" plate washer over slotted holes.

\* Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.  
\*\* 3/4"  $\phi$  HS bolts, 1 5/16"  $\phi$  holes. For diaphragms at stage construction provide 1 3/8" x 1 7/8" vertical slotted holes at south side of beam 4 in angle and beam and for north side of beam 5 provide oversized holes in angle and beam. Bolts in slotted holes shall be finger tightened prior to the deck slab pouring and then fully tightened after completion of the pour.

**NOTES:**

- All beams shall be W36x160 AASHTO M270 Grade 50 (NTR). All diaphragms and connecting angles shall be AASHTO M270 Grade 36.
- All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

**SECTION B-B**

**TOP OF BEAM ELEVATIONS**

(For Fabrication Only)

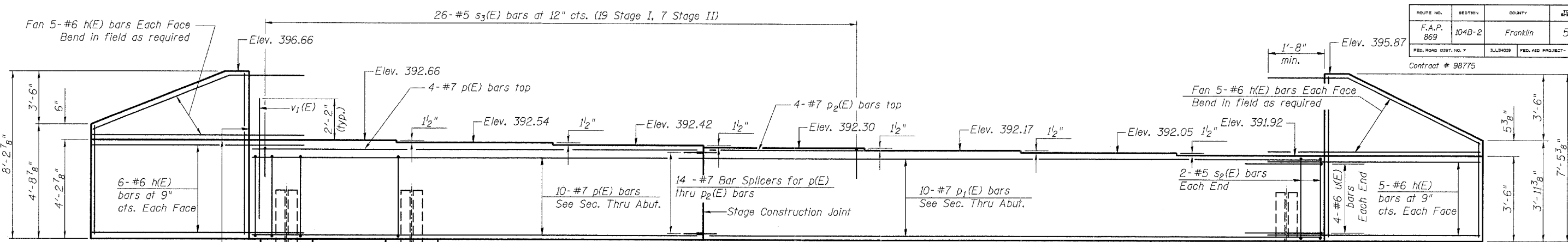
Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 7
© Brg. W. Abut.	395.11	395.23	395.35	395.48	395.60	395.72	395.84
© Brg. E. Abut.	395.62	395.72	395.81	395.91	396.00	396.10	396.19

**Lin Engineering, L.T.D.**  
Consulting Engineers  
Chatham, Illinois

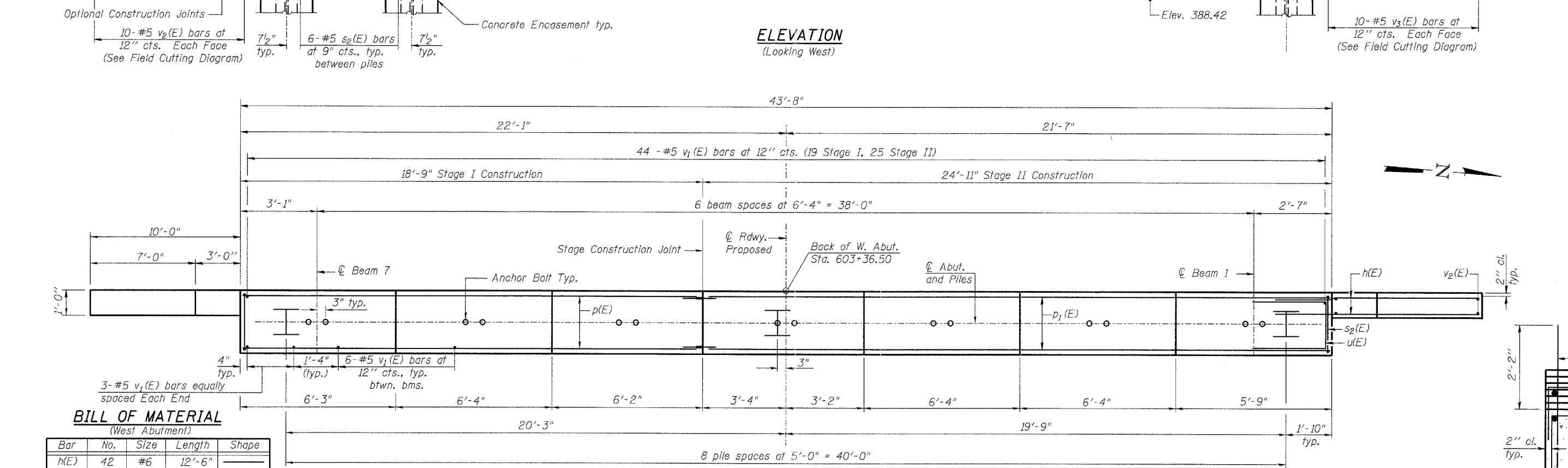
Designed By: JDF    Checked By: MTH    Drawn By: AUF  
Date: 12/06    File: 028-0076.DGN

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FRAMING PLAN & STEEL DETAILS**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076



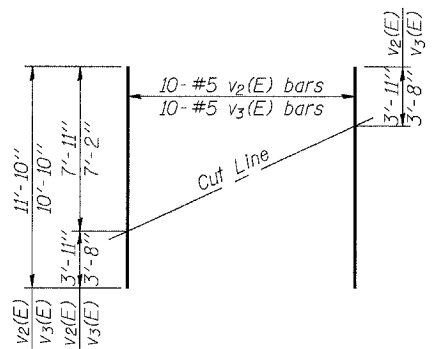
**ELEVATION**  
(Looking West)



**PLAN**

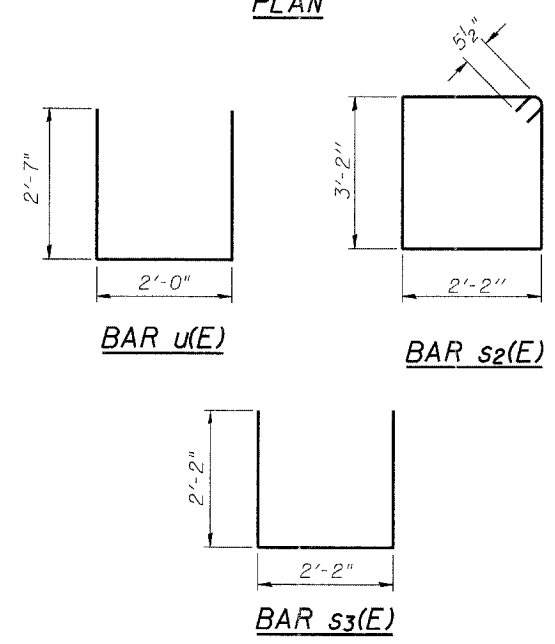
**BILL OF MATERIAL**  
(West Abutment)

