

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 5332	08-00076-00-BR	DEKALB	44	1
ILLINOIS				

# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANS FOR PROPOSED MAJOR BRIDGE PROGRAM

**SECTION 08-00076-00-BR  
DEKALB COUNTY  
PROJECT NO. BRS-0037(048)  
FAU 5332 (C.H. 33)  
C-93-010-10  
CONTRACT NO. 87435**



**CLASSIFICATION: MINOR ARTERIAL (URBAN)  
DESIGN VOLUME:  
CURRENT ADT: 4850 (2013)  
DESIGN SPEED: 45 M.P.H.  
DESIGN POLICY: RECONSTRUCTION GUIDELINES  
OF THE BLR&S MANUAL**

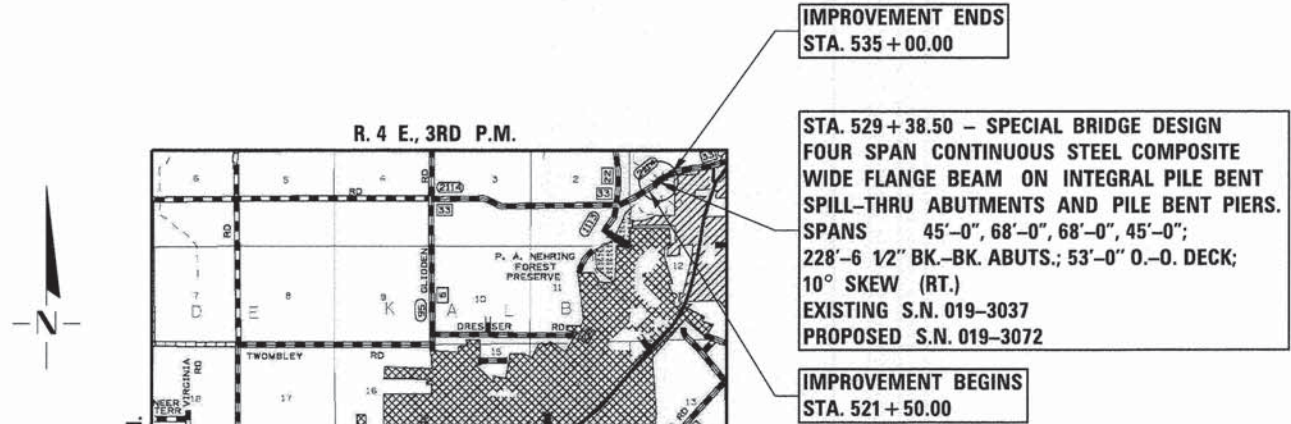
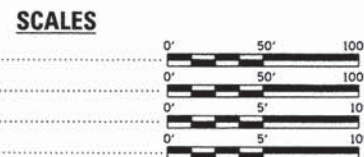
TOLL FREE JOINT UTILITY LOCATING  
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)  
TELEPHONE NUMBER 1-800-892-0123

APPROVED <u>December 26</u> 20 <u>14</u> <i>[Signature]</i> COUNTY ENGINEER	
PASSED <u>1-8</u> 20 <u>15</u> <i>[Signature]</i> DISTRICT 3 ENGINEER OF LOCAL ROADS AND STREETS	
RELEASED FOR BID BASED ON LIMITED REVIEW <u>1-8</u> 20 <u>15</u> <i>[Signature]</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION TWO ENGINEER	
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

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

SHEET NO.	INDEX OF SHEETS	TITLE
1.	COVER SHEET	
2.	SUMMARY OF QUANTITIES & GENERAL NOTES	
3.	TYPICAL CROSS SECTIONS	
4.-5.	PLAN AND PROFILE SHEETS	
6.	ENTRANCE DETAILS	
7.	SHOULDER AND GUARDRAIL DETAIL	
8.-33.	BRIDGE PLANS	
34.-41.	STATION CROSS SECTIONS	
42.-43.	EROSION CONTROL PLAN	

STANDARDS	
000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
482001-02	HMA SHOULDER ADJACENT TO FLEXIBLE PAVEMENT
515001-03	NAME PLATE FOR BRIDGES
542306-02	PRECAST REINFORCED CONCRETE ELLIPTICAL FLARED END SECTION
601101-01	CONCRETE HEADWALL FOR PIPE DRAIN
630001-10	STEEL PLATE BEAM GUARDRAIL
630301-06	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631011-09	TRAFFIC BARRIER TERMINAL, TYPE 2
631032-08	TRAFFIC BARRIER TERMINAL, TYPE 6A
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-04	TRAFFIC CONTROL DEVICES
720011-01	METAL POSTS FOR SIGNS, MARKERS AND DELINEATORS
728001-01	TELESCOPING STEEL SIGN SUPPORT
729001-01	APPLICATIONS OF TYPES A AND B METAL POSTS (FOR SIGNS AND MARKERS)
780001-05	TYPICAL PAVEMENT MARKINGS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 27-1	TRAFFIC BARRIER TERMINAL, TYPE 5A



*Alan R. Kon* (12-23-14)  
ILLINOIS PROFESSIONAL NO. 39751  
EXPIRES 11-30-15

CONTRACT NO. 87435

4440 ASH GROVE  
SPRINGFIELD, IL 62711  
(217) 793-8600  
www.fehr-graham.com

**FEHR-GRAHAM & ASSOCIATES, LLC**  
ENGINEERING AND SCIENCE CONSULTANTS  
MEMBER: C. BOARD OF ENGINEERS, BOARD OF SURVEYORS

**SUMMARY OF QUANTITIES**

CONSTRUCTION  
TYPE CODE  
0011

NUMBER	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	1,108
20300100	CHANNEL EXCAVATION	CU YD	2,225
20400800	FURNISHED EXCAVATION	CU YD	3,777
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	154
28000305	TEMPORARY DITCH CHECKS	FOOT	70
28000400	PERIMETER EROSION BARRIER	FOOT	2,802
28000500	INLET AND PIPE PROTECTION	EACH	4
28100207	STONE RIPRAP, CLASS A4	TON	1,073
28200200	FILTER FABRIC	SO YD	1,354
35101400	AGGREGATE BASE COURSE, TYPE B	TON	2,270
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	7486
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.OFG, N50	TON	2,359
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	453
44000100	PAVEMENT REMOVAL	SO YD	3,552
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	201
50300225	CONCRETE STRUCTURES	CU YD	193.2
50300255	CONCRETE SUPERSTRUCTURE	CU YD	511.2
50300260	BRIDGE DECK GROOVING	SO YD	1,628
50300280	CONCRETE ENCASMENT	CU YD	40.4
50300300	PROTECTIVE COAT	SO YD	1798
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	8,760
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	149,340
51201610	FURNISHING STEEL PILES HP12X63	FOOT	512
51201900	FURNISHING STEEL PILES HP14X89	FOOT	1,167
51202305	DRIVING PILES	FOOT	1,679
51203610	TEST PILE STEEL HP12X63	EACH	1
51203900	TEST PILE STEEL HP14X89	EACH	2
51500100	NAME PLATES	EACH	1
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	60
54201081	PIPE CULVERTS, CLASS D, TYPE 2 36"	FOOT	62
54205065	PIPE CULVERTS, SPECIAL 30"	FOOT	64
54214515	PRECAST REINFORCED CONCRETE FLARED END SECTIONS, EQUIVALENT ROUND-SIZE 30"	EACH	2
59100100	GEOCOMPOSITE WALL DRAIN	SO YD	107
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	4
63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	2
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
63200310	GUARDRAIL REMOVAL	FOOT	402
67100100	MOBILIZATION	L SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	3,040
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	2
X0323013	TUBULAR STEEL GATE	EACH	1
X2080250	TRENCH BACKFILL, SPECIAL	CU YD	30
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	1.2
X2830495	AGGREGATE DITCH (SPECIAL)	TON	76
X5860110	GRANULAR BACKFILL FOR STRUCTURES	CU YD	183
X6330725	STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)	FOOT	100
X7010218	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	EACH	1
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	192
XX006199	STEEL BRIDGE RAIL, TYPE SM (SPECIAL)	FOOT	518

\*SEE SPECIAL PROVISIONS  
△SPECIALTY ITEMS

**GENERAL NOTES**

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

THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY, AS DIRECTED BY THE ENGINEER.

SEEDING, CLASS 2 (SPECIAL) = 1.2 ACRE

THE FINAL SURFACE OF ALL EMBANKMENT AREAS SHALL BE SEEDED. THE TOP 4 INCHES OF THE SEEDED AREAS SHALL BE VEGETATIVE SUSTAINING SOIL SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF SHAPING THE SLOPES AND PROVIDING VEGETATION SUSTAINING SOIL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF FURNISHED EXCAVATION.

**COMMITMENTS**

NO COMMITMENTS WERE MADE.

**TREE REMOVAL**

TREES THAT INTERFERE WITH CONSTRUCTION WITHIN THE LIMITS OF THE ROW LINES SHALL BE REMOVED BY COUNTY FORCES.

**TREE REMOVAL (6 TO 15 UNITS DIAMETER)**

(FOR INFORMATION ONLY)

48' RT. STA. 525+43	=	6 UNIT
48' RT. STA. 525+59	=	6 UNIT
49' RT. STA. 525+72	=	6 UNIT
49' RT. STA. 525+81	=	6 UNIT
50' RT. STA. 525+91	=	6 UNIT
51' RT. STA. 526+03	=	6 UNIT
47' RT. STA. 526+12	=	6 UNIT
49' RT. STA. 526+20	=	6 UNIT
50' RT. STA. 526+33	=	6 UNIT
47' RT. STA. 526+49	=	6 UNIT
<b>TOTAL</b>	=	<b>60 UNIT</b>

**TREE REMOVAL ACRES**

(FOR INFORMATION ONLY)

LT. STA. 531+82 TO LT. STA. 534+14	=	0.1 ACRE
<b>TOTAL</b>	=	<b>0.1 ACRE</b>

**PAVEMENT DESIGN**

STRUCTURAL DESIGN TRAFFIC (S.D.T.) : YEAR (2020); P.V. = 4,863, S.U. = 101, M.U. = 101

CLASS II ROAD

MINIMUM SOIL SUPPORT: I.B.R. = 3.0 (ASSUMED) (> 3 k.s.f.)

PERCENT OF S.D.T. IN DESIGN LANE: P = 50%, SU = 50%, MU = 50%  
T.F. = 0.51

TEMP. = 77° F.; E<sub>AC</sub> = 530; DESIGN STRAIN = 130

**APPLICATION RATES USED IN QUANTITY CALCULATIONS**

STONE RIPRAP, CLASS A4	1.65 TON/CU YD
AGGREGATE DITCH (SPECIAL)	1.65 TON/CU YD
AGGREGATE BASE COURSE AND SURFACE COURSE	2.05 TON/CU YD
BITUMINOUS MATERIALS (PRIME COAT) - (AGG.)	0.25 LB/SO FT
BITUMINOUS MATERIALS (PRIME COAT) - (HMA)	0.025 LB/SO FT
HOT-MIX ASPHALT (BINDER & SURFACE COURSE)	112*/SO YD/IN
BITUMINOUS MATERIALS (PRIME COAT)	8.42 LBS/GAL

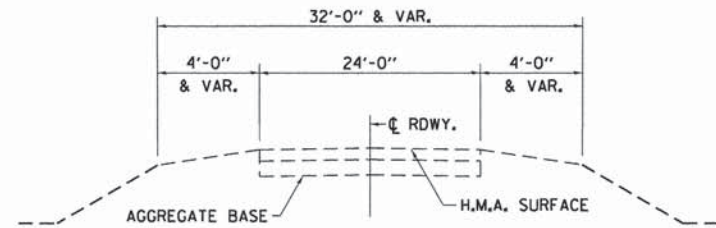
THE ABOVE NOTED APPLICATION RATES FOR BITUMINOUS MATERIALS (PRIME COAT) ARE FOR QUANTITY CALCULATIONS ONLY. THE APPLICATION RATE TO BE APPLIED WILL BE DETERMINED BY THE ENGINEER AT THE TIME OF PLACEMENT.

**HOT-MIX ASPHALT MIXTURE REQUIREMENTS**

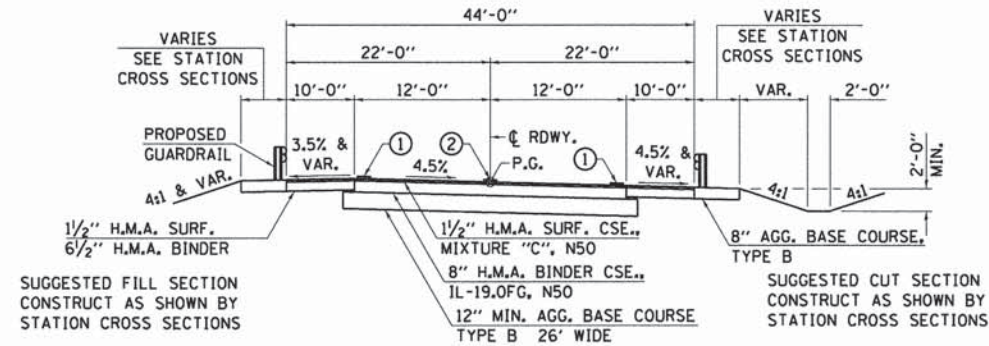
MIXTURE USE(S)	H.M.A. BINDER	H.M.A. SURFACE
PG GRADE	PG64-22	PG64-22
DESIGN AIR VOIDS <sub>i</sub>	4.0% @ N50	4.0% @ N50
MIXTURE COMPOSITION <sub>i</sub>	IL 19.OFG	IL 9.5
FRICTION AGGREGATE <sub>i</sub>	N/A	MIXTURE C
DENSITY TEST METHOD	CORES	LR 1030

MATERIAL SHALL BE COMPACTED TO 93.0-97.4 PERCENT OF THE MAXIMUM THEORETICAL DENSITY, EXCEPT THAT WHEN PLACED AS FIRST LIFT ON AN UNIMPROVED SUBGRADE THE MINIMUM PERCENT COMPACTION SHALL BE 92.0 PERCENT. THE MAXIMUM THEORETICAL DENSITY SHALL BE DETERMINED FROM THE MOVING AVERAGE AS SPECIFIED IN THE OC/OA SPECIFICATION.

FILE NAME = 48518_SUMMARY.DGN	DESIGNED - G.J.C. DRAWN - S.A.P. CHECKED - R.J.C. DATE - 03/03/11	REVISED - REVISED - REVISED - REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com	<b>FEHR-GRAHAM &amp; ASSOCIATES, LLC</b> ENGINEERING AND SCIENCE CONSULTANTS FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MONROE, WI SPRINGFIELD, IL	<b>SUMMARY OF QUANTITIES &amp; GENERAL NOTES</b>	F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 2
PROPOSED STRUCTURE @ STA. 529+38.50						COLTONVILLE ROAD		CONTRACT NO. 87435		
						ILLINOIS				



**EXISTING TYPICAL CROSS SECTION**

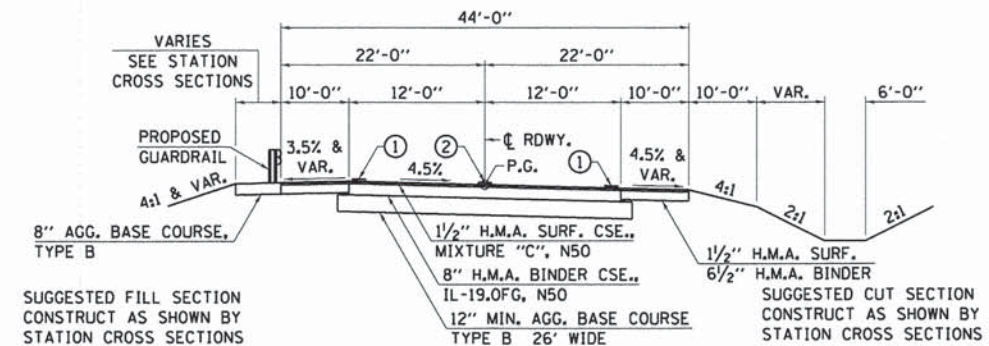


- ① SOLID WHITE PAINT PAVEMENT MARKING - LINE 4"
- ② SKIP-DASH YELLOW PAINT PAVEMENT MARKING - LINE 4"

**TYPICAL PROPOSED CROSS SECTION**

STA. 522+00 TO STA. 527+35.33 AND  
STA. 533+35 TO STA. 534+50

TRANSITION FROM EXISTING ROADWAY TO PROPOSED ROADWAY TO BE CONSTRUCTED FROM STA. 521+50 TO STA. 522+00 AND FROM STA. 534+50 TO STA. 535+00.  
TRANSITION SUPERELEVATION FROM EXISTING ROADWAY SECTION AT STA. 521+50 TO FULL SUPERELEVATION (4.5%) AT STA. 524+00.

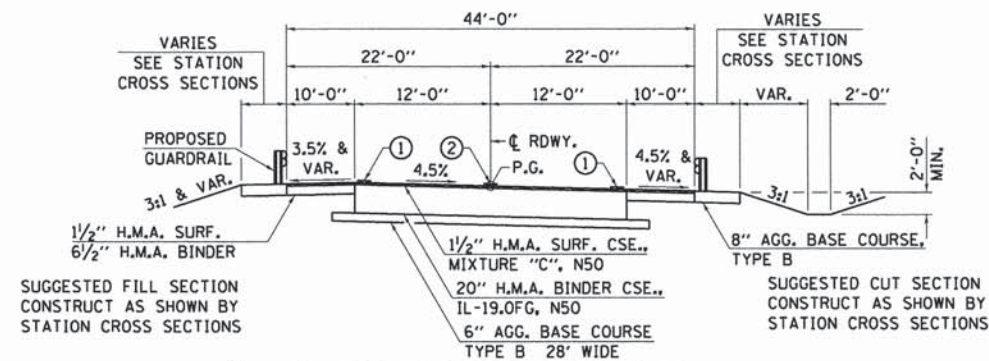


- ① SOLID WHITE PAINT PAVEMENT MARKING - LINE 4"
- ② SKIP-DASH YELLOW PAINT PAVEMENT MARKING - LINE 4"

**TYPICAL PROPOSED CROSS SECTION**

STA. 531+42.77 TO STA. 533+35

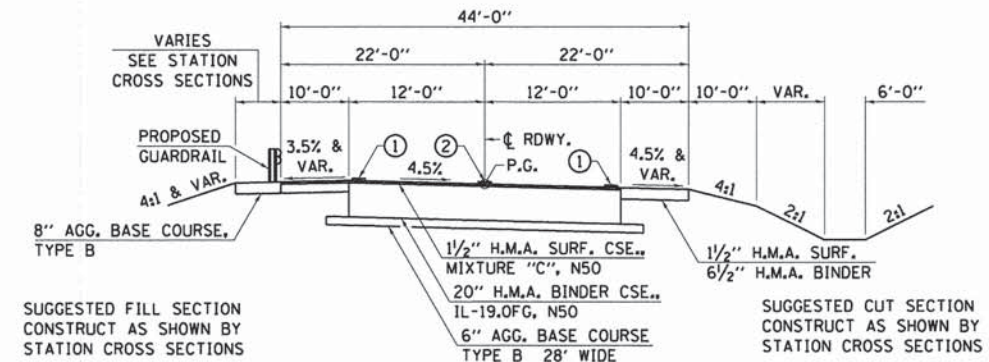
**ROADWAY PAVEMENT**



- ① SOLID WHITE PAINT PAVEMENT MARKING - LINE 4"
- ② SKIP-DASH YELLOW PAINT PAVEMENT MARKING - LINE 4"

**TYPICAL PROPOSED CROSS SECTION**

STA. 527+35.33 TO STA. 527+95.33



- ① SOLID WHITE PAINT PAVEMENT MARKING - LINE 4"
- ② SKIP-DASH YELLOW PAINT PAVEMENT MARKING - LINE 4"

**TYPICAL PROPOSED CROSS SECTION**

STA. 530+82.77 TO STA. 531+42.77

**BRIDGE APPROACH PAVEMENT**

FILE NAME = 48518.TYP-SEC.DGN	DESIGNED - G.J.C.	REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com		TYPICAL CROSS SECTIONS			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN - S.A.P.	REVISED -						5332	08-00076-00-BR	DEKALB	43	3
	CHECKED - R.J.C.	REVISED -			PROPOSED STRUCTURE @ STA. 529+38.50			COLTONVILLE ROAD			CONTRACT NO. 87435	
	DATE - 03/03/11	REVISED -						ILLINOIS				

**UTILITIES**

COM ED  
TOM STUTZMAN 630-437-2236

COMCAST  
MARTHA FIERAS 630-600-6352

DEKALB FIBER OPTIC, LLC  
DAN HALVERSON 815-899-4600 EX. 3001

FRONTIER COMMUNICATIONS  
MARY RUTH WILLIS 815-895-1445

NICOR GAS  
UTILITY CONSULTANT G03W 630-388-2362

MEDIACOM  
DON DEMAY 630-365-0045 EX. 6001

**CURVE DATA**  
 PI STA. = 530+99.00  
 $\Delta = 25^\circ 22' 01''$  (RT)  
 D =  $1^\circ 44' 00''$   
 R = 3,305.53'  
 T = 743.93'  
 L = 1,463.48'  
 E = 82.68'  
 S.E. = 4.5%  
 P.C. STA. = 523+55.07  
 P.T. STA. = 538+18.55  
 S.E. TRANSITION: STA. 521+50 TO STA. 524+00  
 STA. 537+52 TO STA. 539+52

NOTE: EXISTING TRAFFIC CONTROL SIGNAGE SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER.  
 COST INCLUDED IN "TRAFFIC CONTROL AND PROTECTION (SPECIAL), LOCATION 1."

**ENTRANCES TO BE BUILT**

RT. STA. 523+62.80, P.E. -5.39%, 28' & VAR. ROADBED  
 RT. STA. 527+43.72, F.E. -15.0%, 24' ROADBED  
 LT. STA. 531+32.00, C.E. -15.0%, 24' ROADBED  
 RT. STA. 533+51.00, F.E. -15.0%, 16' ROADBED  
 QUANTITIES INCLUDED IN THOSE LISTED

**PIPES TO BE REMOVED**

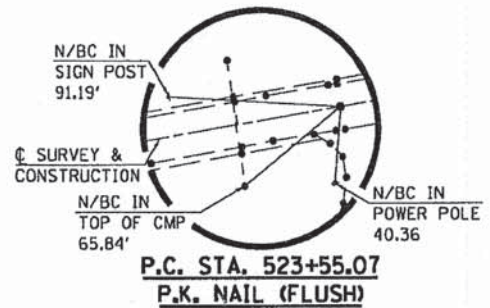
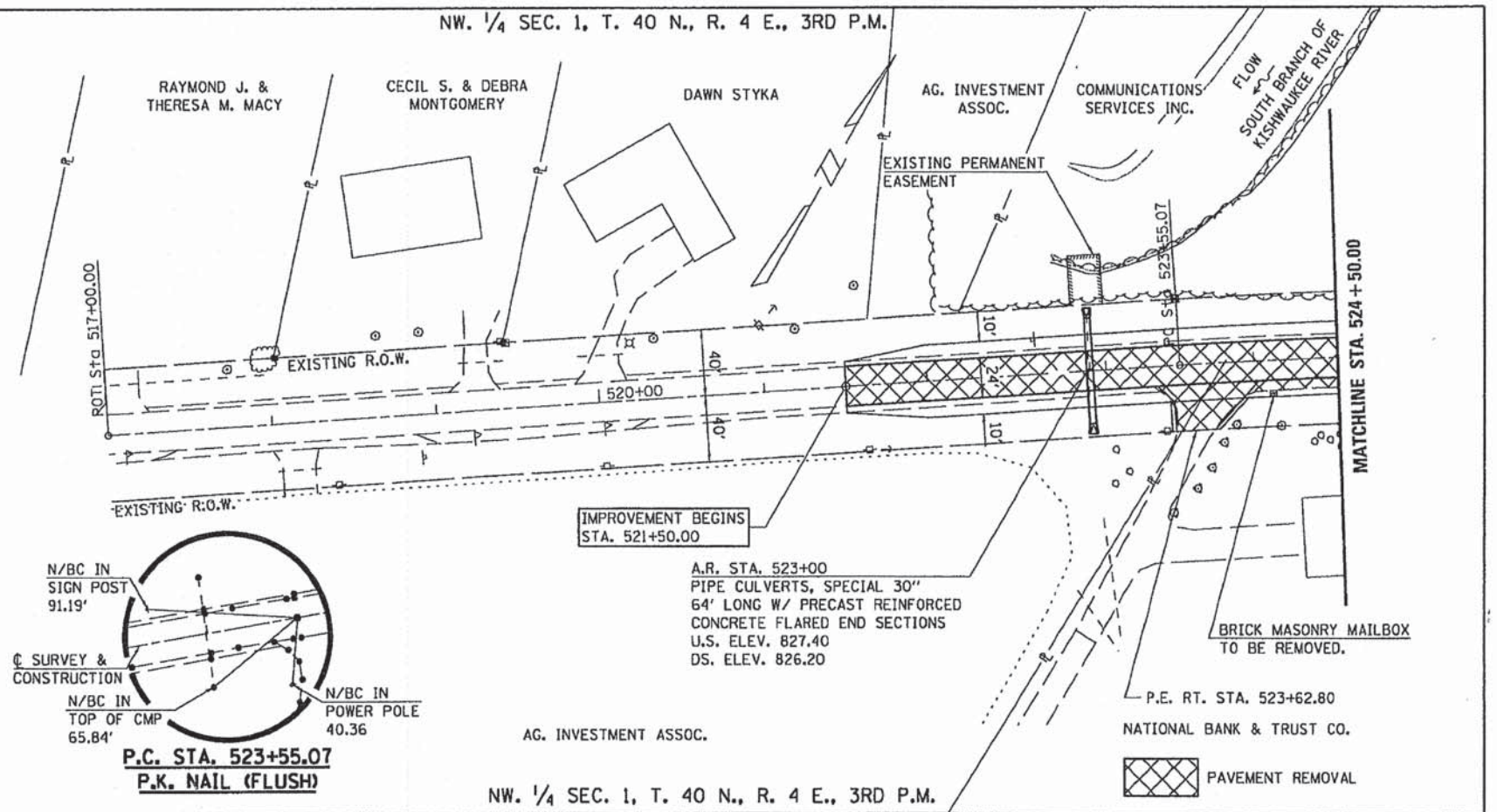
RT. STA. 527+80.00, 15" C.M.P., 40' LONG  
 LT. STA. 531+32.00, 36" C.M.P., 40' LONG  
 COST INCLUDED IN "EARTH EXCAVATION".

**TUBULAR STEEL GATE**

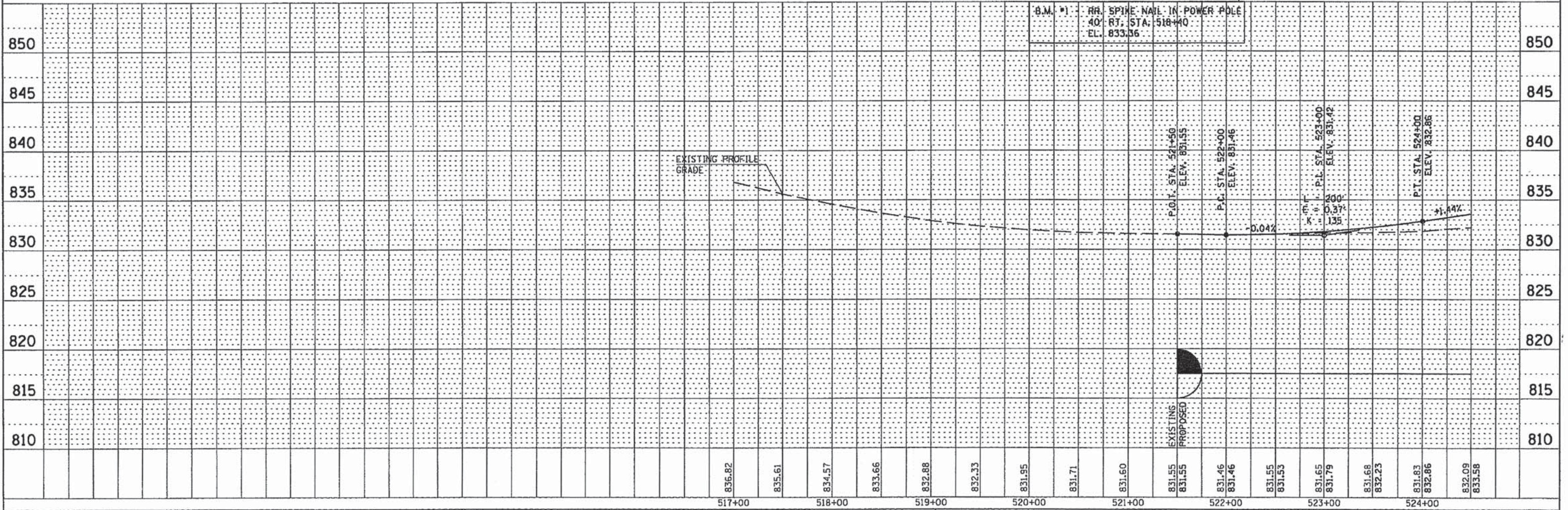
RT. STA. 527+43.72  
 SEE SPECIAL PROVISIONS  
 MATERIAL AND COATINGS SHALL MEET DOMESTIC PRODUCTION AND APPLICATION REQUIREMENTS OF SECTION 106 OF THE STANDARD SPECIFICATIONS

**MAILBOX TO BE REMOVED**

RT. STA. 523+62.80  
 COST INCLUDED IN "PAVEMENT REMOVAL".



NW 1/4 SEC. 1, T. 40 N., R. 4 E., 3RD P.M.



FILE NAME = 48918_PRELIM-P&P	DESIGNED - G.J.C.	REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com	<b>FEHR-GRAHAM &amp; ASSOCIATES, LLC</b> ENGINEERING AND SCIENCE CONSULTANTS FREEPORT, IL. ROCKFORD, IL. ROCHELLE, IL. MONROE, WI. SPRINGFIELD, IL.	PLAN AND PROFILE - C.H. 33 (COLTONVILLE ROAD)		F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 4	
USER NAME = S. PRICE	DRAWN - S.A.P.	REVISED -			SCALE: H=50; V=5	SHEET NO. 1 OF 2 SHEETS	STA. 517+00.00 TO STA. 524+50.00	COLTONVILLE ROAD		CONTRACT NO. 87435		
PLOT SCALE = 5/8	CHECKED - R.J.C.	REVISED -					ILLINOIS					
PLOT DATE = 01/13/09	DATE - 02/14/11	REVISED -										

PLAN	DATE
REVISIONS	BY
NOTED	
CHECKED	
APPROVED	
DATE	

PROFILE	DATE
REVISIONS	BY
NOTED	
CHECKED	
APPROVED	
DATE	

CURVE DATA  
 PI STA. = 530+99.00  
 $\Delta = 25^\circ 22' 01''$  (RT)  
 $D = 1^\circ 44' 00''$   
 $R = 3,305.53'$   
 $T = 743.93'$   
 $L = 1,463.48'$   
 $E = 82.68'$   
 $S.E. = 4.5\%$   
 P.C. STA. = 523+55.07  
 P.T. STA. = 538+18.55  
 S.E. TRANSITION: STA. 521+50 TO STA. 524+00  
 STA. 537+52 TO STA. 539+52

PAVEMENT REMOVAL

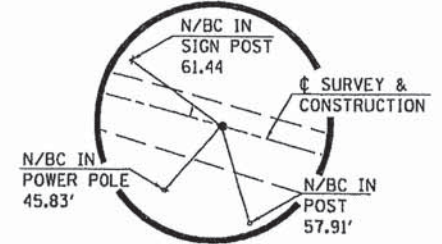
COMMUNICATIONS SERVICES INC.

COMMUNICATIONS SERVICES INC.

LT. STA. 531+32 F.E. PIPE CULVERTS, CLASS D, TYPE 2 36", 62' LONG

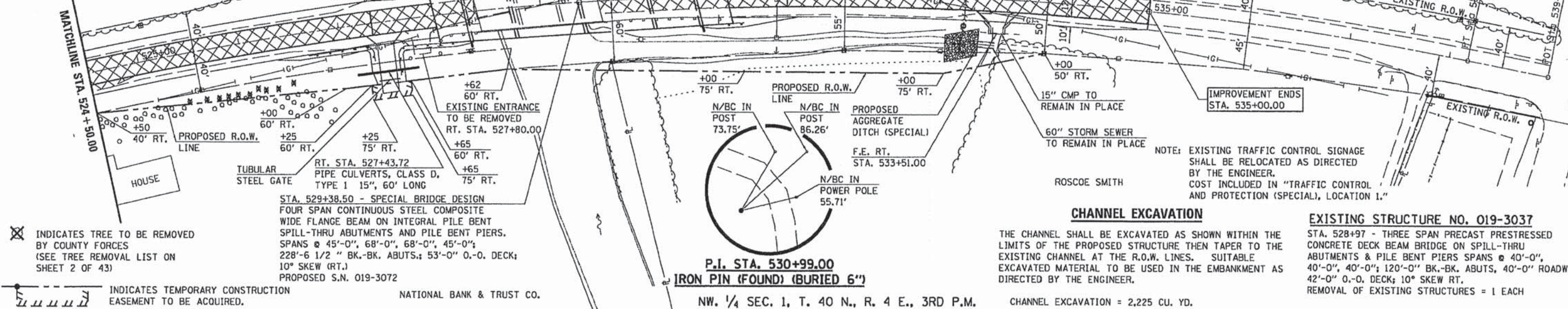
NW 1/4 SEC. 1, T. 40 N., R. 4 E., 3RD P.M.

JEFFREY A. KEIM



P.T. STA. 538+18.55  
 P.K. NAIL (FLUSH)

DATE	
BY	
PLAN	
REVISION	
NO.	



INDICATES TREE TO BE REMOVED BY COUNTY FORCES (SEE TREE REMOVAL LIST ON SHEET 2 OF 43)

INDICATES TEMPORARY CONSTRUCTION EASEMENT TO BE ACQUIRED.

STA. 529+38.50 - SPECIAL BRIDGE DESIGN  
 FOUR SPAN CONTINUOUS STEEL COMPOSITE WIDE FLANGE BEAM ON INTEGRAL PILE BENT SPILL-THRU ABUTMENTS AND PILE BENT PIERS.  
 SPANS @ 45'-0", 68'-0", 68'-0", 45'-0";  
 22'-6 1/2" BK.-BK. ABUTS.; 53'-0" O.-O. DECK;  
 10° SKEW (RT.)  
 PROPOSED S.N. 019-3072

P.I. STA. 530+99.00  
 IRON PIN (FOUND) (BURIED 6")

**CHANNEL EXCAVATION**

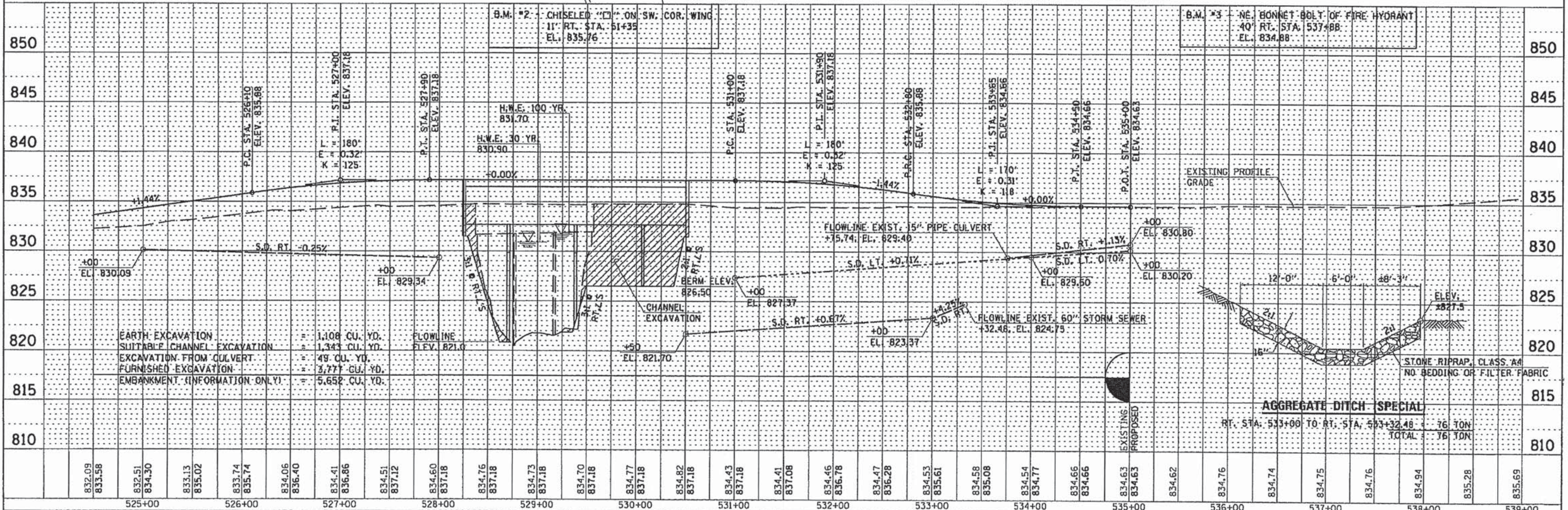
THE CHANNEL SHALL BE EXCAVATED AS SHOWN WITHIN THE LIMITS OF THE PROPOSED STRUCTURE THEN TAPER TO THE EXISTING CHANNEL AT THE R.O.W. LINES. SUITABLE EXCAVATED MATERIAL TO BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.

