1-18-08 Letting, Item 083

PLAN PREPARATION ENGINEER LOUIS F. STAUDER (217) 546-3400

ASSOCIATE FIELD ENGINEER JESSICA FELICIANO, P.E. (847) 705-4487

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO.	

CONTRACT NO. 83978

INDEX OF SHEETS

STANDARDS

SEE SHEET 2 FOR HIGHWAY STANDARDS LISTING

UTILITIES

AT&T
225 E. CHICAGO ST.
ELGIN, IL 60120

NICOR GAS
1844 FERRY ROAD
NAPERVILLE, IL 60563-9600

SBC ILLINOIS
255 E. CHICAGO STREET
ELGIN, IL 6120

COMMONWEALTH EDISON
#1 N 423 SWIFT ROAD
LOMBARD, IL 60148
(630) 424-5709

DESIGN FUNCTIONAL CLASSIFICATION:
OTHER PRINCIPAL ARTERIAL
DESIGN TRAFFIC: N/A (2000), 34,000 (2020)
DESIGN SPEED: 45 M.P.H.

THE CONTRACTOR SHALL NOTIFY THE KANE COUNTY D.O.T. PRIOR TO THE BEGINNING OF CONSTRUCTION

SCALES

PLAN	0'	50'
PROFILE HORIZ.	0'	50'
PROFILE VERT.	0'	5'
CROSS SECTIONS HORIZ.	0'	5'
CROSS SECTIONS VERT.	0'	5'

0 100' 200' 300' — 1"= 100'
0 10' 20' 30' — 1"= 10'
0 50' 100' — 1"= 50'
0 50' 100' — 1"= 40'
0 50' 100' — 1"= 30'
0 50' 100' — 1"= 20'

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

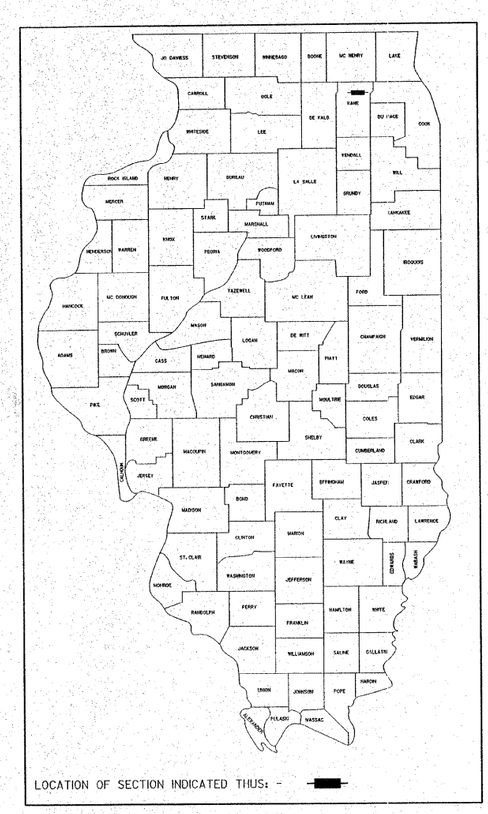
CONTRACT NO. 83978

WARNING

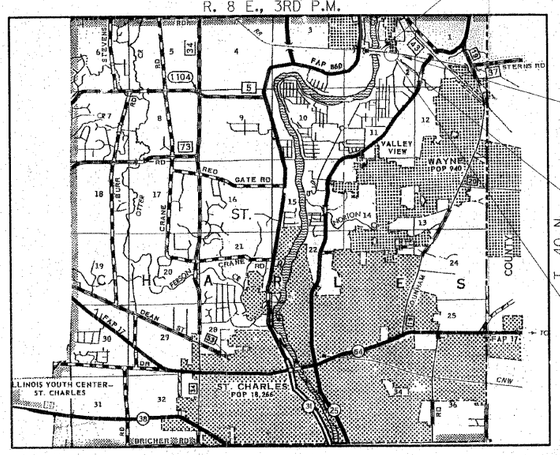
CALL J.U.L.I.E. TOLL FREE 1-800-892-0123

CALL BEFORE YOU DIG

STATE OF ILLINOIS
DEPARTMENT OF TRANSPROTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY
F.A.U. ROUTE 361 NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
SECTION 06-00214-08-BR
PROPOSED BRIDGE CONSTRUCTION
PROPOSED STRUCTURE NOS. 045-3165(WB) & 045-3167(EB)
PROJECT RS-HPP-1527(024)
KANE COUNTY
JOB NO. C-91-187-07



LOCATION OF SECTION INDICATED THUS: -



LAYOUT

0 1 MILE
APPROXIMATE SCALE:

GROSS = NET LENGTH OF SECTION = 600 FEET = 0.114 MILES
LENGTH OF STRUCTURE 045-3165(WB)= 105.83 FEET = 0.020 MILES
LENGTH OF STRUCTURE 045-3167(EB)= 185.10 FEET = 0.035 MILES
LENGTH OF PAVING = 494.17 FEET = 0.094 MILES

IMPROVEMENT ENDS STATION 593+00

IMPROVEMENT BEGINS STATION 587+00

STATION 590+18.15 - SPECIAL BRIDGE DESIGN
STEEL GIRDER BEAM BRIDGE WITH POURED CONCRETE DECK.
SINGLE SPAN @ 103'-0"
43'-10" O-O DECK; LOCAL BRIDGE SKEW = 28°20'
PROPOSED STRUCTURE NO. 045-3165

STATION 590+50.50 - SPECIAL BRIDGE DESIGN
STEEL GIRDER BEAM BRIDGE WITH POURED CONCRETE DECK.
TWO SPANS @ 77'-6 3/8",104'-8 1/8"
32'-5" O-O DECK; SKEW = 30°
PROPOSED STRUCTURE NO. 045-3167

AGENCY RESPONSIBLE FOR LETTING

Approved September 19 2007
County Engineer

Passed November 6 2007
Christopher Holt
District One Engineer of Local Roads & Streets

Releasing For Bid Based on Limited Review Nov. 7 2007
Dione O'Keefe /CH
Deputy Director of Highways, Region One Engineer

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

DATE: 9/20/2007
BY:
LICENSE EXPIRES: 11-30-07

LICENSE NO.
LICENSED PROFESSIONAL ENGINEER
LOUIS F. STAUDER
062-34227
STATE OF ILLINOIS
SEAL:

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1 DATE: 09/20/07

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	2
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978

GENERAL NOTES

SPECIFICATIONS, STANDARDS AND SPECIAL PROVISIONS

ALL WORK SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION," ADOPTED 1-1-07 (HEREINAFTER REFERRED TO AS THE STANDARD SPECIFICATIONS); THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS," ADOPTED 1-1-08; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE "DETAILS" IN THE PLANS; THE "SPECIAL PROVISIONS" AND HIGHWAY STANDARDS INCLUDED IN THE CONTRACT DOCUMENTS.

ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED AS THE LATEST STANDARD OF THE DEPARTMENT.

ALL TRAFFIC CONTROL AND OTHER ADVISORY SIGNS NEEDED FOR CONSTRUCTION ARE TO BE FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH ARTICLE 107.14 OF THE STANDARD SPECIFICATIONS.

UTILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OWNERS OF ALL UTILITIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF ALL UTILITY EQUIPMENT. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY OWNERS AS PROVIDED FOR IN THE STANDARD SPECIFICATIONS IF UTILITY RELOCATION, ADJUSTMENT OR PROTECTION IS NECESSARY.

THE LOCATION ON THE PLANS OF EXISTING DRAINAGE STRUCTURES, TELEPHONE LINES, ELECTRIC LINES AND WATER SERVICE LINES ARE APPROXIMATE AND THEIR EXACT LOCATION IS TO BE DETERMINED IN THE FIELD AS INCIDENTAL TO THE CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER. THIS WORK SHALL BE THE CONTRACTOR'S EXPENSE.

STAKING

THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL SECTION OR SUBSECTION MONUMENTS, PROPERTY CORNERS AND REFERENCE MARKERS UNTIL THE OWNER, HIS AGENT OR A PROFESSIONAL LAND SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATIONS.

SEEDING & EROSION CONTROL MEASURES

THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AND EASEMENTS AS INDICATED ON THE SEEDING PLAN AND AS DIRECTED BY THE ENGINEER. SEEDING TYPE IS INDICATED ON THE SEEDING PLAN.

EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AS SHOWN IN THE EROSION CONTROL PLAN AND SPECIAL PROVISIONS.

TREE REMOVAL

ALL TREE REMOVAL IS TO BE COMPLETED BY OTHERS PRIOR TO BEGINING THIS PROJECT. SEE ACCESS ROAD PLAN SHEET FOR THE PRESERVATION AREA.

MISCELLANEOUS

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE ENGINEER SHALL NOTIFY THE KANE COUNTY D.O.T. 48 HOURS BEFORE CONSTRUCTION EEGINS.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE ENGINEER SHALL NOTIFY THE U.S. ARMY CORP OF ENGINEERS 48 HOURS BEFORE ANY CHANNEL OR INSTREAM WORK OCCURS.

ALL CLEARING AND GRUBBING AND REMOVAL OF EXISTING DRAINAGE STRUCTURES ENCOUNTERED UNLESS OTHERWISE INDICATED, ARE TO BE INCLUDED IN THE UNIT PRICE BID FOR EARTH EXCAVATION.

THE FOLLOWING APPLICATION RATES HAVE BEEN USED TO DETERMINE PLAN QUANTITIES:

STONE RIPRAP	1.75 TON/CU YD
POROUS GRANULAR EMBANKMENT	2.00 TON/CU YD
AGGREGATE BASE COURSE	2.05 TON/CU YD
HOT-MIX ASPHALT	112 LBS/SQ YD/IN

THE EXISTING 36" CULVERT PIPES USED FOR TEMPORARY ACCESS ARE TO BE REMOVED AND ADJACENT STREAM TO BANKS TO BE RESTORED AS DIRECTED BY THE ENGINEER.

HIGHWAY STANDARDS

000001-05	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
280001-04	TEMPORARY EROSION CONTROL SYSTEM
515001-02	NAME PLATE FOR BRIDGES
701901	TRAFFIC CONTROL DEVICES
BLR 21-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS.

MIXTURE REQUIREMENTS		
LOCATON	AC TYPE	AIR VOIDS
HMA BASE COURSE,(HMA BINDER IL-19mm), N50, 4"	PG 64-22*	4% @50 GYR

THE UNIT WEIGHT USED TO CALCULATE ALL HOT-MIX ASPHALT SURFACE MIXTURE QUANTITIES IS 112 LBS/SQ. YD./IN.
*WHEN RAP EXCEEDS 20%, THE NEW ASPHALT BINDER IN THE MIX SHALL BE PG 58-22

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3065 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1		DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

GENERAL NOTES & HIGHWAY STANDARDS
SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

DATE: 13-Sep-07 15:08
FILE: P:\12\12050077\Cad\Phase II\dwg\05077-sht-notes.dgn

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. R. 361	06-00214 -08-BR	KANE	50	3
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO.	

CONTRACT NO. 83978

SUMMARY OF QUANTITIES

CODE #	ITEM	UNIT	TOTAL	CONSTRUCTION CODE: ROADWAY STA. 587+00 TO STA. 593+00	CONSTRUCTION CODE: BRIDGE STR.NO. 045-3165	CONSTRUCTION CODE: BRIDGE STR.NO. 045-3167
				I000	X071-2A	X071-2A
20200100	EARTH EXCAVATION	CU YD	1373	1373		
20400800	FURNISHED EXCAVATION	CU YD	1206	1206		
^ 20700300	POROUS GRANULAR EMBANKMENT, SPECIAL	TON	789		419	370
25000210	SEEDING, CLASS 2A	ACRE	0.11	0.11		
25000310	SEEDING, CLASS 4	ACRE	2.23	2.23		
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	211	211		
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	211	211		
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	211	211		
25000700	AGRICULTURAL GROUND LIMESTONE	TON	4.68	4.68		
25100115	MULCH, METHOD 2	ACRE	0.11	0.11		
25100630	EROSION CONTROL BLANKET	SQ YD	7604	7604		
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	928	928		
28000400	PERIMETER EROSION BARRIER	FOOT	6785	6785		
28100205	STONE RIPRAP, CLASS A3	TON	162	162		
28100207	STONE RIPRAP, CLASS A4	TON	815		315	500
28200200	FILTER FABRIC	SQ YD	1640	277	555	808
35101400	AGGREGATE BASE COURSE, TYPE B	TON	412	412		
35501300	HOT-MIX ASPHALT BASE COURSE, 4"	SQ YD	816	816		
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	325	325		
^ 50101600	REMOVAL OF EXISTING SUPERSTRUCTURES	L SUM	1	1		
^ 50105225	PIPE CULVERT REMOVAL (SPECIAL)	FOOT	240	240		
50200100	STRUCTURE EXCAVATION	CU YD	442.6		255.0	187.6
50200300	COFFERDAM EXCAVATION	CU YD	155.0			155.0
50200500	COFFERDAMS	EACH	1			1
50300225	CONCRETE STRUCTURES	CU YD	143.0		47.4	95.6
50300255	CONCRETE SUPERSTRUCTURE	CU YD	418.4		190.4	228.0
50300260	BRIDGE DECK GROOVING	SQ YD	1033		471	562
50300265	SEAL COAT CONCRETE	CU YD	58.1			58.1
50300280	CONCRETE ENCASEMENT	CU YD	7.7		4.2	3.5
50300300	PROTECTIVE COAT	SQ YD	1388		630	758
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		0.4	0.6
50500505	STUD SHEAR CONNECTORS	EACH	3669		1314	2355
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	100060		42650	57410
^ 50800525	BAR SPLICERS, SPECIAL	EACH	146		86	60

^ SEE SPECIAL PROVISIONS
* DENOTES SPECIALTY ITEM

SUMMARY OF QUANTITIES

CODE #	ITEM	UNIT	TOTAL	CONSTRUCTION CODE: ROADWAY STA. 587+00 TO STA. 593+00	CONSTRUCTION CODE: BRIDGE STR.NO. 045-3165	CONSTRUCTION CODE: BRIDGE STR.NO. 045-3167
				I000	X071-2A	X071-2A
50901720	BICYCLE RAILING	FOOT	106		106	
^ 50901750	PARAPET RAILING	FOOT	106		106	
51201610	FURNISHING STEEL PILES HP12X63	FOOT	1090			1090
51201700	FURNISHING STEEL PILES HP12X74	FOOT	460		460	
51202305	DRIVING PILES	FOOT	1550		460	1090
51203610	TEST PILE STEEL HP12X63	EACH	3			3
51203700	TEST PILE STEEL HP12X74	EACH	2		2	
51500100	NAME PLATES	EACH	2		1	1
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	217		122	95
60100060	CONCRETE HEADWALL FOR PIPE DRAINS	EACH	5		2	3
^ 60109580	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	341		181	160
^ 67100100	MOBILIZATION	L SUM	1		1	
^ XX004981	DEGRADING ROADWAY	SQ YD	4088	4088		
^ XX005916	TEMPORARY CONCRETE BARRIER, FURNISH AND INSTALL	FOOT	180	180		
^ 40201000	AGGREGATE FOR TEMPORARY ACCESS	TON	5726	5726		
^ Z0013300	CONCRETE REMOVAL (SPECIAL)	SQ YD	95	95		
^ Z0013798	CONSTRUCTION LAYOUT	L SUM	1		1	

^ SEE SPECIAL PROVISIONS
* DENOTES SPECIALTY ITEM

ROADWAY SCHEDULE

LOCATION	H.M.A.BASE COURSE 4"	AGGREGATE BASE COURSE, TYPE B	BITUMINOUS MATERIAL PRIME COAT	AGGREGRATE FOR TEMPORARY ACCESS
	SQ YD	TON	GAL	TON
STA 587+00 TO STA 589+49.69	410	215	163	
STA 590+55.94 TO STA 593+00	406	197	162	
TEMPORARY ACCESS ROAD				5726
TOTAL	816	412	325	5726

EROSION CONTROL

LOCATION	PERIMETER EROSION BARRIER	EROSION CONTROL BLANKET
	FOOT	SQ. YD.
STA 587+00 TO STA 589+49.69	310	315
STA 590+55.94 TO STA 593+00	189	220
TEMPORARY ACCESS ROAD	6286	7722
TOTAL	6785	8257

EARTHWORK SCHEDULE

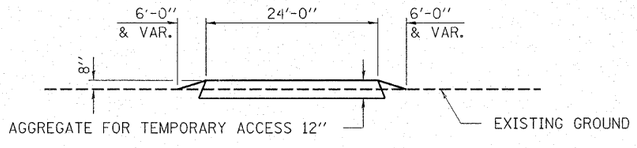
LOCATION	EARTH EXCAVATION CU.YD.	SHRINKAGE FACTOR	PERCENT USED	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE AVALIABLE* CU.YD.	EMBANKMENT REQUIRED CU.YD.	EARTHWORK BALANCE CU.YD.
MAINLINE						
STA. 587+00 TO STA. 589+49.69	233	15.00%	0.00%	0	455	-455
STA. 590+55.94 TO STA. 593+00	202	15.00%	0.00%	0	751	-751
TEMPORARY ACCESS ROAD	938	15.00%	60.00%	478	465	0
TOTAL	1373			478	1671	-1206

* AVALIABLE EXCAVATION = EARTH EXCAVATION X SHRINKAGE FACTOR X % USED

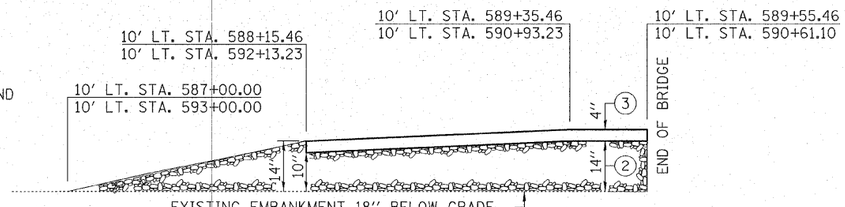
SEEDING SCHEDULE

LOCATION	TEMPORARY EROSION CONTROL SEEDING	SEEDING CLASS 2A	SEEDING CLASS 4	NITROGEN FERTILIZER NUTRIENT 90 LBS/ACRE	PHOSPHORUS FERTILIZER NUTRIENT 90 LBS/ACRE	POTASSIUM FERTILIZER NUTRIENT 90 LBS/ACRE	AGRICULTURAL GROUND LIMESTONE 2 TONS/ACRE	MULCH METHOD 2
	POUND*	ACRES	ACRES	LBS	LBS	LBS	TONS	ACRES
STA 587+00 TO STA 589+49.69	26	0.06		6	6	6	0.12	0.06
STA 590+55.94 TO STA 593+00	18	0.05		4	4	4	0.1	0.05
TEMPORARY ACCESS ROAD	884		2.23	201	201	201	4.46	
TOTAL	928	0.11	2.23	211	211	211	4.68	0.11

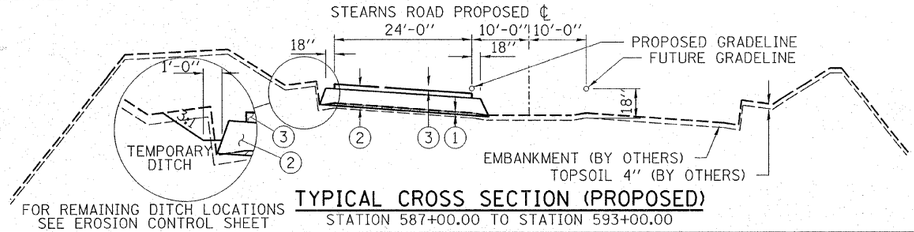
* 100 LBS/ACRE FOR 4 APPLICATIONS



TEMPORARY ACCESS ROAD



PAVING DETAIL (WB)
10' LT. ℄ STEARNS ROAD



FOR REMAINING DITCH LOCATIONS SEE EROSION CONTROL SHEET

TYPICAL CROSS SECTION (PROPOSED)
STATION 587+00.00 TO STATION 593+00.00

LEGEND

(1) EARTH EXCAVATION
(2) AGGREGATE BASE COURSE, TYPE B (14" THICKNESS)
(3) HOT-MIX ASPHALT BASE COURSE, (4" THICKNESS)

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
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3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: L.F.S.	CHECKED: L.F.S.	DRAWN: W.J.S.

SUMMARY OF QUANTITIES AND PROPOSED TYPICAL SECTION

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

DATE: 11-Oct-07 13:18
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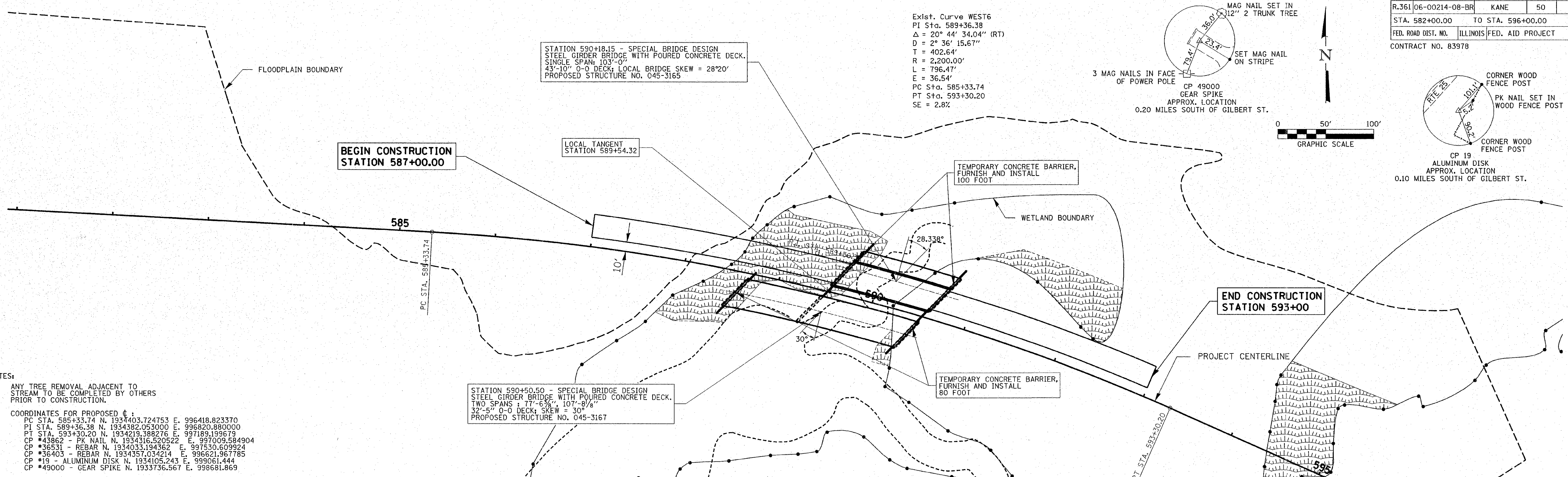
F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
R.361	06-00214-08-BR	KANE	50	4
STA. 582+00.00	TO STA. 596+00.00			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

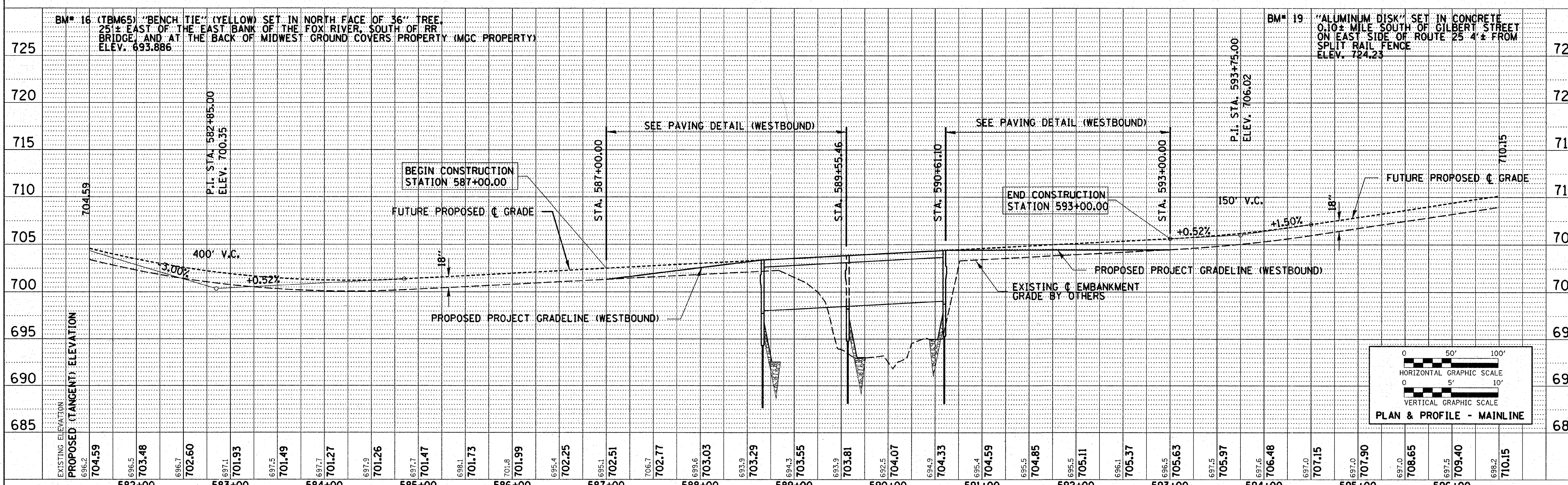
CONTRACT NO. 83978



NOTES:

ANY TREE REMOVAL ADJACENT TO STREAM TO BE COMPLETED BY OTHERS PRIOR TO CONSTRUCTION.

COORDINATES FOR PROPOSED ℄ :
PC STA. 585+33.74 N. 1934403.724753 E. 996418.823370
PI STA. 589+36.38 N. 1934382.053000 E. 996820.880000
PT STA. 593+30.20 N. 1934219.388276 E. 997189.199679
CP #43862 - PK NAIL N. 1934316.520522 E. 997009.584904
CP #36531 - REBAR N. 1934033.194362 E. 997530.609924
CP #36403 - REBAR N. 1934357.034214 E. 996621.967785
CP #19 - ALUMINUM DISK N. 1934105.243 E. 999061.444
CP #49000 - GEAR SPIKE N. 1933736.567 E. 998681.869



PLAN

PROFILE

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	5
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978

EROSION CONTROL PLAN & STORMWATER POLLUTION PREVENTION PLAN

STORM WATER POLLUTION PREVENTION PLAN

THE FOLLOWING PLAN IS ESTABLISHED AND INCORPORATED IN THE PROJECT TO DIRECT THE CONTRACTOR IN THE PLACEMENT OF EROSION CONTROL SYSTEMS AND TO PROVIDE A STORM WATER POLLUTION PREVENTION PLAN FOR COMPLIANCE UNDER NPDES.

THE PURPOSE OF THIS PLAN IS TO MINIMIZE EROSION WITHIN THE CONSTRUCTION SITE AND TO LIMIT SEDIMENTS FROM LEAVING THE CONSTRUCTION SITE BY UTILIZING PROPER EROSION CONTROL SYSTEMS AND PROVIDING GROUND COVER WITHIN A REASONABLE AMOUNT OF TIME.

CERTAIN EROSION CONTROL FACILITIES SHALL BE INSTALLED BY THE CONTRACTOR AT THE BEGINNING OF CONSTRUCTION. OTHER ITEMS SHALL BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER ON A CASE BY CASE SITUATION DEPENDING ON THE CONTRACTOR'S SEQUENCE OF ACTIVITIES, TIME OF YEAR, AND EXPECTED WEATHER CONDITIONS.

THE CONTRACTOR SHALL INSTALL PERMANENT EROSION CONTROL SYSTEMS AND SEEDING WITHIN A TIME FRAME SPECIFIED HEREIN AND AS DIRECTED BY THE ENGINEER, THEREFORE MINIMIZING THE AMOUNT OF AREA SUSCEPTIBLE TO EROSION AND REDUCING THE AMOUNT OF TEMPORARY SEEDING. THE ENGINEER WILL DETERMINE IF ANY TEMPORARY EROSION CONTROL SYSTEMS SHOWN IN THE PLAN CAN BE DELETED AND IF ANY ADDITIONAL TEMPORARY EROSION CONTROL SYSTEMS, WHICH ARE NOT INCLUDED IN THE PLAN, SHALL BE ADDED. THE CONTRACTOR SHALL PERFORM ALL WORK AS DIRECTED BY THE ENGINEER AND AS SHOWN IN THE STANDARD 280001 OF THE PLANS.

SECTION 280, TEMPORARY EROSION CONTROL, OF THE STANDARD SPECIFICATIONS ADDITIONALLY SUPPLEMENTS THIS PLAN.

SITE DESCRIPTION
DESCRIPTION OF CONSTRUCTION ACTIVITY:

1. THE PROJECT CONSISTS OF BRIDGE CONSTRUCTION FOR F.A.U. 361.
2. CONSTRUCTION INCLUDES EARTH EXCAVATION, EMBANKMENT, INSTREAM WORK, VARIOUS BRIDGE ITEMS AND OTHER MISCELLANEOUS ITEMS OF CONSTRUCTION.

DESCRIPTION OF INTENDED SEQUENCE FOR MAJOR CONSTRUCTION ACTIVITIES WHICH WILL DISTURB SOILS FOR MAJOR PORTIONS OF THE CONSTRUCTION SITE:

1. PLACEMENT OF TEMPORARY EROSION CONTROL, SUCH AS PERIMETER EROSION BARRIER, TEMPORARY DITCH CHECKS, MAINTENANCE OF EROSION CONTROL AND PLACEMENT OF TEMPORARY SEEDING AS NEEDED DURING CONSTRUCTION.
2. EXCAVATION AND EMBANKMENT WILL BE COMPLETED ALONG THE JOB SITE TO GRADE OUT FOR THE PROPOSED ROADWAY WIDENING.
3. INSTALL COFFERDAMS TO DIVERT FLOW AROUND BRIDGE CONSTRUCTION.
4. BRIDGE CONSTRUCTION
5. CONSTRUCT FINAL EMBANKMENT DITCHES.
6. PLACEMENT OF PERMANENT EROSION CONTROL, SUCH AS RIPRAP, AND SEEDING, ETC.
7. REMOVAL OF TEMPORARY EROSION CONTROL.

AREA OF CONSTRUCTION SITE:

THE TOTAL AREA OF THE CONSTRUCTION SITE IS ESTIMATED TO BE 0.77 ACRES OF WHICH 0.77 ACRES WILL BE DISTURBED BY EXCAVATION, GRADING, AND OTHER ACTIVITIES.

OTHER REPORTS, STUDIES AND PLANS WHICH AID IN THE DEVELOPMENT OF THE STORM WATER POLLUTION PREVENTION PLAN AS REFERENCED DOCUMENTS:

1. INFORMATION OF THE SOILS AND TERRAIN WITHIN THE SITE WAS OBTAINED FROM TOPOGRAPHIC SURVEYS AND SOIL BORINGS THAT WERE UTILIZED FOR THE DEVELOPMENT OF THE PROPOSED TEMPORARY EROSION CONTROL SYSTEMS.
2. PROJECT PLAN DOCUMENTS, SPECIFICATIONS AND SPECIAL PROVISIONS, AND PLAN DRAWINGS INDICATING DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER GRADING ACTIVITIES WERE UTILIZED FOR THE PROPOSED PLACEMENT OF THE TEMPORARY EROSION CONTROL SYSTEMS.

DRAINAGE TRIBUTARIES AND SENSITIVE AREAS RECEIVING RUNOFF FROM THIS CONSTRUCTION SITE:

1. BREWSTER CREEK

CONTROLS - EROSION CONTROLS AND SEDIMENT CONTROL

DESCRIPTION OF STABILIZATION PRACTICES AT THE BEGINNING OF CONSTRUCTION:

1. THE DRAWINGS, SPECIFICATIONS AND SPECIAL PROVISIONS WILL ENSURE THAT EXISTING VEGETATION IS PRESERVED WHERE ATTAINABLE AND DISTURBED PORTIONS OF THE SITE WILL BE STABILIZED. STABILIZATION PRACTICES INCLUDE: TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, PROTECTION OF TREES, PRESERVATION OF MATURE VEGETATION, AND OTHER APPROPRIATE MEASURES AS DIRECTED BY THE ENGINEER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

   (a.) AREAS OF EXISTING VEGETATION (WOOD AND GRASSLANDS) OUTSIDE THE PROPOSED CONSTRUCTION LIMITS SHALL BE IDENTIFIED BY THE ENGINEER FOR PRESERVING AND SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES.

   (b.) DEAD, DISEASED, OR UNSUITABLE VEGETATION WITHIN THE SITE SHALL BE REMOVED AS DIRECTED BY THE ENGINEER, ALONG WITH REQUIRED TREE REMOVAL.

   (c.) AS SOON AS REASONABLE ACCESS IS AVAILABLE TO ALL LOCATIONS WHERE WATER DRAINS AWAY FROM THE PROJECT, TEMPORARY DITCH CHECKS, INLET AND PIPE PROTECTION, AND PERIMETER EROSION BARRIER SHALL BE INSTALLED AS CALLED OUT IN THIS PLAN AND DIRECTED BY THE ENGINEER.

   (d.) BARE AND SPARSELY VEGETATED GROUND IN HIGH ERODIBLE AREAS AS DETERMINED BY THE ENGINEER SHALL BE TEMPORALLY SEEDED AT THE BEGINNING OF CONSTRUCTION WHERE NO CONSTRUCTION ACTIVITIES ARE EXPECTED WITHIN SEVEN DAYS. AS DIRECTED BY THE ENGINEER.

   (e.) IMMEDIATELY AFTER TREE REMOVAL IS COMPLETED, AREAS WHICH ARE HIGHLY ERODIBLE AS DETERMINED BY THE ENGINEER, SHALL BE TEMPORARILY SEEDED WHEN NO CONSTRUCTION ACTIVITIES ARE EXPECTED WITHIN SEVEN DAYS.

   (f.) AT LOCATIONS WHERE A SIGNIFICANT AMOUNT OF WATER DRAINS INTO THE CONSTRUCTION ZONE FROM OUTSIDE AREAS (ADJACENT LANDOWNERS), TEMPORARY DITCH CHECKS WILL BE UTILIZED TO LOCALLY DIVERT WATER, REDUCE FLOW RATES, AND COLLECT OUTSIDE SILTATION INSIDE THE RIGHT-OF-WAY LINE.

2. ESTABLISHMENT OF THESE TEMPORARY EROSION CONTROL MEASURES WILL HAVE ADDITIONAL BENEFITS TO THE PROJECT. DESIRABLE GRASS SEED WILL BECOME ESTABLISHED IN THESE AREAS AND WILL SPREAD SEEDS ONTO THE CONSTRUCTION SITE UNTIL PERMANENT SEEDING / MOWING AND OVERSEEDING CAN BE COMPLETED.

THIS PLAN HAS BEEN PREPARED TO COMPLY WITH THE PROVISIONS OF THE NPDES PERMIT NUMBER ILR10, ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITE ACTIVITIES.

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION. THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

COUNTY ENGINEER

SEPTEMBER, 19 2007
DATE

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1		DATE: 09/20/07
DESIGNED: T.F.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

EROSION CONTROL PLAN

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

DATE: 18-Sep-07 15:23
FILE: P:\12\12050077\Cad\Phase II\dwg\05077-sht-erosion-notes.dgn

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	6
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978

DESCRIPTION OF STABILIZATION PRACTICES DURING CONSTRUCTION:

1. DURING CONSTRUCTION, AREAS OUTSIDE THE CONSTRUCTION LIMITS AS OUTLINED PREVIOUSLY HEREIN SHALL BE PROTECTED. THE CONTRACTOR SHALL NOT USE THIS AREA FOR STAGING (EXCEPT AS DESCRIBED ON THE PLANS AND DIRECTED BY THE ENGINEER), PARKING OF VEHICLES OR CONSTRUCTION EQUIPMENT, STORAGE OF MATERIALS, OR OTHER CONSTRUCTION RELATED ACTIVITIES.

