

CONTRACT NO. **97812**

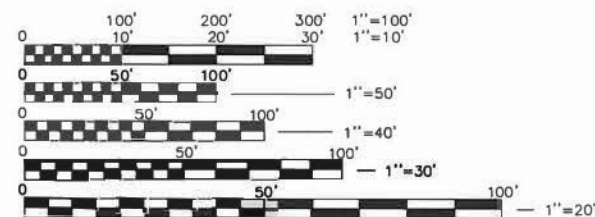
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- 630301-09 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631032-10 TRAFFIC BARRIER TERMINAL, TYPE 6A
- 701901-08 TRAFFIC CONTROL DEVICES
- 725001-01 OBJECT AND TERMINAL MARKERS
- 780001-05 TYPICAL PAVEMENT MARKINGS
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

DESIGN CLASSIFICATION: **RURAL MAJOR COLLECTOR**  
 ADT DESIGN : **775**  
 DESIGN SPEED: **50 MPH**



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES, IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

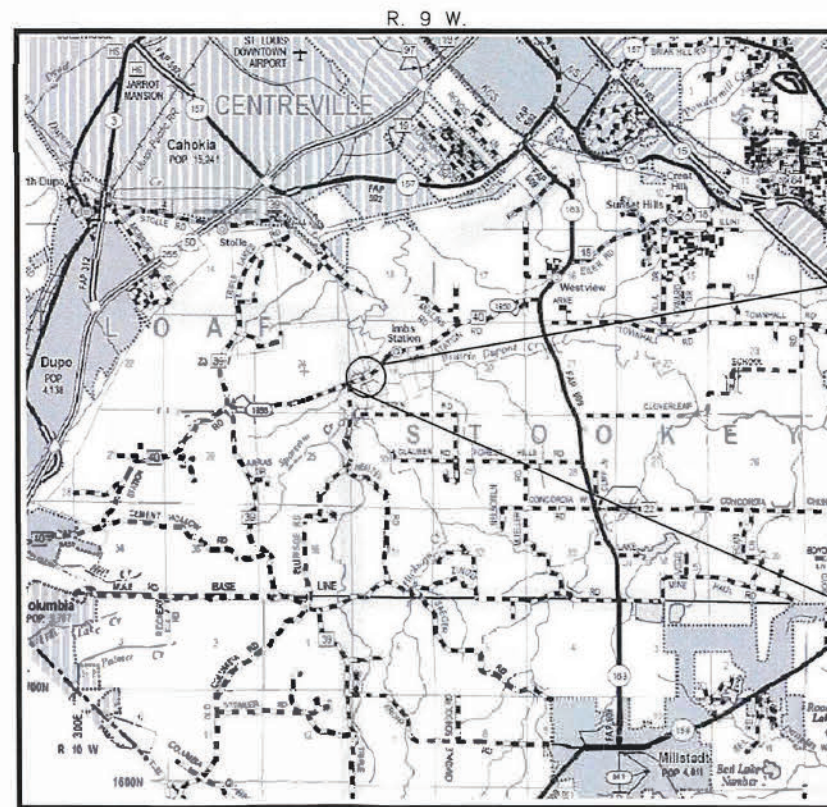


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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**PLANS FOR PROPOSED  
 ILLINOIS SPECIAL BRIDGE PROGRAM**

**FAS 1950 (CH 40 / IMBS STATION ROAD)  
 BRIDGE OVER PRAIRIE DUPONT CREEK  
 SECTION 18-00141-03-BR  
 PROJECT NO. OC9Y(856)  
 ST. CLAIR COUNTY  
 JOB NO. C-98-007-24**



SECTION ENDS  
 STA. 129+80.00

SECTION 18-00141-03-BR INCLUDES  
 THE CONSTRUCTION OF A 3 SPAN  
 PRECAST PRESTRESSED CONCRETE DECK  
 BEAM BRIDGE CARRYING CH 40 OVER  
 PRAIRIE DUPONT CREEK,  
 171'-5" BK. TO BK. ABUTMENTS  
 X 32' WIDE, 15' AHEAD LEFT SKEW.  
 EXISTING STRUCTURE NO. 082-3094  
 PROPOSED STRUCTURE NO. 082-3110

SECTION BEGINS  
 STA. 124+80.00

NOT TO SCALE  
 LOCATION: NEAR THE NW 1/4 OF THE SW 1/4 SEC. 19, T.1N., R.9W., 3RD P.M.  
 GROSS LENGTH OF PROJECT: 500 FT. = 0.095 MI.  
 NET LENGTH OF PROJECT: 500 FT. = 0.095 MI.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	1
GCL JOB NO. 21-608		CONTRACT NO. 97812		



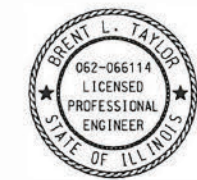
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ST. CLAIR COUNTY  
 HIGHWAY DEPARTMENT

APPROVED: 3/14/2023  
*[Signature]*  
 ST. CLAIR COUNTY ENGINEER

PASSED: 4/3/2023  
*[Signature]*  
 DISTRICT ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID  
 BASED ON LIMITED  
 REVIEW: 4/3/2023  
*[Signature]*  
 REGION FIVE ENGINEER



*[Signature]* 03/14/2023  
 BRENT L. TAYLOR  
 SALEM, ILLINOIS  
 ILLINOIS LICENSED PROFESSIONAL  
 ENGINEER NO. 062-066114  
 EXPIRES NOV. 30, 2023

**gonzalez**  
 GONZALEZ COMPANIES, LLC  
 SALEM, IL 62881  
 PHONE: (618) 222-2221  
 WWW.GONZALEZCORP.COM  
 ILLINOIS PROFESSIONAL DESIGNER LICENSE NO. 0412180054



**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20200100	EARTH EXCAVATION	CU YD	355
20300100	CHANNEL EXCAVATION	CU YD	780
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	729
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	50
28000400	PERIMETER EROSION BARRIER	FOOT	668
28001100	TEMPORARY EROSION CONTROL BLANKET	SQ YD	161
28100809	STONE DUMPED RIPRAP, CLASS A5	TON	1064
28200200	FILTER FABRIC	SQ YD	831
35100100	AGGREGATE BASE COURSE, TYPE A	TON	425
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	1640
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	134
40603085	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON	75
40604052	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70	TON	50
42000070	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	SQ YD	102
44000100	PAVEMENT REMOVAL	SQ YD	631
48101200	AGGREGATE SHOULDERS, TYPE B	TON	166
50300225	CONCRETE STRUCTURES	CU YD	82.6
50300260	BRIDGE DECK GROOVING	SQ YD	815
50300280	CONCRETE ENCASEMENT	CU YD	88.8
50300300	PROTECTIVE COAT	SQ YD	850
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	88.8
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	5408
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	53320

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
* 50901050	STEEL RAILING, TYPE SM	FOOT	343
51201610	FURNISHING STEEL PILES HP12x63	FOOT	880
51202100	FURNISHING STEEL PILES HP14x117	FOOT	1214
51202305	DRIVING PILES	FOOT	2094
51203610	TEST PILE STEEL HP12x63	EACH	1
51204100	TEST PILE STEEL HP14x117	EACH	1
51500100	NAME PLATES	EACH	1
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	12.5
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
67100100	MOBILIZATION	L SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1000
X2070302	POROUS GRANULAR EMBANKMENT (SPECIAL)	TON	148
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25
X5010205	REMOVAL OF EXISTING STRUCTURE (SPECIAL)	EACH	1
X5030306	CONCRETE WEARING SURFACE, 6"	SQ YD	602
# Z0076600	TRAINEES	HOUR	500
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
# Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500

# 0042

\* SPECIALTY ITEMS

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**GONZALEZ COMPANIES, LLC**  
 7 CARPENTER DRIVE  
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 ILLINOIS PROFESSIONAL DESIGN FIRM 184.004664

DESIGNED - BLT	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2023	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF QUANTITIES**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	2
CONTRACT NO. 97812				

DCL JOB NO. 21-6008



### GENERAL NOTES

- THIS SECTION SHALL BE CONSTRUCTED ACCORDING TO THE PLANS, THE SPECIAL PROVISIONS, AND THE "STANDARD SPECIFICATIONS FOR THE ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2022.
- ROADWAY CENTERLINE PROFILES REFER TO THE FINISHED SURFACE.
- EXISTING UTILITIES SHOWN ARE LOCATED FROM SURFACE OBSERVATIONS OR INFORMATION PROVIDED BY THE RESPECTIVE UTILITIES AND MUST BE CONSIDERED APPROXIMATE. THERE MAY BE OTHERS, THE EXACT LOCATION OF WHICH ARE UNKNOWN AND NOT SHOWN. THE CONTRACTOR WILL BE RESPONSIBLE FOR NOTIFYING THE RESPECTIVE UTILITIES BEFORE WORK IS BEGUN. FIELD MARKING OF UNDERGROUND UTILITIES MAY BE OBTAINED BY PROVIDING A MINIMUM OF 48 HOURS ADVANCE NOTICE THROUGH THE J.U.L.I.E SYSTEM BY CALL 1-800-892-0123, OR BY DIRECT CONTACT WITH NON-MEMBERS OF J.U.L.I.E.
- FACTORS USED FOR QUANTITY CALCULATIONS ARE AS FOLLOWS:
 

POROUS GRANULAR EMBANKMENT	2.1 TONS/CU YD
STONE DUMPED RIPRAP	130 POUNDS/ CU FT
ALL AGGREGATES	2.1 TONS/ CU YD
HOT MIX ASPHALT	0.056 TON/ SQ YD/ INCH
BIT. MATERIALS (PRIME COAT)	0.25 POUND/ SQ FT (ON AGGREGATE)
BIT. MATERIALS (TACK COAT)	0.025 POUND/ SQ FT (BETWEEN HMA LIFTS)
- THE CONTRACTOR SHALL CONFINE HIS OPERATIONS TO THE AREA LOCATED WITHIN THE CONSTRUCTION LIMIT LINES AS SHOWN PER PLANS. ANY AREA DISTURBED BEYOND THESE LIMITS SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- ACCESS MUST BE MAINTAINED TO ALL EXISTING PROPERTIES DURING CONSTRUCTION, UNLESS ARRANGEMENTS ARE MADE IN WRITING BY THE CONTRACTOR WITH THE PROPERTY OWNERS, WITH A COPY TO THE ENGINEER FOR SHORT-TERM CLOSURE.
- SAW CUTS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF PAY ITEM ASSOCIATED WITH THE WORK.
- THE CONTRACTOR SHALL NOTIFY ALL EMERGENCY, SCHOOL, AND POSTAL SERVICES OF THE ROAD CLOSURE BEFORE CONSTRUCTION BEGINS.

### COMMITMENTS

- NO TREE CLEARING WILL BE ALLOWED OR PERFORMED FROM APRIL 1 THROUGH SEPTEMBER 30, IN AN EFFORT TO CONSERVE THE NORTHERN LONG-EARED BAT AND THE INDIANA BAT.
- EXISTING FENCE REMOVAL AND REPLACEMENT WITHIN THE LIMITS OF CONSTRUCTION WILL BE DONE BY OTHERS AND WILL BE COORDINATED BY THE COUNTY. THE REMOVAL WILL BE COMPLETED PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY ALL EMERGENCY, SCHOOL, AND POSTAL SERVICES OF THE ROAD CLOSURE BEFORE CONSTRUCTION BEGINS.

### UTILITIES

J.U.L.I.E. DESIGN PHASE LOCATE  
DIG NO.: X1871157-00X (07/06/2021)

**ELECTRIC:**  
MONROE CO. ELEC COOP  
KEITH JONES  
618-939-7171  
618-334-1510

**COMMUNICATIONS:**  
FRONTIER COMMUNICATIONS  
KALIN HINSHAW  
815-895-1515

CLEARWAVE COMMUNICATIONS  
ROTH CLAYTON  
RCLAYTON@CLEARWAVE.COM

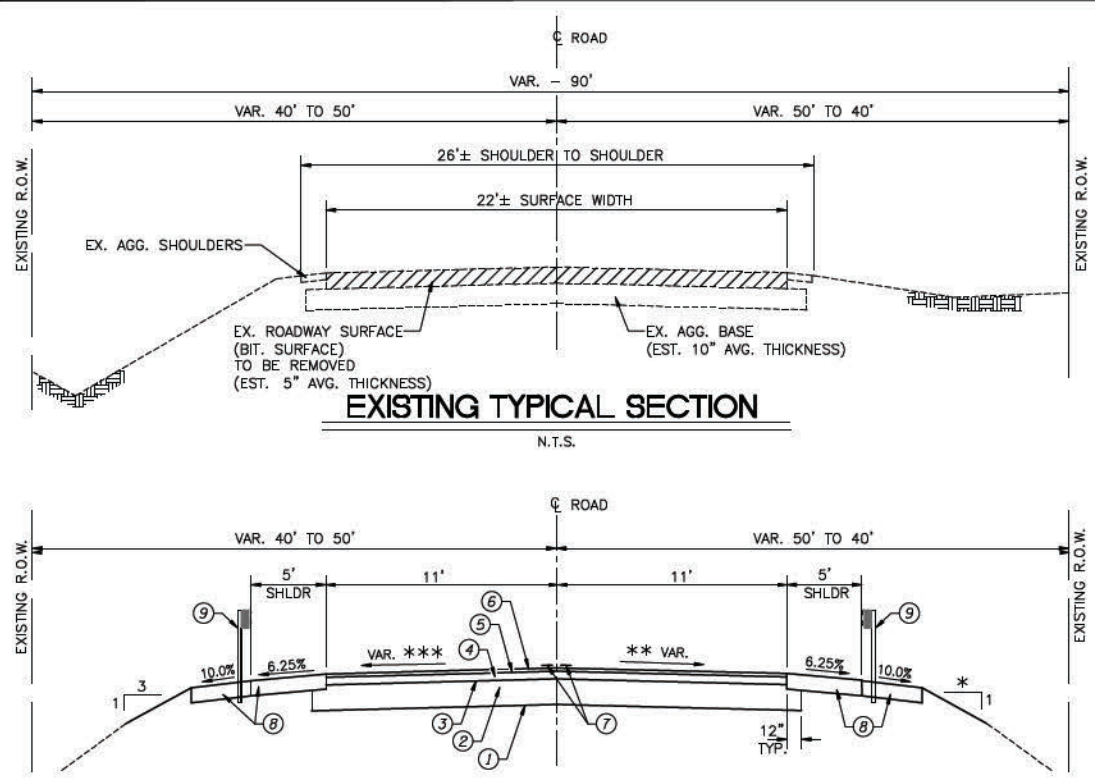
CHARTER COMMUNICATIONS  
CHRIS SHELTON  
314-386-1649  
CHRIS.SHELTON@CHARTER.COM

MCI / VERIZON  
JASON JARVIS  
219-314-6926  
INVESTIGATIONS@VERIZON.COM

**WATER/SEWER:**  
IL AMERICAN WATER-E ST. LOUIS  
BRENT O'NEILL  
859-321-8235  
BRENT.O'NEILL@AMWATER.COM

**GAS:**  
ENABLE MISS. RVR GAS TRANS.  
RICK HARDESTER  
501-377-4614  
501-681-9307  
RICK.HARDESTER@ENABLEMIDSTREAM.COM

VILLAGE OF DUPO  
REX KEYS  
618-779-4914



- \* VARIES 2.5H:1V TO 3H:1V SEE CROSS SECTIONS.
- \*\* VARIES 5.8%± (EX.) TO 1/4"/FT. STA. 124+80 TO STA. 125+90 AND 1/4"/FT. TO 3.1%± (EX.) STA. 129+40 TO STA. 129+80
- \*\*\* VARIES 1.0%± (EX.) TO 1/4"/FT. STA. 124+80 TO STA. 125+90 AND 1/4"/FT. TO 2.4%± (EX.) STA. 129+40 TO STA. 129+80
- ① GEOTECHNICAL FABRIC FOR GROUND STABILIZATION
  - ② AGGREGATE BASE COURSE, TYPE A, 10" THICKNESS
  - ③ BITUMINOUS MATERIALS (PRIME COAT)
  - ④ HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70, 2 1/4"
  - ⑤ BITUMINOUS MATERIALS (TACK COAT)
  - ⑥ HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70, 1 1/2"
  - ⑦ PAINT PAVEMENT MARKING - LINE 4", YELLOW (CENTERLINE, NO PASSING)
  - ⑧ AGGREGATE SHOULDERS, TYPE B, 6" THICK, TYP.
  - ⑨ TRAFFIC BARRIER TERMINAL, OR STEEL PLATE BEAM GUARDRAIL, SEE PLAN.

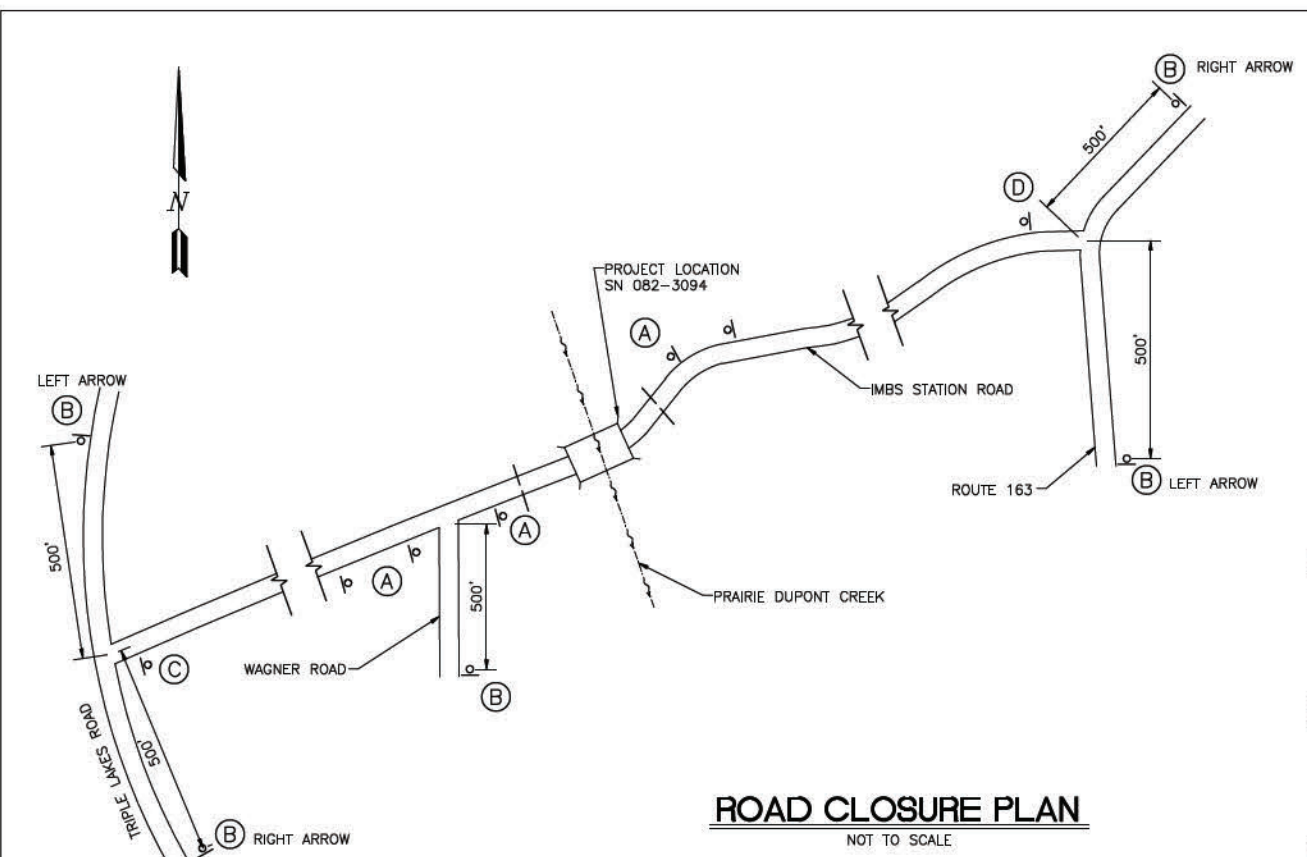
HOT-MIX ASPHALT MIXTURE REQUIREMENTS		
MIXTURE USE(S):	SURFACE COURSE	BINDER COURSE
AC/PG:	64-22	64-22
RAP% (MAX):	15%	25%
DESIGN AIR VOIDS:	4.2% @ N=70	4.2% @ N=70
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL 9.5	IL 19.0
FRICTION AGGREGATE:	MIXTURE C	N.A.

### LEGEND

- W.V.⊙ EXISTING WATER VALVE
- W.M.⊙ EXISTING WATER METER
- GC-#⊙ SOIL BORING
- W — EXISTING WATER LINE
- P.P.-⊙ EXISTING POWER POLE
- EXISTING GUY WIRE
- OE — EXISTING OVERHEAD ELECTRIC LINE
- H.H.⊠ EXISTING HAND HOLE
- ⊙ EXISTING SIGN
- EXISTING TREELINE
- I.P. EXISTING IRON PIN
- EXISTING SURFACE DRAINAGE
- HC#1 HORIZONTAL CONTROL POINT
- TBM#1 VERTICAL CONTROL POINT
- S — PERIMETER EROSION BARRIER
- ▨ TEMPORARY EROSION CONTROL BLANKET

### HORIZONTAL AND VERTICAL CONTROL DATA

POINT	DESCRIPTION	N. COOR.	E. COOR.	ELEV.
HC#1	IRON PIN, SE OF BRIDGE, LT. 21.1', STA. 125+63.6	674672.97	2303594.79	-
HC#2	IRON PIN, NW OF BRIDGE, RT. 18.6', STA. 129+12.3	674584.36	2303254.97	-
TBM#1	R.R. SPIKE IN PP, SE OF BRIDGE, LT. 39.7', STA. 126+22.6	-	-	438.51
TBM#2	R.R. SPIKE IN PP, SW OF BRIDGE, LT. 39.4', STA. 128+21.6	-	-	440.66



### LEGEND

- A PER BLR 21-9: "ROAD CLOSED AHEAD", "ROAD CLOSED 500 FT.", AND TYPE II BARRICADES
- B "ROAD CLOSED AHEAD" USE APPROPRIATE DIRECTION ARROW
- C SIGN R11-3A "ROAD CLOSED 1.5 MILES AHEAD LOCAL TRAFFIC ONLY"
- D SIGN R11-3A "ROAD CLOSED 2.2 MILES AHEAD LOCAL TRAFFIC ONLY"

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PAVING SCHEDULE									
FROM LOCATION (STATION)	TO LOCATION (STATION)	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (SQ YD)	AGGREGATE BASE COURSE, TYPE A (TON)	BITUMINOUS MATERIALS (PRIME COAT) (POUND)	BITUMINOUS MATERIALS (TACK COAT) (POUND)	HMA BINDER COURSE, IL 19.0, N70 (TON)	HMA SURFACE COURSE, IL 9.5, MIX "C", N70 (TON)	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB (SQ YD)	AGGREGATE SHOULDERS, TYPE B (TON)
124+80.00	125+46.36								80.2
124+80.00	125+97.75	314.0	183.2	706.5	64.8	36.3	24.2		
125+97.75	126+12.04	39.8	23.1	89.5				50.8	
126+41.38	125+55.67	39.8	23.1	89.5				50.8	
126+55.67	129+80.00	335.4	195.6	754.6	69.2	38.8	25.9		
126+07.06	129+80.00								85.5
<b>TOTAL</b>		729	425	1640	134	75	50	102	165

EARTHWORK SCHEDULE				
LOCATION	EARTH EXCAVATION (CUT)	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE FACTOR (25%)	EMBANKMENT (FILL)	EARTHWORK BALANCE*** WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD
STA. 124+80.00 TO STA. 126+41.00	208	156	18	138
STA. 126+12.42 TO STA. 129+80.00	144	108	33	75
<b>TOTALS:</b>	352	264	51	213
<b>PAY AMOUNT:</b>	355			

NOTE: PAVEMENT REMOVAL HAS BEEN ACCOUNTED FOR SEPARATELY AND IS NOT INCLUDED IN THE QUANTITY OF EARTH EXCAVATION

\*\*\* FURNISHED EXCAVATION (NONE REQ'D)

REMOVAL SCHEDULE			
FROM LOCATION (STATION)	TO LOCATION (STATION)	PAVEMENT REMOVAL (SY)	REMOVAL OF EXISTING STRUCTURE (SPECIAL) (EACH)
124+80.00	125+94.37	287.0	
125+94.37	128+49.26		1
128+49.26	129+80.00	343.6	
<b>TOTAL</b>		631	1

EROSION CONTROL SCHEDULE			
FROM LOCATION (STATION, DIRECTION)	TO LOCATION (STATION, DIRECTION)	PERIMETER EROSION BARRIER FOOT	TEMPORARY EROSION CONTROL BLANKET (SQ YD)
124+80, LT	126+47, LT	169	
124+80, RT	126+31, RT	153	
128+07, RT	129+00, RT		161
128+02, RT	129+80, RT	182	
128+21, LT	129+80, LT	164	
<b>TOTALS</b>		668	161

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 ILLINOIS PROFESSIONAL DESIGN FIRM 184.004564

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DATE - 03/15/2023	REVISED -

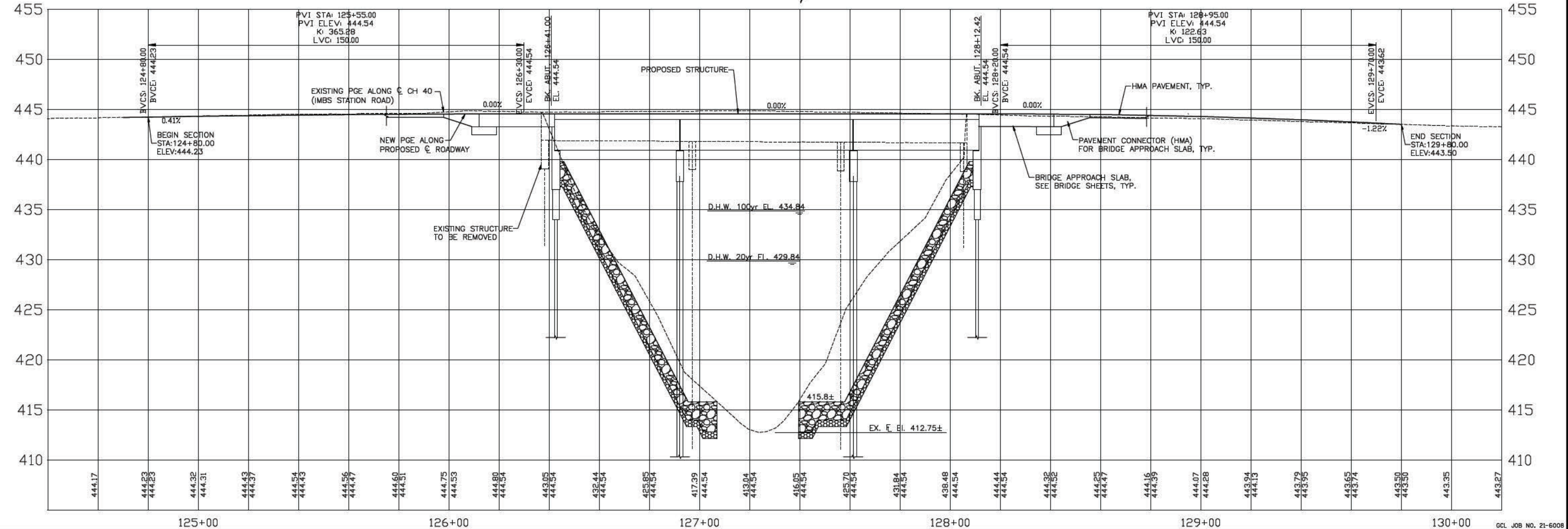
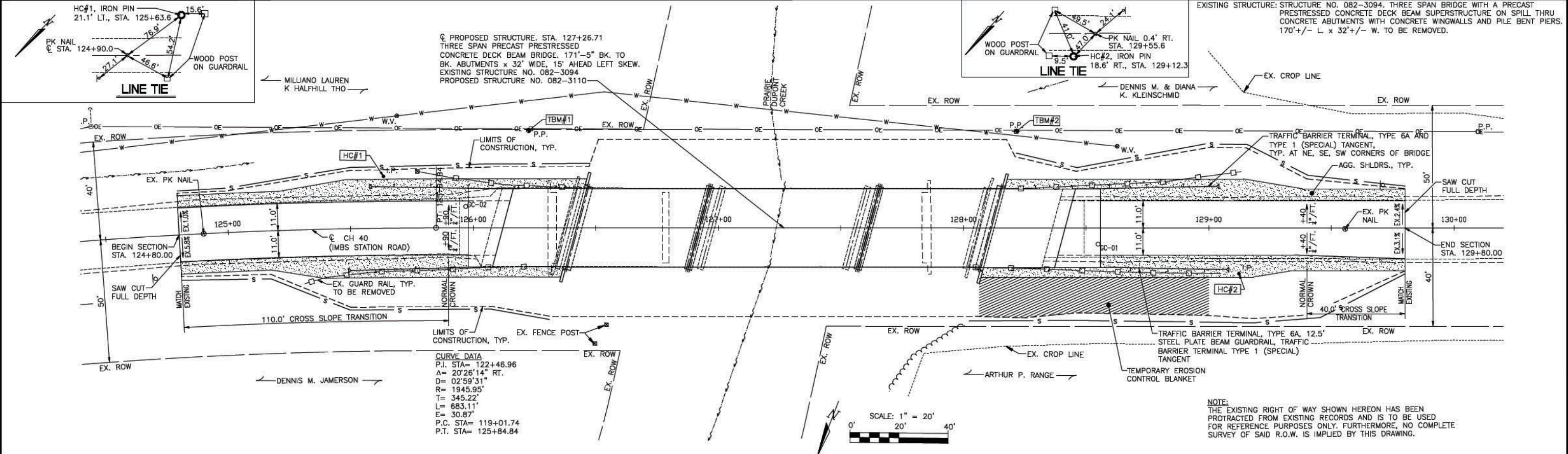
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