**EXISTING STRUCTURE NO. 019-3037**

STA. 528+97 - THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE ON SPILL-THRU ABUTMENTS & PILE BENT PIERS SPANS @ 40'-0", 40'-0", 40'-0"; 120'-0" BK.-BK. ABUTS, 40'-0" ROADWAY, 42'-0" O.-O. DECK; 10° SKEW RT.  
 REMOVAL OF EXISTING STRUCTURES = 1 EACH

CHANNEL EXCAVATION = 2,225 CU. YD.

DATE	
BY	
PROFILE	
REVISION	
NO.	

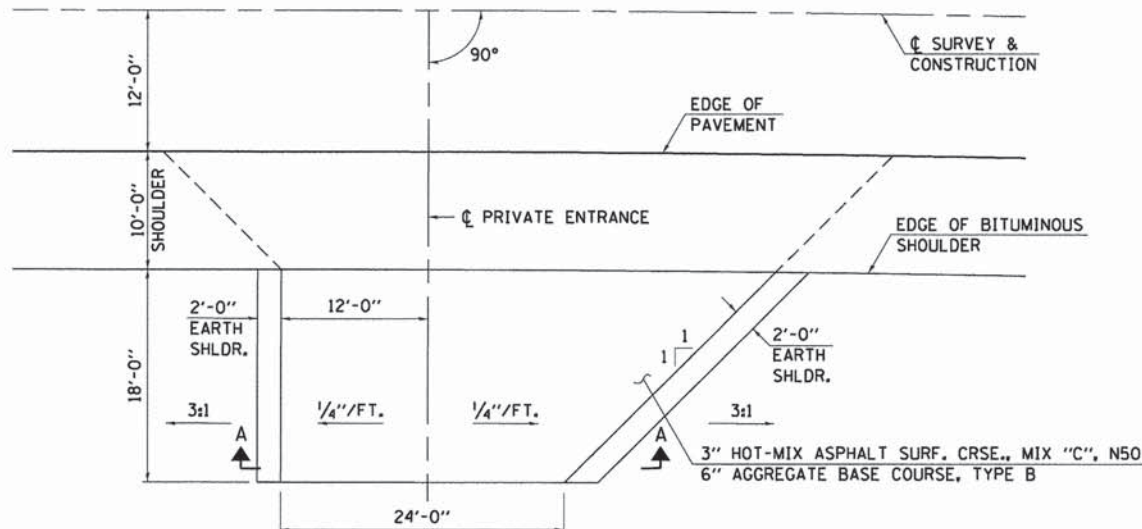


EARTH EXCAVATION = 1,108 CU. YD.  
 SUITABLE CHANNEL EXCAVATION = 1,343 CU. YD.  
 EXCAVATION FROM CULVERT = 49 CU. YD.  
 FURNISHED EXCAVATION = 3,777 CU. YD.  
 EMBANKMENT (INFORMATION ONLY) = 5,652 CU. YD.

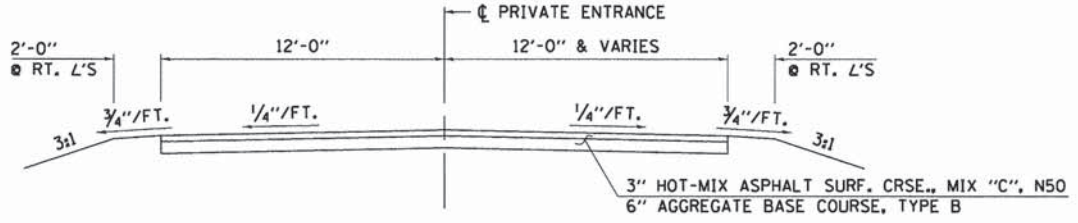
**AGGREGATE DITCH - SPECIAL**

RT. STA. 533+00 TO RT. STA. 533+32.48 = 76 TON  
 TOTAL = 76 TON

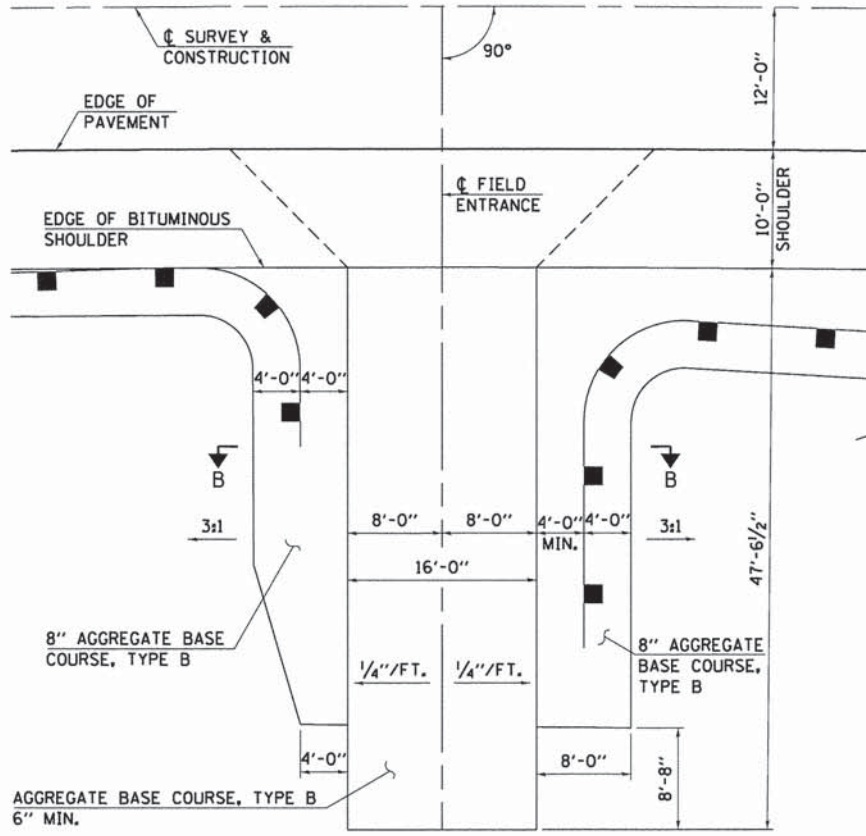
FILE NAME = 48518_P&P.DGN	DESIGNED - C.J.C.	REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com	<b>FEHR-GRAHAM &amp; ASSOCIATES, LLC</b> ENGINEERING AND SCIENCE CONSULTANTS FREEPORT, IL. ROCKFORD, IL. ROCHELLE, IL. MONROE, WI. SPRINGFIELD, IL.	PLAN AND PROFILE - C.H. 33 (COLTONVILLE ROAD)			F.A.U. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 5	
USER NAME = S. PRICE	DRAWN - S.A.P.	REVISED -			SCALE: H:50; V:5			COLTONVILLE ROAD			CONTRACT NO. 87435		
PLOT SCALE = 5/8	CHECKED - R.J.C.	REVISED -			SHEET NO. 2 OF 2 SHEETS			ILLINOIS					
PLOT DATE = 01/13/09	DATE - 02/14/11	REVISED -			STA. 524+50.00 TO STA. 539+00.00								



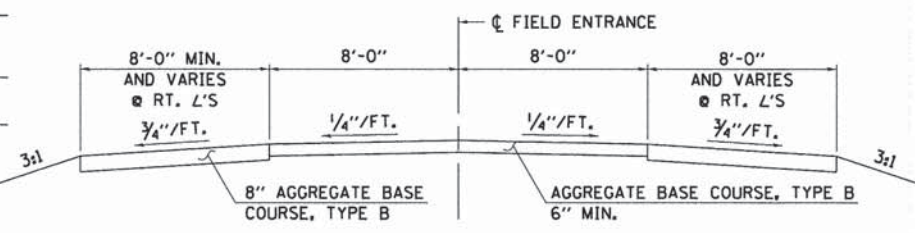
**P.E. RT. STA. 523+62.80**  
(BITUMINOUS SURFACE)



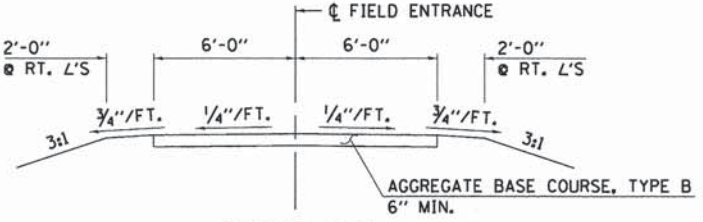
**SECTION A-A**



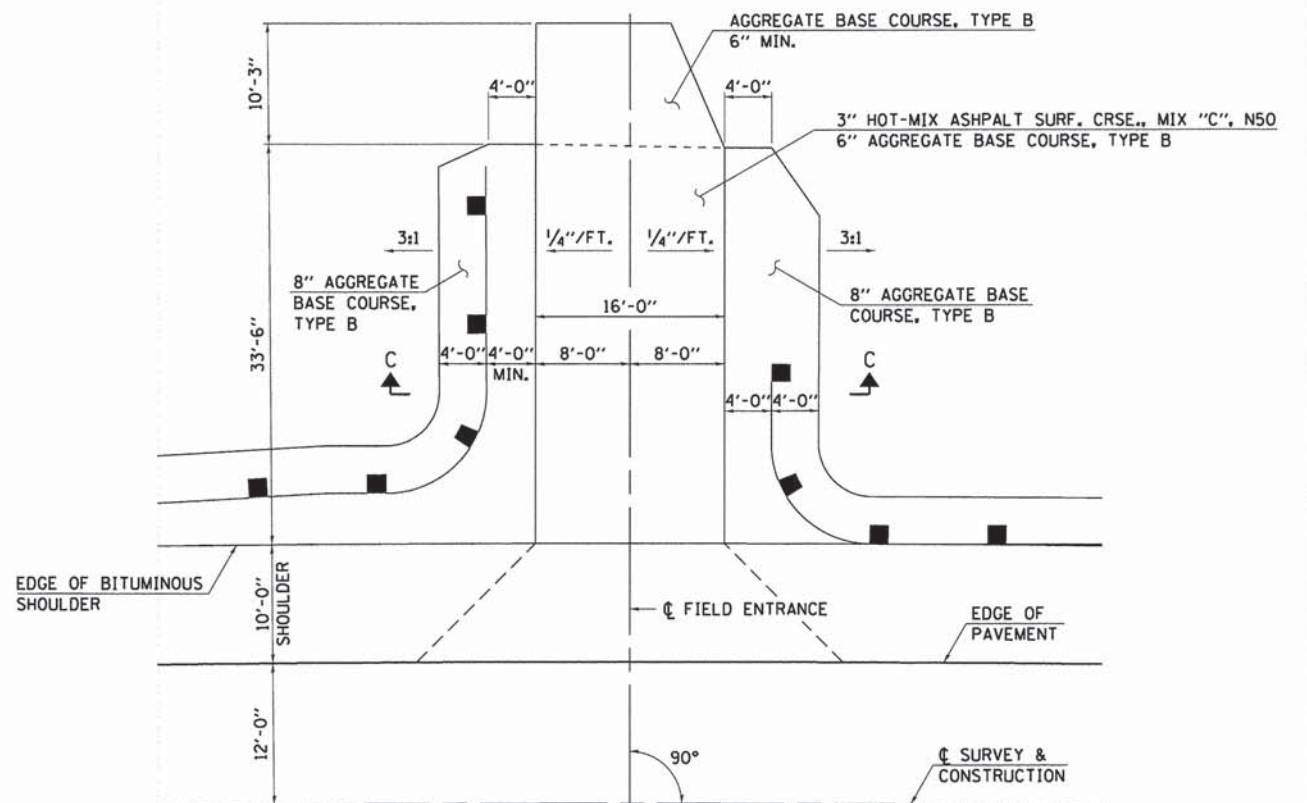
**F.E. RT. STA. 527+43.72**  
(AGGREGATE SURFACE)



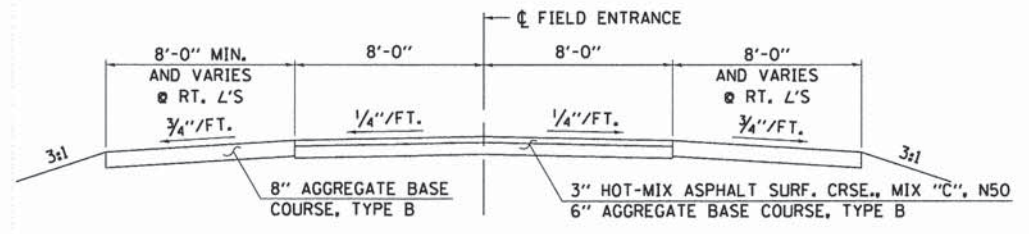
**SECTION B-B**



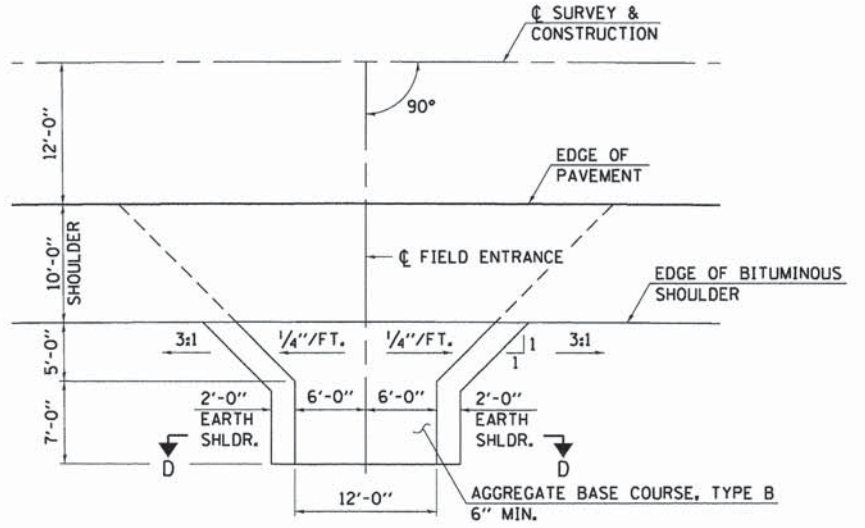
**SECTION D-D**



**F.E. LT. STA. 531+32.00**  
(BITUMINOUS SURFACE)



**SECTION C-C**



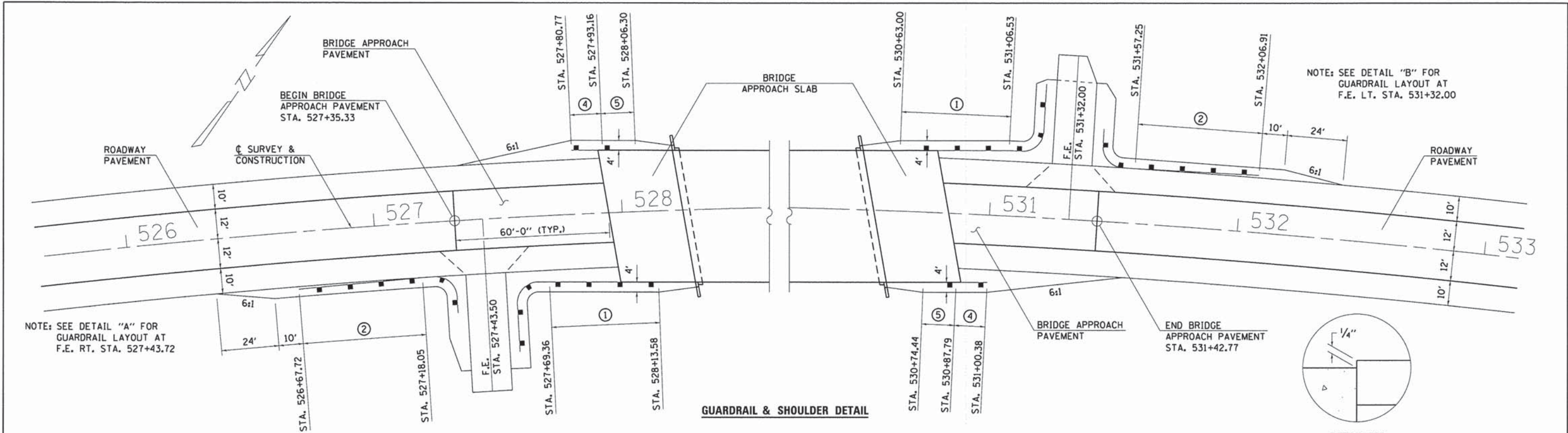
**F.E. RT. STA. 533+51.00**  
(AGGREGATE SURFACE)

FILE NAME =	DESIGNED - G.J.C.	REVISED -
46510_ENTRANCE.DGN	DRAWN - S.A.P.	REVISED -
	CHECKED - R.J.C.	REVISED -
	DATE - 03/03/11	REVISED -

4440 ASH GROVE	<b>FEHR-GRAHAM &amp; ASSOCIATES, LLC</b> ENGINEERING AND SCIENCE CONSULTANTS FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MONROE, WI SPRINGFIELD, IL
SPRINGFIELD, IL 62711	
(217) 793-8600	
www.fehr-graham.com	

<b>ENTRANCE DETAILS</b>		F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PROPOSED STRUCTURE @ STA. 529+38.50		5332	08-00076-00-BR	DEKALB	43	6
		COLTONVILLE ROAD				CONTRACT NO. 87435
		[ILLINOIS]				

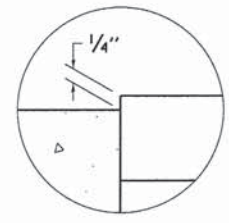
<b>ENTRANCE DETAILS</b>		F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PROPOSED STRUCTURE @ STA. 529+38.50		5332	08-00076-00-BR	DEKALB	43	6
		COLTONVILLE ROAD				CONTRACT NO. 87435
		[ILLINOIS]				



NOTE: SEE DETAIL "A" FOR GUARDRAIL LAYOUT AT F.E. RT. STA. 527+43.72

NOTE: SEE DETAIL "B" FOR GUARDRAIL LAYOUT AT F.E. LT. STA. 531+32.00

**GUARDRAIL & SHOULDER DETAIL**



**DETAIL "C"**

**TRAFFIC BARRIER TERMINAL, TYPE 6A**

26.71' RT. STA. 527+69.36 TO 28.66' RT. STA. 528+13.58 = 1 EACH  
 24.36' LT. STA. 530+63.00 TO 26.30' LT. STA. 531+06.35 = 1 EACH  
 TOTAL = 2 EACH

**TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT**

23.00' RT. STA. 526+67.72 TO 22.00' RT. STA. 527+18.05 = 1 EACH  
 22.00' LT. STA. 531+57.25 TO 23.00' LT. STA. 532+06.91 = 1 EACH  
 TOTAL = 2 EACH

**STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)**

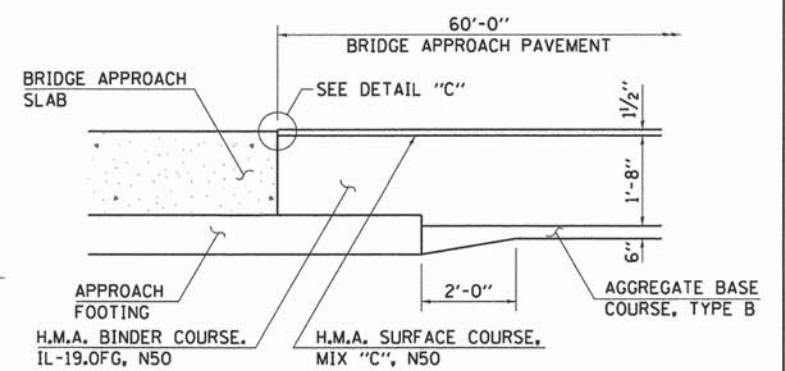
22.00' RT. STA. 527+18.05 TO 37.15' RT. STA. 527+31.59 = 25 FOOT  
 41.64' RT. STA. 527+55.88 TO 26.71' RT. STA. 527+69.36 = 25 FOOT  
 26.30' LT. STA. 531+06.35 TO 41.38' LT. STA. 531+19.98 = 25 FOOT  
 37.20' LT. STA. 531+43.87 TO 22.00' LT. STA. 531+57.25 = 25 FOOT  
 TOTAL = 100 FOOT

**TRAFFIC BARRIER TERMINAL, TYPE 2**

41.64' RT. STA. 527+55.88 TO 54.14' RT. STA. 527+55.92 = 1 EACH  
 25.79' LT. STA. 527+80.77 TO 25.22' LT. STA. 527+93.16 = 1 EACH  
 27.66' RT. STA. 530+87.79 TO 27.07' RT. STA. 531+00.38 = 1 EACH  
 41.38' LT. STA. 531+19.98 TO 53.88' LT. STA. 531+20.02 = 1 EACH  
 TOTAL = 4 EACH

**TRAFFIC BARRIER TERMINAL, TYPE 5A**

25.22' LT. STA. 527+93.16 TO 24.66' LT. STA. 528+06.30 = 1 EACH  
 28.23' RT. STA. 530+74.44 TO 27.66' RT. STA. 530+87.79 = 1 EACH  
 TOTAL = 2 EACH



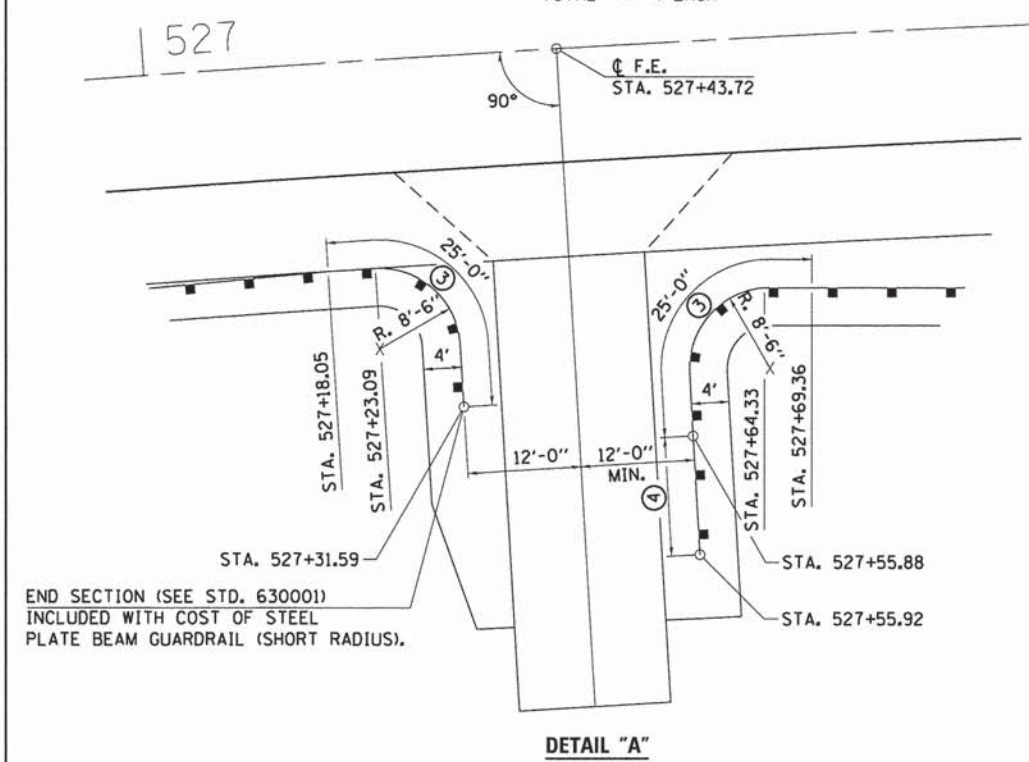
**BRIDGE APPROACH PAVEMENT DETAIL**

**BRIDGE APPROACH PAVEMENT SCHEDULE**

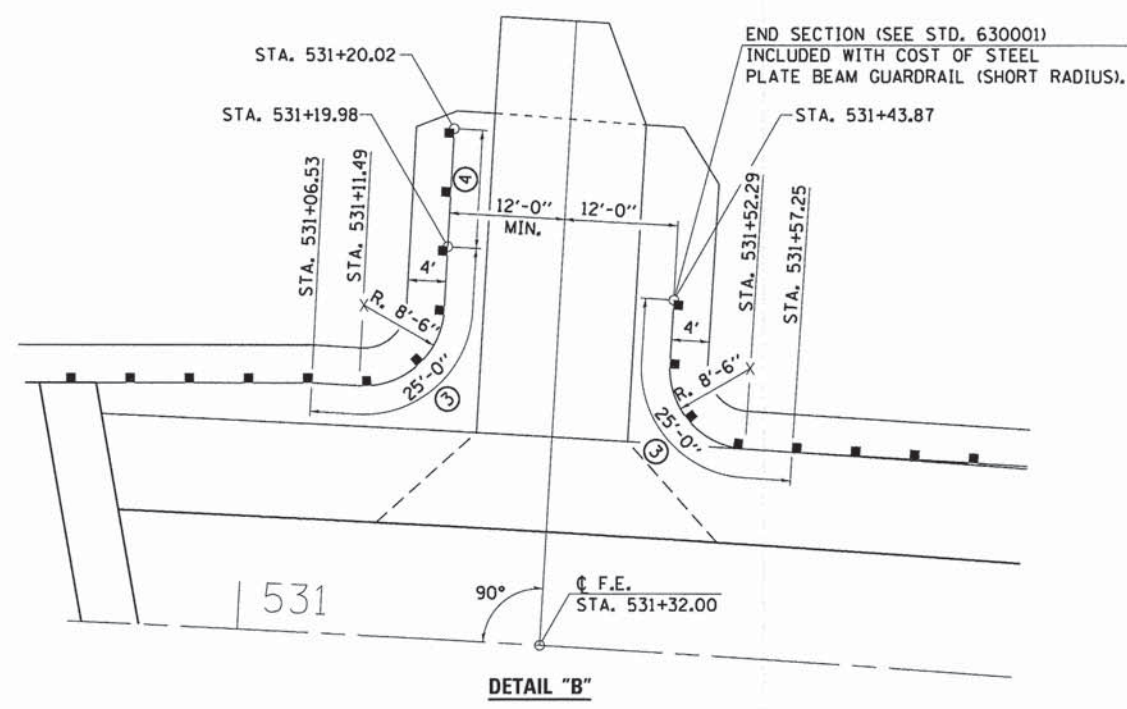
LOCATION	AGGREGATE BASE COURSE, TYPE B	H.M.A. SURFACE COURSE, MIX "C", N50	H.M.A. BINDER COURSE, IL-19, OFG, N50
	TON	TON	TON
WEST APPROACH	61	13.5	179
EAST APPROACH	61	13.5	179
TOTAL	122	27	358

**LEGEND**

- ① TRAFFIC BARRIER TERMINAL, TYPE 6A
- ② TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT
- ③ STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)
- ④ TRAFFIC BARRIER TERMINAL, TYPE 2
- ⑤ TRAFFIC BARRIER TERMINAL, TYPE 5A



**DETAIL "A"**



**DETAIL "B"**

FILE NAME = 48510\_SHL.DWG

DESIGNED - G.J.C.  
 DRAWN - S.A.P.  
 CHECKED - R.J.C.  
 DATE - 03/03/11

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

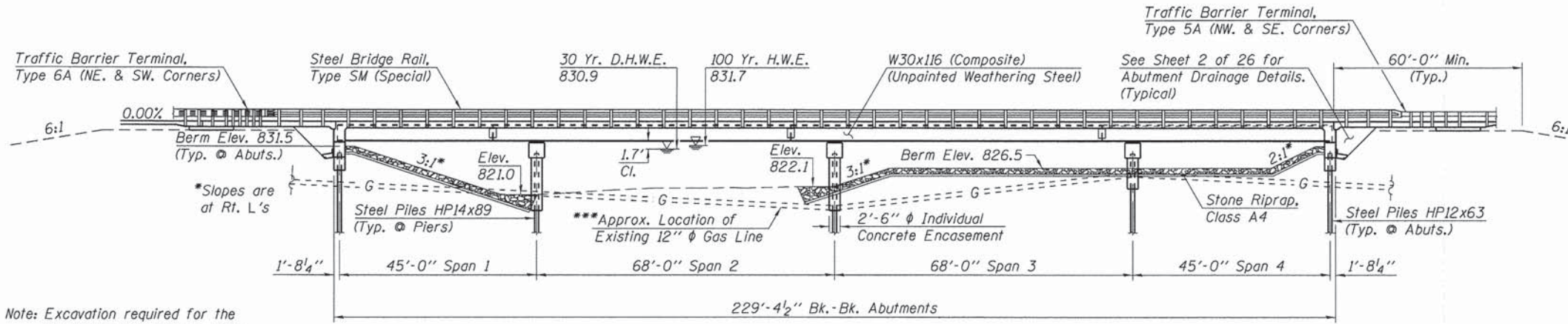
4440 ASH GROVE  
 SPRINGFIELD, IL. 62711  
 (217) 793-8600  
 www.fehr-graham.com

**FEHR-GRAHAM & ASSOCIATES, LLC**  
 ENGINEERING AND SCIENCE CONSULTANTS  
 FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MONROE, WI SPRINGFIELD, IL

**SHOULDER AND GUARDRAIL DETAIL**

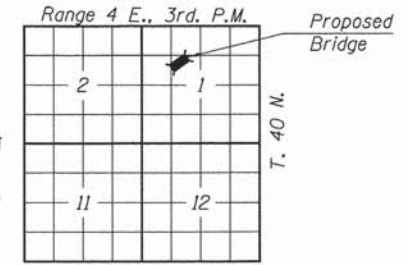
PROPOSED STRUCTURE @ STA. 529+38.50

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	7
COLTONVILLE ROAD			CONTRACT NO. 87435	
[ILLINOIS]				



**ELEVATION**

Note: Excavation required for the encasement of Steel H-Piles is included in the cost of Concrete Encasement.



**LOCATION PLAN**

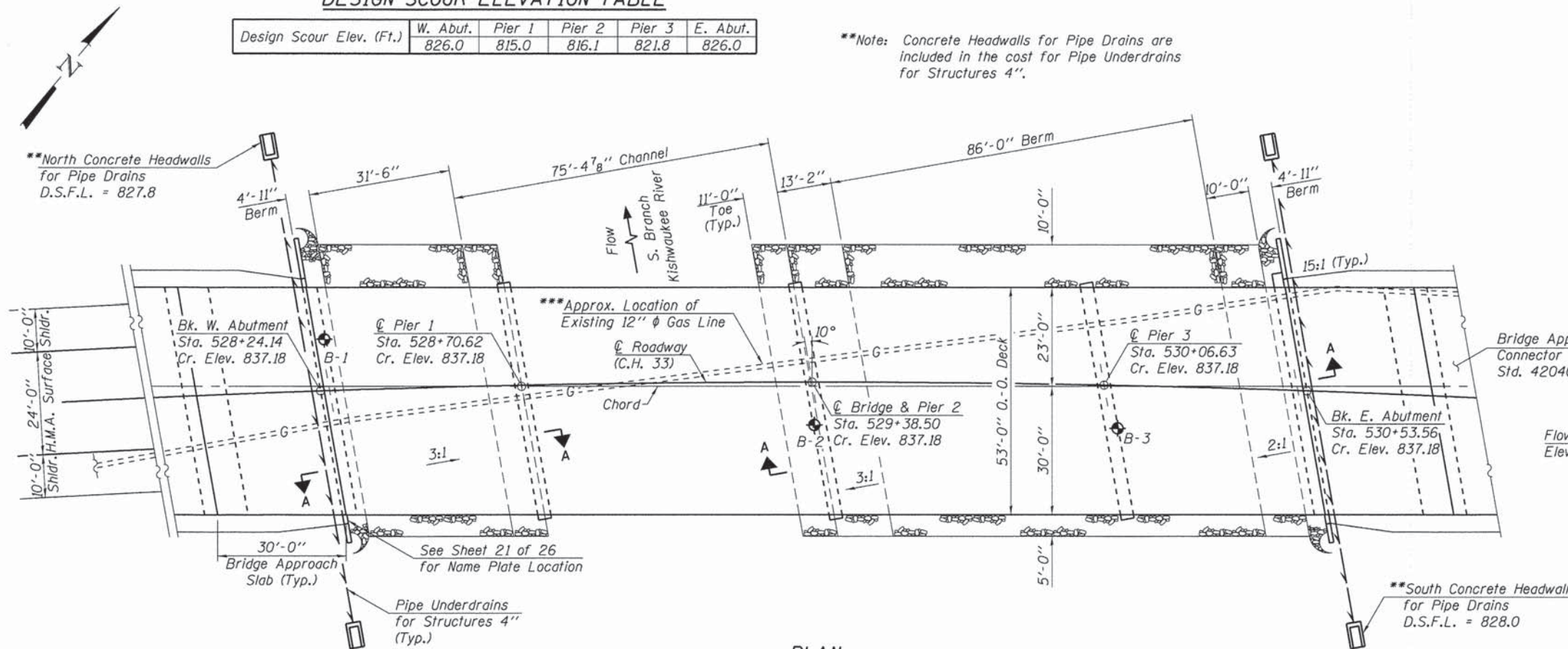
**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elev. (Ft.)	W. Abut.	Pier 1	Pier 2	Pier 3	E. Abut.
	826.0	815.0	816.1	821.8	826.0

\*\*Note: Concrete Headwalls for Pipe Drains are included in the cost for Pipe Underdrains for Structures 4''.

**INDEX OF SHEETS**

1. General Plan and Elevation
2. General Notes, Bill of Materials & Miscellaneous Details
- 3.-7. Top of Slab Elevations
- 8.-9. Top of Approach Slab Elevations
- 10.-11. Superstructure
- 12.-15. Bridge Approach Slab Details
- 16.-17. Steel Railing, Type SM (Special)
- 18.-19. Structural Steel
20. Bearing Details
- 21.-22. Abutments
- 23.-25. Piers
26. Steel Pile Splicing Details



**PLAN**

\*\*\*See Special Provisions for "Driving Piles" prior to driving piles in proximity to the existing gas pipeline at abutments and piers.

Contractor shall take extreme care to protect the existing gas line during all construction operations.

**DESIGN STRESSES**

$f'_c = 3,500$  p.s.i. (Concrete)  
 $f_y = 60,000$  p.s.i. (Reinf. Bars)  
 $f_y = 50,000$  p.s.i. (Structural Steel M270W Gr. 50)  
 LOADING HL-93  
 Design Specifications: 2012 AASHTO LRFD & 2013 Interim  
 50#/Sq. Ft. included in dead load for future wearing surface.

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

*John A. Morris* 12-23-14  
 ILLINOIS STRUCTURAL NO. 4277 (Expires 11/30/16)



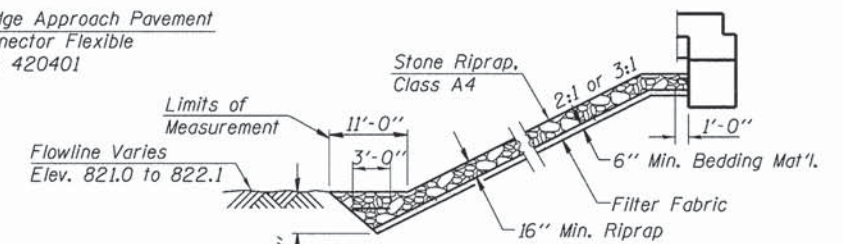
**FEHR GRAHAM**

ENGINEERING & ENVIRONMENTAL

4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com

ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	5332	08-00076-00-BR	DEKALB	43	8
COLTONVILLE ROAD			CONTRACT NO. 87435		

**SECTION A-A  
RIPRAP PLACEMENT DETAIL**



Note: Excavation and aggregate bedding will not be paid for as separate items and shall be considered as included in Stone Riprap, Class A4.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.086 g  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.152 g  
 Soil Site Class = D

**WATERWAY INFORMATION**

Drainage Area	89.50 Sq. Mi.
Existing Opening (Bridge) (30 Yr.)	757 Sq. Ft.
Required Opening (30 Yr.)	1,287 Sq. Ft.
Proposed Opening (Bridge) (30 Yr.)	1,287 Sq. Ft.
Design Discharge (30 Yr.)	4,284 C.F.S.
Created Head (30 Yr.)	0.2 Ft.
100 Year Discharge	5,659 C.F.S.
100 Yr. Created Head	0.30 Ft.

DESIGNED	A.L.S.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.L.S. & J.A.M.



**GENERAL NOTES**

Fasteners shall be high strength bolts (AASHTO M 164, Type 3). Bolts  $\frac{7}{8}$ "  $\phi$ , open holes  $\frac{15}{16}$ "  $\phi$ , unless otherwise noted.

Calculated weight of Structural Steel = 313,040 Pound AASHTO M270 Grade 50W

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

Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 in. 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".

Anchor Bolts shall be set before bolting diaphragms over supports.

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

Reinforcement bars shall conform to the requirements of ASTM A706 Gr 60.

Reinforcement bars designated (E) shall be epoxy coated.

