06-13-14 LETTING ITEM 166

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM

SECTION 11–00172–01–BR
IROQUOIS COUNTY
PROJECT NO. BROS–0075(180)
C.H. 42
C93–059–13
CONTRACT NO. 87554

CONTRACT NO. 87554

LOCATION OF SECTION INDICATED THUS: – ■–

CLASSIFICATION: LOCAL ROAD (NON–URBAN)
DESIGN VOLUME: UNDER 250 ADT
CURRENT ADT: 200 (2013)
DESIGN SPEED: 30 M.P.H.

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

INDEX OF SHEETS

STANDARDS

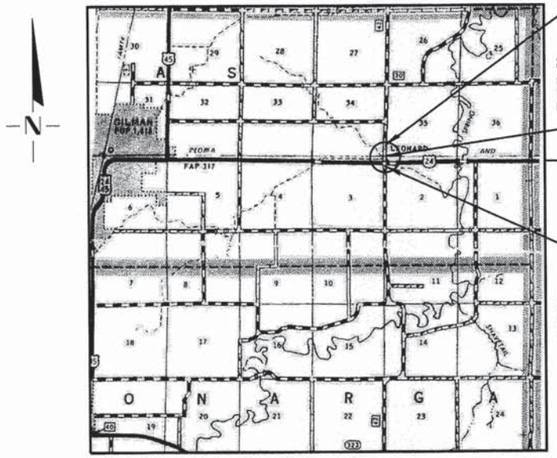
280001–07	TEMPORARY EROSION CONTROL SYSTEMS
515001–03	NAME PLATE FOR BRIDGES
701901–03	TRAFFIC CONTROL DEVICES
720011–01	METAL POSTS FOR SIGNS, MARKERS AND DELINEATORS
728001–01	TELESCOPING STEEL SIGN SUPPORT
729001–01	APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS AND MARKERS)
BLR 21–9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 27–1	TRAFFIC BARRIER TERMINAL, TYPE 5A

SCALES

PLAN ..... 0' 25' 50'
PROFILE HORIZ. ..... 0' 25' 50'
PROFILE VERT. ..... 0' 5' 10'
CROSS SECTIONS ..... 0' 5' 10'

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

R. 14 W., 2ND P.M.



IMPROVEMENT ENDS
STA. 233 + 50.00

STA. 231 + 21.00
PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (33" DEPTH), SINGLE SPAN @ 79'–0",
81'–0¾" BK. TO BK. ABUTMENTS
30'–0" ROADWAY, 40° SKEW LEFT
EXISTING S.N. 038–4007
PROPOSED S.N. 038–4012

IMPROVEMENT BEGINS
STA. 229 + 50.00

LOCATION PLAN

GROSS LENGTH OF SECTION = 400.00 FEET = 0.076 MILES
NET LENGTH OF SECTION = 400.00 FEET = 0.076 MILES

0 1 2 3 4 5
SCALE IN MILES

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS IOWA WISCONSIN

ILLINOIS PROFESSIONAL DESIGN FIRM NUMBER: 184003525

CARY J. CARTWRIGHT
43408
REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Gary J. Cartwright 1-29-14
ILLINOIS PROFESSIONAL NO. 43408
EXPIRES 11-30-15

APPROVED Jan 31 20 14
COUNTY ENGINEER

PASSED 2/7 20 14
DISTRICT 3 ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR BID BASED ON LIMITED REVIEW 2/7 20 14
DEPUTY DIRECTOR OF HIGHWAYS, REGION 2 ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

*13-705

SUMMARY OF QUANTITIES

CONSTRUCTION CODE: 0011

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	
	20200100	EARTH EXCAVATION	CU YD	286	
	20300100	CHANNEL EXCAVATION	CU YD	744	
	20400800	FURNISHED EXCAVATION	CU YD	110	
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	33	
	28000305	TEMPORARY DITCH CHECKS	FOOT	60	
	28000400	PERIMETER EROSION BARRIER	FOOT	715	
	28000500	INLET AND PIPE PROTECTION	EACH	3	
•	28100209	STONE RIPRAP, CLASS A5	TON	236	
•	28100809	STONE DUMPED RIPRAP, CLASS A5	TON	99	
	28200200	FILTER FABRIC	SQ YD	258	
	40200100	AGGREGATE SURFACE COURSE, TYPE A	TON	551	
	40300100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	192	
	40300300	BITUMINOUS MATERIALS (COVER AND SEAL COATS)	GALLON	772	
	40300500	COVER COAT AGGREGATE	TON	14	
	40300600	SEAL COAT AGGREGATE	TON	9	
	40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	44	
•	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	
	50300225	CONCRETE STRUCTURES	CU YD	39.8	
•	50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2370	
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5200	
	50900205	STEEL RAILING, TYPE S1	FOOT	164	**
	51200958	FURNISHING METAL SHELL PILES 14"X 0.250"	FOOT	649	
	51202305	DRIVING PILES	FOOT	649	
	51203200	TEST PILE METAL SHELLS	EACH	1	
	51500100	NAME PLATES	EACH	1	
	542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	96	
	542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	48	
	58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	264	
	58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	711	
	63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2	**
	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2	**
	67100100	MOBILIZATION	L SUM	1	
•	70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1	
•	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	**
•	X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3	
•	XX004633	FIELD TILE ADJUSTMENT	EACH	1	

•SEE SPECIAL PROVISIONS
•• SPECIALTY ITEMS

GENERAL NOTES

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

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

SEEDING, CLASS 2 (SPECIAL) = 0.3 ACRE

HOT-MIX ASPHALT MIXTURE REQUIREMENTS	
	H.M.A. SURFACE
PG GRADE	PG 64-22
DESIGN AIR VOIDS	4% @ N50
MIXTURE COMPOSITION	IL-9.5
FRICTION AGGREGATE	MIXTURE C
DENSITY TEST METHOD	SATISFACTION OF ENGINEER

APPLICATION RATES USED IN QUANTITY CALCULATIONS

STONE RIPRAP, CLASS A5	1.65 TON/CU YD
AGGREGATE SURFACE COURSE	2.05 TON/CU YD
HOT-MIX ASPHALT (SURFACE COURSE)	112 LB/SQ YD/IN
BITUMINOUS MATERIALS (PRIME COAT)	0.25 GALLON/SQ YD
(COVER COAT)	0.35 GALLON/SQ YD
(SEAL COAT)	0.30 GALLON/SQ YD
COVER COAT AGGREGATE	18 LB/SQ YD
SEAL COAT AGGREGATE	25 LB/SQ YD

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.

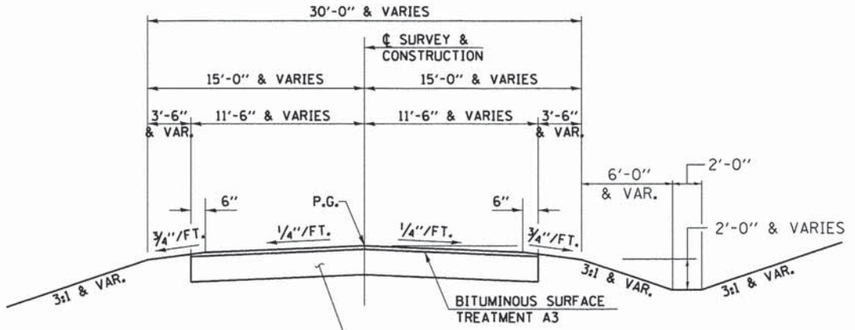
TEMPORARY EROSION CONTROL SEEDINGS	=	33 POUND
TEMPORARY DITCH CHECKS	=	60 FOOT
PERIMETER EROSION CONTROL BARRIER	=	715 FOOT
INLET AND PIPE PROTECTION	=	3 EACH

TEMPORARY DITCH CHECKS

LT. STA. 231+00	=	20 FOOT
RT. STA. 231+50	=	20 FOOT
LT. STA. 231+94	=	20 FOOT
TOTAL	=	60 FOOT

INLET AND PIPE PROTECTION

LT. STA. 230+26	=	1 EACH
RT. STA. 233+18	=	1 EACH
LT. STA. 233+18	=	1 EACH
TOTAL	=	3 EACH



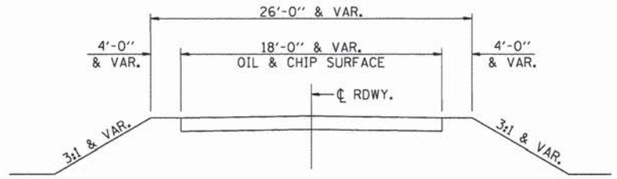
SUGGESTED FILL SECTION CONSTRUCT AS SHOWN BY STATION CROSS SECTIONS

SUGGESTED CUT SECTION CONSTRUCT AS SHOWN BY STATION CROSS SECTIONS

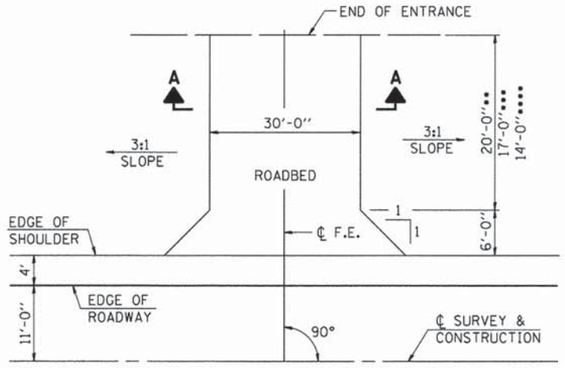
TYPICAL PROPOSED CROSS SECTION

STA. 229+50.00 TO STA. 230+80.47
STA. 231+61.53 TO STA. 233+00.00

TRANSITION FROM PROPOSED ROADWAY TO EXISTING ROADWAY TO BE CONSTRUCTED FROM STA. 233+00.00 TO STA. 233+50.00.

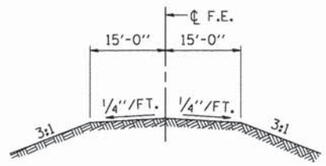


EXISTING TYPICAL CROSS SECTION



FIELD ENTRANCE DETAIL

F.E. LT. STA. 230+50••
F.E. LT. STA. 232+94•••
F.E. RT. STA. 232+94••••



SECTION A–A

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIB. TO SPRING CREEK

DESIGNED:	G.J.C.
CHECKED:	R.D.F.
DRAWN:	A.D.S.
CHECKED:	R.D.F.

REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: SUMMARY OF QUANTITIES, GENERAL NOTES AND TYPICAL CROSS SECTIONS

JOB NUMBER: 13-705

SHEET NUMBER: 2 OF 22

CONTRACT #: 87554

S.E. 1/4, SECT. 34, T. 27 N., R. 14 W., 2ND P.M.

NAIL & BOTTLE CAP IN GATE POST

ALBERT WITVOET & DONNA WITVOET

38.10' 48.43' 26.95'

℄ SURVEY

CHISELLED '+' TOP BRIDGE CURB

CHISELLED '+' TOP BRIDGE CURB

+71.98 45' LT.

P.I. STA. 230+71.98

P.I. STA. 230 + 71.98
IRON PIN (FLUSH)

F.E. LT. STA. 230+50
PIPE CULVERTS, CLASS D,
TYPE 1 15", 48' LONG

+47.92 46.85' LT.

STA. 228+97

℄ TOLEDO, PEORIA & WESTERN R.R.

229+00 | 230+00 | 232+00 | 233+00 | 234+00 | 235+00 | 236+00

179°-09'-12"

IMPROVEMENT BEGINS STA. 229+50.00

50'

NORTH RAILROAD R.O.W.

+50 30.09' RT.

PROPOSED STRUCTURE NO. 038-4012
STA. 231+21.00 - PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (33" DEPTH); SINGLE SPAN @ 79'-0", 81'-0¼" BK.-BK. ABUTS.; 30'-0" ROADWAY; 40° SKEW LEFT

F.E. LT. STA. 232+94
PIPE CULVERTS, CLASS D,
TYPE 1 18", 48' LONG

+10 45' LT.

PROPOSED R.O.W. LINE

+82 45' RT.

F.E. RT. STA. 232+94
PIPE CULVERTS, CLASS D,
TYPE 1 15", 48' LONG

+10 45' LT.

PROPOSED R.O.W. LINE

+50 28.07' RT.

IMPROVEMENT ENDS STA. 233+50.00

+50 31.93' RT.

DALE A. JOHNSON AND DOUGLAS J. JOHNSON, CO-TRUSTEES OF THE EILEEN E. JOHNSON LIVING TRUST AND DEAN L. JOHNSON

SPIKE NAIL EDGE ROAD 15.04' | SPIKE NAIL EDGE ROAD 15.12' | SPIKE NAIL EDGE ROAD 11.42' | ℄ SURVEY

P.I. STA. 237 + 04.51
IRON PIN (FLUSH)

EXISTING R.O.W. LINE

60'

P.I. STA. 237+04.51

EXISTING R.O.W. LINE

ENTRANCES TO BE BUILT

LT. STA. 230+50,	F.E.	-15.0%,	30' ROADBED
LT. STA. 232+94,	F.E.	-13.0%,	30' ROADBED
RT. STA. 232+94,	F.E.	-12.5%,	30' ROADBED

QUANTITIES INCLUDED IN THOSE LISTED

PIPES TO BE REMOVED

LT. STA. 230+83, 15" CMP, 30' LONG
LT. STA. 231+82, 18" CMP, 32' LONG
RT. STA. 231+82, 18" CMP, 30' LONG
QUANTITIES INCLUDED IN "EARTH EXCAVATION".

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 EINGINEER.

CHANNEL EXCAVATION = 744 CU. YD.

