

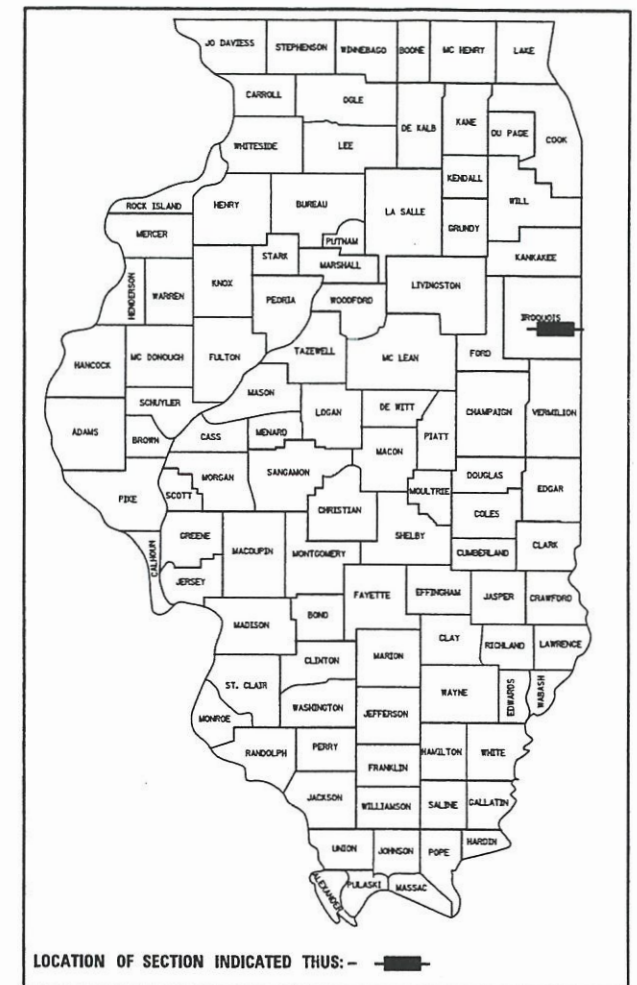
01-17-2020 LETTING ITEM 116

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



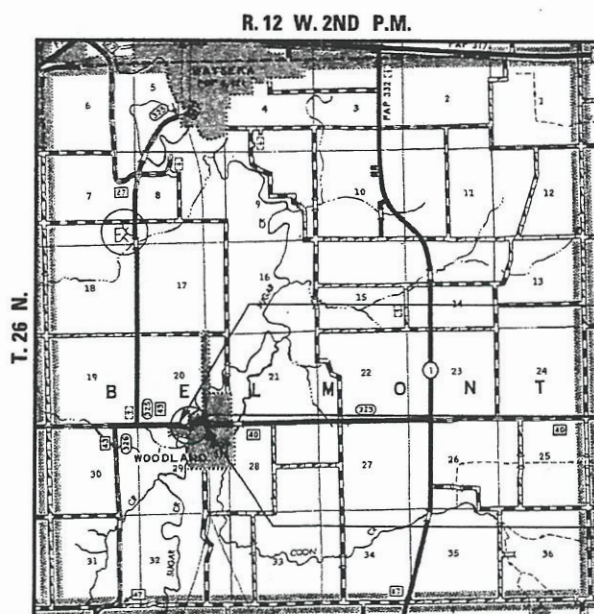
SHEET NO.	TITLE
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES, GENERAL NOTES & TYPICAL SECTIONS
3.	PLAN AND PROFILE SHEET
4.	SHOULDER AND GUARDRAIL DETAIL
5.	BRIDGE APPROACH PAVEMENT CONNECTOR
6-53	BRIDGE PLANS
54-60	STATION CROSS SECTIONS

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



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

ILLINOIS
IOWA
WISCONSIN

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

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
PASSED	September 5, 2019
RELEASED FOR BID	September 5, 2019
REVIEW	September 5, 2019

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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.; $E^{\Delta C}$ = 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

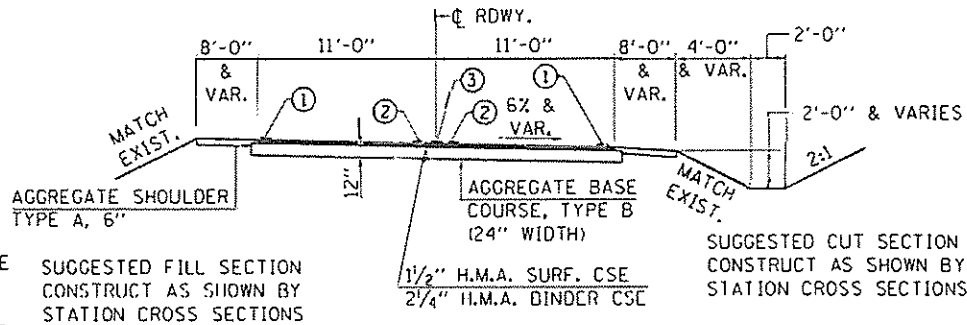
TREE REMOVAL, ACRES - 0.1 ACRE

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



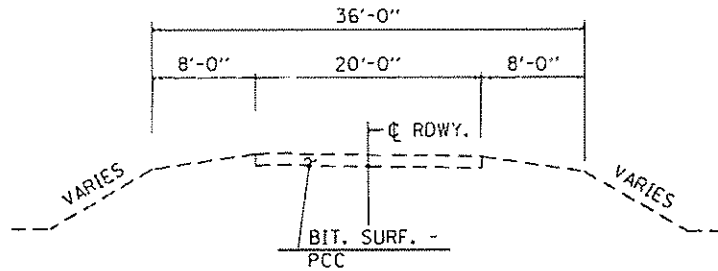
TYPICAL PROPOSED CROSS SECTION

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

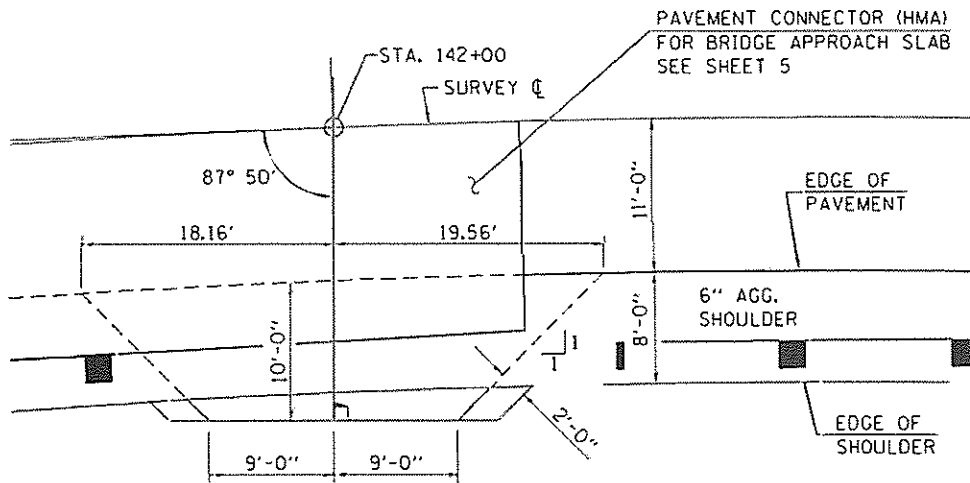
TRANSITION FROM EXISTING ROADWAY STA. 137+00.00 TO PROPOSED NORMAL CROWN ROADWAY STA. 137+50.00.

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.



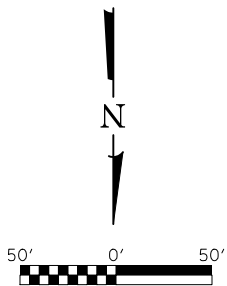
TYPICAL EXISTING CROSS SECTION



FIELD ENTRANCE DETAIL

P.E. RT. STA. 142+00

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

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

ELLA M. SHARP

GRASS

CURVE DATA (EXIST.)

PI STA. = 141+61.48
Δ = 36° 35' 30"
D = 6° 04'
R = 944.47'
T = 312.28'
L = 603.16'
E = 50.28'
S.E. = 0.06 FT./FT. (Trans. Length = 144')
P.C. STA. = 138+49.20
P.T. STA. = 144+52.36

GEORGE A. BAUER &
ALICE D. BAUER

EXISTING S.N. 038-0056

STA. 140+31.05 - THREE SPAN NON-CONTINUOUS COMPOSITE STEEL
WIDE FLANGE BEAM BRIDGE ON STUB CONCRETE ABUTMENTS WITH
CONCRETE PILES & REINFORCED CONCRETE SOLID WALL PIERS
WITH SPREAD FOOTINGS. SPANS @ 72'-0", 72'-0", 72'-0";
219'-1" BK.-BK. ABUTS. ALONG BRIDGE CHORD; 32'-0" O.-O. DECK;
NO SKEW

FOR PROPOSED S.E. TRANSITIONS SEE
PROPOSED TYPICAL SECTION ON SHEET 2

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

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

GUTTER REMOVAL

RT. STA. 137+91 TO RT. STA. 139+19 = 128 FOOT
RT. STA. 141+43 TO RT. STA. 144+00 = 257 FOOT
TOTAL = 385 FOOT

ENTRANCE TO BE BUILT

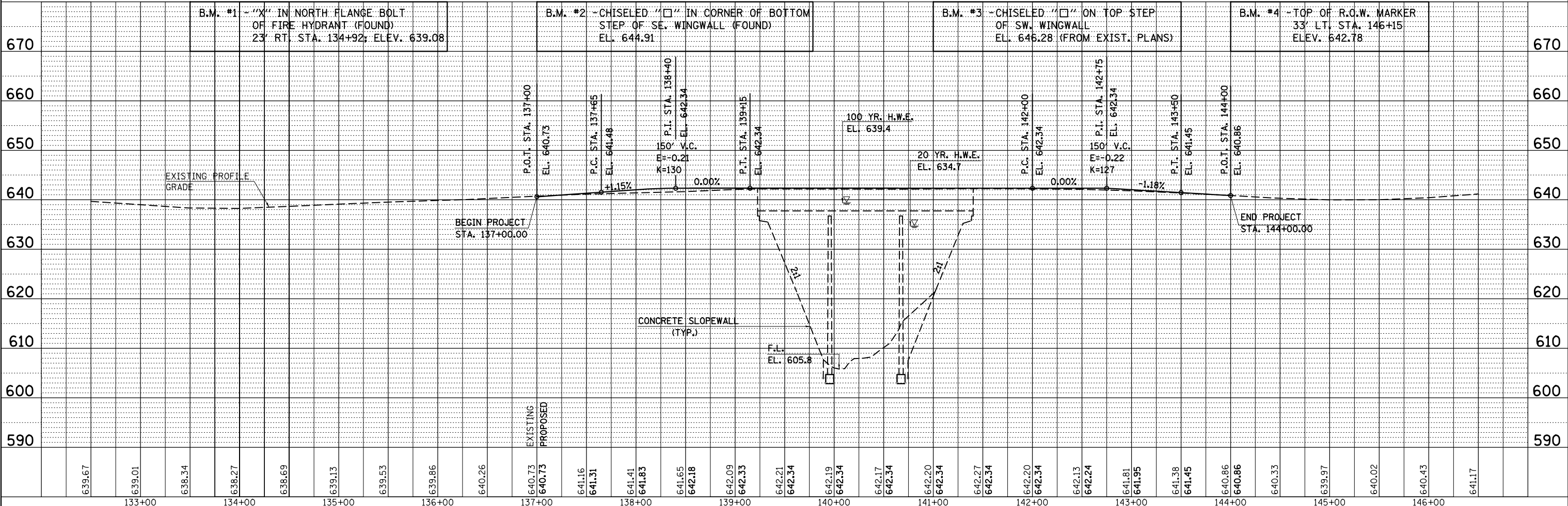
RT. STA. 142+00, F.E., -8.68%, 18' ROADBED
QUANTITIES INCLUDED IN THOSE LISTED

RT. STA. 137+93
REMOVE INLET, PIPE CULVERT
AND HEADWALL.
COST INCLUDED WITH "EARTH
EXCAVATION"

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

GEORGE A. BAUER &
ALICE D. BAUER

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



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

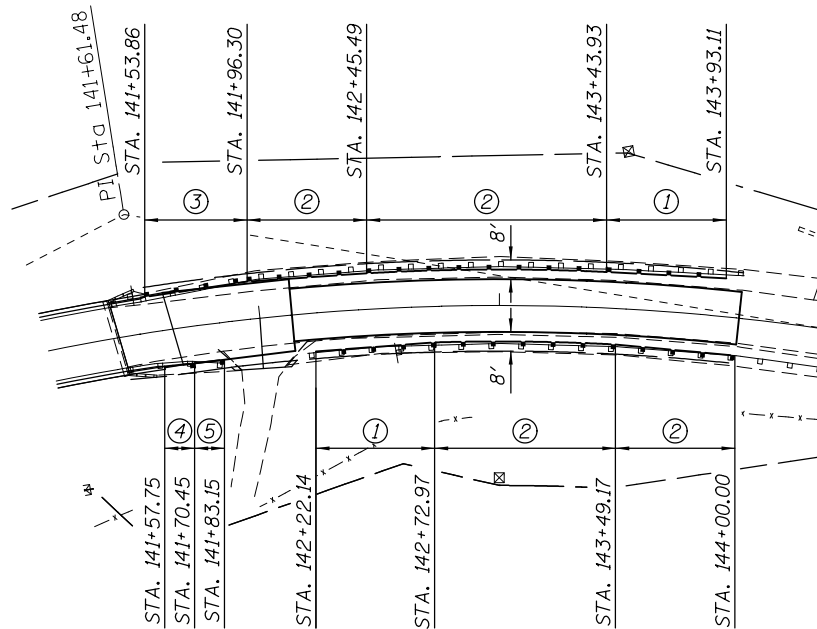
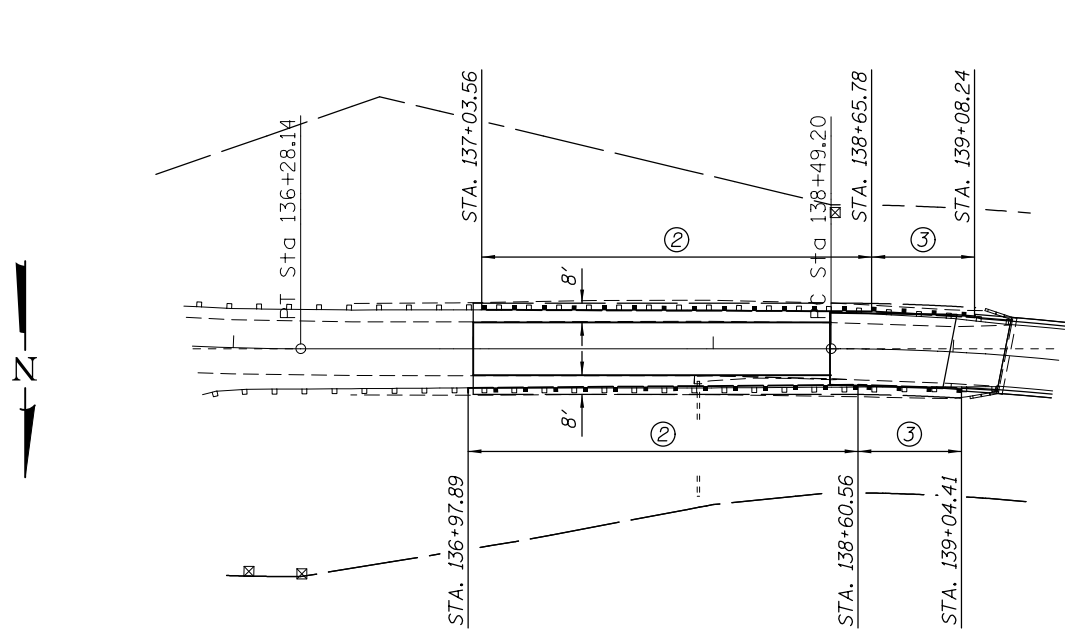
USER NAME = cconnor	DESIGNED - G.J.C.	REVISED -
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PLOT DATE = 8/13/2019	CHECKED - R.D.F.	REVISED -
	DATE -	REVISED -

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				

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

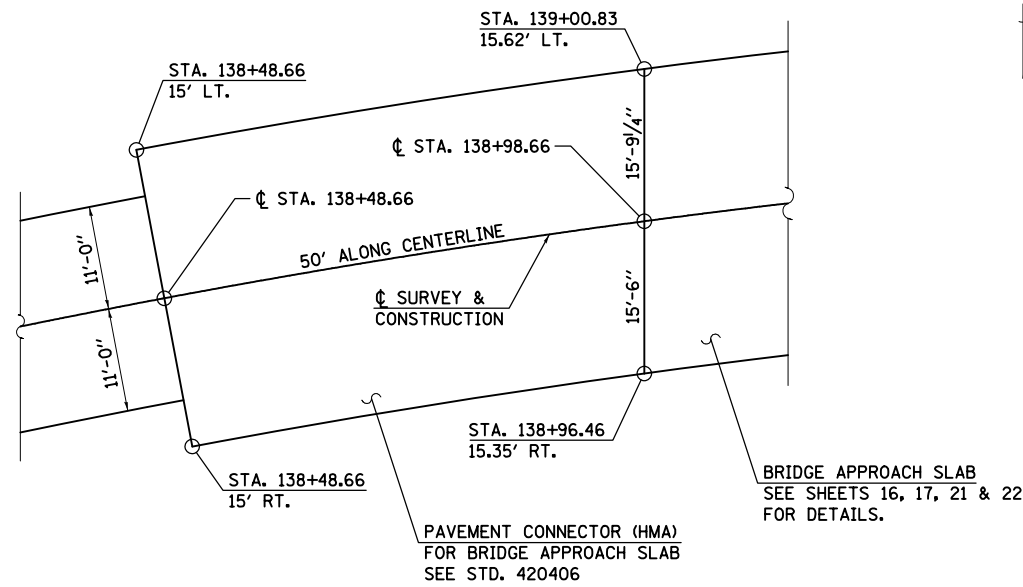
- ① TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT
- ② STEEL PLATE BEAM GUARDRAIL, TYPE A
- ③ TRAFFIC BARRIER TERMINAL, TYPE 6
- ④ TRAFFIC BARRIER TERMINAL, TYPE 5
- ⑤ TRAFFIC BARRIER TERMINAL, TYPE 2

MODEL: Default
FILE: 11-138-ROADWAY\004-SHLD.DGN

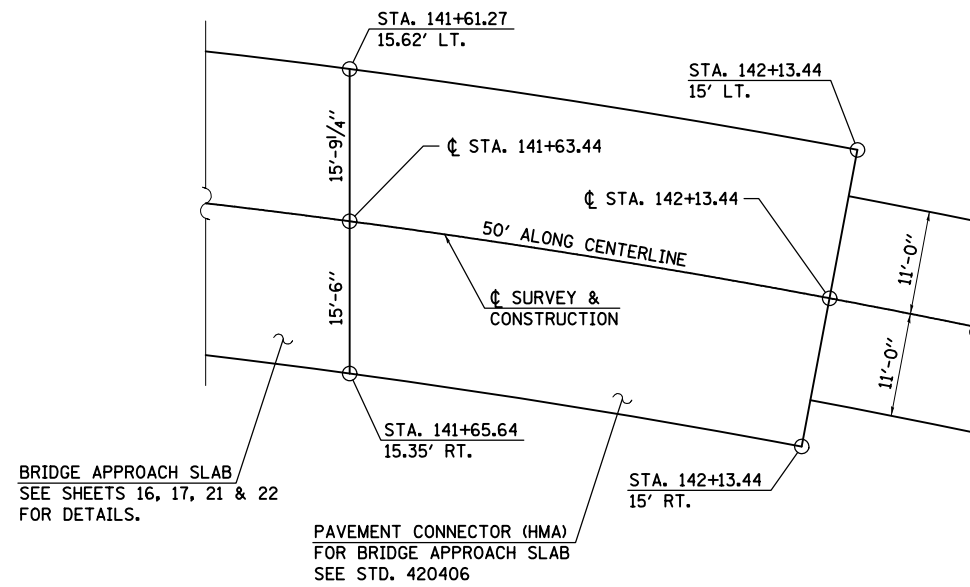
USER NAME = cconnor	DESIGNED - G.J.C.	REVISED -
	DRAWN - A.D.S.	REVISED -
PLOT SCALE = 40,0000 ' / in.	CHECKED - R.D.F.	REVISED -
PLOT DATE = 8/13/2019	DATE -	REVISED -

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				



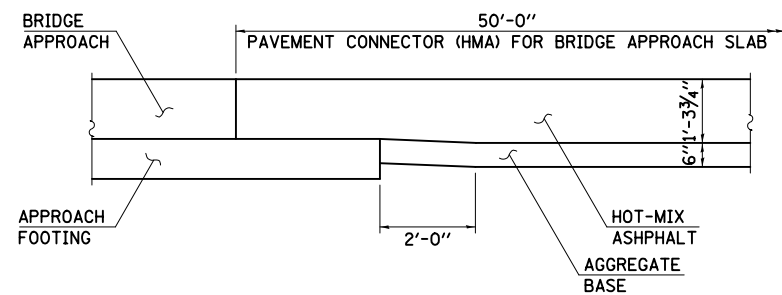
EAST APPROACH



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

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."

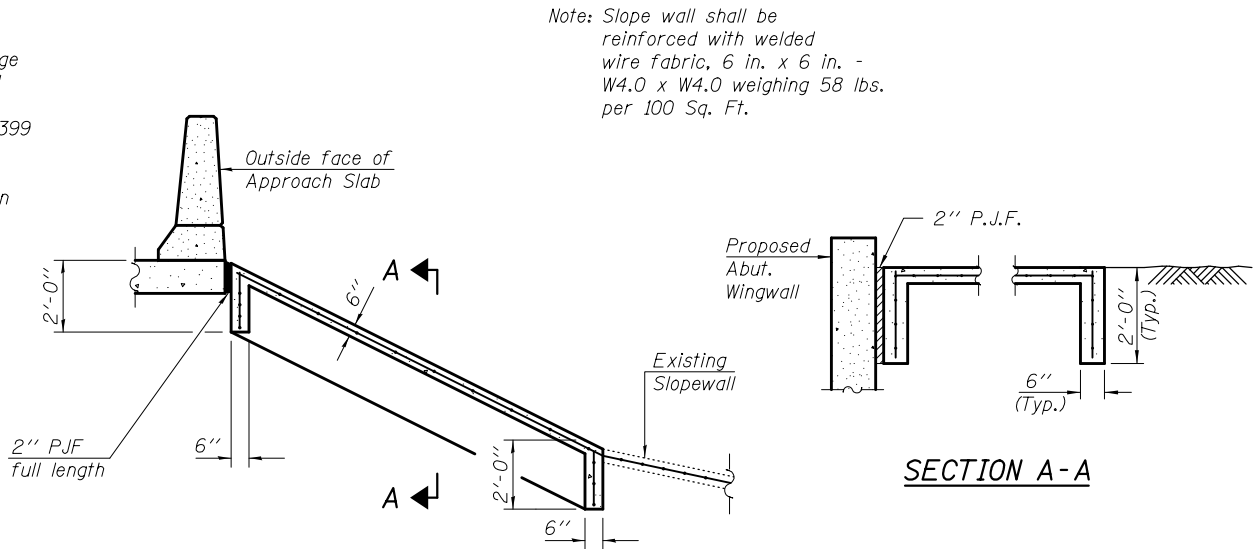
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

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.

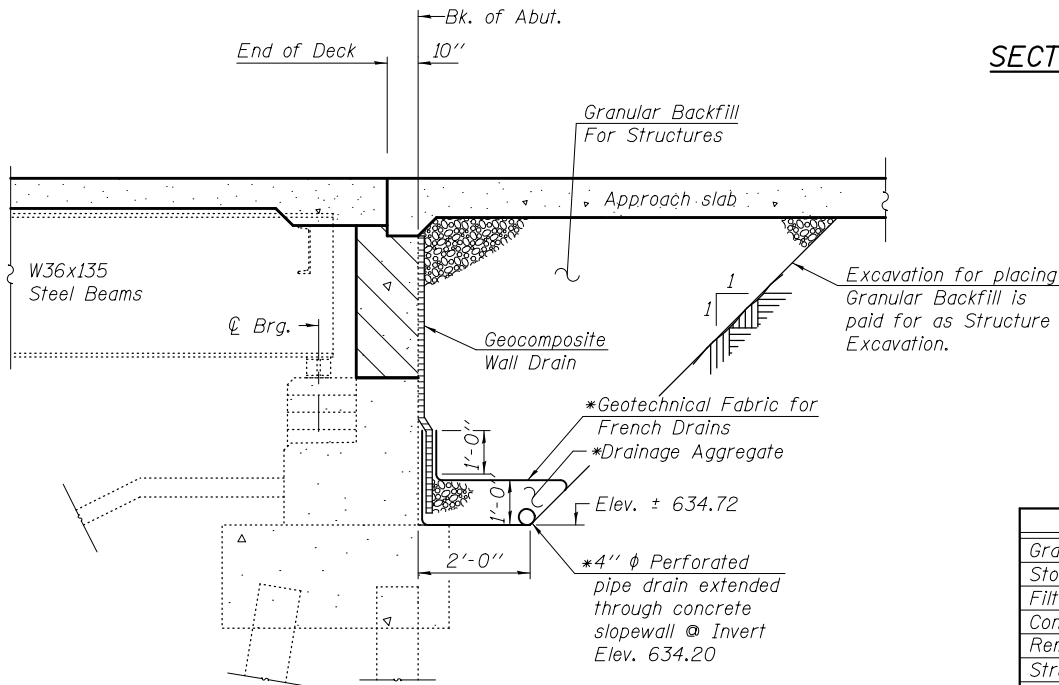
The existing steel bridge rail is patterned after the current Steel Railing, Type 2399 used by the Illinois Department of Transportation. Sheet 48 of 48 provides information relative to the current Steel Railing, Type 2399 used by the Department.

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



* 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.



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.

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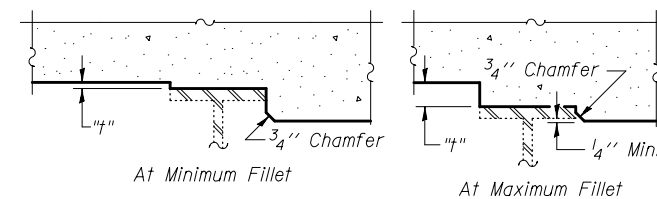
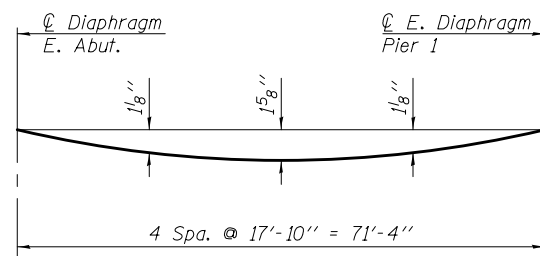
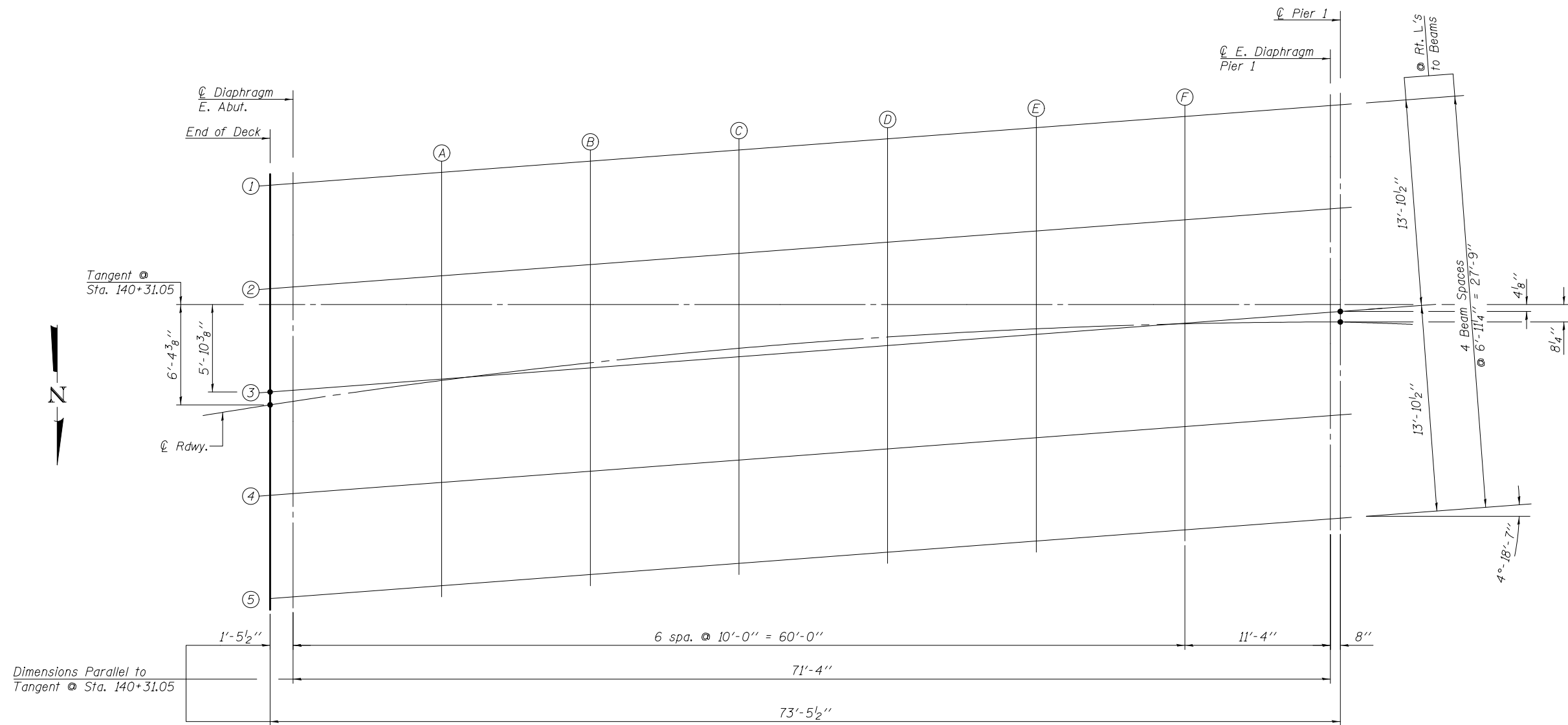
FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. IB4-003525

FEHR GRAHAM PROJECT NUMBER: 11-138

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 -

GENERAL NOTES AND BILL OF MATERIALS	
STRUCTURE NO. 038-0056	
SHEET 2 OF 48	SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	7
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				



FILLET HEIGHTS

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

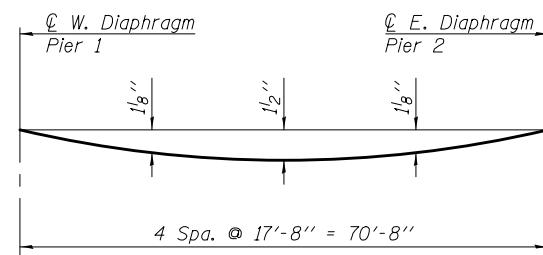
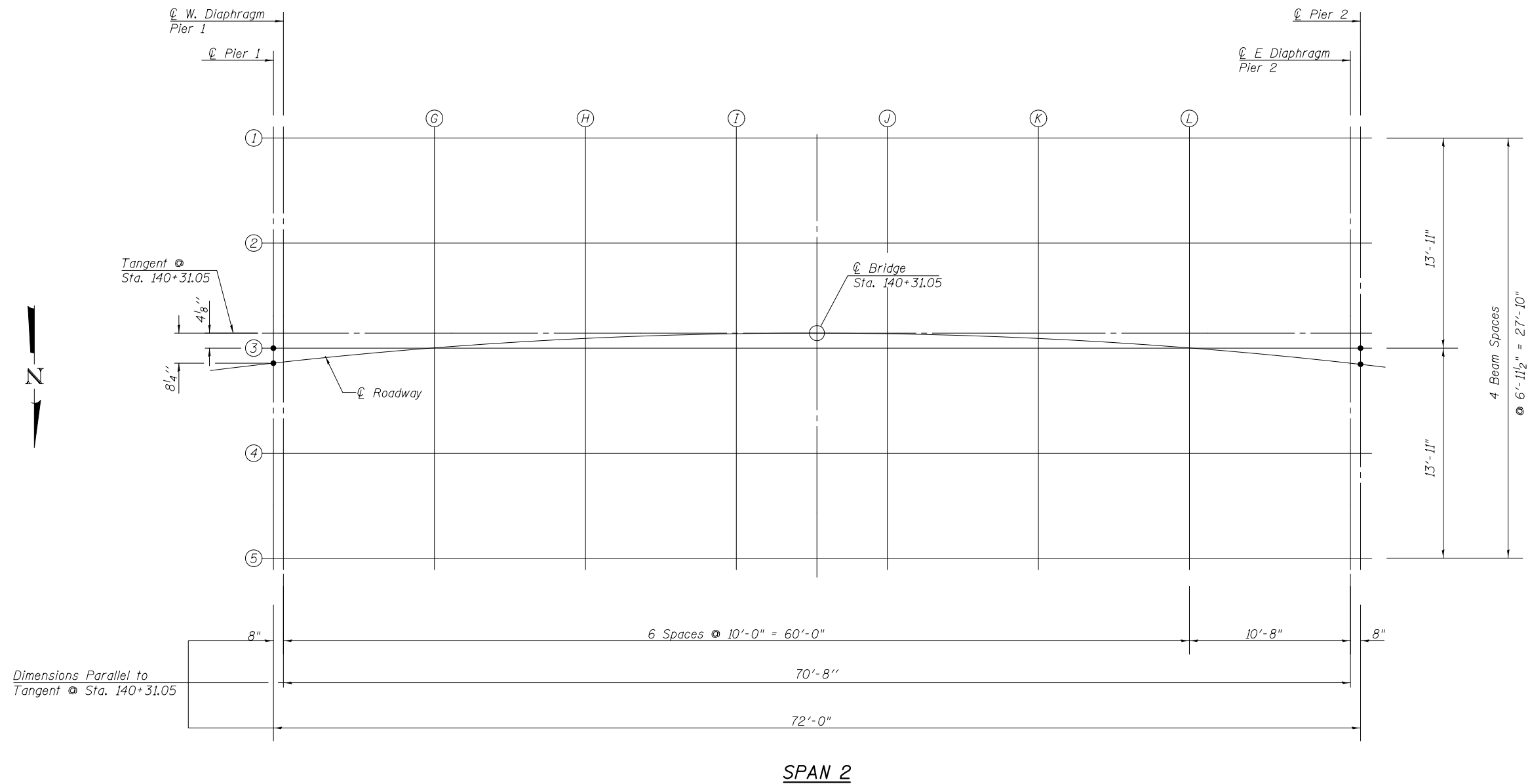
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF DECK	139+20.046	11.000	641.680	641.680
⊘ DIAPHRAGM E. ABUT.	139+21.532	11.000	641.680	641.680
A	139+31.712	11.000	641.680	641.733
B	139+41.881	11.000	641.680	641.780
C	139+52.039	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

