

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	1
		ILLINOIS	CONTRACT NO. 91646	

06-14-2024 LETTING ITEM 156

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED SUPERSTRUCTURE REPLACEMENT LOCAL BRIDGE FORMULA PROGRAM

INDEX OF SHEETS

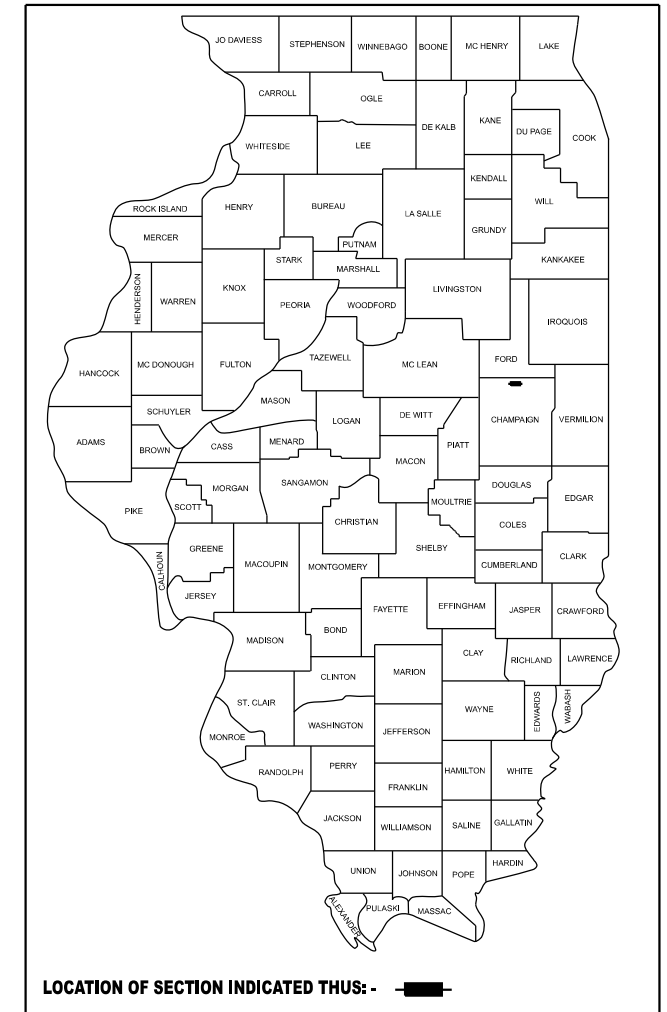
- 1 COVER SHEET
- 2 GENERAL NOTES AND COMMITMENTS
- 3 ALIGNMENT, TIES, AND BENCHMARKS
- 4-5 SUMMARY OF QUANTITIES
- 6 SCHEDULE OF QUANTITIES
- 7 TYPICAL SECTIONS
- 8 PLAN & PROFILE
- 9-20 STRUCTURE PLANS

HIGHWAY STANDARDS

- 000001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 515001-04 NAME PLATE FOR BRIDGES
- 701901-09 TRAFFIC CONTROL DEVICES
- 725001-01 OBJECT AND TERMINAL MARKERS
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

**TR 27 OVER WILDCAT SLOUGH
SECTION 23-14134-00-BR
LUDLOW TOWNSHIP
CHAMPAIGN COUNTY
PROJECT RW48(508)**

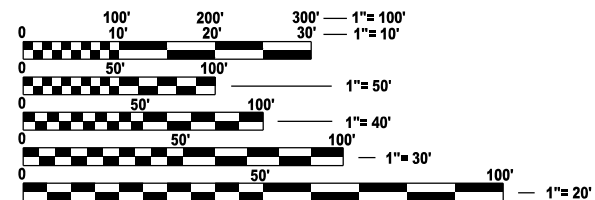
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UTILITIES

EASTERN ILLINI ELECTRIC COOP
CONTACT: BRAD SMITH
PHONE: 217-379-2131 EXT. 0431
EMAIL: BRAD.SMITH@EIEC.COOP

FRONTIER COMMUNICATIONS
CONTACT: KALIN HINSHAW
PHONE: 815-895-1515
EMAIL: KALIN.HINSHAW@FTR.COM

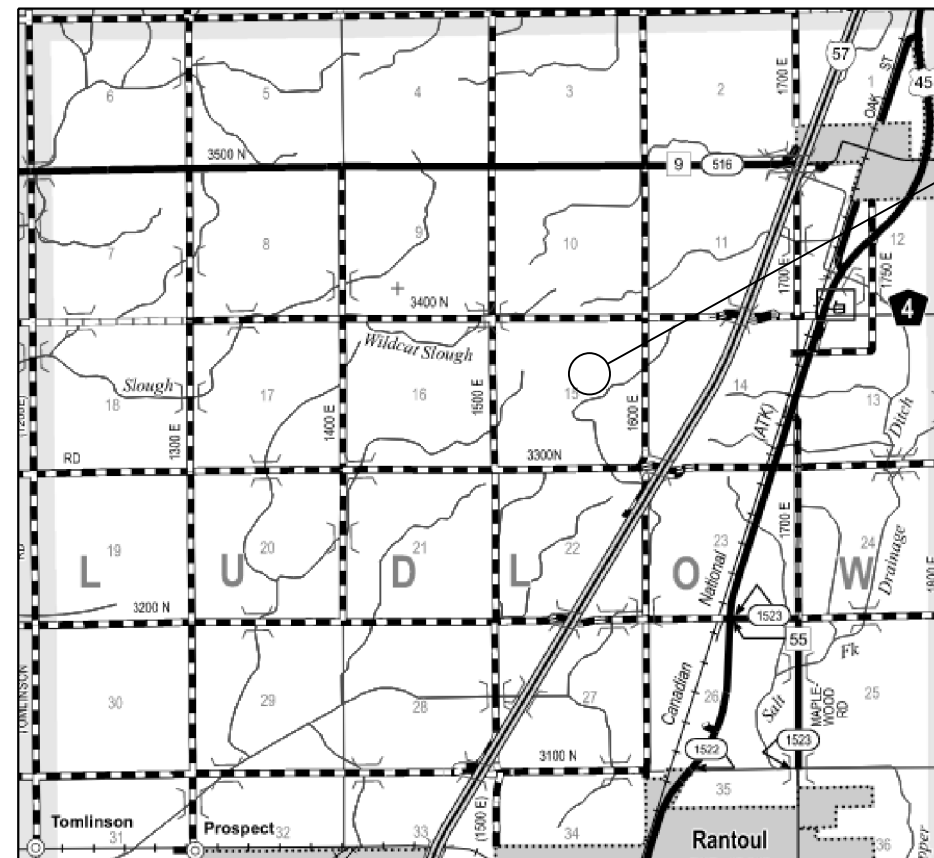


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

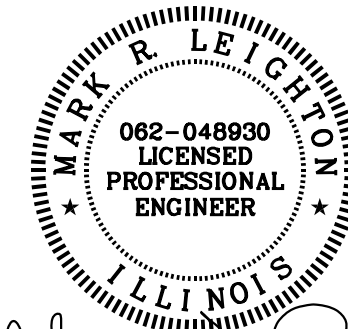
PROJECT MANAGER: MARK R. LEIGHTON, P.E., P.L.S.

CONTRACT NO. 91646



GROSS LENGTH = 80.00 FT. = 0.015 MILE
NET LENGTH = 80.00 FT. = 0.015 MILE

PROPOSED
SUPER REPLACEMENT
SN 010-4187
BEGINS STA. 9+60.00
ENDS STA. 10+40.00



Expires: 11/30/2026 2-26-24

FUNCTIONAL CLASSIFICATION
LOCAL ROAD
ADT = 75 (2021)
DESIGN SPEED = 30 MPH

APPROVED March 7 2024
[Signature]
COUNTY ENGINEER

APPROVED March 7 2024
[Signature]
ROAD COMMISSIONER

PASSED March 27 2024
Kensil A. Garnett
DISTRICT FIVE ENGINEER OF
LOCAL ROADS AND STREETS

Released For
Bid Based on
Limited Review March 27 2024
Kensil A. Garnett
REGION THREE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WORK CONSISTS OF THE REMOVAL OF EXISTING PRECAST DECK BEAMS AND REPLACEMENT WITH PPC DECK BEAMS, SUBSTRUCTURE REHABILITATION, AND THE NECESSARY BACKFILL AND INCIDENTAL APPROACH WORK FOR S.N. 010-4187 AT STA. 10+00.00.

GENERAL NOTES

1. EXCEPT AS NOTED ON THE PLANS, PAVEMENT GRADES SHOWN ARE AT THE TOP OF PAVEMENT SURFACES.
2. ALL ELEVATIONS ARE BASED ON NAVD 88-DATUM.
3. ABANDONED UNDERGROUND UTILITIES THAT CONFLICT WITH CONSTRUCTION SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY ACCORDING TO ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF CONTRACT ITEMS INVOLVED.
4. THE FOLLOWING APPLICATION RATES HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:
 TEMPORARY EROSION CONTROL SEEDING: 100 LB/ACRE
 AGGREGATE BASE COURSE: 2.05 TONS/CU YD
 AGGREGATE SURFACE COURSE: 2.05 TONS/CU YD
 RIPRAP: 1.75 TONS/CU YD
5. THE CONTRACTOR'S OPERATIONS AND TEMPORARY STORAGE ACTIVITIES SHALL BE LIMITED TO THE WORK AREA AND/OR CONSTRUCTION LIMITS. ANY ADDITIONAL STAGING AREAS ADJACENT TO THE PROJECT AREA ARE SUBJECT TO PRIOR APPROVAL BY THE ENGINEER AND MUST NOT CONFLICT WITH EXISTING SIDE ROADS, INTERSECTIONS, DRIVEWAYS, OR DRAINAGE. ALL OPERATIONS SHALL BE SUBJECT TO REGULATORY REQUIREMENTS PERMITTED FOR THIS PROJECT. NO ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR COMPLIANCE WITH THE ABOVE REQUIREMENTS.
6. DISTURBED AREAS SHALL RECEIVE PERMANENT STABILIZATION WITHIN 7 DAYS OF COMPLETION OF CONSTRUCTION ACTIVITIES. TEMPORARY STABILIZATION OF WORK AREAS IS REQUIRED FOR ALL AREAS REMAINING UNDISTURBED FOR 14 DAYS, UNLESS WORK RESUMES PRIOR TO 21 DAYS. TEMPORARY STABILIZATION MUST BE APPROVED BY THE ENGINEER.
7. THE CONTRACTOR SHALL RELOCATE OR REMOVE AND REPLACE ALL SIGNS THAT INTERFERE WITH THE CONSTRUCTION OPERATIONS AND TEMPORARILY RESET ALL SUCH SIGNS DURING ALL STAGES OF CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE ENGINEER WILL DETERMINE THE PERMANENT LOCATION FOR EXISTING SIGNS TO BE RE-ERECTED.
8. CONTRACTOR SHALL FOLLOW CONSTRUCTION REQUIREMENTS OF SECTION 611 WHEN EXISTING FIELD TILE IS ENCOUNTERED. ALL FIELD TILES ENCOUNTERED SHALL BE CAREFULLY PRESERVED, REPAIRED AND CONNECTED TO THE PROPOSED DRAINAGE STRUCTURES, SEWERS OR DITCHES AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE VARIOUS DRAINAGE ITEMS OR AS DIRECTED BY THE ENGINEER.
9. THE LOCATIONS OF EXISTING WATER MAINS, GAS MAINS, SEWERS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE, BUT THEY ARE NOT GUARANTEED. UNLESS ELEVATIONS ARE SHOWN. ALL UTILITY LOCATIONS SHOWN ON THE CROSS SECTIONS ARE BASED ON THE APPROXIMATE DEPTH SUPPLIED BY THE UTILITY COMPANY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE UTILITY COMPANIES AND BY FIELD INSPECTION.
10. EMBANKMENTS ON HILLSIDES OR SLOPES SHALL BE CONSTRUCTED ACCORDING TO ARTICLE 205.03.
11. CONTRACTOR SHALL VERIFY THE LENGTH OF REQUIRED PIPE CULVERTS AND PIPE DRAINS PRIOR TO ORDERING.
12. WHERE PERMANENT SURVEY MARKERS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE DISTURBED. THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER AND AN AUTHORIZED SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THE LOCATION.
13. THE CONTRACTOR SHALL USE CARE IN ALL REMOVAL ACTIVITIES NEAR ALL EXISTING ITEMS WHICH WILL REMAIN. ANY DAMAGE DONE TO EXISTING ITEMS BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
14. A UNIFORMLY STRAIGHT SAW CUT SHALL BE MADE AT LOCATIONS WHERE PROPOSED CONTROLLED LOW-STRENGTH MATERIAL LIMITS MEET THE EXISTING OIL & CHIP SURFACES. THE SAW CUT SHALL BE MADE FULL DEPTH THROUGH THE EXISTING SURFACE. THIS WORK WILL BE CONSIDERED INCLUDED IN THE COST OF THE CONTRACT ITEMS INVOLVED AND NO EXTRA COMPENSATION WILL BE ALLOWED.

