3-5-10 Letting, Item 173

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	1
ROAD DIST.	ILLINOIS	EAST PLUM RIVER		

CONTRACT NO. 85419

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

SECTION 04–00164–00–BR
STEPHENSON COUNTY
PROJECT NO. BRS–62 (108)
F.A.S. 62 (C.H. 13) GOLDMINE ROAD
C–92–008–08
CONTRACT NO. 85419

SCALES

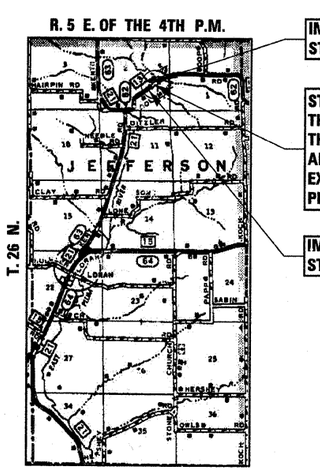
PLAN	0′	50′	100′
PROFILE HORIZ.	0′	50′	100′
PROFILE VERT.	0′	5′	10′
CROSS SECTIONS	0′	5′	10′

INDEX OF SHEETS

SHEET NO.	TITLE
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES, GENERAL NOTES & TYPICAL SECTIONS
3.	ENTRANCE DETAILS & TRAFFIC CONTROL DETAILS
4.	SCHEDULE OF QUANTITIES
5.	PLAN AND PROFILE SHEET
6.	SHOULDER AND GUARDRAIL DETAILS
7.–11.	BRIDGE PLANS
12.–15.	STATION CROSS SECTIONS

STANDARDS:

280001–05	TEMPORARY EROSION CONTROL SYSTEMS
515001–03	NAME PLATE FOR BRIDGES
635006–03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701006–03	OFF ROAD OPERATIONS, 2L, 2W, 15′ (4.5 M) TO 24″ (600 MM) FROM EDGE OF PAVEMENT
701301–03	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701901–01	TRAFFIC CONTROL DEVICES
720011–01	METAL POSTS FOR SIGNS, MARKERS, & DELINEATORS
728001–01	TELESCOPING STEEL SIGN SUPPORT
729001–01	APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS AND MARKERS)
BLR 21–8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 22–6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO–LANE TWO WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)
BLR 23–3	TRAFFIC BARRIER TERMINAL, TYPE 1
BLR 26–2	STEEL PLATE BEAM GUARDRAIL 27 1/2″ (700 mm) HEIGHT
BLR 27–1	TRAFFIC BARRIER TERMINAL, TYPE 5A



IMPROVEMENT ENDS
STA. 194 + 25

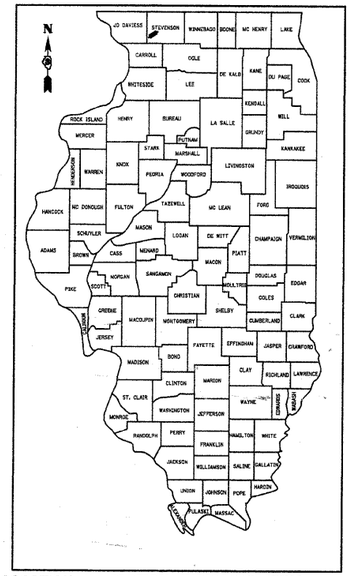
STA. 191 + 93 – SPECIAL BRIDGE DESIGN
THREE SPAN CONTINUOUS R.C. SLAB BRIDGE
THREE SPANS @ 24′–3″, 27′–0″, 24′–3″; 78′–0″ BK.–BK.
ABUTS.; 30′–0″ ROADWAY, 0° SKEW
EXISTING S.N. 089–3016
PROPOSED S.N. 089–3281

IMPROVEMENT BEGINS
STA. 189 + 00

LOCATION PLAN

GROSS LENGTH OF SECTION = 525 FEET = 0.099 MILES
NET LENGTH OF SECTION = 525 FEET = 0.099 MILES

0 1 2 3 4 5
SCALE IN MILES



LOCATION OF SECTION INDICATED THUS:

CLASSIFICATION: RURAL TWO–LANE COLLECTOR
DESIGN VOLUME: 400–750 ADT
CURRENT ADT: 375
DESIGN SPEED: 50 M.P.H.
CLOSED ROAD ADT: 20

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

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. RIVERSIDE, MO SPRINGFIELD, IL.

GARY J. CARTWRIGHT 43408 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Gary J. Cartwright 10-12-09
ILLINOIS PROFESSIONAL NO. 43408
EXPIRES 11-30-11

APPROVED October 13 2009
Chi L Fisch
COUNTY ENGINEER

PASSED December 23 2009
DISTRICT TWO ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR BID
BASED ON LIMITED
REVIEW December 23 2009
DEPUTY DIRECTOR OF HIGHWAYS, REGION TWO ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

#47188

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	2
ROAD DIST.		ILLINOIS	EAST PLUM RIVER	

CONTRACT NO. 85419

SUMMARY OF QUANTITIES

CONSTRUCTION TYPE CODE: X020-2A

	NUMBER	ITEM	UNIT	QUANTITY
	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	28
	20200100	EARTH EXCAVATION	CU YD	118
	20300100	CHANNEL EXCAVATION	CU YD	620
	20700110	POROUS GRANULAR EMBANKMENT	TON	70
*	25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	75
	28000400	PERIMETER EROSION BARRIER	FOOT	834
	28100207	STONE RIPRAP, CLASS A4	TON	232
	28200200	FILTER FABRIC	SQ YD	336
	35101400	AGGREGATE BASE COURSE, TYPE B	TON	753
	40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	779
	40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	255
	40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	141
	44000100	PAVEMENT REMOVAL	SQ YD	1,140
	44000200	DRIVEWAY PAVEMENT REMOVAL	SQ YD	40
	48101200	AGGREGATE SHOULDERS, TYPE B	TON	102
*	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
*	50200100	STRUCTURE EXCAVATION	CU YD	64
	50300225	CONCRETE STRUCTURES	CU YD	72.5
	50300255	CONCRETE SUPERSTRUCTURE	CU YD	114.9
	50300260	BRIDGE DECK GROOVING	SQ YD	243
	50300300	PROTECTIVE COAT	SQ YD	293
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	34,380
△	50900205	STEEL RAILING, TYPE S1	FOOT	156
	51201600	FURNISHING STEEL PILES HP12X53	FOOT	476
	51202305	DRIVING PILES	FOOT	476
	51203600	TEST PILE STEEL HP12X53	EACH	2
	51500100	NAME PLATES	EACH	1
△	63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	25
△	63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
*	63200305	STEEL PLATE BEAM GUARDRAIL REMOVAL	FOOT	206
*	63200307	STEEL PLATE BEAM GUARDRAIL REMOVAL ATTACHED TO STRUCTURE	FOOT	66
	67100100	MOBILIZATION	L SUM	1
*	70101700	TRAFFIC CONTROL AND PROTECTION	L SUM	1
△	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1,330
△ *	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
△	LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2
*	X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1
*	X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1

*SEE SPECIAL PROVISIONS
△ SPECIALTY ITEMS

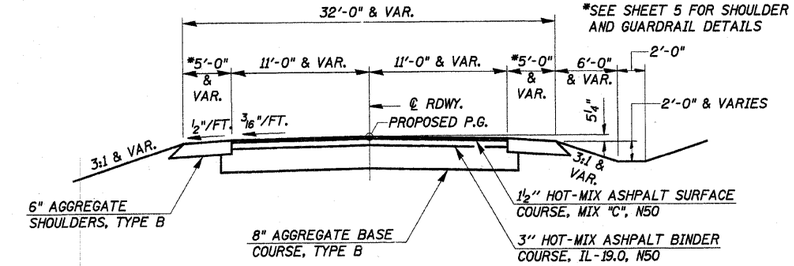
PAVEMENT DESIGN (80,000 LBS.)

Structural Design Traffic (S.D.T.) : Year 2018; P.V. = 431, S.U. = 34, M.U. = 25
Class III Road

Minimum Soil Support: E_{RI} = 3 k.s.i. (Assumed)

Percent of S.D.T. in Design Lane: P = 50%, S = 50%, M = 50%
T.F. = 0.134

Temp.=72° F.: E_{AC}=650 (AC-10); Design Strain=265



*SEE SHEET 5 FOR SHOULDER AND GUARDRAIL DETAILS

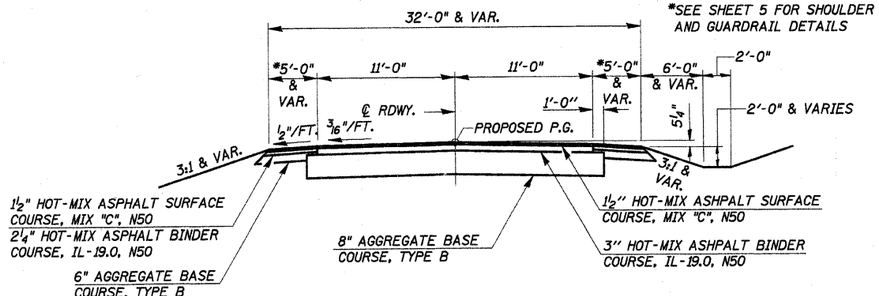
SUGGESTED FILL SECTION CONSTRUCT AS SHOWN BY STATION CROSS SECTIONS

TYPICAL PROPOSED CROSS SECTION

STA. 189+50.00 TO STA. 190+68.57 AND
STA. 193+29.00 TO STA. 193+75.00

SUGGESTED CUT SECTION CONSTRUCT AS SHOWN BY STATION CROSS SECTIONS

TRANSITION FROM EXISTING ROADWAY TO PROPOSED ROADWAY TO BE CONSTRUCTED FROM STA. 189+00 TO STA. 189+50 AND FROM STA. 193+75 TO 194+25



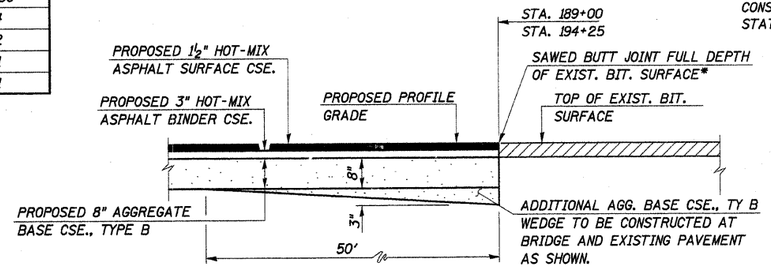
*SEE SHEET 5 FOR SHOULDER AND GUARDRAIL DETAILS

SUGGESTED FILL SECTION CONSTRUCT AS SHOWN BY STATION CROSS SECTIONS

TYPICAL PROPOSED CROSS SECTION

STA. 190+68.57 TO STA. 191+54 AND
STA. 192+32.00 TO STA. 193+29.00

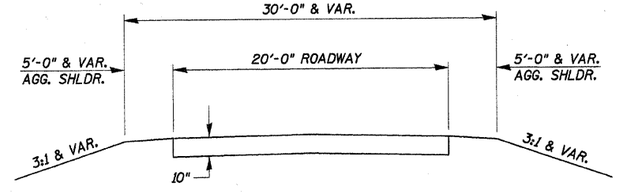
SUGGESTED CUT SECTION CONSTRUCT AS SHOWN BY STATION CROSS SECTIONS



ELEVATION AT BEGINNING AND END OF IMPROVEMENT

JOINT DETAILS

*COST INCLUDED IN "PAVEMENT REMOVAL".



EXISTING TYPICAL CROSS SECTION

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

MIXTURE USE(S)	SURFACE COURSE	BINDER COURSE
AC/PG:	64-22	64-22
DESIGN AIR VOIDS:	4.0% @ N_{des} = 50	4.0% @ N_{des} = 50
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL 9.5	IL 19.0
FRICTION AGGREGATE:	MIXTURE C	N/A

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) = 0.5 ACRE

TREES THAT INTERFERE WITH THE CONSTRUCTION WITHIN THE LIMITS OF THE R.O.W. LINES SHALL BE REMOVED ONLY AS DIRECTED BY THE ENGINEER.

