

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 8	06-00098	IROQUOIS	18	1
F.A.S. 319	-01-BR			
ROAD DIST.	ILLINOIS			

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

SECTION 06-00098-01-BR
IROQUOIS COUNTY
PROJECT NO. BRS-0319(111)
C.H. 8 (F.A.S. 319)
C-93-052-10
CONTRACT NO. 87447

INDEX OF SHEETS

SHEET NO.	TITLE
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES, GENERAL NOTES & TYPICAL SECTIONS
3.	PLAN AND PROFILE SHEET
4.	SHOULDER AND GUARDRAIL DETAIL
5.-13.	BRIDGE PLANS
14.-18.	STATION CROSS SECTIONS

STANDARDS

280001-05	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
630301-05	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631032-05	TRAFFIC BARRIER TERMINAL, TYPE 6A
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 M) AWAY
701006-03	OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701201-03	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 M.P.H.
701301-03	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701901-01	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)
BLR 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

SCALES

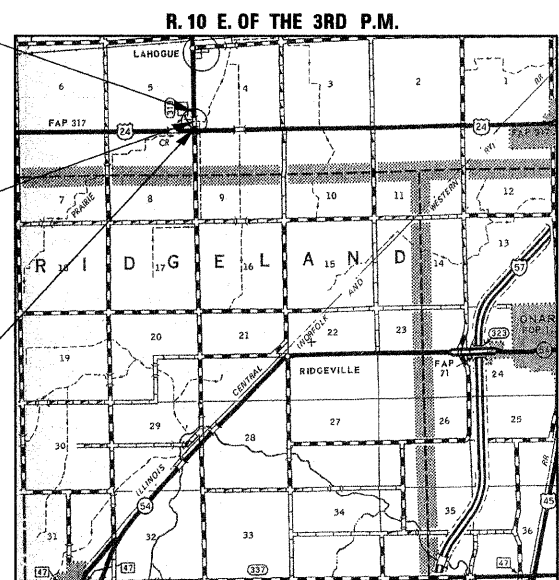
PLAN	0' 50' 100'
PROFILE HORIZ.	0' 50' 100'
PROFILE VERT.	0' 5' 10'
CROSS SECTIONS	0' 5' 10'

CONTRACT NO. 87447

IMPROVEMENT ENDS
STA. 8 + 50.00

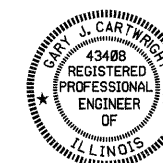
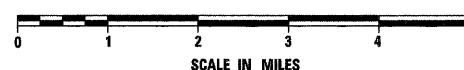
STA. 5 + 46.50 - SPECIAL BRIDGE DESIGN
THREE SPAN CONTINUOUS REINFORCED
CONCRETE SLAB BRIDGE; THREE EQUAL
SPANS AT 21'-9"; 30'-0" ROADWAY;
67'-9" BK.-BK. ABUTS.; 0° SKEW
EXISTING S.N. 038-0075
PROPOSED S.N. 038-4011

IMPROVEMENT BEGINS
STA. 2 + 50.00

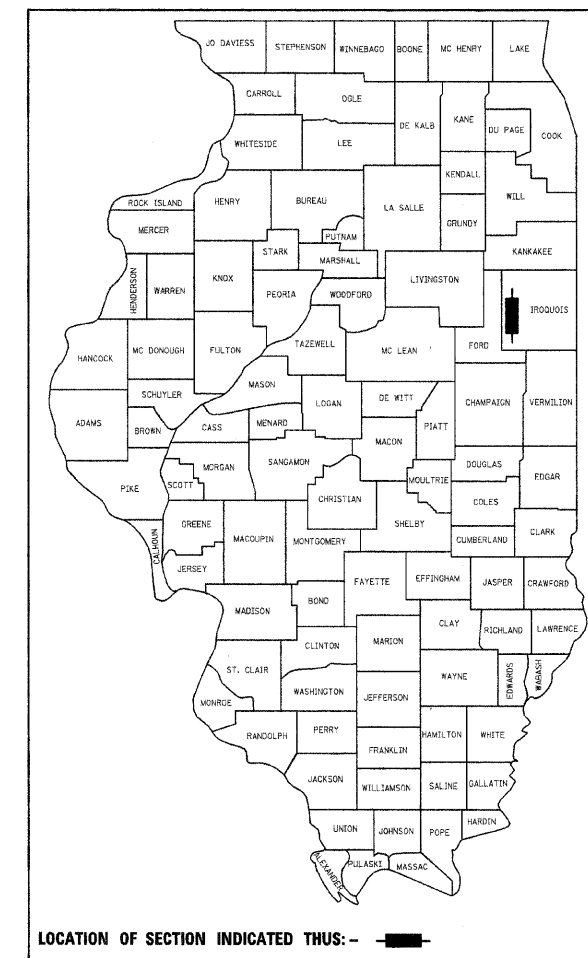


LOCATION PLAN

GROSS LENGTH OF SECTION = 600 FEET = 0.114 MILES
NET LENGTH OF SECTION = 600 FEET = 0.114 MILES



Gary J. Cartwright 12-16-09
ILLINOIS PROFESSIONAL NO. 43408
EXPIRES 11-30-11



CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN)
DESIGN VOLUME: 740 ADT (2030)
CURRENT ADT: 520 (2010)
DESIGN SPEED: 50 M.P.H.

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

APPROVED _____ DECEMBER 17, 2009

[Signature]
COUNTY ENGINEER

PASSED _____ 12-28 2009

[Signature]
DISTRICT THREE ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR BID
BASED ON LIMITED
REVIEW _____ 12-28 2009

[Signature]
DEPUTY DIRECTOR OF HIGHWAYS, REGION TWO ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

FEHR-GRAHAM & ASSOCIATES, LLC
ENGINEERING AND SCIENCE CONSULTANTS
P.O. BOX 11000, SPRINGFIELD, IL 62711-0100

SUMMARY OF QUANTITIES

NUMBER	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	258
20300100	CHANNEL EXCAVATION	CU YD	521
20700110	POROUS GRANULAR EMBANKMENT	TON	62
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.2
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	36
28000305	TEMPORARY DITCH CHECKS	FOOT	40
28000400	PERIMETER EROSION BARRIER	FOOT	1,150
28000500	INLET AND PIPE PROTECTION	EACH	2
28100209	STONE RIPRAP, CLASS A5	TON	267
28100809	STONE DUMPED RIPRAP, CLASS A5	TON	50
28200200	FILTER FABRIC	SQ YD	265
35501450	HOT-MIX ASPHALT BASE COURSE	TON	11
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	236
40600982	HOT-MIX ASPHALT SURFACE REMOVAL-BUTT JOINT	SQ YD	196
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	208
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	109
44000100	PAVEMENT REMOVAL	SQ YD	133
48101200	AGGREGATE SHOULDERS, TYPE B	TON	195
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	17
50300225	CONCRETE STRUCTURES	CU YD	33.2
50300255	CONCRETE SUPERSTRUCTURE	CU YD	95.4
50300260	BRIDGE DECK GROOVING	SQ YD	211
50300280	CONCRETE ENCASEMENT	CU YD	20.0
50300300	PROTECTIVE COAT	SQ YD	256
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	29,870
51201400	FURNISHING STEEL PILES, HP10X42	FOOT	752
51202305	DRIVING PILES	FOOT	752
51203400	TEST PILE STEEL HP10X42	EACH	2
51500100	NAME PLATES	EACH	1
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	94
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	2
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
63200310	GUARDRAIL REMOVAL	FOOT	208
67100100	MOBILIZATION	L SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1
X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1
XX006199	STEEL BRIDGE RAIL, TYPE SM (SPECIAL)	FOOT	136

*SEE SPECIAL PROVISIONS Δ 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.

R.A.P. WILL NOT BE ALLOWED IN AGGREGATE SHOULDERS.

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

SEEDING, CLASS 2 (SPECIAL) = 0.2 ACRE

PAVEMENT DESIGN

STRUCTURAL DESIGN TRAFFIC (S.D.T.) : YEAR 2020; P.V. = 546, S.U. = 43, M.U. = 31 CLASS III ROAD

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

PERCENT OF S.D.T. IN DESIGN LANE P = 50%, S = 50%, M = 50% T.F. = 0.167

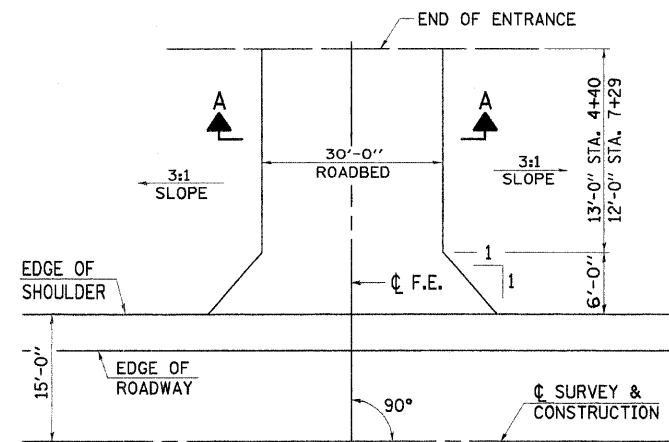
TEMP. = 75° F.; E_{ac} = 675; DESIGN STRAIN = 245

TEMPORARY DITCH CHECKS

LT. STA. 5+00 = 20 FOOT
 LT. STA. 6+00 = 20 FOOT
 TOTAL = 40 FOOT

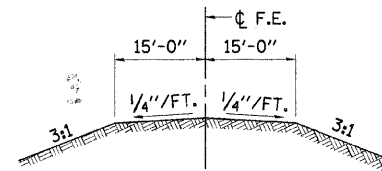
INLET AND PIPE PROTECTION

LT. STA. 4+16 = 1 EACH
 LT. STA. 7+52 = 1 EACH
 TOTAL = 2 EACH

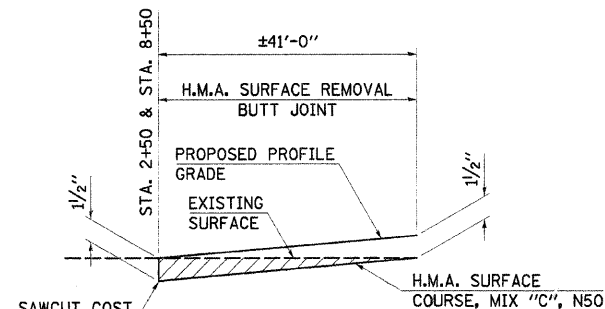


FIELD ENTRANCE DETAIL

F.E. LT. STA. 4+40
 F.E. LT. STA. 7+29



SECTION A-A



BUTT JOINT DETAILS

STA. 2+50 TO STA. 2+91 AND
 STA. 8+09 TO STA. 8+50

TEMPORARY EROSION CONTROL

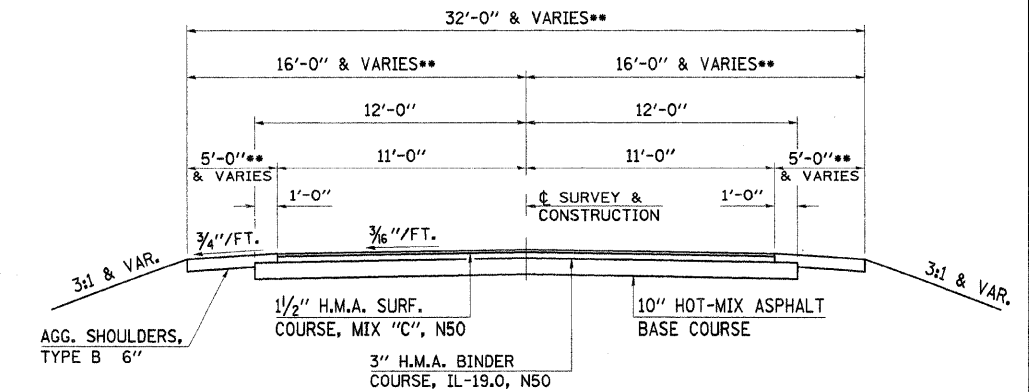
THE FOLLOWING QUANTITIES ARE ESTIMATE ONLY. ACTUAL QUANTITIES FOR EROSION CONTROL WILL BE DETERMINED BY THE ENGINEER IN THE FIELD AND THERE WILL BE NO ADJUSTMENT IN ANY PRICE DUE TO A CHANGE IN PLAN QUANTITY.

TEMPORARY EROSION CONTROL SEEDINGS = 36 POUND
 PERIMETER EROSION CONTROL BARRIER = 1,150 FOOT

APPLICATION RATES USED IN QUANTITY CALCULATIONS

STONE RIPRAP, CLASS A5 1.65 TON/CU YD
 AGGREGATE BASE COURSE, TYPE A 2.05 TON/CU YD
 AGGREGATE SHOULDERS, TYPE B 2.05 TON/CU YD
 BITUMINOUS MATERIALS (PRIME COAT) - (H.M.A.) 0.10 GAL/ SQ YD
 HOT-MIX ASPHALT (BINDER AND SURFACE COURSE) 112*/SQ YD/IN

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.



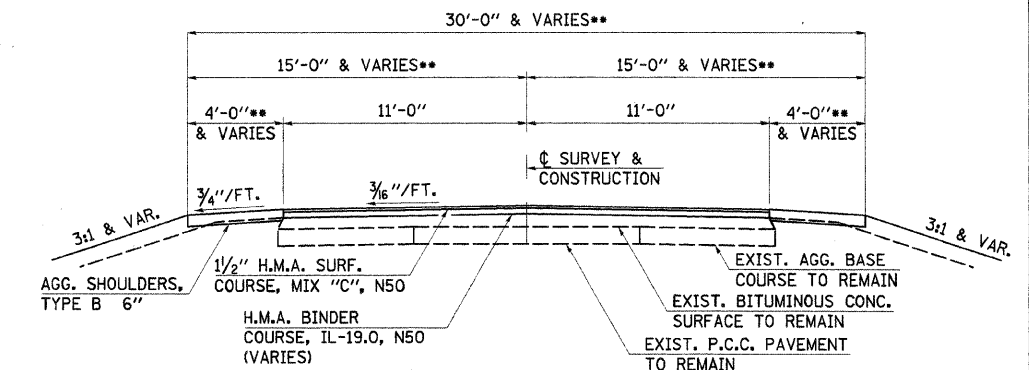
TYPICAL PROPOSED ROADWAY CROSS SECTION

TYPICAL FILL SECTION
 CONSTRUCT AS SHOWN ON
 STATION CROSS SECTIONS.

STA. 5+05.00 TO STA. 5+12.63
 STA. 5+80.38 TO STA. 5+88.00

TYPICAL CUT SECTION
 CONSTRUCT AS SHOWN ON
 STATION CROSS SECTIONS.

**SEE SHOULDER AND GUARDRAIL
 DETAILS ON SHEET 4.

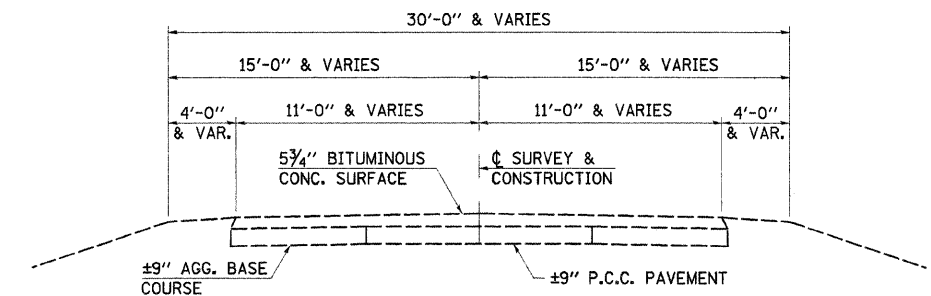


TYPICAL PROPOSED ROADWAY CROSS SECTION

TYPICAL FILL SECTION
 CONSTRUCT AS SHOWN ON
 STATION CROSS SECTIONS.

STA. 2+91.00 TO STA. 5+05.00
 STA. 5+88.00 TO STA. 8+09.00

TYPICAL CUT SECTION
 CONSTRUCT AS SHOWN ON
 STATION CROSS SECTIONS.