COMMITMENTS

1. THERE ARE NO COMMITMENTS ON THIS PROJECT.

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design firm
 no. 184001036

 engineers + planners + land surveyors

USER NAME = bjohnson	DESIGNED - BJJ	REVISED -
	DRAWN - BJJ	REVISED -
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PLOT DATE = 1/11/2024	DATE -	REVISED -

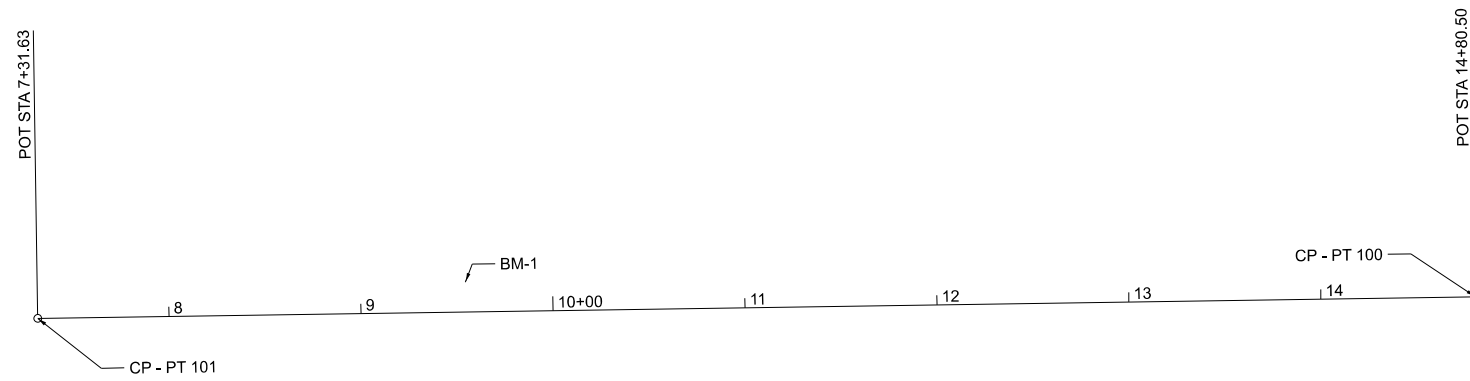
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES AND COMMITMENTS
TR 27 OVER WILDCAT SLOUGH

SCALE: 1"=50' SHEET OF SHEETS STA. TO STA.

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	2
CONTRACT NO. 91646				
ILLINOIS FED. AID PROJECT				

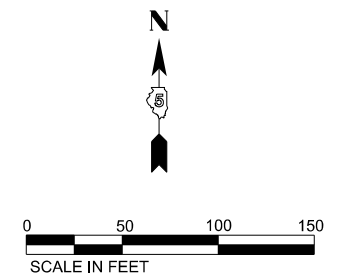
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BM-1
 SPIKE IN S. FACE OF 1ST POWERPOLE WEST OF BRIDGE
 ELEVATION = 754.61

CP - PT. 100
 FOUND 1/2" REBAR +/-3" DEEP BENT OVER
 REMOVED STRAIGHTENED AND OBSERVED (14+80.50)
 ELEVATION = 752.99

CP - PT. 101
 FOUND 1/2" REBAR +/-3" DEEP BENT OVER
 REMOVED STRAIGHTENED AND OBSERVED (7+31.63)
 ELEVATION = 754.97



USER NAME = bjohnson	DESIGNED - BJJ	REVISED -
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PLOT DATE = 12/20/2023		

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

ALIGNMENT, TIES & BENCHMARKS
 TR 27 OVER WILDCAT SLOUGH

SCALE: 1"=50' SHEET OF SHEETS STA. TO STA.

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	3
ILLINOIS FED. AID PROJECT			CONTRACT NO. 91646	

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CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE
				BRIDGE
				0013 S.N. 010-4187
20200100	EARTH EXCAVATION	CU YD	8	8
20300100	CHANNEL EXCAVATION	CU YD	8	8
35101400	AGGREGATE BASE COURSE, TYPE B	TON	24	24
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1	1
50102400	CONCRETE REMOVAL	CU YD	0.2	0.2
50200100	STRUCTURE EXCAVATION	CU YD	20.8	20.8
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	1458	1458
* 50900205	STEEL RAILING, TYPE S1	FOOT	108	108
51500100	NAME PLATES	EACH	1	1
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	43.8	43.8
60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	2	2

* SPECIALTY ITEMS



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PLOT SCALE = 0.16666633 1/in.	DRAWN - BJJ	REVISED -
PLOT DATE = 12/20/2023	CHECKED - MRL	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
TR 27 OVER WILDCAT SLOUGH

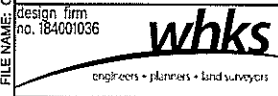
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27	23-14134-00-BR	CHAMPAIGN	20	4
			CONTRACT NO. 91646	
ILLINOIS FED. AID PROJECT				

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CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE
				BRIDGE
				0013 S.N. 010-4187
60103600	PIPE DRAINS, CORRUGATED STEEL 15"	FOOT	20	20
60103700	PIPE DRAINS, CORRUGATED STEEL 18"	FOOT	20	20
67100100	MOBILIZATION	L SUM	1	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25	0.25
X2810206	STONE RIPRAP, CLASS A3 (SPECIAL)	TON	28	28
X6110073	EXISTING FIELD TILE REMOVAL	FOOT	40	40
X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1	1

* SPECIALTY ITEMS



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PLOT SCALE	= 0.19666633 1/16"	DATE	-	REVISED	-
PLOT DATE	= 2/15/2024				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
TR 27 OVER WILDCAT SLOUGH

SCALE: 1"=50' SHEET OF SHEETS STA. TO STA.

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	5
			CONTRACT NO. 91646	
ILLINOIS FED. AID PROJECT				

LOCATION	20200100	20300100	FOR INFORMATION ONLY		EARTHWORK BALANCE WASTE(+)AND SHORTAGE (-)
	EARTH EXCAVATION	CHANNEL EXCAVATION	EXCAVATION TO BE USED IN EMBANKMENT (ADJUSTED FOR SHRINKAGE) (EXC. x 0.75)	EMBANKMENT (FILL)	
	CU. YD.	CU. YD.	CU. YD.	CU. YD.	
STA. 9+60.00 TO STA. 9+72.30	4		3	5	-2
STA. 9+72.30 TO STA. 10+27.71		8	*3		3
STA. 10+27.71 TO STA. 10+40.00	4		3	4	-1
TOTAL	8	8	9	9	0

EARTH EXCAVATION SHRINKAGE FACTOR = 25%
*CHANNEL EXCAVATION USED IN EMBANKMENT= 50%

35101400 AGGREGATE BASE COURSE, TYPE B

TR 27	TON
CL 9+60.00 TO CL 9+72.30	12
CL 10+27.71 TO CL 10+40.00	12
TOTAL	24

X2501000 SEEDING, CLASS 2 (SPECIAL)

TR 27	ACRE
LT 9+60.00 TO LT 9+72.30	0.03
LT 10+27.71 TO LT 10+40.00	0.03
RT 9+60.00 TO RT 9+72.30	0.03
RT 10+27.71 TO RT 10+40.00	0.03
* TOTAL PER MIN. DEGREE OF ACCURACY	TOTAL 0.25

60100060 CONCRETE HEADWALLS FOR PIPE DRAINS

TR 27	EACH
15' LT 9+90.00	1
20' LT 9+90.00	1
TOTAL	2

X6110073 EXISTING FIELD TILE REMOVAL

TR 27	FOOT
15' LT 9+70.00 TO LT 9+90.00	20
20' LT 9+70.00 TO LT 9+90.00	20
TOTAL	40

60103600 PIPE DRAINS, CORRUGATED STEEL 15"

TR 27	FOOT
20' LT 9+70.00 TO LT 9+90.00	20
TOTAL	20

X7011800 TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21

TR 27	L SUM
TOTAL	1

60103700 PIPE DRAINS, CORRUGATED STEEL 18"

TR 27	FOOT
15' LT 9+70.00 TO LT 9+90.00	20
TOTAL	20

67100100 MOBILIZATION

TR 27	L SUM
TOTAL	1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

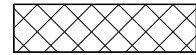
SCHEDULE OF QUANTITIES
TR 27 OVER WILDCAT SLOUGH

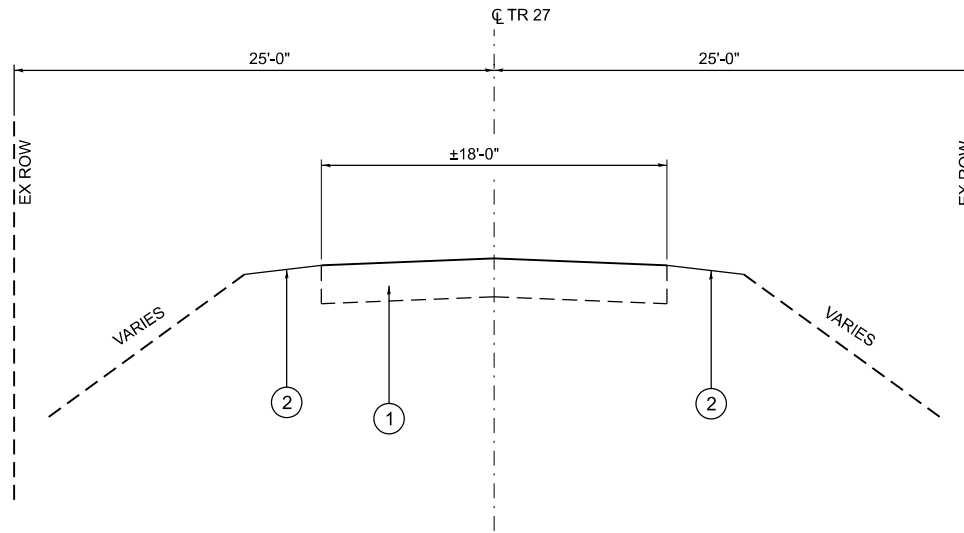
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TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	6
			CONTRACT NO. 91646	
			ILLINOIS FED. AID PROJECT	