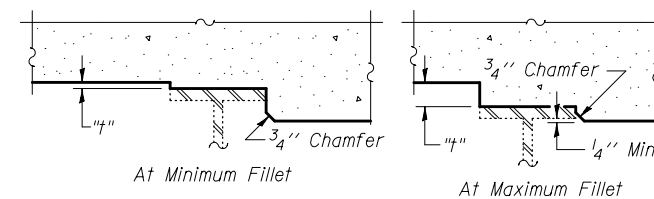
NORTH OUTSIDE EDGE OF DECK

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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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

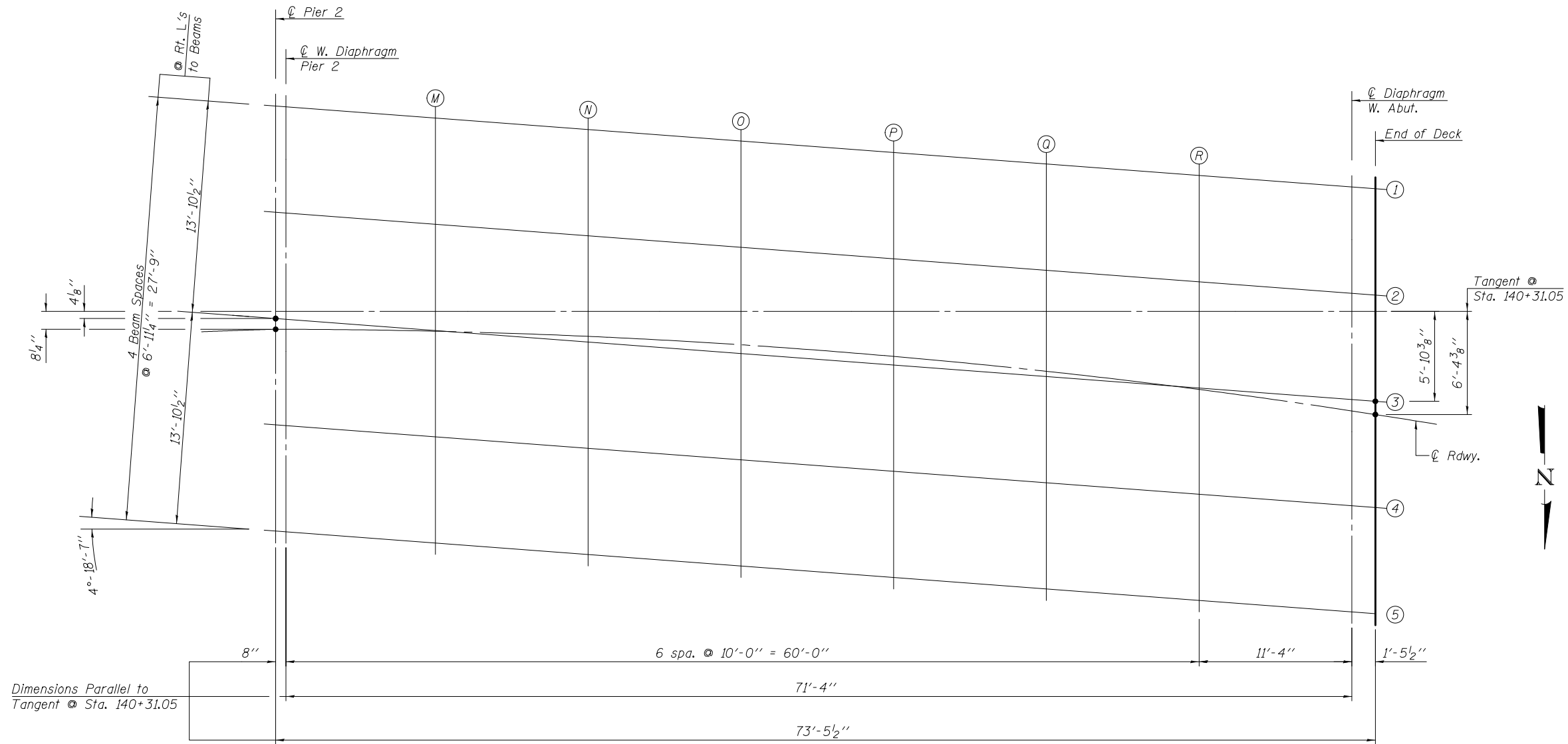
<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☒ PIER 1	139+94.617	11.000	641.680	641.680
☒ W. DIAPHRAGM PIER 1	139+95.292	11.000	641.680	641.680
G	140+05.415	11.000	641.680	641.731
H	140+15.535	11.000	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

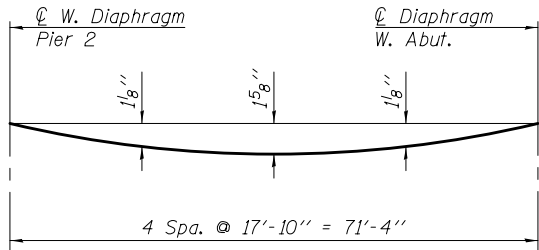
<i>Location</i>	<i>Station</i>	<i>Offset</i>	<i>Theoretical Grade Elevations</i>	<i>Theoretical Grade Elevations Adjusted For Dead Load Deflection</i>
☒ PIER 1	139+94.483	14.417	641.475	641.475
☒ W. DIAPHRAGM PIER 1	139+95.160	14.417	641.475	641.475
G	140+05.321	14.417	641.475	641.526
H	140+15.478	14.417	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



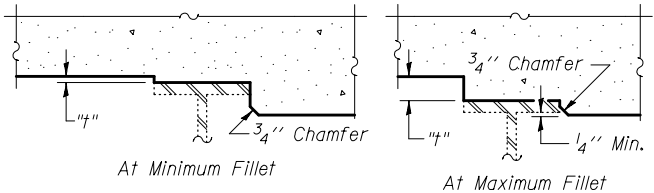
SPAN 3



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				

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

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌒ 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

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌒ 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

⌒ ROADWAY

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌒ 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

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌒ 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

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌒ 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

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
⌒ 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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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

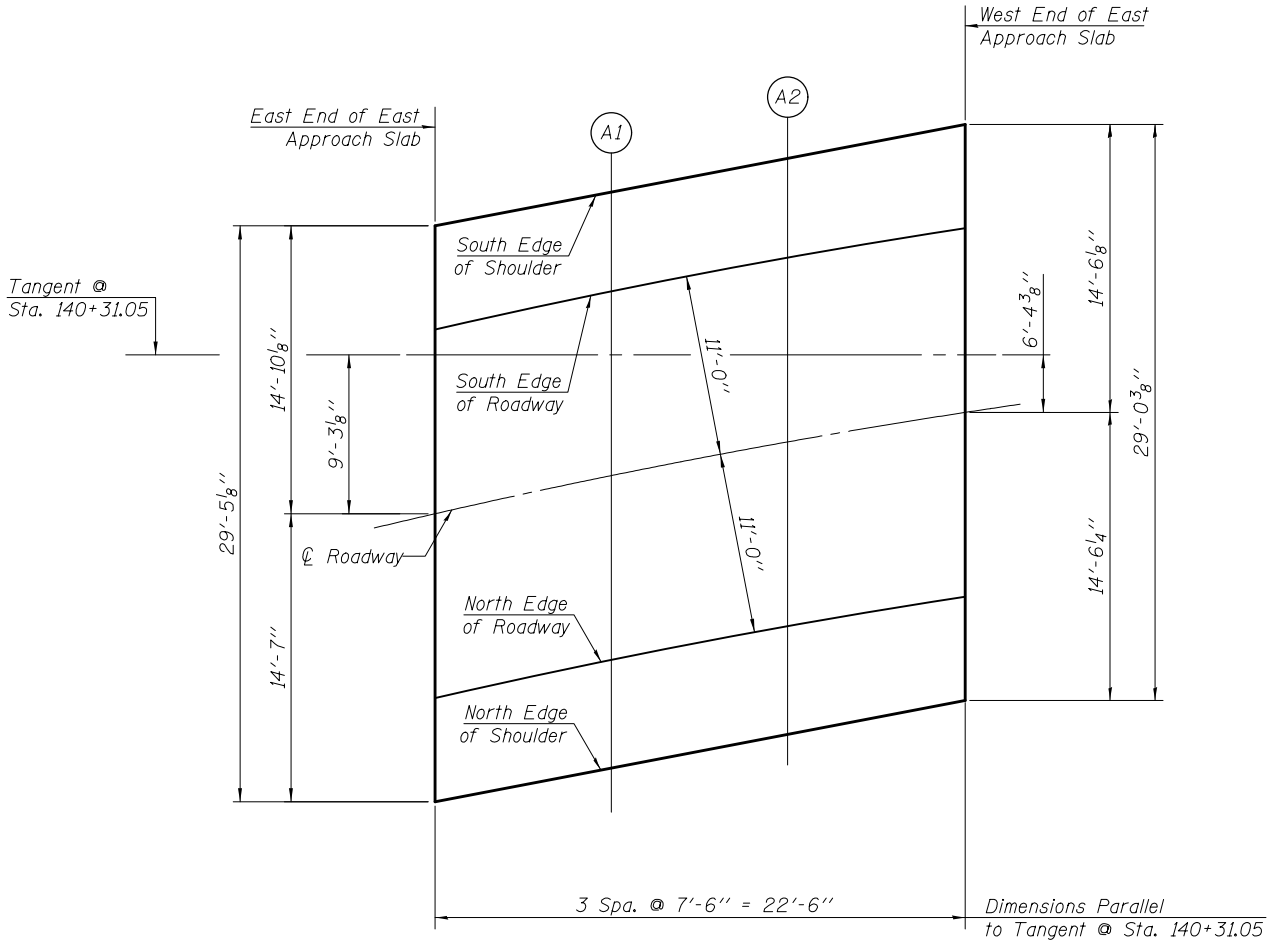
Location	Station	Offset	Theoretical Grade Elevations
E. End of E. Approach Slab	138+98.659	0.000	642.330
A1	139+06.229	0.000	642.337
A2	139+13.791	0.000	642.340
W. End of E. Approach Slab	139+21.345	0.000	642.340

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



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

USER NAME = cconnor

DESIGNED - J.A.M.

CHECKED - A.R.K.

PLOT SCALE = 0.1667 ' / in.

DRAWN - A.D.S.

PLOT DATE = 8/13/2019

CHECKED - J.A.M. & A.R.K.

REVISED -

REVISED -

REVISED -

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				

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

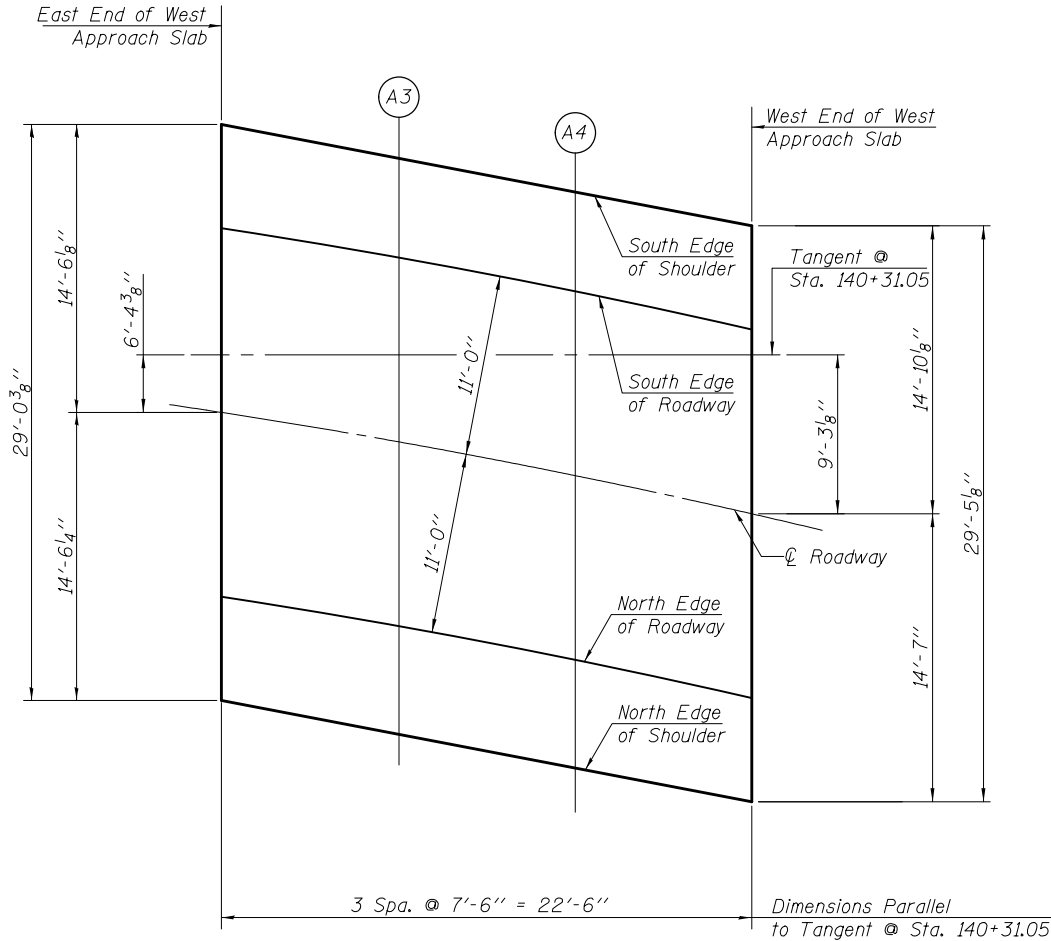
Location	Station	Offset	Theoretical Grade Elevations
E. End of W. Approach Slab	141+40.755	0.000	642.340
A3	141+48.309	0.000	642.340
A4	141+55.871	0.000	642.340
W. End of W. Approach Slab	141+63.441	0.000	642.340

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

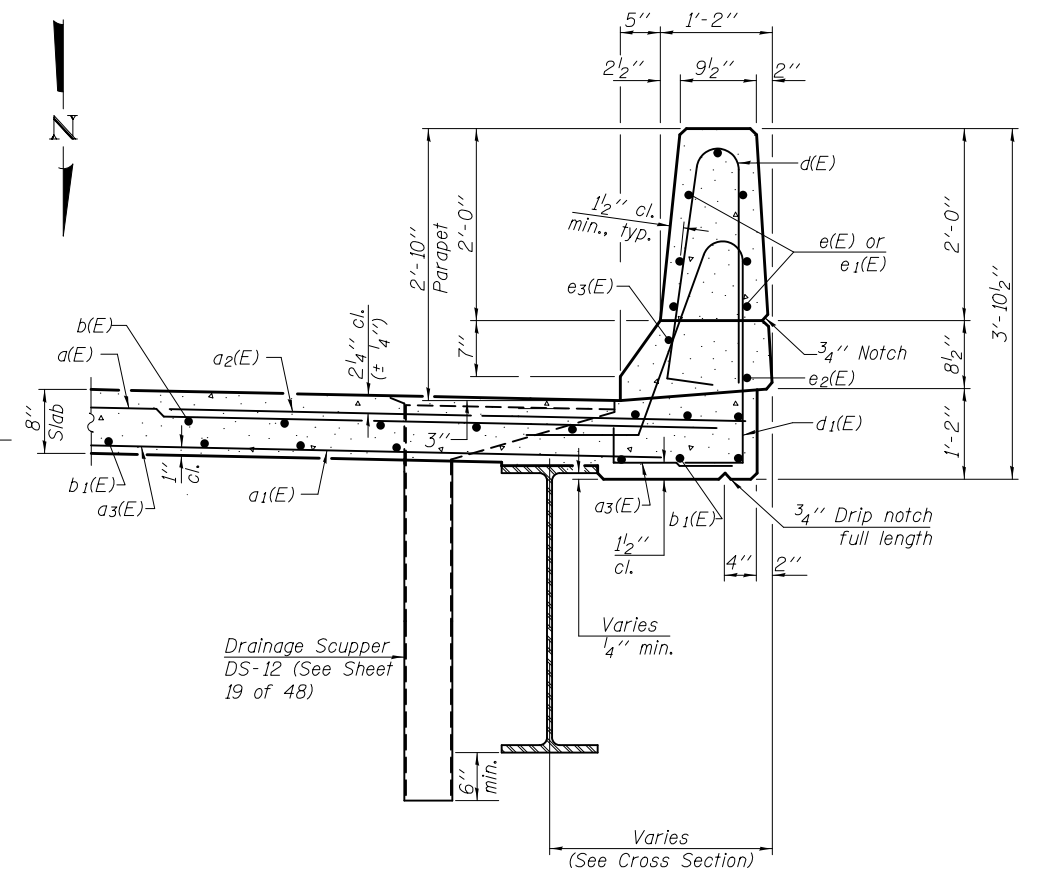
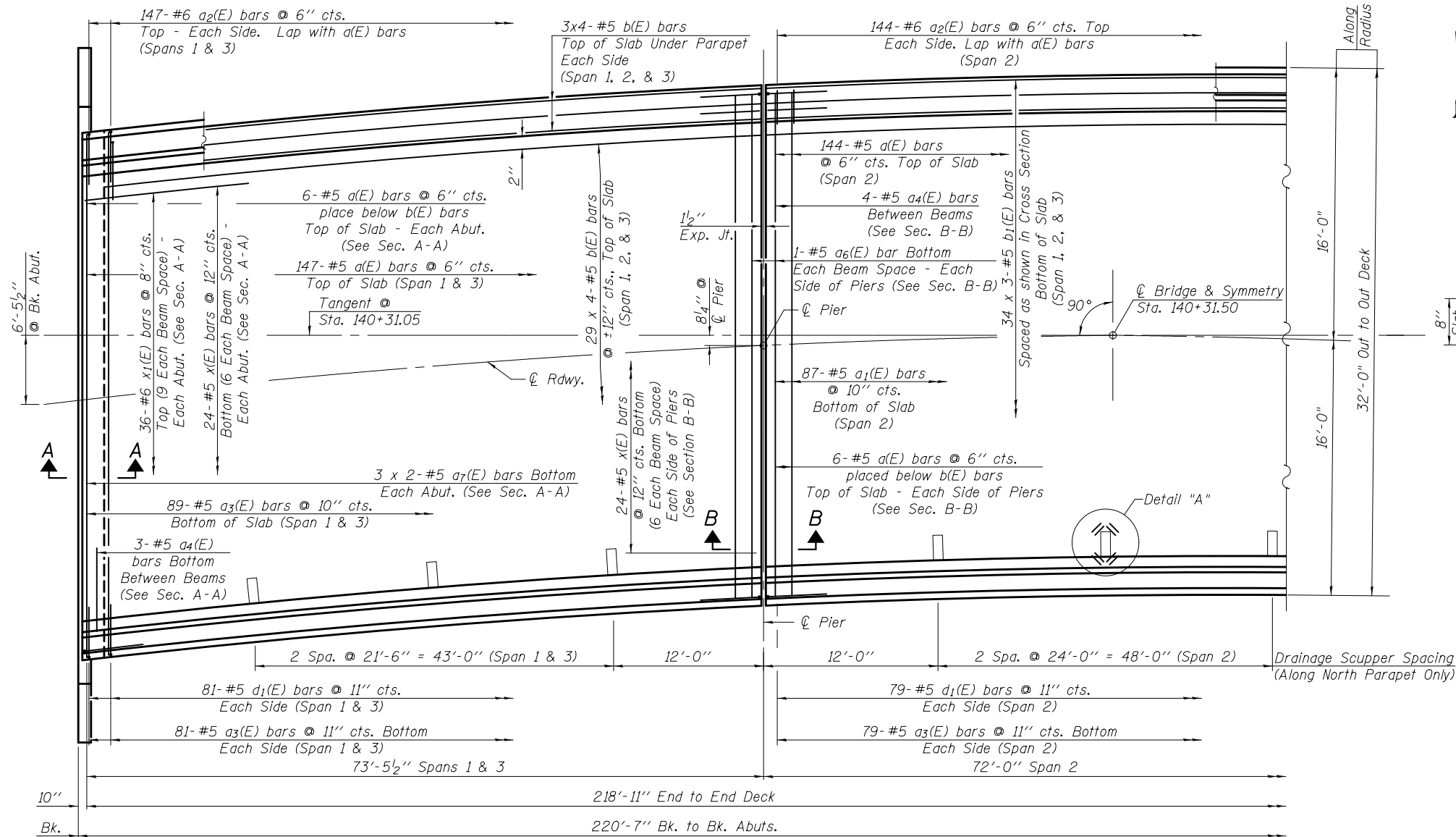
USER NAME = cconnor	DESIGNED - J.A.M.	REVISED -
	CHECKED - A.R.K.	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - A.D.S.	REVISED -
PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -

**TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 038-0056**

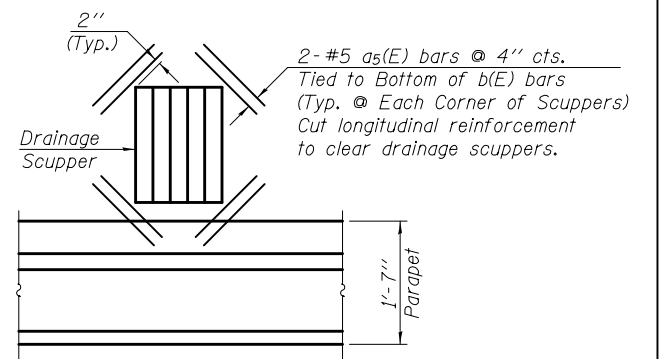
SHEET 13 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	18
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

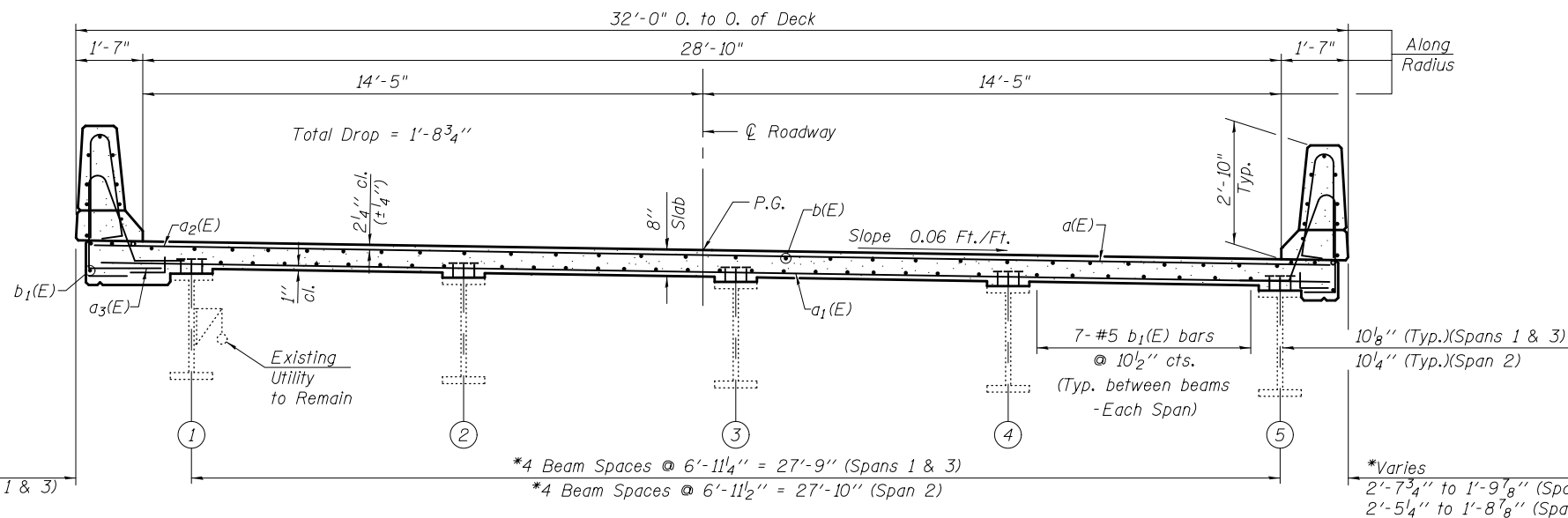
FEHR GRAHAM PROJECT NUMBER: 11-138



SECTION THRU PARAPET



DETAIL "A"

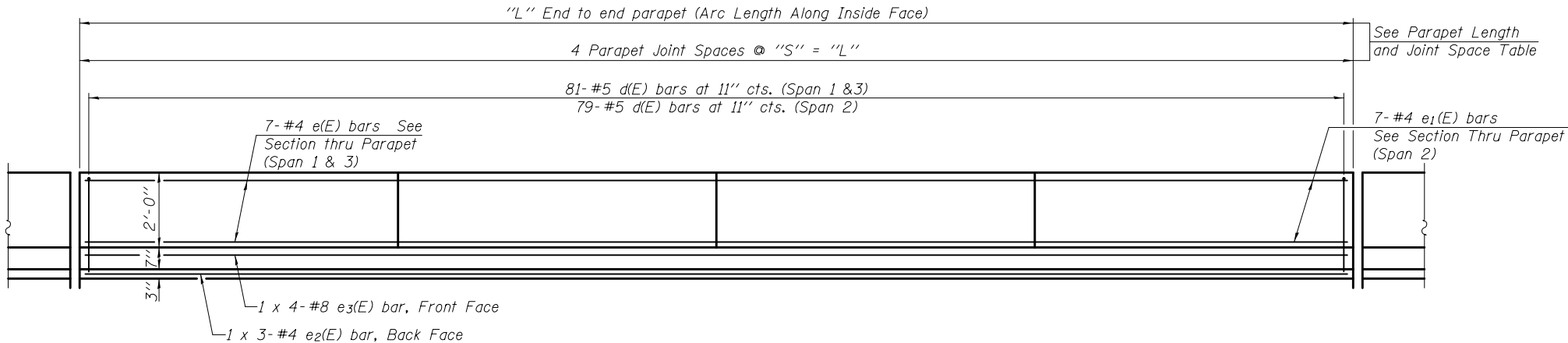


MINIMUM BAR LAP
#5 bar = 2'-6"

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.

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	19
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				



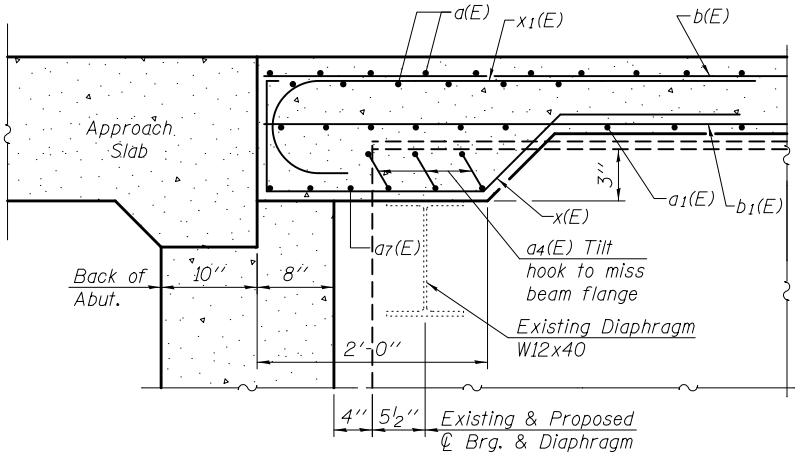
PARAPET LENGTH AND JOINT SPACING

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

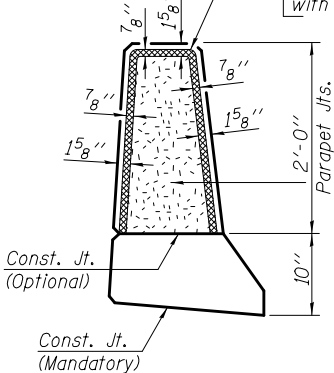
(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"



SECTION A-A

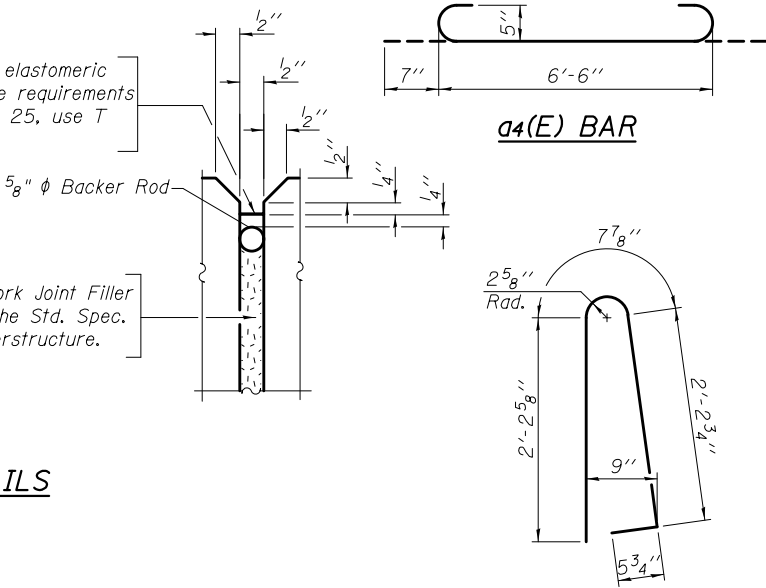
(Horizontal dimensions shown are at Rt. L's to Abutment)

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.

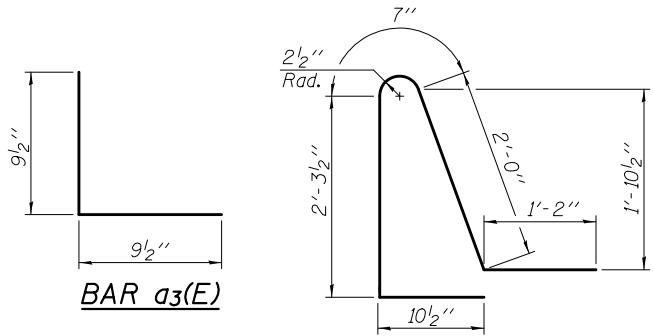


PARAPET JOINT DETAILS

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

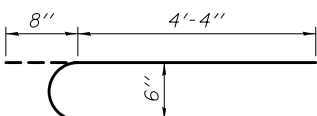


BAR d(E)

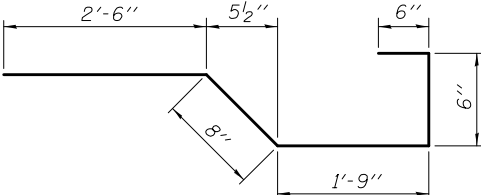


BAR a3(E)

BAR d1(E)



BAR x1(E)

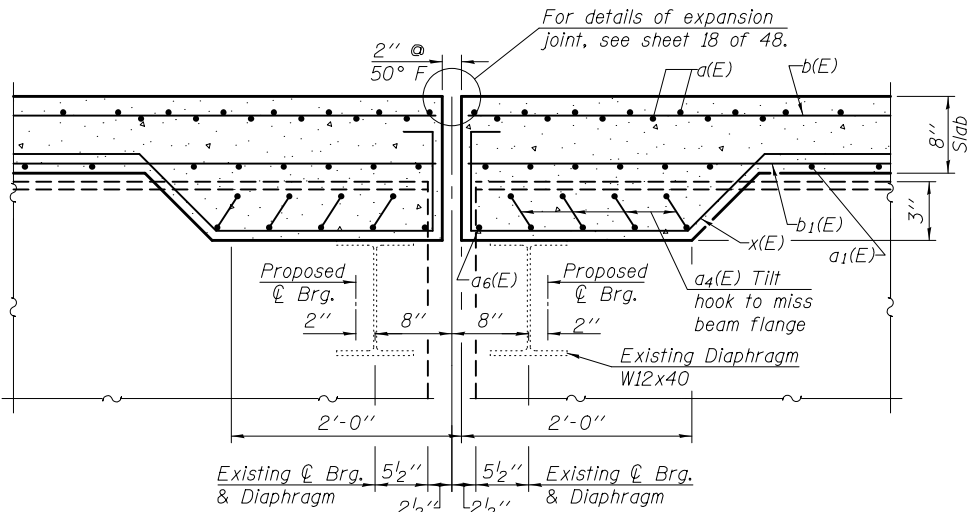


BAR x(E)

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"	J
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"	J
x1(E)	72	#6	5'-0"	J
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.



SECTION B-B

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

S-D1

8-31-12

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 -

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 038-0056

SHEET 15 OF 48 SHEETS

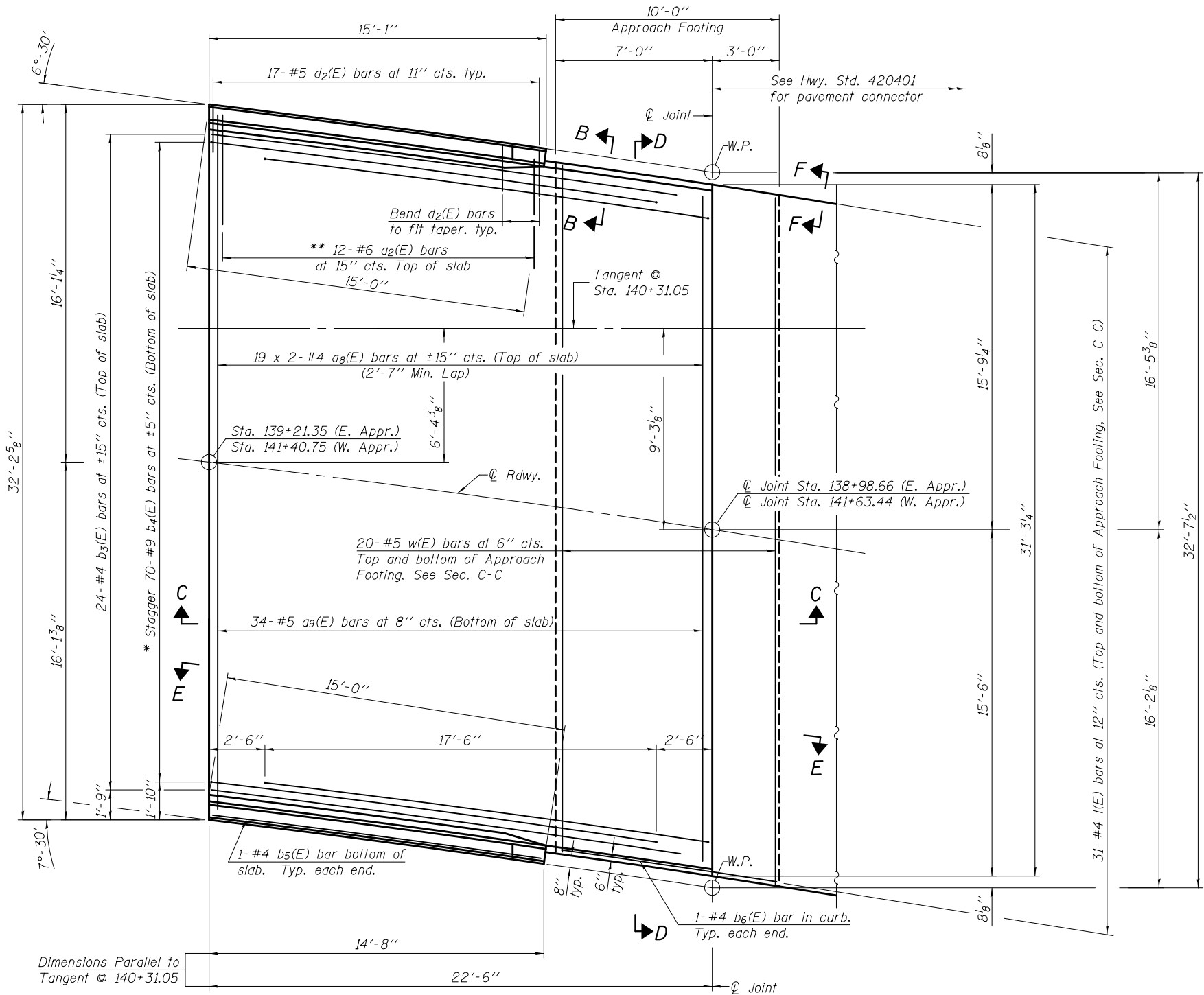
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	20
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FEHR GRAHAM PROJECT NUMBER: 11-138

MODEL: Default
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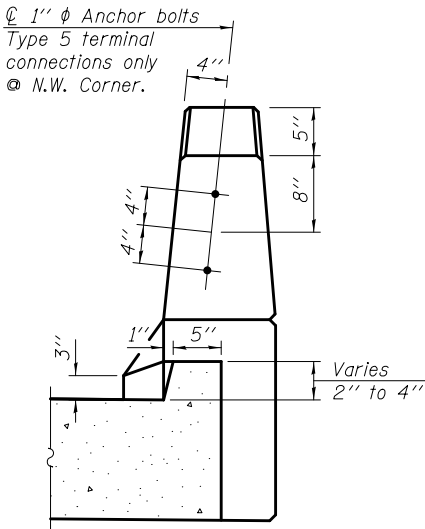
Note: Bars indicated thus, 19 x 2-#5 etc. indicates
19 lines of bars with 2 lengths per line.