DANA S. GROSSE, JULIE K. BORCHERS, ET AL

S.W. 1/4, SECT. 35, T. 27 N., R. 14 W., 2ND P.M.

UTILITIES

ATT/DISTRIBUTION
630-573-5450
2nd 630-573-5495

AMEREN CIPS - (NORTH)
MARK WINSON 217-221-0825

EASTERN ILLINI ELECTRIC COOP.
ALAN SCHWEIGHART 217-379-2131X173

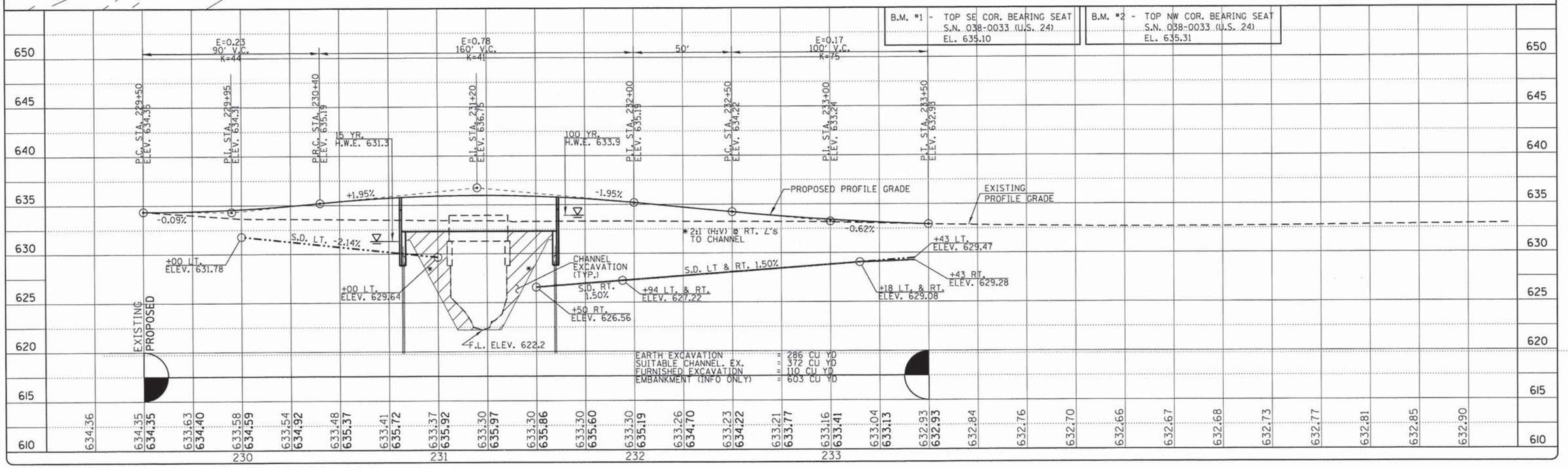
MARATHON PL LLC/MRTNSVL
BEN SARVER 217-382-2234

EXISTING STRUCTURE NO. 038-4007
STA. 231+21.00
SINGLE SPAN PRECAST CONCRETE BRIDGE SLAB SUPERSTRUCTURE ON CLOSED TIMBER BACKED ABUTMENTS
32'-0" BK.-BK. ABUTS., 28'-0" RDWY.,
30'-0" O.-O. DECK, 40° SKEW LEFT

REMOVAL OF EXISTING STRUCTURES = 1 EACH

B.M. #1 - TOP SE COR. BEARING SEAT
S.N. 038-0033 (U.S. 24)
EL. 635.10

B.M. #2 - TOP NW COR. BEARING SEAT
S.N. 038-0033 (U.S. 24)
EL. 635.31



FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIB. TO SPRING CREEK

DESIGNED: G.J.C.
CHECKED: R.D.F.
DRAWN: A.D.S.
CHECKED:

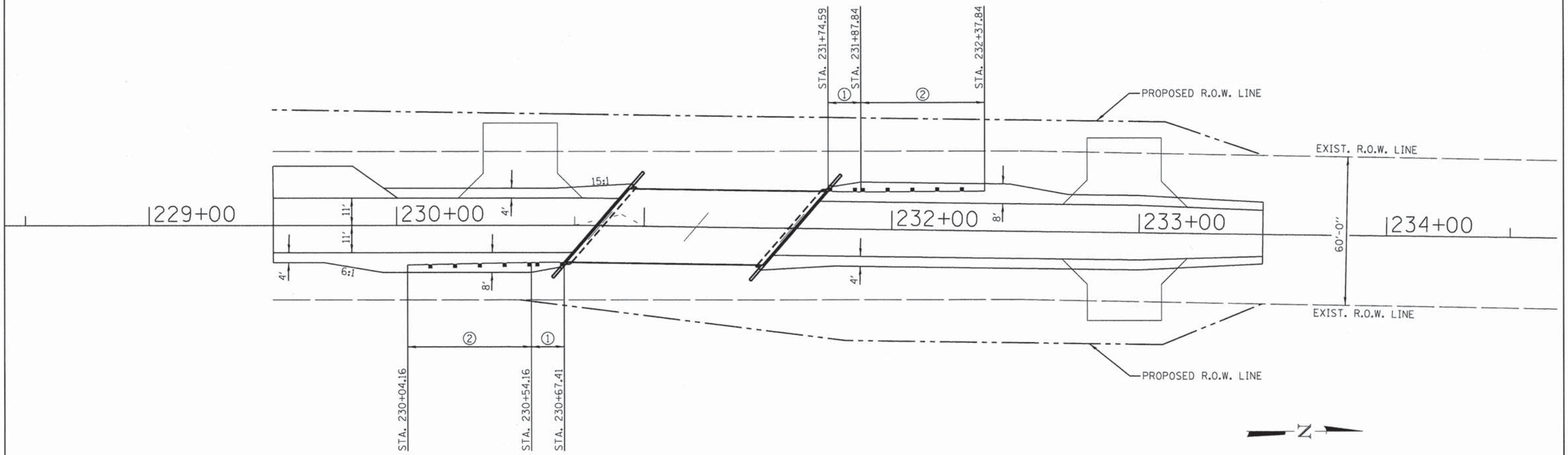
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: PLAN & PROFILE

JOB NUMBER: 13-705

SHEET NUMBER 3 of 22

CONTRACT #: 87554



GUARDRAIL & SHOULDER DETAIL

NOTE:
ROADWAY EMBANKMENT FORESLOPES ARE 3:1 EXCEPT AT THE BRIDGE WINGWALLS WHERE THE SLOPES ARE 2:1. THE TRANSITION FROM THE 2:1 BRIDGE EMBANKMENT TO THE 3:1 ROADWAY FORESLOPE SHALL BE ACCOMPLISHED AS RAPIDLY AS POSSIBLE.

TRAFFIC BARRIER TERMINAL, TYPE 5A

15' RT. STA. 230+54.16 TO 15' RT. STA. 230+67.41	=	1 EACH
15' LT. STA. 231+74.59 TO 15' LT. STA. 231+87.84	=	1 EACH
TOTAL	=	2 EACH

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

16' RT. STA. 230+04.16 TO 15' RT. STA. 230+54.16	=	1 EACH
15' LT. STA. 231+87.84 TO 16' LT. STA. 232+37.84	=	1 EACH
TOTAL	=	2 EACH

LEGEND

① TRAFFIC BARRIER TERMINAL, TYPE 5A

② TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIB. TO SPRING CREEK

DESIGNED: G.J.C.
CHECKED: R.D.F.
DRAWN: A.D.S.
CHECKED:

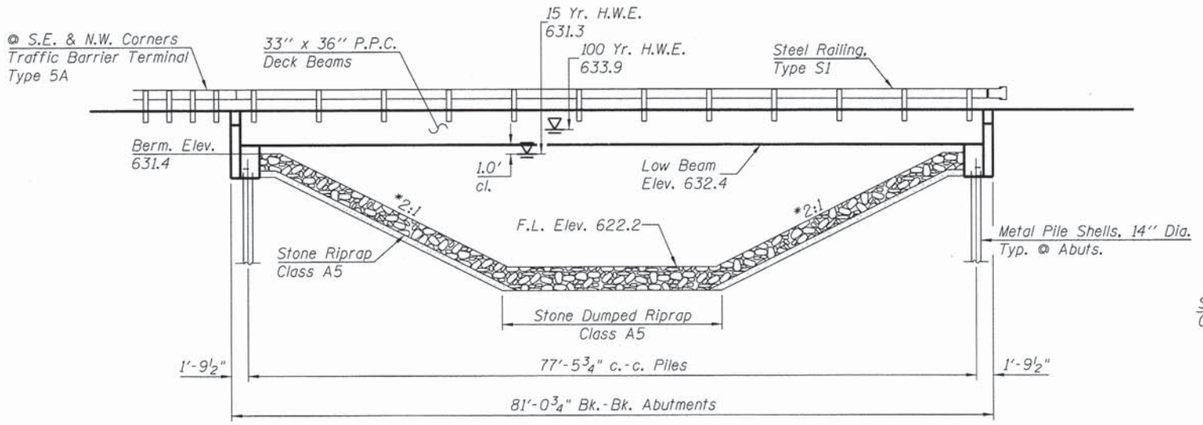
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: SHOULDER AND GUARDRAIL DETAIL

JOB NUMBER: 13-705

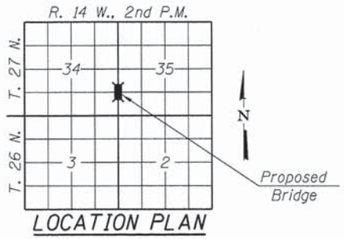
SHEET NUMBER: 4 OF 22

CONTRACT #: 87554

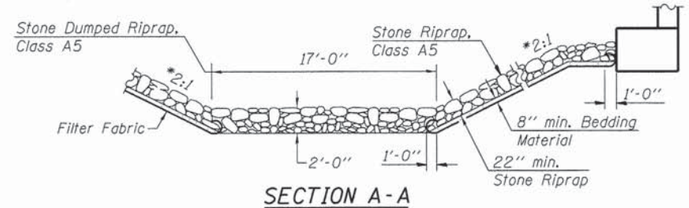


ELEVATION

* ℄ Rt. L's to Channel

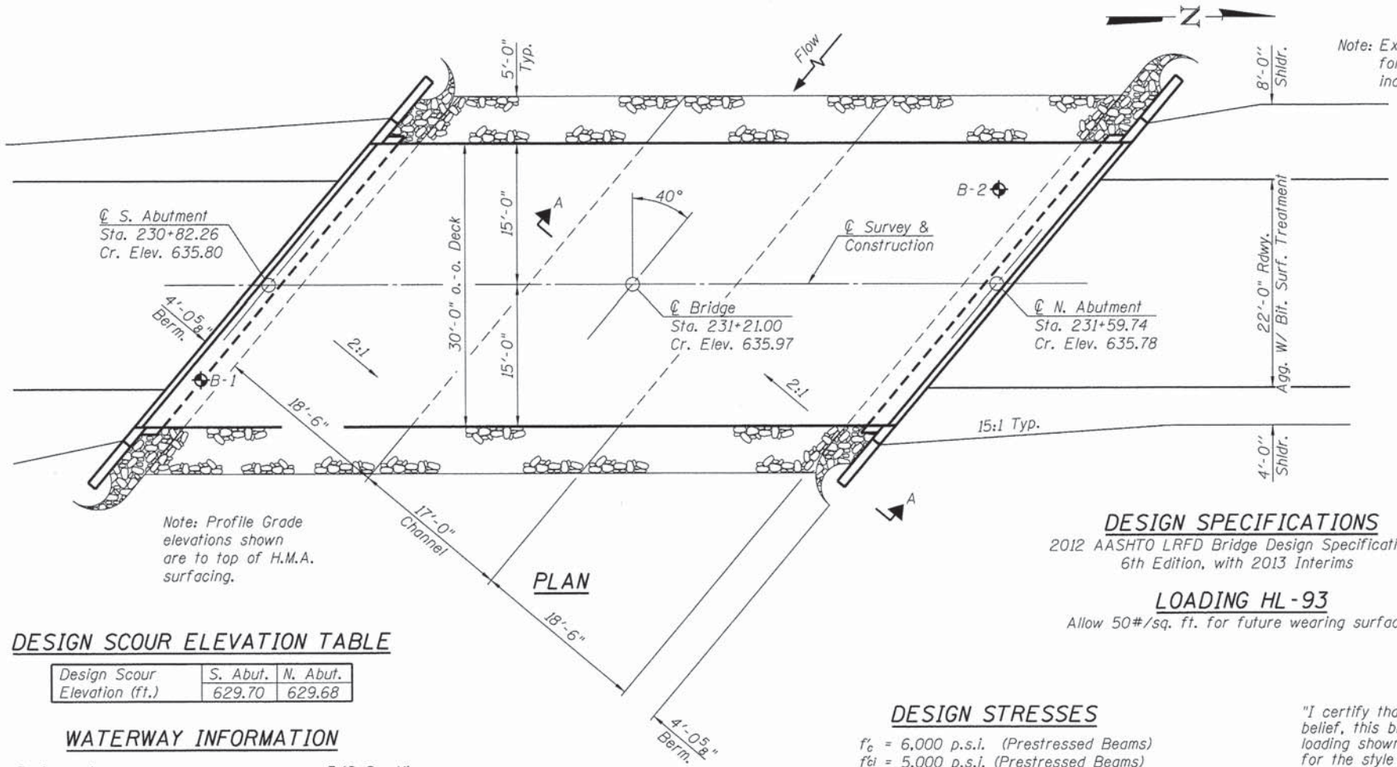


LOCATION PLAN



SECTION A-A
RIPRAP PLACEMENT

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



Note: Profile Grade elevations shown are to top of H.M.A. surfacing.

