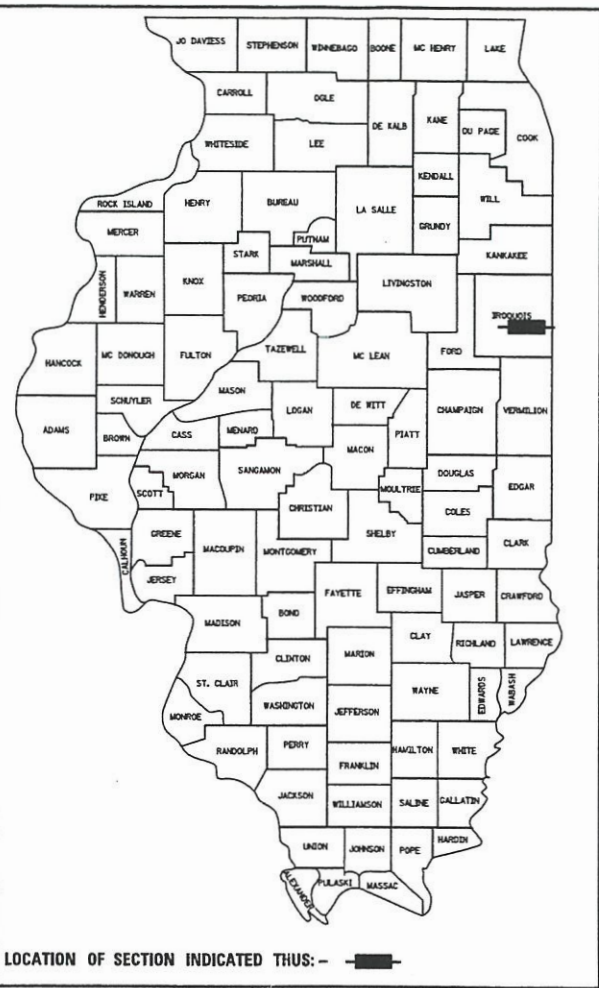


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM**

SECTION 11-00116-04-BR
IROQUOIS COUNTY
PROJECT NO. QMOT(526)
C.H. 40 (FAS 323)
C-93-043-13
CONTRACT NO. 87548

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 40	11-00116-04-BR	IROQUOIS	60	1
ROAD DIST.		ILLINOIS		

CONTRACT NO. 87548



CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN)
DESIGN VOLUME: 1000-3000 ADT
CURRENT ADT: 1430 (2013)
DESIGN SPEED: 30 MPH
3R DESIGN GUIDELINES

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

APPROVED	August 22, 2019	2019
PASSED	September 5, 2019	2019
RELEASED FOR BID	September 5, 2019	2019
REVIEW	September 5, 2019	2019
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		

INDEX OF SHEETS

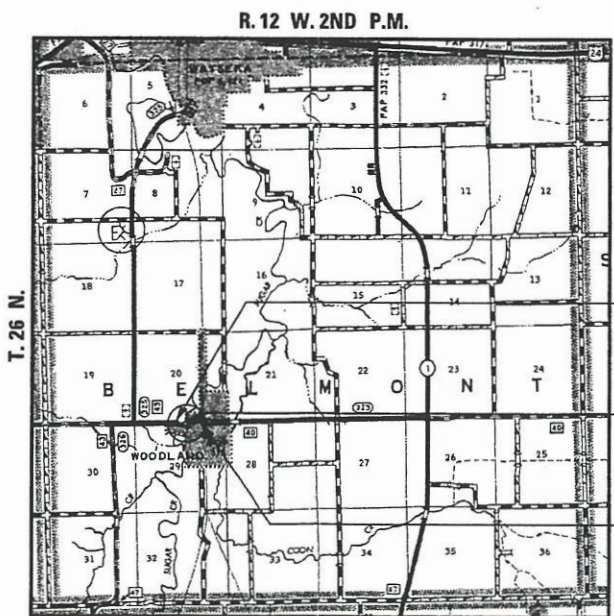
SHEET NO.	TITLE
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES, GENERAL NOTES & TYPICAL SECTIONS
3.	PLAN AND PROFILE SHEET
4.	SHOULDER AND GUARDRAIL DETAIL
5.	BRIDGE APPROACH PAVEMENT CONNECTOR
6-53	BRIDGE PLANS
54-60	STATION CROSS SECTIONS

STANDARDS

000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420406	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB
515001-03	NAME PLATE FOR BRIDGES
630001-12	STEEL PLATE BEAM GUARDRAIL
631011-10	TRAFFIC BARRIER TERMINAL, TYPE 2
631026-06	TRAFFIC BARRIER TERMINAL, TYPE 5
631031-15	TRAFFIC BARRIER TERMINAL, TYPE 6
701901-08	TRAFFIC CONTROL DEVICES
720011-01	METAL POSTS FOR SIGNS, MARKERS AND DELINEATORS
725001-01	OBJECT AND TERMINAL MARKERS
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

SCALES

PLAN	0' 50' 100'
PROFILE HORIZ.	0' 50' 100'
PROFILE VERT.	0' 10' 20'
CROSS SECTIONS	0' 5' 10'



LOCATION PLAN

GROSS LENGTH OF SECTION = 700.00 FEET = 0.133 MILES
NET LENGTH OF SECTION = 700.00 FEET = 0.133 MILES



IMPROVEMENT ENDS
STA. 144 + 00.00

STA. 140 + 31.05
DECK REPLACEMENT AND
REHABILITATION, 32'-0" O.-O.
EXISTING S.N. 038-0056

IMPROVEMENT BEGINS
STA. 137 + 00.00



Gary J. Cartwright 8-19-19
ILLINOIS PROFESSIONAL NO. 43408
EXPIRES 11-30-19

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

ILLINOIS
IOWA
WISCONSIN

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	249
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	29
28000400	PERIMETER EROSION BARRIER	FOOT	1082
28100209	STONE RIPRAP, CLASS A5	TON	77
28200200	FILTER FABRIC	SO YD	70
35101400	AGGREGATE BASE COURSE, TYPE B	TON	611
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	2011
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	185
40603080	HOT-MIX ASPHALT BINDER COURSE, IL 19.0, N50	TON	103
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL 9.5, "MIX C", N50	TON	69
42000070	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	SO YD	338
44000100	PAVEMENT REMOVAL	SO YD	1175
44000400	CUTTER REMOVAL	FOOT	385
48100100	AGGREGATE SHOULDERS, TYPE A	TON	248
50102400	CONCRETE REMOVAL	CU YD	47
50104650	SLOPE WALL REMOVAL	SO YD	31
50104720	REMOVAL OF EXISTING CONCRETE DECK	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	66
50300225	CONCRETE STRUCTURES	CU YD	81.5
50300255	CONCRETE SUPERSTRUCTURE	CU YD	318.7
50300260	BRIDGE DECK GROOVING	SO YD	850
50300265	SEAL COAT CONCRETE	CU YD	17.2
50300300	PROTECTIVE COAT	SO YD	1070
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	16450
50500505	STUD SHEAR CONNECTORS	EACH	3420
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	89,210
51100300	SLOPE WALL 6 INCH	SO YD	103
51500100	NAME PLATES	EACH	1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	62
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE 1	EACH	15
52100520	ANCHOR BOLTS, 1"	EACH	46
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	90
58700300	CONCRETE SEALER	SO FT	92
59100100	GEOCOMPOSITE WALL DRAIN	SO YD	71
63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	600
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1
63100070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	1
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	3
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
63200310	GUARDRAIL REMOVAL	FOOT	925
67100100	MOBILIZATION	L SUM	1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	2
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2980
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.2
X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
Z0001904	STRUCTURAL STEEL REMOVAL	L SUM	1
Z0007112	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES	L SUM	1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SO FT	9
Z0018004	DRAINAGE SCUPPERS, DS-12	EACH	9
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	116
Z0073500	TEMPORARY SUPPORT SYSTEM	L SUM	1
Z0076600	TRAINEES	HOUR	2000
Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	2000

*SEE SPECIAL PROVISIONS

Δ SPECIALTY ITEMS

#0042

PAVEMENT DESIGN

STRUCTURAL DESIGN TRAFFIC (S.D.T.): YEAR 2023; P.V. = 1390,
S.U. = 60, M.U. = 45

CLASS III ROAD

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

PERCENT OF S.D.T. IN DESIGN LANE P = 50%, S = 50%, M = 50%
T.F. 0.24

TEMP. = 75° F.; E^{AC} = 677; DESIGN STRAIN = 216

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).....0.25 LBS/50 FT
BITUMINOUS MATERIALS (TACK COAT).....0.025 LBS/50 FT
HOT-MIX ASPHALT (BINDER AND SURFACE COURSE).....112 LBS/50 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.

- ① SOLID WHITE PAINT PAVEMENT MARKING - LINE 4"
② SOLID YELLOW PAINT PAVEMENT MARKING - LINE 4"
③ SKIP-DASH YELLOW PAINT PAVEMENT MARKING - LINE 4"

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 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

ALL TREES BETWEEN THE LIMITS SHOWN WHICH INTERFERE WITH THE CONSTRUCTION SHALL BE REMOVED ONLY AS DIRECTED BY THE ENGINEER.

LT. STA. 137+42 TO LT. STA. 139+25
LT. STA. 141+39 TO LT. STA. 144+00

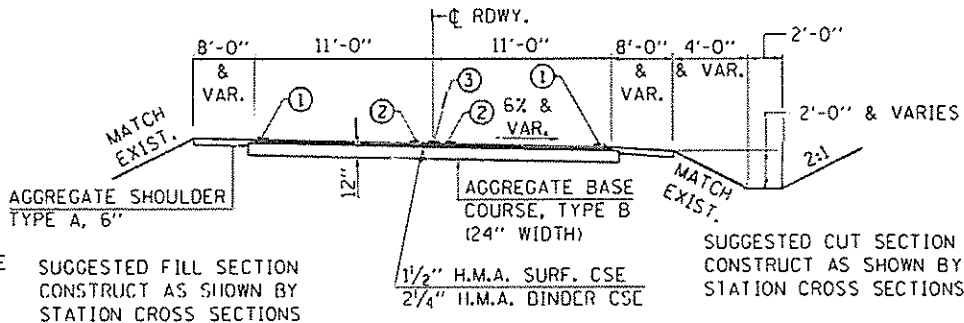
TREE REMOVAL, ACRES - 0.1 ACRE

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 = 29 POUND
PERIMETER EROSION CONTROL BARRIER = 1082 FOOT

	HMA BINDER	HMA SURFACE
PG GRADE	PG 64-22	PG 64-22
DESIGN AIR VOIDS	4.0% @ N50	4.0% @ N50
MIXTURE COMPOSITION	IL 19.0	IL 9.5
FRICTION	--	MIXTURE C
AGGREGATE		
DENSITY TEST METHOD	SATISFACTION OF ENGINEER	SATISFACTION OF ENGINEER
MIXTURE WEIGHT	112# / SQ YD / IN	112# / SQ YD / IN
QUALITY MANAGEMENT PROGRAM	QC/QA	QC/QA
SUBLOT SIZE	N/A	N/A
LOCATION(S)	ENTIRE PROJECT	ENTIRE PROJECT



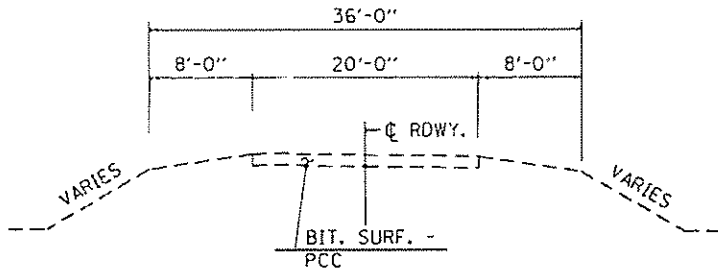
TYPICAL PROPOSED CROSS SECTION

STA. 139+15.00 TO STA. 139+21.26 AND
STA. 141+40.00 TO STA. 143+28.00

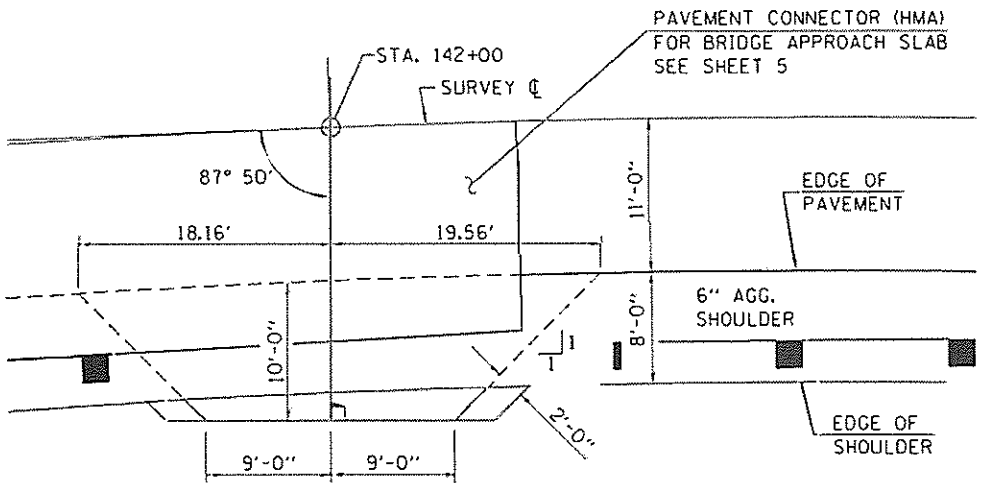
TRANSITION FROM EXISTING ROADWAY STA. 137+00.00 TO PROPOSED NORMAL CROWN ROADWAY STA. 137+50.00.

SUPERELEVATION TRANSITION FROM NORMAL CROWN STA. 137+50.00 TO 6% SUPERELEVATION STA. 139+15.00.

SUPERELEVATION TRANSITION FROM 6% SUPERELEVATION STA. 143+28.00 TO EXISTING ROADWAY STA. 144+00.00.



TYPICAL EXISTING CROSS SECTION



FIELD ENTRANCE DETAIL

P.E. RT. STA. 142+00

FEHR GRAHAM

USER NAME - GJCH

DESIGNED - GJC

REVISED -

DRAWN - A.D.S.

REVISED -

CHECKED - R.D.F.

REVISED -

DATE -

REVISED -

SUMMARY OF QUANTITIES, GENERAL NOTES
AND TYPICAL CROSS SECTIONS

SCALE: SHEET OF SHEETS STA TO STA

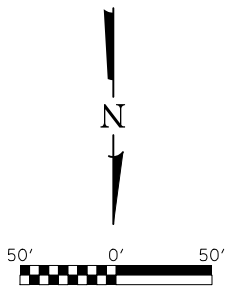
FA RTE SECTION COUNTY TOTAL SHEETS SHEET NO

CH 40 11-00116-04-8R IROQUOIS 60 2

ILLINOIS FED. AID PROJECT CONTRACT NO. 87548

FEHR GRAHAM PROJECT NUMBER: 11-138

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	ALIGNMENT CHECKED		
	AS BUILT		
	CADD FILE NAME		
	NO.		



CHARLES KOTEK

CURVE DATA (EXIST.)

PI STA. = 134+89.40
Δ = 16° 57' 30" (LT)
D = 6° 04'
R = 944.47'
T = 140.79'
L = 279.53'
E = 10.44'
S.E. = 0.03 FT./FT. (Trans. Length = 160')
P.C. STA. = 133+48.61
P.T. STA. = 136+28.14

NE. 1/4, SEC. 29, T. 26 N., R. 12 W., 2ND P.M.

FRED REINERS, ET AL

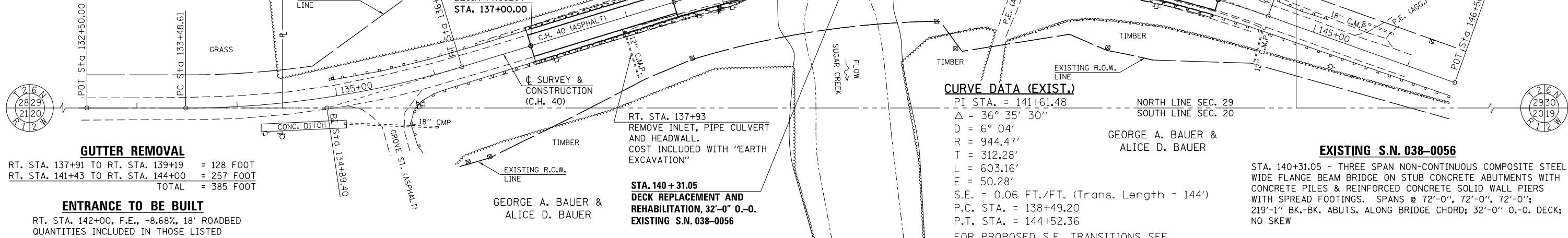
FRED REINERS, ET AL

UTILITIES

FRONTIER COMMUNICATIONS
DARRELL SENIOR 309-827-1253

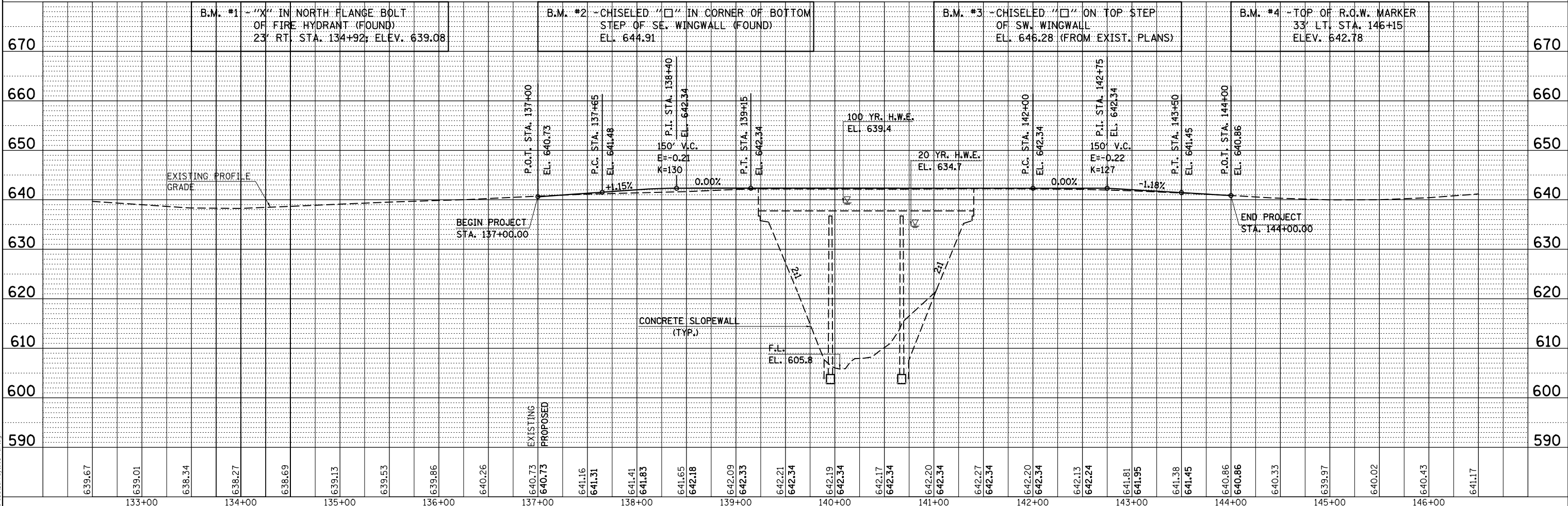
NICOR GAS
UTILITY CONSULTANT G03W 630-388-2362

MEDIACOM
MIKE SUITER 309-274-4500



SE. 1/4, SEC. 20, T. 26 N., R. 12 W., 2ND P.M.

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE NOTATIONS CHNG		
	NO.		



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

USER NAME = cconnor	DESIGNED - G.J.C.	REVISED -
	DRAWN - A.D.S.	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED - R.D.F.	REVISED -
PLOT DATE = 8/13/2019	DATE -	REVISED -

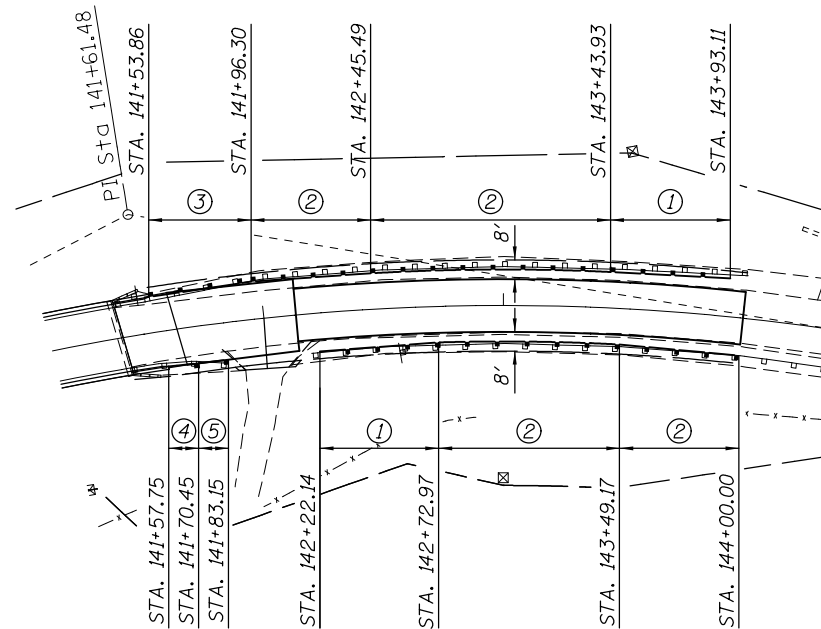
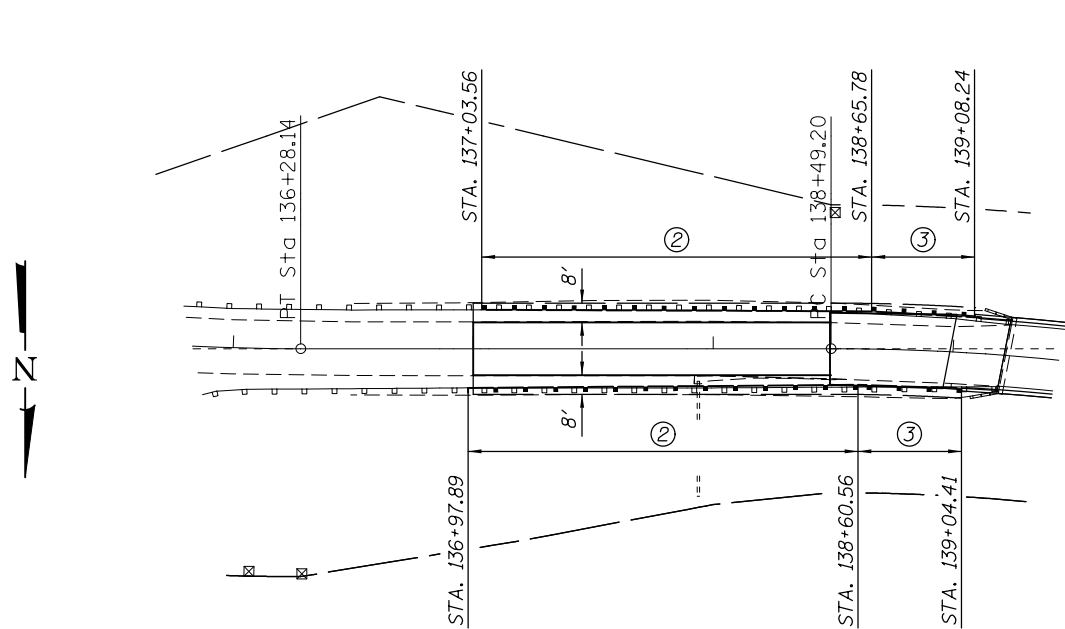
PLAN & PROFILE - C.H. 40 OVER SUGAR CREEK

SCALE: SHEET OF SHEETS STA. 132+50.00 TO STA. 146+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	3
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

MODEL: Default
FILE NAME: ...11-1385Survey003-rgr.dgn

FEHR GRAHAM PROJECT NUMBER: 11-138



GUARDRAIL & SHOULDER DETAIL

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT

16' RT. STA. 142+22.14 TO 15' RT. STA. 142+72.97	=	50 FOOT
15' LT. STA. 143+43.93 TO 16' LT. STA. 143+93.11	=	50 FOOT
TOTAL	=	100 FOOT

STEEL PLATE BEAM GUARDRAIL, TYPE A

16.34' RT. STA. 136+97.89 TO 15' RT. STA. 138+60.56	=	162.5 FOOT
16.22' LT. STA. 137+03.56 TO 15.71' LT. STA. 138+65.78	=	162.5 FOOT
15.73' LT. STA. 141+96.30 TO 15' LT. STA. 142+45.49	=	50 FOOT
15' LT. STA. 142+45.49 TO 15' LT. STA. 143+43.93	=	100 FOOT
15' RT. STA. 142+72.97 TO 15' RT. STA. 143+49.17	=	75 FOOT
15' RT. STA. 143+49.17 TO 15.68' RT. STA. 144+00.00	=	50 FOOT
TOTAL	=	600 FOOT

TRAFFIC BARRIER TERMINAL, TYPE 6

15' RT. STA. 138+60.56 TO 15' RT. STA. 139+04.41	=	1 EACH
15.71' LT. STA. 138+65.78 TO 15' LT. STA. 139+08.24	=	1 EACH
15' LT. STA. 141+53.86 TO 15.73' LT. STA. 141+96.30	=	1 EACH
TOTAL	=	3 EACH

TRAFFIC BARRIER TERMINAL, TYPE 5

15' RT. STA. 141+57.75 TO 15.28' RT. STA. 141+70.45	=	1 EACH
TOTAL	=	1 EACH

TRAFFIC BARRIER TERMINAL, TYPE 2

15.28' RT. STA. 141+70.45 TO 15.50' RT. STA. 141+83.15	=	1 EACH
TOTAL	=	1 EACH

LEGEND

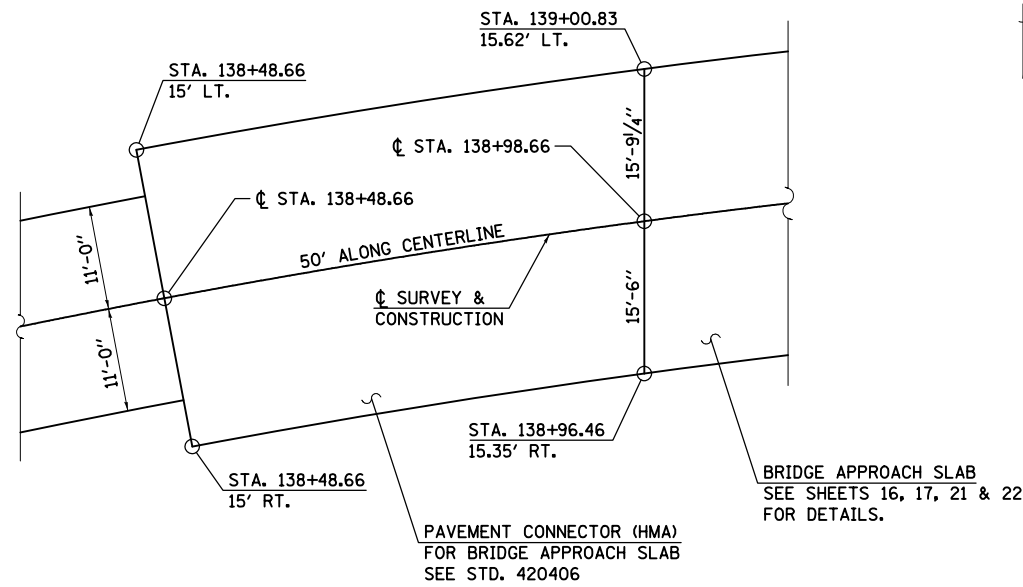
- ① TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT
- ② STEEL PLATE BEAM GUARDRAIL, TYPE A
- ③ TRAFFIC BARRIER TERMINAL, TYPE 6
- ④ TRAFFIC BARRIER TERMINAL, TYPE 5
- ⑤ TRAFFIC BARRIER TERMINAL, TYPE 2

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FILE: I:\WORKING\11-138\ROADWAY\004-SHLD.DGN

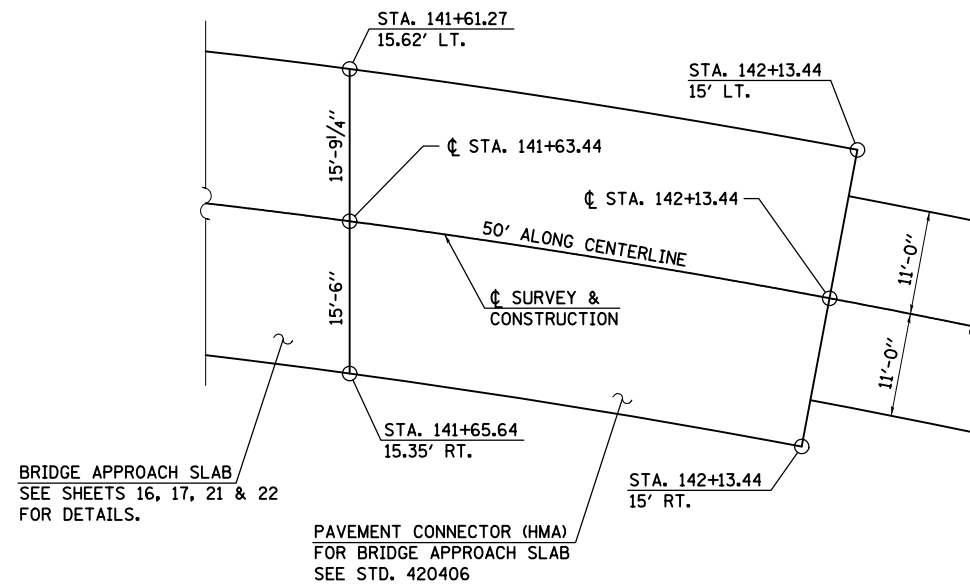
USER NAME = cconnor	DESIGNED - G.J.C.	REVISED -
	DRAWN - A.D.S.	REVISED -
PLOT SCALE = 40,0000 ' / in.	CHECKED - R.D.F.	REVISED -
PLOT DATE = 8/13/2019	DATE -	REVISED -

SHOULDER AND GUARDRAIL DETAIL			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	4
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				



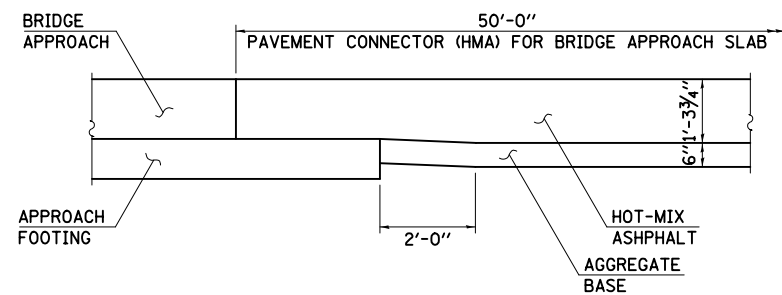
EAST APPROACH



WEST APPROACH

**PAVEMENT CONNECTOR (HMA)
FOR BRIDGE APPROACH SLAB**

SEE SHEET 4 FOR SHOULDER
AND GUARDRAIL DETAILS.



DETAIL

SEE STD. 420406 FOR DETAILS NOT SHOWN.

APPROACH PAVEMENT CONNECTOR SCHEDULE

LOCATION	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB
	SQ. YD.
WEST APPROACH	169
EAST APPROACH	169
TOTAL	338

MODEL: Default
FILE: \\wms\cadd\wax1005-CONNECTOR.dgn

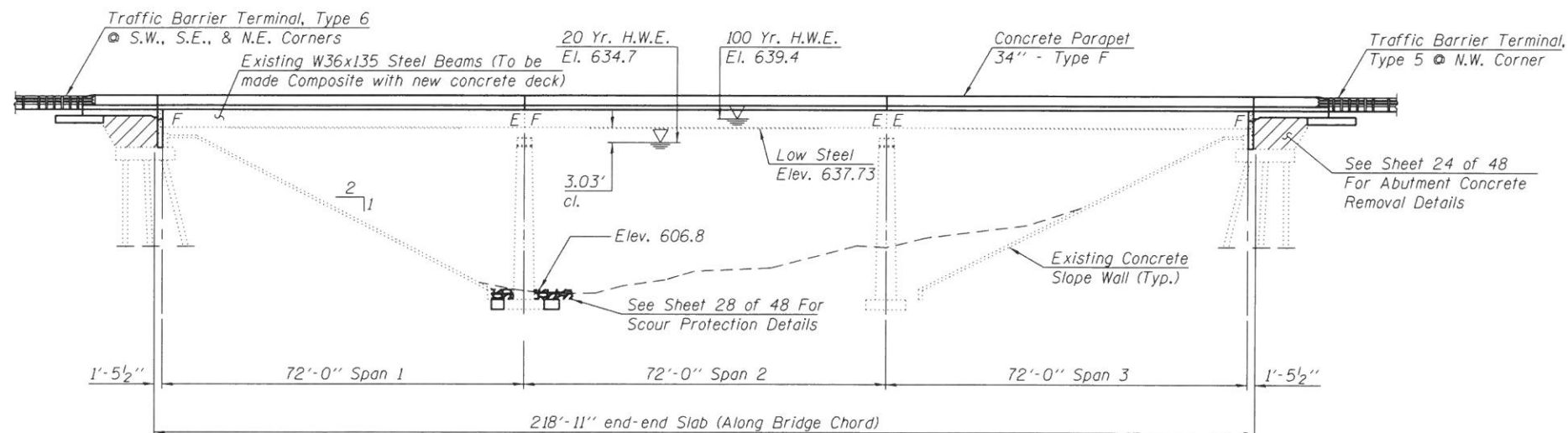
FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

USER NAME = cconnor	DESIGNED - G.J.C.	REVISED -
	DRAWN - A.D.S.	REVISED -
PLOT SCALE = 2.0000' / in.	CHECKED - R.D.F.	REVISED -
PLOT DATE = 8/13/2019	DATE -	REVISED -

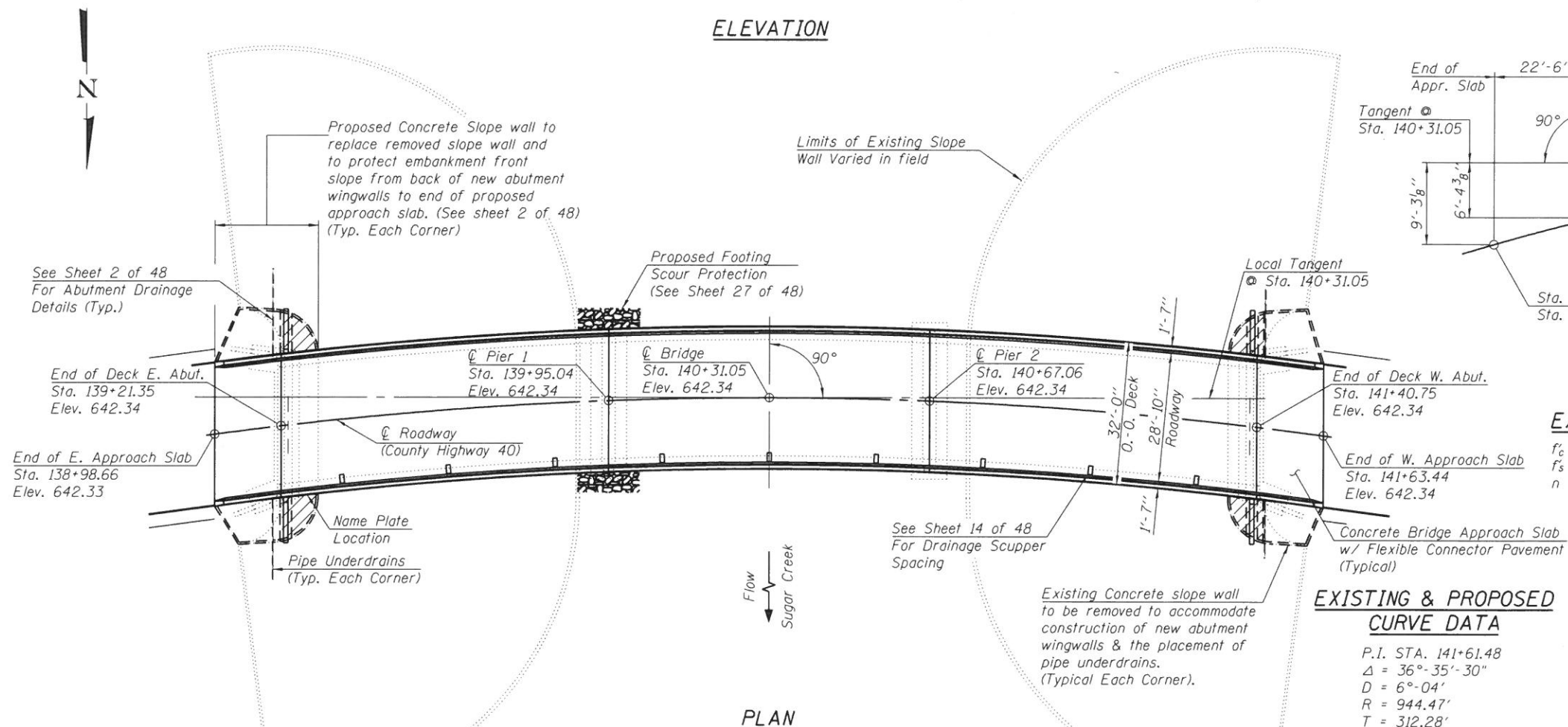
PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	5
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				



ELEVATION



PLAN

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient = 4.4
Site Coefficient = 1.2

WATERWAY INFORMATION

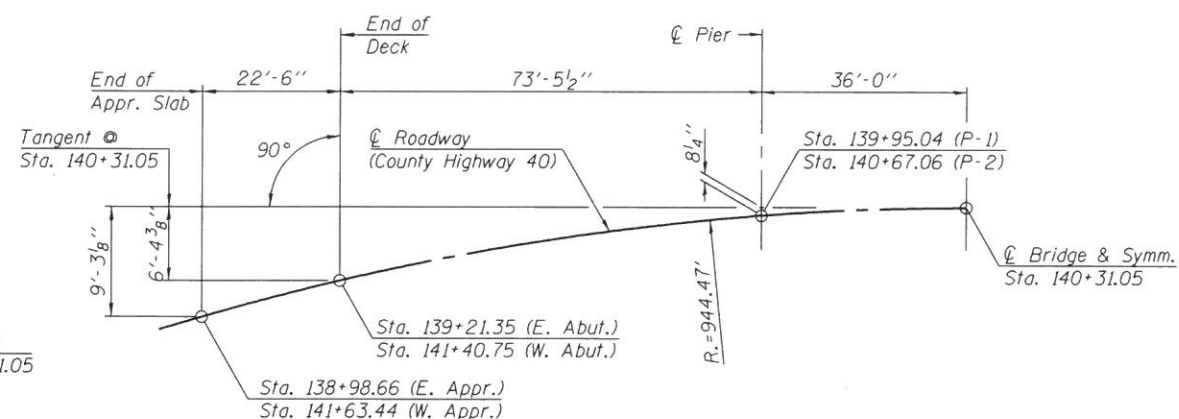
Drainage Area = 482 sq. mi.									
Flood Event	Freq. Yr.	Discharge ft^3/s	Waterway Opening - ft^2		Natural H.W.E. ft.	Head - ft.		Headwater Elevation ft.	
			Existing	Proposed		Existing	Proposed	Existing	Proposed
Design	20	16300	3309	3309	634.7	0.30	0.30	635.0	635.0
Base	100	24200	Bridge 3900	Bridge 3900	639.4	0.10	0.10	639.5	639.5

DESIGN SCOUR ELEVATION TABLE

Event/Limit	Design Scour Elevations (ft.)				Item 113
	E. Abut.	Pier 1	Pier 2	W. Abut.	
State	--	599.60	599.60	--	5
Q100	--	599.60	599.60	--	
Q500	--	598.30	598.30	--	
Design	632.22	602.70	602.70	632.22	
Check	632.22	602.70	602.70	632.22	

INDEX OF SHEETS

1. General Plan & Elevation
2. General Notes & Total Bill of Materials
- 3.-5. Top of Slab Elevations - Span 1
- 6.-8. Top of Slab Elevations - Span 2
- 9.-11. Top of Slab Elevations - Span 3
- 12.-13. Top of Slab Elevations - Approach Slabs
14. Superstructure
15. Superstructure Details
- 16.-17. Approach Slab Details
18. Preformed Joint Strip Seal
19. Drainage Scupper, DS-12
- 20.-22. Structural Steel
23. Bearing Details
24. Abutment-Concrete Removal
- 25.-27. Abutment Details
28. Pier Concrete Removal & Scour Protection Details
- 29-30. Pier Details
- 31.-46. Existing Plan Information
47. 1963 Standard Bridge Approach Information
48. Steel Railing, Type 2399 Information



OFFSET SKETCH

DESIGN STRESSES

EXISTING CONSTRUCTION

$f'_c = 1,400$ p.s.i. (Concrete)
 $f'_s = 20,000$ p.s.i. (Reinf. & Structural Steel)
 $n = 10$
LOADING HS15-S12-44

PROPOSED CONSTRUCTION

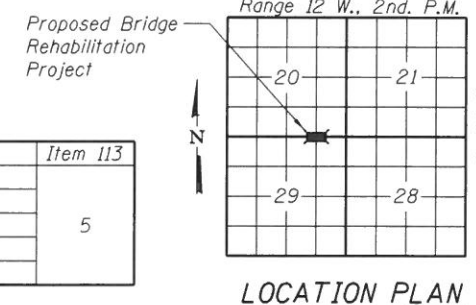
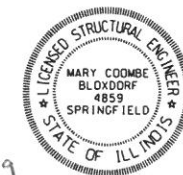
$f'_c = 3,500$ p.s.i. (Superstr. & Sub. Concrete)
 $f'_y = 60,000$ p.s.i. (Reinf. Bars)
 $f_y = 36,000$ p.s.i. (A36 Struct. Steel)
LOADING HS20-44
50#/Sq. Ft. included in dead load for future wearing surface.

DESIGN SPECIFICATIONS

AASHTO Standard Specifications - 2002

"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 Standard Specifications for Highway Bridges'."

Mary Coombe Bledsoe 08/19/19
ILLINOIS STRUCTURAL NO. 4859 (Expires 11/30/20)



LOCATION PLAN

GENERAL PLAN & ELEVATION

C.H.40
SECTION 11-00116-04-BR
IROQUOIS COUNTY
STATION 140+31.50
S.N. 038-0056

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

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667" / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/19/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

GENERAL PLAN & ELEVATION
STRUCTURE NO. 038-0056

SHEET 1 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	6
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8 in. Ø, holes 15/16 in. Ø, unless otherwise noted.

All structural steel shall be AASHTO M 270 Grade 36.

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

The Contractor shall test the existing welds by non-destructive methods within 2 ft. of the end of the existing cover plates for cracks after removal of the existing concrete deck. Dye penetrant (PT), magnetic particle (MT), or other approved testing method shall be performed by qualified personnel approved by the Engineer. If cracks are found, report them to the Bureau of Bridges & Structures for disposition. The cost of testing is included in Removal of Existing Concrete Deck. The cost of crack repair, if necessary, will be paid for according to Article 109.04 of the Standard Specifications.

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

Concrete Sealer shall be applied to the designated areas of the pier bearing seats.

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

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams, bearings and other structural steel within 5 ft (measured along the beam) of either side of deck joints shall be cleaned per Near White Blast Cleaning - SSPC-SP10. The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Commercial Grade Power Tool Cleaning - SSPC-SP15.

The designated area cleaned per Near White Blast Cleaning and per Commercial Grade Power Tool Cleaning shall be painted according to the requirements of Paint System 1 - OZ/E/U. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Gray, Munsell No. 5B 7/1.