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 $\varnothing$ Rdwy.



PLAN

* Tilt #9 b₄(E) bars as required to maintain clearance.
** Space between a(E) bars, typ. ea. parapet.



VIEW B-B

(Sheet 1 of 2)

MODEL: Default
FILE NAME: ...0380056-016-017-APPROACH-DTL.dgn

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

USER NAME = cconnor
PLOT SCALE = 0.1667 ' / in.
PLOT DATE = 8/13/2019

DESIGNED - J.A.M.
CHECKED - A.R.K.
DRAWN - A.D.S.
CHECKED - J.A.M. & A.R.K.

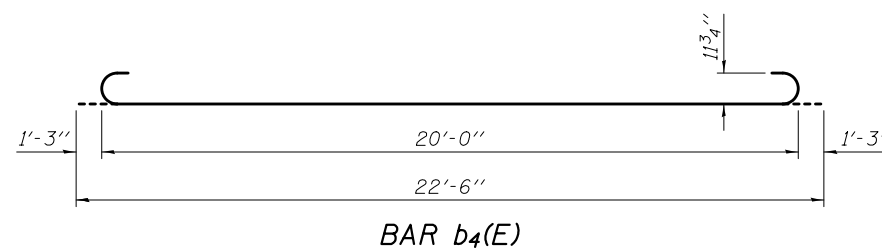
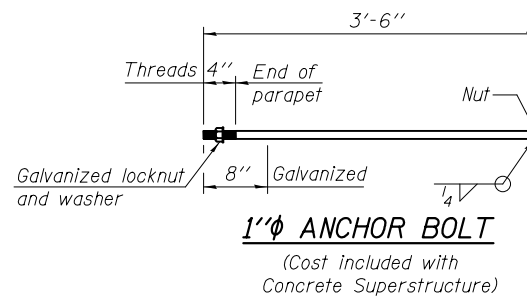
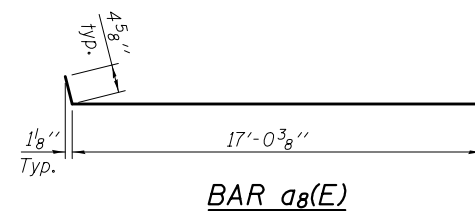
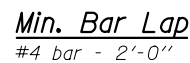
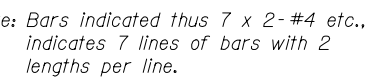
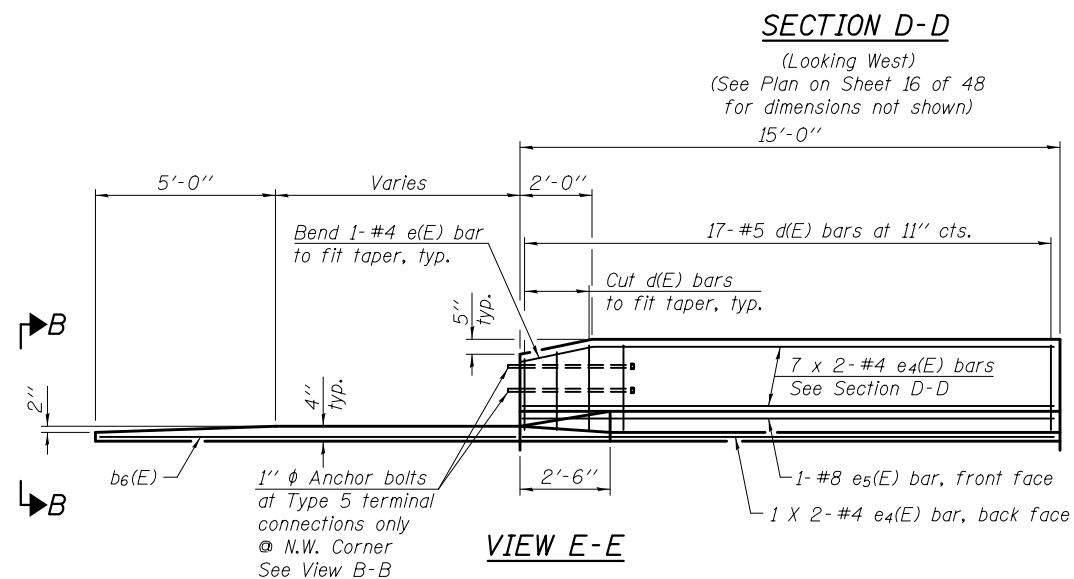
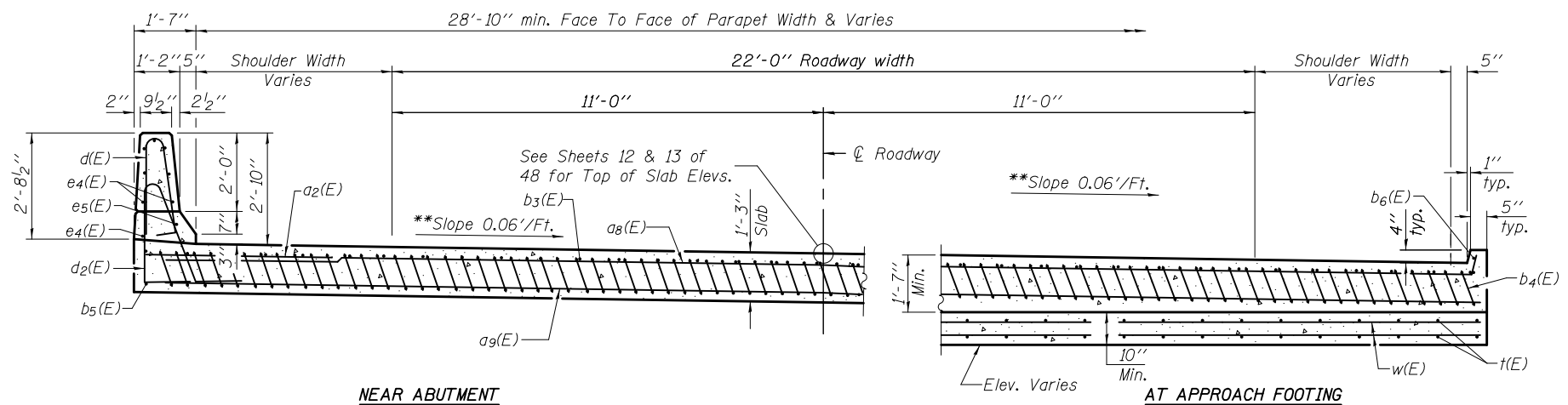
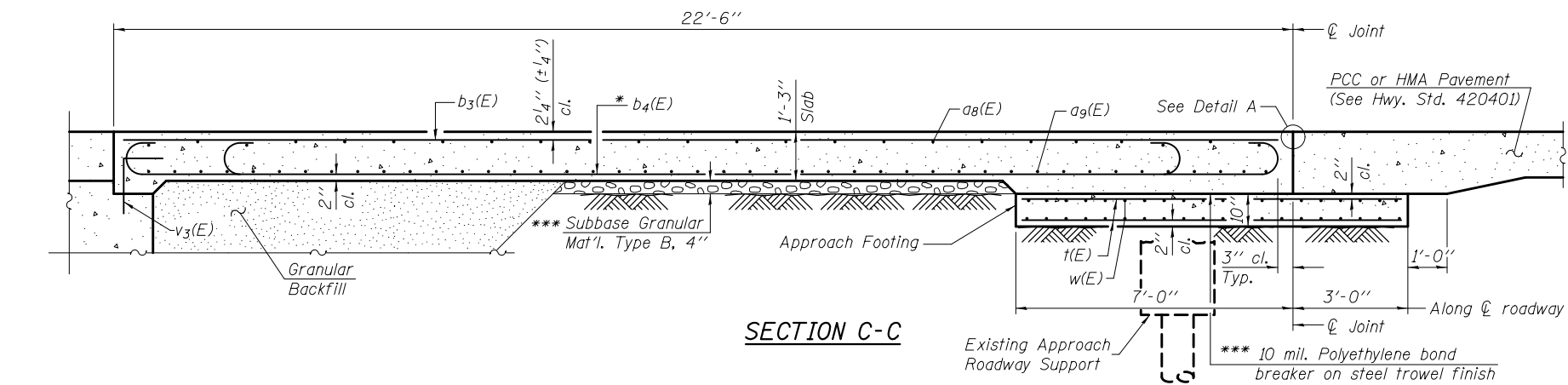
REVISED -
REVISED -
REVISED -
REVISED -

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 038-0056

SHEET 16 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	21
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FEHR GRAHAM PROJECT NUMBER: 11-138



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 $v_3(E)$ 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.

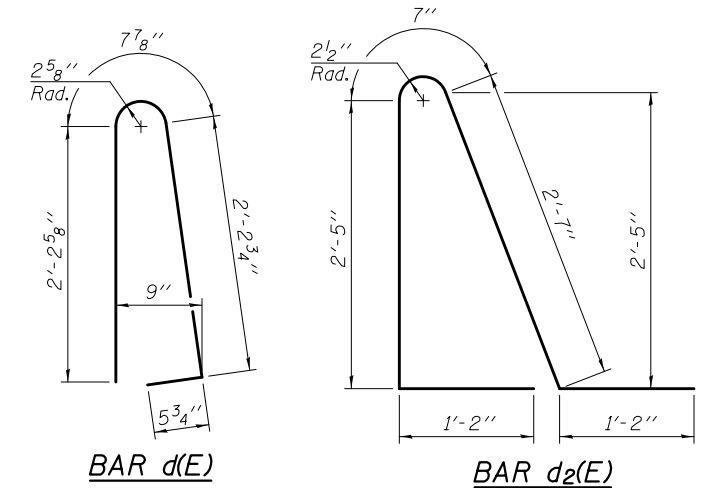
For Granular Backfill and drainage treatment details, see sheet 2 of 48.

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

The Existing Approach Roadway Supports shall be removed if they do not interfere with the construction of the proposed Approach. Cost of removal is included in the cost of Concrete Removal.



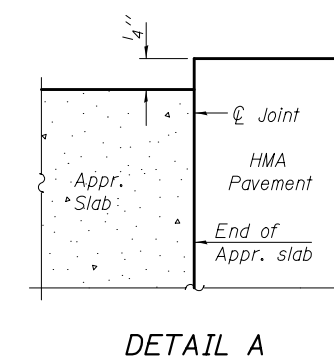
* Tilt #9 b₄(E) bars as required to maintain clearance.

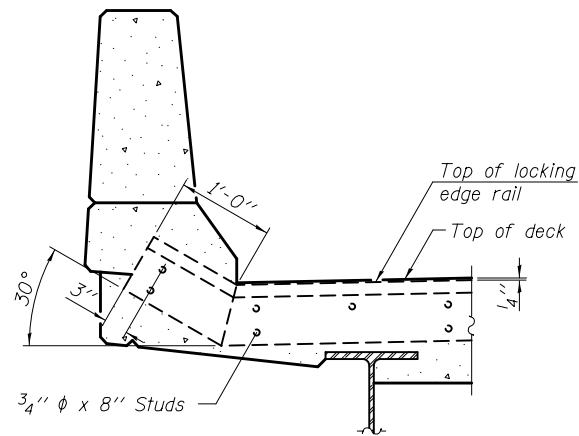
** Slope Varies East of Sta. 139+15.00 on East Approach Slab.

*** Cost included with Concrete Superstructure.

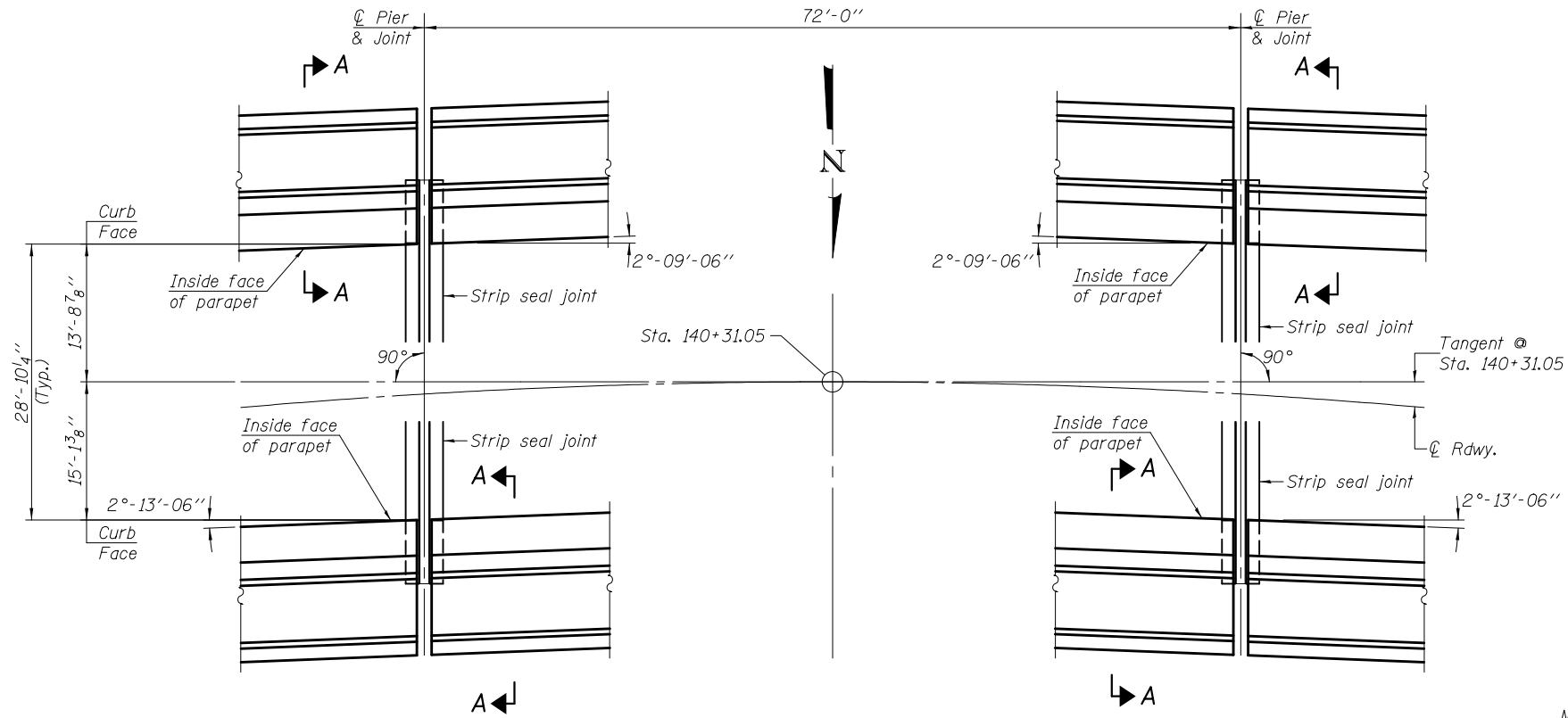
TWO APPROACHES
BILL OF MATERIAL

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			Sa. Yd.	184





SECTION A-A

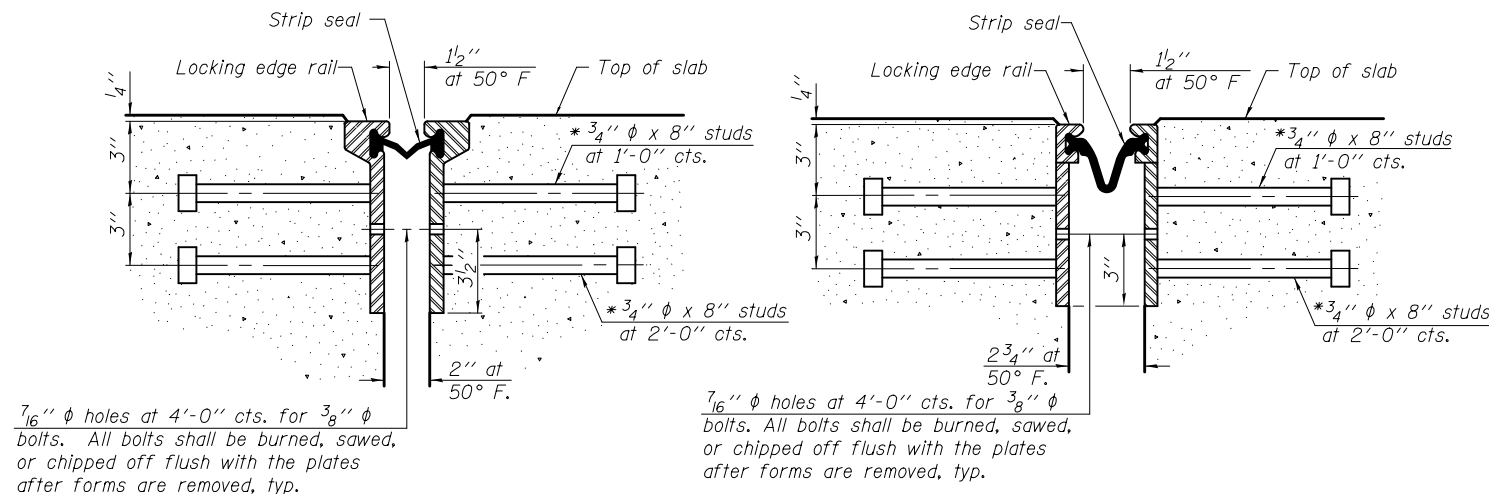


PIER 1

PIER 2

JOINT PLAN AT PIERS

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.
The manufacturer's recommended installation methods shall be followed.
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications. Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.
The Locking Edge Rails are included in the cost of Preformed Joint Strip Seal.



SECTION THRU
ROLLED RAIL JOINT

SECTION THRU
WELDED RAIL JOINT

ROLLED
EXTRUDED RAIL

WELDED RAIL

LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	62

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

EJ-SSJ

1-27-12

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 -

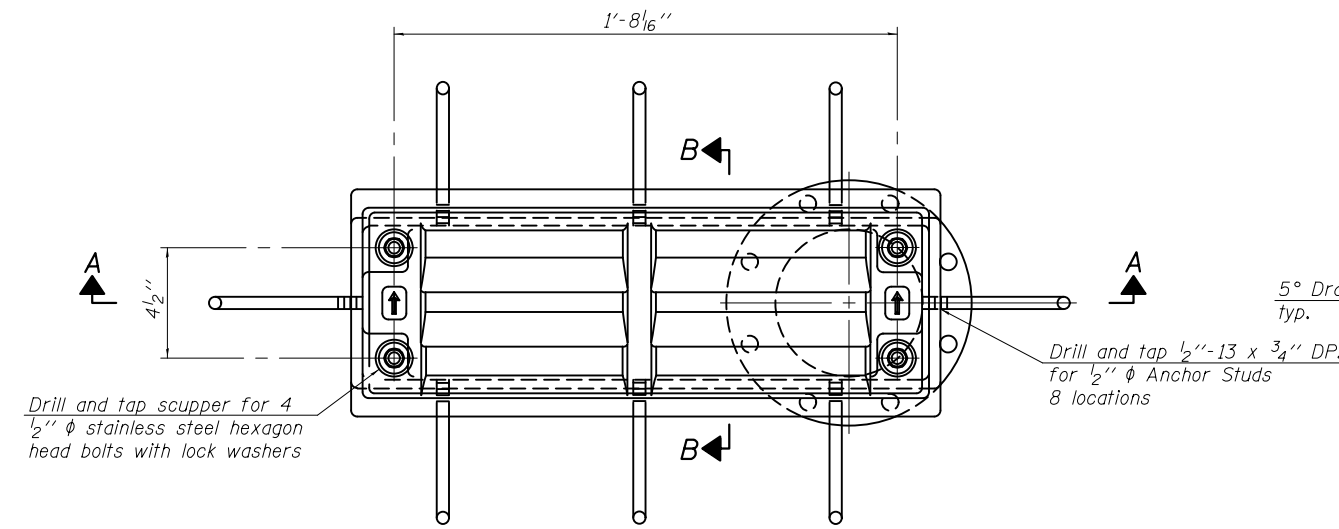
**PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 038-0056**

SHEET 18 OF 48 SHEETS

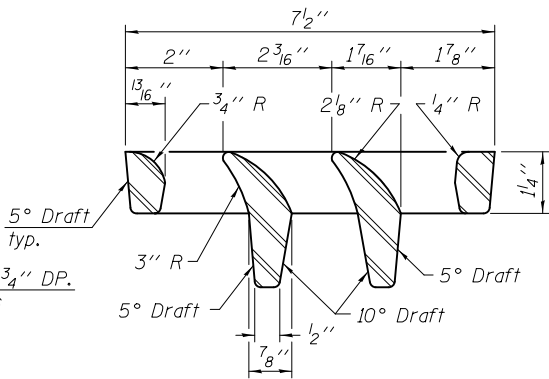
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	23
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

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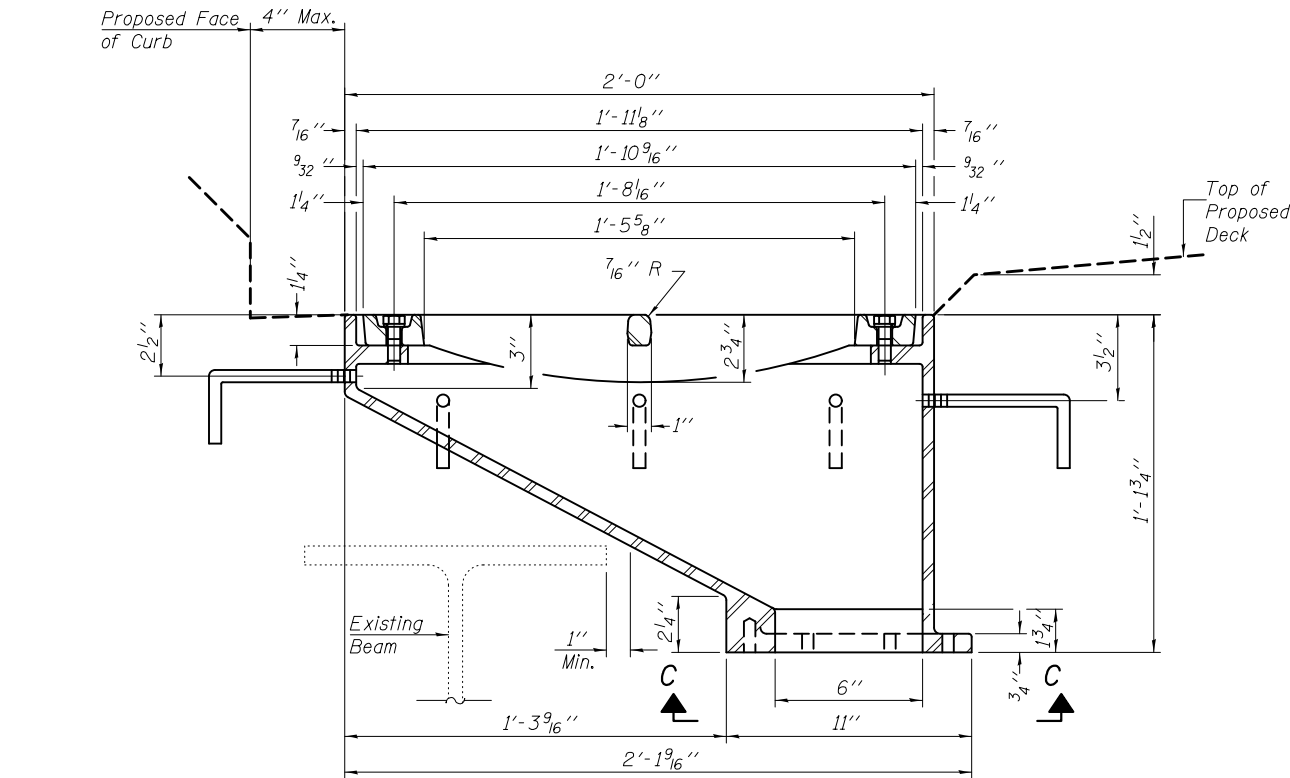
FEHR GRAHAM PROJECT NUMBER: 11-138



PLAN

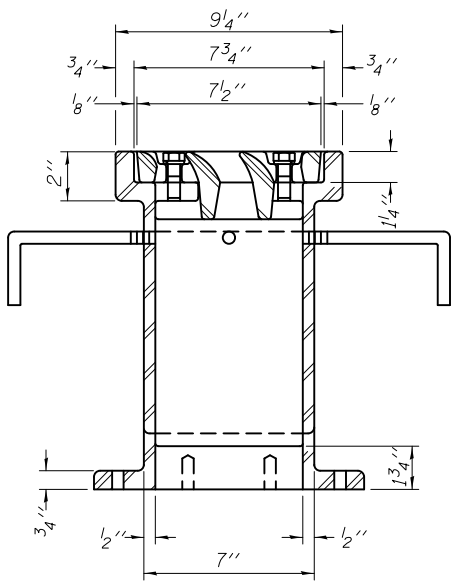


VANE GRATE DETAIL

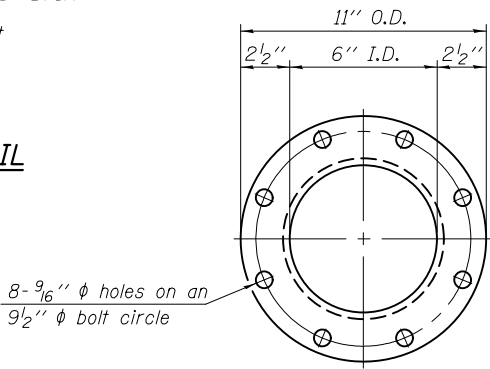


SECTION A-A

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

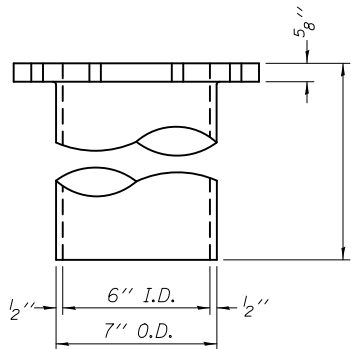


SECTION B-B

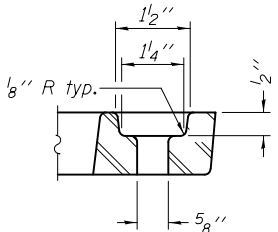


VIEW C-C

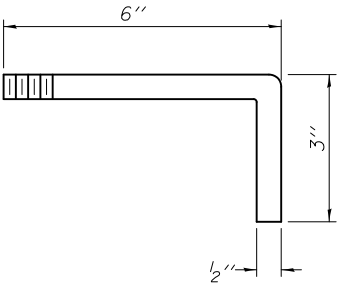
Drill and tap 8 holes for 1/2"-13 bolts on a 9 1/2" ϕ bolt circle. (2 blind holes are 1/4" deep, 6 thru holes)



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

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 -	

DRAINAGE SCUPPER, DS-12
STRUCTURE NO. 038-0056

SHEET 19 OF 48 SHEETS

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				

FEHR GRAHAM PROJECT NUMBER: 11-138

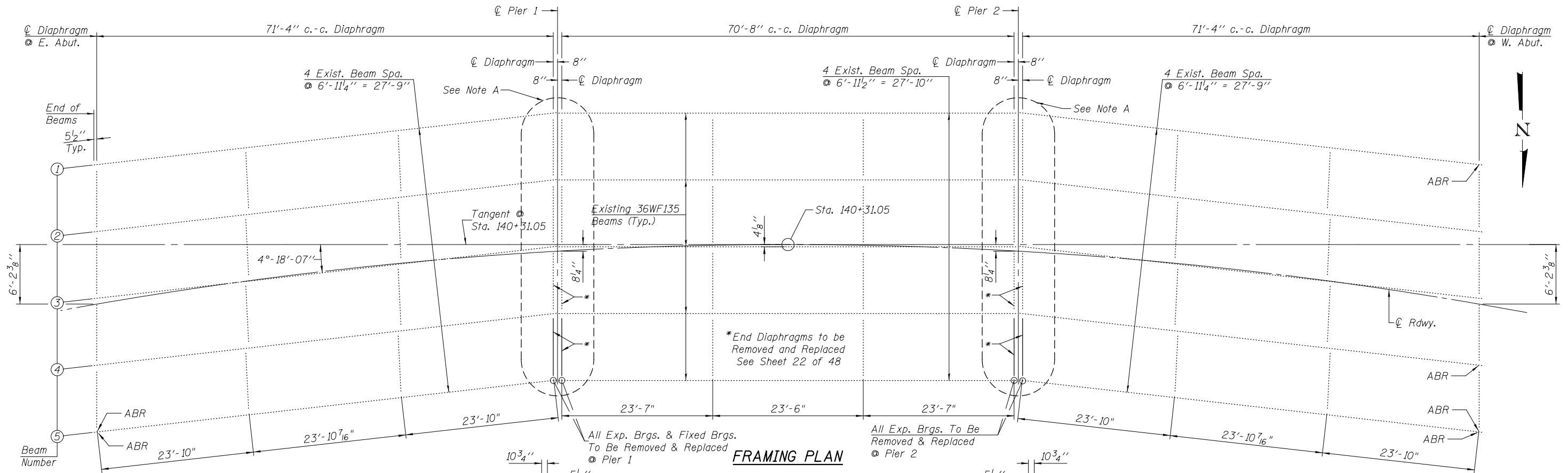
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USER NAME =	cconnor	DESIGNED -	J.A.M.	REVISED -	
		CHECKED -	A.R.K.	REVISED -	
PLOT SCALE =	0.1667' / in.	DRAWN -	A.D.S.	REVISED -	
PLOT DATE =	8/13/2019	CHECKED -	J.A.M. & A.R.K.	REVISED -	

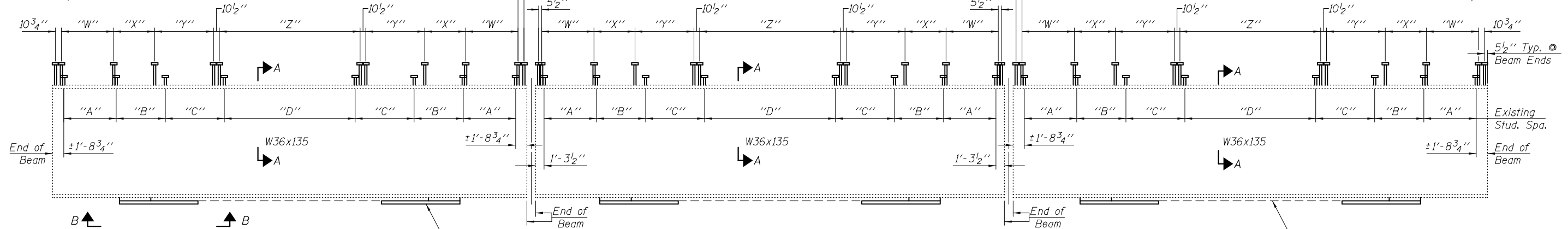
STRUCTURAL STEEL
STRUCTURE NO. 038-0056

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"

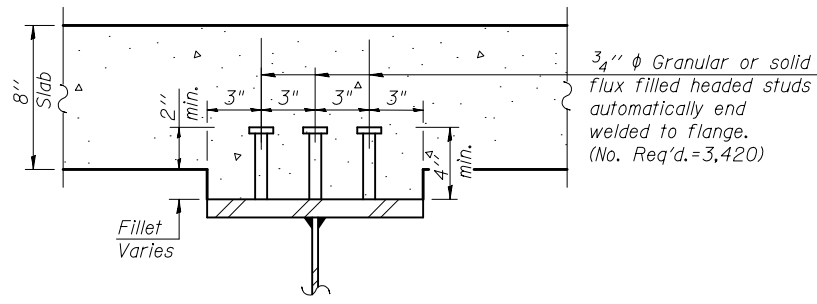
Note: Stud Shear Connector spacing shown is symmetrical about the centerline of the existing beams.

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.).