PLAN

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition, with 2013 Interims

LOADING HL-93

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

GENERAL NOTES

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

The Contractor shall drive one metal shell test pile in a permanent location at the South abutment 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.

All reinforcement bars shall be epoxy coated.

Structure Excavation will not be measured for payment but shall be included in the unit price bid for "Concrete Structues."

BUILT 20__ BY
IROQUOIS COUNTY
SEC. 11-00172-01-BR
F.A. PROJ. BROS-0075 (180)
STR. NO. 038-4012
LOADING HL-93

LETTERING FOR NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	2370		2370
Concrete Structures	Cu. Yd.		39.8	39.8
Reinforcement Bars, Epoxy Coated	Pound		5200	5200
Steel Railing, Type S1	Foot	164		164
Name Plates	Each		1	1
Furnishing Metal Shell Piles 14" x 0.250"	Foot		649	649
Driving Piles	Foot		649	649
Test Pile Metal Shells	Each		1	1
Stone Riprap, Class A5	Ton		236	236
Filter Fabric	Sq. Yd.		258	258
Stone Dumped Riprap, Class A5	Ton		99	99
Waterproofing Membrane System	Sq. Yd.	264		264
Portland Cement Mortar Fairing Course	Foot	711		711
H.M.A. Surface Course, Mix "C", N50	Ton	44		44

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	N. Abut.
	629.70	629.68

WATERWAY INFORMATION

Drainage Area	3.12 Sq. Mi.
Existing Opening (15 Yr.)	173 Sq. Ft.
Required Opening (15 Yr.)	320 Sq. Ft.
Proposed Opening (15 Yr.)	320 Sq. Ft.
Design Discharge (15 Yr.)	401 C.F.S.
Created Head (15 Yr.)	0.2 Ft.
100 Year Discharge	652 C.F.S.
100 Yr. Created Head	0.2 Ft.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.162
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.278
Soil Site Class = E

DESIGN STRESSES

f'_c = 6,000 p.s.i. (Prestressed Beams)
f'_{ci} = 5,000 p.s.i. (Prestressed Beams)
f'_s = 270,000 p.s.i. (Prestressed Strands)
f_{si} = 201,960 p.s.i. (Prestressed Strands)
f'_c = 3,500 p.s.i. (Concrete -- Field Units)
f_y = 60,000 p.s.i. (Reinf. Bars)
LOADING HL-93
Design Specifications: 2012 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 specified 'AASHTO LRFD Bridge Design Specifications'".

John A. Morris 1-29-14
ILLINOIS STRUCTURAL NO. 4277 (Expires 11/30/14)

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

GENERAL PLAN & ELEVATION
C.H. 42
SECTION 11-00172-01-BR
IROQUOIS COUNTY
STA. 231+21.00
S.N. 038-4012

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED:	A.R.K.
CHECKED:	J.A.M.
DRAWN:	A.D.S.
CHECKED:	A.R.K. J.A.M.

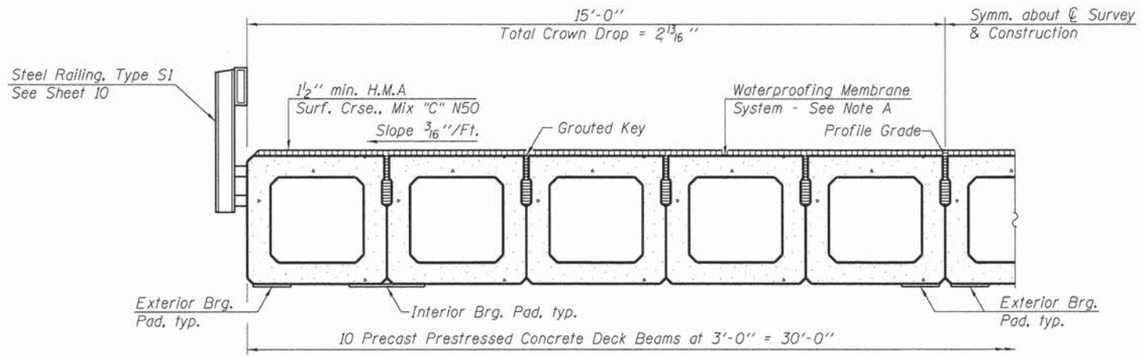
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: GENERAL PLAN & ELEVATION

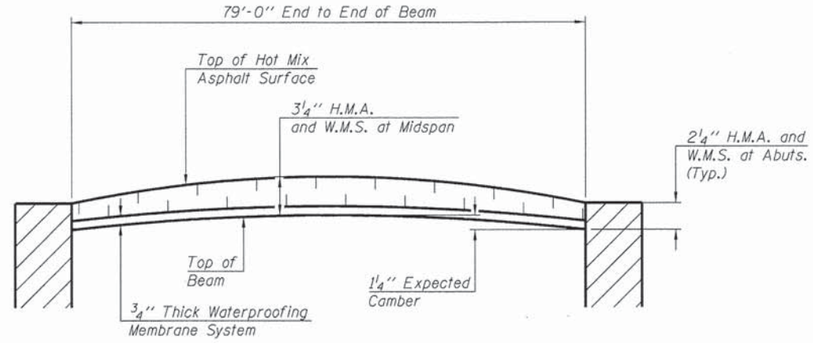
JOB NUMBER: 13-705

SHEET NUMBER 5 of 22

CONTRACT NO. 87554

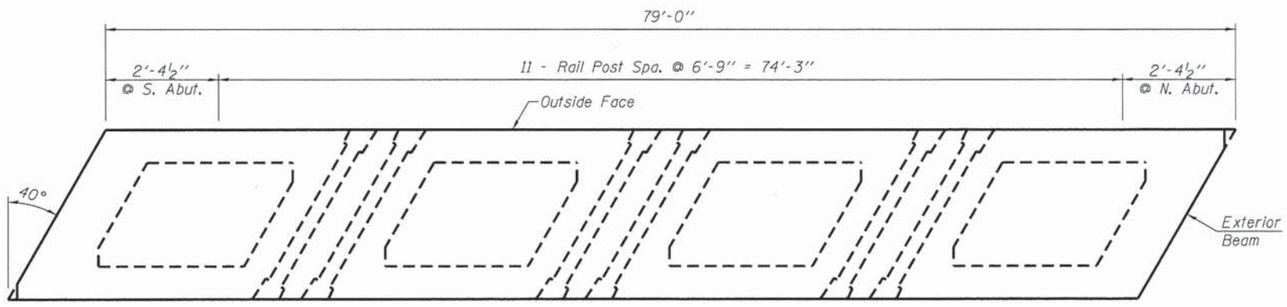


HALF CROSS SECTION



HOT-MIX ASPHALT SURFACE PROFILE

Note A: The top surface of the beams shall be finished in accordance with the "Manual For Fabrication of Precast Prestressed Concrete Products" and the surface shall not be roughened by brooming.



PLAN

(Showing Rail Post Spacing)

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ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED:	A.R.K.
CHECKED:	J.A.M.
DRAWN:	A.D.S.
CHECKED:	A.R.K. J.A.M.

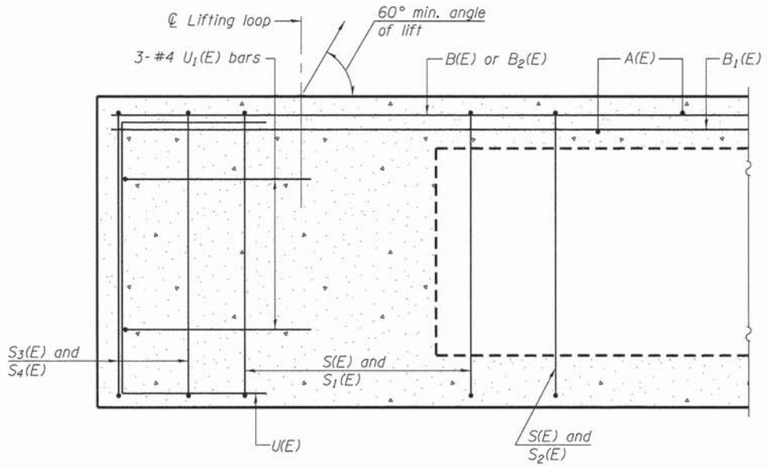
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: SUPERSTRUCTURE

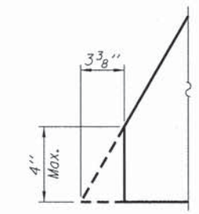
JOB NUMBER: 13-705

SHEET NUMBER 6 of 22

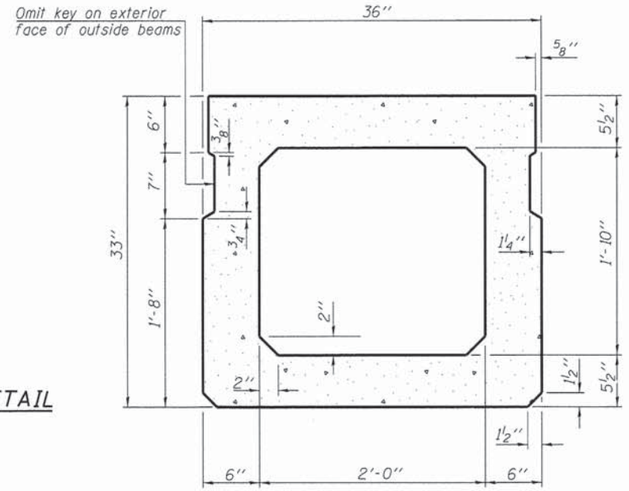
CONTRACT NO. 87554



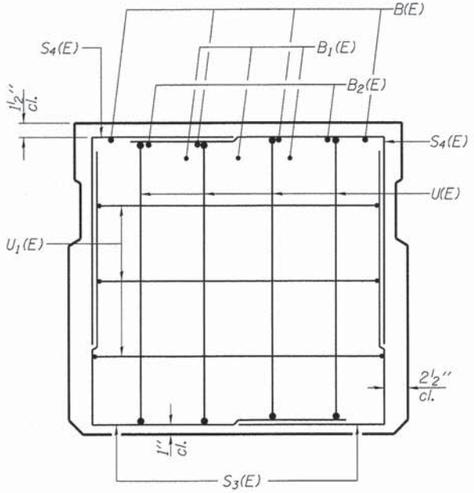
SECTION A-A



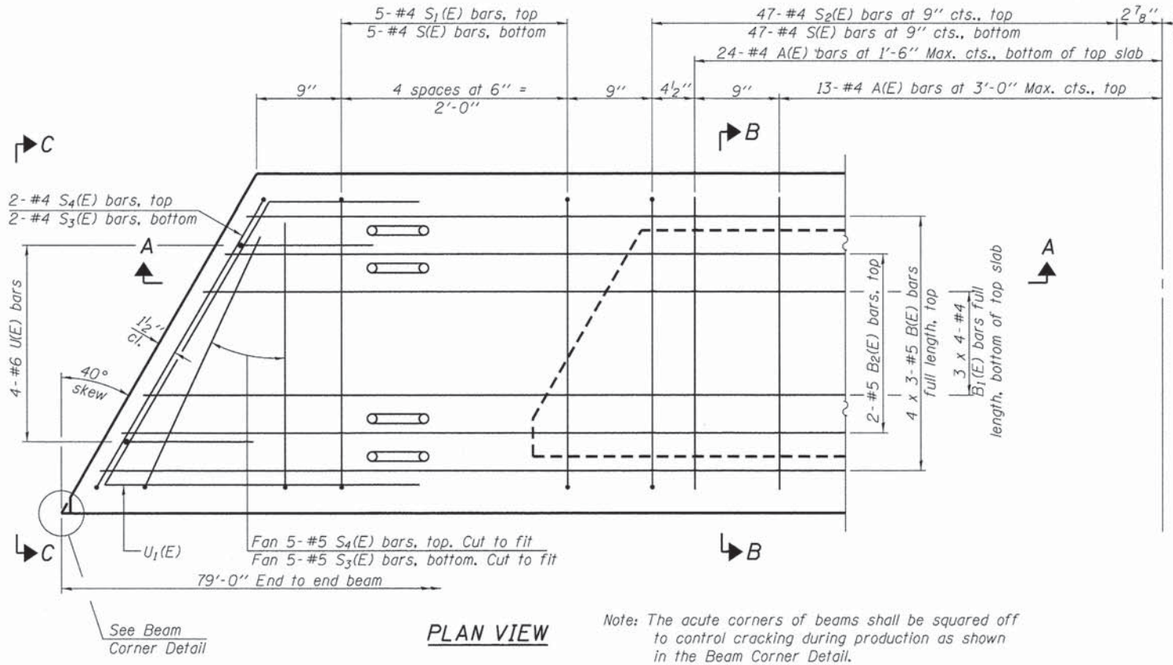
BEAM CORNER DETAIL



SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW

Note: The acute corners of beams shall be squared off to control cracking during production as shown in the Beam Corner Detail.

Spacing of S(E) and $S_2(E)$ bars may be adjusted up to 4'' in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

Bars indicated thus 4 x 3-#5 bars etc. indicates 4 lines of bars with 3 lengths per line.

MINIMUM BAR LAP
#4 bar = 2'-0''
#5 bar = 2'-6''

SECTION B-B
(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	72	#4	2'-7''	—
B(E)	12	#5	27'-11''	—
$B_1(E)$	12	#4	21'-3''	—
$B_2(E)$	4	#5	10'-0''	—
S(E)	104	#4	7'-5''	⌐
$S_1(E)$	10	#4	6'-3''	⌐
$S_2(E)$	94	#4	6'-6''	⌐
$S_3(E)$	14	#4	5'-1''	⌐
$S_4(E)$	14	#4	4'-6''	⌐
U(E)	8	#6	5'-0''	⊏
$U_1(E)$	6	#4	7'-11''	⊏

Note: See sheet 8 for additional details and Bill of Material.