(a.) WITHIN THE CONSTRUCTION LIMITS, AREAS WHICH MAY BE SUSCEPTIBLE TO EROSION AS DETERMINED BY THE ENGINEER SHALL REMAIN UNDISTURBED UNTIL FULL SCALE CONSTRUCTION IS UNDERWAY TO PREVENT UNNECESSARY SOIL EROSION.

(b.) EARTH STOCKPILES SHALL BE TEMPORARILY SEEDED IF THEY ARE TO REMAIN UNUSED FOR MORE THAN FOURTEEN DAYS. STOCKPILES MAY NOT BE LOCATED IN THE FLOODPLAIN.

(c.) AS CONSTRUCTION PROCEEDS, THE CONTRACTOR SHALL INSTITUTE THE FOLLOWING AS DIRECTED BY THE ENGINEER:

I. PLACE TEMPORARY EROSION CONTROL FACILITIES AT LOCATIONS SHOWN ON THE PLANS.

II. TEMPORARILY SEED ERODIBLE BARE EARTH ON A WEEKLY BASIS TO MINIMIZE THE AMOUNT OF ERODIBLE SURFACE AREA WITHIN THE CONTRACT LIMITS.

III. CONSTRUCT ROADSIDE DITCHES AND PROVIDE TEMPORARY EROSION CONTROL SYSTEMS.

IV. INSTALL COFFERDAMS TO DIVERT WATER AROUND CONSTRUCTION AREAS.

V. CONTINUE BUILDING UP THE EMBANKMENT TO THE PROPOSED GRADE WHILE AT THE SAME TIME, PLACING PERMANENT EROSION CONTROL SUCH AS RIPRAP DITCH LINING AND CONDUCTING FINAL SHAPING TO THE SLOPES.

(d.) EXCAVATED AREAS AND EMBANKMENT SHALL BE PERMANENTLY SEEDED IMMEDIATELY AFTER FINAL GRADING. IF NOT, THEY SHALL BE TEMPORARILY SEEDED IF NO CONSTRUCTION ACTIVITY IN THE AREA IS PLANNED FOR 7 DAYS.

(e.) CONSTRUCTION EQUIPMENT SHALL BE STORED AND FUELED ONLY AT DESIGNATED LOCATIONS. ALL NECESSARY MEASURES SHALL BE TAKEN TO CONTAIN ANY FUEL OF OTHER POLLUTANT IN ACCORDANCE WITH EPA WATER QUALITY REGULATIONS. LEAKING EQUIPMENT OR SUPPLIES SHALL BE IMMEDIATELY REPAIRED OR REMOVED FROM THE SITE.

(f.) THE RESIDENT ENGINEER SHALL INSPECT THE PROJECT DAILY DURING CONSTRUCTION ACTIVITIES. INSPECTION SHALL ALSO BE DONE WEEKLY AND AFTER RAINS OF ½ INCH OR GREATER OR EQUIVALENT SNOWFALL AND DURING THE WINTER SHUTDOWN PERIOD. THE PROJECT SHALL ADDITIONALLY BE INSPECTED BY THE CONSTRUCTION FIELD ENGINEER ON A BI-WEEKLY BASIS TO DETERMINE THAT EROSION CONTROL EFFORTS ARE IN PLACE AND EFFECTIVE AND IF OTHER EROSION CONTROL WORK IS NECESSARY.

(g.) THE TEMPORARY EROSION CONTROL SYSTEMS SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AFTER USE IS NO LONGER NEEDED OR NO LONGER FUNCTIONING. THE COST OF THE REMOVAL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR VARIOUS TEMPORARY EROSION CONTROL PAY ITEMS.

DESCRIPTION OF STRUCTURAL PRACTICES AFTER FINAL GRADING:

1. TEMPORARY EROSION CONTROL SYSTEMS SHALL BE LEFT IN PLACE WITH PROPER MAINTENANCE UNTIL PERMANENT EROSION CONTROL IS IN PLACE AND WORKING PROPERLY AND ALL PROPOSED TURF AREAS SEEDED AND ESTABLISHED.

2. ONCE PERMANENT EROSION CONTROL SYSTEMS AS PROPOSED IN THE PLANS ARE FUNCTIONAL AND ESTABLISHED, TEMPORARY ITEMS SHALL BE REMOVED, CLEANED UP, AND DISTURBED TURF AREA SEEDED.

MAINTENANCE AFTER CONSTRUCTION:

1. CONSTRUCTION IS COMPLETE AFTER ACCEPTANCE BY I.D.O.T. & K.D.O.T. FINAL INSPECTION. MAINTENANCE UP TO THIS DATE WILL BE BY THE CONTRACTOR.

MISCELLANEOUS:

1. TEMPORARY DITCH CHECKS SHALL BE LOCATED AT EVERY 1.5 FT. FALL / RISE IN DITCH GRADE.

2. TEMPORARY EROSION CONTROL SEEDING SHALL BE APPLIED AT A RATE OF 100 LBS. / ACRE.

3. STRAW BALES, HAY BALES, PERIMETER EROSION BARRIER AND SILT FENCES WILL NOT BE PERMITTED FOR TEMPORARY OR PERMANENT DITCH CHECKS. DITCH CHECKS SHALL BE COMPOSED OF AGGREGATE, SILT PANELS, ROLLED EXCELSIOR, URETHANE FOAM / GEOTEXTILE (SILT WEDGES), AND / OR ANY OTHER MATERIAL APPROVED BY THE EROSION AND SEDIMENT CONTROL COORDINATOR.

4. SEDIMENT COLLECTED DURING CONSTRUCTION BY THE VARIOUS TEMPORARY EROSION CONTROL SYSTEMS SHALL BE DISPOSED OF ON THE SITE ON A REGULAR BASIS, AS DIRECTED BY THE ENGINEER. THE COST OF THIS MAINTENANCE SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR EARTH EXCAVATION FOR EROSION CONTROL.

5. ALL EROSION CONTROL PRODUCTS FURNISHED SHALL BE SPECIFICALLY RECOMMENDED BY THE MANUFACTURER FOR THE USE SPECIFIED IN THE EROSION CONTROL PLAN. PRIOR TO THE APPROVAL AND USE OF THE PRODUCT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A NOTARIZED CERTIFICATION BY THE PRODUCER STATING THE INTENDED USE OF THE PRODUCT AND THAT THE PHYSICAL PROPERTIES REQUIRED FOR THIS APPLICATION ARE MET OR EXCEEDED. THE CONTRACTOR SHALL PROVIDE MANUFACTURER INSTALLATION PROCEDURES TO FACILITATE THE ENGINEER IN CONSTRUCTION INSPECTION.

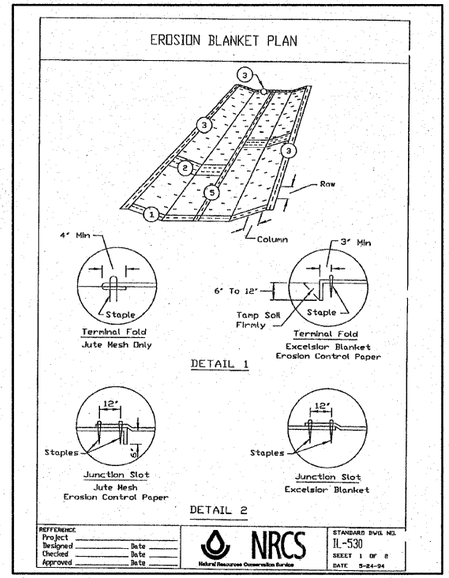
COFFERDAMS:

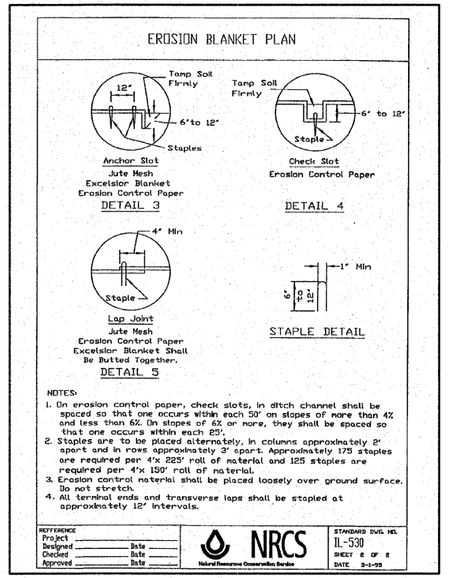
1. COFFERDAMS SHALL BE CONSTRUCTED OF NON-ERODIBLE MATERIAL AND SHALL BE CONSTRUCTED TO WITHSTAND EXPECTED HIGH FLOWS. PRIOR TO INSTALLATION OF THE COFFERDAMS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OBTAIN APPROVAL OF THE MATERIAL TO BE UTILIZED.

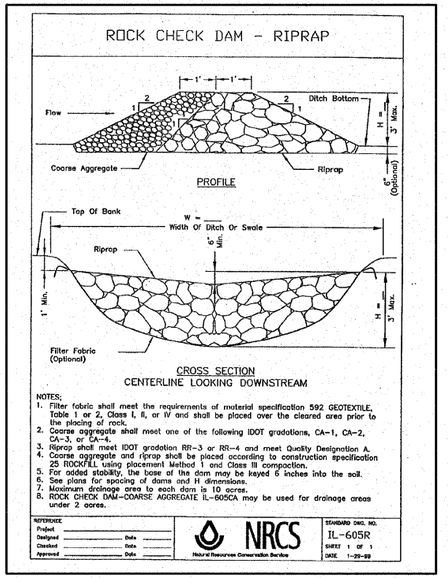
2. THE COFFERDAMS WILL BE INSTALLED TO PROHIBIT THE RELEASE OF SEDIMENT INTO THE WATERWAY.

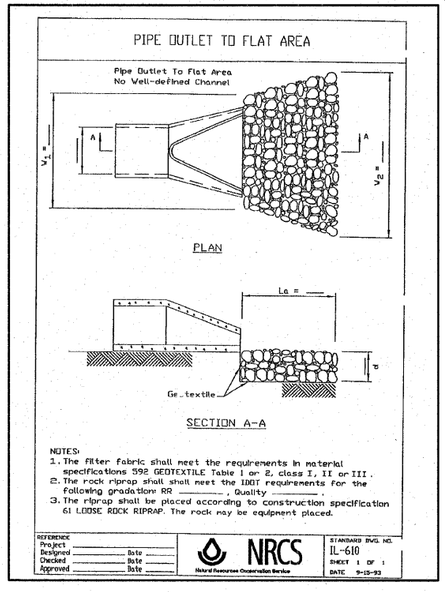
3. THE COFFERDAMS SHALL NOT BE INSTALLED IN A MANNER WHICH COMPLETELY BLOCKS FLOW IN THE STREAM OR INHIBITS MOVEMENT OF AQUATIC SPECIES.

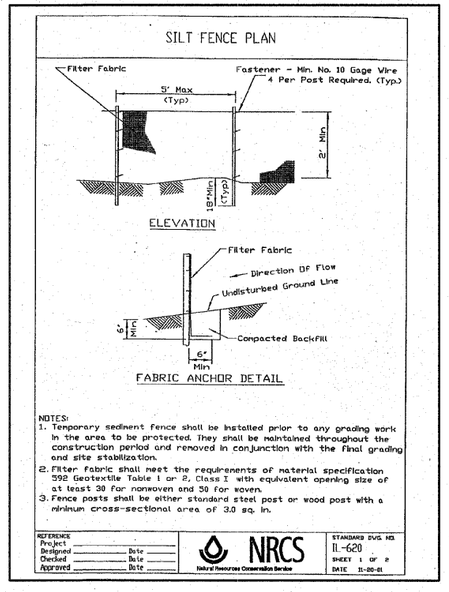
4. THE CONTRACTOR WILL NOT BE ALLOWED TO OPERATE, MOVE OR MAINTAIN CONSTRUCTION EQUIPMENT FROM THE STREAM BOTTOM.

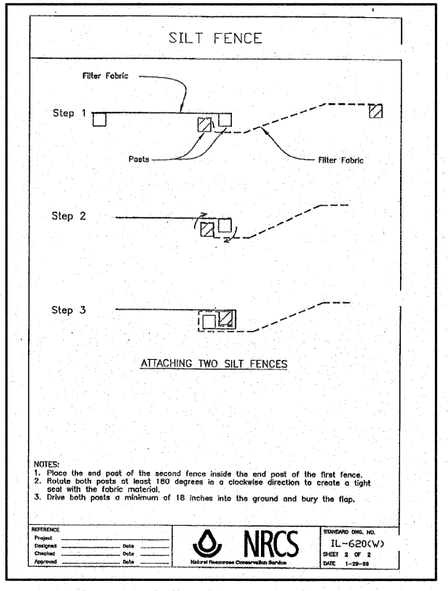












HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
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3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
DRAWN: P.J.L.	

EROSION CONTROL PLAN

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 589+50.50
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

DATE: 13-Sep-07 15:01
FILE: P:\12\12050077\Cad\Phase II\dwg\05077-sht-erosion-notes.dgn

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	7
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978

CURVE WEST6
PI STA. 589+36.38
Δ = 20° 44′ 34″ (RT)
D = 2° 36′ 15.67″
T = 402.64′
R = 2,200.00′
L = 796.47′
E = 36.54′
PC STA. 585+33.74
PT STA. 593+30.20
SE = 2.8%

TEMP. OUTLET DITCH

CONSTRUCTION LIMITS

CONSTRUCTION LIMITS

590

COFFERDAM

TEMP. OUTLET DITCH

CONSTRUCTION LIMITS

PT STA. 593+30.20

WETLAND BOUNDARY

FLOODWAY BOUNDARY

N

0 20′ 40′
GRAPHIC SCALE

LEGEND

- PERIMETER EROSION BARRIER
- SEEDING CLASS 2A, SPECIAL
- RIPRAP (SEE SHEET _ FOR LAYOUT)
- EXISTING EMBANKMENT PLACED IN WETLANDS

NOTE: ALL ITEMS SHALL BE CONSTRUCTED AS SHOWN ON STANDARD 280001 AND AS DIRECTED BY THE ENGINEER. MAINTENANCE AND CLEANING OF THE EROSION CONTROL ITEMS SHALL BE INCLUDED IN THE RESPECTIVE EROSION CONTROL PAY ITEM.

HAMPTON, LENZINI & RENWICK, INC.
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3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1		DATE: 09/13/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

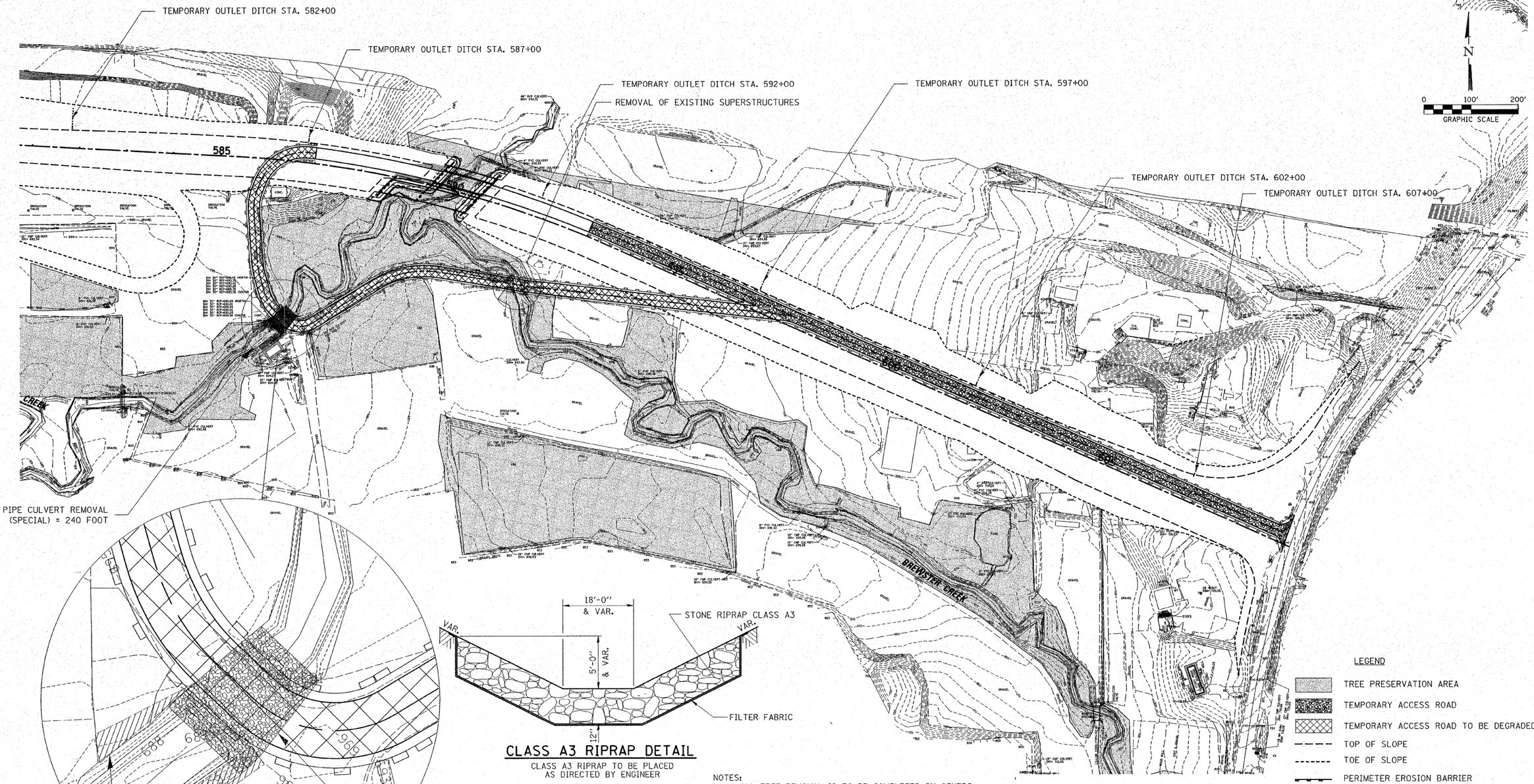
EROSION CONTROL PLAN

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 589+50.54
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

DATE: 13-Sep-07 15:03
FILE: P:\12\12050077\Cad\Phase II\dwg\05077-sht-erosion-plan.dgn

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	8
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978



CLASS A3 RIPRAP DETAIL

CLASS A3 RIPRAP TO BE PLACED AS DIRECTED BY ENGINEER

STONE RIPRAP CLASS A3 = 162 TON
EROSION CONTROL BLANKET = 110 SQ. YD.
FILTER FABRIC = 277 SQ. YD.

LEGEND

- TREE PRESERVATION AREA
- TEMPORARY ACCESS ROAD
- TEMPORARY ACCESS ROAD TO BE DEGRADED
- TOP OF SLOPE
- TOE OF SLOPE
- PERIMETER EROSION BARRIER

NOTES:

ALL TREE REMOVAL IS TO BE COMPLETED BY OTHERS PRIOR TO THE BEGINNING OF THIS PROJECT.

TEMPORARY ACCESS ROAD TO BE DEGRADED UPON COMPLETION OF BRIDGE CONSTRUCTION.

AREA OF CONCRETE REMOVAL, (SPECIAL) WILL BE GRADED, SEEDED AND STABALIZED WITH EROSION CONTROL BLANKET AS AS DIRECTED BY THE ENGINEER.

EARTH EXCAVATION REQUIRED FOR CONSTRUCTION OF RIPRAP WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE COST OF STONE RIPRAP, CLASS A3.

HAMPTON, LENZINI & RENWICK, INC.
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ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: L.F.S.	CHECKED: J.L.B.
DRAWN: TWK	

ACCESS ROAD PLAN

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

DATE: 11-Oct-07 13:03
FILE: P:\12\12050077\Cad\Phase II\dwg\05077-sht-accessroad.dgn

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-08-BR	KANE	50	9
STA. 587+00.00		TO STA. 588+50.00		
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 83978	

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

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

C = 16 SQ. FT. F = 1 SQ. FT.

702.51 | 702.16 | 702.51

3:1 S.D. 703.15

588+50.00

C = 11 SQ. FT. F = 0 SQ. FT.

703.03 | 702.00 | 703.03

3:1 S.D. 703.00

588+00.00

C = 12 SQ. FT. F = 0 SQ. FT.

702.77 | 701.57 | 702.77

3:1 2.76 S.D. 702.00 8.89

587+50.00

STA. 587+00.00 AHEAD C = 12 SQ. FT. F = 0 SQ. FT.
BACK C = 40 SQ. FT. F = 0 SQ. FT.

C = 40 SQ. FT. F = 0 SQ. FT.

702.51 | 701.40 | 702.51

S.D. 701.00 OUTLET S.D. 701.50

587+00.00

IMPROVEMENT BEGINS STA. 587+00.00

0 5' 10'
HORIZONTAL GRAPHIC SCALE
0 5' 10'
VERTICAL GRAPHIC SCALE

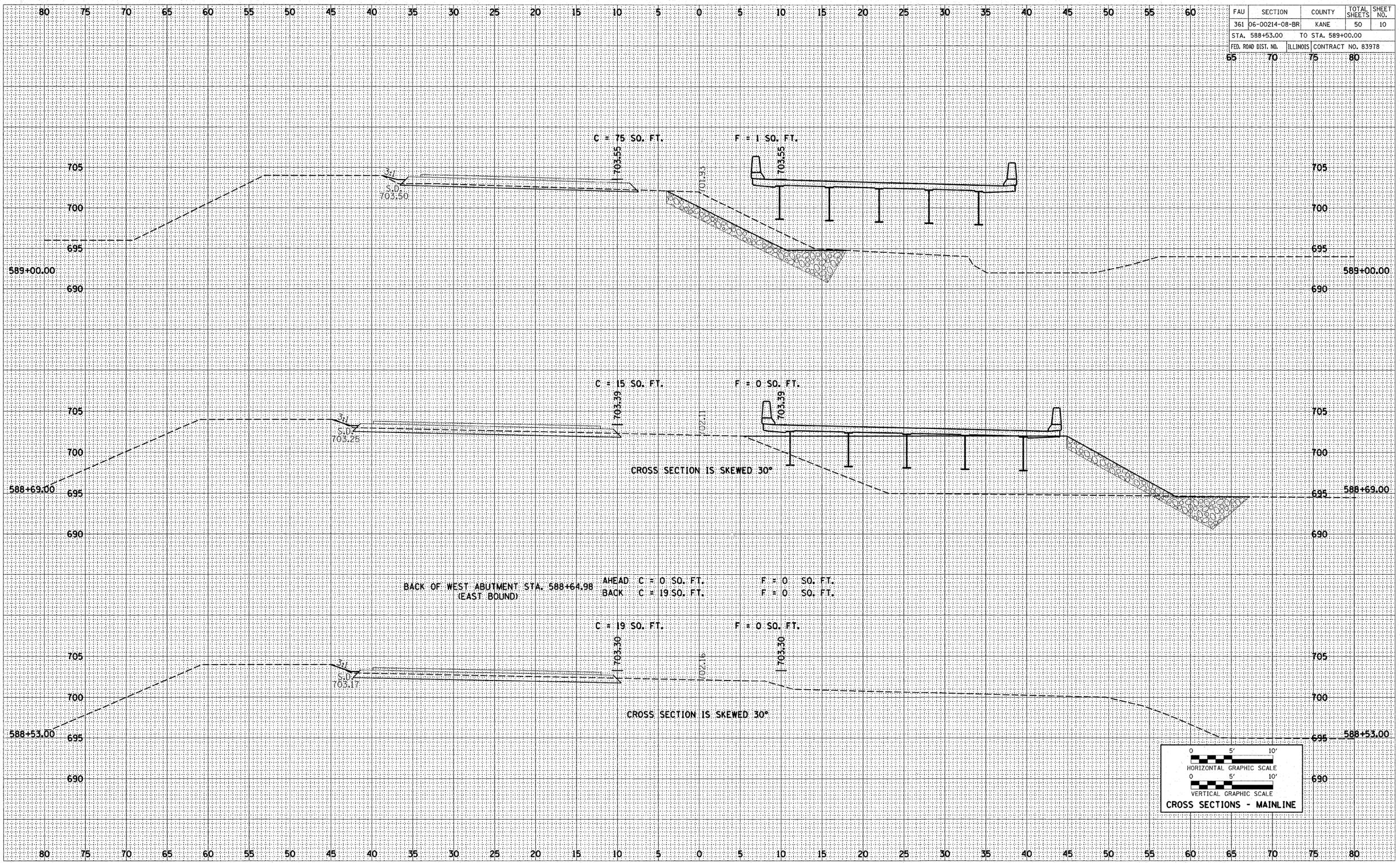
CROSS SECTIONS - MAINLINE

DATE: 13-Sep-07 15:11
FILE: P:\12\12050077\Cad\Phase II\dwg\05077-sht-sxs-soe.dgn

FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-08-BR	KANE	50	10
STA. 588+53.00		TO STA. 589+00.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 83978		

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

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



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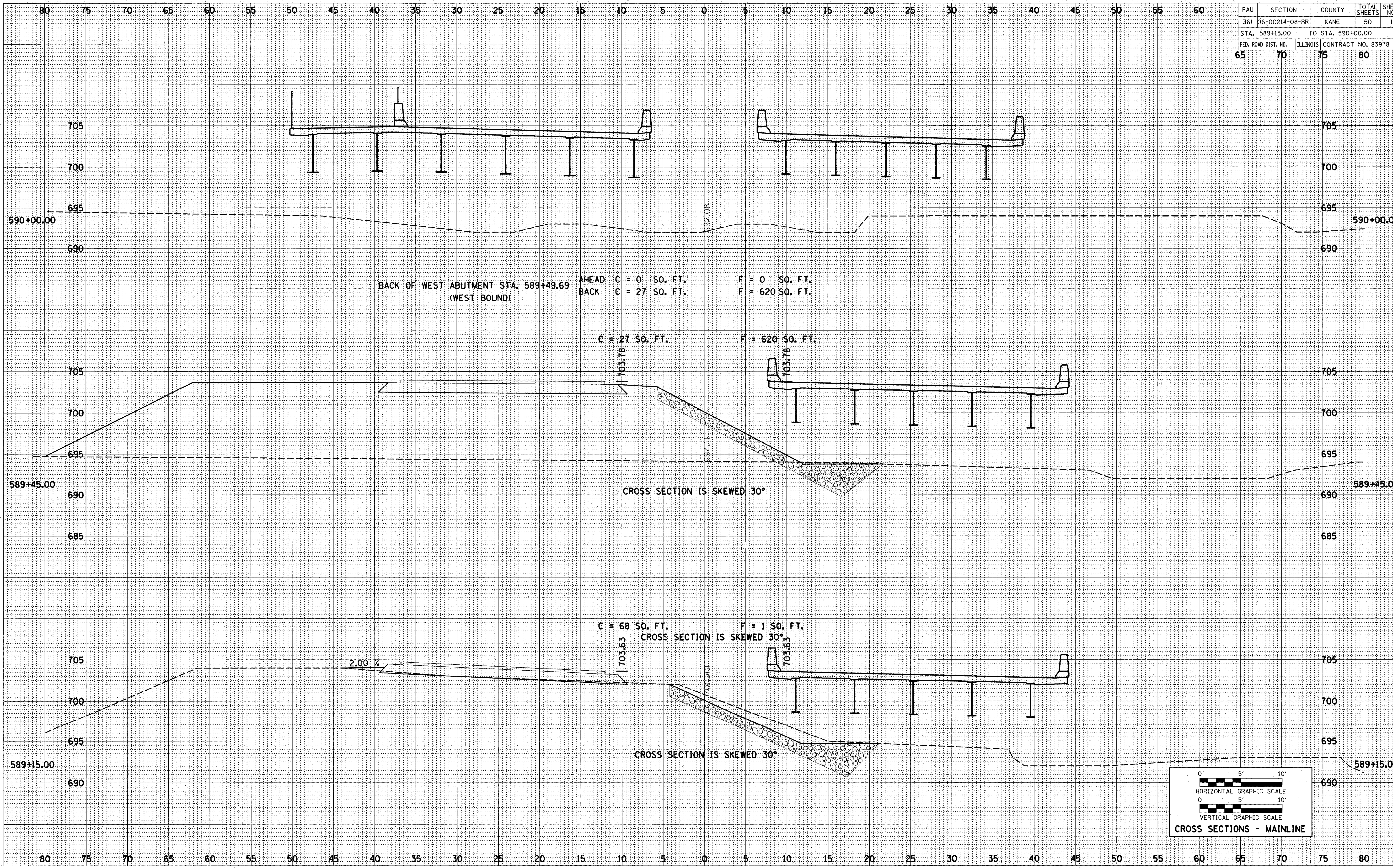
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-08-BR	KANE	50	11
STA. 589+15.00 TO STA. 590+00.00				
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 83978		



CROSS SECTIONS - MAINLINE

FINAL SURVEY / NOTE BOOK / NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

ORIGINAL SURVEY / NOTE BOOK / NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

DATE: 13-Sep-07 15:11
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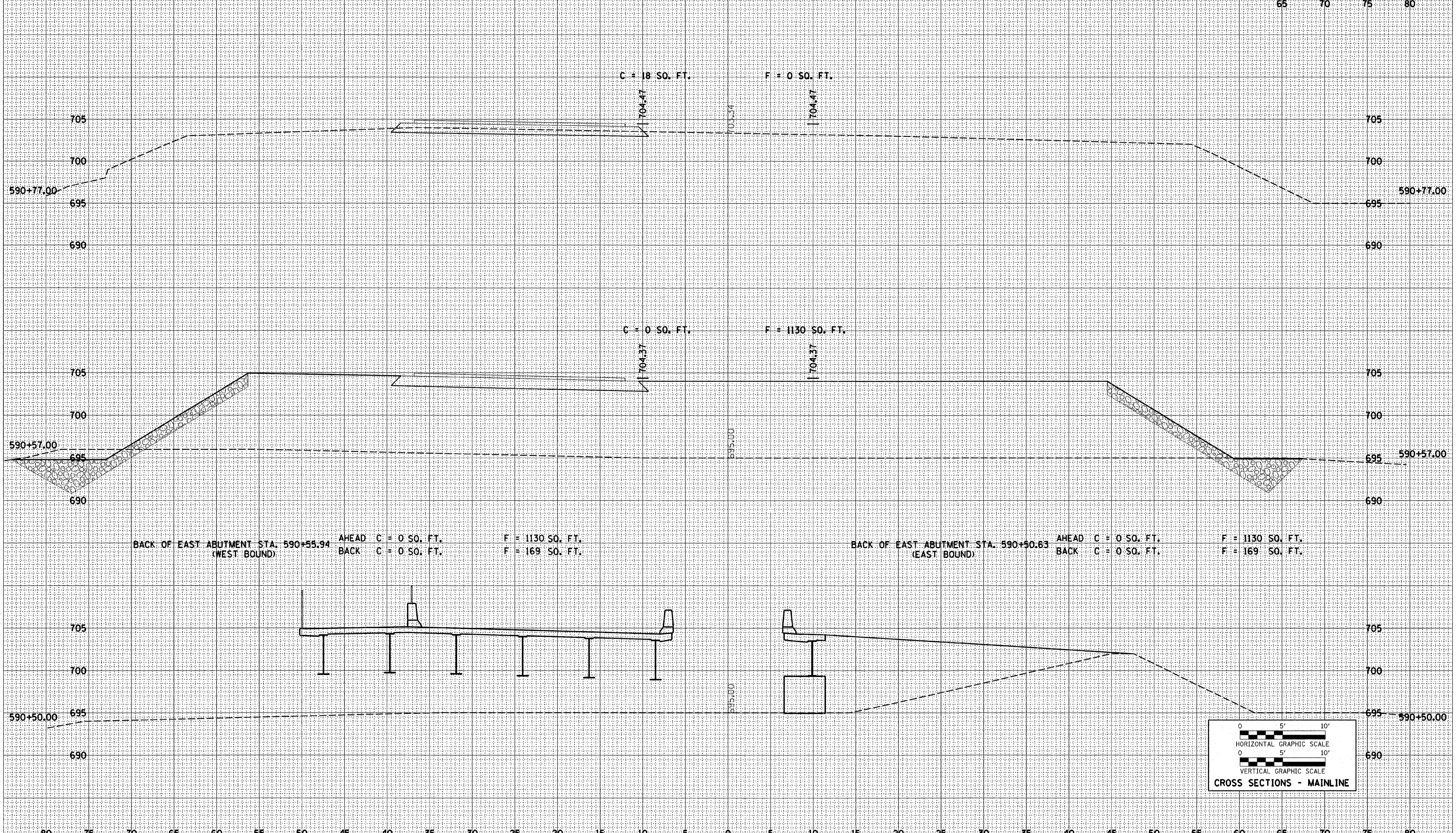
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-08-BR	KANE	50	12
STA. 590+50.00	TO STA. 590+77.00			
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 83978		



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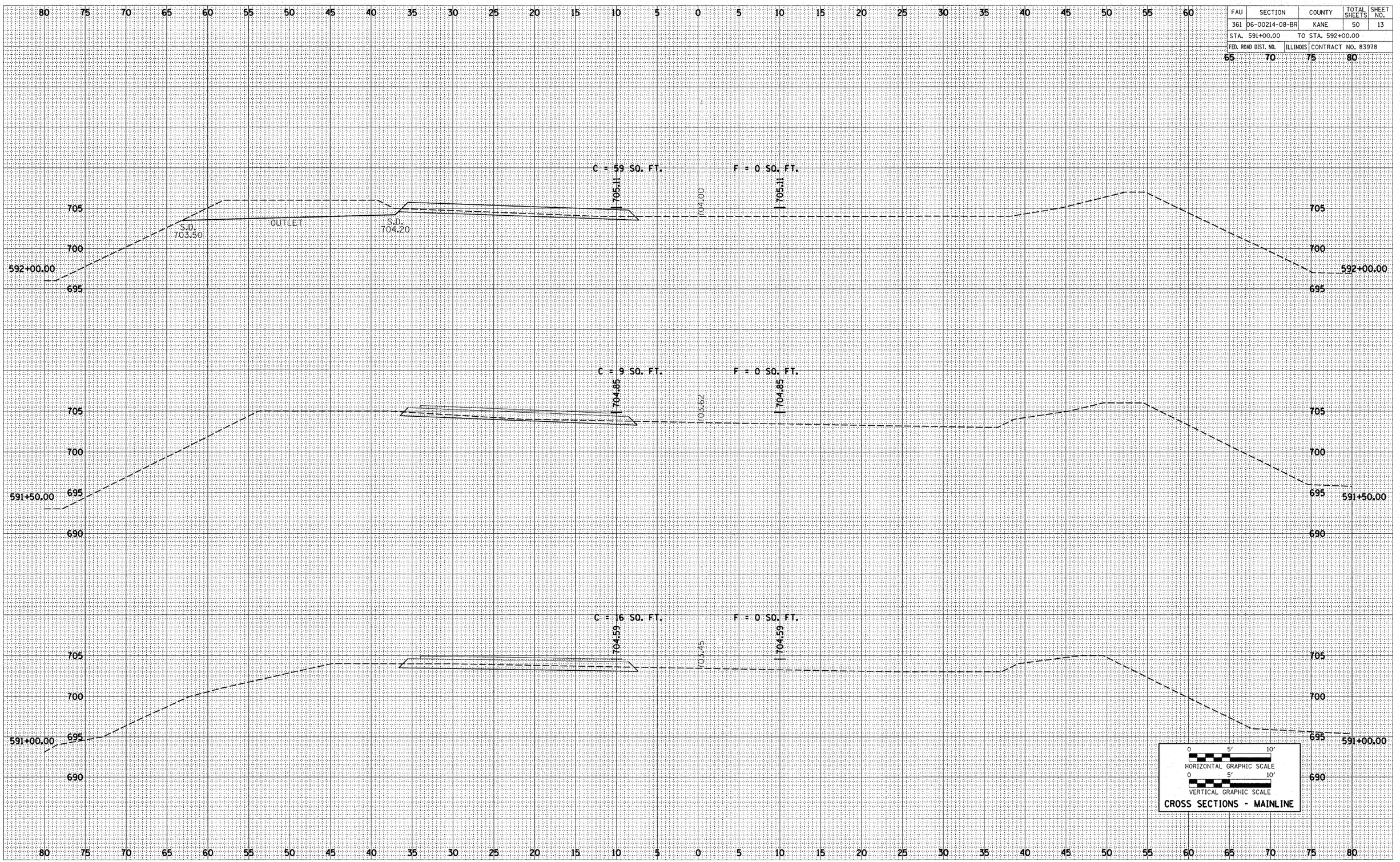
FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-08-BR	KANE	50	13
STA. 591+00.00		TO STA. 592+00.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 83978		