The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Gray, Munsell No. 5B 7/1.

A minimum of two (2) air monitor(s) will be required to monitor abrasive blasting operations at this site. See special provision for "Containment and Disposal of Lead Paint Cleaning Residues."

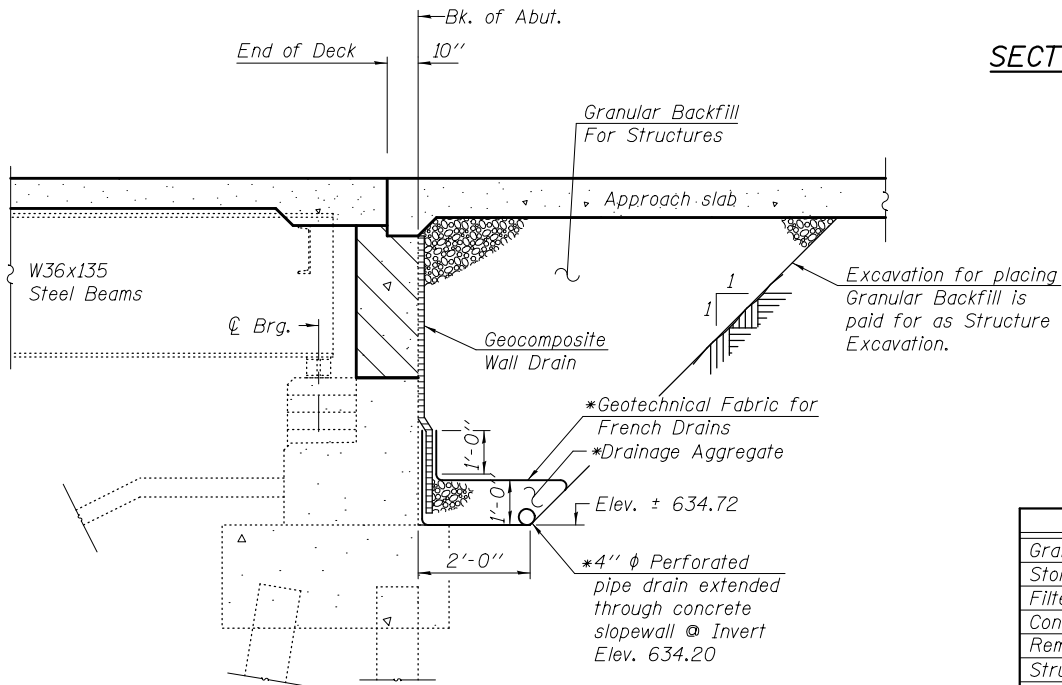
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

SALVAGING EXISTING STEEL BRIDGE RAIL

The existing steel bridge railing shall be salvaged and remain the property of the Iroquois County Highway Department. The Contractor shall remove all steel rail elements, posts and associated hardware in manner that will accommodate reuse of the steel bridge railing by the County at an alternate location. The Contractor shall stockpile all salvaged bridge railing materials on the site as directed by the Engineer.

The existing steel bridge rail is patterned after the current Steel Railing, Type 2399 used by the Illinois Department of Transportation. Sheet 48 of 48 provides information relative to the current Steel Railing, Type 2399 used by the Department.

The cost of salvaging and stockpiling the existing steel bridge railing is included in the cost of Removal of Existing Concrete Deck.



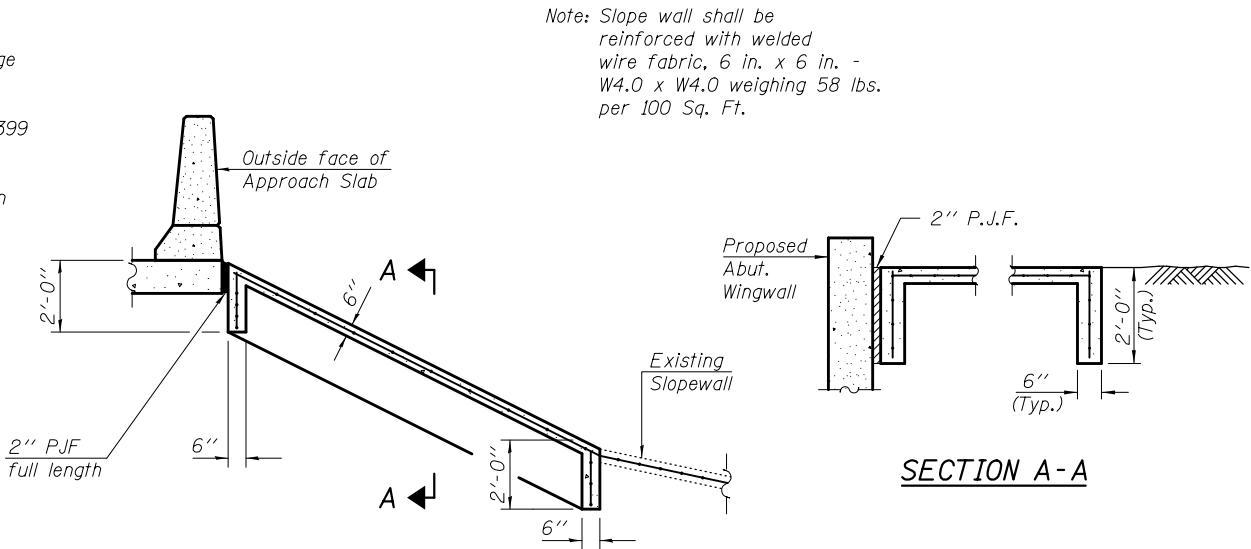
SECTION THRU ABUTMENT

SUGAR CREEK
RE-BUILT 20__ BY
IROQUOIS COUNTY
SEC. 11-00116-04-BR
STR. NO. 038-0056
LOADING HS-20

LETTERING FOR NAME PLATE

See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.



SECTION THRU SLOPEWALL

* Included in the cost of Pipe Underdrains for Structures.

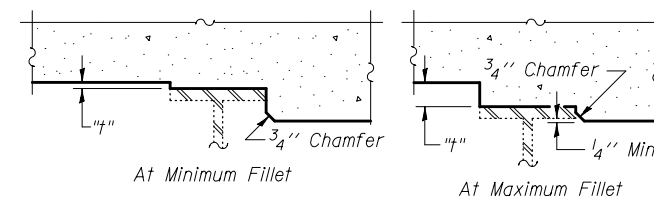
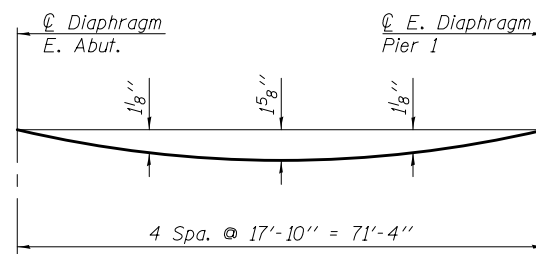
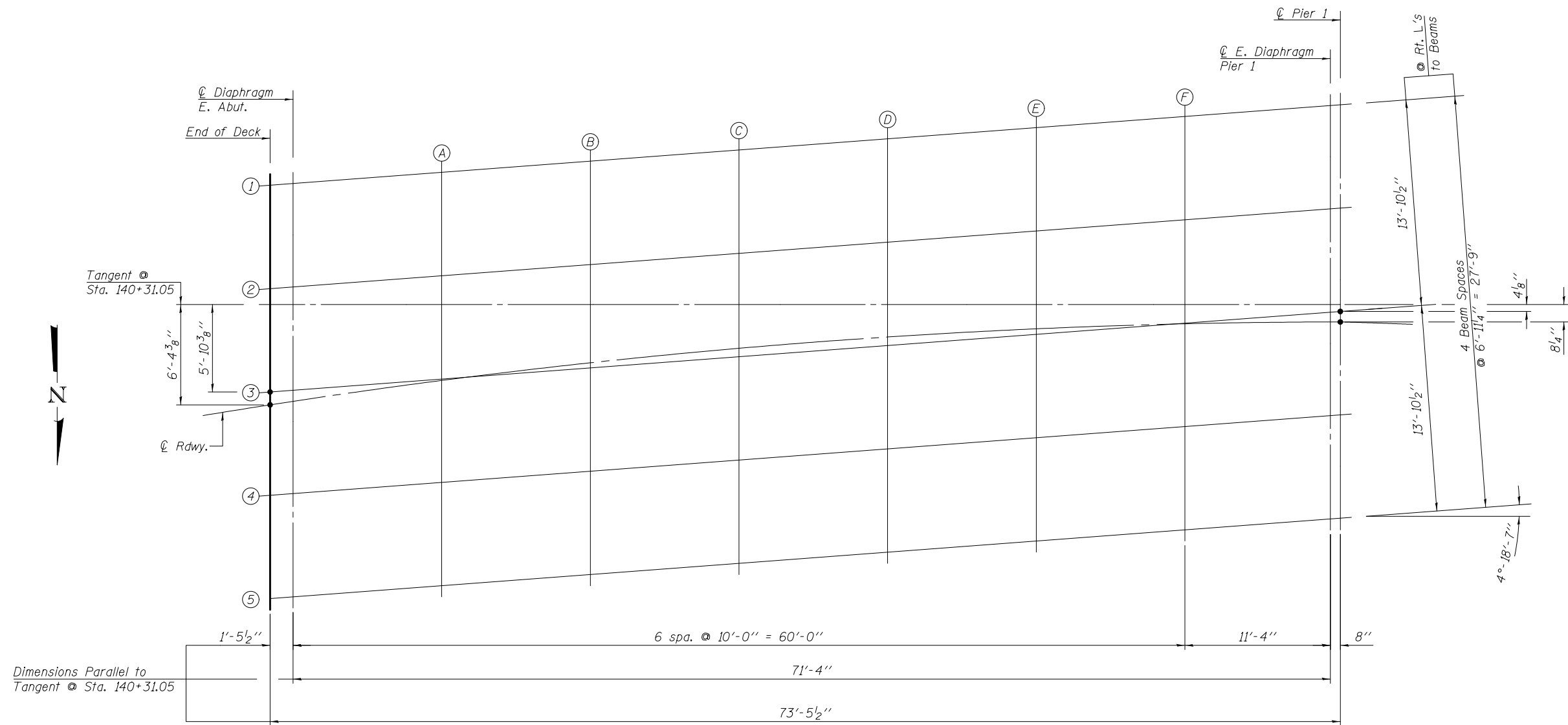
All drainage system components shall extend to the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Granular Backfill for Structures	Cu. Yd.		90	90
Stone Riprap, Class A5	Ton		77	77
Filter Fabric	Sq. Yd.		70	70
Concrete Removal	Cu. Yd.		47	47
Removal of Existing Concrete Deck	Each	1		1
Structure Excavation	Cu. Yd.		66	66
Concrete Structures	Cu. Yd.	19.3	62.2	81.5
Concrete Superstructure	Cu. Yd.	318.7		318.7
Bridge Deck Grooving	Sq. Yd.	850		850
Seal Coat Concrete	Cu. Yd.		17.2	17.2
Protective Coat	Sq. Yd.	1,070		1,070
Furnishing and Erecting Structural Steel	Pound	16,450		16,450
Stud Shear Connectors	Each	3,420		3,420
Reinforcement Bars, Epoxy Coated	Pound	80,840	8,370	89,210
Name Plates	Each		1	1
Preformed Joint Strip Seal	Foot	62		62
Elastomeric Bearing Assembly, Type 1	Each		15	15
Anchor Bolts, 1"	Each		46	46
Concrete Sealer	Sq. Ft.		92	92
Geocomposite Wall Drain	Sq. Yd.		71	71
Structural Steel Removal	L. Sum	1		1
Containment and Disposal of Lead Paint Cleaning Residues	L. Sum	1		1
Cleaning and Painting Steel Bridge No. 1	L. Sum	1		1
Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)	Sq. Ft.		9	9
Drainage Scuppers, DS-12	Each	9		9
Pipe Underdrains for Structures 4"	Foot		116	116
Temporary Support System	L. Sum		1	1
Slope Wall Removal	Sq. Yd.		31	31
Slope Wall 6 Inch	Sq. Yd.		103	103

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FEHR GRAHAM ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. IB4-003525	USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -	GENERAL NOTES AND BILL OF MATERIALS STRUCTURE NO. 038-0056				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - A.R.K.	REVISED -					CH 40	11-00116-04-BR	IROQUOIS	60	7
	PLOT SCALE = 0.1667 ' / in.	DRAWN - A.D.S.	REVISED -					CONTRACT NO. 87548				
	PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -					ILLINOIS FED. AID PROJECT				
FEHR GRAHAM PROJECT NUMBER: 11-138				SHEET 2 OF 48 SHEETS								



BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+22.994	-14.311	643.199	643.199
⌀ DIAPHRAGM E. ABUT.	139+24.433	-14.255	643.195	643.195
A	139+34.281	-13.929	643.176	643.229
B	139+44.134	-13.707	643.162	643.262
C	139+53.991	-13.590	643.155	643.277
D	139+63.850	-13.577	643.155	643.280
E	139+73.707	-13.669	643.160	643.263
F	139+83.561	-13.864	643.172	643.233
⌀ E DIAPHRAGM PIER 1	139+94.922	-14.220	643.193	643.193
⌀ PIER 1	139+95.580	-14.245	643.195	643.195

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+22.205	-7.400	642.784	642.784
⌀ DIAPHRAGM E. ABUT.	139+23.656	-7.342	642.781	642.781
A	139+33.575	-7.009	642.761	642.814
B	139+43.500	-6.780	642.747	642.846
C	139+53.428	-6.656	642.739	642.861
D	139+63.358	-6.638	642.738	642.863
E	139+73.288	-6.724	642.743	642.846
F	139+83.214	-6.916	642.755	642.816
⌀ E DIAPHRAGM PIER 1	139+94.658	-7.268	642.776	642.776
⌀ PIER 1	139+95.321	-7.293	642.778	642.778

⌀ ROADWAY

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+21.345	0.000	642.340	642.340
⌀ DIAPHRAGM E. ABUT.	139+22.813	0.000	642.340	642.340
A	139+32.873	0.000	642.340	642.393
B	139+42.922	0.000	642.340	642.440
C	139+52.961	0.000	642.340	642.462
D	139+62.991	0.000	642.340	642.465
E	139+73.013	0.000	642.340	642.443
F	139+83.029	0.000	642.340	642.401
⌀ E DIAPHRAGM PIER 1	139+94.374	0.000	642.340	642.340
⌀ PIER 1	139+95.041	0.000	642.340	642.340

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+21.406	-0.489	642.369	642.369
⌀ DIAPHRAGM E. ABUT.	139+22.866	-0.431	642.366	642.366
A	139+32.858	-0.089	642.345	642.398
B	139+42.855	0.147	642.331	642.431
C	139+52.857	0.277	642.323	642.445
D	139+62.860	0.301	642.322	642.447
E	139+72.862	0.220	642.327	642.430
F	139+82.862	0.032	642.338	642.399
⌀ E DIAPHRAGM PIER 1	139+94.390	-0.316	642.359	642.359
⌀ PIER 1	139+95.058	-0.340	642.360	642.360

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+20.594	6.421	641.955	641.955
⌀ DIAPHRAGM E. ABUT.	139+22.066	6.481	641.951	641.951
A	139+32.131	6.830	641.930	641.983
B	139+42.202	7.074	641.916	642.015
C	139+52.277	7.210	941.907	642.029
D	139+62.354	7.240	641.906	642.031
E	139+72.431	7.163	641.910	642.013
F	139+82.505	6.980	641.921	641.982
⌀ E DIAPHRAGM PIER 1	139+94.118	6.636	641.942	641.942
⌀ PIER 1	139+94.791	6.612	641.943	641.943

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+19.771	13.330	641.540	641.540
⌀ DIAPHRAGM E. ABUT.	139+21.253	13.391	641.537	641.537
A	139+31.393	13.749	641.515	641.568
B	139+41.538	14.000	641.500	641.600
C	139+51.689	14.143	641.491	641.613
D	139+61.841	14.179	641.489	641.614
E	139+71.993	14.107	641.494	641.597
F	139+82.142	13.928	641.504	641.566
⌀ E DIAPHRAGM PIER 1	139+93.842	13.588	641.525	641.525
⌀ PIER 1	139+94.520	13.564	641.526	641.526

E-S

7-1-10

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11-138-SLAB.DGN FEHR GRAHAM ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 184-003525	USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -	TOP OF SLAB ELEVATIONS – SPAN 1 STRUCTURE NO. 038-0056	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
		CHECKED - A.R.K.	REVISED -		CH 40	11-00116-04-BR	IROQUOIS	60	9	
	PLOT SCALE = 0.1667 ' / in.	DRAWN - A.D.S.	REVISED -		CONTRACT NO. 87548					
	PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -		SHEET 4 OF 48 SHEETS					
	ILLINOIS FED. AID PROJECT									

FEHR GRAHAM PROJECT NUMBER: 11-138

MODEL: Default
FILE NAME: ...0380056-003-011-SLAB.dgn

SOUTH OUTSIDE EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+23.162	-15.833	643.317	643.317
⊘ DIAPHRAGM E. ABUT.	139+24.605	-15.833	643.317	643.317
A	139+34.498	-15.833	643.317	643.370
B	139+44.379	-15.833	643.317	643.417
C	139+54.251	-15.833	643.317	643.439
D	139+64.115	-15.833	643.317	643.442
E	139+73.972	-15.833	643.317	643.420
F	139+83.882	-15.833	643.317	643.378
⊘ E DIAPHRAGM PIER 1	139+94.979	-15.833	643.317	643.317
⊘ PIER 1	139+95.635	-15.833	643.317	643.317

SOUTH CURB FACE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+23.002	-14.417	643.205	643.205
⊘ DIAPHRAGM E. ABUT.	139+24.448	-14.417	643.205	643.205
A	139+34.355	-14.417	643.205	643.258
B	139+44.251	-14.417	643.205	643.305
C	139+54.138	-14.417	643.205	643.327
D	139+64.016	-14.417	643.205	643.330
E	139+73.887	-14.417	643.205	643.308
F	139+83.752	-14.417	643.205	643.266
⊘ E DIAPHRAGM PIER 1	139+94.926	-14.417	643.205	643.205
⊘ PIER 1	139+95.583	-14.417	643.205	643.205

SOUTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+22.614	-11.000	643.000	643.000
⊘ DIAPHRAGM E. ABUT.	139+24.065	-11.000	643.000	643.000
A	139+34.008	-11.000	643.000	643.053
B	139+43.940	-11.000	643.000	643.100
C	139+53.862	-11.000	643.000	643.122
D	139+63.776	-11.000	643.000	643.125
E	139+73.682	-11.000	643.000	643.103
F	139+83.583	-11.000	643.000	643.061
⊘ E DIAPHRAGM PIER 1	139+94.797	-11.000	643.000	643.000
⊘ PIER 1	139+95.456	-11.000	643.000	643.000

NORTH EDGE OF ROADWAY

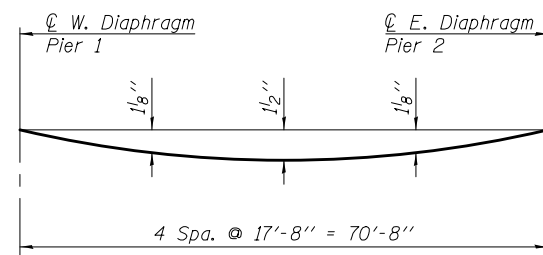
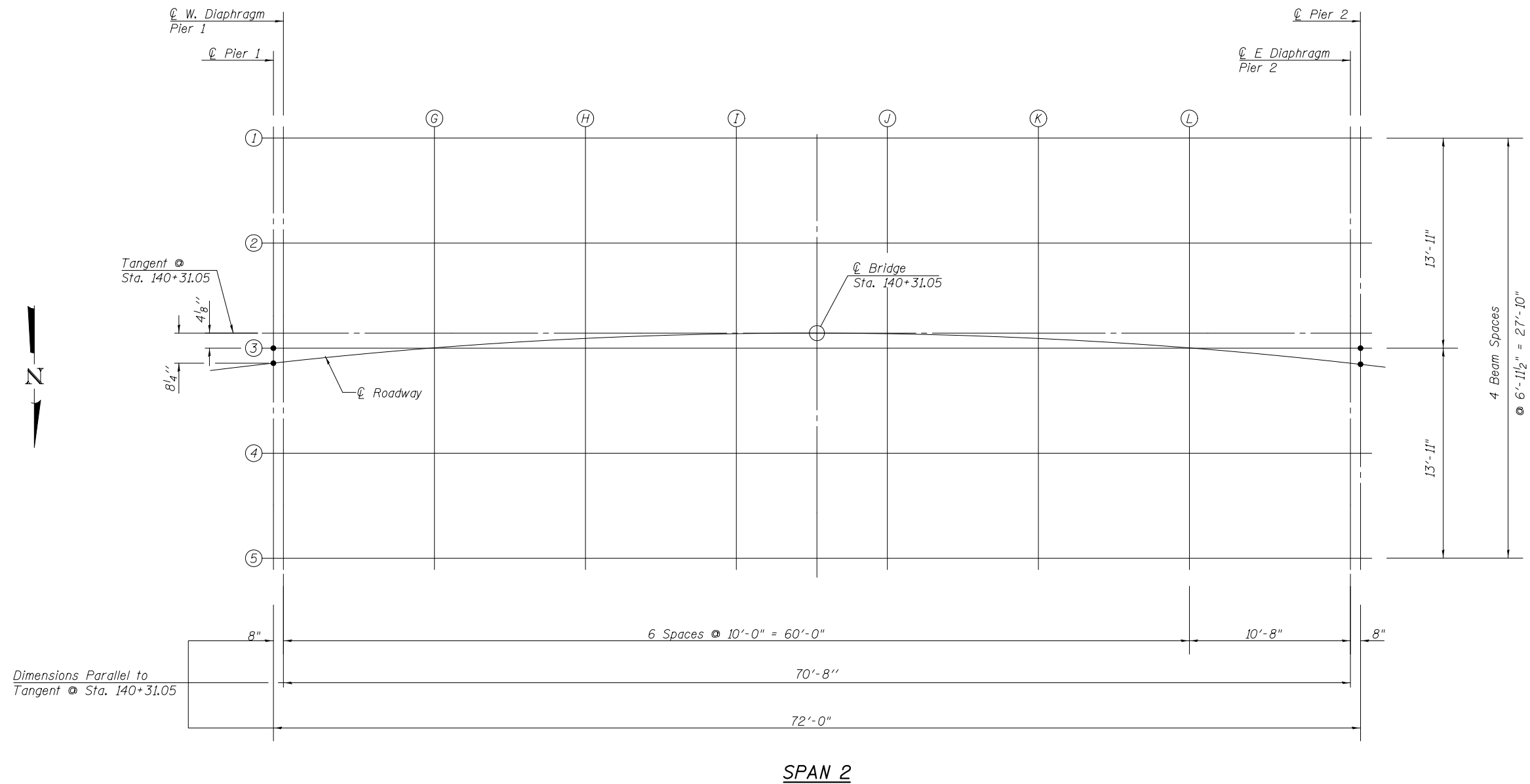
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+20.046	11.000	641.680	641.680
⊘ DIAPHRAGM E. ABUT.	139+21.532	11.000	641.680	641.680
A	139+31.712	11.000	641.680	641.733
B	139+41.881	11.000	641.680	641.780
C	139+52.039	11.000	641.680	641.802
D	139+62.188	11.000	641.680	641.805
E	139+72.329	11.000	641.680	641.783
F	139+82.463	11.000	641.680	641.741
⊘ E DIAPHRAGM PIER 1	139+93.942	11.000	641.680	641.680
⊘ PIER 1	139+94.617	11.000	641.680	641.680

NORTH CURB FACE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+19.637	14.417	641.475	641.475
⊘ DIAPHRAGM E. ABUT.	139+21.128	14.417	641.475	641.475
A	139+31.346	14.417	641.475	641.528
B	139+41.552	14.417	641.475	641.575
C	139+51.748	14.417	641.475	541.597
D	139+61.934	14.417	641.475	641.600
E	139+72.113	14.417	641.475	641.578
F	139+82.284	14.417	641.475	641.536
⊘ E DIAPHRAGM PIER 1	139+93.805	14.417	641.475	641.475
⊘ PIER 1	139+94.483	14.417	641.475	641.475

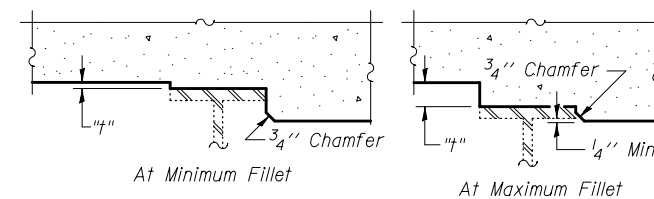
NORTH OUTSIDE EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+19.466	15.833	641.587	641.587
⊘ DIAPHRAGM E. ABUT.	139+20.959	15.833	641.587	641.587
A	139+31.193	15.833	641.587	641.640
B	139+41.415	15.833	641.587	641.687
C	139+51.627	15.833	641.587	641.709
D	139+61.829	15.833	641.587	641.712
E	139+72.023	15.833	641.587	641.690
F	139+82.210	15.833	641.587	641.648
⊘ E DIAPHRAGM PIER 1	139+93.748	15.833	641.587	641.587
⊘ PIER 1	139+94.427	15.833	641.587	641.587



(Includes weight of concrete only.)

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 7 & 8 of 48.



At Maximum Fillet

To determine "t": Elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 7 of 48, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

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

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
	CHECKED - A.R.K.	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - A.D.S.	REVISED -
PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -

TOP OF SLAB ELEVATIONS – SPAN 2 STRUCTURE NO. 038-0056		
SHEET	6 OF 48	SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	11
		CONTRACT NO. 87548		
		ILLINOIS	FED. AID PROJECT	

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 1	139+95.577	-14.249	643.195	643.195
℄ W. DIAPHRAGM PIER 1	139+96.233	-14.224	643.193	643.193
G	140+06.081	-13.908	643.174	643.225
H	140+15.935	-13.696	643.162	643.256
I	140+25.792	-13.588	643.155	643.271
J	140+35.651	-13.584	643.155	643.272
K	140+45.508	-13.685	643.161	643.257
L	140+55.362	-13.890	643.173	643.228
℄ E. DIAPHRAGM PIER 2	140+65.867	-14.224	643.193	643.193
℄ PIER 2	140+66.523	-14.249	643.195	643.195

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 1	139+95.317	-7.296	642.778	642.778
℄ W. DIAPHRAGM PIER 1	139+95.979	-7.271	642.776	642.776
G	140+05.899	-6.952	642.757	642.808
H	140+15.825	-6.738	642.744	642.839
I	140+25.754	-6.630	642.738	642.853
J	140+35.684	-6.626	642.738	642.854
K	140+45.614	-6.728	642.744	642.840
L	140+55.540	-6.934	642.756	642.810
℄ E. DIAPHRAGM PIER 2	140+66.121	-7.271	642.776	642.776
℄ PIER 2	140+66.783	-7.296	642.778	642.778

℄ ROADWAY

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 1	139+95.041	0.000	643.000	643.000
℄ W. DIAPHRAGM PIER 1	139+95.708	0.000	643.000	643.000
G	140+05.714	0.000	643.000	643.051
H	140+15.716	0.000	643.000	643.094
I	140+25.717	0.000	643.000	643.116
J	140+35.717	0.000	643.000	643.117
K	140+45.717	0.000	643.000	643.096
L	140+55.720	0.000	643.000	643.054
℄ E. DIAPHRAGM PIER 2	140+66.392	0.000	643.000	643.000
℄ PIER 2	140+67.059	0.000	643.000	643.000

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 1	139+95.054	-0.342	642.361	642.361
℄ W. DIAPHRAGM PIER 1	139+95.720	-0.317	642.359	642.359
G	140+05.714	0.004	642.340	642.390
H	140+15.712	0.219	642.327	642.421
I	140+25.715	0.329	642.320	642.436
J	140+35.718	0.332	642.320	642.437
K	140+45.721	0.230	642.326	642.422
L	140+55.720	0.022	642.339	642.393
℄ E. DIAPHRAGM PIER 2	140+66.380	-0.317	642.359	642.359
℄ PIER 2	140+67.046	-0.342	642.361	642.361

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 1	139+94.787	6.611	641.943	641.943
℄ W. DIAPHRAGM PIER 1	139+95.458	6.636	641.942	641.942
G	140+05.526	6.960	641.922	641.973
H	140+15.599	7.177	641.909	642.004
I	140+25.675	7.287	641.903	642.018
J	140+35.753	7.291	641.903	642.019
K	140+45.830	7.187	641.909	642.005
L	140+55.903	6.978	641.921	641.975
℄ E. DIAPHRAGM PIER 2	140+66.642	6.636	641.942	641.942
℄ PIER 2	140+67.313	6.611	641.943	641.943

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
℄ PIER 1	139+94.516	13.564	641.526	641.526
℄ W. DIAPHRAGM PIER 1	139+95.192	13.590	642.525	641.525
G	140+05.335	13.916	641.505	641.556
H	140+15.483	14.134	641.492	641.586
I	140+25.635	14.245	641.485	641.601
J	140+35.788	14.249	641.485	641.602
K	140+45.940	14.145	641.491	641.587
L	140+56.089	13.934	641.504	641.558
℄ E. DIAPHRAGM PIER 2	140+66.908	13.590	641.525	641.525
℄ PIER 2	140+67.584	13.564	641.526	641.526

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FILE NAME: ...0380056-003-011-SLAB.dgn

SOUTH OUTSIDE EDGE OF DECK

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 1	139+95.635	-15.833	643.317	643.317
☉ W. DIAPHRAGM PIER 1	139+96.291	-15.833	643.317	643.317
G	140+06.131	-15.833	643.317	643.368
H	140+15.969	-15.833	643.317	643.411
I	140+25.805	-15.833	643.317	643.433
J	140+35.640	-15.833	643.317	643.434
K	140+45.475	-15.833	643.317	643.413
L	140+55.313	-15.833	643.317	643.371
☉ E. DIAPHRAGM PIER 2	140+65.809	-15.833	643.317	643.317
☉ PIER 2	140+66.465	-15.833	643.317	643.317

SOUTH CURB FACE

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 1	139+95.583	-14.417	643.205	643.205
☉ W. DIAPHRAGM PIER 1	139+96.240	-14.417	643.205	643.205
G	140+06.095	-14.417	643.205	643.256
H	140+15.947	-14.417	643.205	643.299
I	140+25.797	-14.417	643.205	643.321
J	140+35.647	-14.417	643.205	642.322
K	140+45.497	-14.417	643.205	643.301
L	140+55.349	-14.417	643.205	643.259
☉ E. DIAPHRAGM PIER 2	140+65.860	-14.417	643.205	643.205
☉ PIER 2	140+66.517	-14.417	643.205	643.205

SOUTH EDGE OF ROADWAY

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 1	139+95.456	- 11.000	643.000	643.000
☉ W. DIAPHRAGM PIER 1	139+96.116	- 11.000	643.000	643.000
G	140+06.005	- 11.000	643.000	643.051
H	140+15.893	- 11.000	643.000	643.094
I	140+25.778	- 11.000	643.000	643.116
J	140+35.663	- 11.000	643.000	643.117
K	140+45.548	- 11.000	643.000	643.096
L	140+55.435	- 11.000	643.000	643.054
☉ E. DIAPHRAGM PIER 2	140+65.984	- 11.000	643.000	643.000
☉ PIER 2	140+66.644	- 11.000	643.000	643.000

NORTH EDGE OF ROADWAY

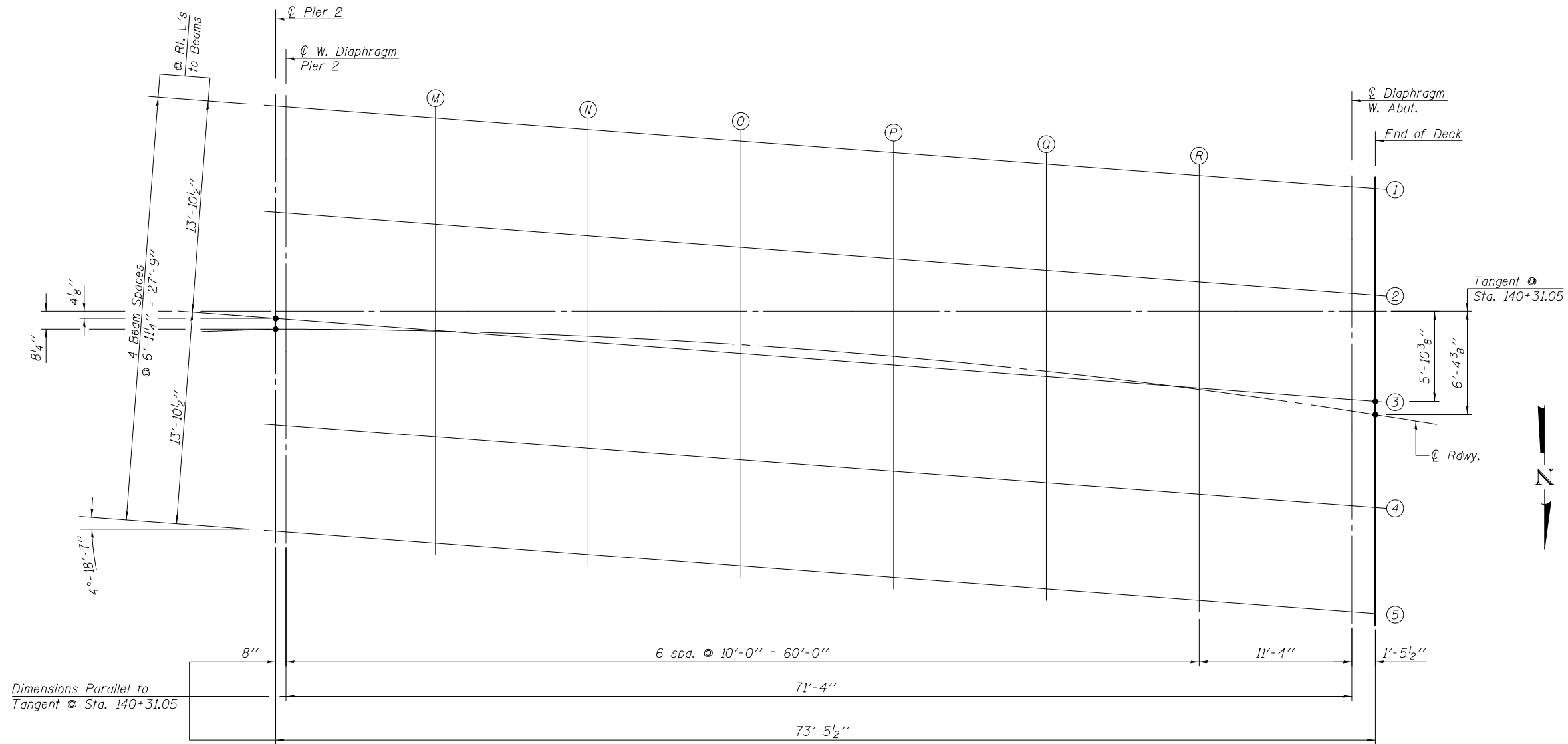
<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 1	139+94.617	11.000	641.680	641.680
☉ W. DIAPHRAGM PIER 1	139+95.292	11.000	641.680	641.680
G	140+05.415	11.000	641.680	641.731
H	140+15.535	11.000	641.680	641.774
I	140+25.654	11.000	641.680	641.796
J	140+35.772	11.000	641.680	641.797
K	140+45.890	11.000	641.680	641.776
L	140+56.010	11.000	641.680	641.734
☉ E. DIAPHRAGM PIER 2	140+66.808	11.000	641.680	641.680
☉ PIER 2	140+67.483	11.000	641.680	641.680

NORTH CURB FACE

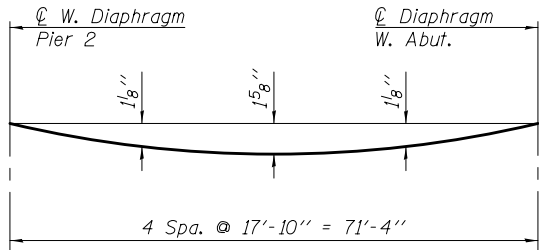
<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 1	139+94.483	14.417	641.475	641.475
☉ W. DIAPHRAGM PIER 1	139+95.160	14.417	641.475	641.475
G	140+05.321	14.417	641.475	641.526
H	140+15.478	14.417	641.475	641.569
I	140+25.634	14.417	641.475	641.591
J	140+35.789	14.417	641.475	641.592
K	140+45.945	14.417	641.475	641.571
L	140+56.102	14.417	641.475	641.529
☉ E. DIAPHRAGM PIER 2	140+66.940	14.417	641.475	641.475
☉ PIER 2	140+67.617	14.417	641.475	641.475

NORTH OUTSIDE EDGE OF DECK

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 1	139+94.427	15.833	641.587	641.587
☉ W. DIAPHRAGM PIER 1	139+95.106	15.833	641.587	641.587
G	140+05.282	15.833	641.587	641.638
H	140+15.455	15.833	641.587	641.681
I	140+25.626	15.833	641.587	641.703
J	140+35.796	15.833	641.587	641.704
K	140+45.967	15.833	641.587	641.683
L	140+56.140	15.833	641.587	641.641
☉ E. DIAPHRAGM PIER 2	140+66.994	15.833	641.587	641.587
☉ PIER 2	140+67.673	15.833	641.587	641.587



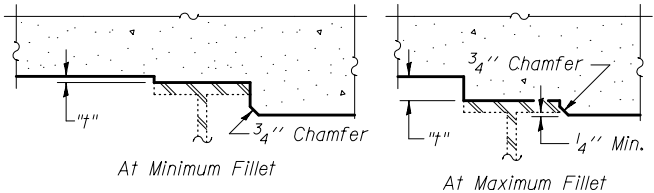
SPAN 3



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 10 & 11 of 48.