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PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED:	A.R.K.
CHECKED:	J.A.M.
DRAWN:	A.D.S.
CHECKED:	A.R.K. J.A.M.

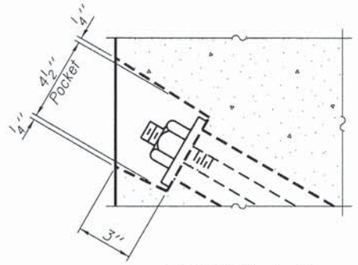
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: 33'' x 36'' PPC DECK BEAM

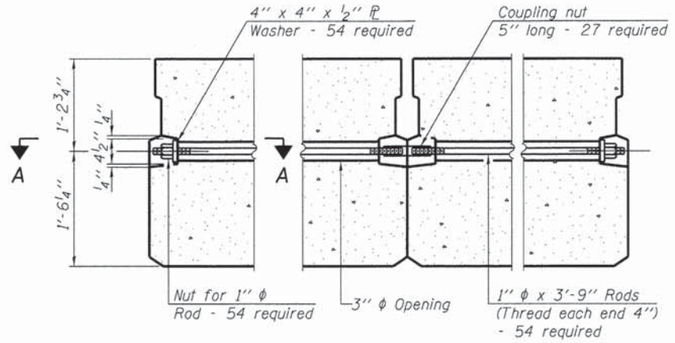
JOB NUMBER: 13-705

SHEET NUMBER 7 of 22

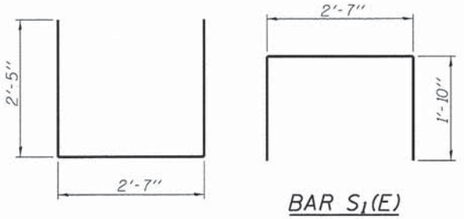
CONTRACT NO. 87554



SECTION A-A

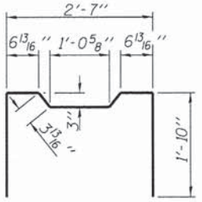


TYPICAL TRANSVERSE TIE ASSEMBLY

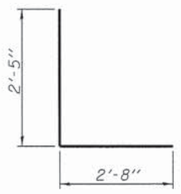


BAR S(E)

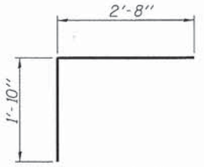
BAR S_1(E)



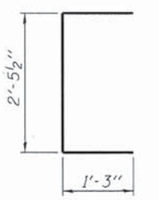
BAR S_2(E)



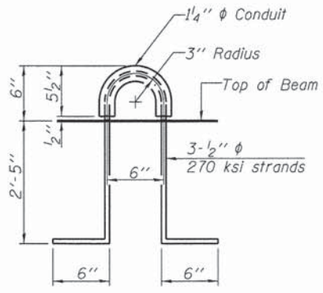
BAR S_3(E)



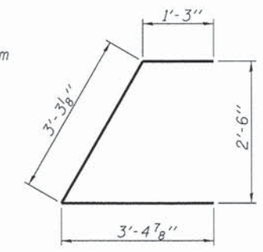
BAR S_4(E)



BAR U(E)

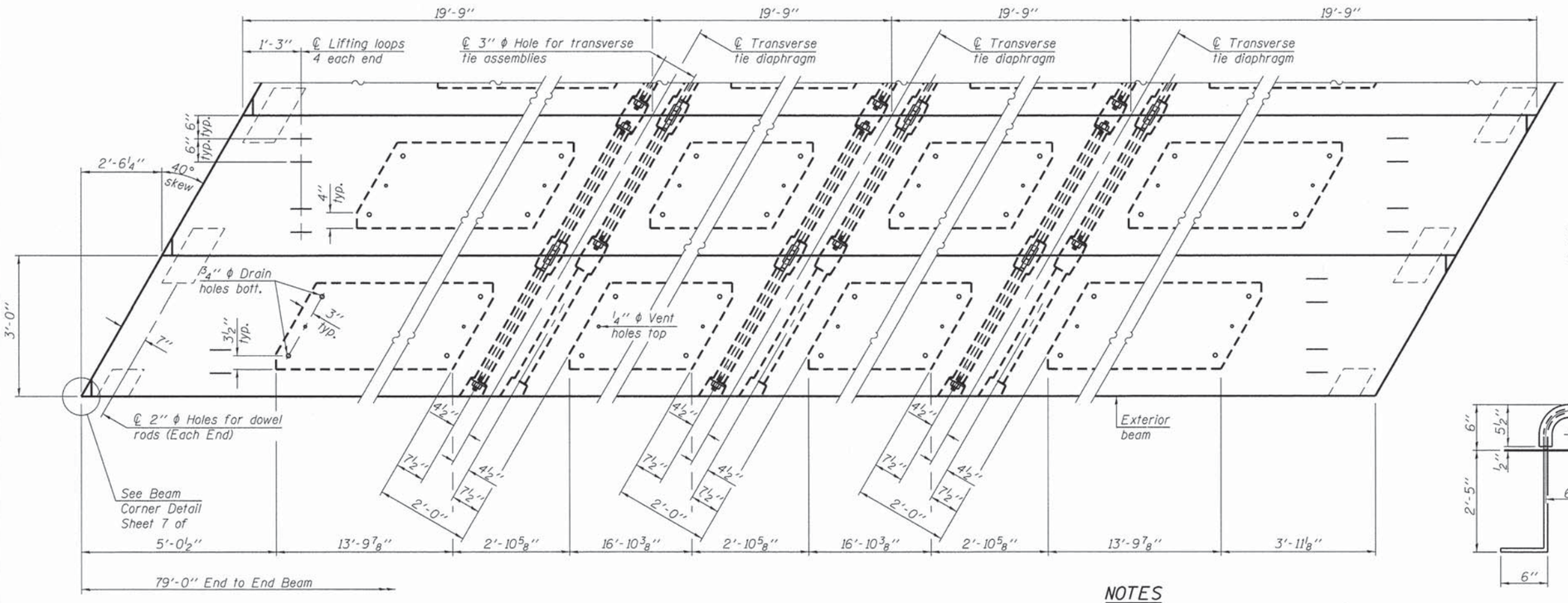


LIFTING LOOP DETAIL



BAR U_1(E)

Notes:
See Sheet 9 for Details of fixed bearings.



PLAN VIEW

Note: Connect beams in pairs with the transverse tie configuration shown.

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706, Grade 60.

A minimum 2 1/2" ø lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

Rail post inserts, specified elsewhere, shall be cast into the exterior face of the outside beams.

See Special Provisions for review and distribution of shop drawings.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	2370

Estimated Total Weight (One Beam) = 64,900 Pounds

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PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED:	A.R.K.
CHECKED:	J.A.M.
DRAWN:	A.D.S.
CHECKED:	A.R.K. J.A.M.

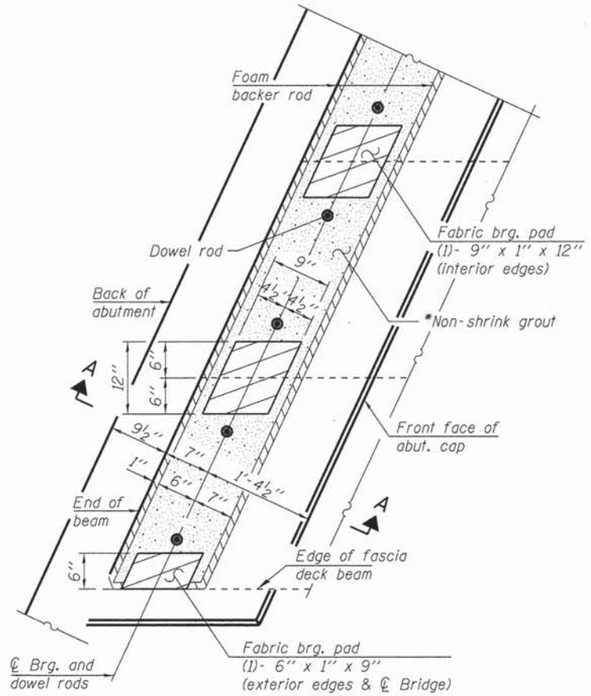
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: 33" x 36" PPC DECK BEAM DETAILS

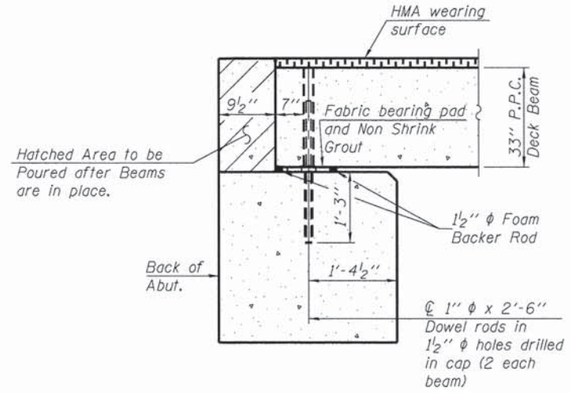
JOB NUMBER: 13-705

SHEET NUMBER 8 of 22

CONTRACT NO. 87554

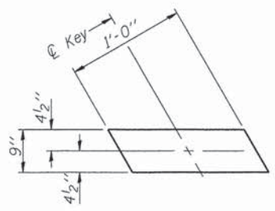


PLAN



SEC. A-A THRU ABUT.

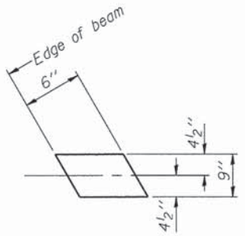
(© Rt. L's)



FABRIC BEARING PAD

(Interior)

(16 Reqd.)



FABRIC BEARING PAD

(Exterior)

(8 Reqd)

Notes:
All bearing pads shall be 1" thick.

Notes:
The bearing seat surfaces shall be adjusted by shimming the bearing to assure firm and even bearing prior to placement of grout. 2-⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shown shall be provided for each bearing. (48-Required)

*Note: After all beams are in place, Non-shrink grout for bearing seats shall be provided and dowel rods grouted. Non-shrink grout and grouted dowel rods shall be allowed to cure (Min. 24 hours) prior to grouting the shear keys.

BEARING SEAT TREATMENT PLAN

Fabric adjusting shims (⅛" thick) shall be used to provide firm and even bearing between fabric bearing pads and concrete bearing surfaces prior to the placement of non-shrink grout. The cost of providing and placing fabric bearing pads, fabric adjusting shims and non-shrink grout is included in the cost of Precast Prrestressed Concrete Deck Beams (33" Depth).

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PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED:	A.R.K.
CHECKED:	J.A.M.
DRAWN:	A.D.S.
CHECKED:	A.R.K. J.A.M.

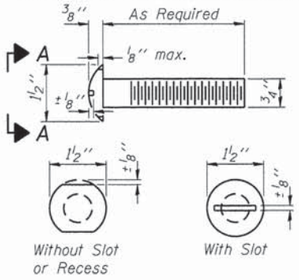
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: BEARING DETAILS

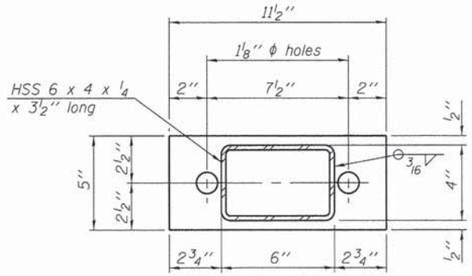
JOB NUMBER: 13-705

SHEET NUMBER 9 of 22

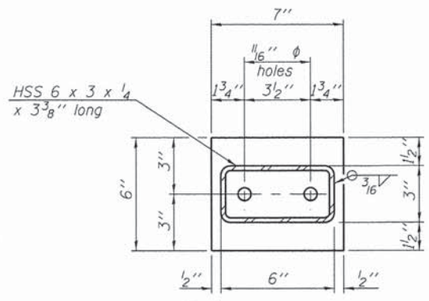
CONTRACT NO. 87554



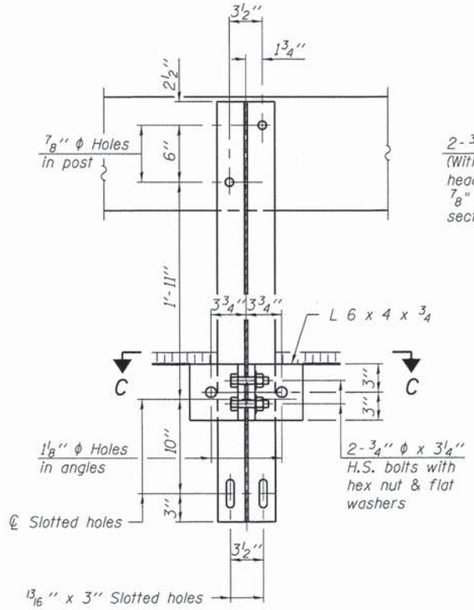
VIEW A-A
ROUND HEAD BOLT



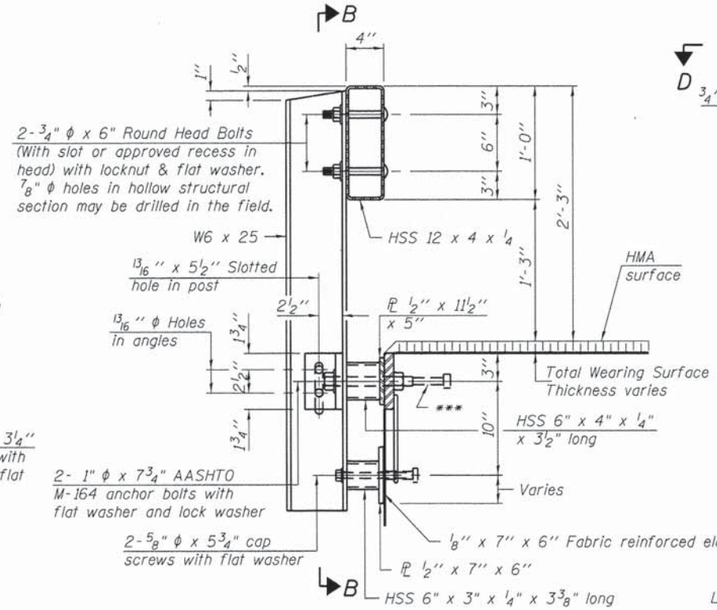
℄ 1/2" x 11 1/2" x 5"