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

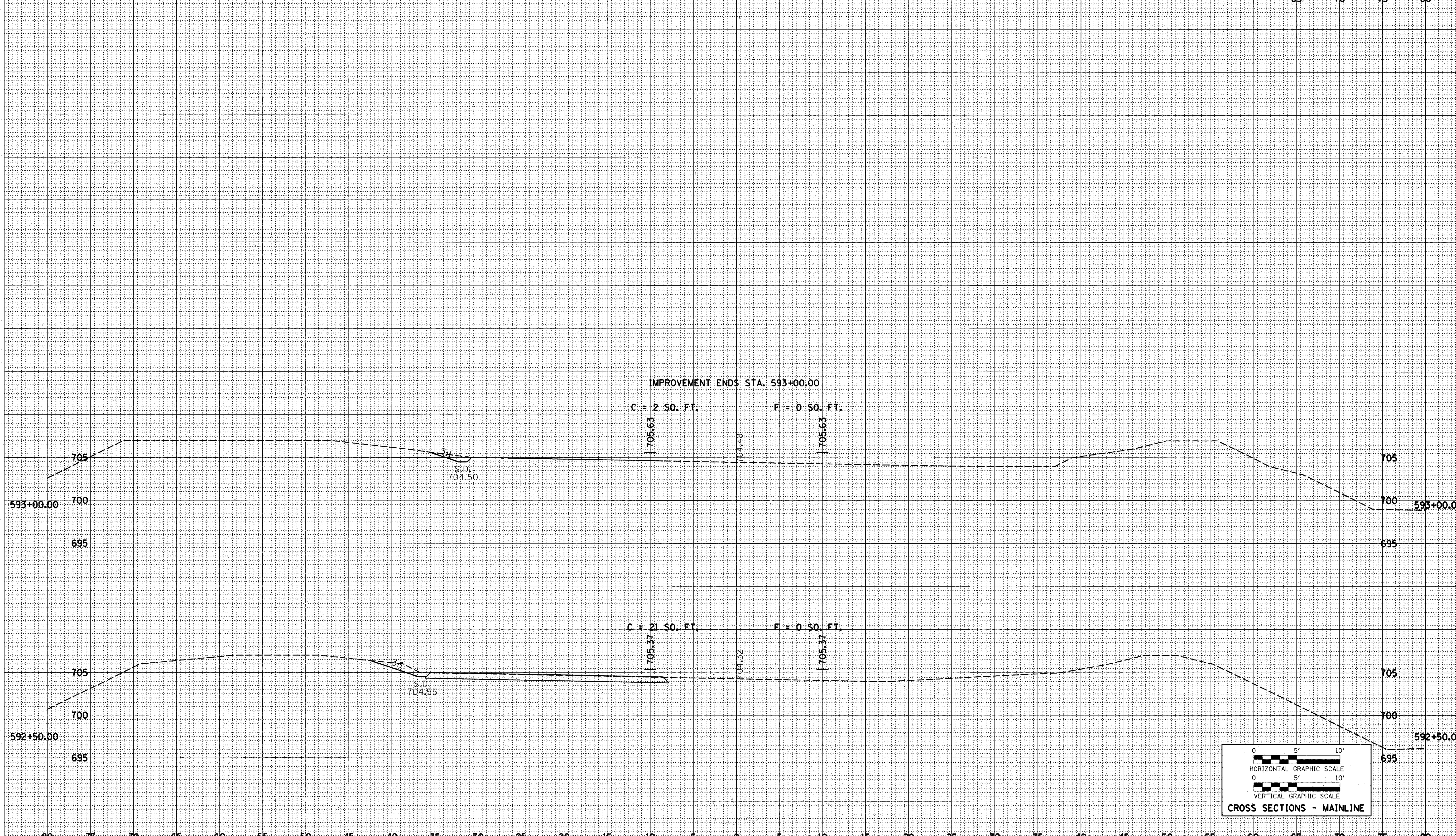
ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
NOTE BOOK	TEMPLATE AREAS	
NO.	AREAS CHECKED	



FAU	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-08-BR	KANE	50	14
STA. 592+50.00 TO STA. 593+00.00				
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 83978		

FINAL SURVEY NOTE BOOK NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

ORIGINAL SURVEY NOTE BOOK NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE



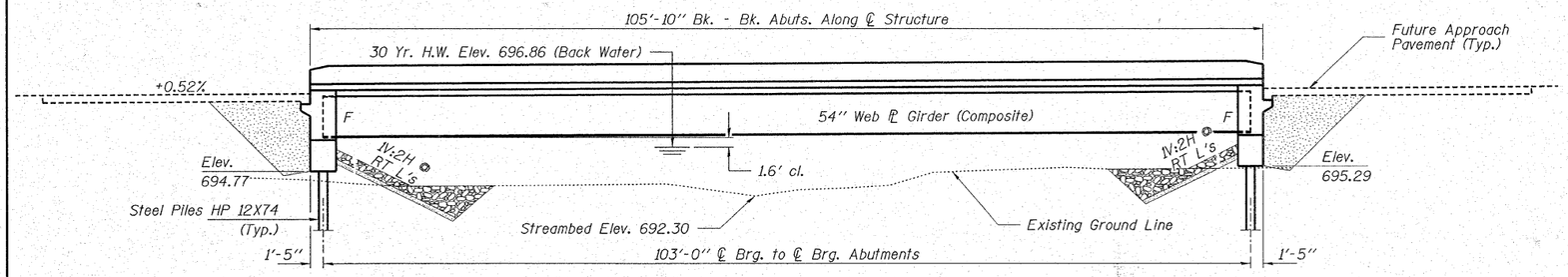
CROSS SECTIONS - MAINLINE

Bench Mark: 16 (TMB 65) "Bench Tie" (yellow) set in north face of 36" tree, 25'± east of the east bank of the Fox River, south of RR bridge and at the back of Midwest Ground Covers Property (MGC property). Elev. 693.886

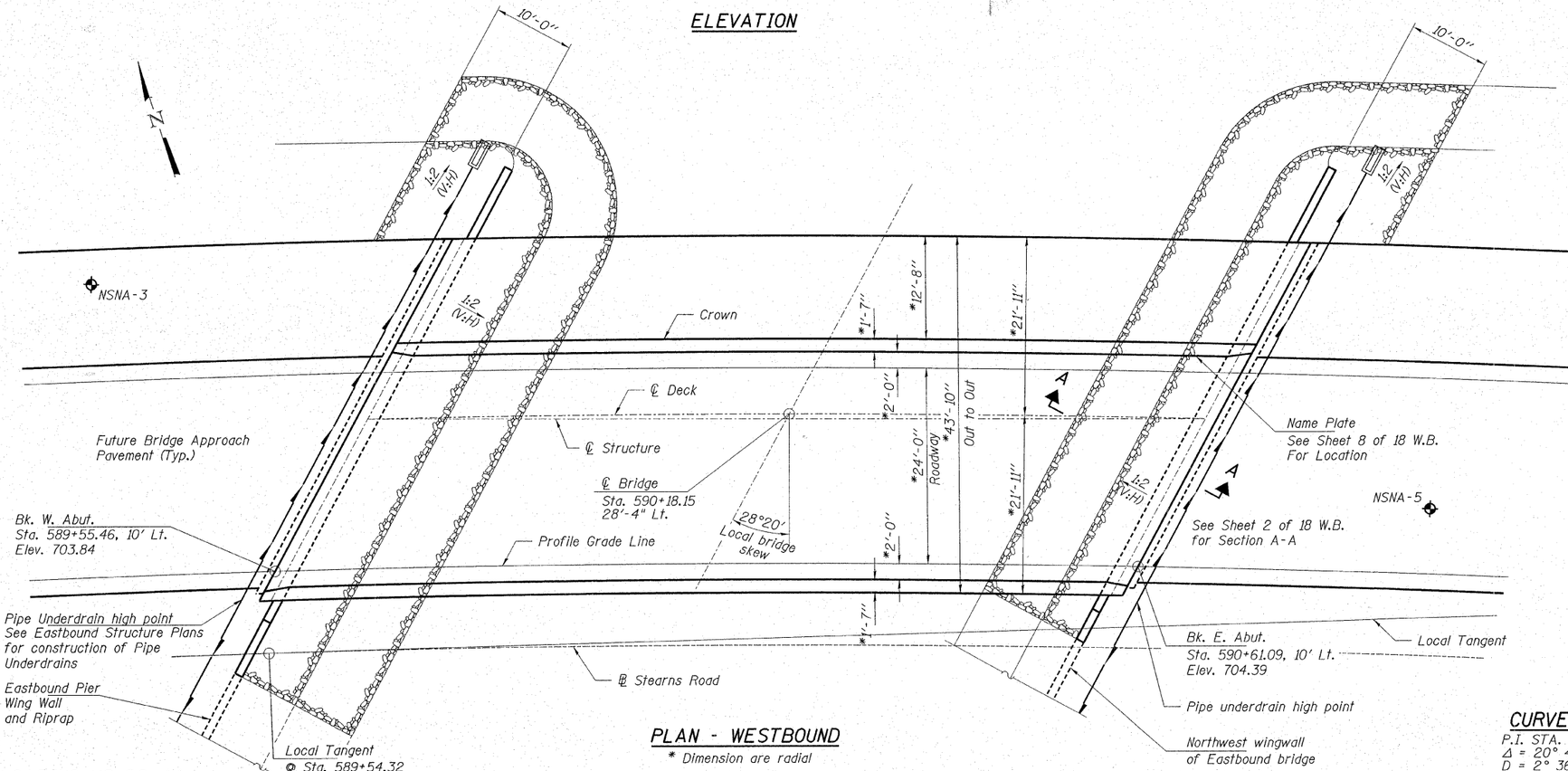
Existing Structure: None

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	15
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 1 of 18 W.B.



ELEVATION



PLAN - WESTBOUND

* Dimension are radial

LOADING HS 20-44

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

DESIGN SPECIFICATIONS

2002 AASHTO

DESIGN STRESSES

f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinforcement)
fy = 50,000 p.s.i. (Structural Steel) (M270 GR. 50 W)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.037g
Site Coefficient (S) = 1.0

WATERWAY INFORMATION

Drainage Area = 2.106 Sq. Mi. Low Grade Elev. 702.7 @ Sta. 556+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	80	N/A	205.8/323.1	696.29	N/A	0.01	N/A	696.30
Design	30	100	N/A	261.5/450.5	696.86	N/A	0.02	N/A	696.88
	50	116	N/A	315.8/539.9	697.40	N/A	0.01	N/A	697.41
Base	100	134	N/A	364.7/585.3	697.82	N/A	0.02	N/A	697.84
Overtopping	>500	376	N/A	427.3/621.8	N/A	N/A	N/A	N/A	702.70
Max. Calc.	500	179	N/A	425.8/621.8	698.62	N/A	0.02	N/A	698.64

Note:
Waterway Information Table provided by Christopher B. Burke Engineering, LTD. 07/16/07

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

10-12-07
ILLINOIS STRUCTURAL NO. 081-5011

LICENSED STRUCTURAL ENGINEER
JEFFREY L. BANE
081-5011
SPRINGFIELD, IL
STATE OF ILLINOIS

Expires 11-30-08

INDEX OF STRUCTURE SHEETS

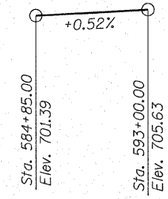
BREWSTER CREEK
BUILT 200_ BY
KANE COUNTY
SEC. 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
F.A. PROJ. BRM-000
STR. NO. 045-3165 LOADING HS 20

NAME PLATE

See Std. 515001

DESIGN SCOUR ELEVATION TABLE

	W. Abut.	E. Abut.
Design Scour Elevation (ft.)	688.66	686.61

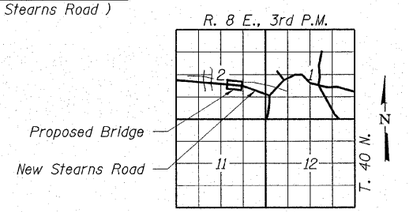


PROFILE GRADE

(New Stearns Road)

CURVE DATA

P.I. STA. 589+36.38
Δ = 20° 44' 34.04" (RT)
D = 2° 36' 15.67"
T = 402.64'
R = 2,200.00'
L = 796.46'
E = 36.54'
P.C. STA. 585+33.74
P.T. STA. 593+30.20
S.E. = 0.028'/'



LOCATION SKETCH

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
DRAWN: P.J.L.	

GENERAL PLAN AND ELEVATION

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	16
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT=	

CONTRACT NO. 83978 Sheet 2 of 18 W.B.

GENERAL NOTES

Fasteners shall be high strength bolts AASHTO M164, Type 3 in unpainted areas and mechanically galvanized AASHTO M 164, Type 1 or 2 in painted areas. Bolts $\frac{7}{8}$ in. ϕ, open holes $\frac{15}{16}$ in. ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 122,170 lbs.

All structural steel shall be AASHTO M 270 Grade 50W.

Structural steel shall only be painted at the ends of the beams, for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Those areas shall be primed in the shop with a Department approved zinc rich primer. No field painting shall be required. All structural steel shall be cleaned as specified in the special provision for "Surface Preparation and Painting Requirements for Weathering Steel".

No field welding is permitted

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flange and web.

Slipforming of the Parapets is not allowed.

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

Reinforcement bar designated (E) shall be epoxy coated.

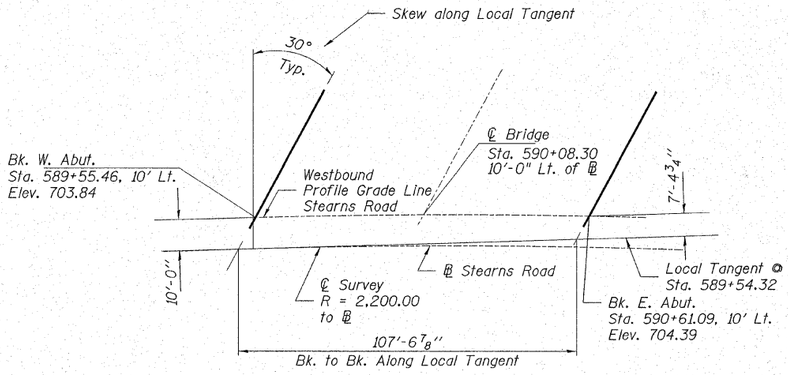
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within an $\frac{1}{8}$ in. tolerance. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two $\frac{1}{8}$ in. adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

The embankment configuration shown shall be the minimum embankment that must be placed and compacted prior to construction of the abutments.

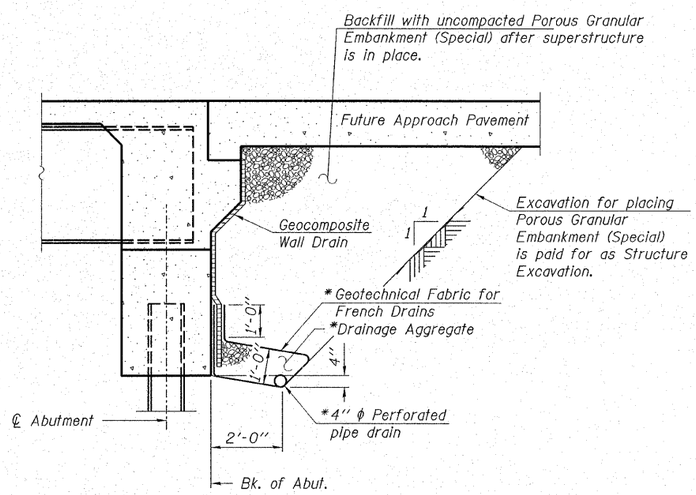
Layout of the slope protection system may be varied to suit ground conditions in the field

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.

All proposed construction activity shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.



OFFSET SKETCH

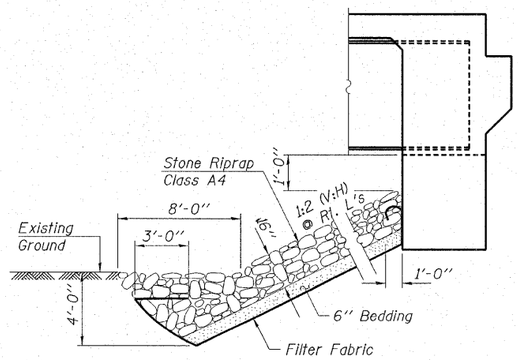


SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. ⊙ Rt. L's)

* 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).



SECTION A-A

Note:
Earth excavation required for construction of riprap will not be paid for separately, but will be included in the cost of Stone Riprap, Class A4. Excavated Material will be disposed of in accordance with Article 281.05 of the Standard Specifications and is not included in the Earthwork Balance.

TOTAL BILL OF MATERIAL - WESTBOUND BRIDGE

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Ton		419	419
Stone Riprap, Class A4	Ton			315
Filter Fabric	Sq. Yd.			555
Structure Excavation	Cu. Yd.		255	255
Concrete Structures	Cu. Yd.		47.4	47.4
Concrete Superstructure	Cu. Yd.	190.4		190.4
Bridge Deck Grooving	Sq. Yd.	471		471
Concrete Encasement	Cu. Yd.		4.2	4.2
Protective Coat	Sq. Yd.	630		630
Furnishing and Erecting Structural Steel	L. Sum	0.4		0.4
Stud Shear Connectors	Each	1,314		1,314
Reinforcement Bars, Epoxy Coated	Pound	35,960	6,690	42,650
Bar Splicers, Special	Each	86		86
Parapet Railing	Foot	106		106
Bicycle Railing	Foot	106		106
Furnishing Steel Piles HP12x74	Foot		460	460
Driving Piles	Foot		460	460
Test Pile Steel HP12x74	Each		2	2
Name Plates	Each		1	1
Geocomposite Wall Drain	Sq. Yd.		122	122
Concrete Headwalls for Pipe Drains	Each		2	2
Pipe Underdrains for Structure, 4"	Foot		181	181

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ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

GENERAL NOTES, DETAILS & TOTAL BILL OF MATERIAL

SECTION 06-00214-08-BR

F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

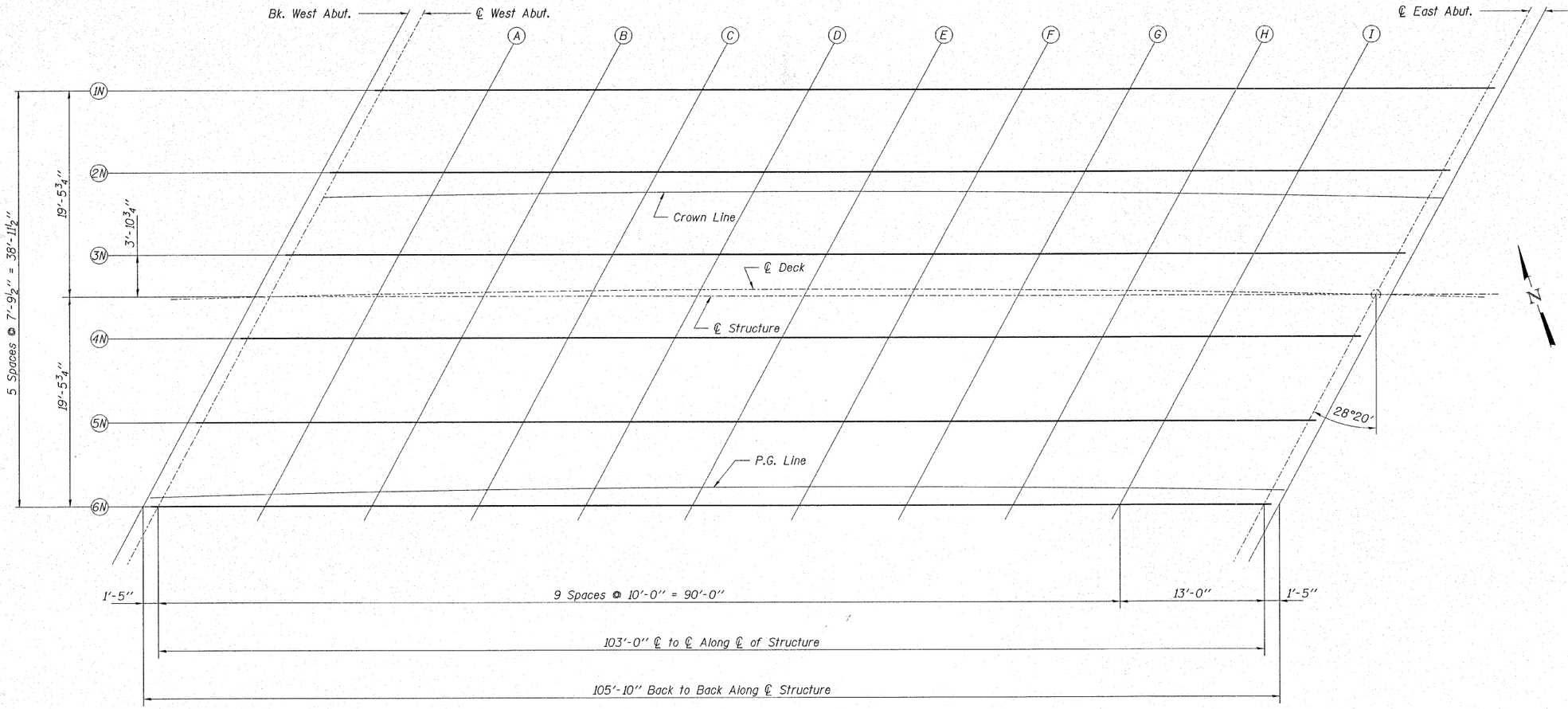
KANE COUNTY

STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

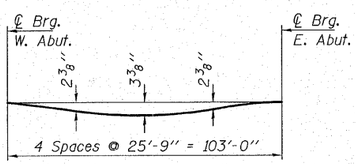
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	17
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 3 of 18 W.B.

as directed by the Engineer.



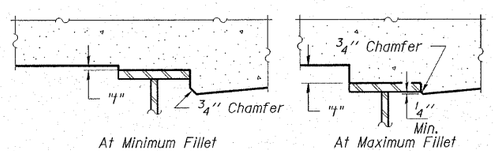
PLAN - WESTBOUND



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

Note: The above deflections are not to be used in the field if the engineer is working from the Theoretical Grade Elevations Adjusted for Dead Load Deflection as shown on Sheets 4 through 5.



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

FILLET HEIGHTS

HAMPTON, LENZINI & RENWICK, INC.
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PROJECT NUMBER: 12-05-0077-1		DATE: 09/20/07
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TOP OF SLAB ELEVATIONS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	18
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 4 of 18 W.B.

BEAM 1N

	Bk. of W. Abut.	℄ of Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	H	I	℄ of Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	704.518	704.526	704.580	704.633	704.685	704.737	704.787	704.837	704.886	704.933	704.980	705.040	705.047
Theoretical Grade Elevation Adjusted for D.L. Deflection	704.518	704.526	704.657	704.787	704.897	704.981	705.064	705.091	705.107	705.110	705.080	705.040	705.047
Bottom of Slab Elevation	703.851	703.859	703.990	704.120	704.230	704.314	704.397	704.424	704.440	704.443	704.413	704.373	704.380
Top of Steel													
Fillet Height "1"													

BEAM 2N

	Bk. of W. Abut.	℄ of Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	H	I	℄ of Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	704.650	704.658	704.712	704.766	704.819	704.871	704.922	704.972	705.021	705.070	705.117	705.178	705.184
Theoretical Grade Elevation Adjusted for D.L. Deflection	704.650	704.658	704.789	704.920	705.031	705.115	705.198	705.226	705.243	705.247	705.217	705.178	705.184
Bottom of Slab Elevation	703.983	703.991	704.122	704.253	704.364	704.448	704.531	704.559	704.576	704.580	704.550	704.511	704.517
Top of Steel													
Fillet Height "1"													

CROWN LINE - (ALONG CURVE)

	Bk. of W. Abut.	℄ of Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	H	I	℄ of Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	704.690	704.697	704.748	704.799	704.851	704.902	704.953	705.004	705.055	705.106	705.157	705.223	705.230
Theoretical Grade Elevation Adjusted for D.L. Deflection	704.690	704.697	704.825	704.953	705.062	705.146	705.229	705.257	705.276	705.282	705.256	705.223	705.230
Bottom of Slab Elevation	704.023	704.030	704.158	704.286	704.395	704.479	704.562	704.590	704.609	704.615	704.589	704.556	704.563
Top of Steel													
Fillet Height "1"													

BEAM 3N

	Bk. of W. Abut.	℄ of Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	H	I	℄ of Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	704.524	704.530	704.576	704.623	704.671	704.720	704.771	704.823	704.876	704.931	704.986	705.061	705.069
Theoretical Grade Elevation Adjusted for D.L. Deflection	704.524	704.530	704.652	704.776	704.882	704.964	705.047	705.077	705.097	705.107	705.086	705.061	705.069
Bottom of Slab Elevation	703.857	703.863	703.985	704.109	704.215	704.297	704.380	704.410	704.430	704.440	704.419	704.394	704.402
Top of Steel													
Fillet Height "1"													

BEAM 4N

	Bk. of W. Abut.	℄ of Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	H	I	℄ of Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	704.286	704.292	704.337	704.384	704.432	704.481	704.531	704.583	704.636	704.690	704.745	704.819	704.827
Theoretical Grade Elevation Adjusted for D.L. Deflection	704.286	704.292	704.414	704.538	704.643	704.725	704.808	704.837	704.857	704.867	704.845	704.819	704.827
Bottom of Slab Elevation	703.619	703.625	703.747	703.871	703.976	704.058	704.141	704.170	704.190	704.200	704.178	704.152	704.160
Top of Steel													
Fillet Height "1"													

BEAM 5N

	Bk. of W. Abut.	℄ of Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	H	I	℄ of Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	704.048	704.054	704.099	704.145	704.193	704.242	704.292	704.343	704.395	704.449	704.504	704.578	704.586
Theoretical Grade Elevation Adjusted for D.L. Deflection	704.048	704.054	704.176	704.299	704.405	704.486	704.568	704.597	704.617	704.626	704.604	704.578	704.586
Bottom of Slab Elevation	703.381	703.387	703.509	703.632	703.738	703.819	703.901	703.930	703.950	703.959	703.937	703.911	703.919
Top of Steel													
Fillet Height "1"													

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ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
DRAWN: P.J.L.	

TOP OF SLAB ELEVATIONS

SECTION 06-00214-08-BR

F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	19
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 5 of 18 W.B.

PROFILE GRADE LINE - (ALONG CURVE)

	Bk. of W. Abut.	℄ of Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	H	I	℄ of Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	703.836	703.844	703.896	703.947	703.999	704.051	704.103	704.154	704.206	704.258	704.310	704.378	704.386
Theoretical Grade Elevation Adjusted for D.L. Deflection	703.836	703.844	703.972	704.101	704.211	704.295	704.379	704.409	704.428	704.436	704.411	704.378	704.386
Bottom of Slab Elevation	703.169	703.177	703.305	703.434	703.544	703.628	703.712	703.742	703.761	703.769	703.744	703.711	703.719
Top of Steel													
Fillet Height "1"													

BEAM 6N

	Bk. of W. Abut.	℄ of Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	H	I	℄ of Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	703.810	703.817	703.861	703.907	703.954	704.002	704.052	704.103	704.155	704.209	704.263	704.336	704.344
Theoretical Grade Elevation Adjusted for D.L. Deflection	703.810	703.817	703.938	704.061	704.166	704.246	704.328	704.357	704.377	704.385	704.363	704.336	704.344
Bottom of Slab Elevation	703.143	703.150	703.271	703.394	703.499	703.579	703.661	703.690	703.710	703.718	703.696	703.669	703.677
Top of Steel													
Fillet Height "1"													

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ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
DESIGNED T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

TOP OF SLAB ELEVATIONS

SECTION 06-00214-08-BR

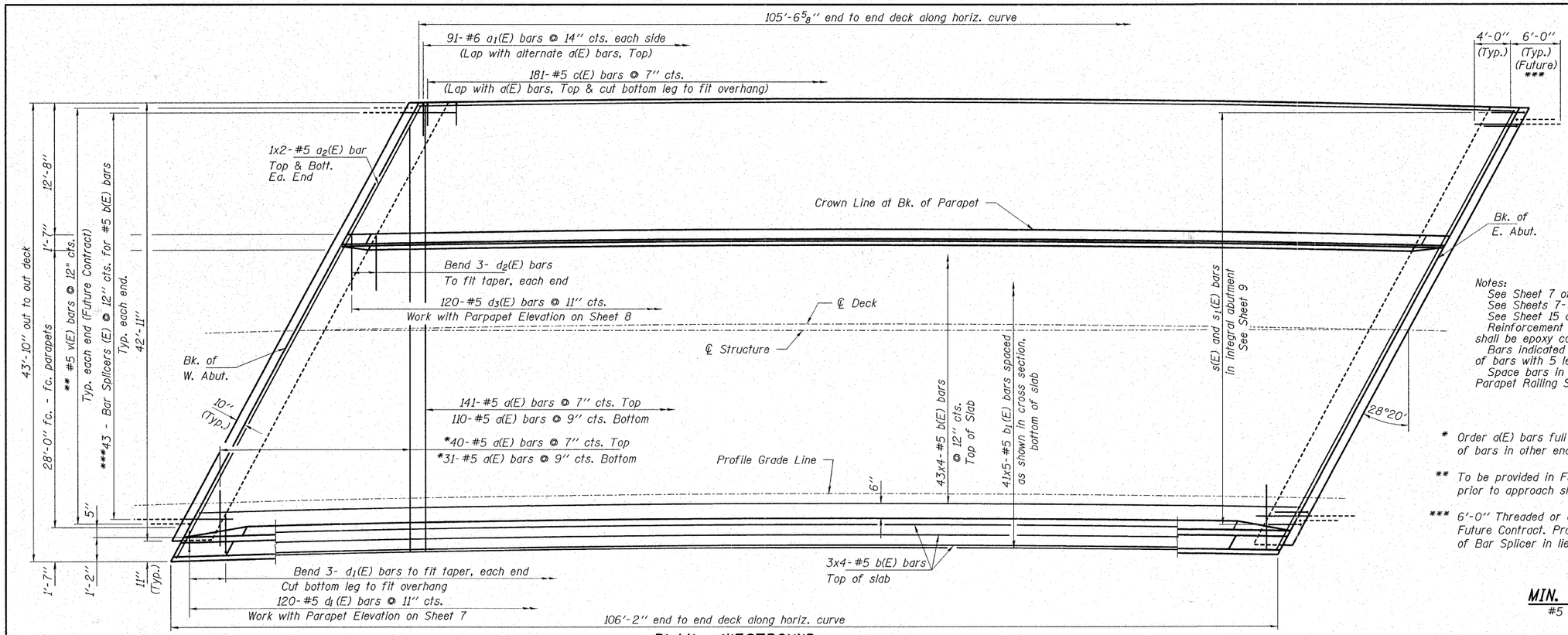
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	20
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 6 of 18 W.B.



PLAN - WESTBOUND

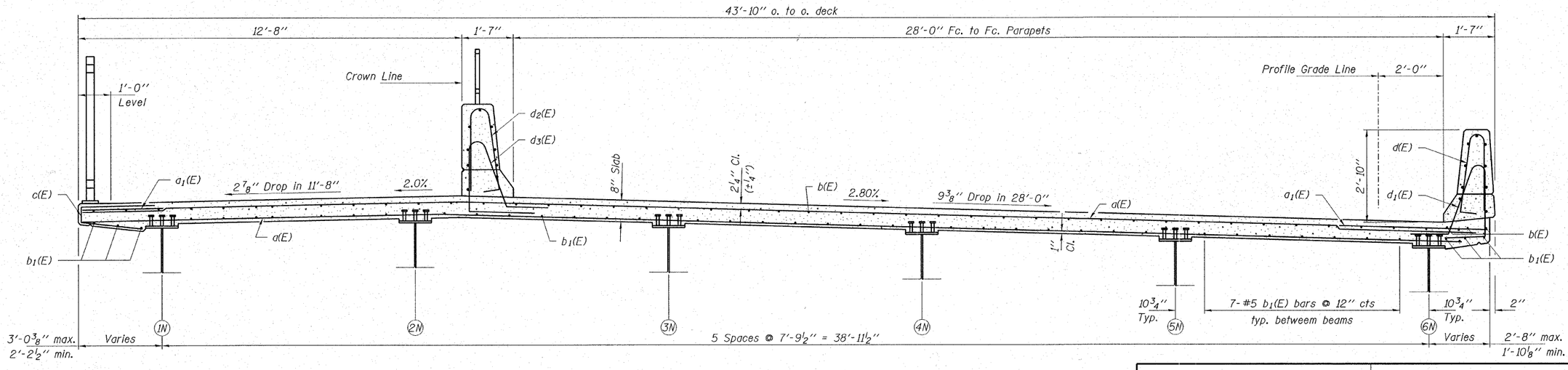
Notes:
See Sheet 7 of 18 W.B. for Superstructure Bill of Material
See Sheets 7-9 of 18 W.B.for Superstructure Details.
See Sheet 15 of 18 W.B. for Bar Splicer (E) details.
Reinforcement Bars & Bar Splicers designated (E) shall be epoxy coated.
Bars indicated thus 41x5-#5 etc. indicates 41 lines of bars with 5 lengths per line.
Space bars in deck to miss anchor bolts for Bicycle & Parapet Railing Sheets 6 & 8 of 18 W.B.

* Order a(E) bars full length. Cut to fit skew & use remainder of bars in other end.

** To be provided in Future Contract. Drill & epoxy in place prior to approach slab construction.

*** 6'-0" Threaded or coil splicer rods to be provided in Future Contract. Provide plastic plugs for exposed end of Bar Splicer in lieu of 6'-0" threaded or coil splicer rods.

MIN. BAR LAPS
#5 bars = 2'-2"



CROSS SECTION
(Looking East)
Horizontal Dimensions Measured Radially

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LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
HLR
ELGIN • SPRINGFIELD

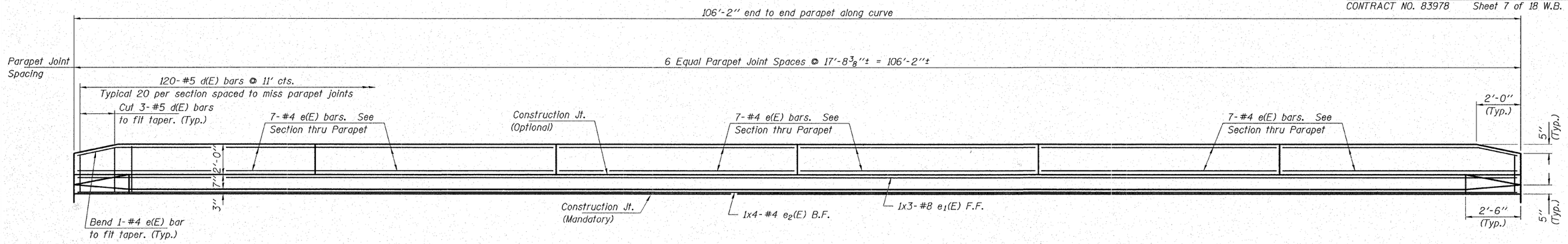
PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
DESIGNED T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

SUPERSTRUCTURE

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	21
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 7 of 18 W.B.