TREE REMOVAL (6 TO 15 UNITS DIAMETER)

35.6' LT. STA. 192+67 = 6 UNITS
39.6' LT. STA. 192+69 = 11 UNITS
35.6' LT. STA. 192+71 = 11 UNITS
TOTAL = 28 UNITS

SUMMARY OF QUANTITIES, GENERAL NOTES AND TYPICAL CROSS SECTION
COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STA. 191+93

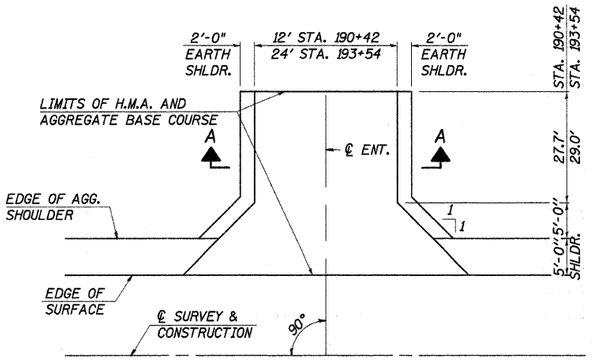
4440 ASH GROVE
SPRINGFIELD, IL 62711
(217) 793-8600
www.fehr-graham.com

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

DRAWN: S.A.P. DATE: 05/16/07
CHECKED: G.J.C. DATE: 05/31/07
JOB NO.: 47188
FILE: SUMTYP.DGN
DATE: 12/08/09

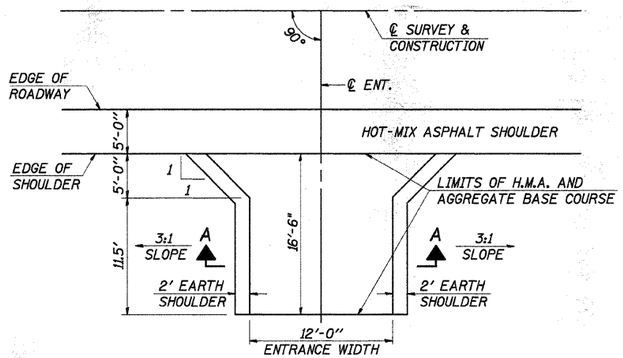
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	3
ROAD DIST.	ILLINOIS	EAST PLUM RIVER		

CONTRACT NO. 85419



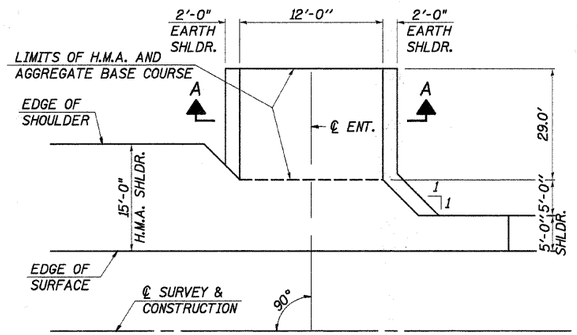
ENTRANCE DETAIL

LT. STA. 190+42 P.E.
LT. STA. 193+54 C.E.



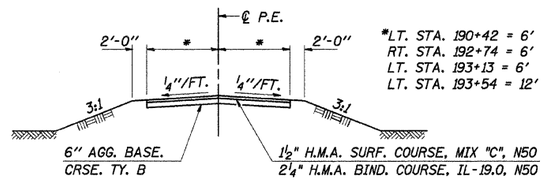
PRIVATE ENTRANCE DETAIL

RT. STA. 192+74



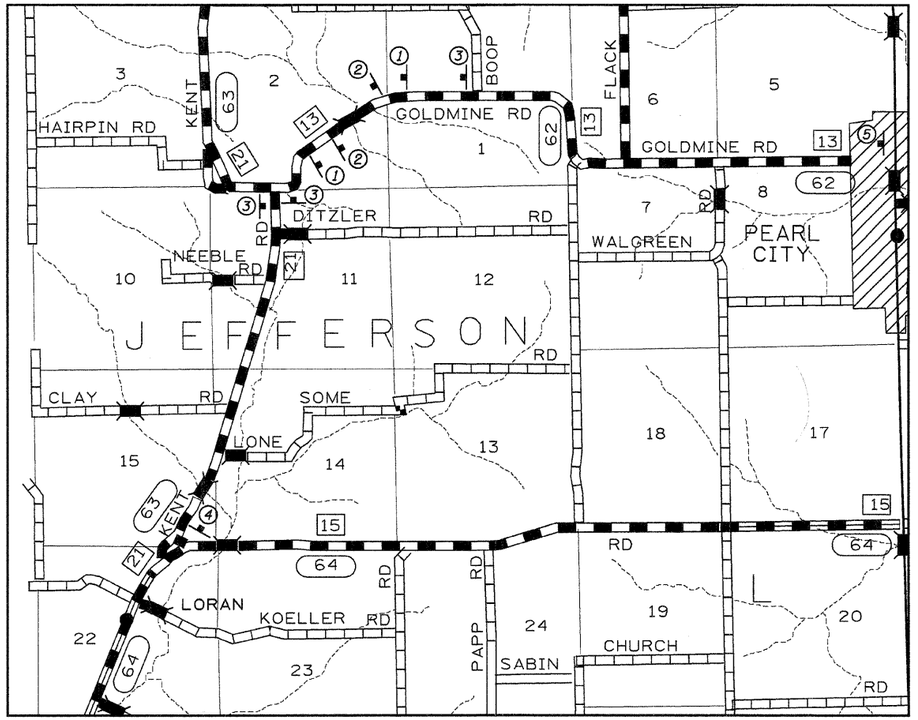
ENTRANCE DETAIL

LT. STA. 193+13 P.E.



*LT. STA. 190+42 = 6'
RT. STA. 192+74 = 6'
LT. STA. 193+13 = 6'
LT. STA. 193+54 = 12'

SECTION A-A



LOCATION MAP

LEGEND

① ROAD CLOSED AHEAD — W20-3(0)48 — POST MOUNTED SIGN WITH TYPE A FLASHING LIGHT

② ROAD CLOSED 500 FT. — W20-3(0)48 — POST MOUNTED SIGN WITH TYPE A FLASHING LIGHT

③ ROAD CLOSED 1/2 MILES AHEAD LOCAL TRAFFIC ONLY — R11-3-6030 — POST MOUNTED SIGN WITH TYPE A FLASHING LIGHT

④ ROAD CLOSED 2 MILES AHEAD LOCAL TRAFFIC ONLY / GOLDMINE RD. — R11-3-6030 — POST MOUNTED SIGN WITH TYPE A FLASHING LIGHT

⑤ ROAD CLOSED 3 MILES AHEAD LOCAL TRAFFIC ONLY — R11-3-6030 — POST MOUNTED SIGN WITH TYPE A FLASHING LIGHT

NOTE: SET TYPE III BARRICADES AS SHOWN ON SHEET 6.

ENTRANCE & TRAFFIC CONTROL DETAILS

COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STA. 191+93

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

DRAWN: S.A.P.
DATE: 05/16/07

CHECKED: G.J.C.
DATE: 05/31/07

JOB NO.: 47188
FILE: 47188ENT.DGN
DATE: 12/08/09

STANDARDS\GENERAL\RPLAN.DGN 1:1 7-17-98

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	4
ROAD DIST.	ILLINOIS	EAST PLUM RIVER		

CONTRACT NO. 85419

SCHEDULE OF QUANTITIES

35101400 AGGREGATE BASE COURSE, TYPE B

LOCATION		TON
LT. STA. 190+68.57 TO LT. STA. 191+54.00	=	16
RT. STA. 190+68.57 TO RT. STA. 191+54.00	=	37
LT. STA. 192+32.00 TO RT. STA. 193+29.00	=	41
RT. STA. 192+32.00 TO RT. STA. 193+29.00	=	18
STA. 189+00.00 TO STA. 191+54.00	=	317
STA. 192+32.00 TO STA. 194+25.00	=	243
P.E. LT. STA. 190+42	=	21
P.E. RT. STA. 192+74	=	8
P.E. LT. STA. 193+13	=	13
C.E. LT. STA. 193+54	=	39
TOTAL	=	753 TON

40600100 BITUMINOUS MATERIALS (PRIME COAT)

LOCATION		GALLON
LT. STA. 190+68.57 TO LT. STA. 191+54.00	=	21
RT. STA. 190+68.57 TO RT. STA. 191+54.00	=	49
LT. STA. 192+32.00 TO LT. STA. 193+29.00	=	71
RT. STA. 192.32.00 TO RT. STA. 193+29.00	=	35
STA. 189+00.00 TO STA. 189+50.00	=	57
STA. 189+50.00 TO STA. 191+54.00	=	268
STA. 192+32.00 TO STA. 193+75.00	=	221
STA. 193+75.00 TO STA. 194+25.00	=	57
TOTAL	=	779 GALLON

40603080 HOT-MIX ASHPALT BINDER COURSE, IL 19.0, N50

LOCATION		TON
STA. 189+00.00 TO STA. 189+50.00	=	20
STA. 189+50.00 TO STA. 191+54.00	=	84
STA. 192+32.00 TO STA. 193+75.00	=	59
STA. 193+75.00 TO STA. 194+25.00	=	20
LT. STA. 190+68.57 TO LT. STA. 191+54	=	6
RT. STA. 190+68.57 TO RT. STA. 191+54	=	13
LT. STA. 192+32 TO LT. STA. 193+29	=	15
RT. STA. 192+32 TO RT. STA. 193+29	=	7
P.E. LT. STA. 190+42	=	8
P.E. RT. STA. 192+74	=	3
P.E. LT. STA. 193+13	=	5
C.E. LT. STA. 193+54	=	15
TOTAL	=	255 TON

40603310 HOT-MIX ASHPALT SURFACE COURSE, MIX "C", N50

LOCATION		TON
STA. 189+00.00 TO STA. 189+50.00	=	10
STA. 189+50.00 TO STA. 191+54.00	=	42
STA. 192+32.00 TO STA. 193+75.00	=	29
STA. 193+75.00 TO STA. 194+25.00	=	10
LT. STA. 190+68.57 TO LT. STA. 191+54	=	4
RT. STA. 190+68.57 TO RT. STA. 191+54	=	10
LT. STA. 192+32 TO LT. STA. 193+29	=	11
RT. STA. 192+32 TO RT. STA. 193+29	=	5
P.E. LT. STA. 190+42	=	5
P.E. RT. STA. 192+74	=	2
P.E. LT. STA. 193+13	=	3
C.E. LT. STA. 193+54	=	10
TOTAL	=	141 TON

44000100 PAVEMENT REMOVAL

LOCATION		SQ YD
STA. 189+00.00 TO STA. 191+77.00	=	641
STA. 192+10.00 TO STA. 194+25.00	=	499
TOTAL	=	1,140 SQ YD

48101200 AGGREGATE SHOULDERS, TYPE B

LOCATION		TON
LT. & RT. STA. 189+00.00 TO LT & RT. STA. 189+50.00	=	20
LT. & RT. STA. 189+50.00 TO LT. & RT. STA. 190+68.57	=	45
LT. & RT. STA. 193+29.00 TO LT. & RT. STA. 193+75.00	=	17
LT. & RT. STA. 193+75.00 TO LT. & RT. STA. 194+25.00	=	20
TOTAL	=	102 TON

63200305 STEEL PLATE BEAM GUARDRAIL REMOVAL

LOCATION		FOOT
NORTHWEST CORNER EXISTING STRUCTURE	=	60
SOUTHWEST CORNER EXISTING STRUCTURE	=	49
NORTHEAST CORNER EXISTING STRUCTURE	=	36
SOUTHEAST CORNER EXISTING STRUCTURE	=	61
TOTAL	=	206 FOOT

63200307 STEEL PLATE BEAM GUARDRAIL REMOVAL ATTACHED TO STRUCTURE

LOCATION		FOOT
LT. STA. 191+77.00 TO LT. STA. 192+10.00	=	33
RT. STA. 191+77.00 TO RT. STA. 192+10.00	=	33
TOTAL	=	66 FOOT

78001110 PAINT PAVEMENT MARKING - LINE 4"

LOCATION		FOOT
LT. & RT. STA. 189+00.00 TO LT. & RT. STA. 194+25.00 (WHITE SOLID)	=	1,050
℄ STA. 189+00.00 TO ℄ STA. 194+25.00 (YELLOW SKIP DASH)	=	130
E.B. ℄ STA. 192+75.00 TO E.B. ℄ 194+25.00 (YELLOW SOLID)	=	150
TOTAL	=	1,330 FOOT

TEMPORARY EROSION CONTROL

THE FOLLOWING QUANTITIES ARE ESTIMATES ONLY. ACTUAL QUANTITIES AND LOCATIONS FOR EROSION CONTROL WILL BE DETERMINED BY THE ENGINEER IN THE FIELD AND THERE WILL BE NO ADJUSTMENT IN ANY PRICE DUE TO A CHANGE IN PLAN QUANTITY.