LEGEND

- ① EX OIL AND CHIP
- ② EX EARTH SHOULDER
- ③ PR AGGREGATE BASE COURSE, TYP B (8")
- ④ PR EARTH SHOULDERS

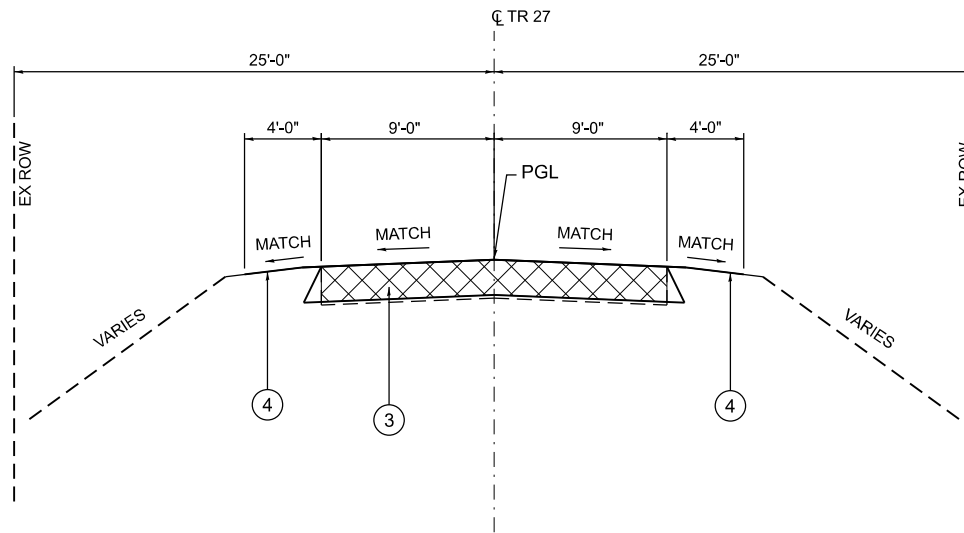
 TO BE REMOVED
(COST INCLUDED IN STRUCTURE EXCAVATION)



EXISTING TYPICAL SECTION

STA. 9+60.00 TO STA. 9+72.30
STA. 10+27.71 TO STA. 10+40.00
(LOOKING EAST)

**BRIDGE OMISSION
STA. 9 + 72.30 TO 10 + 27.71**



PROPOSED TYPICAL SECTION

STA. 9+60.00 TO STA. 9+72.30
STA. 10+27.71 TO STA. 10+40.00
(LOOKING EAST)

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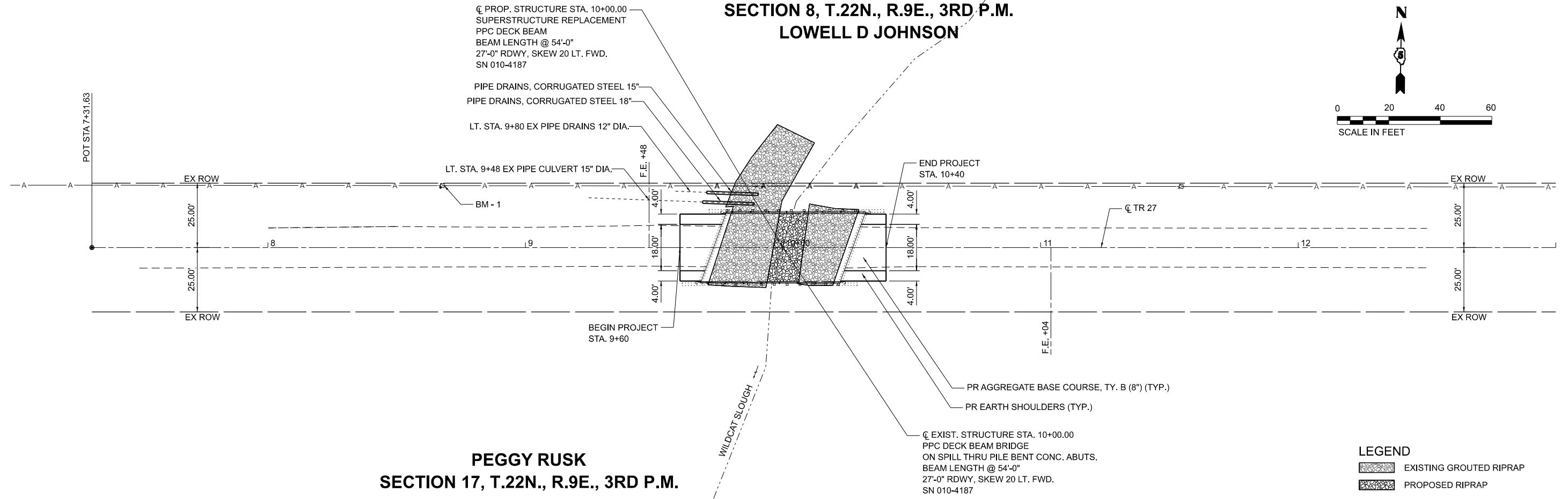
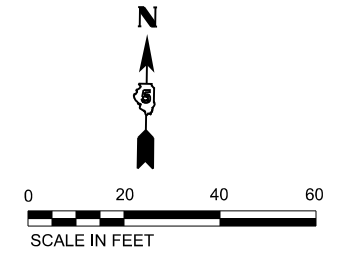
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS
TR 27 OVER WILDCAT SLOUGH**

SCALE: 1"=5' SHEET OF SHEETS STA. TO STA.

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	7
CONTRACT NO. 91646				
ILLINOIS		FED. AID PROJECT		

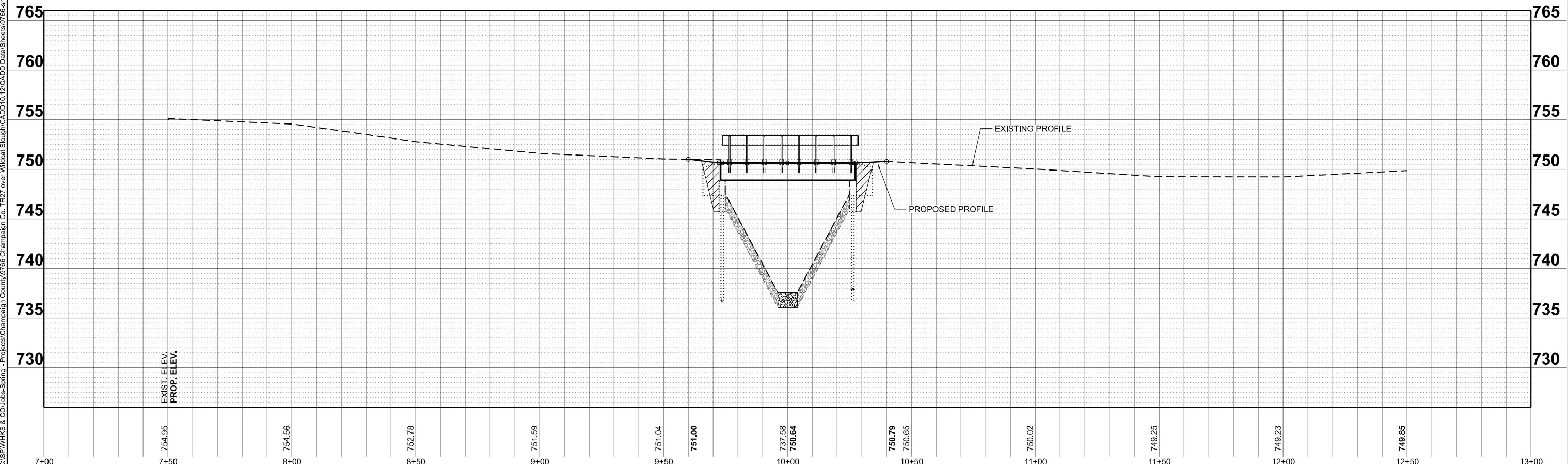
**SECTION 8, T.22N., R.9E., 3RD P.M.
LOWELL D JOHNSON**



**PEGGY RUSK
SECTION 17, T.22N., R.9E., 3RD P.M.**

LEGEND

	EXISTING GROUDED RIPRAP
	PROPOSED RIPRAP



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PLOT DATE = 2/16/2024	CHECKED - MRL	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

PLAN & PROFILE	
TR 27 OVER WILDCAT SLOUGH	
SCALE: 1"=20'	SHEET OF SHEETS
STA. 7+00.00	TO STA. 13+00.00

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	8
CONTRACT NO. 91646				
ILLINOIS FED. AID PROJECT				

Benchmark: BM - Sta. 8+66.66, 21.36' Lt. Set spike in south face of 1st pole west of bridge. Elevation = 754.61

Existing Structure: SN 010-4187 was built in 1982 as Section 79-14545-05-BR, Station 10+00. The structure is a single span PPC Deck Beam bridge on pile-bent concrete abutments. The bridge is 55'-5" back-to-back of abutments with an out-to-out bridge width of 27'-0". The superstructure is to be removed and replaced. Road is to be closed and traffic detoured during construction.

Salvage: None

SCOPE OF WORK

1. Remove and replace existing superstructure with nine (9) new 21" x 36" Precast Prestressed Concrete (PPC) Deck Beams.
2. Add new Type S-1 steel railing.
3. Modify wingwalls to accommodate new superstructure.
4. Streambed to be armored with stone riprap

INDEX OF SHEETS

1. General Plan and Elevation
2. General Data
- 3.-4. 21" x 36" PPC Deck Beam Details
5. Superstructure Details
6. Steel Railing, Type S-1
7. Substructure Details
- 8.-12. Existing Plans (for information only)

DESIGN SPECIFICATIONS (New Const.)

2020 AASHTO LRFD Bridge Design Specifications
9th Edition

LOADING HL-93 (New Const.)