**SCHEDULES**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	4
CONTRACT NO. 97812				

GCL JOB NO. 21-6008





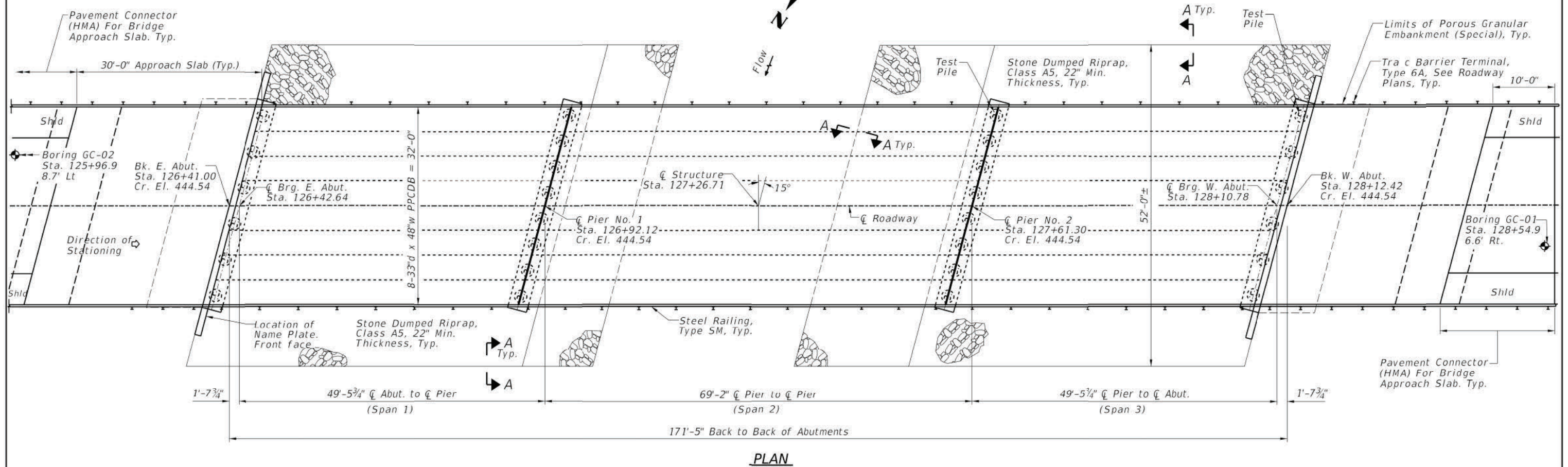
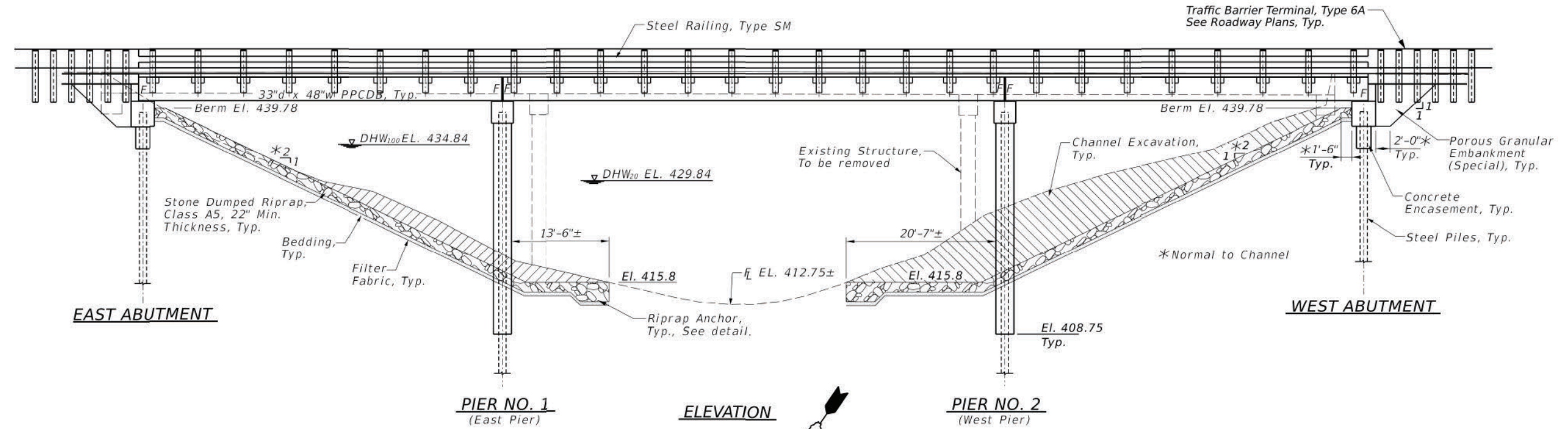
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BENCH MARK: TBM 1: Railroad Spike in Power Pole  
39.7± Lt, Sta. 126+22.6±, Elev. 438.51

TBM 2: Railroad Spike in Power Pole  
39.4± Lt, Sta. 128+21.6±, Elev. 440.66

Existing Structure: Structure No.: 082-3094. Three span Bridge with a precast prestressed concrete deck beam superstructure with spill thru concrete abutments and individually concrete encased steel pile bent piers. ±170' Long x 32' Wide. 15° Lt. Ahd. skew. To be removed.



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DESIGNED - JSP  
DRAWN - JSP, JMW  
CHECKED - BLT  
DATE - 03/15/2023

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION  
STRUCTURE NO. 082-3110

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	6

GCL JOB NO. 21-6008  
CONTRACT NO. 97812



**GENERAL NOTES**

Do not scale these drawings.

See Section 502 of the Standard Specifications for Structural Excavation.

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel 36'-0" Lt. and Rt. (from centerline) of the Bridge. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment. See Roadway Plans.

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

The cost of the bedding material shall be included in the cost of the Stone Dumped Riprap (per the Standard Specifications), and no additional compensation will be allowed. The estimated quantity for the bedding material is included for Contractor convenience only; is not guaranteed; and is not included in the quantity for the Stone Dumped Riprap.

Est. Stone Dumped Riprap = 1064 Ton  
Est. Bedding = 388 Ton

See Special Provisions for Soil Borings.

The abutment bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, 3/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

**WATERWAY INFORMATION**

Drainage Area = 36.38 sq. mi.		Existing Low Grade Elev. 441.64 @ Sta. 119+00		Proposed Low Grade Elev. 441.64 @ Sta. 119+00		
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist. Prop.	Nat. H.W.E.	Head - Ft. Exist. Prop.	Headwater El. Exist. Prop.
Design	20	13170	946 1238	429.84	1.23 0.37	431.07 430.21
Base	100	20900	1509 1845	434.84	1.86 0.78	436.70 435.62
Scour Check	200	23320	---	436.55	---	---
Max. Calc.	500	31500	2205 2557	439.88	3.13 0.34	443.01 440.22

**DESIGN SCOUR TABLE**

Event/Limit State	Design Scour Elevations (ft.)				Item 113 (Abut.)	Item 113 (Piers)
	E. Abut.	Pier 1	Pier 2	W. Abut.		
Q100	N/A	409.6	409.6	N/A	8	5
Q200	N/A	409.6	409.6	N/A		
Design	437.3	408.8	408.8	437.3		
Check	437.3	408.8	408.8	437.3		

**LOADING HL-93**

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

**DESIGN SPECIFICATIONS**

2020 (9th Ed.) AASHTO LRFD Bridge Design Specifications.

**DESIGN STRESSES**

**FIELD UNITS**

$f'_c = 5,000$  psi (Concrete Wearing Surface)

$f'_c = 4,000$  psi (Approach Slab)

$f'_c = 3,500$  psi (Substructures)

$f_y = 60,000$  psi (reinforcement)

**PRECAST PRESTRESSED UNITS**

$f'_c = 6,000$  psi

$f'_c = 5,000$  psi

$f_{pu} = 270,000$  psi (3/2"  $\varnothing$  low lax. strands)

$f_{pbt} = 201,960$  psi (3/2"  $\varnothing$  low lax. strands)

$f_y = 60,000$  psi (reinforcement)

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2

Soil Site Classification = D

$S_{D1} = 0.247$   $S_{D5} = 0.564$

EXTRA BARS FOR TEST SAMPLES				
Bar	No.	Size	Length	Shape
t10(E)	2	#4	9'-8"	—
v(E)	2	#5	6'-7"	—
h1(E)	2	#6	9'-8"	—
p(E)	1	#7	34'-8"	—
a11(E)	1	#8	32'-9"	—
b11(E)	1	#9	29'-8"	—
Reinforcement Bars			Pound	310

These bars shall be identical to and delivered with the bars of the same mark listed on the bridge sheets. This chart assumes that all bars of the same size on the job will have the same heat numbers. If bars of the same size on the job have different heat numbers, then the Contractor shall supply additional bars from other heat numbers for sampling by the Engineer at no additional cost.

The weight of these extra bars has been included in the Summary of Quantities for the project.

The Contractor shall cut test bars as directed by the Engineer (if required for transport, etc.) The cost for cutting the bars shall be included in the cost of Reinforcement Bars, Epoxy Coated and no additional compensation will be allowed.

**BILL OF MATERIALS (BRIDGE ONLY)**

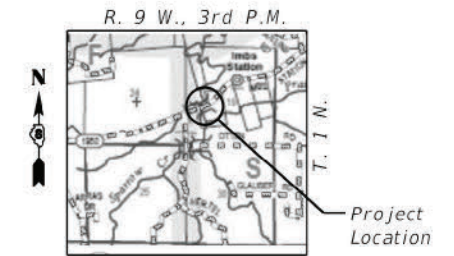
ITEM	UNIT	TOTAL
Channel Excavation	Cu Yd	780
Stone Dumped Riprap, Class A5	Ton	1064
Filter Fabric	Sq Yd	831
Concrete Structures	Cu Yd	82.6
Bridge Deck Grooving	Sq Yd	815
Concrete Encasement	Cu Yd	88.8
Protective Coat	Sq Yd	850
Concrete Superstructure (Approach Slab)	Cu Yd	88.8
PPCDB (33" Depth)	Sq Ft	5408
Reinforcement Bars, Epoxy Coated	Pound	53320
Steel Railing, Type SM	Foot	343
Furnishing Steel Piles HP12x63	Foot	880
Furnishing Steel Piles HP14x117	Foot	1,214
Driving Piles	Foot	2,094
Test Pile Steel HP12x63	Each	1
Test Pile Steel HP14x117	Each	1
Name Plates	Each	1
Porous Granular Embankment (Special)	Ton	148
Removal of Existing Structure (Special)	Each	1
Concrete Wearing Surface, 6"	Sq Yd	602

**DESIGN SCOUR TABLE**

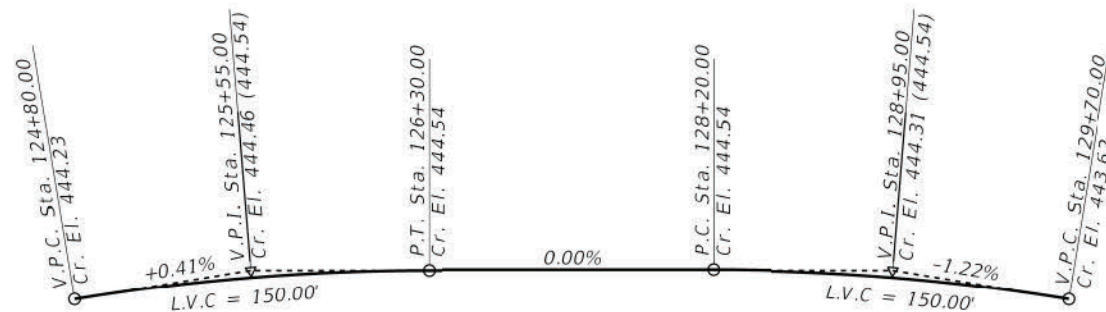
PRAIRIE DUPONT CREEK  
BUILT 20\_\_ BY  
ST. CLAIR COUNTY  
SEC. 18-00141-03-BR  
CH 40 STA. 127+26.71  
STRUCTURE NO. 082-3110  
LOADING HL-93

**NAME PLATE**

See Std. 515001

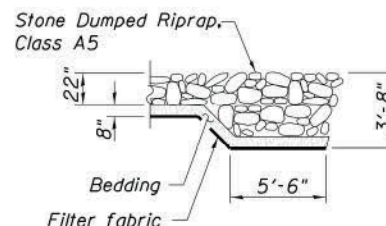


**LOCATION SKETCH**



**GRADE ON STRUCTURE**

(Along  $\hat{C}$  CH 40)

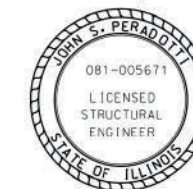


**SECTION A-A**

**RIPRAP ANCHOR**

**DETAIL**

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.



*John S. Peradotti* 03/14/23  
John S. Peradotti  
Salem, Illinois  
Illinois Licensed Structural  
Engineer No. 081-005671  
Expires Nov. 30, 2024



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DESIGNED - JSP  
DRAWN - JSP, JMW  
CHECKED - BLT  
DATE - 03/15/2023

REVISED -  
REVISED -  
REVISED -  
REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

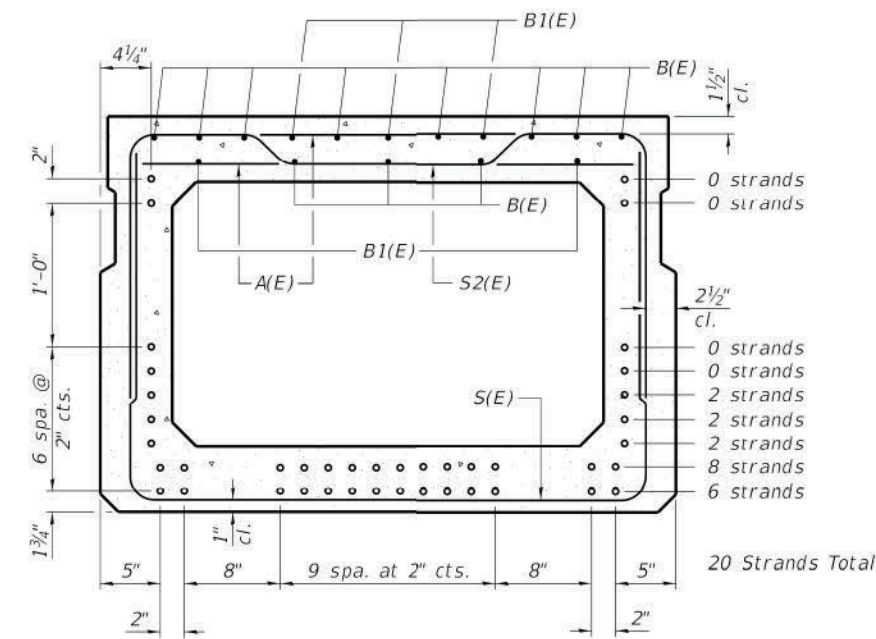
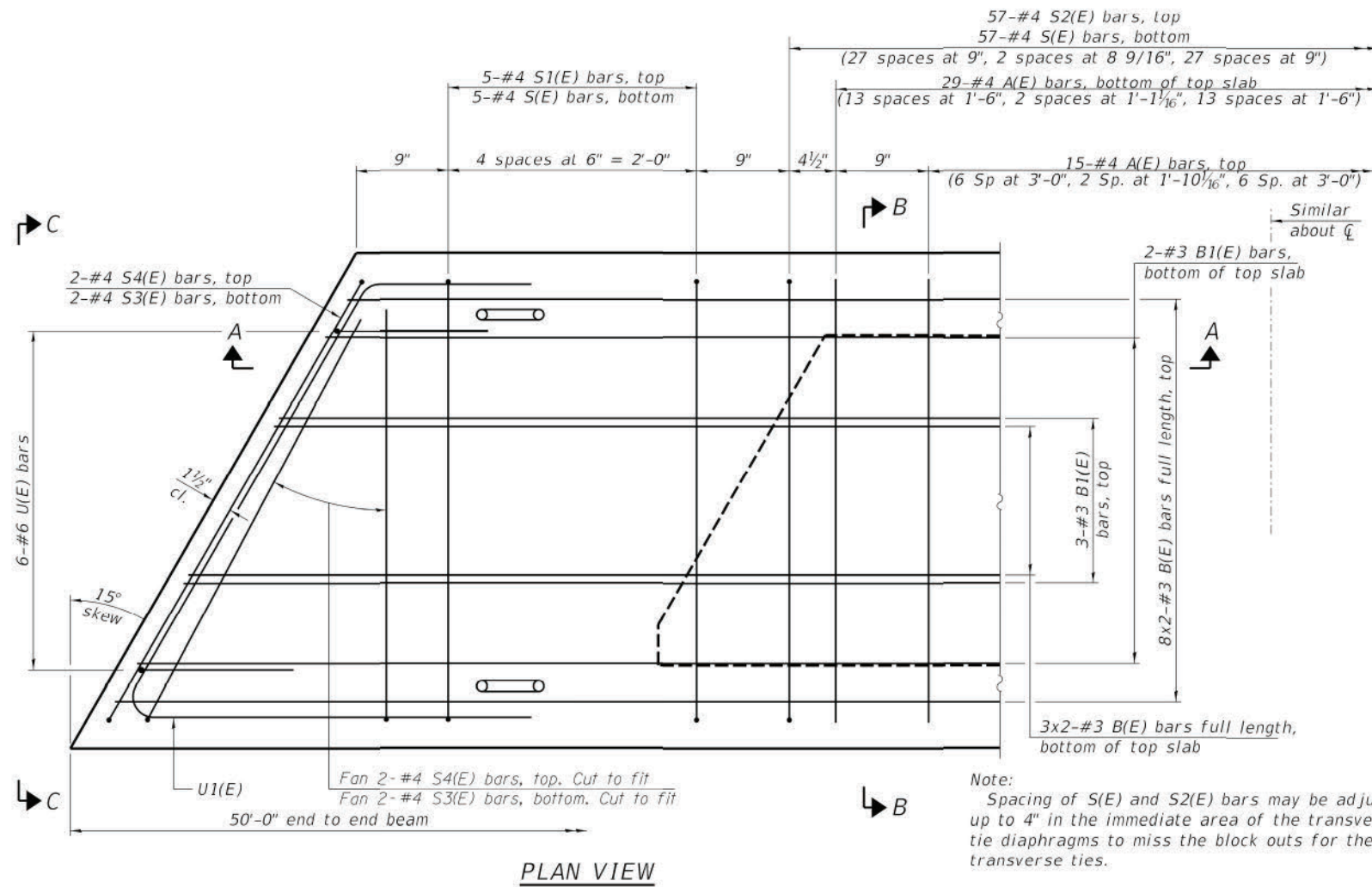
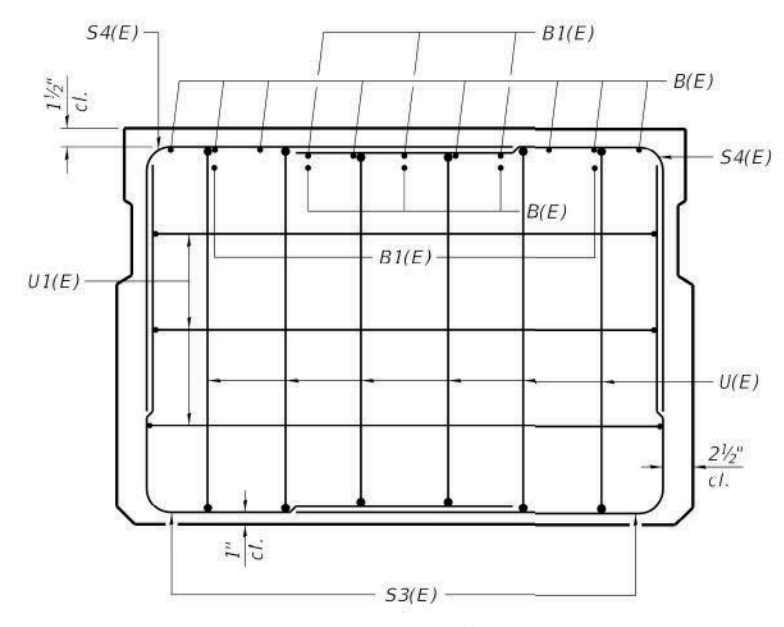
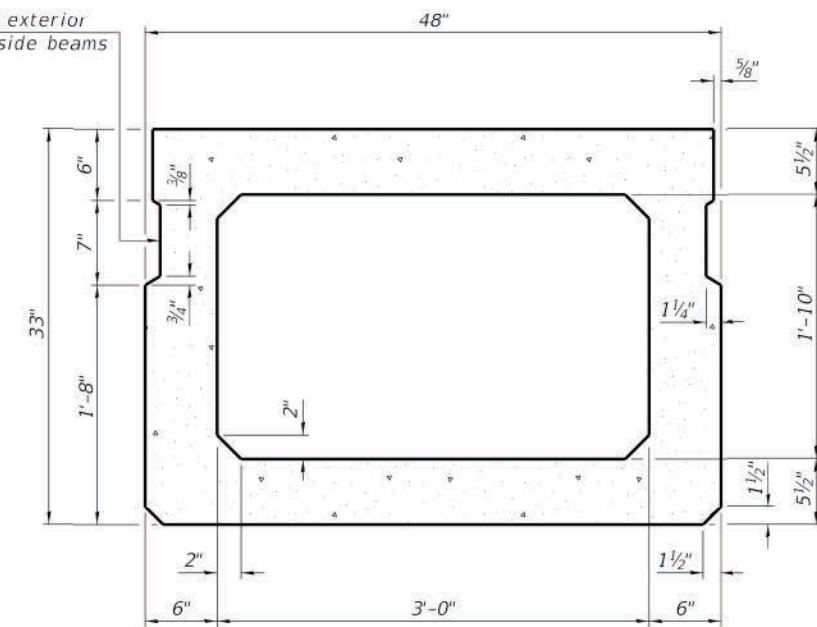
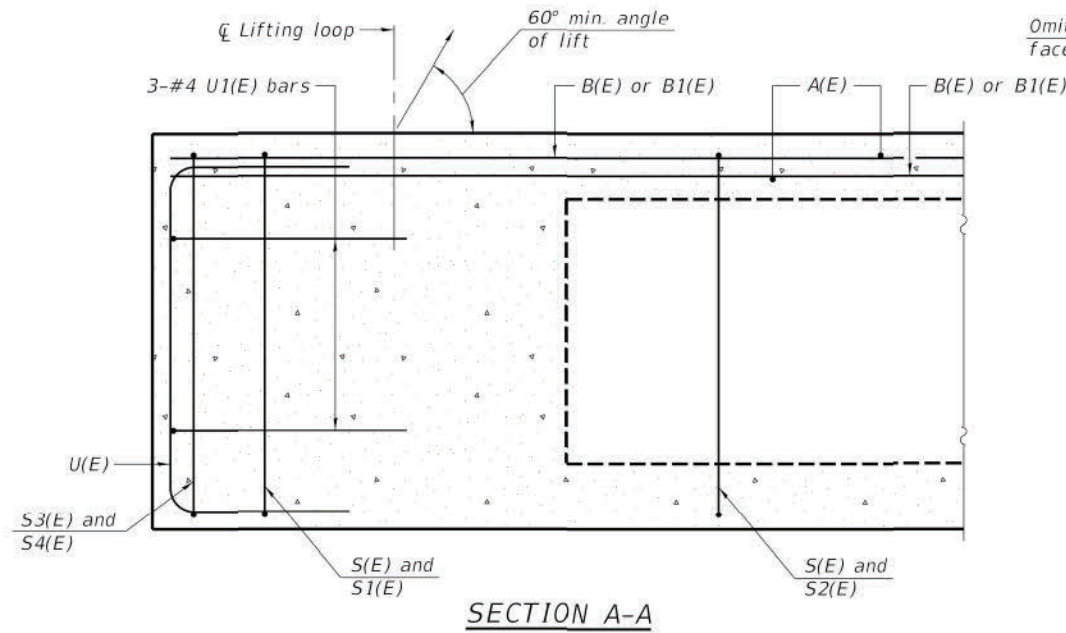
**GENERAL DATA AND SUMMARY OF BRIDGE QUANTITIES**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	7

GCL JOB NO. 21-6008

CONTRACT NO. 97812





**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	44	#4	3'-7"	—
B(E)	22	#3	25'-8"	—
B1(E)	10	#3	10'-0"	—
D(E)	16	#4	2'-9"	L
S(E)	67	#4	8'-8"	U
S1(E)	10	#4	7'-5"	M
S2(E)	57	#4	7'-8"	M
S3(E)	8	#4	6'-2"	J
S4(E)	8	#4	5'-7"	J
U(E)	12	#6	5'-0"	C
U1(E)	6	#4	7'-3"	C

Note:  
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

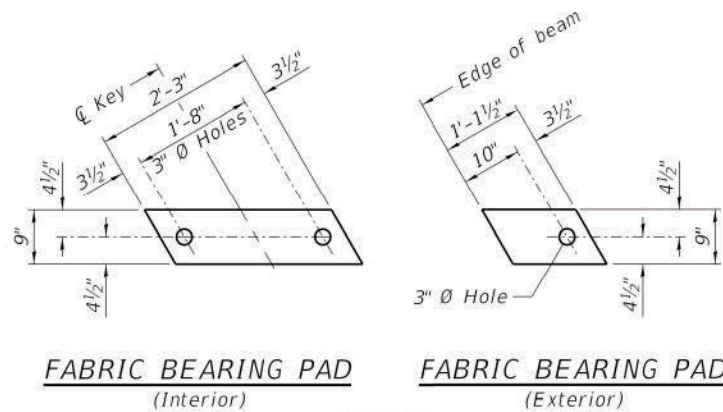
Bars indicated thus: 8x2-#3 etc. indicates 8 lines of bars with 2 lengths per line.

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

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

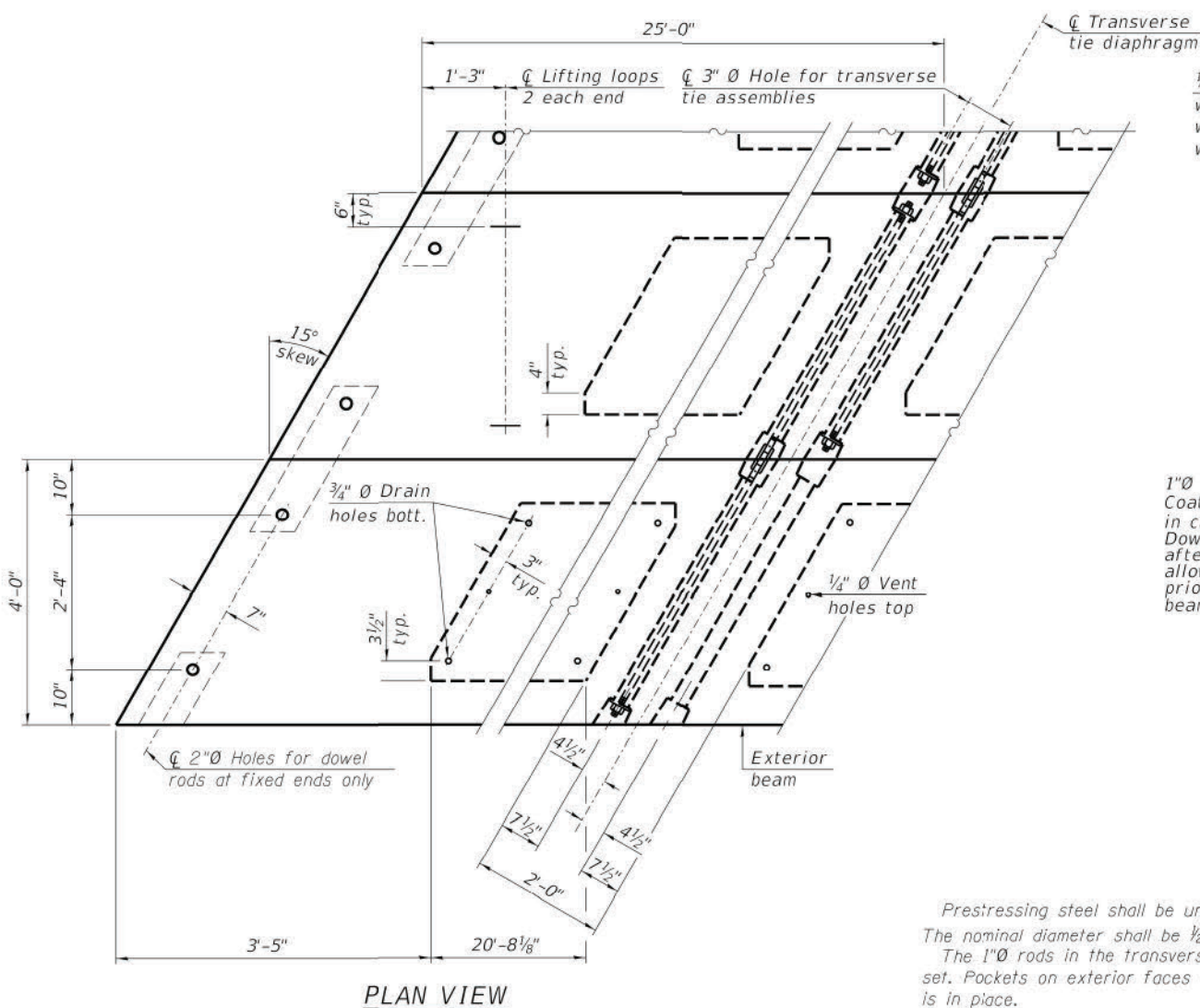
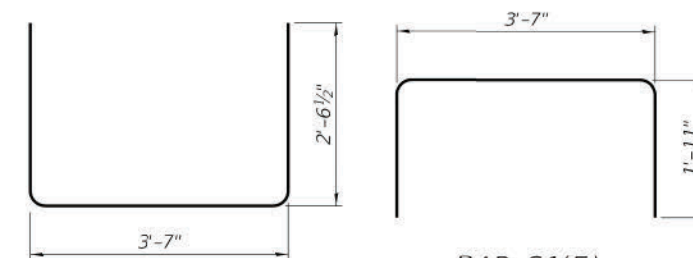
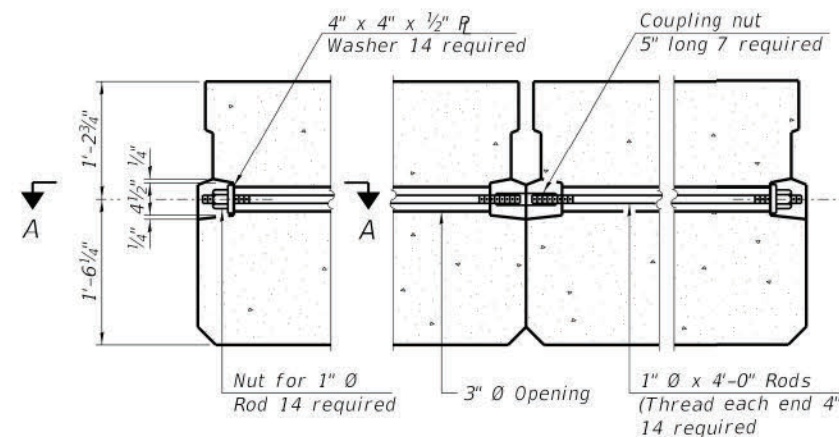
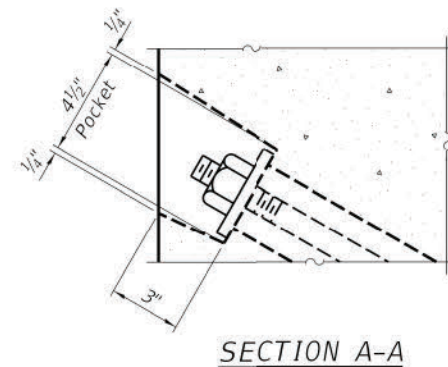
**MINIMUM BAR LAP**  
#3 bar = 1'-6"