Bar	No.	Size	Length	Shape
h(E)	42	#6	12'-6"	—
p(E)	14	#7	18'-5"	—
p <sub>1</sub> (E)	10	#7	24'-7"	—
p <sub>2</sub> (E)	4	#7	6'-2"	—
s <sub>2</sub> (E)	40	#5	11'-7"	□
s <sub>3</sub> (E)	26	#5	6'-6"	□
u(E)	8	#6	7'-2"	□
v <sub>1</sub> (E)	86	#5	4'-4"	—
v <sub>2</sub> (E)	10	#5	11'-10"	—
v <sub>3</sub> (E)	10	#5	10'-0"	—
Structure Excavation	Cu. Yd.		98	
Concrete Structures	Cu. Yd.		20.5	
Reinforcement Bars, Epoxy Coated	Pound		3230	
Furnishing Steel	Foot		416	
Piles, HP 12x53	Foot		416	
Driving Piles	Foot		416	
Test Pile, Steel HP 12x53	Each		1	
Concrete Encasement	Cu. Yd.		3.0	
Anchor Bolts 1" φ	Each		14	



**FIELD CUTTING DIAGRAM**

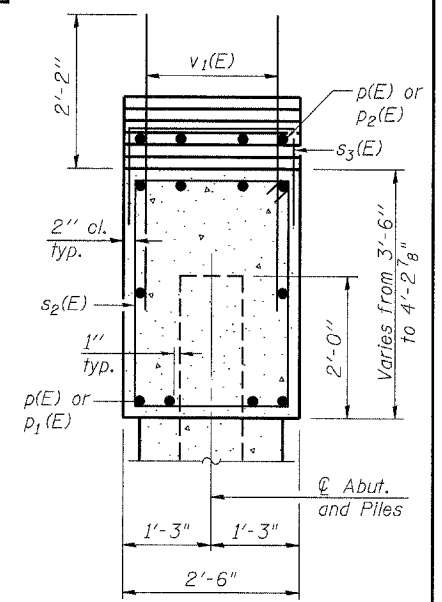
Order v<sub>2</sub>(E) and v<sub>3</sub>(E) full length. Cut as shown and use remainder of bars in opposite face.



**Notes:**  
Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.  
Four steps monolithically with cap.  
Space reinforcement in cap to miss Anchor Bolts.

**PILE DATA**

Type: HP 12x53  
Nominal Required Bearing: 404 Kips  
Factored Resistance Available: 202 Kips  
Est. Length: 52 ft  
No. Production Piles: 8  
No. Test Piles: 1



**SEC. THRU ABUT.**

REVISIONS	
NAME	DATE

**Lin Engineering, Ltd.**  
Consulting Engineers  
Chatham, Illinois

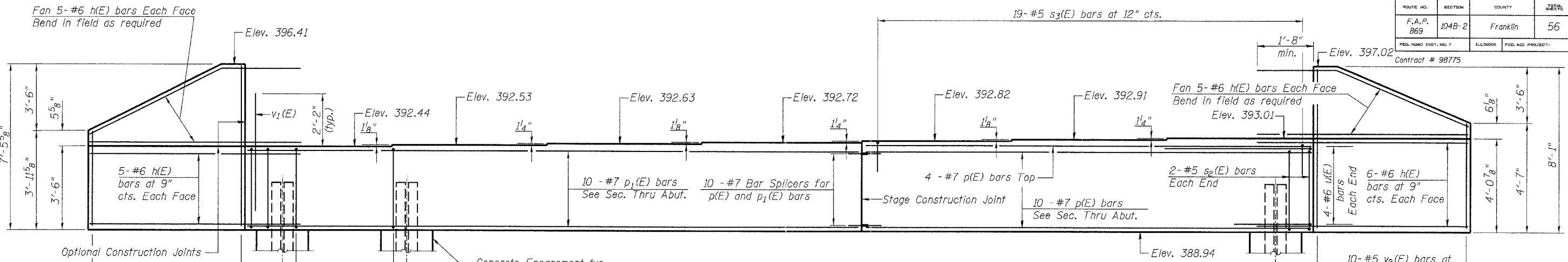
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Date: 12/06

Checked By: MTH  
File: 028-0076.DWG

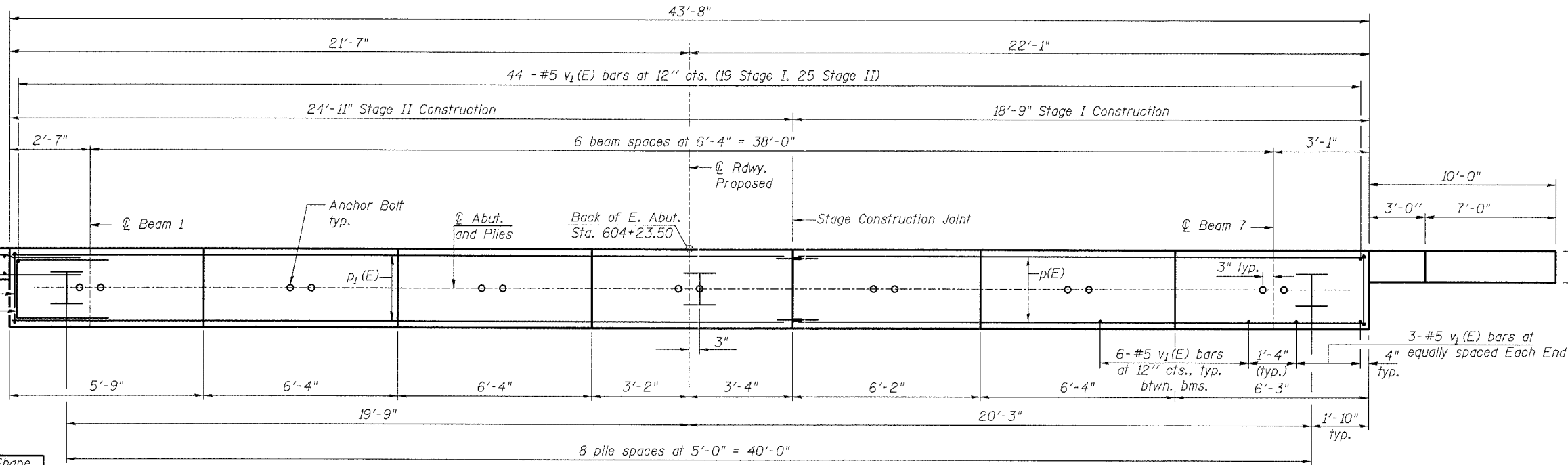
Drawn By: AJF

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**WEST ABUTMENT**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

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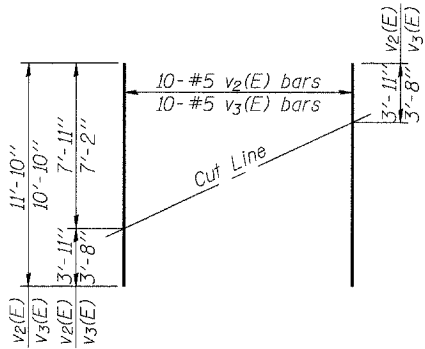
**ELEVATION**  
(Looking East)