Allow 25#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS (Existing)

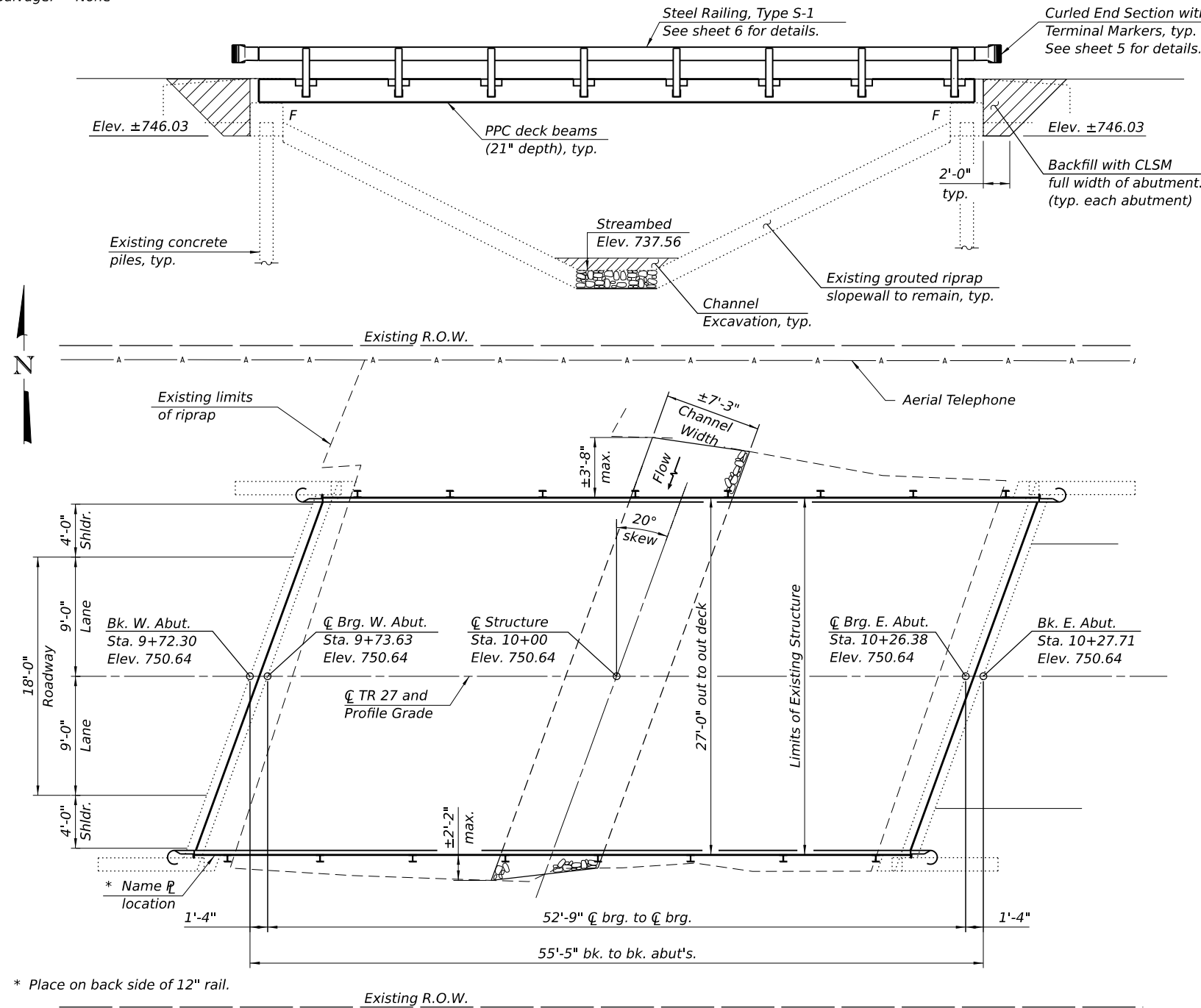
$f_c = 1,400$ psi
 $f_s = 20,000$ psi (Reinforcement)

PRECAST UNITS (New Construction)

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " low lax strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " low lax strands)

SEISMIC DATA (Exist. Const.)

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.089g
Design Spectral Acceleration at 1.0 sec. (S_{D5}) = 0.157g
Soil Site Class = C



- Notes:**
1. See roadway plans for additional information not shown herein.
 2. See sheet 2 for Section A-A and Proposed Profile Grade.

DESIGN SCOUR ELEVATION TABLE

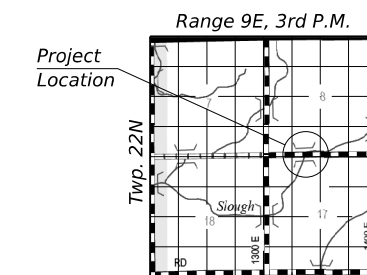
Event / Limit State	Design Scour Elev. (ft.)		Item 113
	W. Abut.	E. Abut.	
Q100	-	-	8
Q200	-	-	
Design	746.03	746.03	
Check	746.03	746.03	

WILDCAT SLOUGH
RE-BUILT BY
CHAMPAIGN COUNTY
SEC. 23-14134-00-BR
TR 27 STA. 10+00
STR. NO. 010-4187 LOADING HL93

NAME PLATE

See Std. 515001

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



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
TR 27 OVER WILDCAT SLOUGH
SECTION 23-14134-00-BR
CHAMPAIGN COUNTY
STATION 10+00
STRUCTURE NO. 010-4187

FILE NAME: C:\SP\WHKS & CO\Jobs-Spring - Projects\Champaign County\0766 Champaign Co. TR27 over Wildcat Slough\VCADD\10.12\VCADD Data\Bldg\CSN 010_4187.dgn



USER NAME = dheberling	DESIGNED - GEM	REVISED -
PLOT DATE = 3/11/2024	CHECKED - JLM	REVISED -
PLOT DATE = 9:58:04 AM	DRAWN - DLH	REVISED -
	CHECKED - GEM/SBC	REVISED -

CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

STRUCTURE NO. 010-4187

SHEET 1 OF 12 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	9
CONTRACT NO. 91646				

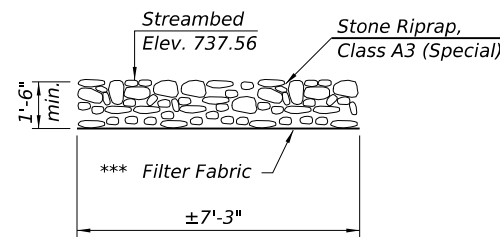
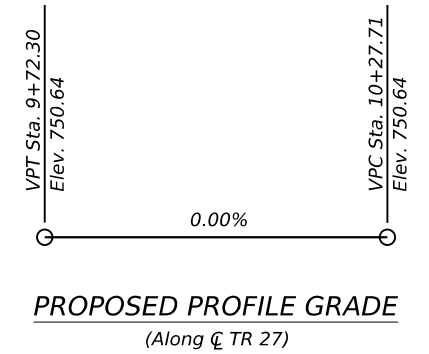
ILLINOIS FED. AID PROJECT

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. 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.
3. The Contractor shall be responsible for diverting the water flow from the construction area using a method meeting the approval of the Engineer. This shall not be paid for separately but shall be included in the cost of the Contract.
4. Layout of the slope protection system, and streambed armoring shown herein, may be varied to suit ground conditions in the field as directed by the Engineer.

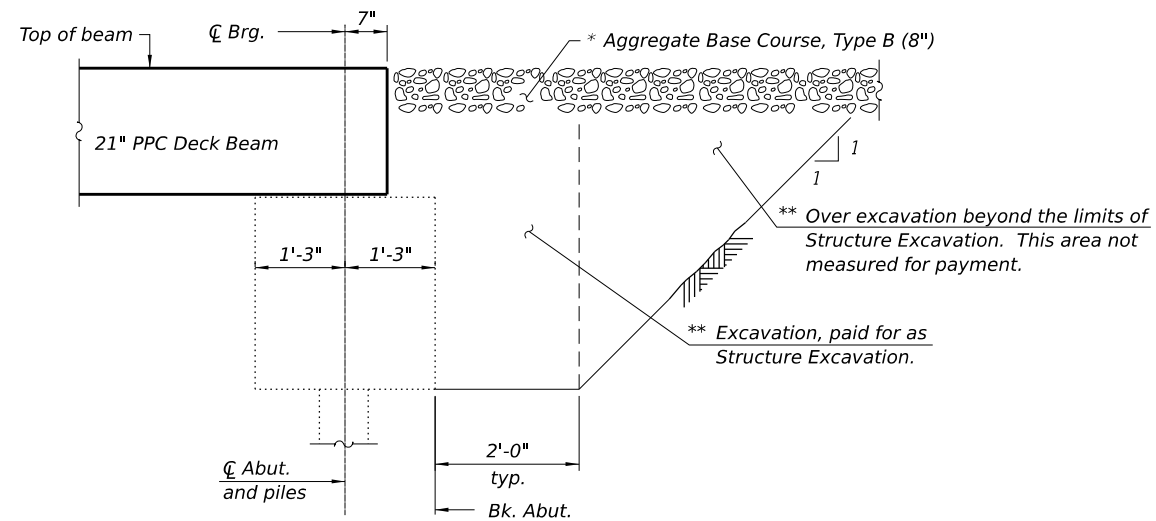
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Channel Excavation	Cu. Yd.		8	8
Removal of Existing Superstructures	Each	1		1
Concrete Removal	Cu. Yd.		0.2	0.2
Structure Excavation	Cu. Yd.		22	22
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,458		1,458
Steel Railing, Type S1	Foot	108		108
Name Plates	Each	1		1
Controlled Low-Strength Material	Cu. Yd.		43.8	43.8
Terminal Marker - Direct Applied	Each	4		4
Stone Riprap, Class A3 (Special)	Ton		28	28



SECTION A-A

*** Cost included with Stone Riprap, Class A3 (Special). See Special Provisions.



SECTION AT ABUTMENT

(Dimensions are at Rt. Δ's)

- * See Roadway Plans
- ** Backfill with Controlled Low-Strength Material (CLSM) (Mix 2) full width of abutment cap only, typ. each abutment.