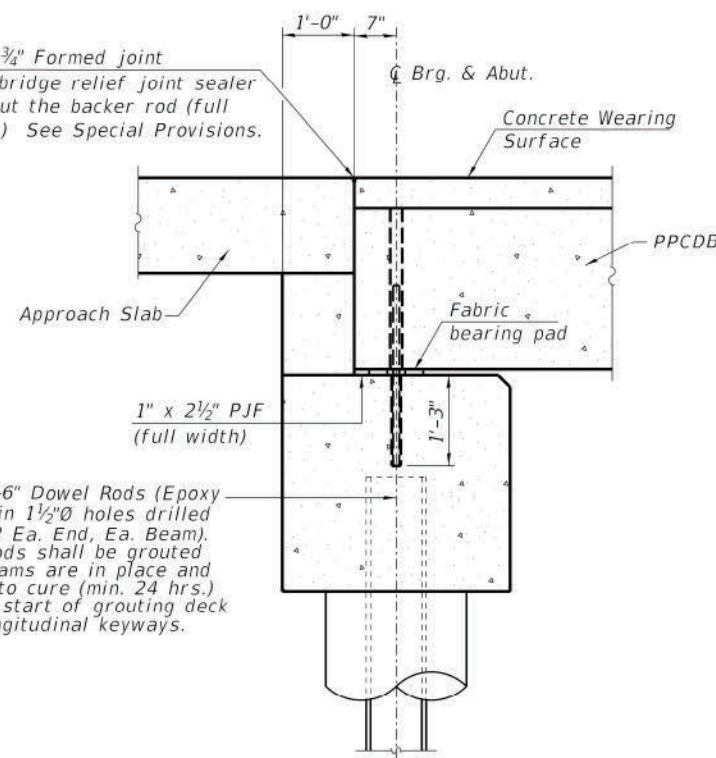


**FIXED**

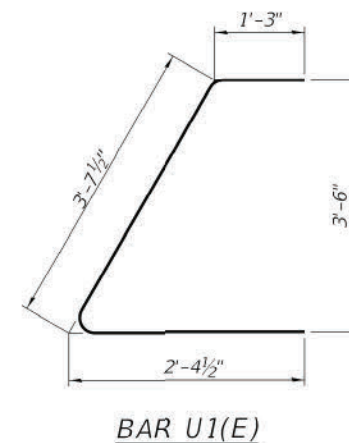
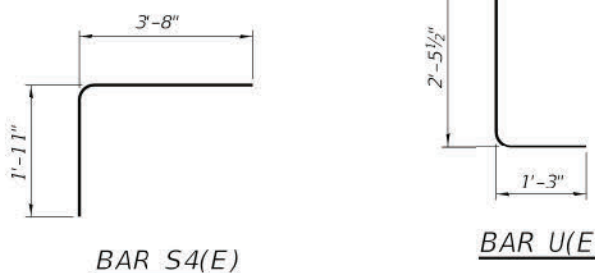
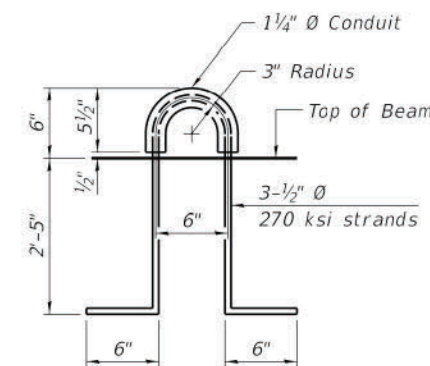
Notes:  
 All bearing pads shall be 1" thick.  
 Omit holes when using expansion bearings.  
 Expansion bearing pads shall be bonded to the substructure.



1/4" x 3/4" Formed joint with bridge relief joint sealer without the backer rod (full width) See Special Provisions.



1" x 2'-6" Dowel Rods (Epoxy Coated) in 1 1/2" holes drilled in cap (2 Ea. End, Ea. Beam). Dowel rods shall be grouted after beams are in place and allowed to cure (min. 24 hrs.) prior to start of grouting deck beam longitudinal keyways.



**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
 A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.  
 Corrosion inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
 Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
 Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.  
 Reinforcement bars shall conform to ASTM A706 (IL Modified), Grade 60.

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	3,200
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 ILLINOIS PROFESSIONAL DESIGN FIRM 184.004564

DESIGNED - JSP	REVISED -
DRAWN - JSP	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2023	REVISED -

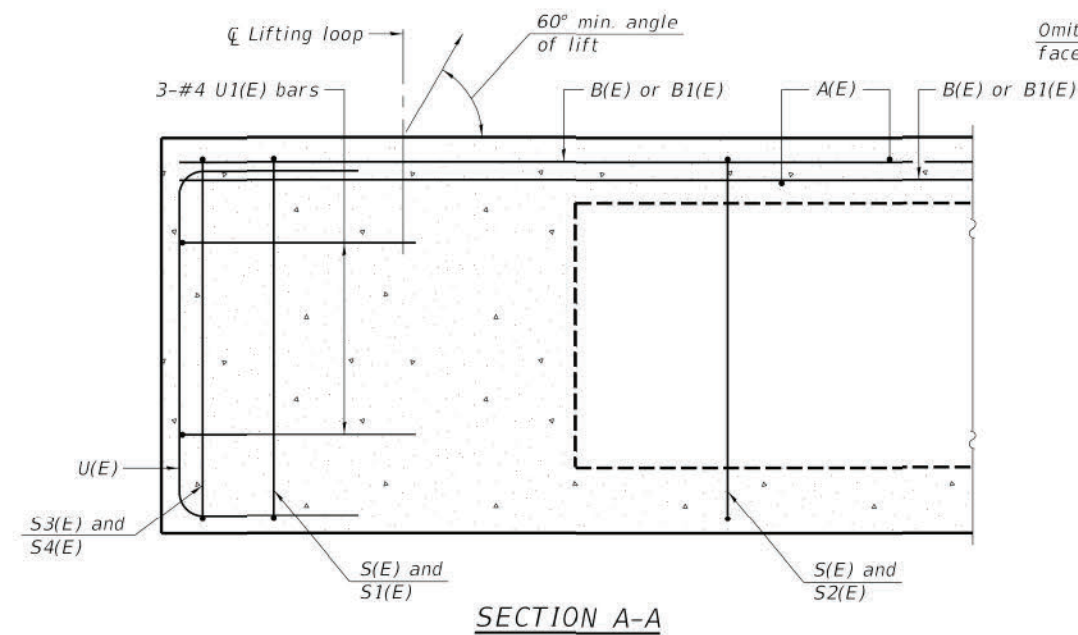
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PRECAST PRESTRESSED CONCRETE DECK BEAM  
 DETAILS, SPAN 1 & 3

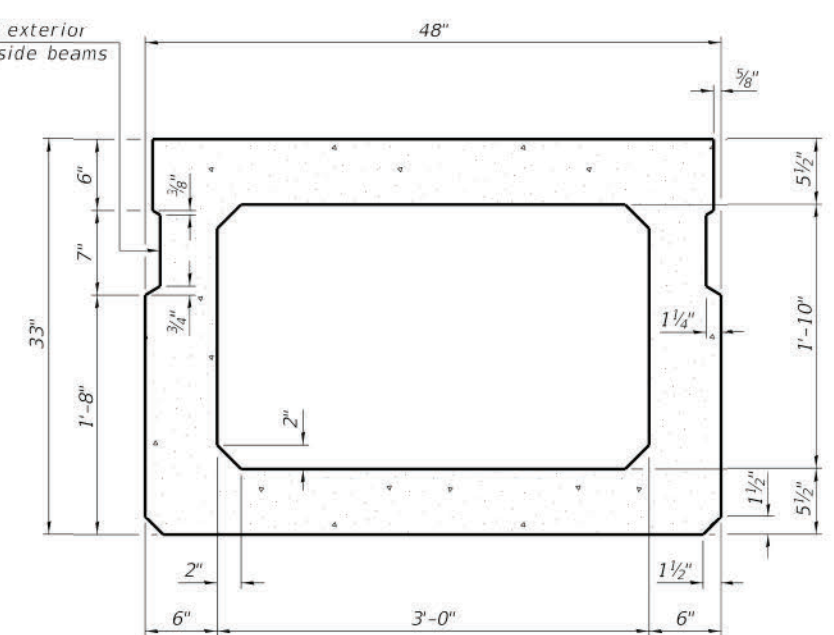
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	9
CONTRACT NO. 97812				

GCL JOB NO. 21-6008

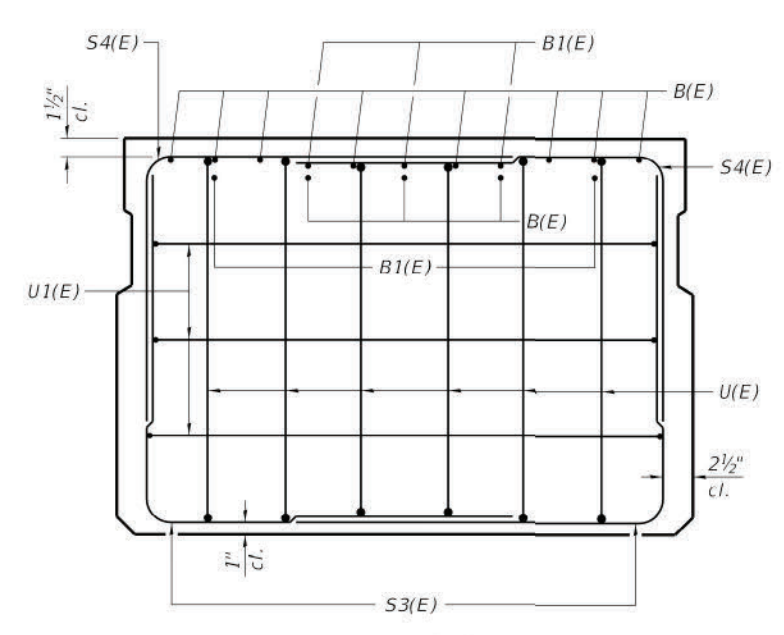




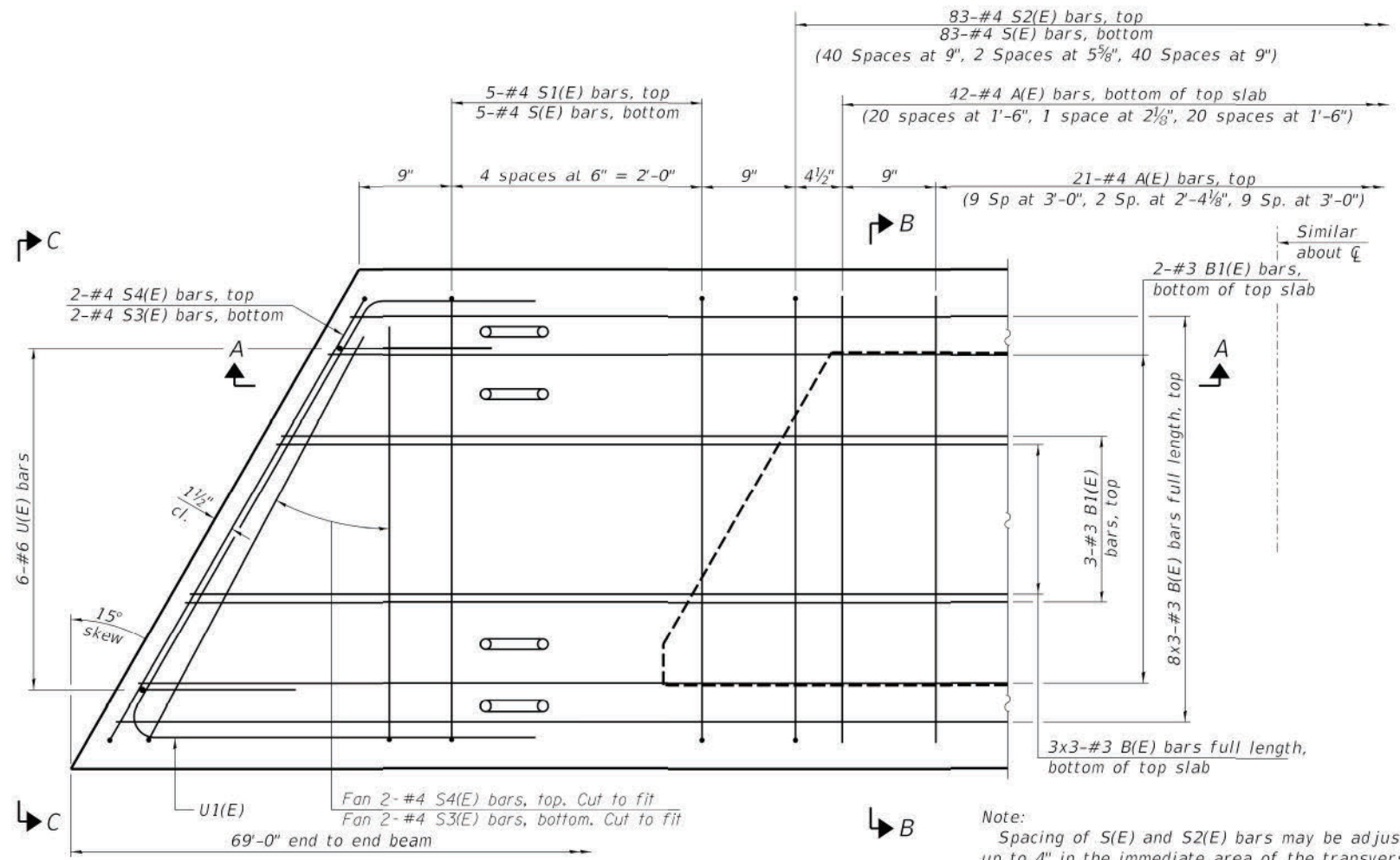
SECTION A-A



SECTION B-B  
(Showing dimensions)

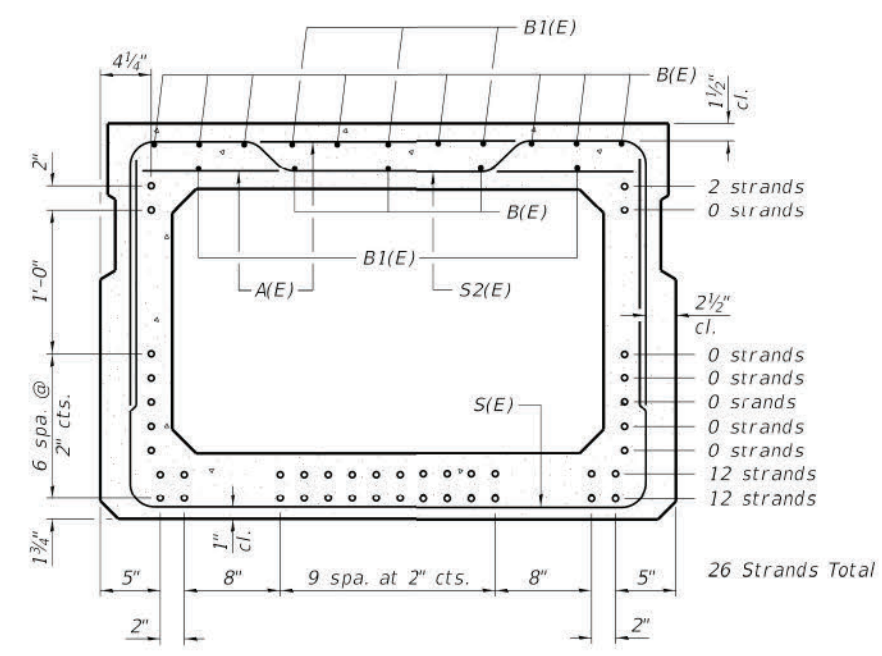


VIEW C-C



PLAN VIEW

Note:  
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.  
Bars indicated thus 3x2-#3 etc. indicates 3 lines of bars with 2 lengths per line.



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

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

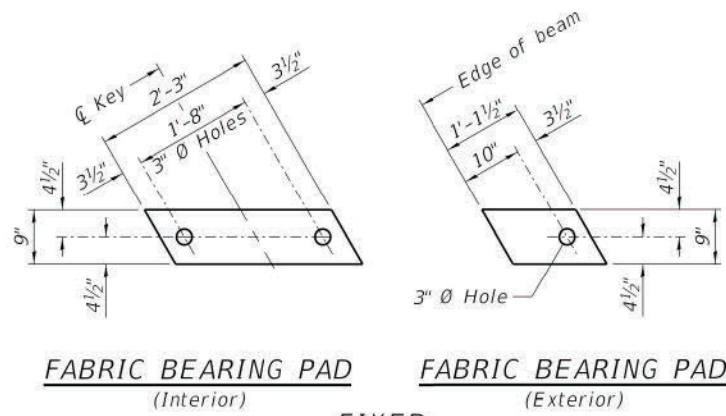
MINIMUM BAR LAP  
#3 bar = 1'-6"

BAR LIST  
ONE BEAM ONLY  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	63	#4	3'-7"	—
B(E)	33	#3	23'-11"	—
B1(E)	10	#3	10'-0"	—
* D(E)	24	#4	2'-9"	L
S(E)	93	#4	8'-8"	U
S1(E)	10	#4	7'-5"	U
S2(E)	83	#4	7'-8"	U
S3(E)	8	#4	6'-2"	U
S4(E)	8	#4	5'-7"	U
U(E)	12	#6	5'-0"	C
U1(E)	6	#4	7'-3"	C

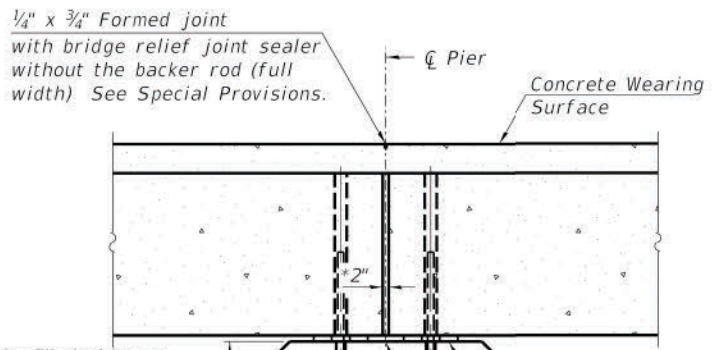
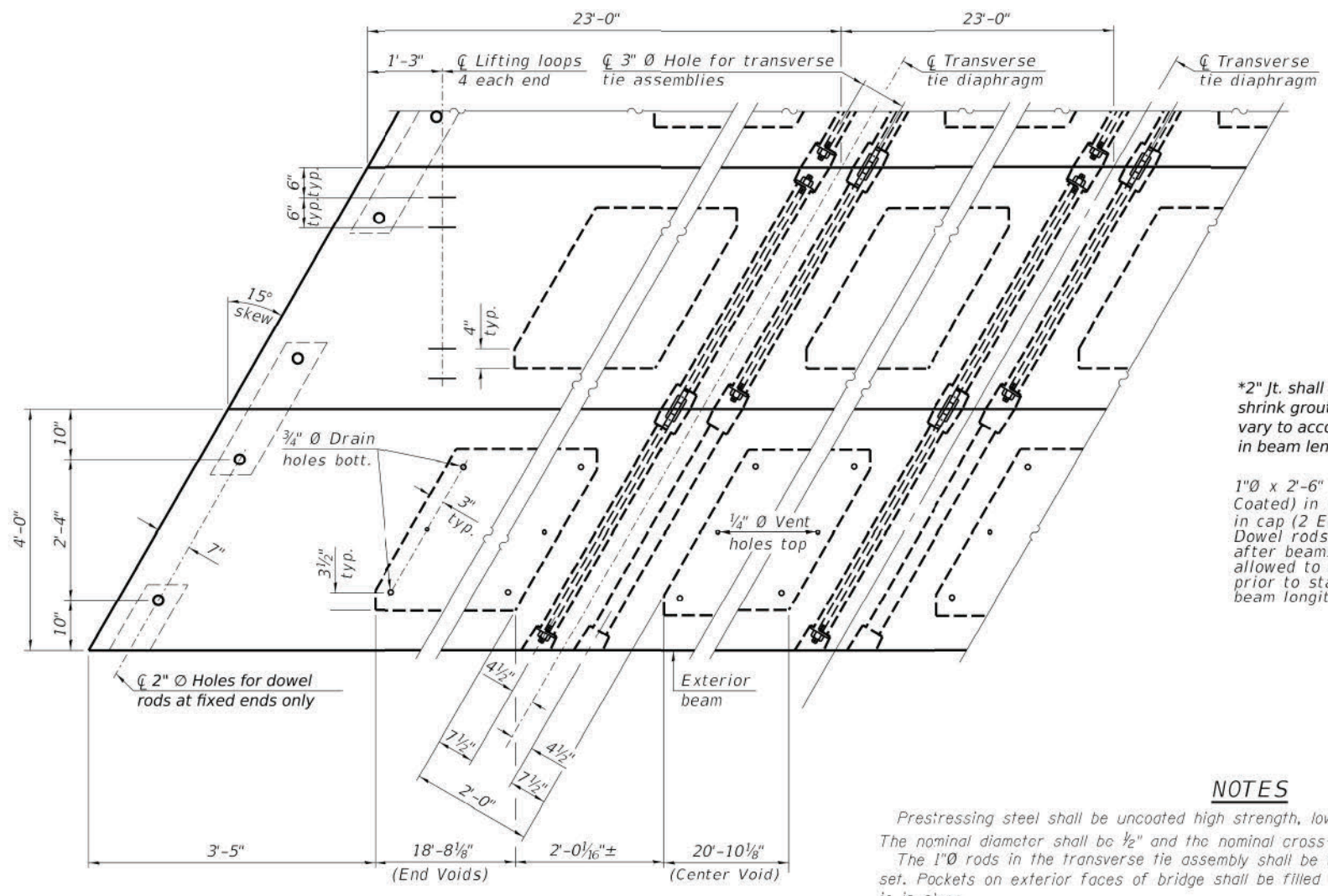
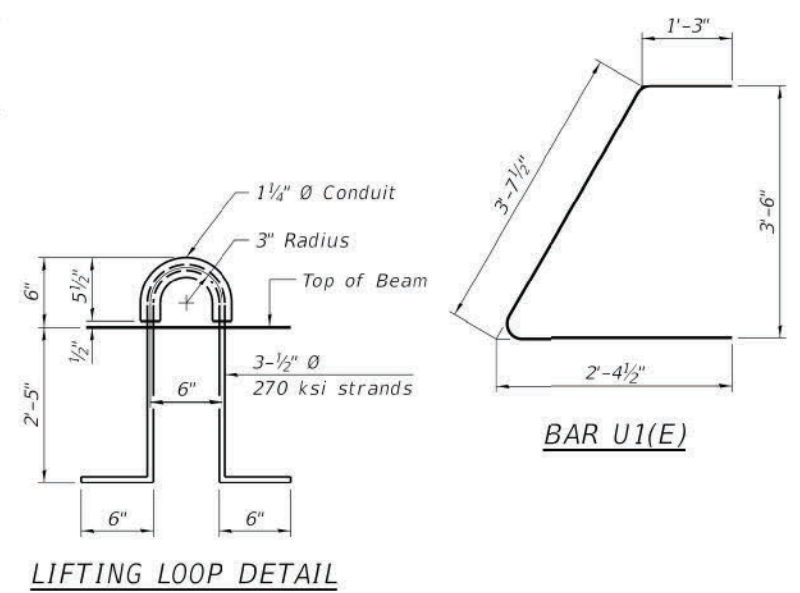
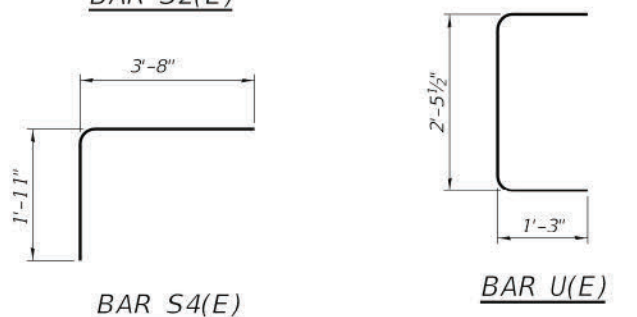
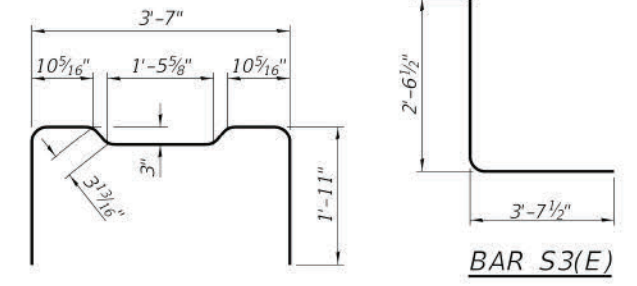
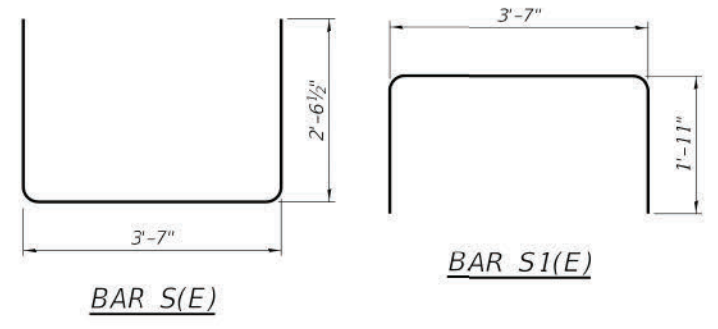
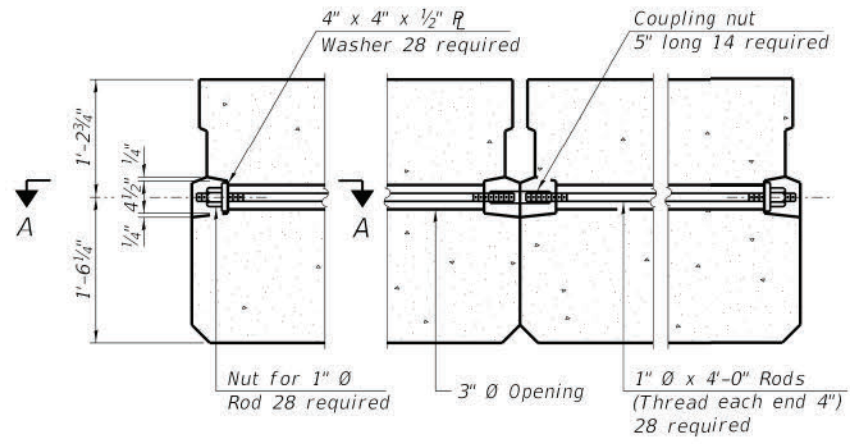
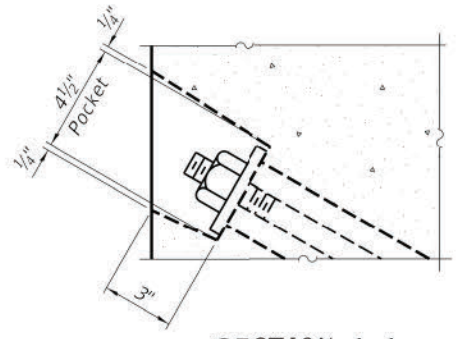
\* D(E) bar in exterior beam only.  
Note:  
See sheet 11 for additional details and Bill of Material.  
See sheet 13 for D(E) Bars.





**FIXED**

Notes:  
 All bearing pads shall be 1" thick.  
 Omit holes when using expansion bearings.  
 Expansion bearing pads shall be bonded to the substructure.



\*2" jt. shall be filled with non-shrink grout. 2" dimension may vary to accommodate tolerance in beam lengths.  
 1"Ø x 2'-6" Dowel Rods (Epoxy Coated) in 1 1/2"Ø holes drilled in cap (2 Ea. End, Ea. Beam). Dowel rods shall be grouted after beams are in place and allowed to cure (min. 24 hrs.) prior to start of grouting deck beam longitudinal keyways.