To determine "t": Elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheet 10 of 48, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

MODEL: Default
FILE NAME: ...0380056-003-011-SLAB.dgn

USER NAME	= cconnor	DESIGNED	- J.A.M.	REVISED	-
		CHECKED	- A.R.K.	REVISED	-
PLOT SCALE	= 0.1667 ' / in.	DRAWN	- A.D.S.	REVISED	-
PLOT DATE	= 8/13/2019	CHECKED	- J.A.M. & A.R.K.	REVISED	-

TOP OF SLAB ELEVATIONS - SPAN 3	
STRUCTURE NO. 038-0056	
SHEET	9 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	14
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

BEAM 1

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 2	140+66.520	-14.245	643.195	643.195
☉ W. DIAPHRAGM PIER 2	140+67.178	-14.220	643.193	643.193
M	140+77.027	-13.904	643.174	643.227
N	140+86.880	-13.692	643.162	643.261
O	140+96.738	-13.584	643.155	643.277
P	141+06.596	-13.581	643.155	643.280
Q	141+16.453	-13.683	643.161	643.264
R	141+26.307	-13.888	643.173	643.235
☉ DIAPHRAGM W. ABUT.	141+37.667	-14.255	643.195	643.195
END OF DECK	141+39.106	-14.311	643.199	643.199

BEAM 2

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 2	140+66.779	- 7.293	642.778	642.778
☉ W. DIAPHRAGM PIER 2	140+67.442	- 7.268	642.776	642.776
M	140+77.363	- 6.955	642.757	642.810
N	140+87.289	- 6.747	642.745	642.844
O	140+97.218	- 6.644	642.739	642.860
P	141+07.148	- 6.647	642.739	642.864
Q	141+17.077	- 6.754	642.745	642.848
R	141+27.003	- 6.967	642.758	642.819
☉ DIAPHRAGM W. ABUT.	141+38.444	- 7.342	642.781	642.781
END OF DECK	141+39.895	- 7.400	642.784	642.784

Q ROADWAY

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 2	140+67.059	0.000	642.340	642.340
☉ W. DIAPHRAGM PIER 2	140+67.726	0.000	642.340	642.340
M	140+77.736	0.000	642.340	642.393
N	140+87.751	0.000	642.340	642.440
O	140+97.772	0.000	642.340	642.462
P	141+07.801	0.000	642.340	642.465
Q	141+17.839	0.000	642.340	642.443
R	141+27.886	0.000	642.340	642.401
☉ DIAPHRAGM W. ABUT.	141+39.287	0.000	642.340	642.340
END OF DECK	141+40.755	0.000	642.340	642.340

BEAM 3

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 2	140+67.042	-0.340	642.360	642.360
☉ W. DIAPHRAGM PIER 2	140+67.710	-0.316	642.359	642.359
M	140+77.704	-0.006	642.340	642.393
N	140+87.703	0.198	642.328	642.428
O	140+97.705	0.296	642.322	642.444
P	141+07.708	0.288	642.323	642.448
Q	141+17.710	0.174	642.330	642.433
R	141+27.708	-0.046	642.343	642.404
☉ DIAPHRAGM W. ABUT.	141+39.234	-0.431	642.366	642.366
END OF DECK	141+40.694	-0.489	642.369	642.369

BEAM 4

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 2	140+67.309	6.612	641.943	641.943
☉ W. DIAPHRAGM PIER 2	140+67.982	6.636	641.942	641.942
M	140+78.050	6.942	641.923	641.977
N	140+88.123	7.142	641.911	642.011
O	140+98.199	7.235	641.906	642.028
P	141+08.276	7.222	641.907	642.032
Q	141+18.352	7.102	641.914	642.017
R	141+28.424	6.875	641.928	641.989
☉ DIAPHRAGM W. ABUT.	141+40.034	6.481	641.951	641.951
END OF DECK	141+41.506	6.421	641.955	641.955

BEAM 5

<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☉ PIER 2	140+67.580	13.564	641.526	641.526
☉ W. DIAPHRAGM PIER 2	140+68.258	13.588	641.525	641.525
M	140+78.401	13.891	641.507	641.560
N	140+88.549	14.086	641.495	641.594
O	140+98.701	14.175	641.490	641.611
P	141+08.853	14.155	641.491	641.616
Q	141+19.004	14.029	641.498	641.601
R	141+29.151	13.795	641.512	641.574
☉ DIAPHRAGM W. ABUT.	141+40.847	13.391	641.537	641.537
END OF DECK	141+42.329	13.330	641.540	641.540

SOUTH OUTSIDE EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌀ PIER 2	140+66.465	-15.833	643.317	643.317
⌀ W. DIAPHRAGM PIER 2	140+67.121	-15.833	643.317	643.317
M	140+76.965	-15.833	643.317	643.370
N	140+86.815	-15.833	643.317	643.417
O	140+96.670	-15.833	643.317	643.439
P	141+06.533	-15.833	643.317	643.442
Q	141+16.404	-15.833	643.317	643.420
R	141+26.284	-15.833	643.317	643.317
⌀ DIAPHRAGM W. ABUT.	141+37.495	-15.833	643.317	643.317
END OF DECK	141+38.938	-15.833	643.317	643.317

SOUTH CURB FACE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌀ PIER 2	140+66.517	-14.417	643.205	643.205
⌀ W. DIAPHRAGM PIER 2	140+67.174	-14.417	643.205	643.205
M	140+77.033	-14.417	643.205	643.258
N	140+86.897	-14.417	643.205	643.305
O	140+96.767	-14.417	643.205	643.327
P	141+06.645	-14.417	643.205	643.330
Q	141+16.530	-14.417	643.205	643.308
R	141+26.425	-14.417	643.205	643.266
⌀ DIAPHRAGM W. ABUT.	141+37.652	-14.417	643.205	643.205
END OF DECK	141+39.098	-14.417	643.205	643.205

SOUTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌀ PIER 2	140+66.644	-11.000	643.000	643.000
⌀ W. DIAPHRAGM PIER 2	140+67.303	-11.000	643.000	643.000
M	140+77.198	-11.000	643.000	643.053
N	140+87.097	-11.000	643.000	643.100
O	140+97.003	-11.000	643.000	643.122
P	141+06.916	-11.000	643.000	643.125
Q	141+16.837	-11.000	643.000	643.103
R	141+26.768	-11.000	643.000	643.061
⌀ DIAPHRAGM W. ABUT.	141+38.035	-11.000	643.000	643.000
END OF DECK	141+39.486	-11.000	643.000	643.000

NORTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌀ PIER 2	140+67.483	11.000	641.680	641.680
⌀ W. DIAPHRAGM PIER 2	140+68.158	11.000	641.680	641.680
M	140+78.286	11.000	641.680	641.733
N	140+88.420	11.000	641.680	641.780
O	140+98.560	11.000	641.680	641.802
P	141+08.708	11.000	641.680	641.805
Q	141+18.864	11.000	641.680	641.783
R	141+29.031	11.000	641.680	641.741
⌀ DIAPHRAGM W. ABUT.	141+40.568	11.000	641.680	641.680
END OF DECK	141+42.054	11.000	641.680	641.680

NORTH CURB FACE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌀ PIER 2	140+67.617	14.417	641.475	641.475
⌀ W. DIAPHRAGM PIER 2	140+68.295	14.417	641.475	641.475
M	140+78.460	14.417	641.475	641.528
N	140+88.631	14.417	641.475	641.575
O	140+98.808	14.417	641.475	641.597
P	141+08.994	14.417	641.475	641.600
Q	141+19.188	14.417	641.475	641.578
R	141+29.393	14.417	641.475	641.536
⌀ DIAPHRAGM W. ABUT.	141+40.972	14.417	641.475	641.475
END OF DECK	141+42.463	14.417	641.475	641.475

NORTH OUTSIDE EDGE OF DECK

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌀ PIER 2	140+67.673	15.833	641.587	641.587
⌀ W. DIAPHRAGM PIER 2	140+68.352	15.833	641.587	641.587
M	140+78.532	15.833	641.587	641.640
N	140+88.719	15.833	641.587	641.687
O	140+98.912	15.833	641.587	641.709
P	141+09.113	15.833	641.587	641.712
Q	141+19.323	15.833	641.587	641.690
R	141+29.543	15.833	641.587	641.648
⌀ DIAPHRAGM W. ABUT.	141+41.141	15.833	641.587	641.587
END OF DECK	141+42.634	15.833	641.587	641.587

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FEHR GRAHAM ENGINEERING & ENVIRONMENTAL ILLINOIS DESIGN FIRM NO. 184-003525	USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -	TOP OF SLAB ELEVATIONS – SPAN 3 STRUCTURE NO. 038-0056	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - A.R.K.	REVISED -		CH 40	11-00116-04-BR	IROQUOIS	60	16
	PLOT SCALE = 0.1667 ' / in.	DRAWN - A.D.S.	REVISED -		CONTRACT NO. 87548				
	PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -		SHEET 11 OF 48 SHEETS				
	ILLINOIS FED. AID PROJECT								

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
E. End of E. Approach Slab	139+00.701	-14.706	643.118
A1	139+08.133	-14.550	643.165
A2	139+15.567	-14.454	643.207
W. End of E. Approach Slab	139+23.002	-14.417	643.205

SOUTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
E. End of E. Approach Slab	139+00.193	-11.000	642.917
A1	139+07.674	-11.000	642.961
A2	139+15.148	-11.000	643.000
W. End of E. Approach Slab	139+22.614	-11.000	643.000

☉ ROADWAY

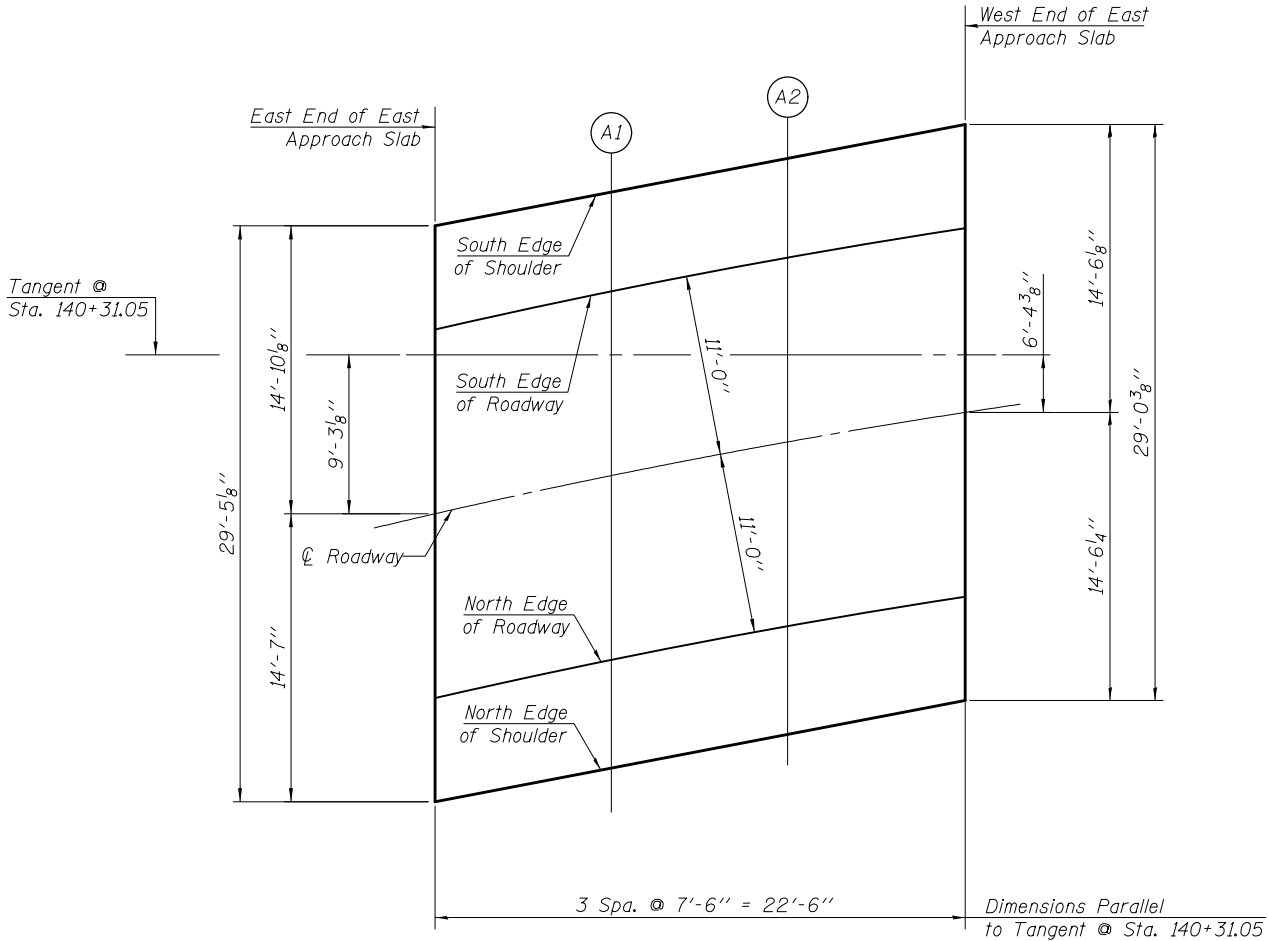
Location	Station	Offset	Theoretical Grade Elevations
E. End of E. Approach Slab	138+98.659	0.000	642.330
A1	139+06.229	0.000	642.337
A2	139+13.791	0.000	642.340
W. End of E. Approach Slab	139+21.345	0.000	642.340

NORTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
E. End of E. Approach Slab	138+97.088	11.000	641.758
A1	139+04.749	11.000	641.728
A2	139+12.402	11.000	641.693
W. End of E. Approach Slab	139+20.046	11.000	641.680

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
E. End of E. Approach Slab	138+96.590	14.433	641.583
A1	139+04.272	14.489	641.537
A2	139+11.955	14.484	641.491
W. End of E. Approach Slab	139+19.637	14.417	641.475



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

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
	CHECKED - A.R.K.	REVISED -
PLOT SCALE = 0.1667' / in.	DRAWN - A.D.S.	REVISED -
PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -

TOP OF EAST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 038-0056

SHEET 12 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	17
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FEHR GRAHAM PROJECT NUMBER: 11-138

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
E. End of W. Approach Slab	141+39.098	-14.417	643.205
A3	141+46.533	-14.454	643.207
A4	141+53.967	-14.550	643.213
W. End of W. Approach Slab	141+61.399	-14.706	643.222

SOUTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
E. End of W. Approach Slab	141+39.486	-11.000	643.000
A3	141+46.952	-11.000	643.000
A4	141+54.426	-11.000	643.000
W. End of W. Approach Slab	141+61.907	-11.000	643.000

CL ROADWAY

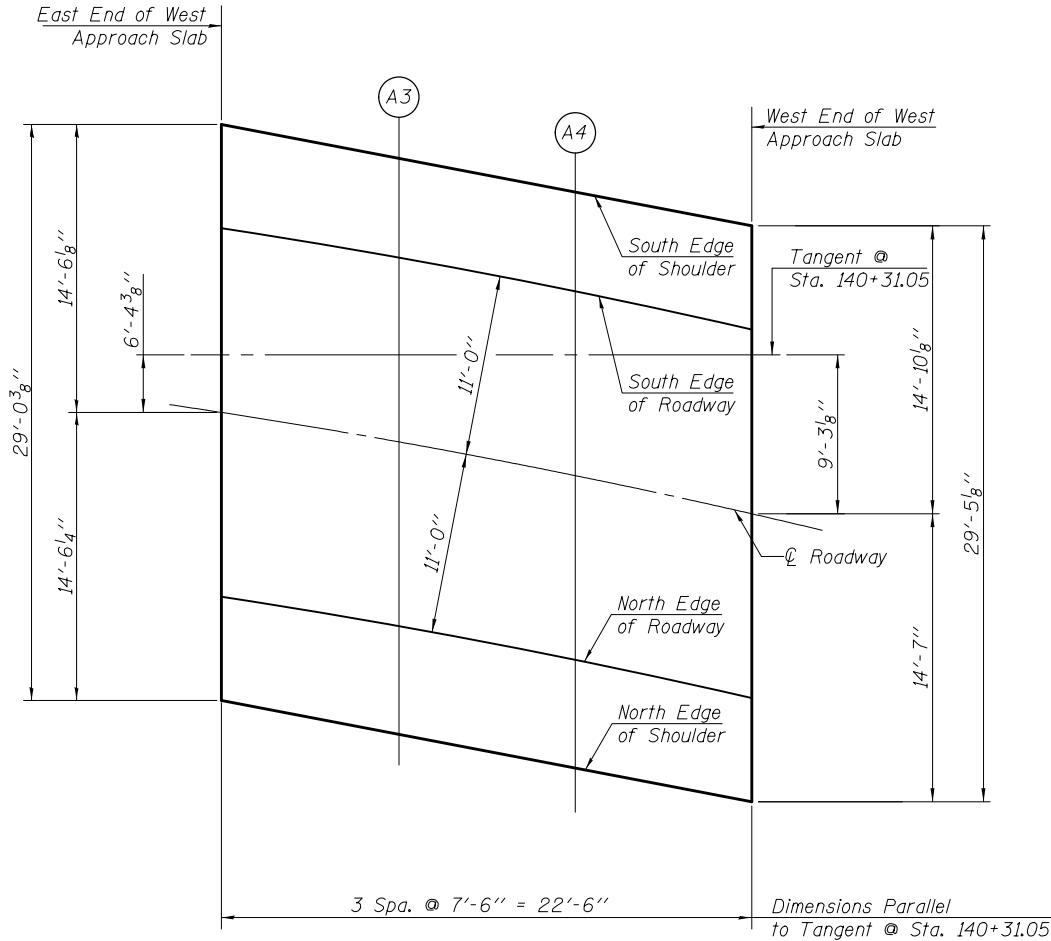
Location	Station	Offset	Theoretical Grade Elevations
E. End of W. Approach Slab	141+40.755	0.000	642.340
A3	141+48.309	0.000	642.340
A4	141+55.871	0.000	642.340
W. End of W. Approach Slab	141+63.441	0.000	642.340

NORTH EDGE OF ROADWAY

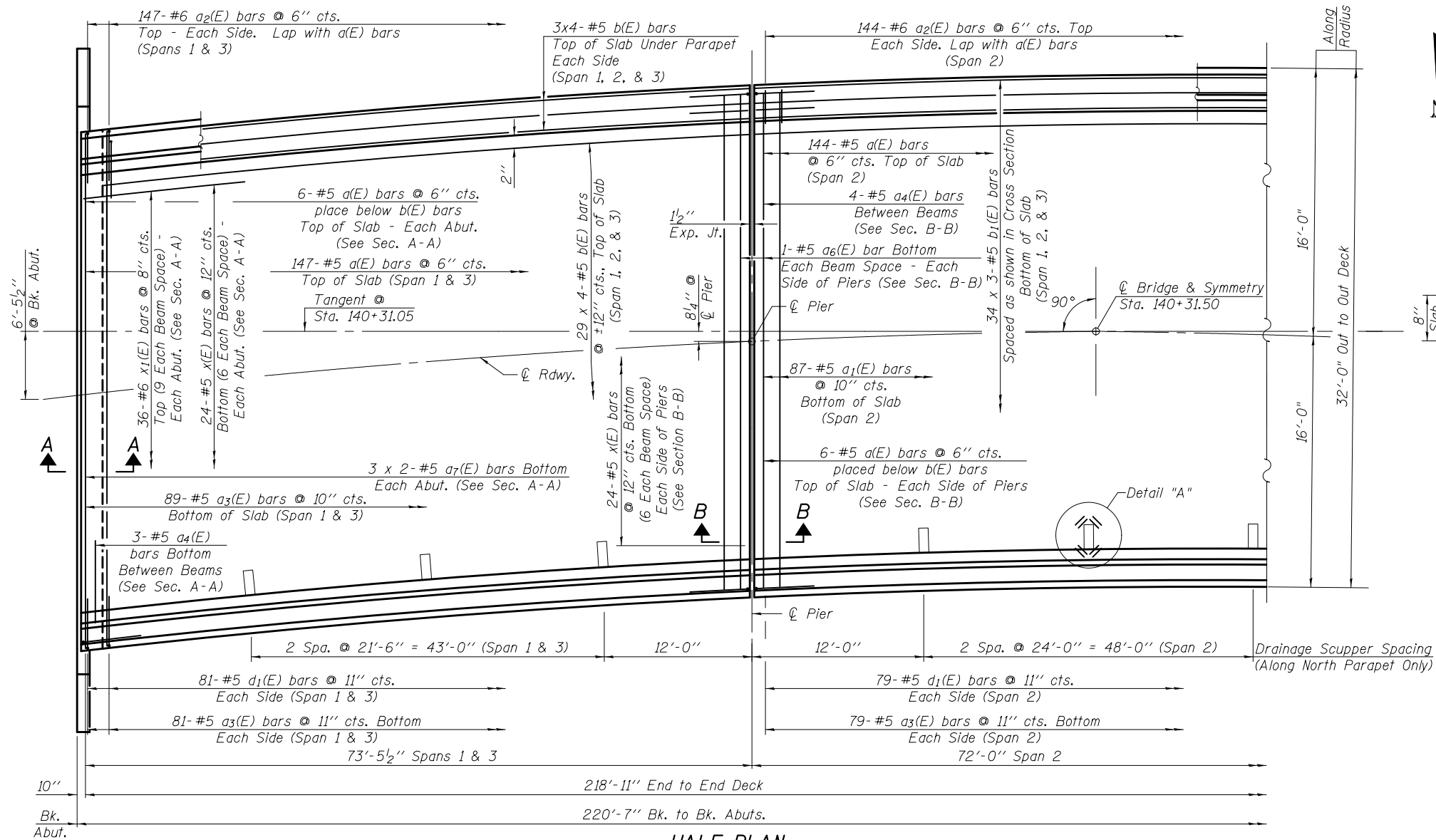
Location	Station	Offset	Theoretical Grade Elevations
E. End of W. Approach Slab	141+42.054	11.000	641.680
A3	141+49.698	11.000	641.680
A4	141+57.351	11.000	641.680
W. End of W. Approach Slab	141+65.012	11.000	641.680

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
E. End of W. Approach Slab	141+42.463	14.417	641.475
A3	141+50.145	14.484	641.471
A4	141+57.828	14.489	641.471
W. End of W. Approach Slab	141+65.510	14.433	641.474

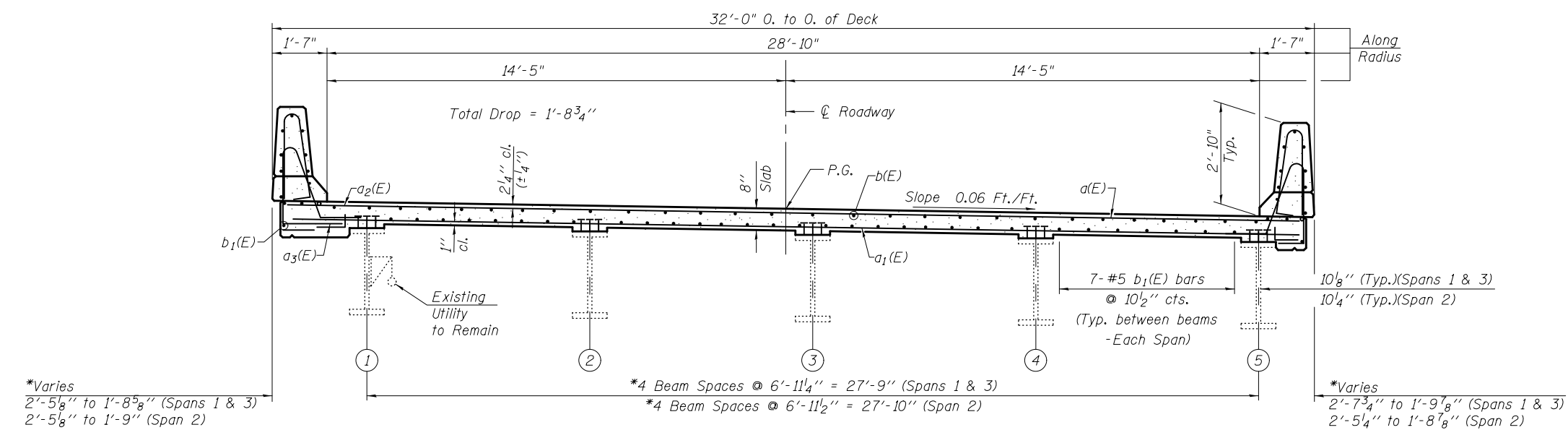


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HALF PLAN

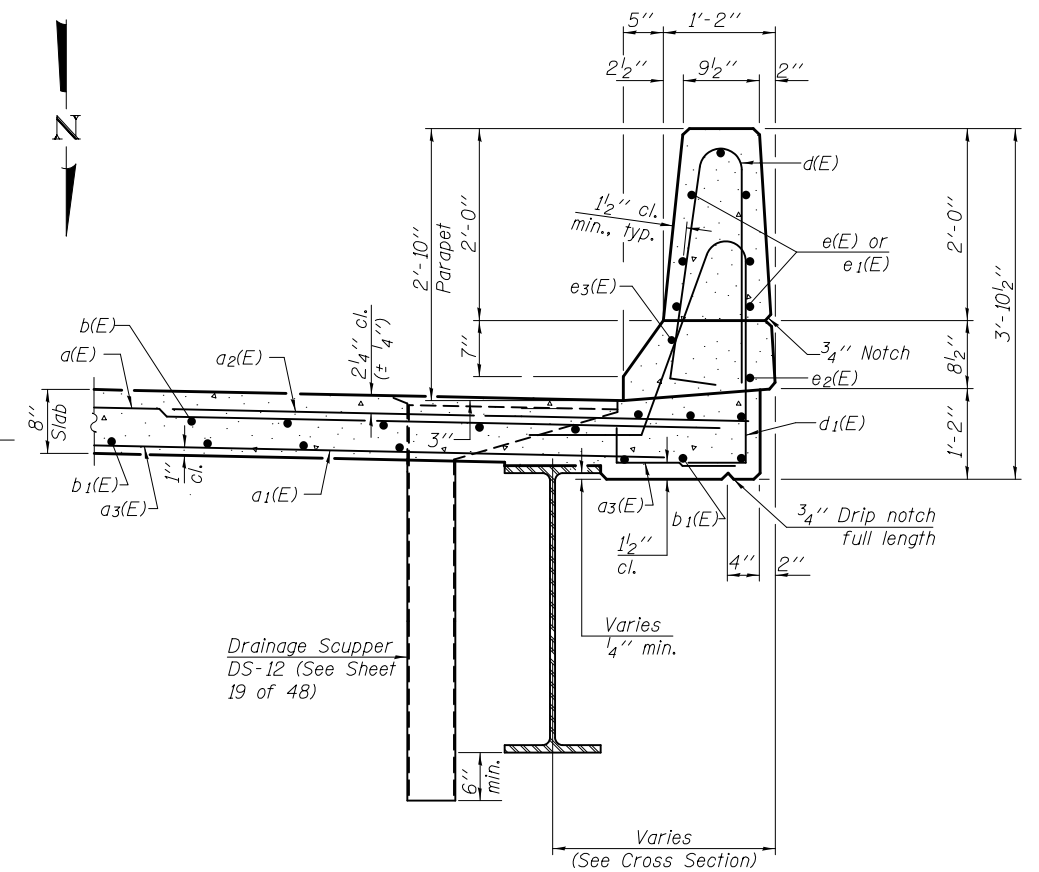
(All longitudinal dimensions shown are parallel to the Tangent @ Sta. 140+31.05)



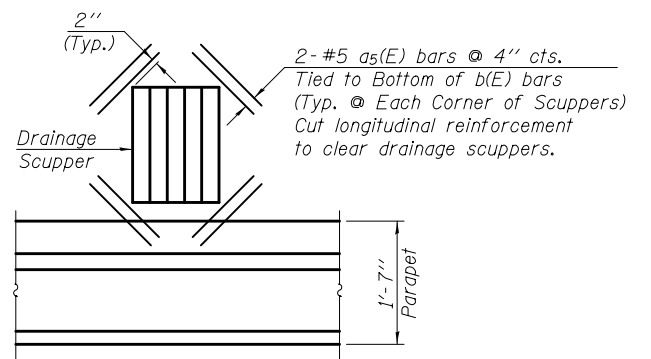
CROSS SECTION

(Looking West)

* Dimensions @ Rt. L's to Beams



SECTION THRU PARAPET



DETAIL "A"

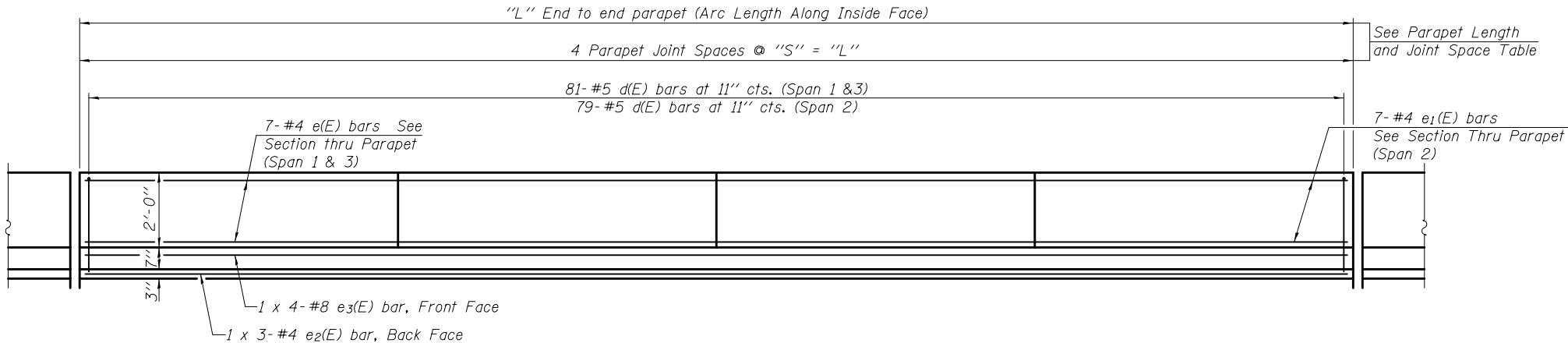
MINIMUM BAR LAP

#5 bar = 2'-6"

Notes:

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

See Sheet 15 of 48 for
Section A-A and Section B-B.



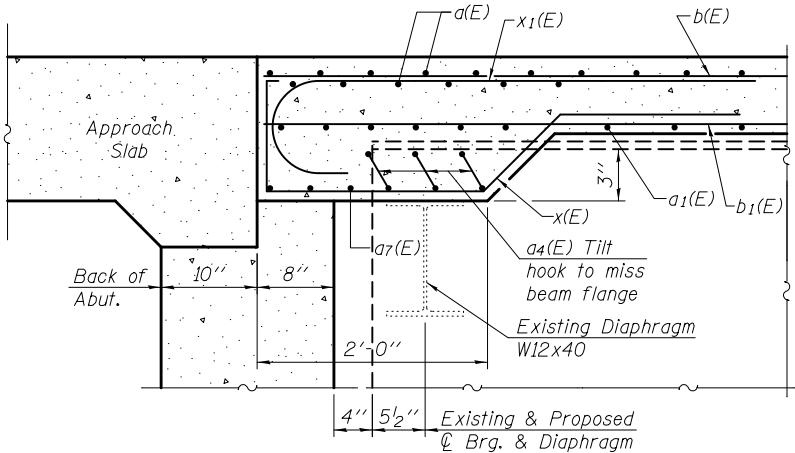
PARAPET LENGTH AND JOINT SPACING

Span	Parapet Location	Parapet Arc Length Along Inside Face "L" (feet)	Parapet Joint Spacing "S" (feet)
1	South	73'-7"	±18'-4 3/4"
1	North	73'-7 1/8"	±18'-4 3/4"
2	South	71'-10 3/4"	±17'-11 3/4"
2	North	71'-10 3/4"	±17'-11 3/4"
3	South	73'-7"	±18'-4 3/4"
3	North	73'-7 1/8"	±18'-4 3/4"

INSIDE ELEVATION OF PARAPET

MINIMUM BAR LAP

(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"



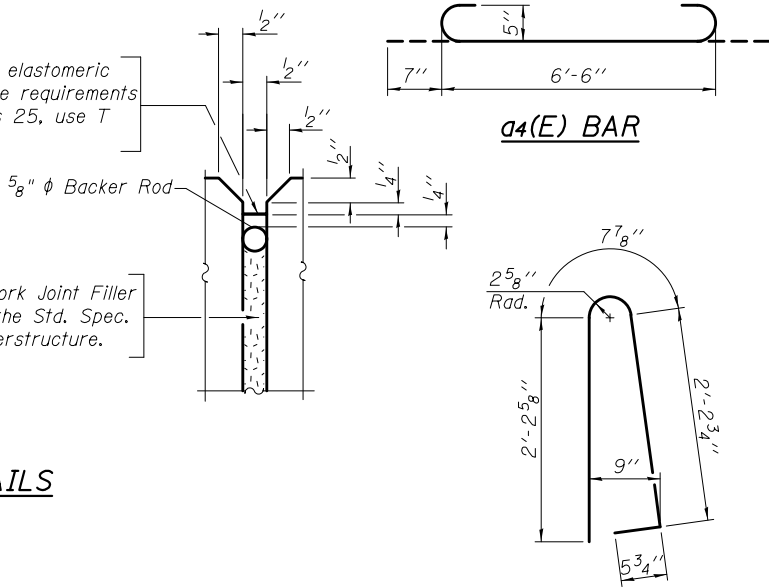
SECTION A-A

(Horizontal dimensions shown are at Rt. L's to Abutment)

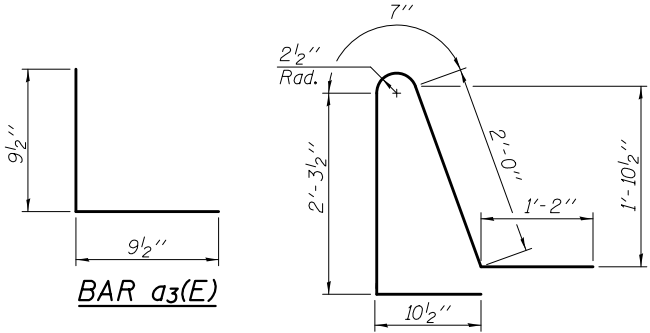
Non-staining gray one component non-sag elastomeric gun grade polyurethane sealant meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25, use T with a 5/8" backer rod.

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

PARAPET JOINT DETAILS

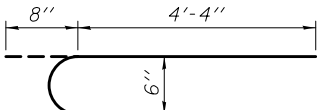


BAR d(E)

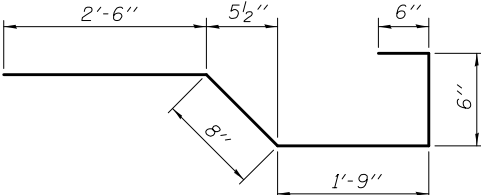


BAR a3(E)

BAR d1(E)



BAR x1(E)



BAR x(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	474	#5	31'-5"	—
a1(E)	265	#5	30'-0"	—
a2(E)	876	#6	6'-6"	—
a3(E)	482	#5	1'-7"	L
a4(E)	88	#5	7'-8"	U
a5(E)	72	#5	1'-6"	—
a6(E)	16	#5	6'-6"	—
a7(E)	12	#5	17'-6"	—
b(E)	420	#5	20'-6"	—
b1(E)	306	#5	26'-3"	—
d(E)	482	#5	5'-7"	I
d1(E)	482	#5	6'-11"	L
e(E)	112	#4	18'-1"	—
e1(E)	56	#4	17'-8"	—
e2(E)	18	#4	26'-0"	—
e3(E)	24	#8	22'-3"	—
x(E)	144	#5	5'-11"	U
x1(E)	72	#6	5'-0"	U
Reinforcement Bars, Epoxy Coated			Pound	63,140
Concrete Superstructure			Cu. Yd.	239.0
Bridge Deck Grooving			Sq. Yd.	703
Protective Coat			Sq. Yd.	886

Bars indicated thus 1 x 3-#8 etc. Indicates 1 line of bars with 3 lengths per line. Slipforming of Parapets is not allowed.

S-D1

8-31-12

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. IB4-003525

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

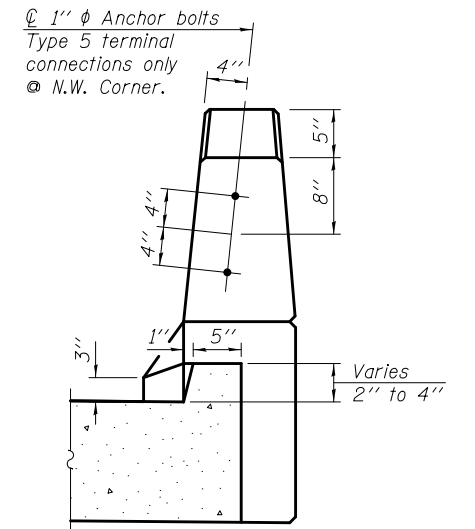
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 038-0056

SHEET 15 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	20
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FEHR GRAHAM PROJECT NUMBER: 11-138

Notes:
See sheet 17 of 48 for Sections C-C & D-D and View E-E.
a(E) and a₁(E) bar spacings measured along $\mathcal{C}$ Rdwy.

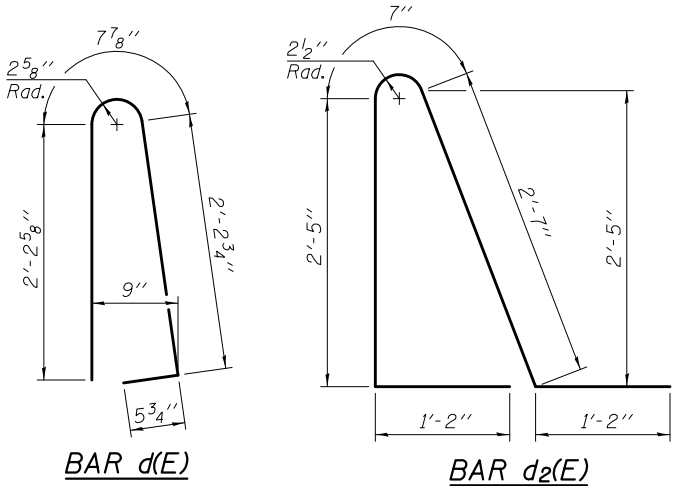


VIEW B-B

PLAN

(Sheet 1 of 2)

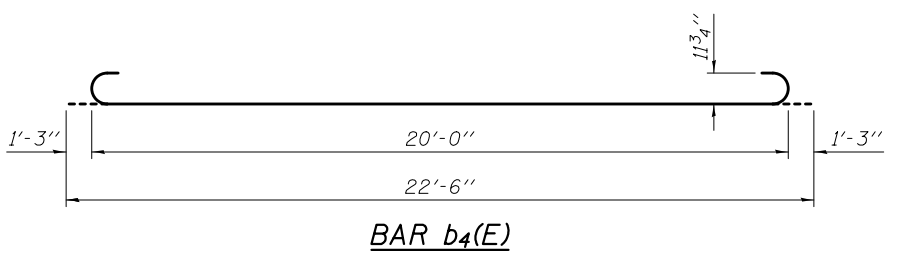
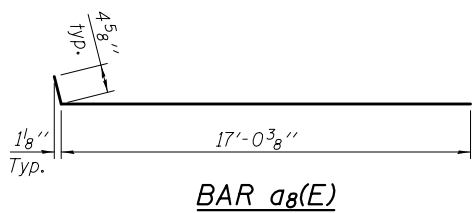
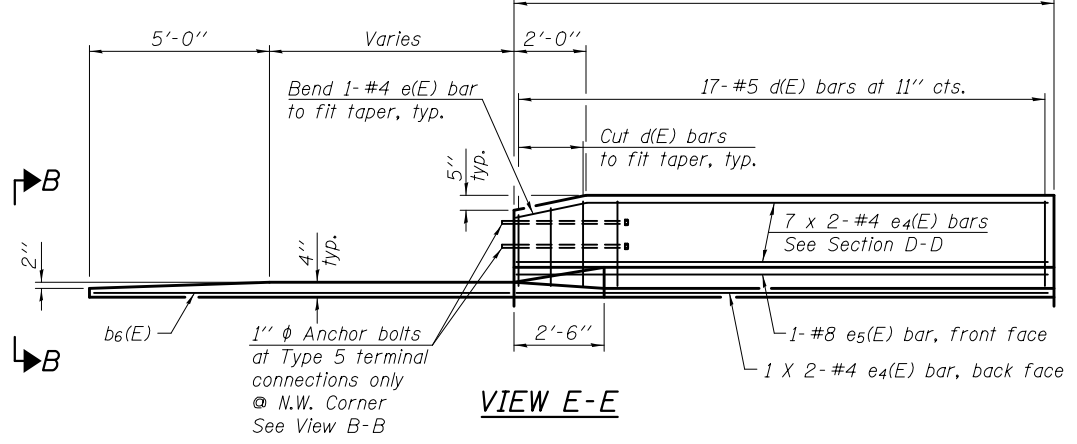
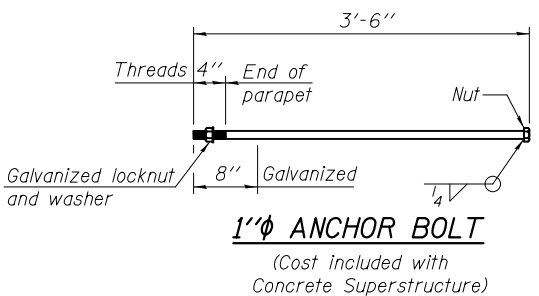
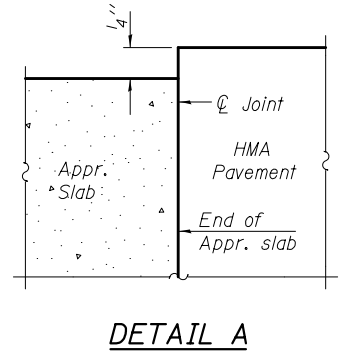
Notes:
See sheet 16 of 48 for View B-B.
Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v₃(E) bar details, see sheet 25 & 26 of 48.
The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill and drainage treatment details, see sheet 2 of 48.
For additional parapet details, see sheet 16 of 48.
Slipforming of Parapet is not allowed.
The Existing Approach Roadway Supports shall be removed to the extent that they do not interfere with the construction of the proposed Approach Footings.
Cost of removal is included in the cost of Concrete Removal.



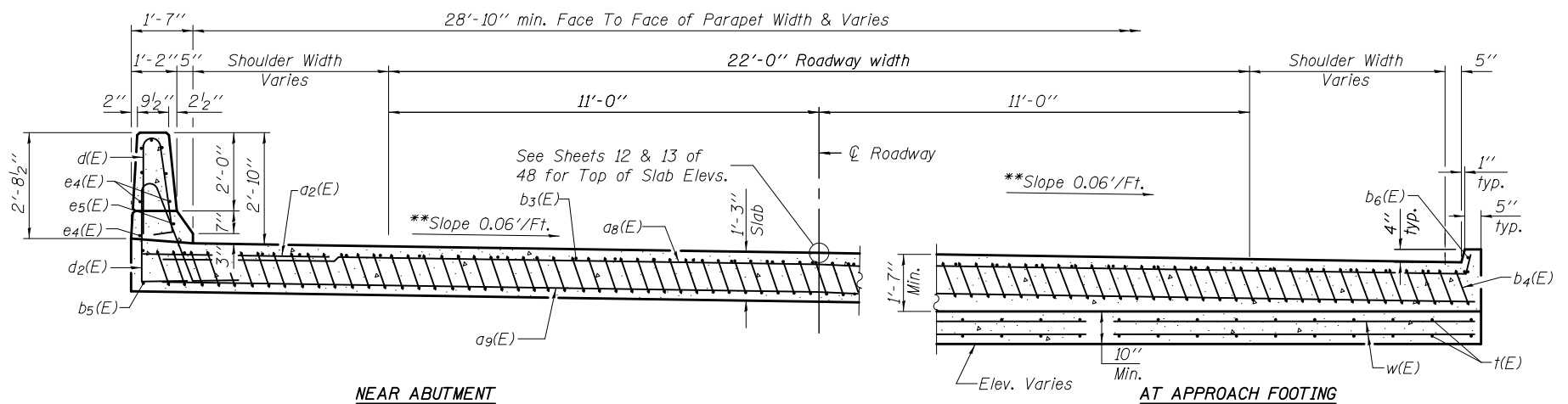
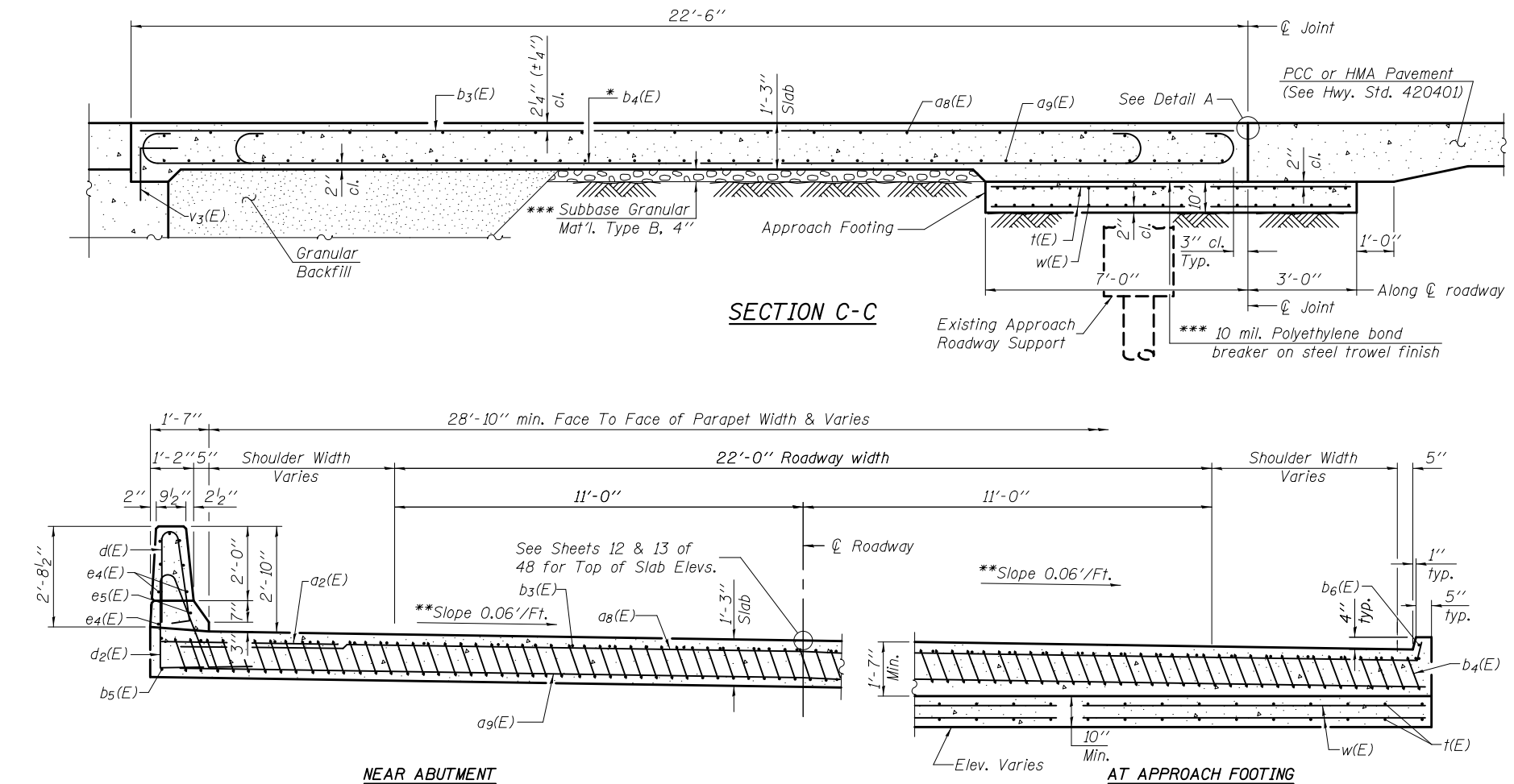
* Tilt #9 b₄(E) bars as required to maintain clearance.
** Slope Varies East of Sta. 139+15.00 on East Approach Slab.
*** Cost included with Concrete Superstructure.

**TWO APPROACHES
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a ₂ (E)	48	#6	6'-6"	
a ₈ (E)	76	#4	17'-5"	
a ₉ (E)	68	#5	31'-0"	
b ₃ (E)	48	#4	22'-4"	
b ₄ (E)	140	#9	22'-6"	
b ₅ (E)	4	#4	14'-10"	
b ₆ (E)	4	#4	7'-3"	
d(E)	68	#5	5'-7"	
d ₂ (E)	68	#5	7'-11"	
e ₄ (E)	64	#4	8'-6"	
e ₅ (E)	4	#8	14'-7"	
t(E)	124	#4	9'-8"	
w(E)	80	#5	30'-11"	
Concrete Superstructure			Cu. Yd.	79.7
Concrete Structures			Cu. Yd.	19.3
Reinforcement Bars, Epoxy Coated			Pound	17,700
Bridge Deck Grooving			Sq. Yd.	147
Protective Coat			Sq. Yd.	184



(Sheet 2 of 2)



Note: Bars indicated thus 7 x 2- #4 etc., indicates 7 lines of bars with 2 lengths per line.