TYPICAL EXISTING ROADWAY CROSS SECTION

FILE NAME -
 09-202_SUM.TYP.DGN

DESIGNED - G.J.C.
 DRAWN - S.A.P.
 CHECKED - R.J.C.
 DATE - 12/16/09

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.

**SUMMARY OF QUANTITIES, GENERAL NOTES
 AND TYPICAL CROSS SECTIONS**

SCALE: N/A

PROPOSED STRUCTURE @ STA. 5+46.50

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 8	06-00098-01-BR	IROQUOIS	18	2
	F.A.S. 319			CONTRACT NO. 87447
	ILLINOIS			

SE. 1/4 SEC. 5, T. 26 N., R. 10 E., 3RD P.M.

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 = 521 CU. YD.

EXISTING STRUCTURE NO. 038-0075

STA. 5+46.50 - SINGLE SPAN R.C. SLAB BRIDGE WITH CLOSED ABUTMENTS; 28.5' BK.-BK., 32'-2" O.-O. DECK; 0° SKEW
REMOVAL OF EXISTING STRUCTURES = 1 EACH

WEST 1/4 CORNER, SEC. 4, T. 26 N., R. 10 E., 3RD P.M. BRASS TABLET (FOUND)

EAST LINE, SECTION 5
WEST LINE, SECTION 4

UTILITIES

AT&T/DISTRIBUTION 630-573-5450
AMEREN CIPS - (NORTH) MARK WINSTON 217-221-0825
VERIZON MARY RUTH WILLIS 309-827-1617

ENTRANCES TO BE BUILT

LT. STA. 4+40, F.E. -8.0%, 30' ROADWAY
LT. STA. 7+29, F.E. -11.9%, 30' ROADWAY
QUANTITIES INCLUDED IN THOSE LISTED

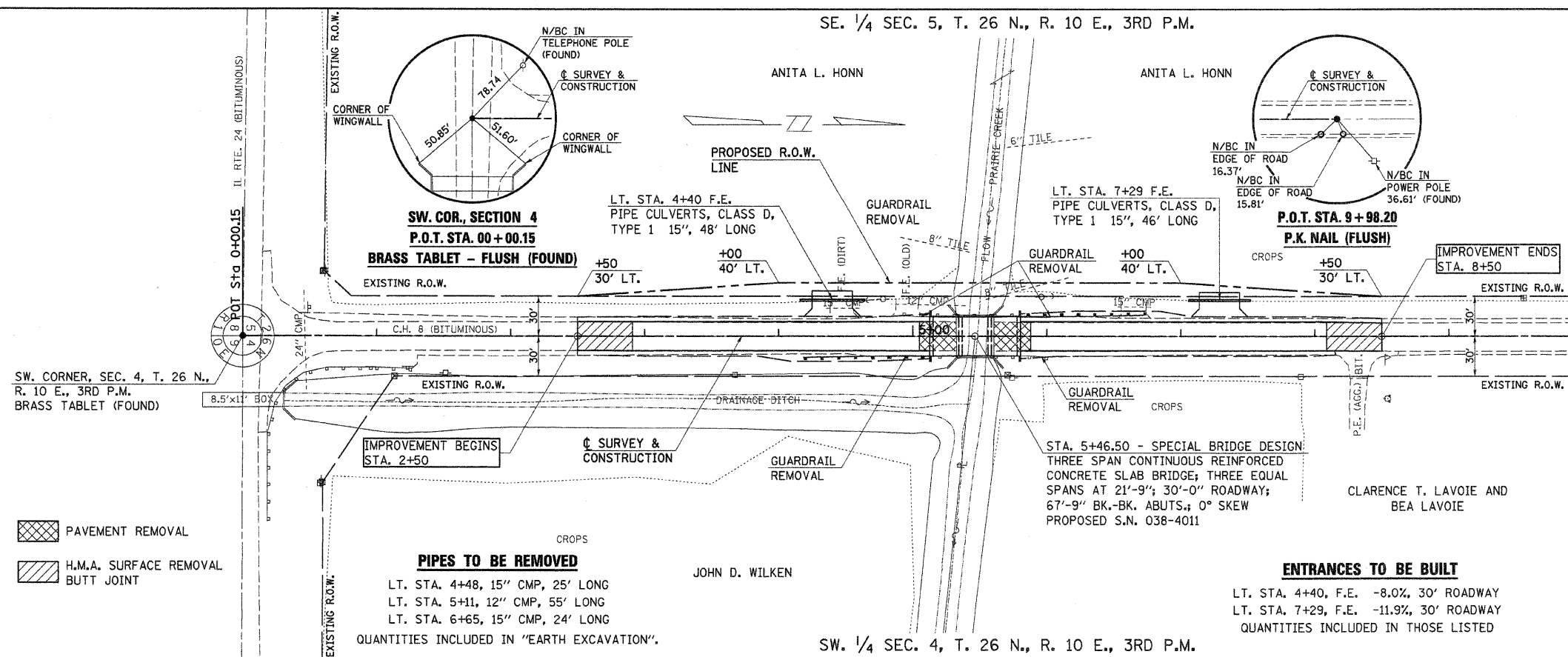
PIPES TO BE REMOVED

LT. STA. 4+48, 15" CMP, 25' LONG
LT. STA. 5+11, 12" CMP, 55' LONG
LT. STA. 6+65, 15" CMP, 24' LONG
QUANTITIES INCLUDED IN "EARTH EXCAVATION".

STA. 5+46.50 - SPECIAL BRIDGE DESIGN: THREE SPAN CONTINUOUS REINFORCED CONCRETE SLAB BRIDGE; THREE EQUAL SPANS AT 21'-9"; 30'-0" ROADWAY; 67'-9" BK.-BK. ABUTS.; 0° SKEW
PROPOSED S.N. 038-4011

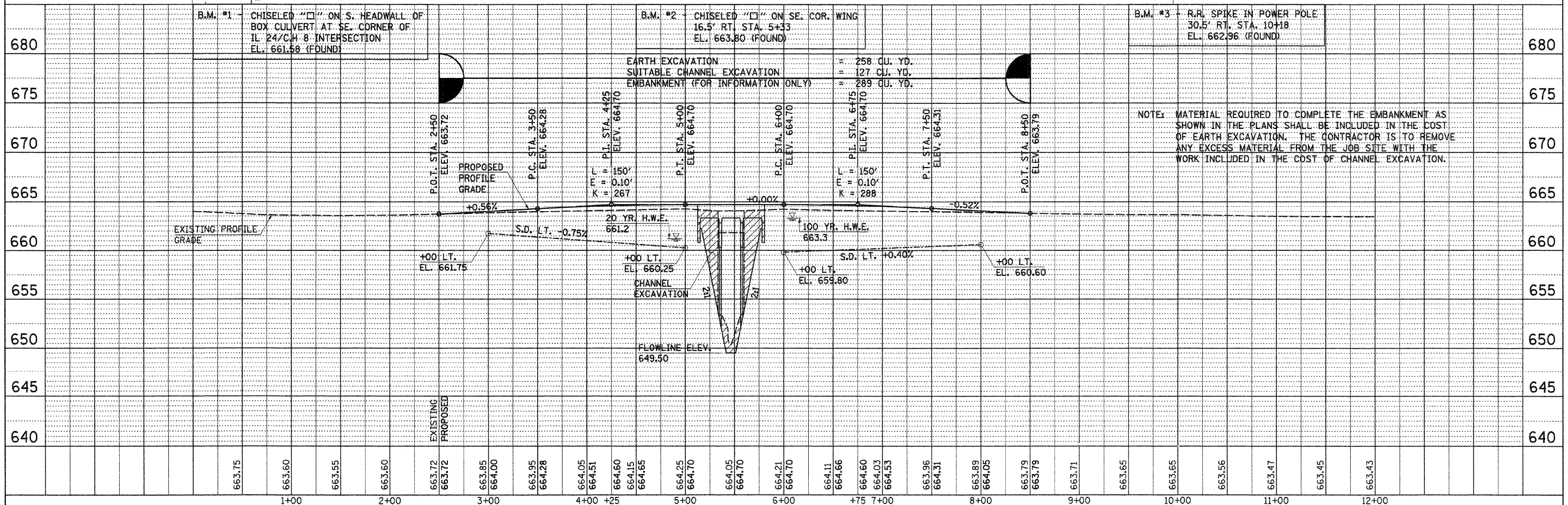
CLARENCE T. LAVOIE AND BEA LAVOIE

DANNY L. DARSHAM AND LISA DARSHAM

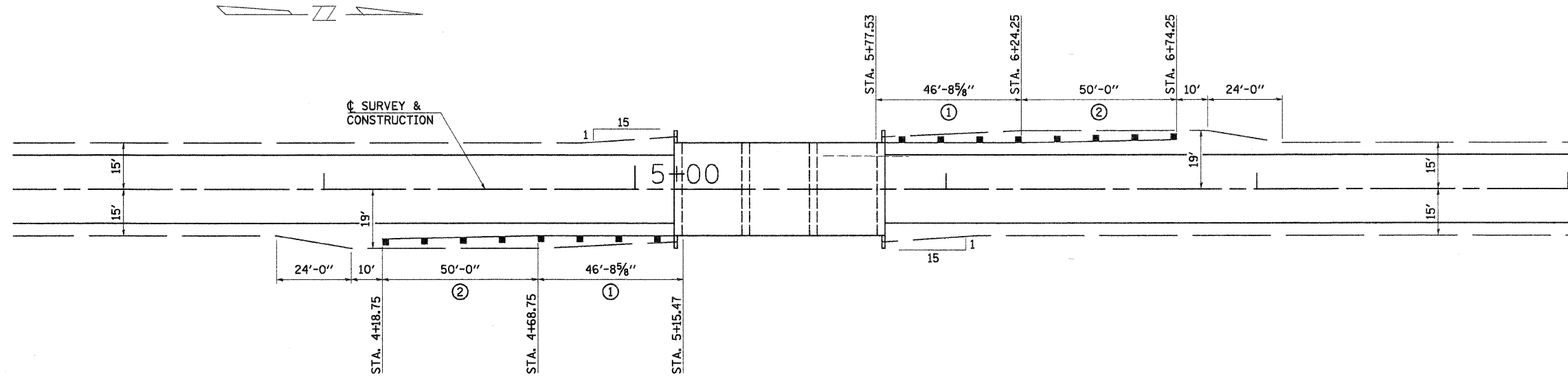


PLAN	SURVEYED	BY	DATE
	ALIGNED		
	CHECKED		
	BY		
	NO. OF WAY CHECKED		
	DATE		
	FILE NAME		

PROFILE	SURVEYED	BY	DATE
	PLotted		
	CHECKED		
	BY		
	NO. NOTED		
	STRUCTURE NOTATION		
	CHFD		



FILE NAME = 09-282_P&P.DGN	USER NAME = S.A.P.	DESIGNED - G.J.C.	REVISED -	<p>FEHR-GRAHAM & ASSOCIATES, LLC ENGINEERING AND SCIENCE CONSULTANTS FREEPORT, IL ROCKFORD, IL ROCHELLE, IL MONROE, WI SPRINGFIELD, IL</p>	PLAN & PROFILE - C.H. 8 (F.A.S. 319)	RTE. C.H. 8	SECTION 06-00098-01-BR	COUNTY IROQUOIS	TOTAL SHEETS 18	SHEET NO. 3
	PLOT SCALE = 50	DRAWN - S.A.P.	REVISED -		SHEET NO. 1 OF 1 SHEETS	F.A.S. 319	CONTRACT NO. 87447			
	PLOT DATE = 84/15/09	CHECKED - R.J.C.	REVISED -		STA. 2+50.00 TO STA. 8+50.00	ILLINOIS				
		DATE - 10/05/09	REVISED -							



GUARDRAIL & SHOULDER DETAIL

TRAFFIC BARRIER TERMINAL, TYPE 6A

15' RT. STA. 4+68.75 TO 15' RT. STA. 5+15.47 = 1 EACH
 15' LT. STA. 5+77.53 TO 15' LT. STA. 6+24.25 = 1 EACH
 TOTAL = 2 EACH

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

16' RT. STA. 4+18.75 TO 15' RT. STA. 4+68.75 = 1 EACH
 15' LT. STA. 6+24.25 TO 16' LT. STA. 6+74.25 = 1 EACH
 TOTAL = 2 EACH

LEGEND

- ① TRAFFIC BARRIER TERMINAL, TYPE 6A
- ② TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

FILE NAME = 09-202_SHLDR.DGN	DESIGNED - G.J.C.	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		RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	DRAWN - S.A.P.	REVISED -					C.H. 8	06-00098-01-BR	IROQUOIS	18	4	
	CHECKED - R.J.C.	REVISED -			SCALE: 1"=20'		PROPOSED STRUCTURE @ STA. 5+46.50		F.A.S. 319		CONTRACT NO. 87447	
	DATE - 12/16/09	REVISED -							ILLINOIS			

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 8	06-00098-01-BR	IROQUOIS	18	5
ROAD DIST.	ILLINOIS	Sheet 1 of 9 CONTRACT NO. 87447		

INDEX OF SHEETS

1. General Plan & Elevation
2. Superstructure
- 3.-4. Steel Railing, Type SM (Special)
5. Abutments
6. Piers
7. Steel Pile Details
- 8.-9. Soil Boring Logs

GENERAL NOTES

See proposal & sheets 8 & 9 of 9 for Boring data.

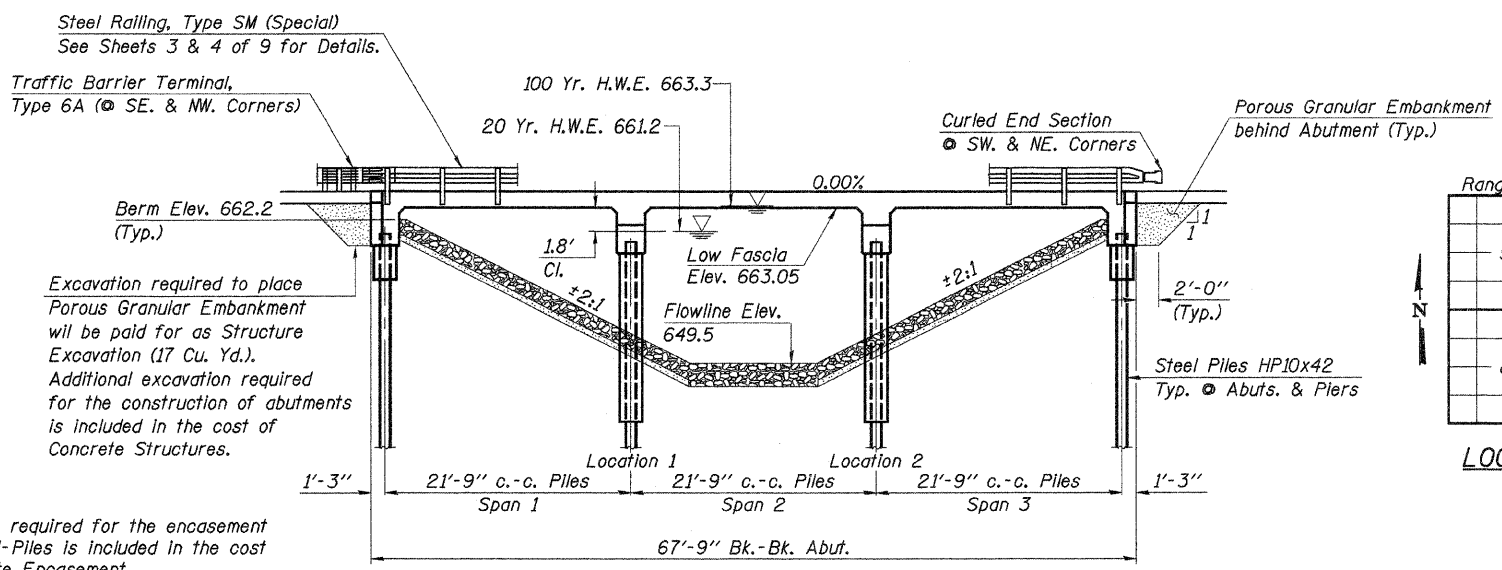
Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60.