PERIMETER EROSION BARRIER	=	834 FOOT
TEMPORARY EROSION CONTROL SEEDING	=	75 POUND

APPLICATION RATES USED IN QUANTITY CALCULATIONS

GRANULAR MATERIALS	= 2.05 TON/CU. YD.
BITUMINOUS MATERIALS (PRIME COAT)	= 0.35 GALLON/SQ. YD. - ON AGG. BASE 0.10 GALLON/SQ. YD. - ON HOT-MIX ASPHALT
HOT-MIX ASHPALT BINDER & SURFACE	= 112 #/INCH/SQ. YD.
STONE RIPRAP	= 1.5 TON/CU. YD.

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.

SCHEDULE OF QUANTITIES

COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STA. 191+93

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.

DRAWN: S.A.P.
DATE: 05/16/07

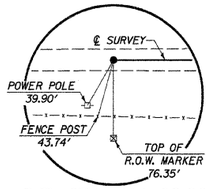
CHECKED: G.J.C.
DATE: 05/31/07

JOB NO.: 47188
FILE: 47188SCHED.DGN
DATE: 12/08/09

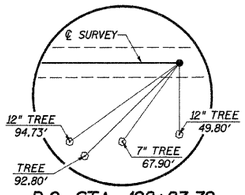
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
62	04-00164-00-BR	STEPHENSON	15	5
STA. 185+00		TO STA. 198+00		
	ILLINOIS	EAST PLUM RIVER		

CONTRACT NO. 85419

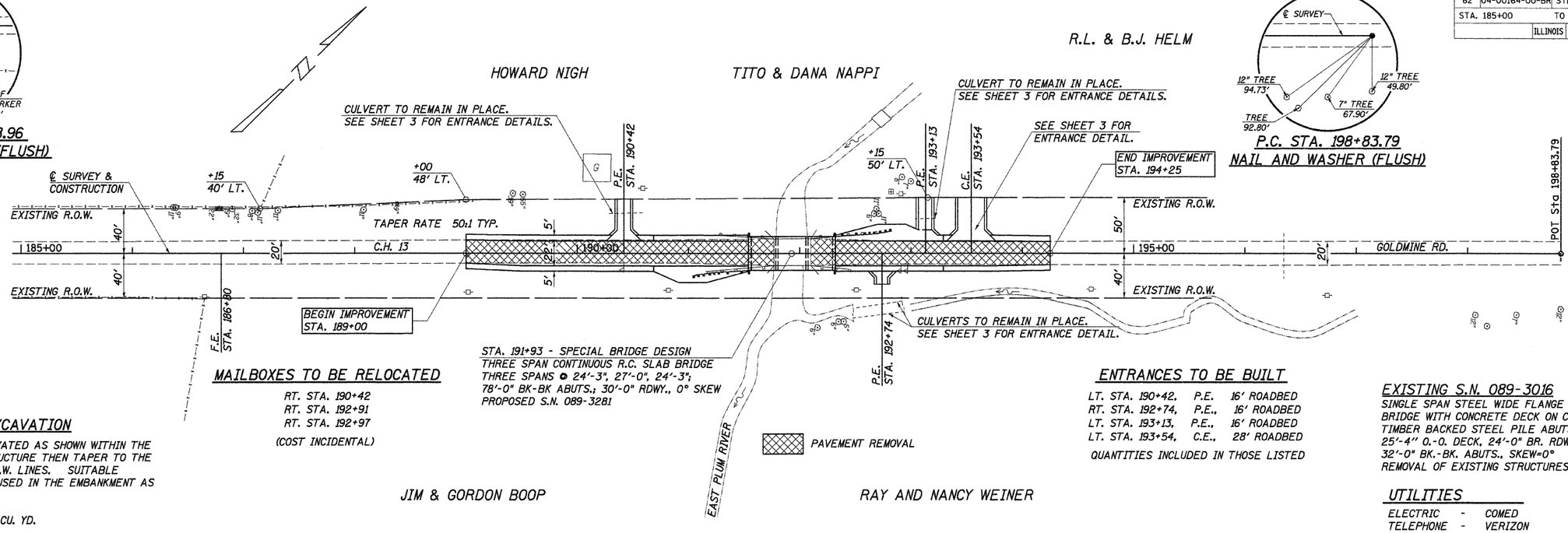
E. 1/2, SE. 1/4, SEC. 2, T. 26 N., R. 5 E., 4TH P.M.



P.T. STA. 174+68.96
NAIL AND WASHER (FLUSH)



P.C. STA. 198+83.79
NAIL AND WASHER (FLUSH)



MAILBOXES TO BE RELOCATED

RT. STA. 190+42
RT. STA. 192+91
RT. STA. 192+97

(COST INCIDENTAL)

ENTRANCES TO BE BUILT

LT. STA. 190+42,	P.E.	16' ROADBED
RT. STA. 192+74,	P.E.,	16' ROADBED
LT. STA. 193+13,	P.E.,	16' ROADBED
LT. STA. 193+54,	C.E.,	28' ROADBED

QUANTITIES INCLUDED IN THOSE LISTED

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.

CHANNEL EXCAVATION = 620 CU. YD.

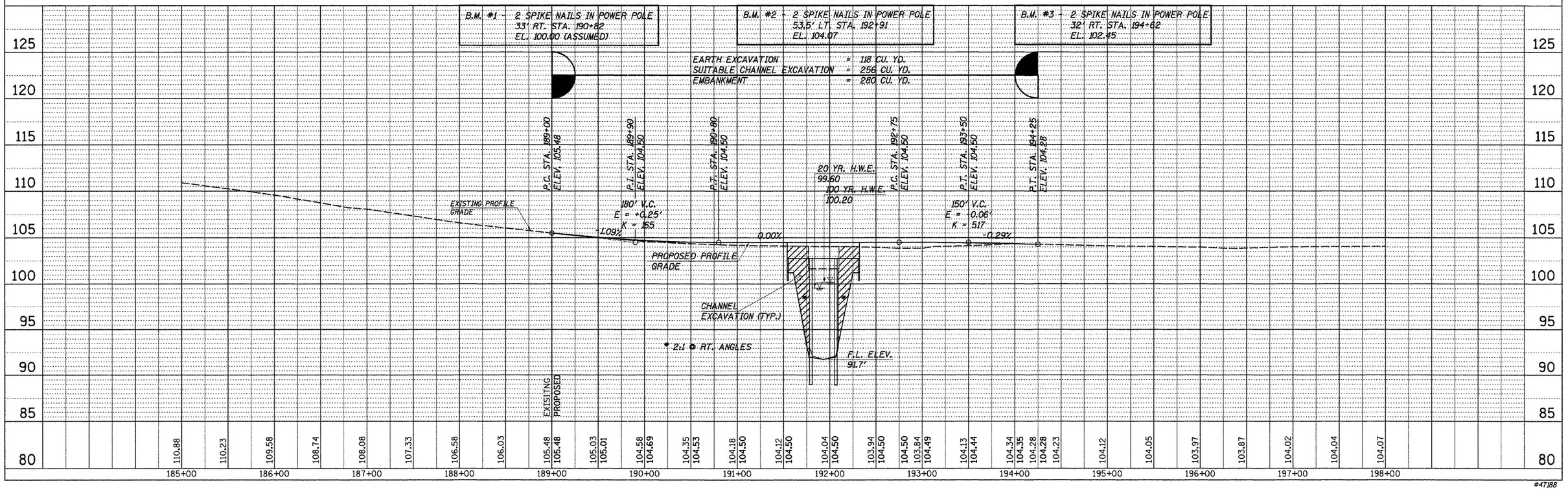
EXISTING S.N. 089-3016

SINGLE SPAN STEEL WIDE FLANGE BEAM BRIDGE WITH CONCRETE DECK ON CLOSED TIMBER BACKED STEEL PILE ABUTS., 25'-4" O.-O. DECK, 24'-0" BR. RDWY., 32'-0" BK.-BK. ABUTS., SKEW=0°
REMOVAL OF EXISTING STRUCTURES = 1 EACH

UTILITIES

ELECTRIC	-	COMED
TELEPHONE	-	VERIZON
GAS	-	NICOR

E. 1/2, SE. 1/4, SEC. 2, T. 26 N., R. 5 E., 4TH P.M.



#47188

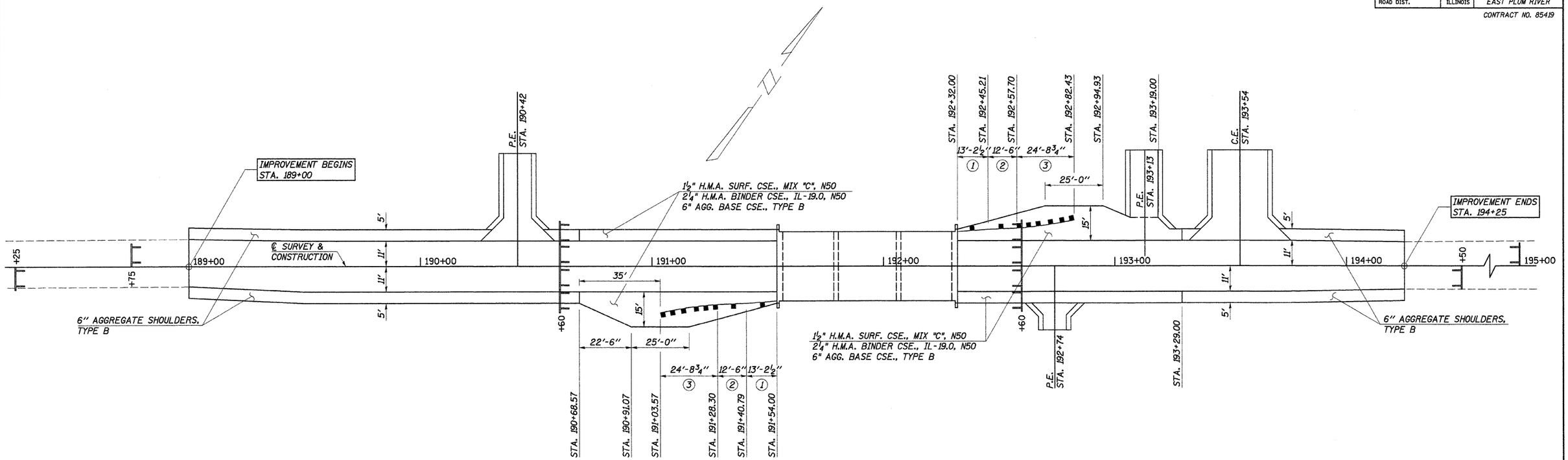
PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RE-MONUMENTED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
RE-MONUMENTED
STRUCTURE NO(S)/NS CHKD
NOTE BOOK
NO.
BY
DATE

PLOT DATE = 2/1/97
FILE NAME = 47188P&P.DGN
PLOT SCALE = 1.0000
USER NAME = S. PRICE

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	6
ROAD DIST.		ILLINOIS	EAST PLUM RIVER	

CONTRACT NO. 85419



SHOULDER AND GUARDRAIL DETAIL

TRAFFIC BARRIER TERMINAL, TYPE 5A

16' RT. STA. 191+40.79 TO 15' RT. STA. 191+54.00 = 1 EACH
15' LT. STA. 192+32.00 TO 16' LT. STA. 192+45.21 = 1 EACH
TOTAL = 2 EACH

STD. BLR 27

STEEL PLATE BEAM GUARD RAIL, TYPE A, 6 FOOT POSTS

16.45' RT. STA. 191+28.30 TO 16' RT. STA. 191+40.79 = 12.5 FOOT
16' LT. STA. 192+45.21 TO 16.45' LT. STA. 192+57.70 = 12.5 FOOT
TOTAL = 25 FOOT

STD. BLR 26

TRAFFIC BARRIER TERMINAL, TYPE 1

20' RT. STA. 191+03.57 TO 16.45' RT. STA. 191+28.30 = 1 EACH
16.45' LT. STA. 192+57.70 TO 20' LT. STA. 192+82.43 = 1 EACH
TOTAL = 2 EACH

STD. BLR 23

ROAD CLOSURE DETAILS

SET TYPE III BARRICADES AT LOCATIONS SHOWN PER STANDARD 701901.