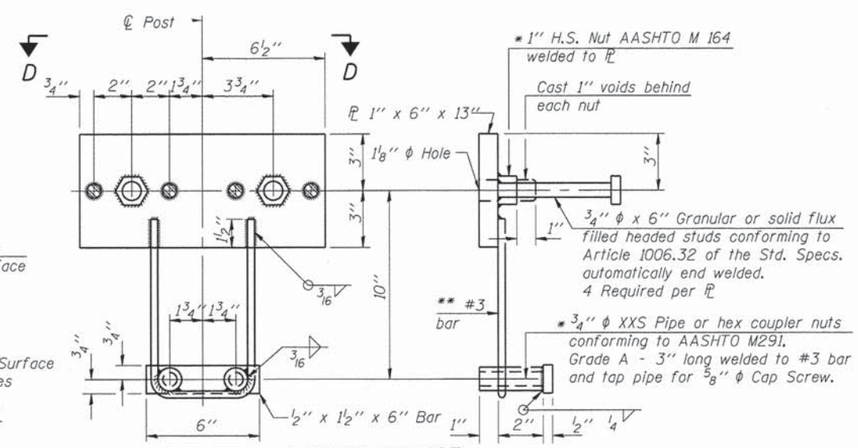
℄ 1/2" x 7" x 6"



SECTION B-B

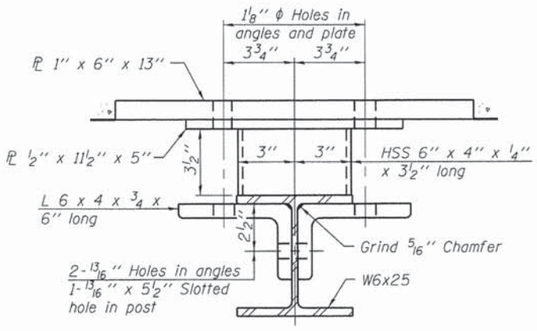


SECTION AT RAILING POST

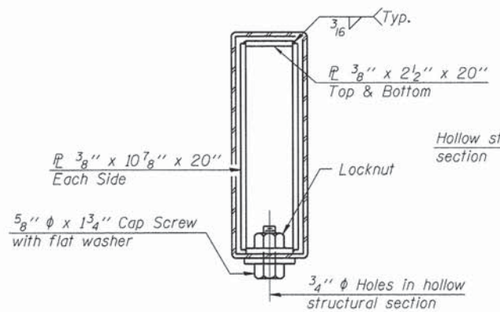


ANCHOR DEVICE

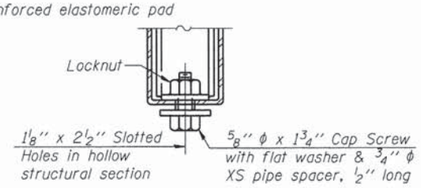
Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
* Threaded areas of nuts or pipes used for anchor devices shall be plugged or blocked off during casting 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".
*** 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.
See Sheet 11 for Rail Post Spacing details.



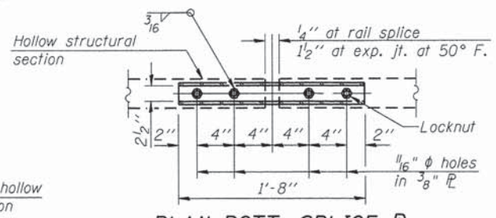
SECTION C-C



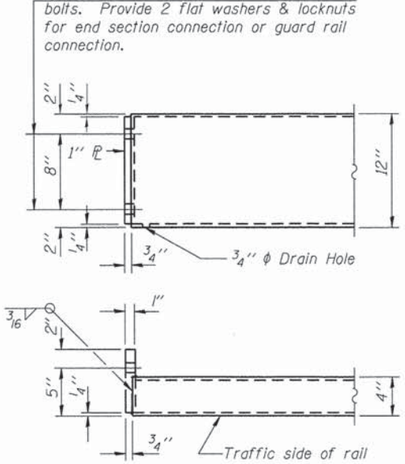
SECTIONS AT RAIL SPLICE



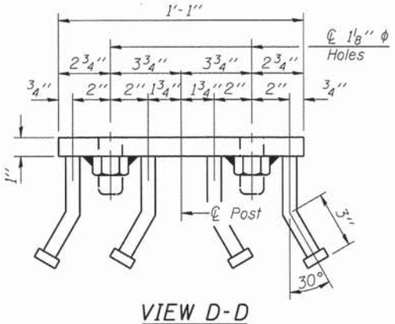
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE ℄ TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	164

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
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PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED: A.R.K.
CHECKED: J.A.M.
DRAWN: A.D.S.
CHECKED: A.R.K. J.A.M.

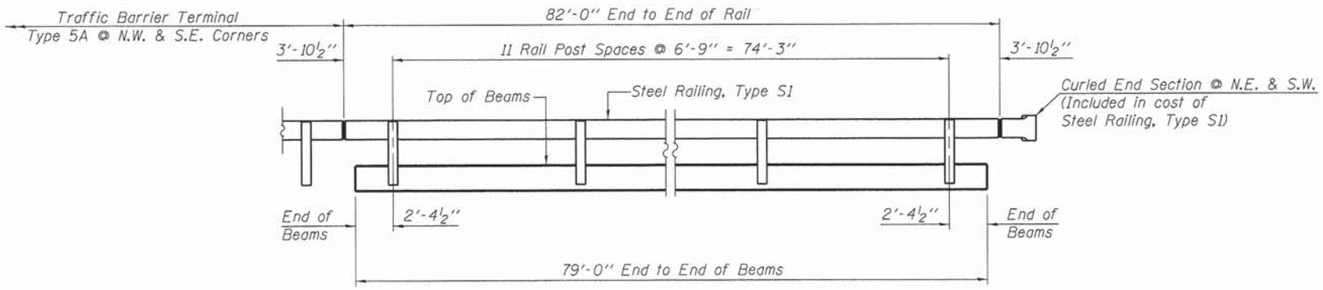
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: STEEL RAILING, TYPE S-1

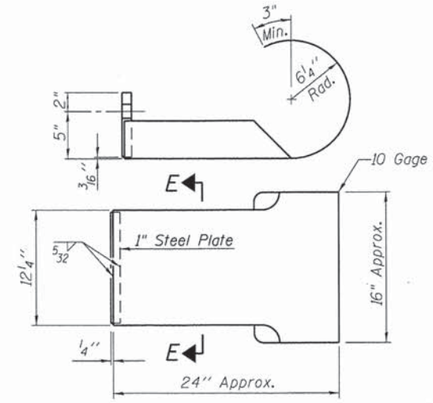
JOB NUMBER: 13-705

SHEET NUMBER: 10 of 22

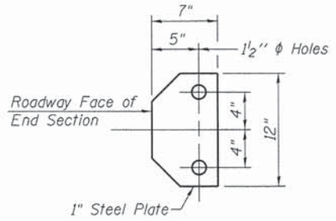
CONTRACT NO. 87554



ELEVATION



CURLED END SECTION DETAILS
(2 Required)



SECTION E-E

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
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REV. NO.	DESCRIPTION	DATE
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REV. NO.	DESCRIPTION	DATE
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REV. NO.	DESCRIPTION	DATE

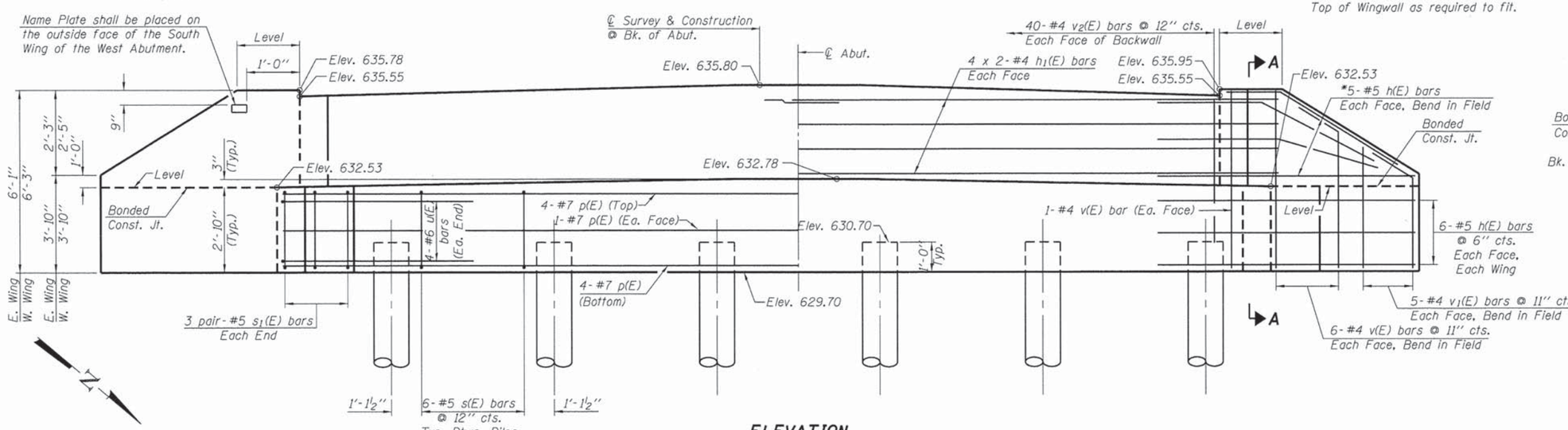
DRAWING: STEEL RAILING, TYPE S-1

JOB NUMBER: 13-705

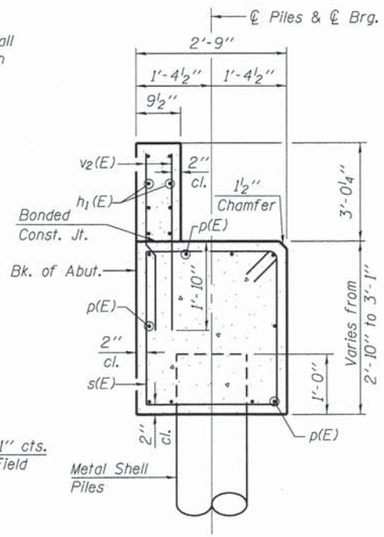
SHEET NUMBER 11 of 22

CONTRACT NO. 87554

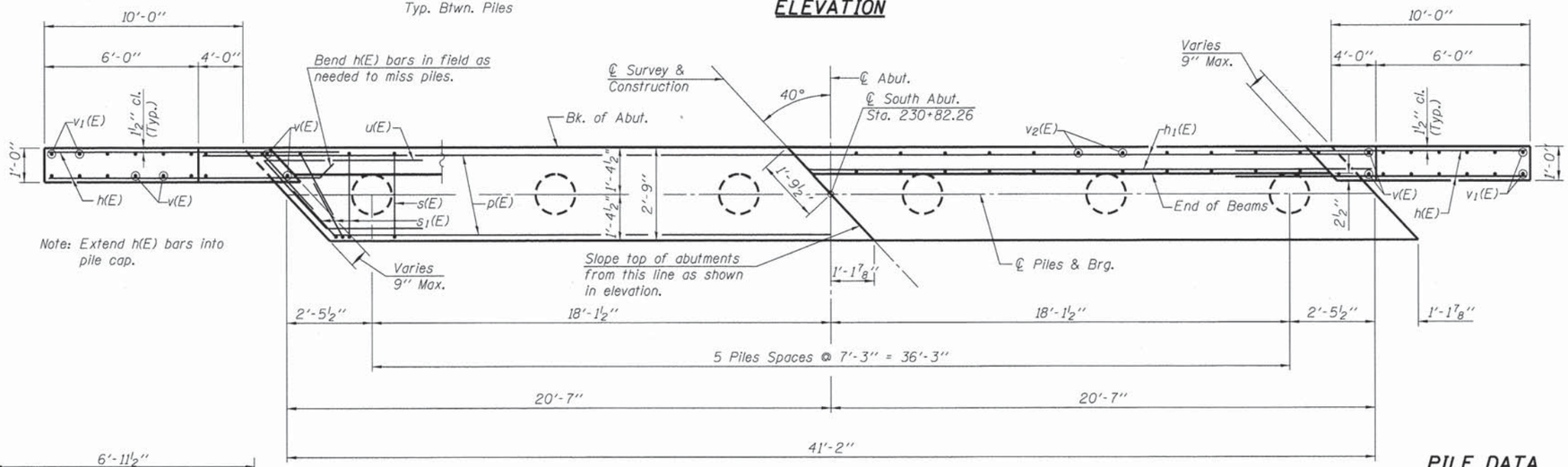
Note: After beams are in place, bearing seats grouted, and dowel rods grouted, the backwall and the portions of the wingwalls above the Bonded Construction Joint shall be poured.