BA-0

7-1-10

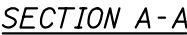
FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
FEHR GRAHAM PROJECT NUMBER: 11-138

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

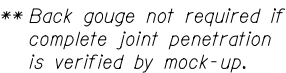
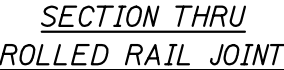
**BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 038-0056**

SHEET 17 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	22
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				



JOINT PLAN AT PIERS



LOCKING EDGE
RAIL SPLICE

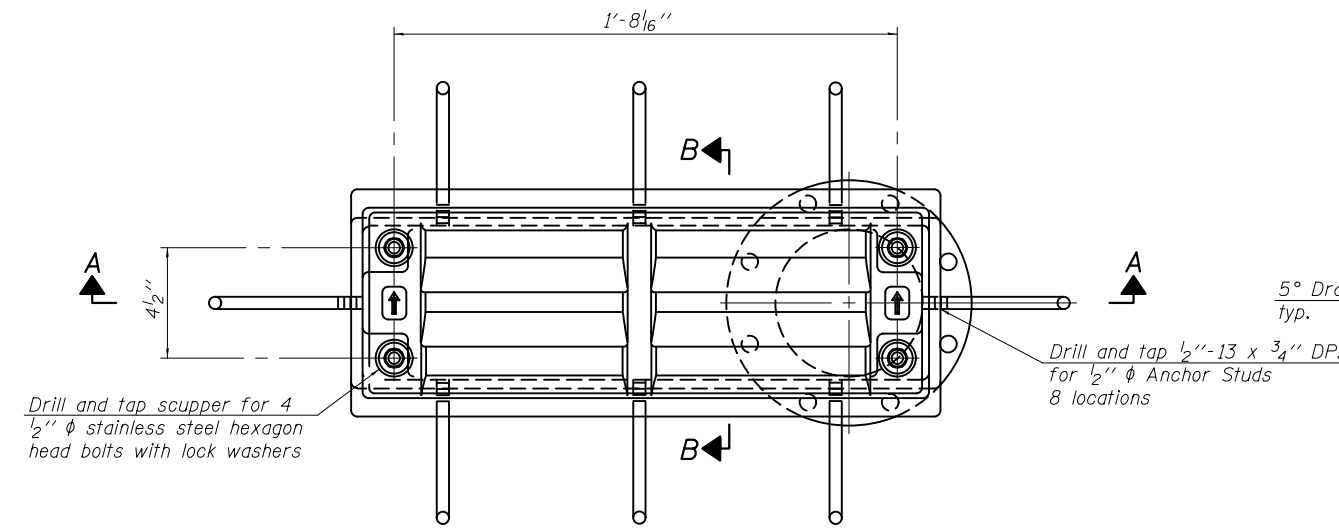
The inside of the locking edge rail groove shall be free of weld residue.

Rolled rail shown, welded rail similar.

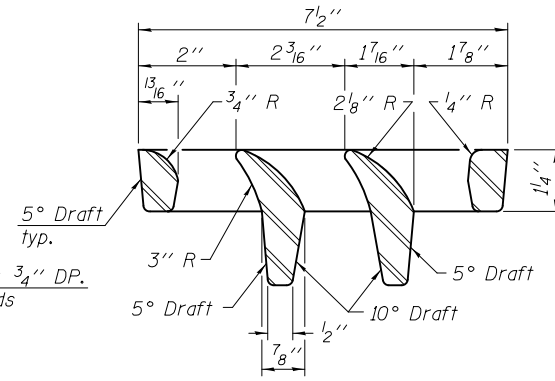
BILL OF MATERIAL

<i>Item</i>	<i>Unit</i>	<i>Total</i>
<i>Preformed Joint Strip Seal</i>	<i>Foot</i>	<i>62</i>

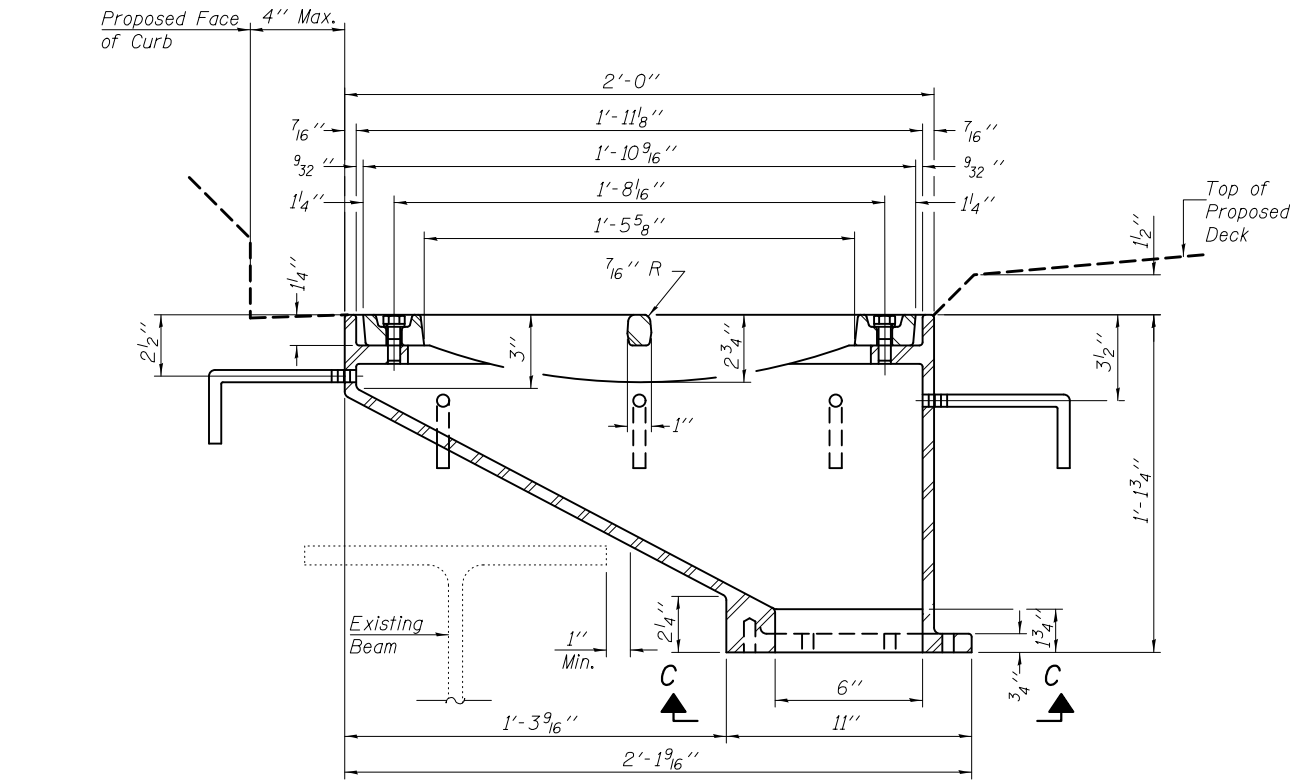
The Locking Edge Rails are included in the cost of Preformed Joint Strip Seal.



PLAN

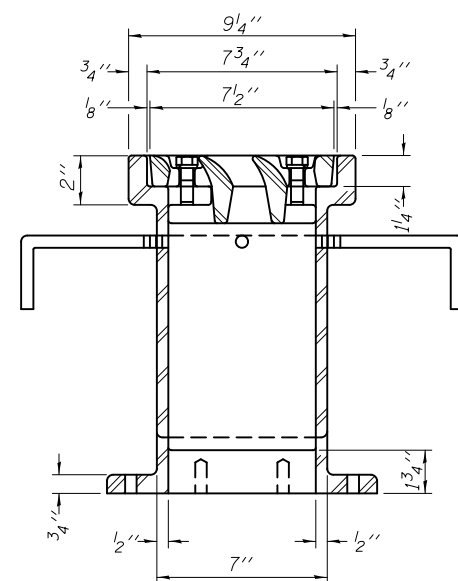


VANE GRATE DETAIL

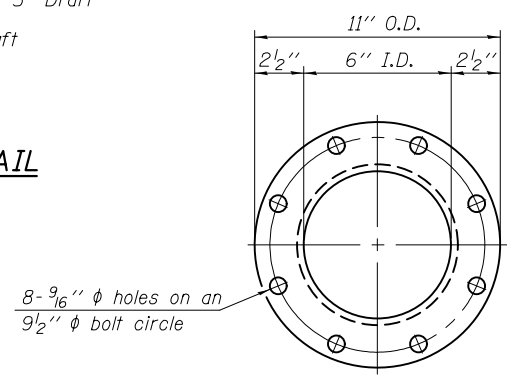


SECTION A-A

See sheet 14 of 48 for scupper location relative to parapet.

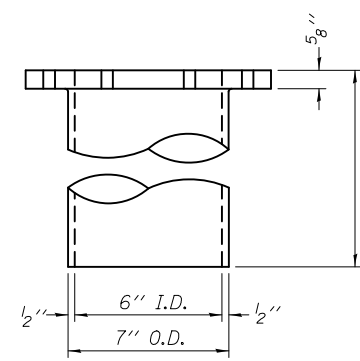


SECTION B-B

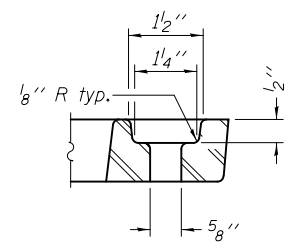


VIEW C-C

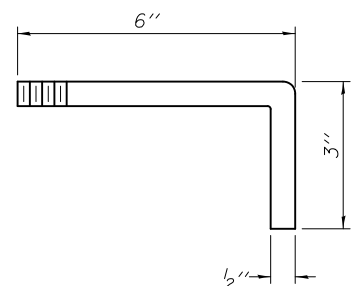
Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" ϕ bolt circle. (2 blind holes are 1/4" deep, 6 thru holes)



DOWNSPOUT



BOLT HOLE DETAIL



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-12	Each	9

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

DS-12

7-1-10

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
	CHECKED - A.R.K.	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - A.D.S.	REVISED -
PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	24
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

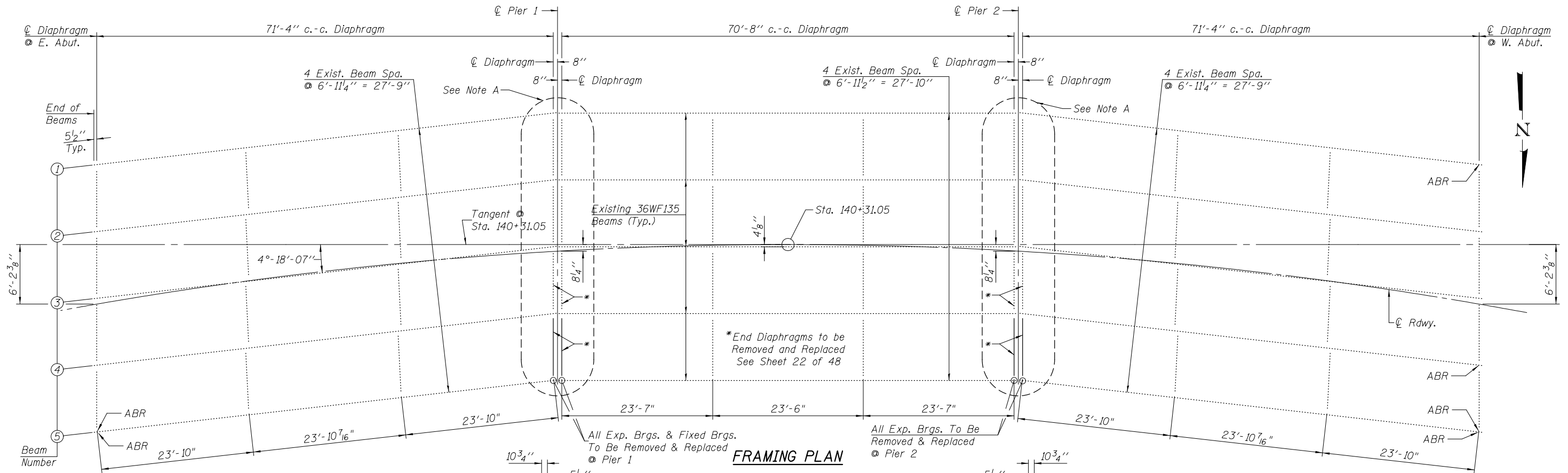
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USER NAME =	cconnor	DESIGNED -	J.A.M.	REVISED -	
		CHECKED -	A.R.K.	REVISED -	
PLOT SCALE =	0.1667' / in.	DRAWN -	A.D.S.	REVISED -	
PLOT DATE =	8/13/2019	CHECKED -	J.A.M. & A.R.K.	REVISED -	

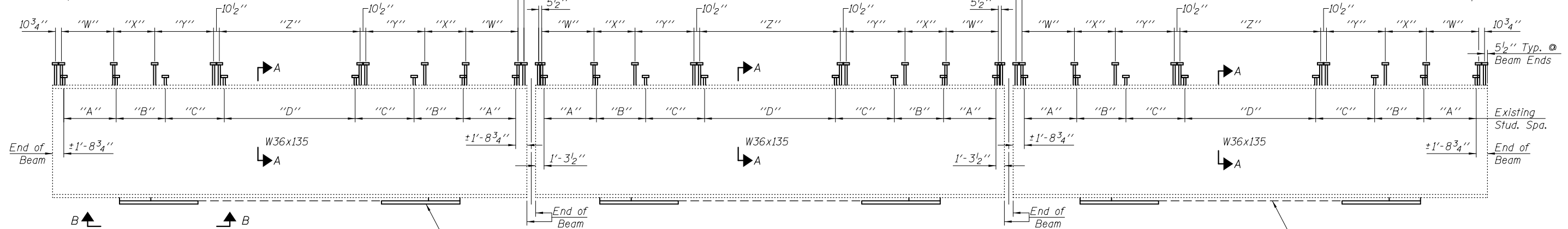
STRUCTURAL STEEL
STRUCTURE NO. 038-0056

SHEET 20 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	25
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				



FRAMING PLAN



ELEVATION

(All stud spacings show are symmetrical about the centerline of the beam)

EXISTING STUD SHEAR CONNECTOR SPACING

Location	Stud Shear Connection Spacing
A	8 Spaces @ 1'-0" = 8'-0"
B	6 Spaces @ 1'-3" = 7'-6"
C	6 Spaces @ 1'-6" = 9'-0"
D	10 Spaces @ 2'-0" = 20'-0"

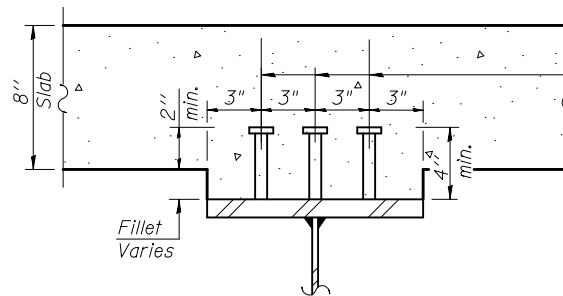
Note: Stud Shear Connector spacing shown is symmetrical about the centerline of the existing beams.

PROPOSED STUD SHEAR CONNECTOR SPACING

Location	Stud Shear Connection Spacing
W	8 Spaces @ 1'-0" = 8'-0"
X	6 Spaces @ 1'-3" = 7'-6"
Y	12 Spaces @ 9" = 9'-0"
Z	19 Spaces @ 1'-0" = 19'-0"

Note: Stud Shear Connector spacing shown is symmetrical about the centerline of the existing beams.

Proposed Cover Plate Retrofit (N.T.R.) (Typical)



SECTION A-A
(Existing & Proposed)

ABR = Anchor Bolt Replacement (See Sheet 22 of 48)

Note: See Sheet 21 of 48 for View B-B & Cover Plate Retrofit Details

Load carrying components designated "N.T.R." shall conform to the Impact Testing Requirement, Zone 2.

Note A: Existing structural steel shall be cleaned and painted for a distance of 5 feet each side of pier deck joints.

INTERIOR BEAM MOMENT TABLE		
		Mid-Span
I_s	(in ⁴)	10051
$I_c(n)$	(in ⁴)	29314
$I_c(3n)$	(in ⁴)	20688
S_s	(in ³)	653
$S_c(n)$	(in ³)	948
$S_c(3n)$	(in ³)	861
Z	(in ³)	--
ϕ	(k/')	0.941
$M\phi$	(k)	576
$S\phi$	(k/')	0.468
$M_s\phi$	(k)	300
M_L	(k)	638
M_I	(k)	162
$^{5/3}[M_L + I]$	(k)	1334
M_a	(k)	2873
* M_u	(k)	3518
$f_s\phi$ non-comp	(ksi)	10.6
$f_s\phi$ (comp)	(ksi)	4.2
$f_s^{5/3}[M_L + M_I]$	(ksi)	16.9
f_s (Overload)	(ksi)	31.7
f_s (Total)	(ksi)	--
VR	(k)	50.4

INTERIOR BEAM REACTION TABLE		
		Abuts. & Piers
$R\phi$	(k)	64.4
R_L	(k)	86.0
R_I	(k)	21.9
R_{Total}	(k)	172.3

* Compact section

I_s , S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

Z : Plastic Section Modulus of the steel section in non-composite areas (in³).

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

M_{DL} : Un-factored moment due to non-composite dead load (kip-ft.).

s_{DL} : Un-factored long term composite (superimposed) dead load (kips/ft.).

M_{SDL} : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_{LL} : Un-factored live load moment (kip-ft.).

M_I : Un-factored moment due to impact (kip-ft.).

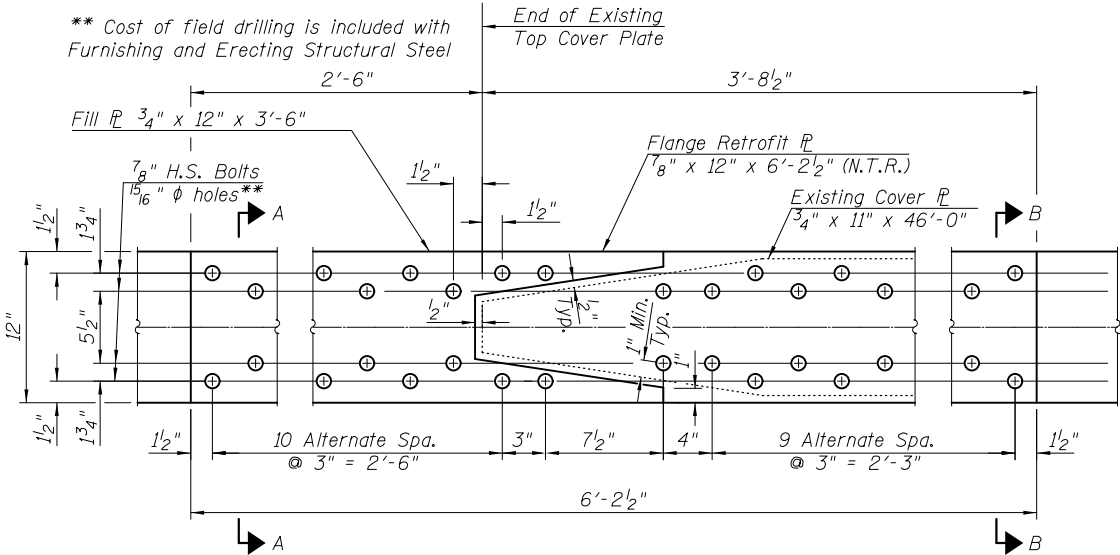
M_a : Factored design moment (kip-ft.).
 $1.3[M_{DL} + M_{SDL} + 5/3(M_{LL} + M_I)]$

M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M_{DL} + M_{SDL} + 5/3(M_{LL} + M_I)$

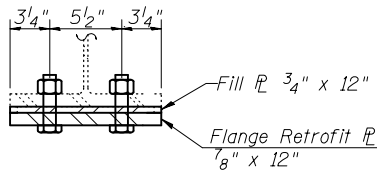
f_s (Total): Sum of stresses computed from the moments below on non-compact section (ksi).
 $1.3[M_{DL} + M_{SDL} + 5/3(M_{LL} + M_I)]$

VR: Maximum LL + impact shear range within the composite portion of the span for stud shear connector design (kips).

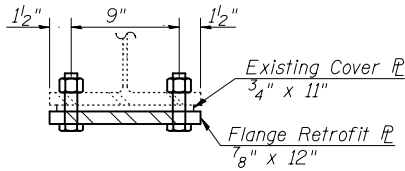


Note: One Fill ϕ and one flange Retrofit plate required at each end of each existing bottom flange cover plate.

VIEW B-B
(See Sheet 20 of 48 for location of View B-B)

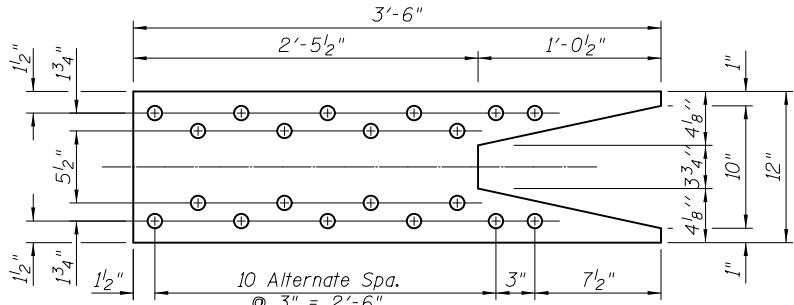


SECTION A-A



SECTION B-B

COVER PLATE RETROFIT DETAILS
(30 Required)



FILL PLATE

Notes:

The cost of drilling bolt holes in the field and the removal and/or reinstallation of all members necessary to complete the work shall be included in the cost of Furnishing and Erecting Structural Steel.

Fasteners for cover plate retrofits shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts $7/8$ ", holes $5/16$ " ϕ .

All structural steel shall be AASHTO M270 Grade 36, except that AASHTO M270 Grade 50 may be used as an alternate.

Load carrying components designated "N.T.R." shall conform to the Impact Testing Requirement, Zone 2.

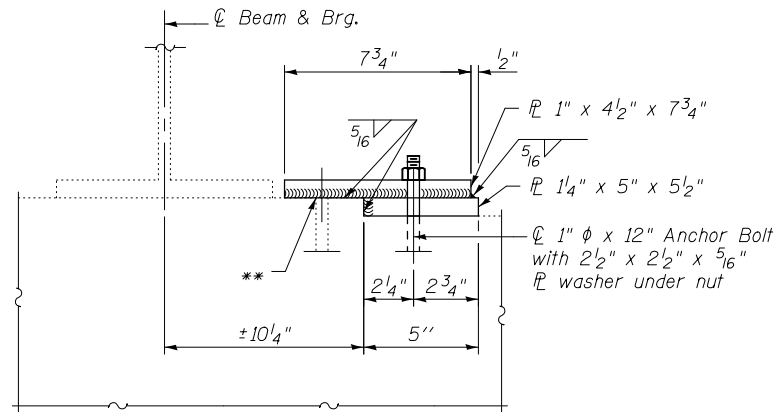
See Special Provisions for Cleaning and Painting Contact Surface Areas of Existing Steel at locations of cover plate retrofits.

BILL OF MATERIAL

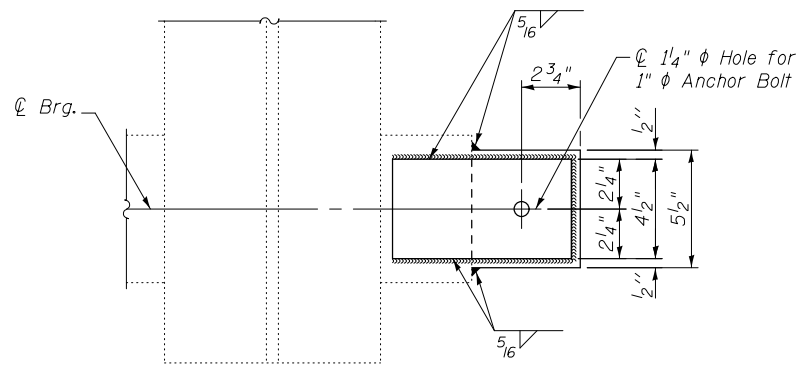
Item	Unit	Quantity
Furnishing and Erecting Structural Steel	Pound	11425

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
	CHECKED - A.R.K.	REVISED -
PLOT SCALE = 0.1667' / in.	DRAWN - A.D.S.	REVISED -
PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	26
				CONTRACT NO. 87548
		ILLINOIS	FED. AID PROJECT	



ELEVATION



PLAN

ANCHOR BOLT REPLACEMENT AT ABUTMENTS

(6 Required)

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

The cost of drilling bolt holes in the field and the removal and/or reinstallation of all members necessary to complete the work shall be included in the cost of Furnishing and Erecting Structural Steel.

Fasteners for proposed Diaphragms shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4 inch diameter, holes 13/16 inch diameter.

Cost of diaphragms, clip L's, bolts and fixed bearing plates to be paid for as Furnishing & Erecting Structural Steel.

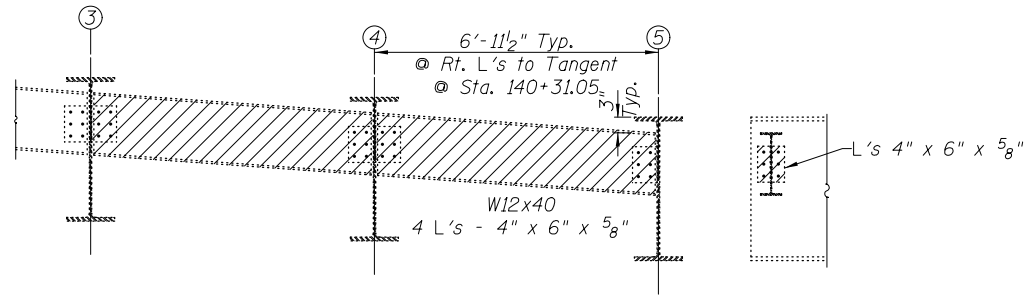
Anchor bolts shall be installed in holes drilled after the supported member is in place. Cost included in Anchor Bolts, 1"

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Cost of field welding new plates shall be included in the cost of Furnishing & Erecting Structural Steel.

Cost of anchor bolt replacement plates included with Furnishing & Erecting Structural Steel.

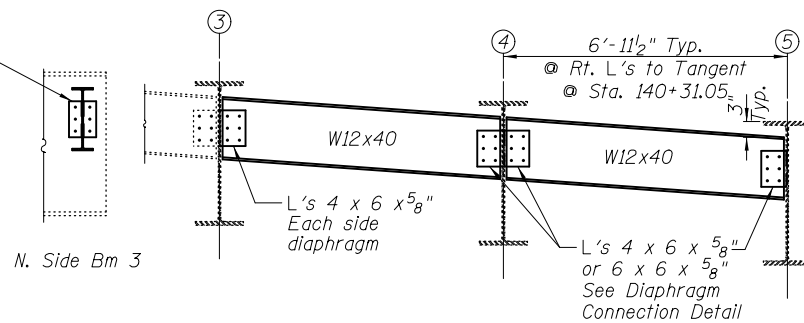
Cost of removing existing diaphragms and clip angles is included as Structural Steel Removal.



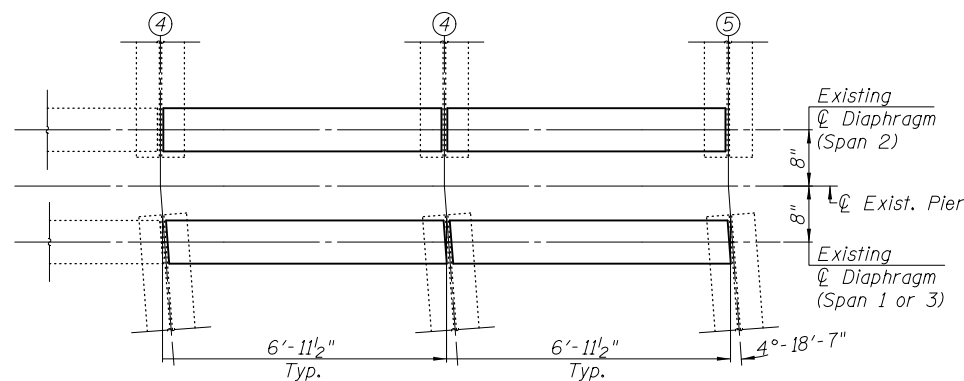
EXISTING DIAPHRAGM REMOVAL

(8 Locations - @ Piers)

Note: The Contractor shall obtain dimensions from the existing end diaphragms and connection angles for use in the fabrication of the proposed replacement diaphragms.
(Estimated weight of steel removal = 5,760 Pound)



N. Side Bm 3

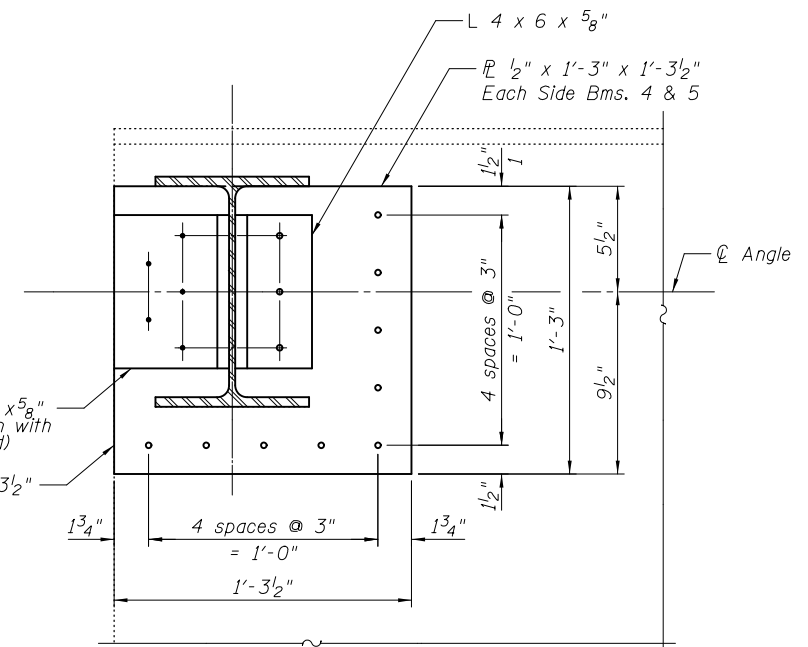


PROPOSED DIAPHRAGMS

(8 - Required)

BILL OF MATERIAL

Item	Unit	Quantity
Anchor Bolts, 1"	Each	6
Furnishing and Erecting Structural Steel	Pound	2850



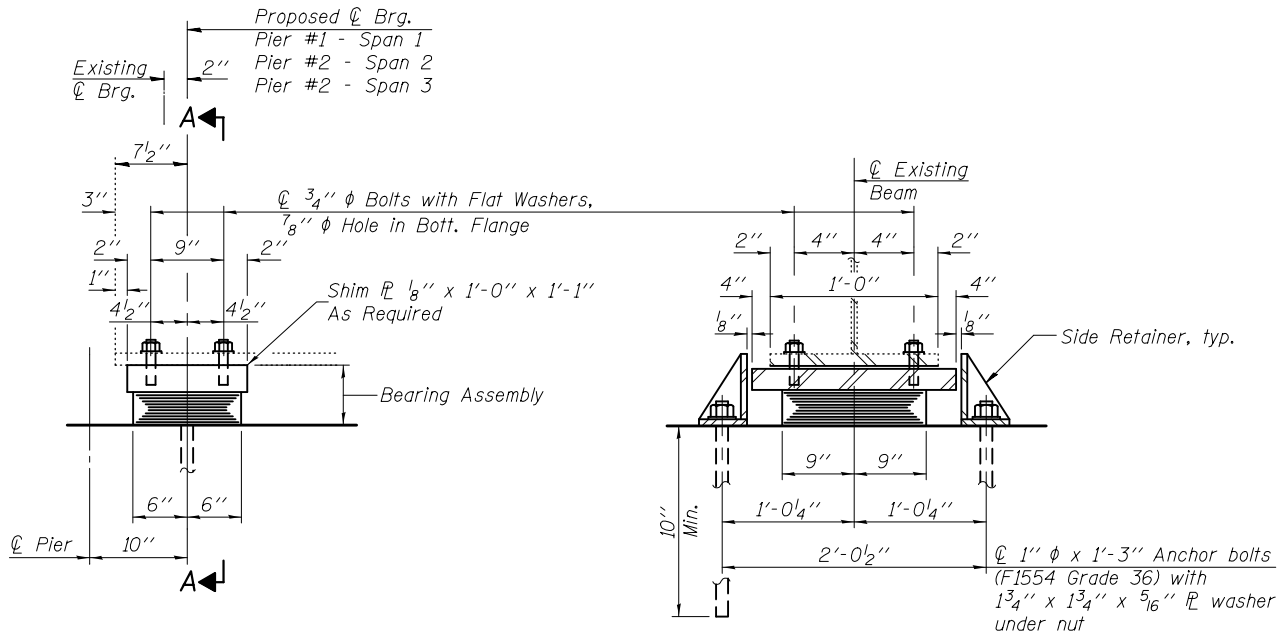
DIAPHRAGM CONNECTION DETAIL

- Holes to be field drilled in existing steel using new steel as template
- Holes in new steel and existing steel to be field drilled.

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PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

STRUCTURAL STEEL STRUCTURE NO. 038-0056
SHEET 22 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	27
				CONTRACT NO. 87548
		ILLINOIS	FED. AID PROJECT	

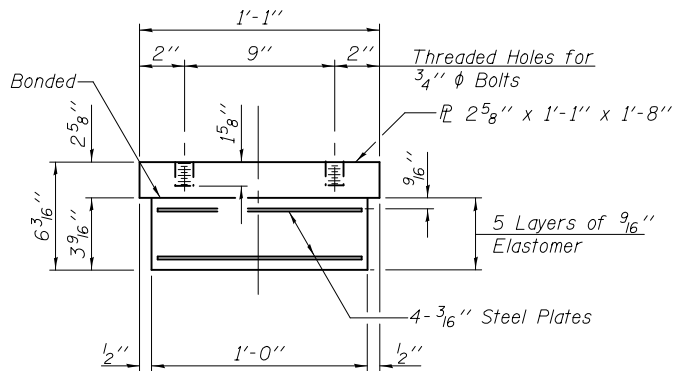


ELEVATION AT PIER

SECTION A-A

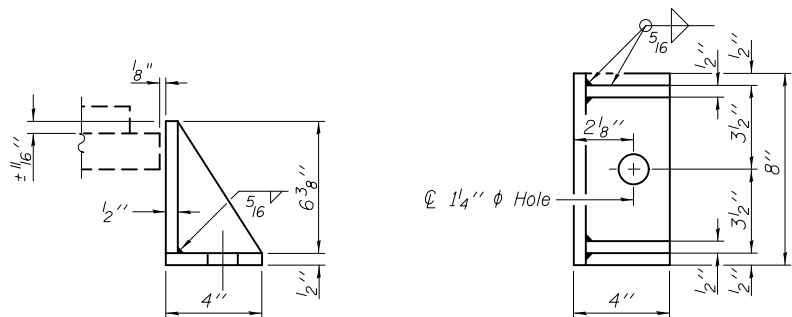
TYPE I ELASTOMERIC EXP. BRG.

(15 Req'd)



BEARING ASSEMBLY

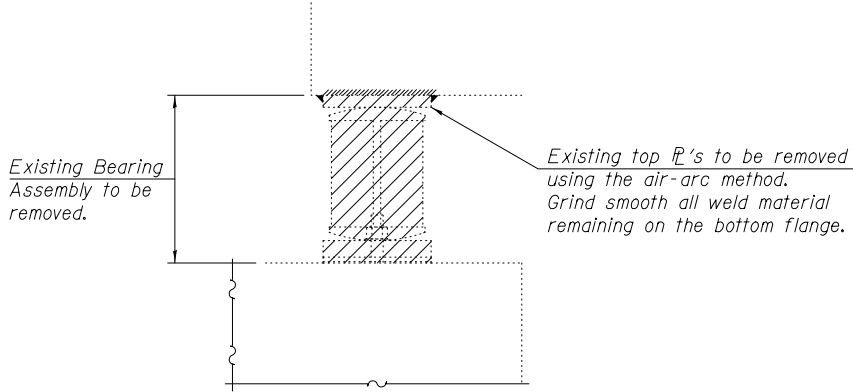
Note:
Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

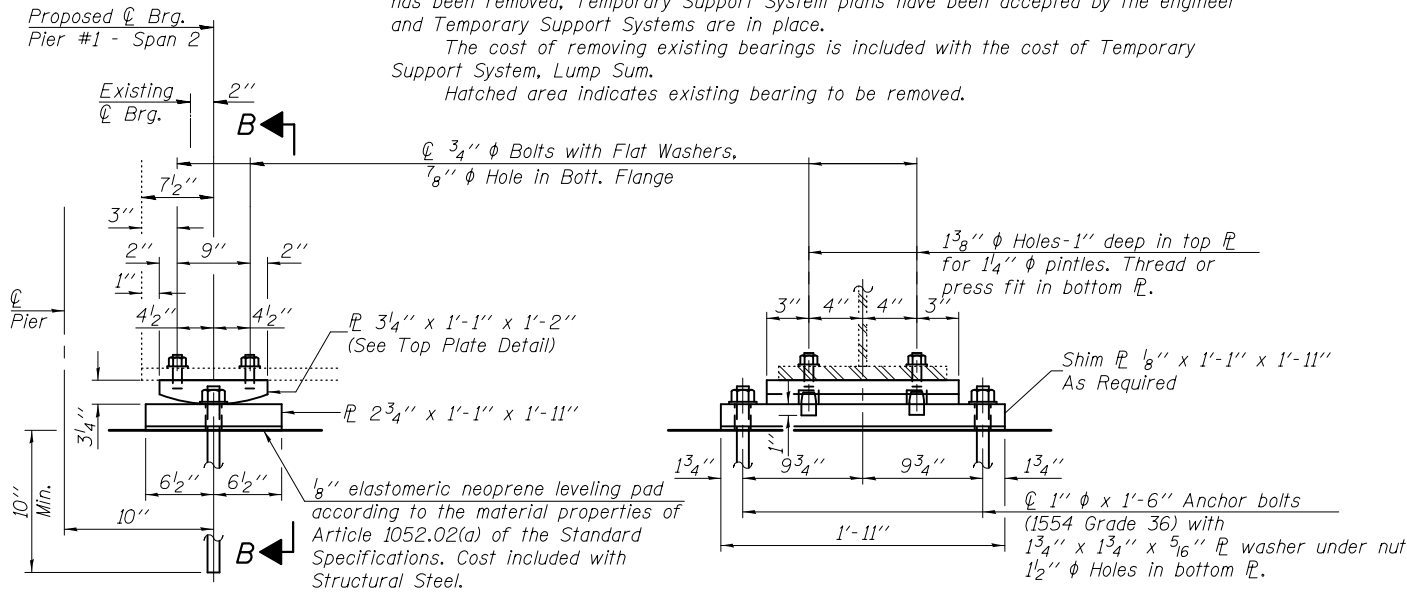
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
The cost of field drilling holes in existing beams for new fixed bearings is included in the cost of Furnishing and Erecting Structural Steel.
The cost of field drilling holes in existing beams for new elastomeric bearings is included in the cost of Elastomeric Bearing Assembly, Type I.
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates and placed as shown in bearing details. The shim plates shall be used, as required, for the adjustment of new bearings at the piers to accommodate existing bearing seat elevations at the abutments.



EXISTING BEARING REMOVAL DETAIL

(20 Locations)

Notes:
The contractor shall submit plans for Temporary Support Systems to the Engineer for approval prior to the removal of the existing bearings. Temporary Support Systems provided by the Contractor shall be designed by or under the direct supervision of an Illinois Licensed Structural Engineer, and the plans for the Temporary Support Systems shall be sealed by an Illinois Licensed Structural Engineer.
Removal of existing bearings shall be done after the existing concrete deck has been removed. Temporary Support System plans have been accepted by the engineer and Temporary Support Systems are in place.
The cost of removing existing bearings is included with the cost of Temporary Support System, Lump Sum.
Hatched area indicates existing bearing to be removed.

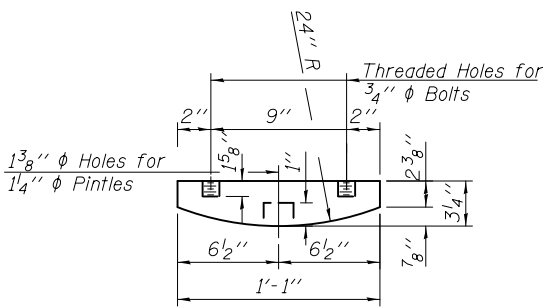


ELEVATION AT PIER

SECTION B-B

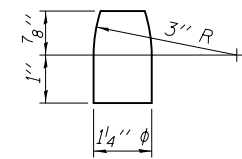
FIXED BEARING

(5 Req'd)



TOP PLATE DETAIL

(Fixed Bearing)



PINTLE

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	15
Temporary Support System	LSum	1
Anchor Bolts, 1"	Each	40
Furnishing and Erecting Structural Steel	Pound	2175

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667 ' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	28
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

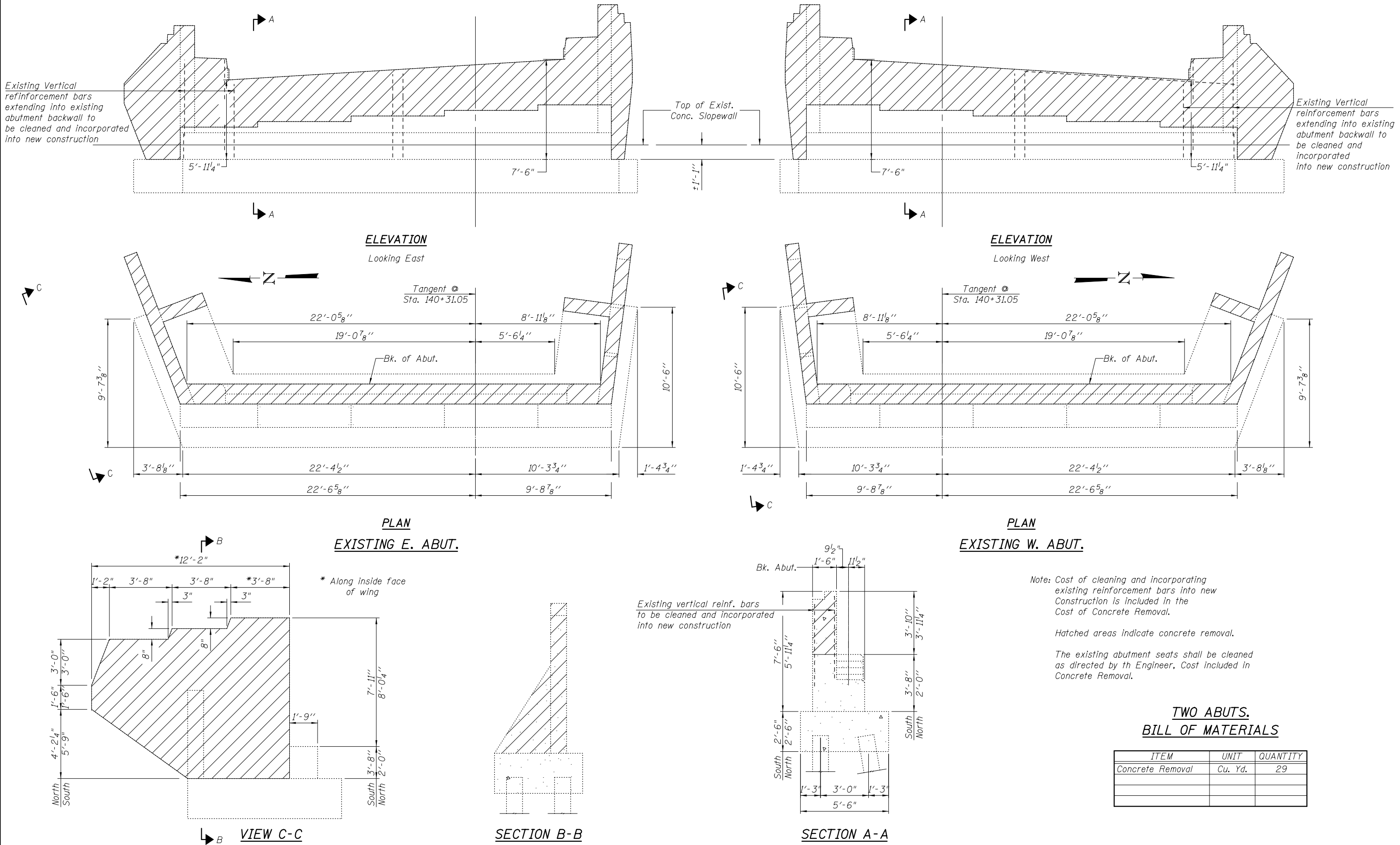
MODEL: Default
FILE NAME: ...0380056-024-027-ABUTMENTS.dgn

USER NAME =	cconnor	DESIGNED -	J.A.M.	REVISED -	
		CHECKED -	A.R.K.	REVISED -	
PLOT SCALE =	0.1667' / in.	DRAWN -	A.D.S.	REVISED -	
PLOT DATE =	8/13/2019	CHECKED -	J.A.M. & A.R.K.	REVISED -	

**ABUTMENTS – CONCRETE REMOVAL
STRUCTURE NO. 038-0056**

SHEET 24 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	29
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				



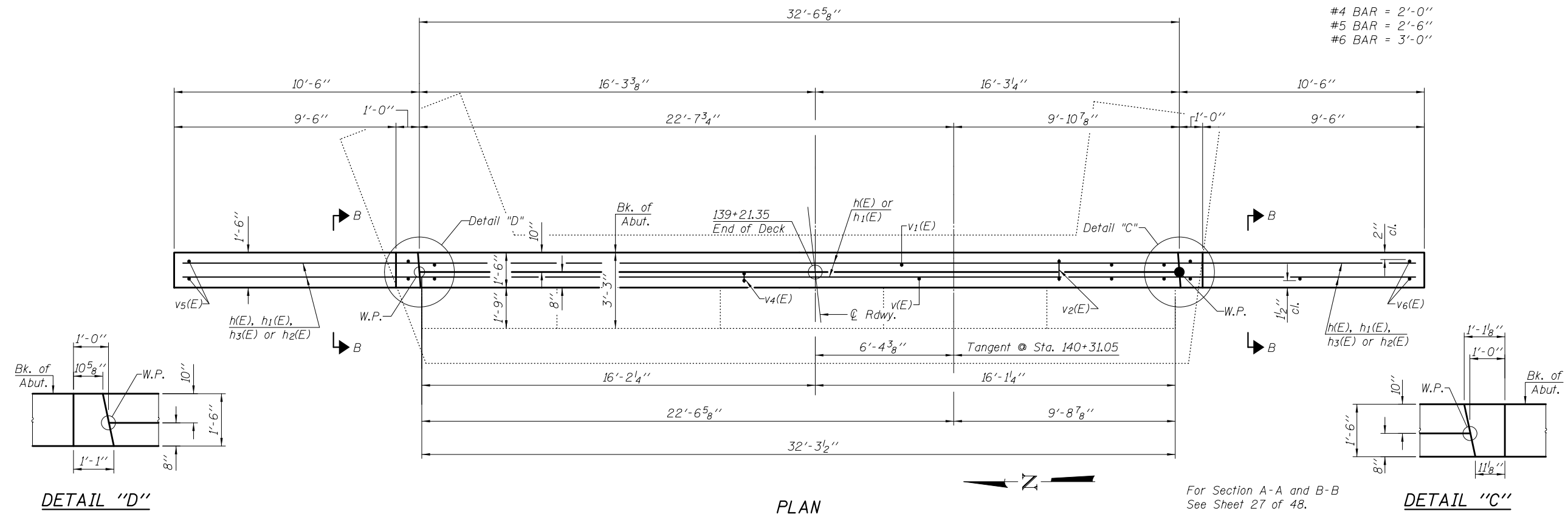
Technical drawing of a bridge structure showing a cross-section and elevation. The drawing includes various dimensions, elevations, and reinforcement details.