The Contractor shall drive one Steel HP10x42 test pile in a permanent location at the South 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 the wings, and ends of pier and abutment caps.

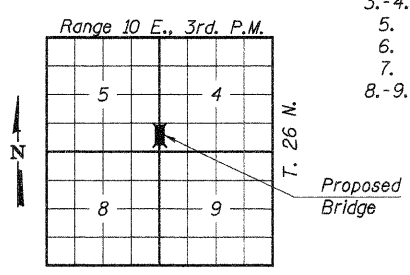
All exposed portions of abutments, wingwalls, and piers shall receive a rubbed finish in accordance with Article 503.15(b) of the Standard Specifications. Cost to be included in the cost of Concrete Superstructure and Concrete Structures.



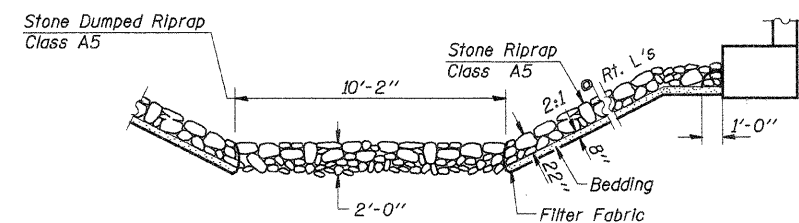
ELEVATION

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

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 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 cap at Elevation 659.72.



LOCATION PLAN



**SECTION A-A
RIPRAP PLACEMENT DETAIL**

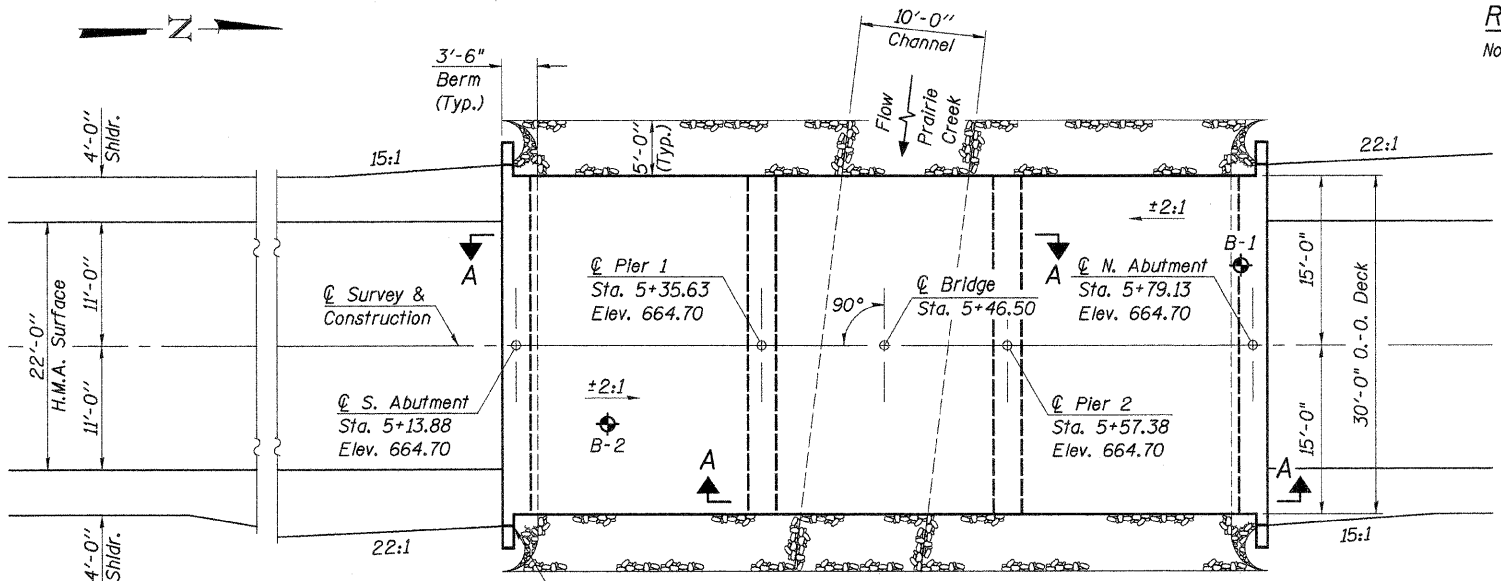
Note: Excavation and aggregate bedding will not be paid for as separate items and shall be considered as included in Stone Riprap, Class A5 and Stone Dumped Riprap, Class A5.

PRAIRIE CREEK
BUILT 20__ BY
IROQUOIS COUNTY
SEC. 06-00098-01-BR
F.A.S. RT. 319
STR. NO. 038-4011
LOADING HL-93

LETTERING FOR NAME PLATE
See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Superstructure	Cu. Yd.	95.4		95.4
Concrete Structures	Cu. Yd.		33.2	33.2
Reinforcement Bars, Epoxy Coated	Pound	23,860	6,010	29,870
Steel Railing, Type SM (Special)	Foot	136		136
Name Plates	Each		1	1
Furnishing Steel Piles HP10x42	Foot		752	752
Driving Piles	Foot		752	752
Test Pile Steel HP10x42	Each		2	2
Stone Riprap, Class A5	Ton	267		267
Stone Dumped Riprap, Class A5	Ton	50		50
Filter Fabric	Sq. Yd.		265	265
Porous Granular Embankment	Ton	62		62
Structure Excavation	Cu. Yd.		17	17
Underwater Structure Excavation Protection - Location 1	Each		1	1
Underwater Structure Excavation Protection - Location 2	Each		1	1
Concrete Encasement	Cu. Yd.		20.0	20.0
Bridge Deck Grooving	Sq. Yd.	211		211
Protective Coat	Sq. Yd.	247	9	256



PLAN

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S₀₁) = 0.115 g
Design Spectral Acceleration at 0.2 sec. (S₀₅) = 0.184 g
Soil Site Class = D

WATERWAY INFORMATION

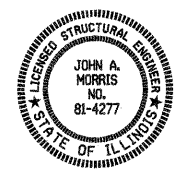
DESIGNED -	A.L.S.
CHECKED -	A.R.K.
DRAWN -	S.A.P.
CHECKED -	A.R.K. & A.L.S.

Drainage Area	4.01 Sq. Mi.
Existing Opening (20 Yr.)	230 Sq. Ft.
Required Opening (20 Yr.)	355 Sq. Ft.
Proposed Opening (20 Yr.)	355 Sq. Ft.
Design Discharge (20 Yr.)	422 C.F.S.
Created Head (20 Yr.)	0.0 Ft.
100 Year Discharge	631 C.F.S.
100 Yr. Created Head	0.0 Ft.

DESIGN STRESSES

f_c = 3,500 p.s.i. (Concrete)
f_y = 60,000 p.s.i. (Reinf. Bars)
LOADING HL93
Design Specifications: 2007 AASHTO LRFD & Interims
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'."



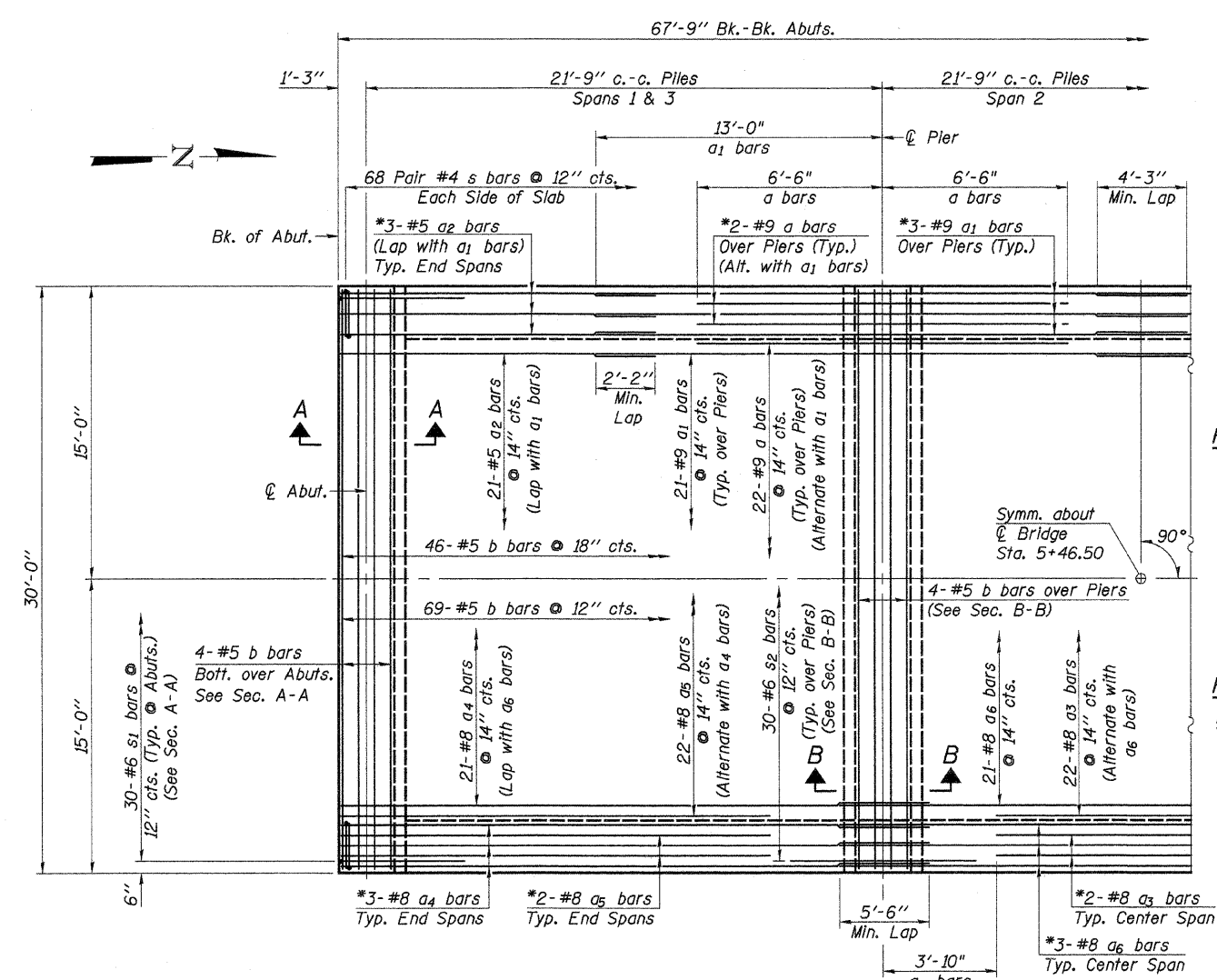
John A. Morris 12-16-09
ILLINOIS STRUCTURAL NO. 4277 (Expires 11/30/10)

GENERAL PLAN & ELEVATION
COUNTY HIGHWAY 8
SECTION 06-00098-01-BR
IROQUOIS COUNTY
STATION 5+46.50

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

FEHR-GRAHAM & ASSOCIATES, LLC
ENGINEERING AND SCIENCE CONSULTANTS

JOB NO.: 09-202
FILE: GPE.DGN
DATE: 10/23/09

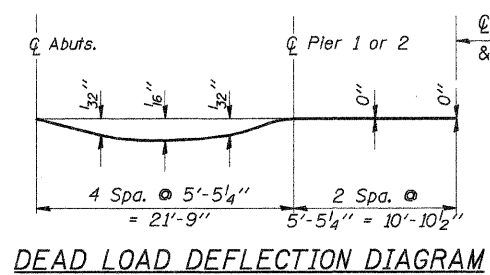


HALF PLAN

*Edge beam bars are enclosed in s bar stirrups.

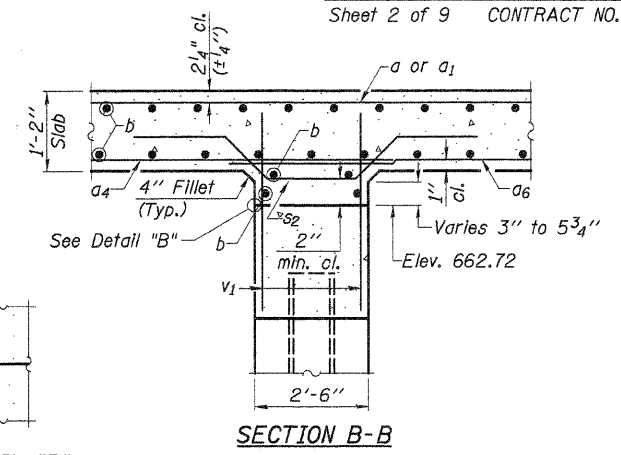
REINFORCEMENT TOP OF SLAB

REINFORCEMENT BOTT. OF SLAB



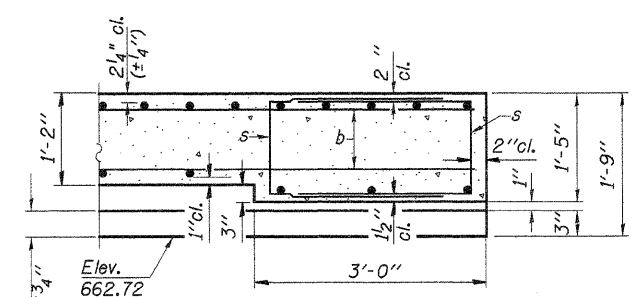
DEAD LOAD DEFLECTION DIAGRAM

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

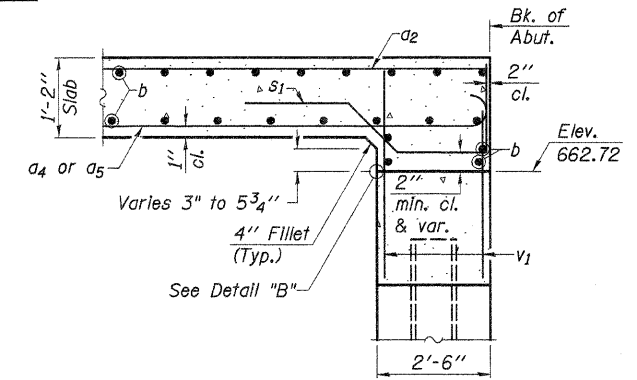


SECTION B-B

DETAIL "B"



DETAIL A



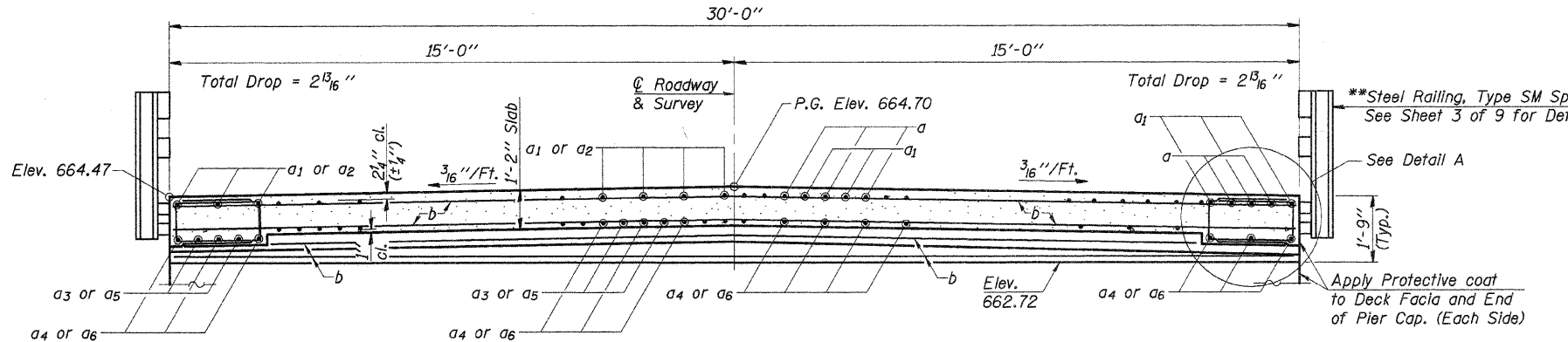
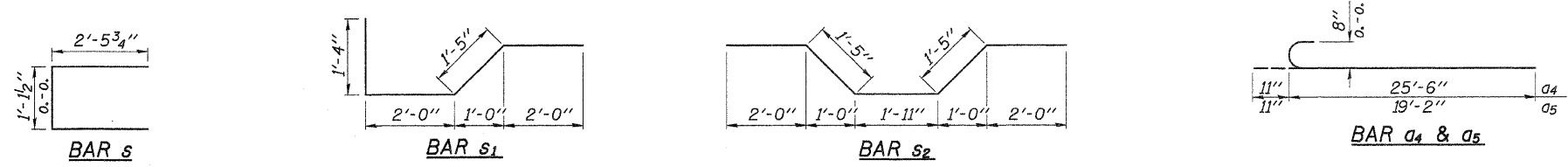
SECTION A-A

SUPERSTRUCTURE BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a	52	#9	13'-0"	—
a1	54	#9	26'-0"	—
a2	54	#5	12'-0"	—
a3	26	#8	14'-1"	—
a4	54	#8	26'-5"	—
a5	52	#8	20'-1"	—
a6	27	#8	27'-6"	—
b	131	#5	29'-8"	—
s	272	#4	6'-1"	—
s1	60	#6	6'-9"	—
s2	60	#6	8'-9"	—

Reinforcement Bars, Epoxy Coated	Pound	23,860
Concrete Superstructure	Cu. Yd.	95.4
Protective Coat	Sq. Yd.	247
Bridge Deck Grooving	Sq. Yd.	211

Note: All Reinforcement Bars Shall Be Epoxy Coated.