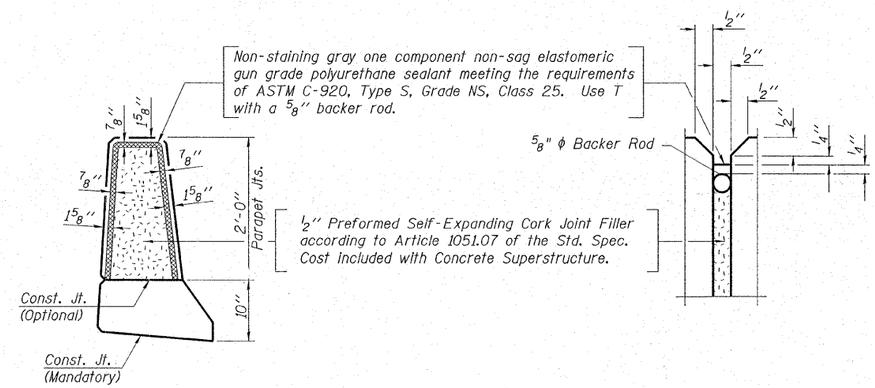


INSIDE ELEVATION OF PARAPET

(South Parapet of Westbound Structure)

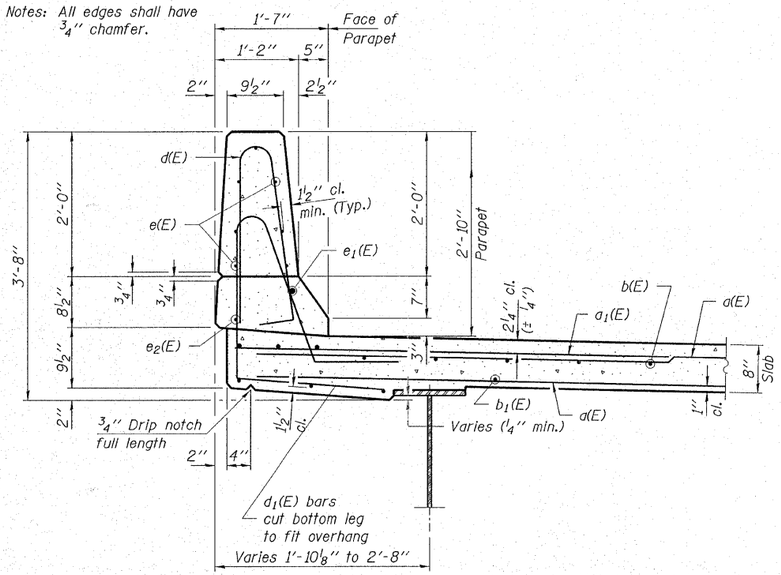
MIN. BAR LAPS

#4 bars = 1'-8"
#8 bars = 4'-6"

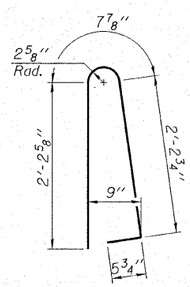


PARAPET JOINT DETAILS

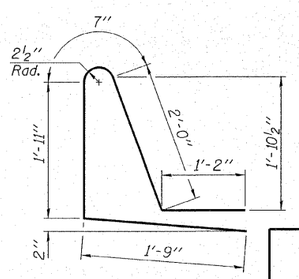
Notes: All edges shall have 3/4" chamfer.



SECTION THRU PARAPET



BAR d(E)



BAR d1(E)

WESTBOUND SUPERSTRUCTURE BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	322	#5	43'-4"	
a1(E)	182	#6	6'-0"	
a2(E)	8	#5	25'-10"	
b(E)	184	#5	28'-1"	
b1(E)	205	#5	22'-11"	
c(E)	181	#5	4'-11"	
d(E)	120	#5	5'-7"	
d1(E)	120	#5	7'-5"	
d2(E)	120	#5	5'-10"	
d3(E)	120	#5	7'-8"	
e(E)	84	#4	17'-4"	
e1(E)	6	#8	38'-4"	
e2(E)	8	#4	27'-9"	
m(E)	8	#6	25'-10"	
m1(E)	20	#6	26'-4"	
m2(E)	24	#6	18'-7"	
m3(E)	10	#6	8'-6"	
m4(E)	4	#6	2'-10"	
s(E)	92	#5	6'-7"	
s1(E)	82	#4	13'-6"	
Reinforcement Bars, Epoxy Coated		Pound	35,960	
Concrete Superstructure		Cu. Yd.	190.4	
Bar Splicers, Special		Each	86	
Parapet Railing		Foot	106	
Bicycle Railing		Foot	106	

Bars indicated thus 1 x 4-#5 etc. indicates 1 line of bars with 4 lengths per line.

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ELGIN • SPRINGFIELD

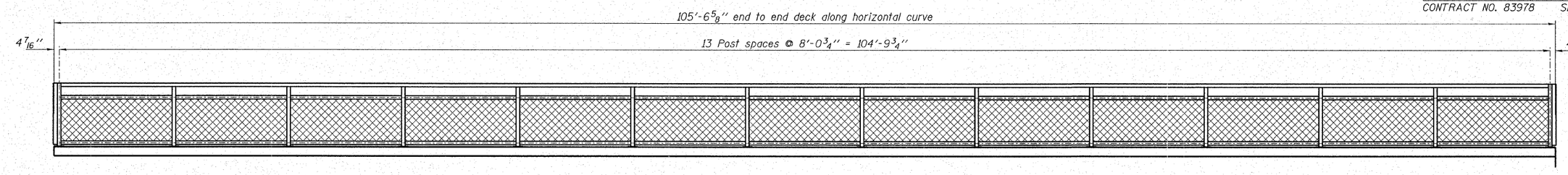
PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

SUPERSTRUCTURE DETAILS

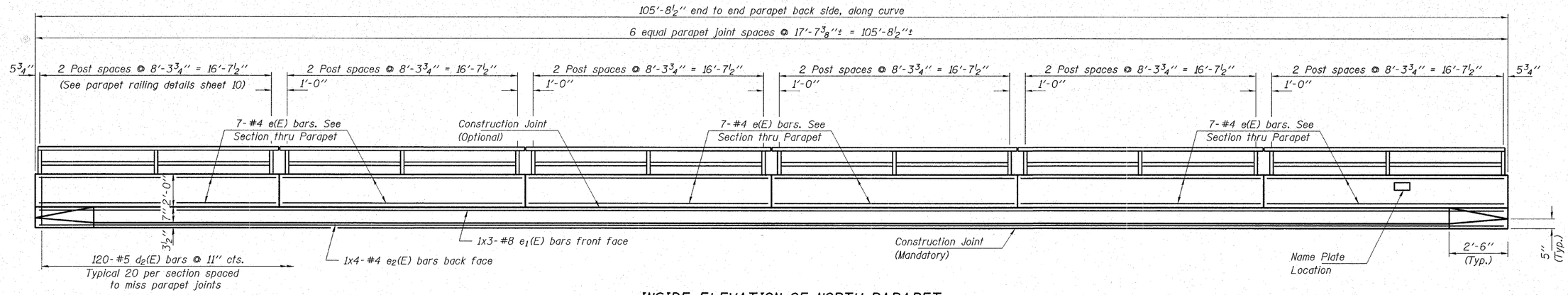
SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214-08-BR	KANE	50	22
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 8 of 18 W.B.



ELEVATION OF NORTH BICYCLE RAILING



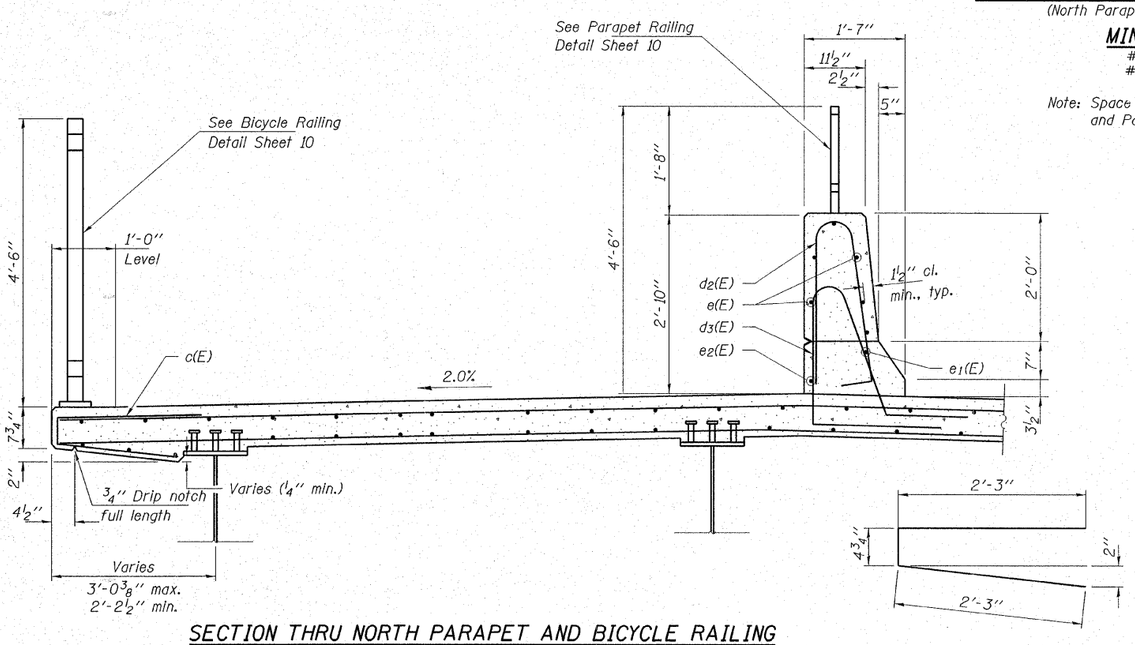
INSIDE ELEVATION OF NORTH PARAPET

(North Parapet of Westbound Structure)

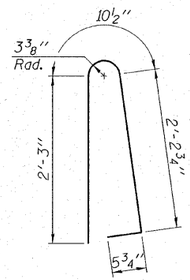
MIN. BAR LAPS

#4 bars = 1'-8"
#8 bars = 4'-6"

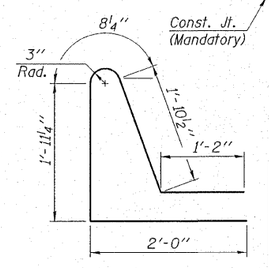
Note: Space reinforcement to miss Bicycle Railing and Parapet Railing anchor bolts.



SECTION THRU NORTH PARAPET AND BICYCLE RAILING

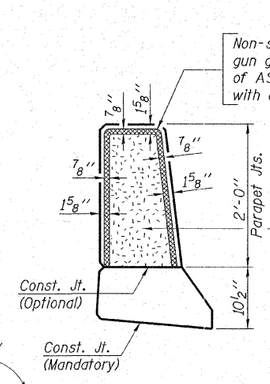


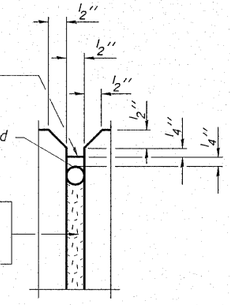
BAR d2(E)



BAR d3(E)

BAR c(E)





1/2" Preformed Self-Expanding Cork Joint Filler according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

PARAPET JOINT DETAILS

Note: See Sheet 7 of 18 W.B. for Superstructure Bill of Material

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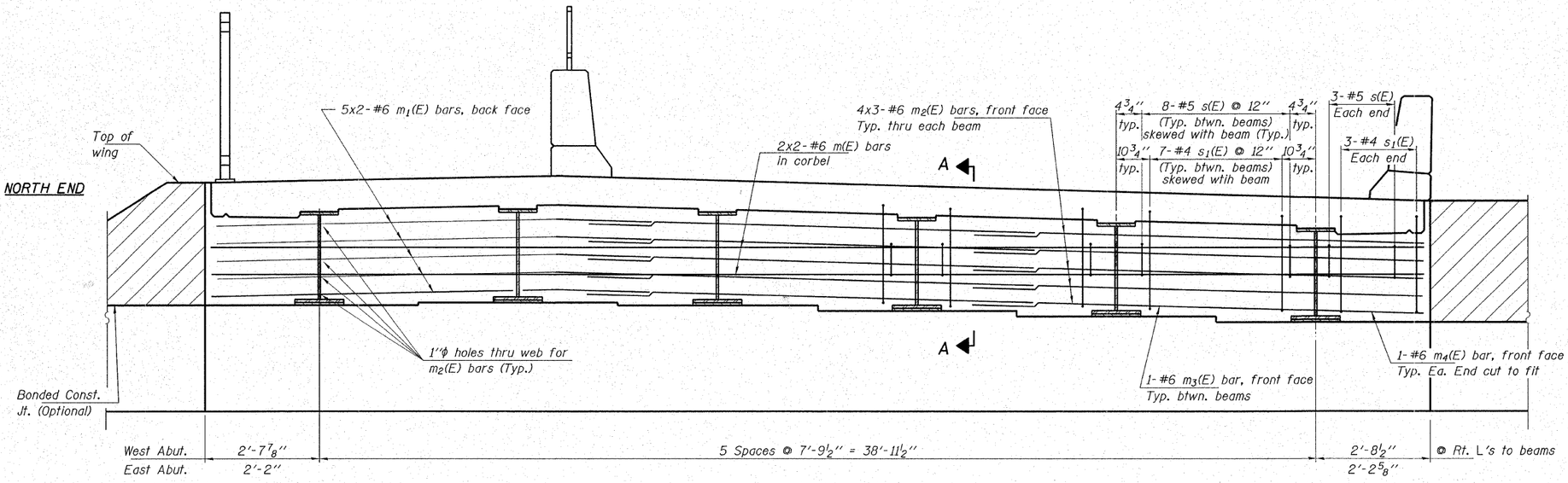
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

SUPERSTRUCTURE DETAILS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	23
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 9 of 18 W.B.



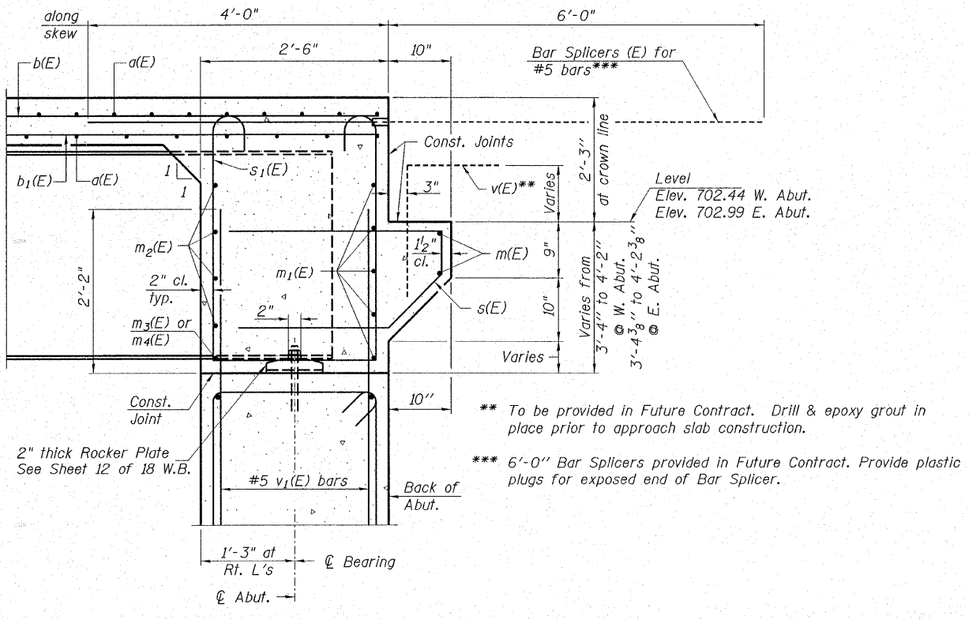
DIAPHRAGM ELEVATION AT EAST ABUTMENT

East Abutment Shown - West Abutment Opposite Hand except as noted

MIN. BAR LAP

#6 bars = 2'-7"

Notes: See Sheet 7 of 18 W.B. for Superstructure Bill of Material.
Concrete in diaphragms is included with "Concrete Superstructure" on Sheet 7 of 18 W.B.

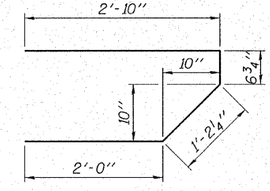


SECTION A-A

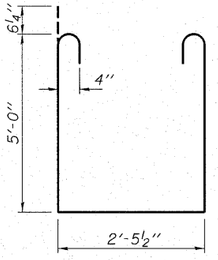
℄ Rt. L's

** To be provided in Future Contract. Drill & epoxy grout in place prior to approach slab construction.

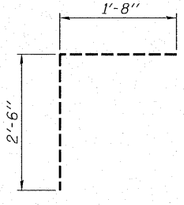
*** 6'-0" Bar Splicers provided in Future Contract. Provide plastic plugs for exposed end of Bar Splicer.



BAR s(E)



BAR s1(E)



BAR v(E)**

Future (NIC)

Min. 9" embedment, cut to fit

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SUPERSTRUCTURE DETAILS

SECTION 06-00214-08-BR

F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

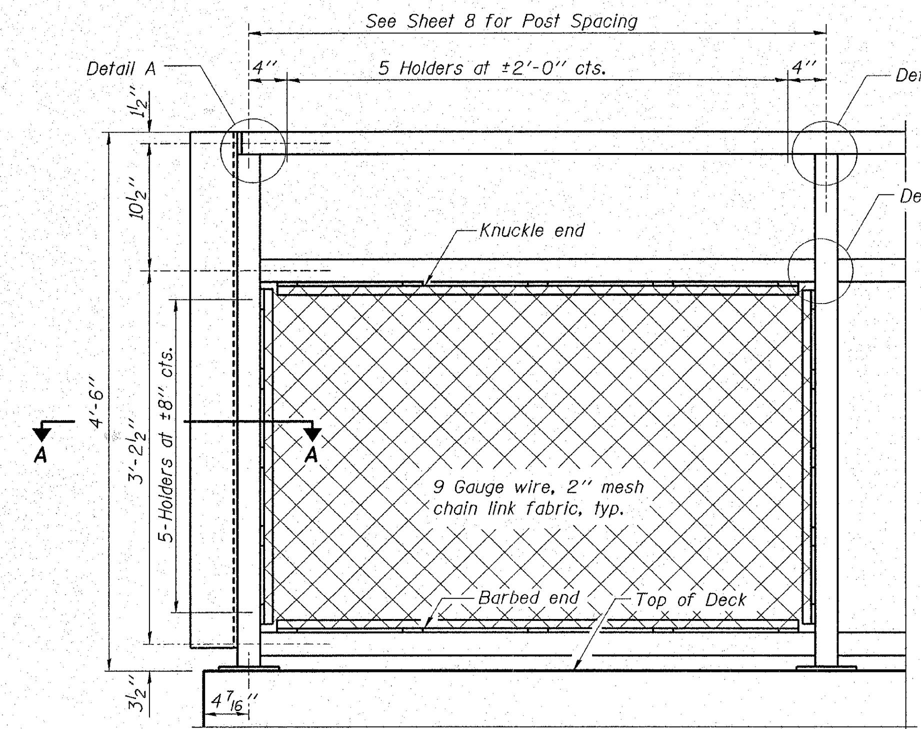
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	24
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 10 of 18 W.B.

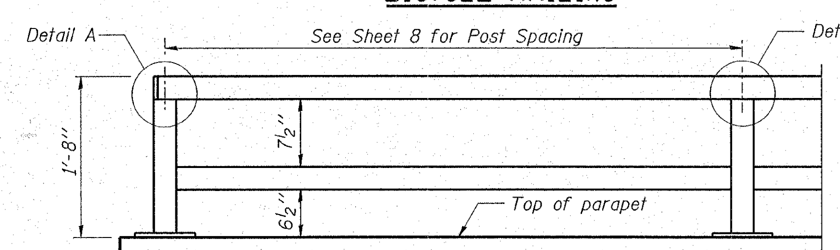
NOTES

Railing shall be according to Section 509 of the Standard Specifications, except as noted.

All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

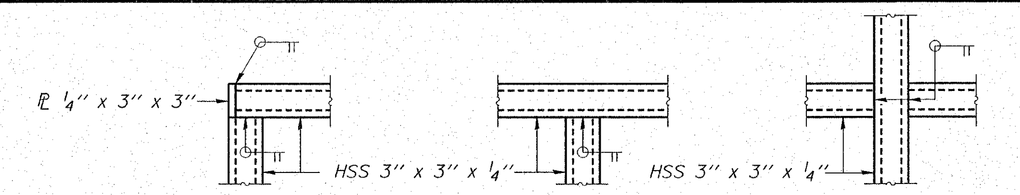


BICYCLE RAILING

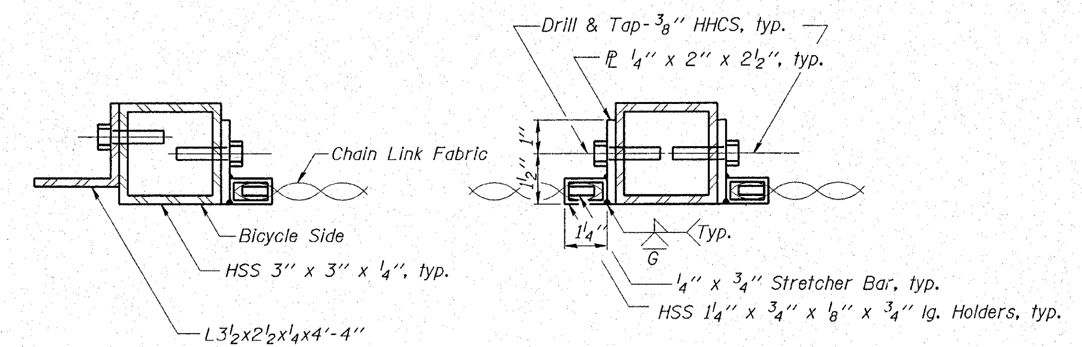


PARAPET RAILING ELEVATION

(Inside Face of Two Element Rail)

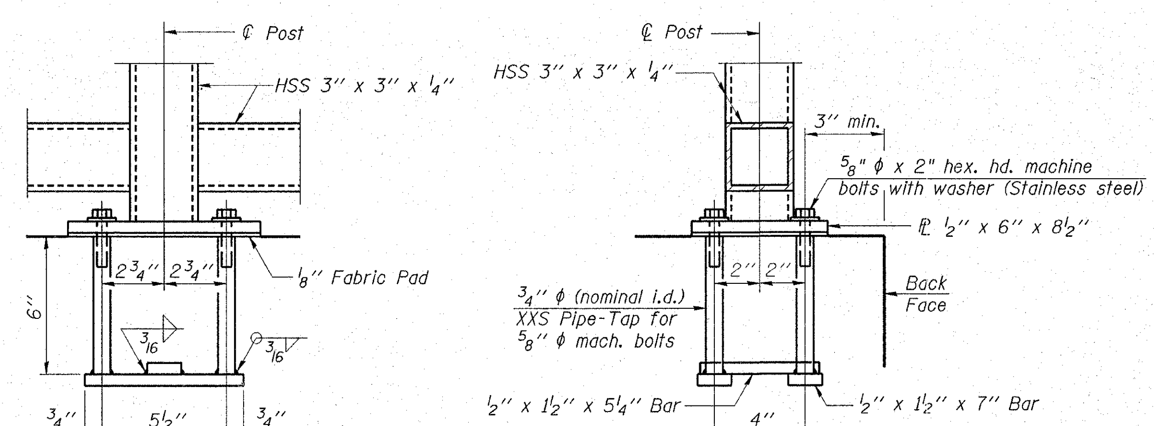


DETAIL A DETAIL B DETAIL C



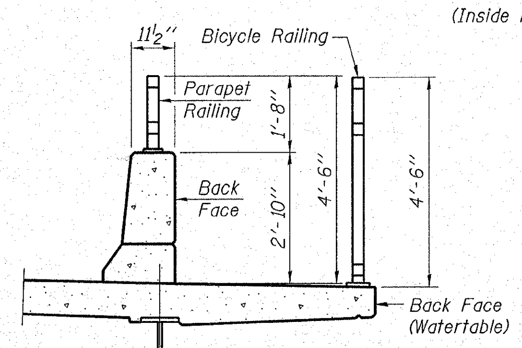
END POST INTERIOR POST

SECTION A-A

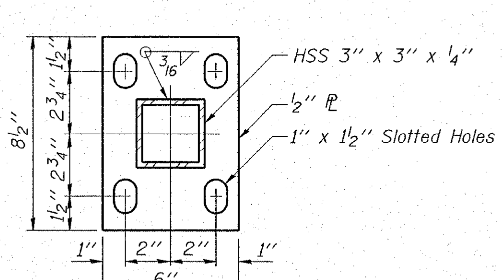


ANCHOR BOLT DETAILS

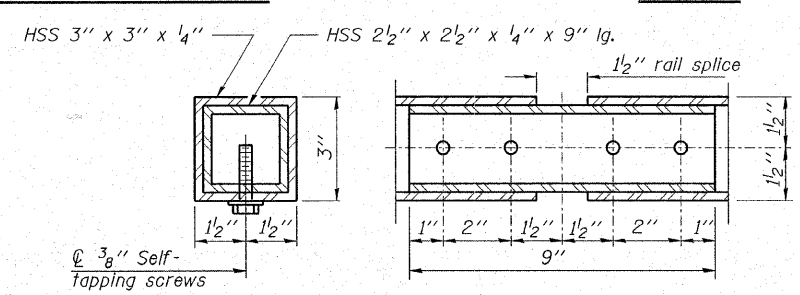
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting ⅝″ ϕ anchor rods. Embedment shall be according to the manufacturer's specifications.



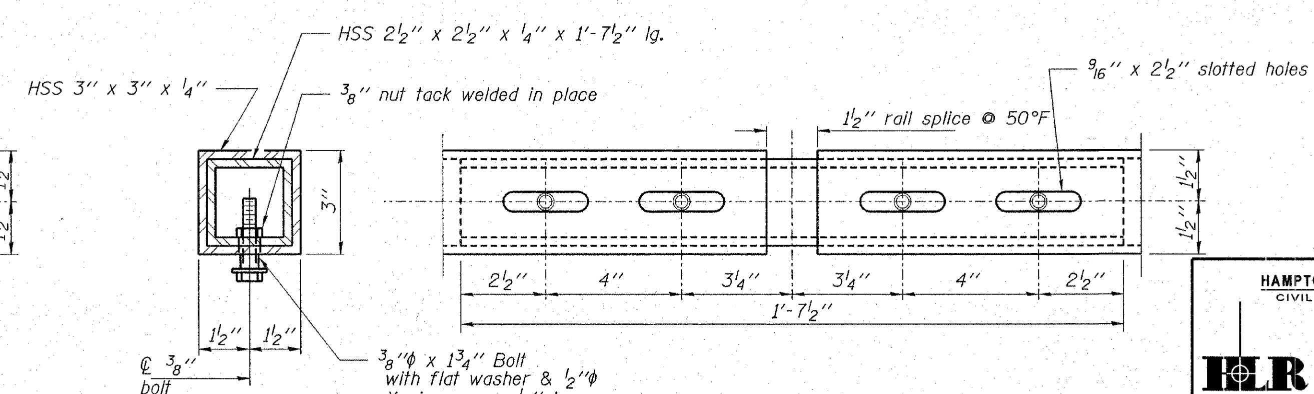
SECTION THRU DECK



BASE PL



RAIL SPLICE



EXPANSION JOINT

BILL OF MATERIAL

Item	Unit	Quantity
Parapet Railing	Foot	106
Bicycle Railing	Foot	106

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PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
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BICYCLE RAILING

SECTION 06-00214-08-BR

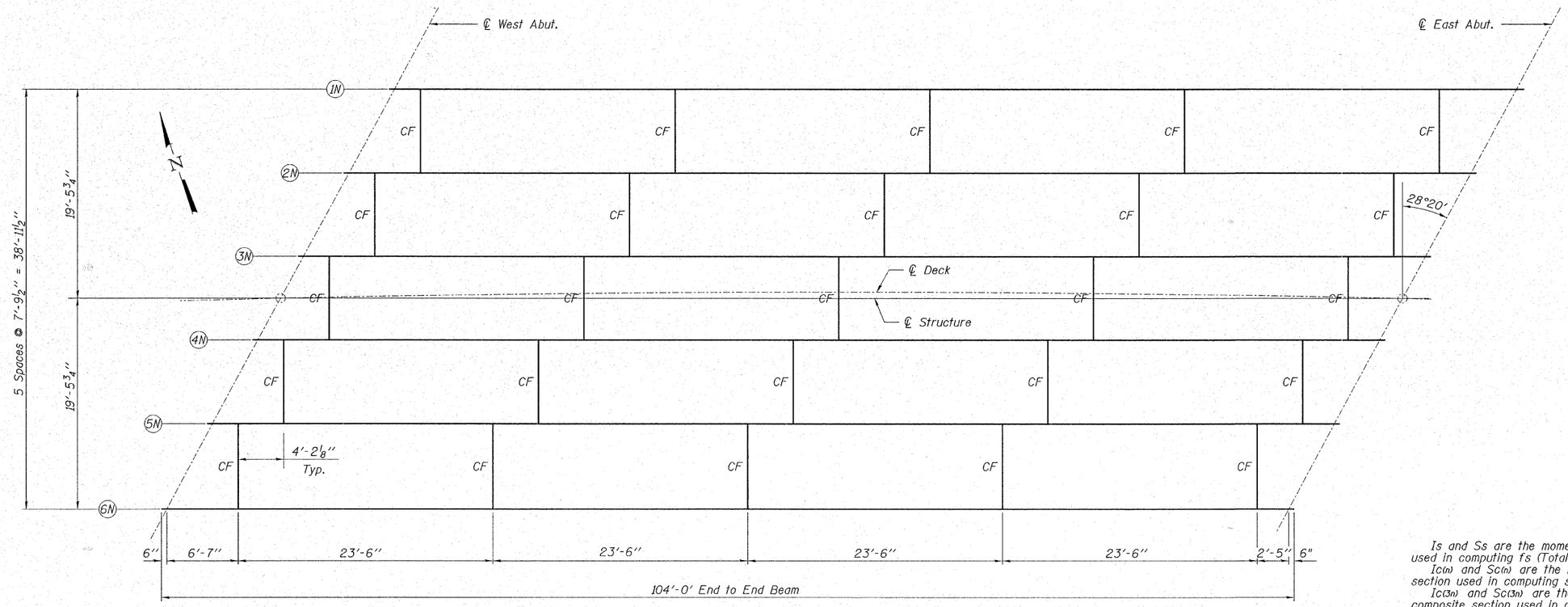
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

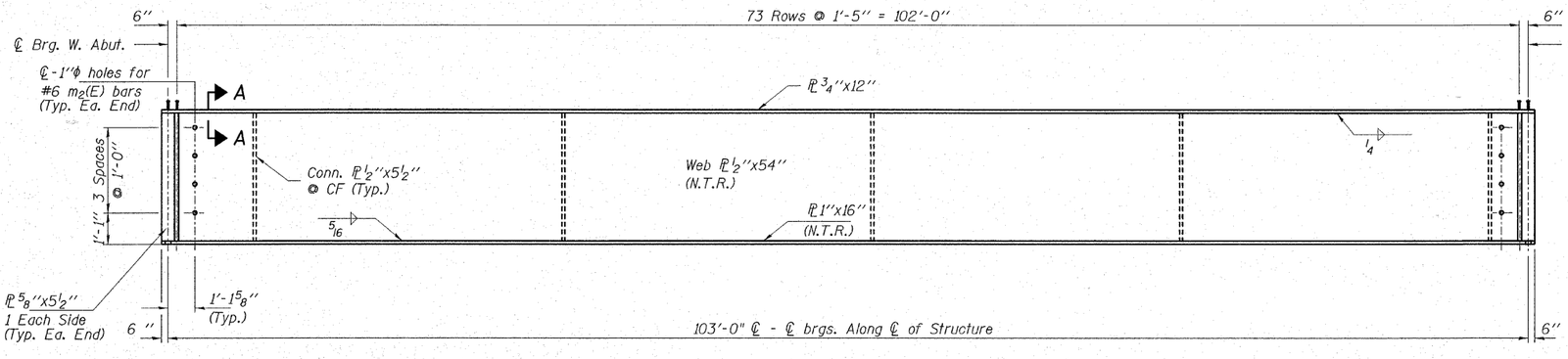
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	25
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 11 of 18 W.B.



FRAMING PLAN - WESTBOUND



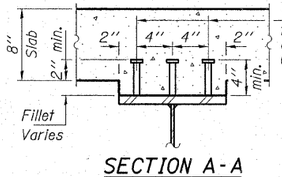
ELEVATION

Location	℄ Brg. W. Abut.	℄ Brg. E. Abut.
BEAM 1	703.74	704.25
BEAM 2	703.87	704.39
BEAM 3	703.74	704.27
BEAM 4	703.50	704.03
BEAM 5	703.27	703.79
BEAM 6	703.03	703.55

TOP OF WEB ELEVATIONS

(For fabrication only)
(Does not include Dead Load Deflections)

Notes:
N.T.R. indicates Notch Toughness Requirements, Zone 2.
All structural steel shall be M270 Grade 50 W.
For additional Structural Steel details see Sheet 12 of 18 W.B.



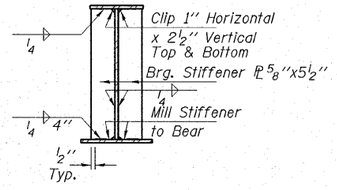
¾"ϕ Granular or solid flux filled headed studs, automatically end welded to flange. (1,314 Req'd.)

SECTION A-A

INTERIOR GIRDER MOMENT TABLE		0.5 Sp. 1
Is	(in^4)	24,686
Ic (n)	(in^4)	67,101
Ic (3n)	(in^4)	48,550
Ss	(in^3)	1,017
Sc (n)	(in^3)	1,441
Sc (3n)	(in^3)	1,317
℄	(k/ft.)	1.01
M℄	('k)	1,339
s℄	(k/ft.)	0.39
Ms℄	('k)	517
M℄	('k)	1,199
M (Imp)	('k)	263
$\frac{5}{3}$[M℄+M(Imp)]	('k)	2,436
Ma	('k)	5,586
Mu	('k)	7,394
fs℄ non-comp	(k.s.i.)	15.8
fs℄ (comp)	(k.s.i.)	4.7
$fs\frac{5}{3}$(℄+Imp)	(k.s.i.)	20.3
fs (Overload)	(k.s.i.)	40.8
VR	(k)	60.7

INTERIOR GIRDER REACTION TABLE		Abutments
R(℄+s℄)	(k)	72.1
R℄	(k)	49.8
Imp.	(k)	10.9
R (Total)	(k)	132.8

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load + Impact.
Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads.
VR is the maximum Live Load + Impact shear range in span.
Ma (Applied Moment)=1.3[M℄ + Ms℄ +$\frac{5}{3}$(M℄ + M_{Imp})].
The Plastic Moment capacity (Mu) is computed according to AASHTO 10.48.1 and 10.50.1.1.
fs (Overload) is the sum of the stresses due to M℄ + Ms℄ +$\frac{5}{3}$(M℄ + M_{Imp}).
fs (Total) (Non-compact section) is the sum of the stresses due to 1.3[M℄ + Ms℄ +$\frac{5}{3}$(M℄ + M_{Imp})].