PLACE ADVANCE SIGNING PER STANDARDS BLR 21, BLR 22 AND AS SHOWN ON SHEET 3.

SEE SPECIAL PROVISIONS.

LEGEND

NOTE: ALL DIMENSIONS REFER TO FRONT FACE OF PROPOSED RAILING

① TRAFFIC BARRIER TERMINAL, TYPE 5A

② STEEL PLATE BEAM GUARD RAIL, TYPE A, 6 FOOT POSTS

③ TRAFFIC BARRIER TERMINAL, TYPE 1

TYPE III BARRICADE WITH FLASHING LIGHTS

ROAD CLOSED

R11-2-4830

MOUNT ON TYPE III BARRICADES AS SHOWN ON STD. 701901 DETAIL FOR "ROAD CLOSED TO ALL THRU TRAFFIC". EACH TYPE III BARRICADE SHALL HAVE TWO TYPE A FLASHING LIGHTS, AND A MINIMUM OF FOUR (4) SANDBAGS.

SHOULDER AND GUARDRAIL DETAILS

COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STA. 191+93

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. MONTROSE, WI SPRINGFIELD, IL.

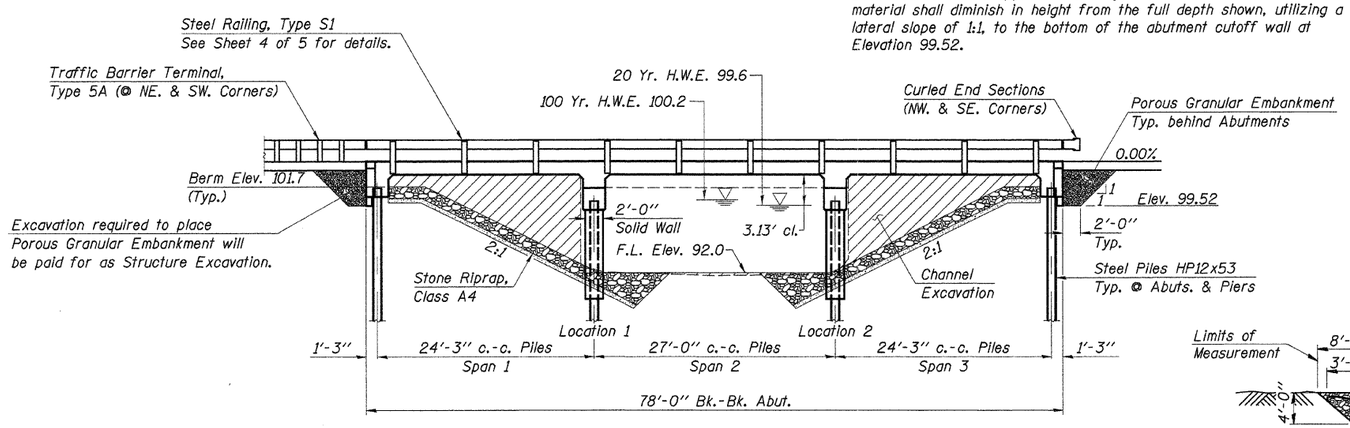
DRAWN: S.A.P.
DATE: 06/04/07

CHECKED: G.J.C. & A.R.K.
DATE: 06/07/07

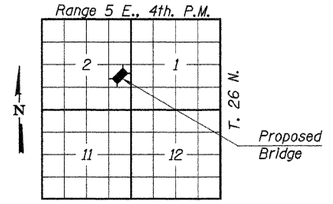
JOB NO.: 47188
FILE: 47188SHLDR.DGN
DATE: 12/08/09

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	7
ROAD DIST.	ILLINOIS	EAST PLUM RIVER		
Sheet 1 of 5		CONTRACT NO. 85419		

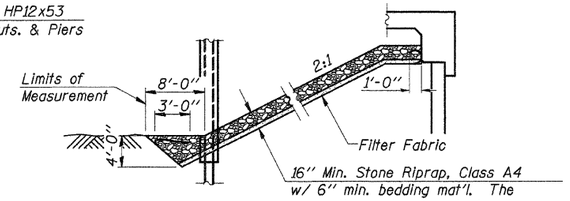
Note: Porous Granular Embankment is to be placed behind the abutment. The Porous Granular Embankment material shall be placed as shown directly under and for the full-width of the Aggregate Base Course of the approach roadway. Beyond the side limits of the Aggregate Base Course of the approach roadway, the Porous Granular Embankment material shall diminish in height from the full depth shown, utilizing a lateral slope of 1:1, to the bottom of the abutment cutoff wall at Elevation 99.52.



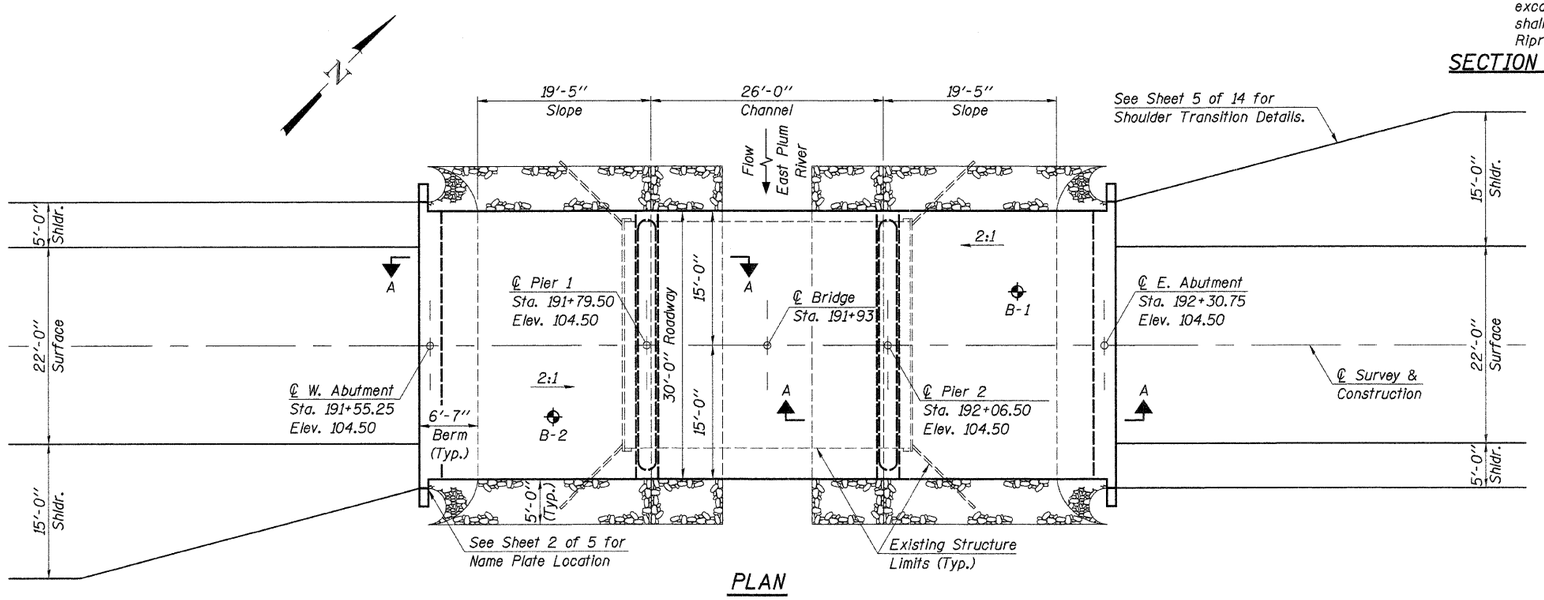
ELEVATION



LOCATION PLAN



SECTION A-A



PLAN

GENERAL NOTES

See Proposal Booklet for Boring data.

Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60. See Special Provisions.

The Contractor shall drive one Steel HP12x53 test pile in a permanent location at the West abutment and at Pier #2 as directed by the Engineer, before ordering the remainder of piles.

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

Protective Coat shall also be applied to deck fascias, exposed portions of wings, and ends of pier and abutment caps.

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

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

EAST PLUM RIVER
BUILT 200_ BY
STEPHENSON COUNTY
SEC. 04-00164-00-BR
F.A.S. RT. 62 STA. 191+93
STR. NO. 089-3281 LOADING HS20

LETTERING FOR NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Ton		70	70
Stone Riprap, Class A4	Ton		232	232
Filter Fabric	Sq. Yd.		336	336
Structure Excavation	Cu. Yd.		64	64
Concrete Structures	Cu. Yd.		72.5	72.5
Concrete Superstructure	Cu. Yd.	114.9		114.9
Bridge Deck Grooving	Sq. Yd.	243		243
Protective Coat	Sq. Yd.	285	8	293
Reinforcement Bars, Epoxy Coated	Pound	25,620	8,760	34,380
Steel Railing, Type S1	Foot	156		156
Furnishing Steel Piles HP12X53	Foot		476	476
Driving Piles	Foot		476	476
Test Pile Steel HP12X53	Each		2	2
Name Plates	Each	1		1
Underwater Structure Excavation Protection - Location 1	Each		1	1
Underwater Structure Excavation Protection - Location 2	Each		1	1

DESIGNED	A.R.K.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.R.K. & J.A.M.

WATERWAY INFORMATION

Drainage Area ..... 2.56 Sq. Mi.
Existing Opening (20 Yr.) ..... 230 Sq. Ft.
Required Opening (20 Yr.) ..... 282 Sq. Ft.
Proposed Opening (20 Yr.) ..... 282 Sq. Ft.
Design Discharge (20 Yr.) ..... 1,138 C.F.S.
Created Head (20 Yr.) ..... 0.7 Ft.
100 Year Discharge ..... 1,814 C.F.S.
100 Yr. Created Head ..... 1.3 Ft.

DESIGN STRESSES

f'_c = 3,500 p.s.i. (Concrete)
f_y = 60,000 p.s.i. (Reinforcement Bars)
n = 8
LOADING HS20-44
Design Specifications: 2002 AASHTO
25#/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 Standard Specifications for Highway Bridges'".