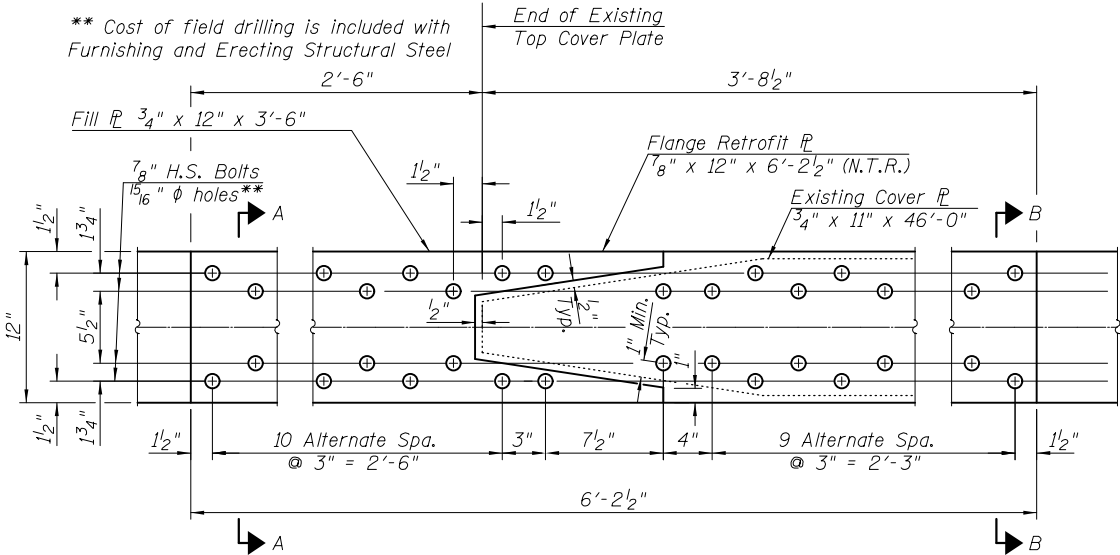
M_a : Factored design moment (kip-ft.).
 $1.3[M_{DL} + M_{SDL} + 5/3(M_{LL} + M_I)]$

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).
 $1.3[M_{DL} + M_{SDL} + 5/3(M_{LL} + M_I)]$

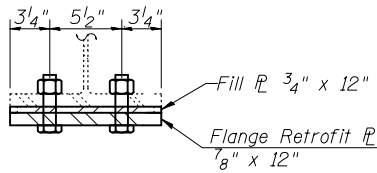
VR: Maximum LL + impact shear range within the composite portion of the span for stud shear connector design (kips).



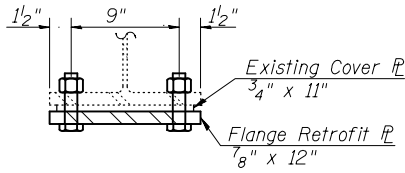
Note: One Fill ϕ and one flange Retrofit plate required at each end of each existing bottom flange cover plate.

VIEW B-B

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



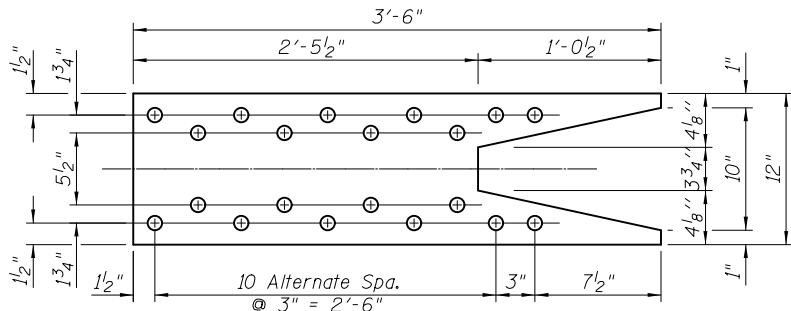
SECTION A-A



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 $15/16$ " 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

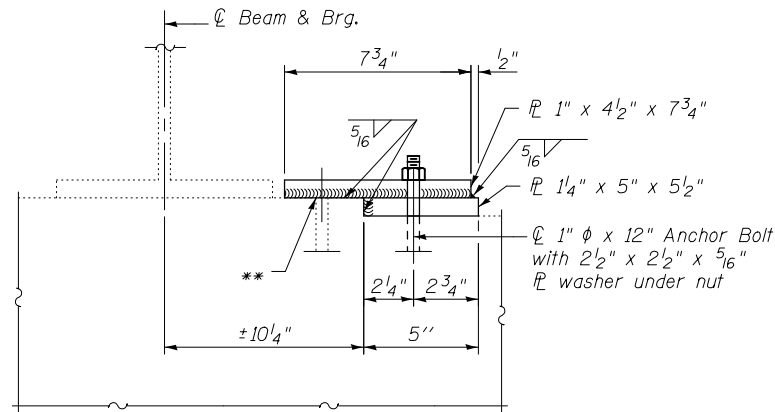
Item	Unit	Quantity
Furnishing and Erecting Structural Steel	Pound	11425

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 -

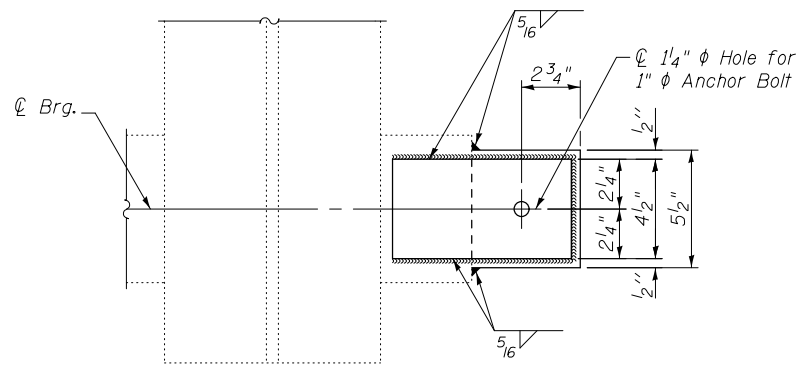
STRUCTURAL STEEL STRUCTURE NO. 038-0056

SHEET 21 OF 48 SHEETS

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 x 1 inch, holes 1 1/4 inch x 1 1/4 inch.

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

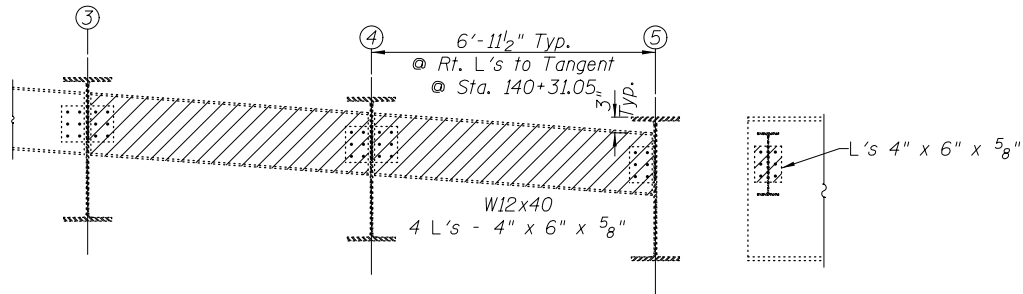
Anchor bolts shall be installed in holes drilled after the supported member is in place. Cost included in Anchor Bolts, 1 inch.

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.

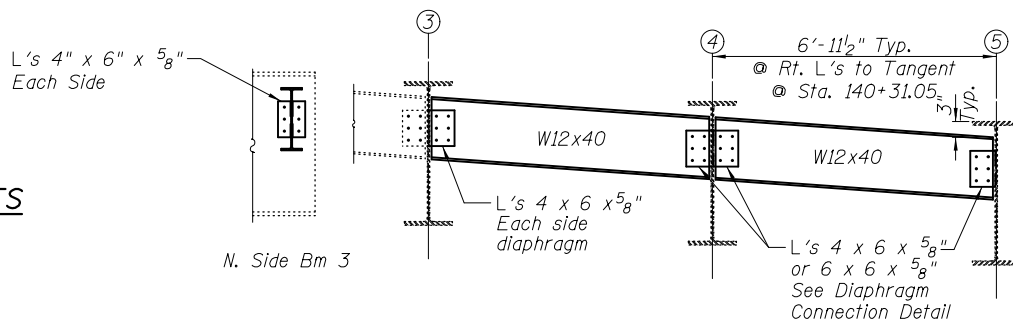
Cost of removing existing diaphragms and clip angles is included as Structural Steel Removal.



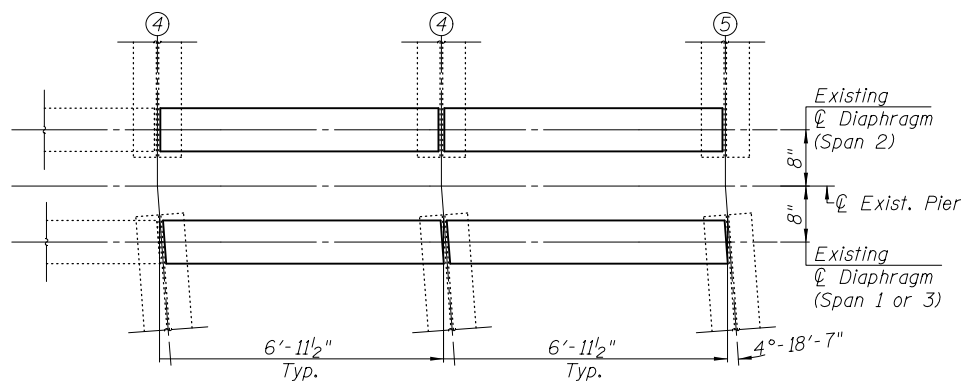
EXISTING DIAPHRAGM REMOVAL

(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

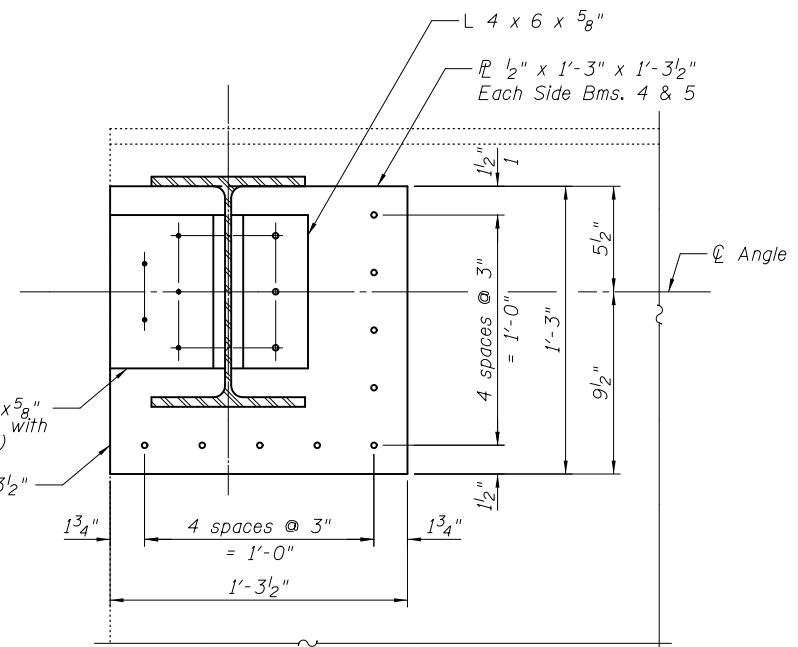


PROPOSED DIAPHRAGMS

(8 - Required)

BILL OF MATERIAL

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

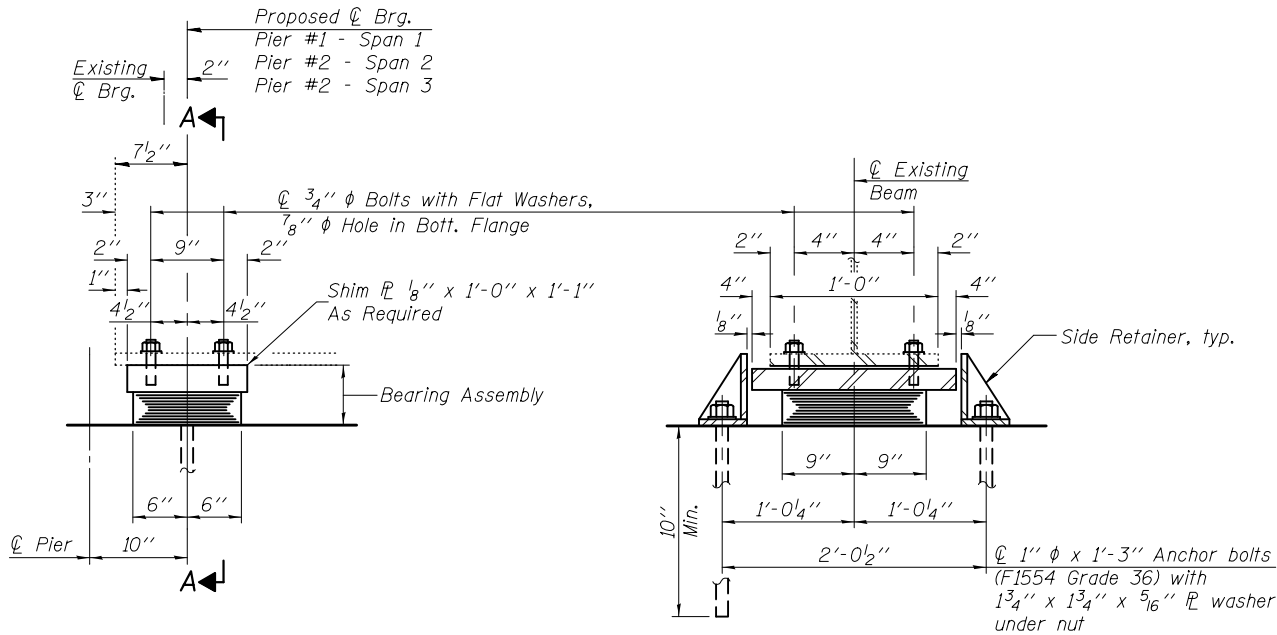


DIAPHRAGM CONNECTION DETAIL

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

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	27
				CONTRACT NO. 87548
		ILLINOIS	FED. AID PROJECT	

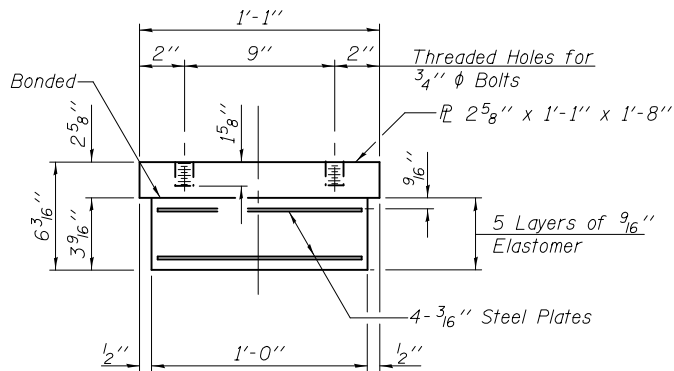


ELEVATION AT PIER

SECTION A-A

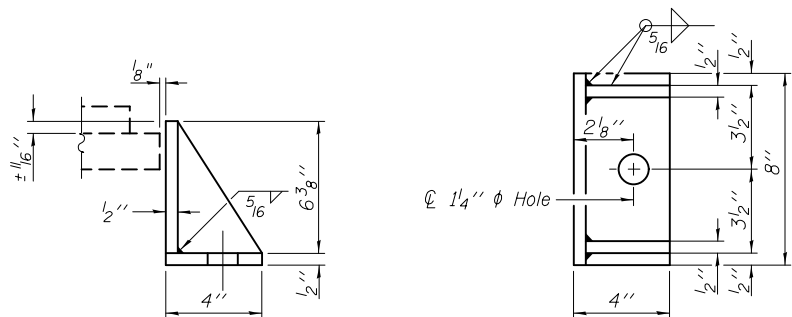
TYPE I ELASTOMERIC EXP. BRG.

(15 Req'd)



BEARING ASSEMBLY

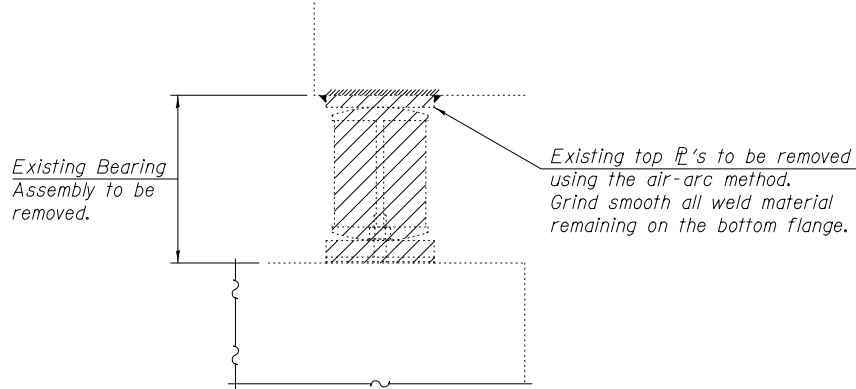
Note:
Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

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

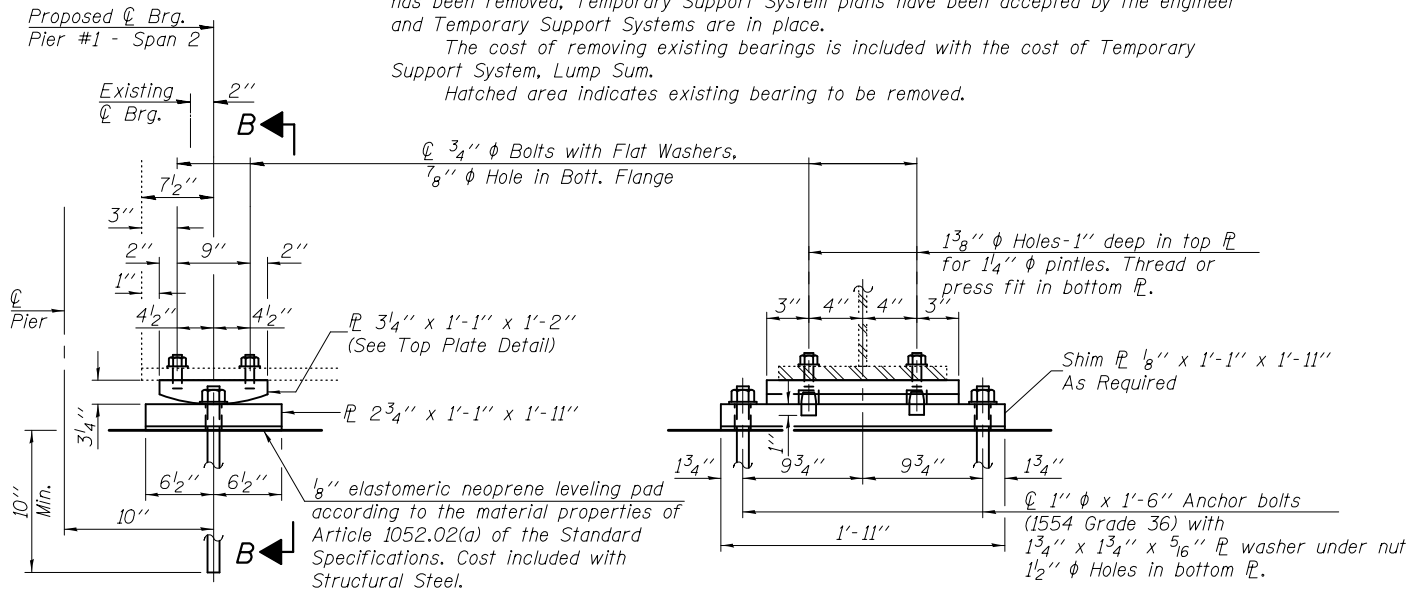
Notes:
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in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

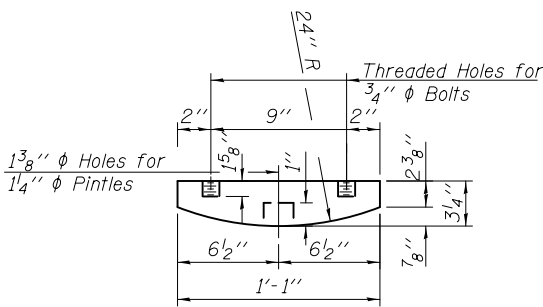


ELEVATION AT PIER

SECTION B-B

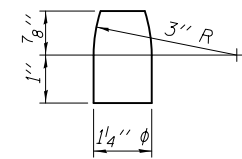
FIXED BEARING

(5 Req'd)



TOP PLATE DETAIL

(Fixed Bearing)



PINTLE

BILL OF MATERIAL

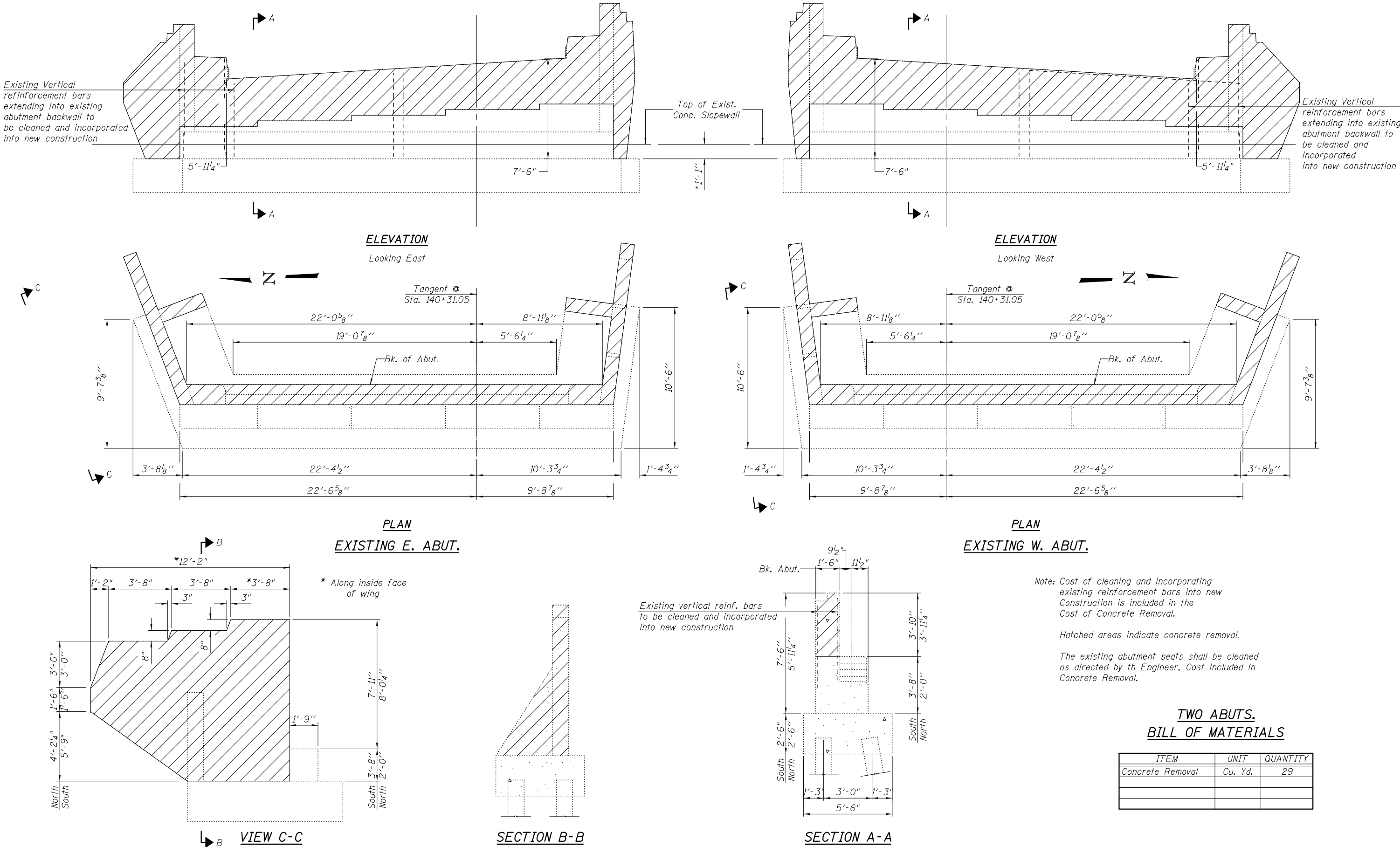
Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	15
Temporary Support System	LSum	1
Anchor Bolts, 1"	Each	40
Furnishing and Erecting Structural Steel	Pound	2175

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 -
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 -



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 -

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 dimensions, elevations, and reinforcement details.

Dimensions:

- 9'-3"
- 5'-3"
- 4'-0"
- 7'-0"
- 11'-0"
- 4'-0"
- 9'-0"
- 11'-0"

Elevations:

- Elev. 641.60
- Elev. 640.43
- Elev. 636.72
- Elev. 632.35
- Elev. 632.22
- Elev. 632.33
- Elev. 642.12
- Elev. 643.33

Reinforcement Details:

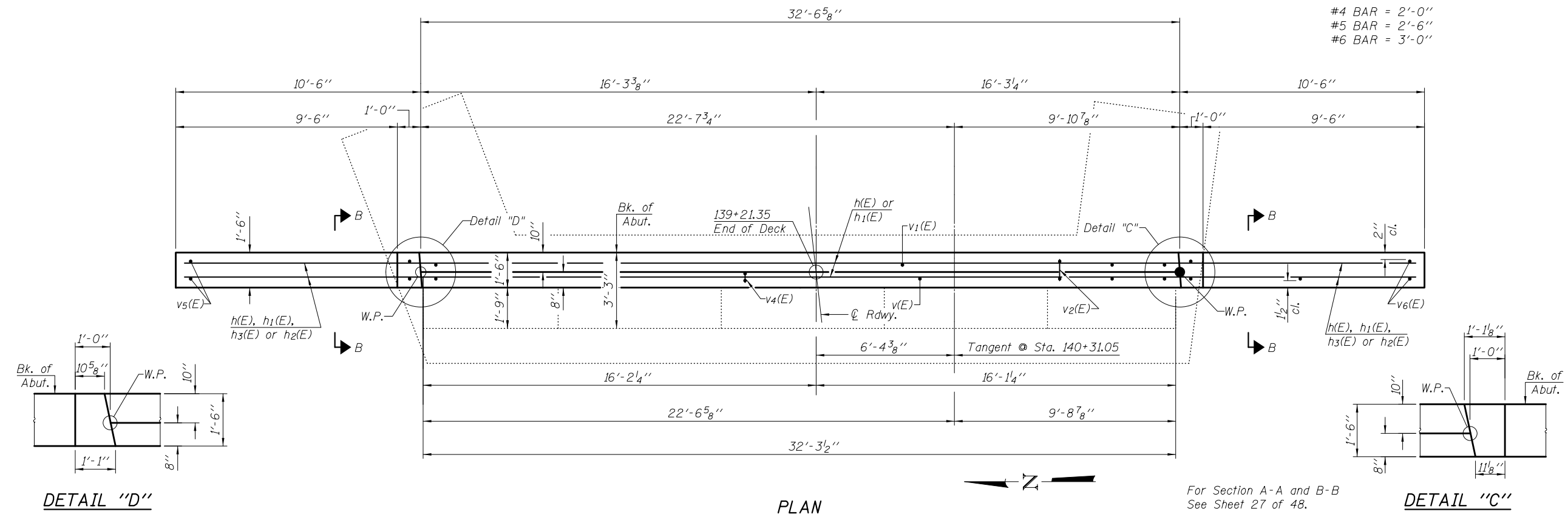
- 1 x 2-#4 $h_3(E)$ bars Each Face
- 2 x 2-#5 $h_1(E)$ bars Top
- 3 x 2-#5 $h_1(E)$ bars Top
- 4 x 2-#6 $h(E)$ bars Each Face
- 10-#5 $v_5(E)$ bars @ 12" cts. (See Sheet 27 of 48)
- 33-#5 $v_3(E)$ bars @ 12" cts.
- 33-#4 $v_2(E)$ bars @ 12" cts.
- 33-#4 $v_4(E)$ bars @ 12" cts.
- *32-#6 $v_1(E)$ bars @ 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.
- Bend in Field
- ±5" (Typ.) Exist. Steps

ELEVATION
Looking East

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

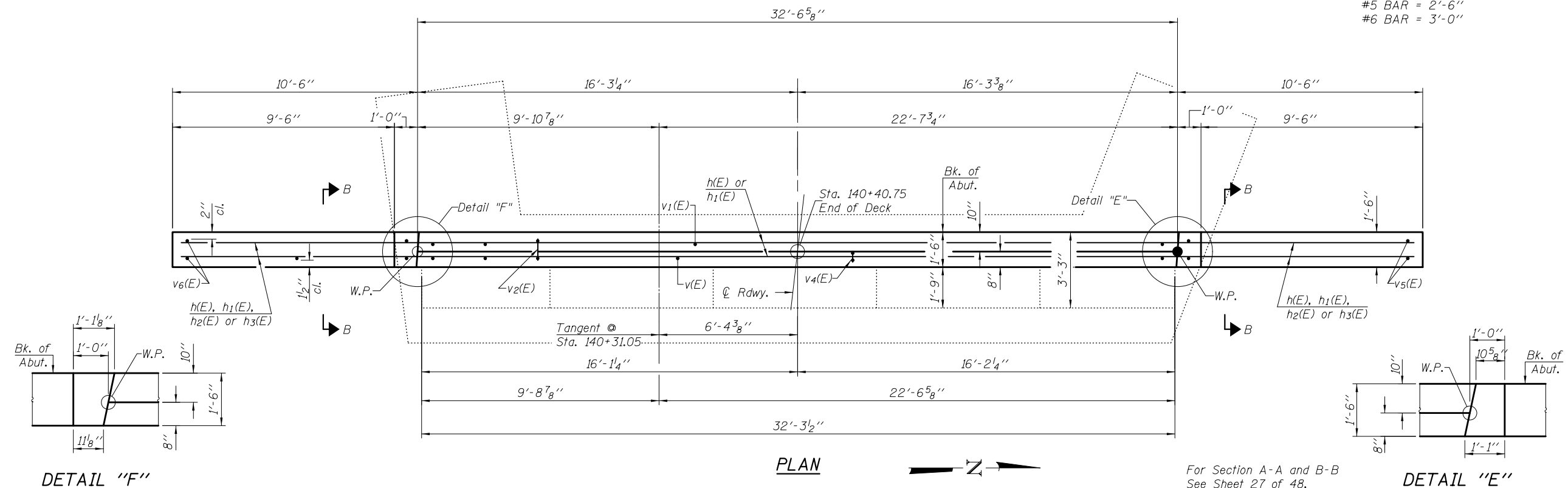


Bars indicated thus 4 x 2-#6
etc. indicates 4 lines of bars
with 2 lengths per line.

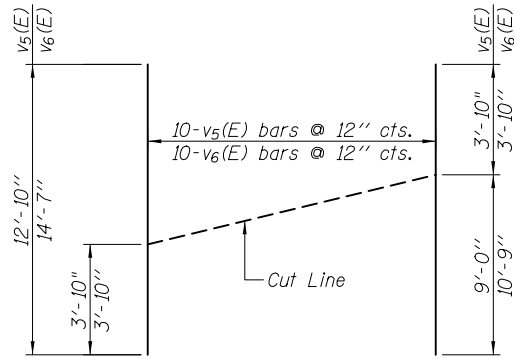
[illegible]

ELEVATION
Looking West

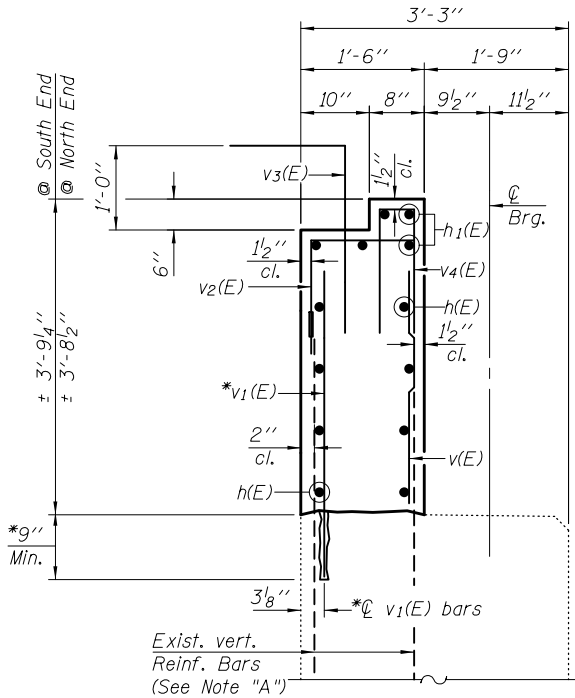
#4 BAR = 2'-0"
#5 BAR = 2'-6"
#6 BAR = 3'-0"



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

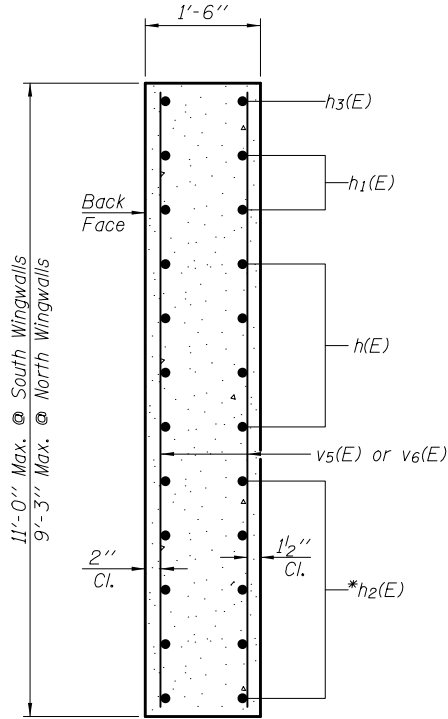


FIELD CUTTING DIAGRAM
Order v₅(E) and v₆(E) bars full length.
Cut to fit and use this remainder of bars
in opposing face.



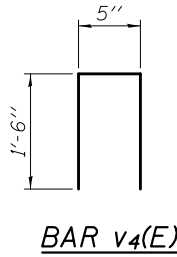
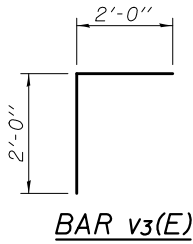
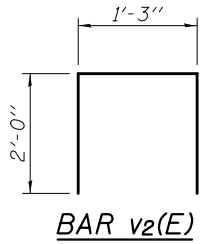
SECTION A-A

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.