HALF SECTION NEAR MIDSPANS & ABUTS.

HALF SECTION NEAR PIERS

DECK CROSS SECTION (Looking North)

**Note: Studs for the rail post 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 devices.

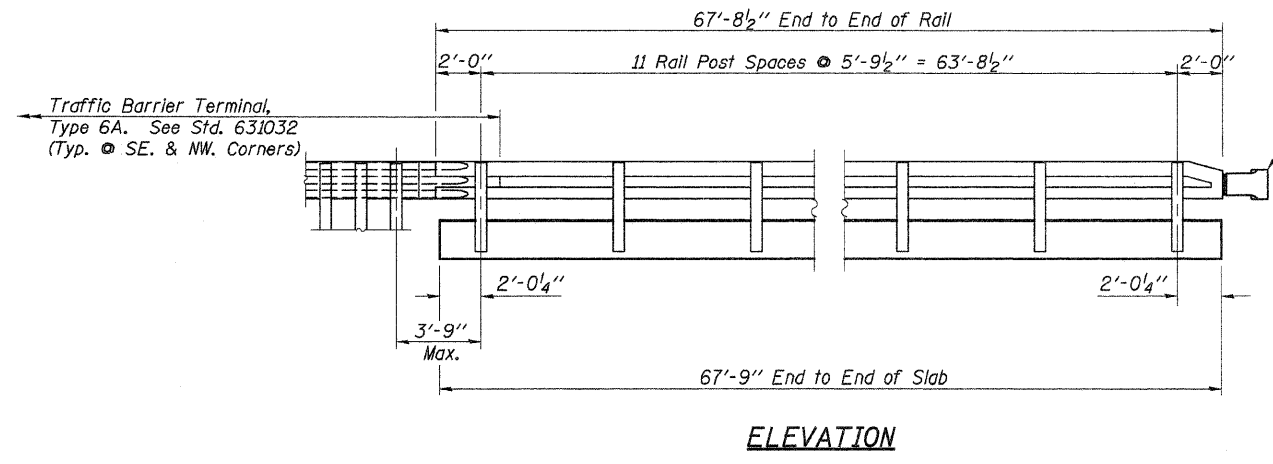
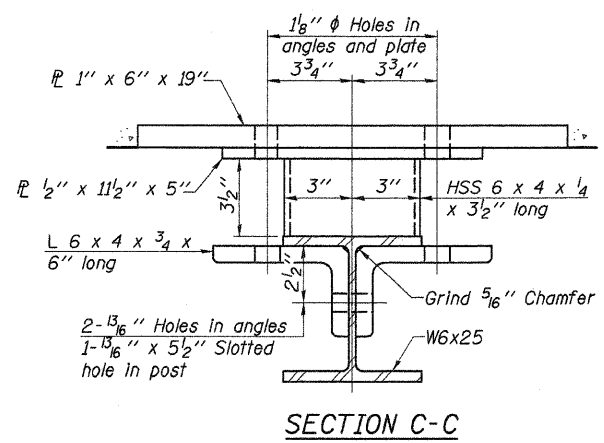
DESIGNED -	A.L.S.
CHECKED -	A.R.K.
DRAWN -	S.A.P.
CHECKED -	A.R.K. & A.L.S.

SUPERSTRUCTURE
COUNTY HIGHWAY 8
SECTION 06-00098-01-BR
IROQUOIS COUNTY
STATION 5+46.50

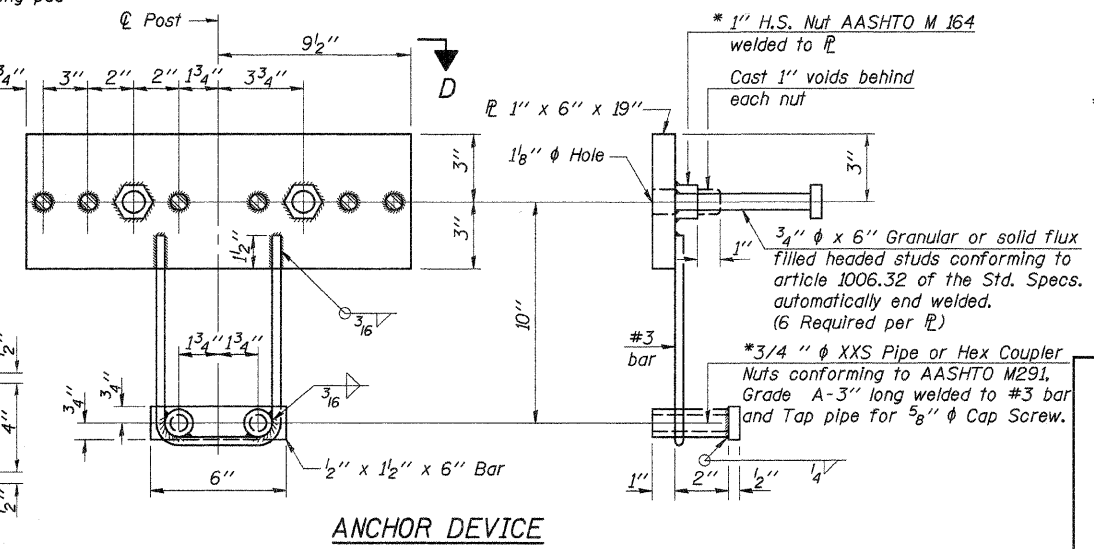
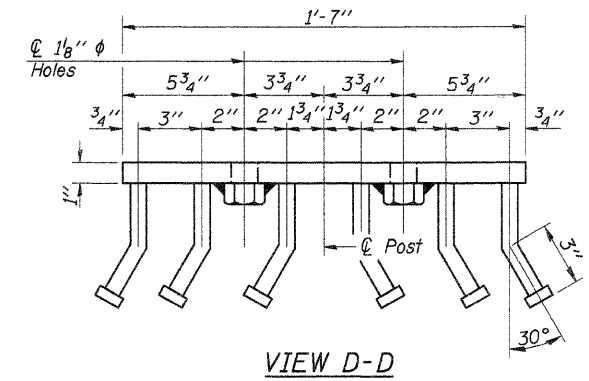
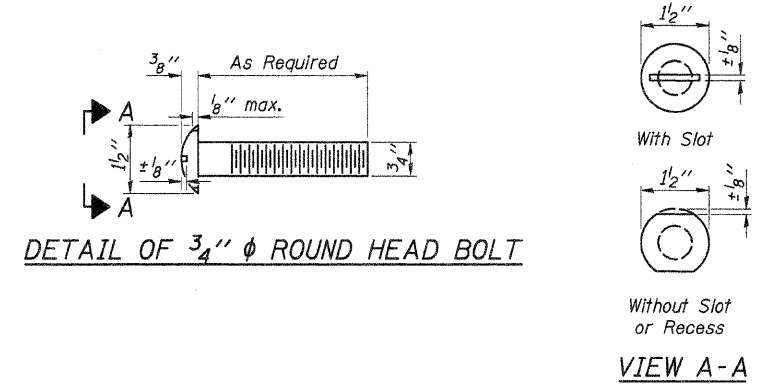
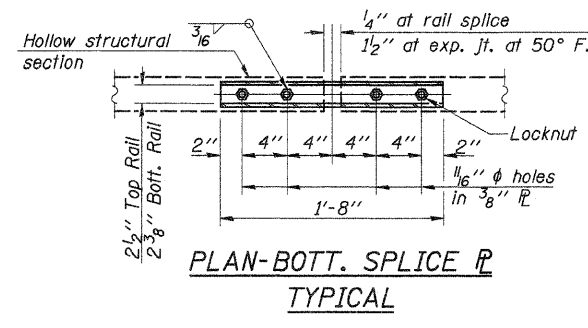
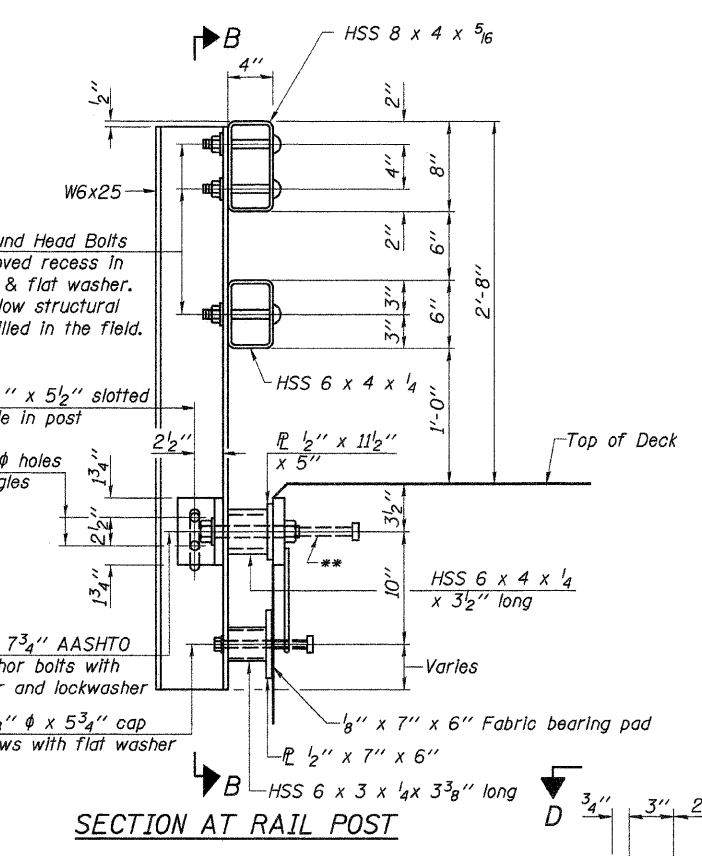
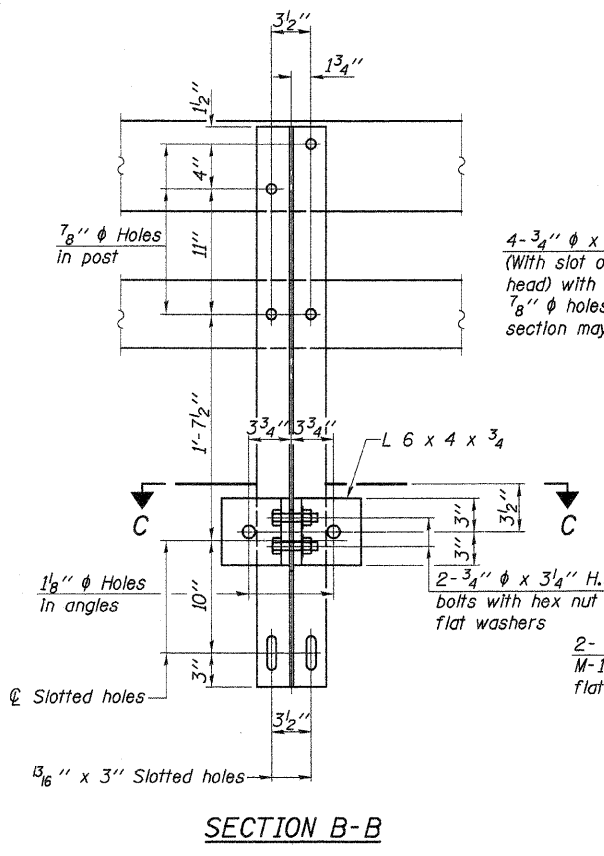
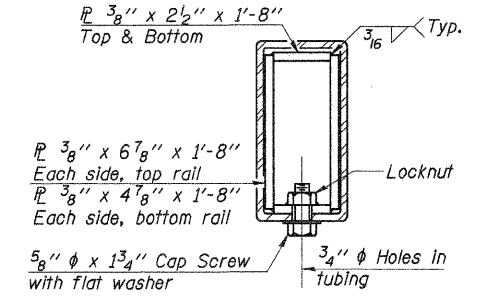
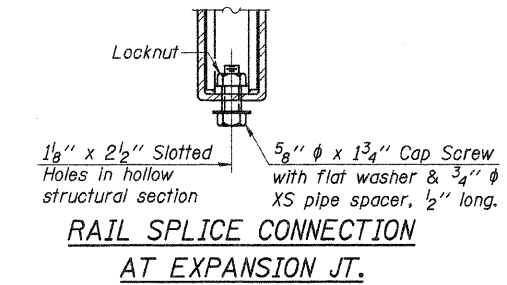
4440 ASH GROVE
 SPRINGFIELD, IL 62711
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 ENGINEERING AND SCIENCE CONSULTANTS

JOB NO.: 09-202
 FILE: RC-SLAB.D
 DATE: 10/23/09



Curled End Section
(Typ. @ SW. & NE. Corners)



Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.
 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.

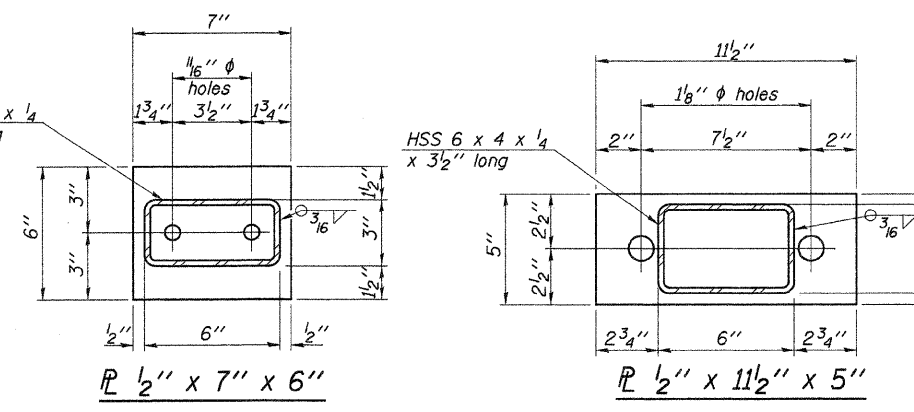
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM (Special)	Foot	136

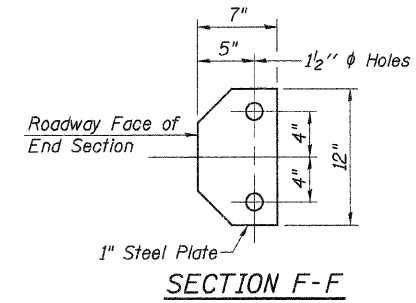
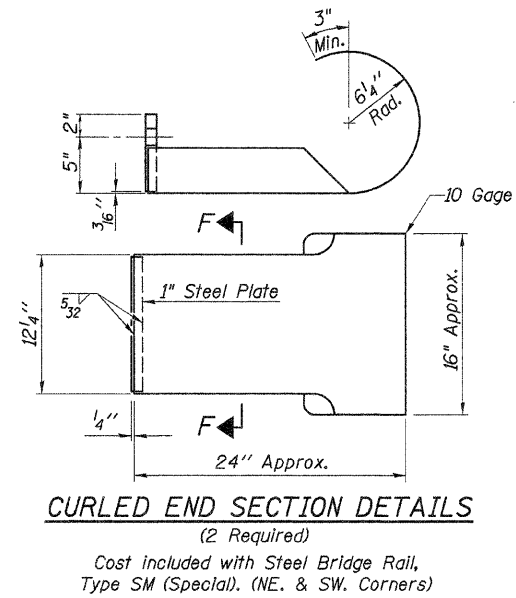
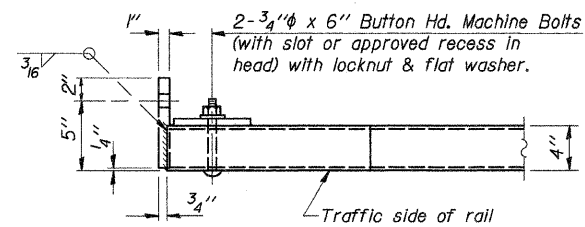
See Sheet 4 of 9 for End of Rail Details.