John A. Morris 10-12-09
ILLINOIS STRUCTURAL NO. 4277 (Expires 11/30/10)

LICENSED STRUCTURAL ENGINEER
JOHN A. MORRIS
NO. 81-4277
STATE OF ILLINOIS

GENERAL PLAN & ELEVATION

COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STATION 191+93

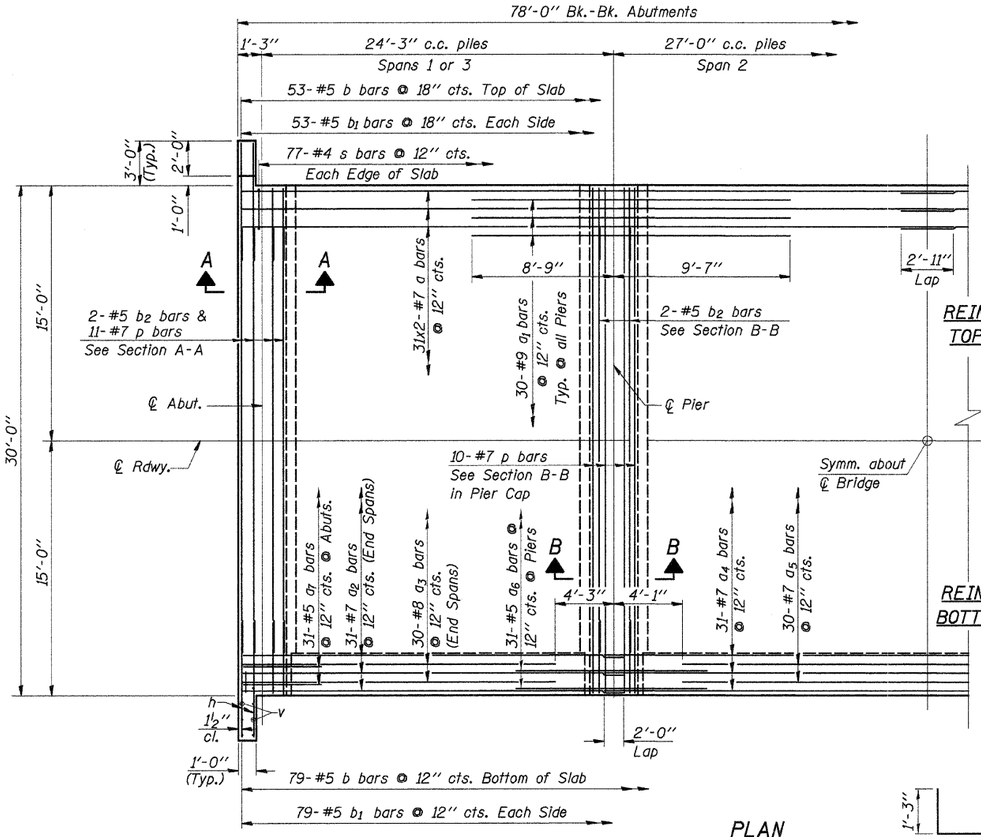
4440 ASH GROVE
SPRINGFIELD, IL. 62711
(217) 793-8600
www.fehr-graham.com

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

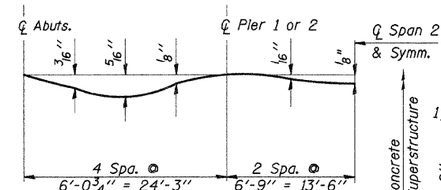
JOB NO.: 47188
FILE: 47188GPE.DGN
DATE: 10/12/09

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	8
ROAD DIST.	ILLINOIS	EAST PLUM RIVER		

Sheet 2 of 5 CONTRACT NO. 85419



PLAN

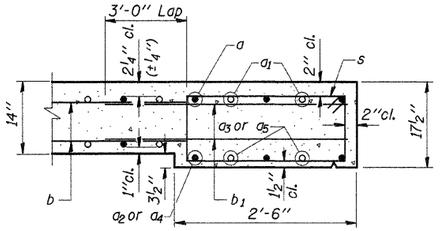


DEAD LOAD DEFLECTION DIAGRAM

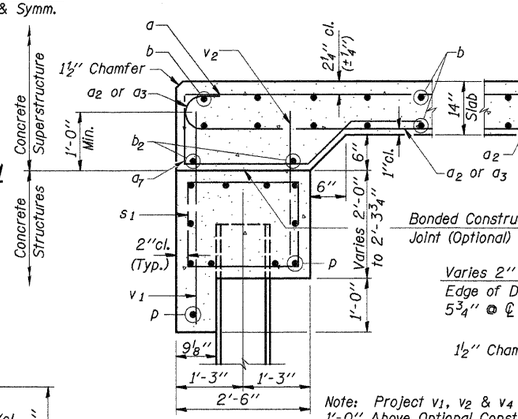
The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework in addition to allowance for dead load deflection.

REINFORCEMENT TOP OF SLAB

REINFORCEMENT BOTTOM OF SLAB



DETAIL A



Note: Project v1, v2 & v4 bars 1'-0" Above Optional Construction Jt.

SECTION A-A

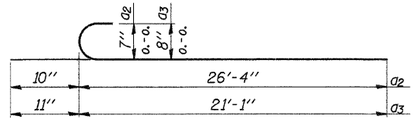
SECTION B-B

BILL OF MATERIAL

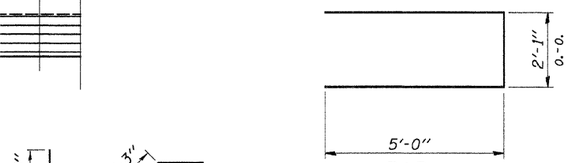
BAR	NO.	SIZE	LENGTH	SHAPE
a	62	#7	40'-4"	
a1	60	#9	18'-4"	
a2	62	#7	27'-2"	
a3	60	#8	22'-0"	
a4	31	#7	29'-0"	
a5	30	#7	18'-10"	
a6	62	#5	7'-10"	
a7	62	#5	5'-11"	
b	132	#5	25'-0"	
b1	264	#5	5'-4"	
b2	8	#5	29'-8"	
h	40	#5	8'-6"	
h1	48	#5	25'-9"	
p	42	#7	29'-8"	
s	154	#4	7'-5"	
s1	60	#5	8'-7"	
s2	60	#5	9'-7"	
u	24	#6	12'-1"	
u1	48	#5	7'-8"	
v	32	#4	3'-5"	
v1	62	#5	4'-2"	
v2	62	#5	3'-2"	
v3	120	#5	12'-6"	
v4	124	#5	3'-10"	

Concrete Structures	Cu. Yd.	72.5
Concrete Superstructure	Cu. Yd.	114.9
Reinforcement Bars, Epoxy Coated	Pound	34,380
Protective Coat	Sq. Yd.	293
Name Plates	Each	1
Steel Piles HP12X53	Foot	476
Test Pile Steel HP12X53	Each	2

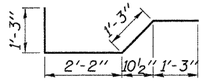
Note: All Reinforcement Bars Shall be Epoxy Coated.



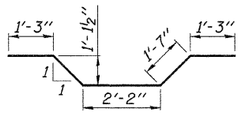
BAR a2 & a3



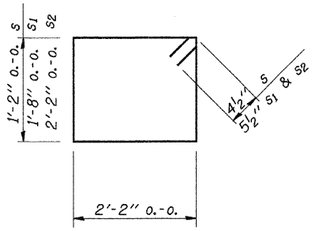
BAR u



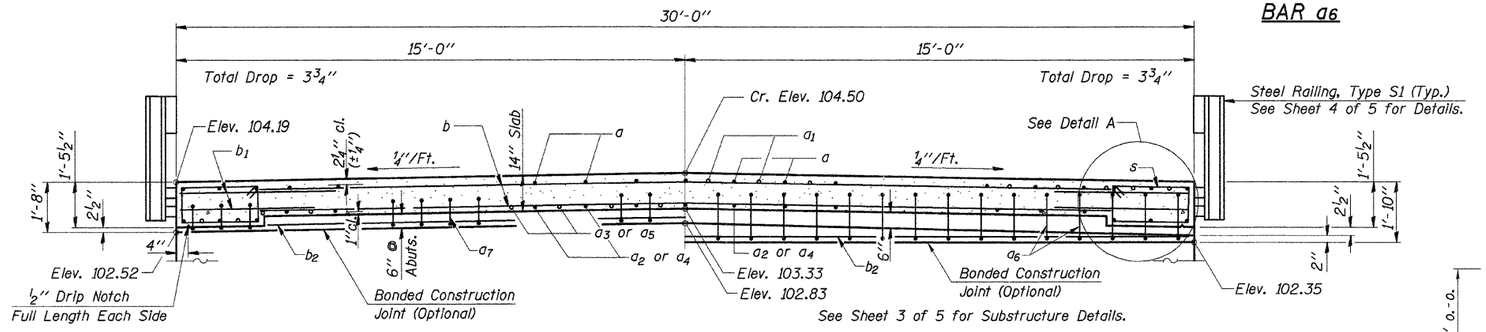
BAR a7



BAR a6



BARS s, s1 & s2

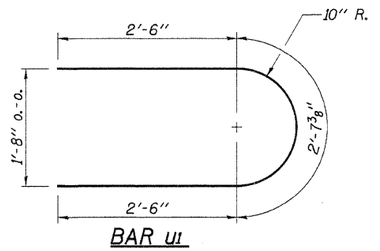


See Sheet 3 of 5 for Substructure Details.

HALF SECTION NEAR MIDSPAN & ABUTS.

HALF SECTION NEAR PIERS

DECK CROSS SECTION



BAR u1

DESIGNED	A.R.K.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.R.K. & J.A.M.

STRUCTURE DETAILS

COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STATION 191+93

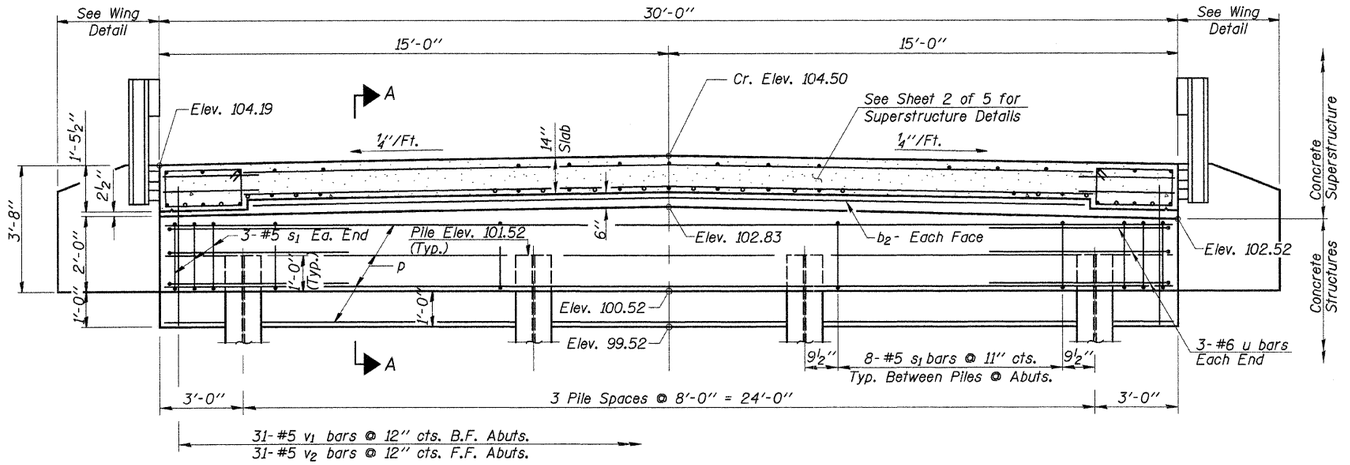
4440 ASH GROVE
SPRINGFIELD, IL. 62711
(217) 793-8800
www.fehr-graham.com

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

JOB NO.: 47188
FILE: 47188SUPER.DGN
DATE: 10/12/09

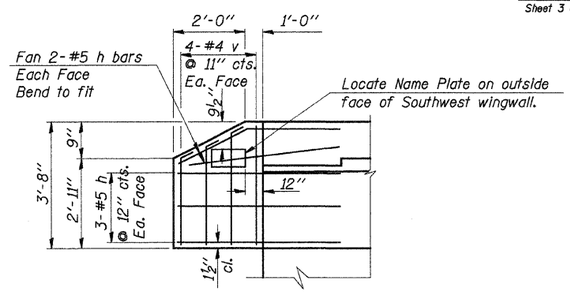
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	9
ROAD DIST.		ILLINOIS	EAST PLUM RIVER	