**PLAN**

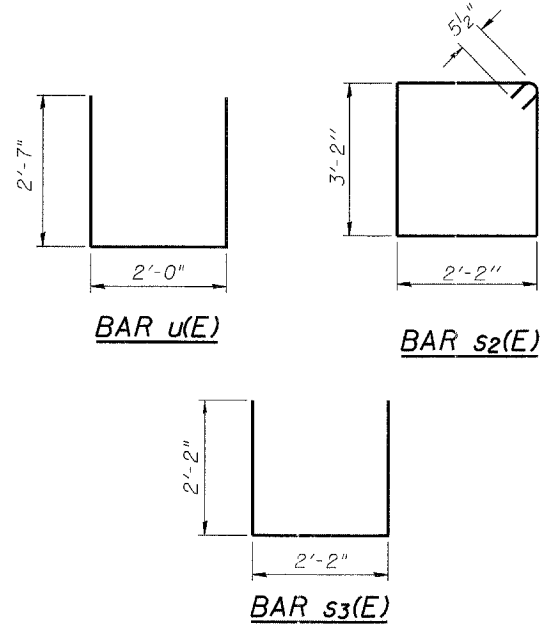
**BILL OF MATERIAL**  
(East Abutment)

Bar	No.	Size	Length	Shape
h(E)	42	#6	12'-6"	
p(E)	14	#7	18'-5"	
p1(E)	10	#7	24'-7"	
s2(E)	40	#5	11'-7"	
s3(E)	19	#5	6'-6"	
u(E)	8	#6	7'-2"	
v1(E)	86	#5	4'-4"	
v2(E)	10	#5	11'-10"	
v3(E)	10	#5	10'-0"	
Structure Excavation	Cu. Yd.		96	
Concrete Structures	Cu. Yd.		20.2	
Reinforcement Bars, Epoxy Coated	Pound		3130	
Furnishing Steel Piles, HP 12x53	Foot		440	
Driving Piles	Foot		440	
Test Pile, Steel HP 12x53	Each		1	
Concrete Encasement	Cu. Yd.		3.0	
Anchor Bolts 1" φ	Each		14	



**FIELD CUTTING DIAGRAM**

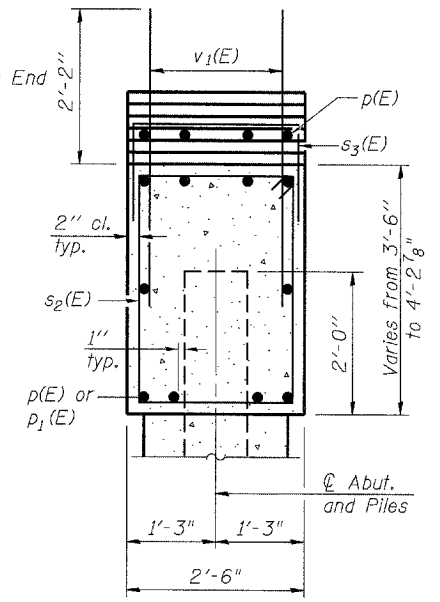
Order v2(E) and v3(E) full length. Cut as shown and use remainder of bars in opposite face.



**Notes:**  
Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage I removal to ensure the remaining portion will not be prematurely damaged.  
Pour steps monolithically with cap.  
Space reinforcement in cap to miss Anchor Bolts.

**PILE DATA**

Type: HP 12x53  
Nominal Required Bearing: 400 Kips  
Factored Resistance Available: 200 Kips  
Est. Length: 55 ft  
No. Production Piles: 8  
No. Test Piles: 1



**SEC. THRU ABUT.**

For details of Bar Splicers, see sheet 13 of 16.  
For details of piles and Concrete Encasement, see sheet 14 of 16.

**LIN ENGINEERING, LTD.**  
Consulting Engineers  
Chattam, Illinois

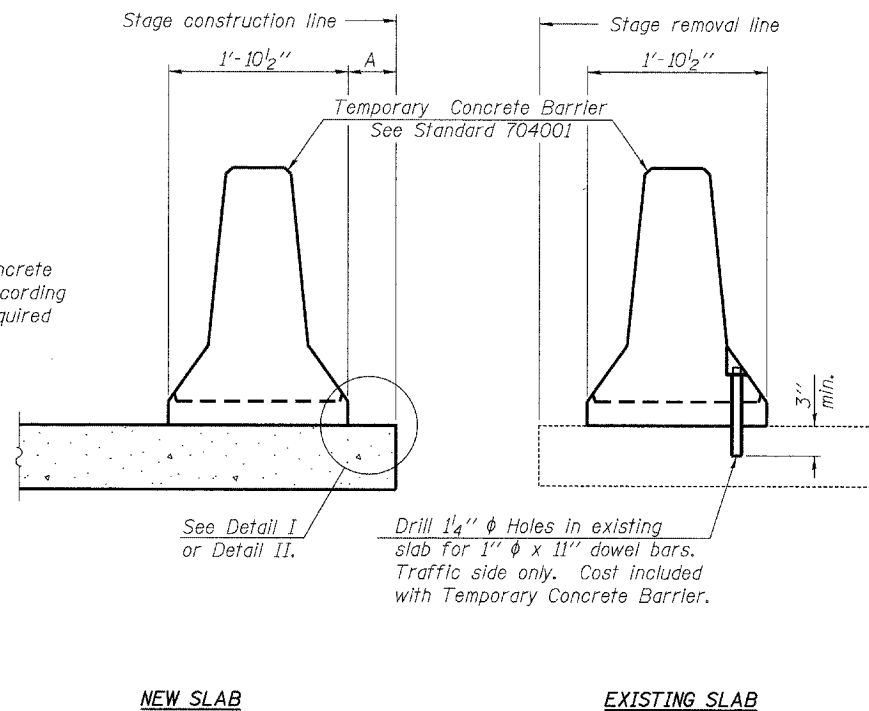
Designed By: JST  
Checked By: MTH  
Date: 12/06