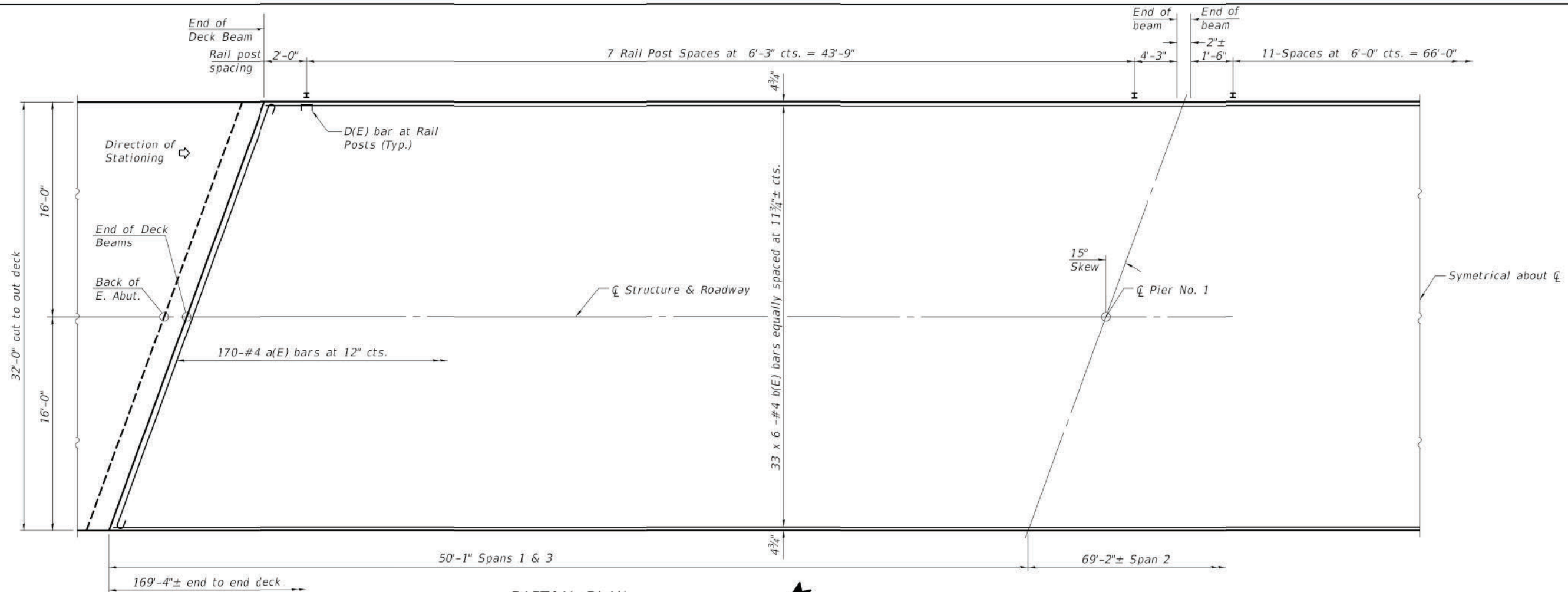
**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1"Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
 A minimum 2 1/2"Ø lifting pin shall be used to engage the lifting loops during handling.  
 Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
 Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
 Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.  
 Reinforcement bars shall conform to ASTM A706 (IL Modified), Grade 60.

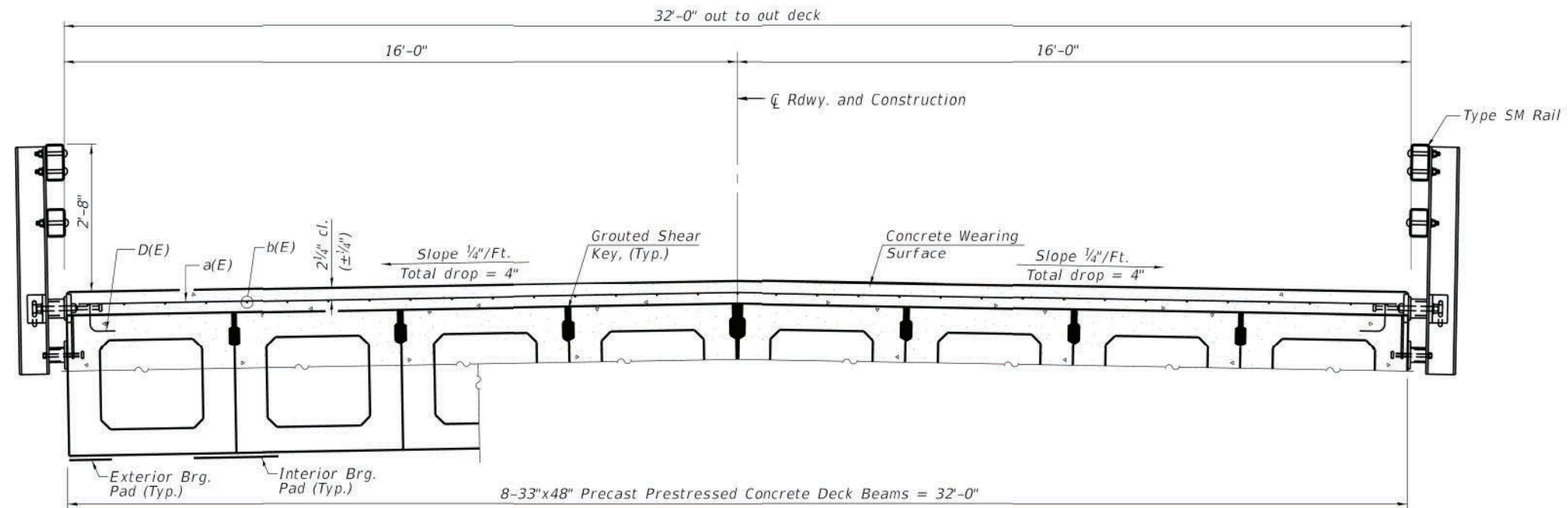
**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	2,208
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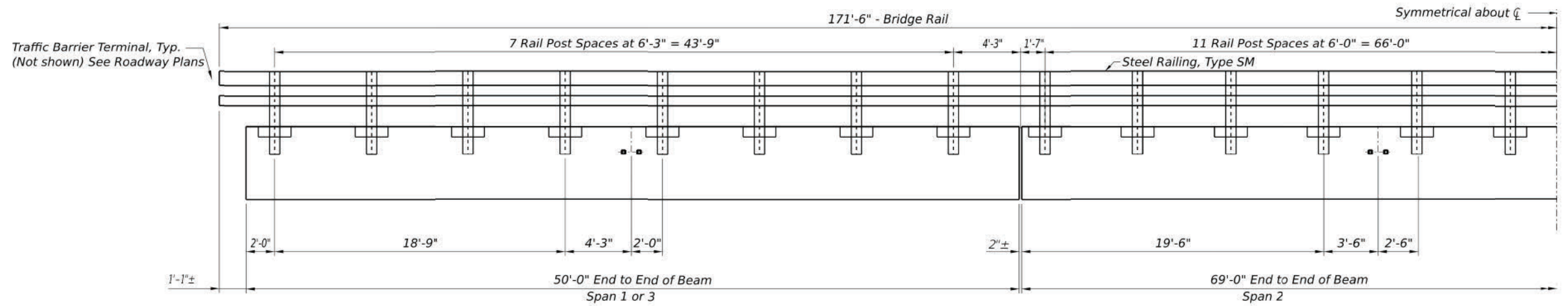


**MINIMUM BAR LAP**  
#4 bar = 2'-5"

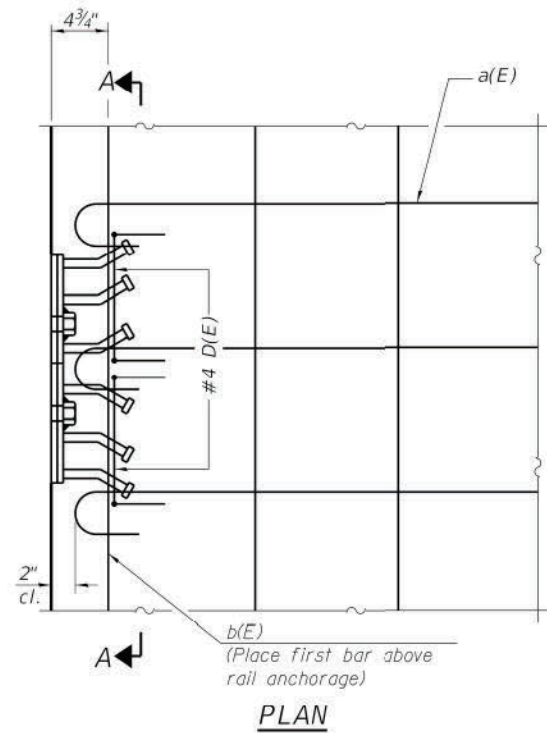


**Notes:**  
See sheet 13 for Additional Superstructure Details and Bill of Material.  
Bars indicated thus 20 x 2-#4 etc. indicates 20 lines of bars with 2 lengths per line.  
Spacing of a(E), a10(E), and a11(E) bars shall be measured along the centerline of structure.  
Concrete wearing surface shall be placed prior to casting approach slab.

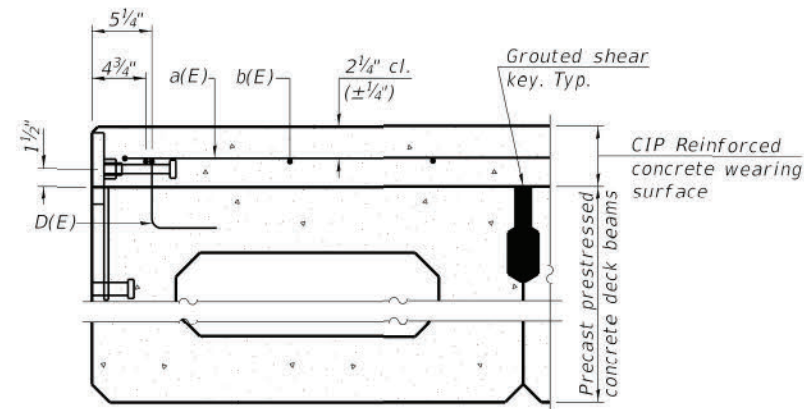




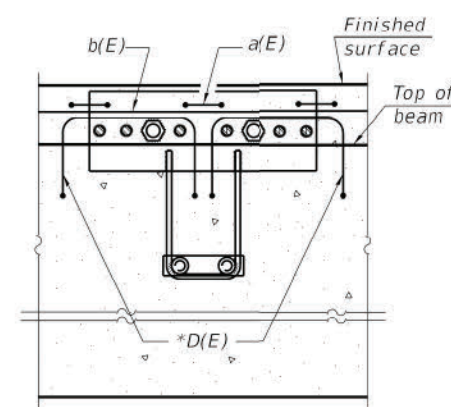
RAIL POST SPACING



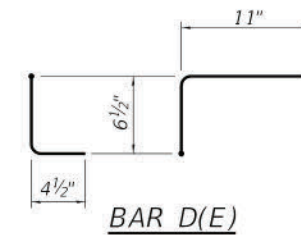
PLAN



SECTION THRU FASCIA BEAM

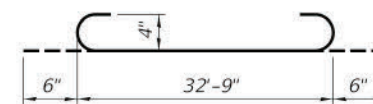


SECTION A-A

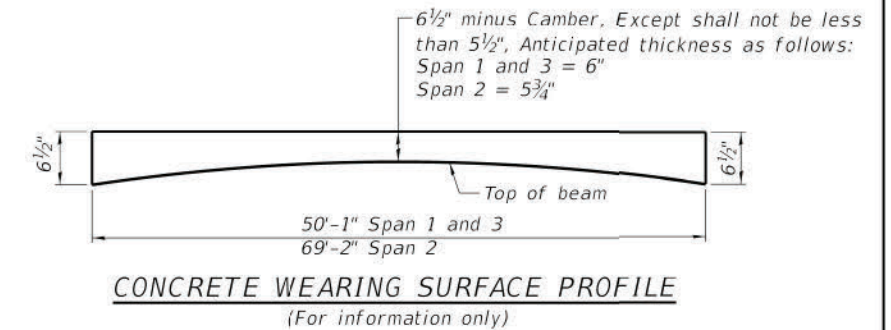


BAR D(E)

\* Place 2-#4 D(E) bars in beam at each post location as shown. D(E) bar included in cost of beam.



BAR a(E)



CONCRETE WEARING SURFACE PROFILE

(For information only)

Notes:  
Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam.

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	170	#4	33'-9"	
b(E)	198	#4	30'-2"	
Protective Coat		Sq. Yd.	602	
Reinforcement Bars, Epoxy Coated		Pound	7,820	
Concrete Wearing Surface, 6"		Sq. Yd.	602	

Bars indicated thus 1 x 4 -#4 etc. indicates 1 line of bars with 4 lengths per line.



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www.gonzalezco.com  
ILLINOIS PROFESSIONAL DESIGN FIRM 184.004564

DESIGNED - JSP  
DRAWN - JSP, JMW  
CHECKED - BLT  
DATE - 03/15/2023

REVISED -  
REVISED -  
REVISED -  
REVISED -

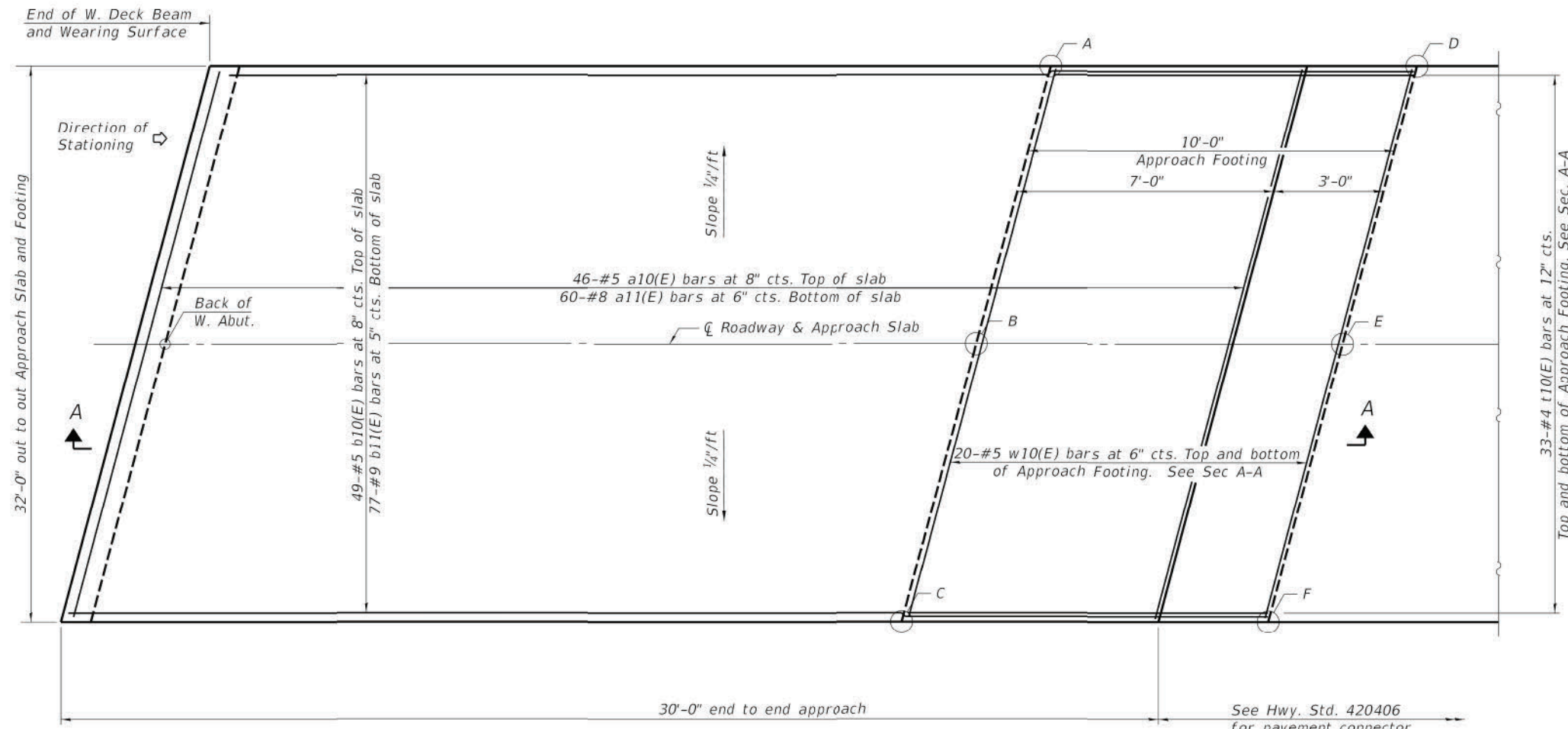
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	13

GCL JOB NO. 21-6008  
CONTRACT NO. 97812





Notes:  
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
 Approach footing concrete shall be paid for as Concrete Structures.  
 The approach footing maximum applied service bearing pressure (Q<sub>max</sub>) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.

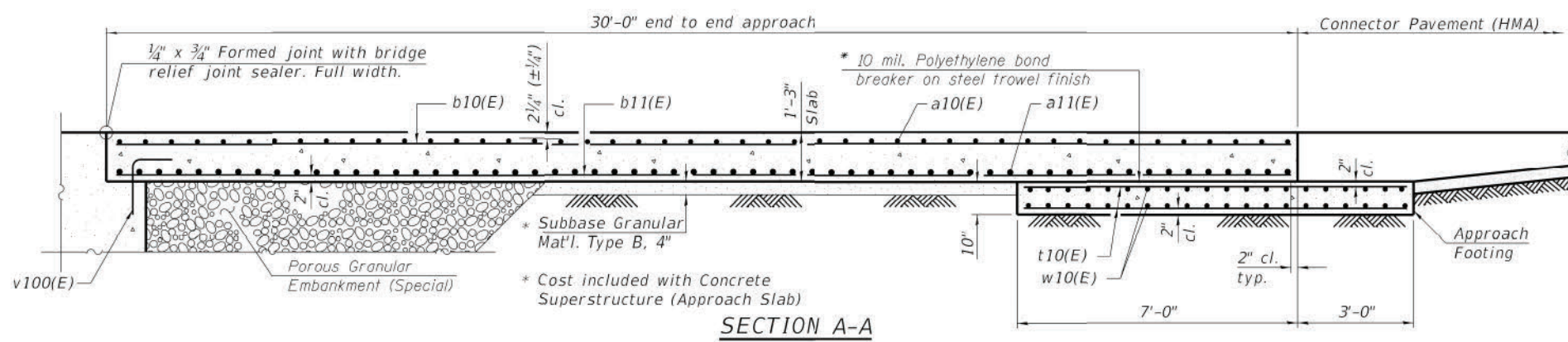
**TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING**

Point	East Approach		West Approach	
	Top	Bottom	Top	Bottom
A	442.96	442.13	442.95	442.12
B	443.29	442.46	443.28	442.45
C	442.96	442.13	442.96	442.13
D	442.96	442.13	442.93	442.10
E	443.28	442.45	443.27	442.44
F	442.95	442.12	442.94	442.11

**PLAN**

**TWO APPROACHES BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
a10(E)	92	#5	32'-9"	—	
a11(E)	120	#8	32'-9"	—	
b10(E)	98	#5	29'-8"	—	
b11(E)	154	#9	29'-8"	—	
t10(E)	132	#4	9'-8"	—	
w10(E)	80	#5	32'-9"	—	
Concrete Superstructure (Approach Slab)				Cu. Yd.	88.8
Concrete Structures				Cu. Yd.	19.8
Protective Coat				Sq. Yd.	214
Reinforcement Bars, Epoxy Coated				Pound	35,790



**SECTION A-A**

**gonzalez**  
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DESIGNED - JSP  
 DRAWN - JSP, JMW  
 CHECKED - BLT  
 DATE - 03/15/2023

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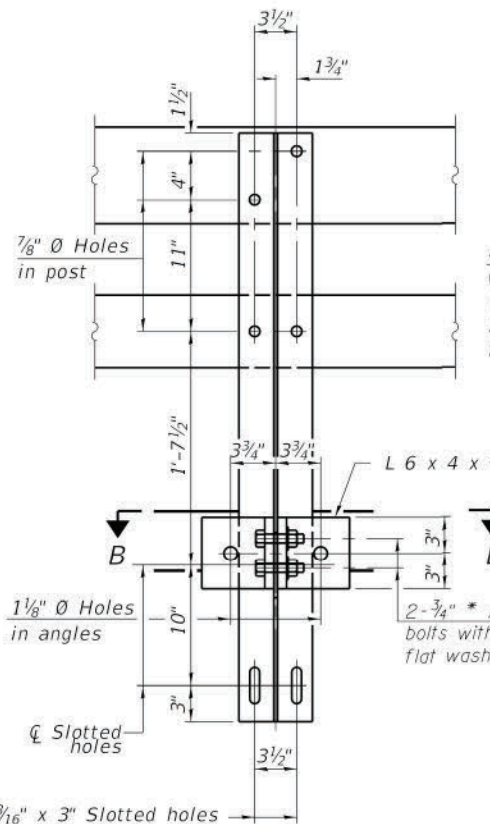
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**BRIDGE APPROACH SLAB DETAILS**

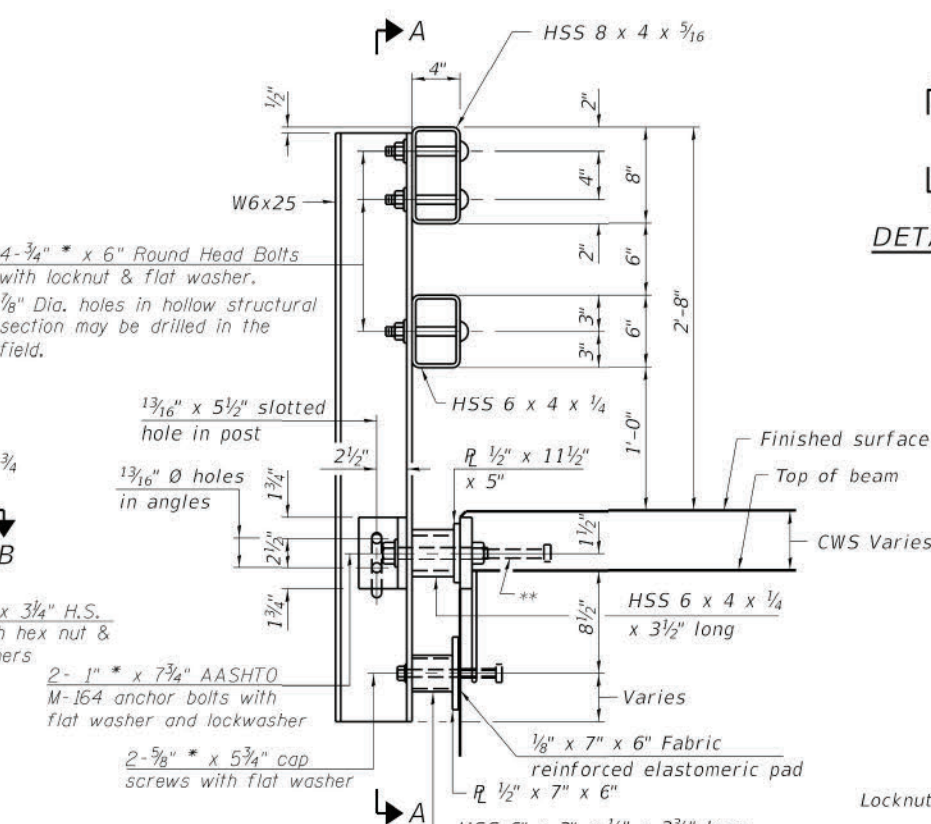
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	14

GCL JOB NO. 21-6008  
 CONTRACT NO. 97812

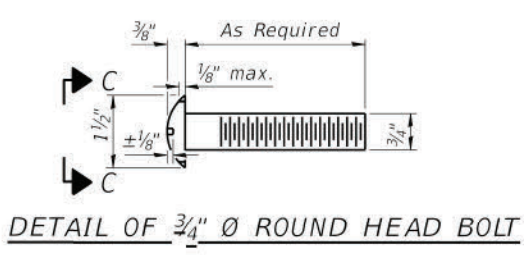




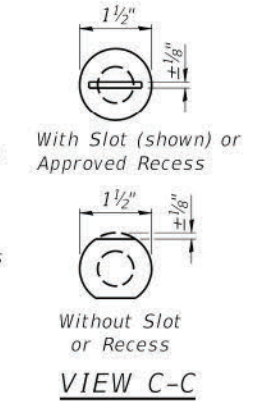
SECTION A-A



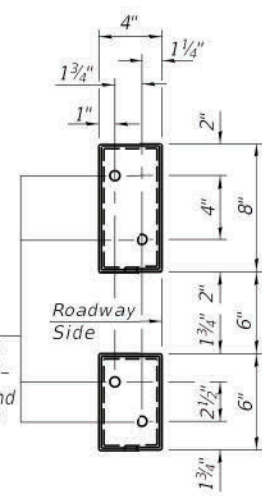
SECTION AT RAIL POST



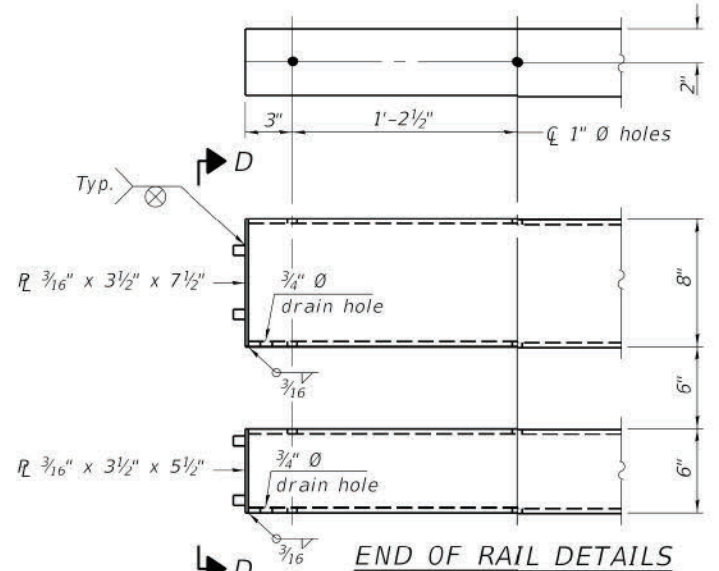
DETAIL OF 3/4" Ø ROUND HEAD BOLT



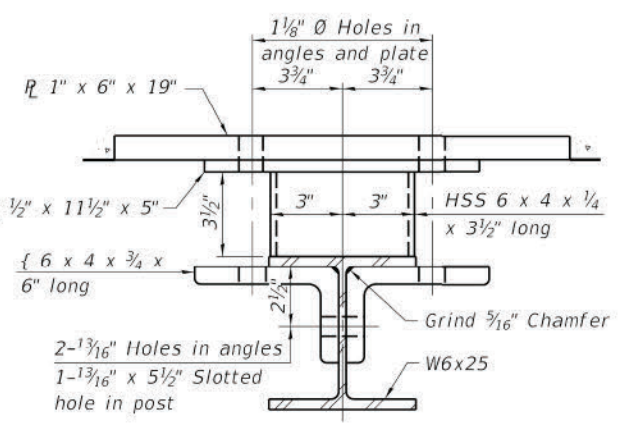
VIEW C-C



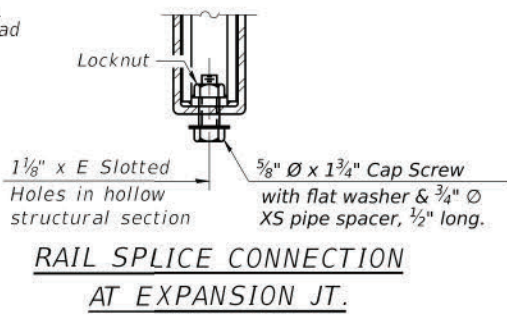
VIEW D-D



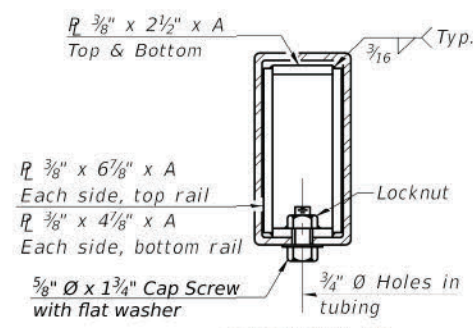
END OF RAIL DETAILS



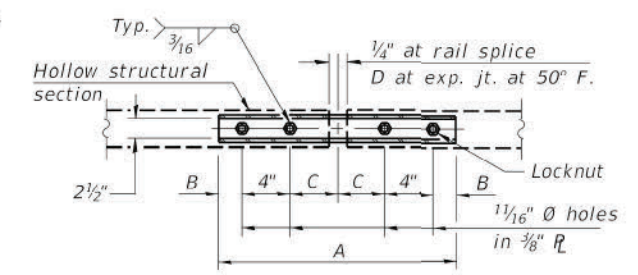
SECTION B-B



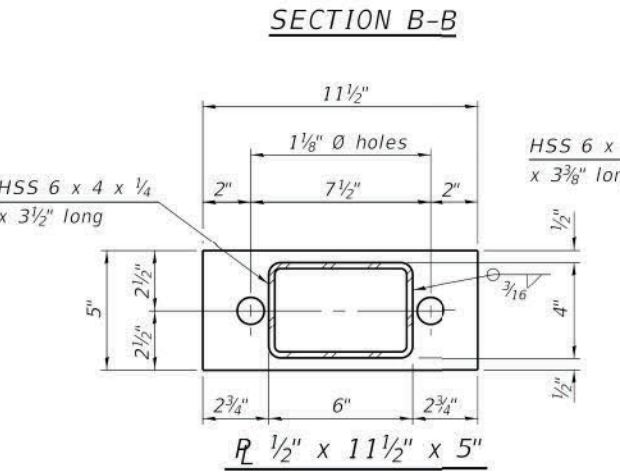
RAIL SPLICE CONNECTION AT EXPANSION JT.