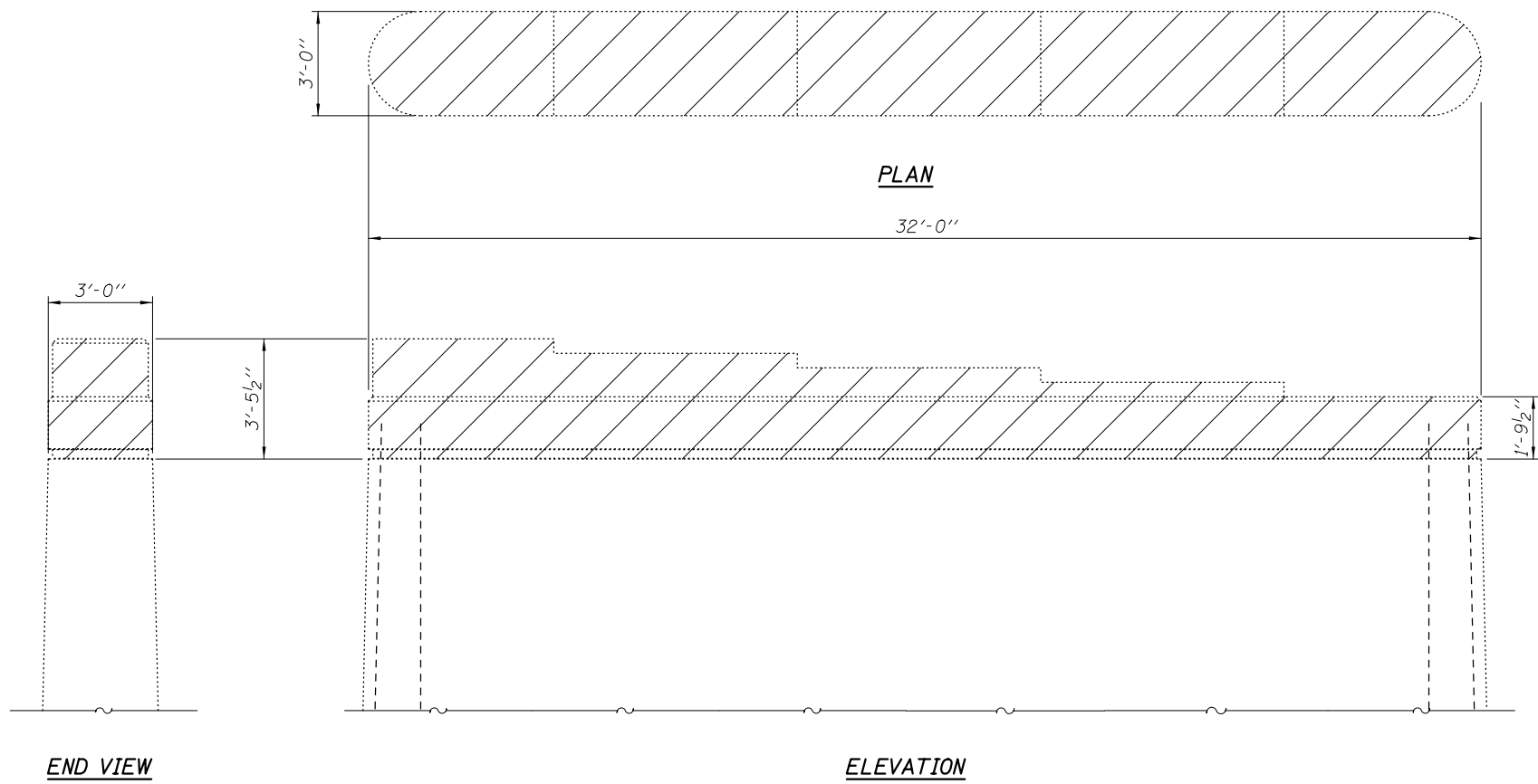
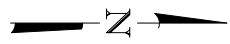
**TWO ABUTMENTS
BILL OF MATERIAL**

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

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 -

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				

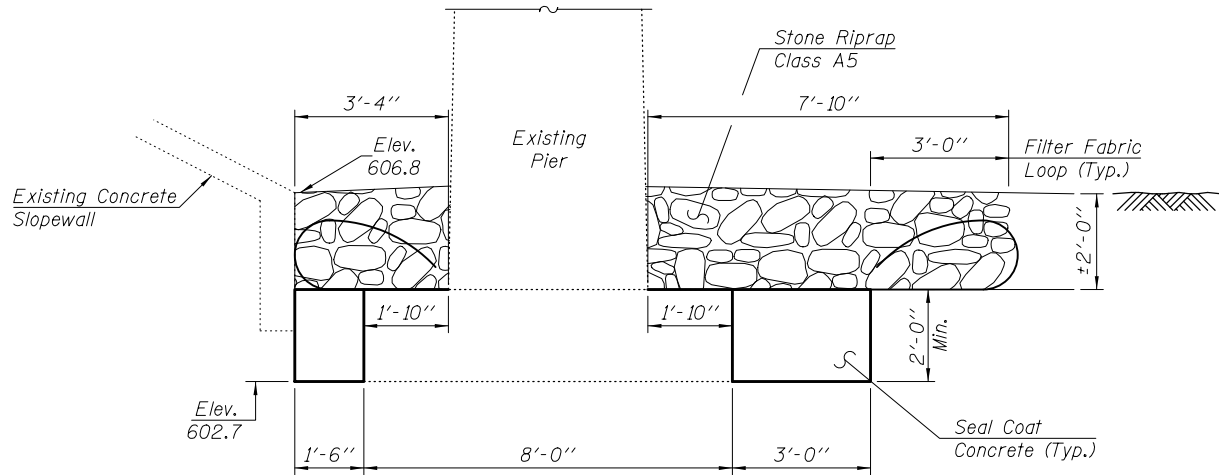


Note: Hatched areas indicate concrete removal.

BILL OF MATERIAL

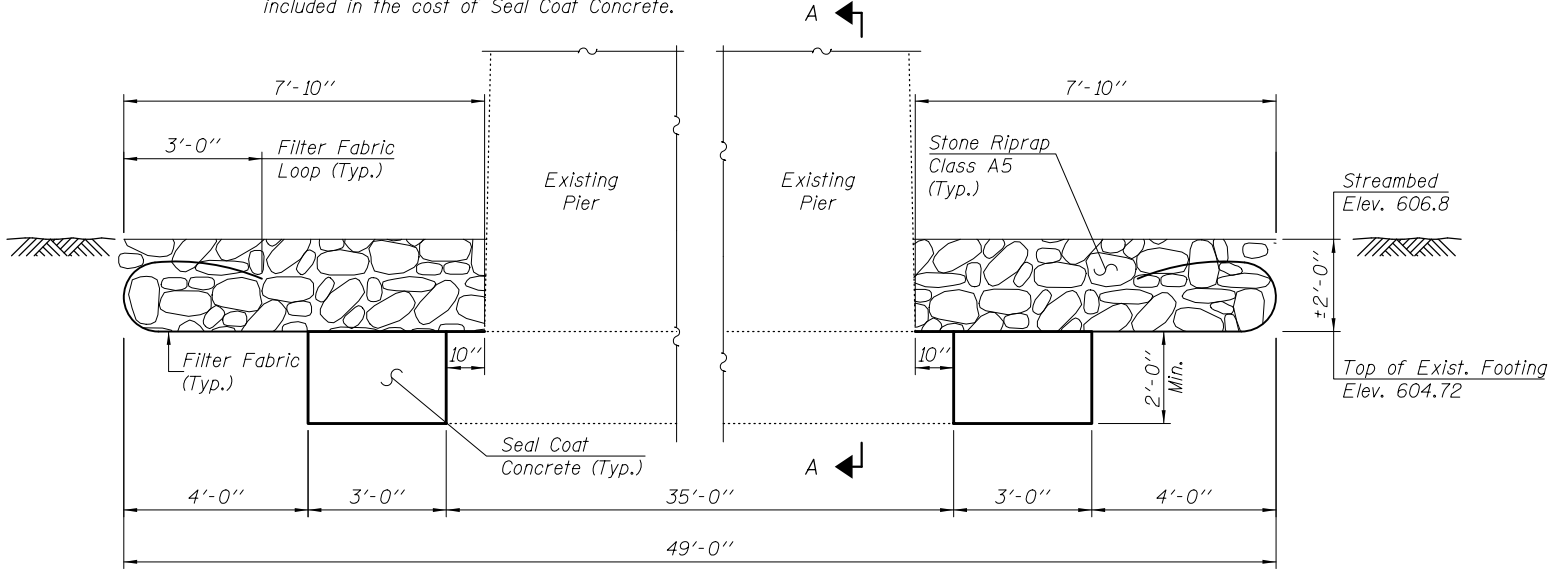
ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	18
Seal Coat Concrete	Cu. Yd.	17.2
Stone Riprap, Class A5	Ton	77
Filter Fabric	Sq. Yd.	70

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.

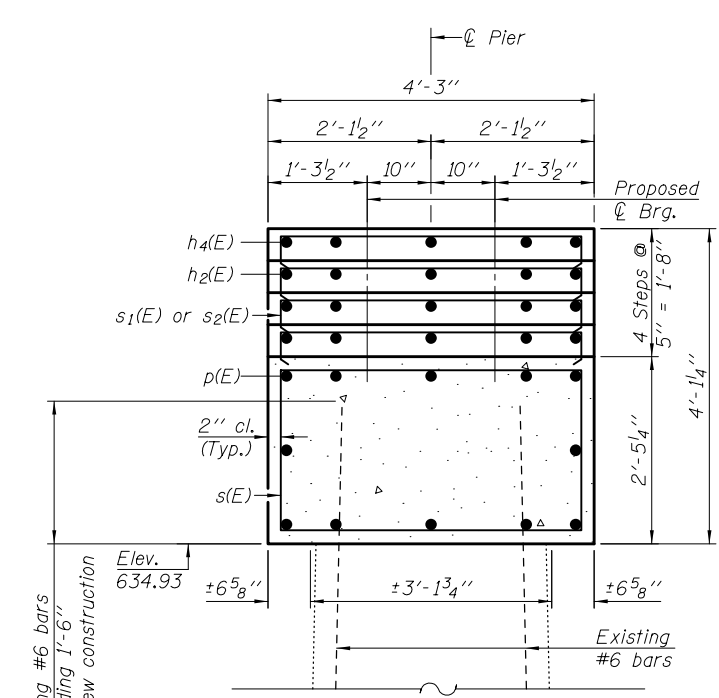


LONGITUDINAL SECTION THRU PIER 1
(Looking West)

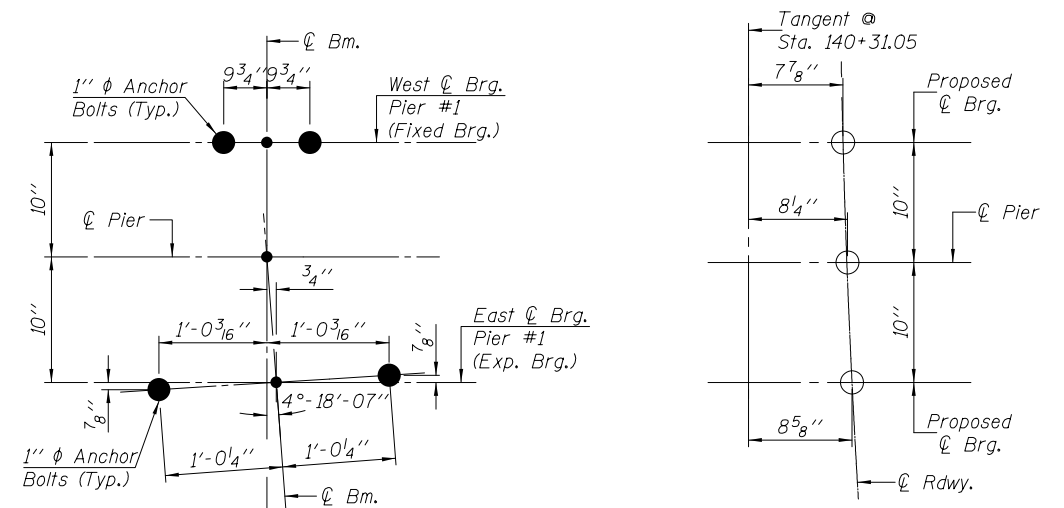
Note: Protection of the excavated area located adjacent to Pier 1 against disturbance by channel flow during the placement of Scour Protection is included in the cost of Stone Riprap, Class A5.

SCOUR PROTECTION @ PIER 1

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



SECTION A-A



DETAIL "A"

DETAIL "B"

PIER 1

BILL OF MATERIAL

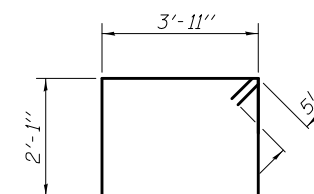
Bar	No.	Size	Length	Shape
$h_2(E)$	17	#6	11'-9"	—
$h_4(E)$	5	#6	6'-4"	—
$p(E)$	12	#6	34'-3"	—
$s(E)$	35	#5	12'-11"	□
$s_1(E)$	13	#5	9'-11"	□
$s_2(E)$	14	#5	8'-5"	□
$u(E)$	10	#6	15'-10"	▬
Concrete Structures			Cu. Yd.	16.5
Reinforcement Bars, Epoxy Coated			Pound	1,930
Concrete Sealer			Sq. Yd.	46
Structural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

A diagram showing a rectangular area. The horizontal dimension is labeled 6'-0" and the vertical dimension is labeled 3'-10".

Diagram showing a rectangular structure with dimensions and labels:

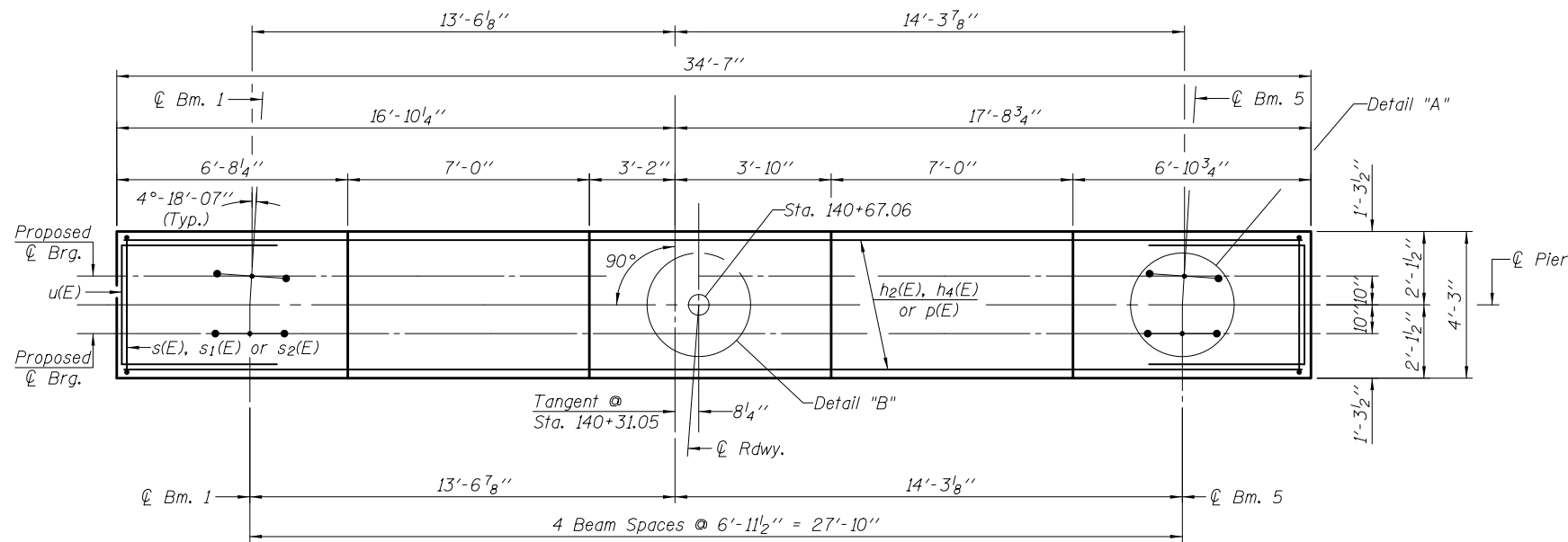
- Vertical dimension on the left: $3'-0''$ (total height) and $2'-3''$ (height of the lower section).
- Horizontal dimension on the top right: $3'-11''$ (width of the upper section).
- Labels $s_1(E)$ and $s_2(E)$ are positioned near the top left corner.

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

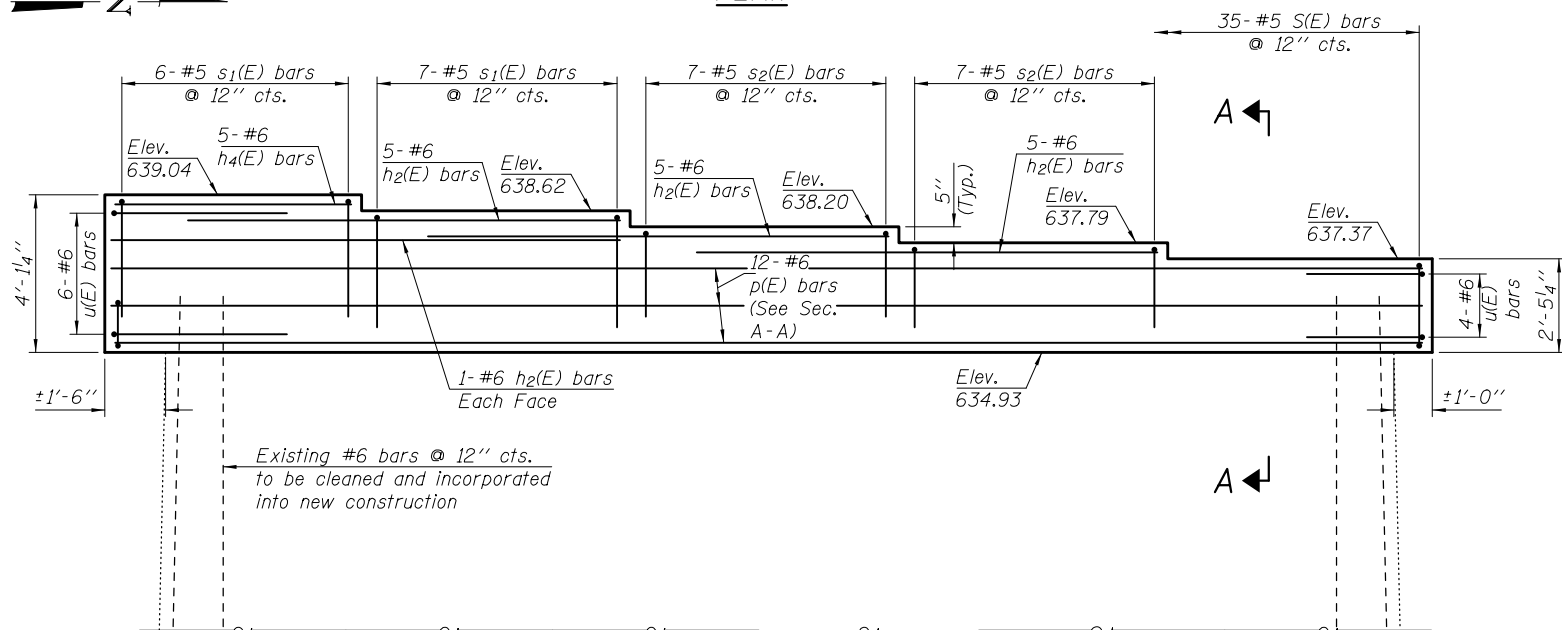

$$\underline{BAR}_{S(E)}$$

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 -	

PIER #1 STRUCTURE NO. 038-0056					F.A. RTE.	SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
					CH 40	11-00116-04-BR		IROQUOIS	60	34
					CONTRACT NO. 87548					
SHEET 29 OF 48 SHEETS										



PLAN



ELEVATION

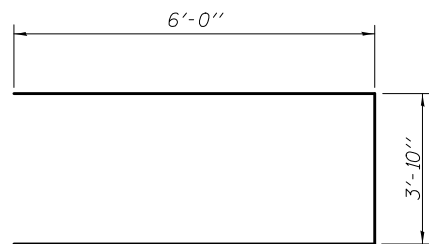
(Looking West)

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

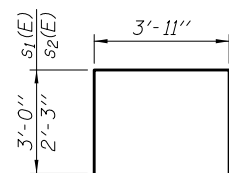
The top of pier cap elevations shown are derived from existing plan dimensions and field survey data. As approved by the Engineer, top of pier elevations shall be adjusted to be compatible with existing bearing seat elevations and bottom of steel beam elevations..

For Concrete Removal see Sheet 28 of 48.

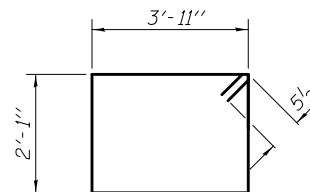
Concrete sealer shall be applied to all top of side surfaces of the new concrete pier cap.



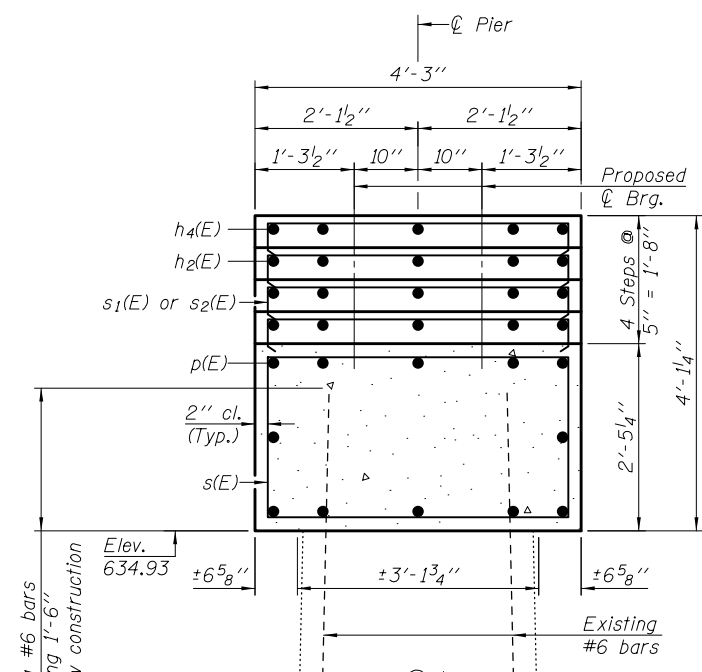
BAR u(E)



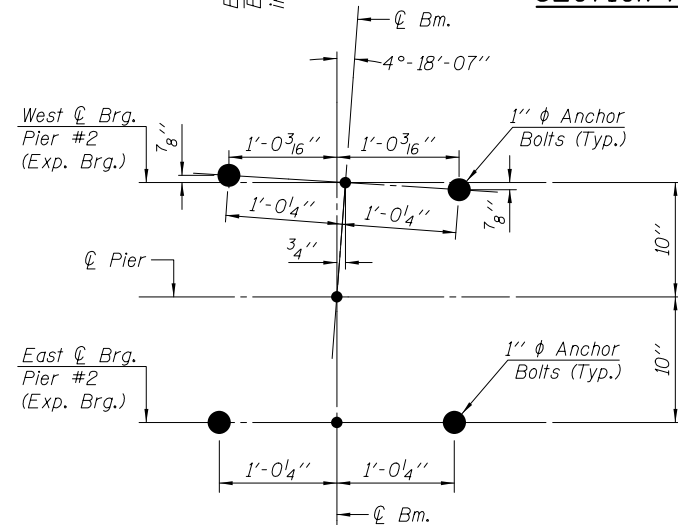
BAR s1(E) & s2(E)



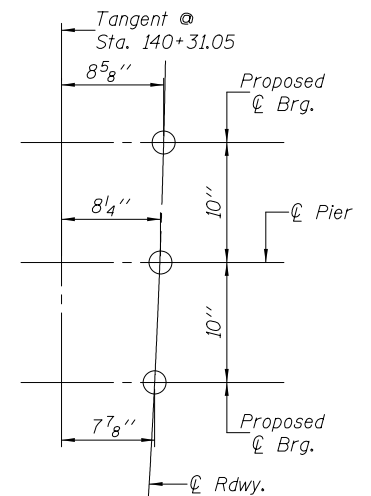
BAR s(E)



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

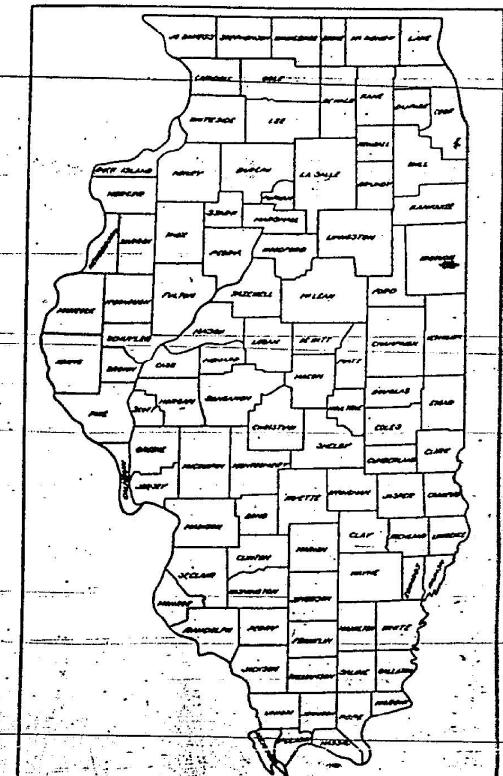
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

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

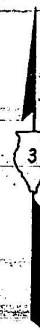
PROJECT S-323-1(1)
F.A.S. ROUTE 323
SECTION 116 BR
IROQUOIS COUNTY

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

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]
DESIGNED 1/2/63
BY [Signature]
APPROVED 1/20/63
BY [Signature]
APPROVED 1/2/63
BY [Signature]

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER
DATE

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

IROQUOIS COUNTY SECTION 116 BR F.A.S. ROUTE 323

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL

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			

CURVE DATA
 A = 18'-37'-30"
 D = 8'-06"
 R = 944.57'
 T = 145.73'
 E = 10.44'
 L = 273.53'
 PC = 133+48.81
 PT = 136+22.34
 SE = 0.0371
 TRANSITION 100'

REINERS ESTATE

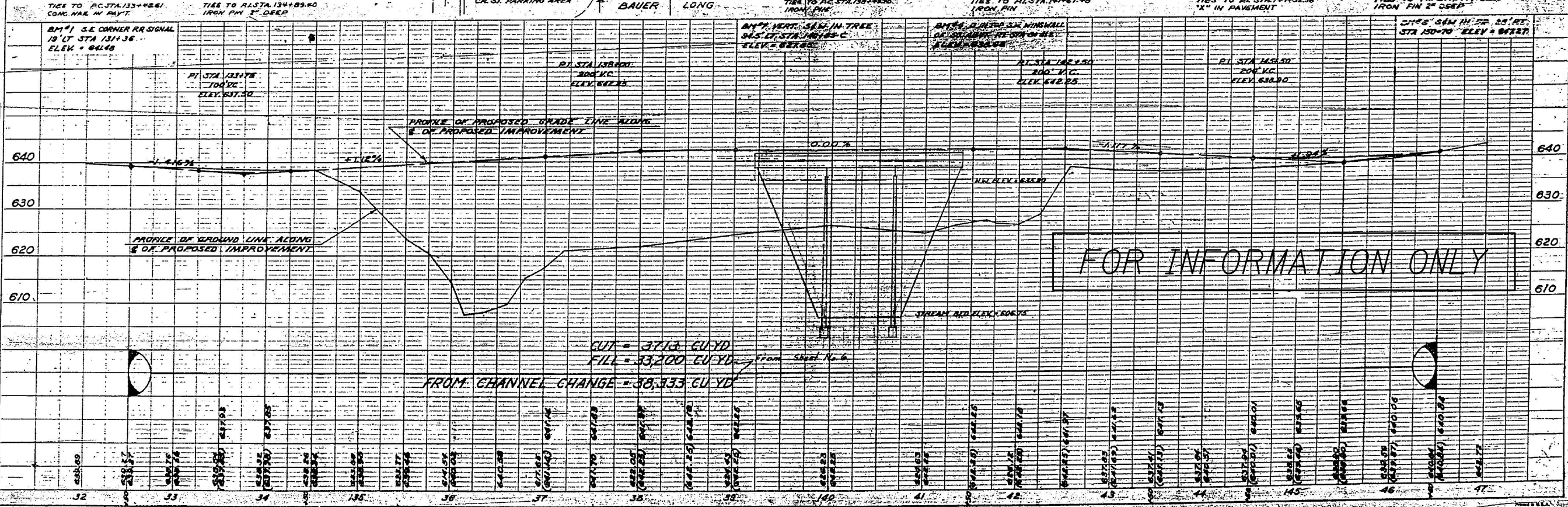
REINERS ESTATE

ELLA M. SHARP

ENDS STA 136+50

GEORGE BAUER

CURVE DATA (EXISTING CURVE)
 A = 20'-35'-14"
 D = 7'-55'-45"
 R = 722.16'
 T = 118.60'
 E = 9.59'
 L = 234.00'
 PC = 126+16.3
 PT = 128+50.3
 SE = 0.0371



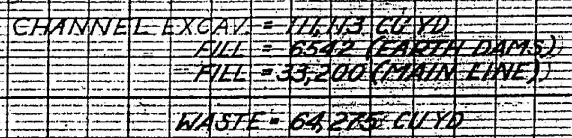
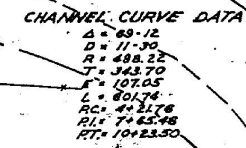
FEHR GRAHAM
 ENGINEERING & ENVIRONMENTAL
 ILLINOIS DESIGN FIRM NO. 184-003525

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		



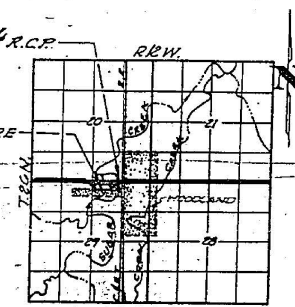
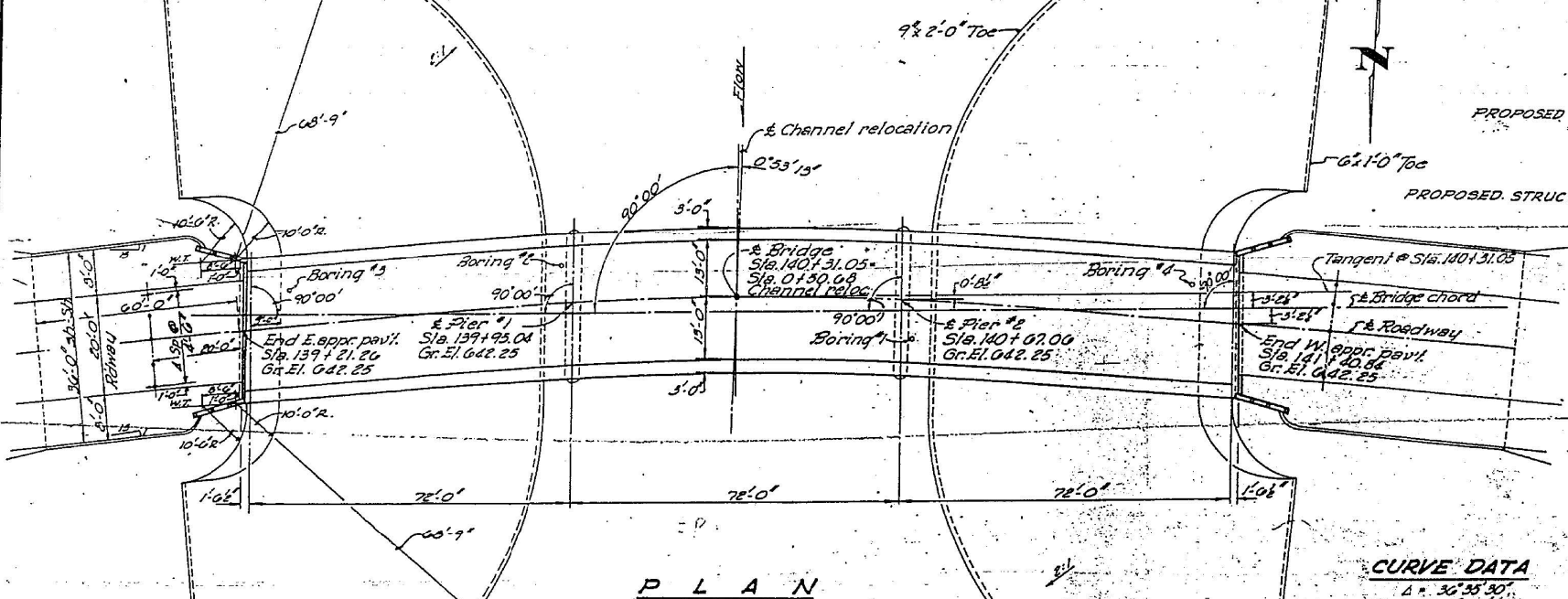
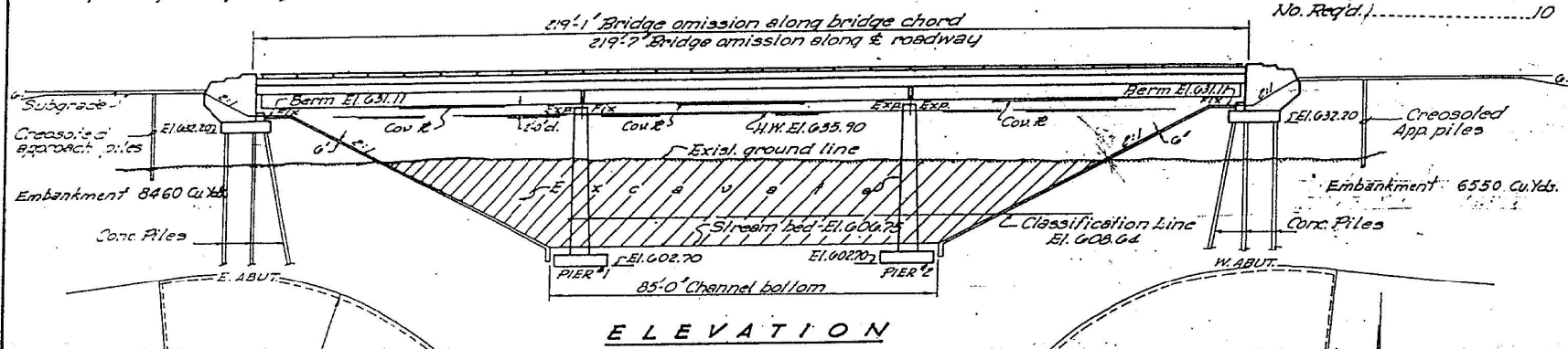
B.M. 14 on top S.W. Wingwall of S. Abut. ±111.0' R.L. Sta. 140+00 Elev. 638.68.
Existing 4 span structure on exist. F.A.S. 323 north of proposed structure on
relocated route (2 R.C. thru girders - 55' & 58' & 2 I-beam @ 31' each apart. R/W. 118').
The abutments & two piers are reinforced concrete.
Remaining 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