Drawn By: AUF  
File: 028-0076.DGN

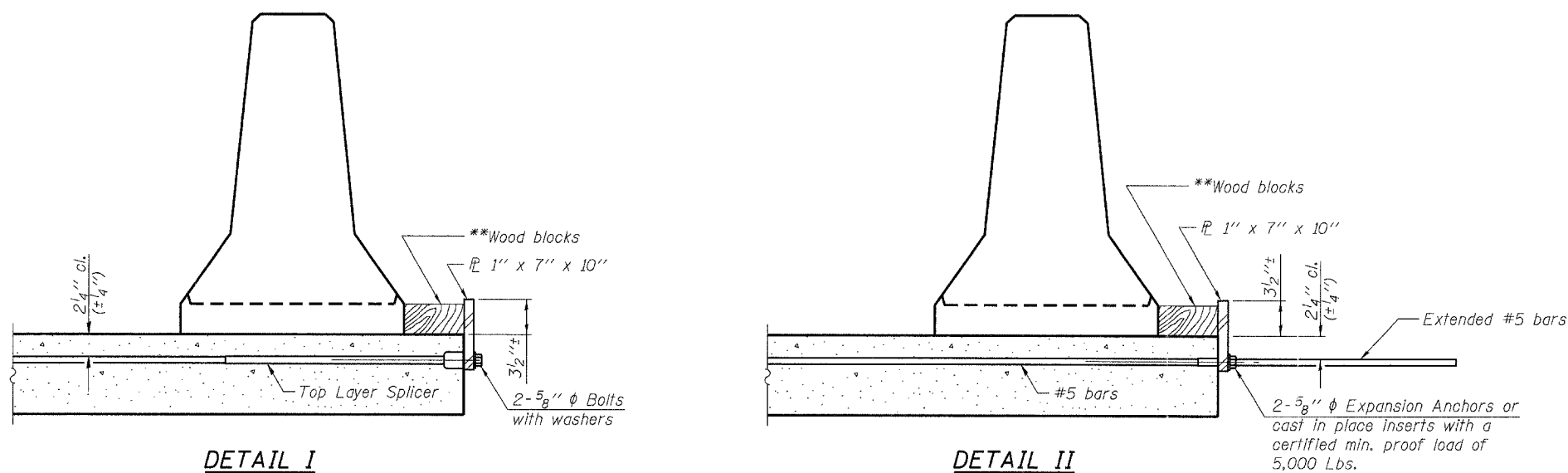
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**EAST ABUTMENT**  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076

Contract # 98775



**SECTIONS THRU SLAB**



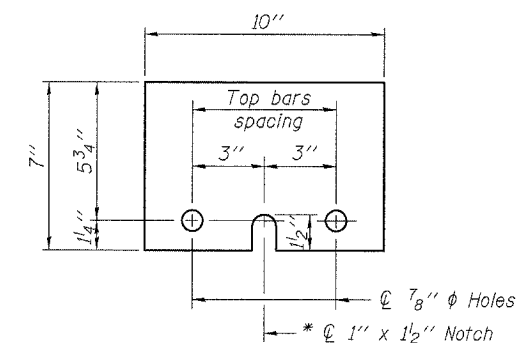
\*\* Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

**NOTES**

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

Detail II - With Extended Reinforcement Bars:  
Connect one (1) 1"x7"x10" steel  $\bar{P}$  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  $\bar{C}$  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  $\bar{P}$  1" x 7" x 10"**

\* Required only with Detail II

**Lin Engineering, Ltd.**  
Consulting Engineers  
Chatham, Illinois

Designed By: JGY    Checked By: MTH    Drawn By: AJF  
Date: 12/06    File: 028-0076.DGN

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CONCRETE BARRIER**  
 ILLINOIS ROUTE 14 OVER  
 ANDY CREEK  
 F.A.P. ROUTE 869 - SECTION 104B-2  
 FRANKLIN COUNTY  
 STATION 603+80.00  
 STRUCTURE NO. 028-0076

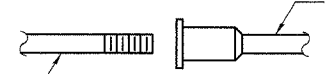
**NOTES**

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

BAR SPLICER ASSEMBLIES			
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

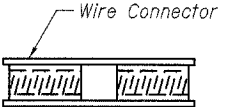
The diameter of this part is equal or larger than the diameter of bar spliced.



**ROLLED THREAD DOWEL BAR**



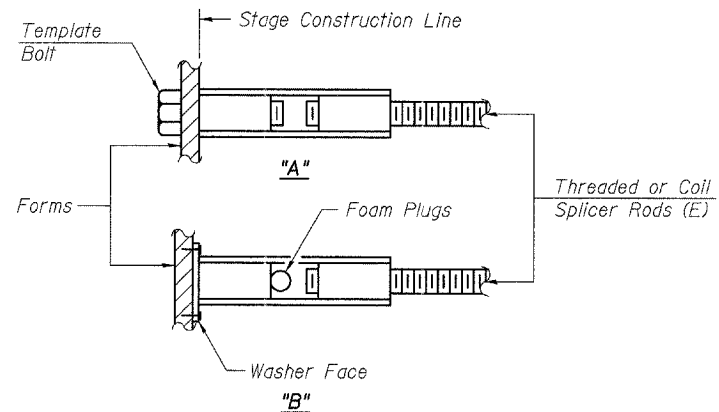
**\*\* ONE PIECE**



**WELDED SECTIONS**

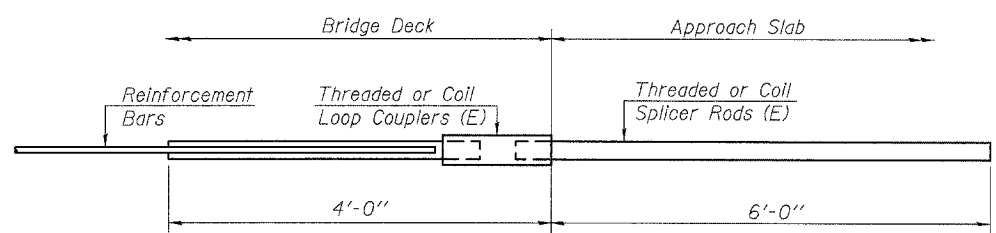
**BAR SPLICER ASSEMBLY ALTERNATIVES**

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



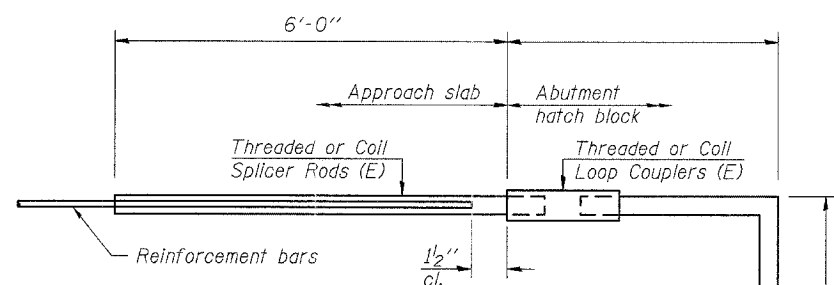
**INSTALLATION AND SETTING METHODS**

"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.