STEEL RAILING, TYPE SM (SPECIAL)
 COUNTY HIGHWAY 8
 SECTION 06-00098-01-BR
 IROQUOIS COUNTY
 STATION 5+46.50

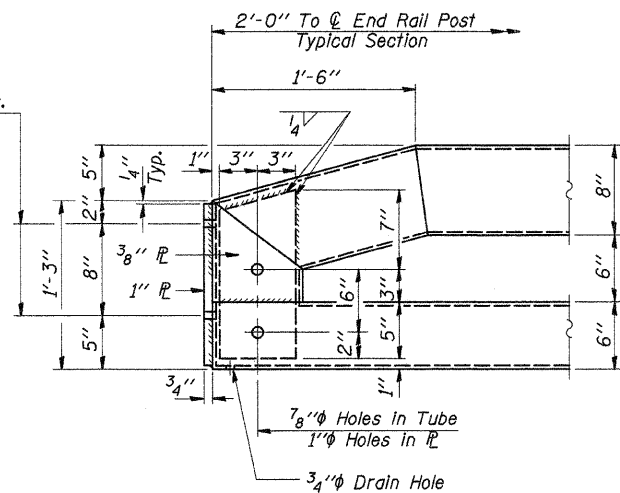
DESIGNED	A.L.S.
CHECKED	A.R.K.
DRAWN	S.A.P.
CHECKED	A.R.K. & A.L.S.



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

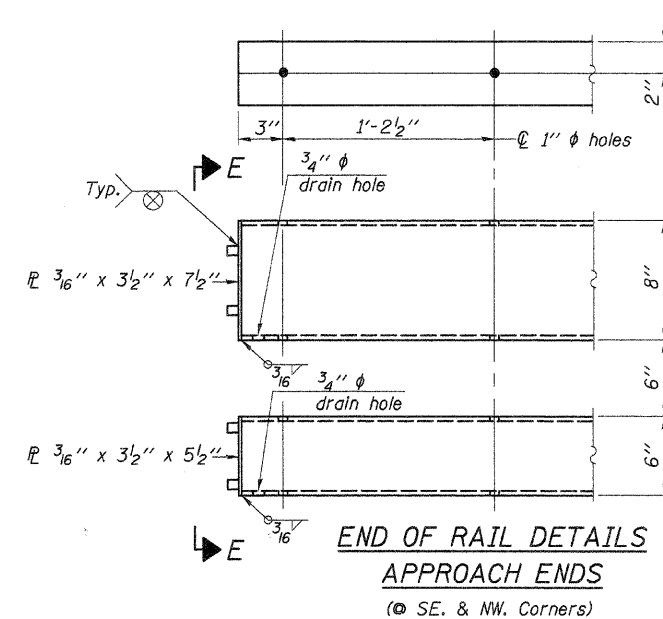
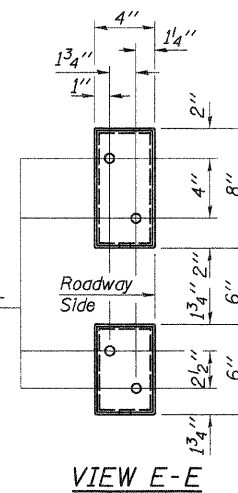


1/8" ϕ Holes for 1" ϕ x 4" Round Head Bolts. Provide 2 flat washers & locknuts for curled end section connection.



END OF RAIL DETAILS
DEPARTURE ENDS
(\odot SW. & NE. Corners)

ϕ - 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



DESIGNED -	A.L.S.
CHECKED -	A.R.K.
DRAWN -	S.A.P.
CHECKED -	A.R.K. & A.L.S.

STEEL RAILING, TYPE SM (SPECIAL)
COUNTY HIGHWAY 8
SECTION 06-00098-01-BR
IROQUOIS COUNTY
STATION 5+46.50

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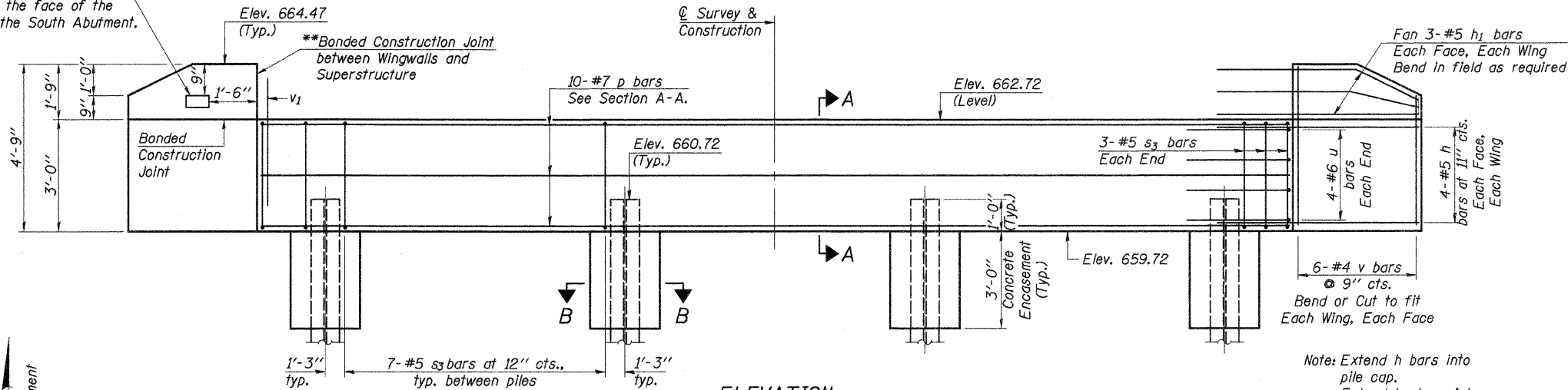
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ENGINEERING AND SCIENCE CONSULTANTS
P.O. BOX 10000, SPRINGFIELD, IL 62709

JOB NO.: 09-202
FILE: RAIL.DGN
DATE: 10/23/09

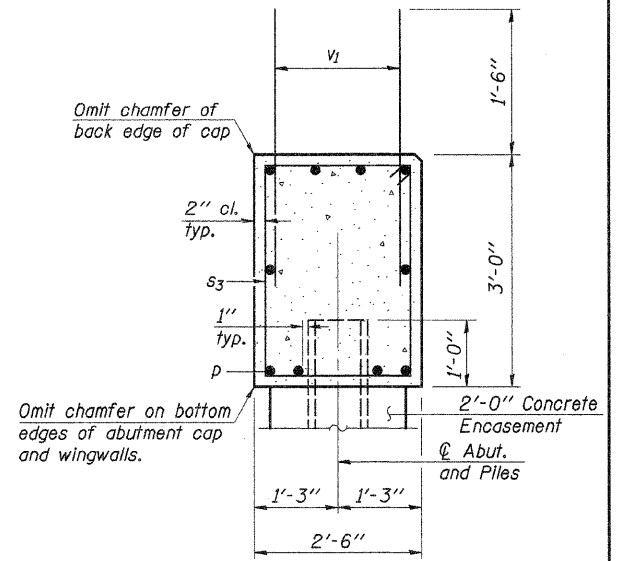
**Wingwall portions, above top of abutment cap, may be placed monolithically with superstructure.

Note: All edges shall have standard 3/4" chamfer except as noted.

Name Plate shall be placed on the outside of the face of the East Wing of the South Abutment.



ELEVATION
Looking South - South Abutment
Looking North - North Abutment



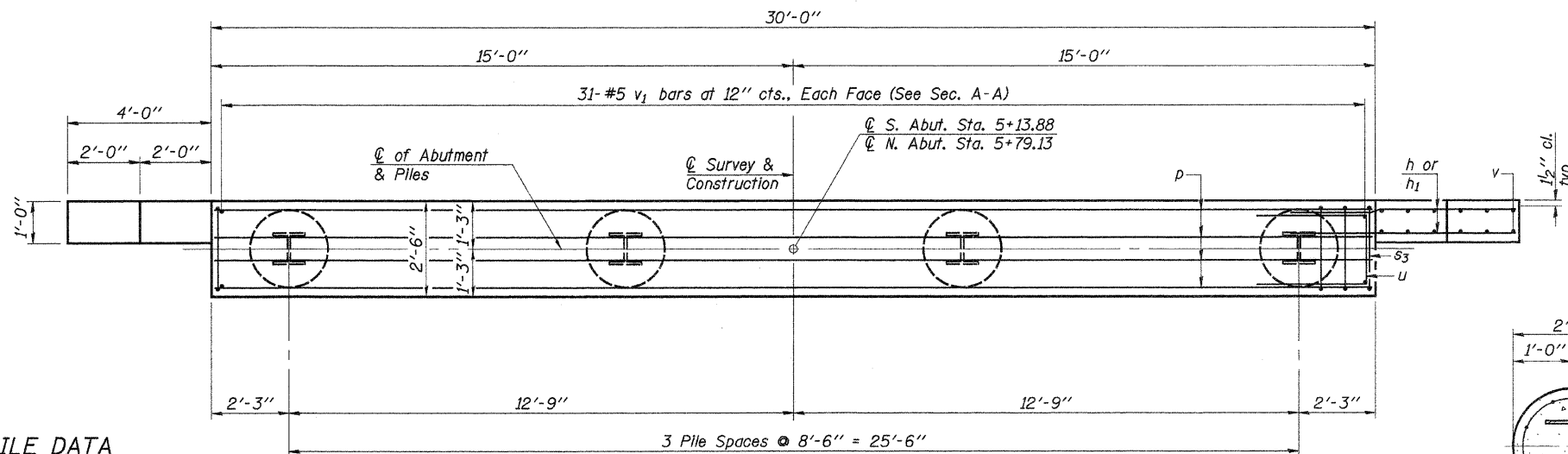
SECTION A-A

BILL OF MATERIAL
2 ABUTMENTS

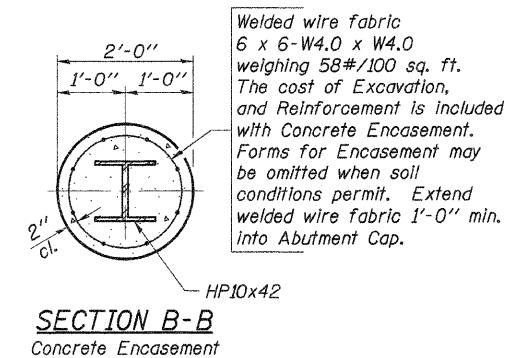
Bar	No.	Size	Length	Shape	
h	32	#5	6'-0"	—	
h1	24	#5	6'-6"	—	
p	20	#7	29'-8"	—	
s3	54	#5	10'-7"	□	
u	16	#6	14'-1"	—	
v	48	#4	4'-5"	—	
v1	124	#5	3'-6"	—	
Concrete Structures				Cu. Yd.	19.3
Reinforcement Bars, Epoxy Coated				Pound	3,110
Name Plates				Each	1
Furnishing Steel Piles, HP10x42				Foot	266
Driving Piles				Foot	266
Test Pile, Steel HP10x42				Each	1
Concrete Encasement				Cu. Yd.	2.8
Protective Coat				Sq. Yd.	6

See Sheet 7 of 9 for Pile Details.

Note: All reinforcement bars shall be epoxy coated.



PLAN



SECTION B-B
Concrete Encasement

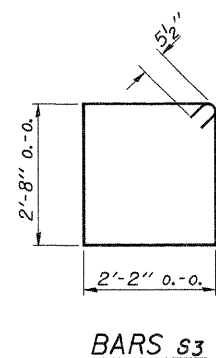
PILE DATA

Type & Size	HP10x42
No. Req'd. (2 Abutments)	8*
Nominal Required Bearing	200 kips
Factored Resistance Available	100 kips
Estimated Length	38 Ft./Pile

*Includes 1 Test Pile to be driven in a permanent location at the South abutment.

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

DESIGNED	A.L.S.
CHECKED	A.R.K.
DRAWN	S.A.P.
CHECKED	A.R.K. & A.L.S.



BARS s3

BAR u

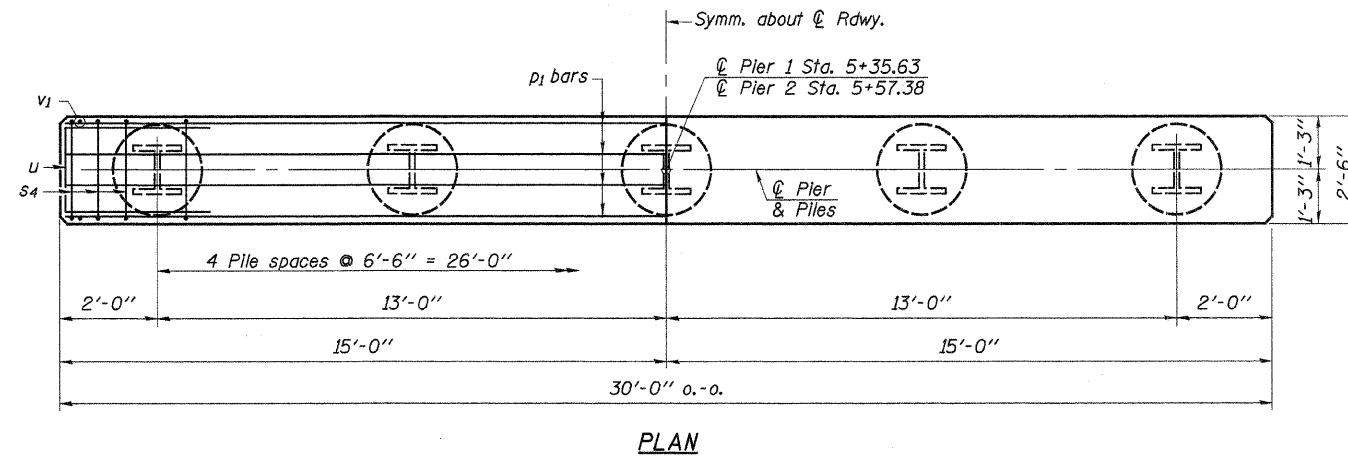
ABUTMENTS
COUNTY HIGHWAY 8
SECTION 06-00098-01-BR
IROQUOIS COUNTY
STATION 5+46.50

4440 ASH GROVE SPRINGFIELD, IL 62711 (217) 793-8800 www.fehr-graham.com	FEHR-GRAHAM & ASSOCIATES, LLC ENGINEERING AND SCIENCE CONSULTANTS PRAIRIE, IL; ROCKFORD, IL; ROCKFORD, IL; MONROE, WI; SPRINGFIELD, IL	JOB NO.: 09-202 FILE: ABUTS.DGN DATE: 10/23/09
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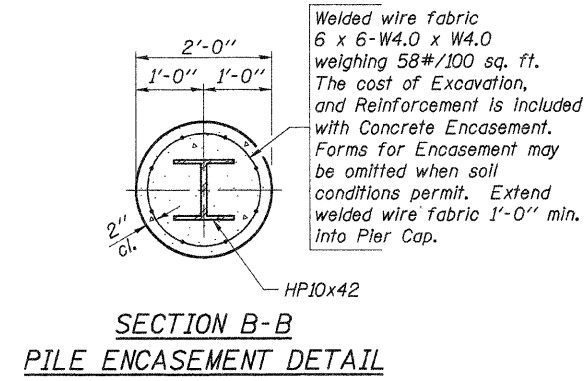
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 8	06-00098-01-BR	IROQUOIS	18	10
ROAD DIST.	ILLINOIS			

Sheet 6 of 9 CONTRACT NO. 87447

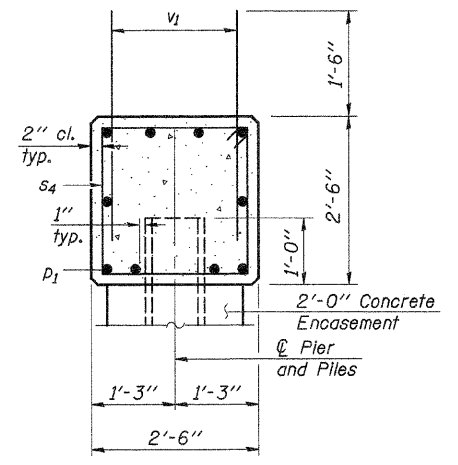
Note: All edges shall have standard 3/4" chamfer.