Sheet 3 of 5 CONTRACT NO. 85419

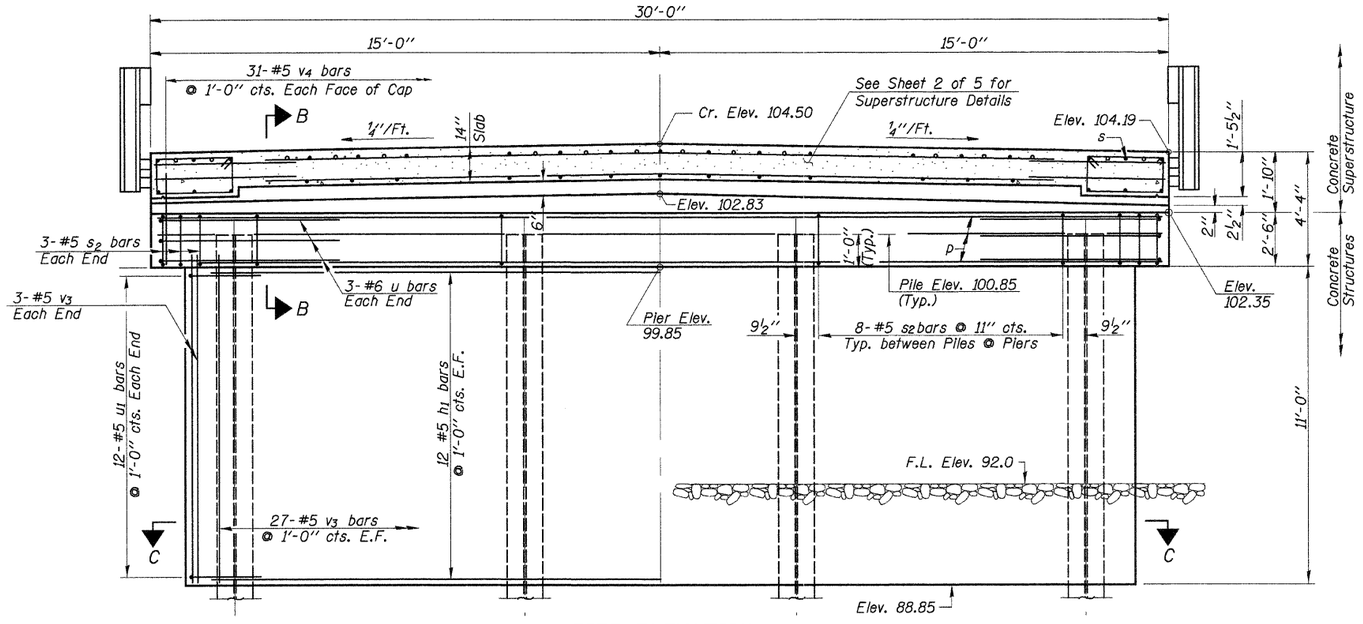


ABUTMENT FRONT ELEVATION

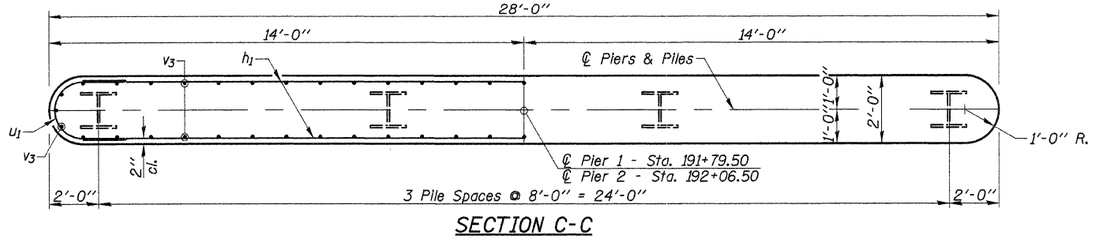
See Sheet 2 of 5 for Sections A-A & B-B.



WING DETAIL



PIER ELEVATION



SECTION C-C

ABUTMENT PILE DATA

Type & Size	Steel HP12x53
No. Req'd. (2 Abuts.)	*8
Nominal Required Bearing	419 Kips/Pile
Allowable Resistance Available	139 Kips/Pile
Estimated Length	34 Feet/Pile

PIER PILE DATA

Type & Size	Steel HP12x53
No. Req'd. (2 Piers.)	*8
Nominal Required Bearing	419 Kips/Pile
Allowable Resistance Available	139 Kips/Pile
Estimated Length	34 Feet/Pile

*Includes 1 Test Pile to be driven in a permanent location at W. Abutment and Pier 2.

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

DESIGNED	A.R.K.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.R.K. & J.A.M.

SUBSTRUCTURE DETAILS

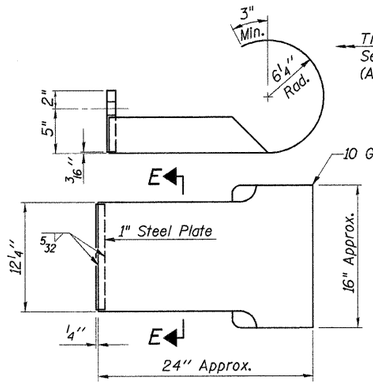
COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STATION 191+93

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

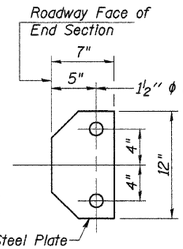
FEHR-GRAHAM & ASSOCIATES, LLC
ENGINEERING AND SCIENCE CONSULTANTS
FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MONROE, WI SPRINGFIELD, IL

JOB NO.: 47188
FILE: 47188SUB.DGN
DATE: 10/12/09

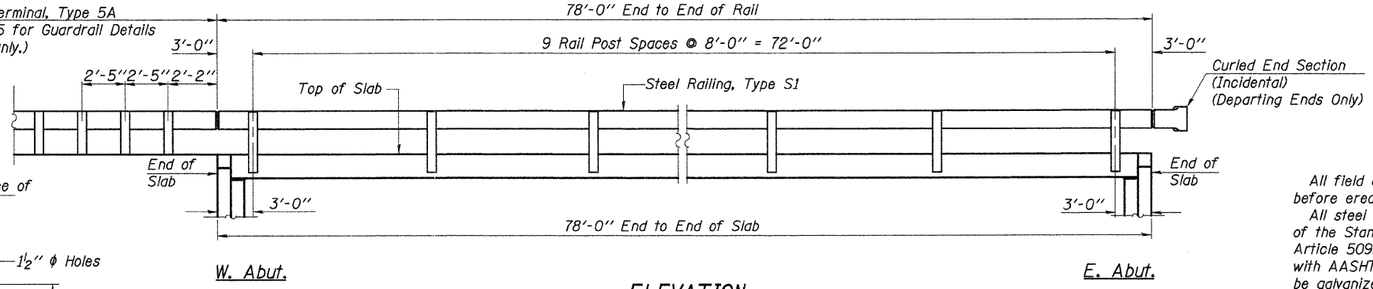
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	10
ROAD DIST.	ILLINOIS	EAST PLUM RIVER		
Sheet 4 of 5		CONTRACT NO. 85419		



CURLED END SECTION DETAILS
(2 Required)



SECTION E-E



ELEVATION

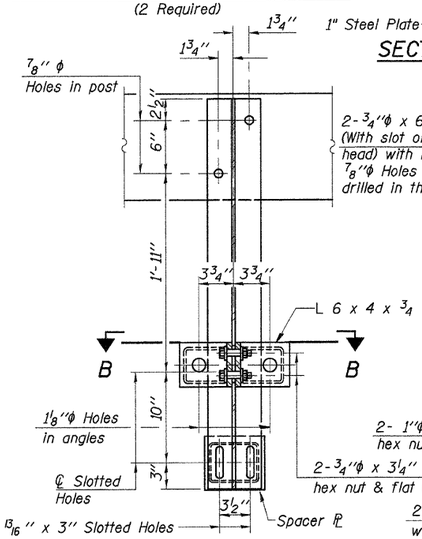
NOTES

All field drilled holes shall be coated with an approved zinc rich paint before erection.

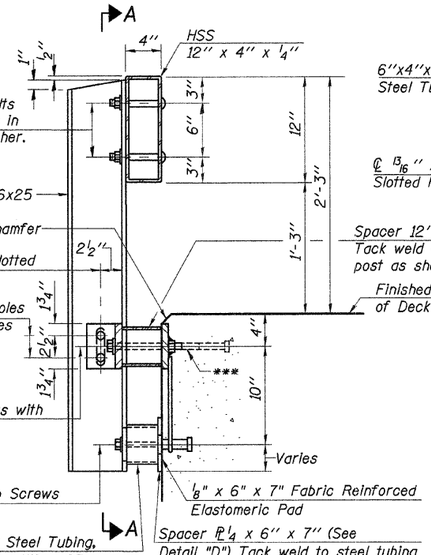
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications. In addition to the elements specified in Article 509.05, all angles and spacers are to be galvanized in accordance with AASHTO M-111, and all cap screws, washers, and lock washers are to be galvanized in accordance with AASHTO M-232.

The 3/4" (M20) diameter high strength bolts used to connect the 6x4x3/4" angles to the post shall be tightened in accordance with Article 504.04(f)(2) of the Standard Specifications. The 1" (M24) diameter high strength bolts connecting steel to concrete shall be brought to a snug tight condition and given an additional 1/8 turn. The 5/8" (M16) cap screws in the bottom of the posts shall be brought to a snug tight condition only.

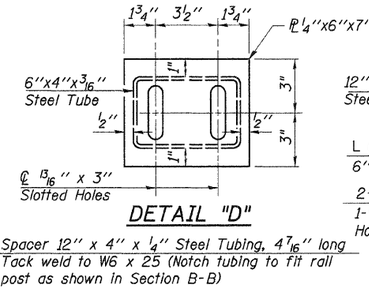
*** The studs for the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



SECTION A-A

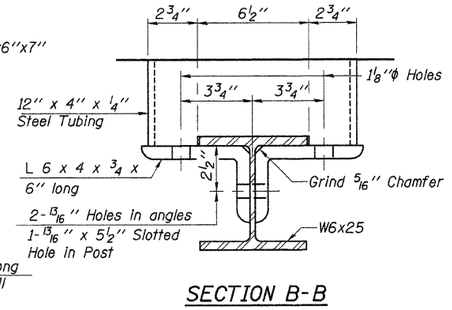


SECTION AT RAIL POST

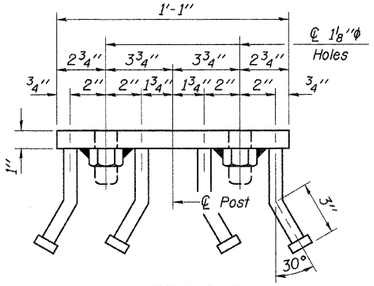


DETAIL "D"

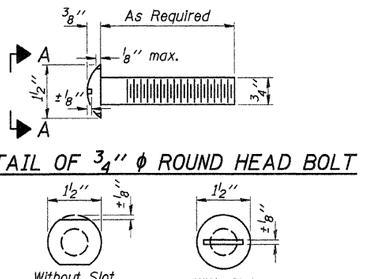
Spacer 12" x 4" x 1/4" Steel Tubing, 4 7/16" long
Tack weld to W6 x 25 (Notch tubing to fit rail post as shown in Section B-B)



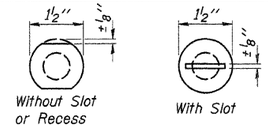
SECTION B-B



VIEW C-C

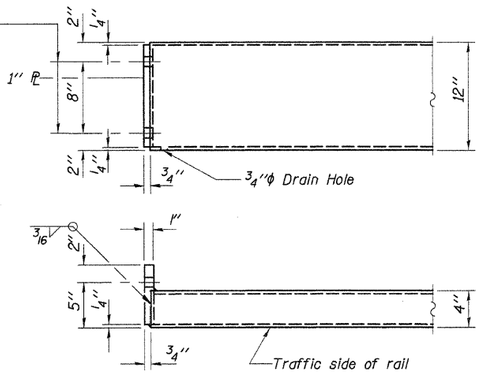


DETAIL OF 3/4" ϕ ROUND HEAD BOLT

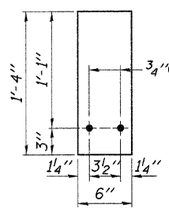


VIEW A-A

1 1/8"ϕ Holes for 1"ϕ x 4" Bolts with plate. Washers & locknuts for end section connection or guard rail connection.