Key Features:

- Elevations:** 641.60, 640.43, 636.72, 632.35, 632.22, 632.33, 642.12, 643.33.
- Dimensions:** 9'-3", 5'-3", 4'-0", 7'-0", 11'-0", 4'-0", 9'-0", 11'-0".
- Reinforcement Details:**
 - 1 x 2-#4 $h_3(E)$ bars Each Face
 - 2 x 2-#5 $h_1(E)$ bars Top
 - 3 x 2-#5 $h_1(E)$ bars Top
 - 4 x 2-#6 $h(E)$ bars Each Face
 - 10-#5 $v_5(E)$ bars @ 12" cts. (See Sheet 27 of 48)
 - 33-#5 $v_3(E)$ bars @ 12" cts.
 - 33-#4 $v_2(E)$ bars @ 12" cts.
 - 33-#4 $v_4(E)$ bars @ 12" cts.
 - *32-#6 $v_1(E)$ bars @ 12" cts. Back
 - 32-#5 $v(E)$ bars @ 12" cts. Front
 - *5-#6 $h_2(E)$ bars @ ±11" cts. Each Face (Cut in Field)
 - *7-#6 $h_2(E)$ bars @ ±11" cts. Each Face (Cut in Field)
 - 10-#5 $v_6(E)$ bars @ 12" cts. (See Sheet 27 of 48)
- Notes:**
 - Exist. Vertical Reinf. bars to remain (Front & Back) (See Note "A")
 - Exist. Conc. Slopwall
 - Exist. Berm. Elev. ±635.80
 - *9" min.
- Section Line:** A-A

Note "A": Existing vertical reinforcement bars extending into the abutment backwall shall be cleaned and cut to extend at least 1'-6" into new construction.

#4 BAR = 2'-0"
#5 BAR = 2'-6"
#6 BAR = 3'-0"

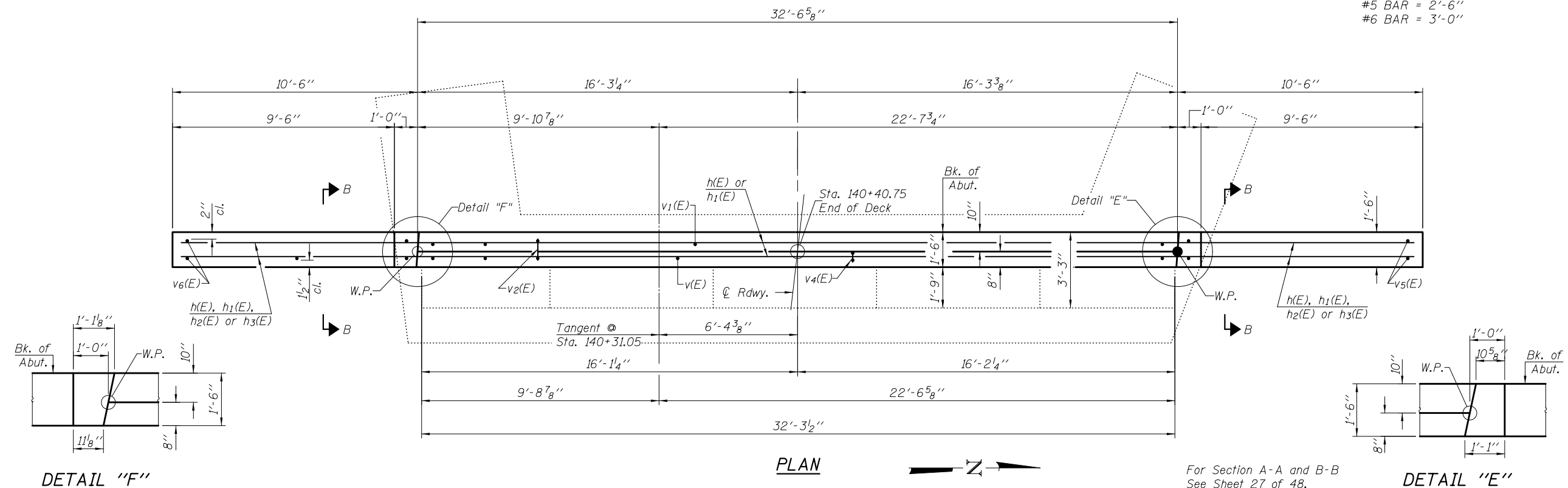


Bars indicated thus 4 x 2-#6
etc. indicates 4 lines of bars
with 2 lengths per line.

[illegible]

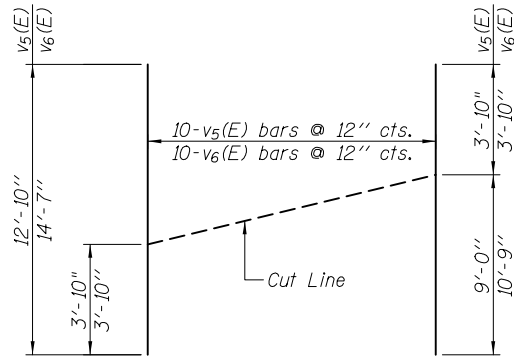
ELEVATION
Looking West

#4 BAR = 2'-0"
#5 BAR = 2'-6"
#6 BAR = 3'-0"

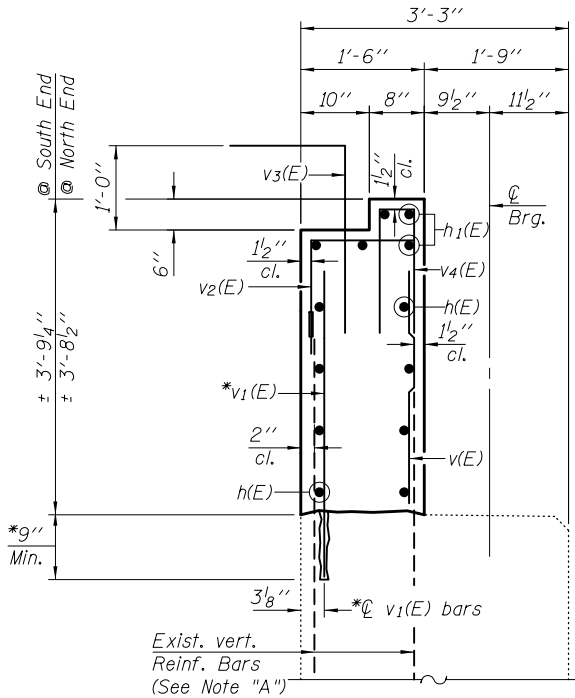


DETAIL "E"

MODEL: Default
FILE NAME: ...\\0380056-024-027-ABUTMENTS.dgn

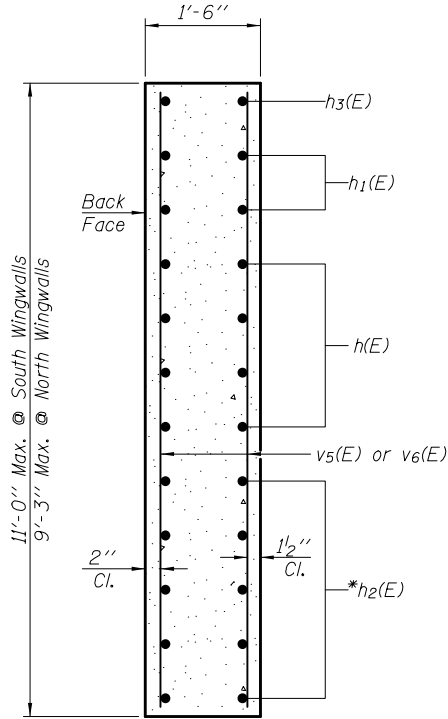


FIELD CUTTING DIAGRAM
Order v₅(E) and v₆(E) bars full length.
Cut to fit and use this remainder of bars
in opposing face.



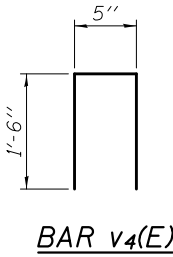
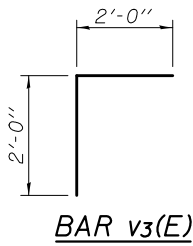
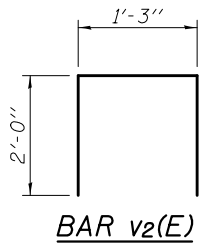
SECTION A-A

Note "A": Existing vertical reinforcement bars extending into the abutment backwall shall be cleaned and cut to extend at least 1'-6" into new construction.



SECTION B-B

*Grout 9" minimum into existing concrete in accordance with section 584 of the Standard Specifications.



**TWO ABUTMENTS
BILL OF MATERIAL**

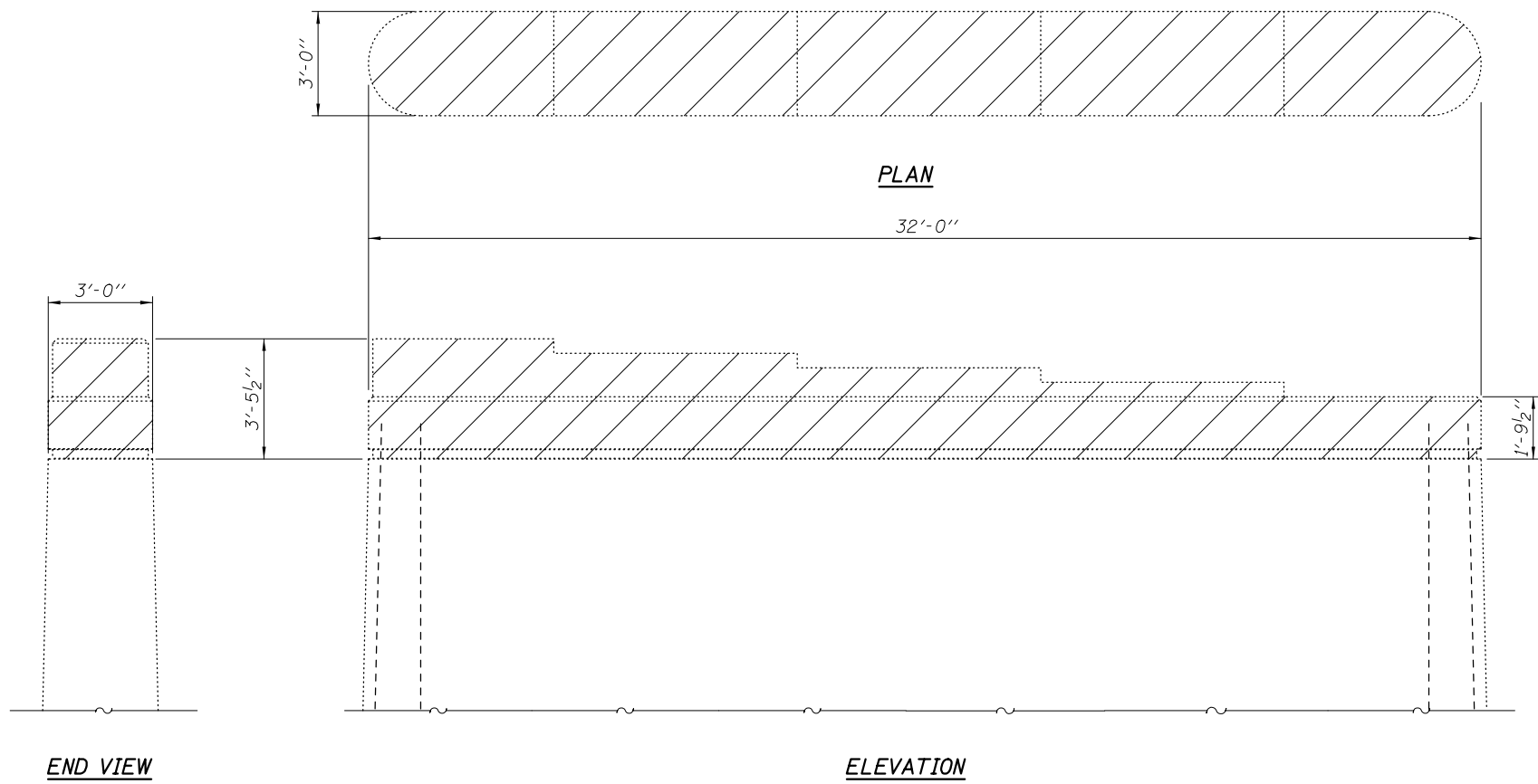
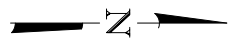
Bar	No.	Size	Length	Shape
h(E)	32	#6	26'-9"	=====
h1(E)	20	#5	20'-6"	=====
h2(E)	48	#6	11'-9"	=====
h3(E)	16	#4	7'-6"	=====
v(E)	64	#5	3'-6"	=====
v1(E)	64	#6	4'-3"	=====
v2(E)	66	#4	5'-3"	┐
v3(E)	66	#5	4'-0"	┐
v4(E)	66	#4	3'-5"	┐
v5(E)	20	#5	12'-10"	=====
v6(E)	20	#5	14'-7"	=====
Concrete Structures			Cu. Yd.	29.2
Reinforcement Bars, Epoxy Coated			Pound	4,510

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
	CHECKED - A.R.K.	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - A.D.S.	REVISED -
PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -

**ABUTMENT DETAILS
STRUCTURE NO. 038-0056**

SHEET 27 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	32
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

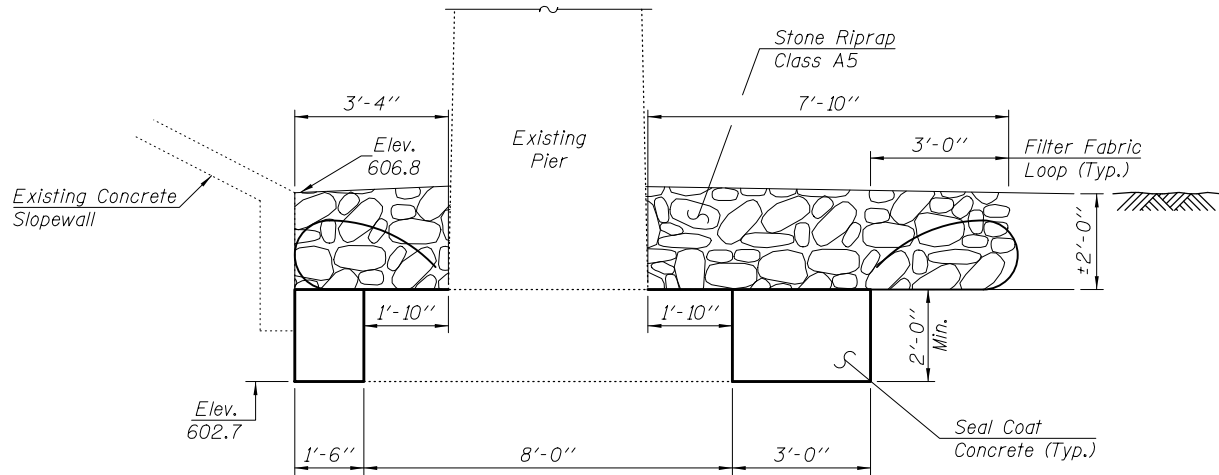


Note: Hatched areas indicate concrete removal.

BILL OF MATERIAL

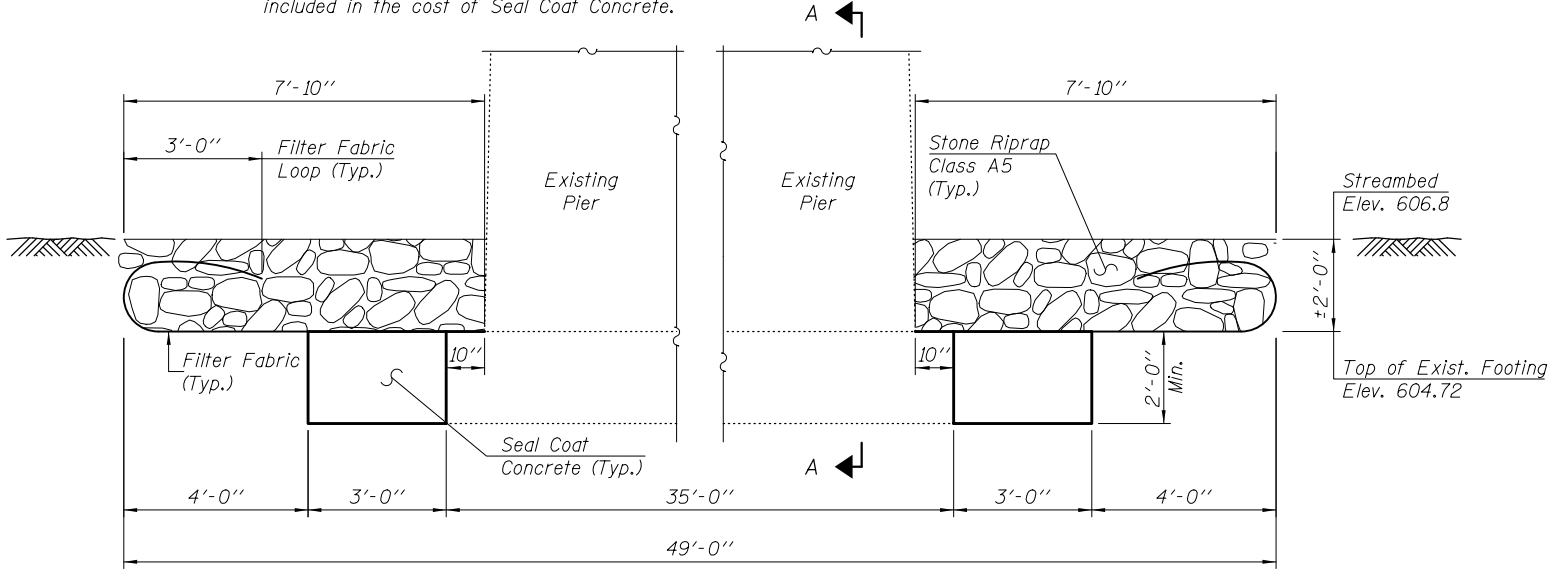
ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	18
Seal Coat Concrete	Cu. Yd.	17.2
Stone Riprap, Class A5	Ton	77
Filter Fabric	Sq. Yd.	70

CONCRETE REMOVAL @ PIERS



SECTION A-A
(Looking South)

Note: Excavation required for the placement of Stone Riprap is included in the cost of Stone Riprap, Class A5.
Excavation required for the placement of Seal Coat Concrete is included in the cost of Seal Coat Concrete.

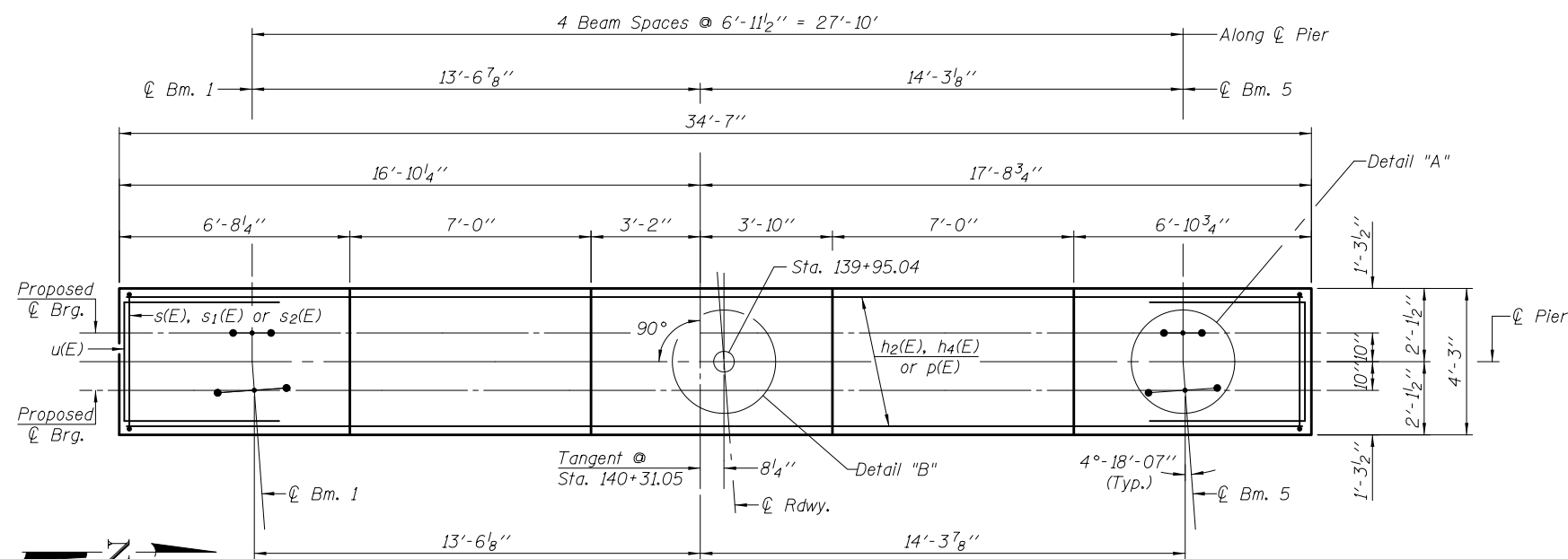


LONGITUDINAL SECTION THRU PIER 1
(Looking West)

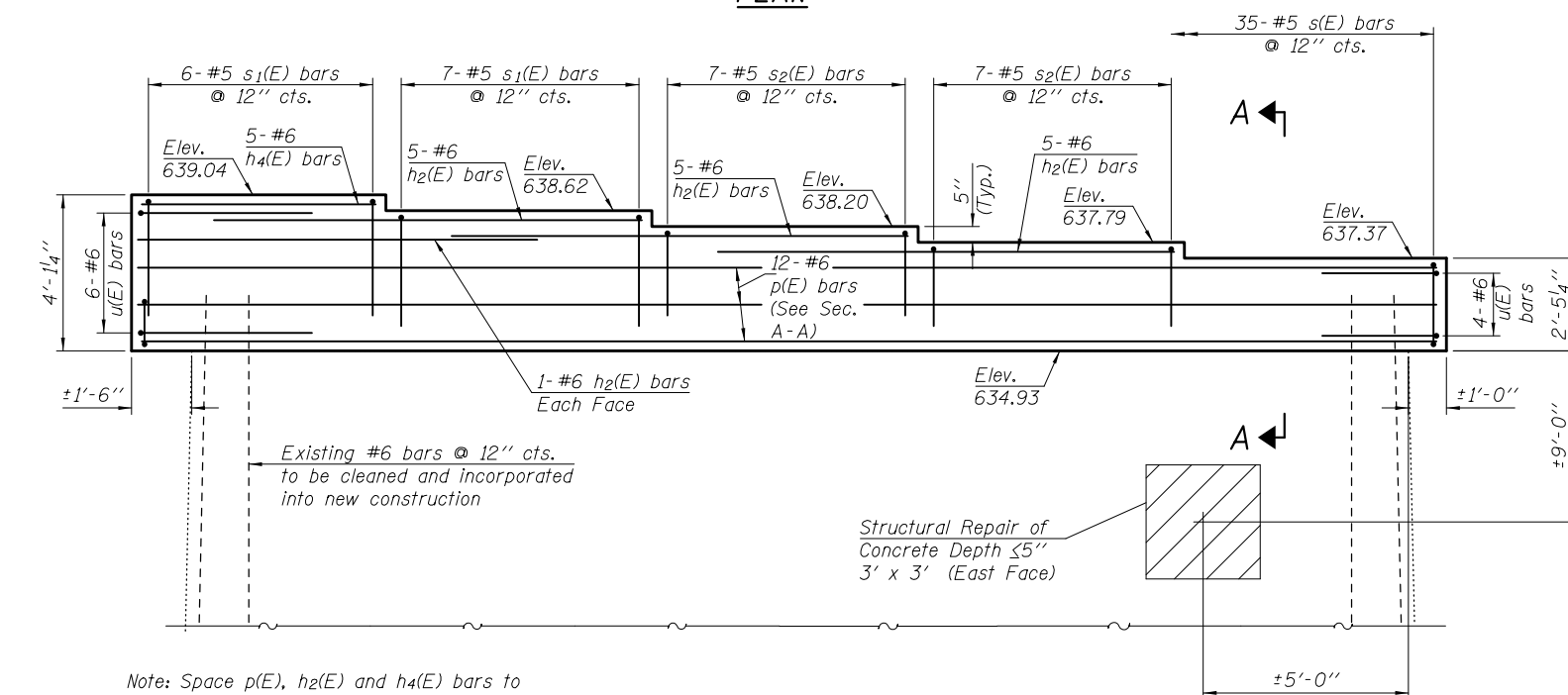
Note: Protection of the excavated area located adjacent to Pier 1 against disturbance by channel flow during the placement of Scour Protection is included in the cost of Stone Riprap, Class A5.

SCOUR PROTECTION @ PIER 1

MODEL: Default
FILE NAME: ...0380056-028-030-PIER.dgn



PLAN



Note: Space $p(E)$, $h_2(E)$ and $h_4(E)$ bars to miss anchor bolts.

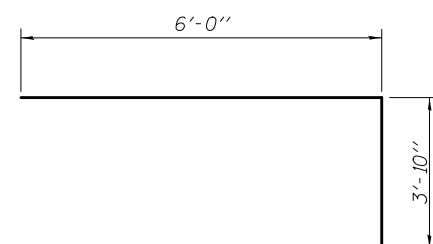
The top of pier cap elevations shown are derived from existing plan dimensions and field survey data. As approved by the Engineer, top of pier elevations shall be adjusted to be compatible with existing bearing seat elevations and bottom of steel beam elevations.

For Concrete Removal see Sheet 28 of 48.

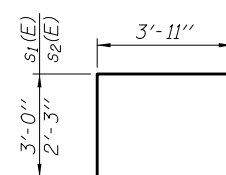
Concrete sealer shall be applied to all top and side surfaces of the new concrete pier cap.

ELEVATION

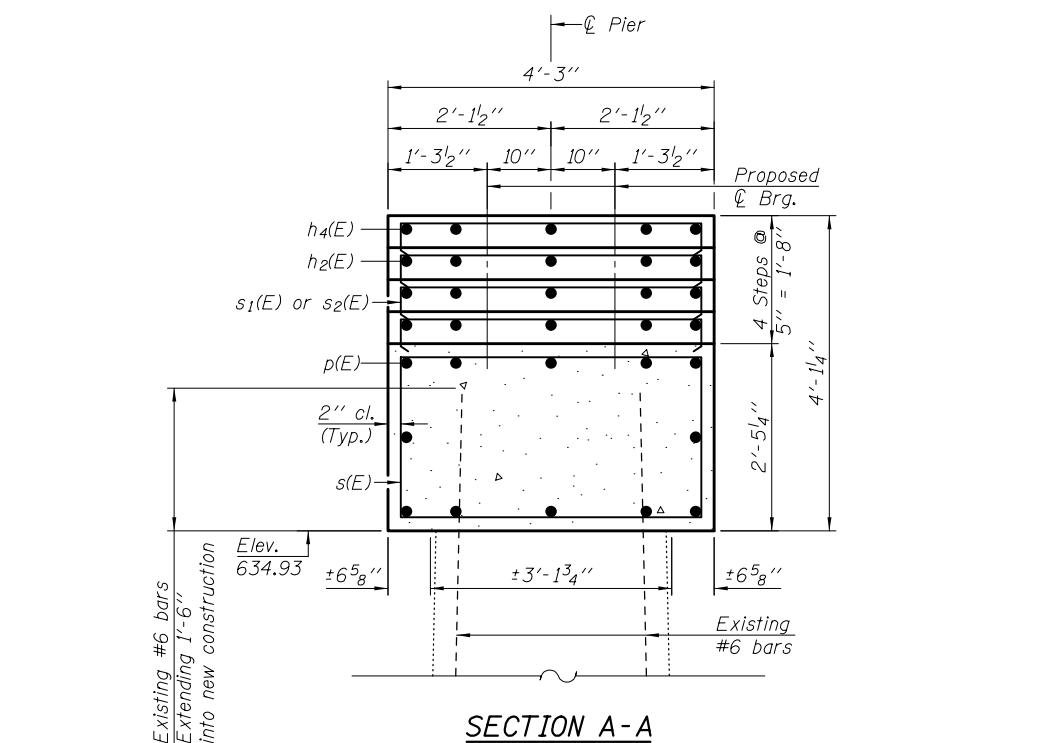
(Looking West)



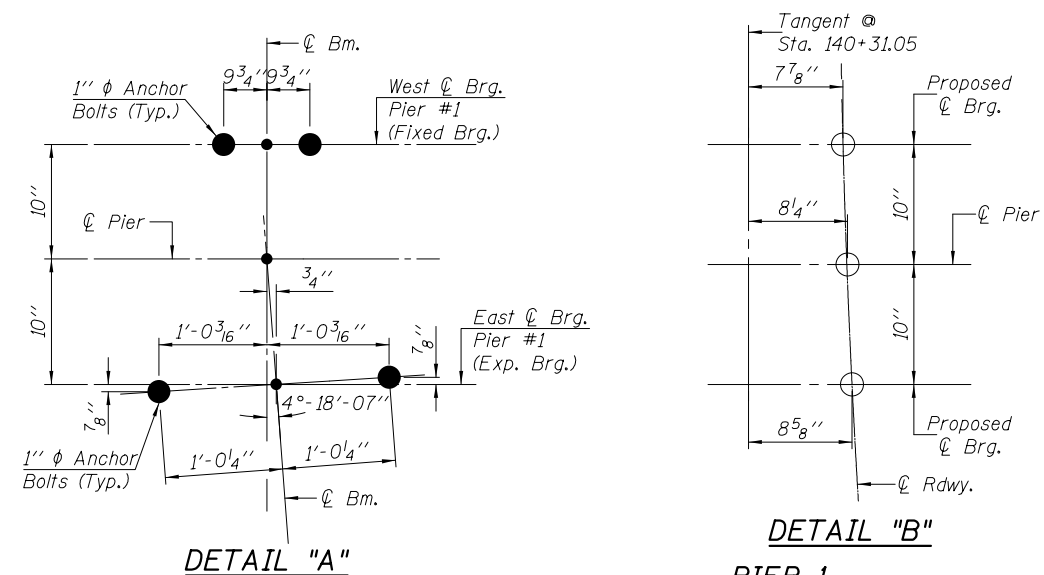
BAR $u(E)$



BAR $s_1(E)$ & $s_2(E)$



SECTION A-A

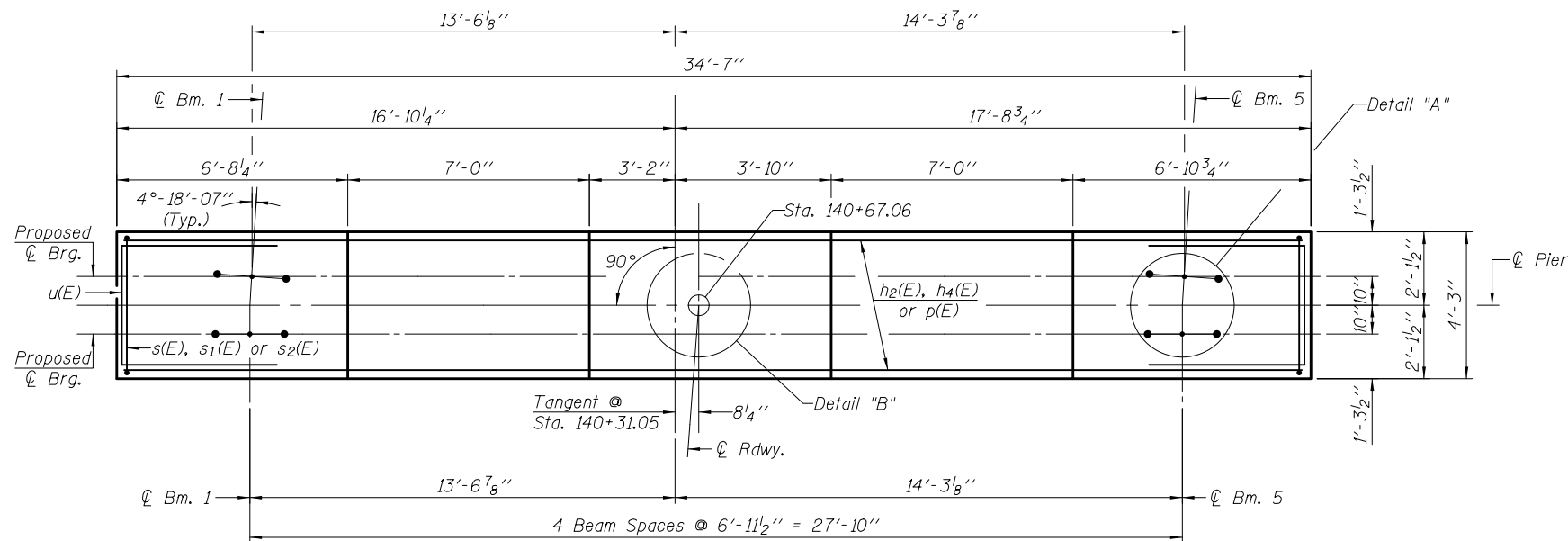


DETAIL "B"

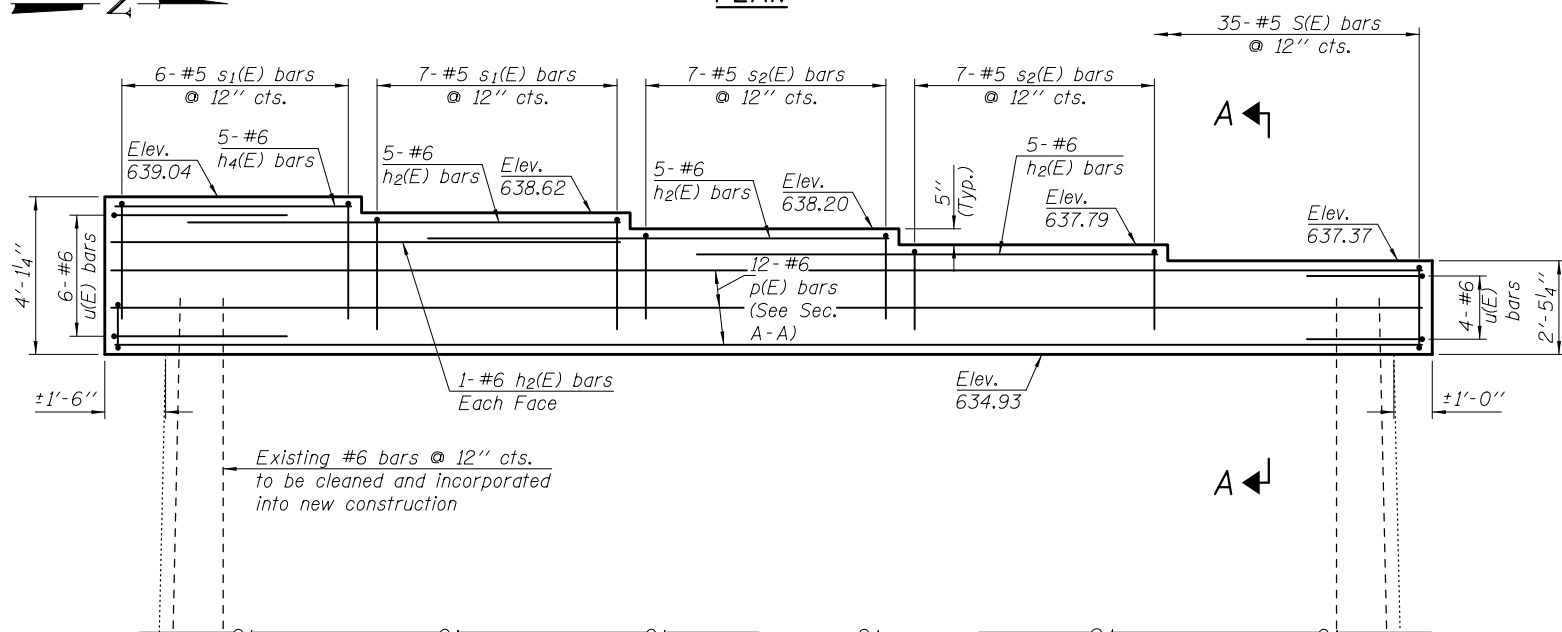
PIER 1

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_2(E)$	17	#6	11'-9"	
$h_4(E)$	5	#6	6'-4"	
$p(E)$	12	#6	34'-3"	
$s(E)$	35	#5	12'-11"	
$s_1(E)$	13	#5	9'-11"	
$s_2(E)$	14	#5	8'-5"	
$u(E)$	10	#6	15'-10"	
Concrete Structures			Cu. Yd.	16.5
Reinforcement Bars, Epoxy Coated			Pound	1,930
Concrete Sealer			Sq. Yd.	46
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)			Sq. Ft.	9



PLAN



ELEVATION

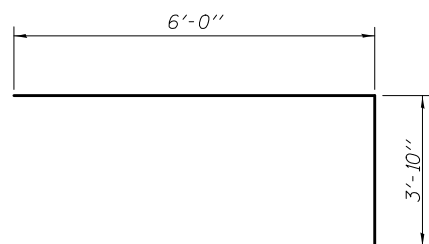
(Looking West)

Note: Space p(E), h2(E) and h4(E) bars to miss anchor bolts.

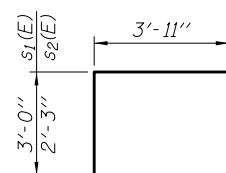
The top of pier cap elevations shown are derived from existing plan dimensions and field survey data. As approved by the Engineer, top of pier elevations shall be adjusted to be compatible with existing bearing seat elevations and bottom of steel beam elevations..

For Concrete Removal see Sheet 28 of 48.

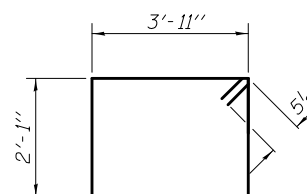
Concrete sealer shall be applied to all top of side surfaces of the new concrete pier cap.