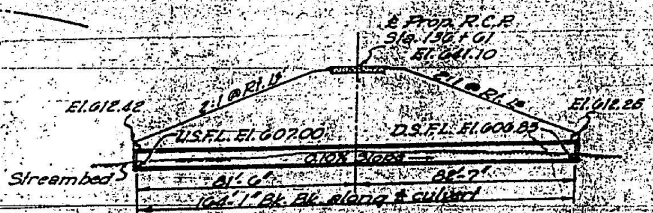
FOR INFORMATION ONLY

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



48' R.C.P. TYPE 3A STA. 136+0.00

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

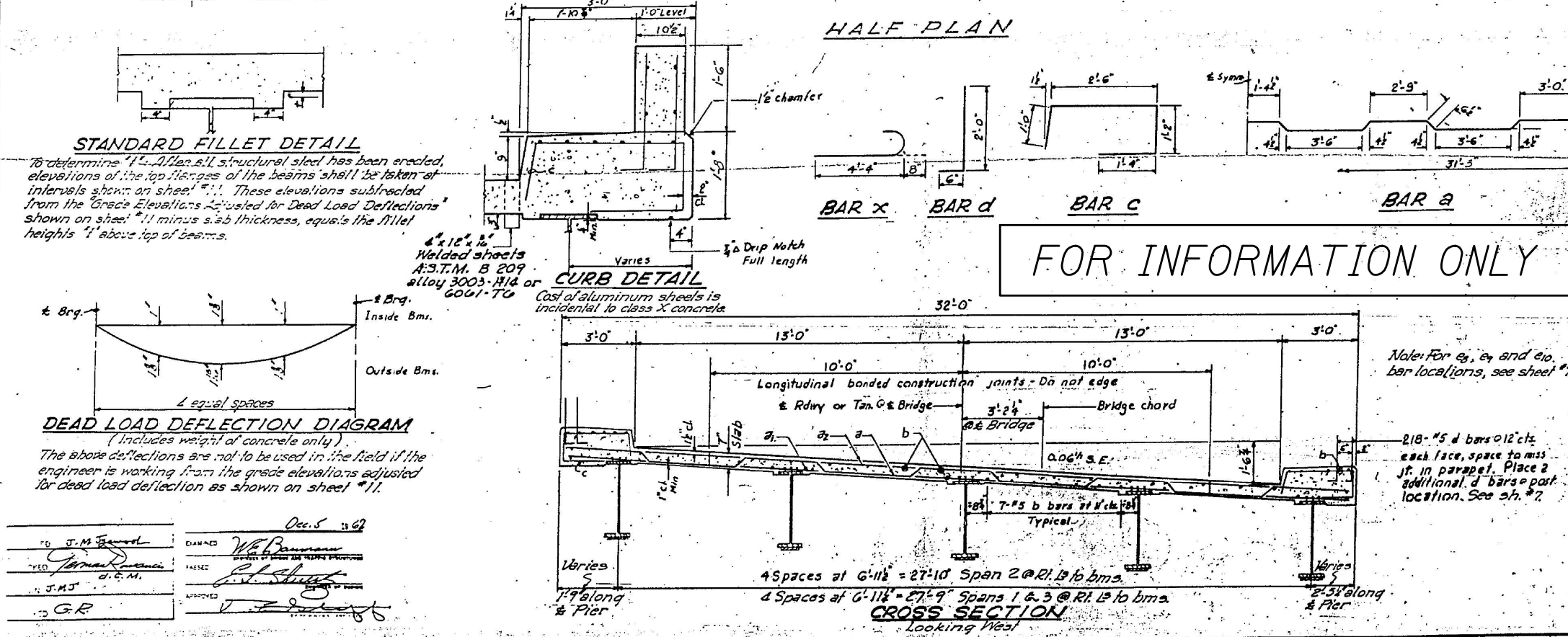
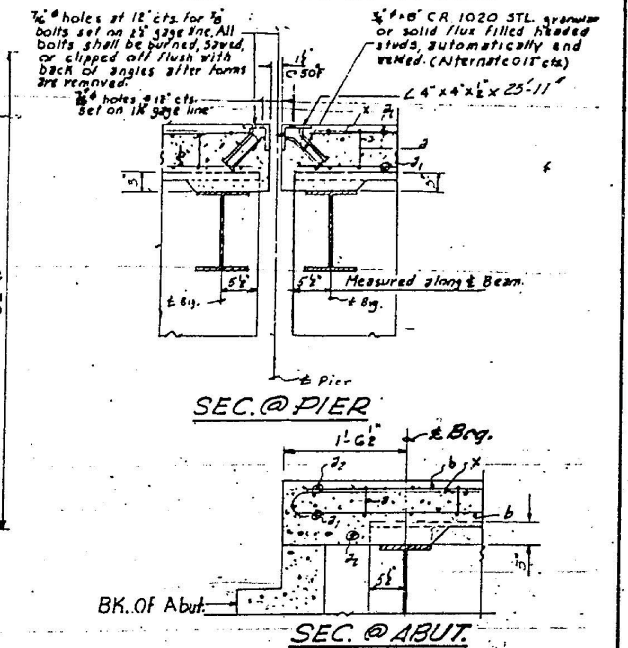
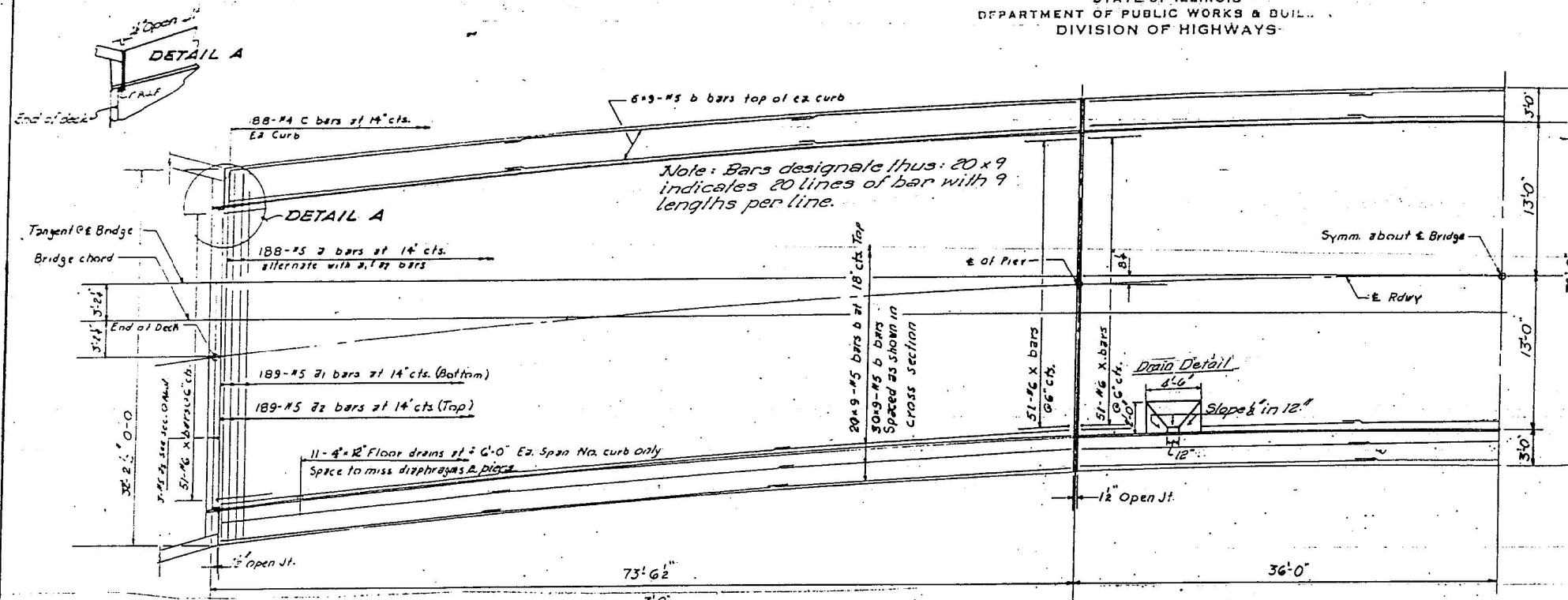
DESIGNED J.M. J...
CHECKED John Mullenix
DRAWN J.M.J.
CHECKED G.R.

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

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 -

PLATE NO.	SECTION	QUANTITY	10' IN SHEET NO.	SHEET NO.
FAS 323	116BR	IR0000013	57.	10
10' IN SHEET NO.		QUANTITY	SHEET NO.	

SHEET NO. 2
// SHEETS



Bar	No.	Size	Length	Shape
a	188	#5	32'-7"	—
a ₁	189	#5	31'-3"	—
a ₂	195	#5	30'-0"	—
b	558	#5	25'-3"	—
c	376	#4	6'-0"	□
d	942	#5	2'-6"	J
e ₈	60	#5	14'-3"	—
e ₉	10	#5	14'-9"	—
e ₁₀	32	#5	17'-9"	—
x	306	#6	5'-0"	U
Reinforcement Bars			Lbs.	41,530
Structural Steel			Lbs.	93,380
Class "X" Concrete			Cu. Yds	230.7

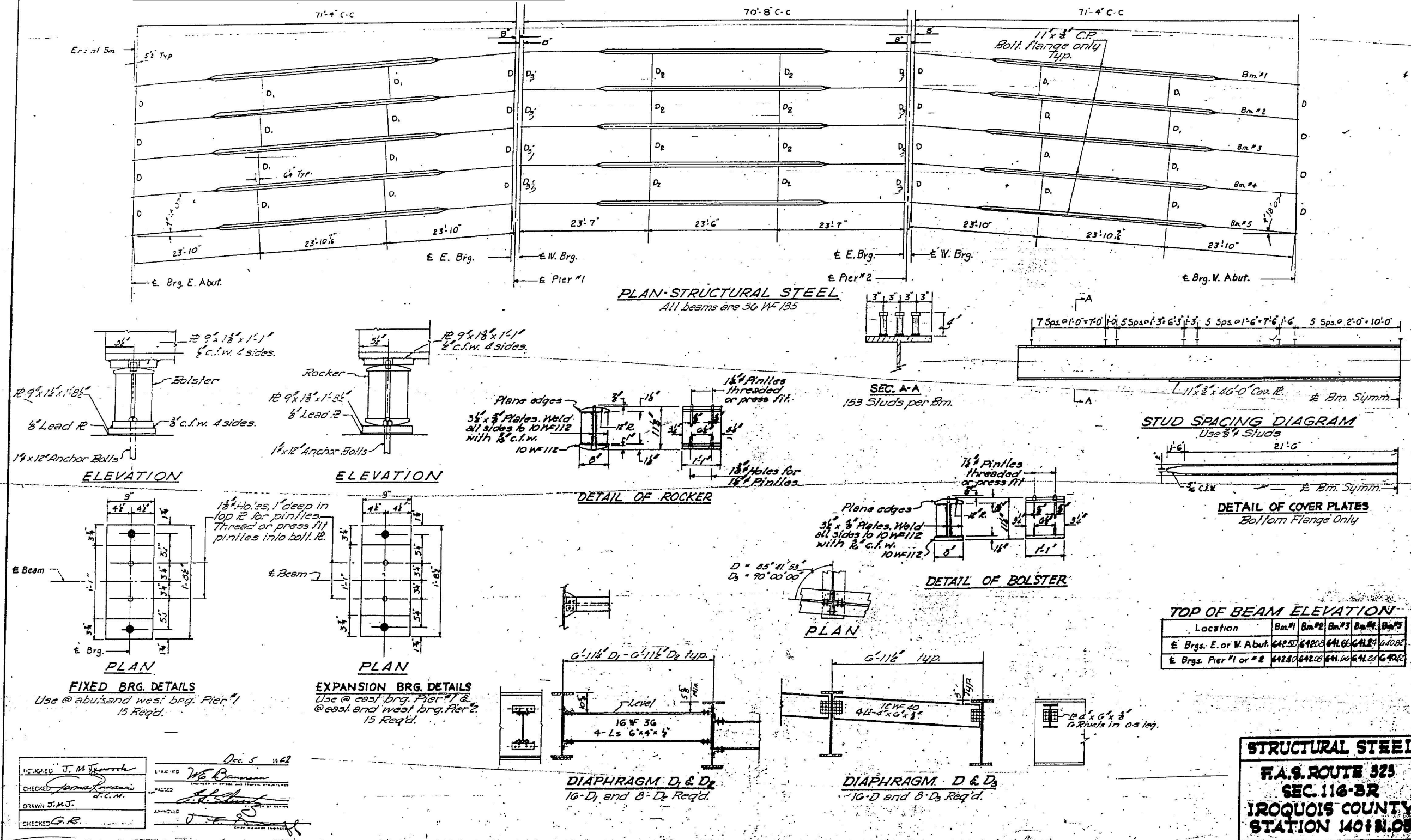
* Weight of bearing assemblies with lead plates and anchor bolts is included in structural steel. Est. wt. = 8,580 lbs

SUPERSTRUCTURE
F.A.S. ROUTE 32B
SEC. 116-BR
IROQUOIS COUNTY
STATION 140+M.05

FOR INFORMATION ONLY

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

FILE NO.	SHEET NO.	DATE	BY	CHKD.	APP'D.
FAS 323	116 BR	18 AUG 018	57	11	11



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

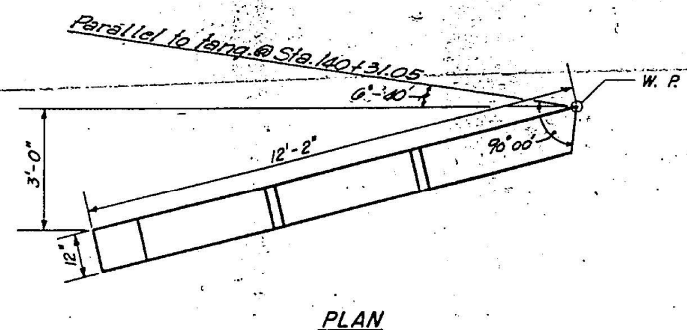
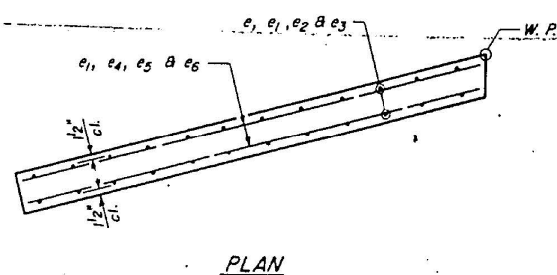
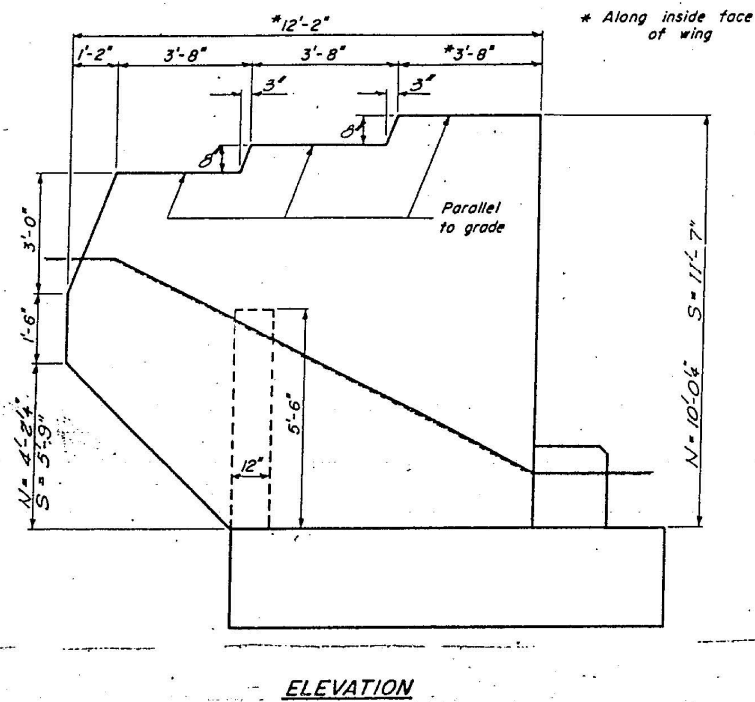
SHEET 36 OF 48 SHEETS

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 SHEET NO.	REPORT NO.
FA5323	116 BR	ILLINOIS	57	12
FBI LABORATORY		FBI - MEMPHIS		

SHEET NO 4
// SHEETS

[illegible]

DESIGNED	J. H. Fawcett	EXAMINED	W. B. Bannan
CHECKED	J. H. Fawcett	DESIGNED BY	W. B. Bannan
J. A. S.	J. C. M.	PASSED	J. H. Fawcett
DRAWN	W. A. Sausaman	APPROVED	J. H. Fawcett
CHECKED	G. R.		

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

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 -

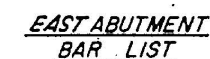
EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056

SHEET 37 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	42
		CONTRACT NO. 87548		
ILLINOIS		FED. AID PROJECT		



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	2d	#4	10'-9"	—
h ₂	2	#4	19'-0"	—
h ₂	10	#5	4'-9"	—
h ₂	2	#4	18'-0"	—
h ₂	1d	#5	4'-9"	—
h ₁	10	#5	5'-0"	—
p	0	#7	32'-0"	—
s	33	#4	6'-4"	—
s ₁	33	#4	7'-0"	—
s	5d	#5	5'-3"	—
u ₂	6	#5	8'-9"	—
u ₂	6	#4	6'-8"	—
u ₂	7	#4	5'-8"	—
u ₂	7	#4	5'-2"	—
u ₂	7	#4	4'-2"	—
y	20	#5	5'-3"	—
y	3d	#5	6'-9"	—
m ₁	8	#5	10'-3"	—
m ₁	2	#5	92'-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.

ELABUTMENT

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

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"

PILE DATA

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

BARS S, S₁, U₄ THRU U₁

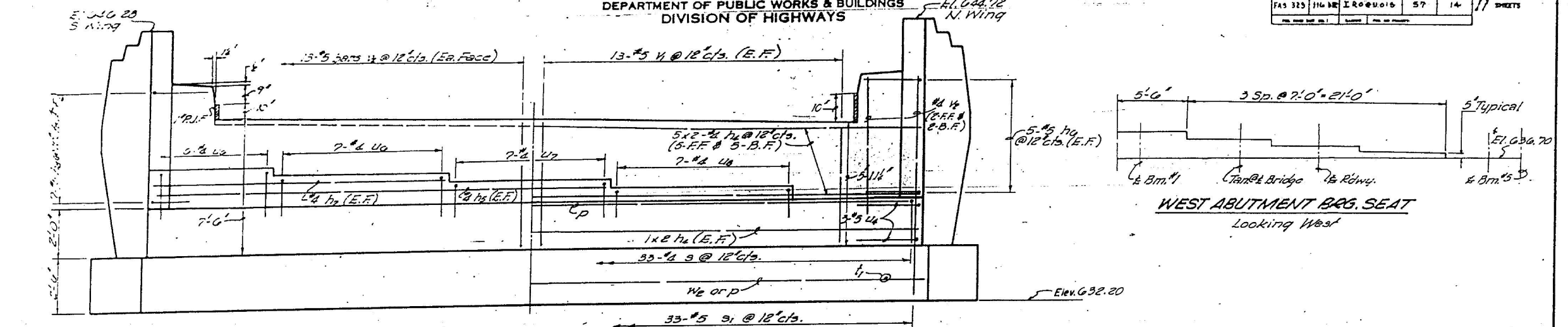
All piles in front row shall be battered 2:12

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



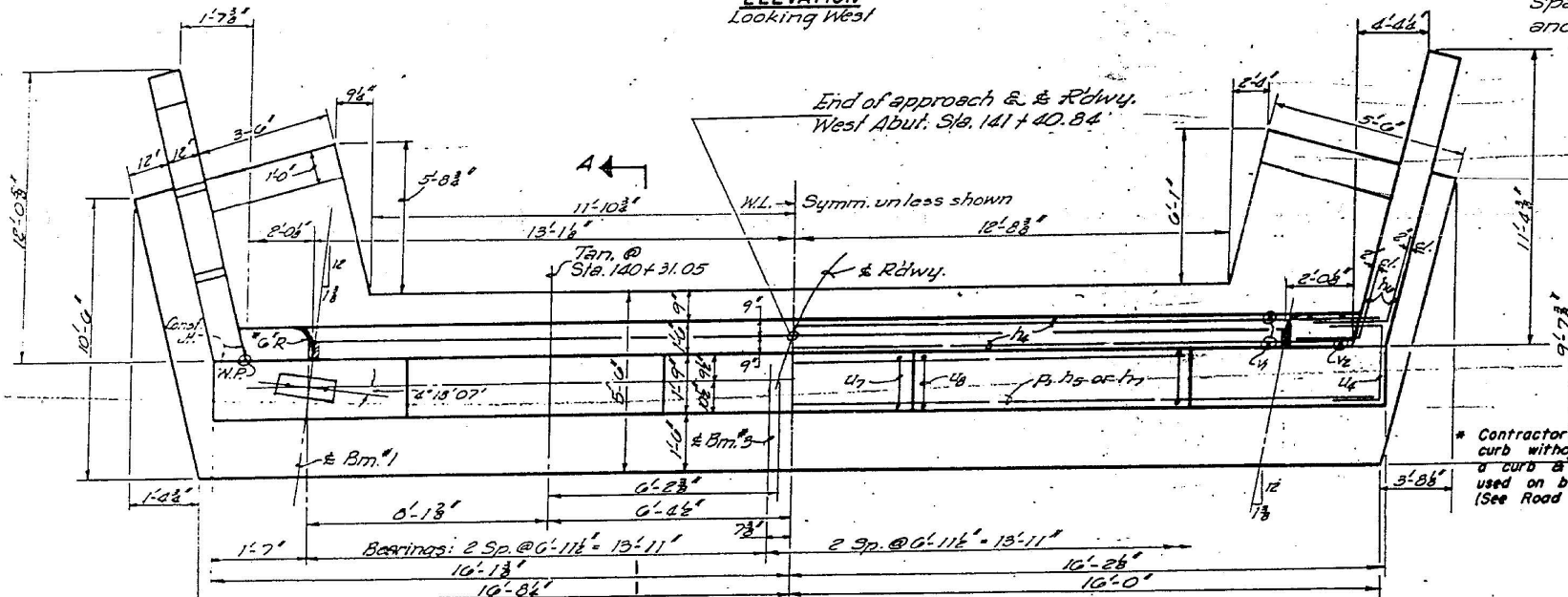
ELEVATION
Looking West

For location of n bars,
see sheet #4.
Space us thru u₈ to miss
anchor bolts.

WEST ABUTMENT
BAR LIST

Bar	No.	Size	Length	Shape
h ₄	28	#4	18'-9"	—
h ₅	2	#4	19'-0"	—
h ₆	10	#5	4'-9"	—
h ₇	2	#4	12'-0"	—
h ₈	14	#5	4'-9"	—
n ₁	16	#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 ₄	0	#5	8'-9"	—
u ₅	0	#4	0'-8"	—
u ₆	7	#4	5'-8"	—
u ₇	7	#4	5'-2"	—
u ₈	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"	—

For Bar Details, see sheet #5



PLAN

* Contractor shall construct
curb without radius when
a curb & gutter are
used on bridge approaches.
(See Road Plans).

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.

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

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

EXAMINED	W.E. Baumann
APPROVED	E.D. Schmitt

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

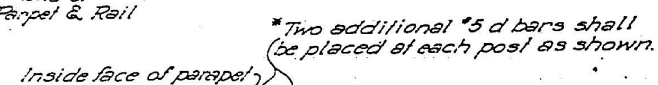
W.ABUTMENT

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

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

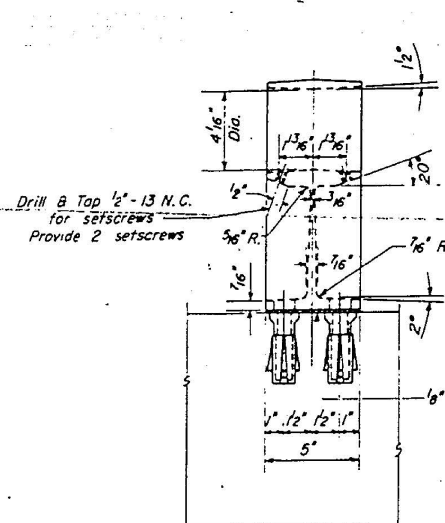
SHEET 39 OF 48 SHEETS

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				

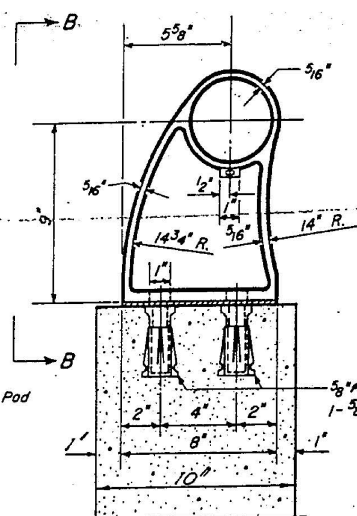


Note: Class X Concrete and Reinforcement Bars for Parapet Wall included with Bill of Material Superstructure.

FOR INFORMATION ONLY



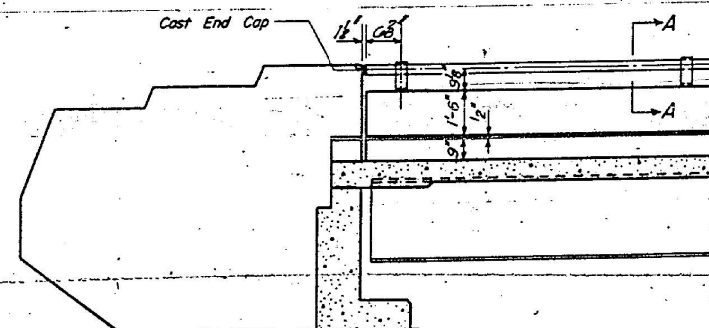
RAIL POST DETAILS



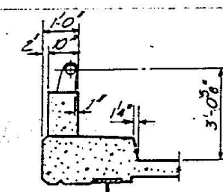
SECTION A-A



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

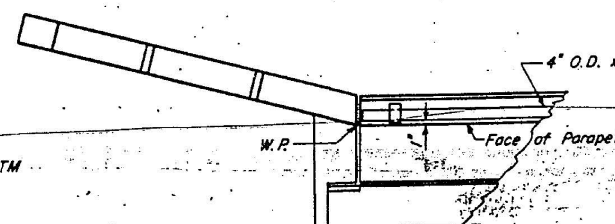


ELEVATION - END POST



SEC. THRU CURB

<u>BILL OF MATERIAL</u>		
Item	Unit	Quantity
Aluminum Handrail	Lin. Ft.	437



PLAN - END POST

TYPE D
ALUMINUM HANDRAIL

HANDRAIL & PARAPET WALL
F.A.S. ROUTE 325
SEC. 116 - BR
IROQUOIS COUNTY
STATION 140+31.05

NOTES

All Posts shall be placed normal to parapet

All Posts shall be of Aluminum conforming to ASTM Specification B-108 alloy 5G-70B-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 <i>J. M. Figgures</i>	DATE <i>Dec. 5 1962</i>
CHECKED <i>J. M. Figgures</i>	EXAMINED <i>W. B. Bannum</i>
<i>J. M. F.</i>	REVIEWED BY DESIGNER AND CHECKED BY EXAMINER
DRAWN <i>W. A. Soudsman</i>	PASSED <i>E. J. Roberts</i>
	REVIEWED BY DESIGNER
CHECKED <i>G. R.</i>	APPROVED <i>W. B. Bannum</i>
	REVIEWED BY EXAMINER

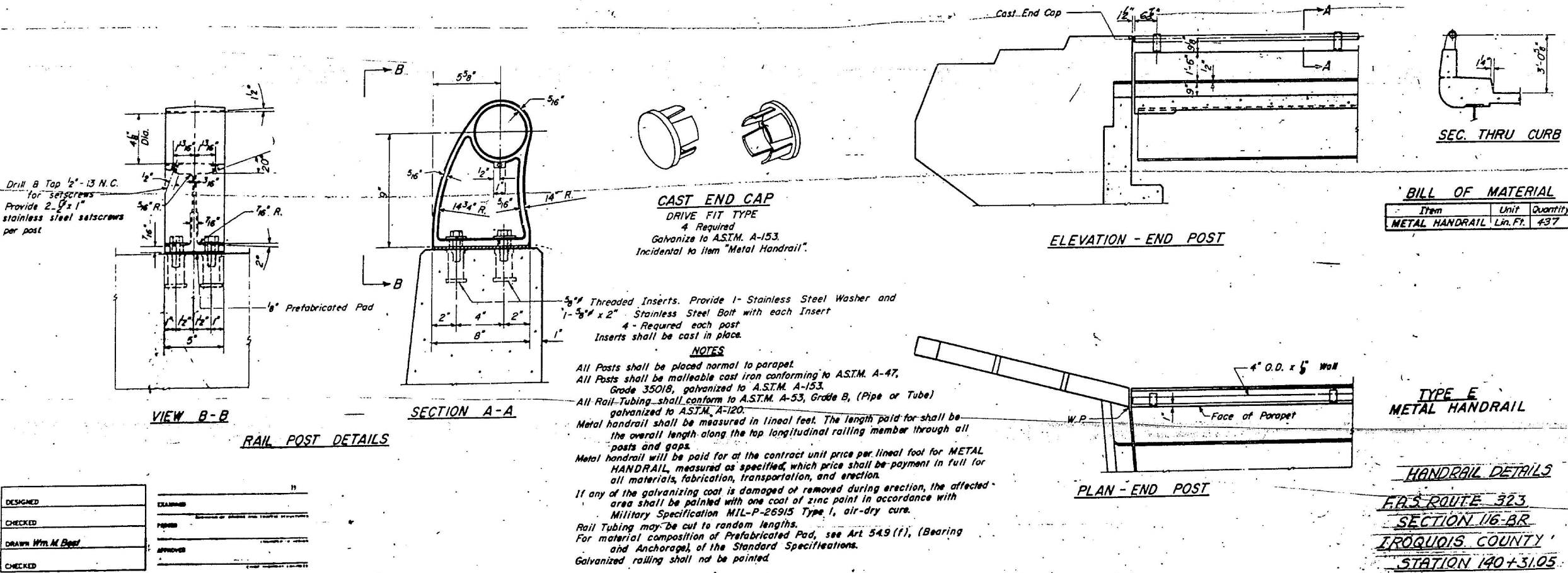
R-10 Drawn 2-16-60 Rev. 9-17-62

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	11 SHEETS

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

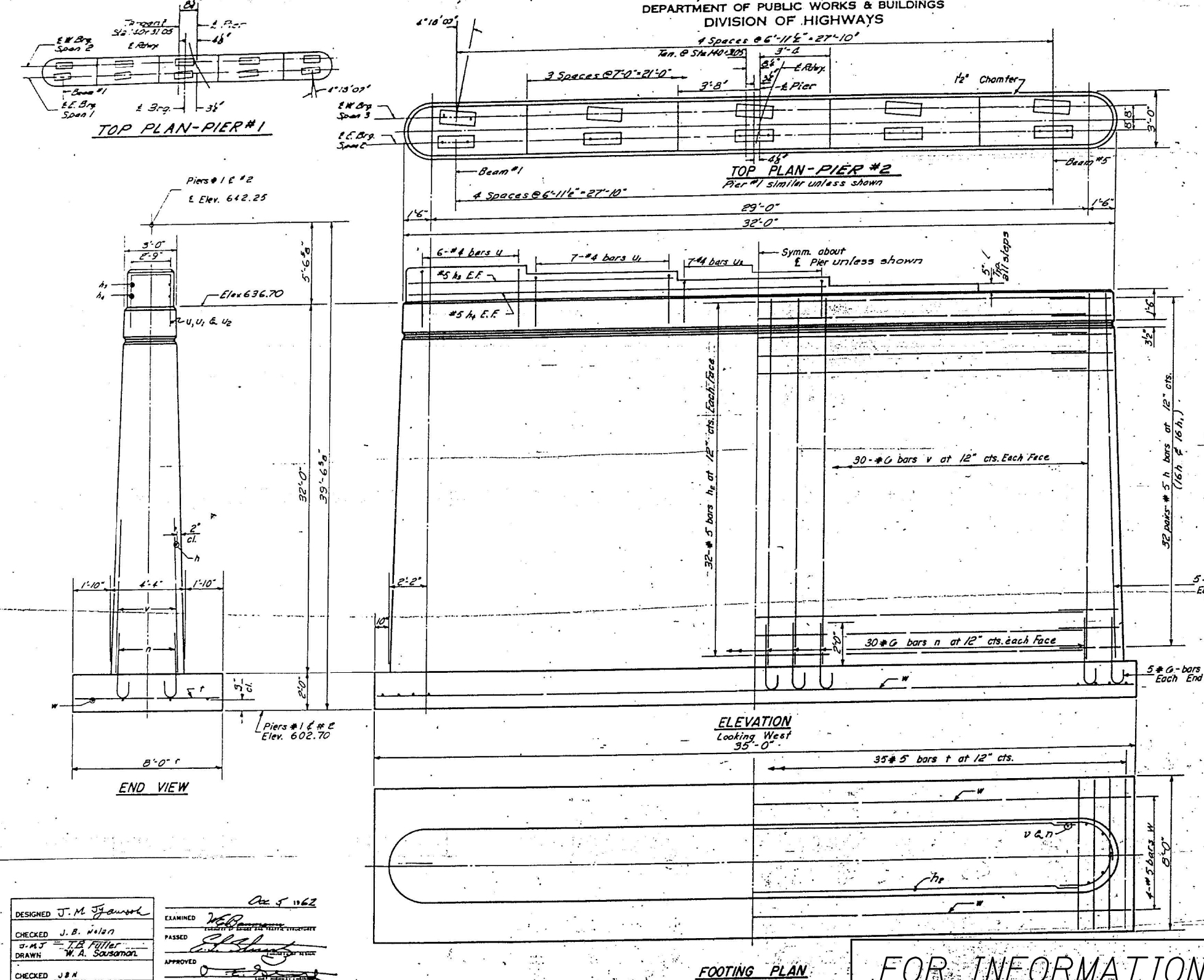
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	47
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

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

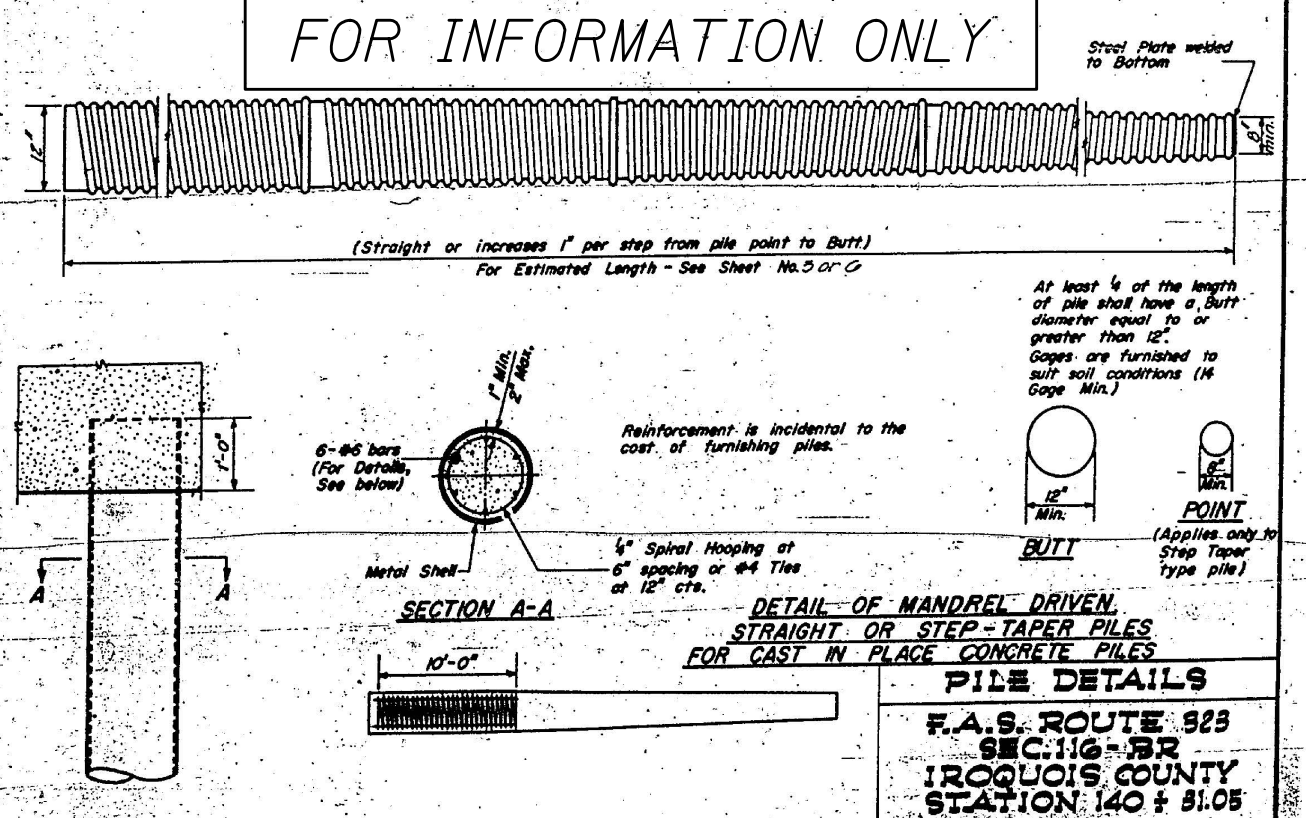
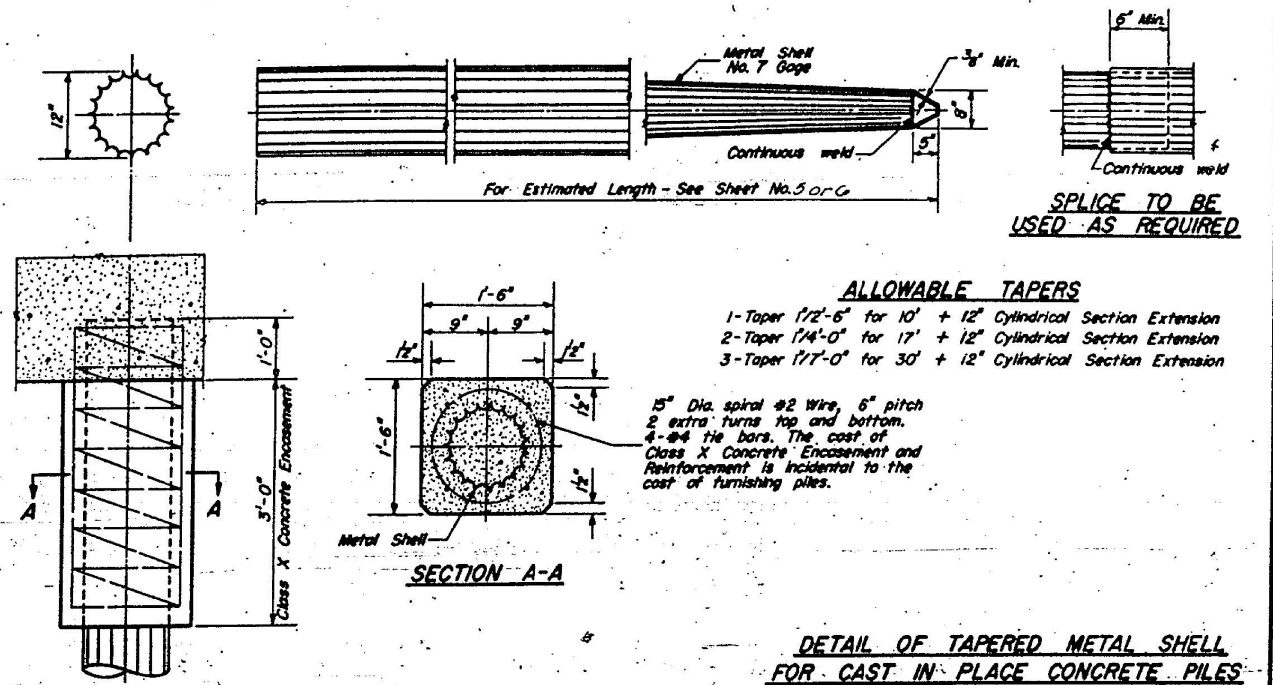
DESIGNED J. M. Gauriel	EXAMINED
CHECKED J. B. Nelson	PASSED
DRAWN T. B. Fuller	APPROVED
W. A. Sausaman	
CHECKED J. B. N.	