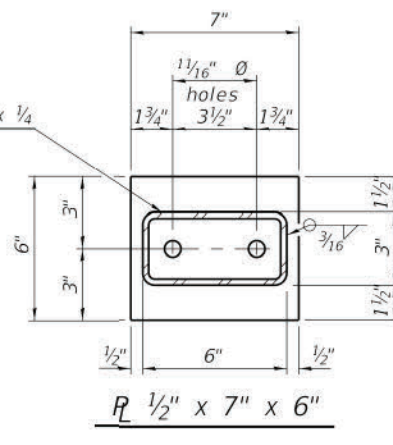
SECTION AT RAIL SPLICE



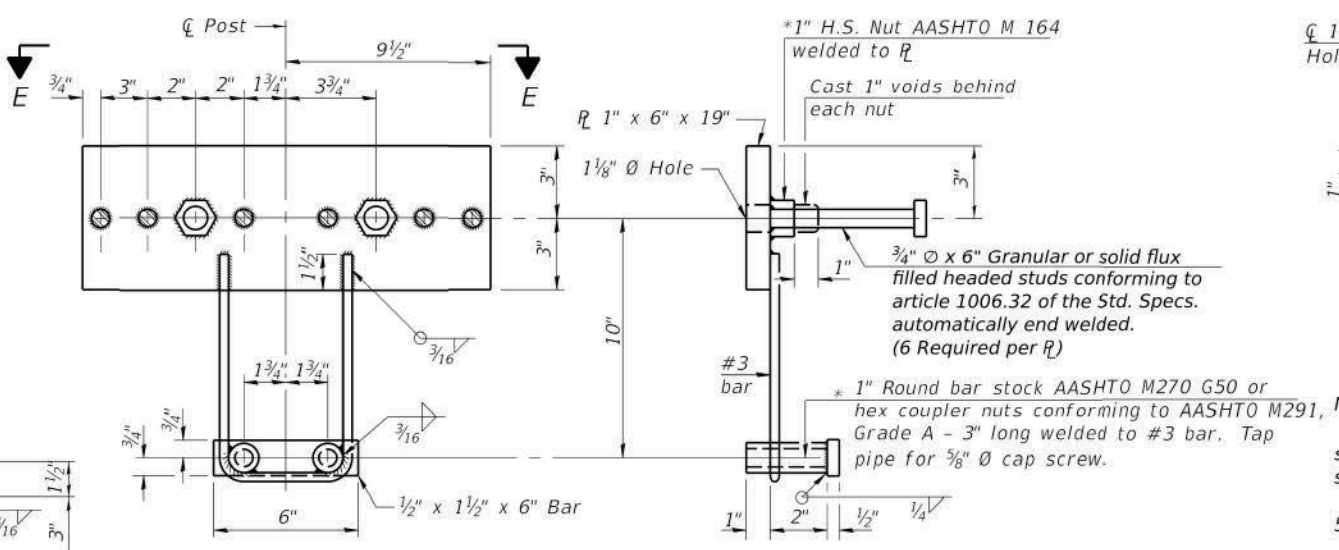
PLAN-BOTT. SPLICE R TYPICAL



SECTION B-B



ANCHOR DEVICE



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"	—

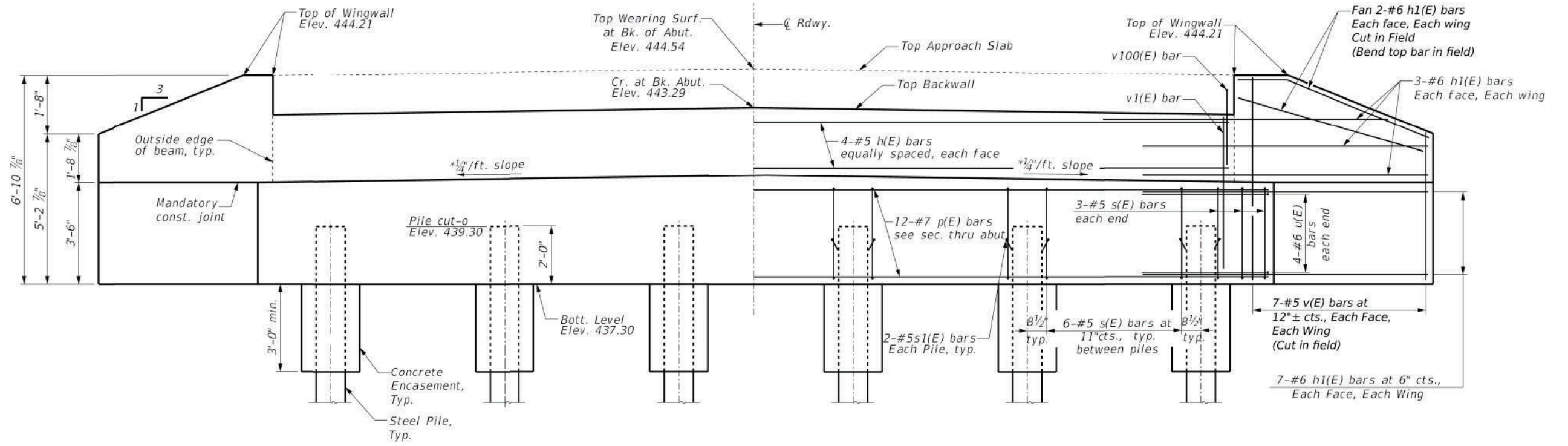
T = Total movement at expansion joint as shown on the design plans.

Notes:  
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.  
 Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 All field drilled holes shall be coated with an approved zinc rich paint before erection.  
 \*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

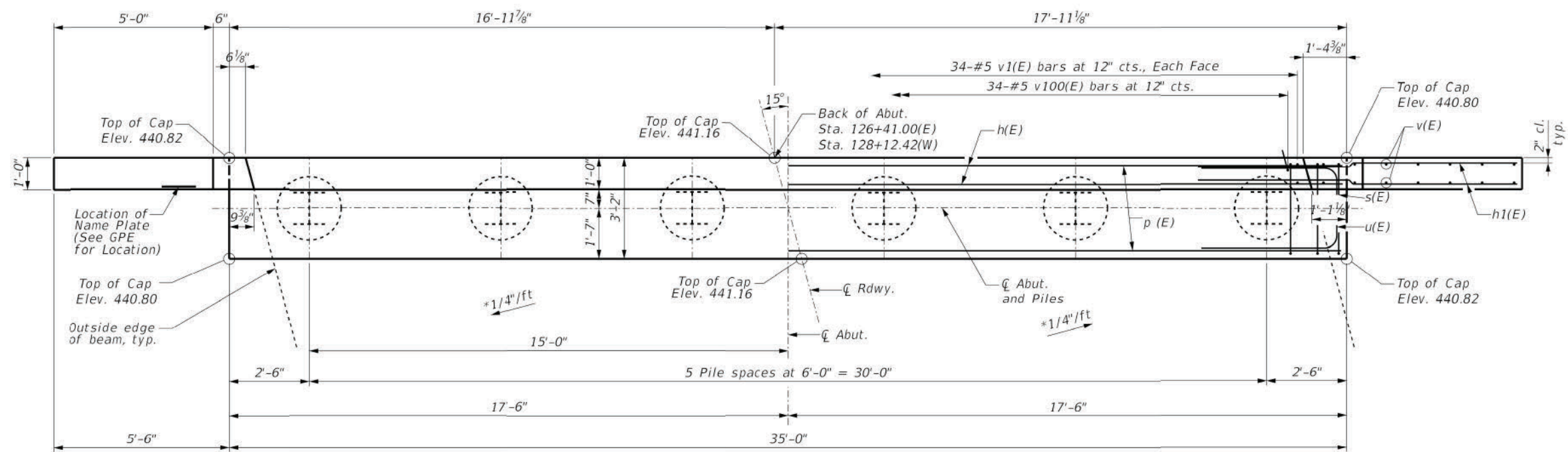
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	343





**ELEVATION**  
\*Normal to  $\zeta$  Roadway



**PLAN**



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**STATE OF ILLINOIS  
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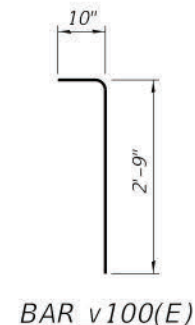
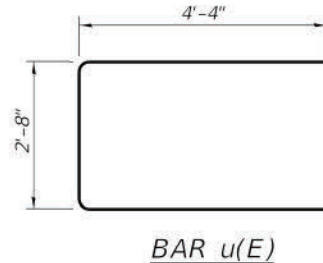
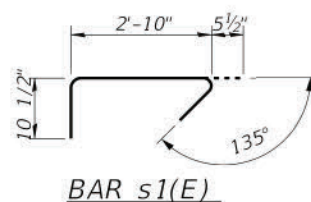
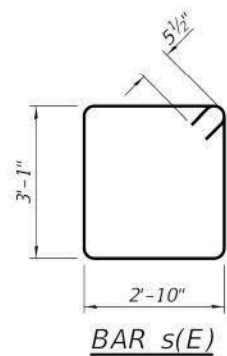
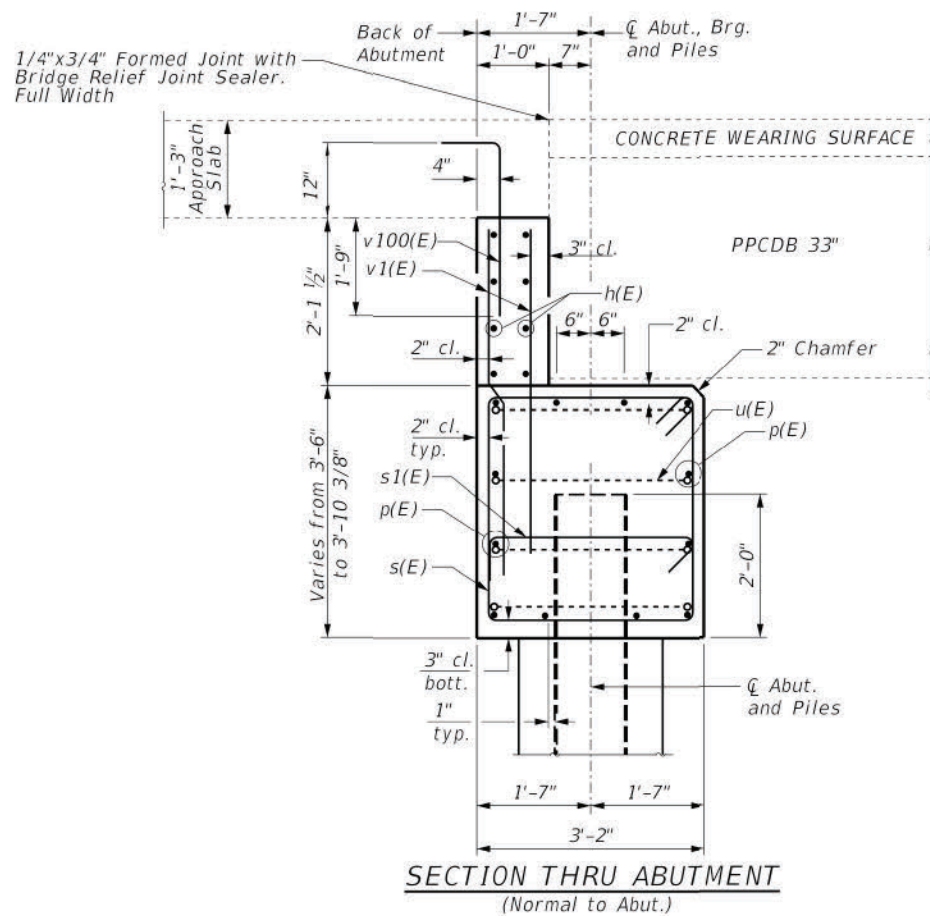
**ABUTMENT DETAILS**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	16

GONZ. JOB NO. 21-6008

CONTRACT NO. 97812





**BILL OF MATERIAL  
FOR ONE ABUTMENT**

Bar	No.	Size	Length	Shape
h(E)	8	#5	32'-9"	—
h1(E)	48	#6	9'-8"	—
p(E)	12	#7	34'-8"	—
s(E)	36	#5	12'-9"	□
s1(E)	12	#5	4'-2"	┌
u(E)	8	#6	11'-4"	U
v(E)	28	#5	6'-7"	└
v1(E)	68	#5	5'-2"	—
v100(E)	34	#5	3'-7"	└
Concrete Structures		Cu Yd	19.0	
Concrete Encasement		Cu Yd	2.1	
Protective Coat		Sq Yd	10	
Reinforcement Bars, Epoxy Coated		Pound	3170	
Furnishing Steel Piles, HP12x63		Foot	E. Abut. 390 W. Abut. 490	
Driving Piles		Foot	E. Abut. 390 W. Abut. 490	
Test Pile, HP12x63		Each	E. Abut. 0 W. Abut. 1	

Notes:  
For details of piles and Concrete Encasement, see sheet 10.

**GENERAL NOTES**

Reinforcement bars shall be epoxy coated and conform to the requirements of ASTM A 706 Grade 60 (IL Modified).

All exposed edges shall have standard 3/4" chamfer, unless otherwise noted or as directed by the Engineer.

All clearances between rebar and form surface shall be 2", unless otherwise noted.

Space reinforcement in cap to miss PPCDB dowel rods.

The Steel H-piles shall be according to AASHTO M270 Grade 50.

The Contractor shall drive one (1) Test Pile of the size indicated in a permanent location as shown on the plans or as directed by the Engineer before ordering the remainder of the piles.

The Test Pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

The back wall and portion of the wingwalls above the construction joint shall be cast against the in-place deck beams.

The position of the 90° & 135° hooked ends of the s1(E) bar shall be alternated between adjacent bars horizontally.

**PILE DATA  
EAST ABUTMENT**

Type: Steel HP12x63  
Nominal Required Bearing: 395 kips  
Factored Resistance Available: 217 kips  
Est. Length: 65'/pile  
No. Production Piles: 6  
No. Test Piles: 0

**PILE DATA  
WEST ABUTMENT**

Type: Steel HP12x63  
Nominal Required Bearing: 395 kips  
Factored Resistance Available: 217 kips  
Est. Length: 98'/pile  
No. Production Piles: 5  
No. Test Piles: 1



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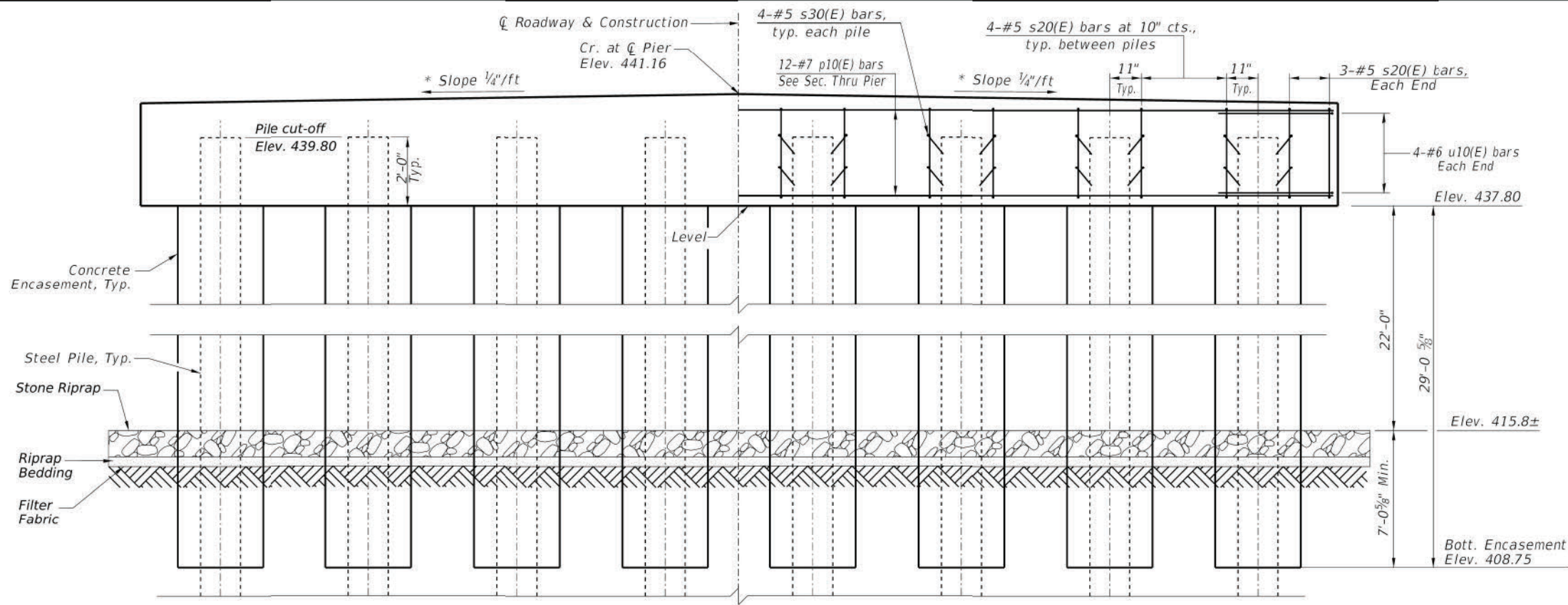
ABUTMENT DETAILS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	17

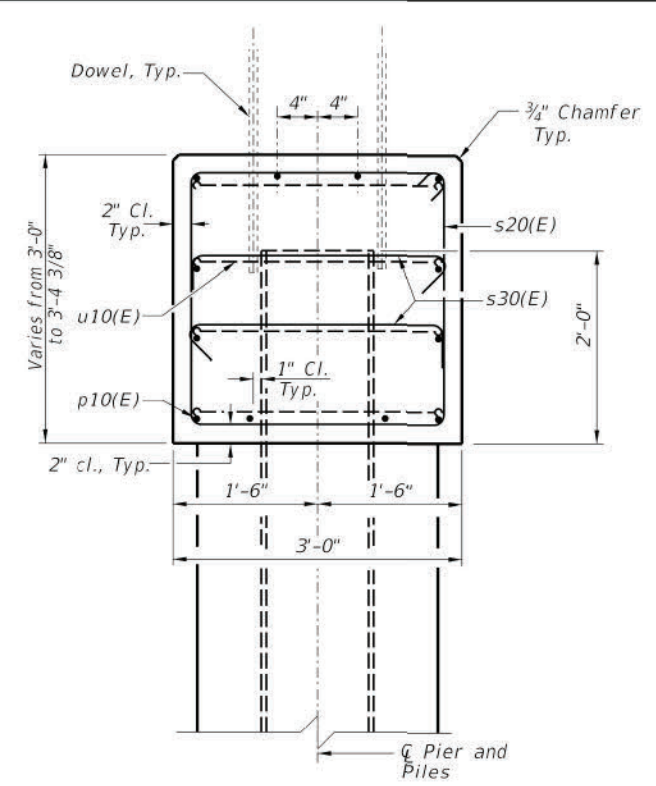
CONTRACT NO. 97812

GONZ JOB NO. 21-6008

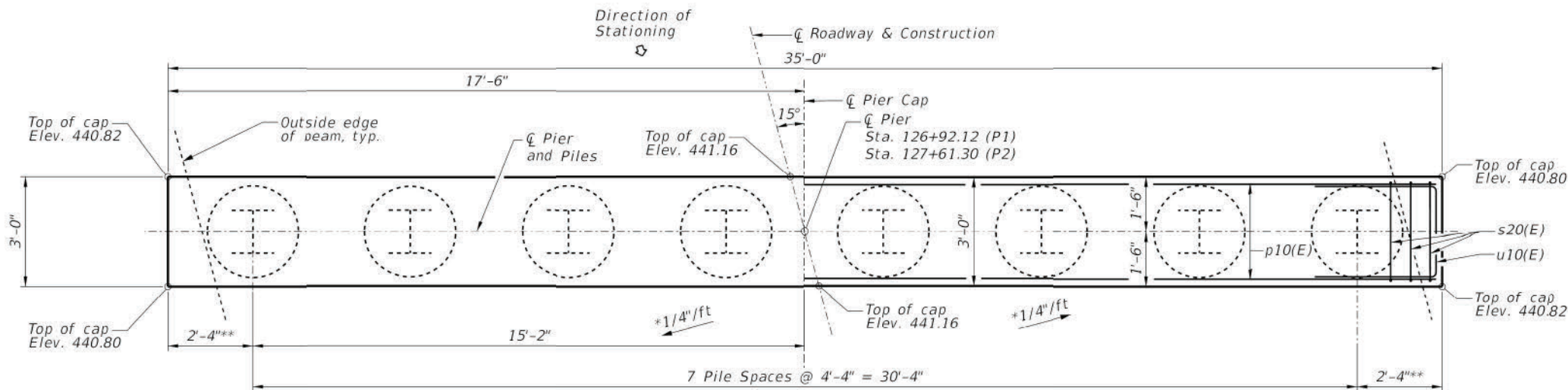




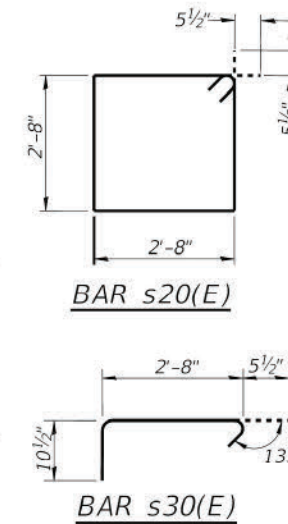
**ELEVATION**  
\* Normal to C of Roadway



**SEC. THRU PIER**  
(Normal to Brg.)



**PLAN**



**BILL OF MATERIAL**  
(FOR ONE PIER)

Bar	No.	Size	Length	Shape	
p10(E)	12	#7	34'-8"	—	
s20(E)	34	#5	11'-7"	□	
s30(E)	32	#5	4'-0"	□	
u10(E)	8	#6	11'-2"	□	
Concrete Structures				Cu Yd	12.4
Concrete Encasement				Cu Yd	42.3
Protective Coat				Sq Yd	7
Reinforcement Bars, Epoxy Coated				Pound	1530
Furnishing Steel Piles, HP14x117		Foot	Pier 1	528	
			Pier 2	686	
Driving Piles		Foot	Pier 1	528	
			Pier 2	686	
Test Pile, HP14x117		Each	Pier 1	0	
			Pier 2	1	

**GENERAL NOTES**

Reinforcement bars shall be Epoxy Coated and conform to the requirements of ASTM A706 Grade 60 (IL Modified).

The position of the 90° & 135° hooked ends of the s30(E) bars shall be alternated between adjacent bars, as shown both vertically and horizontally.

All exposed edges shall have standard 3/4" chamfer, unless otherwise noted or as directed by the Engineer.

If a portion of the concrete encasement is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.

All clearances between rebar and form surface shall be 2", unless otherwise noted.

The Contractor shall drive one (1) Test Pile of the size indicated in a permanent location as shown of the plans or as directed by the Engineer before ordering the remainder of the piles.

Space reinforcement in cap to miss PPCDB dowel rods.

The Test Pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

The Steel H-piles shall be according to AASHTO M270 Grade 50.

**PILE DATA**  
**PIER NO. 1**

Type: Steel HP14x117  
Nominal Required Bearing: 405 kips  
Factored Resistance Available: 223 kips  
Estimated Length: 66'/pile  
No. Production Piles: 8  
No. Test Piles: 0

**PILE DATA**  
**PIER NO. 2**

Type: Steel HP14x117  
Nominal Required Bearing: 405 kips  
Factored Resistance Available: 223 kips  
Estimated Length: 98'/pile  
No. Production Piles: 7  
No. Test Piles: 1



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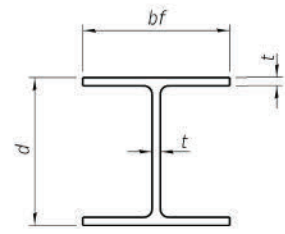
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PIER DETAILS**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	18

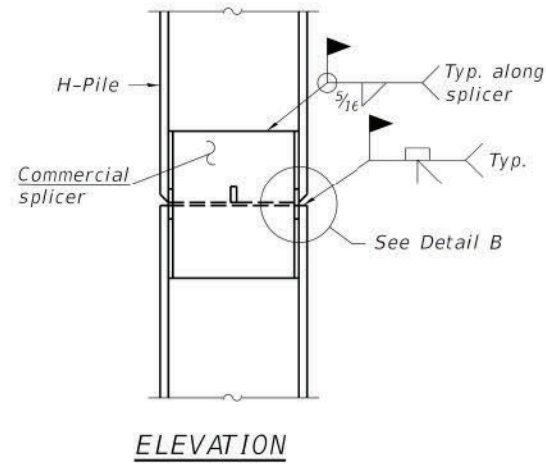
GCL JOB NO. 21-6008  
CONTRACT NO. 97812



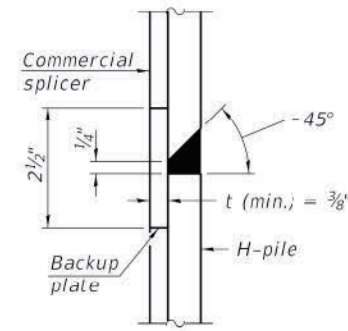


**STEEL PILE TABLE**

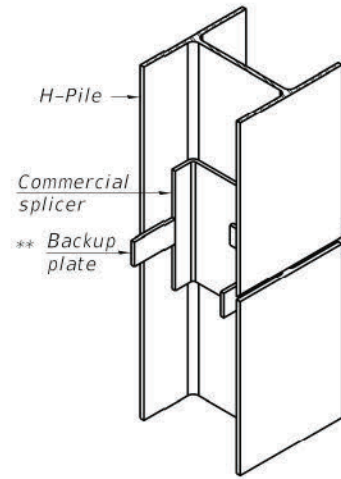
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



**ELEVATION**

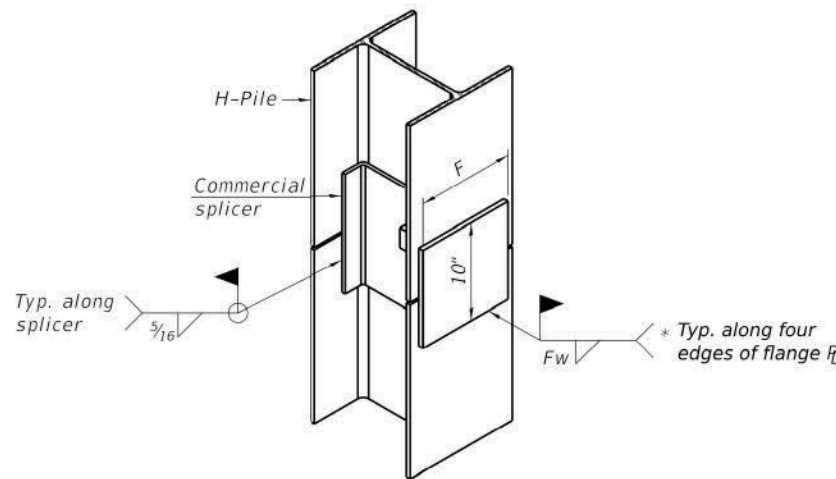


**DETAIL "B"**



**ISOMETRIC VIEW**

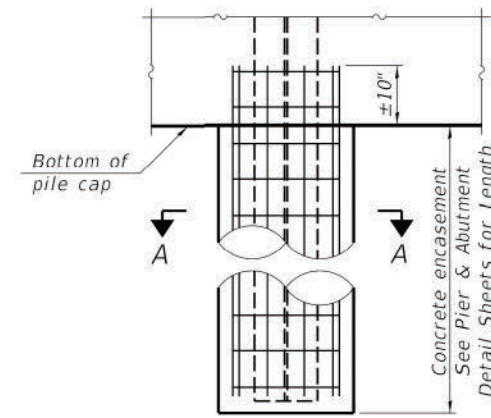
**WELDED COMMERCIAL SPLICE**



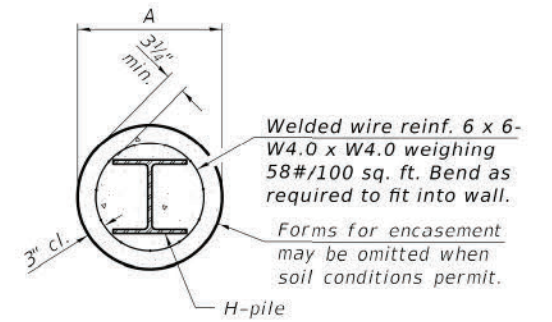
**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

- \* Interrupt welds 1/4" from end of web and/or each flange.
- \*\* Remove portions of backup plates that extend outside the flanges.
- \*\*\* Weld size per pile shoe manufacturer (5/16" min.).