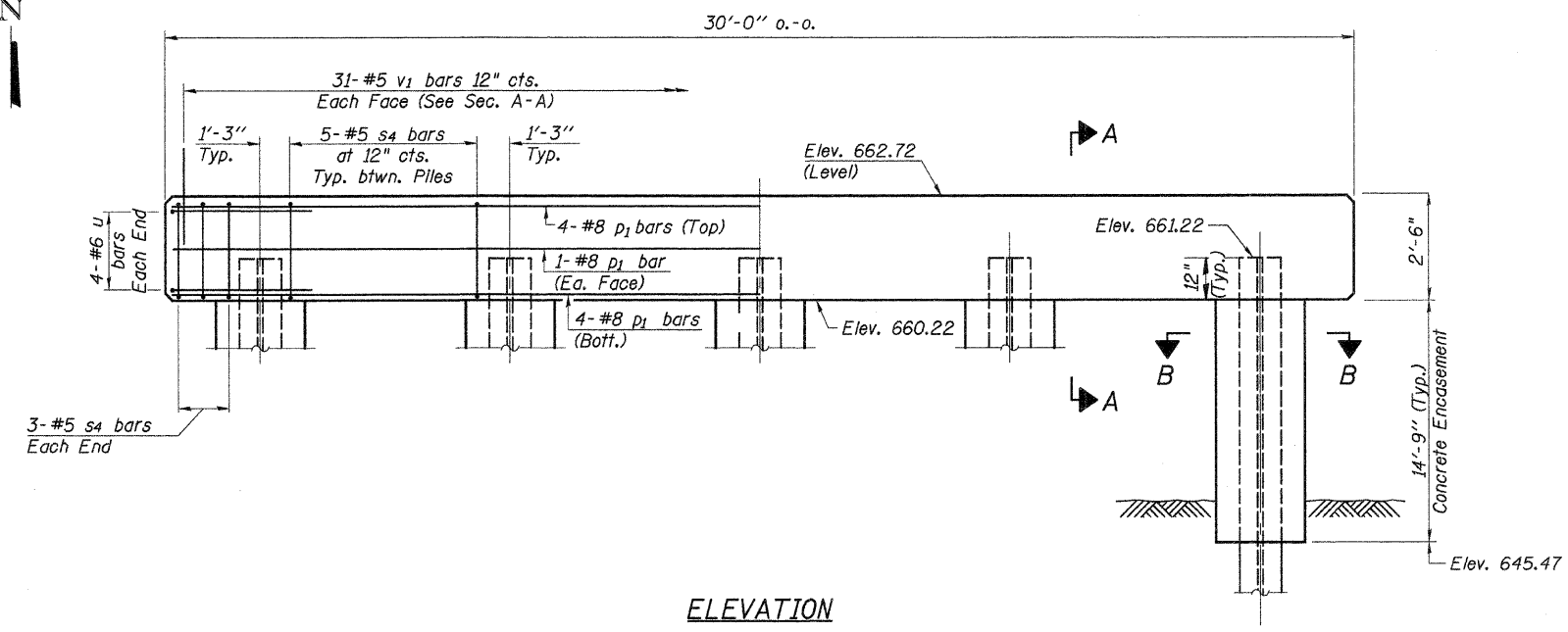
PLAN



SECTION B-B
PILE ENCASEMENT DETAIL



SECTION A-A



ELEVATION

PILE DATA

Type & Size.....Steel HP10x42
 No. Req'd.....*10
 Nominal Required Bearing.....260 kips
 Factored Resistance Available.....130 kips
 Estimated Length.....54 ft./pile

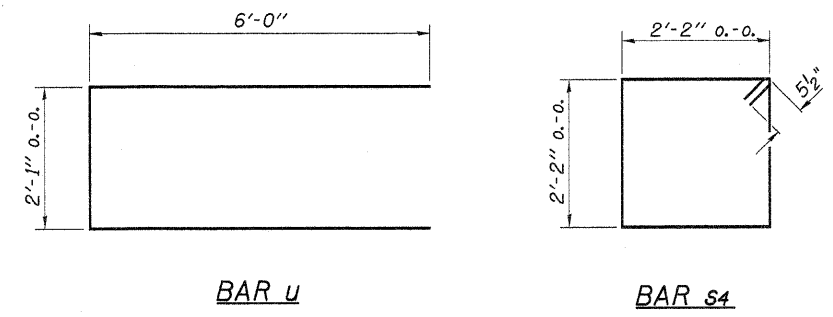
*Includes 1 Test Pile to be driven in a permanent location at the pier #2.
 The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated above.

BILL OF MATERIAL - 2 PIERS

BAR	NO.	SIZE	LENGTH	SHAPE
p1	20	#8	29'-8"	—
s4	52	#5	9'-7"	□
u	16	#6	14'-1"	—
v1	124	#5	3'-6"	—
Concrete Structures			Cu. Yd.	13.9
Reinforcement Bars, Epoxy Coated			Pound	2,900
Furnishing Steel Piles, HP10x42			Foot	486
Driving Piles			Foot	486
Test Pile, Steel HP10x42			Each	1
Underwater Structure Excavation Protection - Location 1			Each	1
Underwater Structure Excavation Protection - Location 2			Each	1
Concrete Encasement			Cu. Yd.	17.2
Protective Coat			Sq. Yd.	3

See Sheet 7 of 9 for Pile Details.

Note: All reinforcement bars shall be epoxy coated.



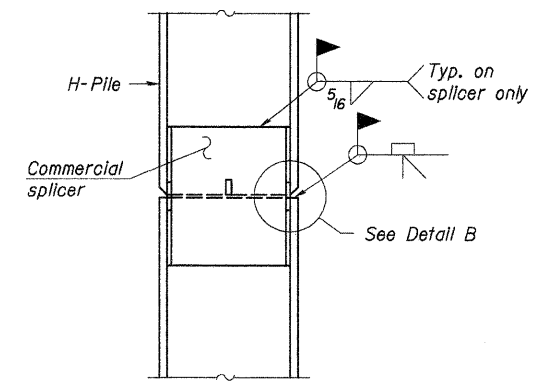
BAR u

BAR s4

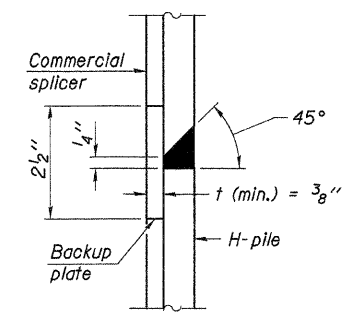
DESIGNED	A.L.S.
CHECKED	A.R.K.
DRAWN	S.A.P.
CHECKED	A.R.K. & A.L.S.

PIERS
 COUNTY HIGHWAY 8
 SECTION 06-00098-01-BR
 IROQUOIS COUNTY
 STATION 5+46.50

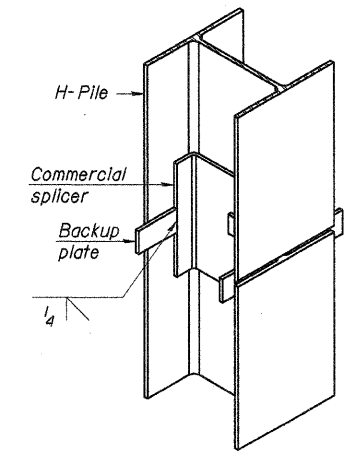
4440 ASH GROVE SPRINGFIELD, IL 62711 (217) 793-8600 www.fehr-graham.com	FEHR-GRAHAM & ASSOCIATES, LLC ENGINEERING AND SCIENCE CONSULTANTS PRESIDENT: R. BOOPFORD, P.E. REGISTERED IN ILLINOIS AND MISSOURI VICE-PRESIDENT: J. BOOPFORD, P.E. REGISTERED IN ILLINOIS AND MISSOURI	JOB NO.: 09-202 FILE: PIERS.DGN DATE: 10/23/09
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ELEVATION

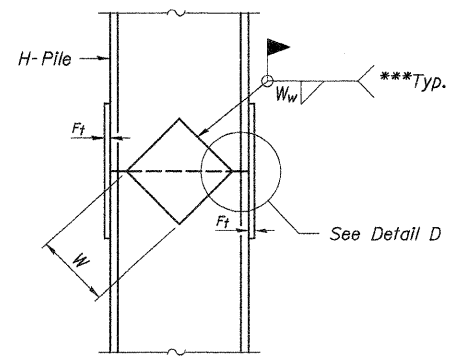


DETAIL "B"

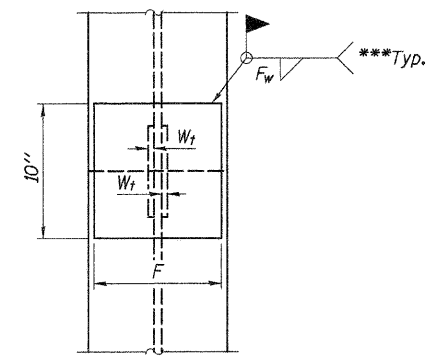


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

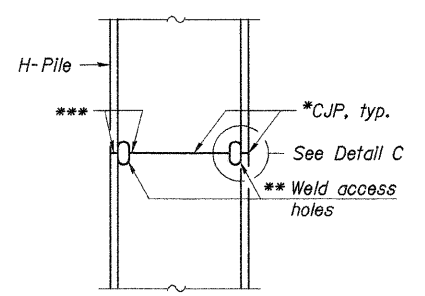


ELEVATION

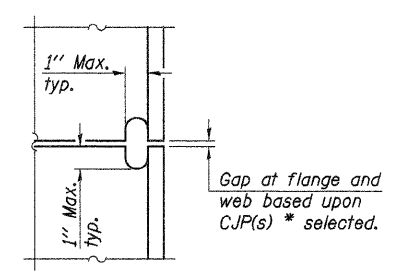


END VIEW

WELDED PLATE FIELD SPLICE

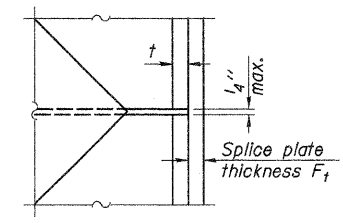


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



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"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

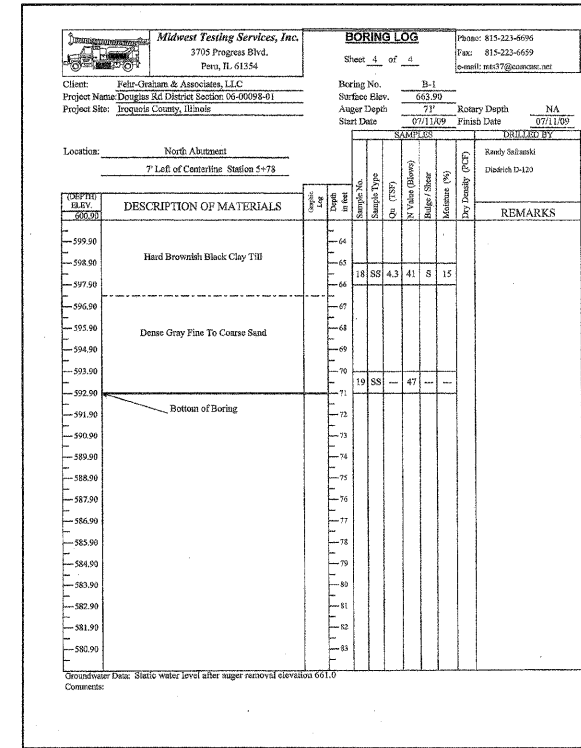
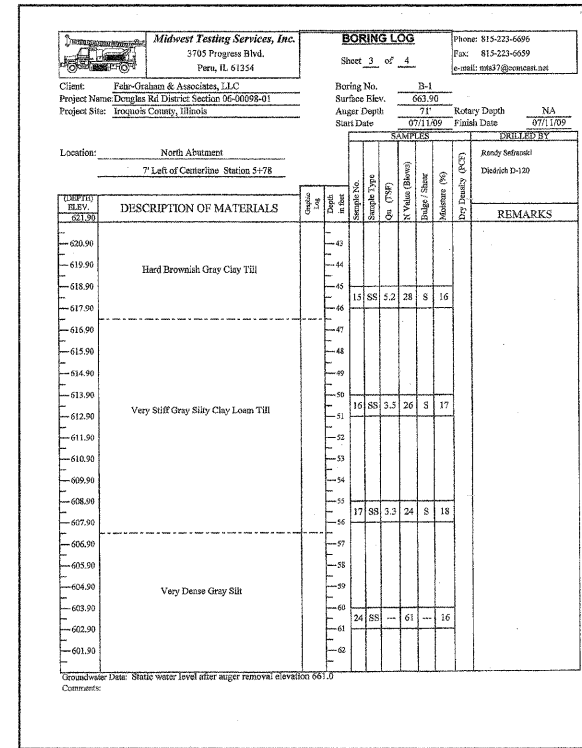
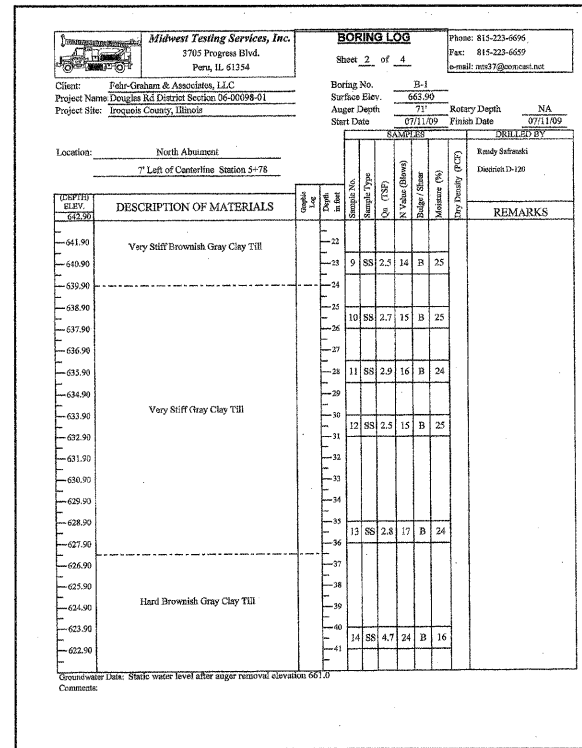
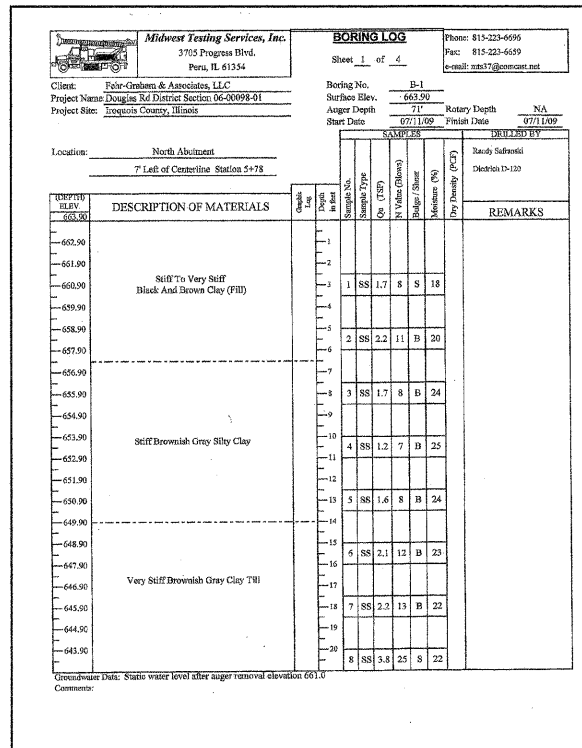
- * Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- ** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- *** Interrupt welds 1/4" from end of each pile.