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

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

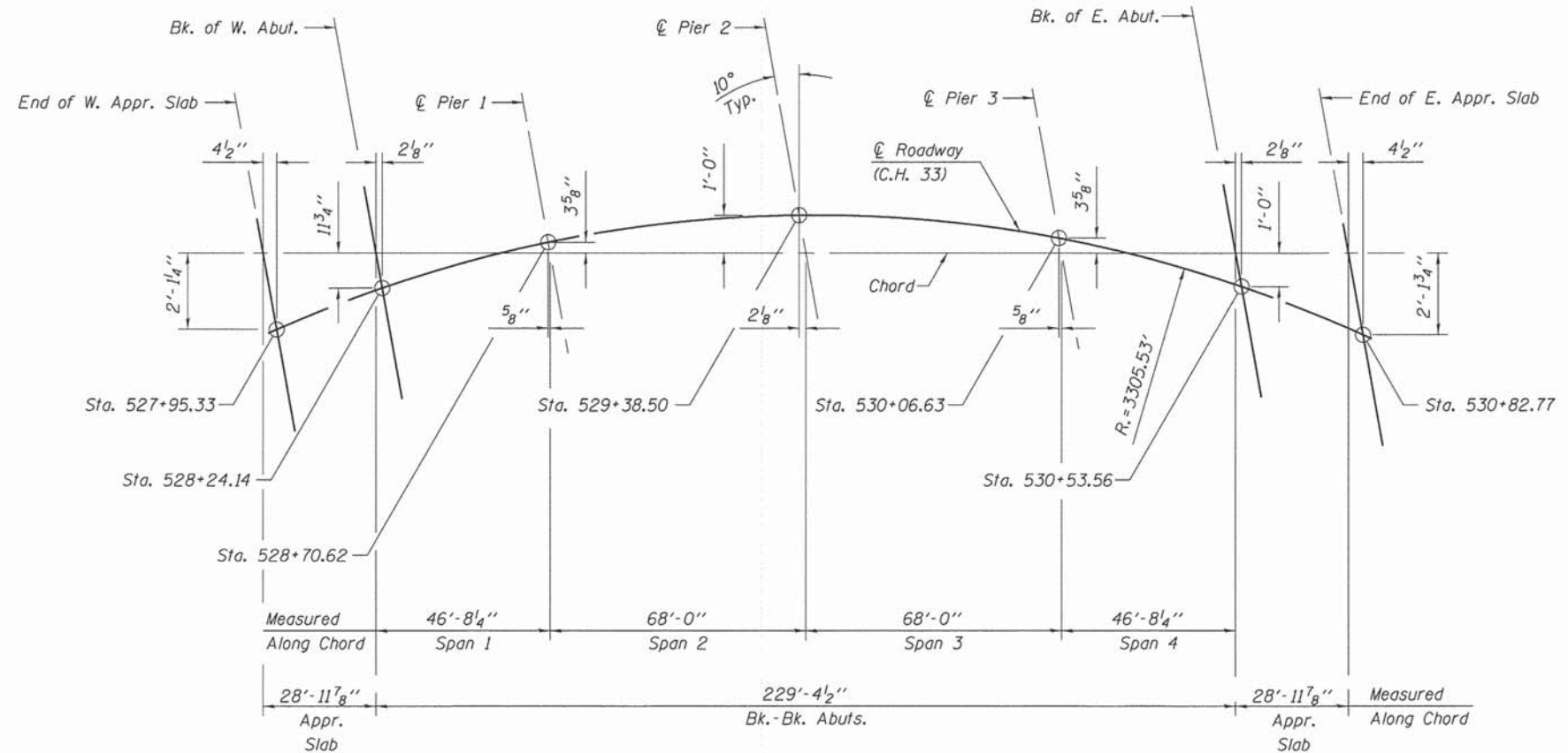
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $\frac{1}{8}$  inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two  $\frac{1}{8}$ " adjusting shims, of the dimension of the bottom bearing plate, shall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

The contractor shall drive one steel HP12x63 test pile in a permanent location at the east abutment & one steel HP14x89 test pile at pier #1 and pier #2 as directed by the Engineer before ordering the remainder of piles.

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

All exposed portions of abutments, wing walls, and piers shall receive a rubbed finish in accordance with Article 503.15 (b) of the Standard Specifications. Cost to be included in cost of Concrete Structures.

See Proposal Booklet for Soil Boring Data.



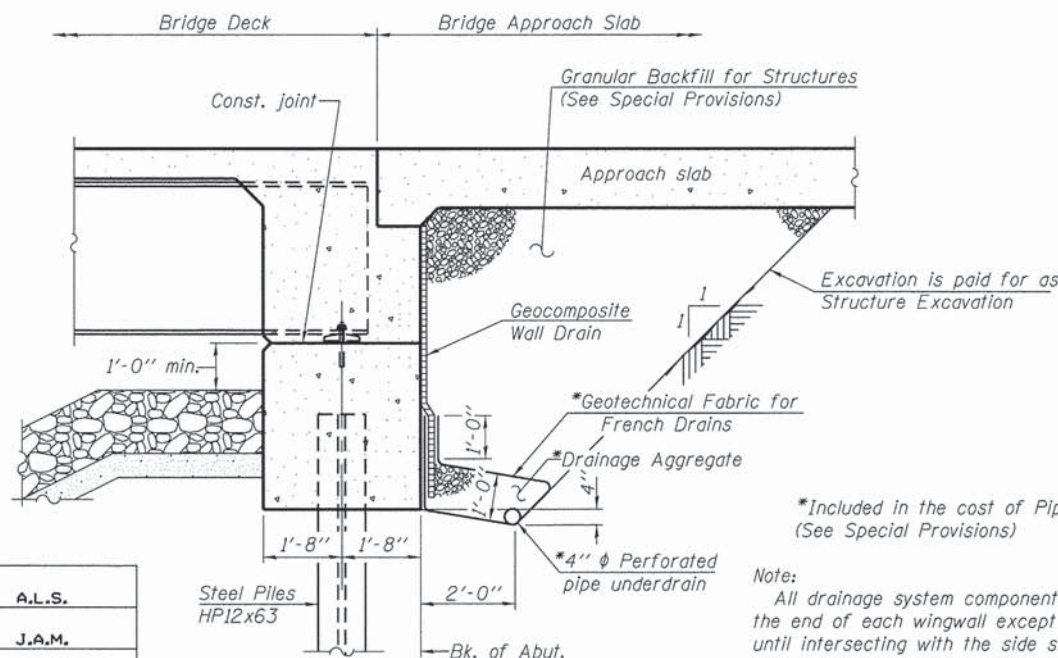
**OFFSET SKETCH**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Granular Backfill For Structures	Cu. Yd.		183	183
Stone Riprap, Class A4	Ton		1,073	1,073
Filter Fabric	Sq. Yd.		1,354	1,354
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		201	201
Concrete Structures	Cu. Yd.		193.2	193.2
Concrete Superstructure	Cu. Yd.	511.2		511.2
Bridge Deck Grooving	Sq. Yd.	1,628		1,628
Protective Coat	Sq. Yd.	1,771	27	1,798
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	8,760		8,760
Reinforcement Bars, Epoxy Coated	Pound	127,300	22,040	149,340
Steel Bridge Rail, Type SM (Special)	Foot	518		518
Furnishing Steel Piles HP12x63	Foot		512	512
Furnishing Steel Piles HP14x89	Foot		1,167	1,167
Driving Piles	Foot		1,679	1,679
Test Pile Steel HP12x63	Each		1	1
Test Pile Steel HP14x89	Each		2	2
Concrete Encasement	Cu. Yd.		40.4	40.4
Name Plates	Each	1		1
Pipe Underdrains for Structure 4"	Foot		192	192
Geocomposite Wall Drain	Sq. Yd.		107	107

S. BRANCH KISHWAUKEE RIVER  
 BUILT 20\_\_ BY  
 DEKALB COUNTY  
 SEC. 08-00076-00-BR  
 F.A. PROJ. BRS-0037(048)  
 STR. NO. 019-3072  
 LOADING HL-93

**LETTERING FOR NAME PLATE**  
 See Std. 515001



\*Included in the cost of Pipe Underdrains for Structures 4".  
 (See Special Provisions)

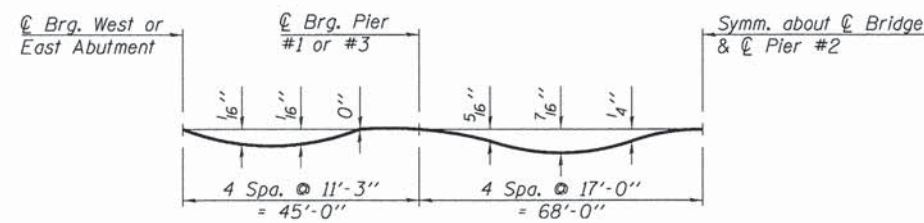
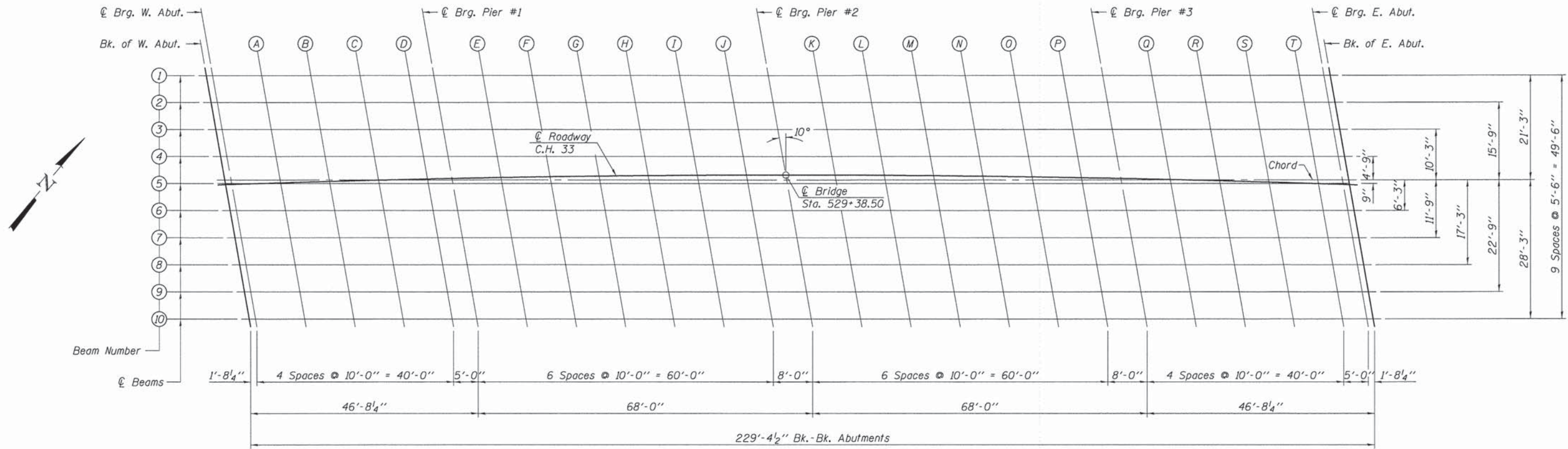
Note:  
 All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

**SECTION THRU INTEGRAL ABUTMENT**  
 (Horiz. dim. @ Rt. L's)

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

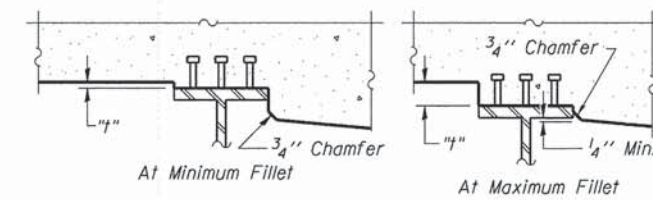
**GENERAL NOTES, BILL OF MATERIAL  
 & MISCELLANEOUS DETAILS  
 S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 04-003525	ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		5332	08-00076-00-BR	DEKALB	43	9
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com			COLTONVILLE ROAD	CONTRACT NO. 87435		
			ILLINOIS			



**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 grade elevations adjusted for dead load deflections as shown on Sheets 4 to 7 of 26.



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 sheets 4 to 7 of 26, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

**TOP OF SLAB ELEVATIONS**  
**S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 04-00525	ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		5332	08-00076-00-BR	DEKALB	43	10
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com			COLTONVILLE ROAD	CONTRACT NO. 87435		
			ILLINOIS			

**BEAM 1**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+21.007	-22.352	838.186	838.186
☉ BRG. W. ABUT.	528+22.685	-22.292	838.183	838.183
A	528+32.613	-21.957	838.168	838.174
B	528+42.543	-21.652	838.154	838.161
C	528+52.474	-21.377	838.142	838.145
D	528+62.408	-21.131	838.131	838.131
☉ BRG. PIER 1	528+67.375	-21.020	838.126	838.126
E	528+77.310	-20.820	838.117	838.131
F	528+87.246	-20.650	838.109	838.135
G	528+97.183	-20.510	838.103	838.137
H	529+07.121	-20.400	838.098	838.129
I	529+17.060	-20.320	838.094	838.115
J	529+26.998	-20.270	838.092	838.101
☉ BRG. PIER 2	529+34.950	-20.252	838.091	838.091
K	529+44.889	-20.256	838.092	838.103
L	529+54.828	-20.291	838.093	838.116
M	529+64.766	-20.355	838.096	838.129
N	529+74.705	-20.449	838.100	838.132
O	529+84.642	-20.574	838.106	838.130
P	529+94.579	-20.729	838.113	838.124
☉ BRG. PIER 3	530+02.528	-20.874	838.119	838.119
Q	530+12.462	-21.083	838.129	838.130
R	530+22.396	-21.321	838.139	838.145
S	530+32.328	-21.590	838.152	838.159
T	530+42.258	-21.889	838.165	838.168
☉ BRG. E. ABUT.	530+47.222	-22.050	838.172	838.172
BK. E. ABUT.	530+48.904	-22.106	838.175	838.175

**BEAM 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+21.776	-16.821	837.937	837.937
☉ BRG. W. ABUT.	528+23.458	-16.762	837.934	837.934
A	528+33.402	-16.429	837.919	837.926
B	528+43.349	-16.126	837.906	837.913
C	528+53.297	-15.853	837.893	837.897
D	528+63.247	-15.611	837.882	837.883
☉ BRG. PIER 1	528+68.222	-15.501	837.878	837.878
E	528+78.174	-15.303	837.869	837.882
F	528+88.126	-15.136	837.861	837.887
G	528+98.080	-14.998	837.855	837.888
H	529+08.034	-14.891	837.850	837.881
I	529+17.989	-14.814	837.847	837.867
J	529+27.945	-14.767	837.845	837.854
☉ BRG. PIER 2	529+35.909	-14.751	837.844	837.844
K	529+45.865	-14.758	837.844	837.856
L	529+55.820	-14.796	837.846	837.868
M	529+65.775	-14.863	837.849	837.882
N	529+75.730	-14.961	837.853	837.885
O	529+85.684	-15.088	837.859	837.883
P	529+95.637	-15.246	837.866	837.877
☉ BRG. PIER 3	530+03.599	-15.394	837.873	837.873
Q	530+13.550	-15.606	837.882	837.883
R	530+23.500	-15.848	837.893	837.899
S	530+33.448	-16.120	837.905	837.912
T	530+43.394	-16.422	837.919	837.922
☉ BRG. E. ABUT.	530+48.367	-16.585	837.926	837.926
BK. E. ABUT.	530+50.051	-16.642	837.929	837.929

**BEAM 3**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+22.549	-11.290	837.688	837.688
☉ BRG. W. ABUT.	528+24.233	-11.232	837.685	837.685
A	528+34.194	-10.901	837.671	837.677
B	528+44.157	-10.601	837.657	837.664
C	528+54.122	-10.330	837.645	837.648
D	528+64.088	-10.090	837.634	837.635
☉ BRG. PIER 1	528+69.072	-9.981	837.629	837.629
E	528+79.040	-9.786	837.620	837.634
F	528+89.010	-9.622	837.613	837.639
G	528+98.980	-9.487	837.607	837.640
H	529+08.951	-9.382	837.602	837.633
I	529+18.922	-9.308	837.599	837.620
J	529+28.894	-9.264	837.597	837.606
☉ BRG. PIER 2	529+36.872	-9.250	837.596	837.596
K	529+46.844	-9.261	837.597	837.608
L	529+56.816	-9.301	837.599	837.621
M	529+66.788	-9.371	837.602	837.634
N	529+76.759	-9.472	837.606	837.638
O	529+86.729	-9.603	837.612	837.636
P	529+96.699	-9.764	837.619	837.630
☉ BRG. PIER 3	530+04.673	-9.914	837.626	837.626
Q	530+14.641	-10.130	837.636	837.637
R	530+24.607	-10.375	837.647	837.653
S	530+34.571	-10.651	837.659	837.666
T	530+44.534	-10.956	837.673	837.676
☉ BRG. E. ABUT.	530+49.515	-11.120	837.680	837.680
BK. E. ABUT.	530+51.202	-11.178	837.683	837.683

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

**TOP OF SLAB ELEVATIONS**  
**S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 04-00325</small>	ILLINOIS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	IOWA	5332	08-00076-00-BR	DEKALB	43	11
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com	WISCONSIN	COLTONVILLE ROAD		CONTRACT NO. 87435		
		ILLINOIS				

**BEAM 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+23.324	-5.760	837.439	837.439
⊕ BRG. W. ABUT.	528+25.011	-5.701	837.437	837.437
A	528+34.989	-5.373	837.422	837.428
B	528+44.968	-5.075	837.408	837.415
C	528+54.950	-4.807	837.396	837.400
D	528+64.933	-4.570	837.386	837.386
⊕ BRG. PIER 1	528+69.925	-4.462	837.381	837.381
E	528+79.910	-4.270	837.372	837.386
F	528+89.896	-4.108	837.365	837.391
G	528+99.883	-3.976	837.359	837.392
H	529+09.870	-3.874	837.354	837.385
I	529+19.859	-3.803	837.351	837.372
J	529+29.847	-3.761	837.349	837.359
⊕ BRG. PIER 2	529+37.838	-3.750	837.349	837.349
K	529+47.827	-3.763	837.349	837.361
L	529+57.815	-3.806	837.351	837.374
M	529+67.803	-3.880	837.355	837.387
N	529+77.791	-3.984	837.359	837.391
O	529+87.778	-4.118	837.365	837.390
P	529+97.764	-4.282	837.373	837.384
⊕ BRG. PIER 3	530+05.752	-4.435	837.380	837.380
Q	530+15.736	-4.654	837.389	837.391
R	530+25.718	-4.902	837.401	837.406
S	530+35.699	-5.181	837.413	837.420
T	530+45.678	-5.490	837.427	837.430
⊕ BRG. E. ABUT.	530+50.667	-5.656	837.435	837.435
BK. E. ABUT.	530+52.357	-5.714	837.437	837.437

**CHORD**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+23.995	-0.984	837.224	837.224
⊕ BRG. W. ABUT.	528+25.685	-0.926	837.222	837.222
A	528+35.677	-0.599	837.207	837.213
B	528+45.671	-0.303	837.194	837.201
C	528+55.667	-0.038	837.182	837.185
D	528+65.665	0.198	837.171	837.172
⊕ BRG. PIER 1	528+70.664	0.304	837.166	837.166
E	528+80.663	0.494	837.158	837.172
F	528+90.664	0.654	837.151	837.176
G	529+00.665	0.784	837.145	837.178
H	529+10.667	0.883	837.140	837.171
I	529+20.670	0.952	837.137	837.158
J	529+30.672	0.991	837.135	837.145
⊕ BRG. PIER 2	529+38.675	1.000	837.135	837.135
K	529+48.678	0.984	837.136	837.147
L	529+58.681	0.938	837.138	837.160
M	529+68.683	0.862	837.141	837.174
N	529+78.685	0.756	837.146	837.178
O	529+88.686	0.619	837.152	837.176
P	529+98.686	0.452	837.160	837.171
⊕ BRG. PIER 3	530+06.686	0.297	837.167	837.167
Q	530+16.684	0.075	837.177	837.178
R	530+26.681	-0.176	837.188	837.194
S	530+36.676	-0.458	837.201	837.208
T	530+46.669	-0.770	837.215	837.218
⊕ BRG. E. ABUT.	530+51.665	-0.937	837.222	837.222
BK. E. ABUT.	530+53.357	-0.996	837.225	837.225

**BEAM 5**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+24.101	-0.230	837.190	837.190
⊕ BRG. W. ABUT.	528+25.791	-0.171	837.188	837.188
A	528+35.786	0.154	837.173	837.179
B	528+45.782	0.450	837.160	837.167
C	528+55.781	0.715	837.148	837.151
D	528+65.780	0.950	837.137	837.138
⊕ BRG. PIER 1	528+70.781	1.057	837.132	837.132
E	528+80.782	1.246	837.124	837.138
F	528+90.785	1.406	837.117	837.143
G	529+00.789	1.535	837.111	837.144
H	529+10.793	1.634	837.106	837.137
I	529+20.798	1.703	837.103	837.124
J	529+30.803	1.741	837.102	837.111
⊕ BRG. PIER 2	529+38.807	1.750	837.101	837.101
K	529+48.812	1.734	837.102	837.114
L	529+58.818	1.688	837.104	837.127
M	529+68.822	1.611	837.108	837.140
N	529+78.826	1.504	837.112	837.144
O	529+88.830	1.367	837.118	837.143
P	529+98.832	1.200	837.126	837.137
⊕ BRG. PIER 3	530+06.834	1.044	837.133	837.133
Q	530+16.834	0.822	837.143	837.144
R	530+26.833	0.570	837.154	837.160
S	530+36.830	0.288	837.167	837.174
T	530+46.826	-0.025	837.181	837.184
⊕ BRG. E. ABUT.	530+51.823	-0.192	837.189	837.189
BK. E. ABUT.	530+53.515	-0.251	837.191	837.191

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

**TOP OF SLAB ELEVATIONS**  
**S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 04-003525</small>	ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		5332	08-00076-00-BR	DEKALB	43	12
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com			COLTONVILLE ROAD	CONTRACT NO. 87435		
			ILLINOIS			

**BEAM 6**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+24.881	5.301	836.941	836.941
☉ BRG. W. ABUT.	528+26.574	5.358	836.939	836.939
A	528+36.586	5.682	836.924	836.931
B	528+46.599	5.975	836.911	836.918
C	528+56.614	6.238	836.899	836.902
D	528+66.631	6.470	836.889	836.889
☉ BRG. PIER 1	528+71.639	6.575	836.884	836.884
E	528+81.658	6.762	836.876	836.890
F	528+91.677	6.919	836.869	836.894
G	529+01.698	7.046	836.863	836.897
H	529+11.719	7.142	836.859	836.889
I	529+21.740	7.208	836.856	836.876
J	529+31.762	7.243	836.854	836.863
☉ BRG. PIER 2	529+39.780	7.250	836.854	836.854
K	529+49.802	7.231	836.855	836.866
L	529+59.823	7.181	836.857	836.880
M	529+69.845	7.102	836.860	836.893
N	529+79.865	6.992	836.865	836.897
O	529+89.885	6.851	836.872	836.896
P	529+99.905	6.681	836.879	836.890
☉ BRG. PIER 3	530+07.919	6.523	836.886	836.886
Q	530+17.936	6.297	836.897	836.898
R	530+27.951	6.042	836.908	836.914
S	530+37.965	5.756	836.921	836.928
T	530+47.977	5.440	836.935	836.938
☉ BRG. E. ABUT.	530+52.982	5.271	836.943	836.943
BK. E. ABUT.	530+54.678	5.212	836.945	836.945

**BEAM 7**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+25.664	10.831	836.693	836.693
☉ BRG. W. ABUT.	528+27.360	10.888	836.690	836.690
A	528+37.388	11.209	836.676	836.682
B	528+47.418	11.500	836.663	836.670
C	528+57.450	11.760	836.651	836.654
D	528+67.484	11.990	836.640	836.641
☉ BRG. PIER 1	528+72.501	12.094	836.636	836.636
E	528+82.536	12.278	836.627	836.641
F	528+92.572	12.432	836.621	836.646
G	529+02.610	12.556	836.615	836.649
H	529+12.647	12.649	836.611	836.641
I	529+22.686	12.712	836.608	836.629
J	529+32.724	12.745	836.606	836.616
☉ BRG. PIER 2	529+40.755	12.749	836.606	836.606
K	529+50.794	12.727	836.607	836.619
L	529+60.832	12.675	836.610	836.632
M	529+70.870	12.592	836.613	836.646
N	529+80.908	12.479	836.618	836.650
O	529+90.945	12.336	836.625	836.649
P	530+00.980	12.162	836.633	836.644
☉ BRG. PIER 3	530+09.008	12.001	836.640	836.640
Q	530+19.041	11.772	836.650	836.651
R	530+29.073	11.514	836.662	836.668
S	530+39.104	11.224	836.675	836.682
T	530+49.132	10.905	836.689	836.692
☉ BRG. E. ABUT.	530+54.146	10.734	836.697	836.697
BK. E. ABUT.	530+55.844	10.674	836.700	836.700

**BEAM 8**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+26.450	16.395	836.444	836.444
☉ BRG. W. ABUT.	528+28.148	16.417	836.441	836.441
A	528+38.193	16.736	836.427	836.433
B	528+48.240	17.024	836.414	836.421
C	528+58.289	17.282	836.402	836.406
D	528+68.340	17.509	836.392	836.393
☉ BRG. PIER 1	528+73.365	17.612	836.387	836.387
E	528+83.417	17.794	836.379	836.393
F	528+93.471	17.945	836.372	836.398
G	529+03.525	18.066	836.367	836.401
H	529+13.579	18.157	836.363	836.394
I	529+23.634	18.217	836.360	836.381
J	529+33.690	18.247	836.359	836.368
☉ BRG. PIER 2	529+41.734	18.248	836.359	836.359
K	529+51.790	18.223	836.360	836.372
L	529+61.845	18.168	836.362	836.385
M	529+71.900	18.082	836.366	836.399
N	529+81.954	17.966	836.372	836.404
O	529+92.007	17.819	836.378	836.402
P	530+02.060	17.642	836.386	836.397
☉ BRG. PIER 3	530+10.101	17.479	836.393	836.393
Q	530+20.151	17.247	836.404	836.405
R	530+30.199	16.985	836.416	836.421
S	530+40.246	16.692	836.429	836.436
T	530+50.291	16.369	836.443	836.447
☉ BRG. E. ABUT.	530+55.313	16.196	836.451	836.451
BK. E. ABUT.	530+57.014	16.136	836.454	836.454

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

**TOP OF SLAB ELEVATIONS**  
**S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 04-00525</small>	ILLINOIS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	IOWA	5332	08-00076-00-BR	DEKALB	43	13
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com	WISCONSIN	COLTONVILLE ROAD		CONTRACT NO. 87435		
		ILLINOIS				

**BEAM 9**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+27.238	21.890	836.195	836.195
⊕ BRG. W. ABUT.	528+28.939	21.947	836.192	836.192
A	528+39.001	22.263	836.178	836.184
B	528+49.065	22.548	836.165	836.172
C	528+59.131	22.804	836.154	836.157
D	528+69.198	23.029	836.144	836.144
⊕ BRG. PIER 1	528+74.233	23.130	836.139	836.139
E	528+84.302	23.309	836.131	836.145
F	528+94.372	23.458	836.124	836.150
G	529+04.443	23.576	836.119	836.153
H	529+14.514	23.664	836.115	836.146
I	529+24.586	23.721	836.113	836.133
J	529+34.659	23.748	836.111	836.121
⊕ BRG. PIER 2	529+42.717	23.747	836.111	836.111
K	529+52.789	23.719	836.113	836.124
L	529+62.861	23.661	836.115	836.138
M	529+72.932	23.572	836.119	836.152
N	529+83.003	23.453	836.125	836.157
O	529+93.073	23.303	836.131	836.156
P	530+03.143	23.122	836.139	836.151
⊕ BRG. PIER 3	530+11.197	22.956	836.147	836.147
Q	530+21.264	22.721	836.158	836.159
R	530+31.329	22.455	836.170	836.175
S	530+41.393	22.159	836.183	836.190
T	530+51.454	21.833	836.198	836.201
⊕ BRG. E. ABUT.	530+56.484	21.658	836.205	836.205
BK. E. ABUT.	530+58.188	21.598	836.206	836.206

**BEAM 10**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. W. ABUT.	528+28.028	27.419	835.946	835.946
⊕ BRG. W. ABUT.	528+29.733	27.476	835.944	835.944
A	528+39.812	27.789	835.929	835.936
B	528+49.893	28.073	835.917	835.924
C	528+59.976	28.325	835.905	835.909
D	528+70.060	28.548	835.895	835.896
⊕ BRG. PIER 1	528+75.103	28.647	835.891	835.891
E	528+85.189	28.824	835.883	835.897
F	528+95.276	28.970	835.876	835.902
G	529+05.364	29.085	835.871	835.905
H	529+15.452	29.170	835.867	835.898
I	529+25.541	29.225	835.865	835.886
J	529+35.631	29.249	835.864	835.873
⊕ BRG. PIER 2	529+43.702	29.246	835.864	835.864
K	529+53.791	29.215	835.865	835.877
L	529+63.880	29.153	835.868	835.891
M	529+73.969	29.061	835.872	835.905
N	529+84.056	28.939	835.878	835.910
O	529+94.143	28.786	835.885	835.909
P	530+04.229	28.602	835.893	835.904
⊕ BRG. PIER 3	530+12.297	28.433	835.900	835.900
Q	530+22.380	28.195	835.911	835.912
R	530+32.462	27.926	835.923	835.929
S	530+42.543	27.626	835.937	835.944
T	530+52.621	27.296	835.952	835.955
⊕ BRG. E. ABUT.	530+57.659	27.120	835.960	835.960
BK. E. ABUT.	530+59.366	27.059	835.962	835.962

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

**TOP OF SLAB ELEVATIONS**  
**S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 184-003525</small>	ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		5332	08-00076-00-BR	DEKALB	43	14
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com			COLTONVILLE ROAD	CONTRACT NO. 87435		
			ILLINOIS			

**NORTH EDGE OF APPROACH SLAB**

Location	Station	Offset	Theoretical Grade Elevations
W. END W. APPR. SLAB	527+92.015	-25.270	838.317
A1	528+01.931	-24.842	838.298
A2	528+11.849	-24.444	838.280
W. END OF DECK	528+21.770	-24.076	838.263

**NORTH EDGE OF SHOULDER**

Location	Station	Offset	Theoretical Grade Elevations
W. END W. APPR. SLAB	527+92.441	-22.000	838.170
A1	528+02.309	-22.000	838.170
A2	528+12.182	-22.000	838.170
W. END OF DECK	528+22.059	-22.000	838.170

**NORTH EDGE OF ROADWAY**

Location	Station	Offset	Theoretical Grade Elevations
W. END W. APPR. SLAB	527+93.747	-12.000	837.720
A1	528+03.646	-12.000	837.720
A2	528+13.549	-12.000	837.720
W. END OF DECK	528+23.456	-12.000	837.720

**☉ ROADWAY & PROFILE GRADE**

Location	Station	Offset	Theoretical Grade Elevations
W. END W. APPR. SLAB	527+95.325	0.000	837.180
A1	528+05.260	0.000	837.180
A2	528+15.200	0.000	837.180
W. END OF DECK	528+25.143	0.000	837.180

**SOUTH EDGE OF ROADWAY**

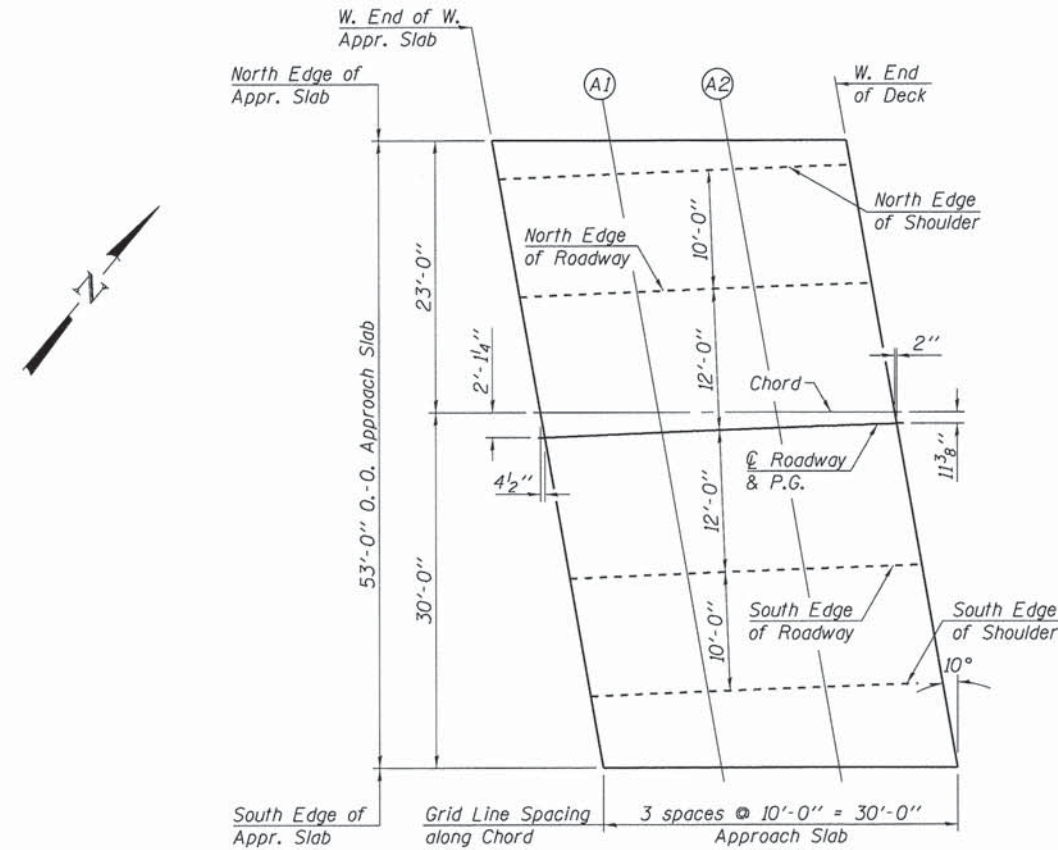
Location	Station	Offset	Theoretical Grade Elevations
W. END W. APPR. SLAB	527+96.914	12.000	836.640
A1	528+06.887	12.000	836.640
A2	528+16.863	12.000	836.640
W. END OF DECK	528+26.844	12.000	836.640

**SOUTH EDGE OF SHOULDER**

Location	Station	Offset	Theoretical Grade Elevations
W. END W. APPR. SLAB	527+98.248	22.000	836.190
A1	528+08.251	22.000	836.190
A2	528+18.259	22.000	836.190
W. END OF DECK	528+28.270	22.000	836.190

**SOUTH EDGE OF APPROACH SLAB**

Location	Station	Offset	Theoretical Grade Elevations
W. END W. APPR. SLAB	527+99.063	28.085	835.916
A1	528+09.141	28.491	835.898
A2	528+19.222	28.867	835.881
W. END OF DECK	528+29.304	29.213	835.865



**PLAN**

**TOP OF WEST APPROACH  
SLAB ELEVATIONS  
S.N. 019-3072**

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

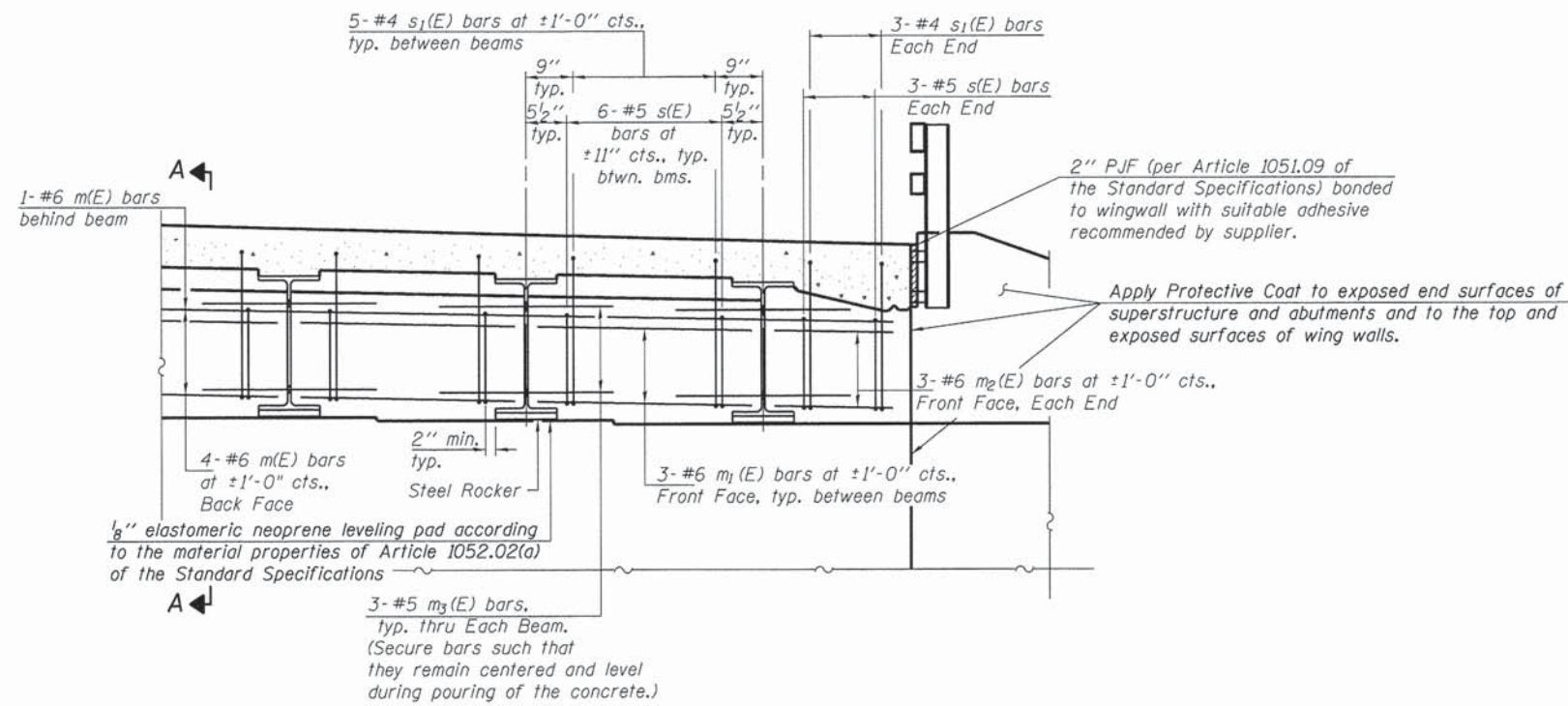
E-AS 11-1-09

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 84-00325</small>	ILLINOIS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	IOWA	5332	08-00076-00-BR	DEKALB	43	15
WISCONSIN	COLTONVILLE ROAD		CONTRACT NO. 87435			
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com		ILLINOIS				