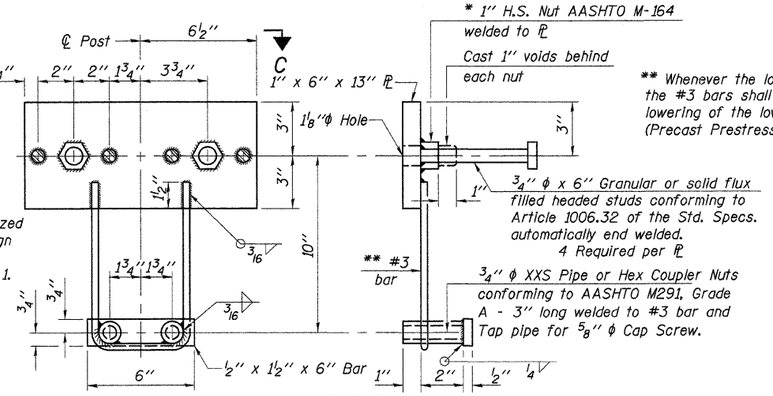


END OF RAIL DETAILS



1/4" SHIM PLATE

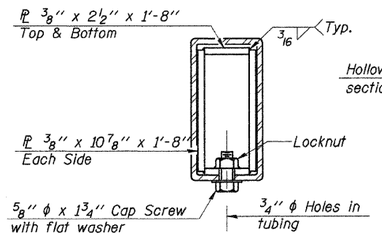
Note: For multi-span bridges, sufficient 1/4" x 6" x 1'-4" galvanized steel shims shall be provided to align rail between adjacent spans. Cost Incuded with Steel Railing, Type S-1.



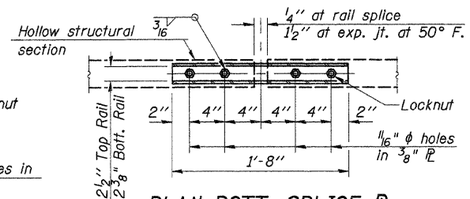
ANCHOR DEVICE

* Threaded areas shall be plugged or blocked off during casting of beam.

** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2". (Precast Prestressed Concrete Deck Beam Bridges Only)



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE PL TYPICAL

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	156

DESIGNED	A.R.K.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.R.K. & J.A.M.

STEEL RAILING, TYPE S1

COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STATION 191+93

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

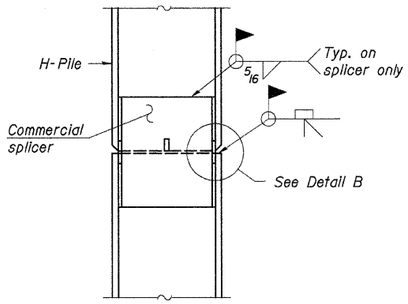
FEHR-GRAHAM & ASSOCIATES, LLC
ENGINEERING AND SCIENCE CONSULTANTS
FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MORRIS, IL SPRINGFIELD, IL

JOB NO.: 47188
FILE: 47188RAIL.DGN
DATE: 10/12/09

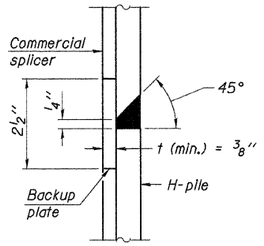
RAIL_S1-S.DGN UPDATED 4-20-04

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 62 C.H. 13	04-00164 -00-BR	STEPHENSON	15	11
ROAD DIST.	ILLINOIS	EAST PLUM RIVER		

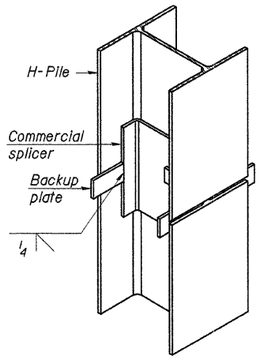
Sheet 5 of 5 CONTRACT NO. 85419



ELEVATION

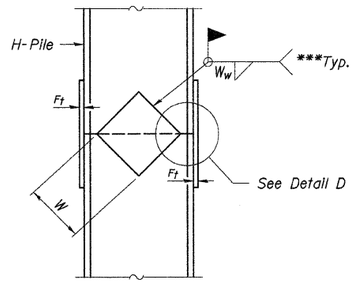


DETAIL "B"

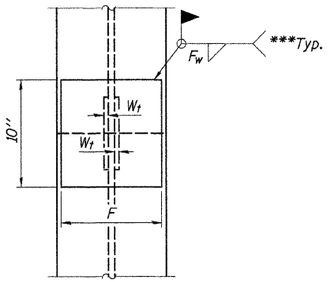


ISOMETRIC VIEW

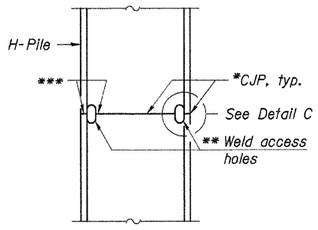
WELDED COMMERCIAL SPLICE



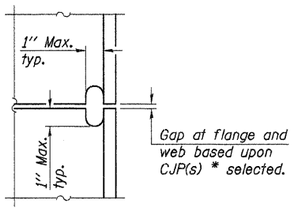
ELEVATION



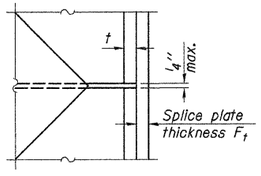
END VIEW



ELEVATION



DETAIL C



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
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"	11/16"	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"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	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"

COMPLETE PENETRATION WELD SPLICE

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

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

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

WELDED PLATE FIELD SPLICE

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

DESIGNED	A.R.K.
CHECKED	J.A.M.
DRAWN	S.A.P.
CHECKED	A.R.K. & J.A.M.

F-HP 11-1-06

STEEL PILE SPLICING DETAILS

COUNTY HIGHWAY 13
SECTION 04-00164-00-BR
STEPHENSON COUNTY
STATION 191+93

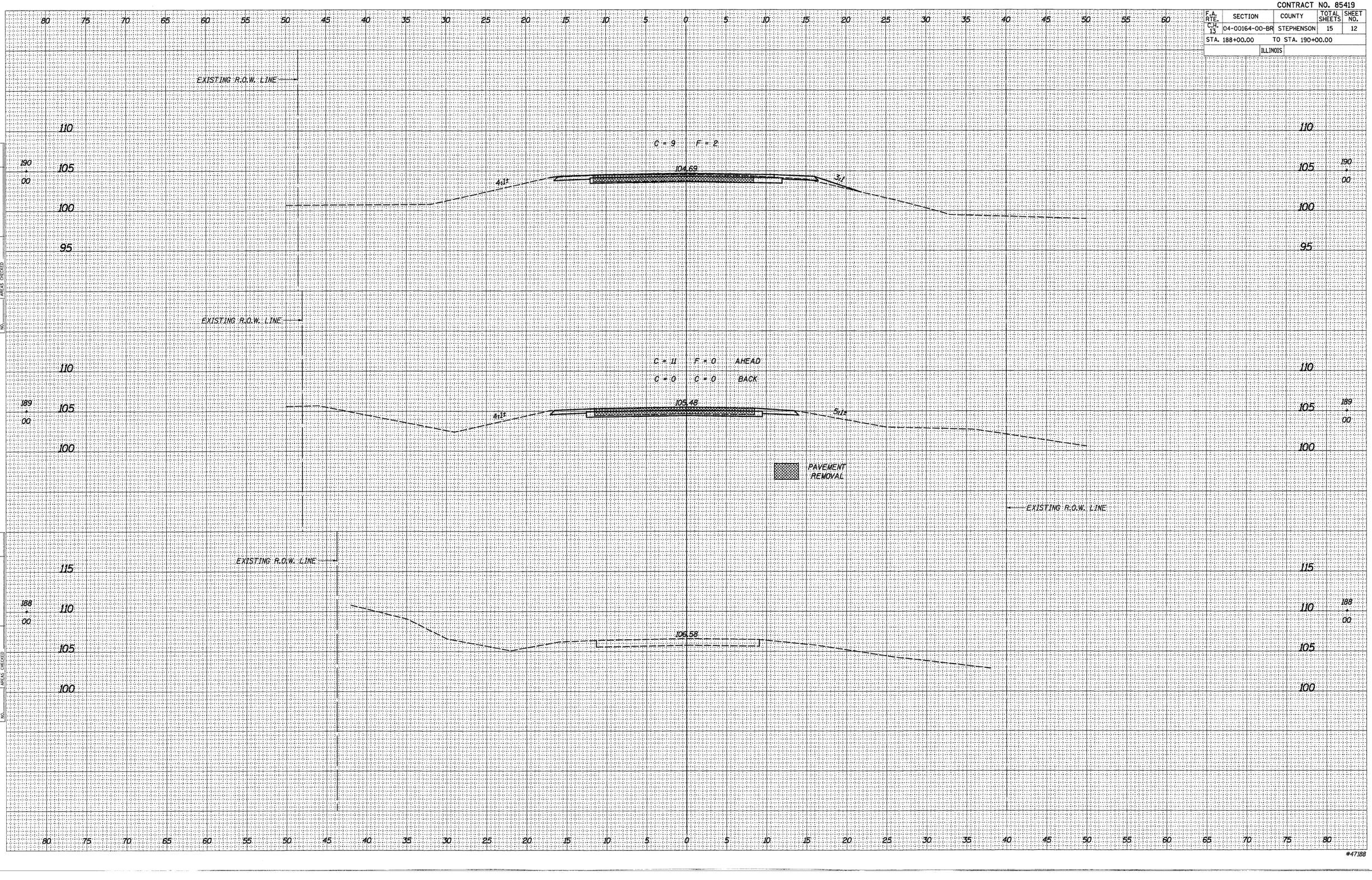
4440 ASH GROVE
SPRINGFIELD, IL 62711
(217) 793-8600
www.fehr-graham.com

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

JOB NO.: 47188
FILE: 47188piles.dgn
DATE: 10/12/09

CONTRACT NO. 85419

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 13	04-00164-00-BR	STEPHENSON	15	12
STA. 188+00.00		TO STA. 190+00.00		
	ILLINOIS			