ELEVATION



SECTION THRU ABUT.



PLAN

BAR u(E) | BAR s(E) | BAR s1(E)

MIN. BAR LAPS

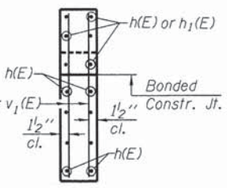
#4 ..... 2'-1"

PILE DATA

Type & Size ..... Metal Shell 14" x 0.25"
No. Req'd. **6
Nominal Required Bearing ..... 395 kips
Factored Resistance Available ..... 217 kips
Estimated Length ..... 59 ft.

**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.



SECTION A-A

S. ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	44	#5	13'-6"	
h1(E)	16	#4	25'-8"	
p(E)	10	#7	40'-8"	
s(E)	30	#5	10'-9"	
s1(E)	12	#5	7'-4"	
u(E)	8	#6	15'-0"	
v(E)	20	#4	5'-11"	
v1(E)	16	#4	5'-1"	
v2(E)	40	#4	4'-9"	
Concrete Structures			Cu. Yd.	19.9
Reinforcement Bars, Epoxy Coated			Pound	2600
Name Plates			Each	1
Test Pile, Metal Shell			Each	1
Furnishing Metal Shell Piles 14" x 0.250"			Foot	295
Driving Piles			Foot	295

See Sheet 14 for Pile Details.

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY SPRING CREEK

DESIGNED:	A.R.K.
CHECKED:	J.A.M.
DRAWN:	A.D.S.
CHECKED:	A.R.K. J.A.M.

REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: SOUTH ABUTMENT

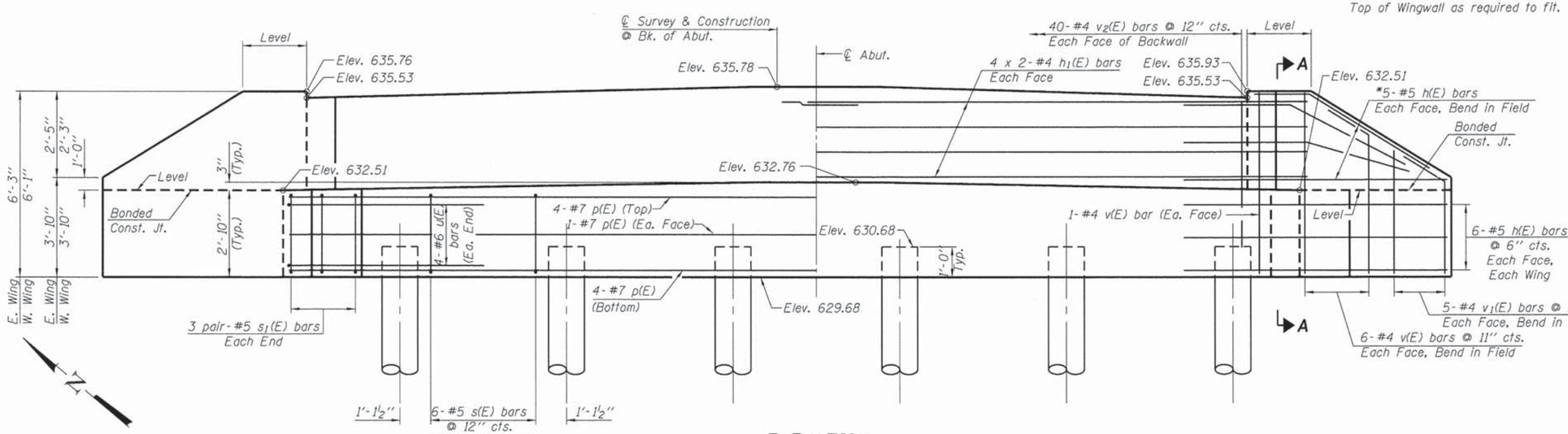
JOB NUMBER: 13-705

SHEET NUMBER: 12 of 22

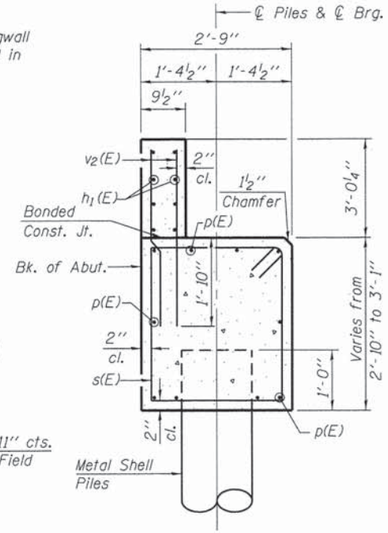
CONTRACT NO. 87554

Note: After beams are in place, bearing seats grouted, and dowel rods grouted, the backwall and the portions of the wingwalls above the Bonded Construction Joint shall be poured.

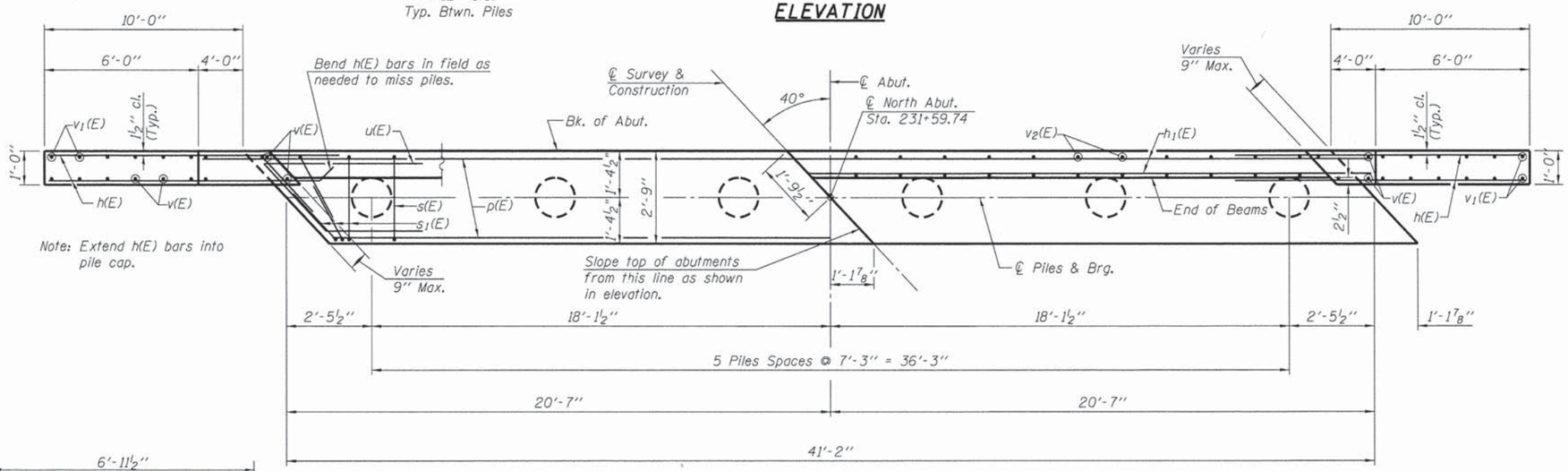
*Cut h(E) bars in Front Face of Wingwall above Bonded Construction Joint and in Top of Wingwall as required to fit.



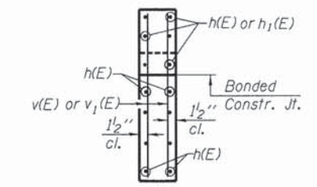
ELEVATION



SECTION THRU ABUT.



PLAN

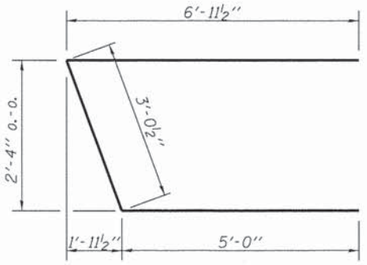


SECTION A-A

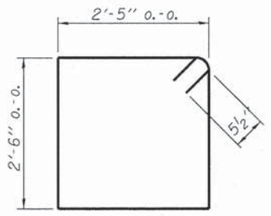
N. ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	44	#5	13'-6"	—
h1(E)	16	#4	25'-8"	—
p(E)	10	#7	40'-8"	—
s(E)	30	#5	10'-9"	□
s1(E)	12	#5	7'-4"	⊏
u(E)	8	#6	15'-0"	⌓
v(E)	20	#4	5'-11"	—
v1(E)	16	#4	5'-1"	—
v2(E)	40	#4	4'-9"	—
Concrete Structures			Cu. Yd.	19.9
Reinforcement Bars, Epoxy Coated			Pound	2600
Furnishing Metal Shell Piles 14" x 0.250"			Foot	354
Driving Piles			Foot	354

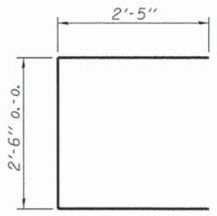
See Sheet 14 for Pile Details.



BAR u(E)



BAR s(E)



BAR s1(E)

MIN. BAR LAPS

#4 ..... 2'-1"

PILE DATA

Type & Size ..... Metal Shell 14" x 0.25"
No. Req'd. 6
Nominal Required Bearing ..... 395 kips
Factored Resistance Available ..... 217 kips
Estimated Length ..... 59 ft.

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY SPRING CREEK

DESIGNED: A.R.K.
CHECKED: J.A.M.
DRAWN: A.D.S.
CHECKED: A.R.K. J.A.M.

REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: NORTH ABUTMENT

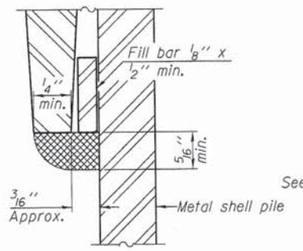
JOB NUMBER: 13-705

SHEET NUMBER 13 of 22

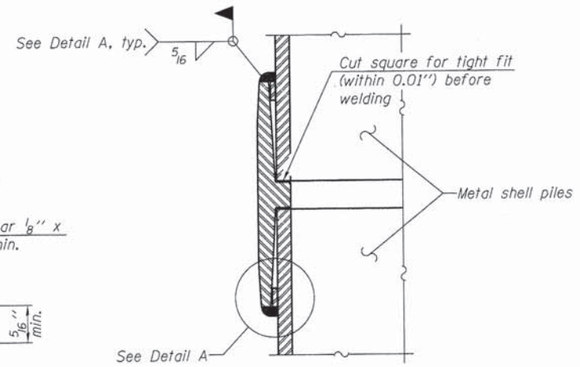
CONTRACT NO. 87554

METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume ($yd.^3$/ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361

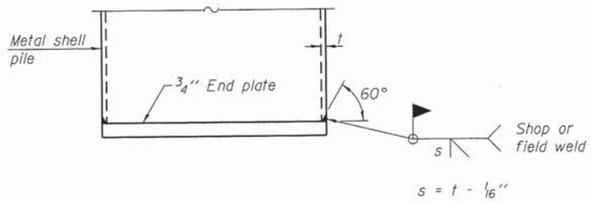


DETAIL A

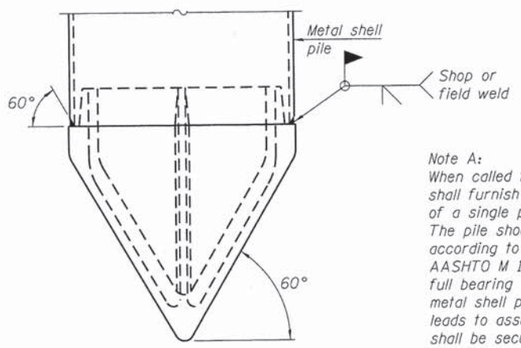


Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE

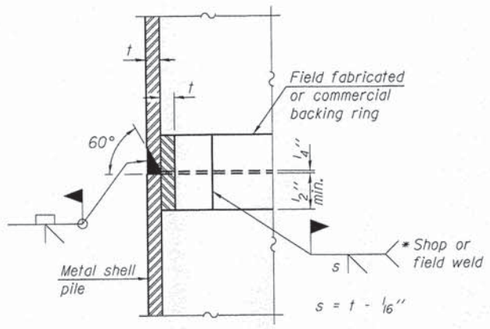


END PLATE ATTACHMENT



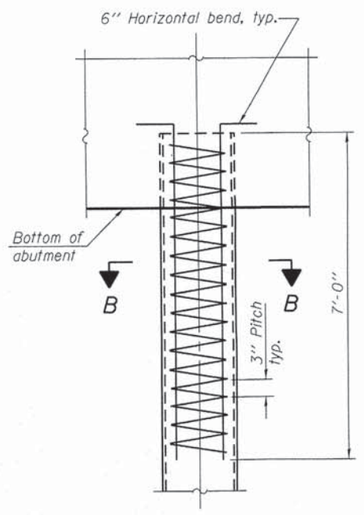
Note A:
When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

METAL SHELL PILE SHOE ATTACHMENT
(See Note A)

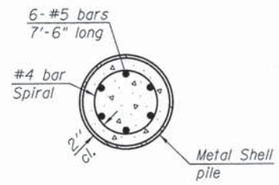


COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION



SECTION B-B

METAL SHELL REINFORCEMENT AT ABUTMENTS

Note:
The metal shell piles shall be according to ASTM A 252 Grade 3.

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS IOWA WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY SPRING CREEK

DESIGNED:	A.R.K.
CHECKED:	J.A.M.
DRAWN:	A.D.S.
CHECKED:	A.R.K. J.A.M.

REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: METAL SHELL PILE DETAILS

JOB NUMBER: 13-705

SHEET NUMBER: 14 of 22

CONTRACT NO. 87554

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

Phone: 815-223-6696
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e-mail: mts37@comcast.net

BORING LOG

Sheet 1 of 4

Client: Fehr-Graham
Project Name: Section 11-00172-01-BR
Project Site: Iroquois County, IL.
SN 038-4012

Boring No. B-1
Surface Elev. 633.10
Auger Depth 66' Rotary Depth NA
Start Date 08/31/13 Finish Date 08/31/13

Location: 10' Right of Station 230+75

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV. 633.10	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
632.10	Stiff Black And Brown Clay (Fill)		1								
631.10			2								
630.10			3	1	SS	1.2	7	S	15		
629.10			4								
628.10	Stiff Black Silty Clay		5	2	SS	1.4	8	B	23		
627.10			6								
626.10			7								
625.10	Stiff Brown Clay		8	3	SS	1.5	8	B	22		
624.10			9								
623.10			10	4	SS	2.0	9	B	25		
622.10	Very Stiff Brownish Gray Clay Till		11								
621.10			12								
620.10			13	5	SS	2.1	9	B	25		
619.10			14								
618.10			15								
617.10			16	6	SS	2.4	10	B	23		
616.10	Very Stiff Gray Clay Till		17								
615.10			18	7	SS	2.2	9	B	26		
614.10			19								
613.10			20								
				8	SS	2.3	10	B	25		

Groundwater Data: No groundwater encountered at time of subsurface investigation.
Comments:

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

BORING LOG

Sheet 2 of 4

Client: Fehr-Graham
Project Name: Section 11-00172-01-BR
Project Site: Iroquois County, IL.
SN 038-4012

Boring No. B-1
Surface Elev. 633.10
Auger Depth 66' Rotary Depth NA
Start Date 08/31/13 Finish Date 08/31/13

Location: 10' Right of Station 230+75

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV. 612.10	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
611.10	Very Stiff Gray Clay Till		22								
610.10			23	9	SS	2.4	10	B	23		
609.10			24								
608.10	Stiff Gray Clay Till		25								
607.10			26	10	SS	1.6	8	B	25		
606.10			27								
605.10			28	11	SS	1.8	9	B	25		
604.10			29								
603.10			30								
602.10			31	12	SS	1.9	8	B	26		
601.10			32								
600.10			33	13	SS	2.2	10	B	22		
599.10			34								
598.10			35								
597.10	Very Stiff Gray Clay With Fine Sand Seams		36	14	SS	2.5	12	B	23		
596.10			37								
595.10			38								
594.10			39								
593.10			40								
592.10			41	15	SS	2.3	12	B	23		

Groundwater Data: No groundwater encountered at time of subsurface investigation.
Comments:

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

BORING LOG

Sheet 3 of 4

Client: Fehr-Graham
Project Name: Section 11-00172-01-BR
Project Site: Iroquois County, IL.
SN 038-4012

Boring No. B-1
Surface Elev. 633.10
Auger Depth 66' Rotary Depth NA
Start Date 08/31/01 Finish Date 08/31/13

Location: 10' Right of Station 230+75

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV. 591.10	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
590.10			43								
589.10	Very Stiff Gray Clay With Silt Seams		44								
588.10			45								
587.10			46	16	SS	2.4	11	B	28		
586.10			47								
585.10			48								
584.10			49								
583.10			50								
582.10			51	17	SS	1.9	9	B	25		
581.10			52								
580.10			53								
579.10	Stiff Gray Clay With Silt Seams		54								
578.10			55								
577.10			56	18	SS	1.9	8	B	37		
576.10			57								
575.10			58								
574.10			59								
573.10			60								
572.10			61	19	SS	1.6	8	B	36		
571.10			62								

Groundwater Data: No groundwater encountered at time of subsurface investigation.
Comments:

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354

Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

BORING LOG

Sheet 4 of 4

Client: Fehr-Graham
Project Name: Section 11-00172-01-BR
Project Site: Iroquois County, IL.
SN 038-4012

Boring No. B-1
Surface Elev. 633.10
Auger Depth 66' Rotary Depth NA
Start Date 08/31/13 Finish Date 08/31/13

Location: 10' Right of Station 230+75

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV. 570.10	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
569.10	Medium Gray Alternating Seams of Fine Sand And Silt		64								
568.10			65								
567.10			66	20	SS	---	22	---	16		
566.10	Botttom of Boring		67								
565.10			68								
564.10			69								
563.10			70								
562.10			71								
561.10			72								
560.10			73								
559.10			74								
558.10			75								
557.10			76								
556.10			77								
555.10			78								
554.10			79								
553.10			80								
552.10			81								
551.10			82								
550.10			83								

Groundwater Data: No groundwater encountered at time of subsurface investigation.
Comments:

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

ILLINOIS
IOWA
WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED:	A.R.K.
CHECKED:	J.A.M.
DRAWN:	A.D.S.
CHECKED:	A.R.K. J.A.M.

REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: SOIL BORING LOGS

JOB NUMBER: 13-705

SHEET NUMBER 16 of 22

CONTRACT NO. 87554

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

BORING LOG

Sheet 1 of 4

Client: Fehr-Graham
Project Name: Section 11-00172-01-BR
Project Site: Iroquois County, IL.
SN 038-4012

Boring No. B-2
Surface Elev. 633.00
Auger Depth 76' Rotary Depth NA
Start Date 08/31/13 Finish Date 08/31/13

Location: 10' Left of Station 231+60

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
633.00											
632.00			1								
631.00			2								
630.00	Stiff Black And Brown Clay (Fill)		3	1	SS	1.4	8	B	23		
629.00			4								
628.00			5	2	SS	1.7	9	B	21		
627.00			6								
626.00			7								
625.00	Stiff Black Silty Clay		8	3	SS	1.3	6	B	25		
624.00			9								
623.00			10								
622.00			11	4	SS	2.1	9	B	24		
621.00			12								
620.00	Very Stiff Gray Clay Till		13	5	SS	2.2	9	B	24		
619.00			14								
618.00			15	6	SS	2.1	8	B	24		
617.00			16								
616.00			17								
615.00			18	7	SS	2.0	9	B	25		
614.00			19								
613.00	Stiff Gray Clay Till		20	8	SS	1.6	8	B	26		

Groundwater Data: No groundwater encountered at time of subsurface investigation.
Comments:

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

BORING LOG

Sheet 2 of 4

Client: Fehr-Graham
Project Name: Section 11-00172-01-BR
Project Site: Iroquois County, IL.
SN 038-4012

Boring No. B-2
Surface Elev. 633.00
Auger Depth 76' Rotary Depth NA
Start Date 08/31/13 Finish Date 08/31/13

Location: 10' Left of Station 231+60

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
612.00											
611.00			22								
610.00			23	9	SS	1.5	7	B	26		
609.00			24								
608.00	Stiff Gray Clay Till		25	10	SS	1.7	8	B	25		
607.00			26								
606.00			27								
605.00			28	11	SS	1.7	8	B	25		
604.00			29								
603.00			30	12	SS	2.0	9	B	23		
602.00			31								
601.00			32								
600.00			33	13	SS	2.1	9	B	23		
599.00			34								
598.00			35								
597.00	Very Stiff Gray Clay With Silt Seams		36	14	SS	2.2	10	B	24		
596.00			37								
595.00			38								
594.00			39								
593.00			40								
592.00			41	15	SS	2.4	12	B	22		

Groundwater Data: No groundwater encountered at time of subsurface investigation.
Comments:

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS IOWA WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED: A.R.K.
CHECKED: J.A.M.
DRAWN: A.D.S.
CHECKED: A.R.K. J.A.M.

REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING: SOIL BORING LOGS

JOB NUMBER: 13-705

SHEET NUMBER: 17 of 22

CONTRACT NO. 87554

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

BORING LOG

Sheet 3 of 4

Client: Fehr-Graham
Project Name: Section 11-00172-01-BR
Project Site: Iroquois County, IL.
SN 038-4012

Boring No. B-2
Surface Elev. 633.00
Auger Depth 76' Rotary Depth NA
Start Date 08/31/01 Finish Date 08/31/13

Location: 10' Left of Station 231+60

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV. 591.00	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
590.00			43								
589.00			44								
588.00			45								
587.00	Very Stiff Gray Clay With Silt Seams		46	16	SS	2.1	10	B	27		
586.00			47								
585.00			48								
584.00			49								
583.00			50	17	SS	2.3	12	B	25		
582.00			51								
581.00			52								
580.00			53								
579.00			54								
578.00			55								
577.00	Stiff Gray Clay With Silt Seams		56	18	SS	1.8	8	B	36		
576.00			57								
575.00			58								
574.00			59								
573.00			60								
572.00			61	19	SS	1.7	9	B	34		
571.00			62								

Groundwater Data: No groundwater encountered at time of subsurface investigation.
Comments:

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Peru, IL 61354
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BORING LOG

Sheet 4 of 4

Client: Fehr-Graham
Project Name: Section 11-00172-01-BR
Project Site: Iroquois County, IL.
SN 038-4012

Boring No. B-2
Surface Elev. 633.00
Auger Depth 76' Rotary Depth NA
Start Date 08/31/13 Finish Date 08/31/13

Location: 10' Left of Station 231+60

DRILLED BY: Randy Safranski, Diedrich D-120

(DEPTH) ELEV. 570.00	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
569.00			64								
568.00			65								
567.00			66	20	SS	---	27	---	15		
566.00	Medium Gray Silty Loam		67								
565.00			68								
564.00			69								
563.00			70								
562.00			71	21	SS	---	29	---	12		
561.00			72								
560.00			73								
559.00	Dense Gray Silty Loam		74								
558.00			75								
557.00	Bottom of Boring		76	22	SS	---	33	---	12		
556.00			77								
555.00			78								
554.00			79								
553.00			80								
552.00			81								
551.00			82								
550.00			83								

Groundwater Data: No groundwater encountered at time of subsurface investigation.
Comments:

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS IOWA WISCONSIN

AGENCY: IROQUOIS COUNTY HWY. DEPT.

PROJECT: SECTION 11-00172-01-BR
C.H. 42 OVER TRIBUTARY
SPRING CREEK

DESIGNED: A.R.K.
CHECKED: J.A.M.
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REV. NO.	DESCRIPTION	DATE
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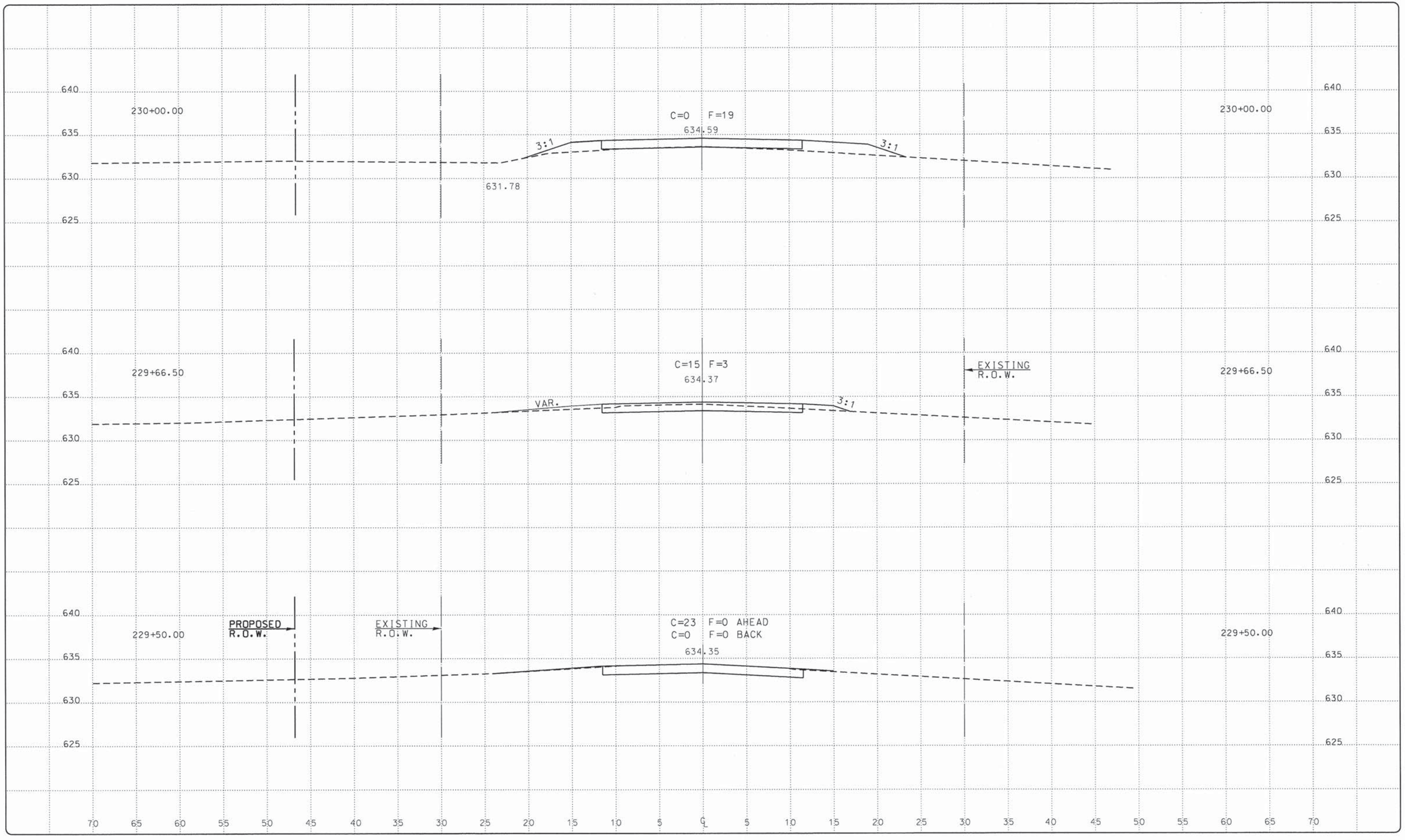
REV. NO.	DESCRIPTION	DATE

DRAWING: SOIL BORING LOGS

JOB NUMBER: 13-705

SHEET NUMBER: 18 of 22

CONTRACT NO. 87554



FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

ILLINOIS
IOWA
WISCONSIN

AGENCY:
IROQUOIS COUNTY HWY. DEPT.