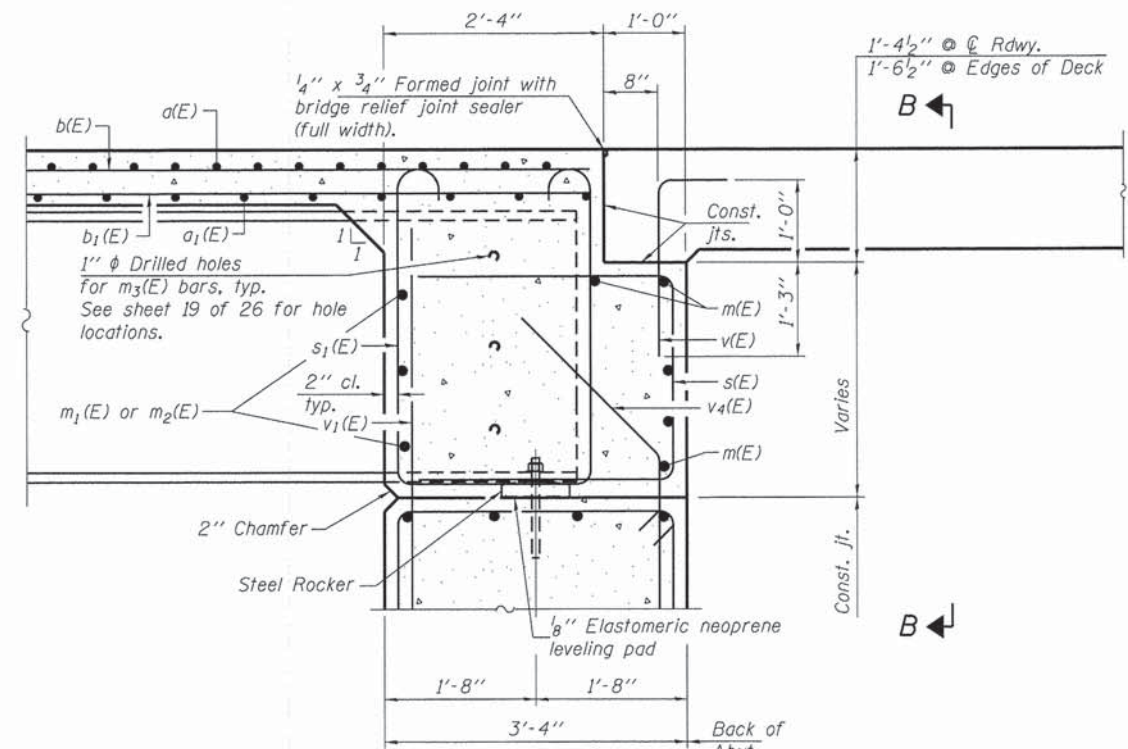






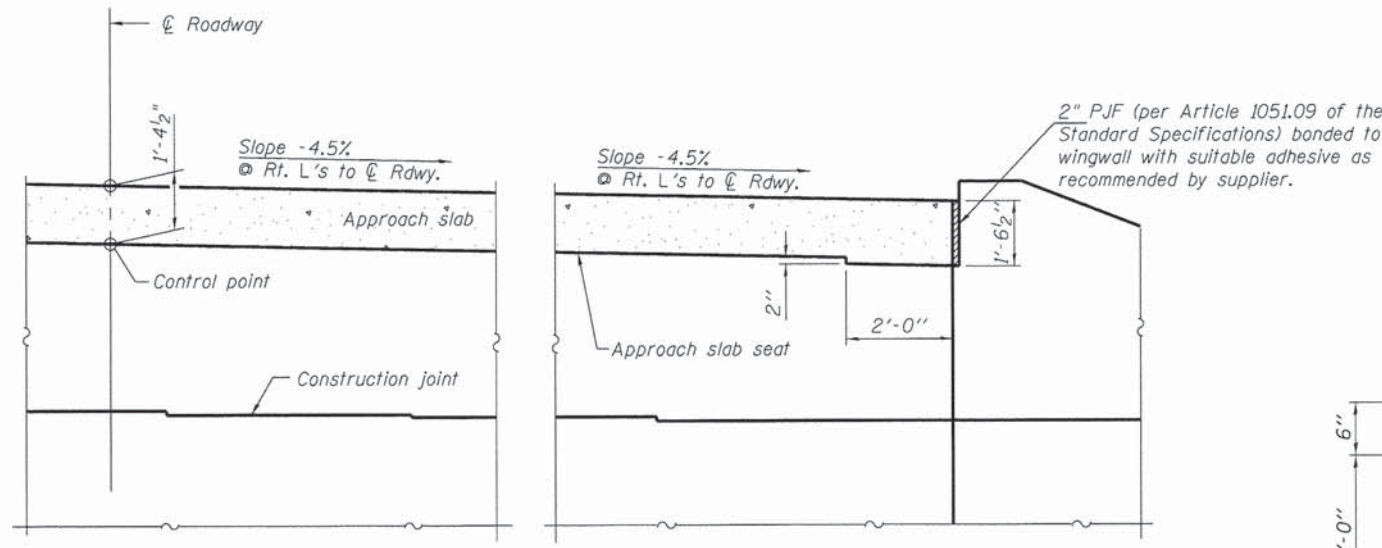


**DIAPHRAGM ELEVATION AT ABUTMENT**

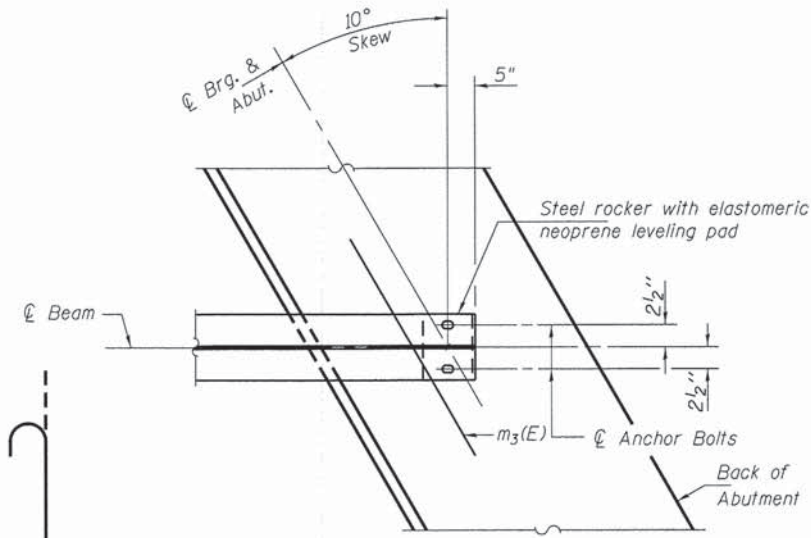


**SECTION A-A**  
(at Rt. L's)

**Notes:**  
Reinforcement bars in diaphragm are billed with superstructure. Concrete in diaphragm is included with Concrete Superstructure. The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams. For bearing details see sheet 20 of 26.



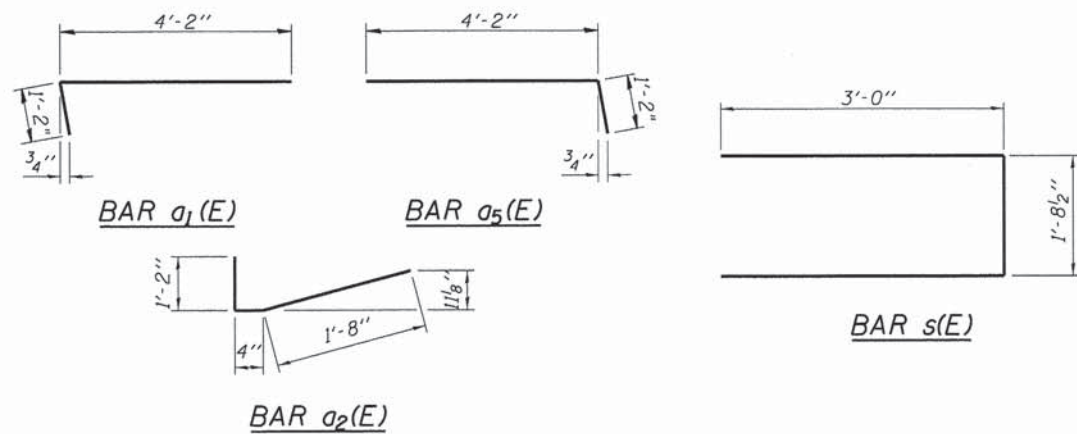
**SECTION B-B**



**PARTIAL PLAN AT ABUTMENT**  
(Showing bottom flange of beam)

**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a (E)	391	#5	52'-8"	—
a1(E)	390	#6	5'-4"	—
a2(E)	392	#5	3'-2"	—
a3(E)	274	#5	52'-4"	—
a4(E)	8	#5	28'-6"	—
a5(E)	390	#6	5'-4"	—
b(E)	522	#5	28'-2"	—
b1(E)	159	#6	39'-0"	—
b2(E)	561	#5	23'-8"	—
m (E)	10	#6	53'-4"	—
m1(E)	54	#6	5'-3"	—
m2(E)	12	#6	1'-5"	—
m3(E)	60	#5	4'-0"	—
s(E)	120	#5	7'-9"	—
s1(E)	102	#4	9'-2"	—
v(E)	108	#5	4'-3"	—
Protective Coat		Sq. Yd.	1,417	
Conc. Superstructure		Cu. Yd.	353.2	
Reinforcement Bars, Epoxy Coated		Pound	86,640	
Bridge Deck Grooving		Sq. Yd.	1,288	

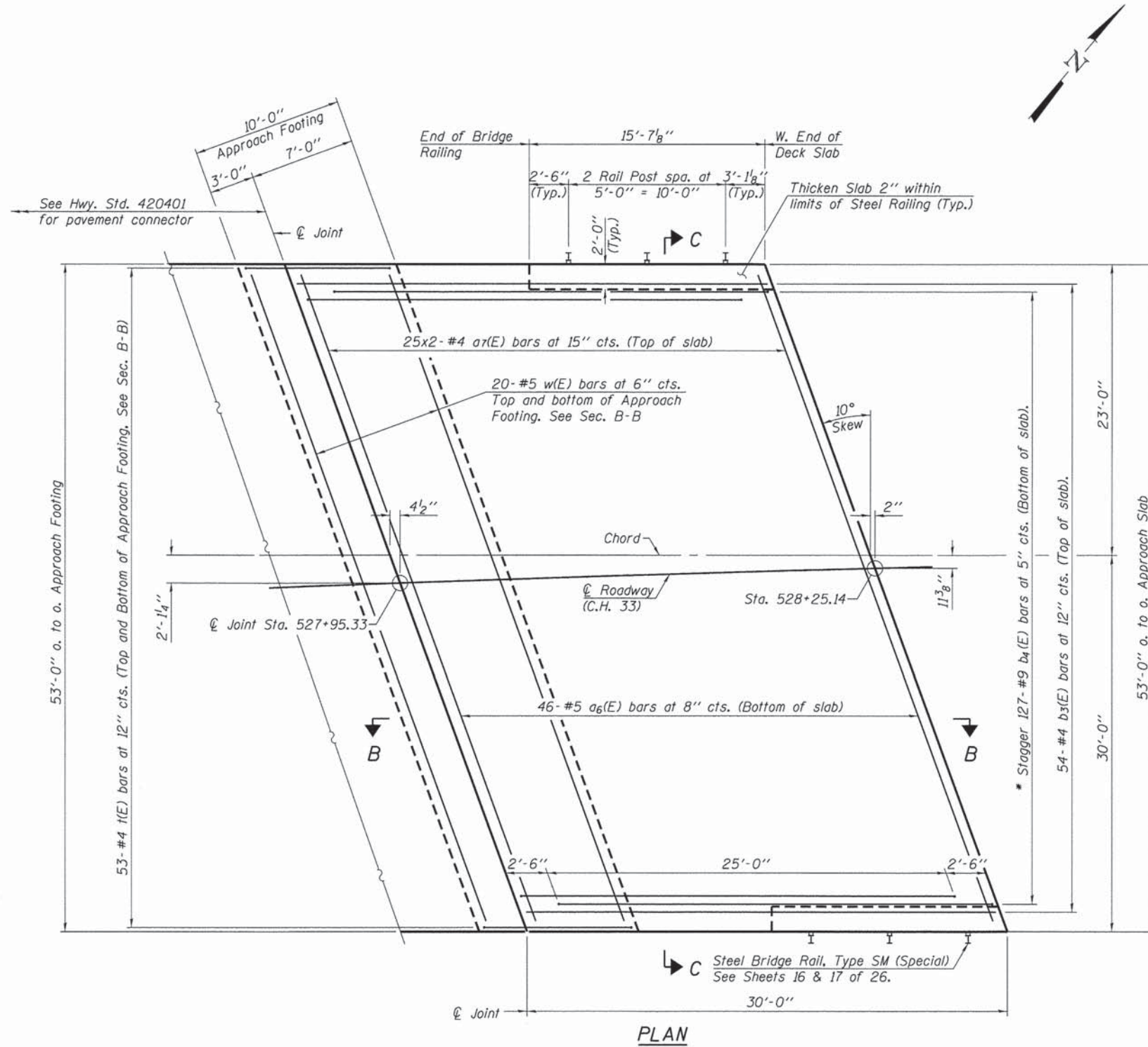


DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

**SUPERSTRUCTURE DETAILS**  
S.N. 019-3072

**FEHR GRAHAM**  
ENGINEERING & ENVIRONMENTAL  
ILLINOIS DESIGN FIRM NO. 04-003525

F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 18
COLTONVILLE ROAD		CONTRACT NO. 87435		



Notes:  
 See sheets 16 & 17 of 26 for Railing & Railing Connection Details  
 See sheet 13 of 26 for bar details, Bill of Material, and  
 Sections B-B & C-C.  
 Spacing for a<sub>6</sub>(E) and a<sub>7</sub>(E) bars is measured parallel to Chord.

**MIN. BAR LAPS**

#4 ..... 2'-7"

**PLAN**

\* Tilt #9 b<sub>4</sub>(E) bars as required to maintain clearance.

Note: Bars indicated thus 25x2-#4 etc. indicates 25 lines of bars with 2 lengths per line.

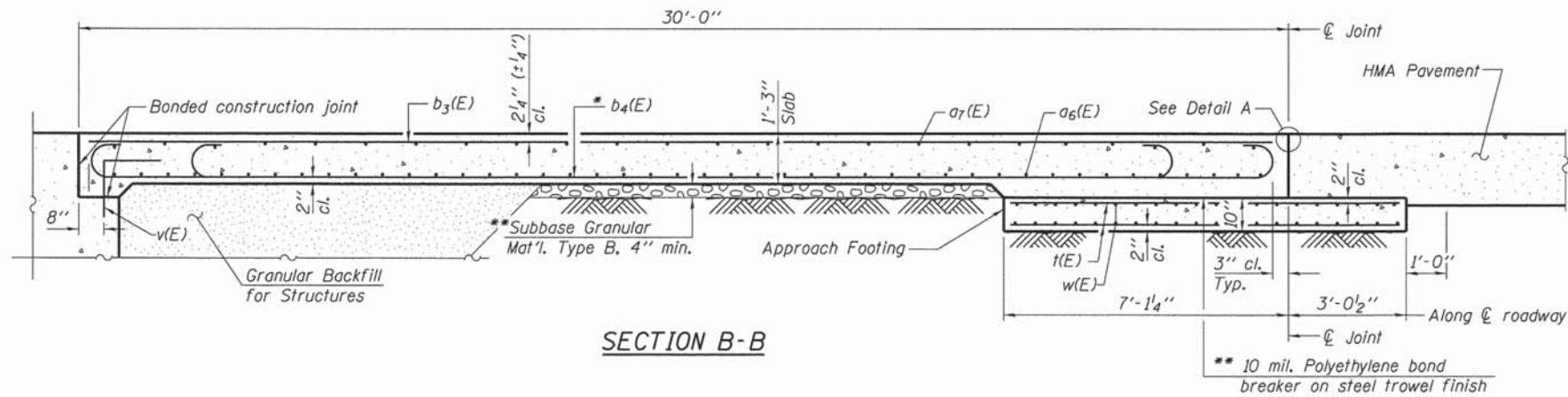
DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

BA-R

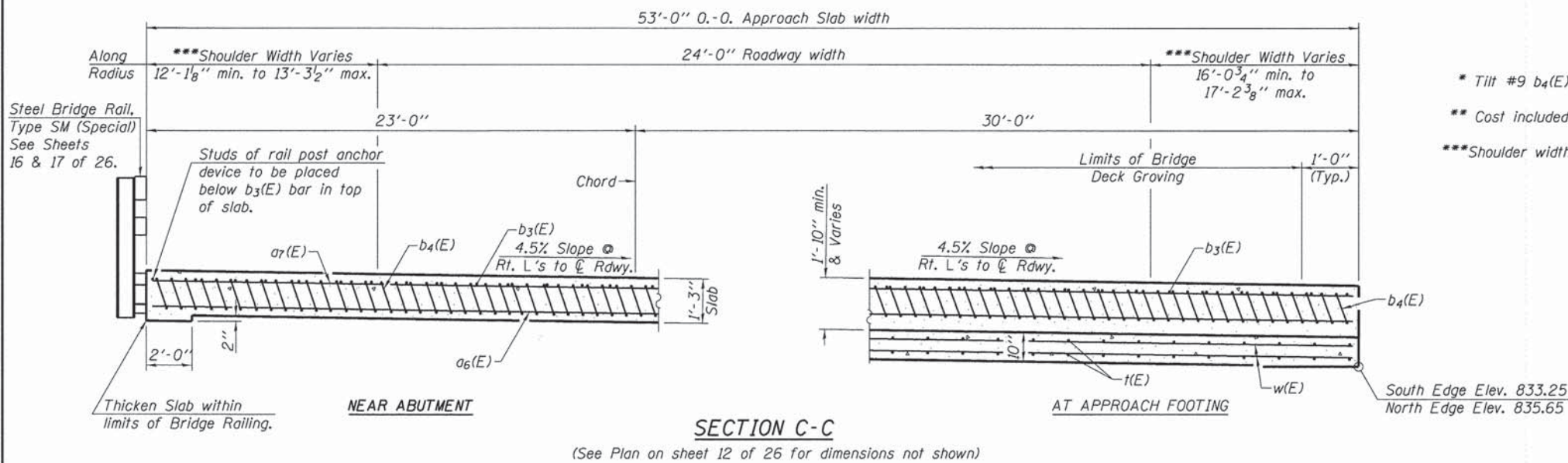
10-31-08

**WEST BRIDGE APPROACH SLAB DETAILS**  
**S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 04-003525</small>	ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		5332	08-00076-00-BR	DEKALB	43	19
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com			COLTONVILLE ROAD	CONTRACT NO. 87435		
			ILLINOIS			



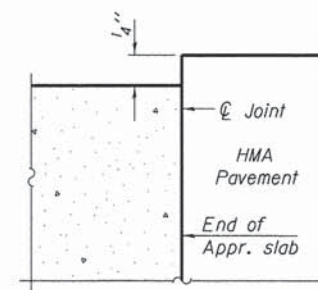
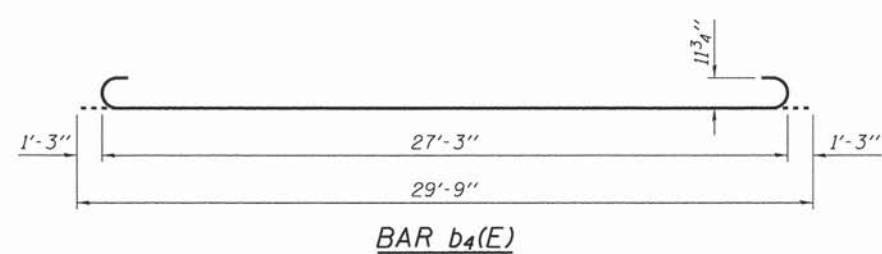
Notes:  
 Approach slab shall be paid for as Concrete Superstructure.  
 Approach footing concrete shall be paid for as Concrete Structures.  
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.  
 For v(E) bar details, see sheet 11 of 26.  
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 26.



\* Tilt #9 b4(E) bars as required to maintain clearance.  
 \*\* Cost included with Concrete Superstructure.  
 \*\*\*Shoulder width variances shown are between ends of approach slab.

**WEST APPROACH SLAB  
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a6(E)	46	#5	53'-4"	—
a7(E)	50	#4	28'-0"	—
b3(E)	54	#4	29'-8"	—
b4(E)	127	#9	29'-9"	⤵
t(E)	106	#4	9'-10"	—
w(E)	40	#5	53'-4"	—
Concrete Superstructure		Cu. Yd.	79.0	
Concrete Structures		Cu. Yd.	16.6	
Reinforcement Bars, Epoxy Coated		Pound	20,330	
Bridge Deck Grooving		Sq. Yd.	170	
Protective Coat		Sq. Yd.	177	



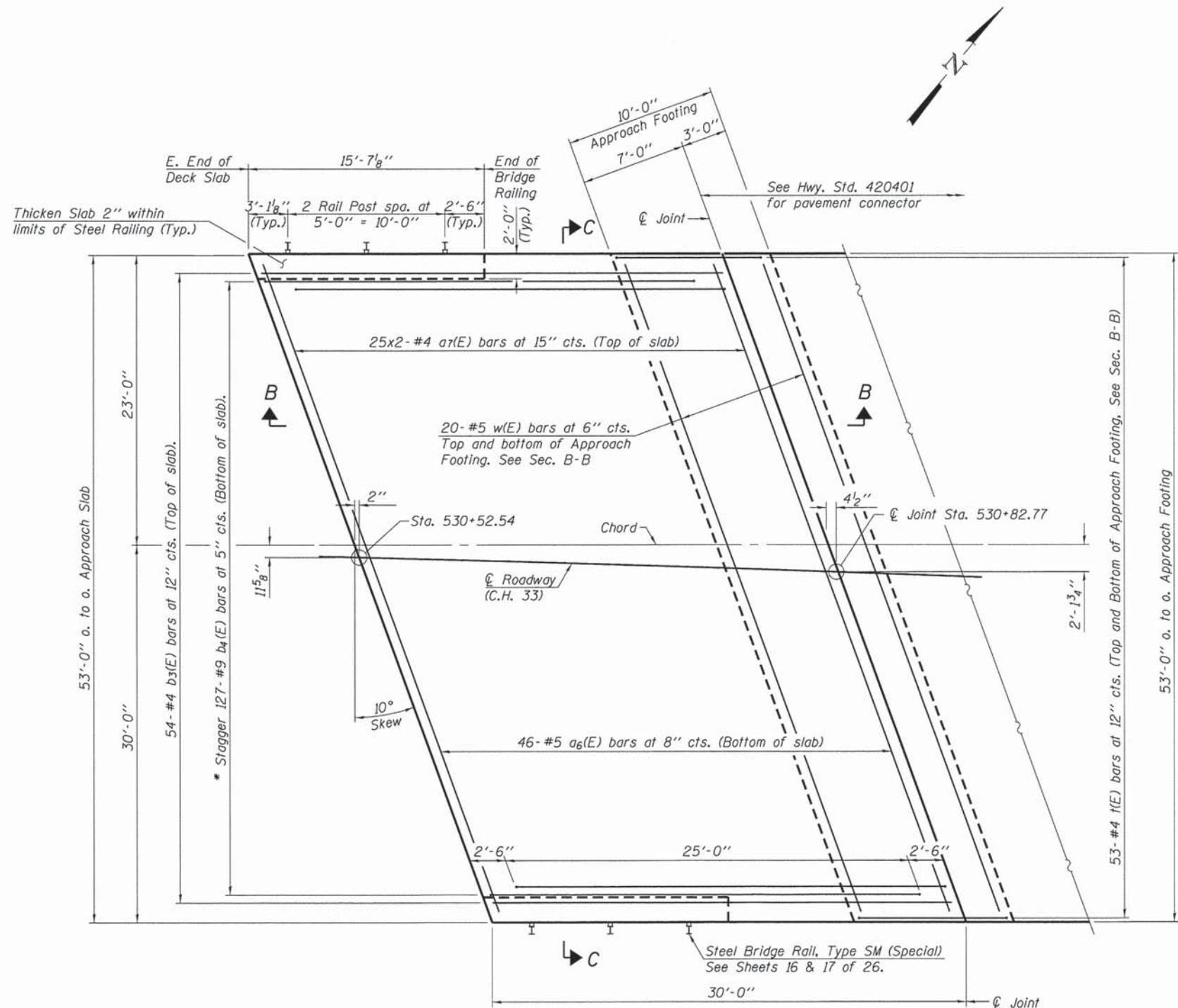
DETAIL A

DESIGNED	A.L.S.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.L.S. & J.A.M.

10-31-08

**WEST BRIDGE APPROACH SLAB DETAILS  
 S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 04-003525 4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com	ILLINOIS	F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 20
	WISCONSIN	COLTONVILLE ROAD		CONTRACT NO. 87435		
ILLINOIS						



**PLAN**

\* Tilt #9 b<sub>4</sub>(E) bars as required to maintain clearance.

Note: Bars indicated thus 25x2-#4 etc. indicates 25 lines of bars with 2 lengths per line.

Notes:  
 See sheets 16 & 17 of 26 for Railing & Railing Connection Details  
 See sheet 15 of 26 for bar details, Bill of Material, and Sections B-B & C-C.  
 Spacing for a<sub>6</sub>(E) and a<sub>7</sub>(E) bars is measured parallel to Chord.

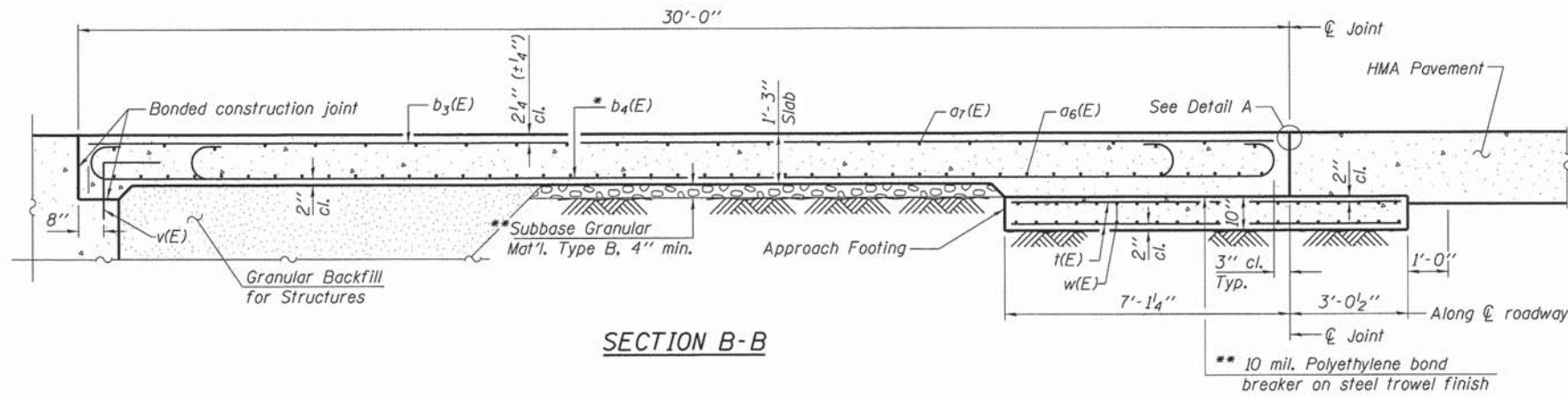
**MIN. BAR LAPS**

#4.....2'-7"

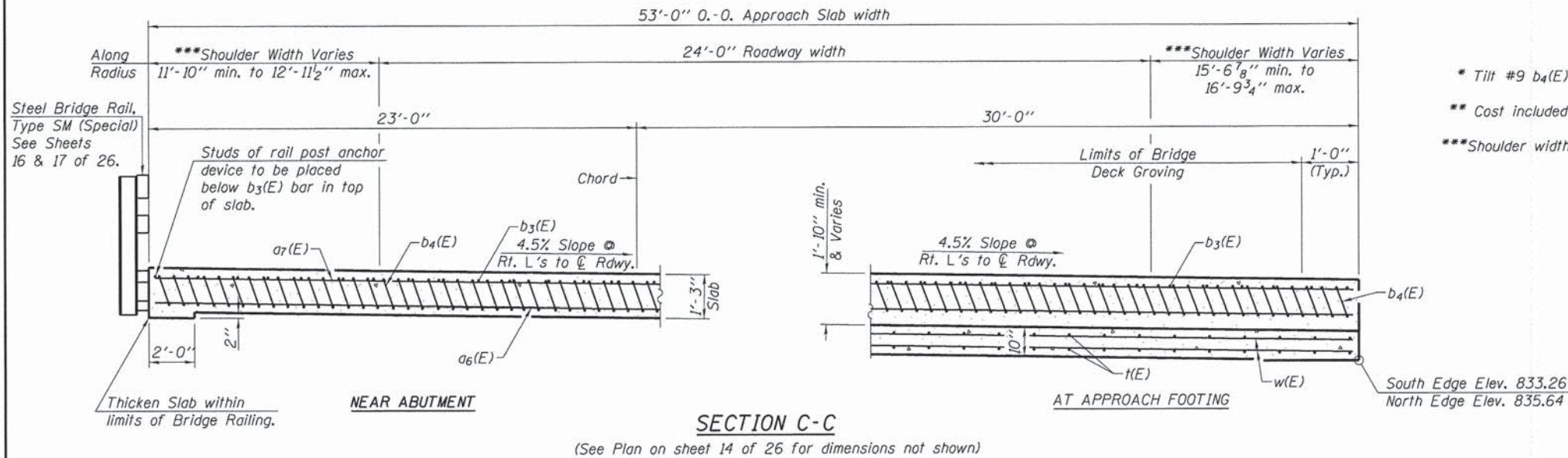
DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

**EAST BRIDGE APPROACH SLAB DETAILS**  
**S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 184-003525	ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		5332	08-00076-00-BR	DEKALB	43	21
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com			COLTONVILLE ROAD	CONTRACT NO. 87435		
			ILLINOIS			



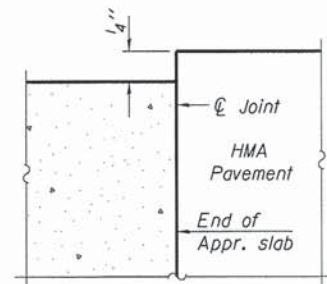
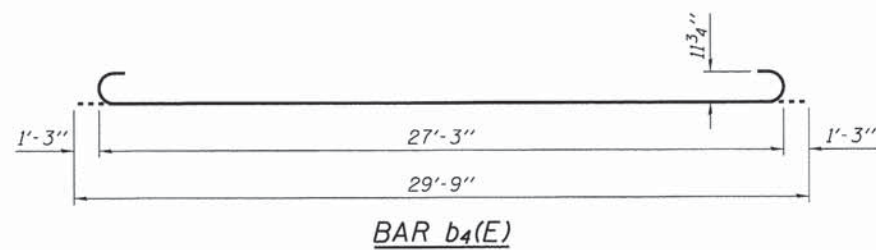
Notes:  
 Approach slab and parapet concrete shall be paid for as Concrete Superstructure.  
 Approach footing concrete shall be paid for as Concrete Structures.  
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.  
 For v(E) bar details, see sheet 11 of 26.  
 The approach footing maximum applied service bearing pressure (Omax) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 26.



\* Tilt #9 b4(E) bars as required to maintain clearance.  
 \*\* Cost included with Concrete Superstructure.  
 \*\*\* Shoulder width variances shown are between ends of approach slab.

**EAST APPROACH SLAB  
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a6(E)	46	#5	53'-4"	—
a7(E)	50	#4	28'-0"	—
b3(E)	54	#4	29'-8"	—
b4(E)	127	#9	29'-9"	↵
t(E)	106	#4	9'-10"	—
w(E)	40	#5	53'-4"	—
Concrete Superstructure		Cu. Yd.		79.0
Concrete Structures		Cu. Yd.		16.6
Reinforcement Bars, Epoxy Coated		Pound		20,330
Bridge Deck Grooving		Sq. Yd.		170
Protective Coat		Sq. Yd.		177

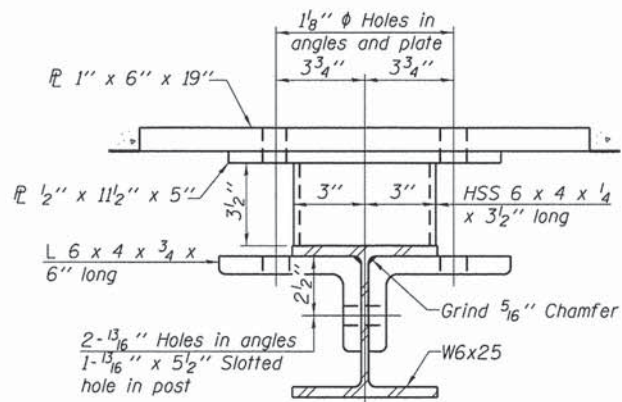


DETAIL A

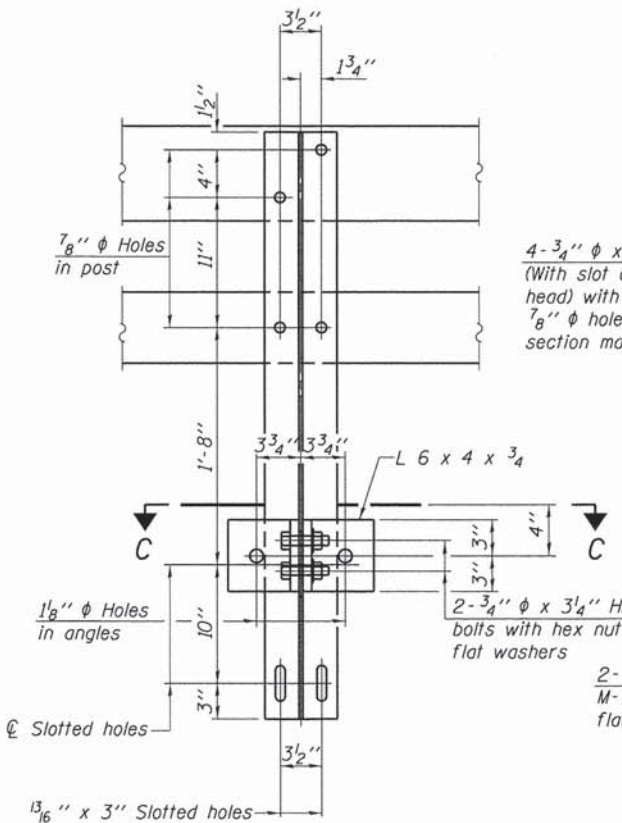
**EAST BRIDGE APPROACH SLAB DETAILS  
 S.N. 019-3072**

DESIGNED	A.L.S.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.L.S. & J.A.M.