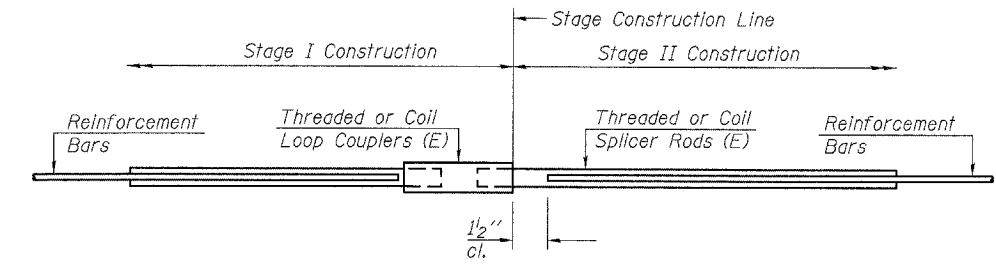
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 84



**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
#5	245	Deck
#6	14	Diaphragms
#7	24	Abutments

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**BAR SPLICER ASSEMBLY DETAILS**  
 ILLINOIS ROUTE 14 OVER  
 ANDY CREEK  
 F.A.P. ROUTE 869 - SECTION 104B-2  
 FRANKLIN COUNTY  
 STATION 603+80.00  
 STRUCTURE NO. 028-0076

**LIN ENGINEERING, LTD.**  
 Consulting Engineers  
 Chatham, Illinois

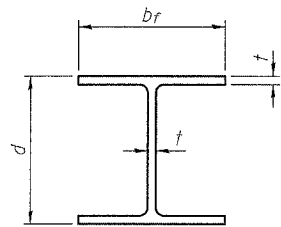
Designed By: JBY    Checked By: MTH    Drawn By: AJF  
 Date: 12/06    File: 028-0076.DGN

REVISIONS	
NAME	DATE

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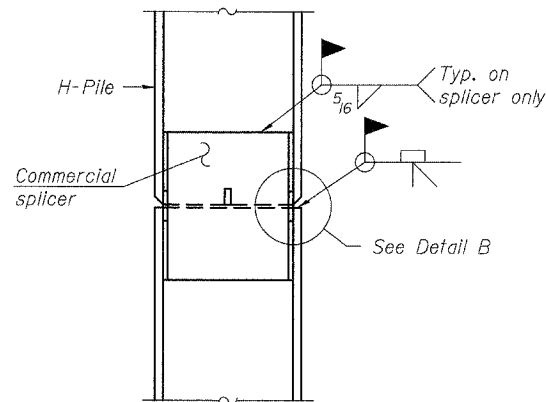


Contract # 98775

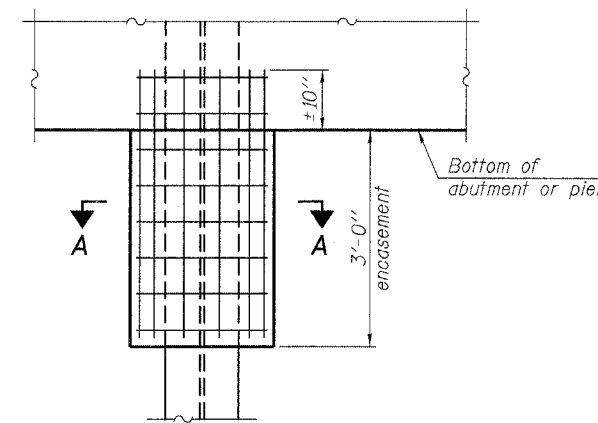


STEEL PILE TABLE

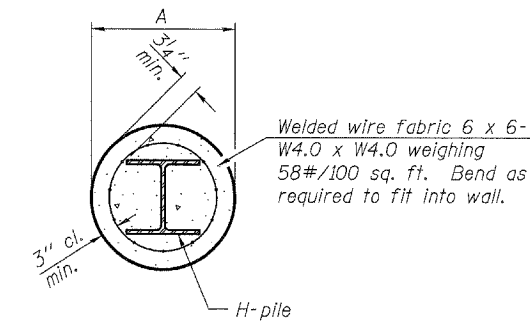
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 8/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11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



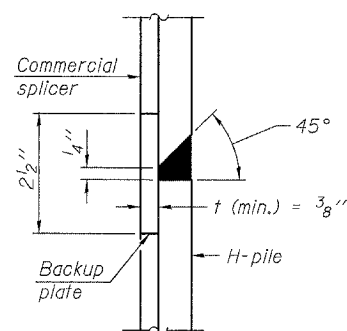
ELEVATION



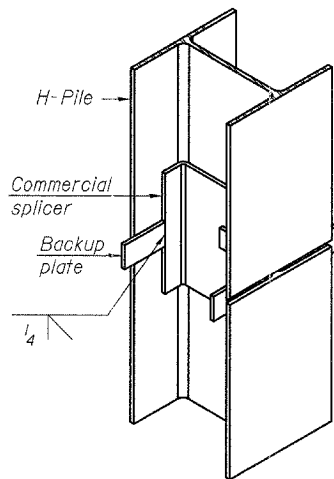
SECTION A-A

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

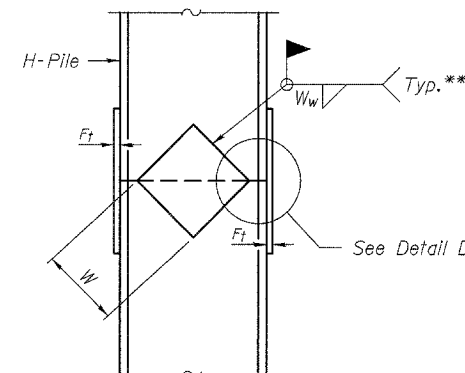
PILE ENCASEMENT



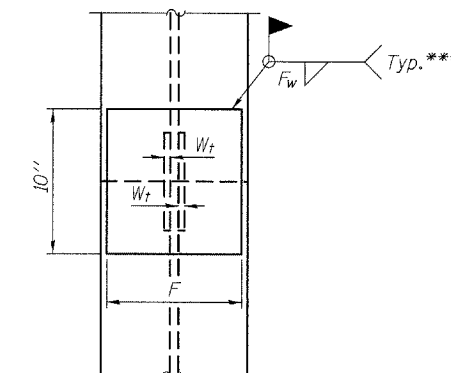
DETAIL "B"