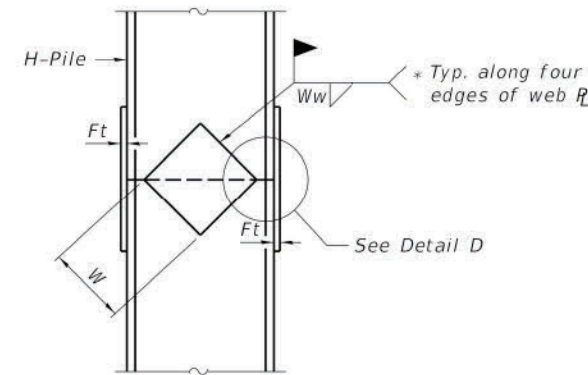


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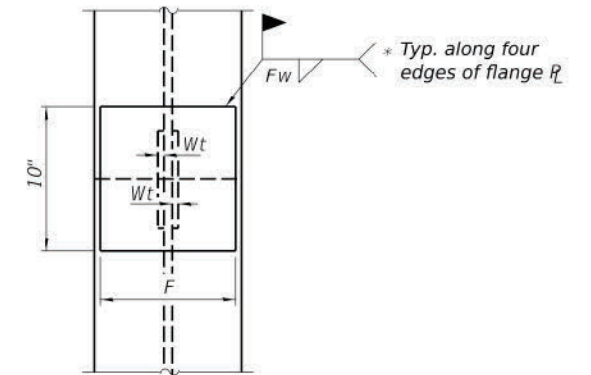


**SECTION A-A**

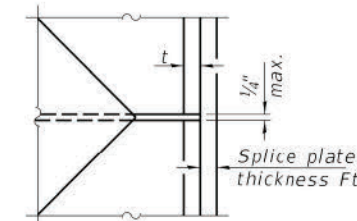
**INDIVIDUAL PILE CONCRETE ENCASEMENT**



**ELEVATION**



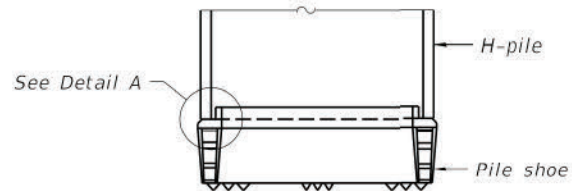
**END VIEW**



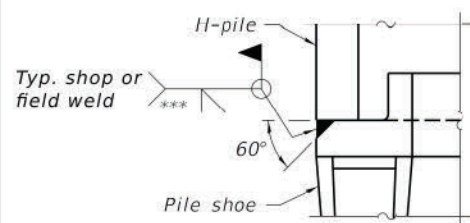
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"



**ELEVATION**



**DETAIL A**

**SHOE ATTACHMENT**

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



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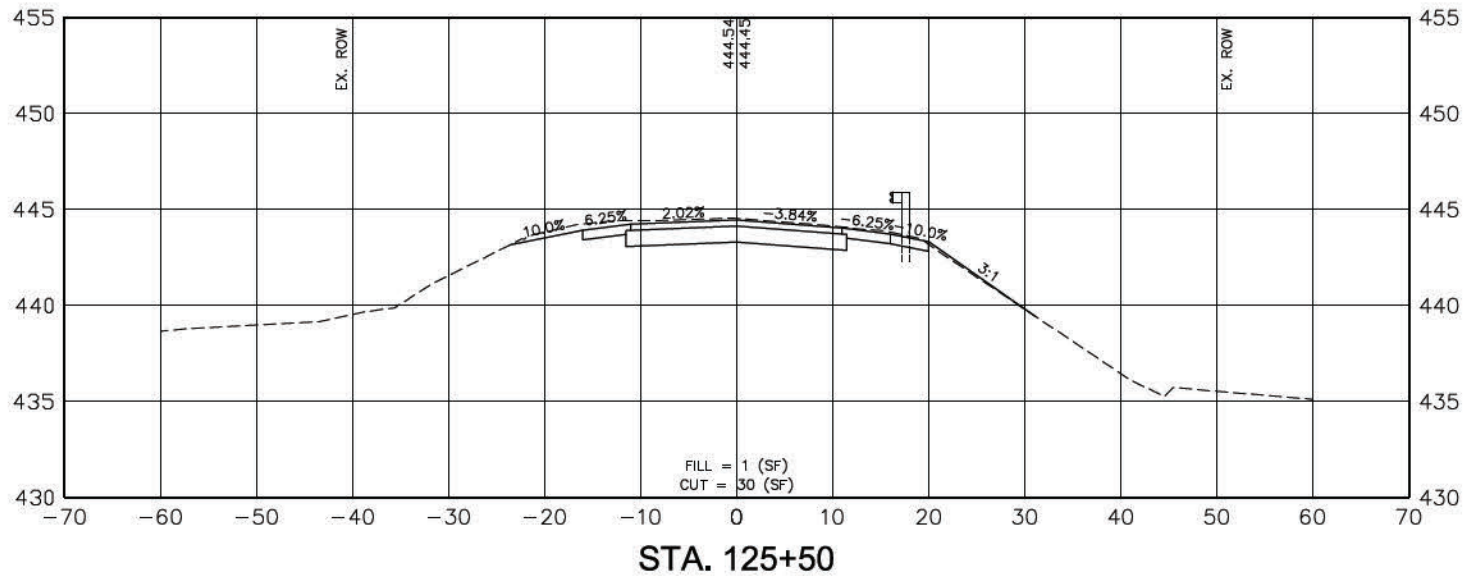
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HP PILE DETAILS

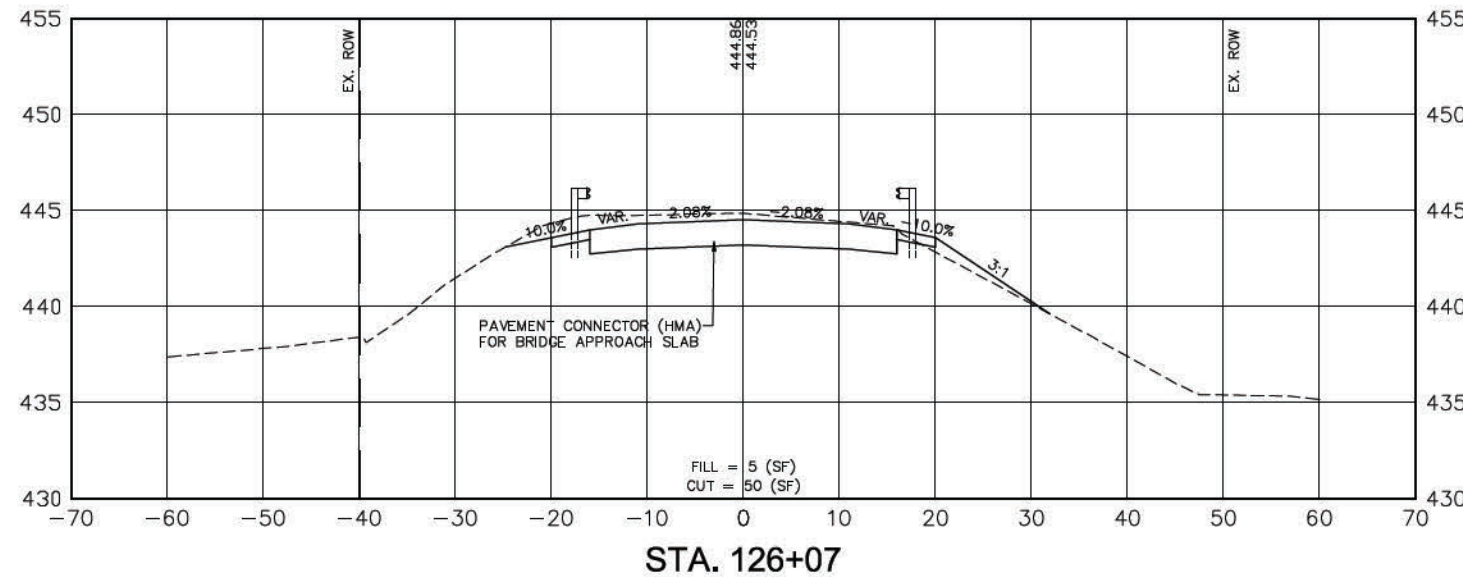
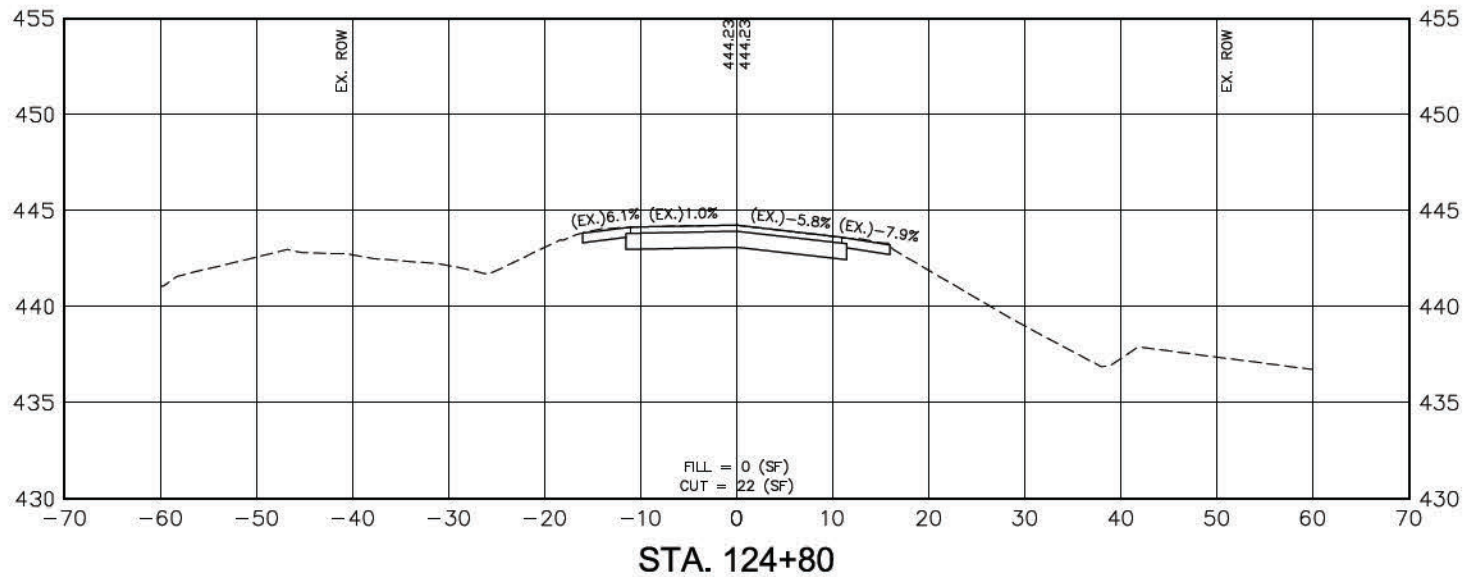
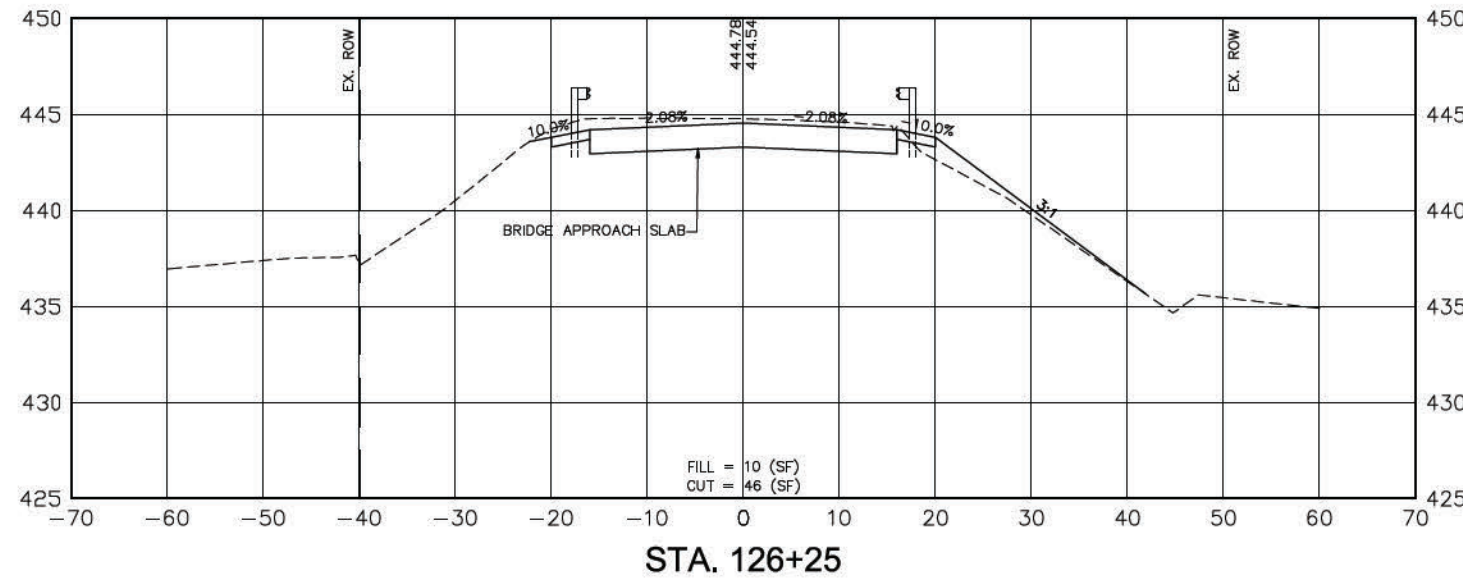
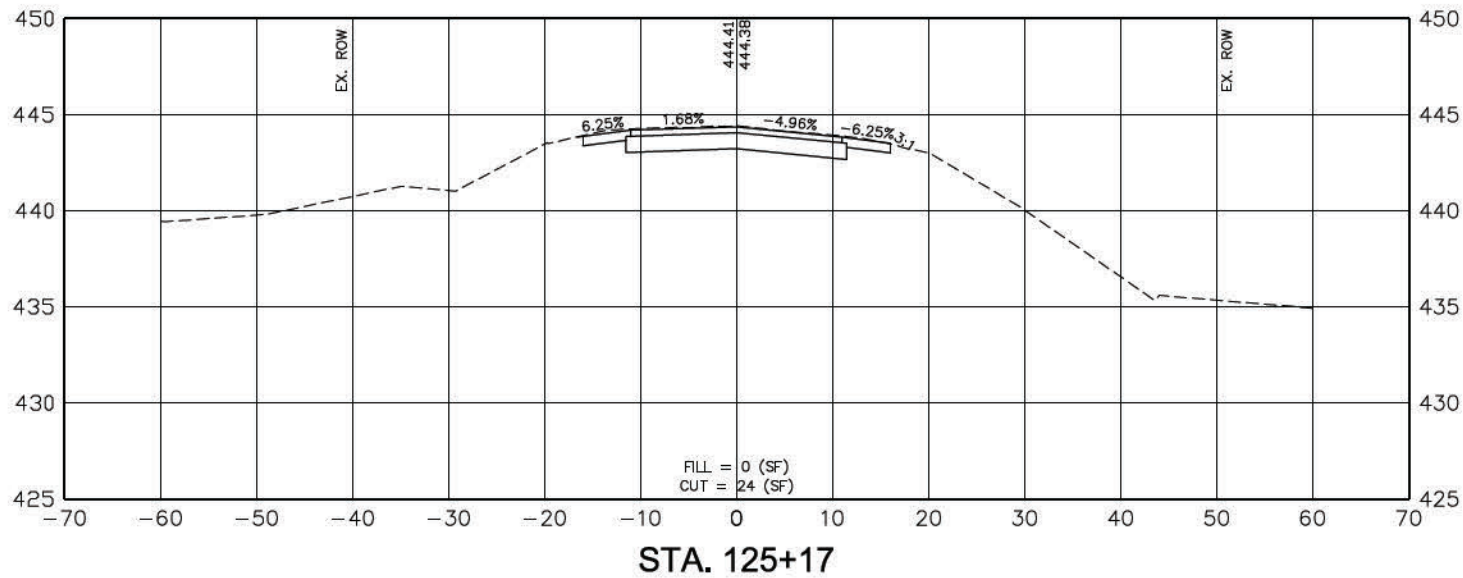
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	19
CONTRACT NO. 97812				

GCL JOB NO. 21-6008





**BRIDGE**



S:\Projects\2021\21-808 St. Clair County Hwy Dept - CH 40 (msa Station Rd)\20 Design\CADD\005\_XTOP0-21808.dwg, Plotted on: 3/15/2023 10:31 AM

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CHECKED - BLT	REVISED -
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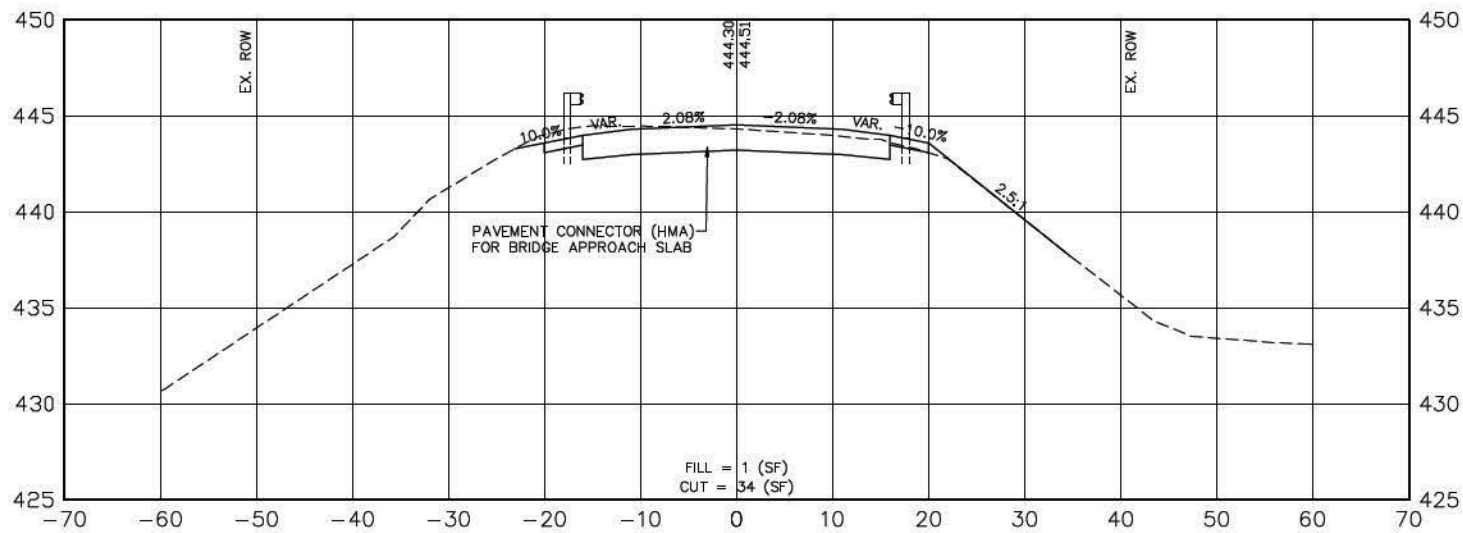
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS OF ROADWAY  
 STA. 124+80 TO STA. 126+25**

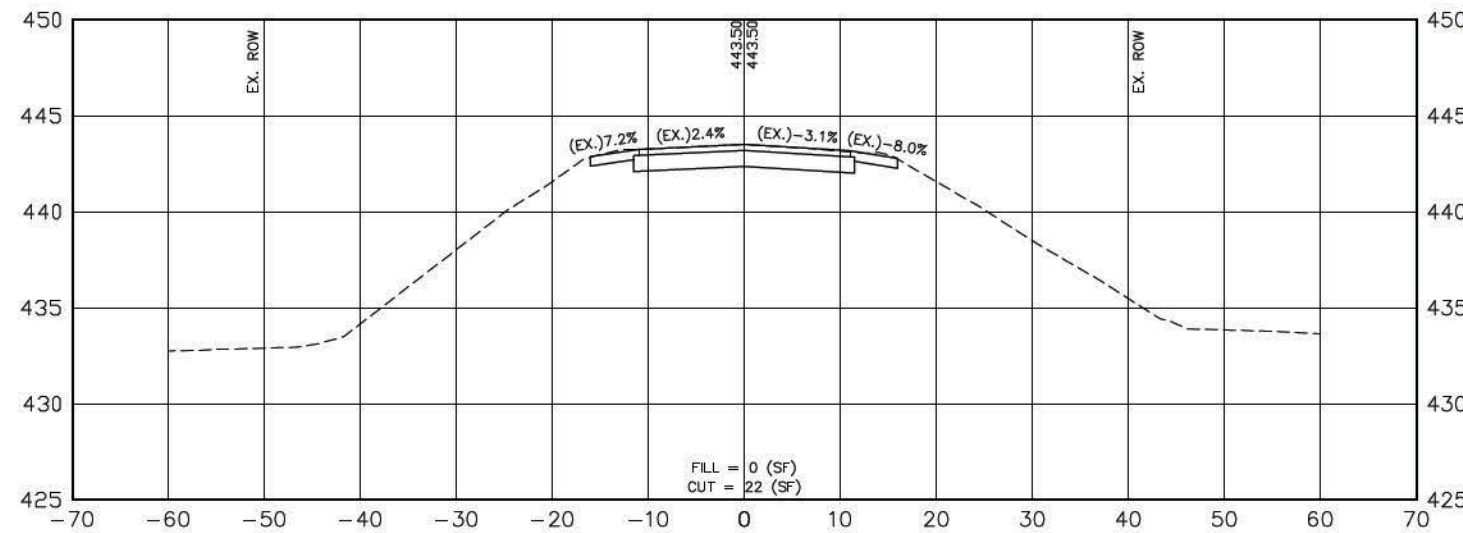
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	20
CONTRACT NO. 97812				

GCL JOB NO. 21-6008

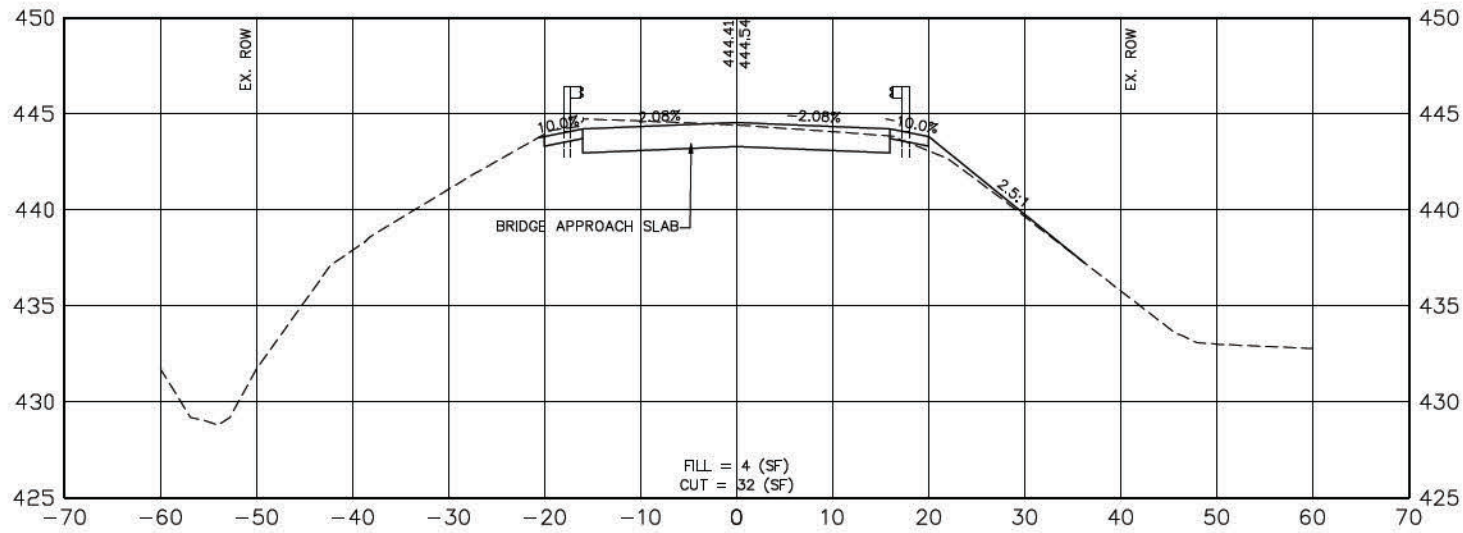




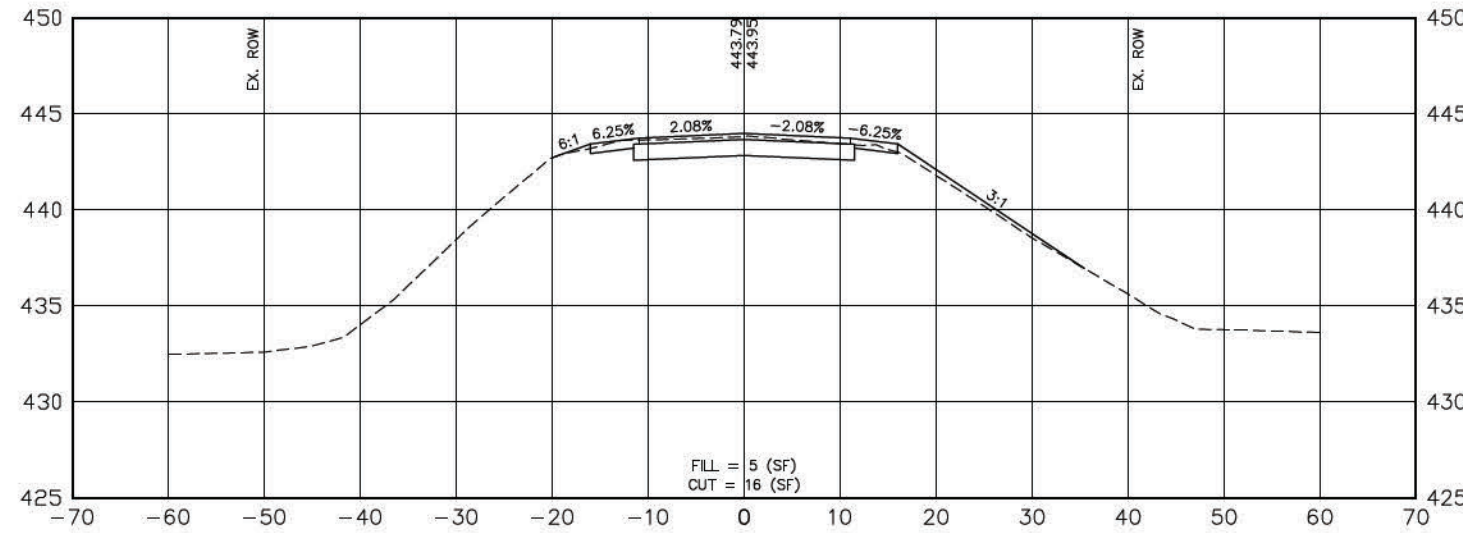
STA. 128+46



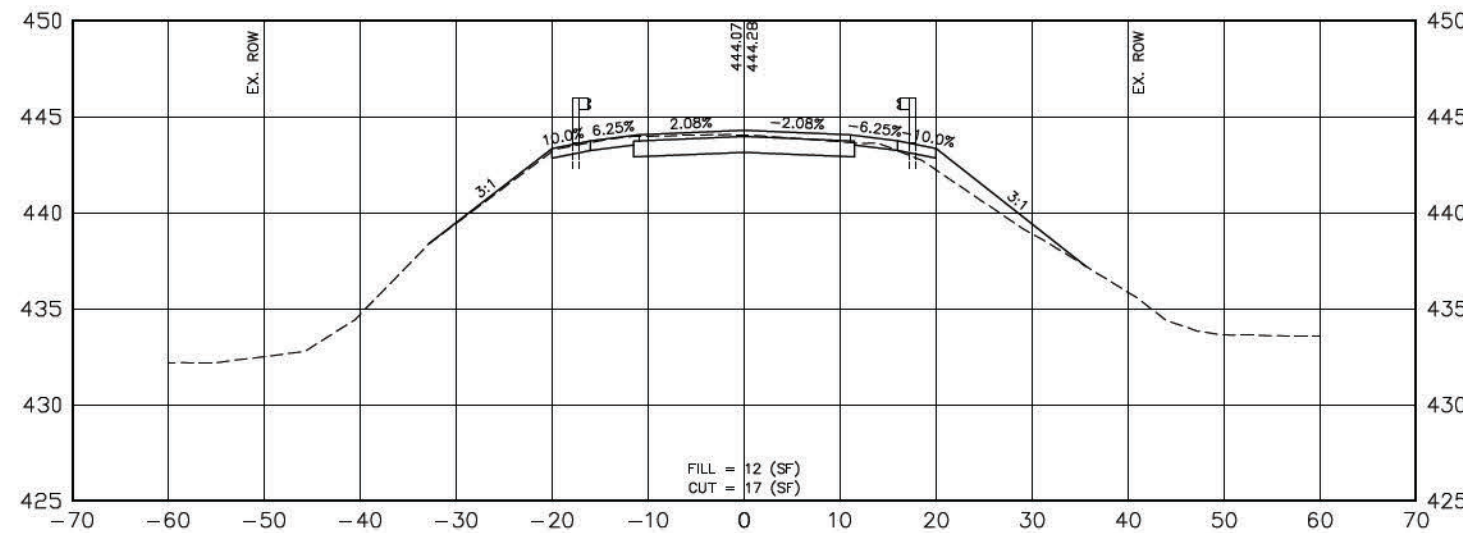
STA. 129+80



STA. 128+25



STA. 129+40



STA. 129+00

**BRIDGE**

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**gonzalez**  
 GONZALEZ COMPANIES, LLC  
 7 CARPENTER DRIVE  
 SALEM, IL 62881  
 PHONE (618-222-2221)  
 www.gonzalezcos.com  
 ILLINOIS PROFESSIONAL DESIGN FIRM 184.004664

DESIGNED - BLT	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2023	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY  
 STA. 128+25 TO STA. 129+80

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	21
CONTRACT NO. 97812				

GCL JOB NO. 21-6008



# STATE OF ILLINOIS

## DEPARTMENT OF TRANSPORTATION PROPOSED LOCAL AGENCY IMPROVEMENT

### FEDERAL AID B.R.R.P. PROJECT IMBS STATION ROAD (F.A.S. ROUTE 1950) SECTION 93-00141-02-BR COUNTY HIGHWAY 40 ST. CLAIR COUNTY

PROJECT NO. BRS-1950(101)  
JOB NO. C98-003-96

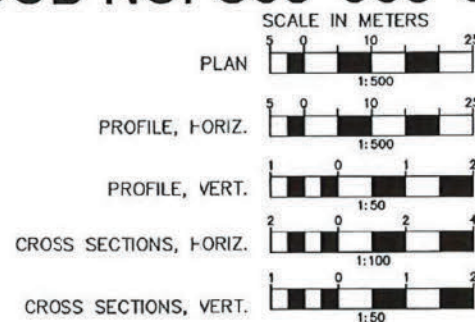
SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
93-00141-02-BR	40	ST. CLAIR	01/17
FHWA REG. NO. 7	ILLINOIS	PROJECT BRS-1950(101)	

#### INDEX OF SHEETS

- 1 COVER SHEET
- 2 TYPICAL SECTIONS AND MISCELLANEOUS DETAILS
- 3-4 SUMMARY OF QUANTITIES AND GENERAL NOTES
- 5 ROADWAY PLAN & PROFILE
- 6 GENERAL PLAN & ELEVATION
- 7 SUPERSTRUCTURE DETAILS
- 8 DECK BEAM DETAILS
- 9 PILE BENT ABUTMENT DETAILS
- 10 PILE BENT PIER DETAILS
- 11 STEEL BRIDGE RAIL, TYPE SM
- 12 NAME PLATE
- 13 TRAFFIC CONTROL PLAN
- 14-16 CROSS SECTIONS
- 17 CHANNEL SECTIONS

#### STANDARDS

- 1686-5
- 2135-1
- 2230-18
- 2298-12
- 2323-14
- 2336-5
- 2340-6
- 2381-2
- 2396-1
- 2442-4
- B.L.R. 22-1



CALL JOINT UTILITY LOCATING INFORMATION FOR EXCAVATORS (J.U.L.I.E.) BEFORE DIGGING.  
800-892-0123

STOOKEY TOWNSHIP (T.1N, R.9W.)  
S.W. 1/4 SECTION 19

NOTE: SEE GENERAL NOTES SHEET FOR LIST OF UTILITIES.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED September 9 19 96  
*William E. Pollock*  
COUNTY ENGINEER LOCAL AGENCY OFFICIAL

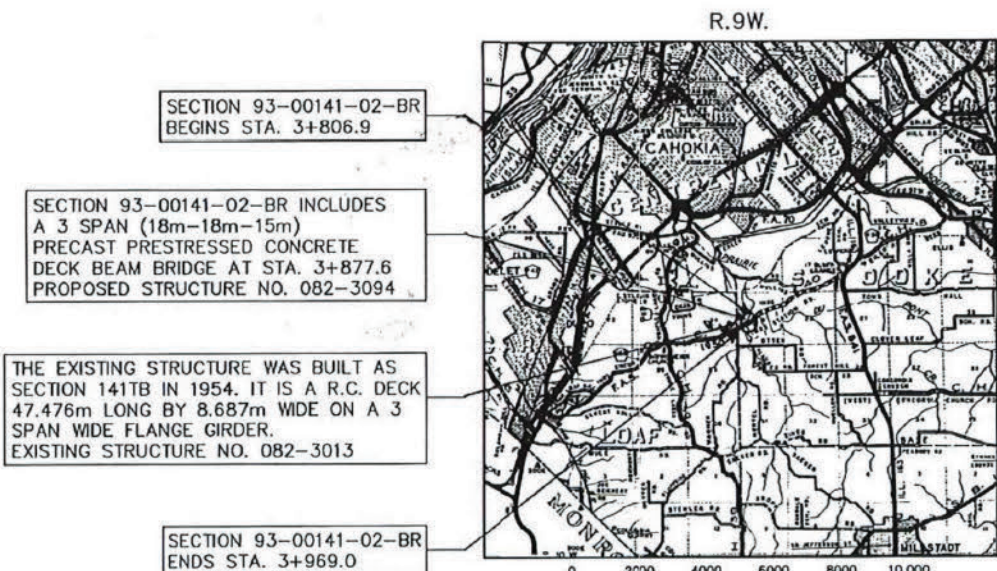
PASSED September 27 19 96  
*Michael A. Wiedemeyer*  
STUDIES AND PLANS ENGINEER