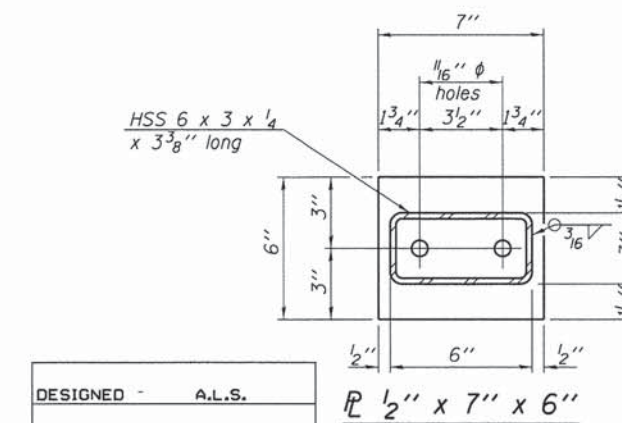
<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 64-003525</small>	ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		5332	08-00076-00-BR	DEKALB	43	22
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com			COLTONVILLE ROAD	CONTRACT NO. 87435		
			ILLINOIS			



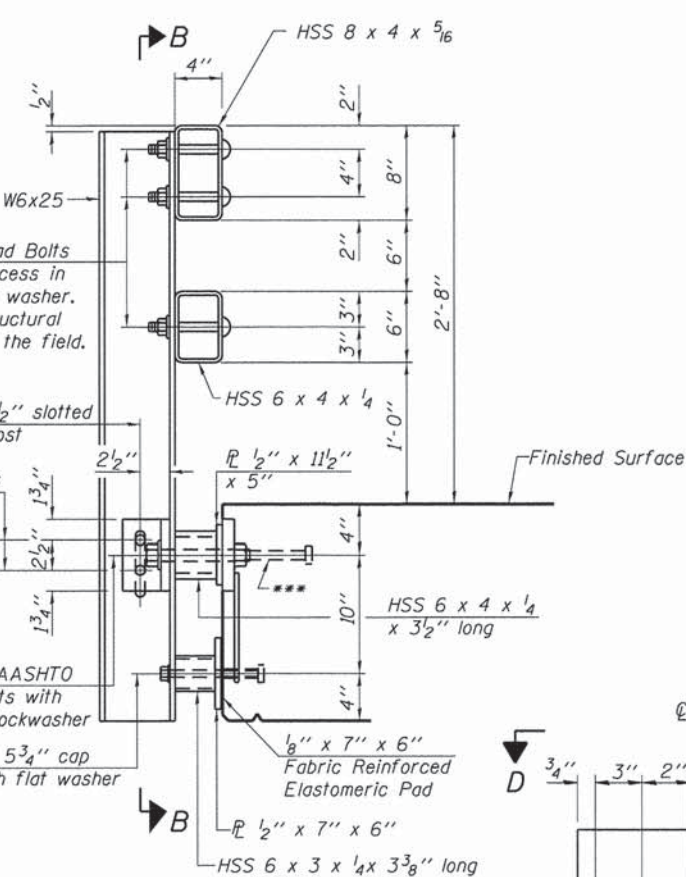
SECTION C-C



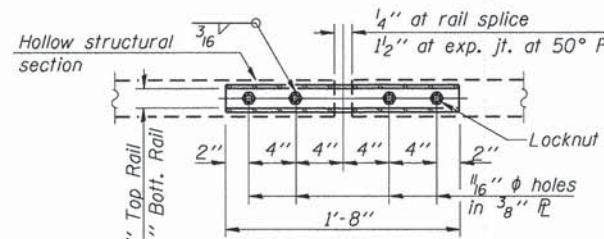
SECTION B-B



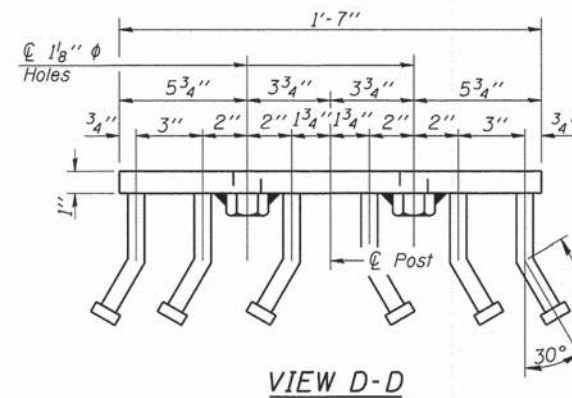
SECTION AT RAIL POST



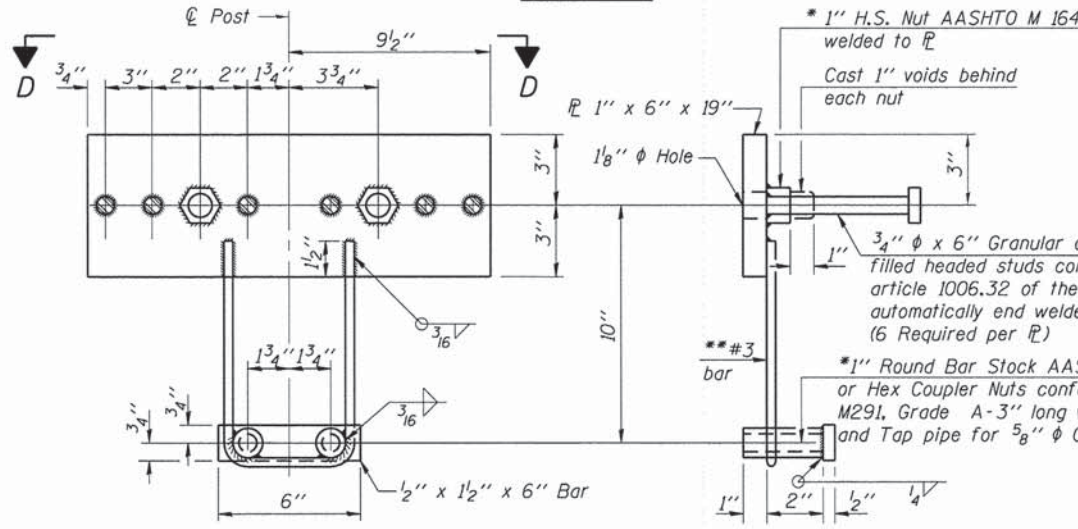
SECTION AT RAIL SPLICE



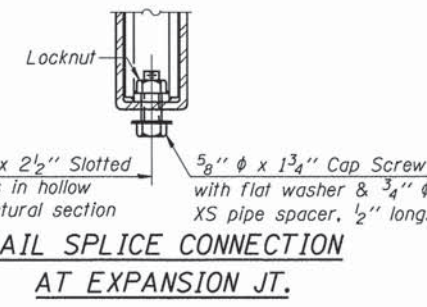
PLAN-BOTT. SPLICE P TYPICAL



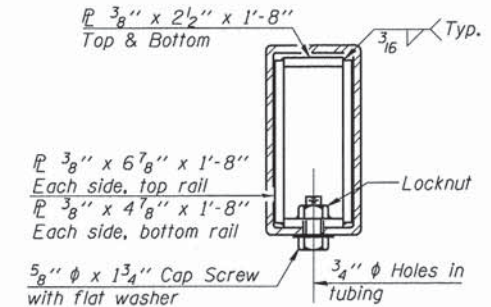
VIEW D-D



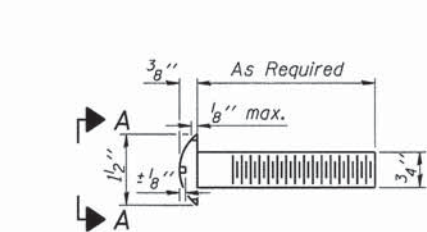
ANCHOR DEVICE



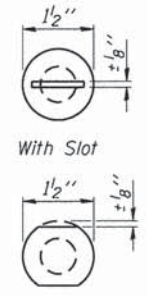
RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTION AT RAIL SPLICE



DETAIL OF 3/4\"/>



VIEW A-A

Notes:  
 All field drilled holes shall be coated with an approved zinc rich paint before erection.  
 All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.  
 \*\*\*The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Rail, Type SM (Special)	Foot	518

See Sheet 17 of 26 for Rail Post Spacing.  
 See Sheet 17 of 26 for End of Rail Details.

STEEL BRIDGE RAIL, TYPE SM (SPECIAL)  
 S.N. 019-3072

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

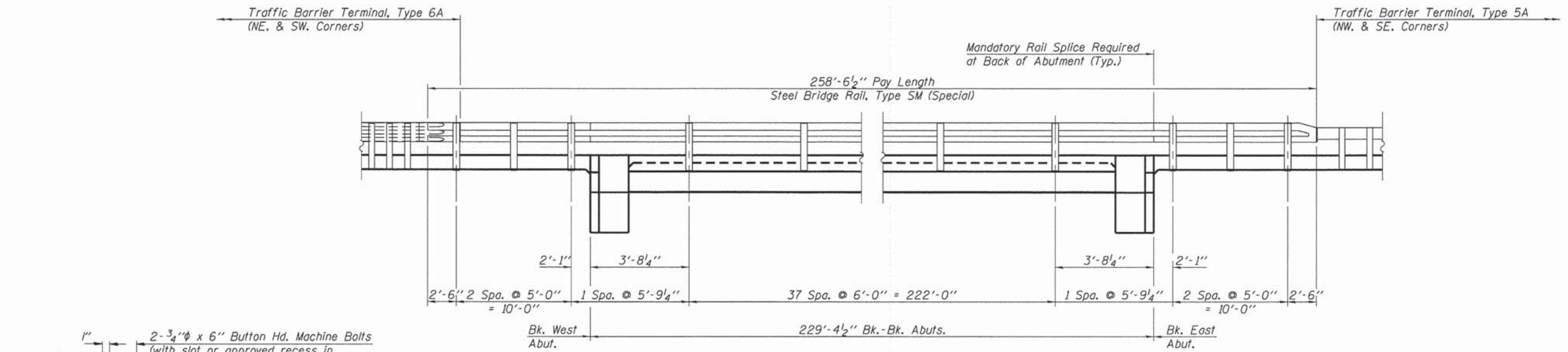
R-SM6A 11-1-09 (6'-3\"/>

\*Threaded areas shall be plugged or blocked off during placement of concrete. Galvanized after fabrication.

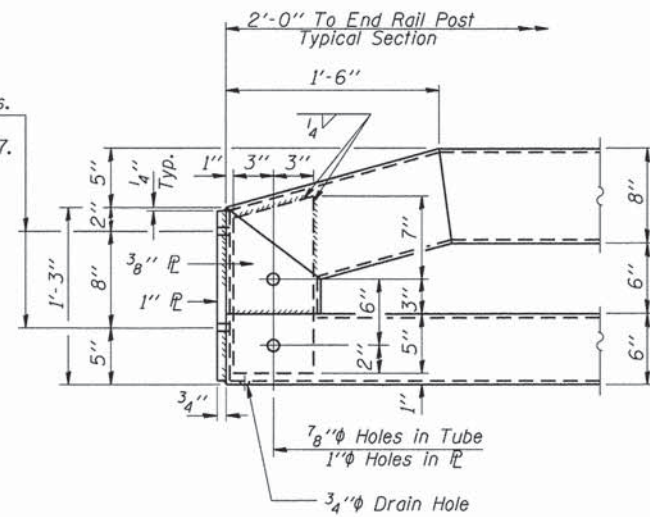
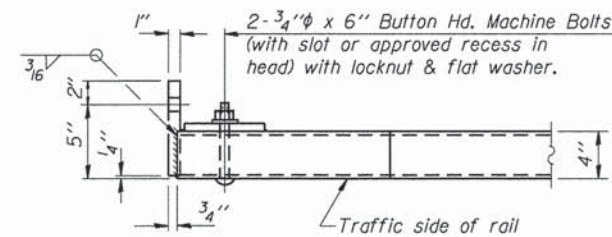
Note: Work this Sheet with Sheet 17 of 26.

**FEHR GRAHAM**  
 ENGINEERING & ENVIRONMENTAL  
 ILLINOIS DESIGN FIRM NO. 04-00525

ILLINOIS	F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 23
WISCONSIN	COLTONVILLE ROAD		CONTRACT NO. 87435		
ILLINOIS					



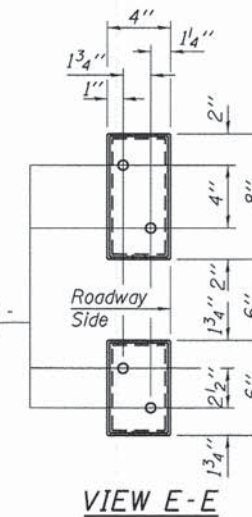
**RAIL POST SPACING**



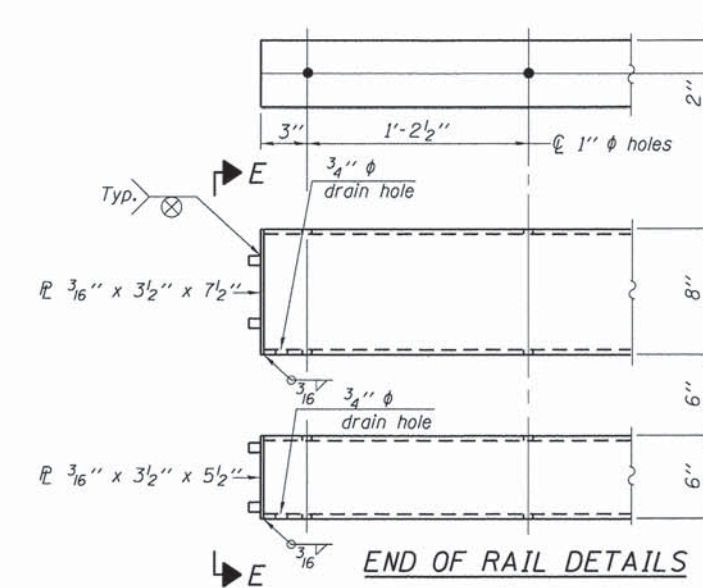
**END OF RAIL DETAILS  
DEPARTURE ENDS**  
(N.W. & S.E. Corners)

1/8" diameter Holes for 1" diameter x 4" Round Head Bolts. Provide 2 flat washers & locknuts for guardrail connection shown on Std. BLR 27.

5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



**VIEW E-E**



**END OF RAIL DETAILS  
APPROACH ENDS**  
(N.E. & S.W. Corners)

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

Note: Work this Sheet with Sheet 16 of 26.

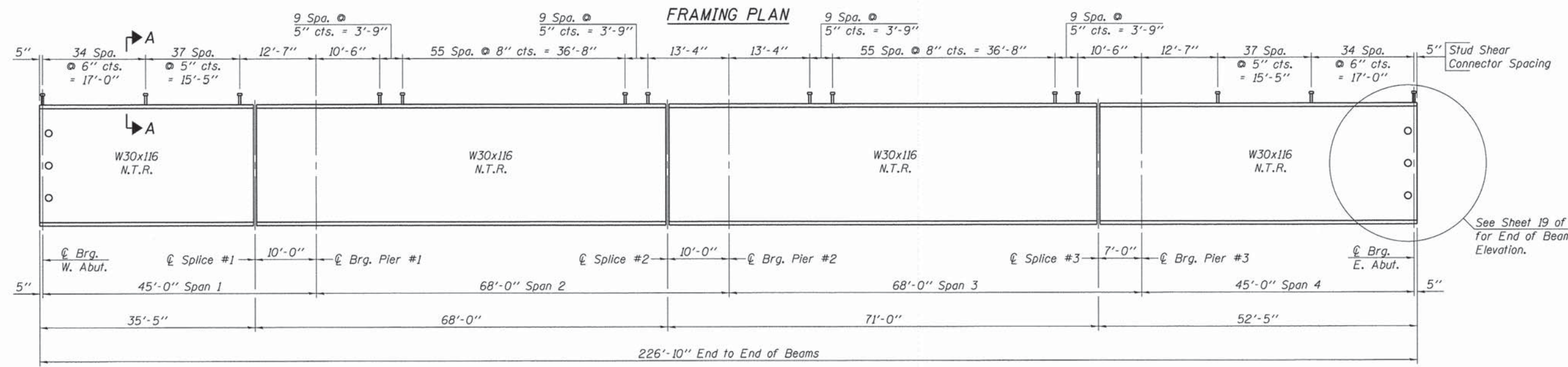
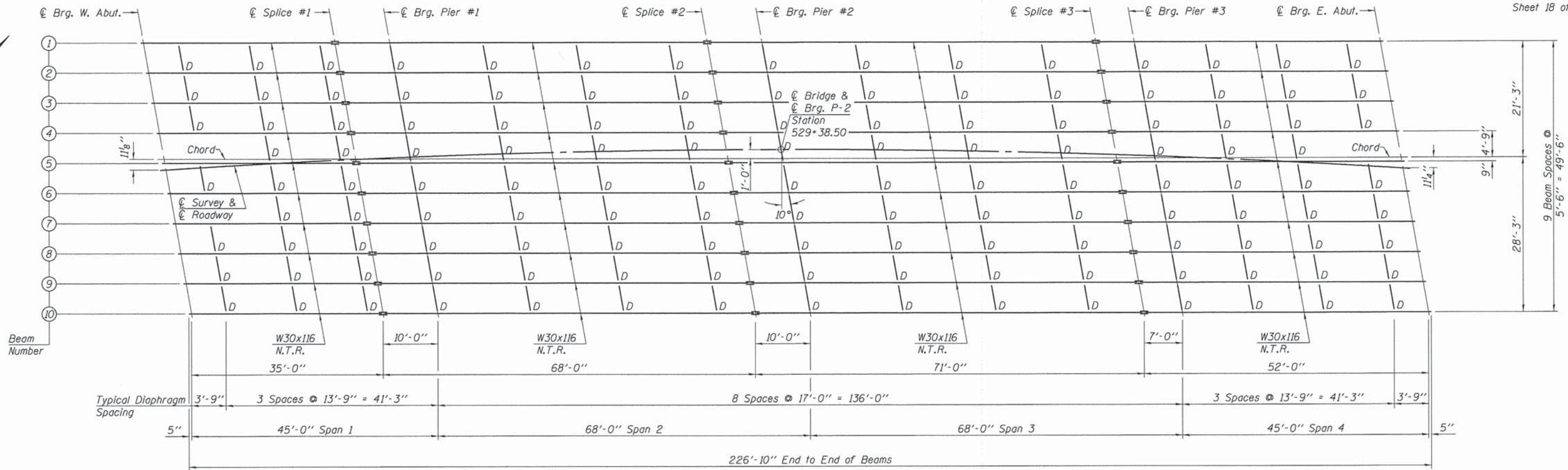
**FEHR GRAHAM**  
ENGINEERING & ENVIRONMENTAL  
ILLINOIS DESIGN FIRM NO. 04-00325

ILLINOIS  
IOWA  
WISCONSIN

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	24
COLTONVILLE ROAD		CONTRACT NO. 87435		
ILLINOIS				

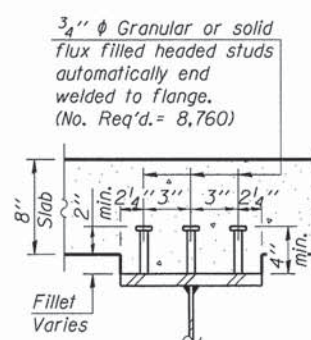
**STEEL BRIDGE RAIL, TYPE SM (SPECIAL)**  
S.N. 019-3072





**ELEVATION**  
(Looking North)  
**TOP OF BEAM ELEVATIONS**  
(For Fabrication Only)

	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 7	Beam 8	Beam 9	Beam 10
℄ Brg. W. Abut.	837.46	837.21	836.96	836.71	836.46	836.21	835.96	835.71	835.46	835.21
℄ Splice #1	837.36	837.11	836.86	836.61	836.36	836.11	835.86	835.61	835.36	835.11
℄ Brg. Pier #1	837.35	837.10	836.85	836.60	836.35	836.10	835.85	835.60	835.35	835.10
℄ Splice #2	837.31	837.06	836.81	836.56	836.31	836.06	835.81	835.56	835.31	835.06
℄ Brg. Pier #2	837.31	837.06	836.81	836.56	836.31	836.06	835.81	835.56	835.31	835.06
℄ Splice #3	837.34	837.09	836.84	836.59	836.34	836.09	835.84	835.59	835.34	835.09
℄ Brg. Pier #3	837.35	837.10	836.85	836.60	836.35	836.10	835.85	835.60	835.35	835.10
℄ Brg. E. Abut.	837.46	837.21	836.96	836.71	836.46	836.21	835.96	835.71	835.46	835.21



**DESIGNED - A.L.S.**

**CHECKED - J.A.M.**

**DRAWN - S.A.P.**

**CHECKED - A.L.S. & J.A.M.**

Notes: The designation "N.T.R." indicates that Notch Toughness Requirements are applicable. Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

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.

Work this sheet with sheet 19 & 20 of 26.

**STRUCTURAL STEEL**  
**S.N. 019-3072**

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 04-00325</small>	ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		5332	08-00076-00-BR	DEKALB	43	25
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com			COLTONVILLE ROAD	CONTRACT NO. 87435		
			ILLINOIS			

INTERIOR BEAM MOMENT TABLE					
		0.4 sp. 1 or 0.6 sp. 4	Pier 1 or 3	Pier 2	0.5 sp 2 or 3
$I_s$	(in <sup>4</sup> )	4,930	4,930	4,930	4,930
$I_c(n)$	(in <sup>4</sup> )	13,527	—	—	13,527
$I_c(3n)$	(in <sup>4</sup> )	9,859	—	—	9,859
$S_s$	(in <sup>3</sup> )	329	329	329	329
$S_c(n)$	(in <sup>3</sup> )	490	—	—	490
$S_c(3n)$	(in <sup>3</sup> )	440	—	—	440
$Z$	(in <sup>3</sup> )	—	378	378	—
DC1	(k/ft)	0.714	0.714	0.714	0.714
M <sub>DC1</sub>	(k)	79	224	289	144
DC2	(k/ft)	0.020	0.020	0.020	0.020
M <sub>DC2</sub>	(k)	5	9	12	9
DW	(k/ft)	0.265	0.265	0.265	0.265
M <sub>DW</sub>	(k)	36	72	94	70
$M_k \cdot IM$	(k)	419	344	466	647
$M_u$ (Strength I)	(k)	892	1,001	1,333	1,428
$\phi_r M_n, \phi_r M_{nc}$	(k)	2,470	1,575	1,575	2,470
$f_s$ DC1	(ksi)	2.9	8.2	10.5	5.3
$f_s$ DC2	(ksi)	0.1	0.3	0.4	0.2
$f_s$ DW	(ksi)	1.0	2.6	3.4	1.9
$f_s$ 1.3(4+IM)	(ksi)	13.3	16.3	22.1	20.6
$f_s$ (Service II)	(ksi)	17.3	27.4	36.4	28.0
$f_s$ (Total)(Strength I)	(ksi)	23.2	36.5	48.5	37.5
$V_r$	(k)	39.7	—	—	36.4

\* Compact sections  
 \*\* Non-Compact and slender sections

INTERIOR BEAM REACTION TABLE				
		Abuts.	Pier 1 & 3	Pier 2
R <sub>DC1</sub>	(k)	10.6	43.2	49.1
R <sub>DC2</sub>	(k)	0.5	2.0	2.3
R <sub>DW</sub>	(k)	4.4	16.2	18.7
R <sub>k · IM</sub>	(k)	56.8	84.6	88.8
R <sub>Total</sub>	(k)	72.3	146.0	158.9

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

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

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

Z: Plastic Section Modulus of the steel section in non-composite areas.

DC1: Un-factored non-composite dead load (kips/ft.).

M<sub>DC1</sub>: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M<sub>DC2</sub>: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M<sub>DW</sub>: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

$M_k \cdot IM$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

$M_u$  (Strength I): Factored design moment (kip-ft.).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_k \cdot IM$

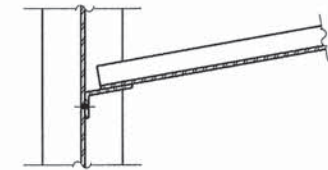
$\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

$\phi_r M_{nc}$ : Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).

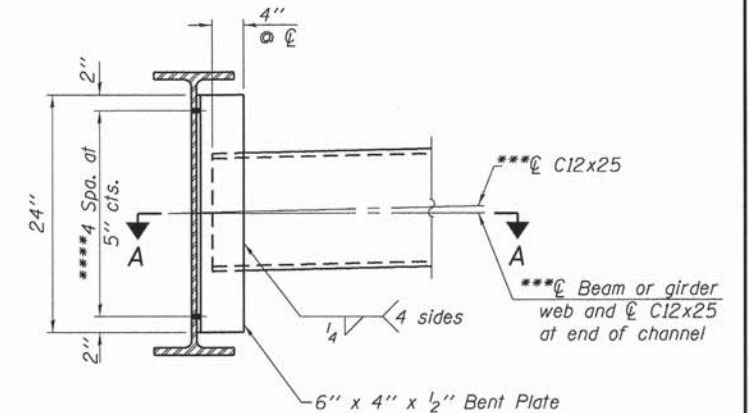
$f_s$  (Service II): Sum of stresses as computed from the moments below (ksi).  
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_k \cdot IM$

$f_s$  (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_k \cdot IM$

$V_r$ : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

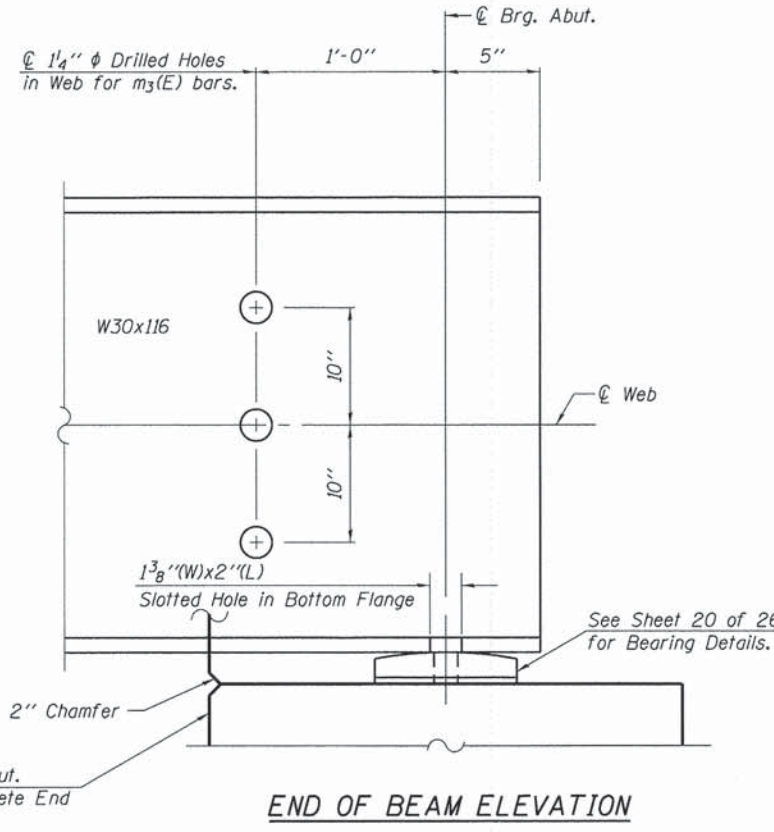
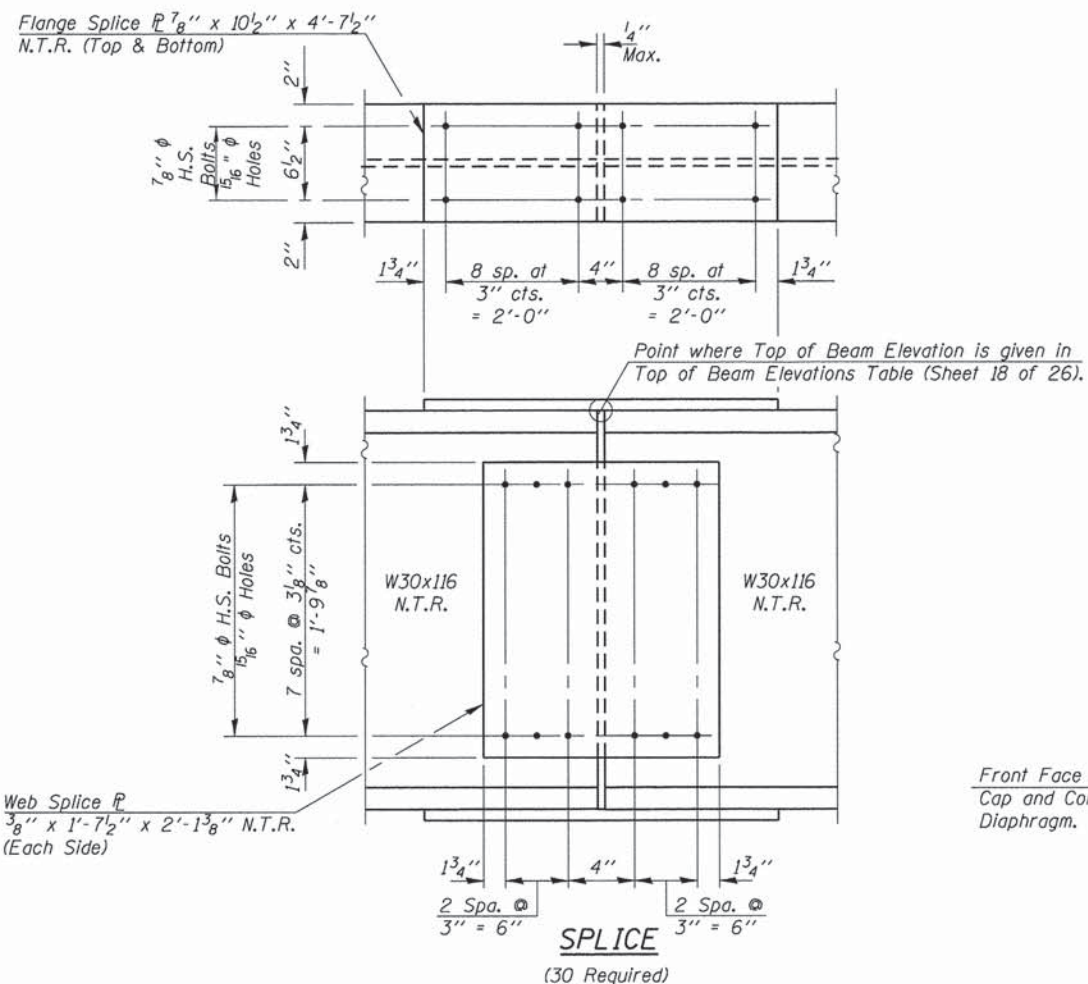


SECTION A-A



INTERIOR DIAPHRAGM - D  
 (135 Required)

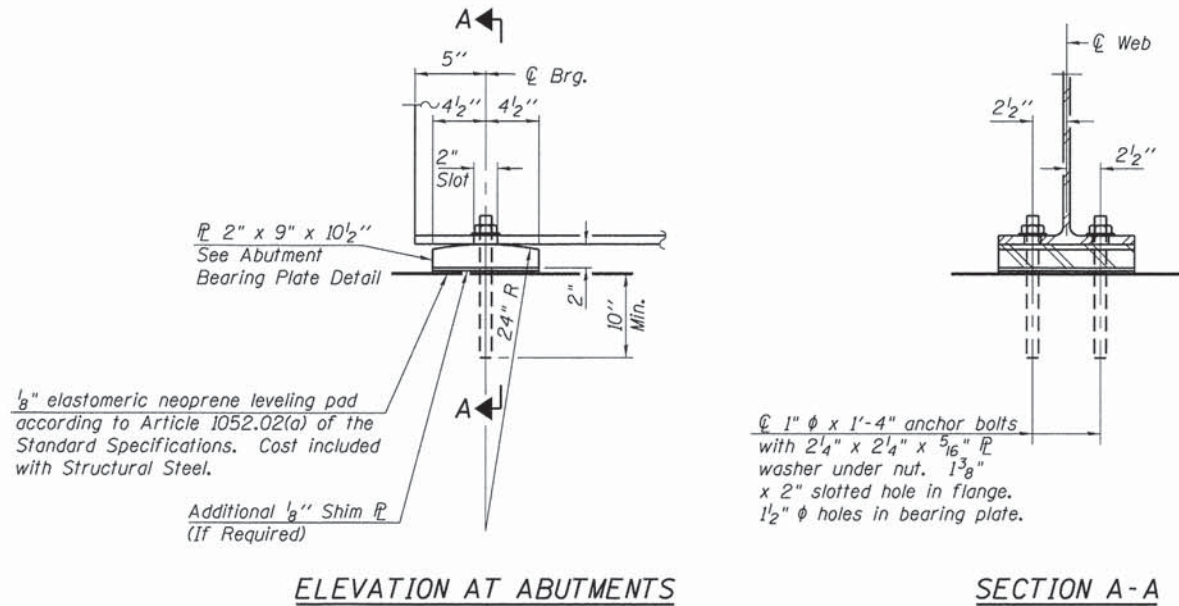
Note:  
 Two hardened washers required for each set of oversized holes.  
 \*\*\*Alternate channels C12x30 are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.  
 \*\*\*\*3/4" φ HS bolts, 15/16" φ holes  
 Work this Sheet with Sheets 18 & 20 of 26.