SECTION AT ABUTMENT

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
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SPRINGFIELD, ILLINOIS 62703
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PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
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STRUCTURAL STEEL

SECTION 06-00214-08-BR

F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

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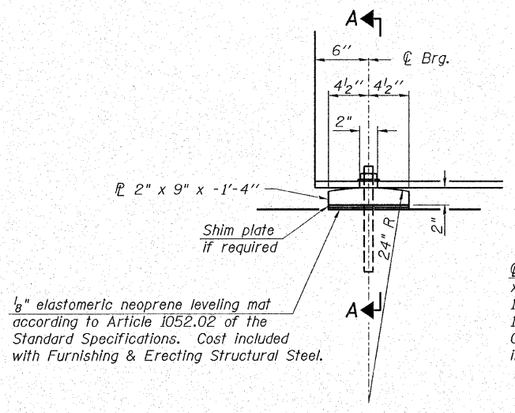
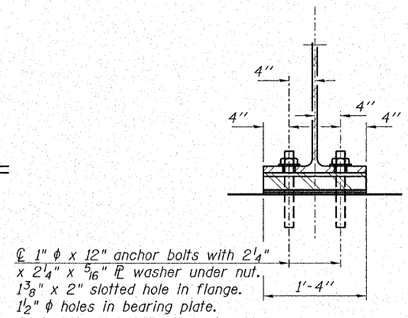
F.A.U. 361	06-00214 -08-BR	KANE	50	26
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 12 of 18 W.B.



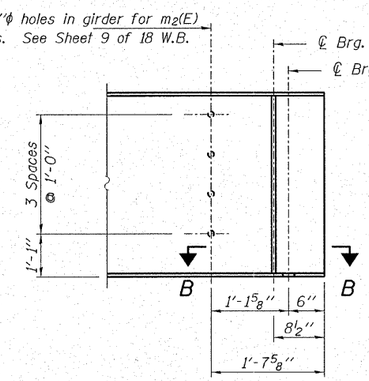
ELEVATION AT ABUTMENT



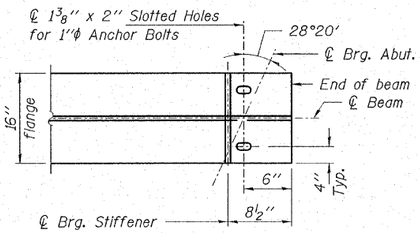
SECTION A-A

BEARING PLATE

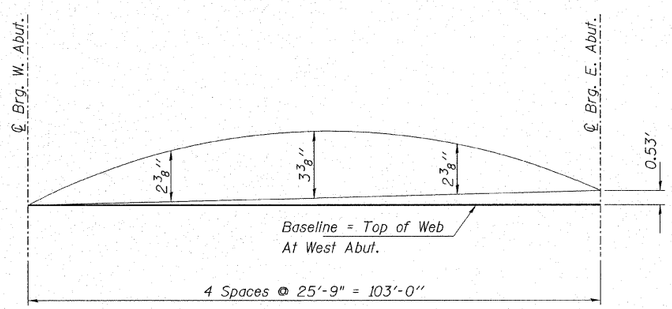
(12 Required)
Bearing Plates are included with Furnishing and Erecting Structural Steel



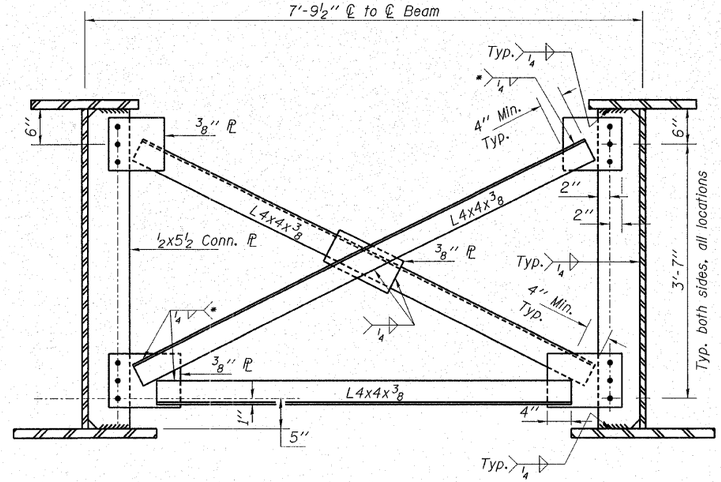
TYP. END OF GIRDER ELEVATION



SECTION B-B



CAMBER DIAGRAM



TYPICAL INTERIOR CROSS FRAME (CF)

Notes:
15/16" ϕ holes for all ¾" ϕ bolts.
Two hardened washers required for each set of oversized holes.

* Fillet weld angles along 3 sides on one face of gusset plate.

All cross frames of diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

HAMPTON, LENZINI & RENWICK, INC.
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(217) 546-3400
HLR
ELGIN • SPRINGFIELD

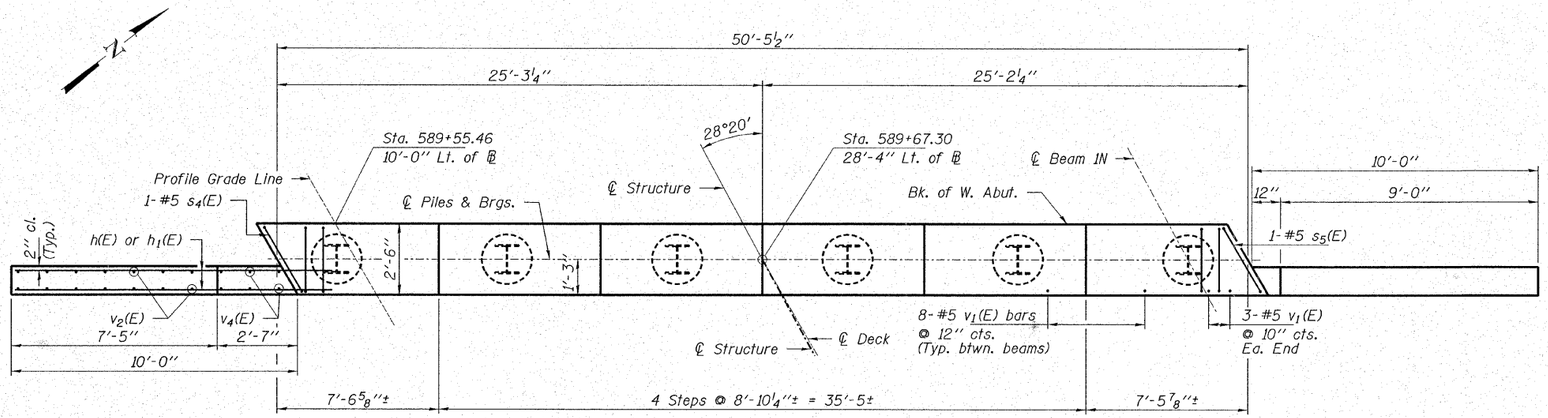
PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

STRUCTURAL STEEL DETAILS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

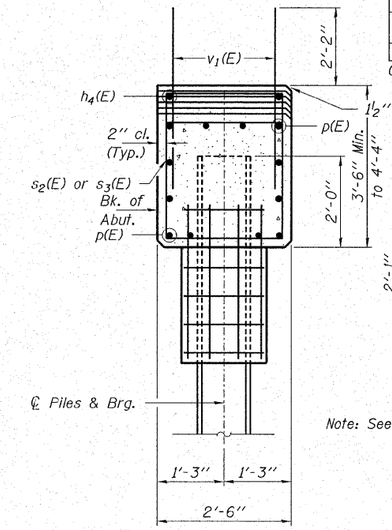
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	27
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 13 of 18 W.B.

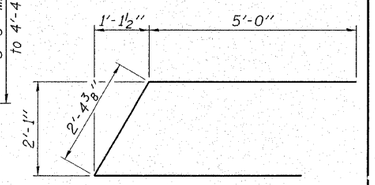


PLAN

Note: Pour Steps Monolithically with cap.

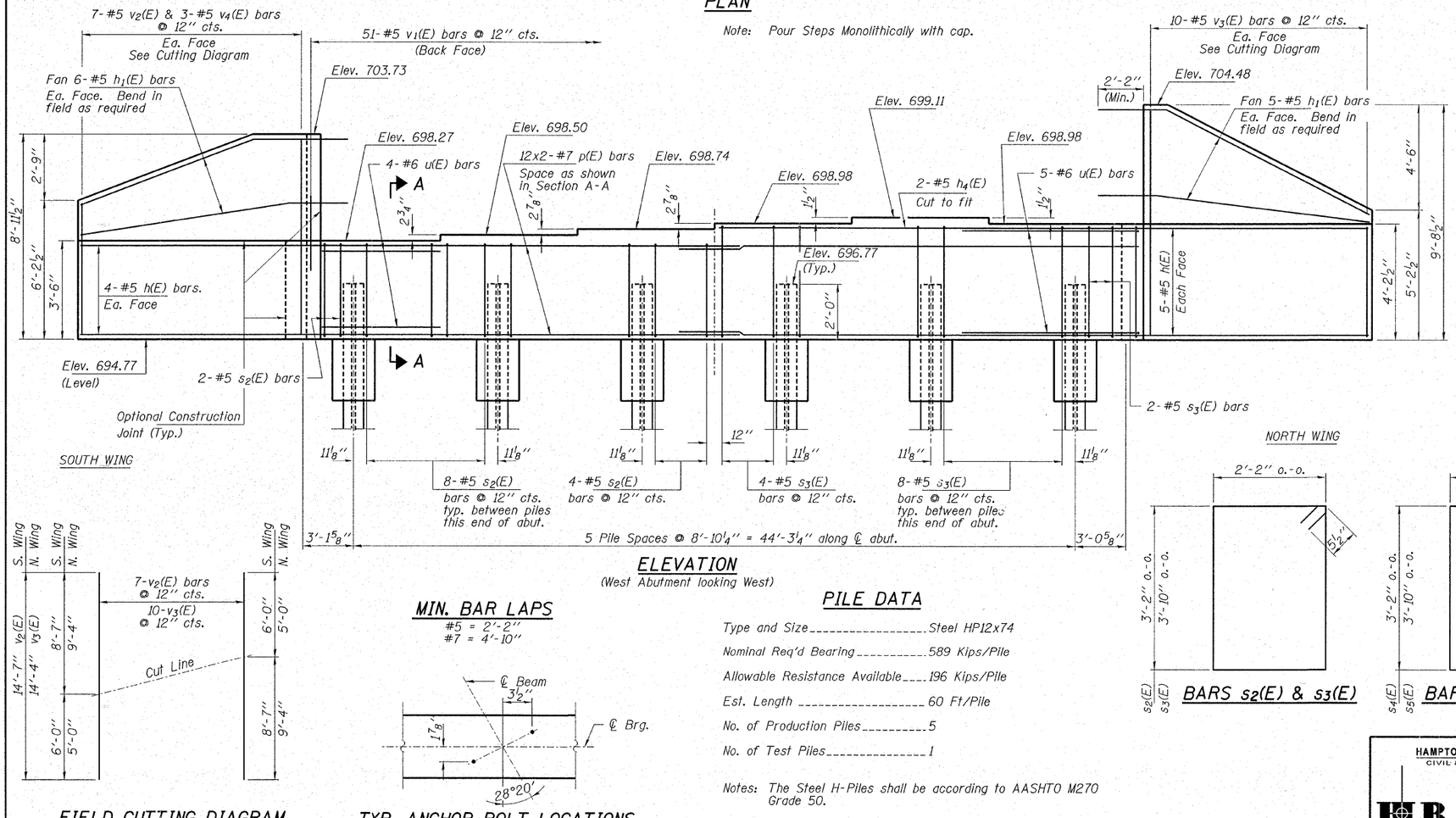


SECTION A-A



BAR u(E)

Note: See Sheet 16 of 18 W.B. for Pile Encasement



ELEVATION

(West Abutment looking West)

FIELD CUTTING DIAGRAM

Order $v_2(E)$ & $v_3(E)$ full length. Cut as shown and use remainder of bars in opposite face.

MIN. BAR LAPS

#5 = 2'-2"
#7 = 4'-10"

TYP. ANCHOR BOLT LOCATIONS

Note: Space reinforcement in the cap to miss anchor bolts.

PILE DATA

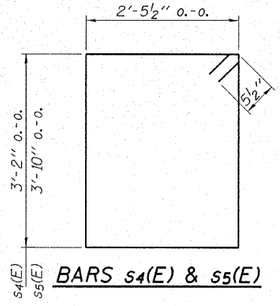
Type and Size	Steel HP12x74
Nominal Req'd Bearing	589 Kips/Pile
Allowable Resistance Available	196 Kips/Pile
Est. Length	60 Ft/Pile
No. of Production Piles	5
No. of Test Piles	1

Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

See Sheet 16 of 18 W.B. for Pile Details.

BARS s2(E) & s3(E)



BARS s4(E) & s5(E)

BILL OF MATERIAL WEST ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	18	#5	12'-0"	—
h1(E)	22	#5	13'-1"	—
h4(E)	2	#5	24'-10"	—
p(E)	24	#7	27'-5"	—
s2(E)	22	#5	11'-7"	□
s3(E)	22	#5	12'-11"	□
s4(E)	1	#5	12'-2"	□
s5(E)	1	#5	13'-6"	□
u(E)	9	#6	12'-5"	▭
v1(E)	97	#5	4'-4"	—
v2(E)	7	#5	14'-7"	—
v3(E)	10	#5	14'-4"	—
v4(E)	6	#5	8'-9"	—
Concrete Structures			Cu. Yd.	24.3
Reinforcement Bars, Epoxy Coated			Pound	3,430
Furnishing Steel Piles HP 12x74			Foot	300
Driving Piles			Foot	300
Test Pile Steel HP 12x74			Each	1
Concrete Encasement			Cu. Yd.	2.1

Bars indicated thus 12x2-#7 etc. indicates 12 lines of bars with 2 lengths per line.

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PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

WEST ABUTMENT

SECTION 06-00214-08-BR

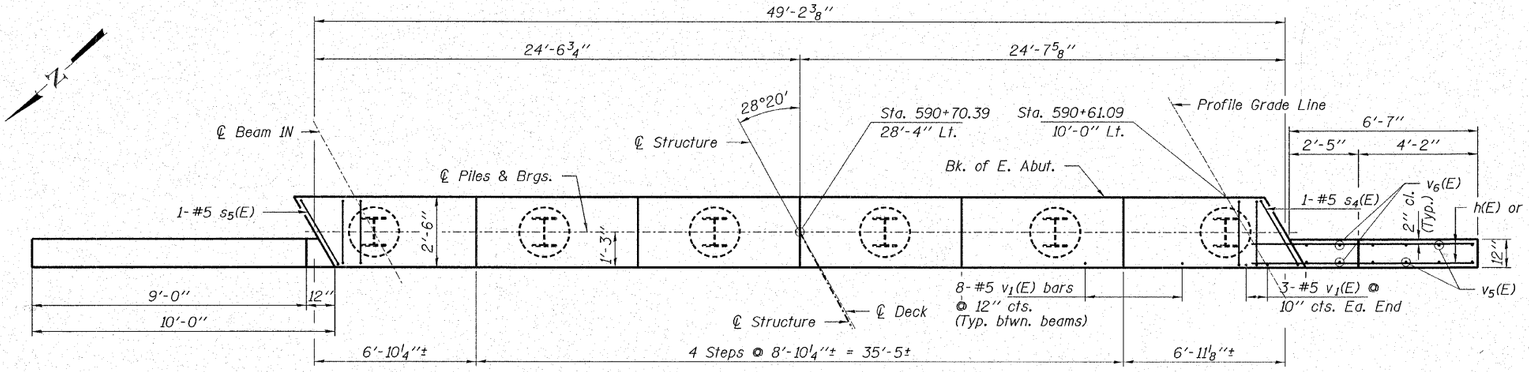
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

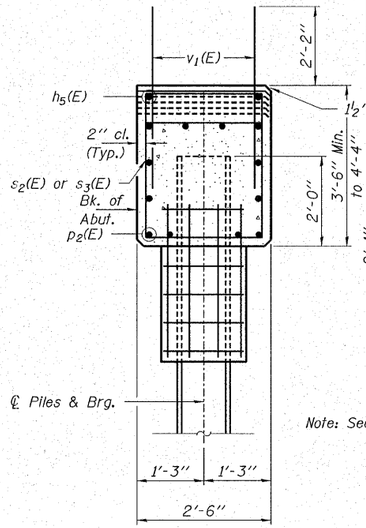
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	28
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 14 of 18 W.B.

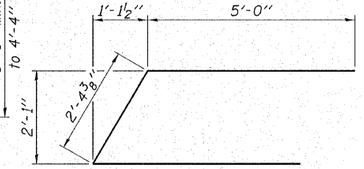


PLAN

Note: Pour Steps Monolithically with cap.

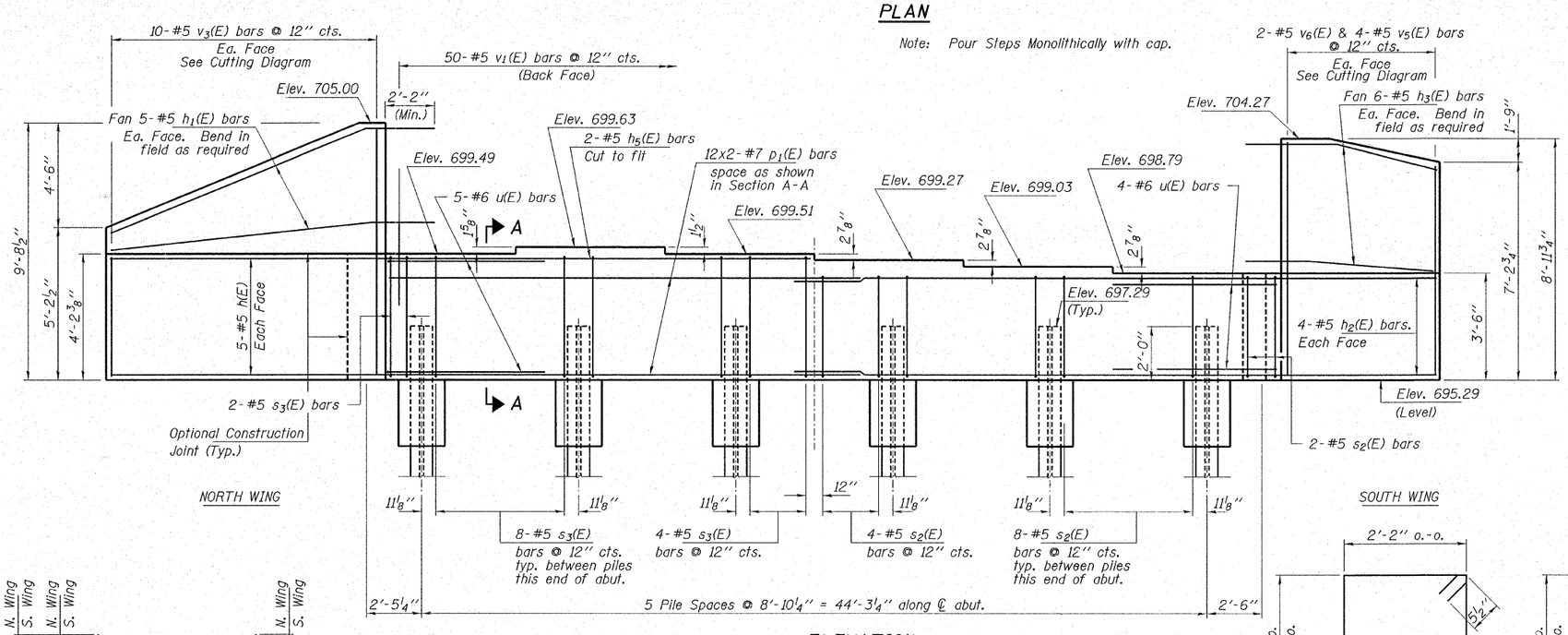


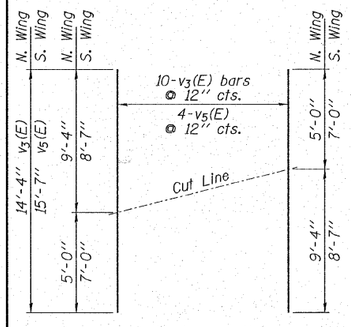
SECTION A-A



BAR u(E)

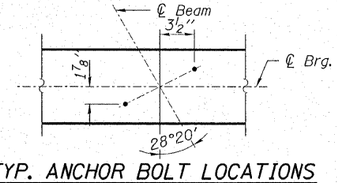
Note: See Sheet 16 of 18 W.B. for Pile Encasement





FIELD CUTTING DIAGRAM

Order v3(E) & v5(E) full length. Cut as shown and use remainder of bars in opposite face.



TYP. ANCHOR BOLT LOCATIONS

Note: Space reinforcement in the cap to miss anchor bolts.

MIN. BAR LAPS

#5 = 2'-2"
#7 = 4'-10"

ELEVATION

(East Abutment looking East)

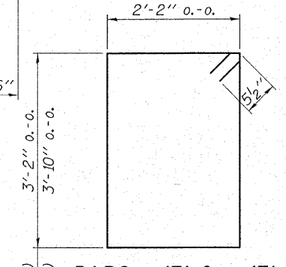
PILE DATA

Type and Size	Steel HP12x74
Nominal Req'd Bearing	589 Kips/Pile
Allowable Resistance Available	196 Kips/Pile
Est. Length	32 Ft/Pile
No. of Production Piles	5
No. of Test Piles	1

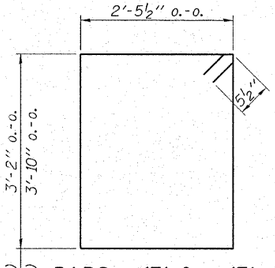
Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

See Sheet 16 of 18 W.B. for Pile Details.



BARS s2(E) & s3(E)



BARS s4(E) & s5(E)

BILL OF MATERIAL EAST ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	10	#5	12'-0"	
h1(E)	10	#5	13'-1"	
h2(E)	8	#5	8'-7"	
h3(E)	12	#5	9'-1"	
h5(E)	2	#5	24'-11"	
p1(E)	24	#7	26'-10"	
s2(E)	22	#5	11'-7"	
s3(E)	22	#5	12'-11"	
s4(E)	1	#5	12'-2"	
s5(E)	1	#5	13'-6"	
u(E)	9	#6	12'-5"	
v1(E)	96	#5	4'-4"	
v3(E)	10	#5	14'-4"	
v5(E)	4	#5	15'-7"	
v6(E)	4	#5	8'-7"	
Concrete Structures			Cu. Yd.	23.1
Reinforcement Bars, Epoxy Coated			Pound	3,260
Furnishing Steel Piles HP 12x74			Foot	160
Driving Piles			Foot	160
Test Pile Steel HP 12x74			Each	1
Concrete Encasement			Cu. Yd.	2.1

Bars indicated thus 12x2-#7 etc. indicates 12 lines of bars with 2 lengths per line.

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ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

EAST ABUTMENT

SECTION 06-00214-08-BR

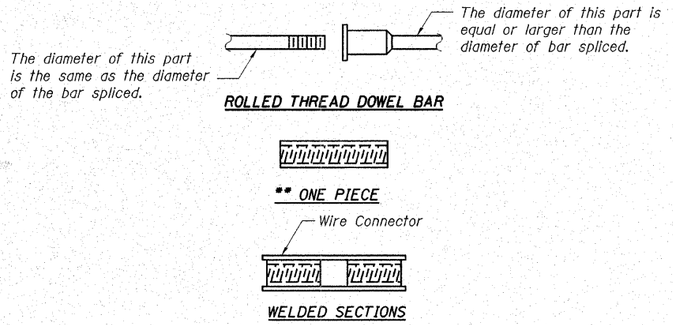
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

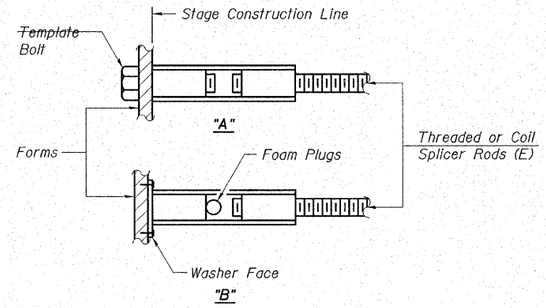
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	29
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 15 of 18 W.B.



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.

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.

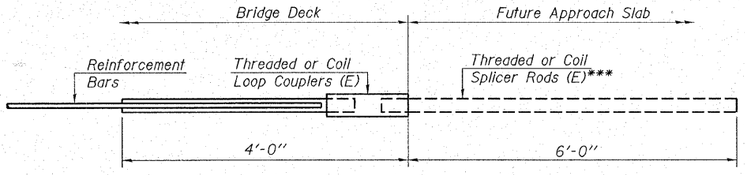
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times fy \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times fy \times A_t$

Where fy = 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



FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

*** 6'-0'' Threaded or coil splicer rods to be provided in Future Contract. Provide plastic plugs for exposed end of Bar Splicer in lieu of 6'-0'' threaded or coil splicer rods.

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 86

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	DRAWN: P.J.L.

BAR SPLICERS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
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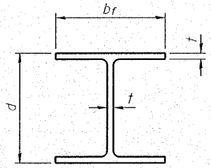
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

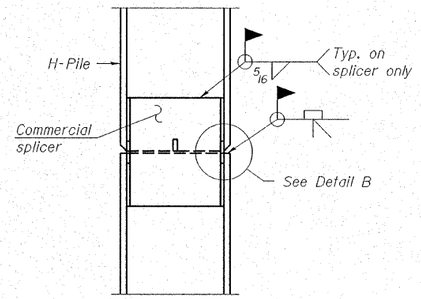
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	30
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 16 of 18 W.B.

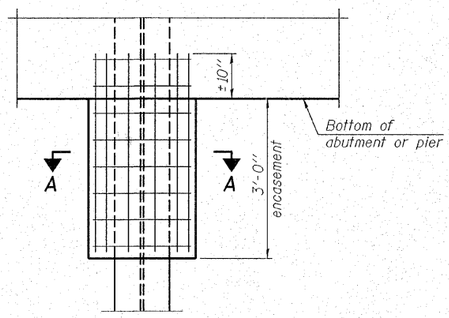


STEEL PILE TABLE

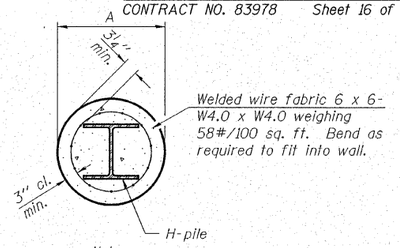
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''



ELEVATION



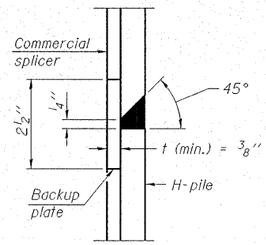
ELEVATION



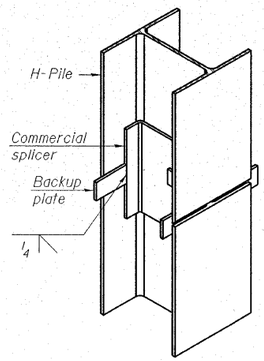
SECTION A-A

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

PILE ENCASEMENT

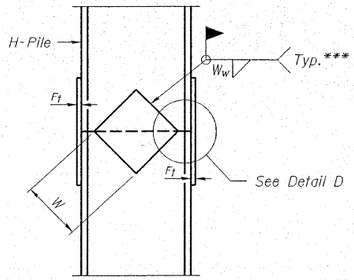


DETAIL "B"

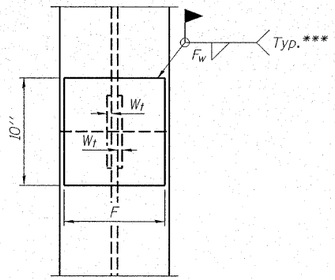


ISOMETRIC VIEW

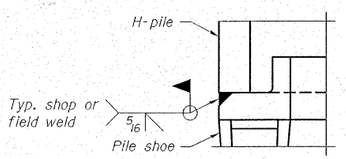
WELDED COMMERCIAL SPLICE



ELEVATION



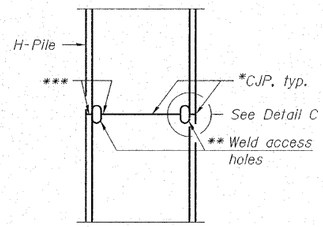
END VIEW



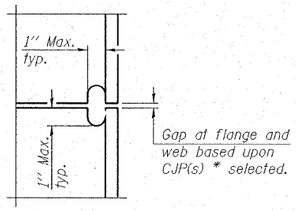
ELEVATION

DETAIL A

H-PILE SHOE ATTACHMENT

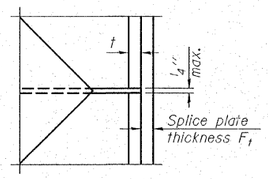


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	$12\frac{1}{2}''$	1''	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8''	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8''	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7''	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

WELDED PLATE FIELD SPLICE

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

* 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 ¼'' from end of each pile.

HAMPTON, LENZINI & RENWICK, INC.
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(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

STEEL H PILE DETAILS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214-08-BR	KANE	50	31
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 — Sheet 17 of 18 W.B.

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Page 1 of 2
Date Started 3/15/04
Date Completed 3/15/04

ROUTE F.A.U. 361 DESCRIPTION New Stearns Road Bridge over N. Arm Brewster Creek
SECT. 98-00214-02-BR STRUCT. NO. 045-3167 DRILLED BY TSC/L-59,965
COUNTY Kane LOCATION North End WB West Abutment S. 2-SE ¼ , TWP. 40 N , RNG. 8 E

Boring No. NSNA-3
Station 589+34
Offset 46.00ft LT
Surface Elev. 693.97 ft

Surface Water Elev.
Groundwater Elev.:
when drilling 691.0
at Completion 691.0
after 24 Hrs. 693.0

DEPTH	Description	BLOWS	Qu tsf	W %
0	Stiff black CLAY LOAM (topsoil), very moist A-7-6	4 4 5	P 1.25	46.4
693.97				
	Medium dense gray SAND and GRAVEL, saturated A-1-a	2 7 7		12.7
-5				
688.47				
	Medium dense gray SAND and GRAVEL, trace clay, saturated A-1-a	4 6 6		12.1
685.97				
		5 7 8	B 4.8 15%	14.8
-10				
	Hard gray CLAY, trace gravel, moist A-6	5 6 9	B 4.4 15%	16.7
		6 8 10	B 4.1 15%	16.7
-15				
	M dense SAND, wet A-1-b	7 9 9	B 4.8 15%	17.0
675.97				
	Very stiff gray CLAY, moist A-6	7 10 10	B 2.3 15%	16.9 16.0
-20				
673.47	Medium dense gray SILT, moist A-4			
	Medium dense gray silty fine SAND, wet A-1-b	S 7 9		17.2
670.97				
	Very stiff gray CLAY, moist A-6	8 9 9	B 2.3 15%	18.4 17.9
668.47				
668.97 -25				

DEPTH	Description	BLOWS	Qu tsf	W %
		7 9 9		16.6
	Medium dense gray fine to medium SAND, trace gravel, saturated A-3	7 10 12		17.9
-30				
661.97				
	Medium dense gray silty SAND, trace gravel, saturated A-1-b	9 12 13		8.4
-35				
656.97				
	Medium dense gray silty SAND, some gravel, saturated A-1	7 11 13		10.4
-40				
651.97				
	Medium dense gray fine to medium SAND, trace silt, saturated A-3	7 7 9		11.9
-45				
646.97				
	Medium dense gray clayey SILT, moist A-4	9 9 10	S 3.1 5%	14.6
-50				

SPT (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Page 2 of 2
Date Started 3/15/04
Date Completed 3/15/04

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

Boring No. NSNA-3
Station 589+34
Offset 46.00ft LT
Elevation 643.97 ft

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

Elevation 618.97 ft

DEPTH	Description	BLOWS	Qu tsf	W %
0	Medium dense gray clayey SILT, moist A-4			
641.97				
		19 23 26	B 7.4 15%	10.2
-55				
		16 20 25	B 10.4 15%	10.5
-60				
	Hard brown and gray CLAY and CLAY LOAM, trace gravel, damp to moist A-6	23 31 38	B 10.4 15%	10.2
-65				
		25 31 33	B 10.4 15%	11.3
-70				
618.97 -75		30 33 38	B 10.4 15%	10.0

Mobile B-57 Ardco ATV Rig (#159)
CME Automatic Hammer
3.25" (83 mm) ID HSA

End of Boring at 75.0'

SPT (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

NSNA - 3

HAMPTON, LENZINI & RENWICK, INC.
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LAND SURVEYORS
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SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
DRAWN: P.J.L.	

BORING

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	32
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 18 of 18 W.B.

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Date Started 3/12/04
Date Completed 3/12/04

ROUTE F.A.U. 361 DESCRIPTION New Stearns Road Bridge over N. Arm Brewster Creek
SECT. 98-00214-02-BR STRUCT. NO. 045-3167 DRILLED BY TSC/L-59,965
COUNTY Kane LOCATION South End WB East Abutment S. 2-SE ¼ , TWP. 40 N , RNG. 8 E

Boring No. NSNA-5
Station 590+97
Offset 18.00ft LT
Surface Elev. 695.24 ft

Surface Water Elev. —
Groundwater Elev.: when drilling 690.7
at Completion after 24 Hrs. 691.2

	DEPTH	BLOWS	Qu tsf	W %
FILL - Black clayey SAND, little gravel, trace organic, wet A-2-4		6 7 10		27.9
692.24				
Medium dense black and gray clayey SAND, trace to little gravel, wet A-2-4	-5	6 8 9		22.3
689.74				
Medium dense black and gray clayey SAND and GRAVEL, wet A-1		5 8 16		12.6
687.24				
Dense gray GRAVEL, occasional Cobbles, saturated A-1-a	-10	23 20 21		9.7
684.74				
Dense gray SAND and GRAVEL, trace clay, saturated A-1-a		23 20 21		10.6
682.24				
Dense gray SAND, little to some gravel, saturated A-1-b	-15	23 24 18		8.4
		15 16 28		9.4 15.9
679.24				
(occasional Cobbles)				
Dense gray SILTY LOAM, trace to little gravel, moist A-4	-20	10 15 16	B 4.4 15%	11.0
674.74				
(No Recovery)		14 15 19		
Very stiff gray CLAY, trace gravel, moist A-6		14 17 25	B 3.5 15%	16.6
670.24	-25			

	DEPTH	BLOWS	Qu tsf	W %
Very stiff gray CLAY, trace gravel, moist A-6		10 14 16	B 2.4 15%	17.4
667.24				
Dense gray silty fine SAND, saturated A-1/A-2	-30	15 21 30		17.3
663.24				
Very stiff gray CLAY, occasional silt seams, trace gravel, moist A-6	-35	8 9 15	B 2.8 15%	18.6
658.24				
Very stiff gray CLAY, numerous silt seams, trace gravel, moist A-4/A-6	-40	B 10 15	P 2.5	17.9
653.24				
Medium dense to dense gray SAND and GRAVEL, occasional Cobbles, saturated A-1-a	-45	30 9 10		11.0
(occasional Cobbles)	-50	B 8 50/6"		12.6

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Date Started 3/12/04
Date Completed 3/12/04

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

Boring No. NSNA-5
Station 590+97
Offset 18.00ft LT
Elevation 645.24 ft

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

Elevation 620.24 ft

	DEPTH	BLOWS	Qu tsf	W %
Medium dense to dense gray SAND and GRAVEL, occasional Cobbles, saturated A-1-a				
643.24				
	-55	38 46 50/4"	B 9.3 15%	11.3
Very hard reddish-gray CLAY LOAM, trace gravel, damp A-6				
	-60	33 43 50/3"	B 6.0 15%	10.8
633.24				
(No Recovery)	-65	100/6"		
Very dense gray SAND, trace to little gravel, occasional Cobbles, saturated A-1				
	-70	89 120 104		17.0
623.24				
Very hard reddish-gray CLAY LOAM, trace gravel, moist A-6		48 50/4"	B 6.3 15%	9.5
620.24	-75			

	DEPTH
Elevation 620.24 ft	
	-80
	-85
	-90
	-95
	-100

Gus Pech GP-750 Truck Rig (#217)
Rope and Cathead Hammer

3.25" (83 mm) ID HSA to 20 feet

Rotary Wash Drill below 20 feet

End of Boring at 75.0'

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

NSNA - 5

HAMPTON, LENZINI & RENWICK, INC.
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(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

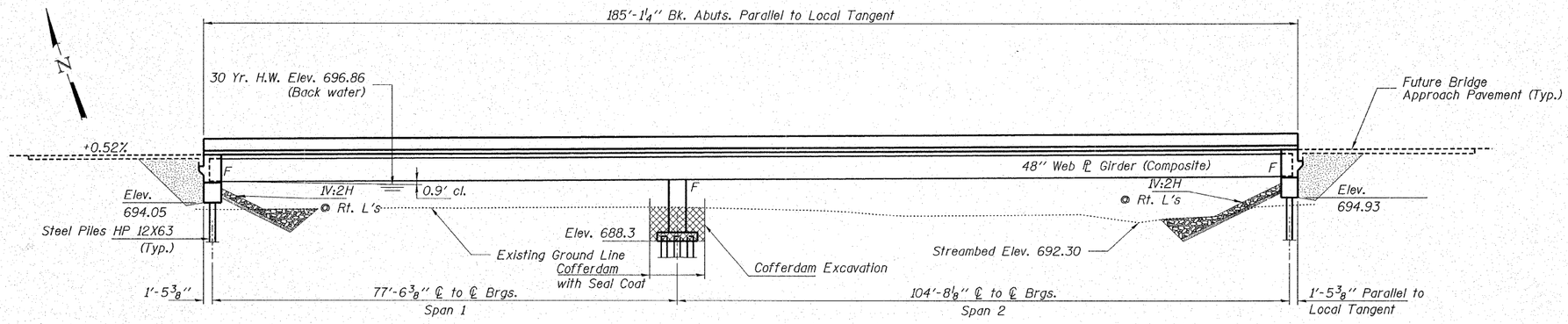
BORING
SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3165 (W.B.) / STATION 590+18.15

Bench Mark: 16 (TMB 65) "Bench Tie" (yellow) set in north face of 36" tree, 25'± east of the east bank of the Fox River, south of RR bridge and at the back of Midwest Ground Covers Property (MGC property). Elev. 693.886

Existing Structure: None

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	33
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 1 of 18 E.B.