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

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



FOR INFORMATION ONLY



FOR INFORMATION ONLY

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

FILE NO.	PROJECT	SHEET NO.	10
745 323	ILL. DR. I&O 0018	57	18
		11 SHEETS	

Pier #2 Boring No. 1 Station 140+81.5 Offset 8' 11" E	Elevation	Z	W (%)
Ground Surface	626.11	0	
Stiff Brown Silty CLAY			
	621.63	17	1.4
Very Stiff Brown CLAY LOAM		16	3.3
	619.13		
Medium Brown CLAY LOAM		8	0.9
		5	0.7
	614.13		
Very Loose Yellowish Brown SANDY LOAM		3	0.4
		3	0.3
	609.13		
Stiff Gray CLAY (Lacustrine)		8	1.3
	606.63		
Very Stiff Gray CLAY (Lacustrine)		10	2.6
	604.13		
Stiff Gray CLAY (Till)		11	1.9
	601.63		
Very Stiff Gray CLAY (Till)		13	3.3
		19	3.2
		20	3.7
		22	3.8
	591.63		
Dense Gray SILT		35	
		59	
		48	
	581.13		

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

DESIGNED J.M. Flawole
CHECKED Jamar Roman
DRAWN T.B. Fuller
CHECKED G.R.

Pier #1 Boring No. 2 Station 140+81.5 Offset 8' 11" E	Elevation	Z	W (%)
Ground Surface	626.28	0	
Medium Gray SILT		21	
	621.13		
Stiff Gray CLAY (Lacustrine)		13	1.8
		12	1.7
		10	1.8
	609.13		
Stiff Gray CLAY (Till)		12	1.8
	604.63		
Stiff Gray CLAY LOAM (Till)		13	1.6
	604.13		
Very Stiff Gray CLAY LOAM (Till)		23	3.7
	601.63		
Hard Gray CLAY LOAM (Till)		33	9.9
		82	8.3
	597.63		

Pier #1 Boring No. 2 Station 140+81.5 Offset 8' 11" E	Elevation	Z	W (%)
Ground Surface	626.28	0	
Stiff Brownish Black CLAY LOAM			
	621.78		
Stiff Brown CLAY LOAM		10	1.3
	619.28		
Very Loose Yellowish Brown Fine Rounded SAND		4	
	616.78		
Loose Yellowish Brown Fine Rounded SANDY LOAM		5	
	612.28		
Very Loose Yellowish Brown and Gray Fine Rounded SANDY LOAM		3	

Dec 5 1962

EXAMINED W. Bauman
PASSED P. Shantz
APPROVED J. J. [Signature]

N - Standard Penetration Test - 140 lb. hammer falling 30".
W - Water Content - percentage of oven dry weight - %

Pier #1 Boring No. 2 Station 140+81.5 Offset 8' 11" E	Elevation	Z	W (%)
Ground Surface	626.28	0	
Very Loose Gray SAND & Angular Gravel			
	609.78		
Very Stiff Gray CLAY (Till)		13	2.8
		11	2.7
		18	2.1
		17	3.3
		17	3.7
		14	3.1
	587.28		
Very Stiff Gray CLAY (Varved)		21	2.7
	584.78		
Ground Surface	626.28	0	
Medium Gray SILT (Small Pockets of Clay)		23	
	579.78		
Dense Gray SILT		38	
		34	
	574.78		
Medium Gray SILT (Small Pockets of Clay)		28	
		30	
	570.28		

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

Qu - Unconfined Compressive Strength - Tsf
w - Water Content - percentage of oven dry weight - %

Type Label
B - Borehole
S - Shallow
E - Estimated

Pier #1 Boring No. 2 Station 140+81.5 Offset 8' 11" E	Elevation	Z	W (%)
Ground Surface	624.75	0	
Stiff Brownish Black & Brown CLAY LOAM			
	617.85		
Medium Brown CLAY LOAM		6	0.9
	615.25		
Stiff Brown CLAY LOAM		7	1.2
		6	1.0
	610.25		
Very Loose Yellowish Brown SANDY LOAM		2	
	607.85		
Loose Fine to Coarse Angular SAND		5	
		6	
	602.85		
Stiff Gray CLAY (Till)		10	1.3
	600.25		
Very Stiff Gray CLAY (Till)		15	2.6
		12	2.1
		18	2.8
		18	2.0
	589.25		
Dense Gray SILT (Small Clay Pockets)		34	
		48	
	584.25		
Medium Gray SILT (Small Clay Pockets)		21	
	582.85		
Dense Gray SILT		25	
	577.85		
Very Stiff Gray CLAY (Lacustrine)		17	3.1

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

Pier #1 Boring No. 4 Station 141+00.2 Offset 8' 11" E	Elevation	Z	W (%)
Ground Surface	627.01	0	
Very Stiff Brownish Black and Brown CLAY LOAM			
	615.51		
Medium Yellowish Brown CLAY LOAM		4	0.6
	613.01		
Loose to Very Loose Yellowish Brown and Gray SANDY LOAM		5	
		3	
	608.01		
Very Stiff Gray CLAY (Till)		6	2.1
		13	3.3
		12	2.9
		14	3.1
		25	2.6
		16	2.1
		13	2.3
	590.51		
Hard Gray CLAY LOAM (Till)		38	3.0
	588.01		
Hard Gray SILTY CLAY		40	4.4
	585.51		

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

Surface Water El. None
Groundwater El. at Completion 593.01
After 24 Hours 593.01

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

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 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				

MODEL: Default
FILE NAME: ...0380056-031-041-EX-PLAN5.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 -

FOR INFORMATION ONLY

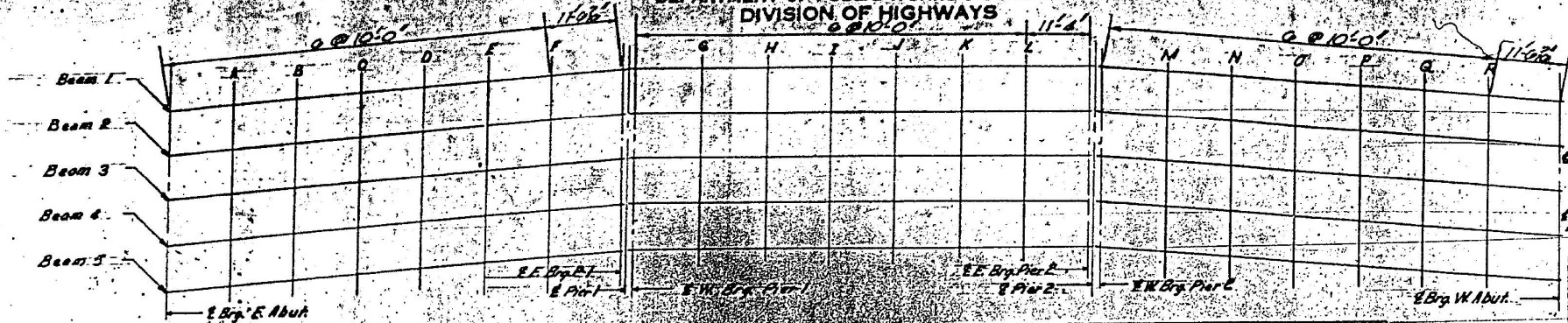
EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056

SHEET 45 OF 48 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	50
		CONTRACT NO. 87548		
		ILLINOIS FED. AID PROJECT		

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

PROJECT NO.	SECTION	SHEET NO.	TOTAL SHEETS
038-0056	11-00116-04-BR	45	48
SHEET NO. 11			

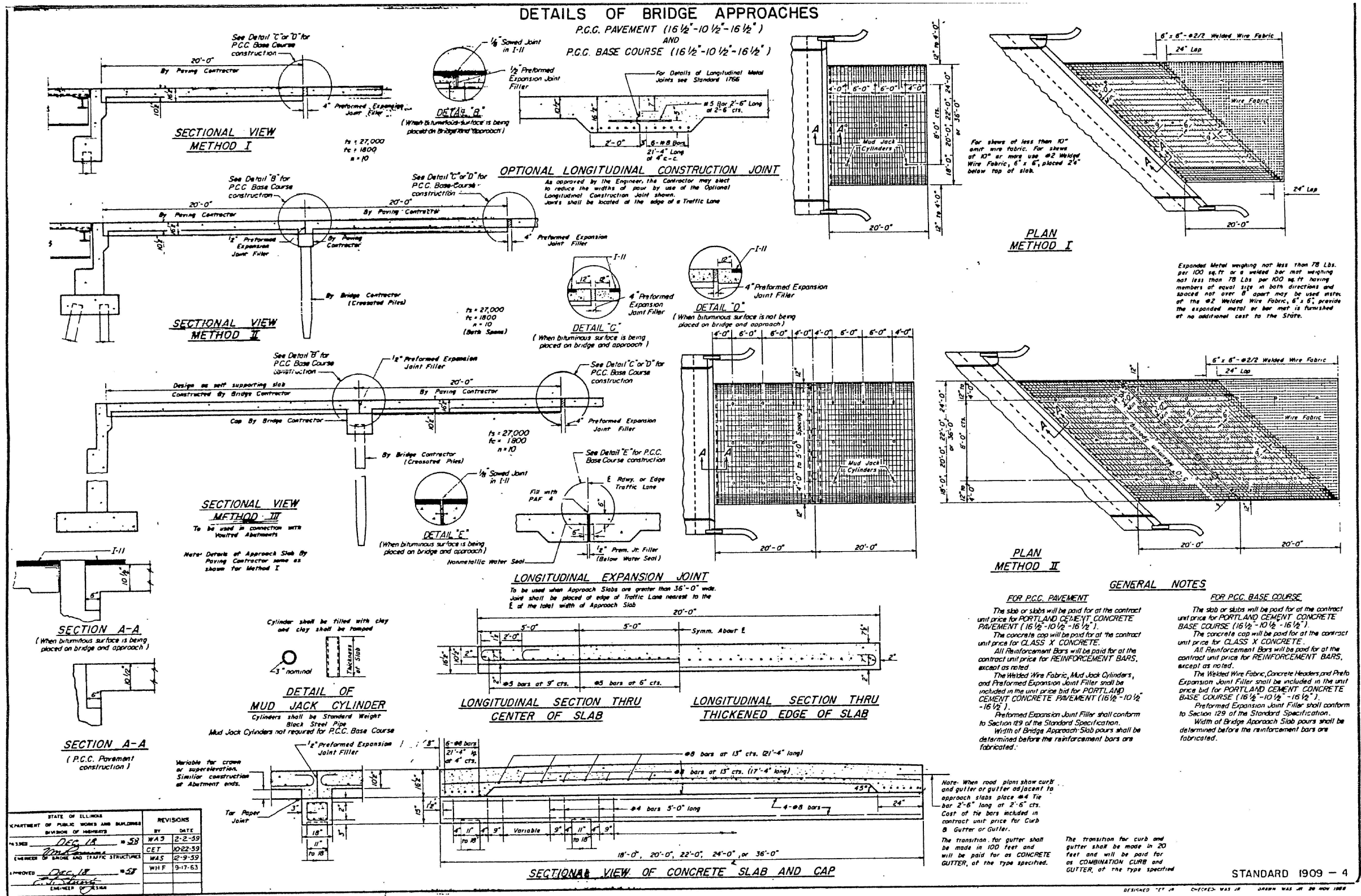


Beams	Station	Offset	Theoretical Grade Elevations	Grade Elevations Adjusted For Deflection
Bl. E. Appr.	13920.420	7.295	841.813	841.813
	13921.818	7.373	842.228	842.228
	13921.800	7.300	842.228	842.228
	13922.000	6.538	842.842	842.842
E. Br. E. Abut.	13921.977	7.345	841.809	841.813
	13922.781	6.52	842.22	842.228
	13923.052 =	6.48	842.289	842.293
	13923.254	6.481	842.639	842.645
1	13923.052	7.670	841.790	841.840
	13923.783	7.18	842.22	842.228
	13923.874	7.00	842.270	842.280
	13923.942 =	6.172	842.620	842.61
D	13924.133	7.388	841.777	841.885
	13924.770	6.907	842.192	842.251
	13924.781	7.16	842.257	842.348
	13924.397 =	5.283	842.608	842.697
O	13925.271	6.000	841.770	841.876
	13925.790	6.053	842.181	842.252
	13925.987 =	7.172	842.257	842.357
	13926.201	6.189	842.608	842.708
D	13926.303	6.004	841.770	841.875
	13926.791	6.051	842.181	842.252
	13926.987 =	7.172	842.257	842.357
	13926.279 =	5.175	842.603	842.708
F	13927.357	7.322	841.775	841.884
	13927.821	6.87	842.195	842.251
	13927.921 =	6.82	842.257	842.357
	13928.210	5.987	842.603	842.697
F	13928.483	7.663	841.738	841.836
	13928.828	6.194	842.073	842.152
	13929.067 =	6.200	842.270	842.360
	13929.153	6.204	842.622	842.672
1	13929.081	7.320	841.811	841.811
	13929.348	6.357	842.228	842.228
	13929.363 =	6.118	842.223	842.223
	13929.508 =	6.504	842.648	842.648
E. Pier 1	13929.724	7.204	841.812	841.812
	13929.914 =	6.341	842.228	842.228
	13929.928 =	7.204	842.254	842.254
	13929.280 =	6.811	842.647	842.647
Bl. E. Appr.	13919.813	15.186	841.308	841.308
	13922.778 =	15.651	842.057	842.057
	13923.181	14.257	841.305	841.305
	13924.208 =	15.385	842.054	842.054
1	13923.351	14.800	841.375	841.459
	13924.153 =	15.004	842.058	842.100
	13924.488	16.818	841.361	841.481
	13924.918 =	16.807	842.054	842.144
O	13925.846	14.534	841.364	841.500
	13926.881 =	12.804	842.018	842.166
	13927.807 =	14.564	841.358	841.505
	13928.742 =	12.818	842.019	842.180
F	13927.988	14.807	841.359	841.483
	13928.912 =	12.835	842.028	842.150
	13929.123	14.842	841.371	841.494
	13929.578 =	12.153	842.029	842.115
Bl. E. Appr.	13929.935	14.712	841.395	841.504
	13930.943 =	16.037	842.058	842.208
	13930.911	15.298	841.390	841.392
	13930.502 =	15.063	842.064	842.064

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 ± Rdwy	Theoretical Grade Elevations	Env. Adjusted for D.L. Deflection
End E App	1	13980.511	6.409	641.865	641.865
	2	13981.325	5.906	642.280	642.280
	3	13982.125	5.410	642.695	642.695
	4	13982.912	4.913	643.110	643.110
E Brg. E. Abut.	5	13983.695	4.417	643.525	643.525
	6	13984.478	3.920	643.940	643.940
	7	13985.261	3.423	644.355	644.355
	8	13986.044	2.926	644.770	644.770
A	9	13986.827	2.429	645.185	645.185
	10	13987.610	1.932	645.600	645.600
	11	13988.393	1.435	646.015	646.015
	12	13989.176	0.938	646.430	646.430
B	13	13989.959	0.441	646.845	646.845
	14	13990.742	-0.056	647.260	647.260
	15	13991.525	-0.559	647.675	647.675
	16	13992.308	-1.062	648.090	648.090
C	17	13993.091	-1.565	648.505	648.505
	18	13993.874	-2.068	648.920	648.920
	19	13994.657	-2.571	649.335	649.335
	20	13995.440	-3.074	649.750	649.750
D	21	13996.223	-3.577	650.165	650.165
	22	13997.006	-4.080	650.580	650.580
	23	13997.789	-4.583	650.995	650.995
	24	13998.572	-5.086	651.410	651.410
E	25	13999.355	-5.589	651.825	651.825
	26	14000.138	-6.092	652.240	652.240
	27	14000.921	-6.595	652.655	652.655
	28	14001.704	-7.098	653.070	653.070
F	29	14002.487	-7.601	653.485	653.485
	30	14003.270	-8.104	653.900	653.900
	31	14004.053	-8.607	654.315	654.315
	32	14004.836	-9.110	654.730	654.730
E Brg. Pier 1	33	14005.619	-9.613	655.145	655.145
	34	14006.402	-10.116	655.560	655.560
	35	14007.185	-10.619	655.975	655.975
	36	14007.968	-11.122	656.390	656.390
E Pier 1	37	14008.751	-11.625	656.805	656.805
	38	14009.534	-12.128	657.220	657.220
	39	14010.317	-12.631	657.635	657.635
	40	14011.100	-13.134	658.050	658.050
BK. E. App.	41	14011.883	-13.637	658.465	658.465
	42	14012.666	-14.140	658.880	658.880
	43	14013.449	-14.643	659.295	659.295
	44	14014.232	-15.146	659.710	659.710
Brg. E. Abut.	45	14015.015	-15.649	660.125	660.125
	46	14015.798	-16.152	660.540	660.540
	47	14016.581	-16.655	660.955	660.955
	48	14017.364	-17.158	661.370	661.370
A	49	14018.147	-17.661	661.785	661.785
	50	14018.930	-18.164	662.200	662.200
	51	14019.713	-18.667	662.615	662.615
	52	14020.496	-19.170	663.030	663.030
B	53	14021.279	-19.673	663.445	663.445
	54	14022.062	-20.176	663.860	663.860
	55	14022.845	-20.679	664.275	664.275
	56	14023.628	-21.182	664.690	664.690
C	57	14024.411	-21.685	665.105	665.105
	58	14025.194	-22.188	665.520	665.520
	59	14025.977	-22.691	665.935	665.935
	60	14026.760	-23.194	666.350	666.350
D	61	14027.543	-23.697	666.765	666.765
	62	14028.326	-24.200	667.180	667.180
	63	14029.109	-24.703	667.595	667.595
	64	14029.892	-25.206	668.010	668.010
E	65	14030.675	-25.709	668.425	668.425
	66	14031.458	-26.212	668.840	668.840
	67	14032.241	-26.715	669.255	669.255
	68	14033.024	-27.218	669.670	669.670
F	69	14033.807	-27.721	670.085	670.085
	70	14034.590	-28.224	670.500	670.500
	71	14035.373	-28.727	670.915	670.915
	72	14036.156	-29.230	671.330	671.330
E Brg. Pier 1	73	14036.939	-29.733	671.745	671.745
	74	14037.722	-30.236	672.160	672.160
	75	14038.505	-30.739	672.575	672.575
	76	14039.288	-31.242	672.990	672.990
E Pier 1	77	14040.071	-31.745	673.405	673.405
	78	14040.854	-32.248	673.820	673.820
	79	14041.637	-32.751	674.235	674.235
	80	14042.420	-33.254	674.650	674.650
BK. W. App.	81	14043.203	-33.757	675.065	675.065
	82	14043.986	-34.260	675.480	675.480
	83	14044.769	-34.763	675.895	675.895
	84	14045.552	-35.266	676.310	676.310
E Brg. W. Abut.	85	14046.335	-35.769	676.725	676.725
	86	14047.118	-36.272	677.140	677.140
	87	14047.901	-36.775	677.555	677.555
	88	14048.684	-37.278	677.970	677.970
E Pier 2	89	14049.467	-37.781	678.385	678.385
	90	14050.250	-38.284	678.800	678.800
	91	14051.033	-38.787	679.215	679.215
	92	14051.816	-39.290	679.630	679.630
BK. W. App.	93	14052.599	-39.793	680.045	680.045
	94	14053.382	-40.296	680.460	680.460
	95	14054.165	-40.799	680.875	680.875
	96	14054.948	-41.302	681.290	681.290
E Brg. W. Abut.	97	14055.731	-41.805	681.705	681.705
	98	14056.514	-42.308	682.120	682.120
	99	14057.297	-42.811	682.535	682.535
	100	14058.080	-43.314	682.950	682.950
E Pier 2	101	14058.863	-43.817	683.365	683.365
	102	14059.646	-44.320	683.780	683.780
	103	14060.429	-44.823	684.195	684.195
	104	14061.212	-45.326	684.610	684.610
BK. W. App.	105	14061.995	-45.829	685.025	685.025
	106	14062.778	-46.332	685.440	685.440
	107	14063.561	-46.835	685.855	685.855
	108	14064.344	-47.338	686.270	686.270
E Brg. W. Abut.	109	14065.127	-47.841	686.685	686.685
	110	14065.910	-48.344	687.100	687.100
	111	14066.693	-48.847	687.515	687.515
	112	14067.476	-49.350	687.930	687.930
E Pier 2	113	14068.259	-49.853	688.345	688.345
	114	14069.042	-50.356	688.760	688.760
	115	14069.825	-50.859	689.175	689.175
	116	14070.608	-51.362	689.590	689.590
BK. W. App.	117	14071.391	-51.865	689.605	689.605
	118	14072.174	-52.368	689.620	689.620
	119	14072.957	-52.871	689.635	689.635
	120	14073.740	-53.374	689.650	689.650
E Brg. W. Abut.	121	14074.523	-53.877	689.665	689.665
	122	14075.306	-54.380	689.680	689.680
	123	14076.089	-54.883	689.695	689.695
	124	14076.872	-55.386	689.710	689.710
E Pier 2	125	14077.655	-55.889	689.725	689.725
	126	14078.438	-56.392	689.740	689.740
	127	14079.221	-56.895	689.755	689.755
	128	14080.004	-57.398	689.770	689.770
BK. W. App.	129	14080.787	-57.901	689.785	689.785
	130	14081.570	-58.404	689.800	689.800
	131	14082.353	-58.907	689.815	689.815
	132	14083.136	-59.410	689.830	689.830
E Brg. W. Abut.	133	14083.919	-59.913	689.845	689.845
	134	14084.702	-60.416	689.860	689.860
	135	14085.485	-60.919	689.875	689.875
	136	14086.268	-61.422	689.890	689.890
E Pier 2	137	14087.051	-61.925	689.905	689.905
	138	14087.834	-62.428	689.920	689.920
	139	14088.617	-62.931	689.935	689.935
	140	14089.400	-63.434	689.950	689.950
BK. W. App.	141	14090.183	-63.937	689.965	689.965
	142	14090.966	-64.440	689.980	689.980
	143	14091.749	-64.943	689.995	689.995
	144	14092.532	-65.446	690.010	690.010
E Brg. W. Abut.	145	14093.315	-65.949	690.025	690.025
	146	14094.098	-66.452	690.040	690.040
	147	14094.881	-66.955	690.055	690.055
	148	14095.664	-67.458	690.070	690.070
E Pier 2	149	14096.447	-67.961	690.085	690.085
	150	14097.230	-68.464	690.100	690.100
	151	14098.013	-68.967	690.115	690.115
	152	14098.796	-69.470	690.130	690.130
BK. W. App.	153	14099.579	-69.973	690.145	690.145
	154	14100.362	-70.476	690.160	690.160
	155	14101.145	-70.979	690.175	690.175
	156	14101.928	-71.482	690.190	690.190
E Brg. W. Abut.	157	14102.711	-71.985	690.205	690.205
	158	14103.494	-72.488	690.220	690.220
	159	14104.277	-72.991	690.235	690.235
	160	14105.060	-73.494	690.250	690.250
E Pier 2	161	14105.843	-73.997	690.265	690.265
	162	14106.626	-74.500	690.280	690.280
	163	14107.409	-75.003	690.295	690.295
	164	14108.192	-75.506	690.310	690.310
BK. W. App.	165	14108.975	-76.009	690.325	690.325
	166	14109.758	-76.512	690.340	690.340
	167	14110.541	-77.015	690.355	690.355
	168	14111.324	-77.518	690.370	690.370
E Brg. W. Abut.	169	14112.107	-78.021	690.385	690.385
	170	14112.890	-78.524	690.400	690.400
	171	14113.673	-79.027	690.415	690.415
	172	14114.456	-79.530	690.430	690.430
E Pier 2	173	14115.239	-80.033	690.445	690.445
	174	14116.022	-80.536	690.460	690.460
	175	14116.805	-81.039	690.475	690.475
	176	14117.588	-81.542	690.490	690.490
BK. W. App.	177	14118.371	-82.045	690.505	690.505
	178	14119.154	-82.548	690.520	690.520
	179	14120.937	-83.051	690.535	690.535
	180	14121.720	-83.554	690.550	690.550
E Brg. W. Abut.	181	14122.503	-84.057	690.565	690.565
	182	14123.286	-84.560	690.580	690.580
	183	14124.069	-85.063	690.595	690.595
	184	14124.852	-85.566	690.610	690.610
E Pier 2	185	14125.635	-86.069	690.625	690.625
	186	14126.418	-86.572	690.640	690.640
	187	14127.201	-87.075	690.655	690.655
	188	14127.984	-87.578	690.670	690.670
BK. W. App.	189	14128.767	-88.081	690.685	690.685
	190	14129.550	-88.584	690.700	690.700
	191	14130.333	-89.087	690.715	690.715
	192	14131.116	-89.590	690.730	690.730
E Brg. W. Abut.	193	14131.899	-90.093	690.745	690.745
	194	14132.682	-90.596	690.760	690.760
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FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

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cconnor	J.A.M.	A.R.K.	A.D.S.	2-2-59
				10-22-59
				12-9-59
				9-17-63

REVISIONS	BY	DATE
WAS	CET	2-2-59
WAS	CET	10-22-59
WAS	WHF	12-9-59
WAS	WHF	9-17-63

REVISIONS	BY	DATE
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WAS	CET	10-22-59
WAS	WHF	12-9-59
WAS	WHF	9-17-63

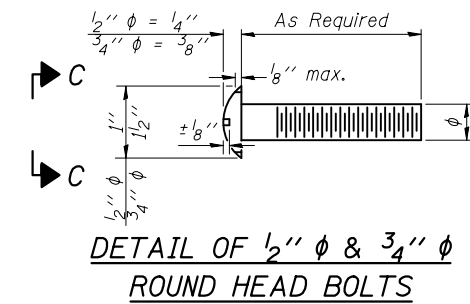
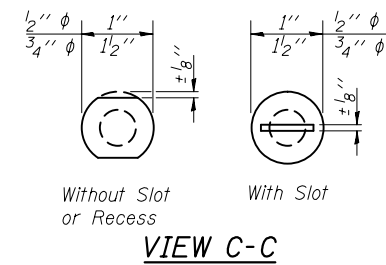
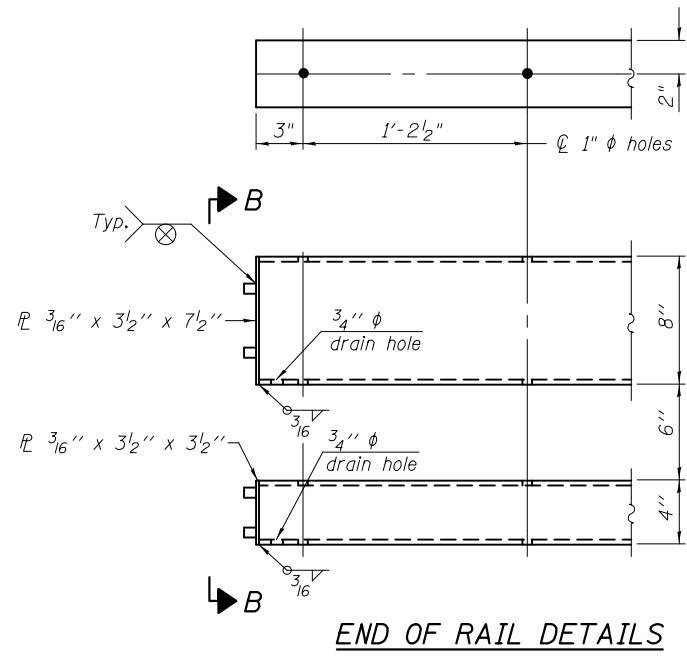
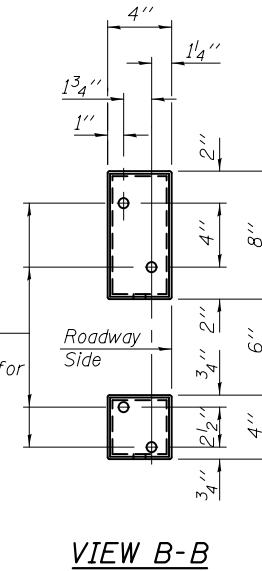
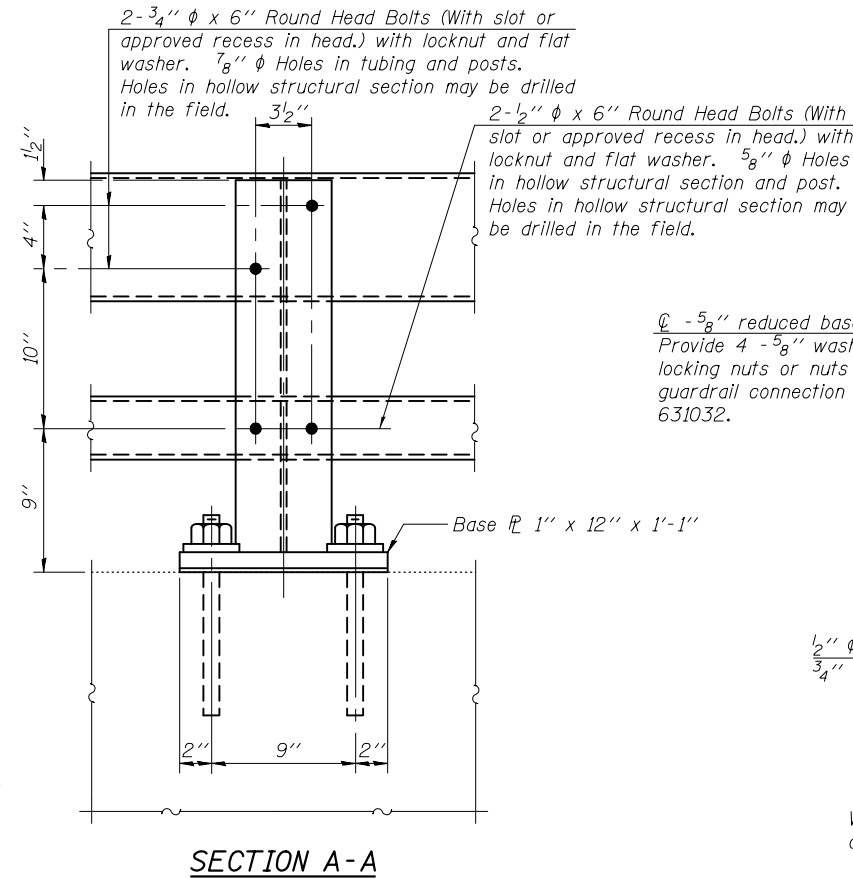
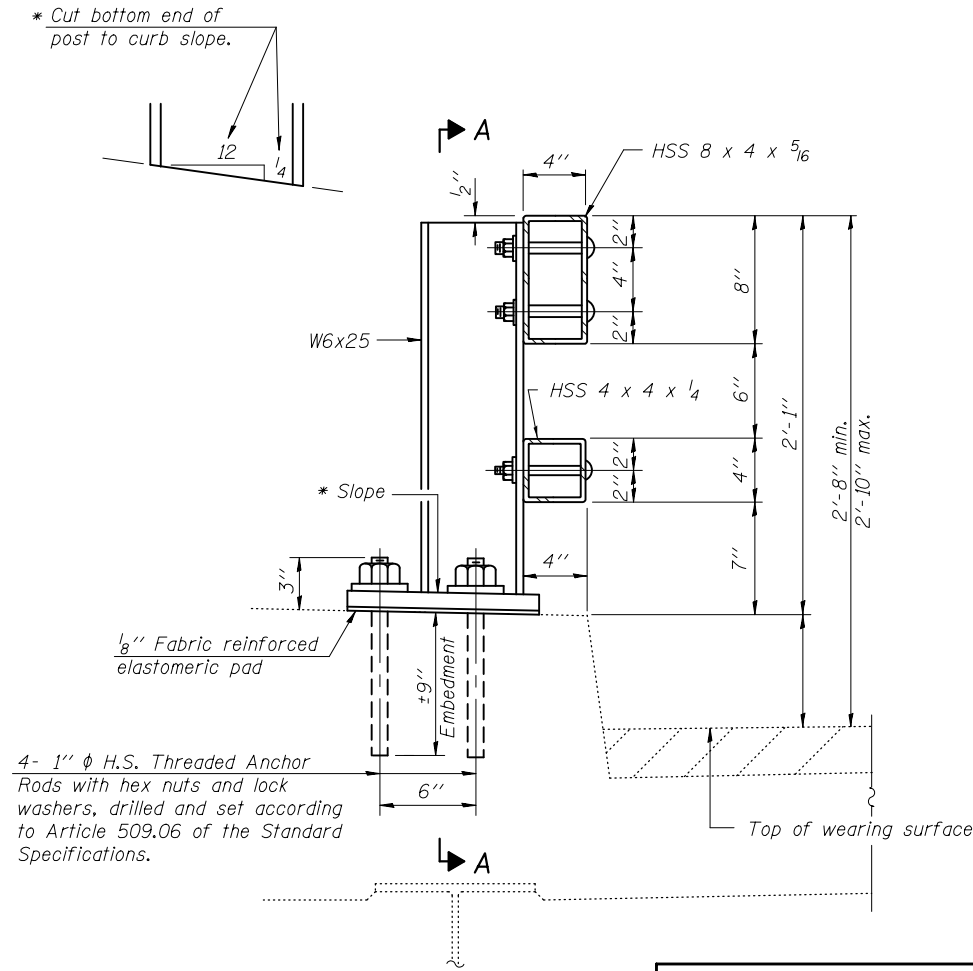
EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 038-0056