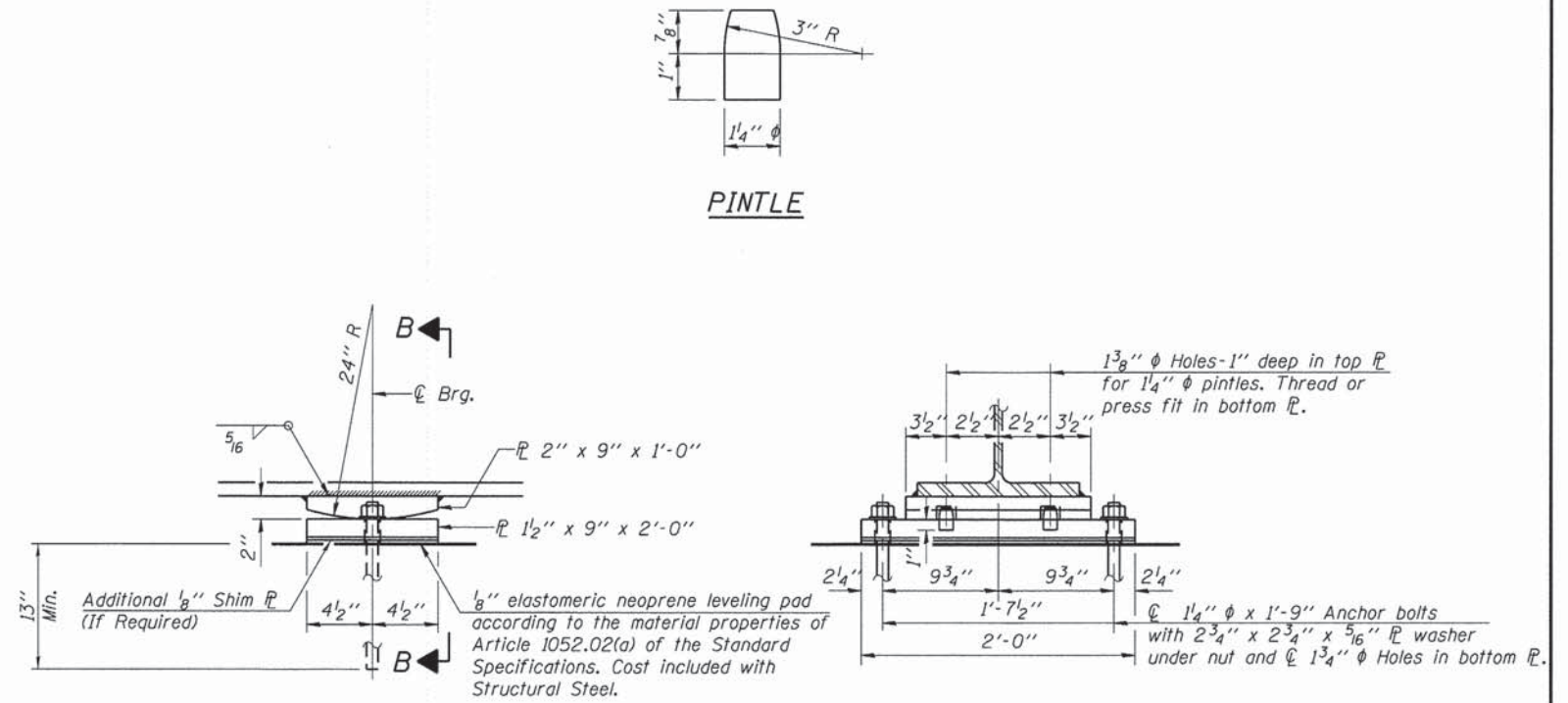
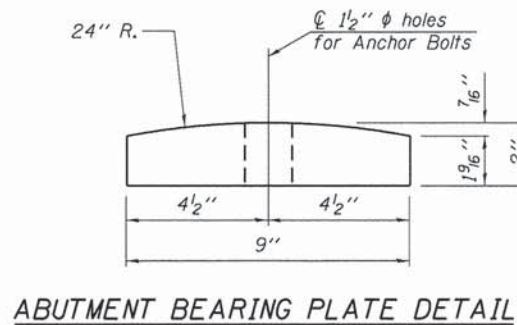
END OF BEAM ELEVATION

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 04-003523</small>	ILLINOIS	F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 26
	IOWA	COLTONVILLE ROAD		CONTRACT NO. 87435		
WISCONSIN	ILLINOIS					
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com						



**ABUTMENT BEARING DETAILS**  
 (20 Required)  
 Weight included with Structural Steel.



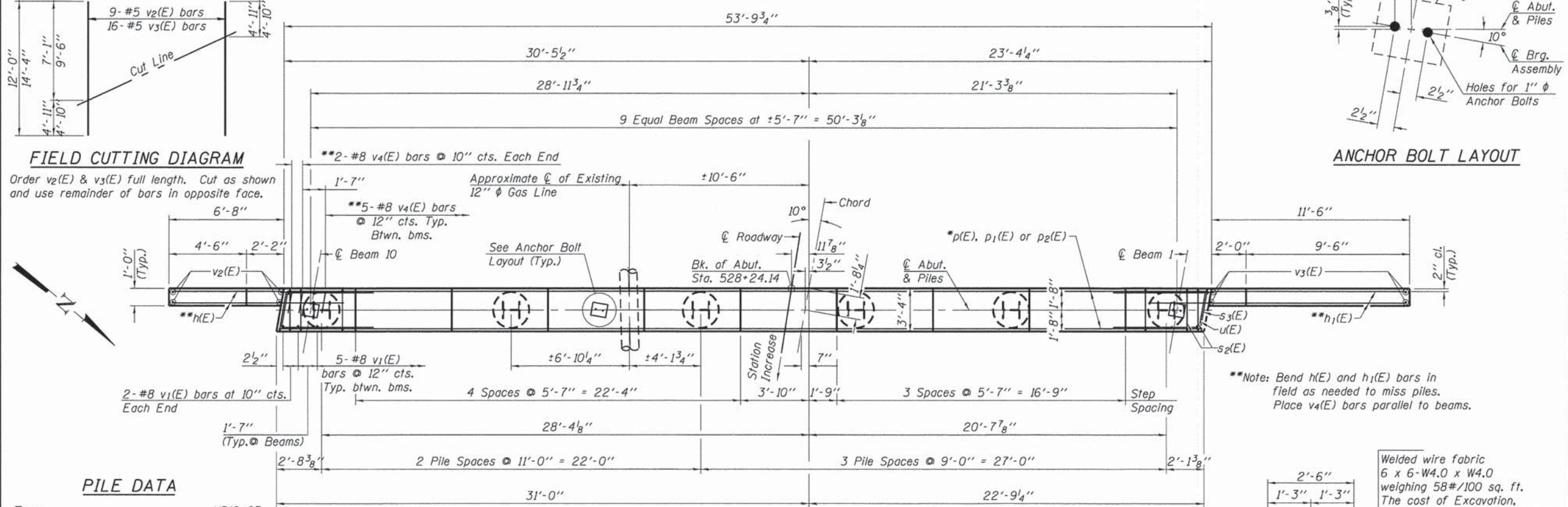
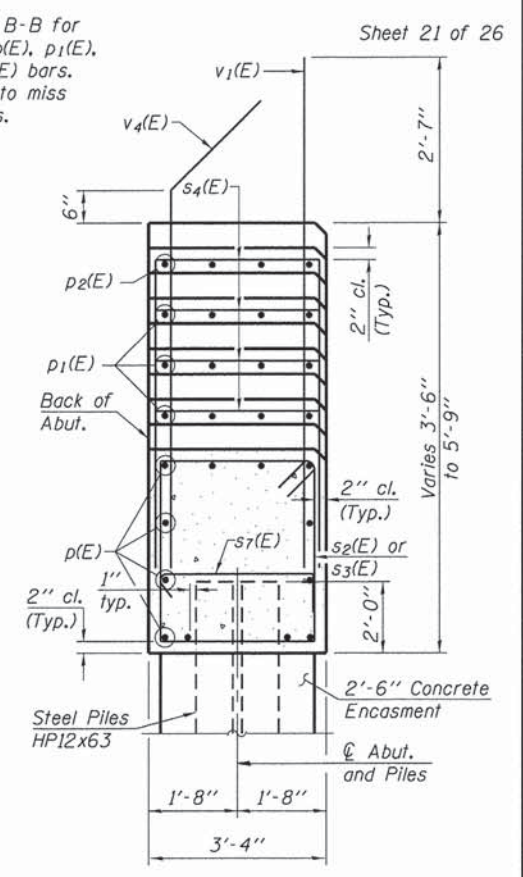
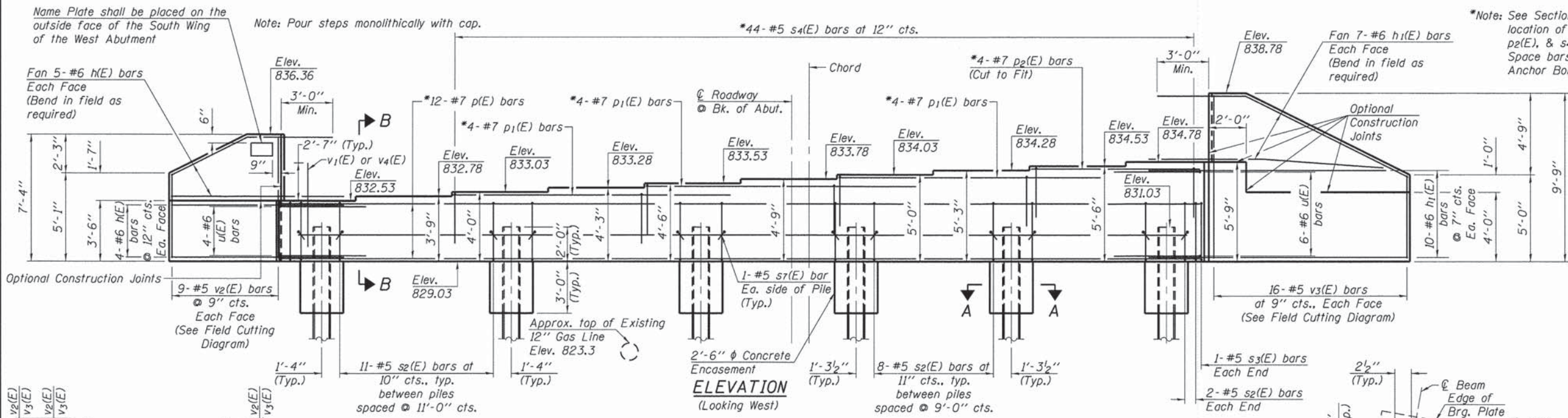
**PIER BEARING DETAILS**  
 (30 Required)  
 Weight included with Structural Steel.

Notes: Two 1/8" adjusting shims, of the dimension of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.  
 Anchor bolts shall be ASTM F1554 Grade 36, all-thread of the diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36 ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.  
 Anchor bolts at piers may be either cast in place or installed in holes drilled after the supported member is in place. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.  
 The cost of furnishing and installing anchor bolts is included in the cost of Furnishing and Erecting Structural Steel.  
 Work this Sheet with Sheets 18 & 19 of 26.

**BEARING DETAILS**  
 S.N. 019-3072

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 04-003525</small>	ILLINOIS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	IOWA	5332	08-00076-00-BR	DEKALB	43	27
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com	WISCONSIN	COLTONVILLE ROAD		CONTRACT NO. 87435		
		ILLINOIS				



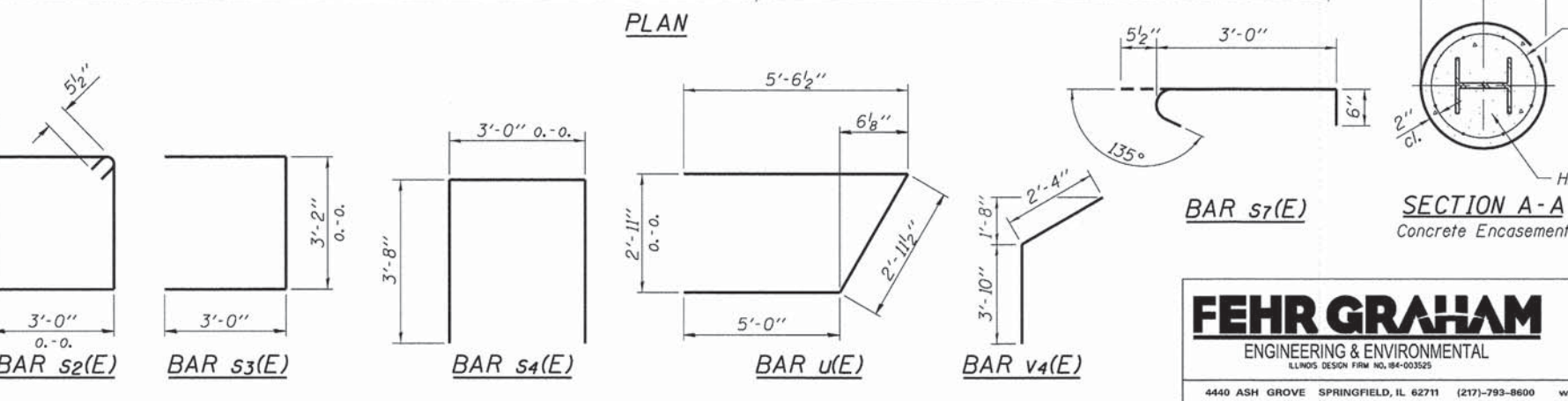
**PILE DATA**

Type: HP12x63  
 No. Required: 6  
 Nominal Required Bearing: 420 k  
 Factored Resistance Available: 230 k  
 Est. Length: 52 Ft./Pile

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

DESIGNED	A.L.S.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.L.S. & J.A.M.

AI-R 11-1-06



**SECTION B-B**

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	18	#6	10'-0"	—
h1(E)	34	#6	15'-6"	—
p(E)	12	#7	53'-4"	—
p1(E)	12	#7	15'-0"	—
p2(E)	4	#7	10'-2"	—
s2(E)	50	#5	13'-3"	□
s3(E)	2	#5	9'-2"	□
s4(E)	44	#5	10'-4"	—
s7(E)	12	#5	4'-0"	⌋
u(E)	10	#6	13'-6"	⌋
v1(E)	49	#8	5'-11"	—
v2(E)	9	#5	12'-0"	—
v3(E)	16	#5	14'-4"	—
v4(E)	49	#8	6'-2"	⌋
Concrete Structures		Cu. Yd.	35.7	
Reinforcement Bars, Epoxy Coated		Pound	6,190	
Furnishing Steel Piles, HP12x63		Foot	312	
Driving Piles		Foot	312	
Concrete Encasement		Cu. Yd.	3.3	
Name Plate		Each	1	
Protective Coat		Sq. Yd.	13	

For Pile Splicing details see sheet 26 of 26.

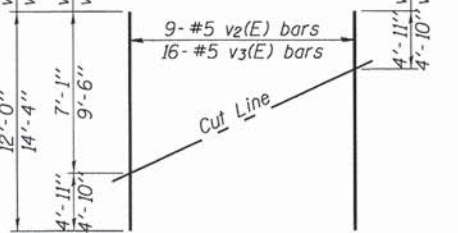
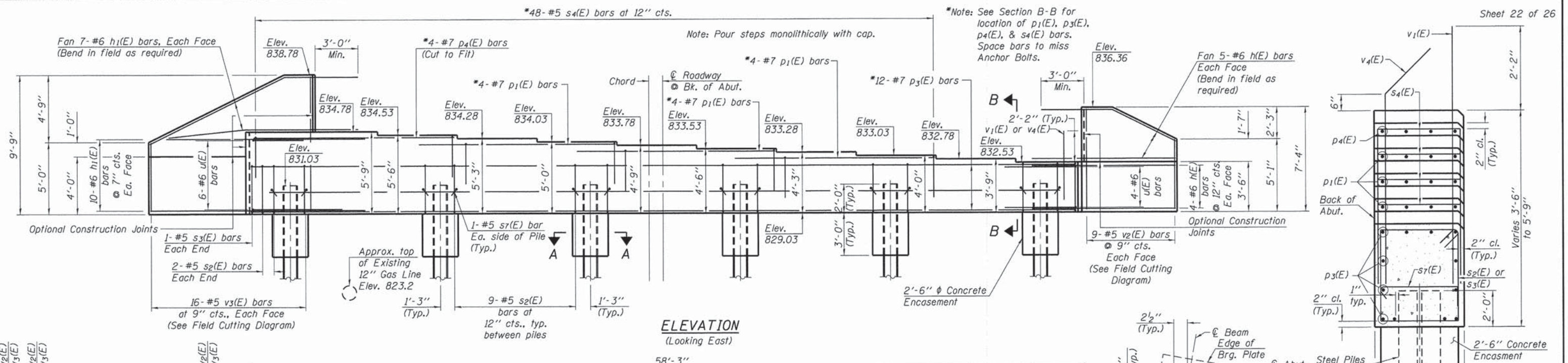
**WEST ABUTMENT**  
**S.N. 019-3072**

ILLINOIS	F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 28
ILLINOIS		COLTONVILLE ROAD		CONTRACT NO. 87435	

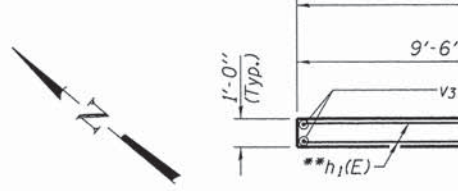
**FEHR GRAHAM**  
 ENGINEERING & ENVIRONMENTAL

ILLINOIS IOWA WISCONSIN

4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com



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



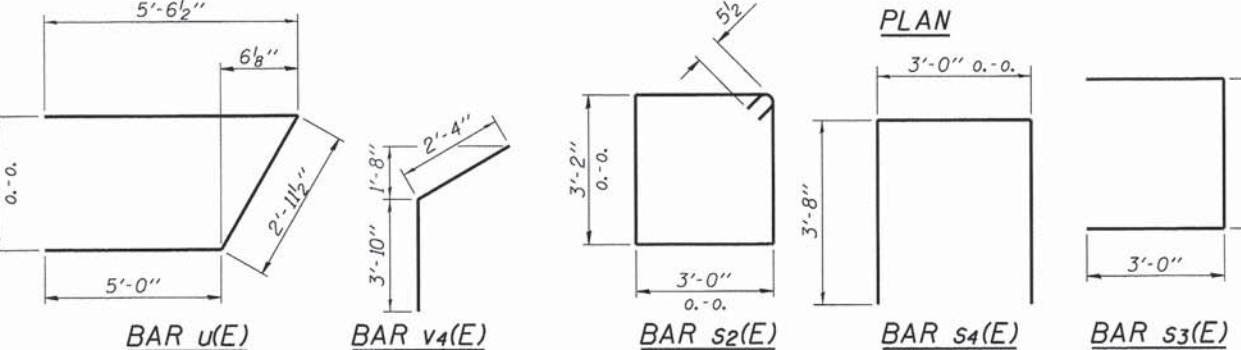
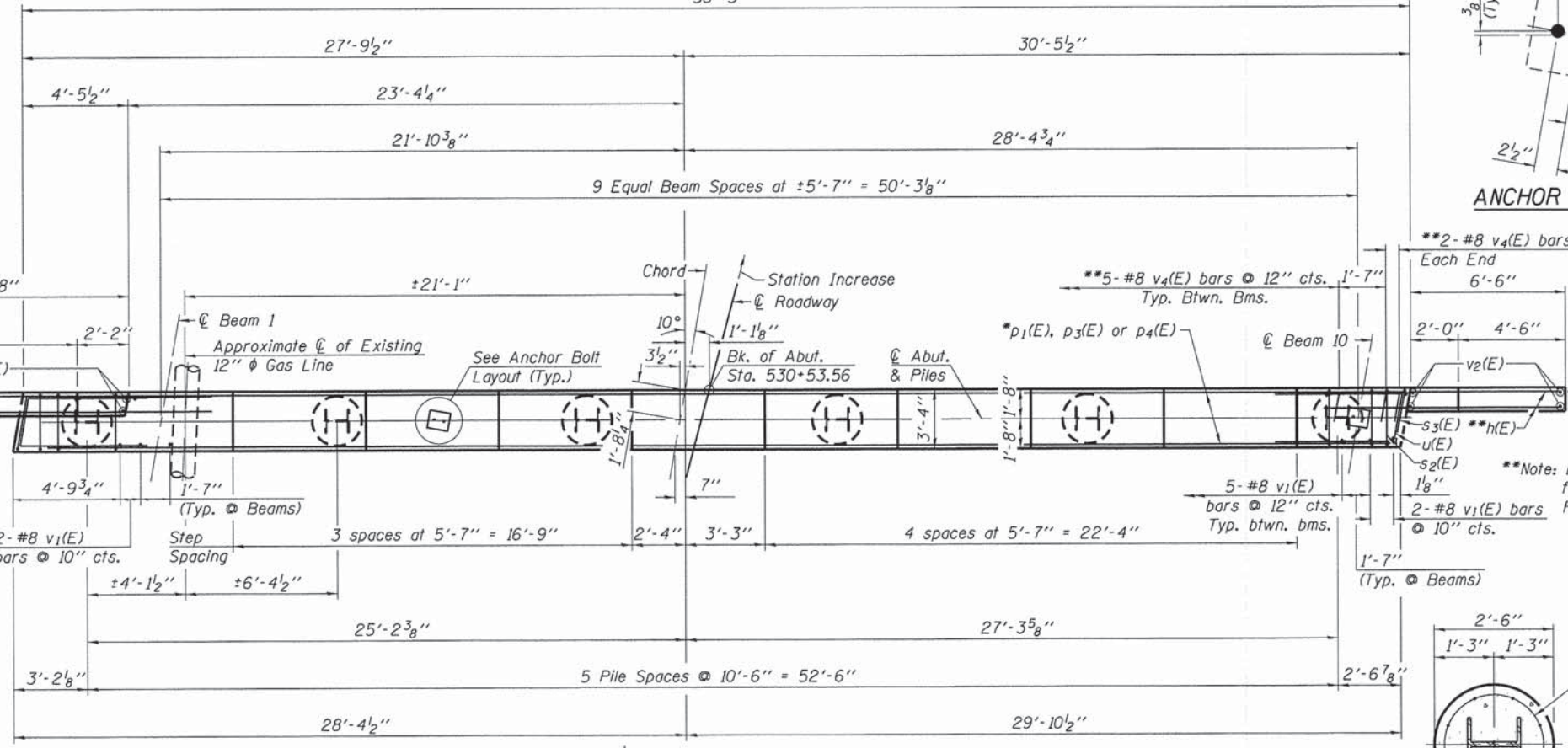
**PILE DATA**  
Type: HPI2x63  
No. Required: 6  
Nominal Required Bearing: 420 k  
Factored Resistance Available: 230 k  
Est. Length: 40 Ft./Pile

\*\*\*Includes 1 Test Pile to be driven in a permanent location at the Abutment

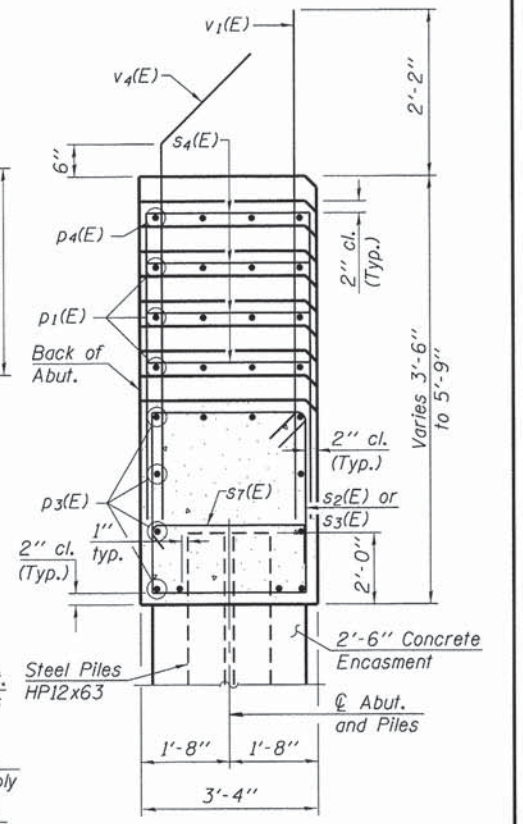
The steel H-piles shall be according to AASHTO M270, Grade 50.

The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated above.

DESIGNED	A.L.S.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.L.S. & J.A.M.



**ANCHOR BOLT LAYOUT**



**SECTION B-B**  
**BILL OF MATERIAL**

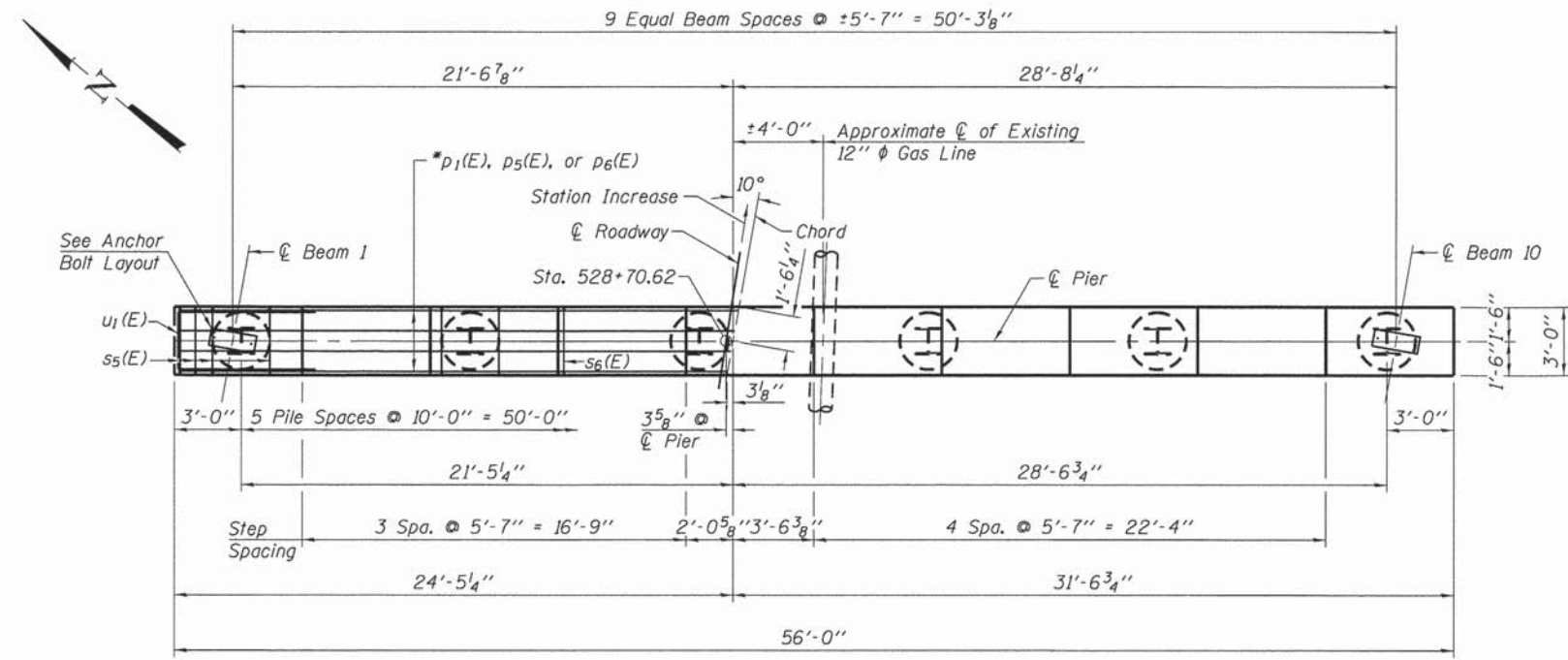
Bar	No.	Size	Length	Shape
h(E)	18	#6	10'-0"	—
h1(E)	34	#6	15'-6"	—
p1(E)	12	#7	15'-0"	—
p3(E)	10	#7	57'-11"	—
p4(E)	4	#7	14'-6"	—
s2(E)	49	#5	13'-3"	□
s3(E)	2	#5	9'-2"	□
s4(E)	48	#5	10'-4"	□
s7(E)	12	#5	4'-0"	□
u(E)	10	#6	13'-6"	□
v1(E)	49	#8	5'-11"	—
v2(E)	9	#5	12'-0"	—
v3(E)	16	#5	14'-4"	—
v4(E)	49	#8	6'-2"	—
Concrete Structures		Cu. Yd.	37.9	
Reinforcement Bars, Epoxy Coated		Pound	6,130	
Furnishing Steel Piles, HPI2x63		Foot	200	
Driving Piles		Foot	200	
Test Pile, HPI2x63		Each	1	
Concrete Encasement		Cu. Yd.	3.3	
Protective Coat		Sq. Yd.	14	

For Pile Splicing details see sheet 26 of 26.

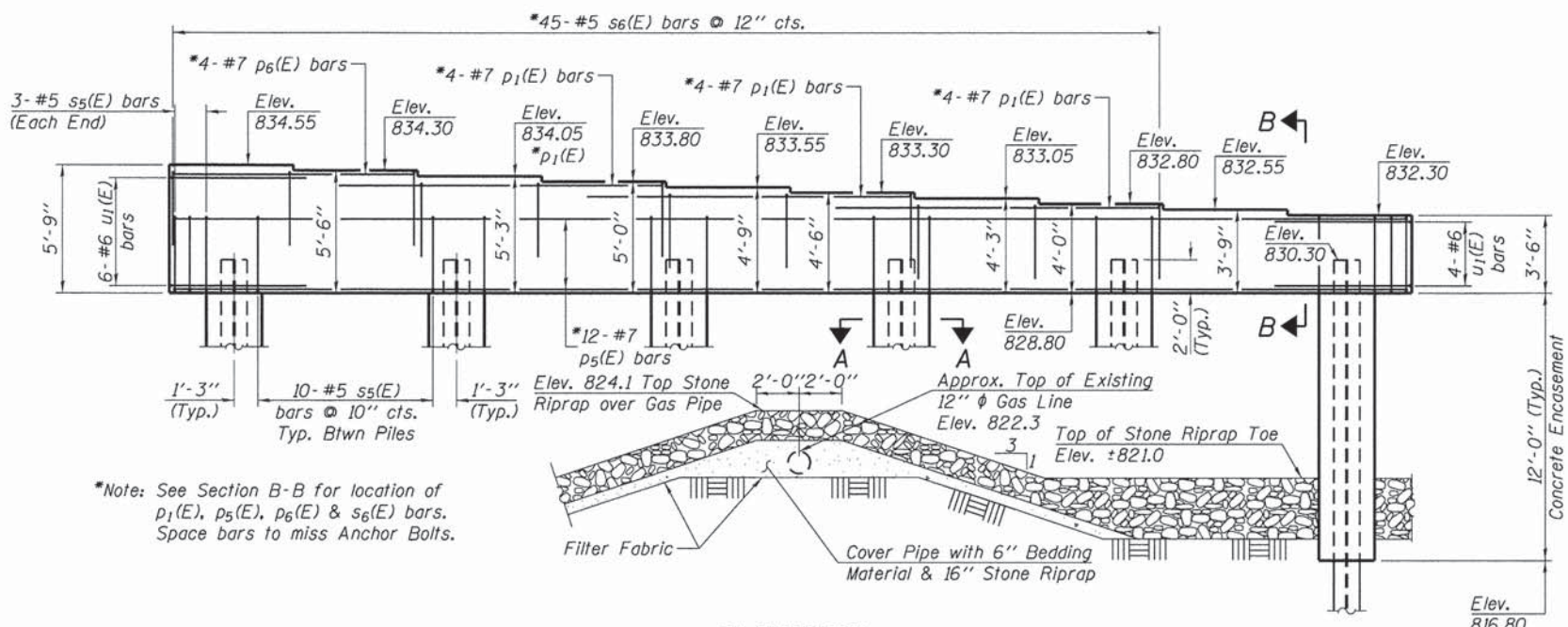
**EAST ABUTMENT**  
**S.N. 019-3072**

**FEHR GRAHAM**  
ENGINEERING & ENVIRONMENTAL  
ILLINOIS DESIGN FIRM NO. 04-003525

ILLINOIS	F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 29
IOWA		COLTONVILLE ROAD			
WISCONSIN					
			CONTRACT NO. 87435		

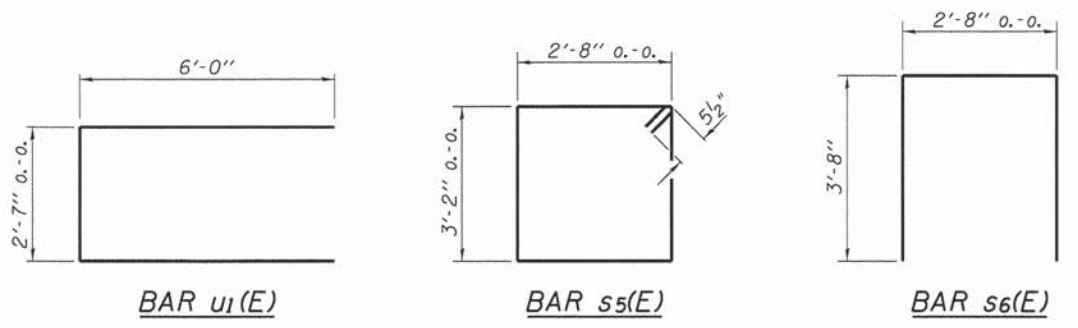


PLAN



ELEVATION  
(Looking East)

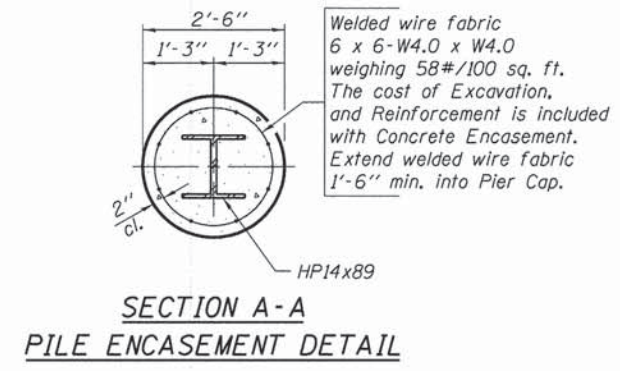
\*Note: See Section B-B for location of p<sub>1</sub>(E), p<sub>5</sub>(E), p<sub>6</sub>(E) & s<sub>6</sub>(E) bars. Space bars to miss Anchor Bolts.



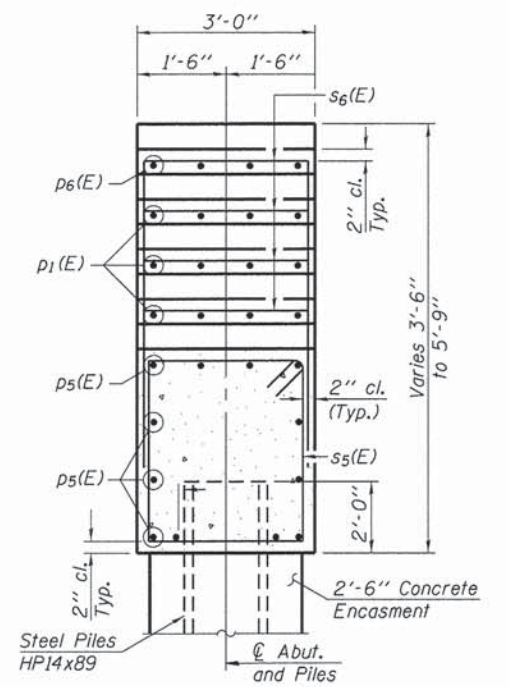
BAR u<sub>1</sub>(E)

BAR s<sub>5</sub>(E)

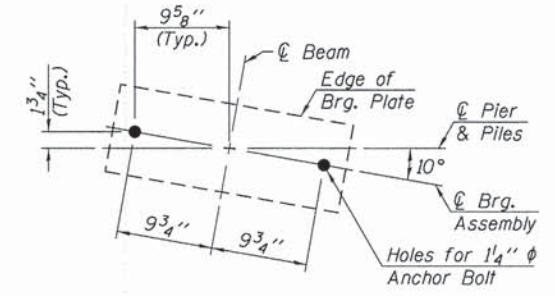
BAR s<sub>6</sub>(E)



SECTION A-A  
PILE ENCASEMENT DETAIL



SECTION B-B



ANCHOR BOLT LAYOUT

**PILE DATA**  
 Type: HP14x89  
 No. Required: \*\*6  
 Nominal Required Bearing: 570 kips  
 Factored Resistance Available: 312 kips  
 Est. Length: 74 Foot/Pile

\*\*Includes 1 Test Pile to be driven in a permanent location at the Pier.  
 The steel H-piles shall be according to AASHTO M270, Grade 50.  
 The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated above.

If a portion of the pier wall or concrete encasement is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

PIER 1 - BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
p <sub>1</sub> (E)	12	#7	15'-0"	—
p <sub>5</sub> (E)	12	#7	55'-6"	—
p <sub>6</sub> (E)	4	#7	10'-10"	—
s <sub>5</sub> (E)	56	#5	12'-7"	□
s <sub>6</sub> (E)	45	#5	10'-0"	□
u <sub>1</sub> (E)	10	#6	14'-7"	□
Concrete Structures			Cu. Yd.	28.8
Reinforcement Bars, Epoxy Coated			Pound	3,240
Furnishing Steel Piles HP14x89			Foot	370
Driving Piles			Foot	370
Test Pile, Steel HP14x89			Each	1
Concrete Encasement			Cu. Yd.	13.1

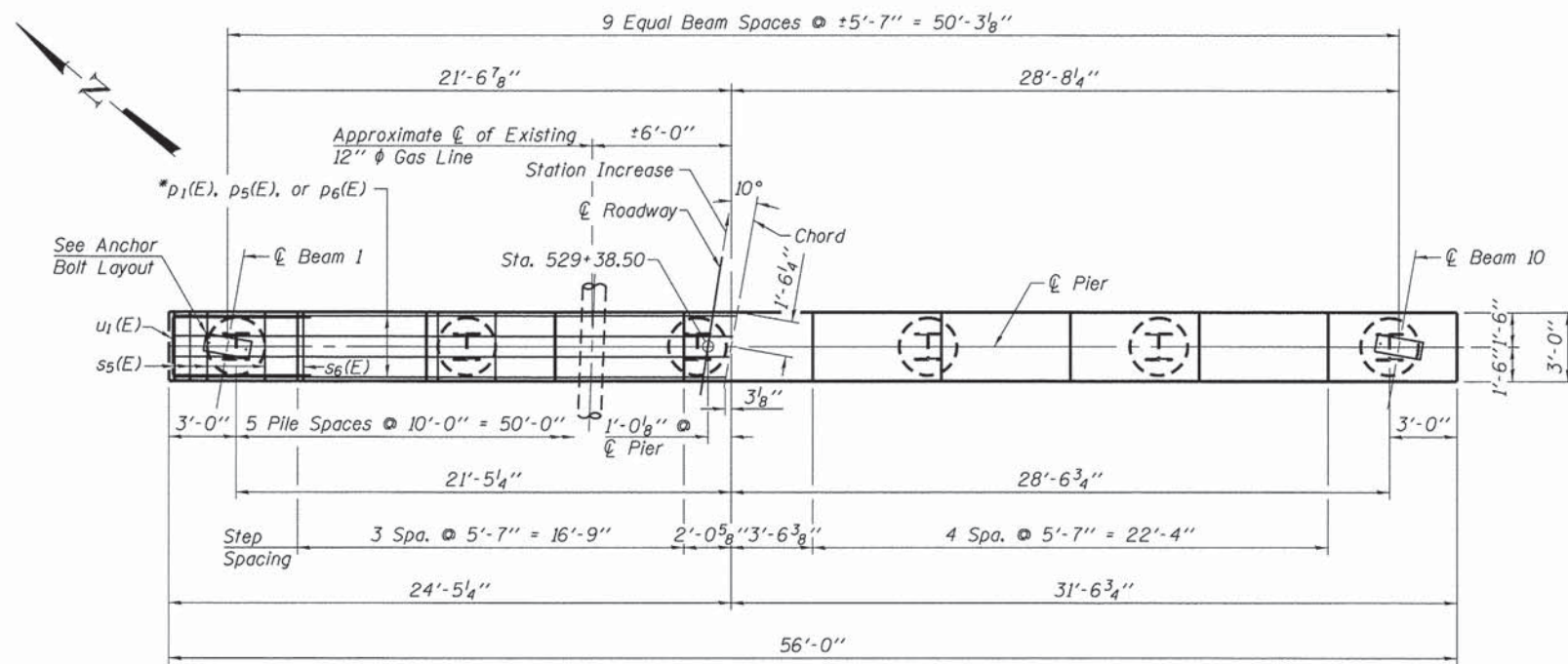
See Sheet 26 of 26 for Pile Splicing Details.