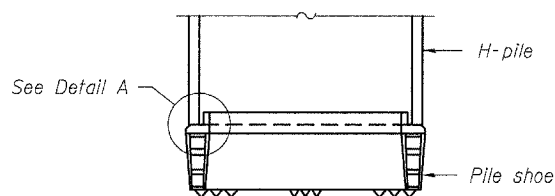
ISOMETRIC VIEW



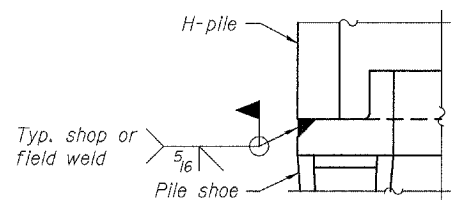
ELEVATION



END VIEW

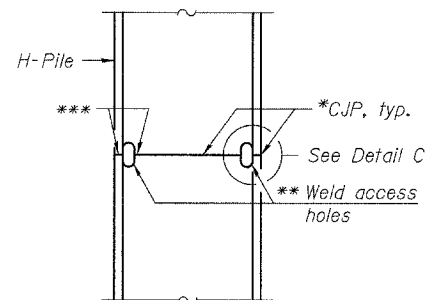


ELEVATION



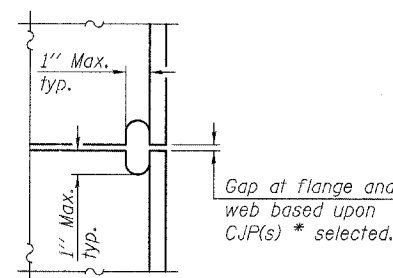
DETAIL A

H-PILE SHOE ATTACHMENT

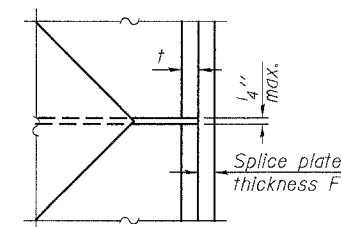


ELEVATION

COMPLETE PENETRATION WELD SPLICE



DETAIL C



DETAIL D

WELDED PLATE FIELD SPLICE

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

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

- \* Use Joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- \*\* Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- \*\*\* Interrupt welds 1/4" from end of each pile.

**LIN ENGINEERING, LTD.**  
Consulting Engineers  
Crahan, Illinois

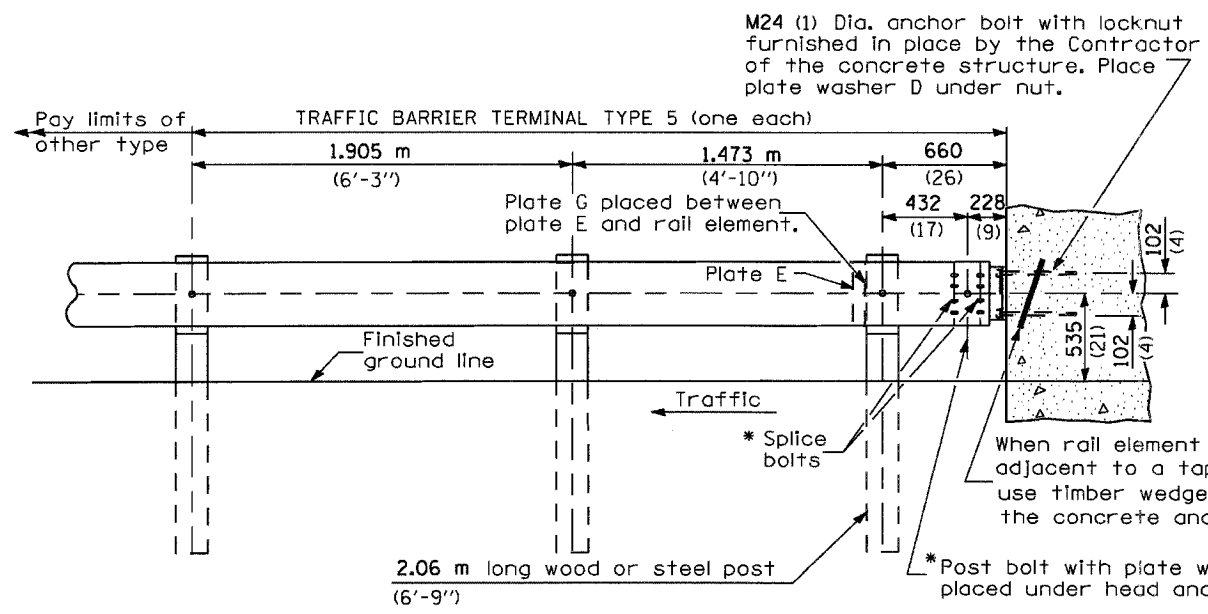
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Date: 12/06    File: 028-0076.DGN

REVISIONS	
NAME	DATE

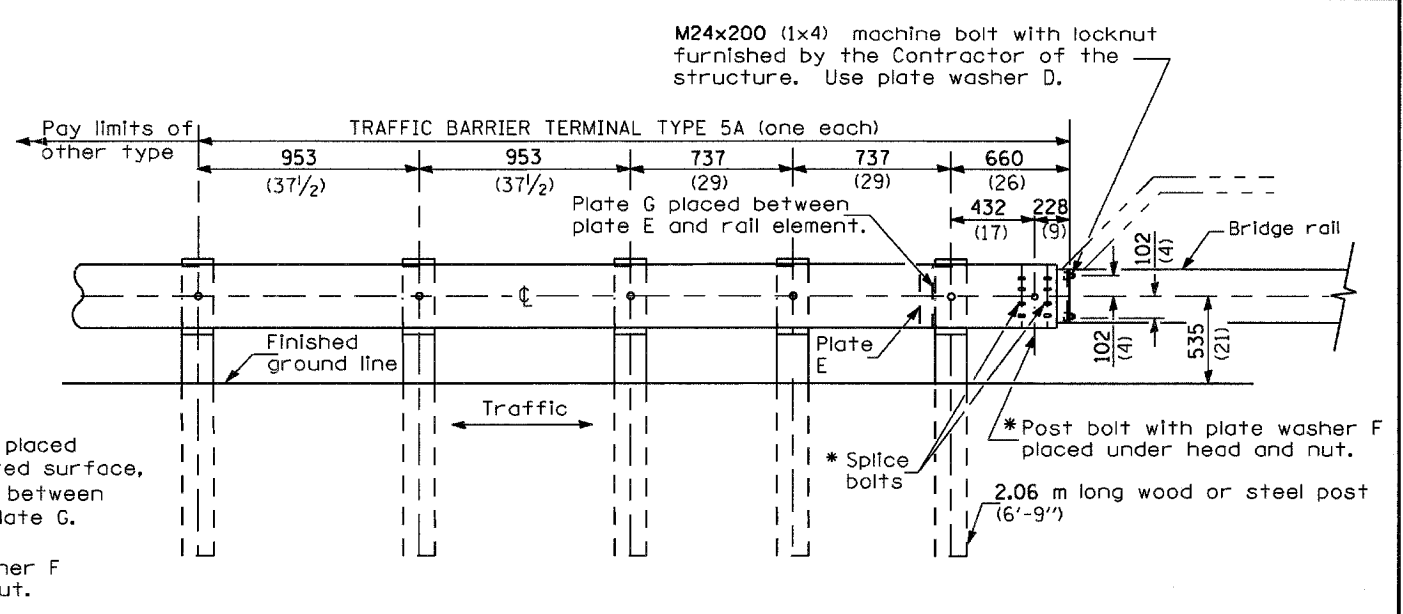
ILLINOIS DEPARTMENT OF TRANSPORTATION  
STEEL PILE DETAILS  
ILLINOIS ROUTE 14 OVER  
ANDY CREEK  
F.A.P. ROUTE 869 - SECTION 104B-2  
FRANKLIN COUNTY  
STATION 603+80.00  
STRUCTURE NO. 028-0076