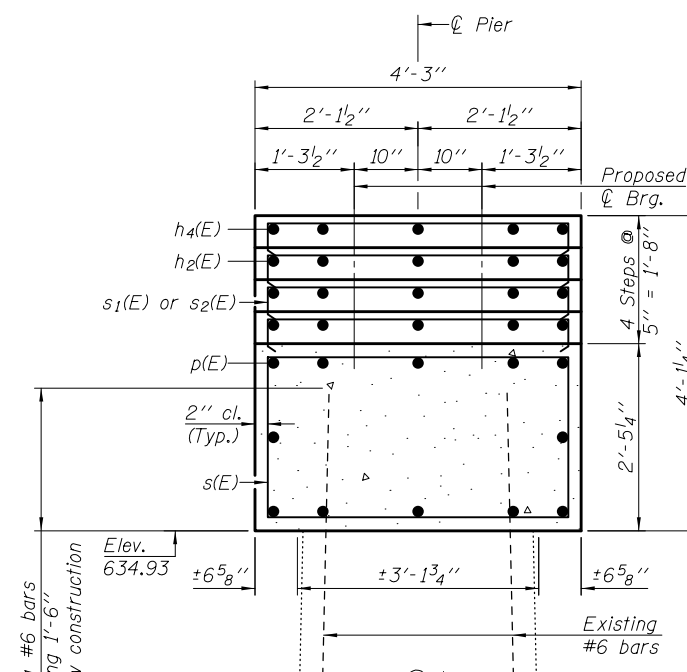
BAR u(E)



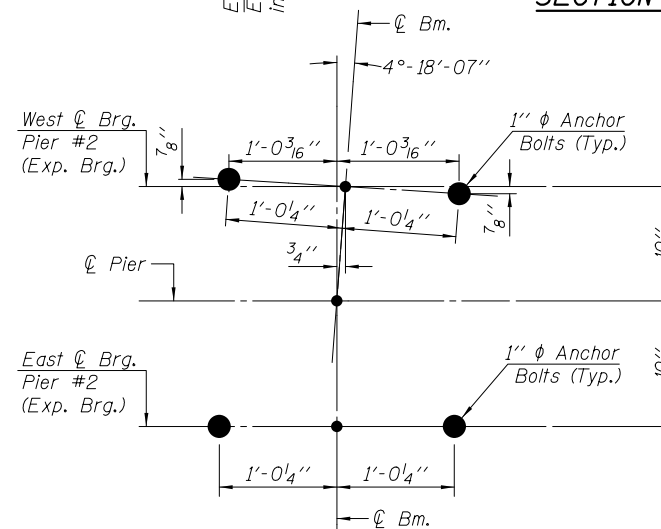
BAR s1(E) & s2(E)



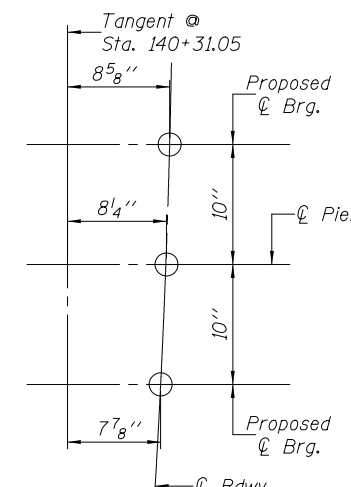
BAR s(E)



SECTION A-A



DETAIL "A"



DETAIL "B"

PIER 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h2(E)	17	#6	11'-9"	—
h4(E)	5	#6	6'-4"	—
p(E)	12	#6	34'-3"	—
s(E)	35	#5	12'-11"	□
s1(E)	13	#5	9'-11"	□
s2(E)	14	#5	8'-5"	□
u(E)	10	#6	15'-10"	□
Concrete Structures			Cu. Yd.	16.5
Reinforcement Bars, Epoxy Coated			Pound	1,930
Concrete Sealer			Sq. Yd.	46

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	35
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

INDEX OF SHEETS ON SHEET NO. 3

SCALES
PLAN 1 INCH = 100 FT.
PROFILE HOR. 1 INCH = 100 FT.
PROFILE VERT. 1 INCH = 10 FT.
CROSS-SECTIONS 1 INCH = 8 FT. VERT. 1 INCH = 10 FT. MORE

PROJECT S-323-1(1)
F.A.S. ROUTE 323
SECTION 116 BR
IROQUOIS COUNTY

FOR INFORMATION ONLY

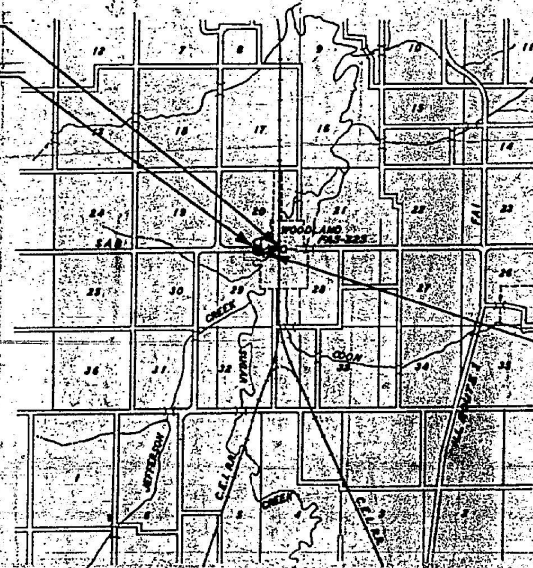


LOCATION OF SECTION INDICATED THUS:—
HIGHWAY CLASSIFICATION: 114-M-50-1983

PROJECT S-323-1(1) BEGINS STA. 132+50
PROJECT S-323-1(1) ENDS STA. 146+50



SCALE 1" = 1 MILE



PROPOSED 3 SPAN BRIDGE OVER SUGAR CREEK
TOTAL LENGTH: 219.57' BTW ABUTMENTS
STA. 139+21.26 TO 141+40.84

GROSS LENGTH OF PROJECT: 1400 FT. = 0.265 MILES
NET LENGTH OF PROJECT: 1400 FT. = 0.265 MILES

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
REVISIONS
REVISION NO. 1
DATE 11/16/62
BY [Signature]
CHECKED 1/2/63
BY [Signature]
APPROVED 1/2/63
BY [Signature]
APPROVED 1/2/63
BY [Signature]

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER
DATE

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

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

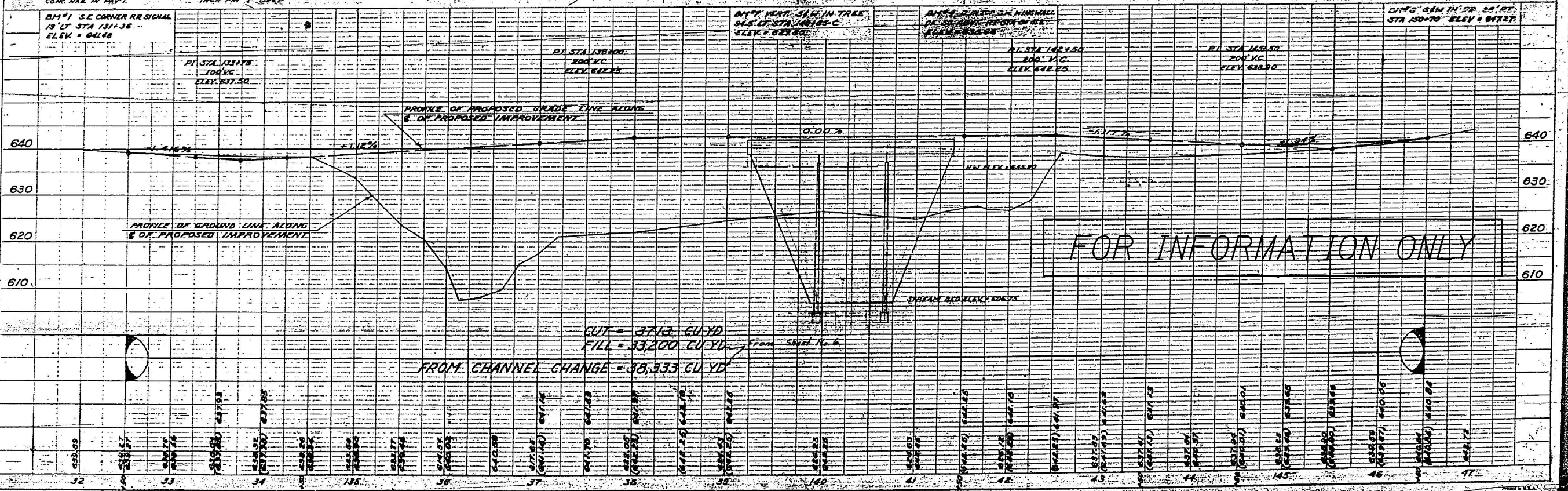
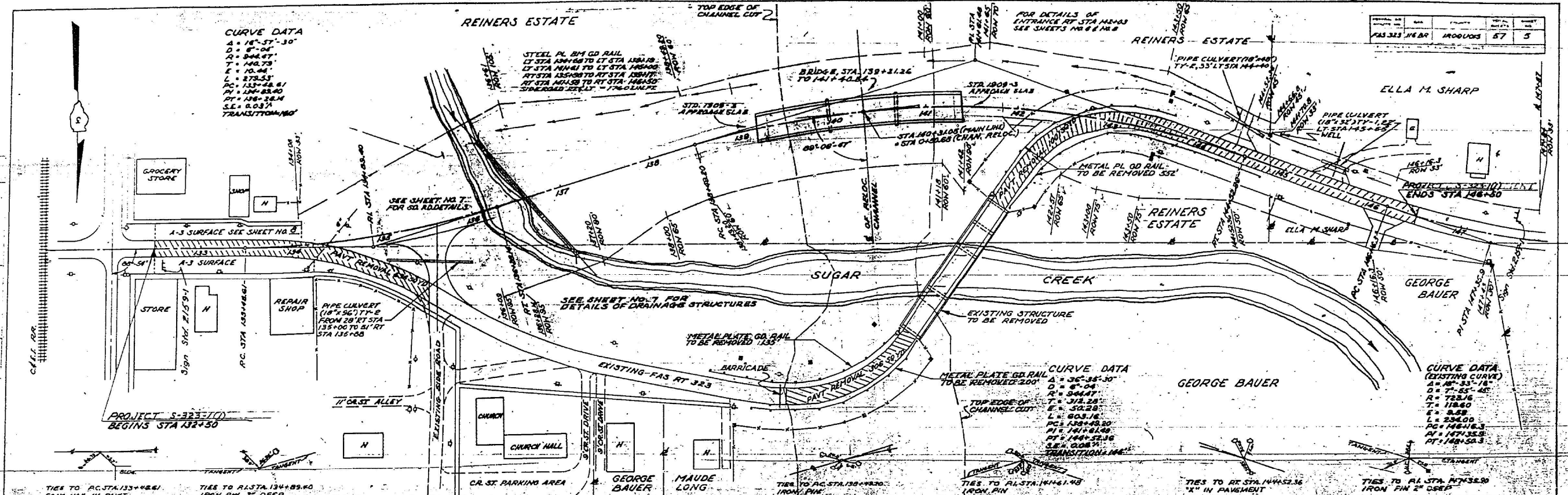
EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056

SHEET 31 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	36
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FAS ROUTE 323, SEC. 116-BR, IROQUOIS CO.

DATE	BY	CHKD	APP'D	REVISED
10-27-10	CG			
10-27-10	CG			
10-27-10	CG			
10-27-10	CG			



FOR INFORMATION ONLY

CUT = 3713 CU YD
 FILL = 33200 CU YD
 FROM CHANNEL CHANGE = 38333 CU YD

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

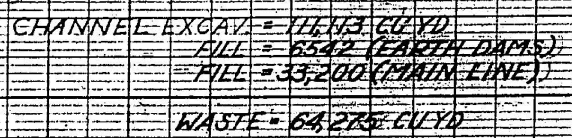
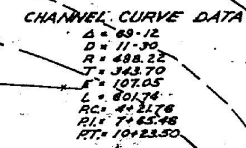
USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

EXISTING PLANS (FOR INFORMATION ONLY)
 STRUCTURE NO. 038-0056

SHEET 32 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	37
				CONTRACT NO. 87548

ILLINOIS FED. AID PROJECT



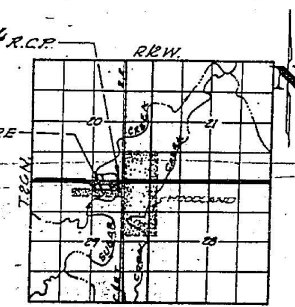
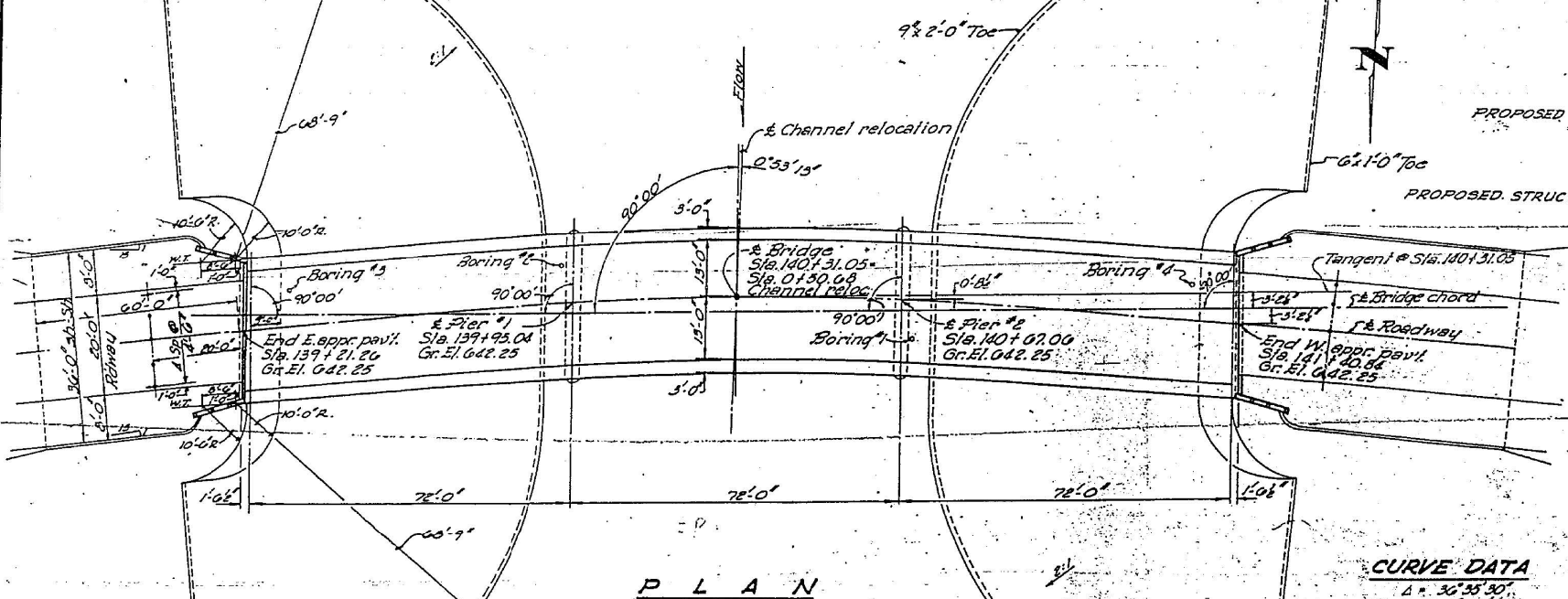
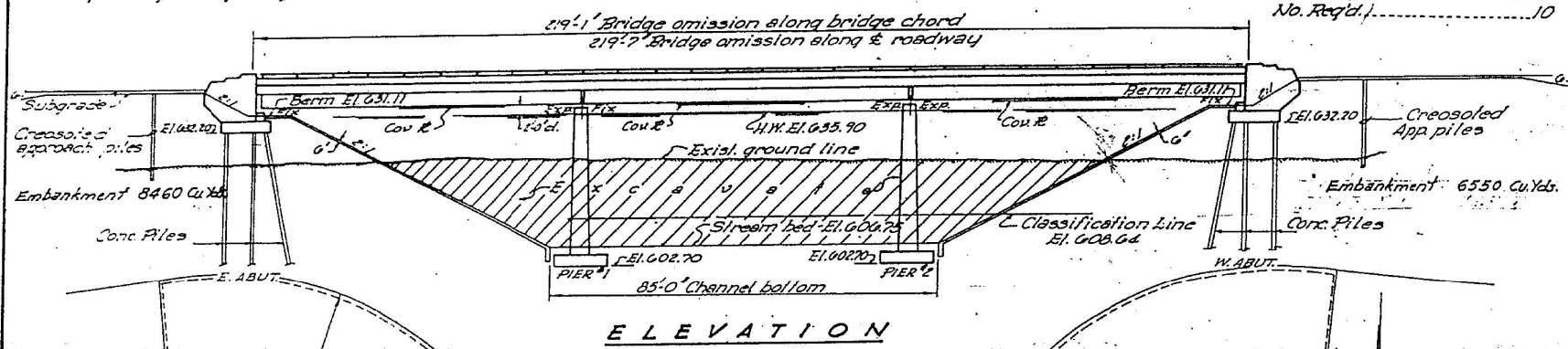
B.M. 14 on top S.W. Wingwall of S. Abut. ±111.0' R.L. Sta. 140+00 Elev. 638.68.
Existing 4 span structure on exist. F.A.S. 323 north of proposed structure on
relocated route (2 R.C. thru girders - 55' & 58' & 2 I-beam @ 31' each apart. R/W. 118').
The abutments & two piers are reinforced concrete.
Remaining Pier - piles & conc. cap.
Bridge contractor shall remove the exist. structure after completion of the new structure.
Salvage: No - Becomes property of bridge contractor.
No temporary bridge required.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

APPROACH PILE DATA
Type.....Crested
Capacity.....15 Ton
Est. Length.....15'-0"
No. Req'd.....10

GENERAL NOTES

Coarse aggregate to be used in parapet handrails and end posts must be absolutely free of chert, flint, limonite, lignite and soft sandstone. The concrete floor slab shall be finished in accordance with Article 51.19 of the Standard Specifications.
Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 38 lbs per 100 sq. ft.
Layout of slope walls may be varied to suit ground conditions in the field as directed by the Engineer.
All reinforcement bars shall be lapped 20 diameters unless otherwise shown.
Permanent forms will not be permitted in forming the concrete floor. Rivets & open holes 1/2" unless otherwise noted.
Anchor bolts shall be set before riveting diaphragms over supports. The exposed surfaces of the expansion guard shall be given two shop coats of red lead paint, the contact surfaces shall be given one coat of red lead paint. Anchor studs shall not be painted.
Expansion guards are included in the quantity of structural steel. Estimated weight - 1,480 lbs.
Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Article 50.1 to 50.5 inclusive of the Standard Specifications.
The Contractor shall drive one concrete test pile (in a permanent location) at each abutment as directed by the Engineer before ordering the remainder of piles.
Bridge Sealant shall be applied to the tops of Piers 1 and 2. (See Special Provisions).
All structural steel shall conform to ASTM Designation A36.



LOCATION PLAN

STATION 140 + 31.05
BUILT 196 BY
STATE OF ILLINOIS
F.A.S. RT. 323, SEC. 116-BR
F.A. PROJECT S-323-1(1)
LOADING H15: S12

NAME & LETTERING
See Std. 2113

WATERWAY INFORMATION

Drainage Area.....170 Sq. Miles
Character.....Level, Rolling Clay, Cultu.
Reg'd Opening (20 yr. fl.).....4000 Sq. Ft.
Present Opening.....3508 Sq. Ft.
Proposed Opening.....4000 Sq. Ft.
Ordinary Water Elevation.....
Low Water Elevation.....608.64

DESIGN STRESSES

f_c = 1400 psi.....Super
f_c = 1400 psi.....Sub
f_s = 20000 psi.....Reinl.
f_s = 20000 psi.....Strud. (A-36)
f_c = 75 psi.....Footings
f_c = 10

LOADING H15-S12-LL

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Channel Excavation	Cu.Yds.		26,800	26,800
Class B Excavator Strud.	Cu.Yds.		160	160
Class A Concrete	Cu.Yds.		323.8	323.8
Class X Concrete	Cu.Yds.	230.7	96.0	326.7
Structural Steel	Lbs.	193380		193380
Aluminum Handrail Type D	Lin. Ft.	437		437
Reinforcement Bars	Lbs.	41,550	19,600	61,150
Crested Piles	Lin. Ft.		150	150
Concrete Piles	Lin. Ft.		1,000	1,000
Test Piles (Concrete)	Each		1	1
Name Plates	Each	1		1
Slope Wall	Sq.Yds.		2,660	2,660
Protective Coat	Sq.Yds.	910		910
Metal Handrail Type E	Lineal	437		437
Removal of Exist. Structure	Each		1	1
Bridge Seal Sealant	L.S.			15

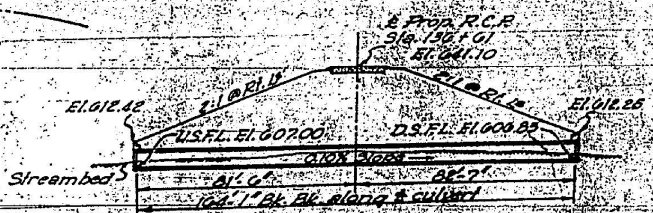
FOR INFORMATION ONLY

CURVE DATA

A = 36°35'30"
D = 6°04'15"
R = 944.87'
T = 312.28'
E = 50.89'
L = 603.16'
PC Sta. 138+45.20
PI Sta. 141+01.48
PT Sta. 144+58.30
SE = 0.064%

PROPOSED 48' R.C.P.
PROPOSED F.A.S. RT. 323

CHANNEL CHANGE



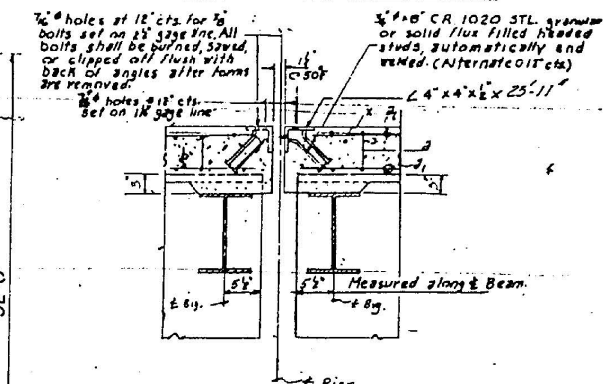
COUNTY PARTICIPATION

GENERAL PLAN & ELEVATION
F.A. PROJECT S-323-1(1)
SUGAR CREEK
F.A.S. RT. 323 SEC. 116-BR
IROQUOIS COUNTY
STATION 140 + 31.05

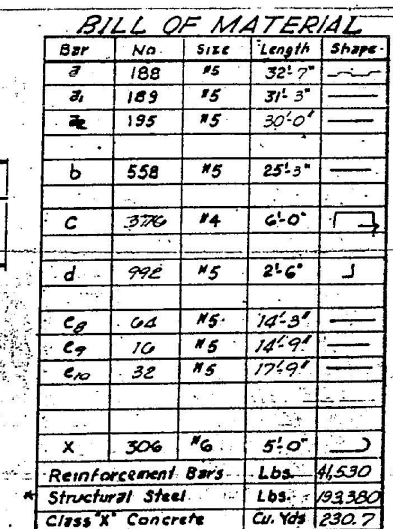
DESIGNED J.M. J...
CHECKED John Mullenix
DRAWN J.M.J.
CHECKED G.R.

EXAMINED W.E. Bauman
PASSED J.E. Shultz
APPROVED J.E. Shultz

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -



SEC. @ ABUT.



FOR INFORMATION ONLY

Note: For e_8 , e_9 and e_{10} ,
bar locations, see sheet #7.

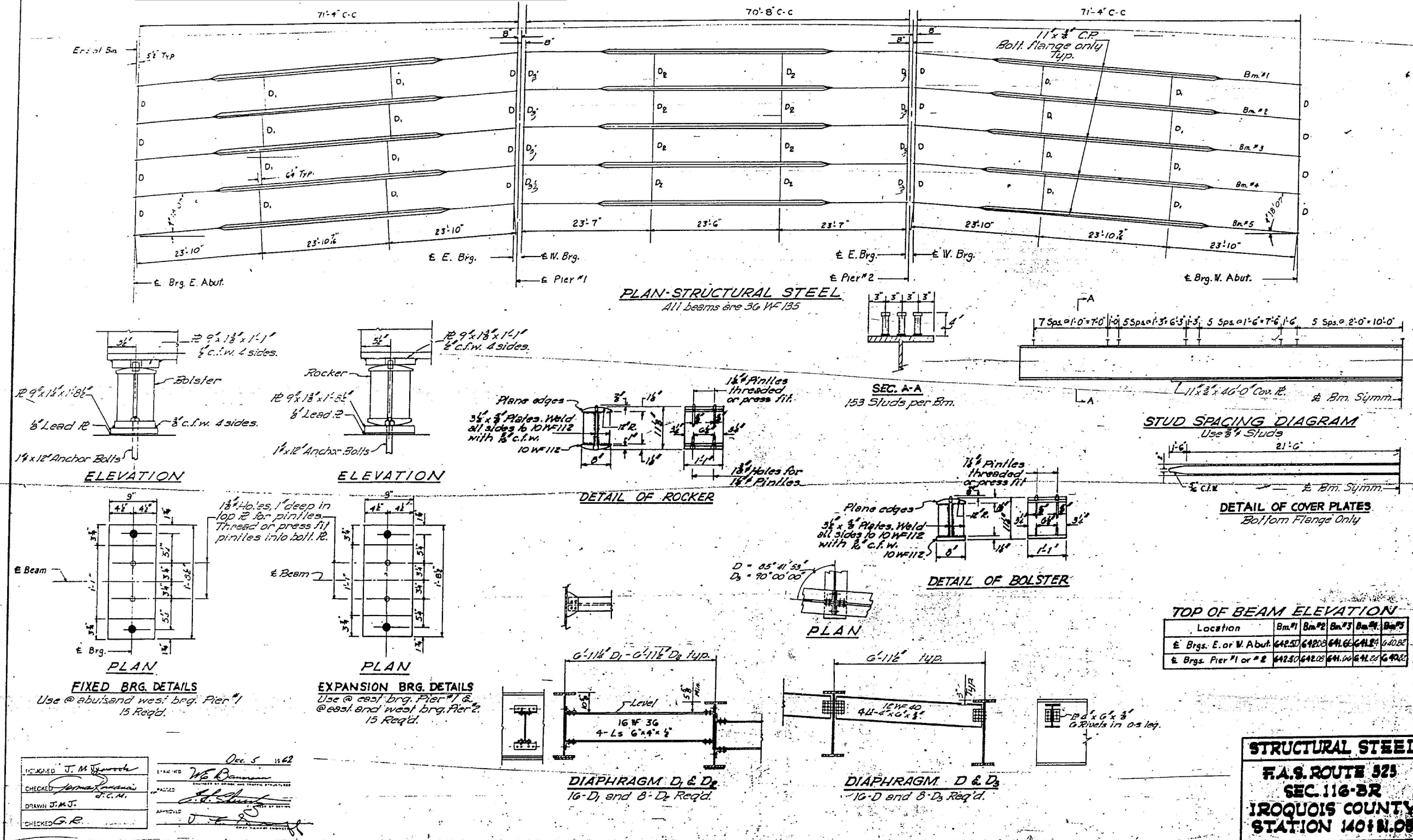
* Weight of bearing assemblies with lead plates and anchor bolts is included in structural steel. Est. wt. = 8,580 lb.

SUPERSTRUCTURE
F.A.S. ROUTE 328
SEC. 116-8R
IROQUOIS COUNTY
STATION 140+N.05

FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

FILE NO.	116BR	IR 080018	57	11	11
DATE	11/16/08	11/16/08	11/16/08	11/16/08	11/16/08



MODEL: Default
FILE NAME: ...0380056-031-047-EX-PLANS.dgn

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

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056

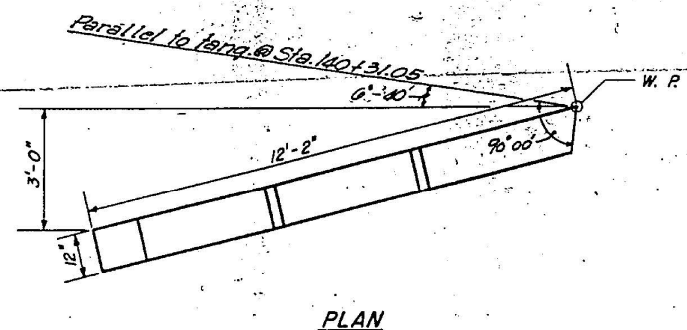
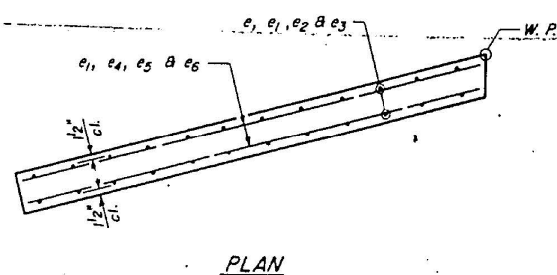
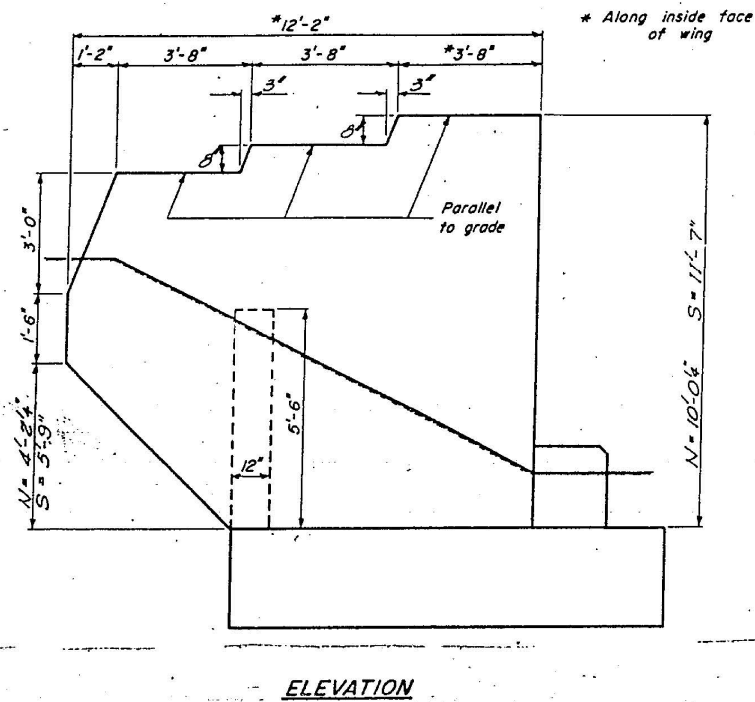
SHEET 36 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	41
			CONTRACT NO. 87548	
		ILLINOIS	FED. AID PROJECT	

FEHR GRAHAM PROJECT NUMBER: 11-138

REPORT NO.	DATE	SUBJECT	ENTERING AGENCY	REPORT NO.
FA5323	116 BR	ILLINOIS	57	12
FBI BUREAU REPORT NO. 1		LABORATORY	FBI AND FIELD OFFICES	

SHEET NO 4
// SHEETS



W. P.

12'

e5, e1, e2, e3

e4

12' cl.

10'

e1

3'-0"

Bend in field

10'

13'

3'-0"

13'

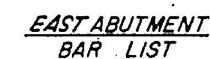
SECTION B-B

DESIGNED	J. H. Fawcett	EXAMINED	W. B. Bannan
CHECKED	J. H. Fawcett	DRAWN	W. A. Sausaman
J. H. Fawcett	J. H. Fawcett	APPROVED	V. E. ...

END POSTS DETAILS
F.A.S. ROUTE 525
SEC. 116-BR
IROQUOIS COUNTY
STATION 140 + 31.05



For location of n_1 bars,
see sh. *4.
Space u_3 thru u_6 to miss
anchor bolts.



Bar	No.	Size	Length	Shad
h_2	24	#4	10'-9"	—
h_5	2	#4	19'-0"	—
h_6	10	#5	4'-9"	L
h_7	2	#4	18'-0"	—
h_8	18	#5	4'-9"	—
h_1	16	#5	5'-0"	—
P	0	#7	32'-0"	—
s	33	#4	6'-4"	□
s_1	33	#4	7'-0"	□
s_2	54	#5	5'-3"	—
u_2	6	#5	8'-9"	□
u_3	6	#4	6'-8"	—
u_6	7	#4	5'-8"	—
u_7	7	#4	5'-2"	—
u_8	7	#4	4'-2"	—
y	20	#5	5'-3"	—
y_2	34	#5	6'-9"	—
y_1	8	#5	10'-3"	—
m_1	2	#5	32'-3"	—

EAST ABUTMENT
BILL OF MATERIAL

Item	Unit	Quantity
Class X Concrete	Cu. Yds.	28.0
Reinforcement Bars	Lbs.	2,810
Conc. Piles	Lin. Ft.	480
Test Piles (Conc.)	Each	1

Note: Bill of Material includes Reinforcement and Class X Concrete for End Posts.

PILE DATA

Type - Conc.
Capacity - 30 Ton - Min.
Est. Length - 40 Feet
No. Req'd. - 12 + 1 Test pile

Bar	A	B
S	2'-8"	1'-10"
S ₁	2'-8"	2'-3"
U ₆	2'-9"	3'-0"
U ₃	1'-4"	2'-8"
U ₆	1'-4"	2'-6"
U ₇	1'-4"	1'-11"
U ₈	1'-4"	1'-5"

BARS S, S₁, U₁ thru U₄

E. ABUTMENT

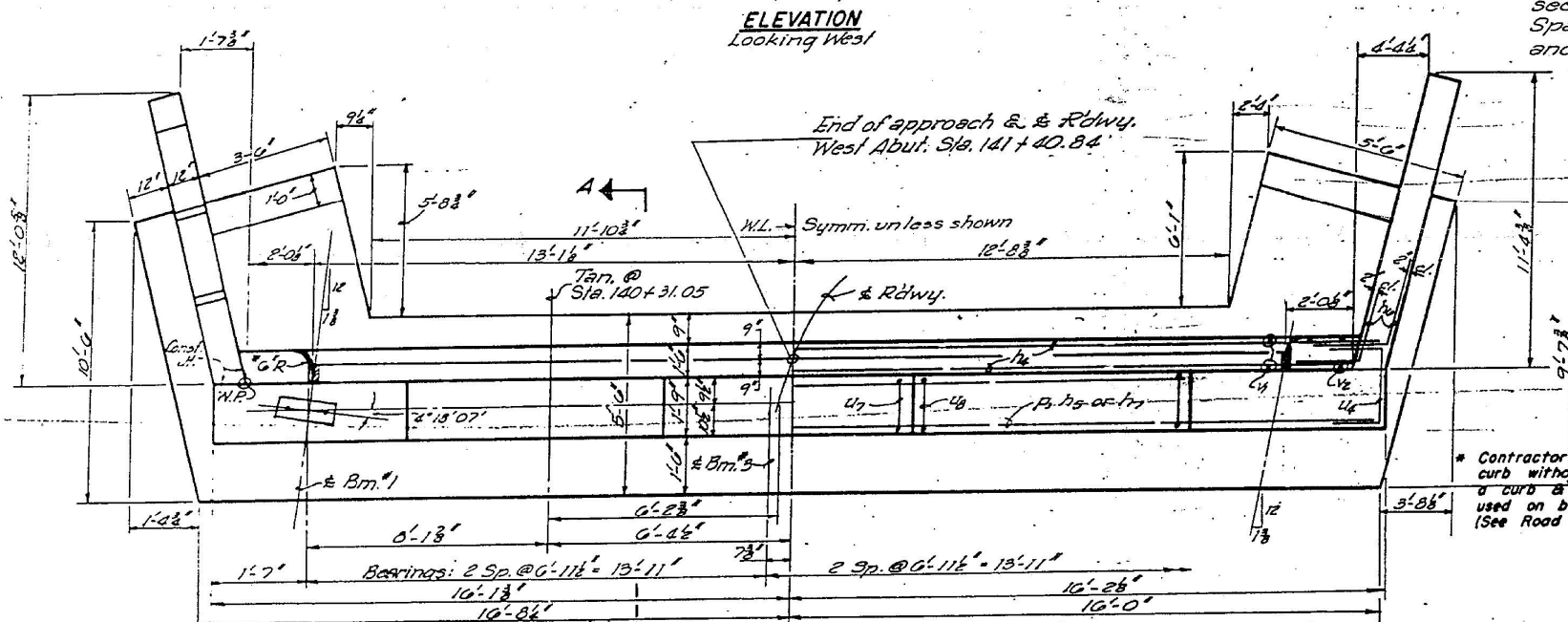
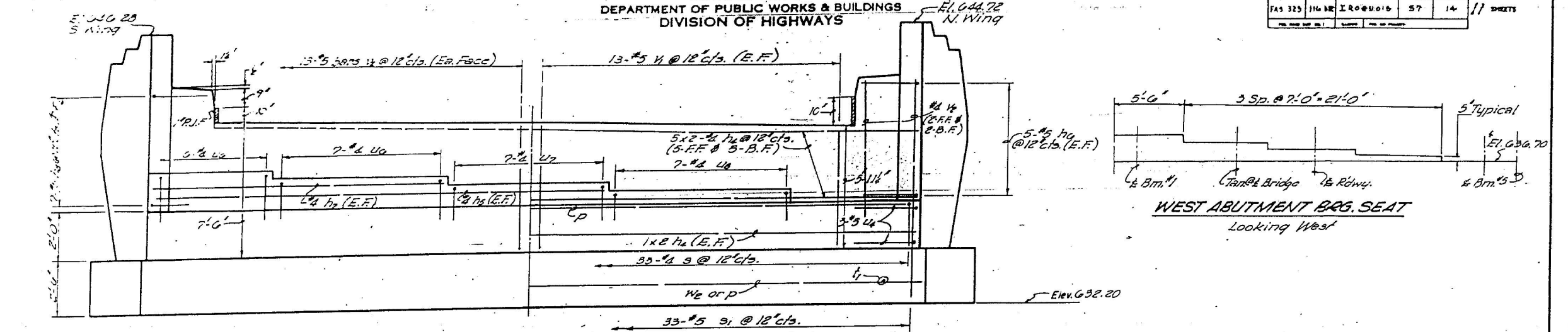
F.A.S. ROUTE 323
SEC. 116-BR
IROQUOIS COUNTY
STATION 140+51.05

MODEL: Default
FILE NAME: ...0380056-031-047-EX-PLANS.dgn

USER NAME =	cconnor	DESIGNED -	J.A.M.	REVISED -	
PLOT SCALE =	0.1667' / in.	CHECKED -	A.R.K.	REVISED -	
PLOT DATE =	8/13/2019	DRAWN -	A.D.S.	REVISED -	
		CHECKED -	J.A.M. & A.R.K.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

PROJECT NO.	DATE	REVISION	BY	DATE	SHEET NO.
FAS 323	11/6/88	IR000016	57	14	11
SHEETS					11



For Details of End Post &
Sec. A-A See Sheet #2.
For Brq. R Detail,
see sheet #3

DESIGNED	J.M. Ignatowski
CHECKED	John A. Ignatowski
IN CHARGE	J.E.M.
DRAWN	W.A. Soussan
CHECKED	G.R.

DESIGNED	W.E. Baumann
CHECKED	W.E. Baumann
IN CHARGE	W.E. Baumann
DRAWN	W.E. Baumann
CHECKED	W.E. Baumann

All piles in front row
shall be battered 8:12

FOOTING PLAN

FOR INFORMATION ONLY

PILE DATA
Type - CONC.
Capacity - 30 Ton Min.
Est. Length - 40 Feet
No. Req'd. - 13

WEST ABUTMENT
BAR LIST

Bar	No.	Size	Length	Shape
h ₁	28	#4	18'-9"	—
h ₂	2	#4	19'-0"	—
h ₃	10	#5	4'-9"	—
h ₄	2	#4	12'-0"	—
h ₅	14	#5	4'-9"	—
h ₆	10	#5	3'-0"	—
P	6	#7	32'-0"	—
s	33	#4	6'-2"	—
s ₁	33	#4	7'-0"	—
t ₁	5d	#5	5'-3"	—
u ₁	0	#5	8'-9"	—
u ₂	0	#4	0'-8"	—
u ₃	7	#4	5'-8"	—
u ₄	7	#4	5'-2"	—
u ₅	7	#4	4'-2"	—
v ₁	20	#5	5'-3"	—
v ₂	3d	#5	6'-9"	—
w ₁	8	#5	10'-3"	—
w ₂	2	#5	32'-3"	—

WEST ABUTMENT
BILL OF MATERIAL

Item	Unit	Quantity
Class X Concrete	Cu.Yds.	48.0
Reinforcement Bars	Lbs.	2,810
Conc. Piles	Lin.Ft.	620

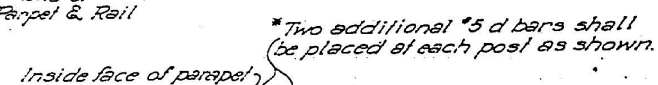
Note: Bill of Material includes
Reinforcement and Class X
Concrete for End Posts.

W.ABUTMENT
F.A.S. ROUTE 323
SEC. 116-BR
IROQUOIS COUNTY
STATION 140+31.05

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056

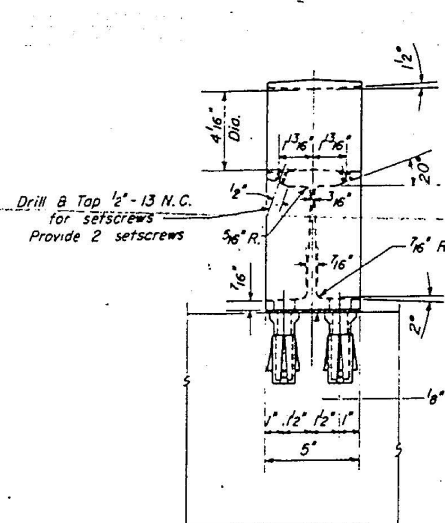
SHEET 39 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	44
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

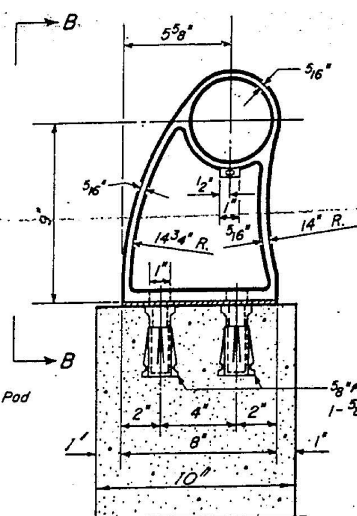


Note: Class X Concrete and Reinforcement Bars for Parapet Wall included with Bill of Material Superstructure.

FOR INFORMATION ONLY



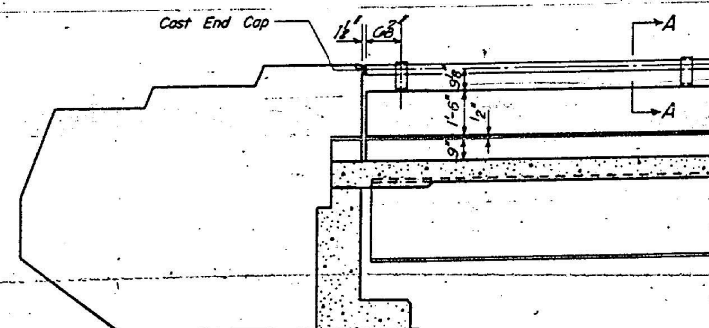
RAIL POST DETAILS



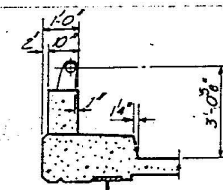
SECTION A-A



DRIVE FIT TYPE
1G- Required
Incidental to item "Aluminum
Handrail"

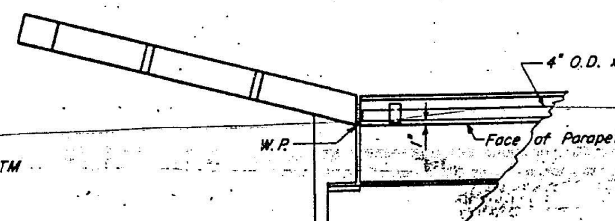


ELEVATION - END POST



SEC. THRU CURB

Item	Unit	Quantity
Aluminum Handrail	Lin. Ft.	437



PLAN - END POST

TYPE D
ALUMINUM HANDRAIL

HANDRAIL & PARAPET WALL
E.A.S. ROUTE 325
SEC. 116 - B.R.
IROQUOIS COUNTY
STATION 140+31.05

NOTES

NOTES

All Posts shall be placed normal to parapet

All Posts shall be of Aluminum conforming to ASTM Specification B-108 alloy 3070B-T6.

All Rail Tubing shall be of Aluminum conforming to ASTM Specification B-235 alloy 6061-T6.

The contract unit price per linear foot for aluminum handrail shall include the furnishing, fabrication, transportation and erection of all material.

Rail Tubing may be cut to random lengths.

For material composition of Prefabricated Pad, See Art. 54.9-(f), (Bearings and Anchorage), of the Std. Specs.

Set Screws shall be of Aluminum conforming to ASTM Specification B-211 alloy 2024-T4.

DESIGNED J. M. Fitzgerald
CHECKED J. M. Fitzgerald
J. M. Fitzgerald
DRAWN W. A. Soussan
CHECKED G. R.