PIER #1  
S.N. 019-3072

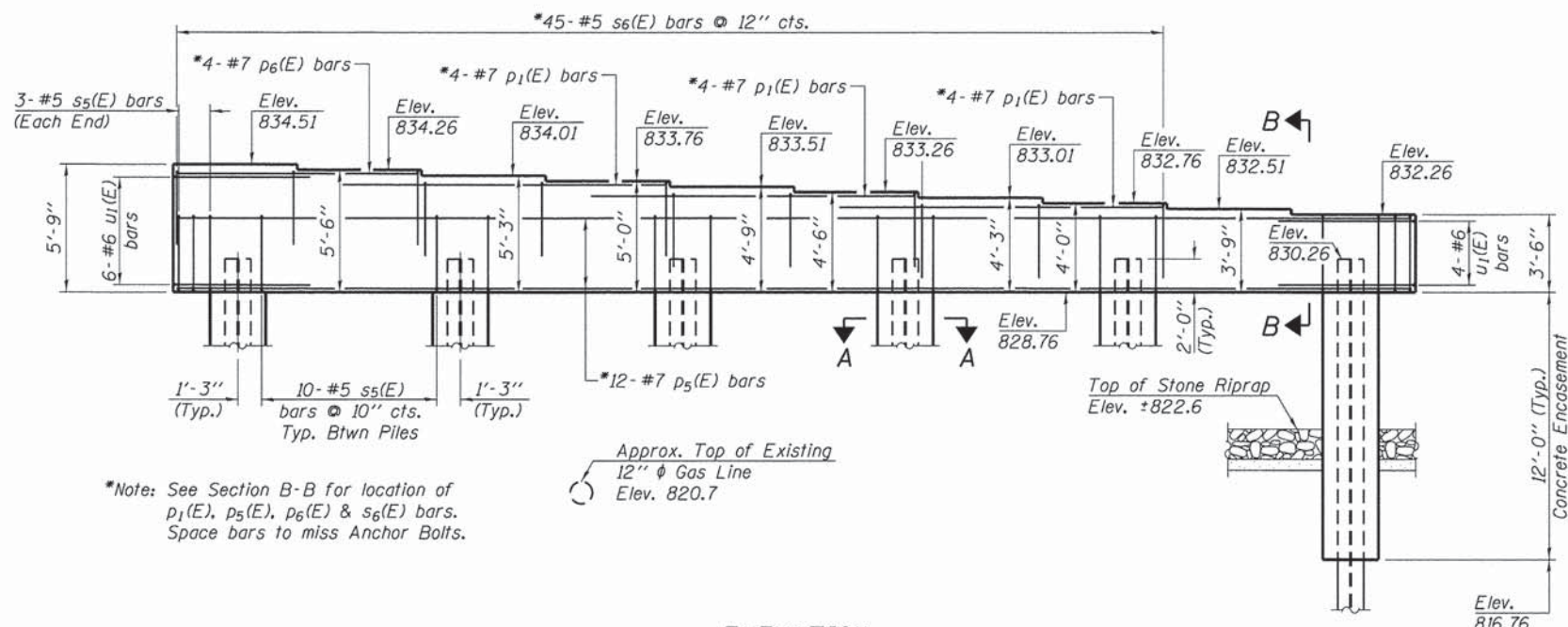
DESIGNED	-	A.L.S.
CHECKED	-	J.A.M.
DRAWN	-	S.A.P.
CHECKED	-	A.L.S. & J.A.M.

**FEHR GRAHAM**  
ENGINEERING & ENVIRONMENTAL  
ILLINOIS DESIGN FIRM NO. 184-003025

ILLINOIS IOWA WISCONSIN	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	5332	08-00076-00-BR	DEKALB	43	30
COLTONVILLE ROAD			CONTRACT NO. 87435		
ILLINOIS					

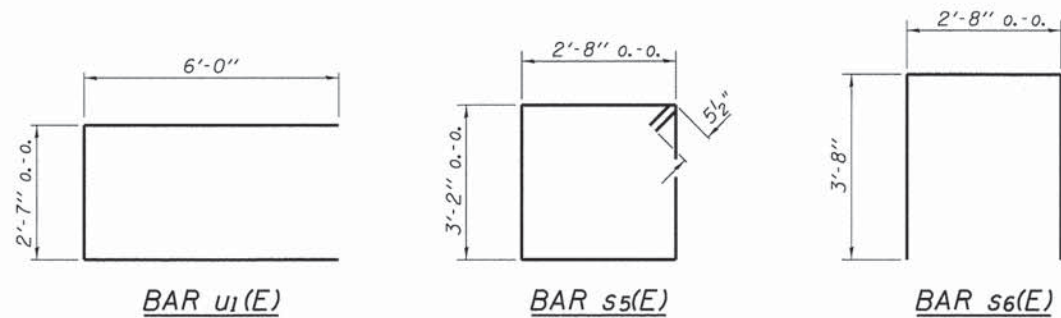


PLAN

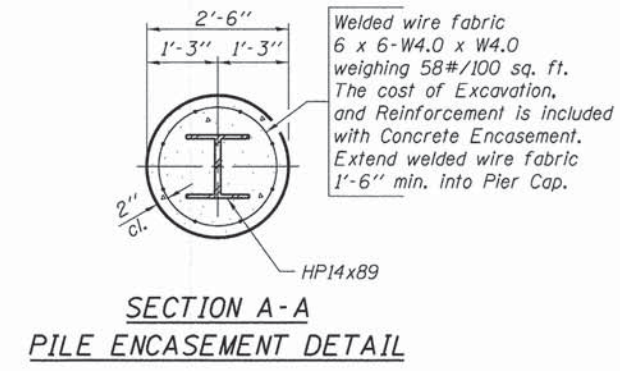


ELEVATION  
(Looking East)

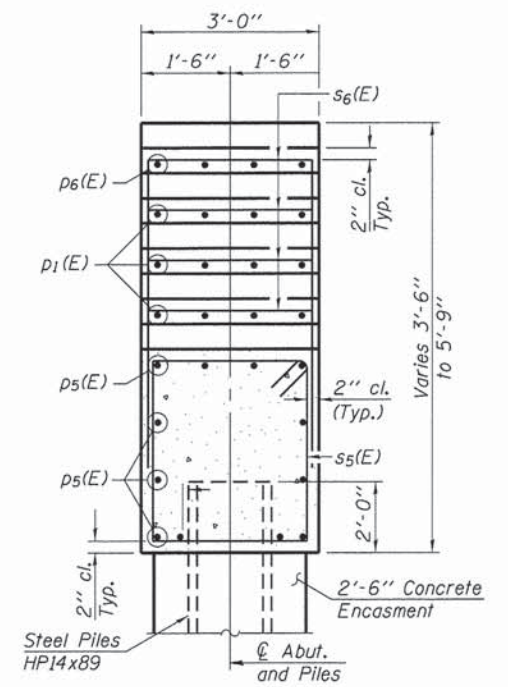
\*Note: See Section B-B for location of p<sub>1</sub>(E), p<sub>5</sub>(E), p<sub>6</sub>(E) & s<sub>6</sub>(E) bars. Space bars to miss Anchor Bolts.



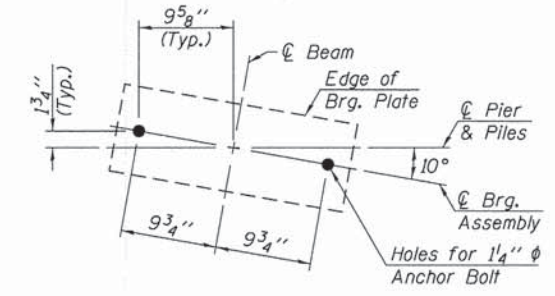
DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.



SECTION A-A  
PILE ENCASEMENT DETAIL



SECTION B-B



ANCHOR BOLT LAYOUT

PILE DATA

Type: HP14x89  
 No. Required: \*\*6  
 Nominal Required Bearing: 570 kips  
 Factored Resistance Available: 312 kips  
 Est. Length: 85 Foot/Pile

\*\*Includes 1 Test Pile to be driven in a permanent location at the Pier.

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

The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated above.

If a portion of the pier wall or concrete encasement is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

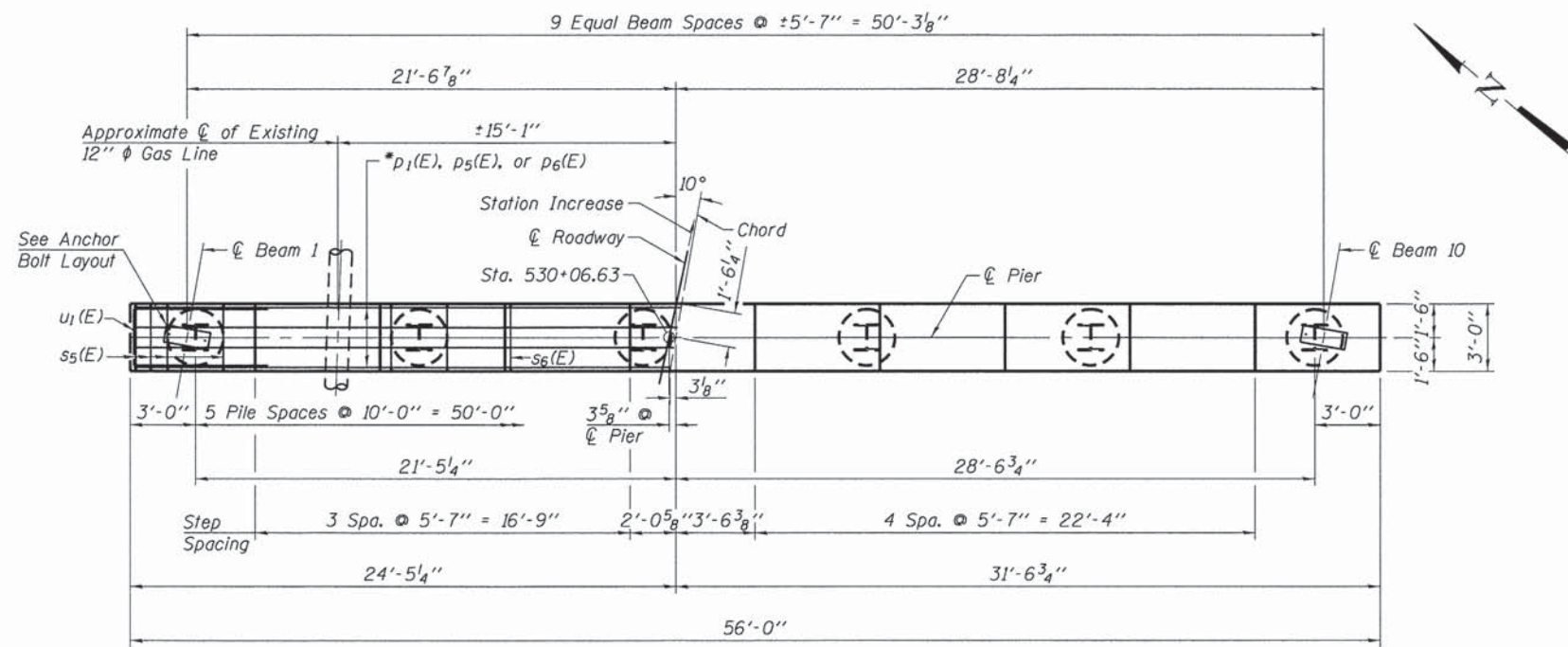
PIER 2 - BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
p <sub>1</sub> (E)	12	#7	15'-0"	—
p <sub>5</sub> (E)	12	#7	55'-6"	—
p <sub>6</sub> (E)	4	#7	10'-10"	—
s <sub>5</sub> (E)	56	#5	12'-7"	□
s <sub>6</sub> (E)	45	#5	10'-0"	□
u <sub>1</sub> (E)	10	#6	14'-7"	□
Concrete Structures			Cu. Yd.	28.8
Reinforcement Bars, Epoxy Coated			Pound	3,240
Furnishing Steel Piles HP14x89			Foot	425
Driving Piles			Foot	425
Test Pile, Steel HP14x89			Each	1
Concrete Encasement			Cu. Yd.	13.1

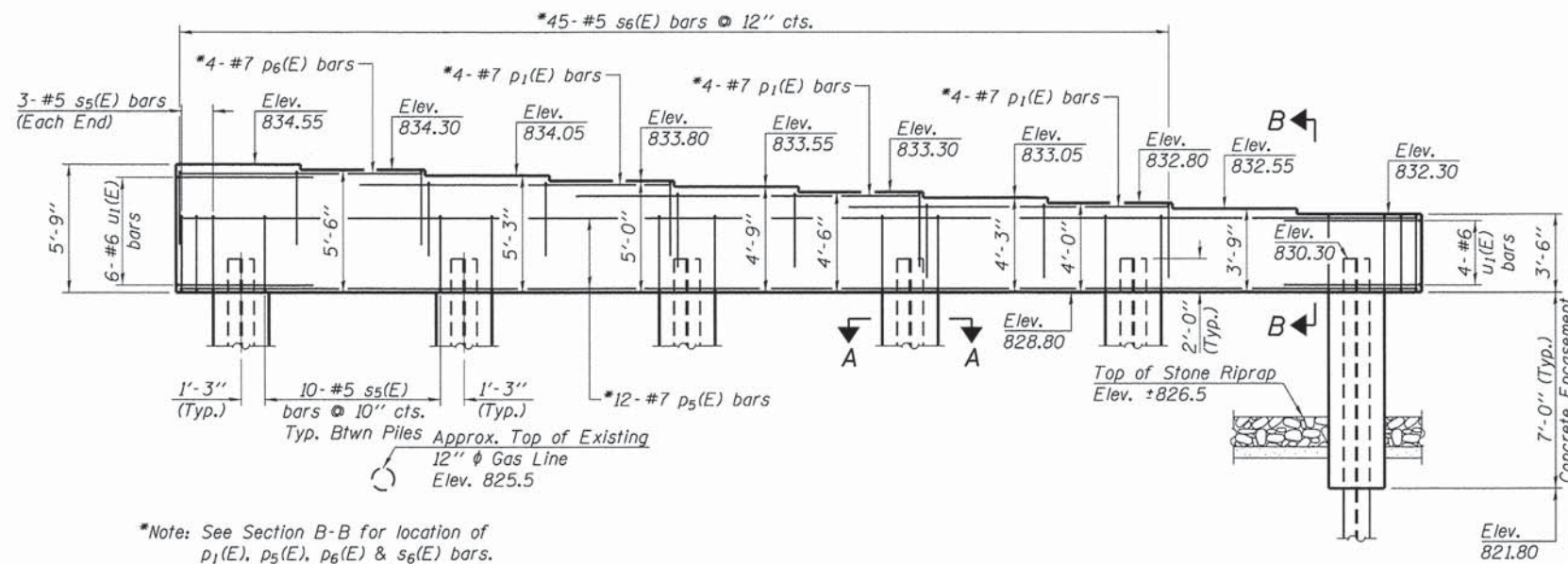
See Sheet 26 of 26 for Pile Splicing Details.

PIER #2  
S.N. 019-3072

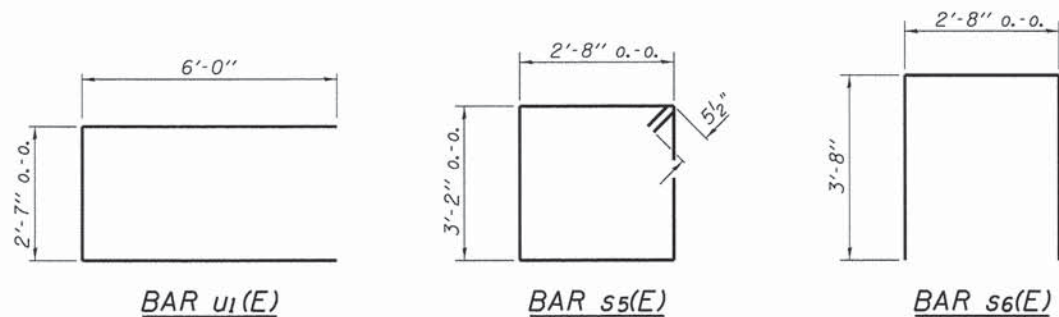
<b>FEHR GRAHAM</b> ENGINEERING & ENVIRONMENTAL <small>ILLINOIS DESIGN FIRM NO. 84-003525</small>	ILLINOIS	F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 31
	WISCONSIN	COLTONVILLE ROAD		CONTRACT NO. 87435		
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com		ILLINOIS				



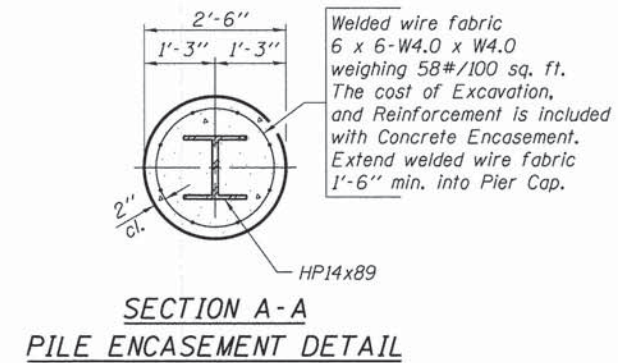
PLAN



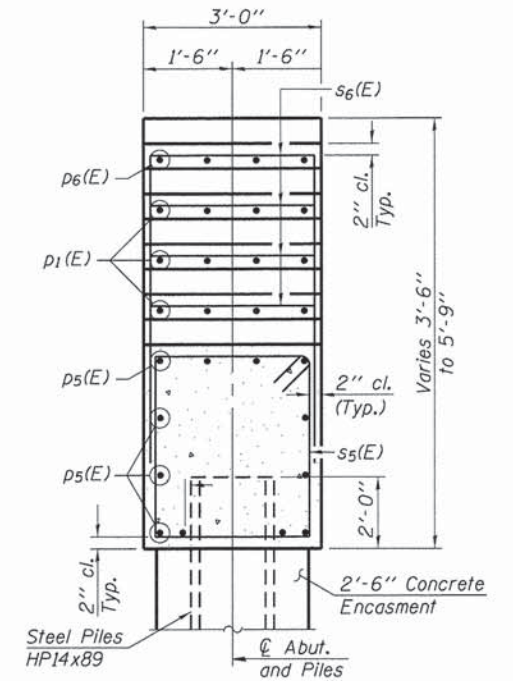
ELEVATION  
(Looking East)



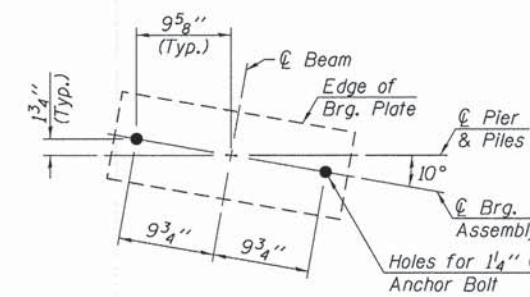
DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.



SECTION A-A  
PILE ENCASEMENT DETAIL



SECTION B-B



ANCHOR BOLT LAYOUT

PILE DATA

Type: HP14x89  
 No. Required: 6  
 Nominal Required Bearing: 570 kips  
 Factored Resistance Available: 312 kips  
 Est. Length: 62 Foot/Pile

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

PIER 3 - BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
p1(E)	12	#7	15'-0"	—
p5(E)	12	#7	55'-6"	—
p6(E)	4	#7	10'-10"	—
s5(E)	56	#5	12'-7"	□
s6(E)	45	#5	10'-0"	□
u1(E)	10	#6	14'-7"	□
Concrete Structures		Cu. Yd.	28.8	
Reinforcement Bars, Epoxy Coated		Pound	3,240	
Furnishing Steel Piles HP14x89		Foot	372	
Driving Piles		Foot	372	
Concrete Encasement		Cu. Yd.	7.6	

See Sheet 26 of 26 for Pile Splicing Details.

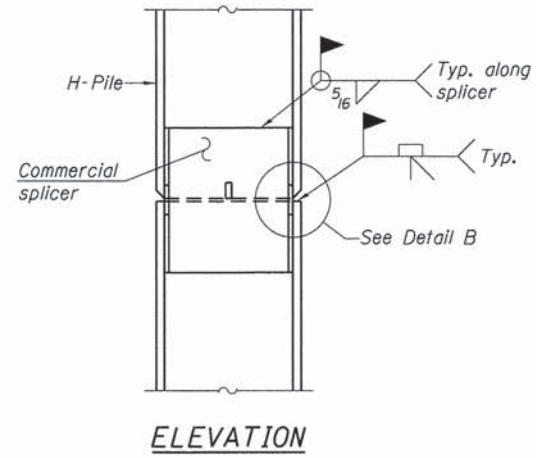
PIER #3  
S.N. 019-3072

**FEHR GRAHAM**  
ENGINEERING & ENVIRONMENTAL  
ILLINOIS DESIGN FIRM NO. 04-003525

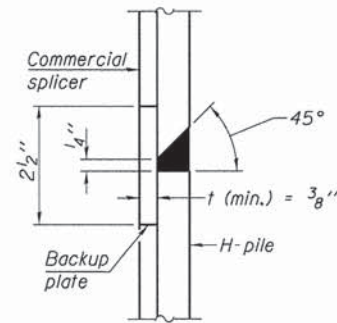
ILLINOIS  
IOWA  
WISCONSIN

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	32
COLTONVILLE ROAD		CONTRACT NO. 87435		
4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8600 www.fehr-graham.com		ILLINOIS		

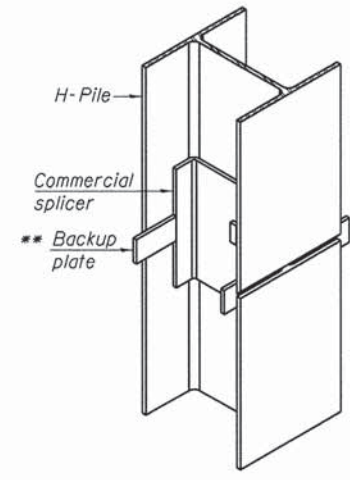




ELEVATION

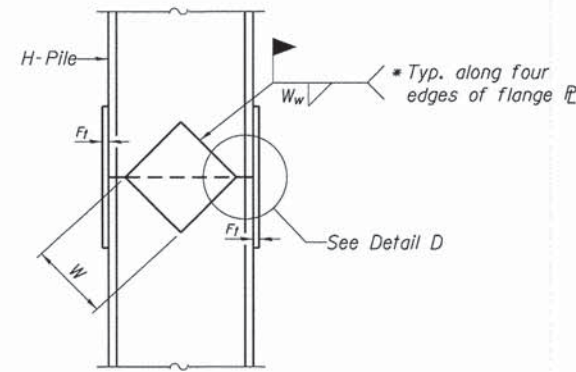


DETAIL "B"

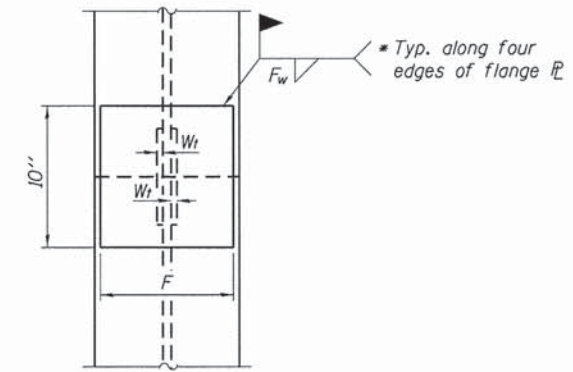


ISOMETRIC VIEW

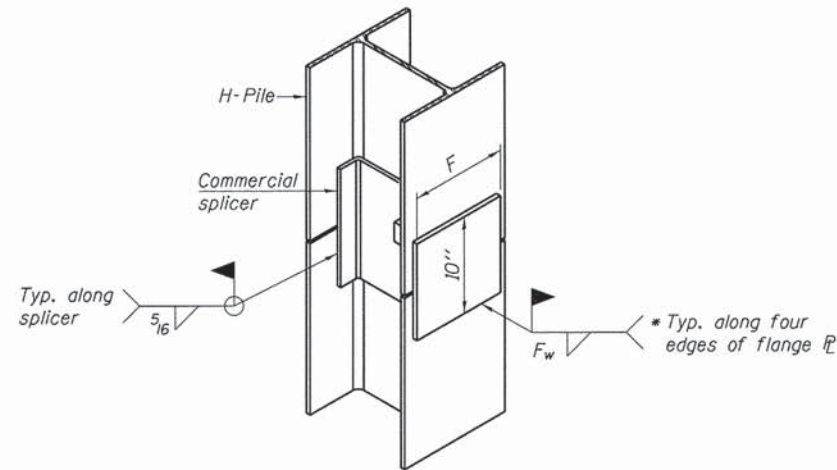
WELDED COMMERCIAL SPLICE



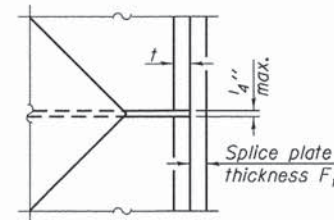
ELEVATION



END VIEW



ISOMETRIC VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
HP 14x117	12 1/2"	1"	7 8"	7 3/4"	5 8"	1/2"
x102	12 1/2"	7 8"	3 4"	7 3/4"	5 8"	1/2"
x89	12 1/2"	3 4"	1 1/16"	7 3/4"	5 8"	1/2"
x73	12 1/2"	5 8"	9 16"	7 3/4"	5 8"	1/2"
HP 12x84	10"	7 8"	1 1/16"	6 1/2"	5 8"	1/2"
x74	10"	7 8"	1 1/16"	6 1/2"	5 8"	1/2"
x63	10"	5 8"	1/2"	6 1/2"	1/2"	3 8"
x53	10"	5 8"	1/2"	6 1/2"	1/2"	3 8"
HP 10x57	8"	3 4"	9 16"	5 1/4"	1/2"	3 8"
x42	8"	5 8"	9 16"	5 1/4"	1/2"	3 8"
HP 8x36	7"	5 8"	7 16"	4 1/4"	1/2"	3 8"

WELDED COMMERCIAL SPLICE ALTERNATE

- \* Interrupt welds 1/4" from end of web and/or each flange.
- \*\* Remove portions of backup plates that extend outside the flanges.

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

STEEL PILE SPLICING DETAILS  
S.N. 019-3072

DESIGNED -	A.L.S.
CHECKED -	J.A.M.
DRAWN -	S.A.P.
CHECKED -	A.L.S. & J.A.M.

F-HP 11-1-09

**FEHR GRAHAM**  
ENGINEERING & ENVIRONMENTAL  
ILLINOIS DESIGN FIRM NO. 04-003525

ILLINOIS  
IOWA  
WISCONSIN

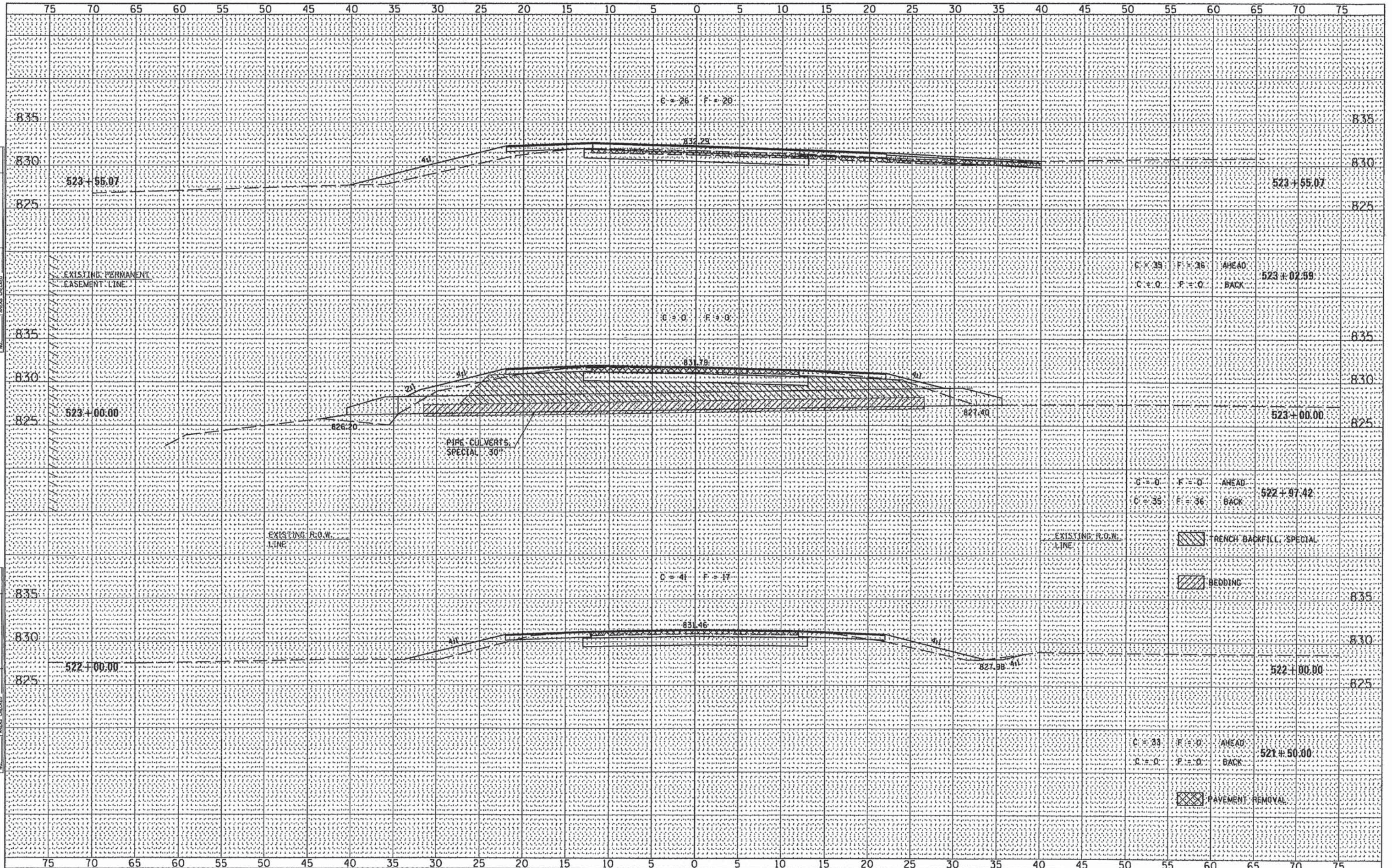
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	33
COLTONVILLE ROAD		CONTRACT NO. 87435		

4440 ASH GROVE SPRINGFIELD, IL 62711 (217)-793-8800 www.fehr-graham.com

ILLINOIS

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

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



FILE NAME	48510.X5-SHEETS.DGN
DESIGNED	G.J.C.
REVISOR	
DRAWN	S.A.P.
REVISOR	
CHECKED BY	R.J.C.
REVISOR	
PLOT DATE	04/12/10
DATE	01/05/11
REVISOR	

DESIGNED	G.J.C.
REVISOR	
DRAWN	S.A.P.
REVISOR	
CHECKED	R.J.C.
REVISOR	
DATE	01/05/11
REVISOR	

4440 ASH GROVE  
 SPRINGFIELD, IL. 62711  
 (217) 793-8600  
 www.fehr-grahm.com

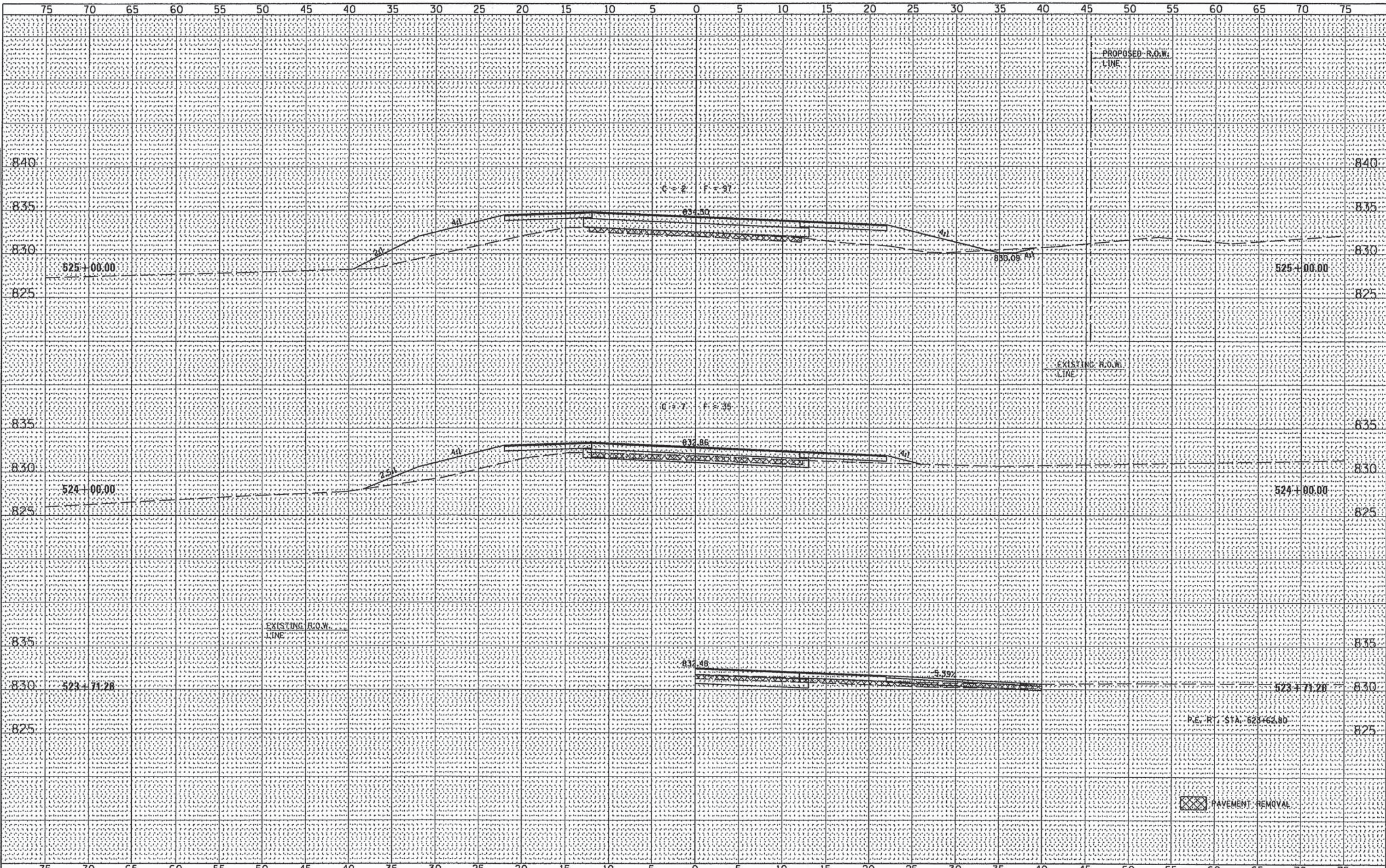
**FEHR-GRAHAM & ASSOCIATES, LLC**  
 ENGINEERING AND SCIENCE CONSULTANTS  
 FREEPORT, IL. ROCKFORD, IL. ROCHELLE, IL. MONROE, WI. SPRINGFIELD, IL.