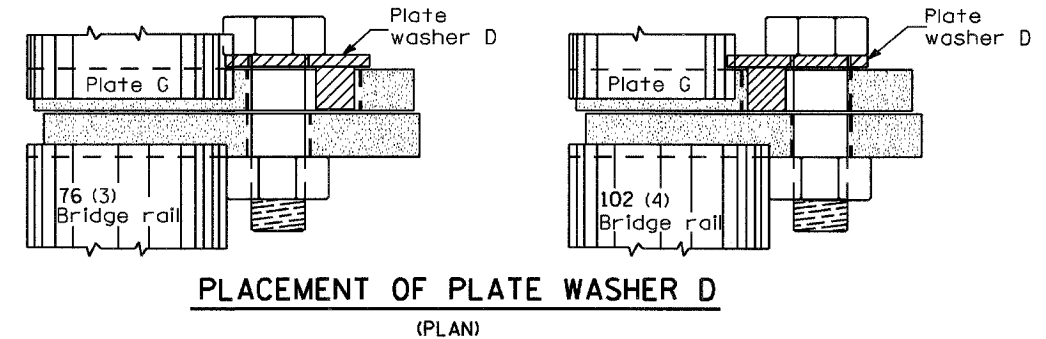
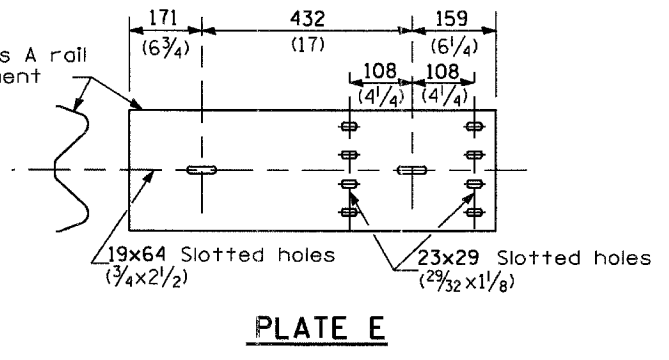
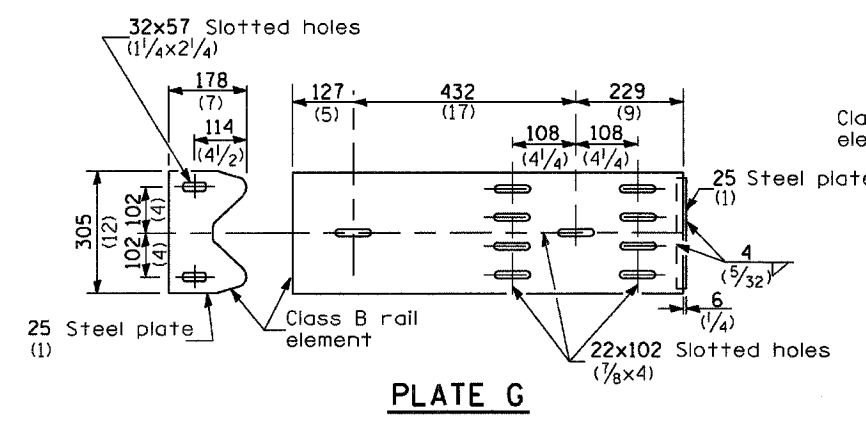




**TYPE 5 - CONCRETE BRIDGE PARAPET**



**TYPE 5A - STEEL BRIDGE RAIL**

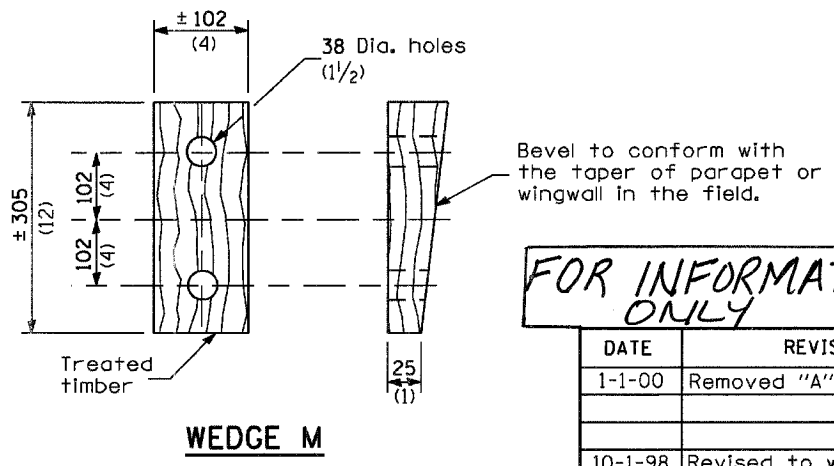
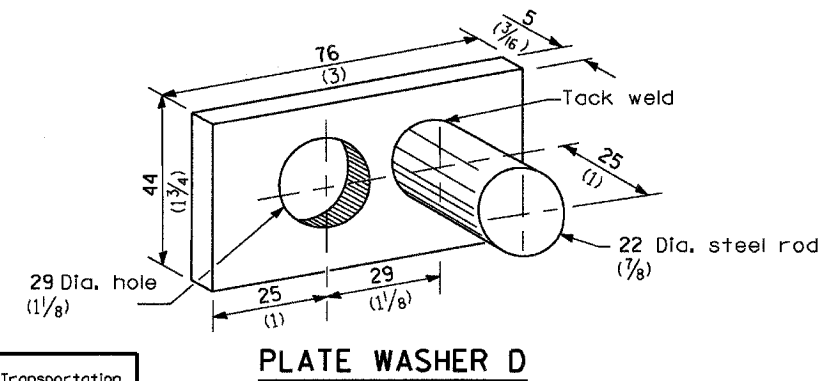


**GENERAL NOTES**

Install plate washer D so that the 25 mm (1") projection fills the remainder of the slotted holes in the 25 mm (1") end plate on plate G after the M24 (1") dia. bolts are in place.

\* Bolts shall be provided with locknut or double nut and shall be tightened only to a point that will allow plate G to be free to move when an expansion joint exists below the connector.

See Standard 630001 for details of guardrail not shown.



**FOR INFORMATION ONLY**

DATE	REVISIONS
1-1-00	Removed "A" Plates.
10-1-98	Revised to wooden block-out.