Dec. 5 11 62

EXAMINED W. C. Bauman
SUPERVISOR, BUREAU OF INVESTIGATION, U.S. DEPARTMENT OF JUSTICE

PASSED E. J. Connelley
SPECIAL AGENT IN CHARGE, NEW YORK OFFICE

APPROVED J. E. Davis
DIRECTOR, FBI

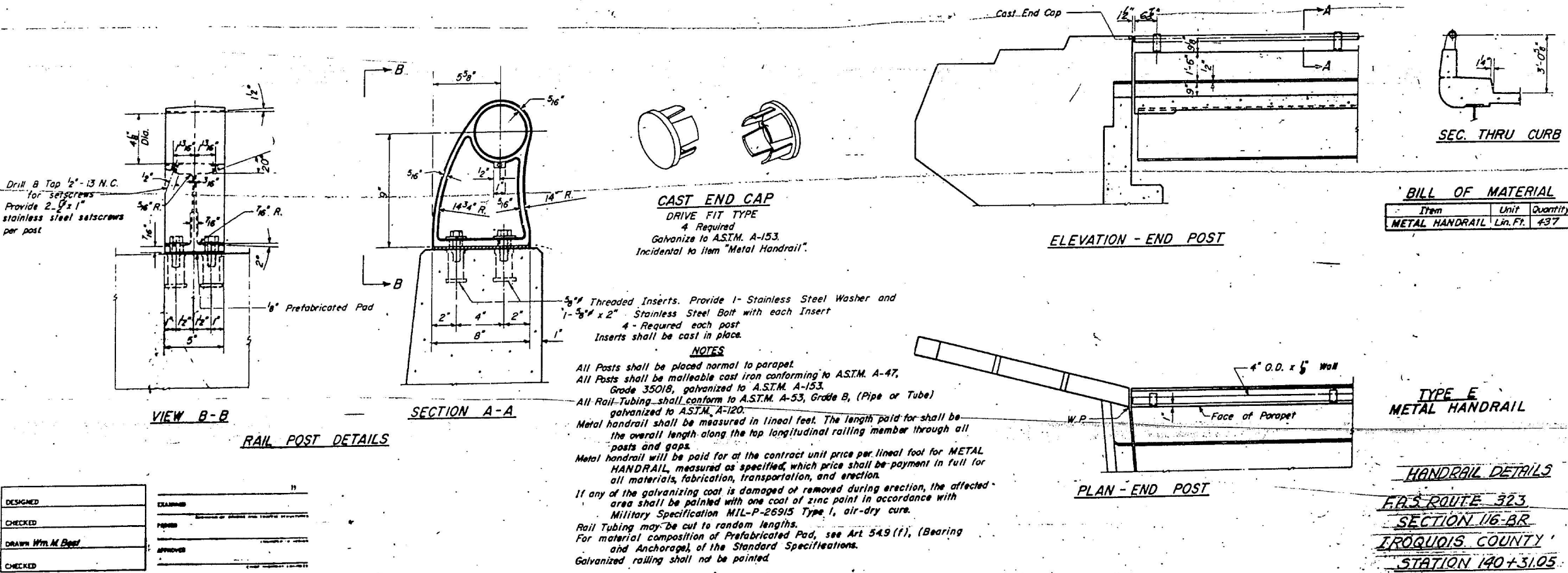
R-10 Drawn 2-16-60 Rev. 9-17-62

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

PROJECT NO.	DATE	DESIGNED BY	CHECKED BY	DATE	SHEET NO.
FAS 323 ILL. BR.	11/16/05	ILLINOIS	57	15 A	77
SHEETS					11

NOTE: FOR RAIL POSTS, SPACING AND PARAPET WALL
SEE "ELEVATION" SHEET NO. 7.

FOR INFORMATION ONLY



R-14 Drawn 11-2-62

MODEL: Default
FILE NAME: ...0380056-031-047-EX-PLANS.dgn

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

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056

SHEET 41 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	46
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FEHR GRAHAM PROJECT NUMBER: 11-138

MODEL: Default
FILE NAME: ...0380056-031-047-EX-PLANS.dgn

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
FEHR GRAHAM PROJECT NUMBER: 11-138

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056

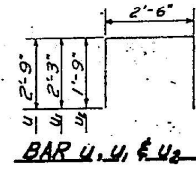
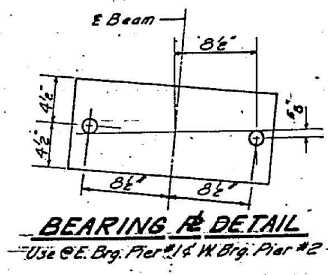
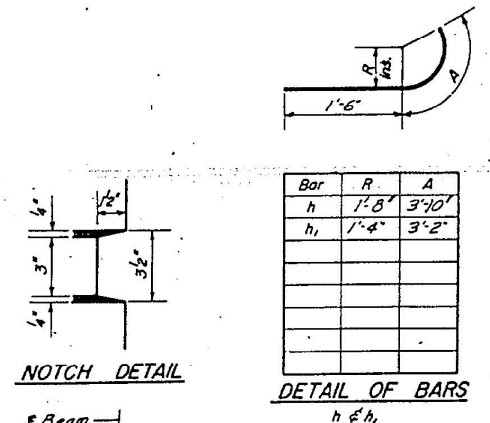
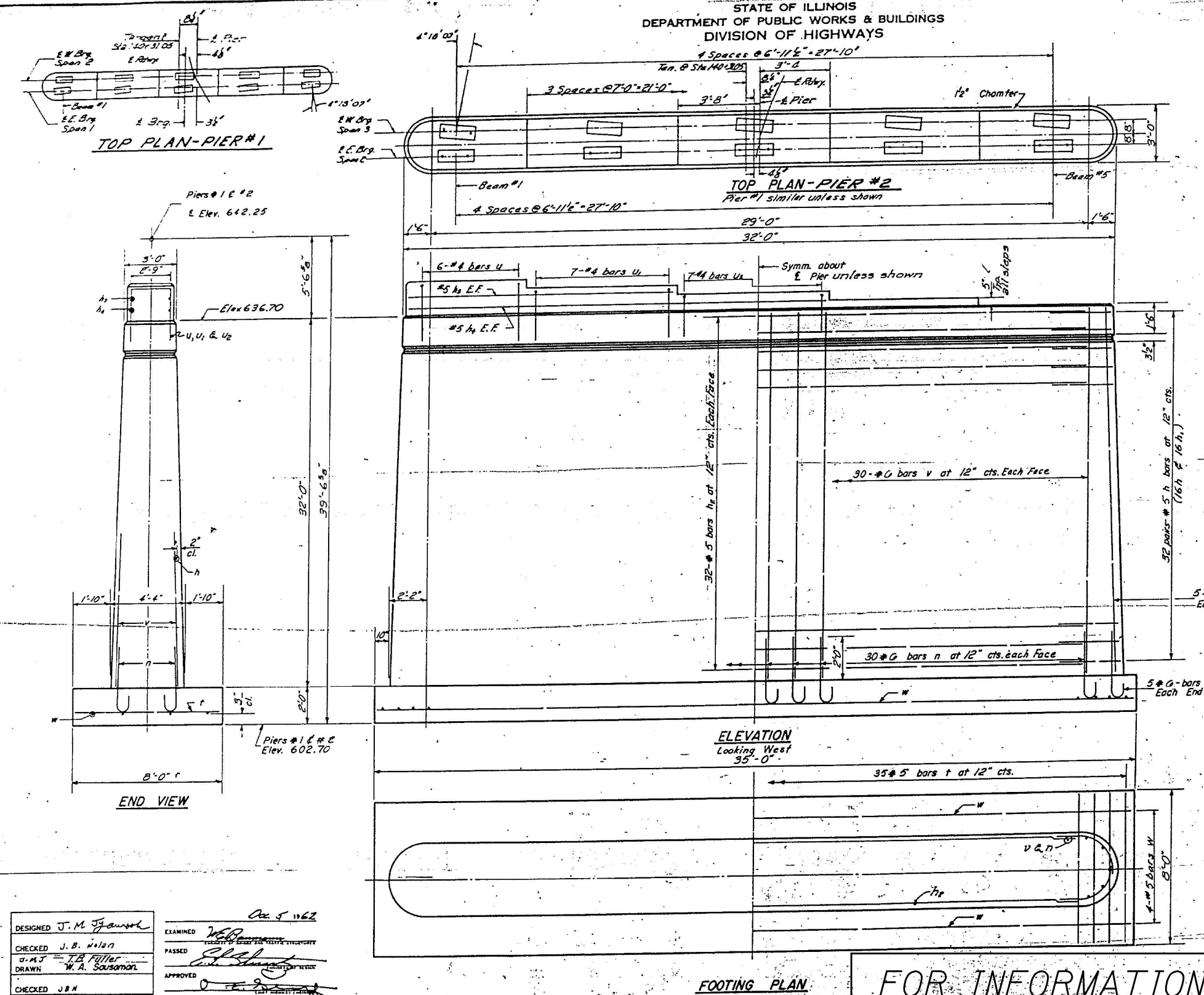
SHEET 42 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	47
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 323	116 BR	IROQUOIS	57	16
SHEETS				

DESIGNED J. M. Gauriel	EXAMINED
CHECKED J. B. Nelson	PASSED
DRAWN T. B. Fuller	APPROVED
CHECKED J. B. N.	

P-1 Re-drawn 7-21-59. Rev. 11-25-59

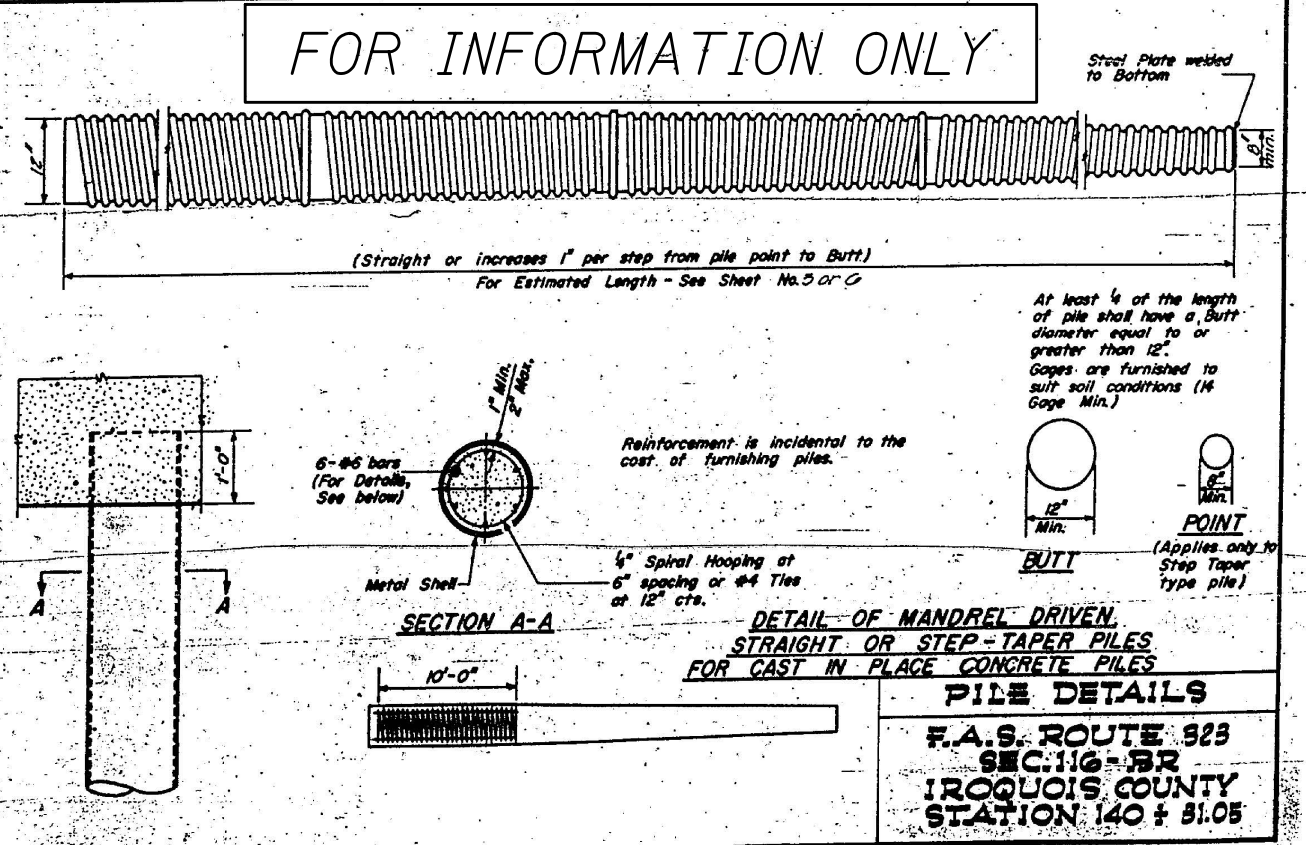
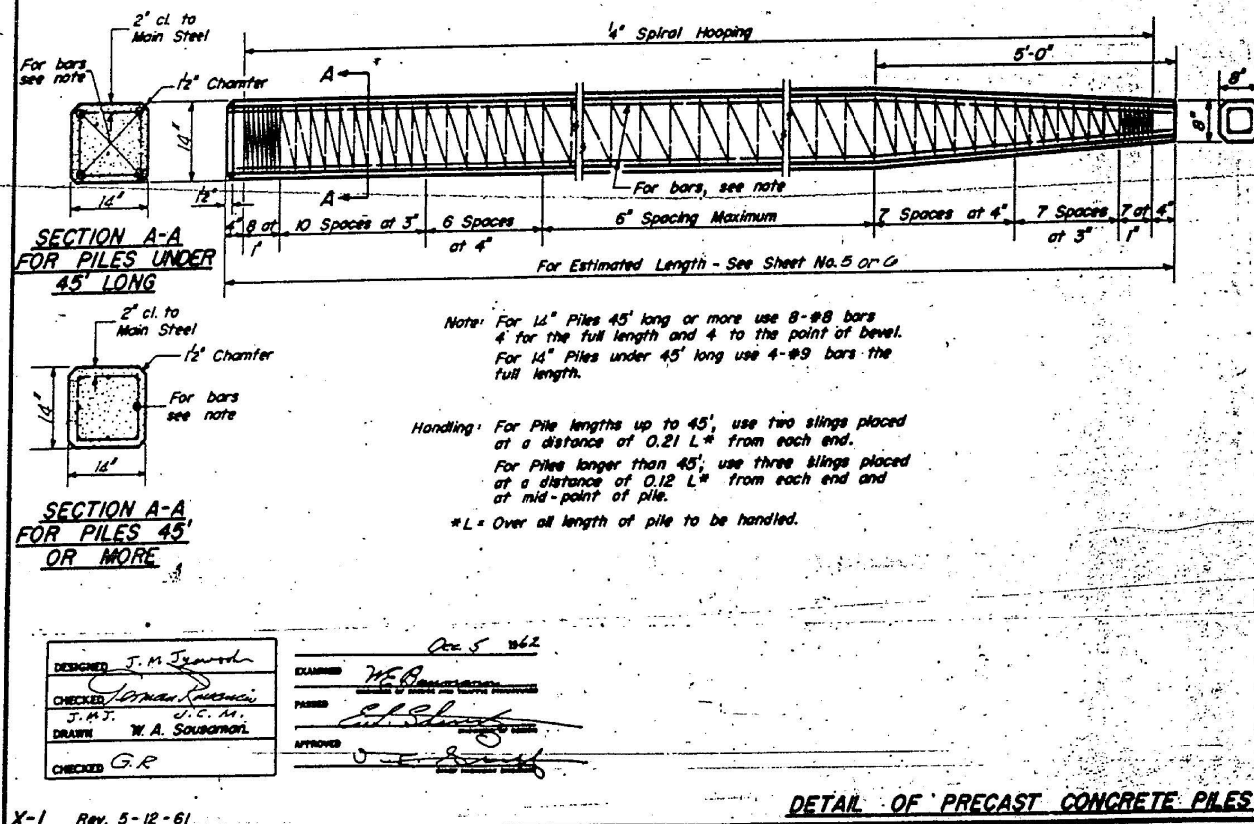
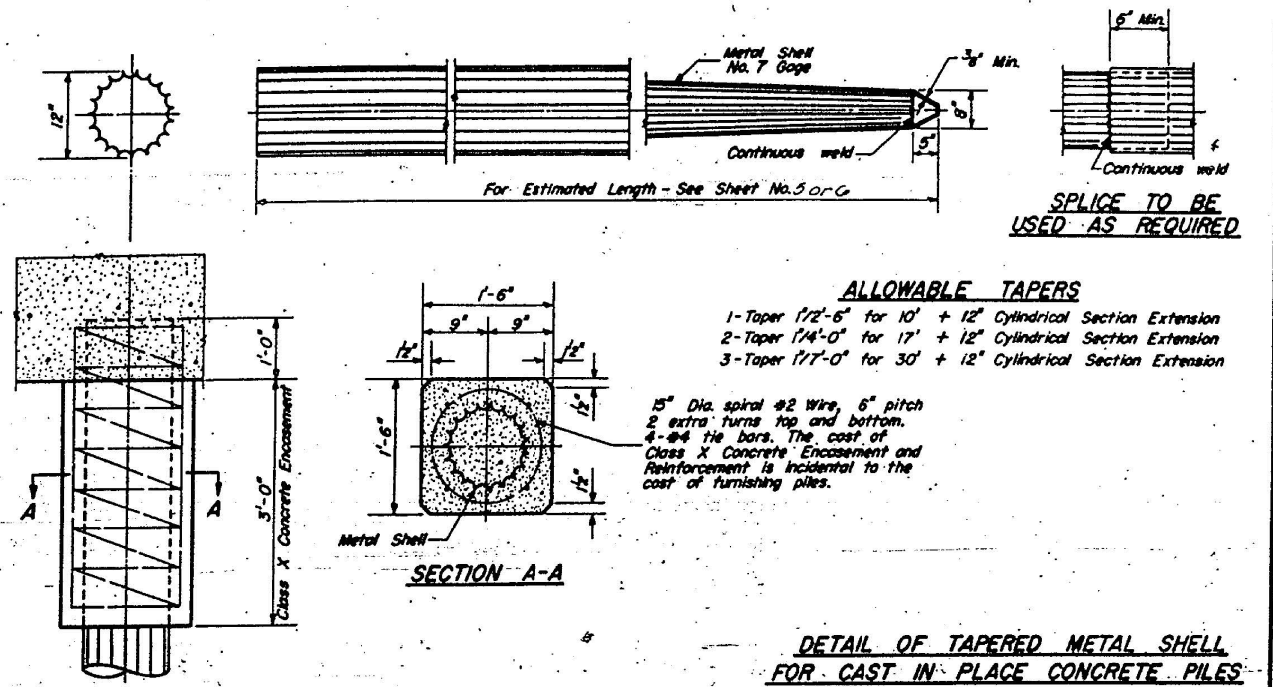
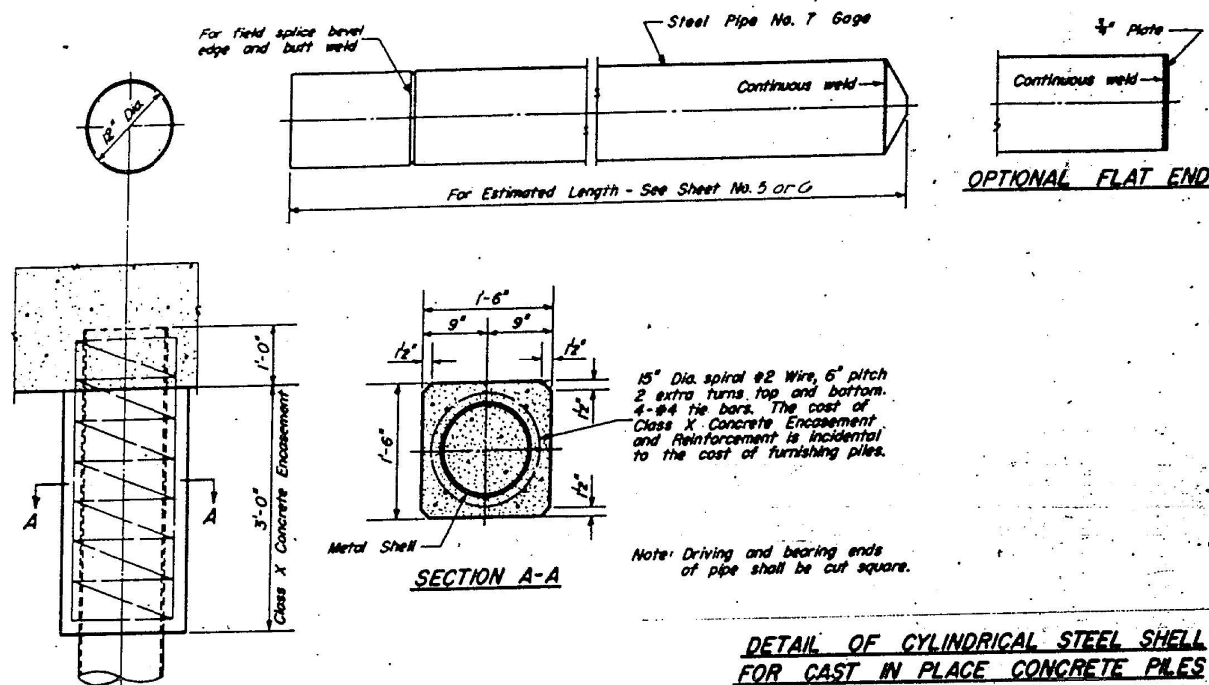


TWO PIERS BILL OF MATERIAL				
Bar	No.	Size	Length	Shape
h	128	#5	5'-0"	U
h ₁	128	#5	4'-8"	U
h ₂	128	#5	29'-0"	—
h ₃	4	#5	11'-0"	—
h ₄	4	#5	18'-0"	—
n	140	#6	4'-5"	C
t	70	#5	7'-9"	—
v	140	#6	31'-9"	—
u	12	#4	8'-0"	U
u ₁	14	#4	7'-0"	U
u ₂	14	#4	6'-0"	U
w	8	#5	34'-9"	—
Class 'A' Concrete			Cu. Yds. 323.8	
Reinforcement Bars			Lbs. 13,980	

PIERS
F.A.S. ROUTE 323
SEC. 116-BR
IROQUOIS COUNTY
STATION 140+31.05

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

DESIGN NO.	SECTION	DATE	BY	CHECKED	APPROVED	SHEET NO. 9
FAS 923	116 BR	12-20-61	57	17		11 SHEETS



DESIGNED	J. M. J. [Signature]	EXAMINED	W. A. [Signature]
CHECKED	J. M. J. [Signature]	PAIRED	[Signature]
DRAWN	W. A. [Signature]	APPROVED	[Signature]
CHECKED	G. R. [Signature]		

X-1 Rev. 5-12-61

DETAIL OF PRECAST CONCRETE PILES

DETAIL OF MANDREL DRIVEN
STRAIGHT OR STEP-TAPER PILES
FOR CAST IN PLACE CONCRETE PILES
PILE DETAILS
F.A.S. ROUTE 923
SEC. 116-BR
IROQUOIS COUNTY
STATION 140 + 81.05

USER NAME =	cconnor	DESIGNED -	J.A.M.	REVISED -	
PLOT SCALE =	0.1667' / in.	CHECKED -	A.R.K.	REVISED -	
PLOT DATE =	8/13/2019	DRAWN -	A.D.S.	REVISED -	
		CHECKED -	J.A.M. & A.R.K.	REVISED -	

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	48
				CONTRACT NO. 87548

FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

FILE NO.	PROJECT	DATE	SHEET NO.	TOTAL SHEETS
IAS 323	ILL. DR. IROQUOIS	57	18	11 SHEETS

Pier #2 Boring No. 1 Station 140+81.5 Offset 8' 11" E	Elevation	Z	C /	S /	w (%)
Ground Surface	626.11	0			
Stiff Brown Silty CLAY					
	621.63	17	1.4	8	23
Very Stiff Brown CLAY LOAM					
	619.13	16	3.5	8	23
Medium Brown CLAY LOAM					
		8	0.9	8	24
		5	0.7	8	25
	614.13				
Very Loose Yellowish Brown SANDY LOAM					
		3	0.4	8	24
		3	0.3	8	23
	609.13				
Stiff Gray CLAY (Lacustrine)					
		8	1.5	8	32
Very Stiff Gray CLAY (Lacustrine)					
		10	2.6	8	27
	604.13				
Stiff Gray CLAY (Till)					
		11	1.9	8	21
	601.63				
Very Stiff Gray CLAY (Till)					
		13	3.5	8	23
		19	3.2	8	21
		20	3.7	8	22
		22	3.8	8	20
	591.63				
Dense Gray SILT					
		35			23
		59			30
		48			19
	581.13				

Surface Water El. None
Groundwater El. at Completion After 24 Hours 610.83

Pier #1 Boring No. 2 Station 140+81.5 Offset 8' 11" E	Elevation	Z	C /	S /	w (%)
Ground Surface	626.28	0			
Stiff Brownish Black CLAY LOAM					
	621.78	14	1.9	8	21
Stiff Brown CLAY LOAM					
		10	1.3	8	24
Very Loose Yellowish Brown Fine Rounded SAND					
	618.28	4			11
Loose Yellowish Brown Fine Rounded SANDY LOAM					
	616.78	5			16
		4			18
	612.28				
Very Loose Yellowish Brown and Gray Fine Rounded SANDY LOAM					
		3			19

DESIGNED J.M. Flawole
CHECKED Jamar Roman
DRAWN T.B. Fuller
CHECKED G.R.
EXAMINED W. Bauman
PASSED P. Shantz
APPROVED J. J. [Signature]
Dec 5 1962

N - Standard Penetration Test - 140 lb. hammer falling 30".
U - Unconfined Compressive Strength - 140 lb. hammer falling 30".
w - Water Content - percentage of oven dry weight - %.

Pier #1 Boring No. 3 Station 140+81.5 Offset 8' 11" E	Elevation	Z	C /	S /	w (%)
Ground Surface	605.78	0			
Very Loose Gray SAND & Angular Gravel					
	604.78	1			21
Very Stiff Gray CLAY (Till)					
		13	2.8	8	21
		11	2.7	8	21
		18	2.1	8	24
		17	3.5	8	23
		17	3.7	8	21
		14	3.1	8	21
	587.28				
Very Stiff Gray CLAY (Varved)					
		21	2.7	8	24
	584.78				
Ground Surface	626.28	0			
Medium Gray SILT (Small Pockets of Clay)					
		23			20
		25			19
	579.78				
Dense Gray SILT					
		38			21
		34			21
	574.78				
Medium Gray SILT (Small Pockets of Clay)					
		28			21
		30			24
	570.28				

Surface Water El. None
Groundwater El. at Completion After 24 Hours 611.78

Pier #1 Boring No. 4 Station 140+81.5 Offset 8' 11" E	Elevation	Z	C /	S /	w (%)
Ground Surface	624.75	0			
Stiff Brownish Black & Brown CLAY LOAM					
		12	2.0	8	21
		14	2.0	8	22
	617.85				
Medium Brown CLAY LOAM					
		6	0.9	8	23
Stiff Brown CLAY LOAM					
		7	1.2	8	21
		6	1.0	8	24
	610.25				
Very Loose Yellowish Brown SANDY LOAM					
		2			25
	607.85				
Loose Fine to Coarse Angular SAND					
		5			27
		6			24
	602.85				
Stiff Gray CLAY (Till)					
		10	1.3	8	26
Very Stiff Gray CLAY (Till)					
		15	2.6	8	23
		12	2.1	8	23
		18	2.8	8	22
		18	2.0	8	20
		34	2.4	8	20
	589.25				
Dense Gray SILT (Small Clay Pockets)					
		48			20
		48			20
	624.75				
Medium Gray SILT (Small Clay Pockets)					
		21			23
		25			22
	577.85				
Dense Gray SILT					
		32			21
	575.35				
Very Stiff Gray CLAY (Lacustrine)					
		17	3.1	8	34

Surface Water El. None
Groundwater El. at Completion After 24 Hours 608.13

Pier #1 Boring No. 5 Station 140+81.5 Offset 8' 11" E	Elevation	Z	C /	S /	w (%)
Ground Surface	627.01	0			
Very Stiff Brownish Black and Brown CLAY LOAM					
		13	3.3	8	27
		12	2.2	8	21
	620.51				
Stiff Brown CLAY LOAM					
		8	1.8	8	21
		6	1.2	8	23
	615.51				
Medium Yellowish Brown CLAY LOAM					
		4	0.6	8	26
Loose to Very Loose Yellowish Brown and Gray SANDY LOAM					
		5			23
		3			24
	608.01				
Very Stiff Gray CLAY (Till)					
		6	2.1	8	25
		13	3.3	8	21
		12	2.9	8	20
		14	3.1	8	20
		25	2.6	8	20
		16	2.1	8	20
		13	2.3	8	21
	590.51				
Hard Gray CLAY LOAM (Till)					
		38	2.0	8	36
	588.01				
Hard Gray SILTY CLAY					
		40	4.4	8	39
	585.51				

Ground Surface	627.01				
Dense Gray SILT					
		27			18
		42			18
	580.51				
Medium Gray SILT (Small Clay Pockets)					
		29			20
		30			20
	575.51				
Very Stiff Gray CLAY (Lacustrine)					
		14	3	8	33
		13	3.2	8	27
	571.01				

Surface Water El. None
Groundwater El. at Completion After 24 Hours 618.81

BORINGS
E.A.S. ROUTE 323
SEC. 116-BR
IROQUOIS COUNTY
STATION 140+81.05

MODEL: Default
FILE NAME: ...0380056-031-047-EX-PLANS.dgn

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525
FEHR GRAHAM PROJECT NUMBER: 11-138

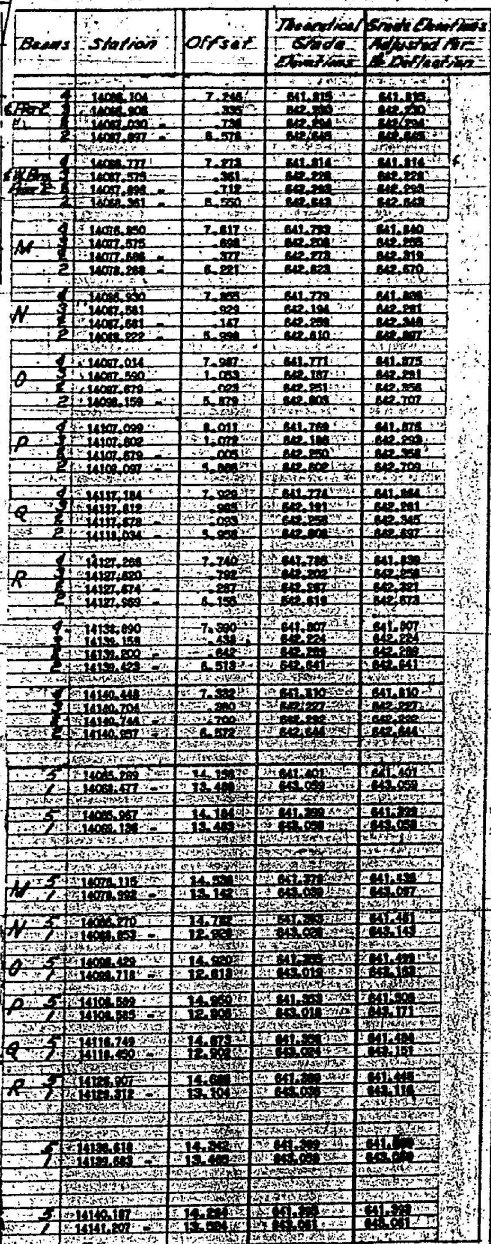
USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
PLOT SCALE = 0.1667' / in.	CHECKED - A.R.K.	REVISED -
PLOT DATE = 8/13/2019	DRAWN - A.D.S.	REVISED -
	CHECKED - J.A.M. & A.R.K.	REVISED -

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056
SHEET 44 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	49
			CONTRACT NO. 87548	

ILLINOIS FED. AID PROJECT

DATE	TIME	LOCATION	WIND	TEMP	SHEET NO. 116
FAS 528	16.5R	IRPOODIS	57	18	
THE END OF THE		SHEETS			



Beam Station	Offset	Theoretical Grade Elevations	Grade Elevation Adjusted For Deflection
A	13905.458	8.638	841.852
	13905.720	8.317	842.288
	13905.730	7.996	842.720
	13905.978	7.270	842.898
C	14005.328	8.959	841.832
	14005.714	8.003	842.590
	14005.728	7.339	842.770
	14005.898	6.951	842.967
H	14015.598	7.176	841.819
	14015.712	6.219	842.237
	14015.718	5.124	842.293
	14015.928	6.738	842.854
S	14025.878	7.588	841.813
	14025.715	6.858	842.280
	14025.717	6.015	842.251
	14025.754	6.659	842.548
J	14035.753	6.650	841.813
	14035.719	5.832	842.230
	14035.711	5.011	842.251
	14035.841	6.638	842.848
R	14045.830	6.187	841.815
	14045.721	5.259	842.228
	14045.716	4.119	842.227
	14045.814	6.727	842.854
L	14055.530	6.077	841.831
	14055.720	5.061	842.230
	14055.711	4.322	842.298
	14055.540	6.934	842.888
2	14065.844	6.638	841.832
	14065.580	5.317	842.288
	14065.567	4.680	842.250
	14065.122	7.270	842.898
1	13905.182	13.589	841.435
	13905.232	14.224	849.103
6	14005.338	13.913	841.412
	14005.061	13.507	843.061
H	14015.483	14.138	841.402
	14015.935	13.695	843.072
S	14025.635	14.840	841.385
	14025.792	13.587	843.061
J	14035.781	14.248	841.385
	14035.851	13.584	843.061
K	14045.580	14.146	841.401
	14045.594	13.487	843.071
L	14055.080	13.533	841.414
	14055.352	13.890	843.083
2	14065.508	13.588	841.435
	14065.867	14.204	843.103

TOP OF SLAB ELEVATION
H.A.S. ROUTE 325
SEC. 116-RR
IROQUOIS COUNTY
STATION 140+81.05

Doc: 5 162

EXAMINED McBrennan 26

INVESTIGATOR OF CRIME AND CLERICAL SERVICES 26

PAID E. J. [unclear] 64

APPROVED O. J. [unclear]

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
11-00116-04-BR	11-00116-04-BR	IROQUOIS	60	57
FILE NAME	DATE	BY	DATE	BY
11-00116-04-BR	8/13/2019	J.M.J.	8/13/2019	J.M.J.

Sta	Station	Radius Offset from to Rdy	Theoretical Grade Elevations	Env. Adjusted for D.L. Deflection
End E App	13980.511	6.409	641.865	641.865
	13981.325	5.906	642.280	642.280
	13982.125	5.410	642.695	642.695
	13982.912	4.913	643.110	643.110
E Brg. E. Abut.	13983.675	4.417	643.525	643.525
	13984.438	3.920	643.940	643.940
	13985.200	3.423	644.355	644.355
	13985.962	2.926	644.770	644.770
A	13986.725	2.429	645.185	645.185
	13987.487	1.932	645.600	645.600
	13988.250	1.435	646.015	646.015
	13989.012	0.938	646.430	646.430
B	13989.775	0.441	646.845	646.845
	13990.537	-0.056	647.260	647.260
	13991.300	-0.559	647.675	647.675
	13992.062	-1.062	648.090	648.090
C	13992.825	-1.565	648.505	648.505
	13993.587	-2.068	648.920	648.920
	13994.350	-2.571	649.335	649.335
	13995.112	-3.074	649.750	649.750
D	13995.875	-3.577	650.165	650.165
	13996.637	-4.080	650.580	650.580
	13997.400	-4.583	650.995	650.995
	13998.162	-5.086	651.410	651.410
E	13998.925	-5.589	651.825	651.825
	13999.687	-6.092	652.240	652.240
	14000.450	-6.595	652.655	652.655
	14001.212	-7.098	653.070	653.070
F	14001.975	-7.601	653.485	653.485
	14002.737	-8.104	653.900	653.900
	14003.500	-8.607	654.315	654.315
	14004.262	-9.110	654.730	654.730
E Brg. Pier 1	14005.025	-9.613	655.145	655.145
	14005.787	-10.116	655.560	655.560
	14006.550	-10.619	655.975	655.975
	14007.312	-11.122	656.390	656.390
E Pier 1	14008.075	-11.625	656.805	656.805
	14008.837	-12.128	657.220	657.220
	14009.600	-12.631	657.635	657.635
	14010.362	-13.134	658.050	658.050
BK. E. App.	14011.125	-13.637	658.465	658.465
	14011.887	-14.140	658.880	658.880
	14012.650	-14.643	659.295	659.295
	14013.412	-15.146	659.710	659.710
E Brg. E. Abut.	14014.175	-15.649	660.125	660.125
	14014.937	-16.152	660.540	660.540
	14015.700	-16.655	660.955	660.955
	14016.462	-17.158	661.370	661.370
A	14017.225	-17.661	661.785	661.785
	14017.987	-18.164	662.200	662.200
	14018.750	-18.667	662.615	662.615
	14019.512	-19.170	663.030	663.030
B	14020.275	-19.673	663.445	663.445
	14021.037	-20.176	663.860	663.860
	14021.800	-20.679	664.275	664.275
	14022.562	-21.182	664.690	664.690
C	14023.325	-21.685	665.105	665.105
	14024.087	-22.188	665.520	665.520
	14024.850	-22.691	665.935	665.935
	14025.612	-23.194	666.350	666.350
D	14026.375	-23.697	666.765	666.765
	14027.137	-24.200	667.180	667.180
	14027.900	-24.703	667.595	667.595
	14028.662	-25.206	668.010	668.010
E	14029.425	-25.709	668.425	668.425
	14030.187	-26.212	668.840	668.840
	14030.950	-26.715	669.255	669.255
	14031.712	-27.218	669.670	669.670
F	14032.475	-27.721	670.085	670.085
	14033.237	-28.224	670.500	670.500
	14034.000	-28.727	670.915	670.915
	14034.762	-29.230	671.330	671.330
E Brg. Pier 1	14035.525	-29.733	671.745	671.745
	14036.287	-30.236	672.160	672.160
	14037.050	-30.739	672.575	672.575
	14037.812	-31.242	672.990	672.990
E Pier 1	14038.575	-31.745	673.405	673.405
	14039.337	-32.248	673.820	673.820
	14040.100	-32.751	674.235	674.235
	14040.862	-33.254	674.650	674.650

E W. Brg. Pier 1

4	13995.459	6.625	641.852	641.852
3	13995.721	5.327	642.270	642.270
2	13995.979	4.028	642.687	642.687
G	14005.526	6.949	641.833	641.880
	14005.714	6.006	642.250	642.298
	14005.899	5.062	642.668	642.715
	14015.599	7.186	641.820	641.908
H	14015.713	6.238	642.237	642.325
	14015.825	5.294	642.655	642.743
	14025.675	7.276	641.813	641.919
	14025.715	6.318	642.231	642.336
I	14025.754	5.359	642.649	642.754
	14035.753	7.279	641.813	641.919
	14035.718	6.321	642.231	642.337
	14035.684	5.363	642.649	642.754
J	14045.830	7.176	641.819	641.908
	14045.721	6.219	642.237	642.325
	14045.613	5.278	642.654	642.742
	14055.923	6.957	641.832	641.883
K	14055.720	6.011	642.249	642.300
	14055.539	5.064	642.667	642.718
	14065.641	6.625	641.852	641.855
	14065.379	5.327	642.270	642.273
L	14065.121	4.028	642.687	642.690
	14075.526	6.949	641.833	641.880
	14075.714	6.006	642.250	642.298
	14075.899	5.062	642.668	642.715
M	14085.599	7.186	641.820	641.908
	14085.713	6.238	642.237	642.325
	14085.825	5.294	642.655	642.743
	14095.675	7.276	641.813	641.919
N	14095.715	6.318	642.231	642.336
	14095.754	5.359	642.649	642.754
	14105.753	7.279	641.813	641.919
	14105.718	6.321	642.231	642.337
O	14105.684	5.363	642.649	642.754
	14115.830	7.176	641.819	641.908
	14115.721	6.219	642.237	642.325
	14115.613	5.278	642.654	642.742
P	14125.923	6.957	641.832	641.883
	14125.720	6.011	642.249	642.300
	14125.539	5.064	642.667	642.718
	14135.641	6.625	641.852	641.855
Q	14135.379	5.327	642.270	642.273
	14135.121	4.028	642.687	642.690
	14145.526	6.949	641.833	641.880
	14145.714	6.006	642.250	642.298
R	14145.899	5.062	642.668	642.715
	14155.599	7.186	641.820	641.908
	14155.713	6.238	642.237	642.325
	14155.825	5.294	642.655	642.743

E E. Brg. Pier 2

E W. Brg. Pier 1

5	13995.193	13.579	641.435	641.435
4	13995.233	14.234	642.104	643.104
G	14005.335	13.905	641.416	641.481
	14005.082	13.918	643.085	643.150
	14015.483	14.123	641.403	641.524
	14015.935	13.705	643.072	643.193
H	14025.635	14.234	641.396	641.544
	14025.792	13.598	643.066	643.214
	14035.788	14.238	641.396	641.544
	14035.650	13.594	643.066	643.214
I	14045.940	14.134	641.402	641.524
	14045.508	13.695	643.072	643.194
	14055.089	13.923	641.415	641.485
	14055.362	13.900	643.084	643.154
J	14065.907	13.579	641.435	641.439
	14065.867	14.234	643.104	643.108
	14075.335	13.905	641.416	641.481
	14075.082	13.918	643.085	643.150
K	14085.483	14.123	641.403	641.524
	14085.935	13.705	643.072	643.193
	14095.635	14.234	641.396	641.544
	14095.792	13.598	643.066	643.214
L	14105.788	14.238	641.396	641.544
	14105.650	13.594	643.066	643.214
	14115.940	14.134	641.402	641.524
	14115.508	13.695	643.072	643.194
M	14125.089	13.923	641.415	641.485
	14125.362	13.900	643.084	643.154
	14135.907	13.579	641.435	641.439
	14135.867	14.234	643.104	643.108
N	14145.335	13.905	641.416	641.481
	14145.082	13.918	643.085	643.150
	14155.483	14.123	641.403	641.524
	14155.935	13.705	643.072	643.193
O	14165.635	14.234	641.396	641.544
	14165.792	13.598	643.066	643.214
	14175.788	14.238	641.396	641.544
	14175.650	13.594	643.066	643.214
P	14185.940	14.134	641.402	641.524
	14185.508	13.695	643.072	643.194
	14195.089	13.923	641.415	641.485
	14195.362	13.900	643.084	643.154
Q	14205.907	13.579	641.435	641.439
	14205.867	14.234	643.104	643.108
	14215.335	13.905	641.416	641.481
	14215.082	13.918	643.085	643.150
R	14225.483	14.123	641.403	641.524
	14225.935	13.705	643.072	643.193
	14235.635	14.234	641.396	641.544
	14235.792	13.598	643.066	643.214

SPAN #2

FOR INFORMATION ONLY

E Pier 2

E W. Brg. Pier 2

E Brg. W. Abut.

BK. W. App.

E Pier 2

E W. Brg. Pier 2

E Brg. W. Abut.

BK. W. App.

SPAN #3

TOP OF SLAB ELEVATION
F.A.S. RT. 323
SEC. 11

DETAILS OF BRIDGE APPROACH
P.C.G. PAVEMENT ($16\frac{1}{2}$ "- $10\frac{1}{2}$ "- $16\frac{1}{2}$ ")
AND
P.C.G. BASE COURSE ($16\frac{1}{2}$ "- $10\frac{1}{2}$ "- $16\frac{1}{2}$ ")

SECTIONAL VIEW METHOD I

See Detail "C" or "D" for P.C.G. Base Course construction.

By Paving Contractor

20'-0"

4' Preformed Expansion Joint Filler

(When bituminous surface is being placed on bridge and approach)

n = 27,000
fc = 1800
n = 10

OPTIONAL LONGITUDINAL CONSTRUCTION JOINT

As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a Traffic Lane.

SECTIONAL VIEW METHOD II

See Detail "B" for P.C.G. Base Course construction.

By Paving Contractor

20'-0"

2' Preformed Expansion Joint Filler

By Bridge Contractor (Crested Piles)

20'-0"

4' Preformed Expansion Joint Filler

See Detail "C" or "D" for P.C.G. Base Course construction.

n = 27,000
fc = 1800
n = 10 (Both Same)

SECTIONAL VIEW METHOD III

Design as self supporting slab constructed by Bridge Contractor.