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

DESIGNED -	A.L.S.
CHECKED -	A.R.K.
DRAWN -	S.A.P.
CHECKED -	A.R.K. & A.L.S.

STEEL PILE SPLICING DETAILS
COUNTY HIGHWAY 8
SECTION 06-00098-01-BR
IROQUOIS COUNTY
STATION 5+46.50

4440 ASH GROVE SPRINGFIELD, IL 62711 (217) 793-8600 www.fehr-graham.com	FEHR-GRAHAM & ASSOCIATES, LLC ENGINEERING AND SCIENCE CONSULTANTS MEMBER: IROQUOIS COUNTY BOARD OF ENGINEERS	JOB NO.: 09-202 FILE: PILES.DGN DATE: 10/23/09
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SOIL BORING LOG #1
COUNTY HIGHWAY 8
SECTION 06-00098-01-BR
IROQUOIS COUNTY
STATION 5+46.50

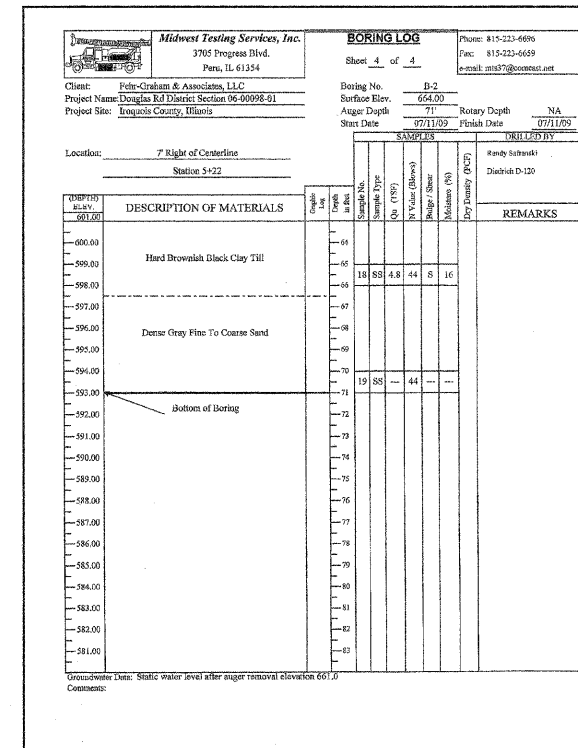
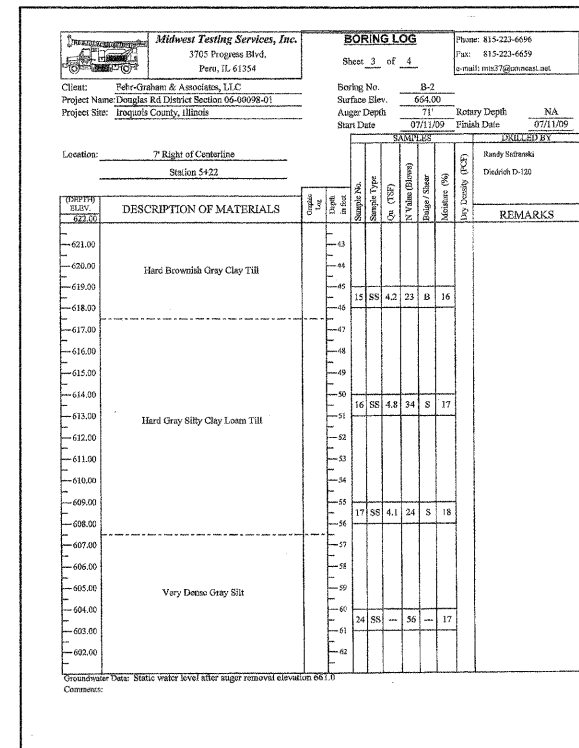
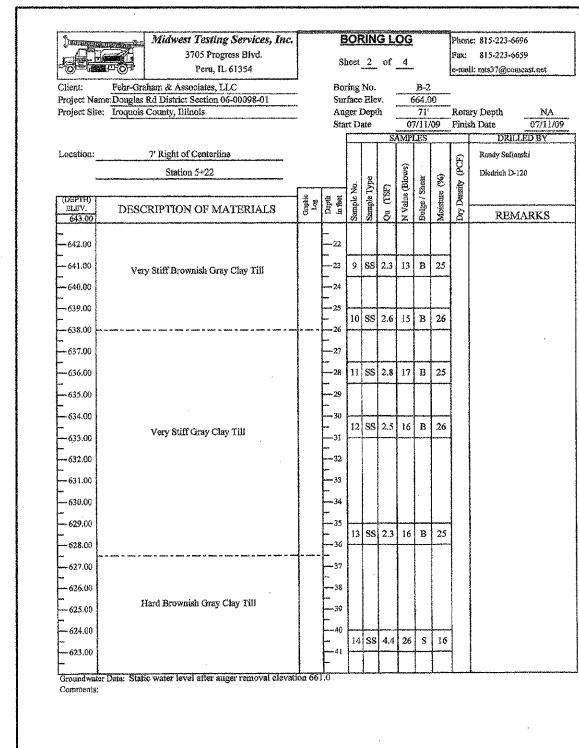
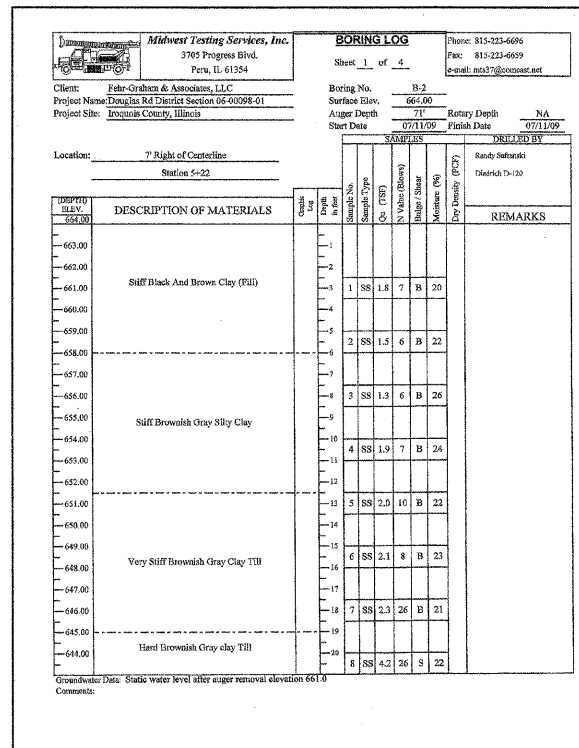
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ENGINEERING AND SCIENCE CONSULTANTS
PROFESSIONAL ENGINEERS, PROFESSIONAL SURVEYORS

JOB NO.: 09-202
FILE: BORINGS-DGN
DATE: 10/23/09

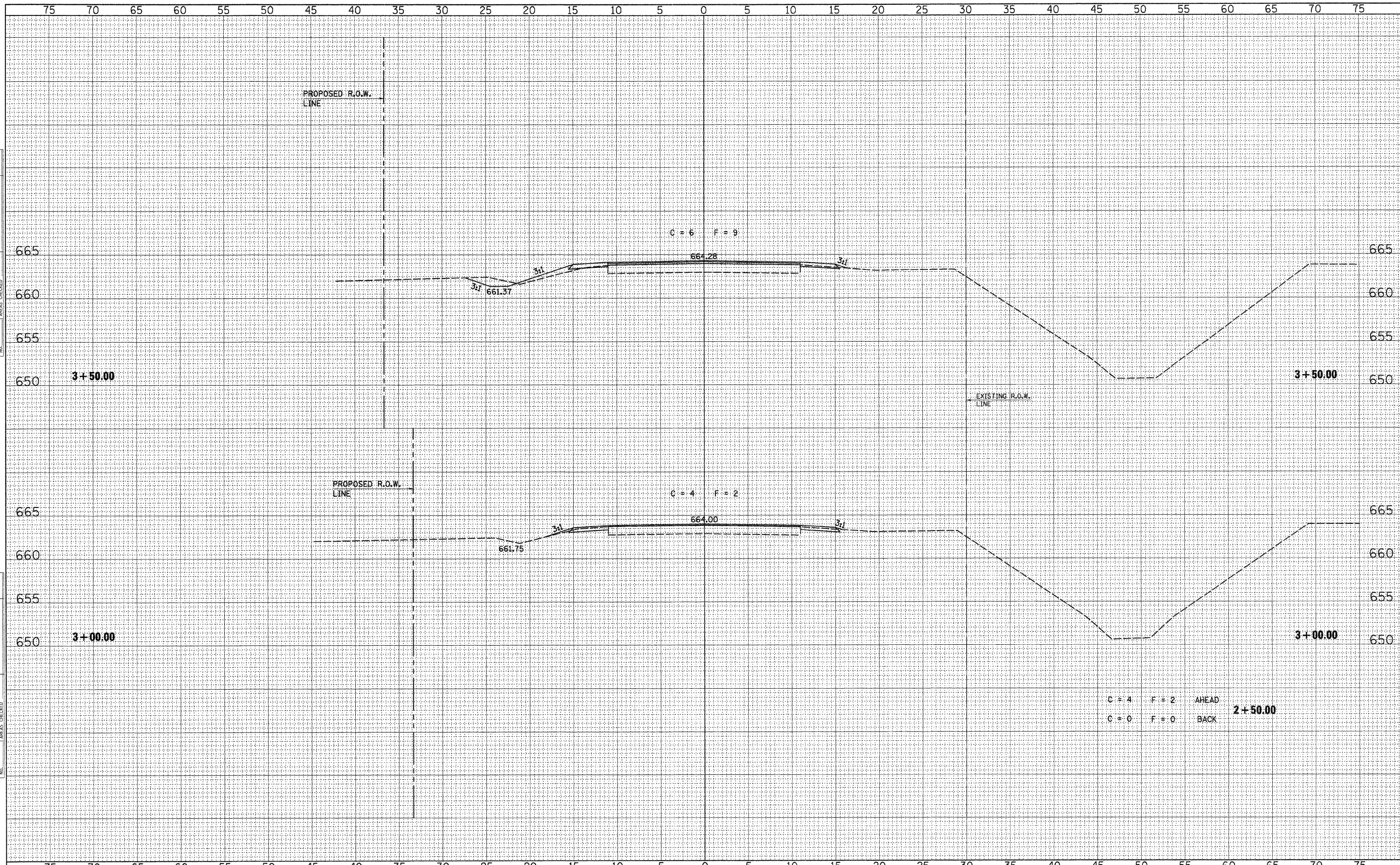
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 8	06-00098-01-BR	IROQUOIS	18	13
ROAD DIST.		ILLINOIS		

Sheet 9 of 9 CONTRACT NO. 87447



SOIL BORING LOG #2
COUNTY HIGHWAY 8
SECTION 06-00098-01-BR
IROQUOIS COUNTY
STATION 5+46.50

4440 ASH GROVE SPRINGFIELD, IL 62711 (217) 793-8600 www.fehr-graham.com	FEHR-GRAHAM & ASSOCIATES, LLC ENGINEERING AND SCIENCE CONSULTANTS SPRINGFIELD, ILLINOIS	JOB NO.: 09-202 FILE: BORINGS-DGN DATE: 10/23/09
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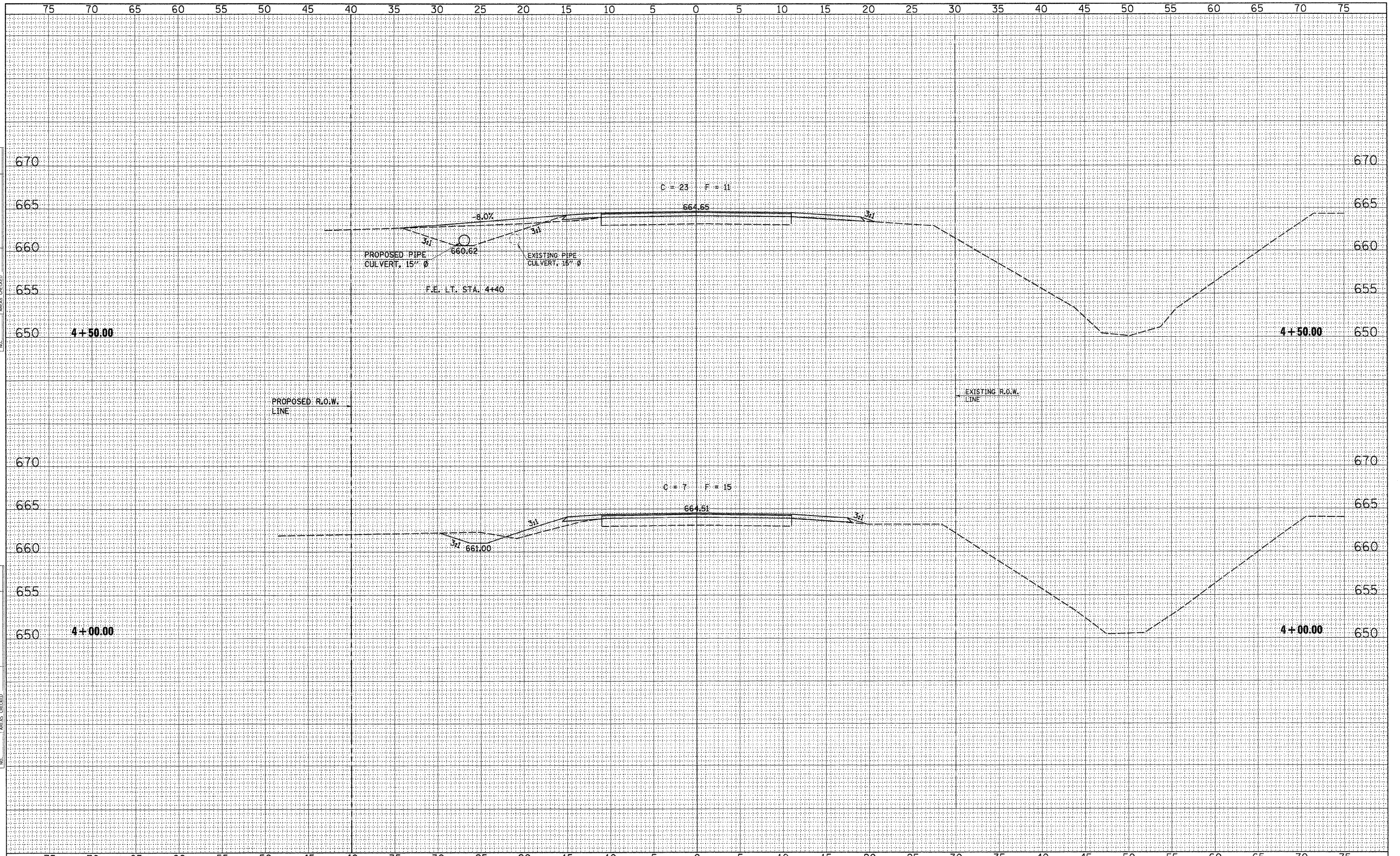
DATE	
BY	
FINAL SURVEY	
NO. SURVEY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