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

**TRAFFIC BARRIER TERMINAL TYPE 5 & 5A**

Illinois Department of Transportation

PASSED January 1, 2000

ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 2000

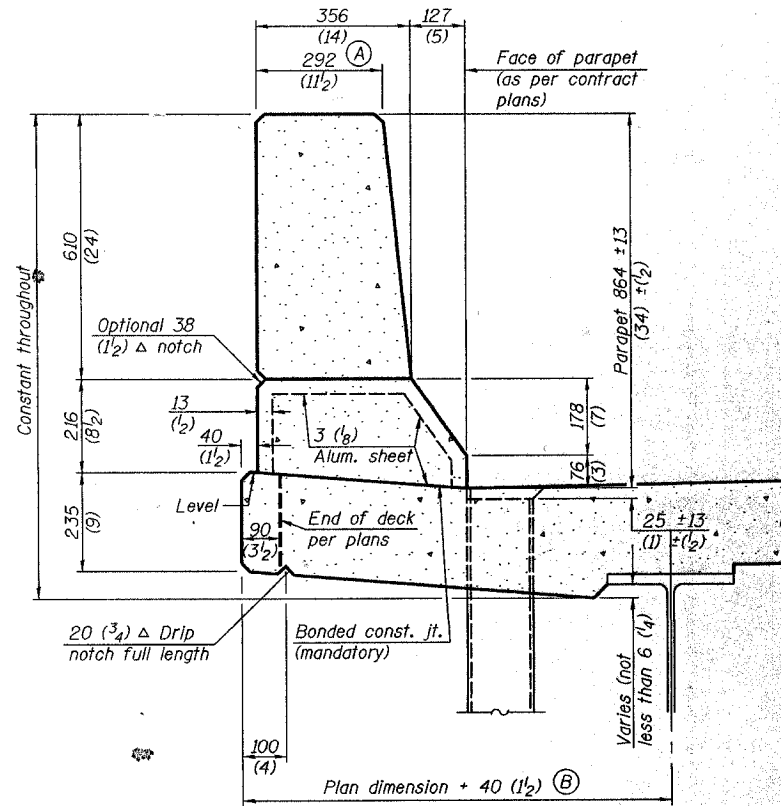
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

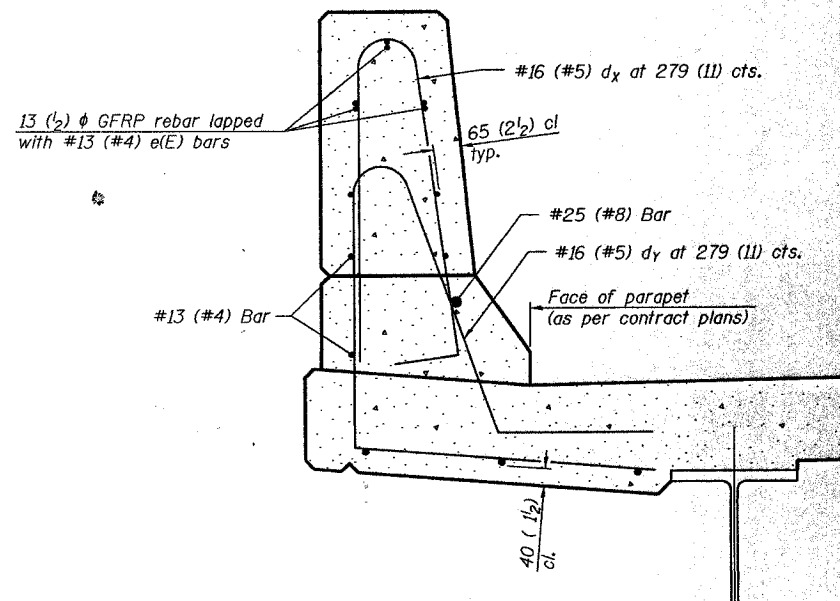
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.	SHEET NO.
F.A.P. 869	104B...	FRANKLIN	56	56B.	
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT-	

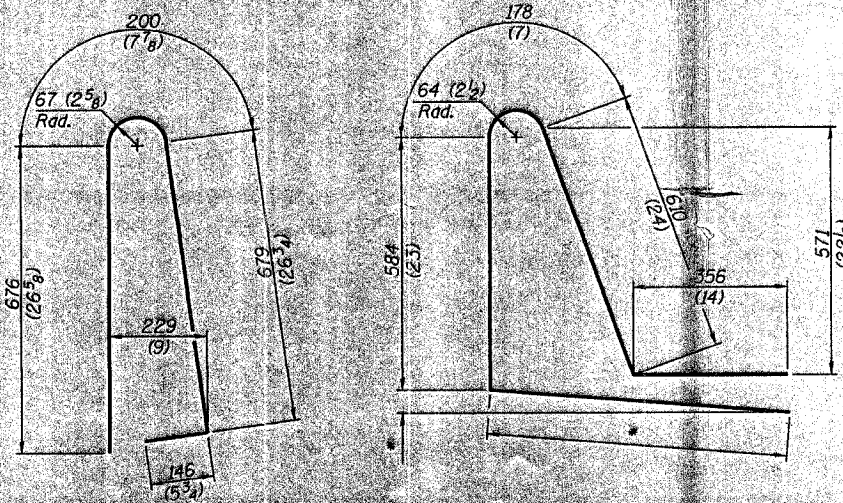
Contract # 98775



**SECTION**  
(Showing dimensions)



**SECTION**  
(Showing required reinforcement)



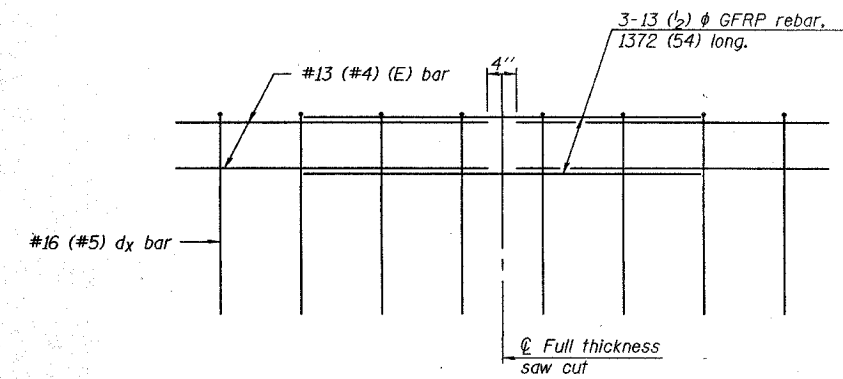
**BAR d(x)**

**BAR d(x)**

Per contract plans

**GENERAL NOTES**

All dimensions shall remain the same as shown on contract plans, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B= 0.0422 m<sup>3</sup>/m (0.165 cu. yds./ft.) of parapet. Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all other locations. Adjust/add joint locations to maintain 3 to 6 meter (10 to 20 foot) spacing.



**GFRP REBAR STIFFENING DETAIL**  
(Place as shown in parapet section)

**CONCRETE PARAPET  
SLIPFORMING OPTION**