APPROVED Sept 27 19 96  
*D. Al Hill*  
DISTRICT ENGINEER

*Ronald L. Yeager*  
LICENSE NUMBER: 62-038479  
LICENSE EXPIRATION DATE: 11-30-97



(Printed by Authority of the State of Illinois)



FOR INFORMATION ONLY  
NOT TO SCALE

LOCATION MAP  
NET LENGTH OF IMPROVEMENT 162.1m (0.162km)  
DESIGN DESIGNATION  
ADT (1996) 1380  
DESIGN YEAR ADT (2016) 1870  
FUNCTIONAL CLASSIFICATION: RURAL MAJOR COLLECTOR  
DESIGN SPEED: 80 km/h

DESIGN KAR DRAWN KAK CHECK RCY PLOT 08/30/1996 391700V.R

PREPARED BY:  
**Stookey**  
Engineers Architects Planners  
One Central Bank Building  
Fairview Heights, Illinois 62208

CONTRACT NO.: 97107

GONZALEZ COMPANIES, LLC  
7 CARPENTER DRIVE  
SALEM, IL 62881  
PHONE (618-222-2221)  
www.gonzalezcon.com  
ILLINOIS PROFESSIONAL DESIGN FIRM 184.004564

DESIGNED - BLT	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2023	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS  
STRUCTURE NO. 082-3094

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	22
CONTRACT NO. 97812				

DCL JOB NO. 21-6008

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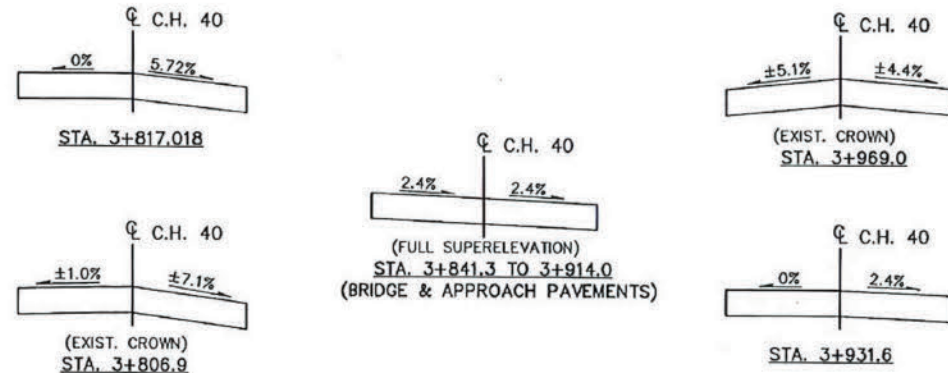


SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
93-00141-02-BR	40	ST. CLAIR	02/17
FHWA REG. NO. 7	ILLINOIS	PROJECT BRS-1950(101)	

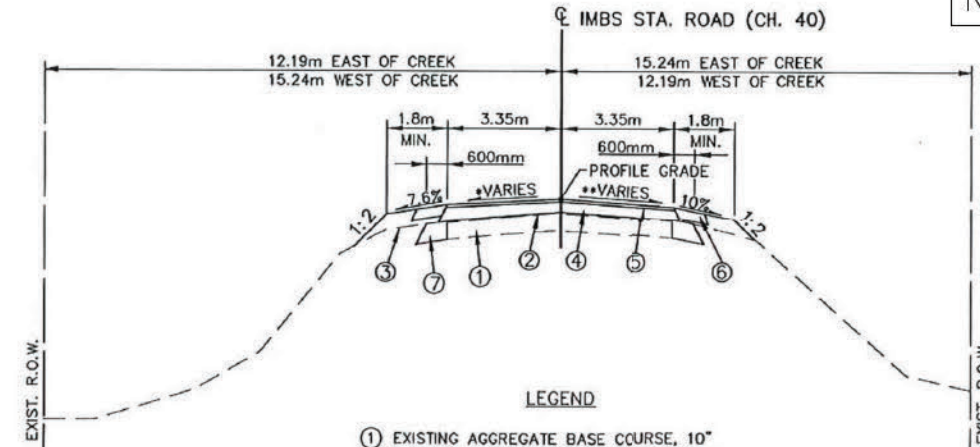
**PAVEMENT STRUCTURE DESIGN INFORMATION**

STRUCTURAL DESIGN TRAFFIC (S.D.T.): 1600 V.P.D., (YEAR 2004)  
 PV=1520 SU=64 MU=16  
 CLASS III ROADWAY CLASSIFICATION  
 MINIMUM SOIL SUPPORT: IBS=3(ASSUMED)  
 PERCENT OF DESIGN TRAFFIC IN DESIGN LANE  
 PV=50% SU=50% MU=50%  
 TRAFFIC FACTOR TF=0.100  
 USE 24mm MIN. CLASS I SURFACE PER FAPLHI, PAGE 5-8-34

FOR INFORMATION ONLY  
 NOT TO SCALE



PAVEMENT SUPERELEVATION TRANSITION DETAIL



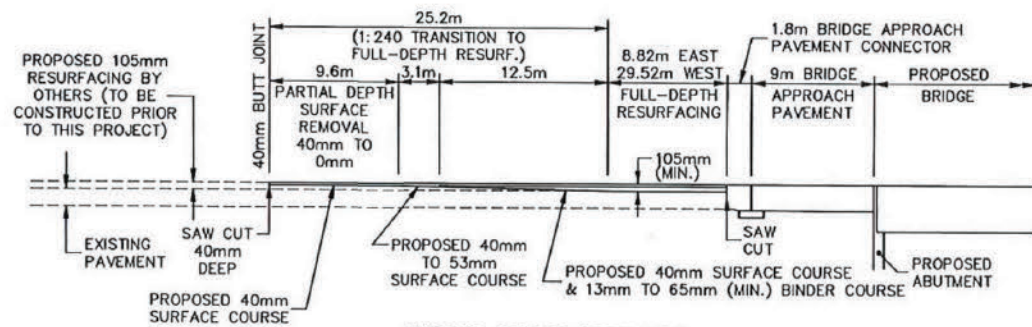
- LEGEND**
- ① EXISTING AGGREGATE BASE COURSE, 10"
  - ② EXISTING BITUMINOUS SURFACE TREATMENT
  - ③ EXISTING TURF SHOULDER
  - ④ PROPOSED BITUMINOUS CONCRETE BINDER COURSE, MIXTURE B, TYPE 2, VARIES
  - ⑤ PROPOSED BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE C, CLASS I, TYPE 2, 40mm
  - ⑥ PROPOSED AGGREGATE SHOULDER, TYPE B, 150mm (900mm WIDTH)
  - ⑦ PROPOSED AGGREGATE BASE COURSE, TYPE B, 250mm

**PROPOSED TYPICAL CROWN SECTION**

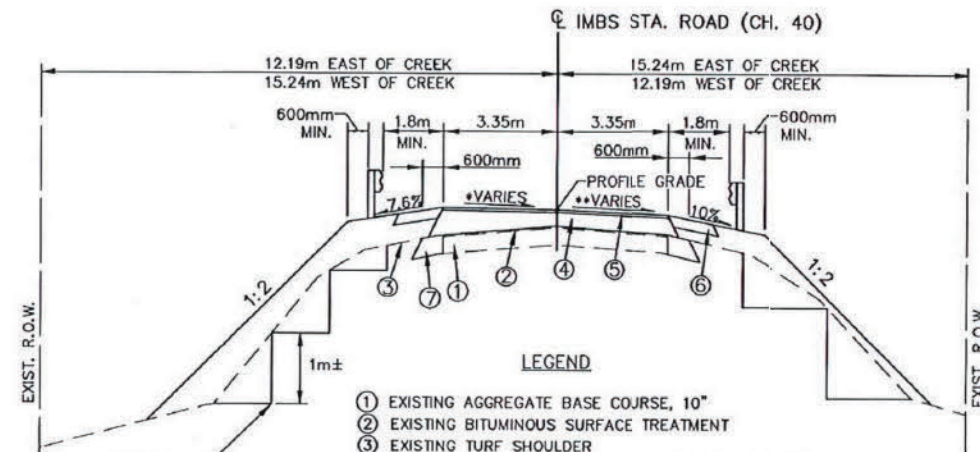
STA. 3+806.9 TO STA. 3+817.018  
 STA. 3+931.6 TO STA. 3+969.0

- ±1.0% TO 0.0% (STA. 3+806.9 TO STA. 3+817.018)
- 0.0% TO ±5.1% (STA. 3+931.6 TO STA. 3+969.0)
- ±7.1% TO 5.72% (STA. 3+806.9 TO STA. 3+817.018)
- 2.4% TO ±4.4% (STA. 3+931.6 TO STA. 3+969.0)

WHERE EMBANKMENT IS TO BE CONSTRUCTED ON EXISTING SLOPES EXCEEDING 1:2.5, STEPS SHALL BE CUT INTO THE EXISTING SLOPES BEFORE CONSTRUCTION OF THE EMBANKMENT IS STARTED (SEE CROSS-SECTIONS).



TYPICAL BRIDGE APPROACH ELEVATION VIEW



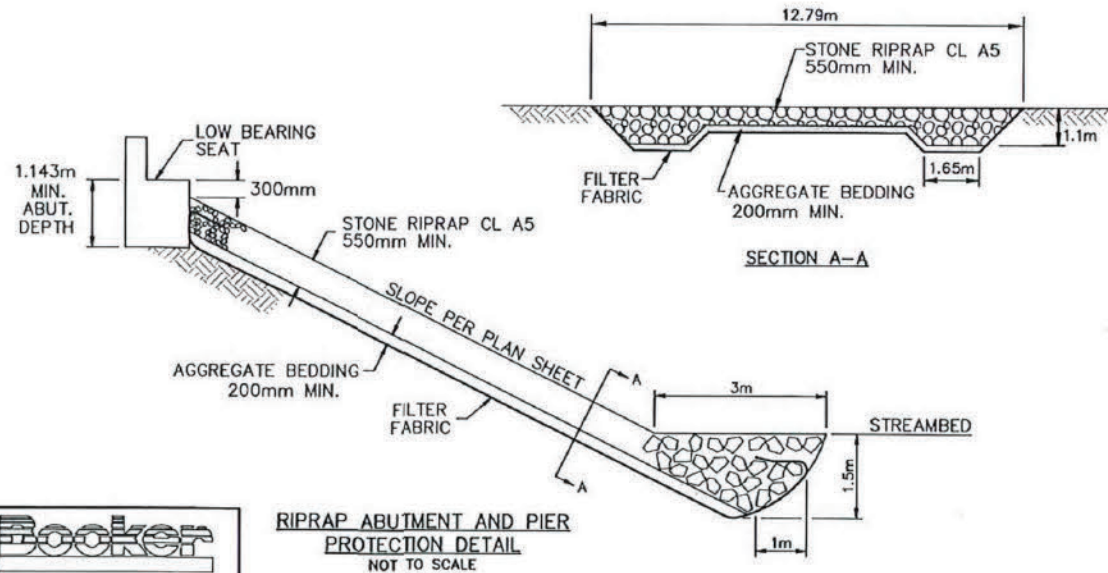
- LEGEND**
- ① EXISTING AGGREGATE BASE COURSE, 10"
  - ② EXISTING BITUMINOUS SURFACE TREATMENT
  - ③ EXISTING TURF SHOULDER
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  - ⑥ PROPOSED AGGREGATE SHOULDER, TYPE B, 150mm
  - ⑦ PROPOSED AGGREGATE BASE COURSE, TYPE B, 250mm

**PROPOSED TYPICAL SUPERELEVATED SECTION**

STA. 3+817.018 TO STA. 3+841.3  
 STA. 3+914.0 TO STA. 3+931.6

- 0.0% TO 2.4% (STA. 3+817.018 TO STA. 3+841.3)
- 2.4% TO 0.0% (STA. 3+914.0 TO STA. 3+931.6)
- 5.72% TO 2.4% (STA. 3+817.018 TO STA. 3+841.3)
- 2.4% (STA. 3+914.0 TO STA. 3+931.6)

TYPICAL SECTIONS AND MISCELLANEOUS DETAILS



RIPRAP ABUTMENT AND PIER PROTECTION DETAIL  
 NOT TO SCALE

DESIGN K.A.R. DRAWN K.A.K. CHECK R.C.Y. PLOT 08/30/1996 39177001

**Booker**  
 Engineers Architects Planners  
 One Central Bank Building  
 Fairview Heights, Illinois 62208

GONZALEZ COMPANIES, LLC  
 7 CARPENTER DRIVE  
 SALEM, IL 62881  
 PHONE (618-222-2221)  
 www.gonzalezcos.com  
 ILLINOIS PROFESSIONAL DESIGN FIRM 184.004664

DESIGNED - BLT	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2023	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS  
 STRUCTURE NO. 082-3094

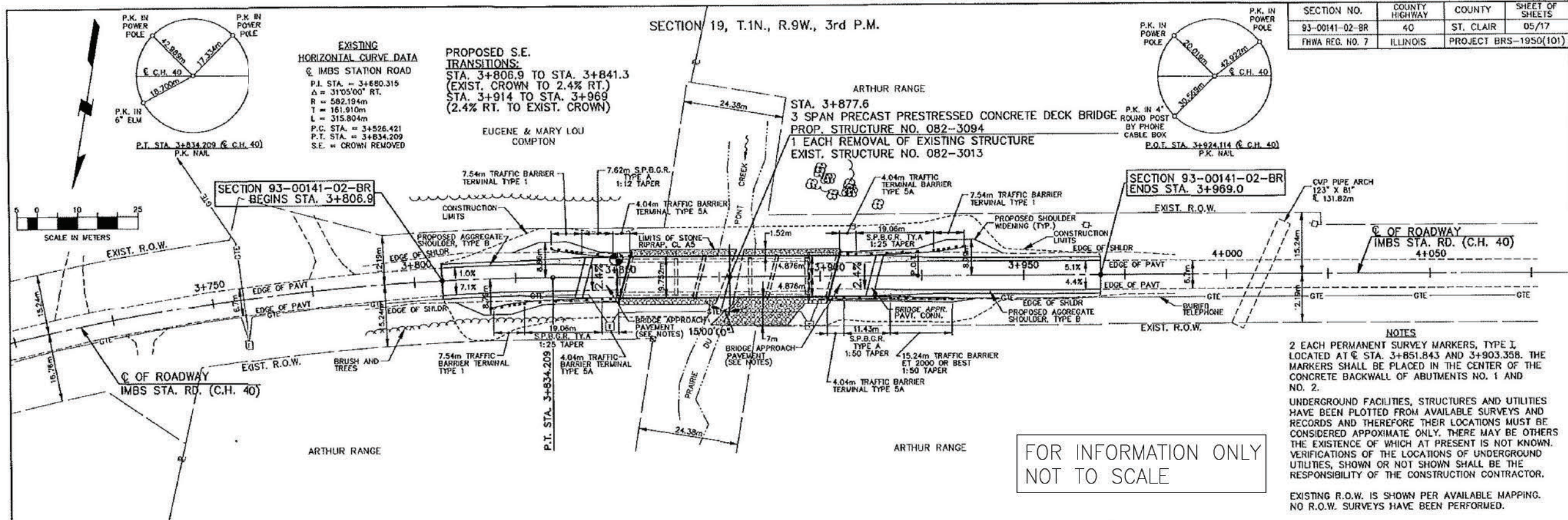
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	23
CONTRACT NO. 97812				

GCL JOB NO. 21-6008

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SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
93-00141-02-BR	40	ST. CLAIR	05/17
FHWA REG. NO. 7 ILLINOIS PROJECT BRS-1950(101)			



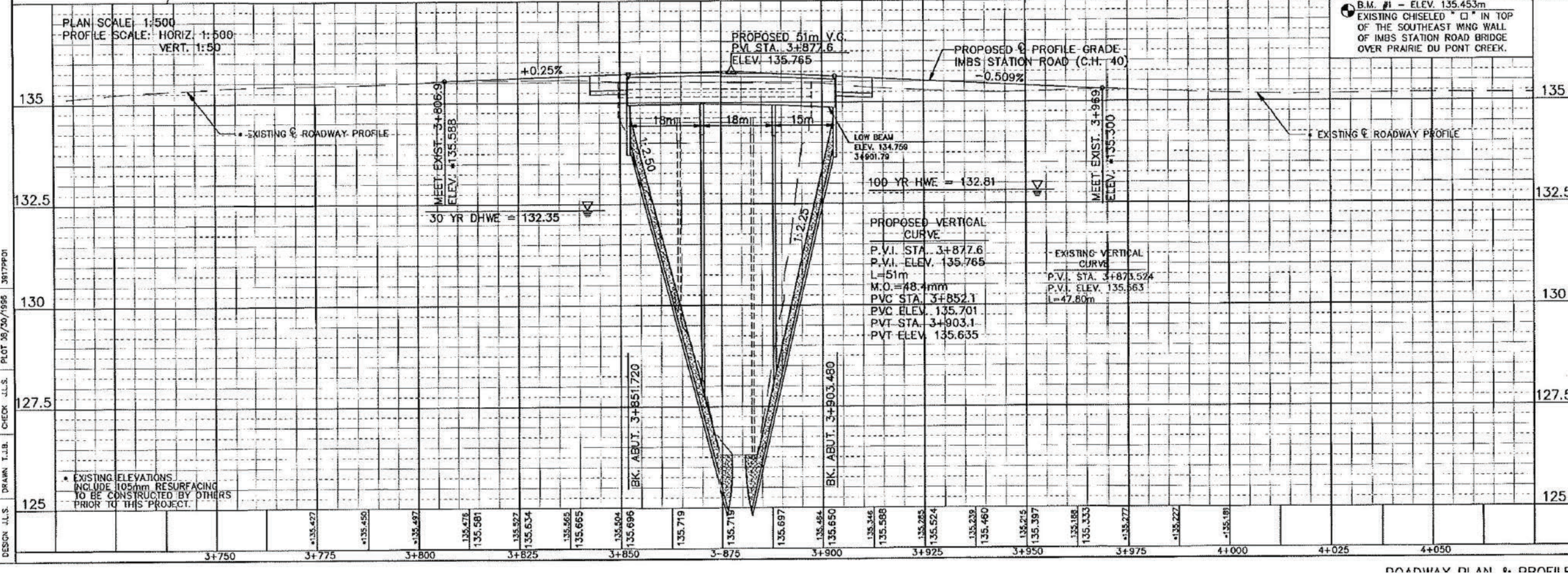
**NOTES**

2 EACH PERMANENT SURVEY MARKERS, TYPE I, LOCATED AT C. STA. 3+851.843 AND 3+903.358. THE MARKERS SHALL BE PLACED IN THE CENTER OF THE CONCRETE BACKWALL OF ABUTMENTS NO. 1 AND NO. 2.

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS THE EXISTENCE OF WHICH AT PRESENT IS NOT KNOWN. VERIFICATIONS OF THE LOCATIONS OF UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR.

EXISTING R.O.W. IS SHOWN PER AVAILABLE MAPPING. NO R.O.W. SURVEYS HAVE BEEN PERFORMED.

FOR INFORMATION ONLY  
NOT TO SCALE



GONZALEZ COMPANIES, LLC  
7 CARPENTER DRIVE  
SALEM, IL 62881  
PHONE (618-222-2221)  
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DATE - 03/15/2023	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS  
STRUCTURE NO. 082-3094

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	24
CONTRACT NO. 97812				

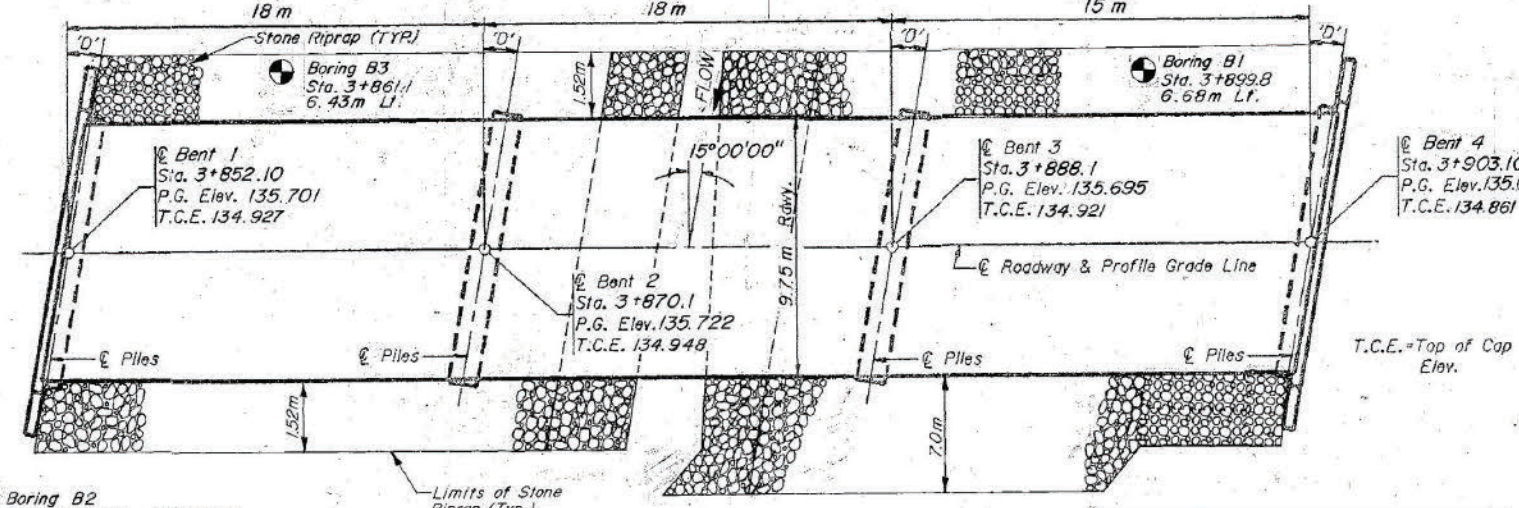
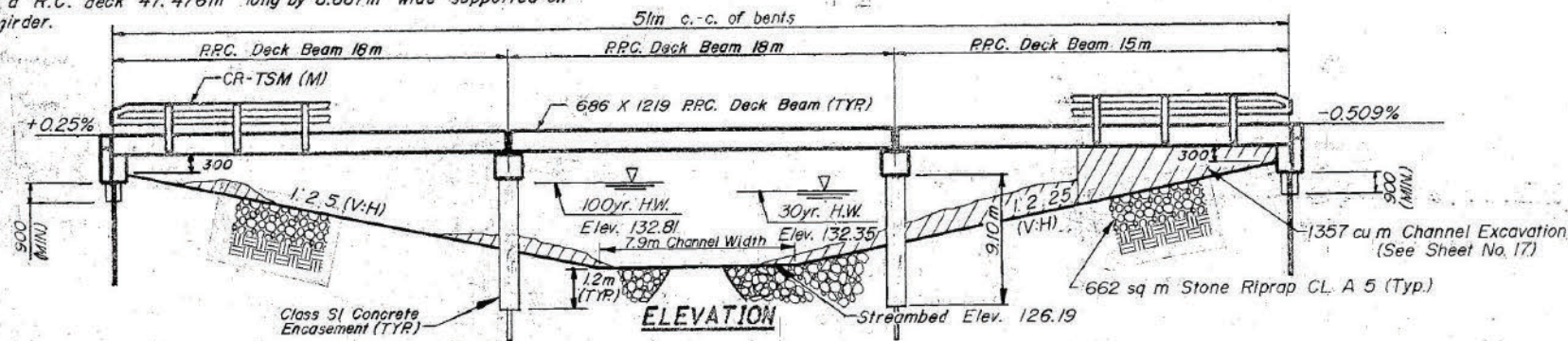
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SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
93-00141-02-BR	40	ST. CLAIR	06/17
FHWA REG. NO. 7	ILLINOIS	PROJECT BRS-1950(101)	

B.M. # 1 Elev. 135.453m Existing chiseled "D" in top of the S.E. wingwall Imbs Station Road Bridge  
 4.368m Left Sta. 3+849.733m @ Imbs Station Road.  
 Existing Structure-S.N. 082-3013 Built as Imbs Station Road Sec 141TB in 1954.  
 The superstructure consists of a R.C. deck 47.476m long by 8.687m wide supported on a three span wide flange girder.

Salvage: All materials considered salvageable by the Engineer shall remain property of the County. All other materials shall be disposed of by the Contractor at his expense. All salvageable material shall be stored within the R.O.W.



PLAN  
 Skew Angle 15°0' Left Forward

FOR INFORMATION ONLY  
 NOT TO SCALE

GENERAL NOTES

- The Contractor shall drive 2 test piles, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See Special Provisions for boring logs.
- A Calcium Nitrite Corrosion inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.
- All dimensions are in millimeters (mm) except as noted.
- Layout of Stone Riprap may be varied to suit ground conditions in the field, as directed by the Engineer.
- See Sheets No. 5 and 17 for limits of Stone Riprap.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Bituminous Concrete Surface Course, Class I Mix D, Type 2	t	64			64
Waterproofing Membrane System	m <sup>2</sup>	500.0			500.0
Concrete Structures	m <sup>3</sup>		15.6	22.2	37.8
Precast Prestressed Concrete Deck Beams (686mm Depth)	m <sup>2</sup>	500.0			500.0
Steel Bridge Rail, Type SM	m	102			102
Channel Excavation	m <sup>3</sup>				1357
Reinforcement Bars, Epoxy Coated	kg		880	1520	2400
Furnishing Steel Piles HP 360 X 108	m		295.5	291.0	586.5
Driving Steel Piles HP 360 X 108	m		295.5	291.0	586.5
Test Pile Steel HP 360 X 108	Each		1	1	2
Name Plates	Each				1
Class SI Concrete Encasement	m <sup>3</sup>		55.9	5.5	61.4
Structure Excavation	m <sup>3</sup>			45	45
Stone Riprap CL A 5	m <sup>2</sup>				662
Filter Fabric For Riprap	m <sup>2</sup>				662
Structure Excavation Protection For Pile bents	Each		2		2
Portland Cement Mortar Fairing Course	m	359			359

INDEX OF SHEETS

- General Plan & Elevation
- P.P.C. Deck Beam Superstructure 15m/18m
- P.P.C. Deck Beam Details 1219mm
- Pile Bent Abutment Details
- Pile Bent Pier Details
- Standard CR-TSM (M)
- Standard CN (M)

SEISMIC DATA

Seismic Performance Category (SPC)=B  
 Bedrock Acceleration Coefficient (A)=0.11  
 Site Coefficient (S)=II/1.2

DESIGN STRESSES

FIELD UNITS  
 $f_c = 24 \text{ MPa}$   
 $f_y = 400 \text{ MPa}$

PRECAST PRESTRESSED UNITS

$f'_c = 35 \text{ Pa}$   
 $f'_{ci} = 28 \text{ MPa}$   
 $f'_s = 1860 \text{ MPa (12.7mm } \phi)$   
 $f'_{si} = 1302 \text{ MPa (12.7mm } \phi)$

PILE DATA (2-PIERS)

Type HP360 X 108  
 Capacity Refusal  
 Estimated Length 19.7 m  
 Number Required 16 (Includes 1 Test Pile located in Bent #2)

PILE DATA (2-ABUTS.)

Type HP 360 X 108  
 Capacity Refusal  
 Estimated Length 19.4 m  
 Number Required 16 (Includes 1 Test Pile located in Bent #4)

DESIGN SPECIFICATIONS

1992 AASHTO, 1993, 1994 and 1995 Interims

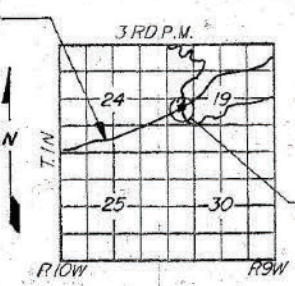
LOADING MS18

Allow 1.2 kN/m<sup>2</sup> for future wearing surface

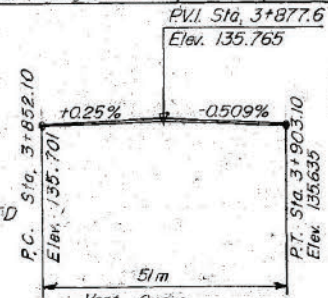
PRAIRIE DU PONT CREEK  
 BUILT 199 BY  
 ST. CLAIR COUNTY  
 SEC. 93-00141-02-BR  
 F.A.S. RT. 1950 STA. 3+877  
 F.A.B.R.R.P. PROJ. BRS-1950 (101)  
 STR. NO. 082-3094 LOADING MS 18

LETTERING FOR NAME PLATE

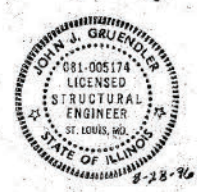
Locate Name Plate at Northeast Corner of Bridge (See Std. CN (M))



LOCATION SKETCH



I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO Specifications for Highway Bridges."  
 Illinois Licensed Structural Engineer No. 081-005174  
 11-30-96 Exp. Date



GENERAL PLAN & ELEVATION  
 FAS ROUTE 1950  
 OVER PRAIRIE DU PONT CREEK  
 SECTION 93-00141-02-BR  
 ST. CLAIR COUNTY  
 STATION 3+877.6

WATERWAY INFORMATION

Flood	Freq. Yr.	Q m <sup>3</sup> /s	Opening m <sup>2</sup>		Nat. H.W.E.		Head - m		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	30	210	136	136	132.35	0	0	132.35	132.35	
Base	100	278	148	149	132.81	0	0	132.81	132.81	
Overtopping										
Max. Calc.	500	366	160	161	133.19	0.24	0.24	133.43	133.43	

Note: This Drawing is not to Scale. Follow Dimensions.

Designed: J.E.F.  
 Detailed: K.A.K.  
 Checked: J.J.G.