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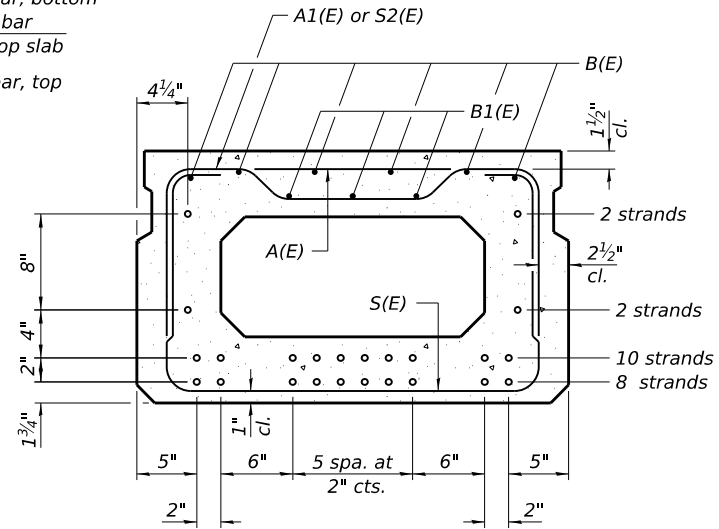
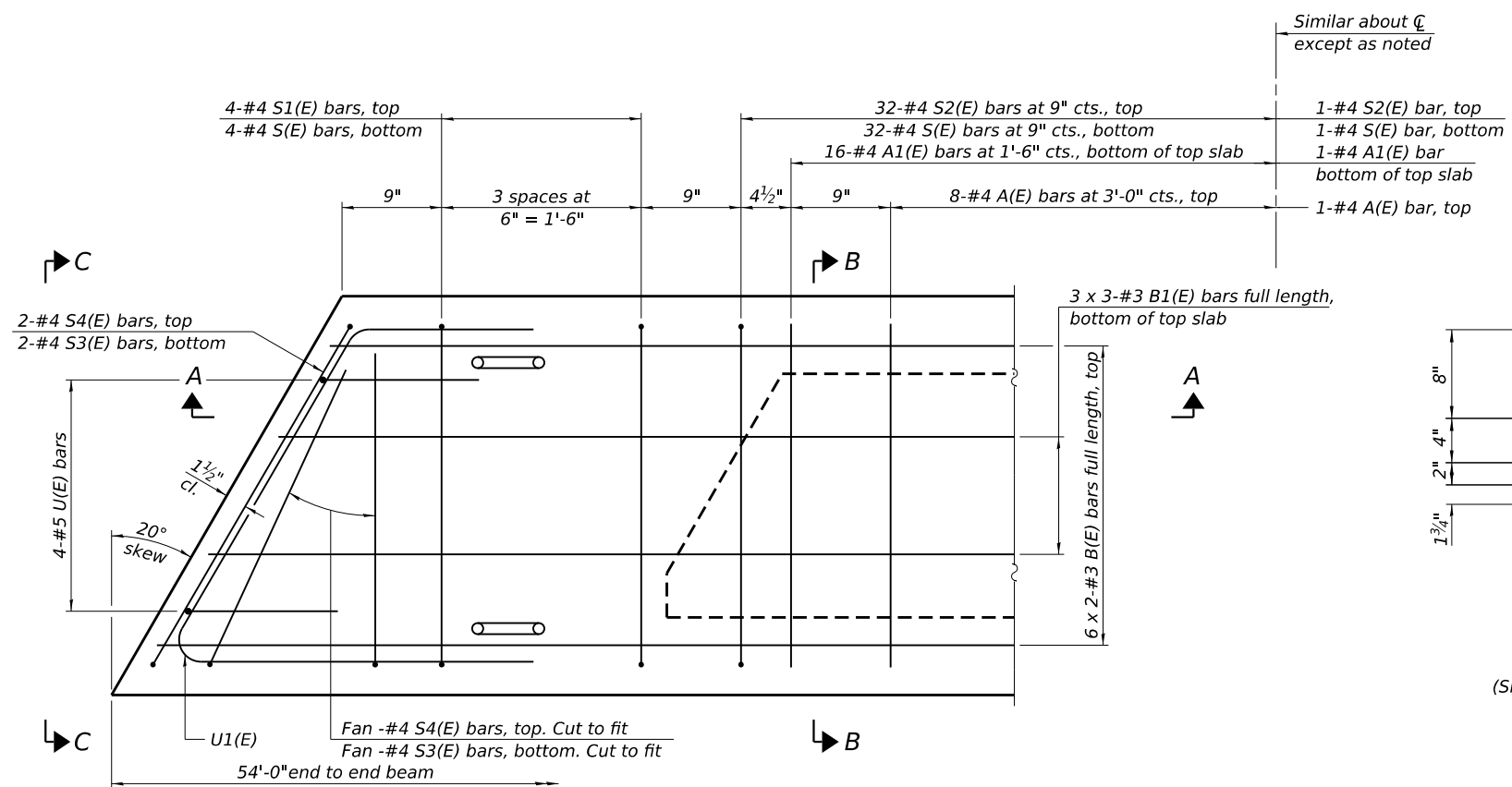
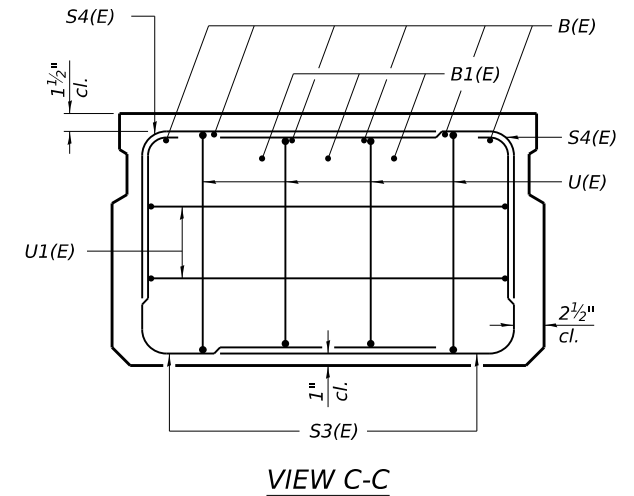
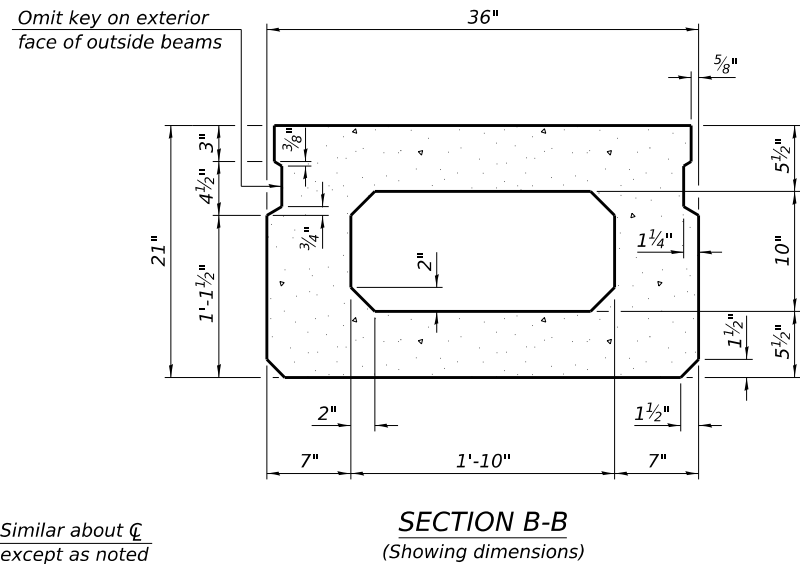
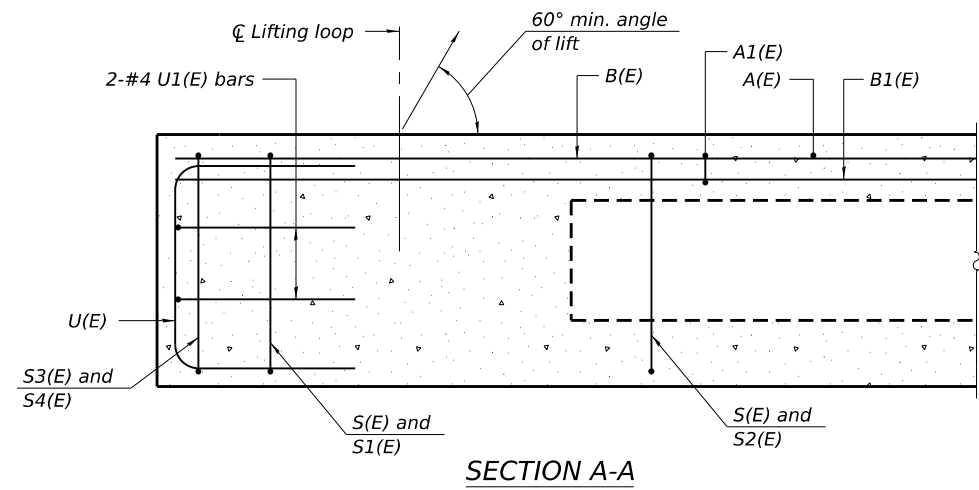
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CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

GENERAL DATA
STRUCTURE NO. 010-4187

SHEET 2 OF 12 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	10
CONTRACT NO. 91646			ILLINOIS FED. AID PROJECT	



BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	17	#4	2'-7"	—
A1(E)	33	#4	2'-10"	—
B(E)	12	#3	27'-8"	—
B1(E)	9	#3	18'-11"	—
S(E)	73	#4	6'-5"	┌
S1(E)	8	#4	4'-11"	┌
S2(E)	65	#4	5'-2"	┌
S3(E)	8	#4	4'-4"	┌
S4(E)	8	#4	3'-7"	┌
U(E)	8	#5	4'-0"	┌
U1(E)	4	#4	6'-1"	┌

PLAN VIEW
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.

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

- Notes:
1. Bars indicated thus 3 x 3-#3 etc. indicate 3 lines of bars with 3 lengths per line.
 2. See sheet 4 for additional detail and Bill of Material.

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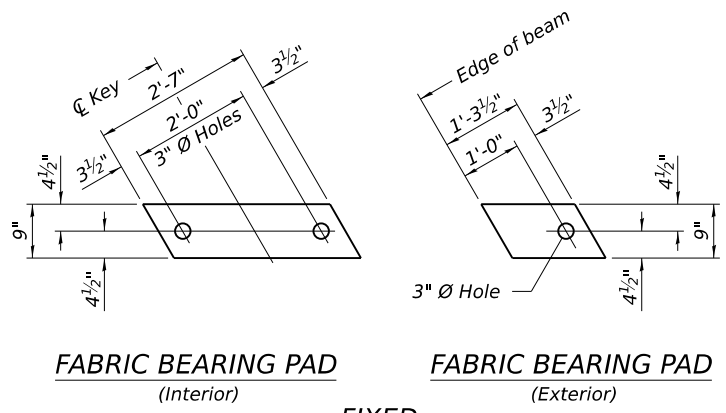
PD-2136-L 5-15-2023

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CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

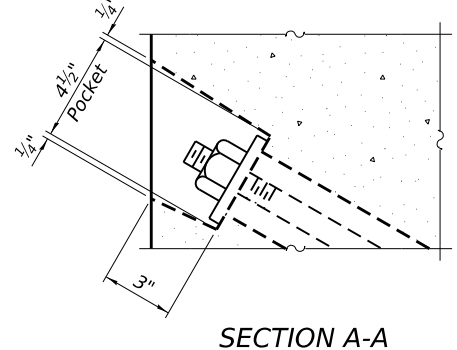
21" x 36" PPC DECK BEAM
STRUCTURE NO. 010-4187

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	11
CONTRACT NO. 91646				
ILLINOIS FED. AID PROJECT				

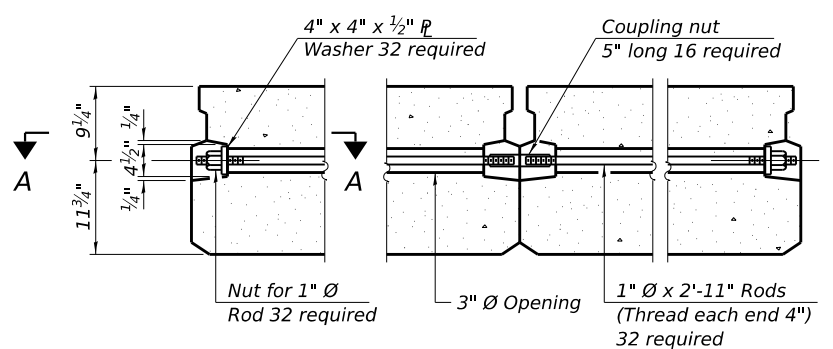


FABRIC BEARING PAD
(Interior) **FIXED**
FABRIC BEARING PAD
(Exterior)