Cap by Bridge Contractor

By Bridge Contractor (Crested Piles)

20'-0"

1/2" Sowed Joint in T-II

See Detail "E" for P.C.G. Base Course construction.

n = 27,000
fc = 1800
n = 10

DETAIL "A-A"

(When bituminous surface is being placed on bridge and approach)

DETAIL "B-B"

(When bituminous surface is being placed on bridge and approach)

DETAIL "C-C"

(When bituminous surface is being placed on bridge and approach)

DETAIL "D-D"

(When bituminous surface is not being placed on bridge and approach)

DETAIL "E-E"

(When bituminous surface is being placed on bridge and approach)

LONGITUDINAL EXPANSION JOINT

To be used when Approach Slabs are greater than 36'-0" wide. Joint shall be placed at edge of Traffic Lane nearest to the E of the total width of Approach Slab.

LONGITUDINAL SECTION THRU CENTER OF SLAB

LONGITUDINAL SECTION THRU THICKENED EDGE OF SLAB

PLAN METHOD I

PLAN METHOD II

GENERAL NOTES

FOR P.C.G. PAVEMENT

- The slab or slabs will be paid for at the contract unit price for PORTLAND CEMENT CONCRETE PAVEMENT ($16\frac{1}{2}$ "- $10\frac{1}{2}$ "- $16\frac{1}{2}$ ").
- The concrete cap will be paid for at the contract unit price for CLASS X CONCRETE.
- All Reinforcement Bars will be paid for at the contract unit price for REINFORCEMENT BARS, except as noted.
- The Welded Wire Fabric, Mud Jack Cylinders, and Preformed Expansion Joint Filler shall be included in the unit price bid for PORTLAND CEMENT CONCRETE PAVEMENT ($16\frac{1}{2}$ "- $10\frac{1}{2}$ "- $16\frac{1}{2}$ ").
- Reinforced Expansion Joint Filler shall conform to Section 89 of the Standard Specification.
- Width of Bridge Approach Slab pours shall be determined before the reinforcement bars are fabricated.

FOR P.C.G. BASE COURSE

- The slab or slabs will be paid for at the contract unit price for PORTLAND CEMENT CONCRETE BASE COURSE ($16\frac{1}{2}$ "- $10\frac{1}{2}$ "- $16\frac{1}{2}$ ").
- The concrete cap will be paid for at the contract unit price for CLASS X CONCRETE.
- All Reinforcement Bars will be paid for at the contract unit price for REINFORCEMENT BARS, except as noted.
- The Welded Wire Fabric, Concrete Headers and Preformed Expansion Joint Filler shall be included in the unit price bid for PORTLAND CEMENT CONCRETE BASE COURSE ($16\frac{1}{2}$ "- $10\frac{1}{2}$ "- $16\frac{1}{2}$ ").
- Reinforced Expansion Joint Filler shall conform to Section 129 of the Standard Specification.
- Width of Bridge Approach Slab pours shall be determined before the reinforcement bars are fabricated.

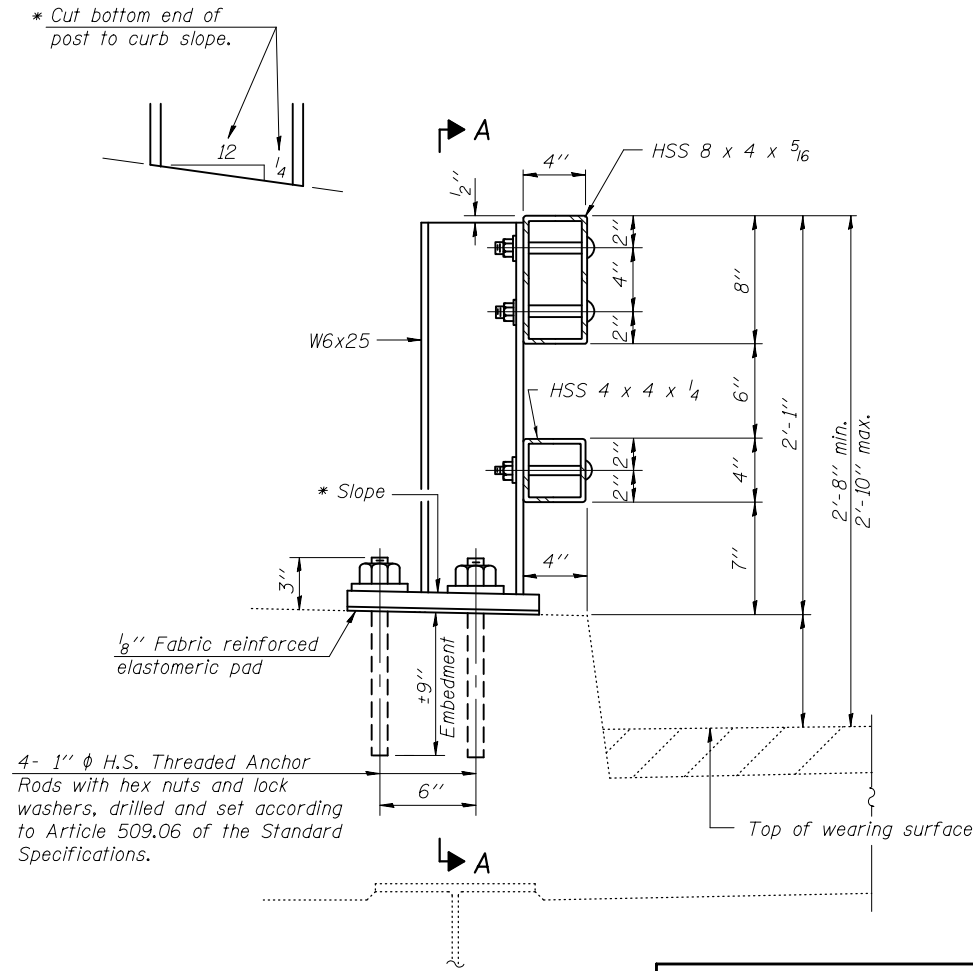
Note: When road plans show curb and gutter or gutter adjacent to approach slabs place #4 Tie Bar 2'-6" long at 2'-6" cts. Cost of the bars included in contract unit price for Class B Gutter or Gutter.

The transition for curb and gutter shall be made in 100 feet and will be paid for as CONCRETE GUTTER, of the type specified.

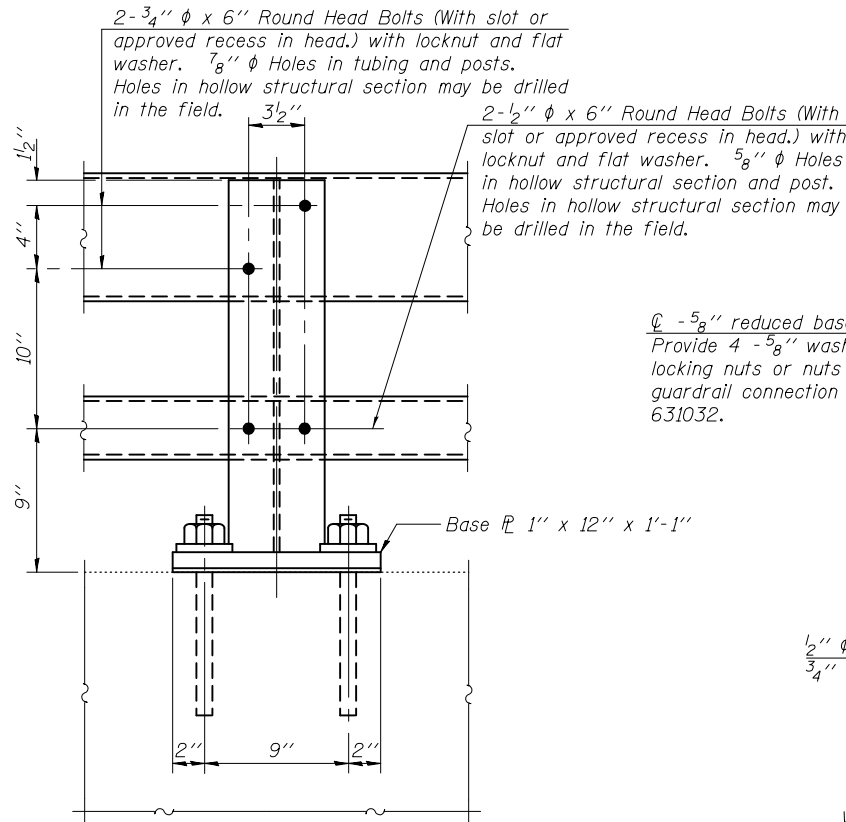
SECTIONAL VIEW OF CONCRETE SLAB AND CAP

STATE OF ILLINOIS	REVISIONS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS	BY DATE
DIVISION OF HIGHWAYS	WAS 2-2-59
DESIGNED DEC 18 '58	CET 10-22-59
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES	WAS 2-9-59
APPROVED DEC 18 '58	WHF 9-17-63
ENGINEER	

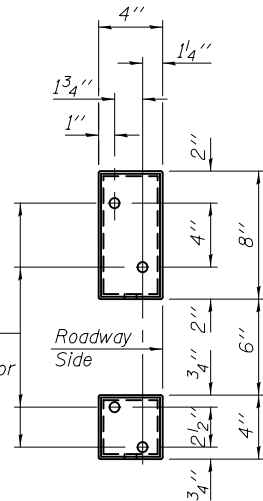
FOR INFORMATION ONLY



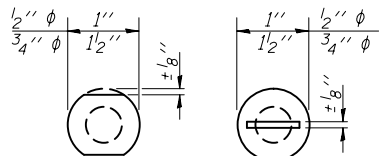
SECTION AT RAIL POST



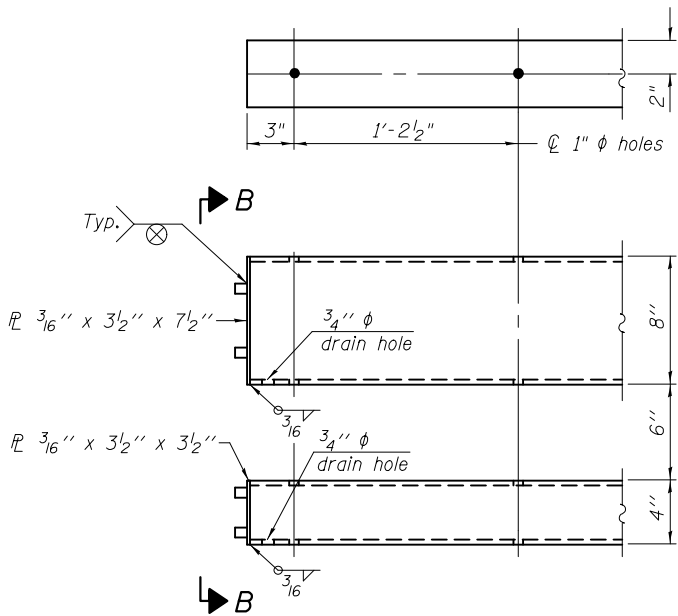
SECTION A-A



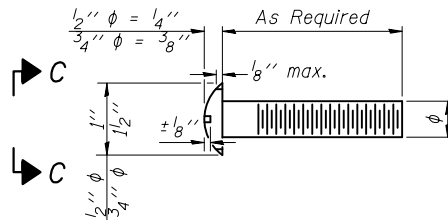
VIEW B-B



VIEW C-C

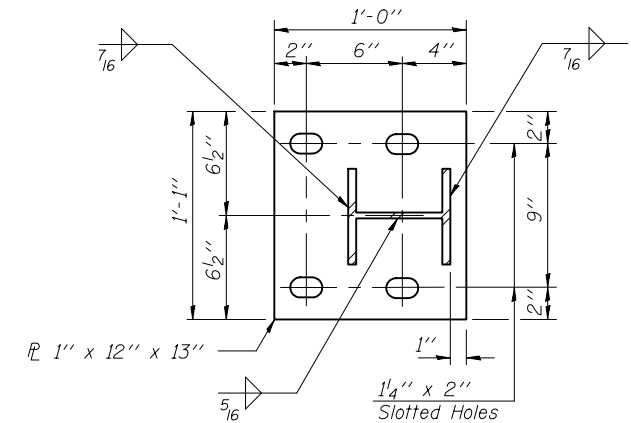


END OF RAIL DETAILS

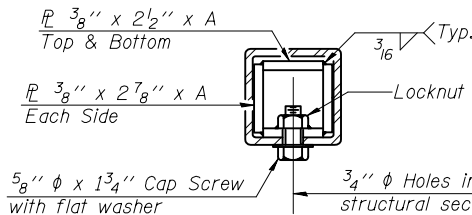


DETAIL OF 1/2" ϕ & 3/4" ϕ ROUND HEAD BOLTS

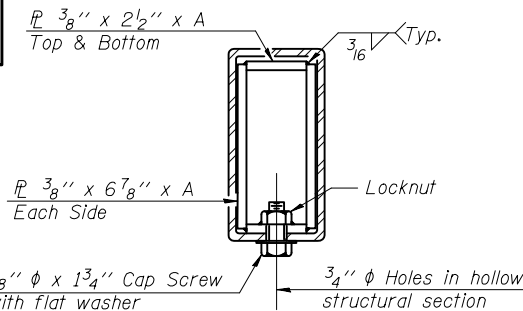
FOR INFORMATION ONLY



BASE PLATE DETAIL

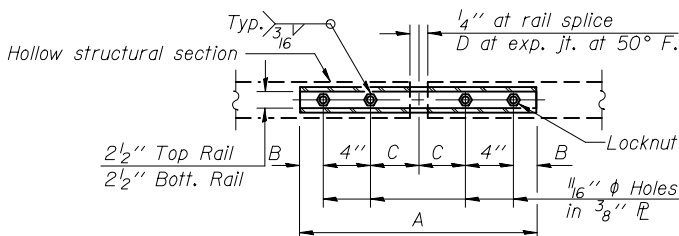


BOTTOM RAIL

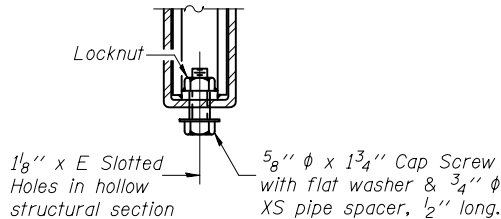


TOP RAIL

SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE PL TYPICAL



RAIL SPLICE CONNECTION AT EXPANSION JT.

Notes:

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

Posts shall not be located closer than 1'-3" to an existing bridge expansion joint or end of bridge.

Steel Bridge Rail expansion joint shall be provided between any two (2) posts which span a bridge expansion joint. Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.

Provide one 1/8" and two 1/16" steel shims for 25% of the posts. Shims shall be similar to base plates in size and holes.

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

SPLICE DIMENSIONS

T	D	A	B	C	E
≤4"	2 1/2"	1'-8"	2"	4"	2 1/2"
>4"≤6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
>6 1/2"≤9"	5"	2'-4"	3 1/2"	6 1/2"	9"
>9"≤13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1 1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type 2399	Foot	

R-31

7-1-10

(6'-3" Maximum Post Spacing)

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. IB4-003525

USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
	CHECKED - A.R.K.	REVISED -
PLOT SCALE = 0.1667' / in.	DRAWN - A.D.S.	REVISED -
PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -

STEEL RAILING, TYPE 2399
STRUCTURE NO. 038-0056

SHEET 48 OF 48 SHEETS

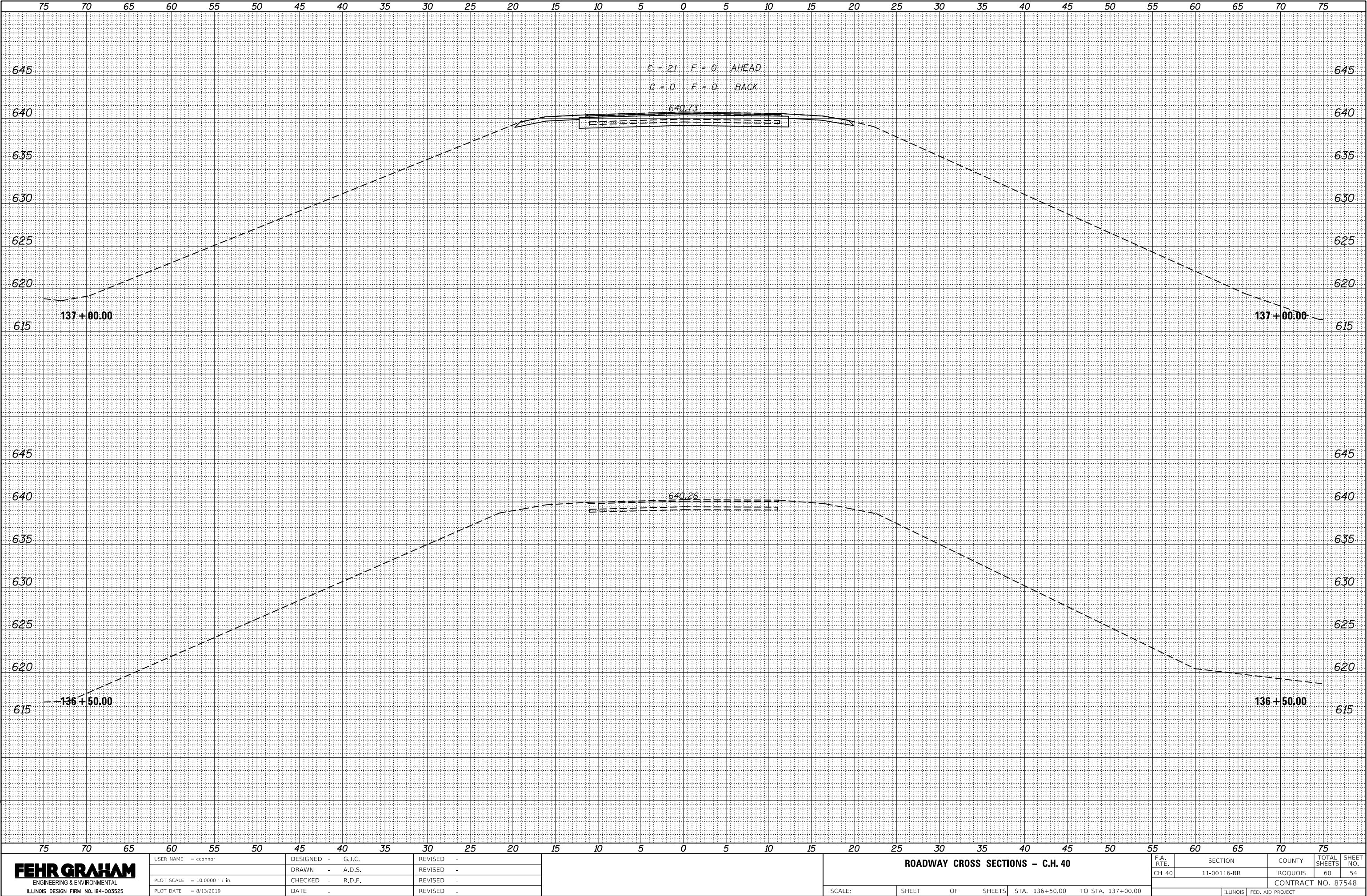
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	53
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FEHR GRAHAM PROJECT NUMBER: 11-138

FINAL SURVEY	NO.	SURVEYED	BY	DATE	PLOTTED	TEMPLATE	AREAS	CHECKED

ORIGINAL SURVEY	NO.	SURVEYED	BY	DATE	PLOTTED	TEMPLATE	AREAS	CHECKED

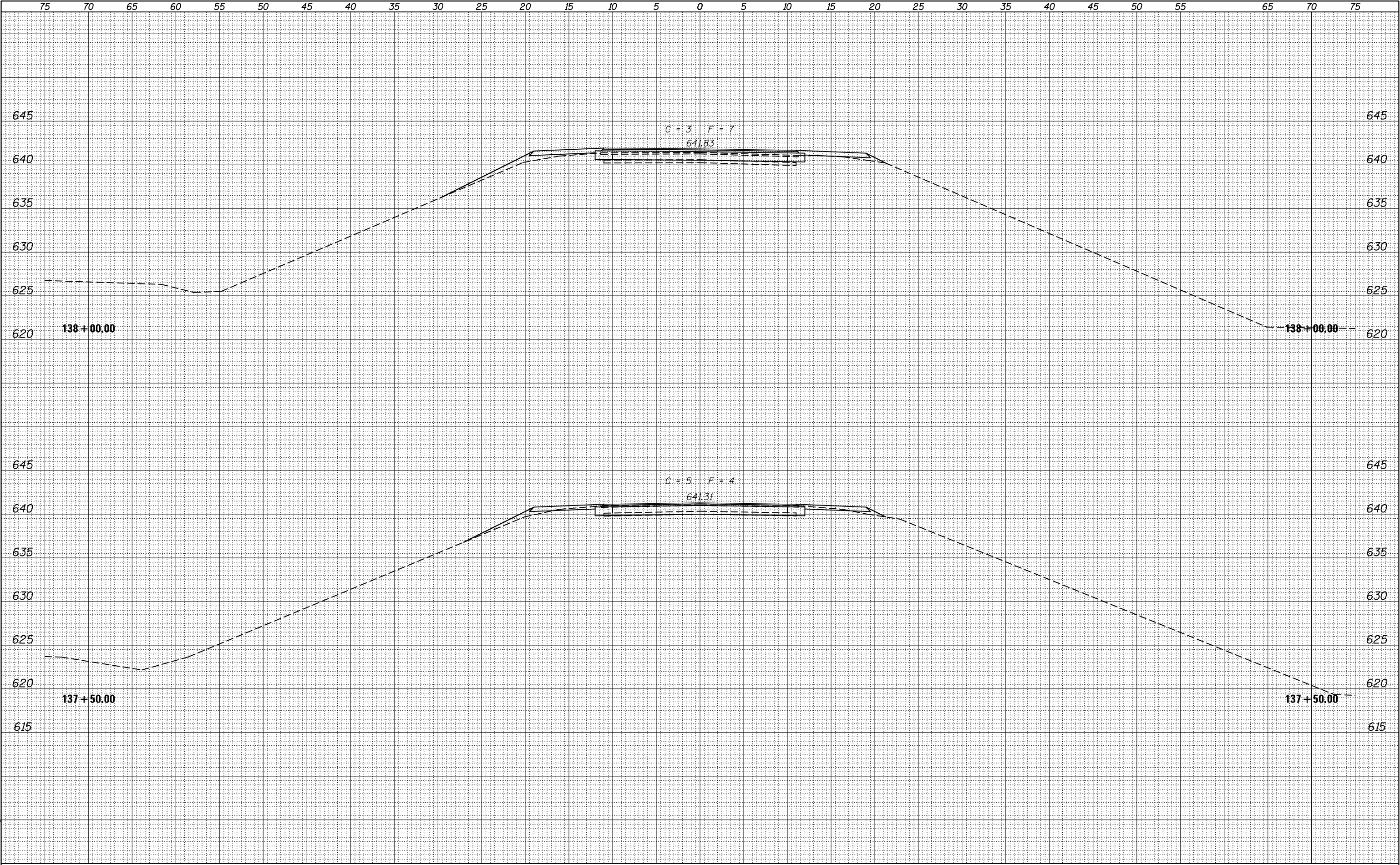
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FINAL	SURVEYED	BY	DATE
SURVEY	PLOTTED		
NOTE BOOK	TEMPLATE		
NO.	AREAS CHECKED		

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

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

USER NAME = cconnor	DESIGNED - G.J.C.	REVISED -
	DRAWN - A.D.S.	REVISED -
PLOT SCALE = 10,0000 ' / in.	CHECKED - R.D.F.	REVISED -
PLOT DATE = 8/13/2019	DATE -	REVISED -

ROADWAY CROSS SECTIONS - C.H. 40

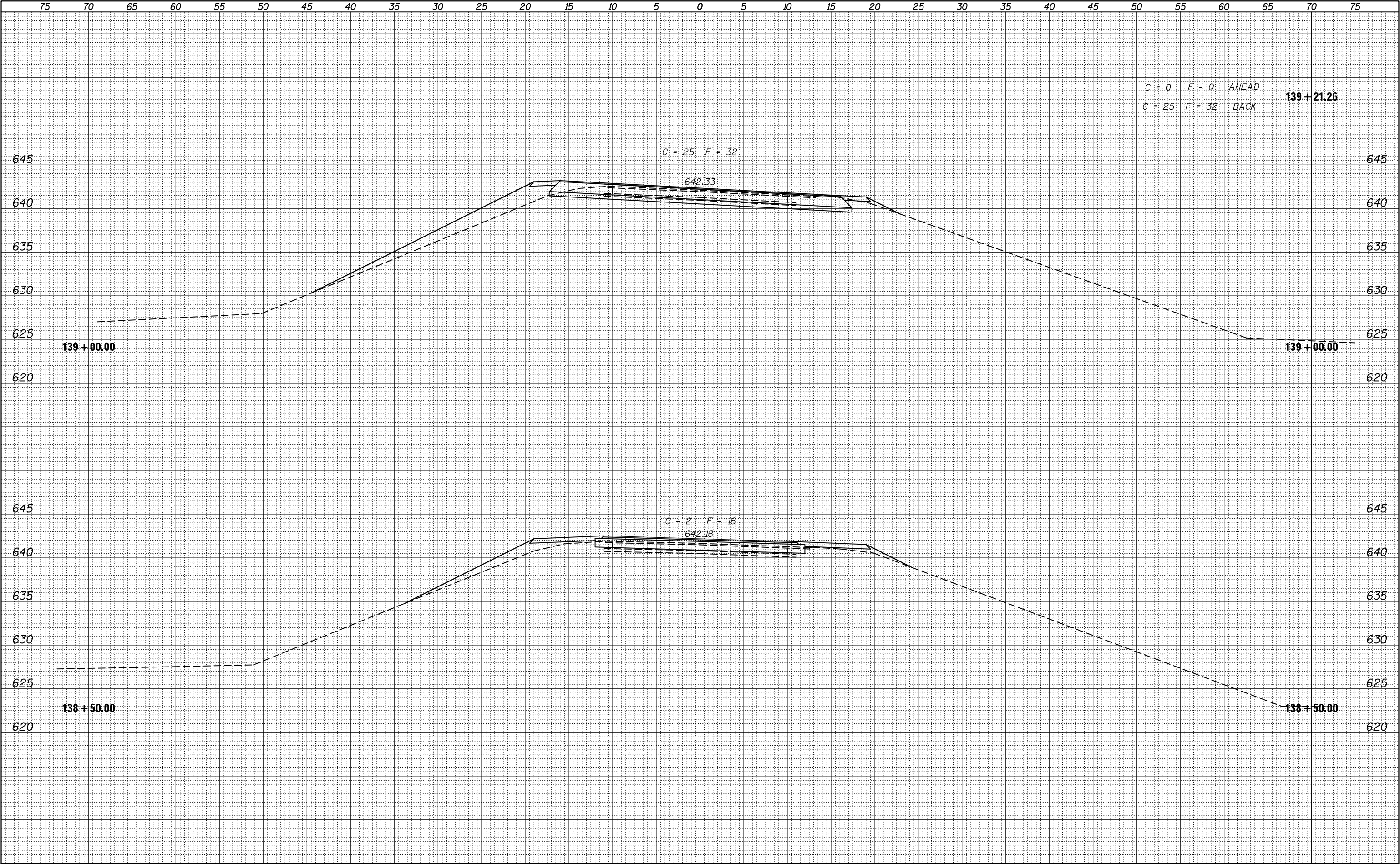
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CH 40	11-00116-BR	IROQUOIS	60	55
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

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

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SURVEY	PLOTTED	BY
NOTE BOOK	TEMPLATE	
NO.	AREAS CHECKED	

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

USER NAME = cconnor	DESIGNED - G.I.C.	REVISED -
	DRAWN - A.D.S.	REVISED -
PLOT SCALE = 10.0000 ' / in.	CHECKED - R.D.F.	REVISED -
PLOT DATE = 8/13/2019	DATE -	REVISED -

ROADWAY CROSS SECTIONS - C.H. 40

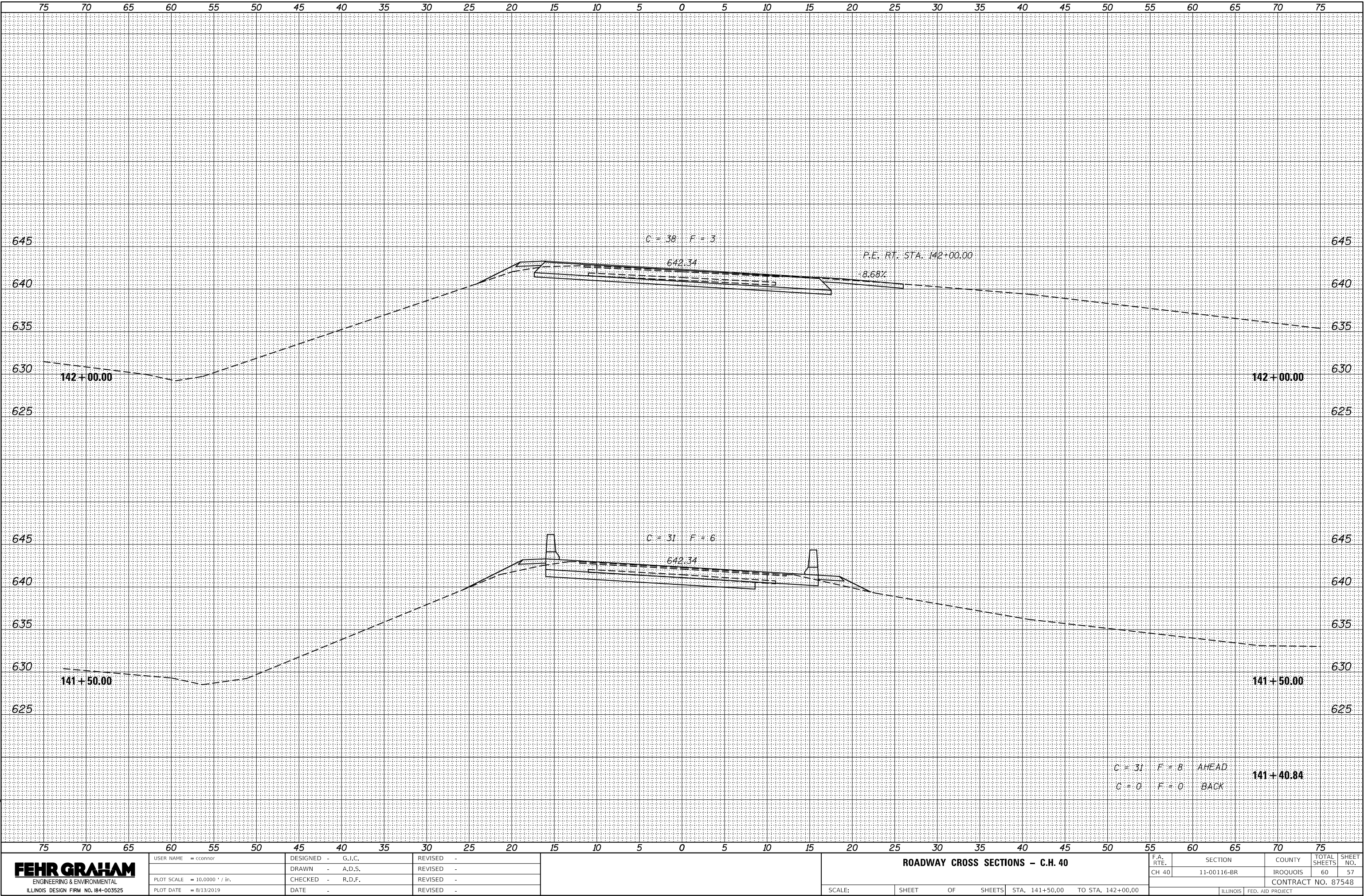
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-BR	IROQUOIS	60	56
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

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

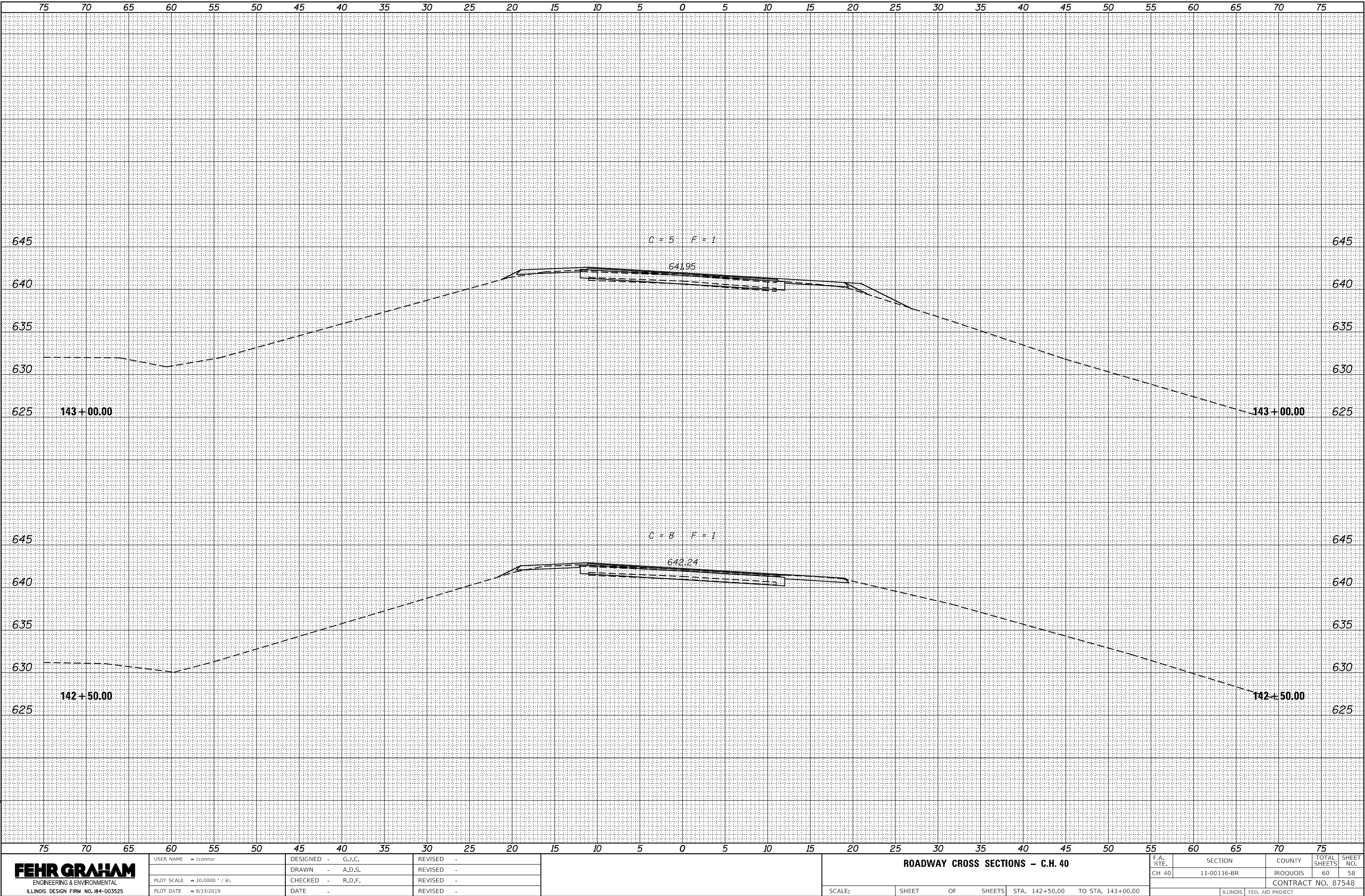
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NOTE BOOK	TEMPLATE		
NO.	AREAS		
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ORIGINAL	SURVEYED	BY	DATE
SURVEY	PLOTTED		
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FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

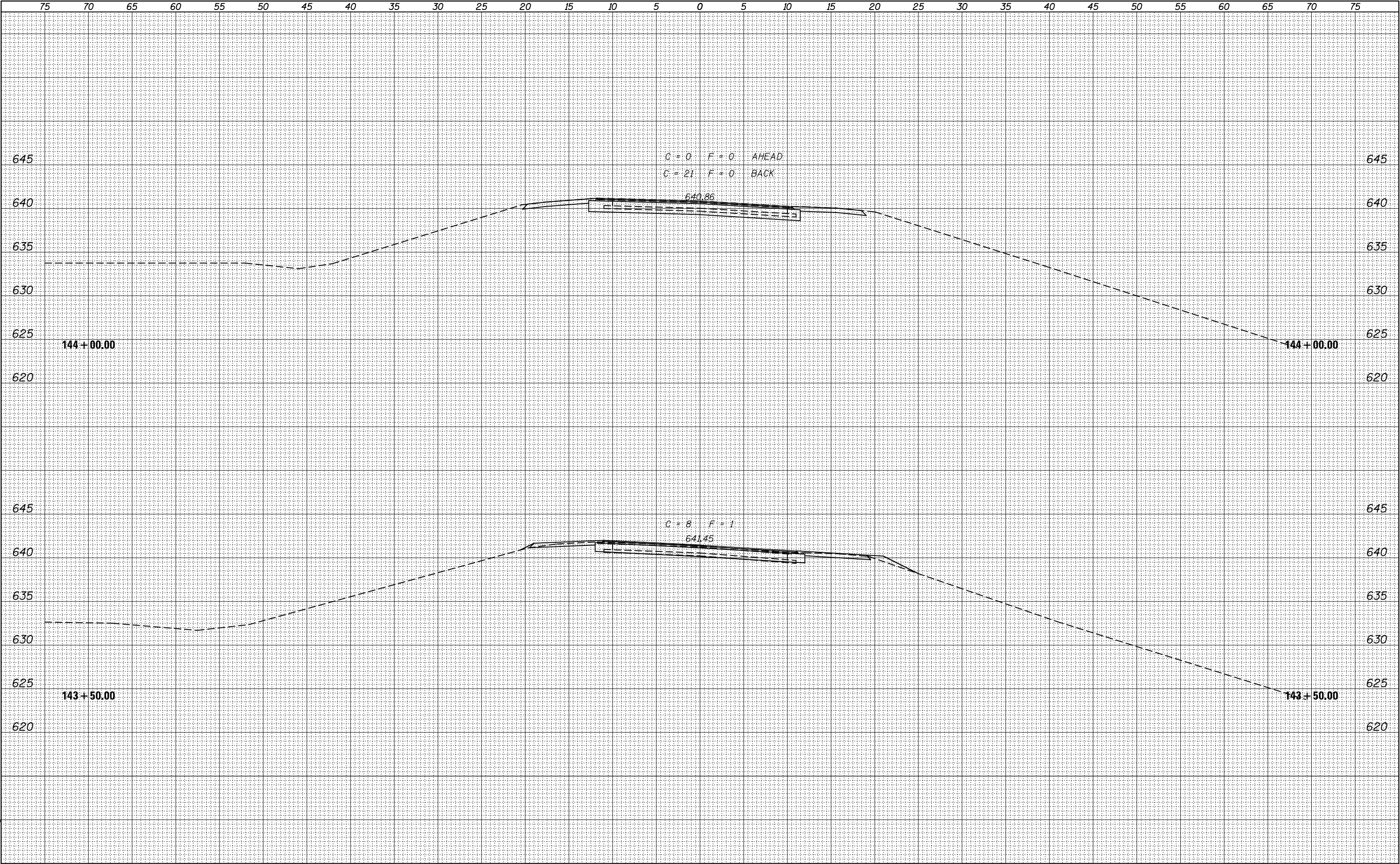
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PLOT DATE = 8/13/2019	DATE -	REVISED -

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-BR	IROQUOIS	60	58
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

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

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

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

USER NAME = cconnor	DESIGNED - G.J.C.	REVISED -
	DRAWN - A.D.S.	REVISED -
PLOT SCALE = 10.0000 ' / in.	CHECKED - R.D.F.	REVISED -
PLOT DATE = 8/13/2019	DATE -	REVISED -

ROADWAY CROSS SECTIONS - C.H. 40

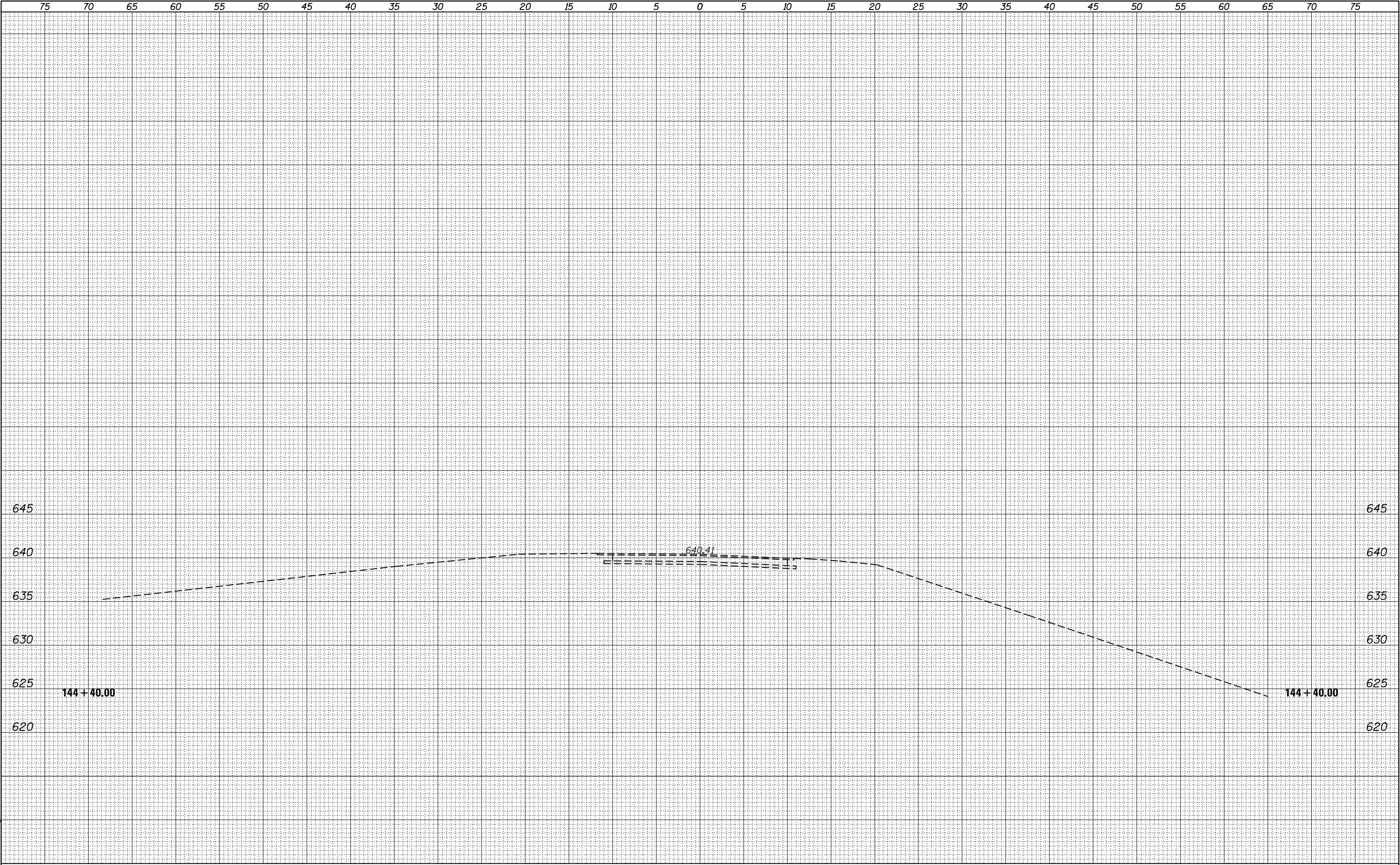
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CH 40	11-00116-BR	IROQUOIS	60	59
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

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

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

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

USER NAME = cconnor	DESIGNED - G.J.C.	REVISED -
	DRAWN - A.D.S.	REVISED -
PLOT SCALE = 10.0000 ' / in.	CHECKED - R.D.F.	REVISED -
PLOT DATE = 8/13/2019	DATE -	REVISED -

ROADWAY CROSS SECTIONS - C.H. 40

SCALE: SHEET OF SHEETS STA. 144+40.00 TO STA. 144+40.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-BR	IROQUOIS	60	60
CONTRACT NO. 87548				
		ILLINOIS	FED. AID PROJECT	