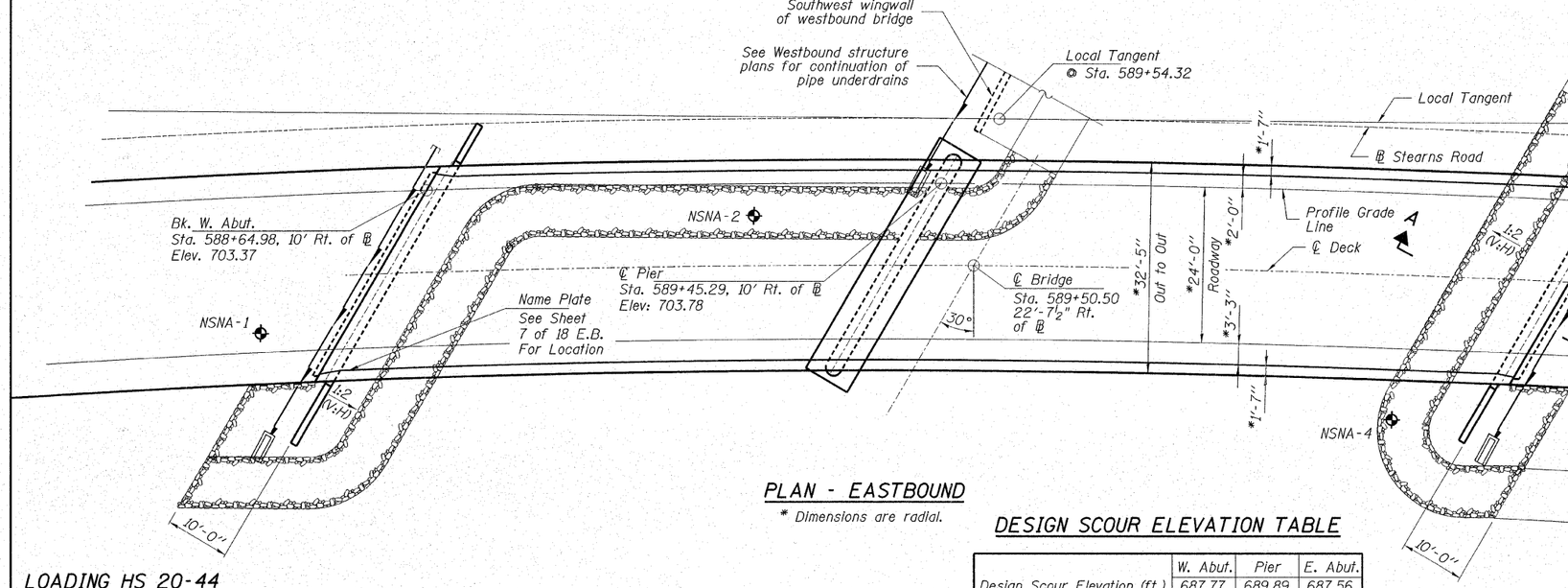
ELEVATION

INDEX OF STRUCTURE SHEETS

BREWSTER CREEK
BUILT 200_ BY
KANE COUNTY
SEC. 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
F.A. PROJ. BRM-000
STR. NO. 045-3167 LOADING HS 20

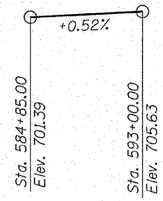
NAME PLATE

See Std. 515001



PLAN - EASTBOUND

* Dimensions are radial.

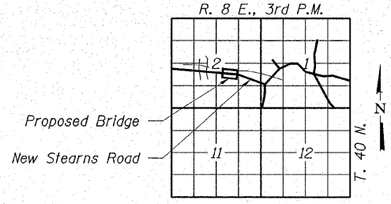


PROFILE GRADE

(New Stearns Road)

CURVE DATA

P.I. STA. 589+36.38
Δ = 20° 44' 34.04" (RT)
D = 2° 36' 15.67"
T = 402.64'
R = 2,200.00'
L = 796.46'
E = 36.54'
P.C. STA. 585+33.74
P.T. STA. 593+30.20
S.E. = 0.028'/'



LOCATION SKETCH

DESIGN SCOUR ELEVATION TABLE

	W. Abut.	Pier	E. Abut.
Design Scour Elevation (ft.)	687.77	689.89	687.56

WATERWAY INFORMATION

Drainage Area = 2.106 Sq. Mi. Low Grade Elev. 702.7 @ Sta. 556+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	80	N/A	205.8/323.1	696.29	N/A	0.01	N/A	696.30
Design	30	100	N/A	261.5/450.5	696.86	N/A	0.02	N/A	696.88
	50	116	N/A	315.8/539.9	697.40	N/A	0.01	N/A	697.41
Base	100	134	N/A	364.7/585.3	697.82	N/A	0.02	N/A	697.84
Overtopping	>500	376	N/A	427.3/621.8	N/A	N/A	N/A	N/A	702.70
Max. Calc.	500	179	N/A	425.8/621.8	698.62	N/A	0.02	N/A	698.64

Note:
Waterway Information Table provided by Christopher B. Burke Engineering, LTD. 07/16/07

LOADING HS 20-44

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

DESIGN SPECIFICATIONS

2002 AASHTO and applicable interims.

DESIGN STRESSES

f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinforcement)
fy = 50,000 p.s.i. (Structural Steel) (M270 GR. 50 W)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.037g
Site Coefficient (S) = 1.0

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

11-19-07
ILLINOIS STRUCTURAL NO. 081-5011

LICENSED STRUCTURAL ENGINEER
JEFFREY L. BANE
081-5011
SPRINGFIELD, IL
STATE OF ILLINOIS

Expires 11-30-08

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
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GENERAL PLAN AND ELEVATION

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY

STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	34
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 2 of 18 E.B.

GENERAL NOTES

Fasteners shall be high strength bolts AASHTO M164, Type 3 in unpainted areas and mechanically galvanized AASHTO M 164, Type 1 in painted areas. Bolts $\frac{7}{8}$ in. ϕ. open holes $\frac{15}{16}$ in. ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 187,940 lbs.

All structural steel shall be AASHTO M 270 Grade 50W.

Structural steel shall only be painted at the ends of the beams, for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Those areas shall be primed in the shop with a Department approved zinc rich primer. No field painting shall be required. All structural steel shall be cleaned as specified in the special provision for "Surface Preparation and Painting Requirements for Weathering Steel".

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

Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Nothch Toughness, Zone 2.

Slipforming of the Parapets is not allowed.

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

Reinforcement bar designated (E) shall be epoxy coated.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within an $\frac{1}{8}$ in. tolerance. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two $\frac{1}{2}$ in. adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

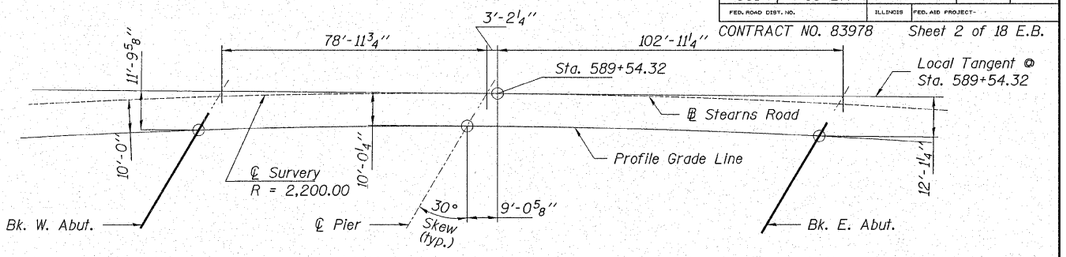
The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

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

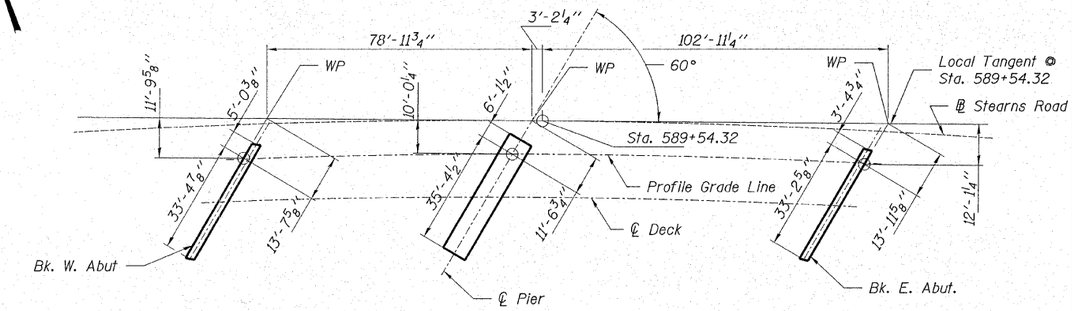
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.

Seal coat thickness design is based on the Estimated Water Surface Elevation (EWSE). Cofferdam design details and proposed changes in seal coat thickness shall be submitted for approval with the cofferdam design to the Engineer.

The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc Any permit application by the Contractor shall refer to the IDNR permit number as shown in the contract plans.



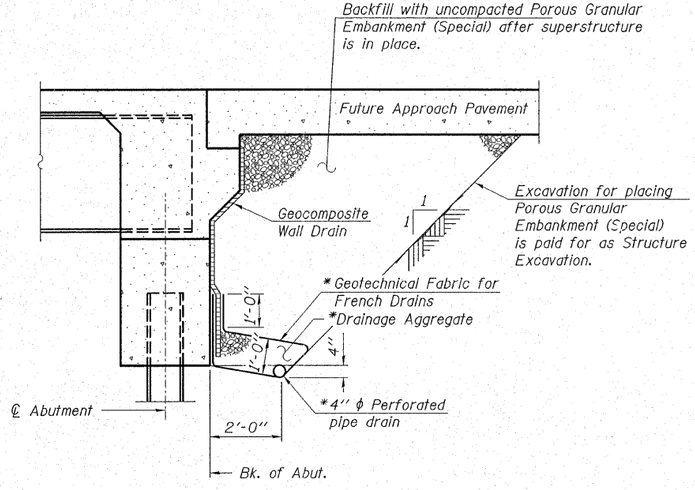
OFFSET SKETCH



FOOTING LAYOUT

TOTAL BILL OF MATERIAL - EASTBOUND BRIDGE

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment, Special	Ton		370	370
Stone Riprap, Class A4	Ton			500
Filter Fabric	Sq. Yd.			808
Structure Excavation	Cu. Yd.		187.6	187.6
Cofferdam Excavation	Cu. Yd.		155.0	155.0
Cofferdams	Each		1	1
Concrete Structures	Cu. Yd.		95.6	95.6
Concrete Superstructure	Cu. Yd.	228.0		228.0
Bridge Deck Grooving	Sq. Yd.	562		562
Seal Coat Concrete	Cu. Yd.		58.1	58.1
Concrete Encasement	Cu. Yd.		3.5	3.5
Protective Coat	Sq. Yd.	758		758
Furnishing and Erecting Structural Steel	L. Sum	0.6		0.6
Stud Shear Connectors	Each	2,355		2,355
Reinforcement Bars, Epoxy Coated	Pound	48,350	9,060	57,410
Bar Splicers, Special	Each	60		60
Furnishing Steel Piles HP12x63	Foot		1,090	1,090
Driving Piles	Foot		1,090	1,090
Test Pile Steel HP12x63	Each		3	3
Name Plates	Each			1
Geocomposite Wall Drain	Sq. Yd.		95	95
Concrete Headwalls for Pipe Drains	Each		3	3
Pipe Underdrains for Structure, 4"	Foot		160	160

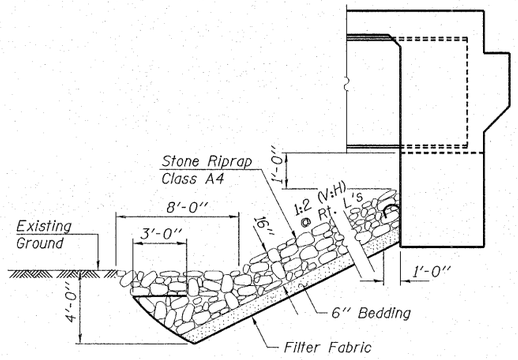


SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)

* 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).



SECTION A-A

Note:
Earth excavation required for construction of riprap will not be paid for separately, but will be included in the cost of Stone Riprap, Class A4. Excavated Material will be disposed of in accordance with Article 281.05 of the Standard Specifications and is not included in the Earthwork Balance.

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1		DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

GENERAL NOTES, DETAILS & TOTAL BILL OF MATERIAL

SECTION 06-00214-08-BR

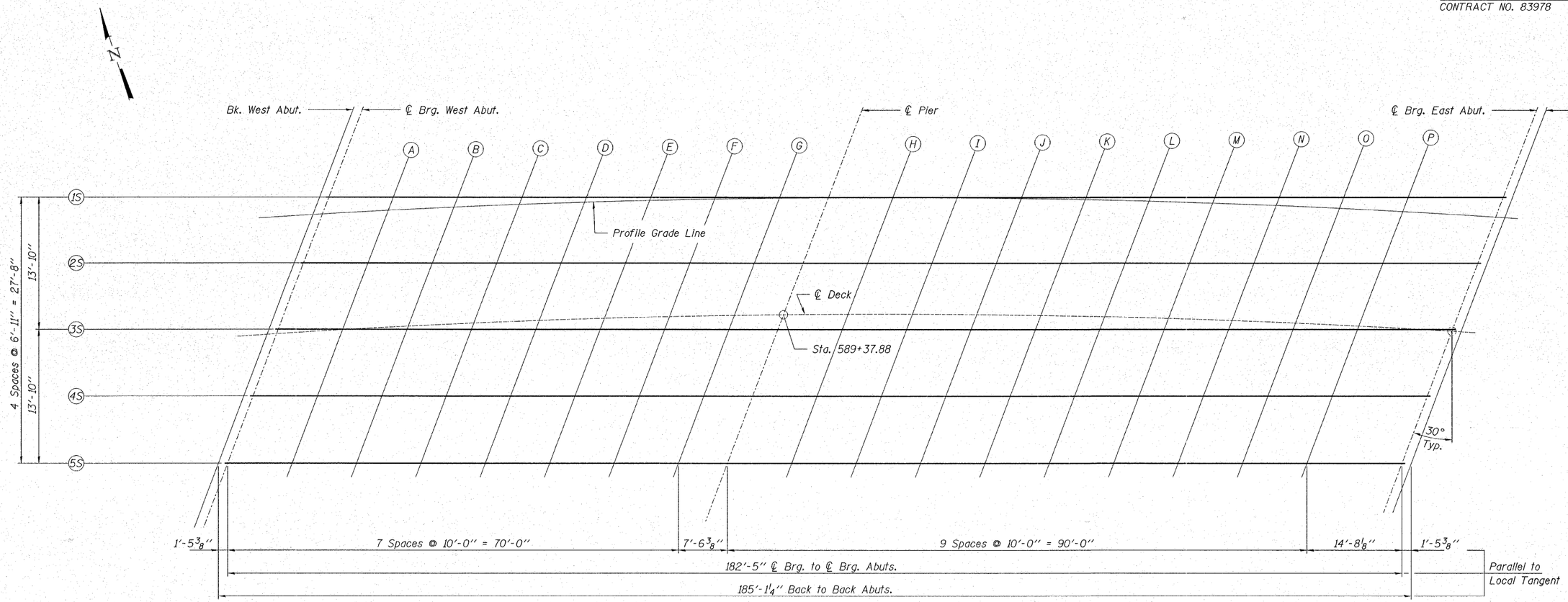
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

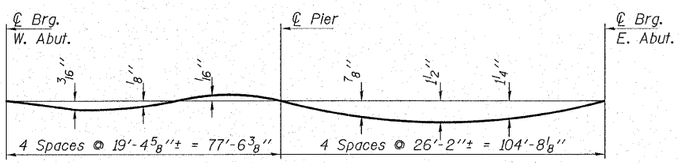
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	35
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 3 of 18 E.B.



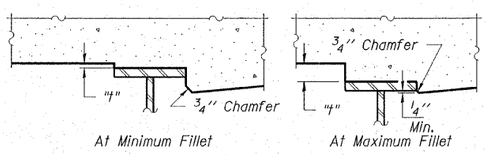
PLAN - EASTBOUND



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

Note: The above deflections are not to be used in the field if the engineer is working from the Theoretical Grade Elevations Adjusted for Dead Load Deflection as shown on Sheet 4 of 18 E.B.



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

FILLET HEIGHTS

HAMPTON, LENZINI & RENWICK, INC.
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(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

TOP OF SLAB ELEVATIONS

SECTION 06-00214-08-BR

F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214-08-BR	KANE	50	36
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 4 of 18 E.B.

BEAM 1S

	Bk. of W. Abut.	℄ Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	℄ of Pier	Span 2 H	I	J	K	L	M	N	O	P	Q	℄ Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	703.419	703.425	703.467	703.511	703.556	703.602	703.649	703.698	703.748	703.786	703.839	703.892	703.947	704.003	704.060	704.119	704.179	704.240	704.302	704.366	704.396	704.405
Theoretical Grade Elevation Adjusted for D.L. Deflection	703.419	703.425	703.476	703.528	703.570	703.613	703.652	703.694	703.746	703.786	703.868	703.951	703.034	704.115	704.197	704.253	704.301	704.347	704.366	704.386	704.396	704.405
Bottom of Slab Elevation	702.752	702.758	702.809	702.861	702.903	703.946	702.985	703.027	703.079	703.119	703.201	703.284	703.367	703.448	703.530	703.586	703.634	703.680	703.699	703.719	703.729	703.738
Top of Steel																						
Fillet Height "t"																						

PROFILE GRADE LINE (ALONG CURVE)

	Bk. of W. Abut.	℄ Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	℄ of Pier	Span 2 H	I	J	K	L	M	N	O	P	Q	℄ Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	703.366	703.374	703.426	703.478	703.530	703.583	703.635	703.687	703.739	703.784	703.836	703.888	703.940	703.992	704.045	704.097	704.149	704.201	704.254	704.306	704.324	704.331
Theoretical Grade Elevation Adjusted for D.L. Deflection	703.366	703.374	703.434	703.495	703.545	703.594	703.638	703.683	703.738	703.784	703.866	703.948	704.028	704.106	704.183	704.230	704.271	704.304	704.313	704.321	704.324	704.331

BEAM 2S

	Bk. of W. Abut.	℄ Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	℄ of Pier	Span 2 H	I	J	K	L	M	N	O	P	Q	℄ Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	703.208	703.214	703.256	703.299	703.343	703.389	703.436	703.484	703.534	703.572	703.624	703.677	703.732	703.787	703.844	703.903	703.962	704.023	704.085	704.148	704.178	704.188
Theoretical Grade Elevation Adjusted for D.L. Deflection	703.208	703.214	703.264	703.315	703.358	703.400	703.439	703.481	703.532	703.572	703.654	703.736	703.819	703.899	703.981	703.036	704.085	704.130	704.148	704.168	704.178	704.188
Bottom of Slab Elevation	702.541	702.547	702.597	702.648	702.691	702.733	702.772	702.814	702.865	702.905	702.987	703.069	703.152	703.232	703.314	703.369	703.418	703.463	703.481	703.501	703.511	703.521
Top of Steel																						
Fillet Height "t"																						

℄ DECK (ALONG CURVE)

	Bk. of W. Abut.	℄ Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	℄ of Pier	Span 2 H	I	J	K	L	M	N	O	P	Q	℄ Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	702.971	702.978	703.031	703.083	703.136	703.188	703.241	703.294	703.346	703.391	703.444	703.497	703.549	703.602	703.654	703.707	703.759	703.812	703.864	703.917	703.936	703.943
Theoretical Grade Elevation Adjusted for D.L. Deflection	702.971	702.978	703.039	703.100	703.151	703.200	703.245	703.290	703.344	703.391	703.474	703.556	703.637	703.715	703.792	703.840	703.881	703.915	703.924	703.933	703.936	703.943

BEAM 3S

	Bk. of W. Abut.	℄ Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	℄ of Pier	Span 2 H	I	J	K	L	M	N	O	P	Q	℄ Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	702.996	703.002	703.044	703.087	703.131	703.176	703.223	703.271	703.320	703.358	703.409	703.462	703.516	703.572	703.628	703.686	703.745	703.806	703.868	703.931	703.961	703.970
Theoretical Grade Elevation Adjusted for D.L. Deflection	702.996	703.002	703.052	703.103	703.145	703.187	703.226	703.267	703.318	703.358	703.439	703.521	703.603	703.684	703.765	703.820	703.868	703.913	703.931	703.951	703.961	703.970
Bottom of Slab Elevation	702.329	702.335	702.385	702.436	702.478	702.520	702.559	702.600	702.651	702.691	702.772	702.854	702.936	703.017	703.098	703.153	703.201	703.246	703.264	703.284	703.294	703.303
Top of Steel																						
Fillet Height "t"																						

BEAM 4S

	Bk. of W. Abut.	℄ Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	℄ of Pier	Span 2 H	I	J	K	L	M	N	O	P	Q	℄ Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	702.785	702.791	702.832	702.875	702.918	702.963	703.010	703.057	703.106	703.144	703.195	703.247	703.301	703.356	703.412	703.470	703.529	703.589	703.651	703.713	703.743	703.752
Theoretical Grade Elevation Adjusted for D.L. Deflection	702.785	702.791	702.841	702.891	703.933	703.975	703.012	703.054	703.104	703.144	703.224	703.306	703.388	703.468	703.549	703.604	703.652	703.696	703.714	703.734	703.743	703.752
Bottom of Slab Elevation	702.118	702.124	702.174	702.224	702.266	702.308	702.345	702.387	702.437	702.477	702.557	702.639	702.721	702.801	702.882	702.937	702.985	702.029	702.047	703.067	703.076	703.085
Top of Steel																						
Fillet Height "t"																						

BEAM 5S

	Bk. of W. Abut.	℄ Brg. W. Abut.	Span 1 A	B	C	D	E	F	G	℄ of Pier	Span 2 H	I	J	K	L	M	N	O	P	Q	℄ Brg. E. Abut.	Bk. of E. Abut.
Theoretical Grade Elevation	702.574	702.580	702.621	702.663	702.706	702.750	702.796	702.844	702.892	702.930	702.980	703.033	703.086	703.141	703.197	703.254	703.312	703.372	703.433	703.496	703.526	703.535
Theoretical Grade Elevation Adjusted for D.L. Deflection	702.574	702.580	702.629	702.679	702.720	702.762	702.799	702.840	702.891	702.930	703.010	703.092	703.173	703.253	703.333	703.388	703.435	703.479	703.497	703.516	703.526	703.535
Bottom of Slab Elevation	701.907	701.913	701.962	702.012	702.053	702.095	702.132	702.173	702.224	702.263	702.343	702.425	702.506	702.586	702.666	702.721	702.768	702.812	702.830	702.849	702.859	702.868
Top of Steel																						
Fillet Height "t"																						

HAMPTON, LENZINI & RENWICK, INC.
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SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

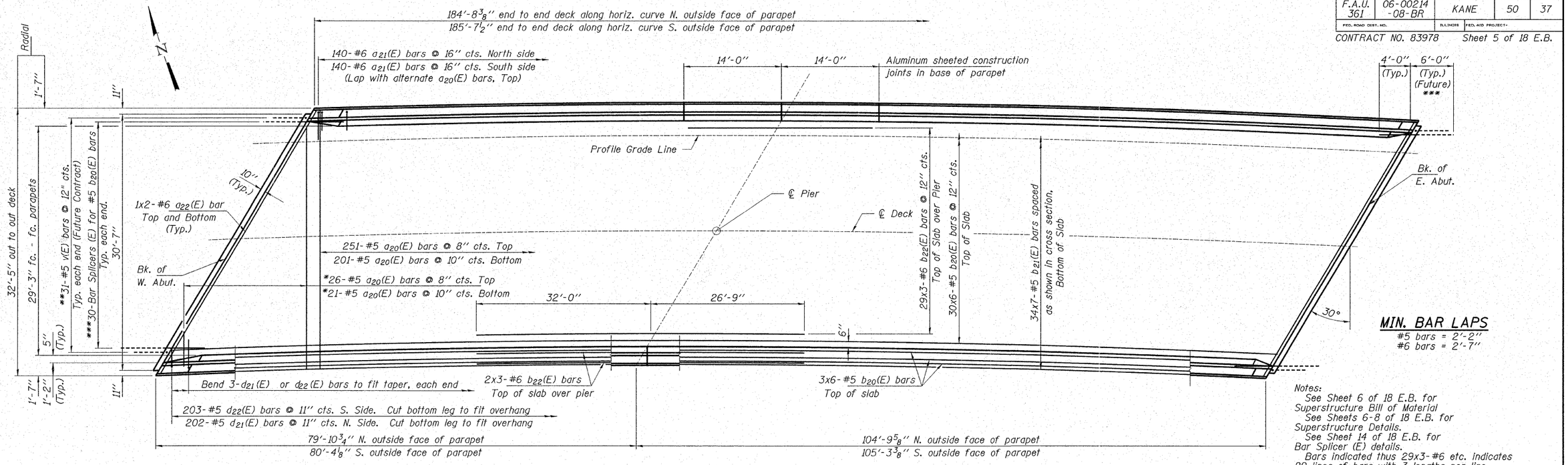
PROJECT NUMBER: 12-05-0077-i | DATE: 09/20/07
DESIGNED: T.P.L. | CHECKED: J.L.B. | DRAWN: P.J.L.

TOP OF SLAB ELEVATIONS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	37
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

CONTRACT NO. 83978 Sheet 5 of 18 E.B.



PLAN - EASTBOUND

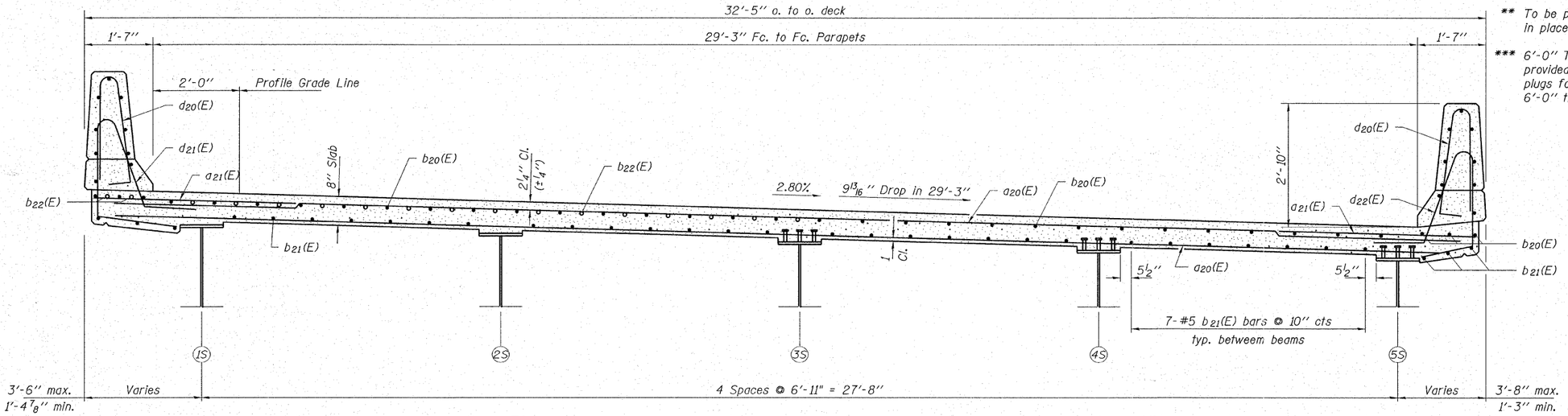
MIN. BAR LAPS
#5 bars = 2'-2"
#6 bars = 2'-7"

Notes:
See Sheet 6 of 18 E.B. for Superstructure Bill of Material
See Sheets 6-8 of 18 E.B. for Superstructure Details.
See Sheet 14 of 18 E.B. for Bar Splicer (E) details.
Bars indicated thus 29x3-#6 etc. indicates 29 lines of bars with 3 lengths per line.

* Order $a_{20}(E)$ bars full length. Cut to fit skew & use remainder of bars in other end.

** To be provided in Future Contract. Drill & epoxy in place prior to approach slab construction.

*** 6'-0" Threaded or coil splicer rods to be provided in Future Contract. Provide plastic plugs for exposed end of Bar Splicer in lieu of 6'-0" threaded or coil splicer rods.



Near Pier

Near Midspan

CROSS SECTION

(Looking East)
Horizontal Dimensions Measured Radially

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD

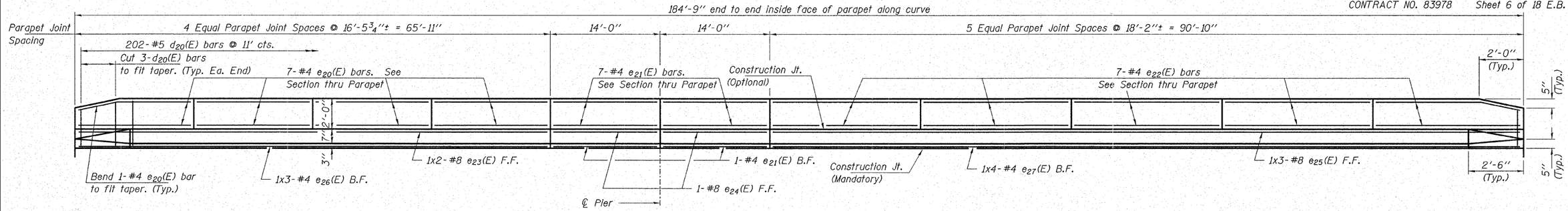
PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

SUPERSTRUCTURE

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	38
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT-		

CONTRACT NO. 83978 Sheet 6 of 18 E.B.

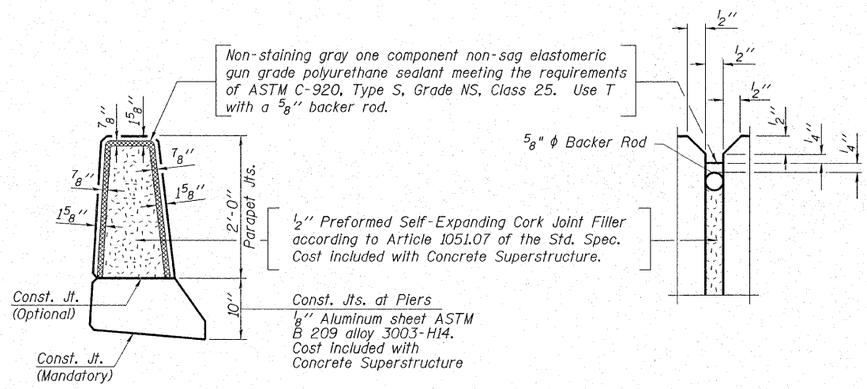


INSIDE ELEVATION OF NORTH PARAPET

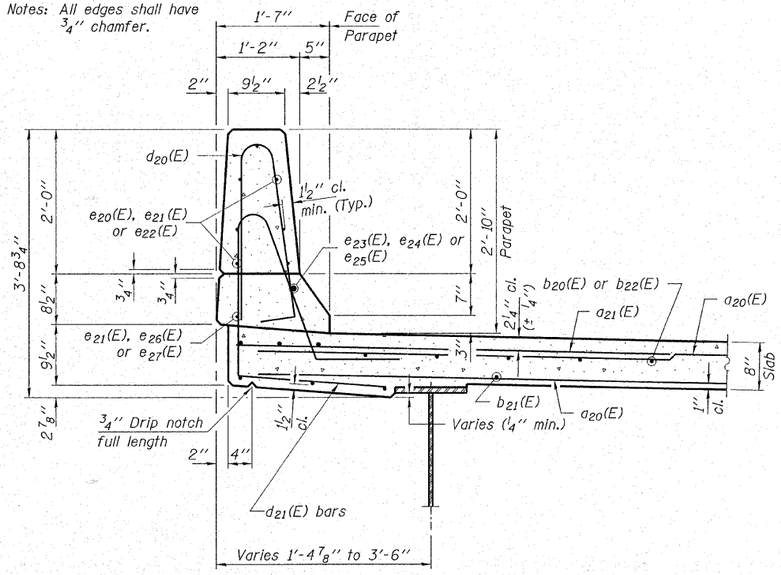
(Eastbound Structure)

MIN. BAR LAPS

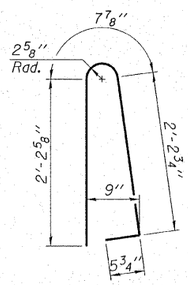
#4 bars = 1'-8"
#5 bars = 2'-2"
#8 bars = 4'-6"



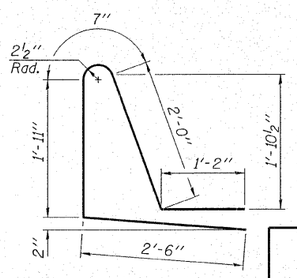
PARAPET JOINT DETAILS



SECTION THRU PARAPET



BAR d20(E)



BAR d21(E)

EASTBOUND SUPERSTRUCTURE BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
$a_{20}(E)$	499	#5	31'-11"	
$a_{21}(E)$	280	#6	6'-0"	
$a_{22}(E)$	8	#5	20'-4"	
$b_{20}(E)$	216	#5	32'-9"	
$b_{21}(E)$	238	#5	28'-4"	
$b_{22}(E)$	99	#6	21'-4"	
$d_{20}(E)$	405	#5	5'-7"	
$d_{21}(E)$	202	#5	8'-2"	
$d_{22}(E)$	203	#5	8'-4"	
$e_{20}(E)$	28	#4	16'-2"	
$e_{21}(E)$	32	#4	13'-9"	
$e_{22}(E)$	35	#4	17'-11"	
$e_{23}(E)$	2	#8	35'-0"	
$e_{24}(E)$	4	#8	13'-9"	
$e_{25}(E)$	3	#8	33'-3"	
$e_{26}(E)$	3	#4	23'-0"	
$e_{27}(E)$	4	#4	23'-11"	
$e_{28}(E)$	35	#4	18'-0"	
$e_{29}(E)$	28	#4	16'-4"	
$e_{30}(E)$	3	#8	33'-4"	
$e_{31}(E)$	2	#8	35'-3"	
$e_{32}(E)$	4	#4	24'-0"	
$e_{33}(E)$	3	#4	23'-3"	
$m_{20}(E)$	8	#6	19'-3"	
$m_{21}(E)$	20	#6	20'-4"	
$m_{22}(E)$	40	#6	9'-8"	
$m_{23}(E)$	8	#6	7'-8"	
$m_{24}(E)$	2	#6	3'-11"	
$m_{25}(E)$	2	#6	1'-10"	
$s_{20}(E)$	68	#5	6'-7"	
$s_{21}(E)$	68	#4	12'-8"	
Concrete Superstructure			Cu. Yd.	228.0
Reinforcement Bars, Epoxy Coated			Pound	48,350
Bar Splicers, Special			Each	60

Bars indicated thus 1 x 3-#8 etc. indicates 1 line of bars with 3 lengths per line.