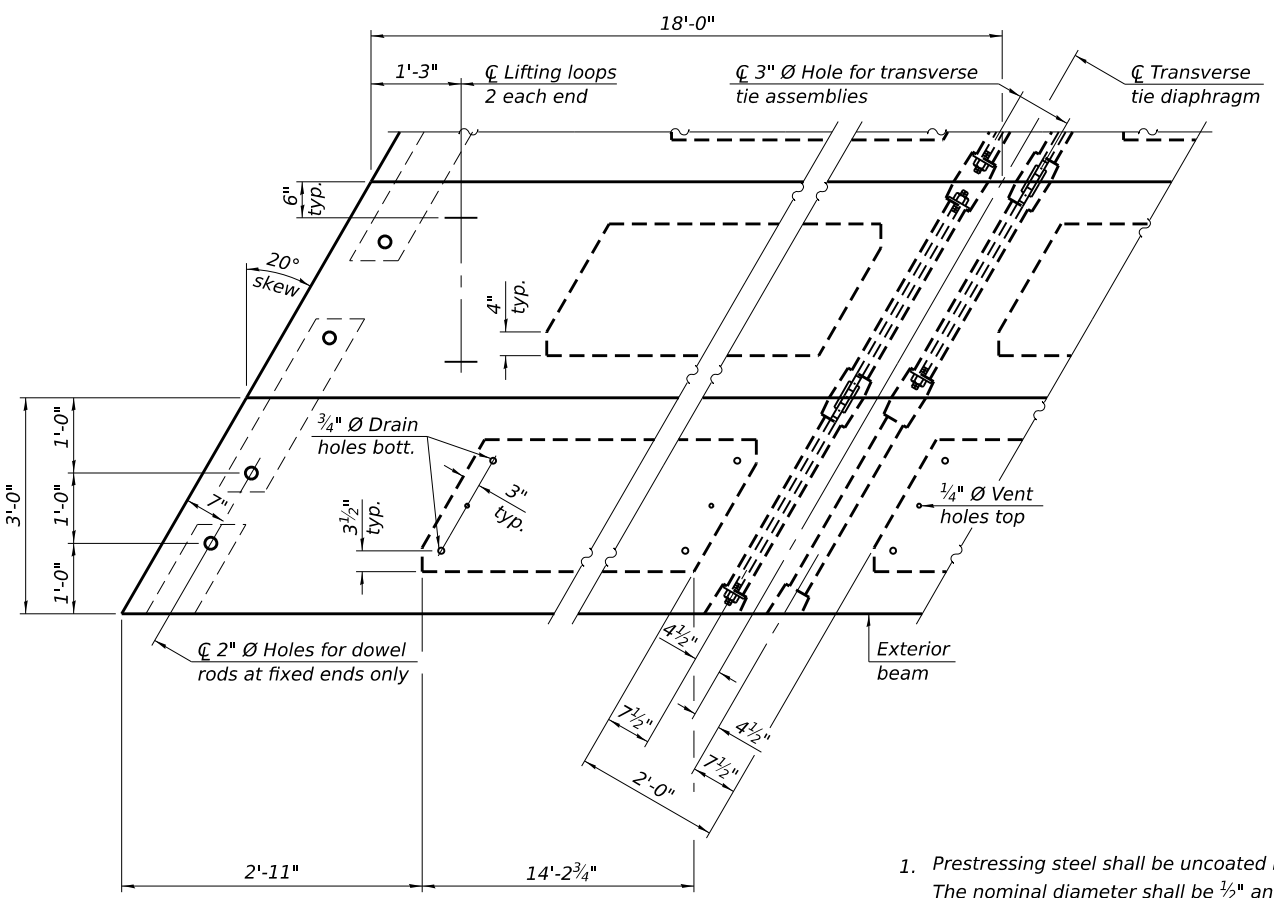
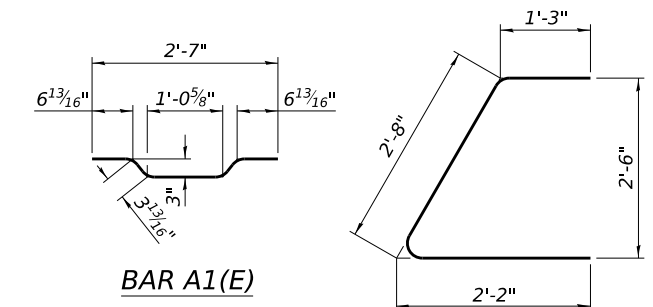
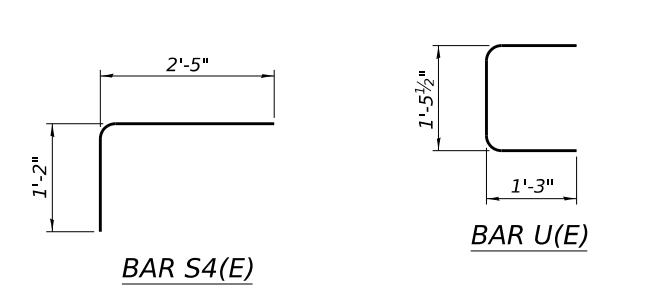
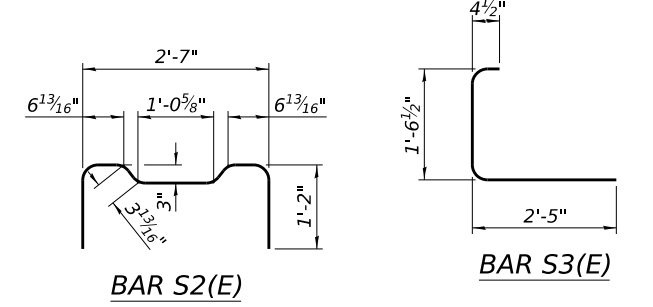
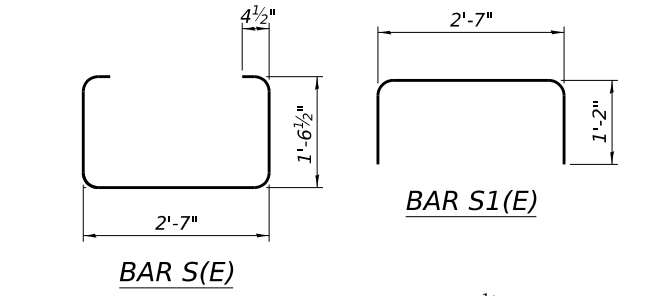
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pads shall be bonded to the substructure.



SECTION A-A



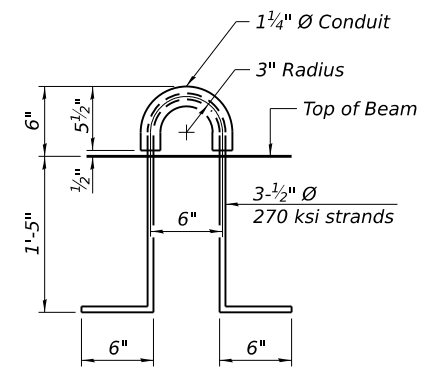
TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW
Connect beams in pairs with the transverse tie configuration shown.

NOTES

1. 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.
2. 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.
3. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
4. A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling.
5. 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.
6. Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
7. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1,458
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PDD-2136-L 5-15-2023



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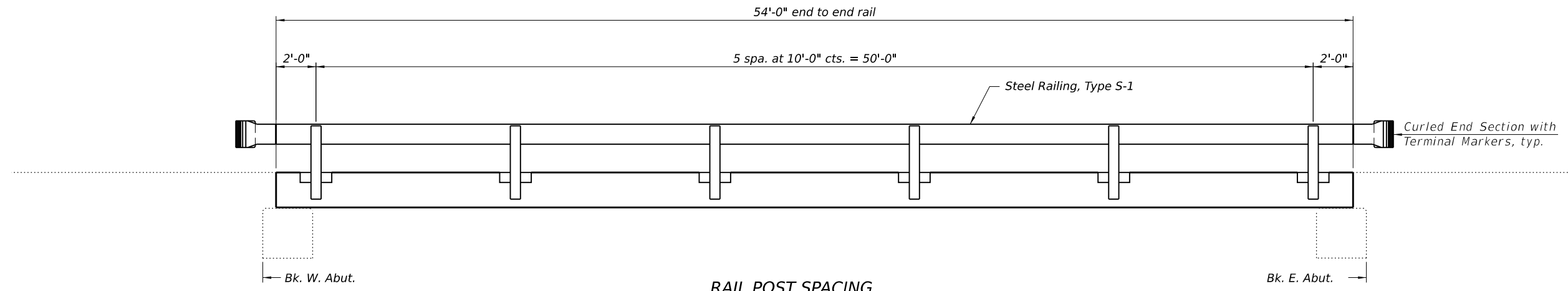
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

21" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 010-4187

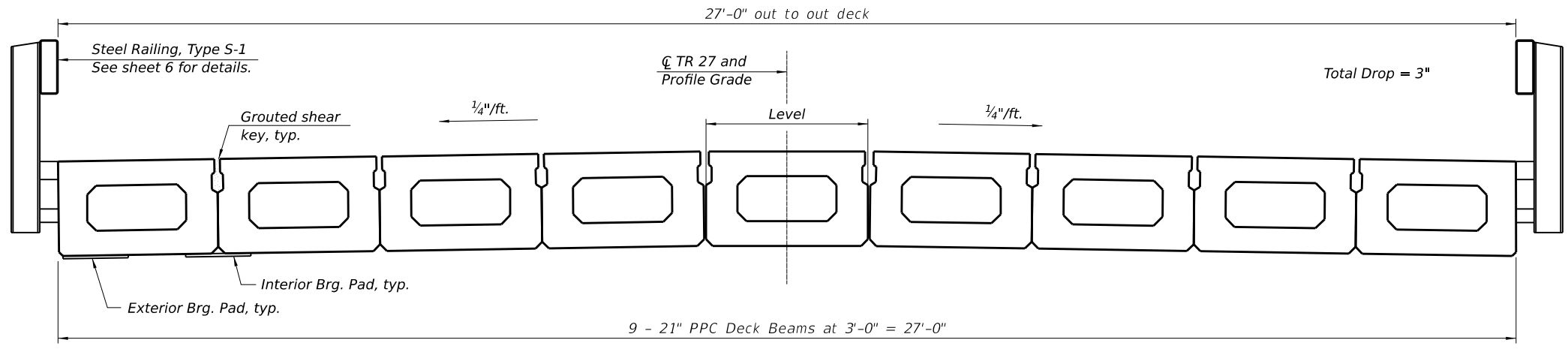
SHEET 4 OF 12 SHEETS

TR. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 91646				

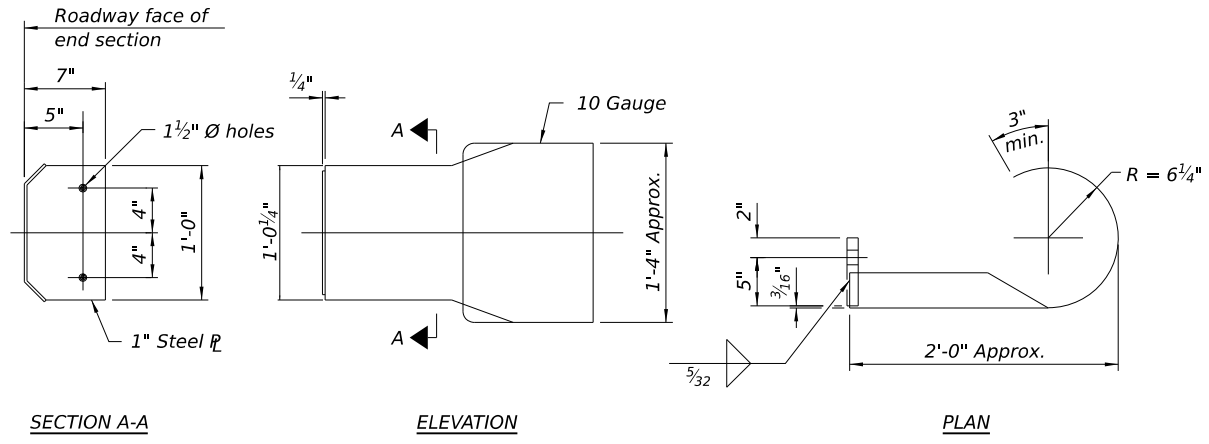
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RAIL POST SPACING



CROSS SECTION



DETAILS OF CURLED END SECTION
(Cost included with Steel Railing, Type S-1.)