SHEET 47 OF 48 SHEETS

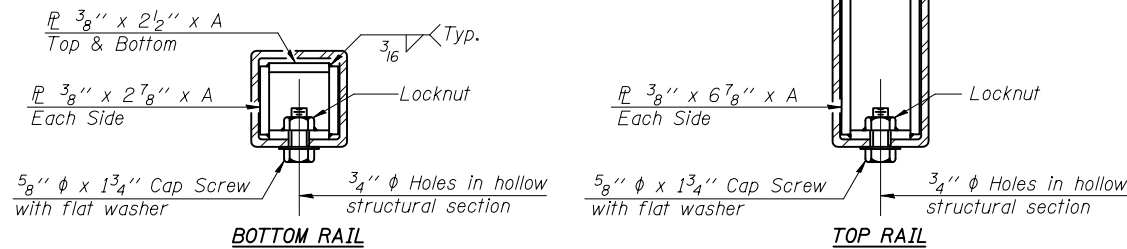
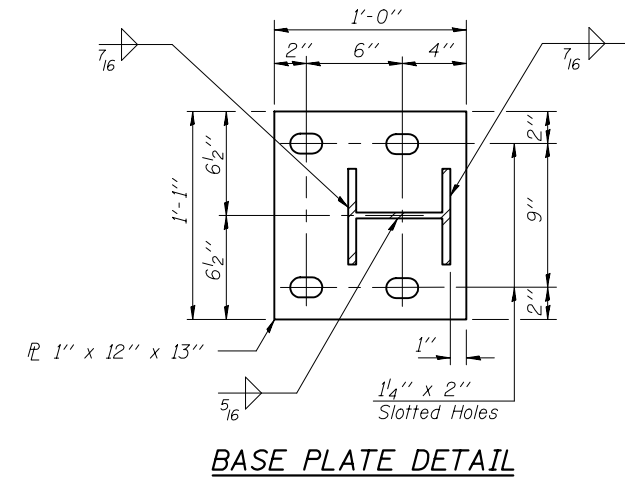
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-04-BR	IROQUOIS	60	52
				CONTRACT NO. 87548

ILLINOIS FED. AID PROJECT

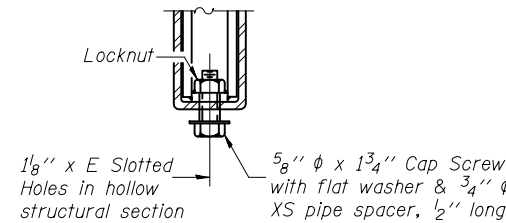
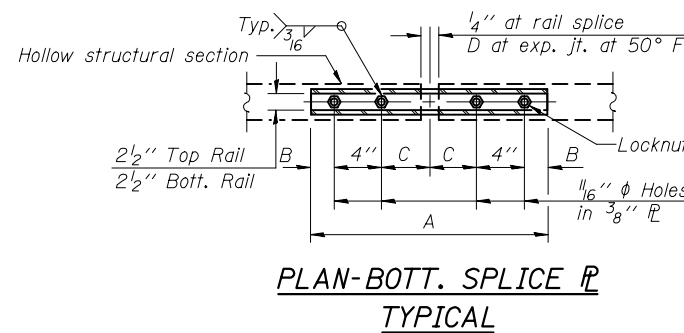
FEHR GRAHAM PROJECT NUMBER: 11-138



FOR INFORMATION ONLY



SECTIONS AT RAIL SPLICE



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	1/4"	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	

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				

R-31

7-1-10

(6'-3" Maximum Post Spacing)

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

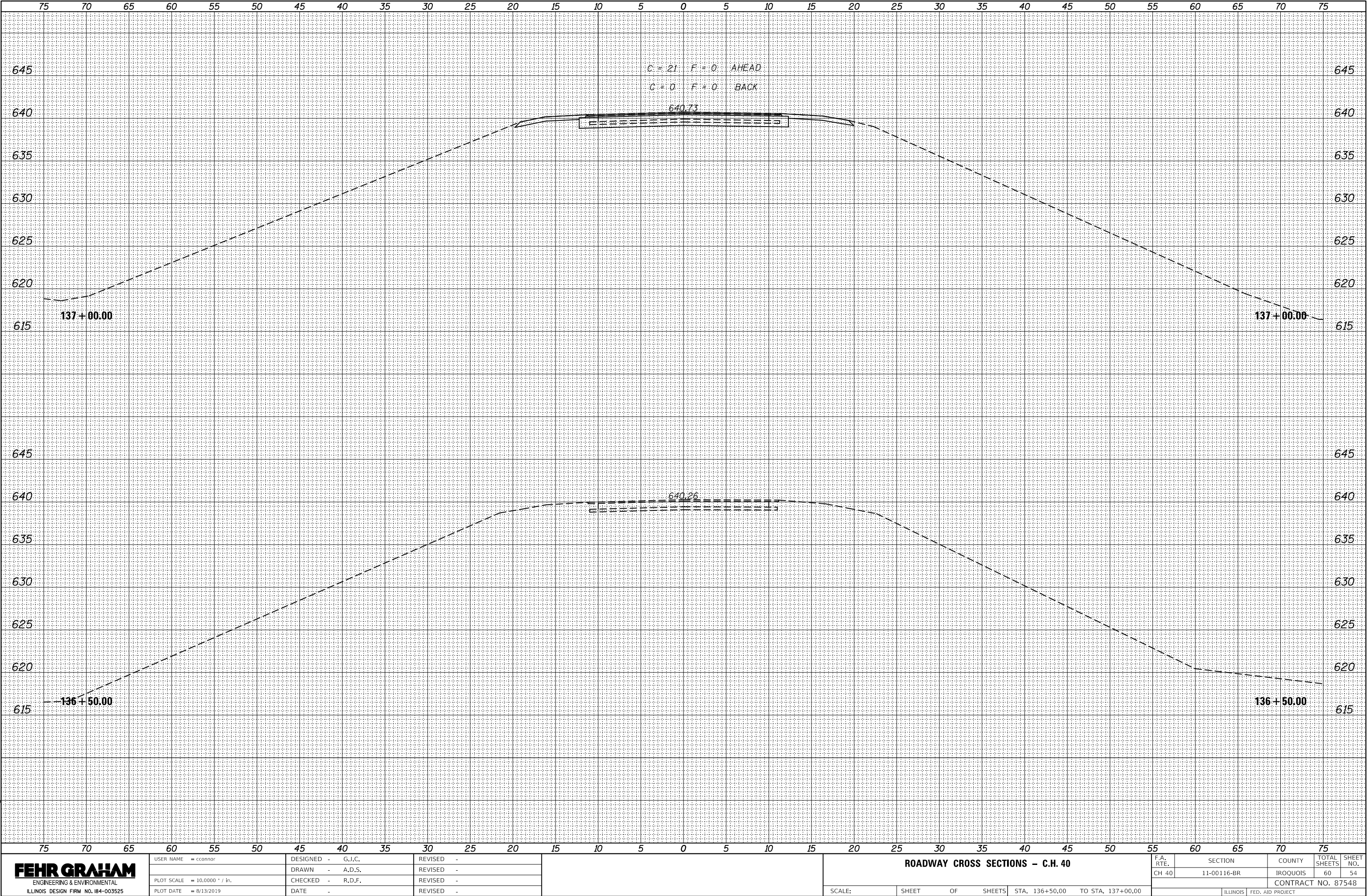
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PLOT DATE = 8/13/2019	CHECKED - J.A.M. & A.R.K.	REVISED -

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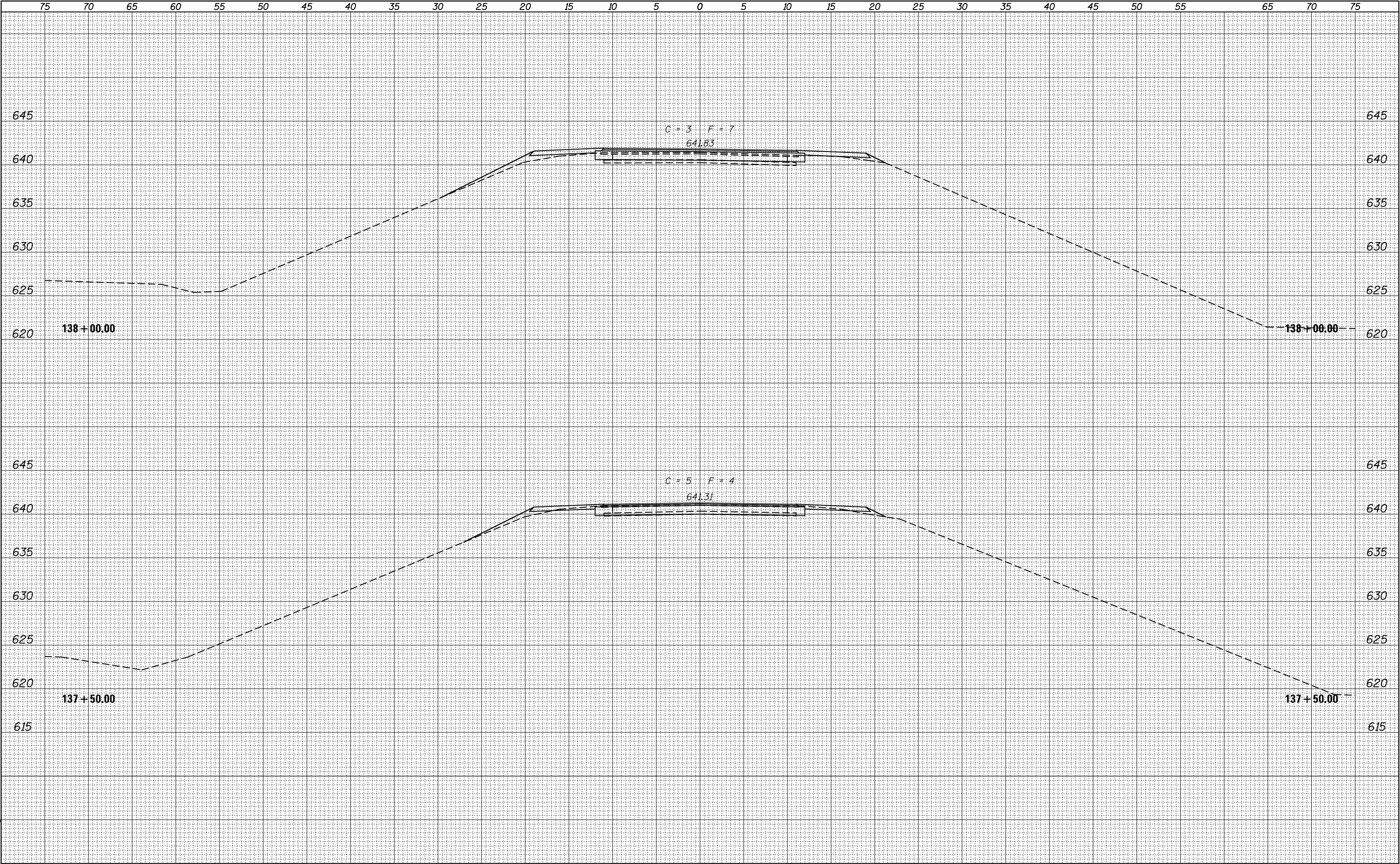
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	11-00116-BR	IROQUOIS	60	54
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FINAL	SURVEYED	BY	DATE
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NO.	AREAS		
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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 -

ROADWAY CROSS SECTIONS - C.H. 40

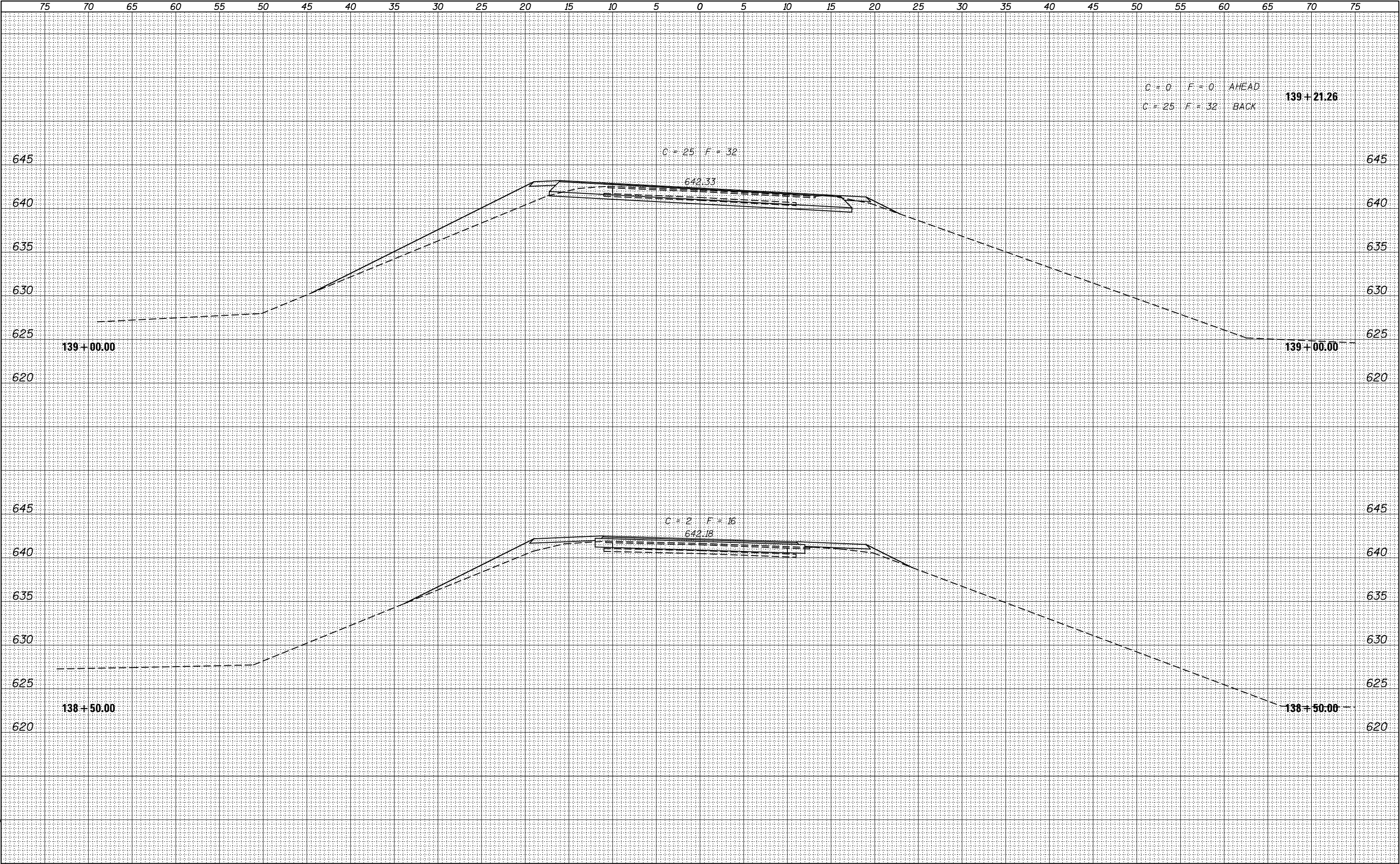
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CH 40	11-00116-BR	IROQUOIS	60	55
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FINAL	SURVEYED	DATE
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NOTE BOOK	TEMPLATE	
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FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

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	DRAWN - A.D.S.	REVISED -
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PLOT DATE = 8/13/2019	DATE -	REVISED -

ROADWAY CROSS SECTIONS - C.H. 40

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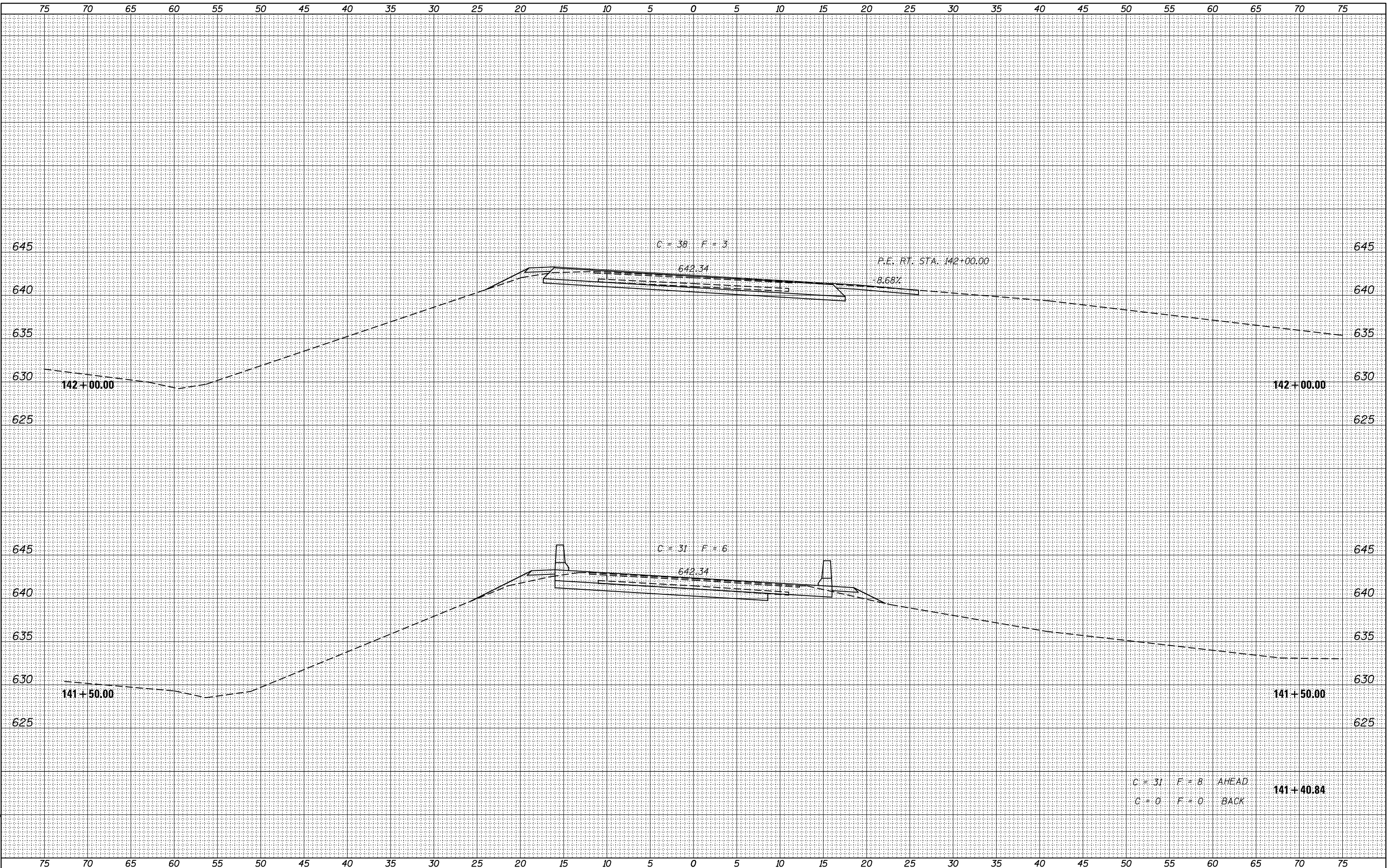
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CH 40	11-00116-BR	IROQUOIS	60	56
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

ORIGINAL		BY	DATE
SURVEYED			
PLOTTED			
TEMPLATE			
AREAS			
AREAS CHECKED			
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FEHR GRAHAM
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ILLINOIS DESIGN FIRM NO. 184-003525

ROADWAY CROSS SECTIONS – C.H. 40			
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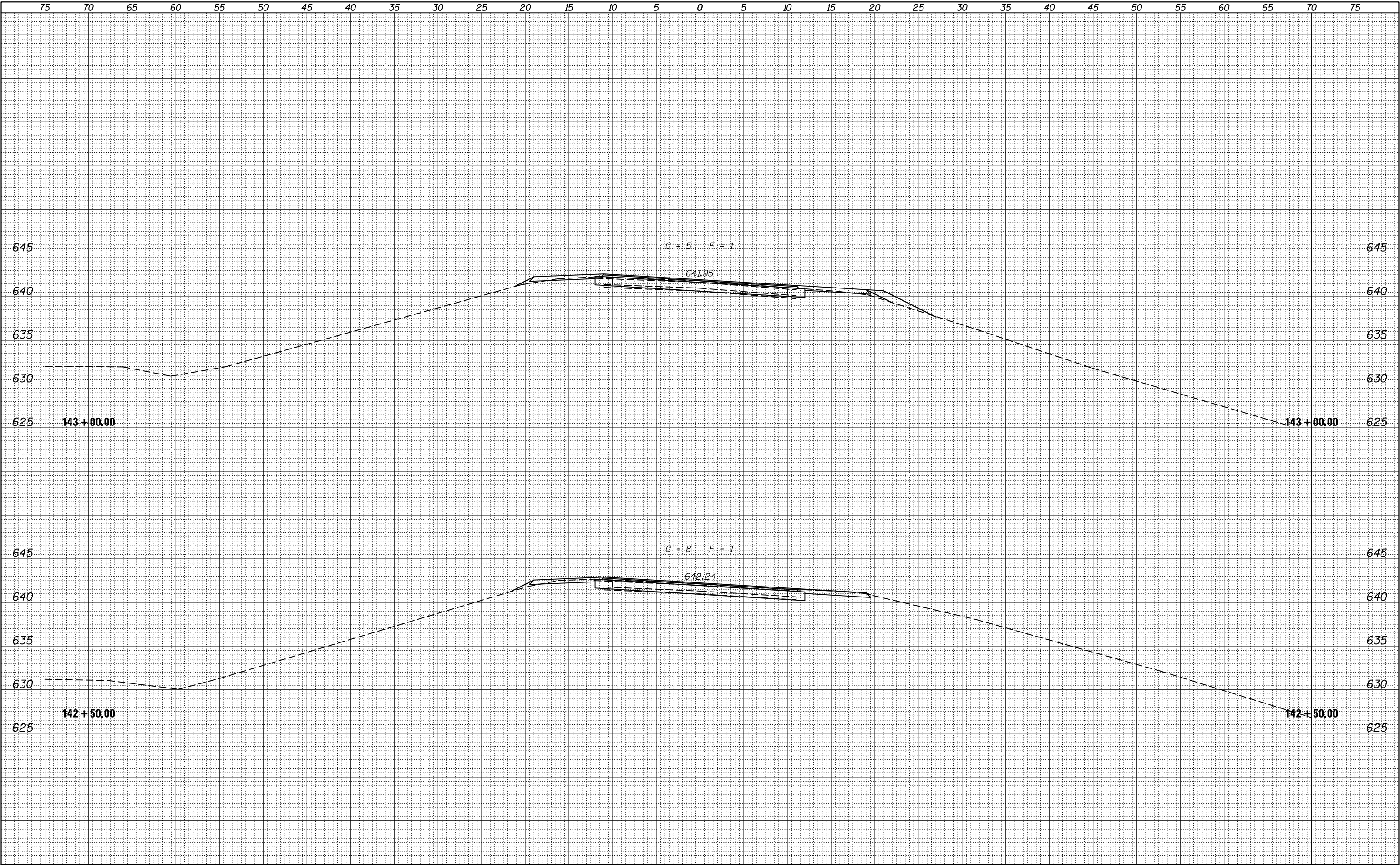
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CH 40	11-00116-BR	IROQUOIS	60	57
		CONTRACT NO. 87548		
ILLINOIS		FED. AID PROJECT		



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

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ROADWAY CROSS SECTIONS - C.H. 40

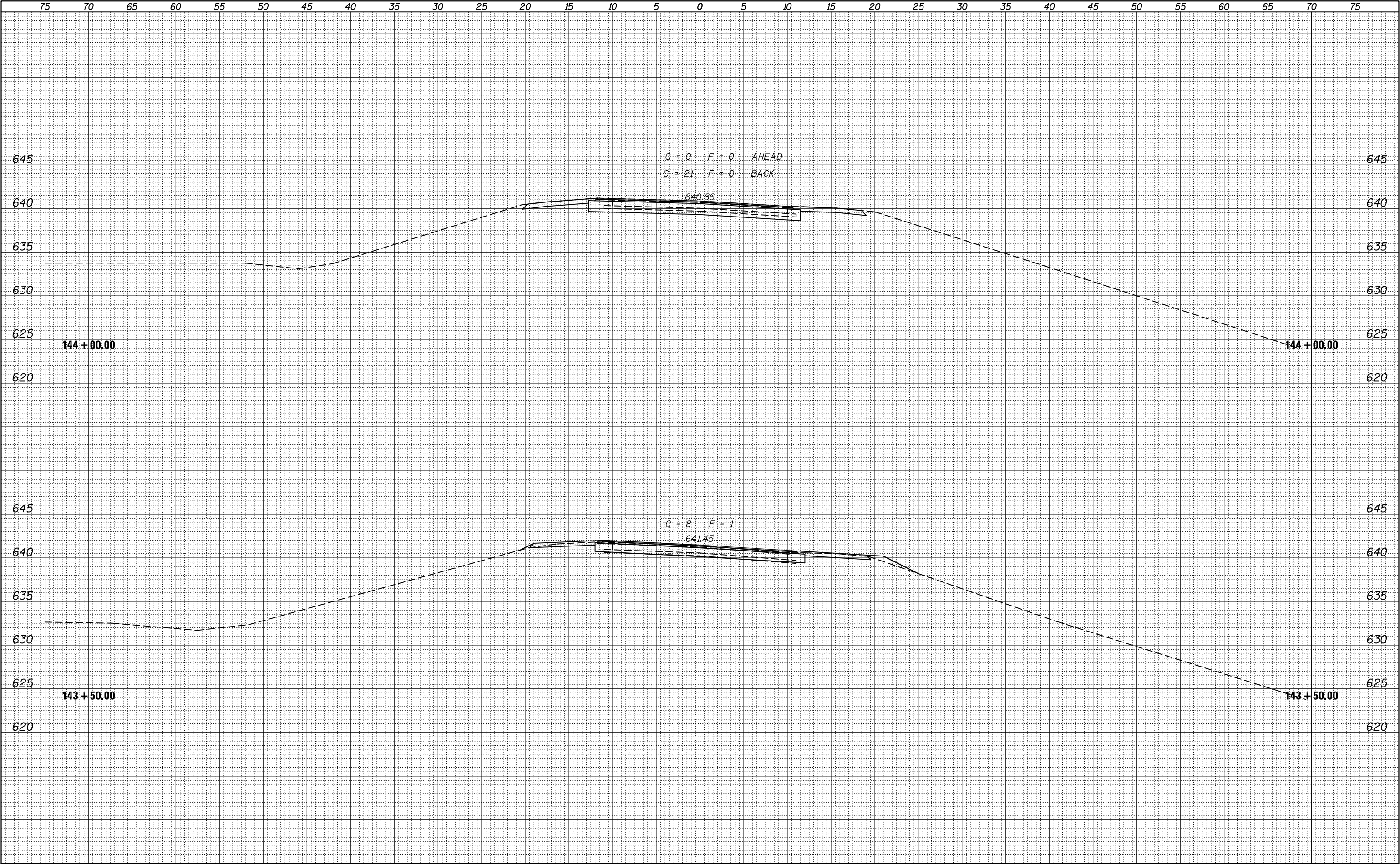
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CH 40	11-00116-BR	IROQUOIS	60	58
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

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

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	DRAWN - A.D.S.	REVISED -
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PLOT DATE = 8/13/2019	DATE -	REVISED -

ROADWAY CROSS SECTIONS - C.H. 40

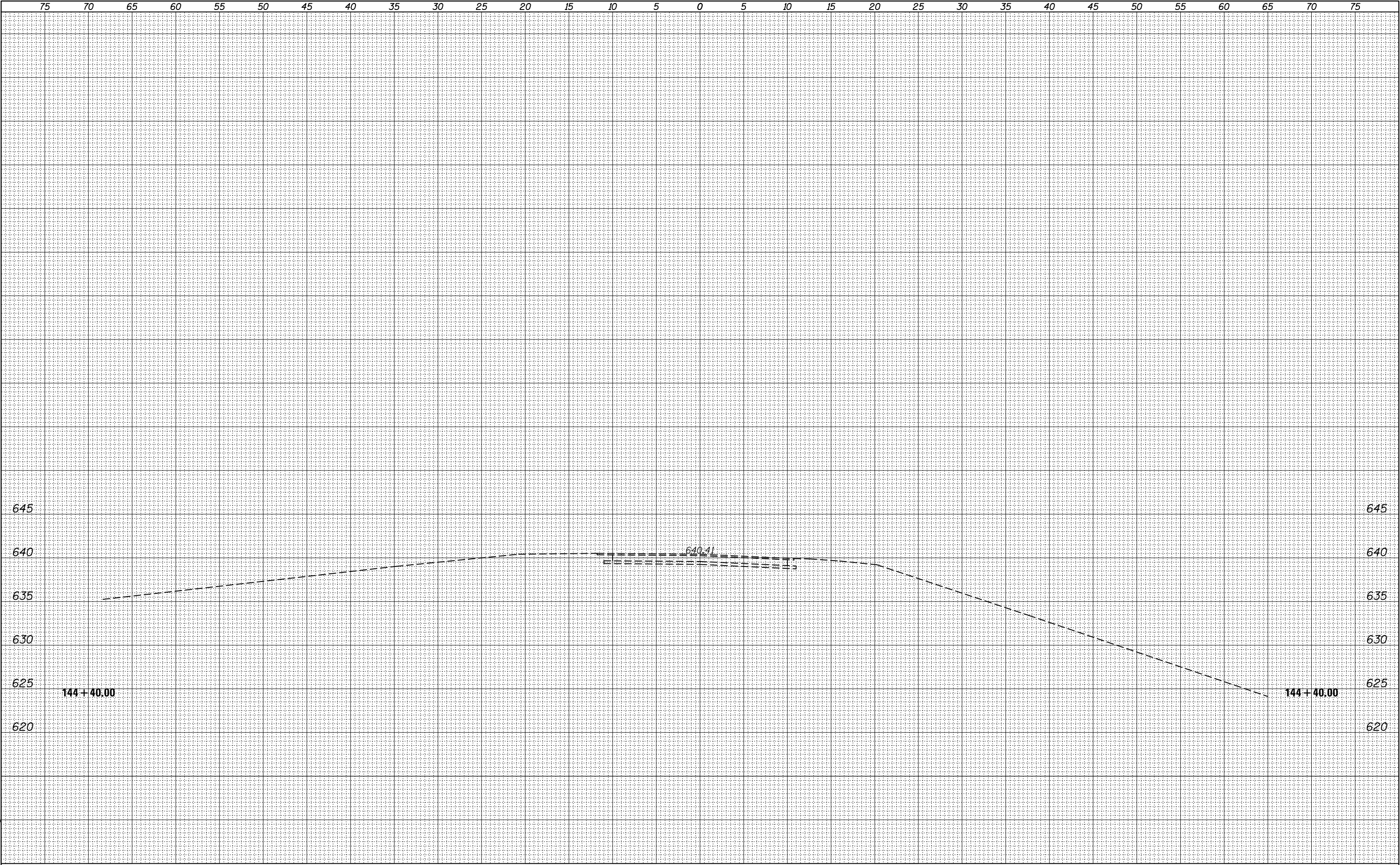
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CH 40	11-00116-BR	IROQUOIS	60	59
CONTRACT NO. 87548				
ILLINOIS FED. AID PROJECT				

FINAL	SURVEYED	BY	DATE
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NOTE BOOK	TEMPLATE		
NO.	AREAS		
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ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 184-003525

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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	