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

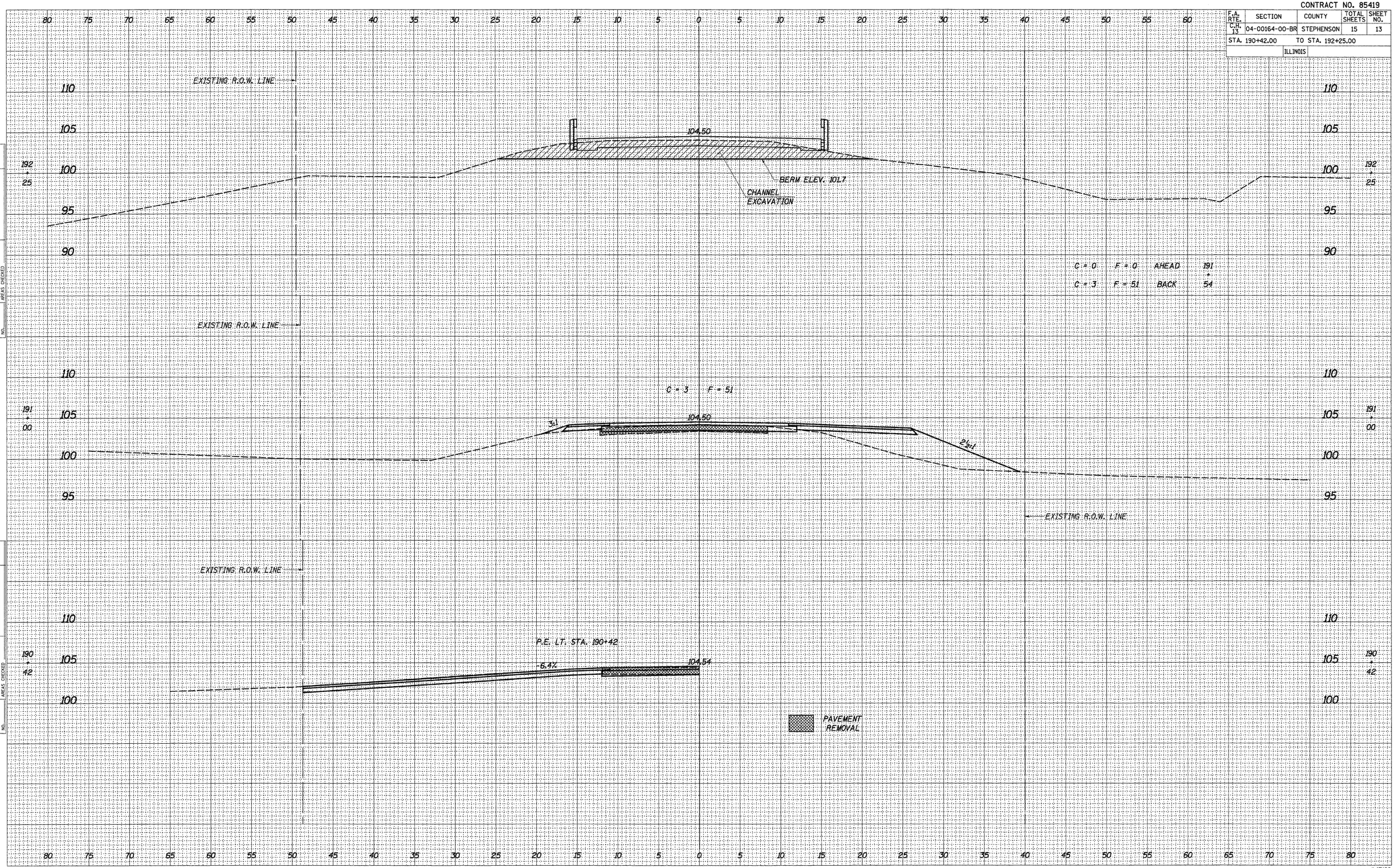
ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

PLOT DATE = 01/31/07
FILE NAME = 47188XSECTIONSHEETS
PLOT SCALE = 50
USER NAME = S. PRUDE

#47188

CONTRACT NO. 85419

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 13	04-00164-00-BR	STEPHENSON	15	13
STA. 190+42.00		TO STA. 192+25.00		
		ILLINOIS		



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

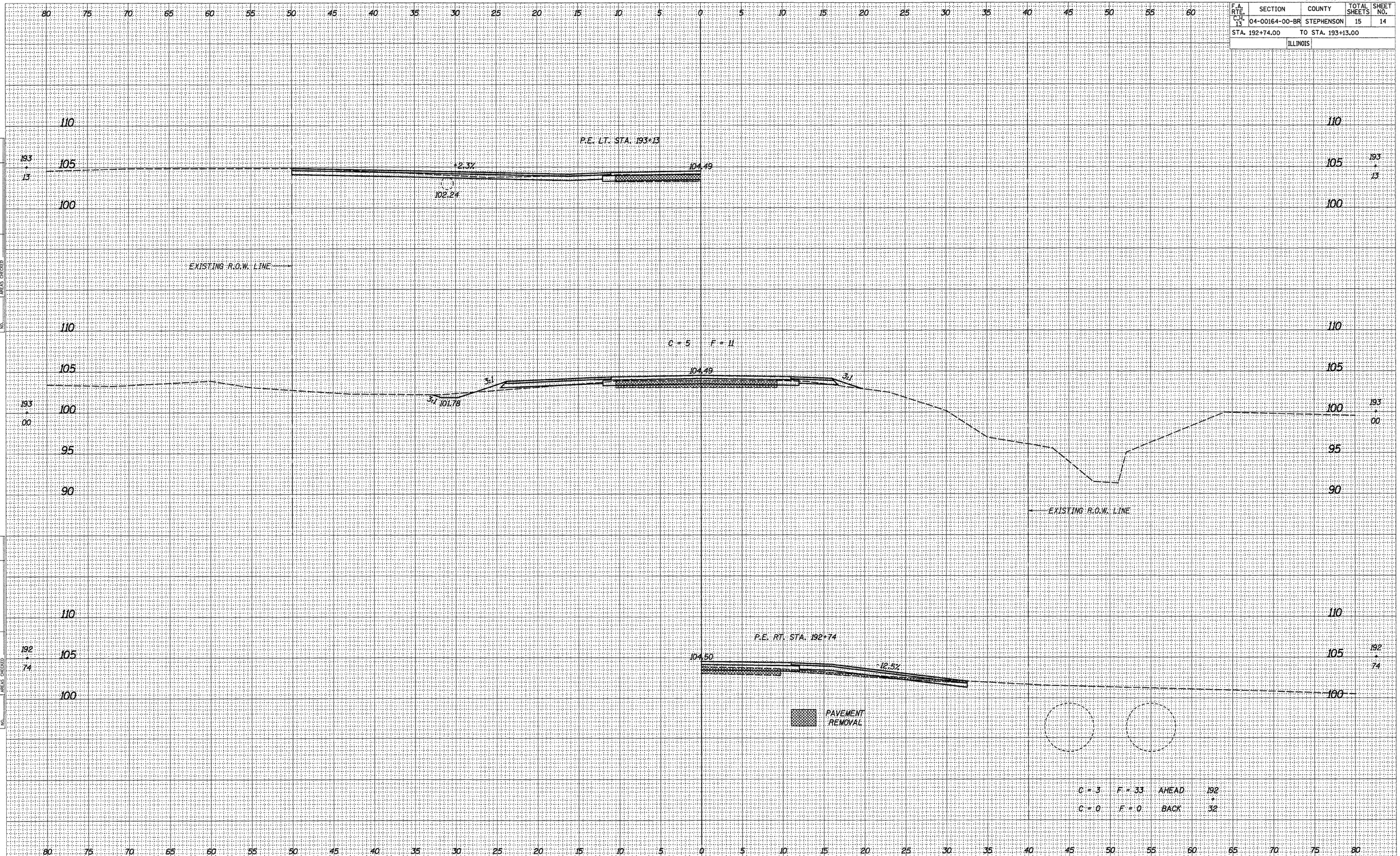
ORIGINAL SURVEY | NOTE BOOK NO. | SURVEYED | PLOTTED | TEMPLATE | AREAS | AREAS CHECKED | BY | DATE

PLOT DATE = 01/31/07
FILE NAME = 47188XSECTIONSHEETS
PLOT SCALE = 50
USER NAME = S. PRICE

#47188

CONTRACT NO. 85419

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 13	04-00164-00-BR	STEPHENSON	15	14
STA. 192+74.00	TO STA. 193+13.00			
	ILLINOIS			



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

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

PLOT DATE = 01/31/07
FILE NAME = 47188XSECTIONSHEETS
PLOT SCALE = 50
USER NAME = S.PRICE

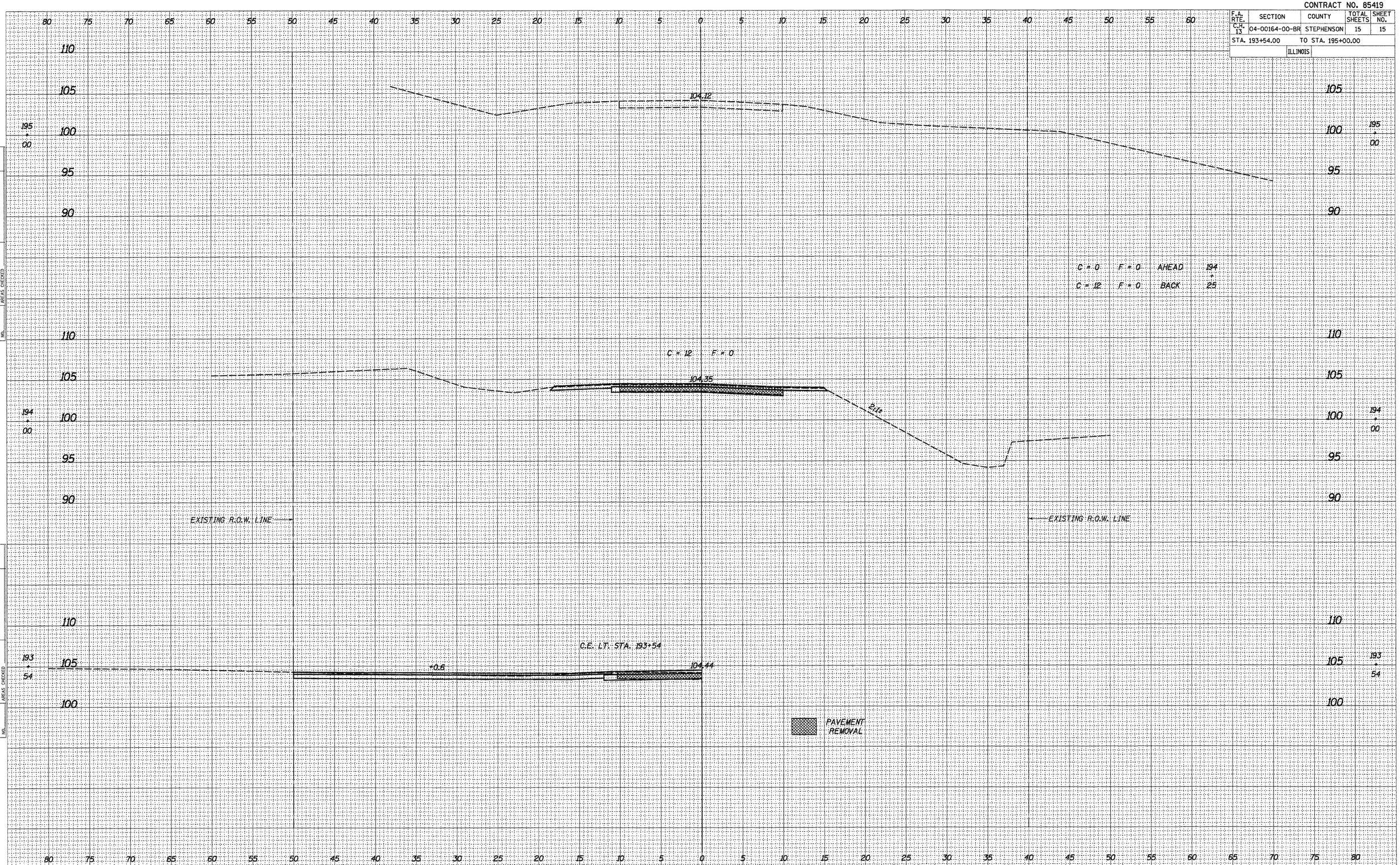
#47188

CONTRACT NO. 85419

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 13	04-00164-00-BR	STEPHENSON	15	15

STA. 193+54.00 TO STA. 195+00.00

ILLINOIS



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

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

PLOT DATE = 01/31/07
FILE NAME = 47188XSECTIONSHEETS
PLOT SCALE = 50
USER NAME = S. PRICE

#47188