HAMPTON, LENZINI & RENWICK, INC.
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LAND SURVEYORS
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SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
HLR
ELGIN • SPRINGFIELD

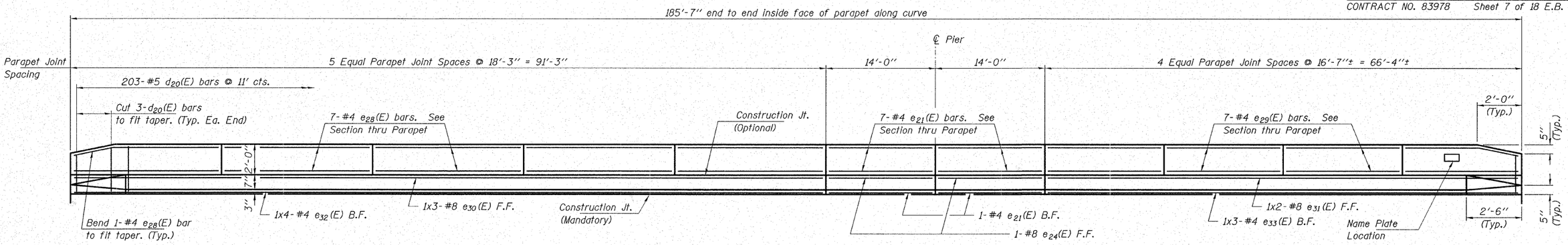
PROJECT NUMBER: 12-05-0077-1		DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

SUPERSTRUCTURE DETAILS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	39
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 7 of 18 E.B.

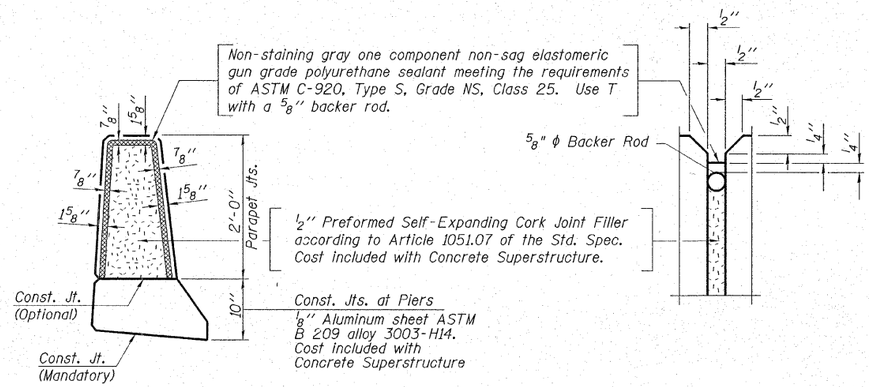


INSIDE ELEVATION OF SOUTH PARAPET

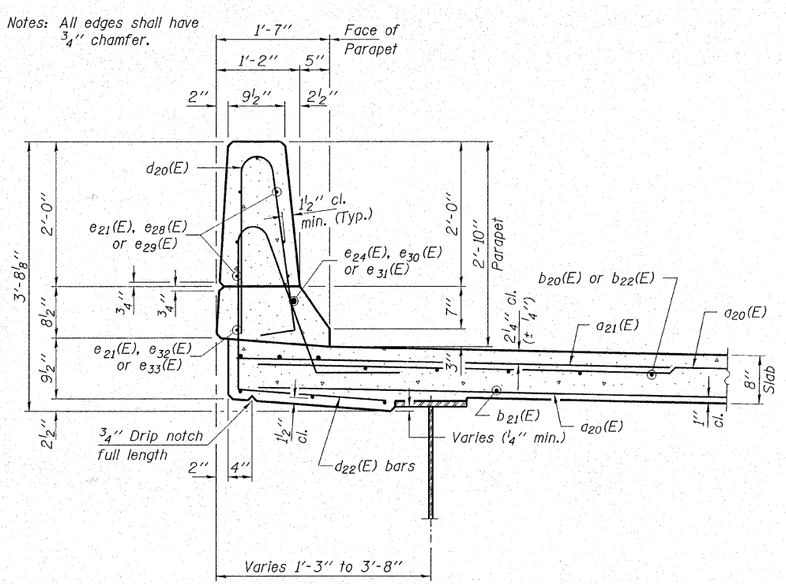
(Eastbound Structure)

MIN. BAR LAPS

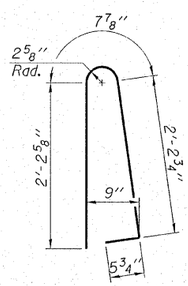
#4 bars = 1'-8"
#5 bars = 2'-2"
#8 bars = 4'-6"



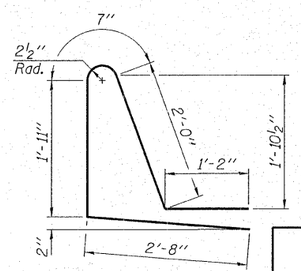
PARAPET JOINT DETAILS



SECTION THRU PARAPET



BAR d_{20}(E)



BAR d_{22}(E)

Note:
For Superstructure Bill of Material See Sheet #6

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
HLR
ELGIN • SPRINGFIELD

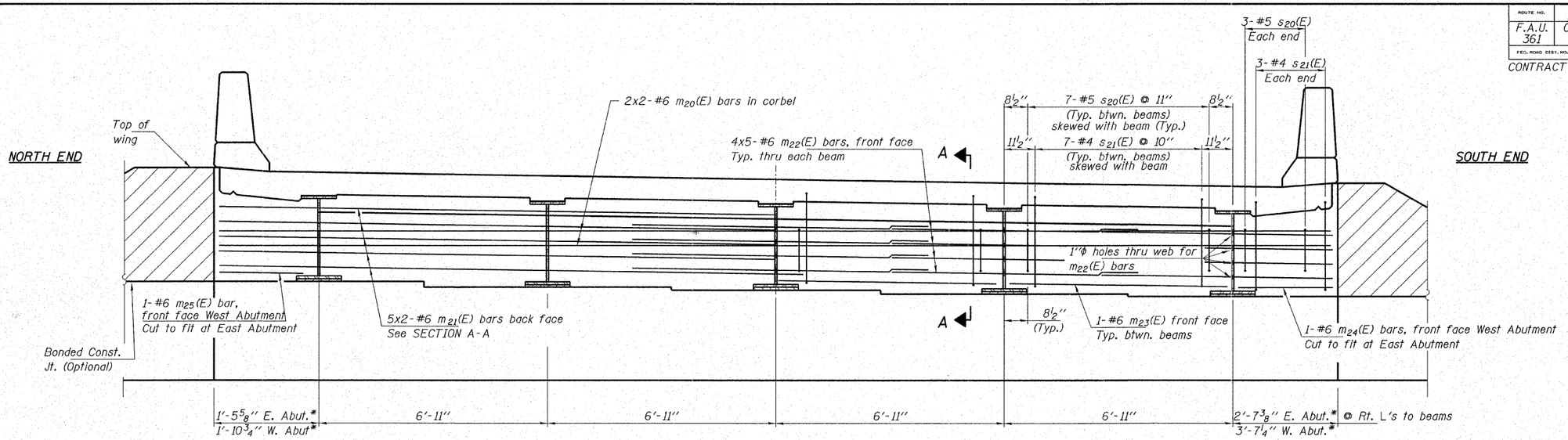
PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
DESIGNED T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

SUPERSTRUCTURE DETAILS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214-08-BR	KANE	50	40
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 8 of 18 E.B.

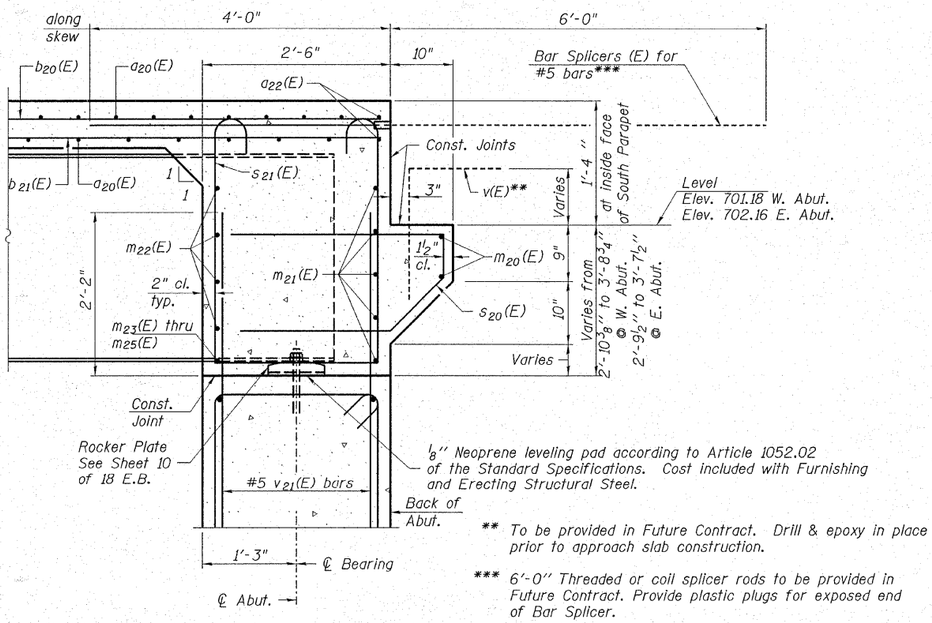


DIAPHRAGM AT ABUTMENT

East Abutment shown - West Abutment Opposite Hand except as noted

Notes: Reinforcement bars in diaphragms are billed with superstructure on Sheet 6 of 18 E.B.
Concrete in diaphragms is included with "Concrete Superstructure" on Sheet 6 of 18 E.B.

* At face of Abutment



SECTION A-A

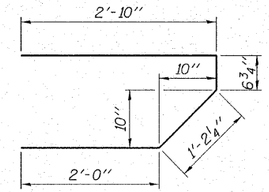
℄ Rt. L's

** To be provided in Future Contract. Drill & epoxy in place prior to approach slab construction.

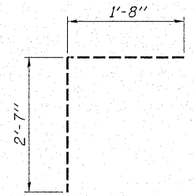
*** 6'-0" Threaded or coil splicer rods to be provided in Future Contract. Provide plastic plugs for exposed end of Bar Splicer.

MIN. BAR LAPS

#6 bars = 2'-7"



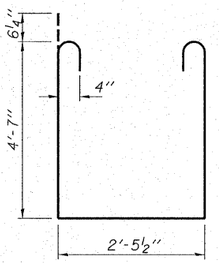
BAR s_{20}(E)



BAR $v_{(E)}$**

Future (NIC)

Min. 9" embedment, cut to fit



BAR s_{21}(E)

Note:
For Superstructure Bill of Material See Sheet 6 of 18 E.B.

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(217) 546-3400
HLR
ELGIN • SPRINGFIELD

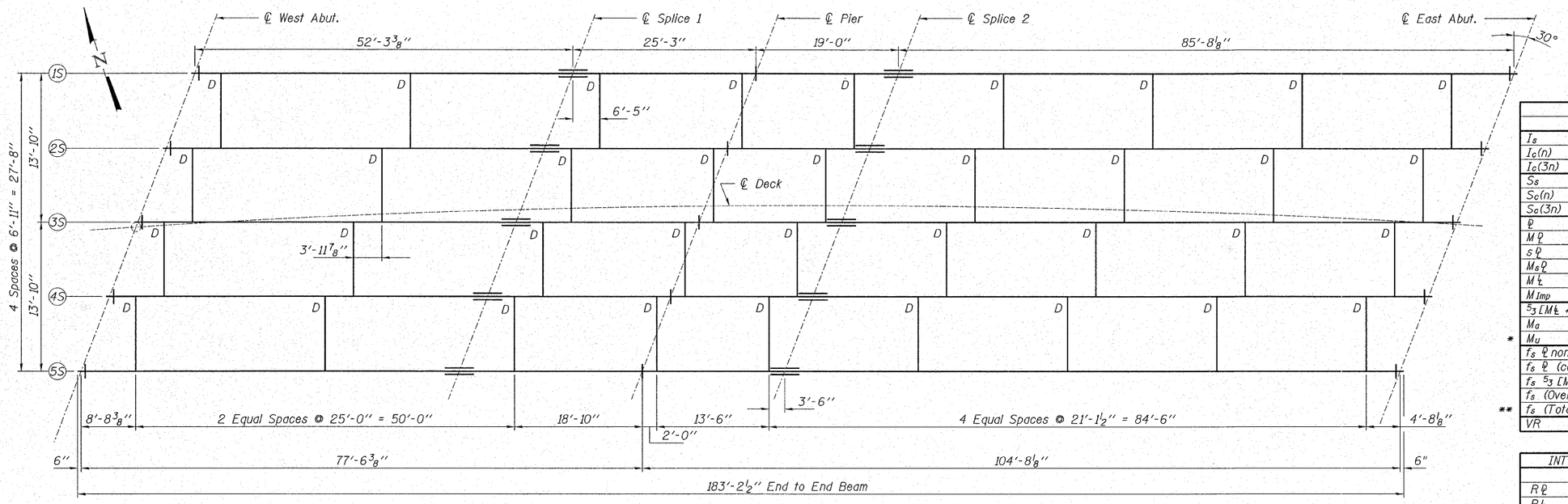
PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

SUPERSTRUCTURE DETAILS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	41
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 9 of 18 E.B.



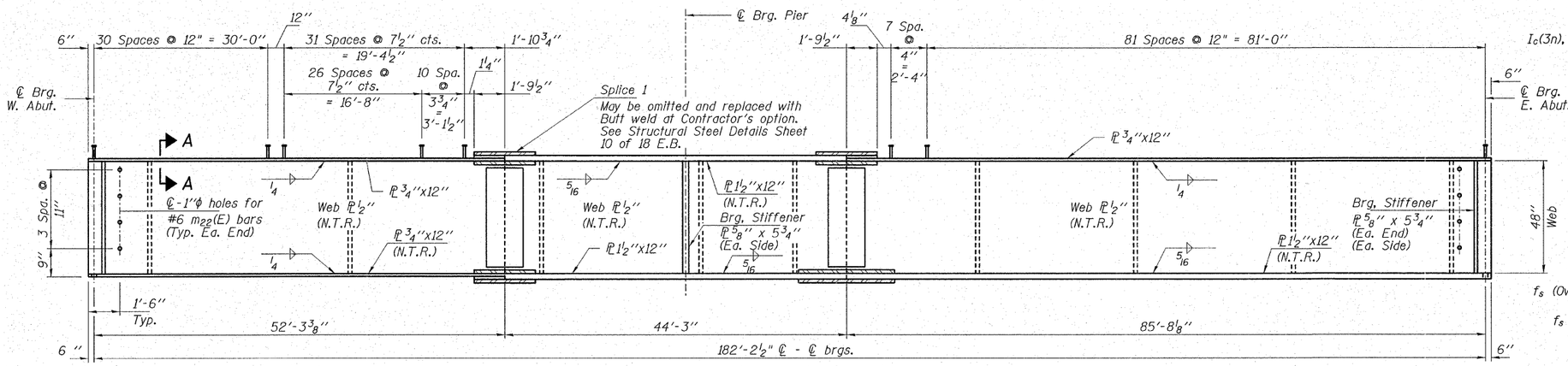
FRAMING PLAN - EASTBOUND

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in^4)	15,303	26,667	19,983
$I_c(n)$	(in^4)	39,966		56,752
$I_c(3n)$	(in^4)	29,966		40,784
S_s	(in^3)	618	1046	949
$S_c(n)$	(in^3)	901		1,349
$S_c(3n)$	(in^3)	822		1,236
$\mathcal{D}$	(k/')	0.911	1.437	0.911
$M\mathcal{D}$	('k)	210	1,578	751
$s\mathcal{D}$	(k/')	0.526		0.526
$M_s\mathcal{D}$	('k)	195		508
$M\mathcal{L}$	('k)	588	514	855
M_{Imp}	('k)	147	118	188
$\frac{5}{3}[M\mathcal{L} + Imp]$	('k)	1,225	1,053	1,738
M_a	('k)	2,119	3,420	3,896
* M_u	('k)	3,606	4,358	5,148
f_s $\mathcal{D}$ non-comp	(ksi)	4.1	18.1	9.5
f_s $\mathcal{D}$ (comp)	(ksi)	2.8		4.9
f_s $\frac{5}{3}[M\mathcal{L} + M_{Imp}]$	(ksi)	16.3	12.1	15.5
f_s (Overload)	(ksi)	23.2	30.2	29.9
** f_s (Total)	(ksi)	30.2	39.3	38.9
VR	(k)	54		52.5

INTERIOR GIRDER REACTION TABLE				
		W. Abut.	Pier	E. Abut.
$R\mathcal{D}$	(k)	35.4	166.4	60.1
$R\mathcal{L}$	(k)	38.8	60.9	40.5
Imp.	(k)	9.7	14	8.9
R_{Total}	(k)	83.9	241.3	109.5

* Compact section
** Braced non-compact and partially braced section

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads ($in.^4$ and $in.^3$).
$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads ($in.^4$ and $in.^3$).
$I_c(3n)$, $S_c(3n)$: 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 and Overload) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
$\mathcal{D}$: Un-factored non-composite dead load (kips/ft.).
$M\mathcal{D}$: Un-factored moment due to non-composite dead load (kip-ft.).
$s\mathcal{D}$: Un-factored long-term composite (superimposed) dead load (kips/ft.)
$M_s\mathcal{D}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
$M\mathcal{L}$: Un-factored live load moment (kip-ft.).
M_{Imp}: Un-factored moment due to impact (kip-ft.).
M_a: Factored design moment (kip-ft.). $1.3\,[M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}(M\mathcal{L} + M_{Imp})]$
M_u: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
f_s (Overload): Sum of stresses as computed from the moments below (ksi). $M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}(M\mathcal{L} + M_{Imp})$
f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi). $1.3\,[M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}(M\mathcal{L} + M_{Imp})]$
VR: Maximum $\mathcal{L}$ + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).



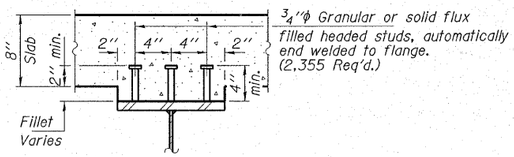
ELEVATION

Location	℄ Brg. W. Abut.	℄ Splice 1	℄ Brg. Pier	℄ Splice 2	℄ Brg. E. Abut.
BEAM 1S	702.63	702.74	702.93	702.98	703.60
BEAM 2S	702.42	702.53	702.72	702.76	703.39
BEAM 3S	702.21	702.32	702.50	702.55	703.17
BEAM 4S	702.00	702.10	702.29	702.33	702.95
BEAM 5S	701.79	701.89	702.08	702.12	702.73

TOP OF WEB ELEVATIONS

(For fabrication only)
(Does not include Dead Load Deflections)

Notes:
N.T.R. indicates Notch Toughness Requirements are applicable.
All structural steel shall be M270 Grade 50W.
For additional Structural Steel details see Sheet 10 of 18 E.B.



SECTION A-A

HAMPTON, LENZINI & RENWICK, INC.
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ELGIN • SPRINGFIELD

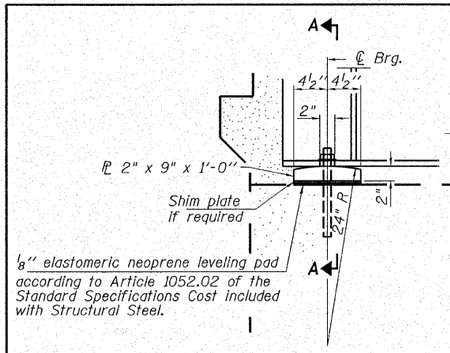
PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

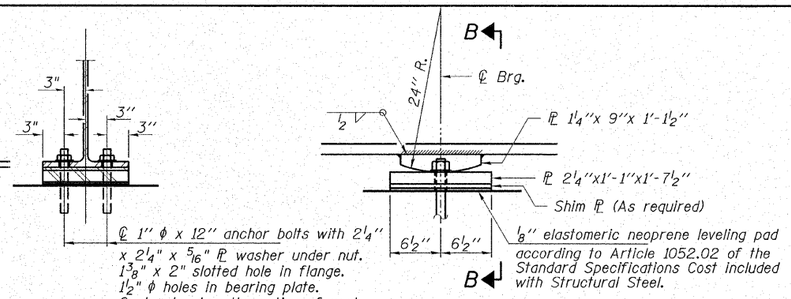
STRUCTURAL STEEL

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	42
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 10 of 18 E.B.



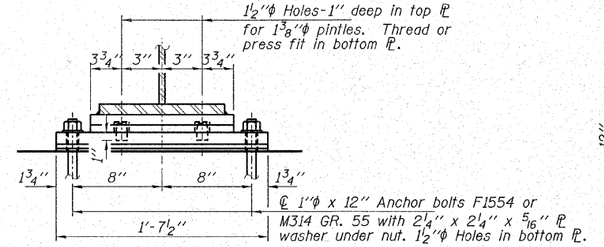


ELEVATION AT ABUTMENT SECTION A-A

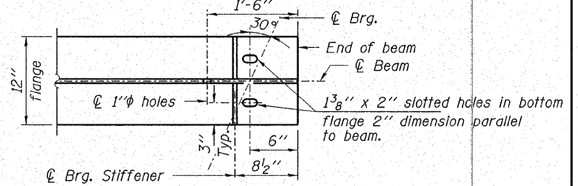
ELEVATION AT PIER

FIXED BEARING AT ABUTMENTS
(10 Required)

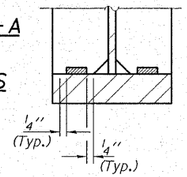
FIXED BEARING AT PIER
(5 Required)



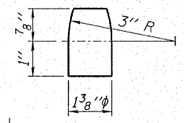
SECTION B-B



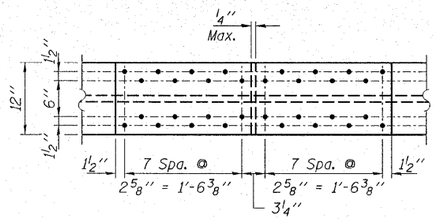
PLAN VIEW END OF BEAM



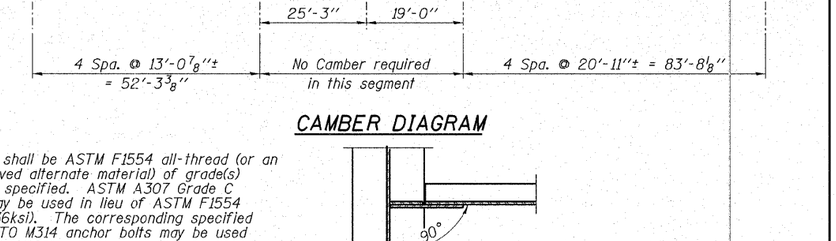
DETAIL "A"



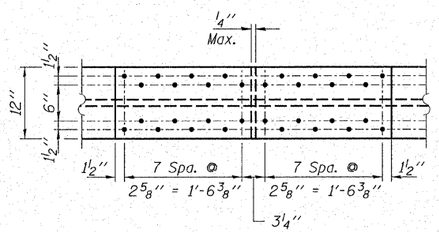
PINTLE
(50 ksi)



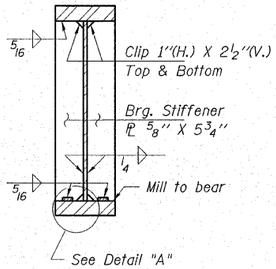
VIEW D-D
(Top Flange)



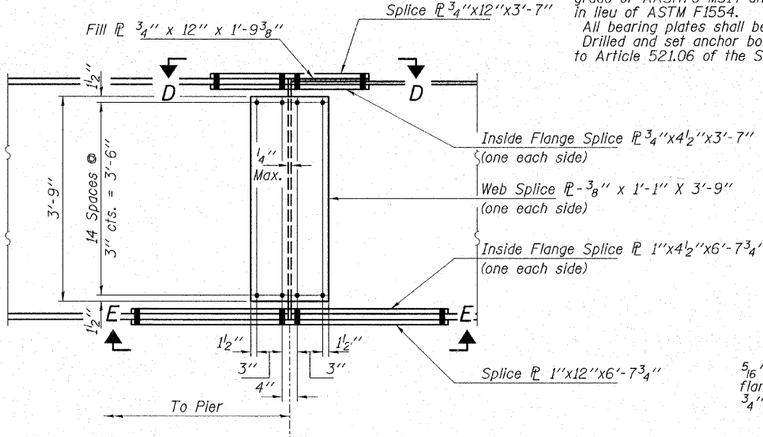
CAMBER DIAGRAM

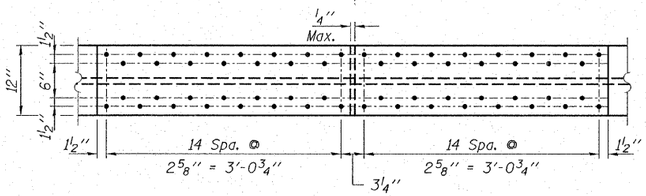


VIEW C-C
(Typ. Top & Bottom Flange)

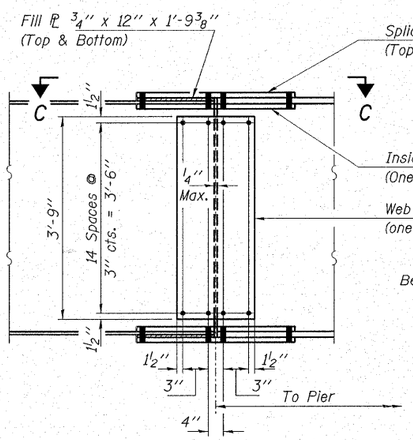


BEARING STIFFENER AT PIER & ABUTMENTS

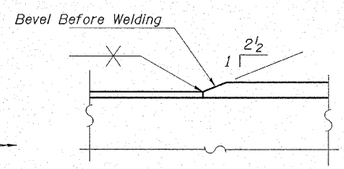




VIEW E-E
(Bottom Flange)



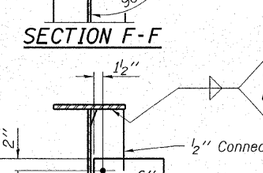
SPLICE 1
⅞"ϕ H.S. Bolts (Typ.)
All splice plates are NTR
(5 Required)



BUTT WELD
Alternate For Splice 1 Only

SPLICE 2
⅞"ϕ H.S. Bolts (Typ.)
All splice plates are NTR
(5 Required)

Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of 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.
All bearing plates shall be AASHTO M270 Grade 50 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.



SECTION F-F

TYPICAL DIAPHRAGM (D)
(36 Required)

Notes:
Two hardened washers required for each set of oversized holes.

All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

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PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

STRUCTURAL STEEL DETAILS

SECTION 06-00214-08-BR

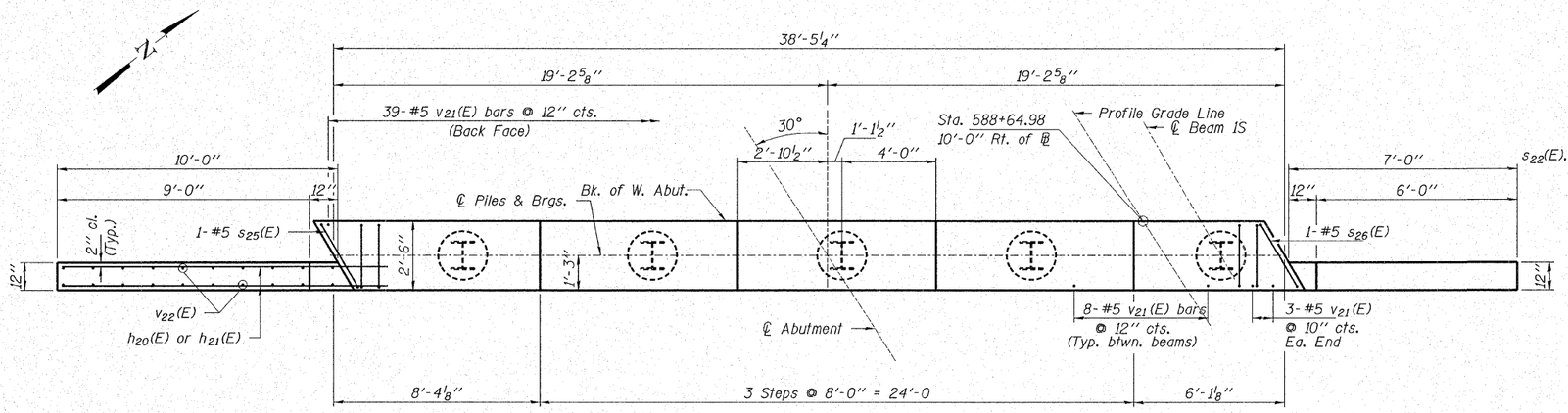
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

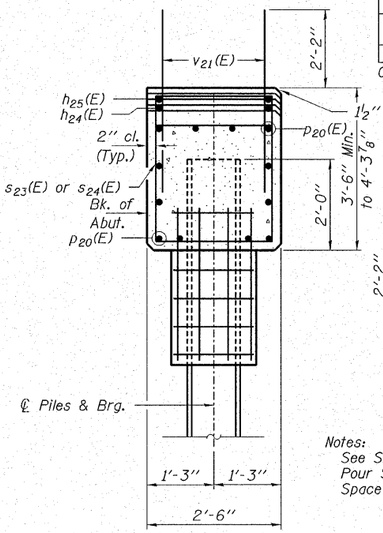
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	43
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

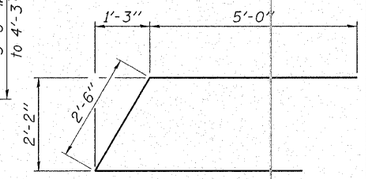
CONTRACT NO. 83978 Sheet 11 of 18 E.B.



PLAN

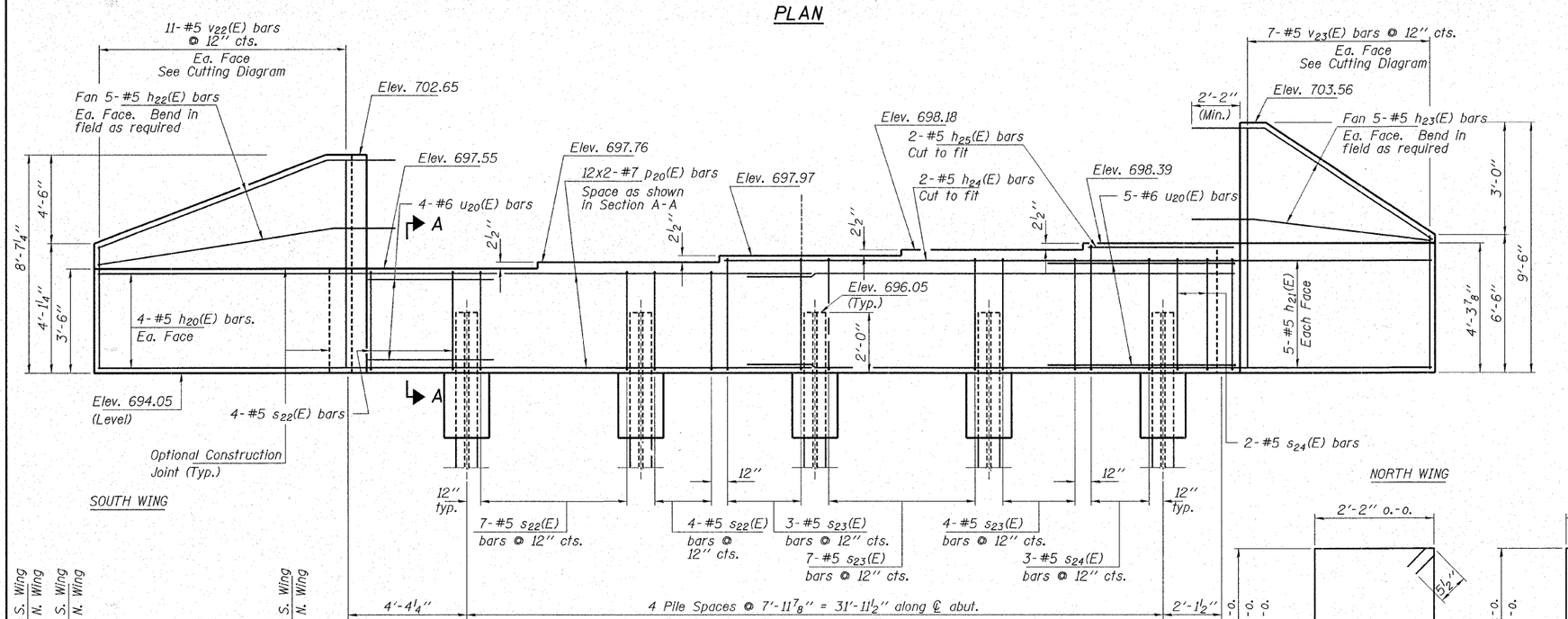


SECTION A-A

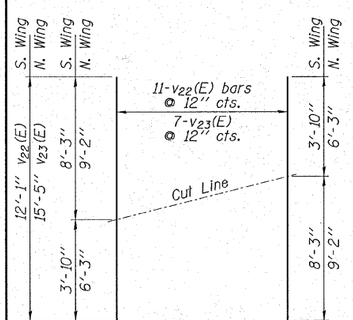


BAR $u_{20}(E)$

Notes:
See Sheet 15 of 18 E.B. for Pile Encasement.
Pour Steps Monolithically with cap.
Space reinforcement in cap to miss anchor bolts.



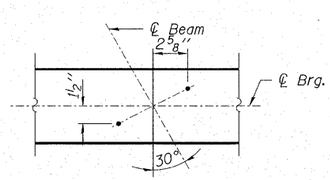
ELEVATION
(West Abutment looking West)



FIELD CUTTING DIAGRAM

Order $v_{22}(E)$ & $v_{23}(E)$ full length. Cut as shown and use remainder of bars in opposite face.

MIN. BAR LAPS
#5 = 2'-2"
#7 = 4'-10"



TYP. ANCHOR BOLT LOCATIONS

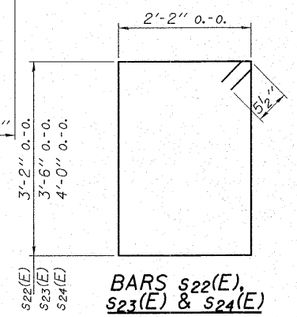
PILE DATA

Type and Size	Steel HP12x63
Nominal Req'd Bearing	497 Kips/Pile
Allowable Resistance Available	166 Kips/Pile
Est. Length	50 Ft/Pile
No. of Production Piles	4
No. of Test Piles	1

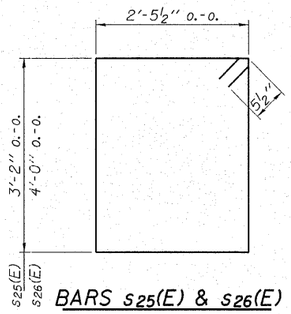
Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

See Sheet 15 of 18 E.B. for Pile Details.