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

FILE NAME = 09-202.XS-SHEETS	DESIGNED - G.J.C.	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. 8 (F.A.S. 319)			C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
USER NAME = S.A.P.	DRAWN - S.A.P.	REVISED -			8	06-00098-01-BR	IROQUOIS	18	14			
PLOT SCALE = 5	CHECKED - R.J.C.	REVISED -			F.A.S. 319		CONTRACT NO. 87447					
PLOT DATE = 04/15/09	DATE - 10/05/09	REVISED -			ILLINOIS							
				SHEET NO. 1 OF 5 SHEETS		STA. 2+50.00 TO STA. 3+50.00						

DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 NOTE BOOK _____
 NO. _____

DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 NOTE BOOK _____
 NO. _____

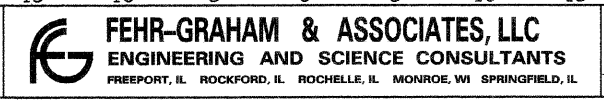


FILE NAME = 09-202.XS-SHEETS
 USER NAME = S.A.P.
 PLOT SCALE = 5
 PLOT DATE = 04/15/09

DESIGNED - G.J.C.
 DRAWN - S.A.P.
 CHECKED - R.J.C.
 DATE - 10/05/09

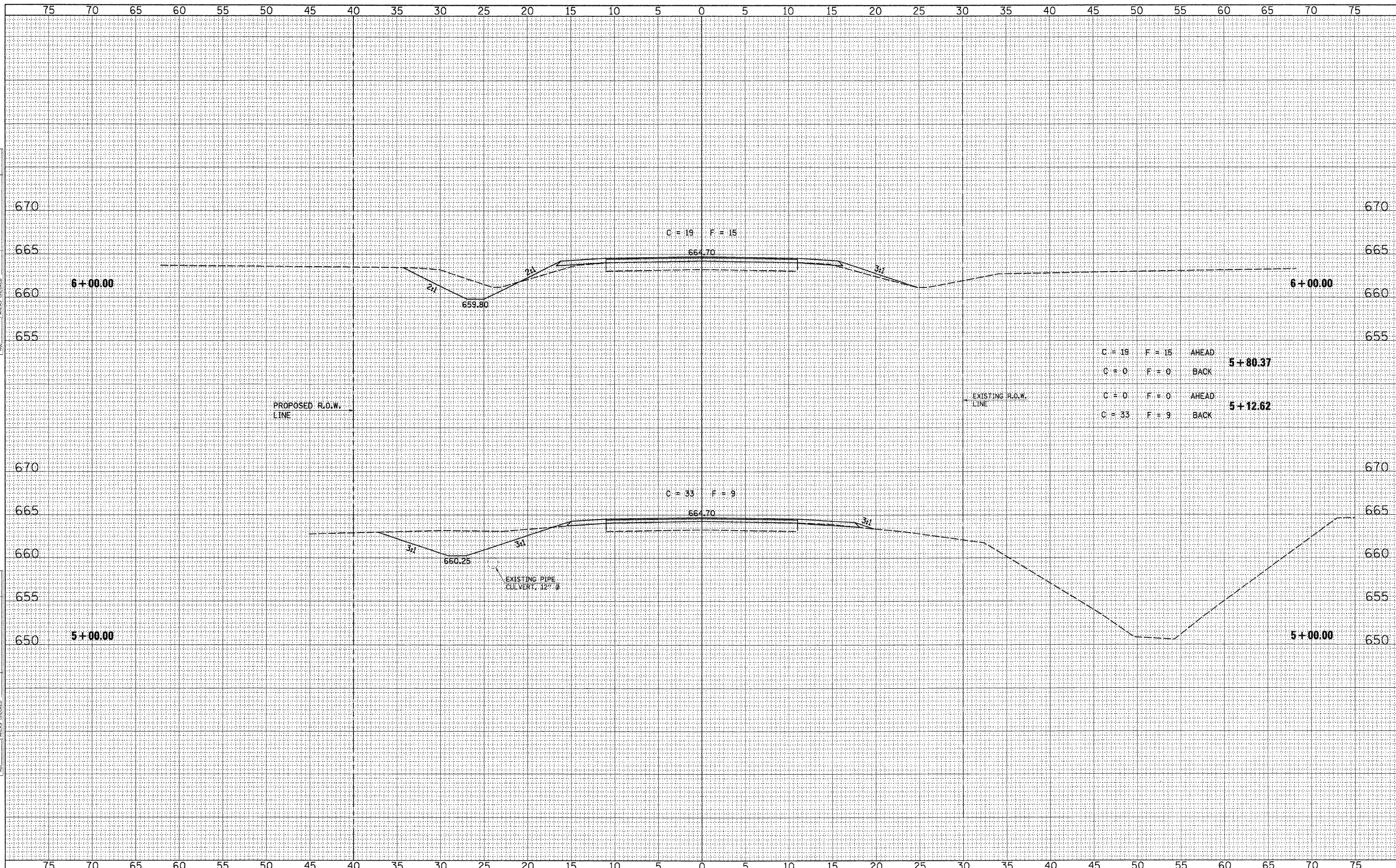
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ROADWAY CROSS SECTIONS - C.H. 8 (F.A.S. 319)
 SHEET NO. 2 OF 5 SHEETS
 STA. 4+00.00 TO STA. 4+50.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
8	06-00098-01-BR	IROQUOIS	18	15
F.A.S. 319			CONTRACT NO. 87447	
ILLINOIS				



C = 19	F = 15	AHEAD	5+80.37
C = 0	F = 0	BACK	
C = 0	F = 0	AHEAD	5+12.62
C = 33	F = 9	BACK	

DATE	BY
FINAL SURVEY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

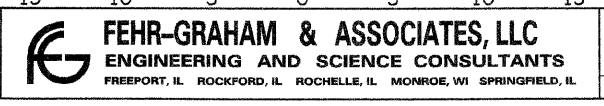
DATE	BY
ORIGINAL SURVEY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

FILE NAME = 09-202.XS-SHEETS
 USER NAME = S.A.P.
 PLOT SCALE = 5
 PLOT DATE = 04/15/09

DESIGNED - G.J.C.
 DRAWN - S.A.P.
 CHECKED - R.J.C.
 DATE - 10/05/09

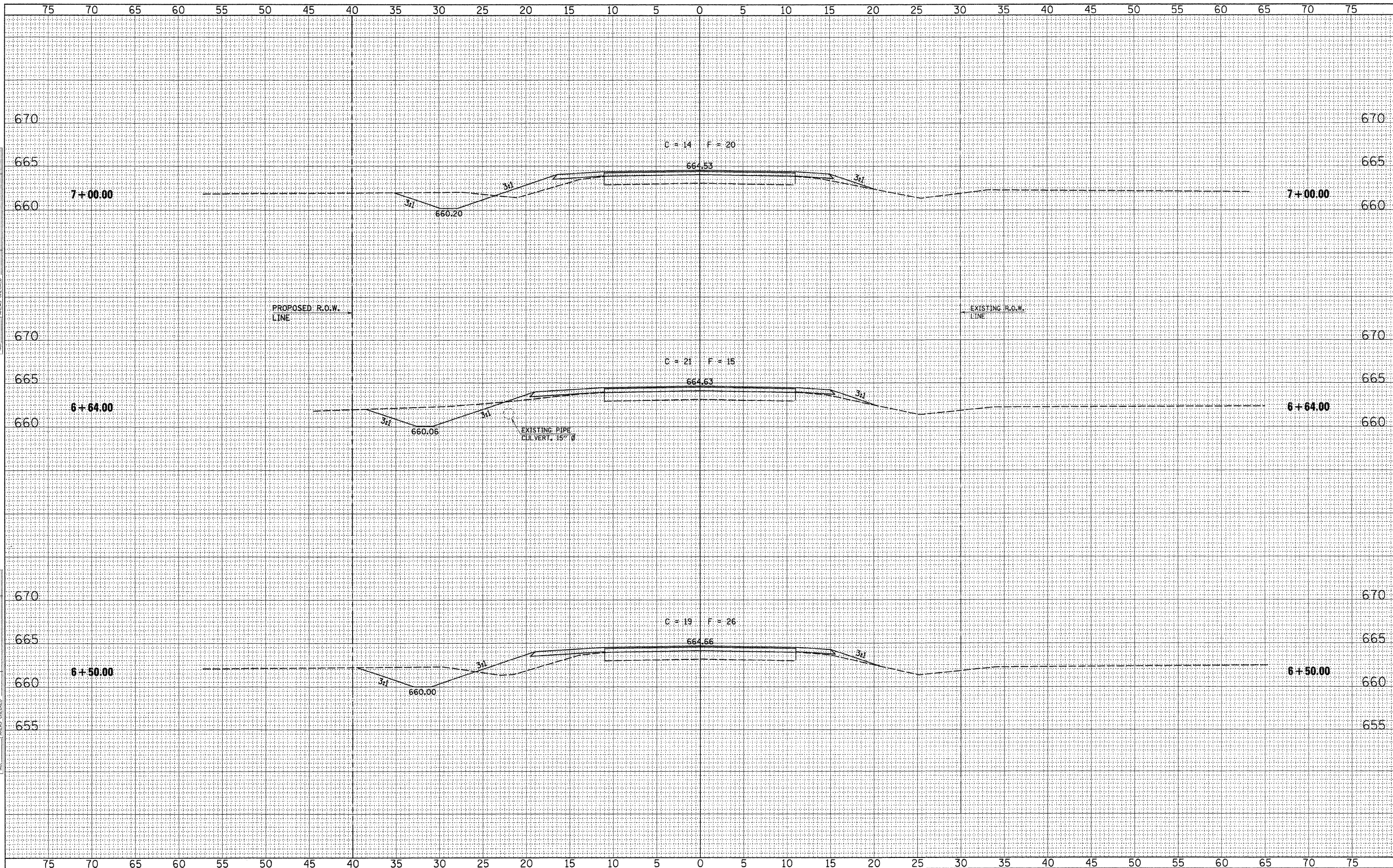
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ROADWAY CROSS SECTIONS - C.H. 8 (F.A.S. 319)
 SHEET NO. 3 OF 5 SHEETS
 STA. 5+00.00 TO STA. 6+00.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
8	06-00098-01-BR	IROQUOIS	18	16
F.A.S. 319		CONTRACT NO. 87447		
ILLINOIS				



DATE	
BY	
FINAL SURVEY	
PLOTTED	
NOTE BOOK	
AREAS	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
PLOTTED	
NOTE BOOK	
AREAS	
AREAS CHECKED	

FILE NAME = 09-202_XS-SHEETS
 USER NAME = S.A.P.
 PLOT SCALE = 5
 PLOT DATE = 04/15/09

DESIGNED - G.J.C.
 DRAWN - S.A.P.
 CHECKED - R.J.C.
 DATE - 10/05/09

REVISED -
 REVISED -
 REVISED -
 REVISED -

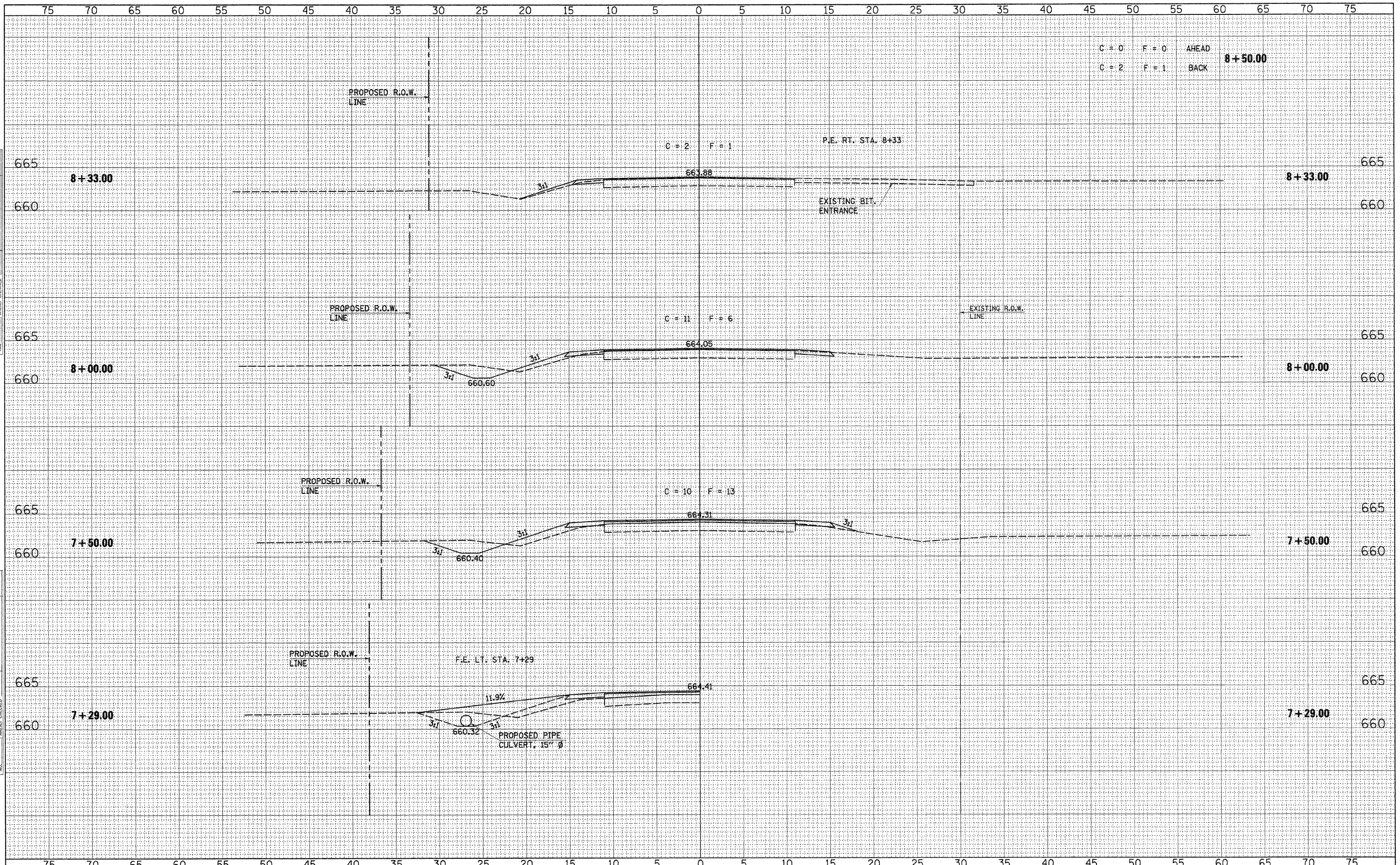
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ROADWAY CROSS SECTIONS - C.H. 8 (F.A.S. 319)

SHEET NO. 4 OF 5 SHEETS STA. 6+50.00 TO STA. 7+00.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
8	06-00098-01-BR	IROQUOIS	18	17
F.A.S. 319		CONTRACT NO. 87447		
[ILLINOIS]				



DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 NOTE BOOK _____
 AREAS CHECKED _____
 NO. _____

DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 NOTE BOOK _____
 AREAS CHECKED _____
 NO. _____

FILE NAME = 09-202.XS-SHEETS	DESIGNED - G.J.C.	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. 8 (F.A.S. 319)			C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
USER NAME = S.A.P.	DRAWN - S.A.P.	REVISED -						8	06-00098-01-BR	IROQUOIS	18	18	
PLOT SCALE = 5	CHECKED - R.J.C.	REVISED -			SHEET NO. 5 OF 5 SHEETS			STA. 7+29.00	TO STA. 8+50.00	F.A.S. 319	CONTRACT NO. 87447	[ILLINOIS]	
PLOT DATE = 04/15/09	DATE - 10/05/09	REVISED -											