GP-3L (M) (7-1-95)

GONZALEZ COMPANIES, LLC  
 7 CARPENTER DRIVE  
 SALEM, IL 62881  
 PHONE (618-222-2221)  
 www.gonzalezco.com  
 ILLINOIS PROFESSIONAL DESIGN FIRM 184.004664

DESIGNED - BLT	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2023	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

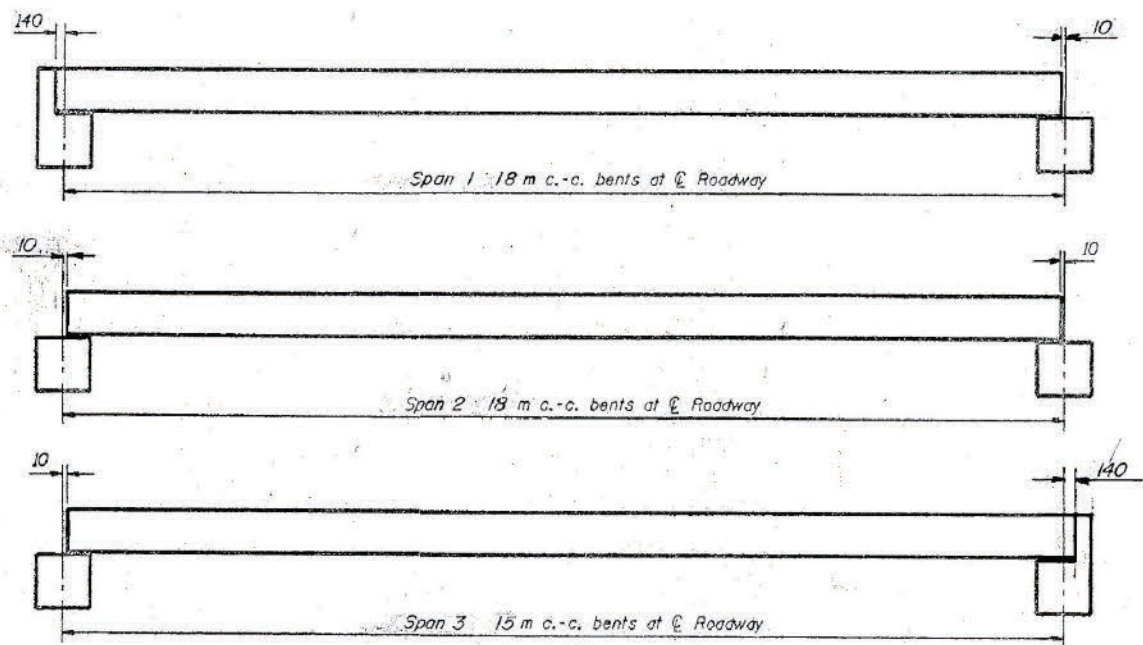
EXISTING BRIDGE PLANS  
 STRUCTURE NO. 082-3094

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	25
CONTRACT NO. 97812				

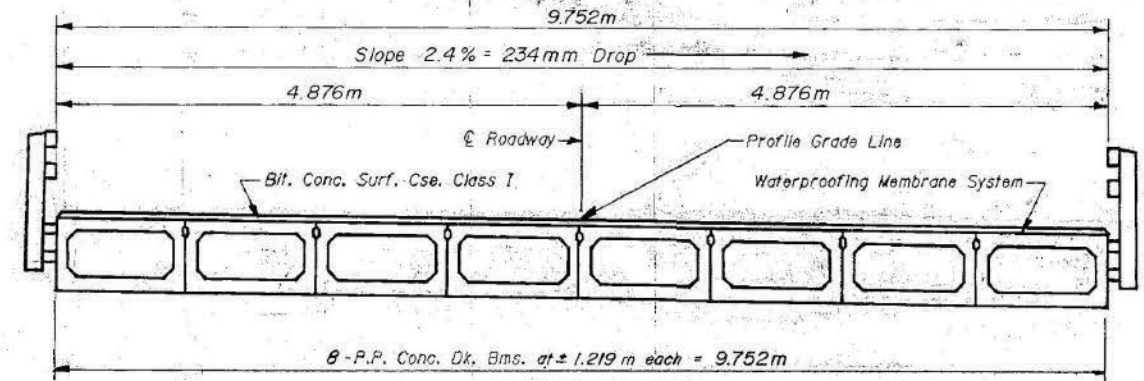
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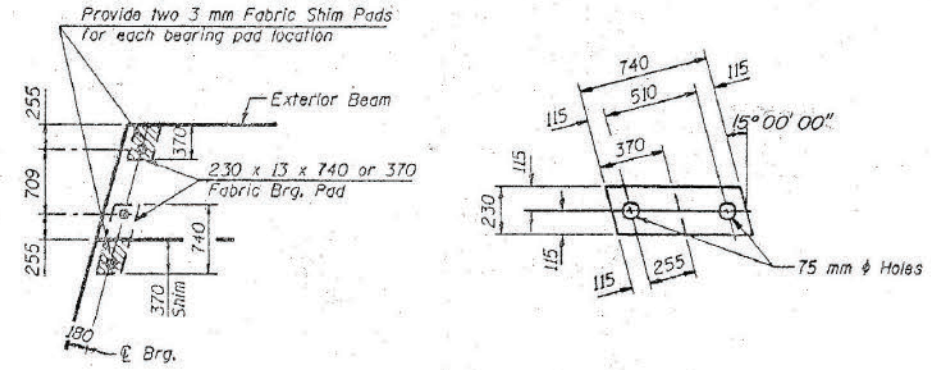
SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
93-00141-02-BR	40	ST. CLAIR	07/17
FHWA REG. NO. 7	ILLINOIS	PROJECT BRS-1950(101)	



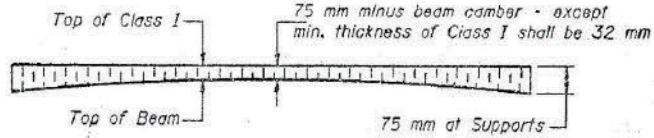
**TYPICAL ELEVATIONS**



**CROSS SECTION**  
For Details of P.P. Conc. Dk. Beams See Sht 8 of 17 (Looking West)

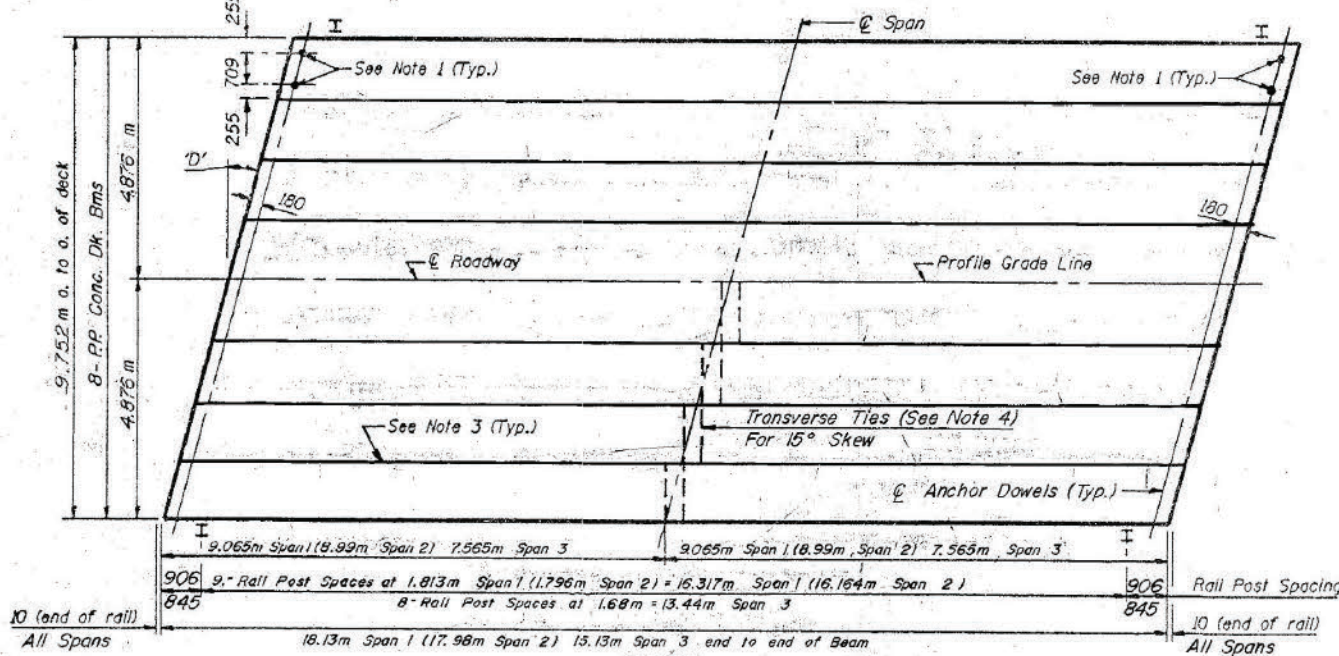


**13 mm FABRIC BRG. PAD DETAILS**



**PROFILE OF OVERLAY**

FOR INFORMATION ONLY  
NOT TO SCALE



**PLAN**  
(D' = 15° 00' 00")

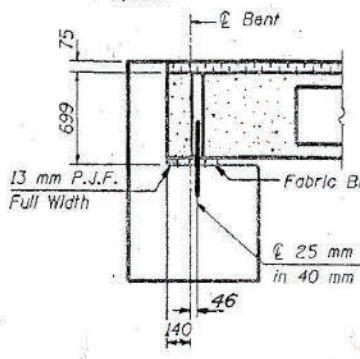
**QUANTITIES FOR SPANS 1 & 2 (EACH)**

P.P. Conc. Dk. Bm. 686 mm Dp.	176.2 m <sup>2</sup>
Steel Rolling	36 m
Bit. Conc. Surf. Cse. Class I	22.5 t
Waterproofing Membrane System	176.2 m <sup>2</sup>
Portland Cement Mortar Fairing Course	127 m

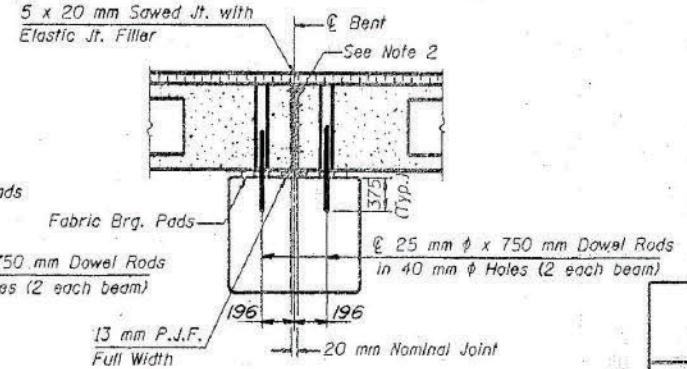
**QUANTITIES FOR SPAN 3**

P.P. Conc. Dk. Bm. 686 mm Dp.	147.6 m <sup>2</sup>
Steel Rolling	30 m
Bit. Conc. Surf. Cse. Class I	18.7 t
Waterproofing Membrane System	147.6 m <sup>2</sup>
Portland Cement Mortar Fairing Course	105 m

- NOTES**
- After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
  - Nominal 20 mm joint at centerline pier shall be filled with non-shrink grout.
  - Longitudinal keys shall be grouted.
  - The 25 mm diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.
  - All dimensions are in millimeters (mm) except as noted.



**SECTION AT ABUTS.**  
(Along centerline RDWY)



**SECTION AT PIERS**  
(Along centerline Rdwy)

Note: This Drawing is not to Scale. Follow Dimensions.

<b>P.P.C. DECK BEAM SUPERSTRUCTURE</b>			
9.75 m RDWY.	686 mm BMS.	15/18m SPANS	LEFT
<b>P.P.C. DECK BEAM SUPERSTRUCTURE 15m/18m</b>			

Designed: J.E.F.  
Detailed: K.A.K.  
Checked: J.J.G.

**GONZALEZ COMPANIES, LLC**  
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ILLINOIS PROFESSIONAL DESIGN FIRM 184.004564

DESIGNED - BLT	REVISED -
DRAWN - JMW	REVISED -
CHECKED - BLT	REVISED -
DATE - 03/15/2023	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

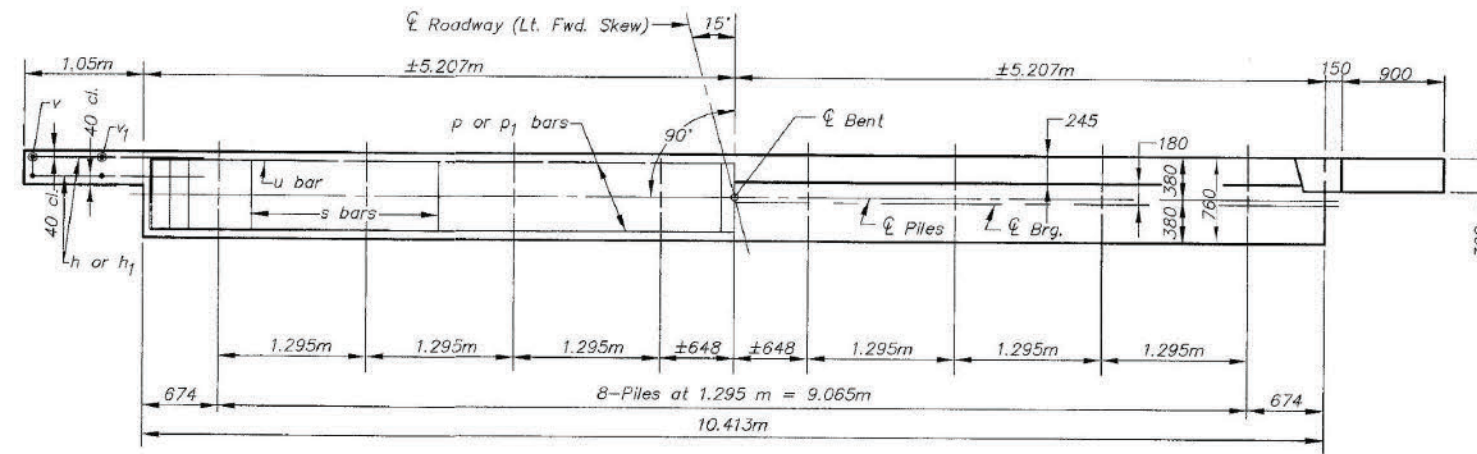
EXISTING BRIDGE PLANS  
STRUCTURE NO. 082-3094

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	26
CONTRACT NO. 97812				

GCL JOB NO. 21-6008

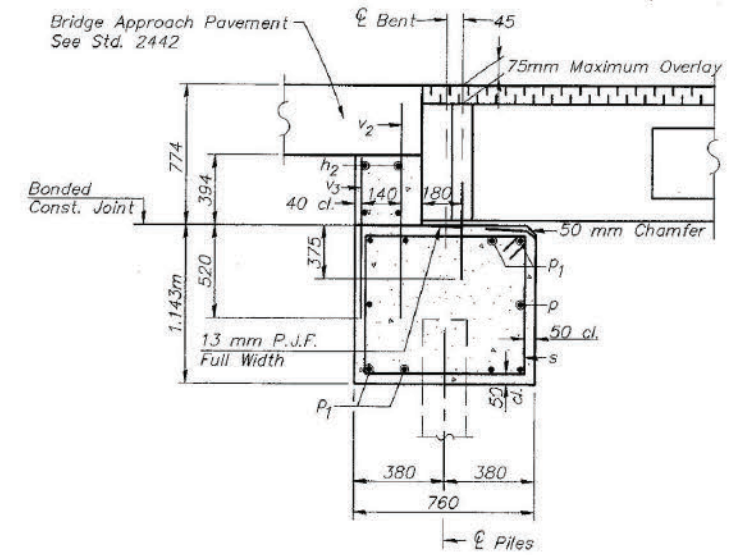


SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
93-00141-02-BR	40	ST. CLAIR	09/17
FHWA REG. NO. 7	ILLINOIS	PROJECT BRS-1950(101)	

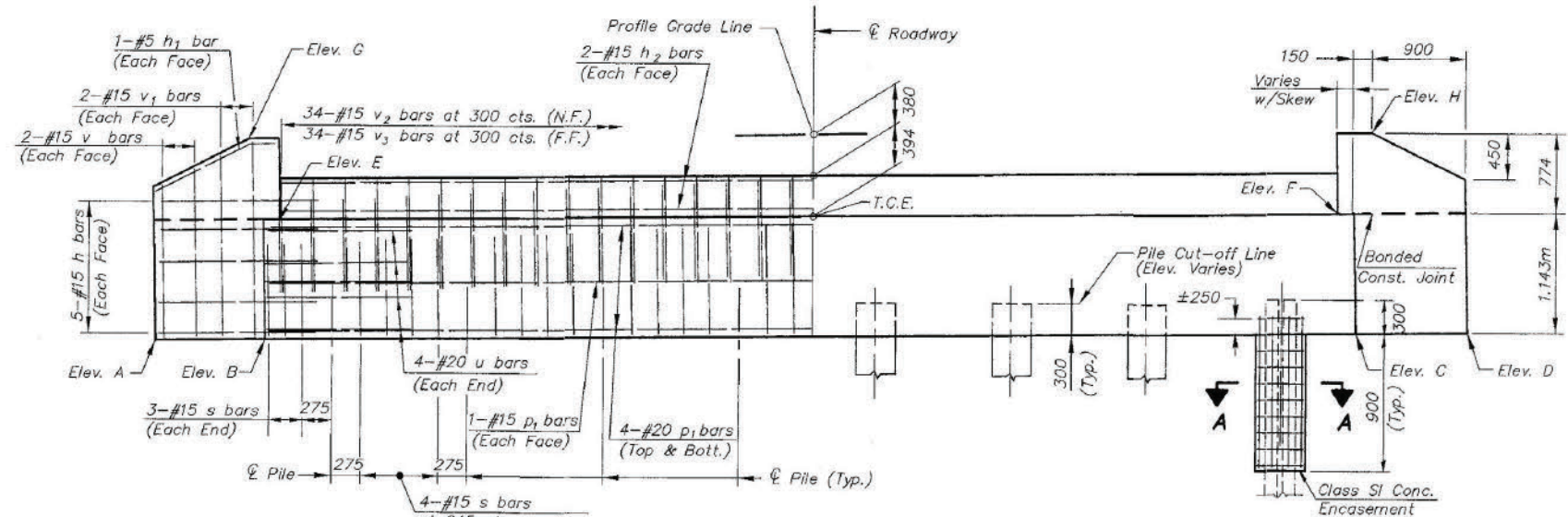


**PLAN**

Bent No. 1 shown. Bent No. 4 is similar. Follow elevations in table below.

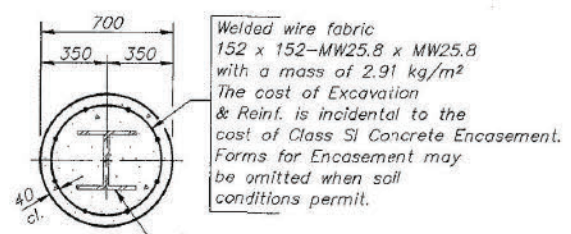


**SECTION THRU ABUTMENT**  
(At Right Angles)



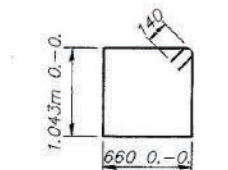
**ELEVATION**

N.F. = Near Face  
F.F. = Fill Face

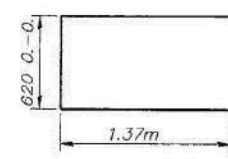


**SECTION A-A**  
**PILE ENCASEMENT DETAIL**

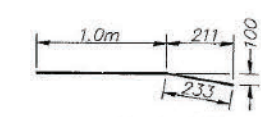
Welded wire fabric  
152 x 152-MW25.8 x MW25.8  
with a mass of 2.91 kg/m<sup>2</sup>  
The cost of Excavation  
& Reinf. is incidental to the  
cost of Class SI Concrete Encasement.  
Forms for Encasement may  
be omitted when soil  
conditions permit.



**BAR s (E)**



**BAR u (E)**



**BAR h1 (E)**

**BILL OF MATERIAL FOR ONE ABUTMENT**

Bar	No.	Size	Length (m)	Shape
h(E)	20	#15	1.57	—
h1(E)	4	#15	1.23	—
h2(E)	4	#15	10.3	—
p(E)	2	#15	10.3	—
p1(E)	8	#20	10.3	—
s(E)	34	#15	3.69	□
u(E)	8	#20	3.36	—
v(E)	8	#15	1.37	—
v1(E)	8	#15	1.69	—
v2(E)	34	#15	1.24	—
v3(E)	34	#15	0.860	—
Concrete Structures			11.1 m <sup>3</sup>	
Reinforcement Bars			760 kg	
Epoxy Coated				

**NOTES**

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to A.A.S.H.T.O. M-31M, M-42M or M-53M, except as noted.
- All dimensions are in millimeters (mm) except as noted.
- Dowel bars shall conform to A.A.S.H.T.O. M-31M or M-53M.
- Reinforcement bars designated (E) shall be epoxy coated.

**DESIGN STRESSES**

f<sub>c</sub> = 24 MPa  
f<sub>y</sub> = 400 MPa

**ELEVATIONS**

LOCATION	TCE	A	B	C	D	E	F	G	H
BENT 1	134.927	133.634	133.660	133.908	133.933	134.807	135.047	135.574	135.828
BENT 4	134.861	133.855	133.832	133.606	133.584	134.971	134.746	135.752	135.519

FOR INFORMATION ONLY  
NOT TO SCALE

**P.P.C. DECK BEAMS  
PILE BENT ABUTMENT**

9.75m RDWY.	686mm BMS.	15' SKEW
<b>PILE BENT ABUTMENT DETAILS</b>		

Designed: J.E.F.  
Detailed: R.S.K.  
Checked: J.J.G.

Note: This Drawing is not to scale. Follow Dimensions.

**gonzalez**  
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CHECKED - BLT	REVISED -
DATE - 03/15/2023	REVISED -

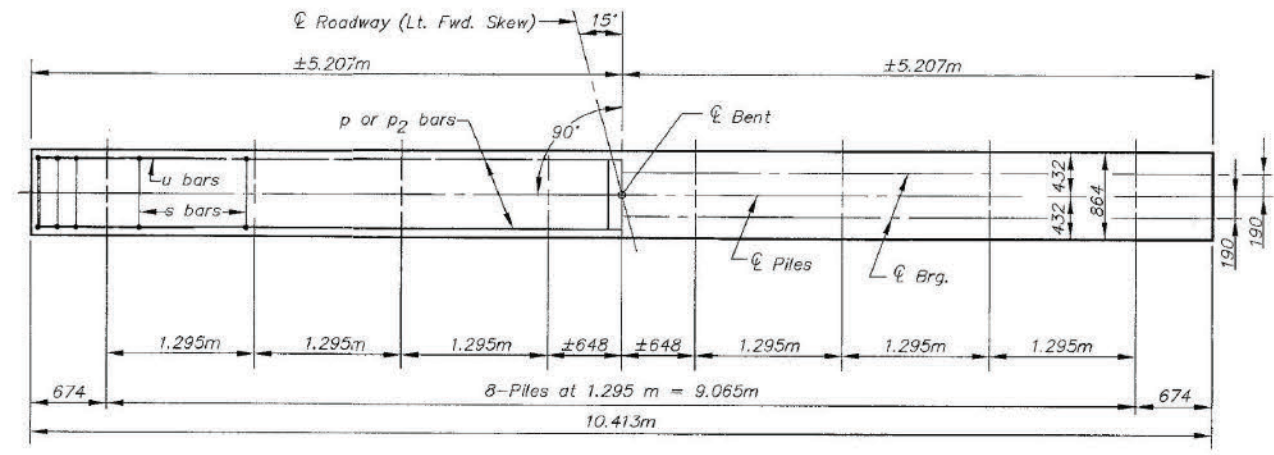
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS  
STRUCTURE NO. 082-3094

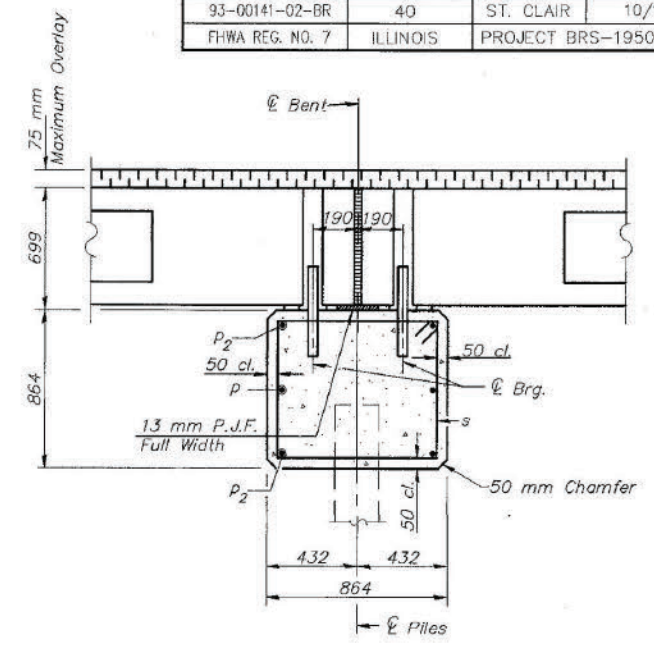
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	27
CONTRACT NO. 97812			GCL JOB NO. 21-6008	



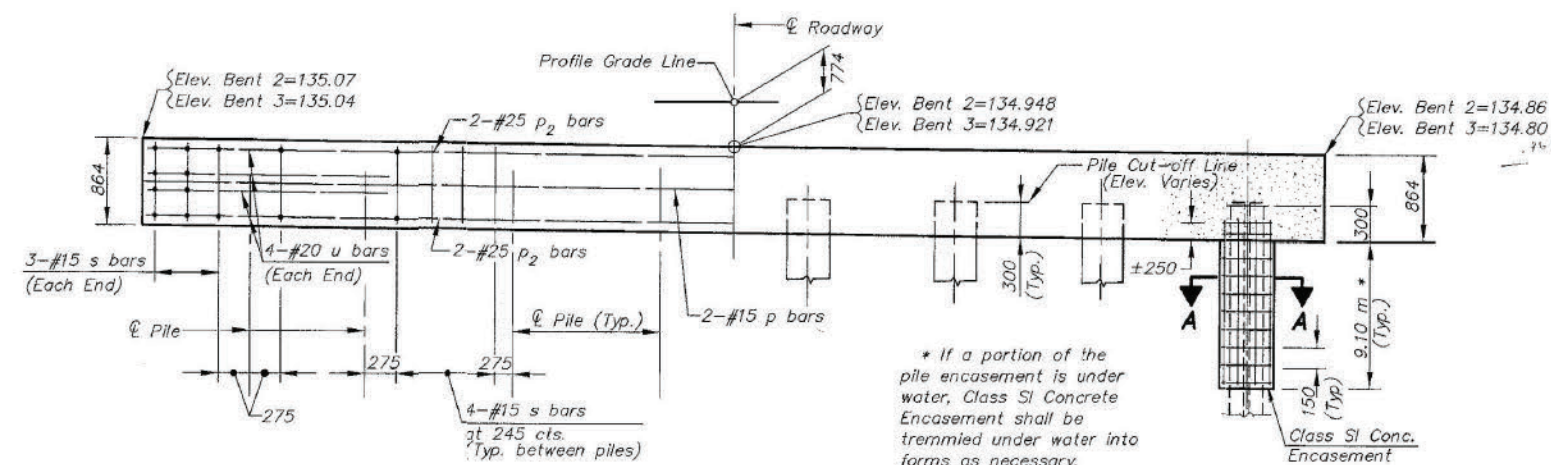
SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
93-00141-02-BR	40	ST. CLAIR	10/17
FHWA REG. NO. 7	ILLINOIS	PROJECT BRS-1950(101)	



**PLAN**

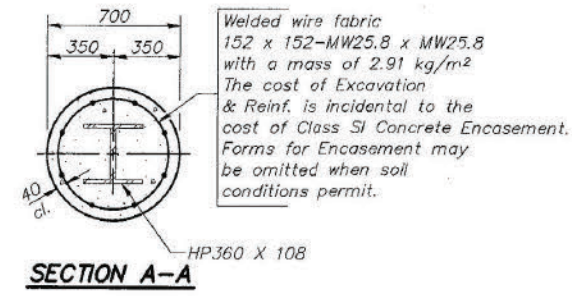


**SECTION THRU PIER**  
(At Right Angles)



**ELEVATION**  
Looking West

\* If a portion of the pile encasement is under water, Class SI Concrete Encasement shall be tremied under water into forms as necessary.



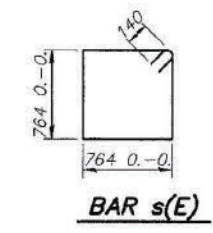
**SECTION A-A**

**PILE ENCASEMENT DETAIL**

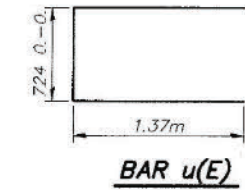
The cost of Reinforcement, concrete and excavation for forms is incidental to Class SI Concrete Encasement.

**NOTES**

1. Reinforcement bars shall conform to A.A.S.H.T.O. M-31M, M-42M or M-53M. Grade 400.
2. All dimensions are in millimeters (mm) except as noted.
3. Dowel bars shall conform to A.A.S.H.T.O. M-31M or M-53M.
4. Reinforcement bars designated (E) shall be epoxy coated.



**BAR s(E)**



**BAR u(E)**

**BILL OF MATERIAL FOR ONE PIER**

Bar	No.	Size	Length (m)	Shape
p(E)	2	#15	10.3	—
p2(E)	4	#25	10.3	—
s(E)	34	#15	3.34	□
u(E)	8	#20	3.46	▭
Concrete Structures			7.8 m <sup>3</sup>	
Reinforcement Bars Epoxy Coated			440 kg	

FOR INFORMATION ONLY  
NOT TO SCALE

**DESIGN STRESSES**

$f'_c = 24 \text{ MPa}$   
 $f_y = 400 \text{ MPa}$

P.P.C. DECK BEAMS PILE BENT PIER		
9.75m RDWY.	686mm BMS.	15° SKEW
PILE BENT PIER DETAILS		

Note: This Drawing is not to scale. Follow Dimensions.

Designed: J.E.F.  
Detailed: R.S.K.  
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EXISTING BRIDGE PLANS  
STRUCTURE NO. 082-3094

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 40	18-00141-03-BR	ST. CLAIR	28	28
CONTRACT NO. 97812				

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