PROJECT:
SECTION 11-00172-01-BR
C.H. 42 OVER TRIB. TO SPRING CREEK

DESIGNED:	G.J.C.
CHECKED:	R.D.F.
DRAWN:	A.D.S.
CHECKED:	ENG

REVISIONS

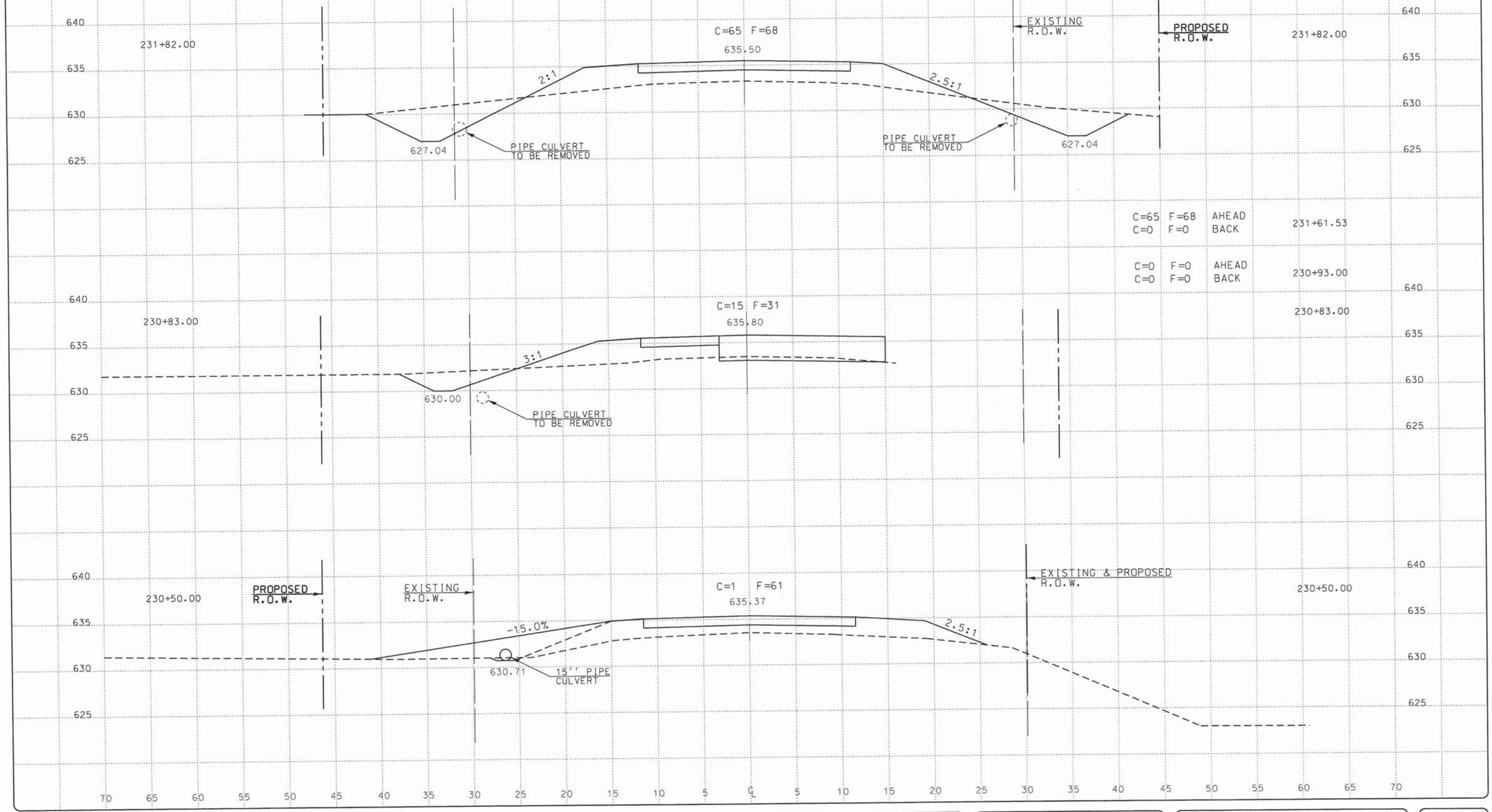
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING:
STATION CROSS SECTIONS

JOB NUMBER:
13-705

SHEET NUMBER
19 of 22

CONTRACT #: 87554



FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
ILLINOIS
IOWA
WISCONSIN

AGENCY:
IROQUOIS COUNTY HWY. DEPT.

PROJECT:
SECTION 11-00172-01-BR
C.H. 42 OVER TRIB. TO SPRING CREEK

DESIGNED:	G.J.C.
CHECKED:	R.D.F.
DRAWN:	A.D.S.
CHECKED:	ENG

REVISIONS

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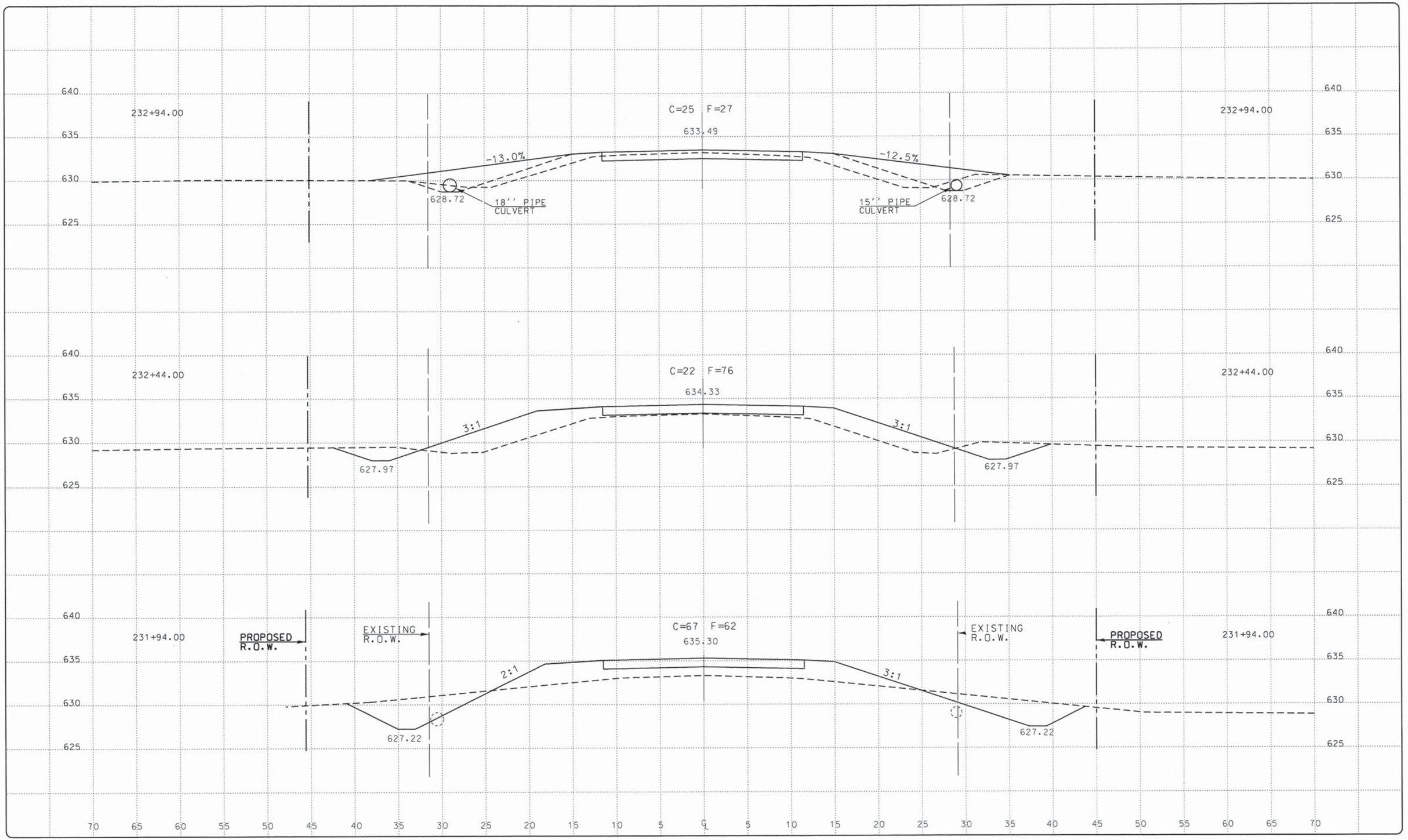
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING:
STATION CROSS SECTIONS

JOB NUMBER:
13-705

SHEET NUMBER
20 of 22

CONTRACT #: 87554



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IROQUOIS COUNTY HWY. DEPT.

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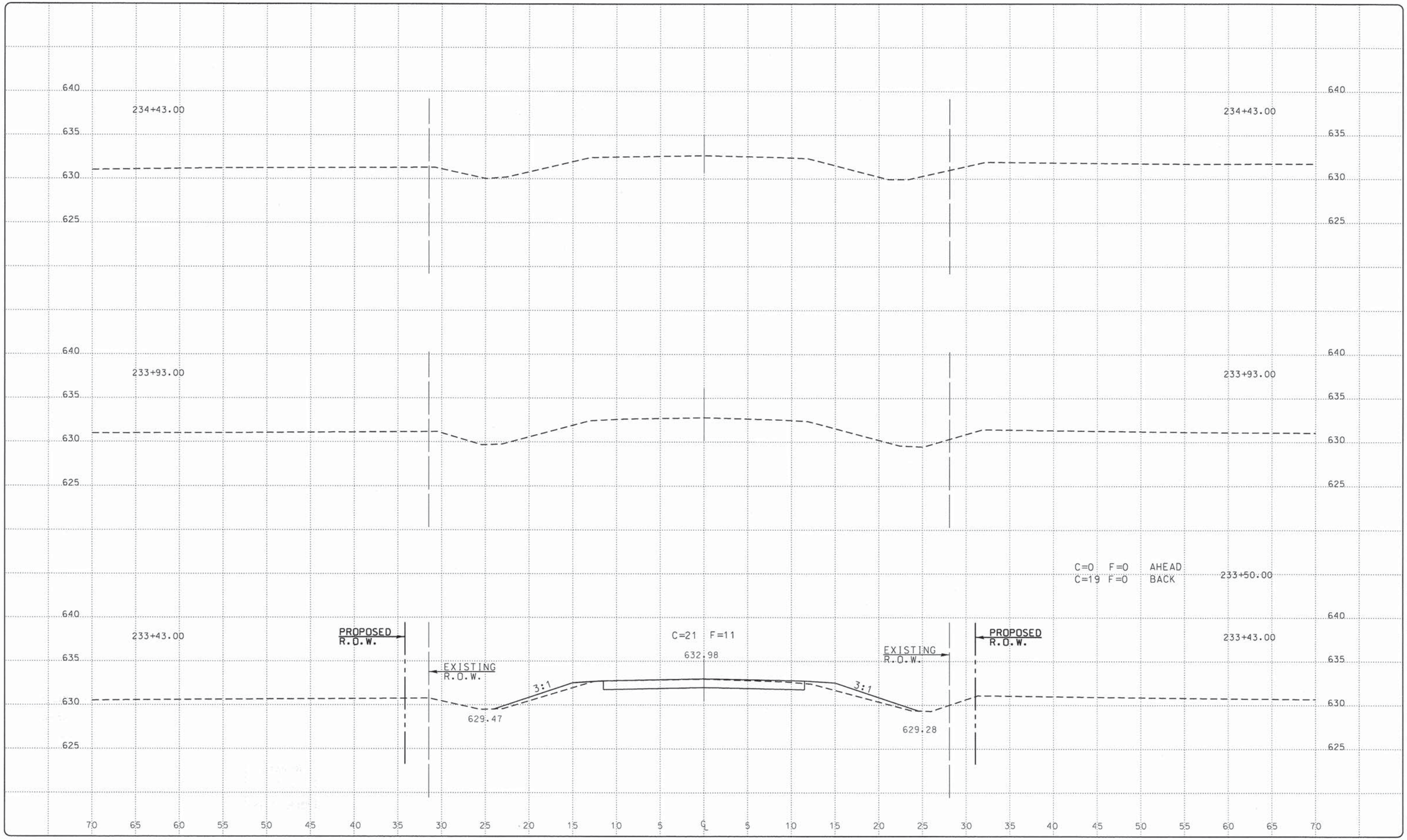
DRAWING:
STATION CROSS SECTIONS

JOB NUMBER:
13-705

SHEET NUMBER
21 of 22

CONTRACT #: 87554



FEHR GRAHAM
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ILLINOIS
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IROQUOIS COUNTY HWY. DEPT.

PROJECT:
SECTION 11-00172-01-BR
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REV. NO.	DESCRIPTION	DATE
REV. NO.	DESCRIPTION	DATE

DRAWING:
STATION CROSS SECTIONS

JOB NUMBER:
13-705

SHEET NUMBER
22 of 22

CONTRACT #: 87554