**ROADWAY CROSS SECTIONS - C.H. 33 (COLTONVILLE RD.)**  
 STA. 521+50.00 TO STA. 523+55.07

F.A.J. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	34
	COLTONVILLE ROAD			CONTRACT NO. 87435
	(ILLINOIS)			

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

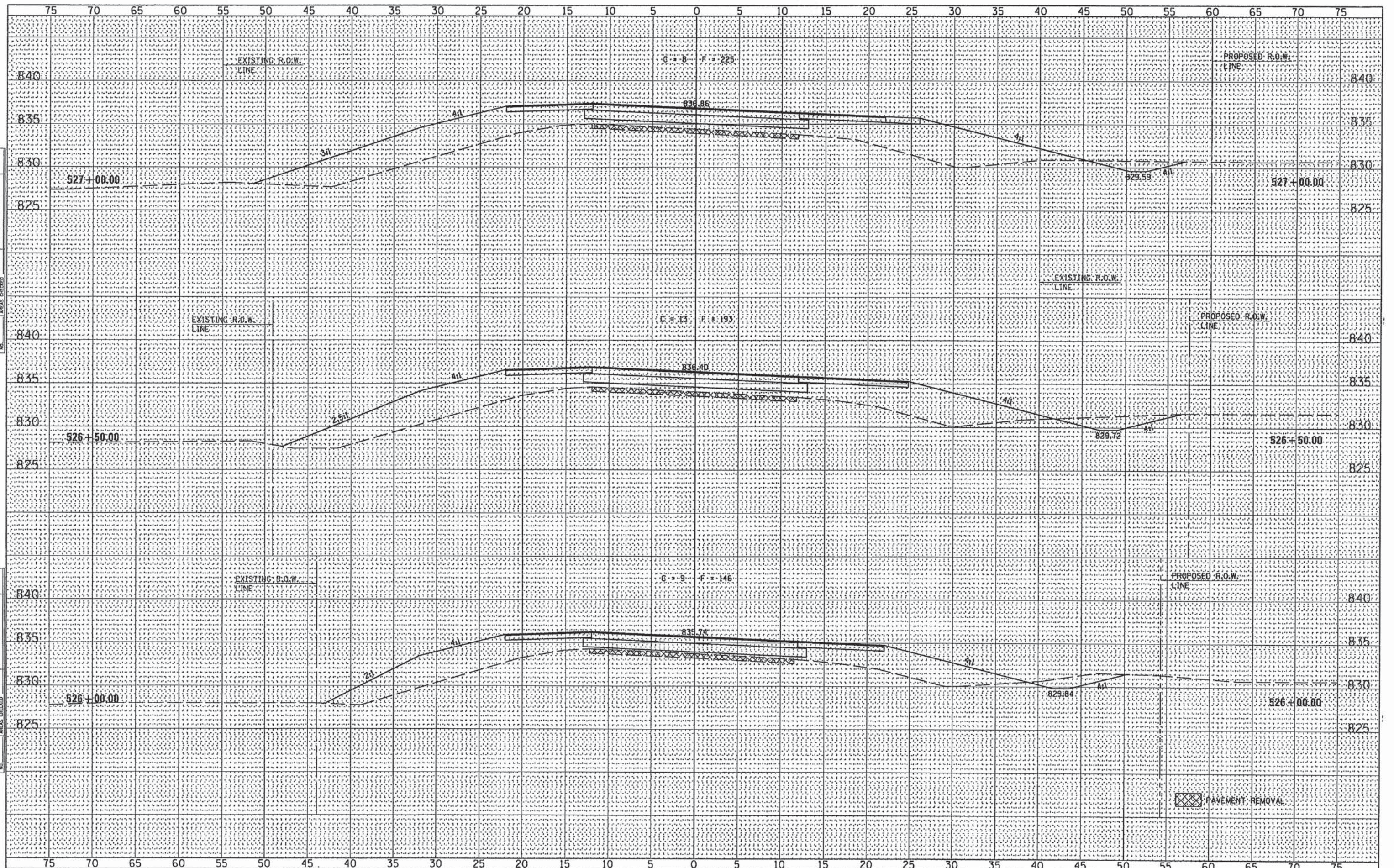
DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



FILE NAME = 48510_XS-SHEETS.DGN	DESIGNED - G.J.C.	REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com	<b>FEHR-GRAHAM &amp; ASSOCIATES, LLC</b> ENGINEERING AND SCIENCE CONSULTANTS FREEPORT, IL. ROCKFORD, IL. ROCHELLE, IL. MONROE, WI. SPRINGFIELD, IL.	ROADWAY CROSS SECTIONS - C.H. 33 (COLTONVILLE RD.)			F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 35
PLOTTED BY = S.A.P.	DRAWN - S.A.P.	REVISED -			STA. 523+71.28 TO STA. 525+00.00			COLTONVILLE ROAD	ILLINOIS	CONTRACT NO. 87435		
CHECKED BY = R.J.C.	CHECKED - R.J.C.	REVISED -										
PLOT DATE = 04/12/18	DATE - 01/05/11	REVISED -										

FINAL SURVEY  
 SURVEY PLOTTED  
 NOTE BOOK NO.  
 TEMPLATE AREAS CHECKED

ORIGINAL SURVEY  
 SURVEY PLOTTED  
 NOTE BOOK NO.  
 TEMPLATE AREAS CHECKED



FILE NAME = 48518.XS-SHEETS.DGN  
 PLOTTED BY = S.A.P.  
 CHECKED BY = R.J.C.  
 PLOT DATE = 04/12/18

DESIGNED - G.J.C.  
 DRAWN - S.A.P.  
 CHECKED - R.J.C.  
 DATE - 01/05/11

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

4440 ASH GROVE  
 SPRINGFIELD, IL 62711  
 (217) 793-8600  
 www.fehr-graham.com

**FEHR-GRAHAM & ASSOCIATES, LLC**  
 ENGINEERING AND SCIENCE CONSULTANTS  
 FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MONROE, WI SPRINGFIELD, IL

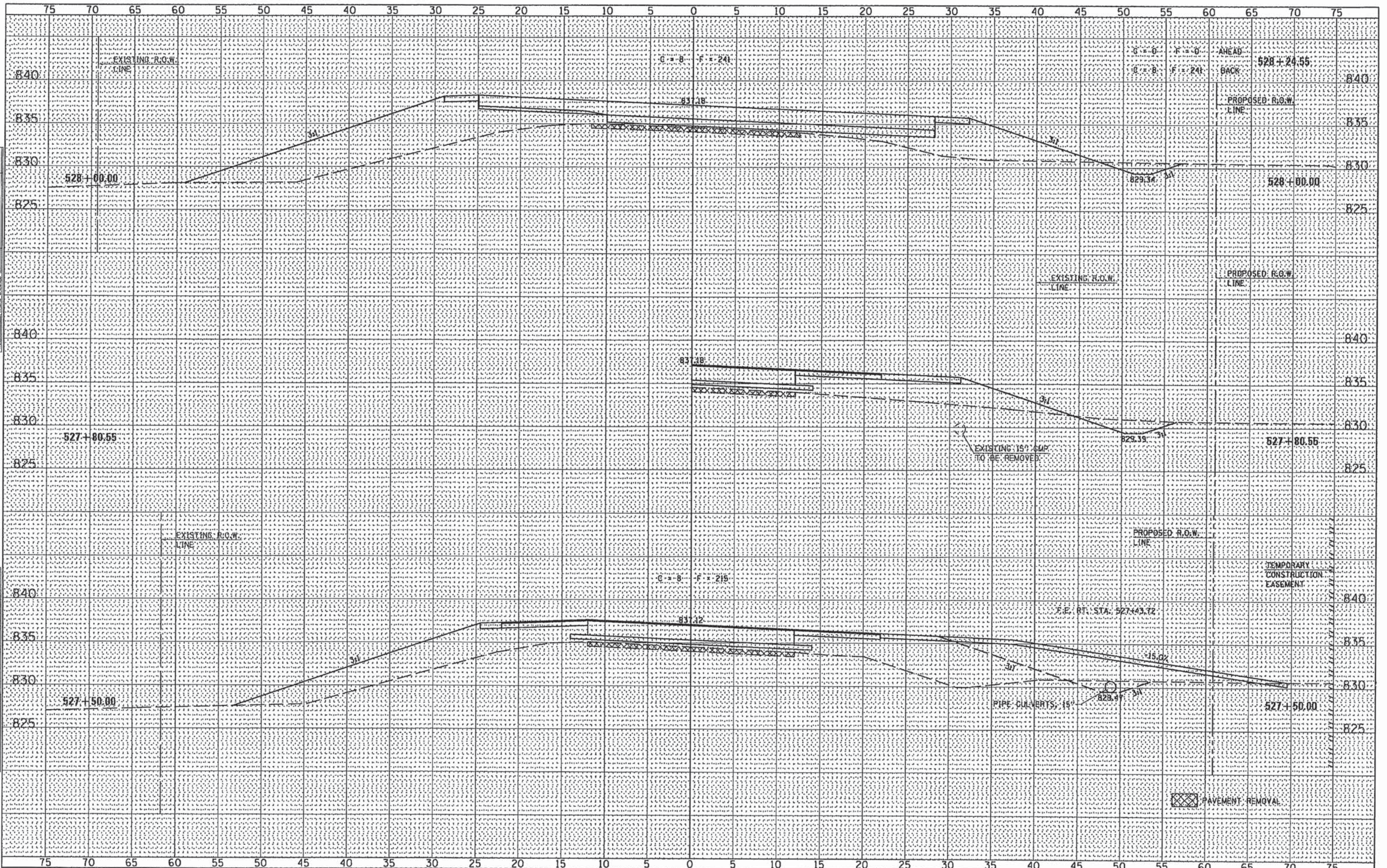
ROADWAY CROSS SECTIONS - C.H. 33 (COLTONVILLE RD.)

STA. 526+00.00 TO STA. 527+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	36
COLTONVILLE ROAD			CONTRACT NO. 87435	
[ILLINOIS]				

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

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



FILE NAME = 48510\_XS-SHEETS.DGN  
 PLOTTED BY = S.A.P.  
 CHECKED BY = R.J.C.  
 DATE = 04/12/18

DESIGNED - G.J.C.  
 DRAWN - S.A.P.  
 CHECKED - R.J.C.  
 DATE - 01/05/11

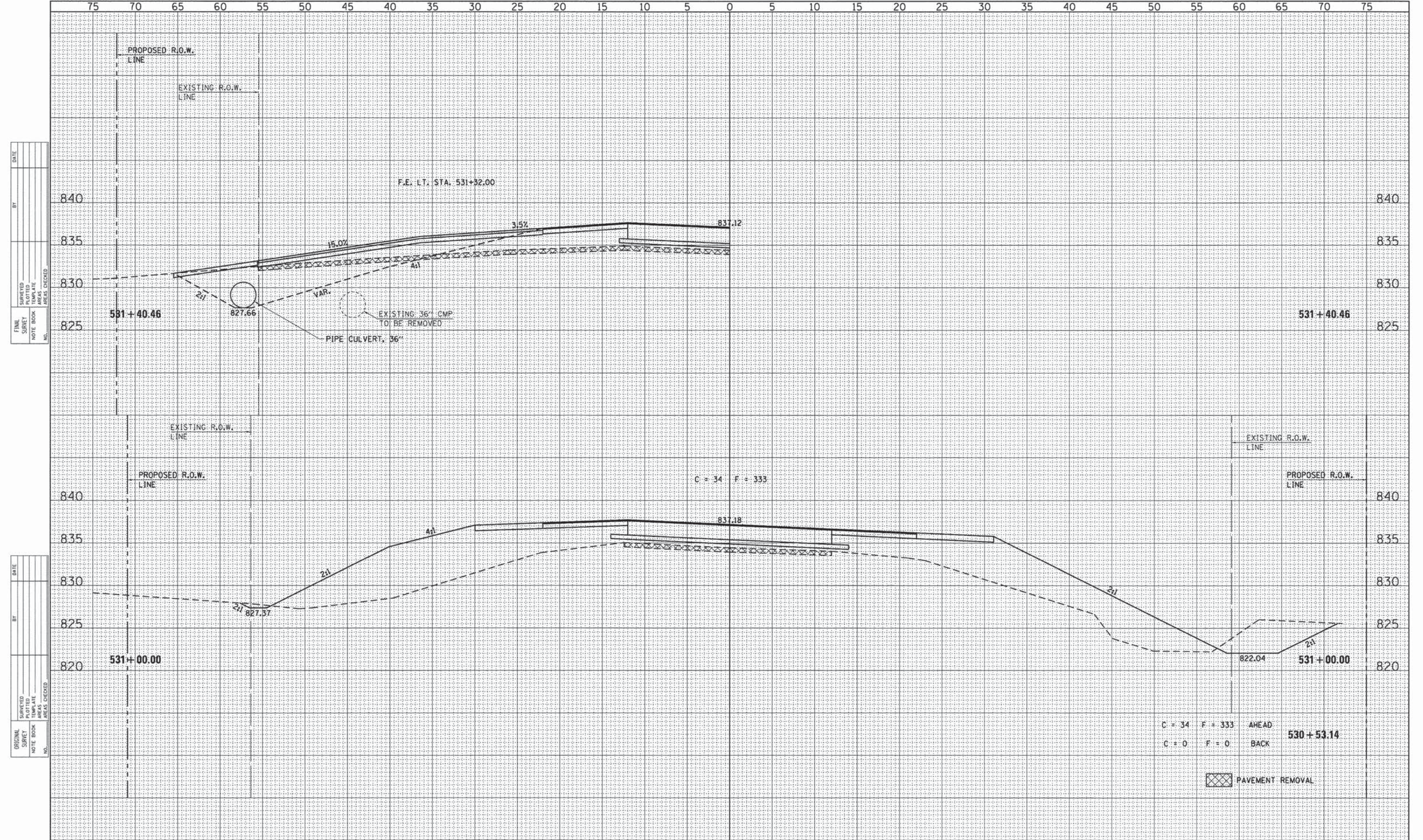
REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

4440 ASH GROVE  
 SPRINGFIELD, IL, 62711  
 (217) 793-8600  
 www.fehr-graham.com



ROADWAY CROSS SECTIONS - C.H. 33 (COLTONVILLE RD.)  
 STA. 527+50.00 TO STA. 528+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	37
COLTONVILLE ROAD			CONTRACT NO. 87435	
ILLINOIS				



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

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

C = 34 F = 333 AHEAD  
 C = 0 F = 0 BACK

PAVEMENT REMOVAL

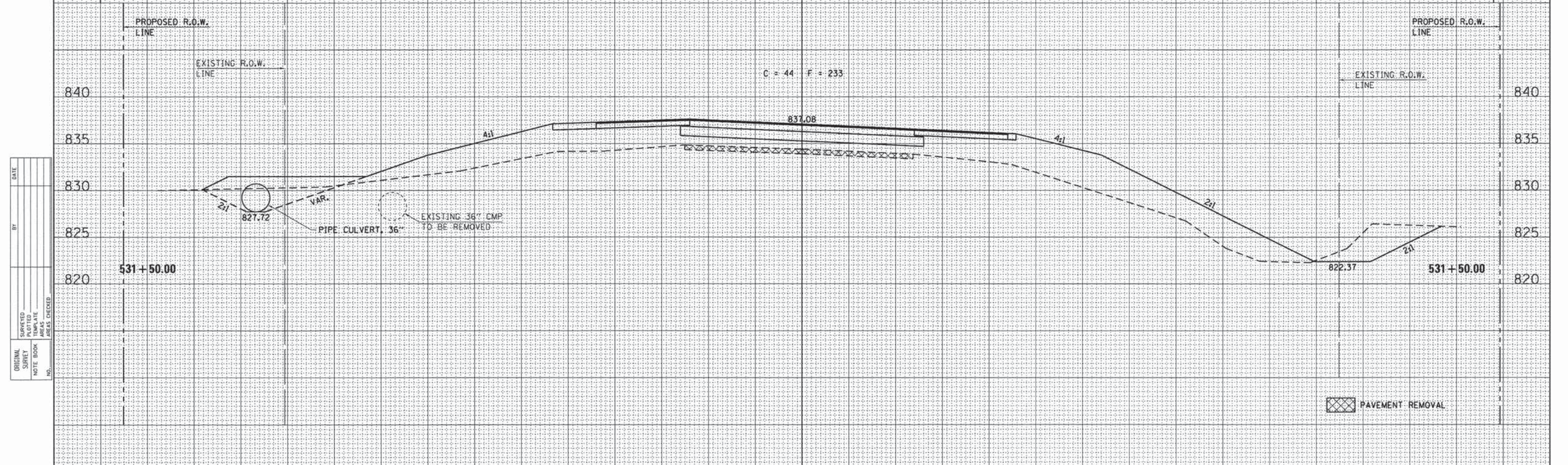
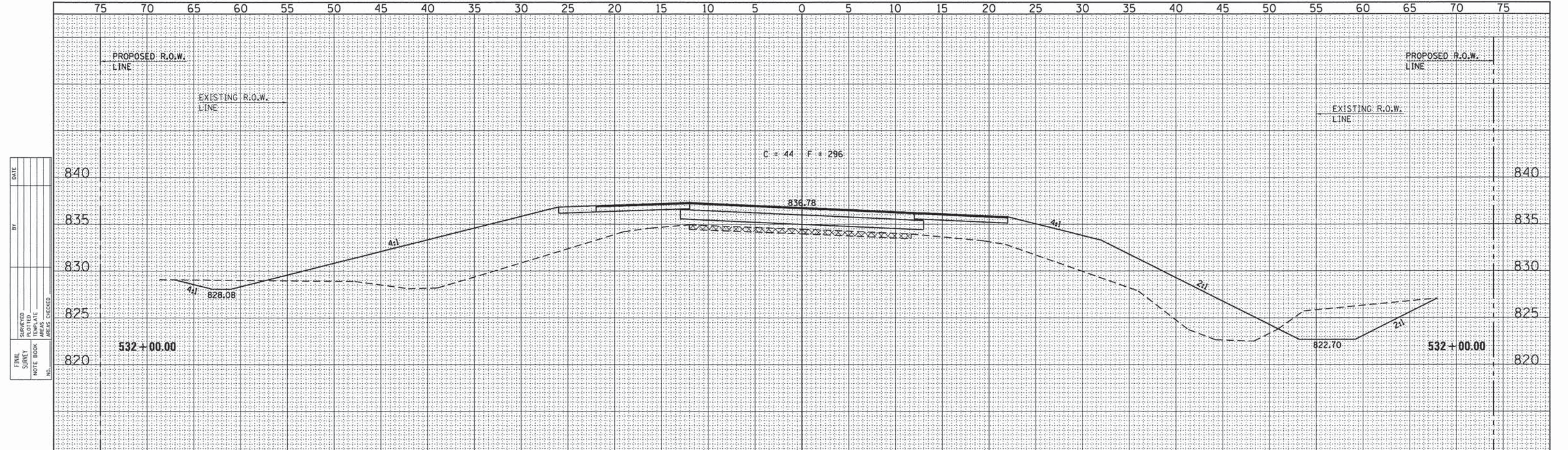
FILE NAME = 48510_XS-SHEETS.DGN	DESIGNED - G.J.C.	REVISED -
PLOTTED BY = S.A.P.	DRAWN - S.A.P.	REVISED -
CHECKED BY = R.J.C.	CHECKED - R.J.C.	REVISED -
PLOT DATE = 04/12/10	DATE - 01/05/11	REVISED -

4440 ASH GROVE  
 SPRINGFIELD, IL. 62711  
 (217) 793-8600  
 www.fehr-graham.com



ROADWAY CROSS SECTIONS - C.H. 33 (COLTONVILLE RD.)  
 STA. 531+00.00 TO STA. 531+40.46

F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 38
COLTONVILLE ROAD			CONTRACT NO. 87435	
[ILLINOIS]				



DATE	
BY	
FINAL SURVEY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

FILE NAME = 48510.X5-SHEETS.DGN  
 PLOTTED BY = S.A.P.  
 CHECKED BY = R.J.C.  
 PLOT DATE = 04/12/10

DESIGNED - G.J.C.  
 DRAWN - S.A.P.  
 CHECKED - R.J.C.  
 DATE - 01/05/11

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

4440 ASH GROVE  
 SPRINGFIELD, IL. 62711  
 (217) 793-8600  
 www.fehr-graham.com

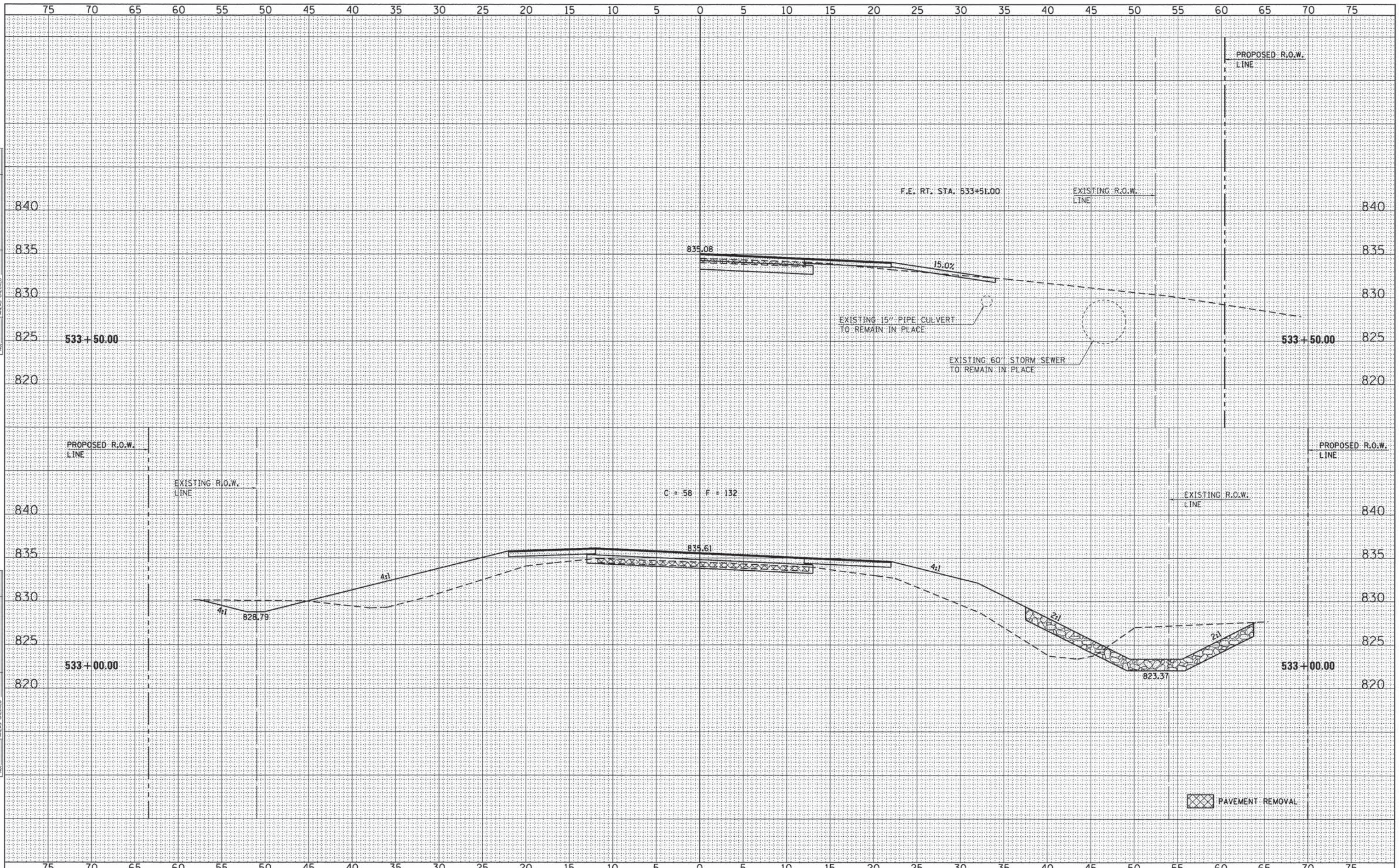


**ROADWAY CROSS SECTIONS - C.H. 33 (COLTONVILLE RD.)**  
 STA. 531+50.00 TO STA. 532+00.00

F.A.U. RTE. 5332	SECTION 08-00076-00-BR	COUNTY DEKALB	TOTAL SHEETS 43	SHEET NO. 39
COLTONVILLE ROAD			CONTRACT NO. 87435	
[ILLINOIS]				

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

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

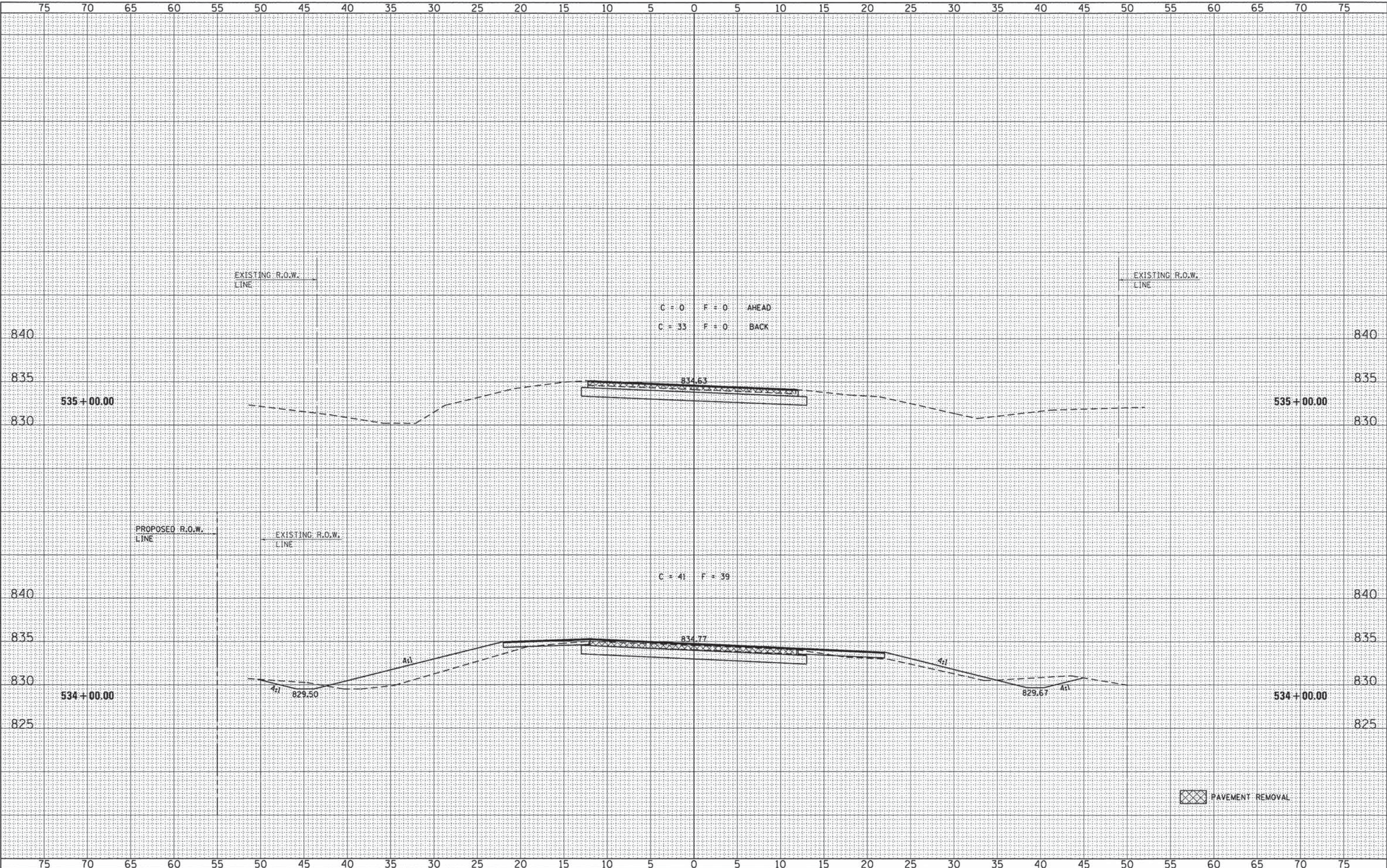


FILE NAME = 48510.X5-SHEETS.DGN	DESIGNED - G.J.C.	REVISED -	4440 ASH GROVE SPRINGFIELD, IL. 62711 (217) 793-8600 www.fehr-graham.com	<b>FEHR-GRAHAM &amp; ASSOCIATES, LLC</b> ENGINEERING AND SCIENCE CONSULTANTS FREEPORT, IL. ROCKFORD, IL. ROCHELLE, IL. MONROE, WI. SPRINGFIELD, IL.	ROADWAY CROSS SECTIONS - C.H. 33 (COLTONVILLE RD.)			F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOTTED BY = S.A.P.	DRAWN - S.A.P.	REVISED -						5332	08-00076-00-BR	DEKALB	43	40
CHECKED BY = R.J.C.	CHECKED - R.J.C.	REVISED -			COLTONVILLE ROAD			CONTRACT NO. 87435				
DATE = 01/05/11	DATE -	REVISED -			ILLINOIS							
PLOT DATE = 04/12/10	DATE -	REVISED -			STA. 533+00.00 TO STA. 533+50.00							



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

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



FILE NAME = 48510.XS-SHEETS.DGN  
 PLOTTED BY = S.A.P.  
 CHECKED BY = R.J.C.  
 PLOT DATE = 04/12/10

DESIGNED - G.J.C.  
 DRAWN - S.A.P.  
 CHECKED - R.J.C.  
 DATE - 01/05/11

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

4440 ASH GROVE  
 SPRINGFIELD, IL. 62711  
 (217) 793-8600  
 www.fehr-graham.com

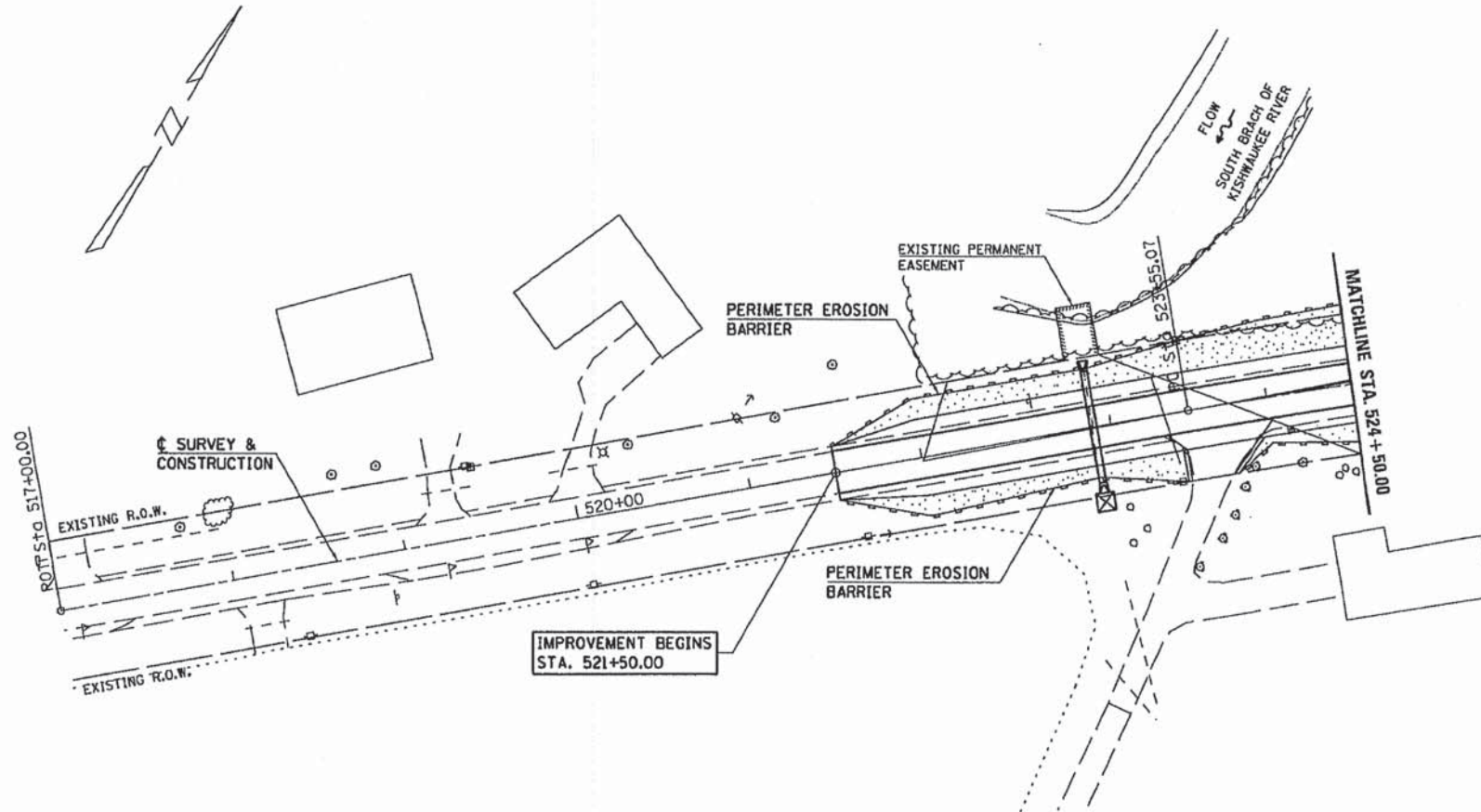
**FEHR-GRAHAM & ASSOCIATES, LLC**  
 ENGINEERING AND SCIENCE CONSULTANTS  
 FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MONROE, WI SPRINGFIELD, IL

**ROADWAY CROSS SECTIONS - C.H. 33 (COLTONVILLE RD.)**  
 STA. 534+00.00 TO STA. 535+00.00

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	41
COLTONVILLE ROAD			CONTRACT NO. 87435	
ILLINOIS				

**DESCRIPTION OF INTENDED SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES WHICH WILL DISTURB EARTH AND LEAD TO POSSIBLE EROSION FOR MAJOR PORTIONS OF THE CONSTRUCTION SITE:**

1. PLACEMENT OF PERIMETER EROSION CONTROL FENCE PRIOR TO THE COMMENCEMENT OF ANY ROAD OR BRIDGE WORK. SEE STD. 280001.
2. REMOVAL OF EXISTING STRUCTURE.
3. CONSTRUCTION OF THE REPLACEMENT STRUCTURE.
4. PLACEMENT OF ROADWAY EMBANKMENT TO RAISE THE ROADWAY TO THE PROPOSED GRADE.
5. DRAINAGE STRUCTURES, INCLUDING DITCHES, WILL BE INSTALLED BEFORE AND/OR DURING THE COMPLETION OF THE EMBANKMENT.
6. PLACEMENT AND MAINTENANCE OF TEMPORARY EROSION CONTROL.
7. PLACEMENT OF PERMANENT EROSION CONTROL.
8. REMOVAL AND PROPER CLEAN UP OF TEMPORARY EROSION CONTROL.
9. FINAL GRADING, PLACING AGGREGATE AND OTHER MISCELLANEOUS ITEMS.



TEMPORARY EROSION CONTROL:	
	PERIMETER EROSION BARRIER
	TEMPORARY DITCH CHECK
	INLET AND PIPE PROTECTION
PERMANENT EROSION CONTROL:	
	SEEDING CLASS 2, FERTILIZERS, & MULCH, METHOD 3

**TEMPORARY DITCH CHECKS**

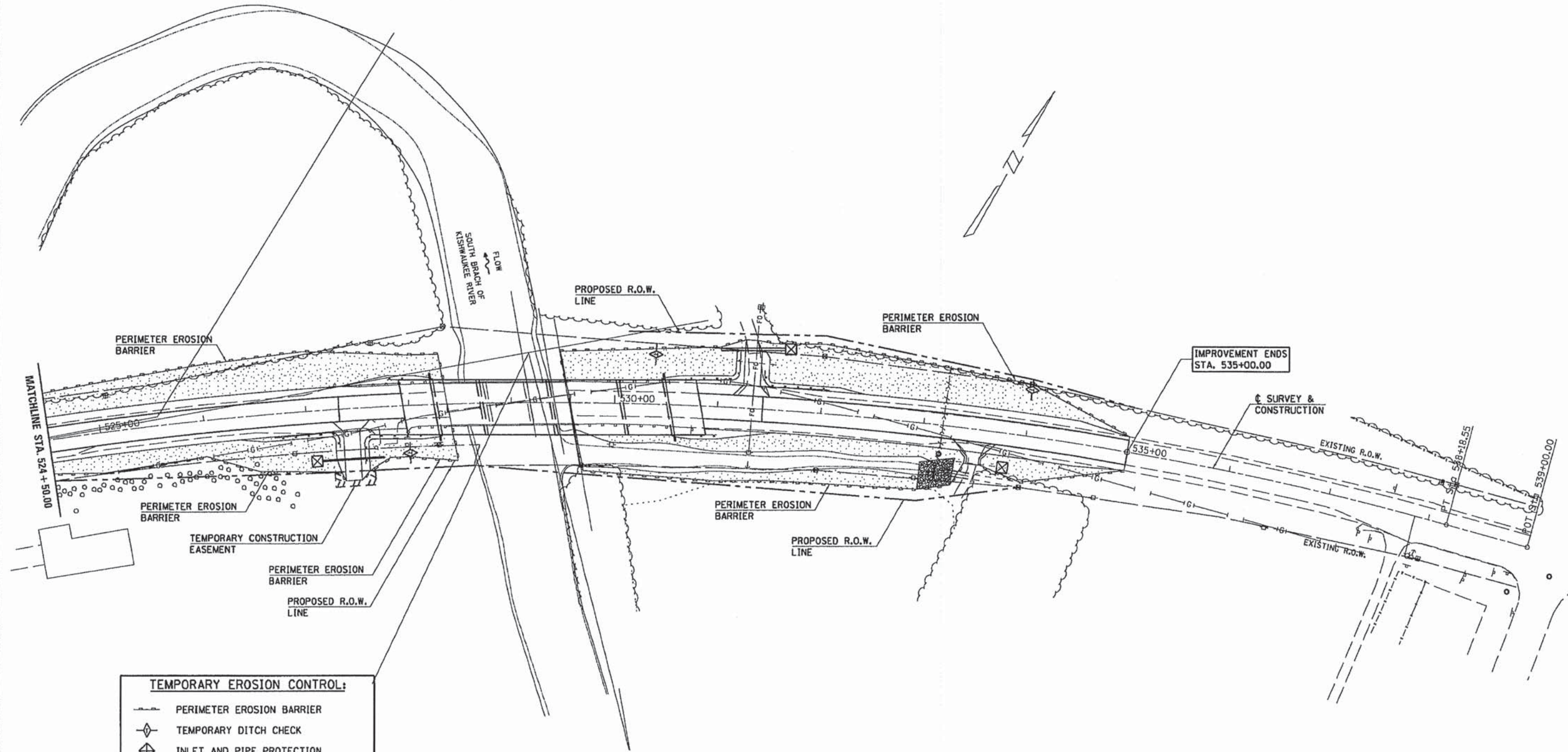
RT. STA. 528+00	=	20 FOOT
LT. STA. 530+40	=	20 FOOT
LT. STA. 534+00	=	30 FOOT
<b>TOTAL</b>	=	<b>70 FOOT</b>

**INLET AND PIPE PROTECTION**

RT. STA. 523+00	=	1 EACH
RT. STA. 527+13.72	=	1 EACH
LT. STA. 531+64	=	1 EACH
RT. STA. 533+76	=	1 EACH
<b>TOTAL</b>	=	<b>4 EACH</b>

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
TEMPORARY EROSION CONTROL SEEDING	POUND	154
TEMPORARY DITCH CHECKS	EACH	70
PERIMETER EROSION BARRIER	FOOT	2,802
INLET AND PIPE PROTECTION	EACH	4



TEMPORARY EROSION CONTROL:	
	PERIMETER EROSION BARRIER
	TEMPORARY DITCH CHECK
	INLET AND PIPE PROTECTION
PERMANENT EROSION CONTROL:	
	SEEDING CLASS 2, FERTILIZERS, & MULCH, METHOD 3

NOTE: SEE SHEET 42 FOR EROSION CONTROL QUANTITIES

FILE NAME = 48510\_EROSION.DGN

DESIGNED - G.J.C.  
 DRAWN - S.A.P.  
 CHECKED - R.J.C.  
 DATE - 03/03/11

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

4440 ASH GROVE  
 SPRINGFIELD, IL. 62711  
 (217) 793-8600  
 www.fehr-graham.com

**FEHR-GRAHAM & ASSOCIATES, LLC**  
 ENGINEERING AND SCIENCE CONSULTANTS  
 FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MONROE, WI SPRINGFIELD, IL

**EROSION CONTROL PLAN**  
 STA. 524+50.00 TO STA. 539+00.00  
 PROPOSED STRUCTURE @ STA. 529+38.50

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5332	08-00076-00-BR	DEKALB	43	43
COLTONVILLE ROAD		CONTRACT NO. 87435		
ILLINOIS				