BARS $s_{22}(E)$, $s_{23}(E)$ & $s_{24}(E)$



BARS $s_{25}(E)$ & $s_{26}(E)$

BILL OF MATERIAL WEST ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
$h_{20}(E)$	8	#5	12'-0"	
$h_{21}(E)$	10	#5	9'-0"	
$h_{22}(E)$	10	#5	13'-1"	
$h_{23}(E)$	10	#5	10'-1"	
$h_{24}(E)$	2	#5	22'-8"	
$h_{25}(E)$	2	#5	6'-5"	
$p_{20}(E)$	24	#7	21'-6"	
$s_{22}(E)$	15	#5	11'-7"	
$s_{23}(E)$	15	#5	12'-3"	
$s_{24}(E)$	5	#5	13'-3"	
$s_{25}(E)$	1	#5	12'-2"	
$s_{26}(E)$	1	#5	13'-10"	
$u_{20}(E)$	9	#6	12'-6"	
$v_{21}(E)$	77	#5	4'-4"	
$v_{22}(E)$	11	#5	12'-1"	
$v_{23}(E)$	7	#5	15'-5"	
Concrete Structures			Cu. Yd.	18.4
Reinforcement Bars, Epoxy Coated			Pound	2,790
Furnishing Steel Piles HP 12x63			Foot	200
Driving Piles			Foot	200
Test Pile Steel HP 12x63			Each	1
Concrete Encasement			Cu. Yd.	1.7

Bars indicated thus 12x2-#7 etc. indicates 12 lines of bars with 2 lengths per line.

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(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
DESIGNED T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

WEST ABUTMENT

SECTION 06-00214-08-BR

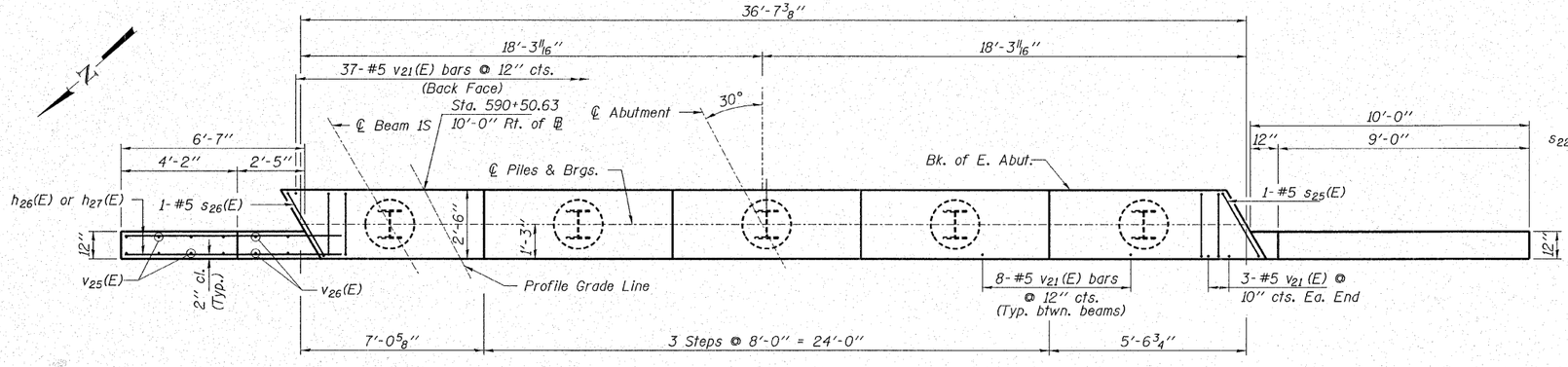
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

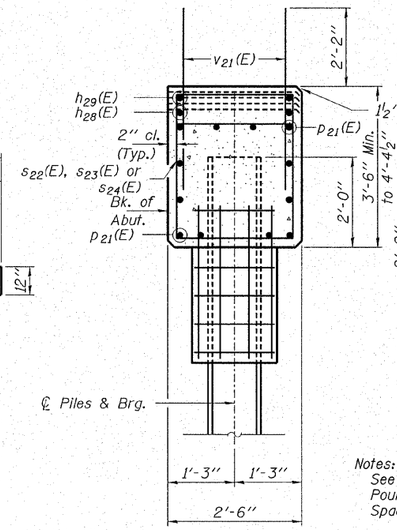
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214-08-BR	KANE	50	44
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

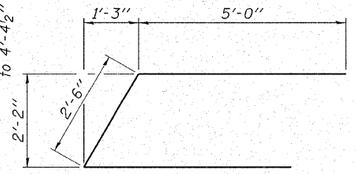
CONTRACT NO. 83978 Sheet 12 of 18 E.B.



PLAN

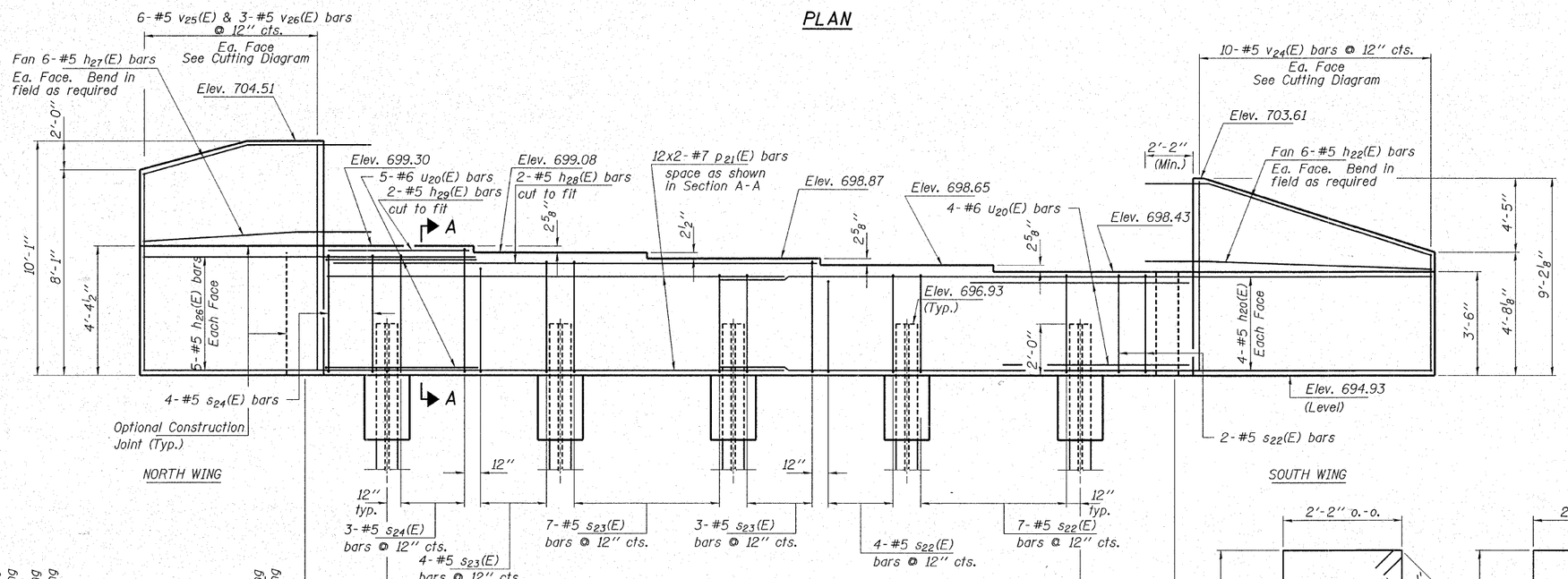


SECTION A-A

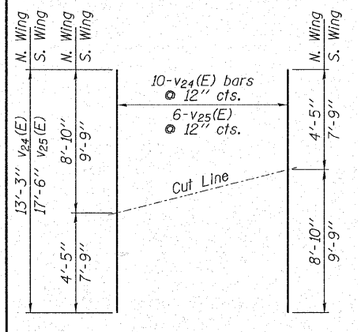


BAR $u_{20}(E)$

Notes:
See Sheet 15 of 18 E.B. for Pile Encasement.
Pour Steps Monolithically with cap.
Space reinforcement in cap to miss anchor bolts.

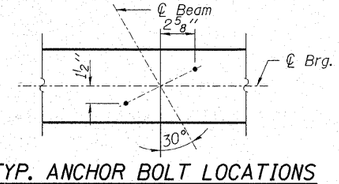


ELEVATION
(East Abutment looking East)



FIELD CUTTING DIAGRAM
Order $v_{24}(E)$ & $v_{25}(E)$ full length. Cut as shown and use remainder of bars in opposite face.

MIN. BAR LAPS
#5 = 2'-2"
#7 = 4'-10"



TYP. ANCHOR BOLT LOCATIONS

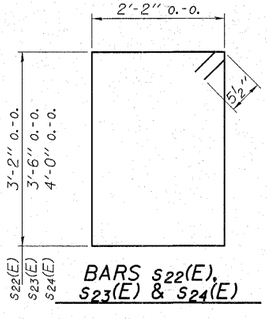
PILE DATA

Type and Size	Steel HP12x63
Nominal Req'd Bearing	497 Kips/Pile
Allowable Resistance Available	166 Kips/Pile
Est. Length	44 Ft/Pile
No. of Production Piles	4
No. of Test Piles	1

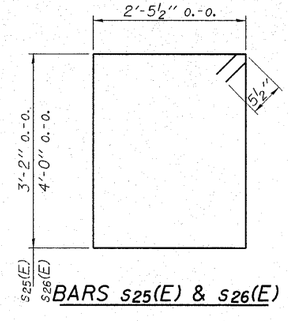
Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

The test pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

See Sheet 15 of 18 E.B. for Pile Details.



BARS $s_{22}(E)$, $s_{23}(E)$ & $s_{24}(E)$



BARS $s_{25}(E)$ & $s_{26}(E)$

BILL OF MATERIAL EAST ABUT.

BAR	NO.	SIZE	LENGTH	SHAPE
$h_{20}(E)$	8	#5	12'-0"	—
$h_{22}(E)$	12	#5	13'-1"	—
$h_{26}(E)$	10	#5	8'-7"	—
$h_{27}(E)$	12	#5	9'-1"	—
$h_{28}(E)$	2	#5	23'-4"	—
$h_{29}(E)$	2	#5	7'-4"	—
$p_{21}(E)$	24	#7	20'-7"	—
$s_{22}(E)$	13	#5	11'-7"	□
$s_{23}(E)$	14	#5	12'-3"	□
$s_{24}(E)$	7	#5	13'-3"	□
$s_{25}(E)$	1	#5	12'-2"	□
$s_{26}(E)$	1	#5	13'-10"	□
$u_{20}(E)$	9	#6	12'-6"	▱
$v_{21}(E)$	75	#5	4'-4"	—
$v_{24}(E)$	10	#5	13'-3"	—
$v_{25}(E)$	6	#5	17'-6"	—
$v_{26}(E)$	6	#5	9'-9"	—
Concrete Structures			Cu. Yd.	18.3
Reinforcement Bars, Epoxy Coated			Pound	2,820
Furnishing Steel Piles HP 12x63			Foot	176
Driving Piles			Foot	176
Test Pile Steel HP 12x63			Each	1
Concrete Encasement			Cu. Yd.	1.7

Bars indicated thus 12x2-#7 etc. indicates 12 lines of bars with 2 lengths per line.

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PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
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	DRAWN: P.J.L.

EAST ABUTMENT

SECTION 06-00214-08-BR

F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

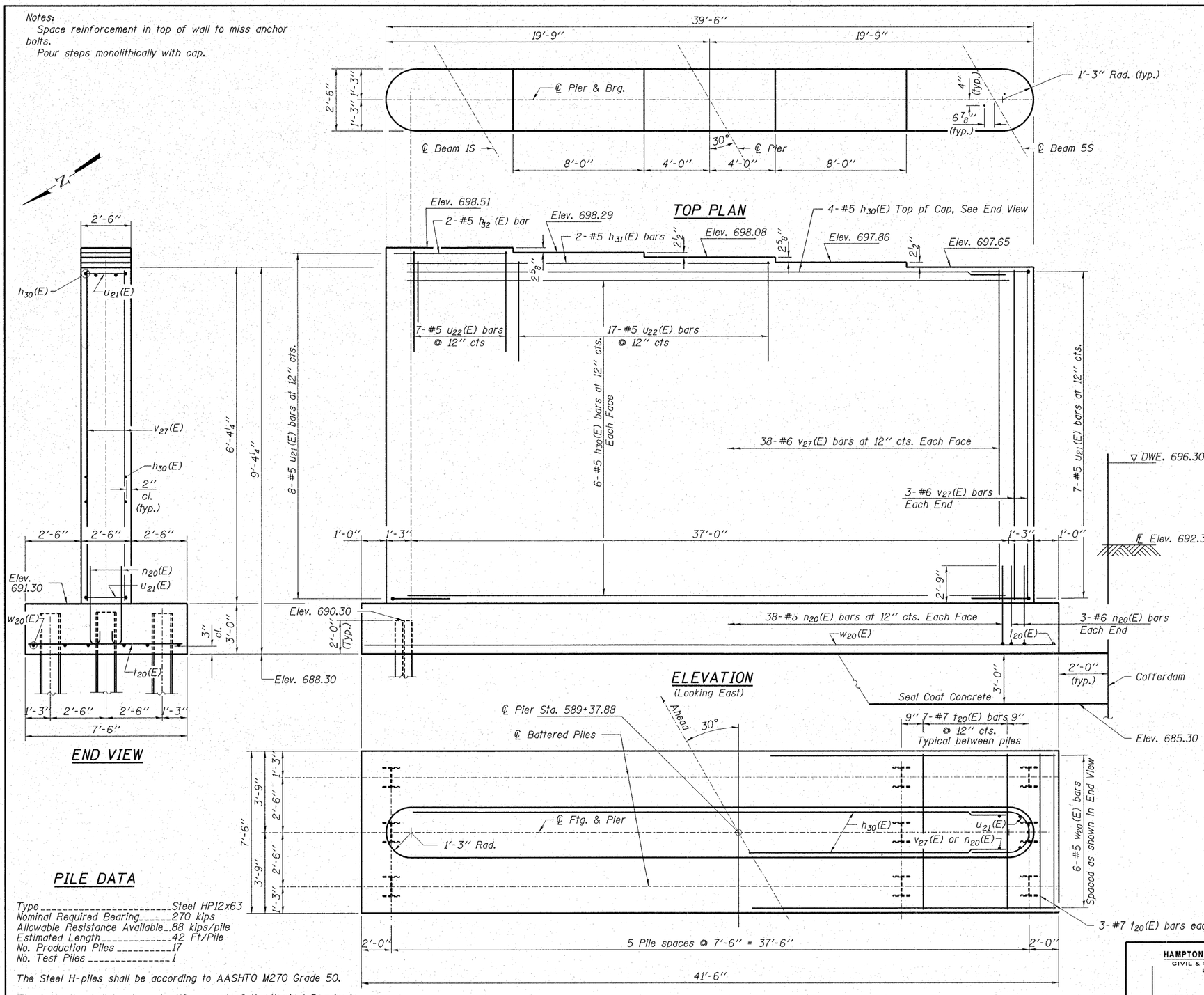
KANE COUNTY

STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

Notes:
Space reinforcement in top of wall to miss anchor bolts.
Pour steps monolithically with cap.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	45
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 13 of 18 E.B.



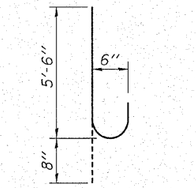
PILE DATA

Type _____ Steel HP12x63
Nominal Required Bearing _____ 270 kips
Allowable Resistance Available _____ 88 kips/pile
Estimated Length _____ 42 Ft/Pile
No. Production Piles _____ 17
No. Test Piles _____ 1

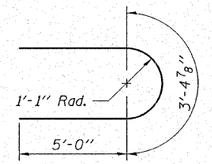
The Steel H-piles shall be according to AASHTO M270 Grade 50.

The test pile shall be drven to 110 percent of the Nominal Required Bearing incicated in the pile data information.

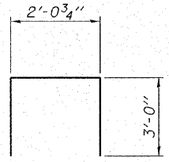
See Sheet 15 of 18 E.B. for details.



BAR $n_{20}(E)$



BAR $u_{21}(E)$



BAR $u_{22}(E)$

MIN. BAR LAPS

#5 = 2'-2"
#6 = 2'-7"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{30}(E)$	16	#5	37'-0"	—
$h_{31}(E)$	2	#5	22'-3"	—
$h_{32}(E)$	2	#5	6'-3"	—
$n_{20}(E)$	82	#6	6'-2"	⊃
$t_{20}(E)$	41	#7	7'-2"	—
$u_{21}(E)$	15	#5	13'-5"	⊃
$u_{22}(E)$	24	#5	8'-1"	⊃
$v_{27}(E)$	82	#6	6'-0"	—
$w_{20}(E)$	6	#5	41'-2"	—
Structure Excavation			Cu. Yd.	2.6
Cofferdam Excavation			Cu. Yd.	155.0
Cofferdams			Each	1
Concrete Structures			Cu. Yd.	58.9
Seal Coat Concrete			Cu. Yd.	58.1
Reinforcement Bars, Epoxy Coated			Pound	3,450
Furnishing Steel Piles, HP 12X63			Foot	714
Driving Piles			Foot	714
Test Pile, Steel, HP12X63			Each	1

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ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-1	DATE: 09/20/07
DESIGNED T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

PIER

SECTION 06-00214-08-BR

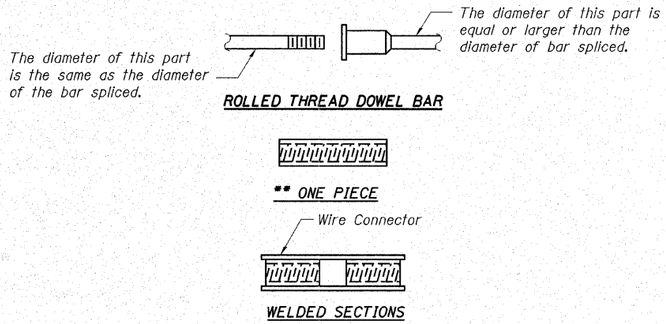
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK

KANE COUNTY

STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

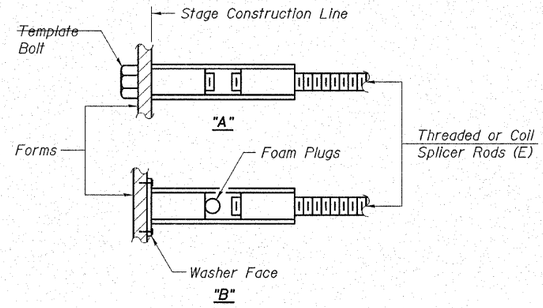
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	46
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 14 of 18 E.B.



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.

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.

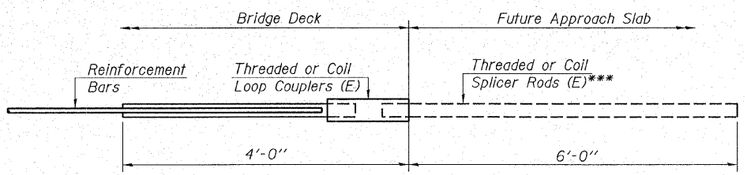
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = $1.25 \times fy \times A_t$

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times fy \times A_t$

Where fy = 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



FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

*** 6'-0" Threaded or coil splicer rods to be provided in Future Contract. Provide plastic plugs for exposed end of Bar Splicer in lieu of 6'-0" threaded or coil splicer rods.

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 60

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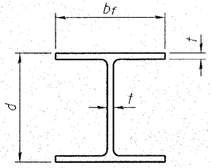
PROJECT NUMBER: 12-05-0077-i		DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.	DRAWN: P.J.L.

BAR SPLICERS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

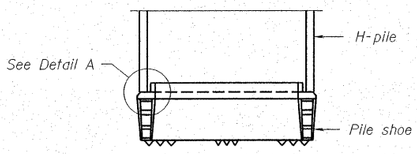
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	47
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 15 of 18 E.B.

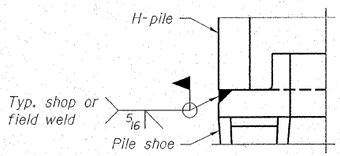


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''

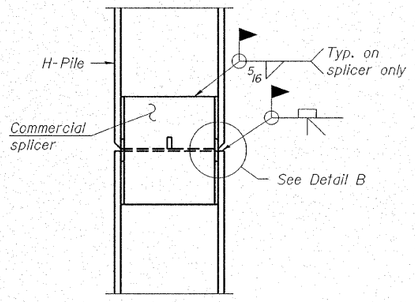


ELEVATION

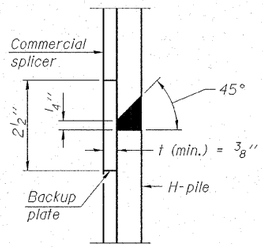


DETAIL A

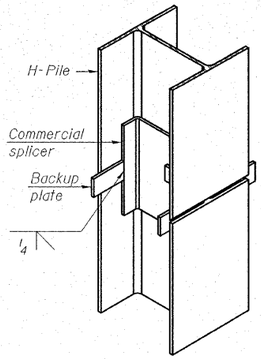
H-PILE SHOE ATTACHMENT



ELEVATION

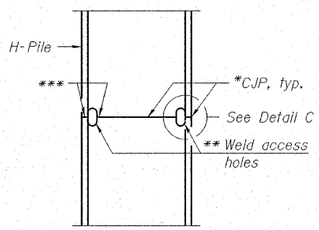


DETAIL "B"

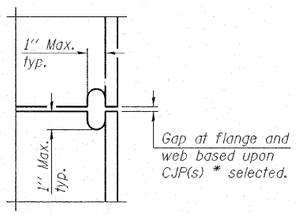


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ELEVATION



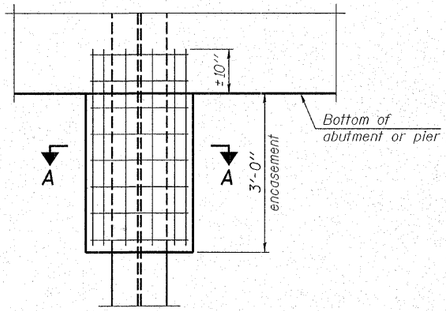
DETAIL C

COMPLETE PENETRATION WELD SPLICE

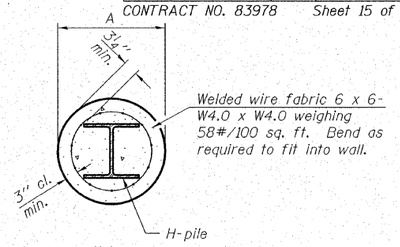
* Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.

** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.

*** Interrupt welds 1/4'' from end of each pile.



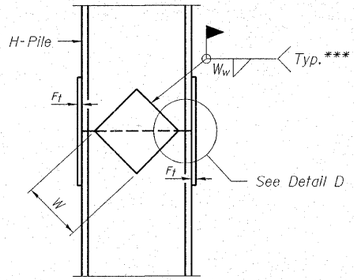
ELEVATION



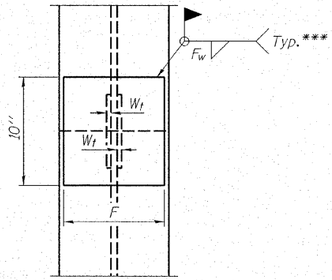
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

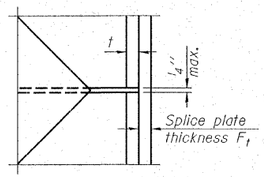
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	$12\frac{1}{2}''$	1''	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8''	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8''	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7''	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

WELDED PLATE FIELD SPLICE

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

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
HLR
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

STEEL H PILE DETAILS

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	48
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 16 of 18 E.B.

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Page 1 of 2
Date Started 3/16/04
Date Completed 3/16/04

ROUTE F.A.U. 361 DESCRIPTION New Stearns Road Bridge over N. Arm Brewster Creek
SECT. 98-00214-02-BR STRUCT. NO. 045-3167 DRILLED BY TSC/I-59,965
COUNTY Kane LOCATION South End EB West Abutment S. 2-SE ¼ , TWP. 40 N , RNG. 8 E

Boring No. NSNA-1
Station 588+38
Offset 31.00ft RT
Surface Elev. 693.73 ft

Surface Water Elev.
Groundwater Elev.: when drilling 668.2
at Completion 690.7
after Hrs.

DEPTH	BLOWS	Qu tsf	W %
	4 4 5	P 0.5	37.2
Soft black CLAY LOAM (topsoil) A-7-6			
690.73			
	5 5 7		11.9
Medium dense dark gray silty SAND and GRAVEL, wet A-1			
688.23			
	4 4 6		4.6
Medium dense gray SAND and GRAVEL, saturated A-1-a			
685.73			
	11 10 12		6.4
Medium dense gray GRAVEL, little sand, saturated A-1-a			
683.23			
	8 10 11		15.1
Medium dense brown and gray SAND and GRAVEL, trace silt, saturated A-1-a			
680.73			
	5 4 5		12.9
	4 5 5		12.8
Loose to firm brown and gray SAND and GRAVEL, trace silt, saturated A-1-a			
673.23			
	5 7 7		12.7
	6 6 8	P 3.0	15.6
Very stiff to hard gray CLAY, trace gravel, moist A-6			
668.73			
	7 10 18	B 5.6 15%	15.7

DEPTH	BLOWS	Qu tsf	W %
	7 10 12	B 5.1 15%	16.7
Hard gray CLAY, trace gravel, moist A-6			
664.73			
	8 12 12	B 4.8 15%	18.4
Medium dense brownish-gray sandy SILT, very moist A-4			
656.73			
	8 8 10		20.4
Medium dense gray silty fine SAND, saturated A-3			
651.73			
	11 12 10		22.5
	9 12 14		16.0
Medium dense gray fine to medium SAND, saturated A-3			
643.73			
	9 12 14		15.8

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Page 2 of 2
Date Started 3/16/04
Date Completed 3/16/04

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

Boring No. NSNA-1
Station 588+38
Offset 31.00ft RT
Elevation 643.73 ft

DEPTH	BLOWS	Qu tsf	W %
	9 13 19		15.2
Medium dense to dense gray fine to medium SAND, saturated A-3			
636.73			
	14 18 25		15.4
Dense gray fine to medium SAND, saturated A-3			
	15 15 17		13.3
(trace gravel)			
626.73			
	21 33 35		18.4
Very dense gray fine to medium SAND, trace gravel, saturated A-3			
	17 25 33		10.3
618.73			

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

Elevation 618.73 ft

Mobile B-57 Ardco ATV Rig (#159)
CME Automatic Hammer
3.25" (83 mm) ID HSA

End of Boring at 75.0'

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

NSNA - 1

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
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(217) 546-3400
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

BORING
SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	49
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 17 of 18 E.B.

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Date Started 3/15/04
Date Completed 3/16/04

ROUTE F.A.U. 361 DESCRIPTION New Stearns Road Bridge over N. Arm Brewster Creek
SECT. 98-00214-02-BR STRUCT. NO. 045-3167 DRILLED BY TSC/L-59,965
COUNTY Kane LOCATION North End EB Center Pier S. 2-SE ¼ , TWP. 40 N , RNG. 8 E

Boring No. NSNA-2
Station 589+16
Offset 15.00ft RT
Surface Elev. 694.35 ft

Surface Water Elev.
Groundwater Elev.:
when drilling 691.4
at Completion
after Hrs.

	DEPTH	BLOWS		Qu tsf	W %
Soft black CLAY LOAM (topsoil), very moist A-7-6		3 3 4	P	0.5	38.5
691.35					
Loose gray SAND and GRAVEL, saturated A-1-a	-5	6 5 4			12.4
686.85					
Medium dense gray silty SAND, trace organic, saturated A-1-b		4 7 9			16.8
680.35					
Very loose gray clayey SAND, trace organic, wet A-6	-10	WOH			36.6
683.85					
Very soft black and gray organic silty CLAY with sandy clay layers, very moist A-7-6		WOH	B	0.1 15%	46.3
681.35					
Medium dense gray fine to medium SAND, trace gravel, saturated A-3	-15	3 6 8			18.4
		7 9 12			13.4
676.35					
Medium dense gray SAND and GRAVEL, saturated A-1	-20	5 7 8			13.1
673.85					
Very stiff gray SILTY CLAY LOAM, trace gravel, moist A-4/A-6		7 9 13	P	2.0	11.0
671.35					
Hard gray CLAY, trace gravel, moist A-6	-25	4 6 11	B	5.2 15%	15.4

	DEPTH	BLOWS		Qu tsf	W %
Hard gray CLAY, trace gravel, moist A-6	-30	7 9 11	B	6.4 15%	15.9
	-35	7 10 12	B	5.4 15%	16.5
662.35					
Medium dense gray clayey SILT, moist to very moist A-4		6 7 8			18.1
657.35					
Medium dense brown and gray sandy SILT, very moist A-4	-40	7 10 12			21.6
652.35					
Dense brown and gray fine to medium SAND, saturated A-3	-45	12 15 17			15.3
647.35					
Dense brown and gray fine SAND, trace silt, saturated A-3	-50	13 18 22			13.0

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Date Started 3/15/04
Date Completed 3/16/04

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

Boring No. NSNA-2
Station 589+16
Offset 15.00ft RT
Elevation 644.35 ft

	DEPTH	BLOWS		Qu tsf	W %
Dense brown and gray fine SAND, trace silt, saturated A-3		7 9 11	B	6.4 15%	15.9
642.35					
Stiff brown and gray CLAY LOAM, very moist A-4		7 10 12	B	5.4 15%	16.5
640.35	-55	11 14 22	B	1.0 15%	15.5 9.5
Dense brown and gray SAND and GRAVEL, saturated A-1-a					
637.35					
Dense brown and gray silty fine SAND, saturated A-3	-60	16 19 21			11.9
	-65	17 16 23			14.9
627.35					
Very dense gray SAND and GRAVEL, saturated A-1-a	-70	14 23 33			6.3
622.35					
Very dense Cobbles and Boulders, some sand, saturated A-1-a	-75	39 45 50/1"			5.0

	DEPTH	BLOWS	Qu tsf	W %
Elevation 619.35 ft				
Very dense Cobbles and Boulders, some sand, saturated A-1-a	-80	39 45 47		7.2
		34 40 50/3"		10.2
611.85				
End of Boring at 82.5'				
Mobile B-57 Auto ATV Rig (#159) CME Automatic Hammer	-85			
3.25" (83 mm) ID HSA				
WOH = Weight of Hammer	-90			
	-95			
	-100			

SPT. (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

NSNA-2

HAMPTON, LENZINI & RENWICK, INC.
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ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-05-0077-i	DATE: 09/20/07
DESIGNED: T.P.L.	CHECKED: J.L.B.
	DRAWN: P.J.L.

BORING

SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD
OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.U. 361	06-00214 -08-BR	KANE	50	50
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

CONTRACT NO. 83978 Sheet 18 of 18 E.B.

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Page 1 of 2

Date Started 3/15/04
Date Completed 3/15/04

ROUTE F.A.U. 361 DESCRIPTION New Stearns Road Bridge over N. Arm Brewster Creek

SECT. 98-00214-02-BR STRUCT. NO. 045-3167 DRILLED BY TSC/L-59,965

COUNTY Kane LOCATION South End EB East Abutment S. 2-SE ¼ ; TWP. 40 N , RNG. 8 E

Boring No. NSNA-4
Station 590+17
Offset 45.00ft RT
Surface Elev. 694.73 ft

Surface Water Elev. ______
Groundwater Elev.:
when drilling 690.7
at Completion ______
after ______ Hrs. ______

Description	Bottom Elev.	DEPTH	BLOWS	Qu tsf	W %
Dark brown and black CLAY LOAM (topsoil), moist to very moist A-6/A-7-6	690.73		4 4 5	P 3.5	20.0
		-5	12 12 11	P 0.5	25.9 11.2
Medium dense gray SAND and GRAVEL, occasional Cobbles, trace clay, saturated A-1-a	686.73		5 7 6		11.9
Medium dense brown fine to medium SAND, trace to little gravel, saturated A-1-b	684.23	-10	5 7 6		21.9
Medium dense brown fine SAND, saturated A-3	681.73		10 13 14		26.4
Soft gray SILTY LOAM, very moist A-6	679.23	-15	4 2 6	P 0.25	29.3
Medium dense gray clayey SAND and SILT, occasional Cobbles, moist A-4 & A-1	676.73		6 8 10		17.2
Medium dense to dense gray SAND and GRAVEL, occasional Cobbles, saturated A-1-a		-20	9 9 7		13.1
			14 11 13		6.0
		-25	15 21 23		8.8
Medium dense gray SAND and GRAVEL, occasional Cobbles, saturated A-1-a			11 10 9		9.9
	662.73	-30	14 11 15		10.2
Dense gray silty SAND, trace clay, wet A-1-b	657.73	-35	9 13 19		18.3
Dense gray SAND and GRAVEL, saturated A-1-a	652.73	-40	13 15 22		9.6
Dense gray fine to coarse SAND, little gravel, saturated A-1	647.73	-45	13 18 20		17.9
Dense brown and gray silty SAND, clay layer at 49 feet, saturated A-1-b & A-6		-50	9 15 22	B 1.2 15%	24.2 19.0 17.4

SPT, (N) = Sum of last two blow values in sample. (Qu) B=Bulge S=Shear P=Penetration Test
Stations, Depths, Offset, and Elevations are in Feet

ILLINOIS DEPARTMENT OF TRANSPORTATION
Testing Service Corporation
STRUCTURE BORING LOG

Page 2 of 2

Date Started 3/15/04
Date Completed 3/15/04

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

STRUCTURE NO. 045-3167
ROUTE F.A.U. 361
SECTION 98-00214-02-BR
COUNTY Kane

Boring No. NSNA-4
Station 590+17
Offset 45.00ft RT
Elevation 644.73 ft

Description	Bottom Elev.	DEPTH	BLOWS	Qu tsf	W %
Dense brown and gray silty SAND, trace gravel, saturated A-1-b	642.73				
Dense reddish-gray CLAY LOAM and SANDY LOAM, trace gravel, moist A-4	637.73	-55	13 15 22	B 1.2 15%	11.0
Very dense brown and gray SAND and GRAVEL, saturated A-1-a	632.73	-60	23 28 33		7.0
Very dense grayish-brown SILT, moist A-4	627.73	-65	38 50/5"		21.4
Very dense brown fine SAND, wet A-1-b	620.73	-70	60 50/3"		20.4
Very dense brownish-gray CLAY LOAM, occasional Cobbles, damp A-4		-75	100/3"	P 4.5	13.1 10.0

Elevation 619.73 ft

Description	Bottom Elev.	DEPTH	BLOWS	Qu tsf	W %
Very dense brownish-gray CLAY LOAM, occasional Cobbles, damp A-4	618.23		100/1"		
End of Boring at 76.5'					
Gus Pech GP-750 Truck Rig (#217) Rope and Cathead Hammer					
3.25" (83 mm) ID HSA		-80			
		-85			
		-90			
		-95			
		-100			

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Stations, Depths, Offset, and Elevations are in Feet

NSNA-4

HAMPTON, LENZINI & RENWICK, INC.
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PROJECT NUMBER: 12-05-0077-i | DATE: 09/20/07
DESIGNED: T.P.L. | CHECKED: J.L.B. | DRAWN: P.J.L.

BORING
SECTION 06-00214-08-BR
F.A.U. ROUTE 361 / NEW STEARNS ROAD OVER THE NORTH ARM OF BREWSTER CREEK
KANE COUNTY
STRUCTURE NO. 045-3167 (E.B.) / STATION 590+50.50