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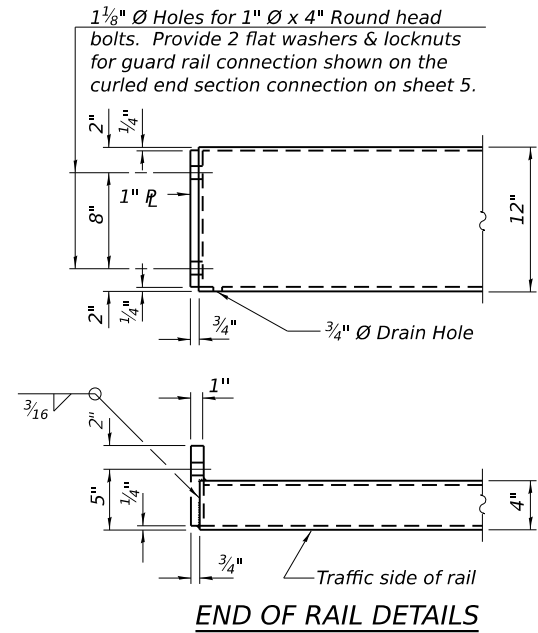
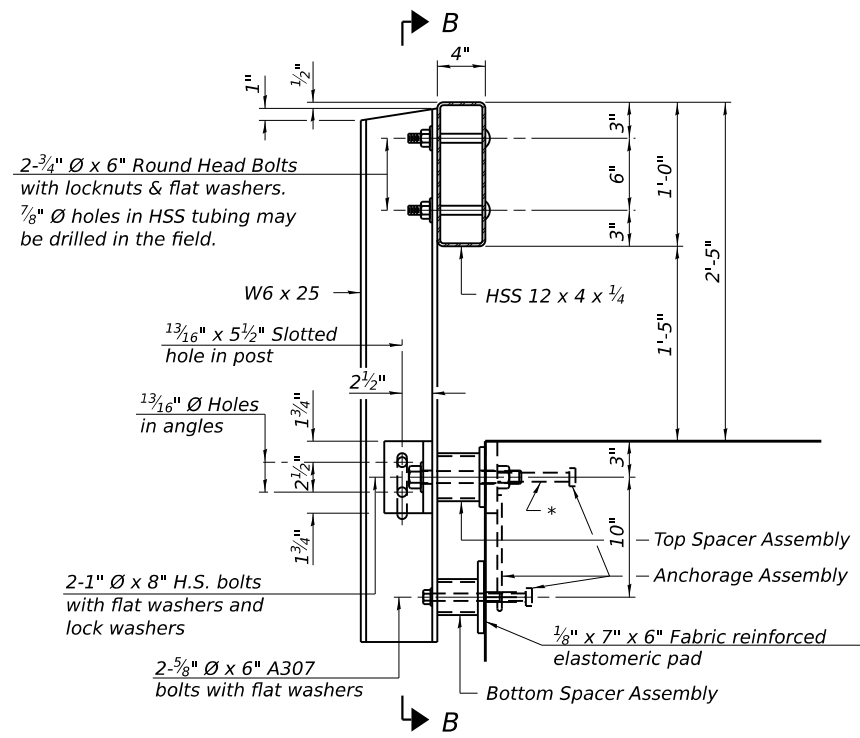
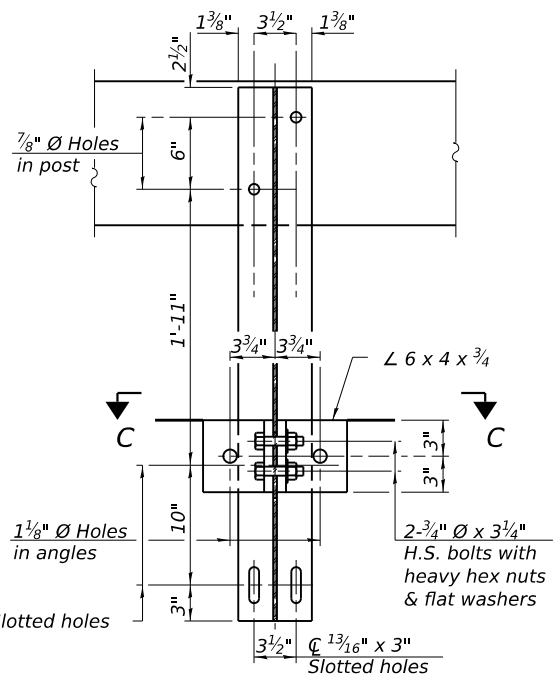
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 010-4187

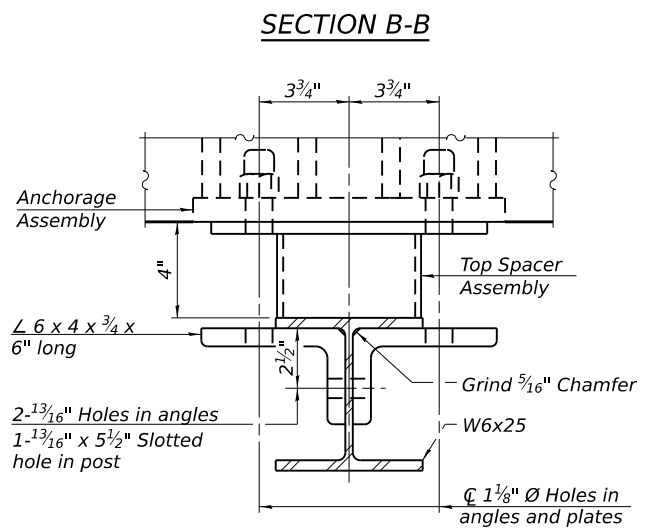
SHEET 5 OF 12 SHEETS

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CONTRACT NO. 91646				

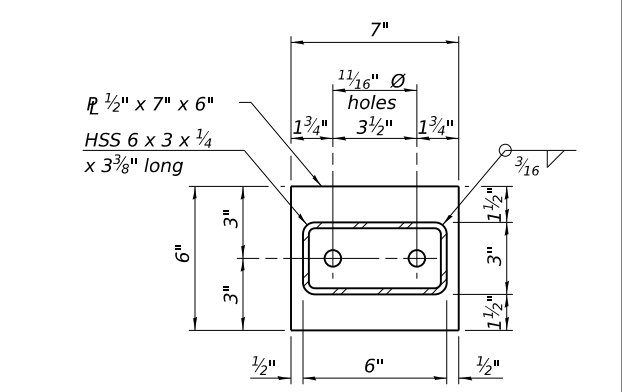
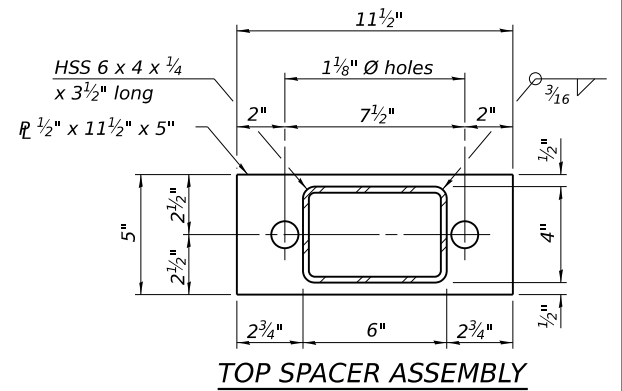
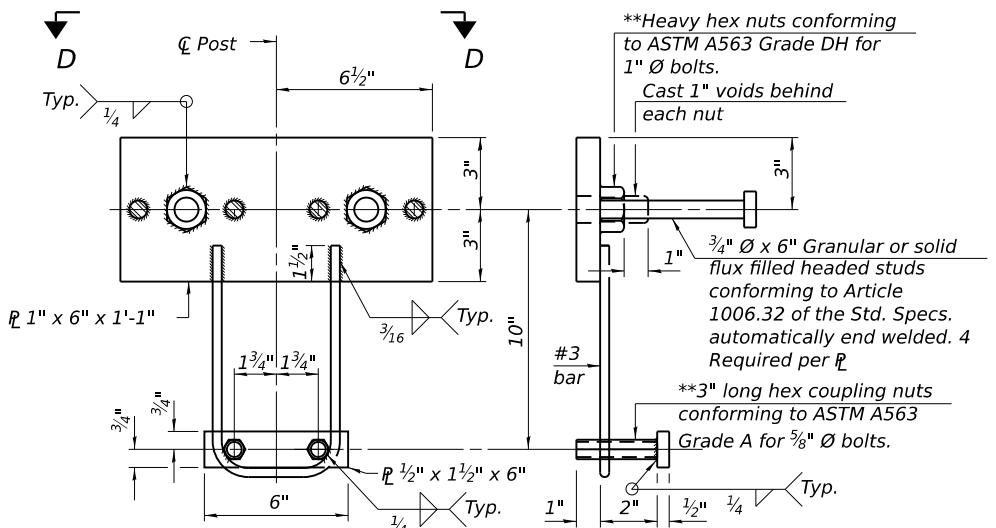
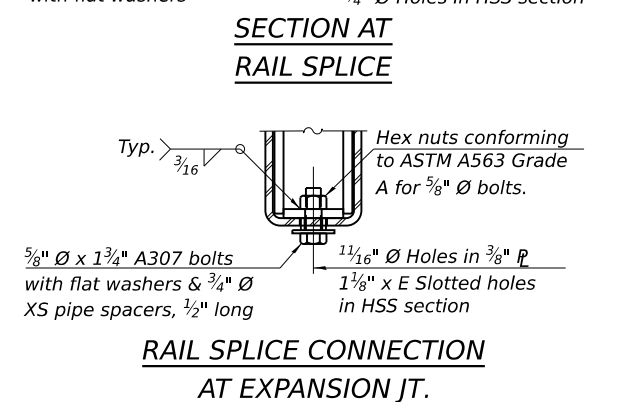
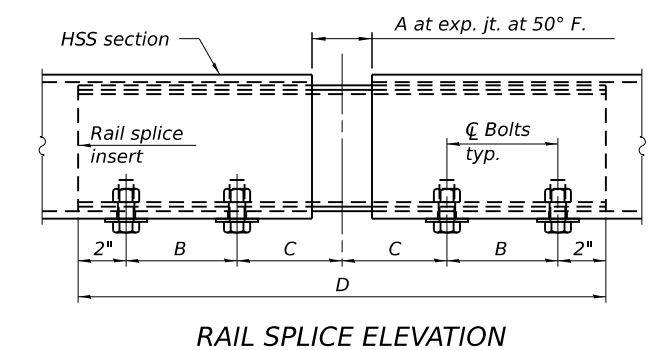
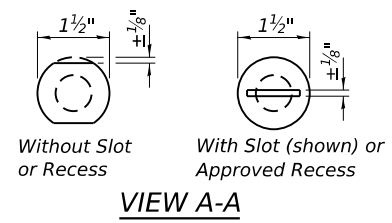
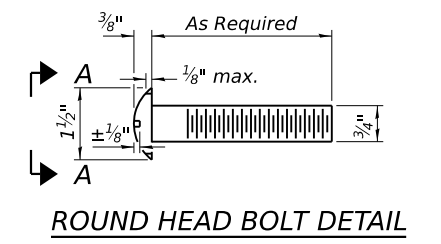
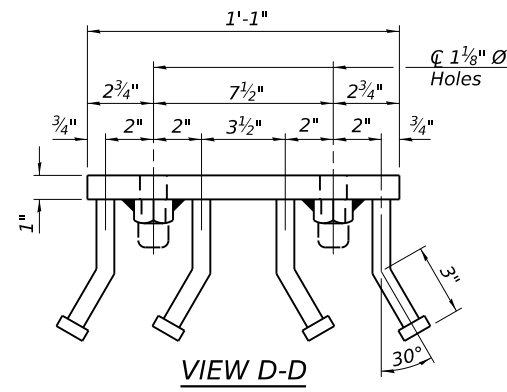
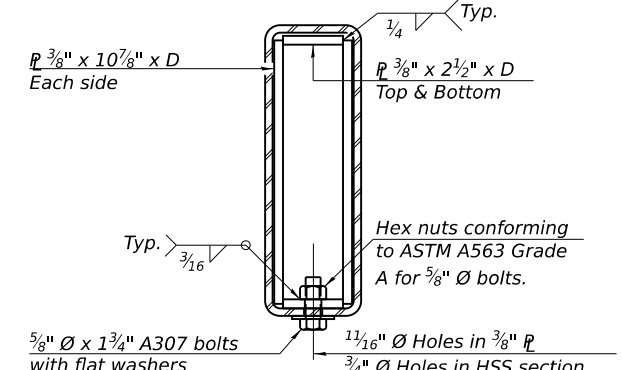
ILLINOIS FED. AID PROJECT



- Notes:
1. A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type S-1.
 2. All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.
 3. All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.
 4. Rail splice inserts may be built out of 2 - 3/8" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.
 5. All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.



* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



SPLICE DIMENSIONS

Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	1/4"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤ 4"	2 1/2"	4 3/8"	4 3/8"	1'-10"	3 1/2"
Over Finger or Modular Jt.	≤ 9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5' 13/16"
Over Finger or Modular Jt.	≤ 15"	8 1/4"	10 1/8"	10"	3'-8 1/4"	8 9/16"

T = ; total movement along centerline of roadway at expansion joint.

RAILING CRITERIA

NCHRP 350 Test Level	2
Railing Weight (plf)	50

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	108

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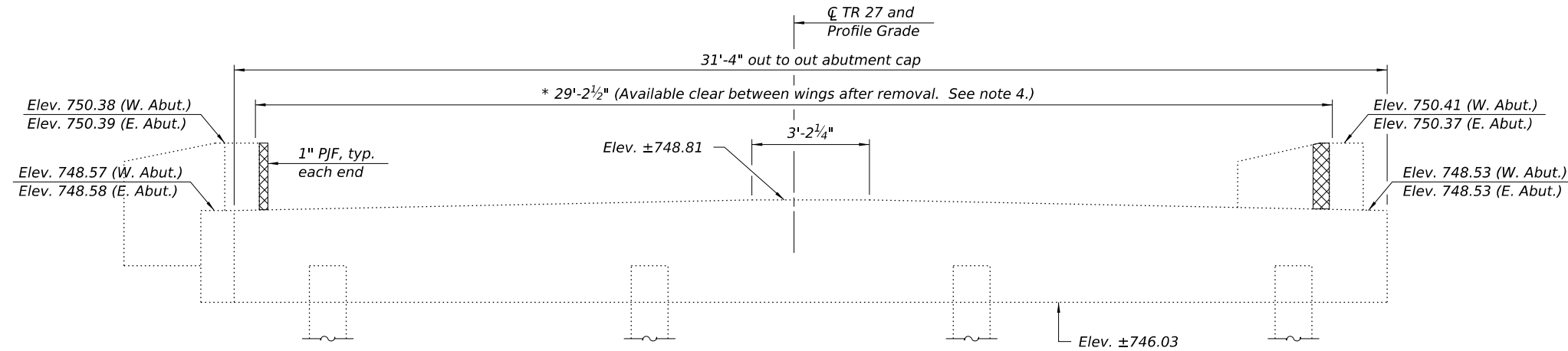
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CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 010-4187

SHEET 6 OF 12 SHEETS

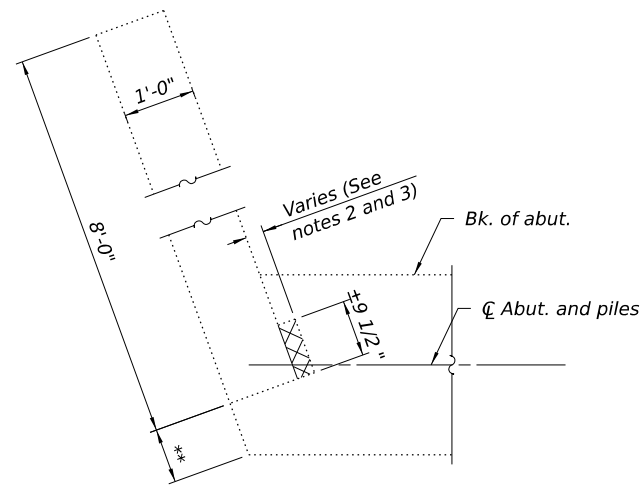
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27	23-14134-00-BR	CHAMPAIGN	20	14
CONTRACT NO. 91646				
ILLINOIS FWD.AID PROJECT				



ABUTMENT ELEVATION

(West Abutment shown. East Abutment similar, unless otherwise noted.)

* Dimensions determined from the existing plans and shall be field verified by the Contractor prior to superstructure installation. (See Wingwall Removal Detail)



WINGWALL REMOVAL DETAIL

(SW and NE wingwalls shown. SE and NW wingwalls similar, unless otherwise noted.)

** ±9 1/8" SW and NE wings. ±1'-7 1/8" SE and NW wings.

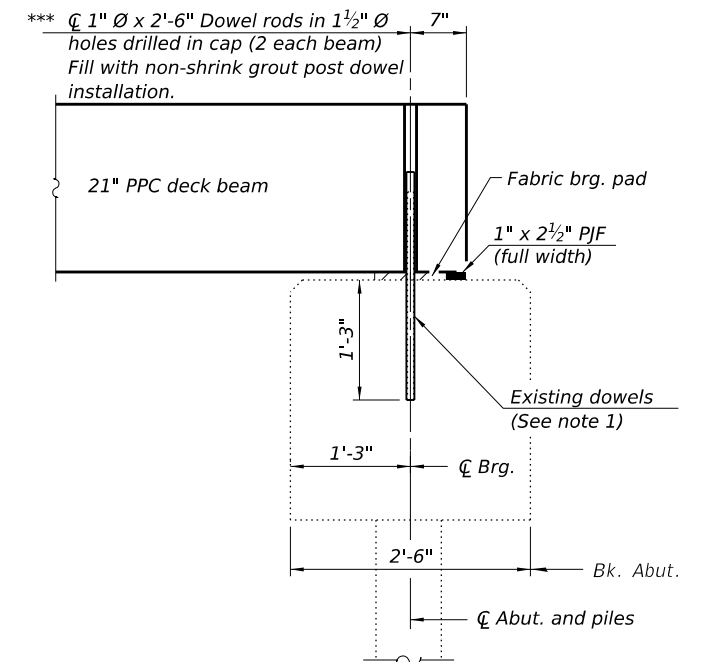
Notes:

1. Burn existing dowels flush with top of cap. Grind existing dowels smooth and seal with epoxy. Epoxy used shall be approved by the Engineer. Cost is included with Removal of Existing Superstructure.
2. Burn any existing reinforcement extending into the concrete removal limits flush with the remaining concrete surface. Grind existing reinforcement smooth and seal with epoxy. Epoxy used shall be approved by the Engineer. Cost is included with Concrete Removal.
3. Removal of the wingwalls shall be completed in a manner such that the removal is the minimum necessary to allow for installation of the new superstructure as detailed herein. The Contractor shall provide sawing equipment adequate in size and horsepower to complete the required full-depth sawing operation. Chipping and/or hydraulic hammers are not allowed along the vertical wingwall removal lines. The resulting vertical surface of the wingwalls after concrete removal operations shall be smooth and plumb.
4. The thickness of the preformed joint filler (PJF) may be increased if the expansion gap between exterior beams and wing walls is larger than anticipated after concrete removal operations. Cost is included with Precast Prestressed Concrete Deck Beams (21" Depth).

LEGEND



Limits of Concrete Removal



SECTION THRU ABUTMENT

Dimension are at Rt. Δ's

*** If the Contractor encounters any conflicts with existing dowel rods, contact the Engineer of Record for further disposition.

BILL OF MATERIAL

(1 Abutment)

Item	Unit	Total
Concrete Removal	Cu. Yd.	0.1

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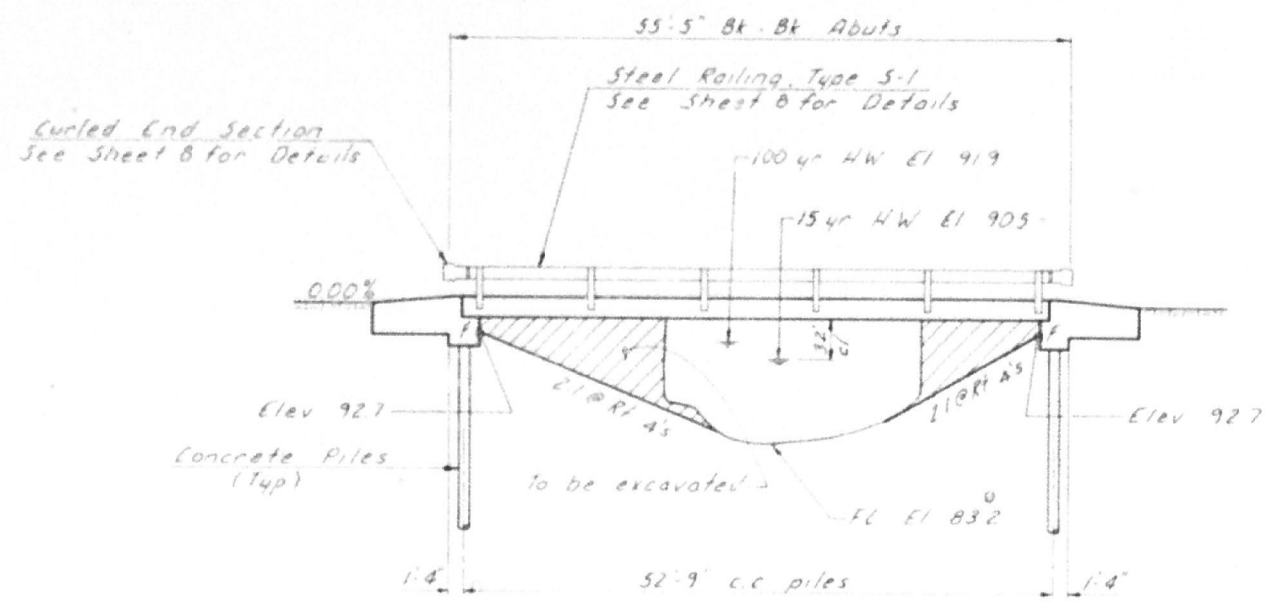
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CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

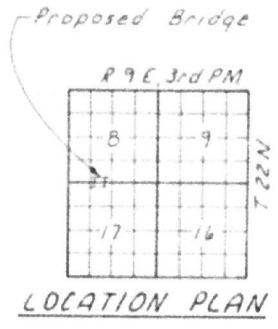
**SUBSTRUCTURE DETAILS
STRUCTURE NO. 010-4187**

SHEET 7 OF 12 SHEETS

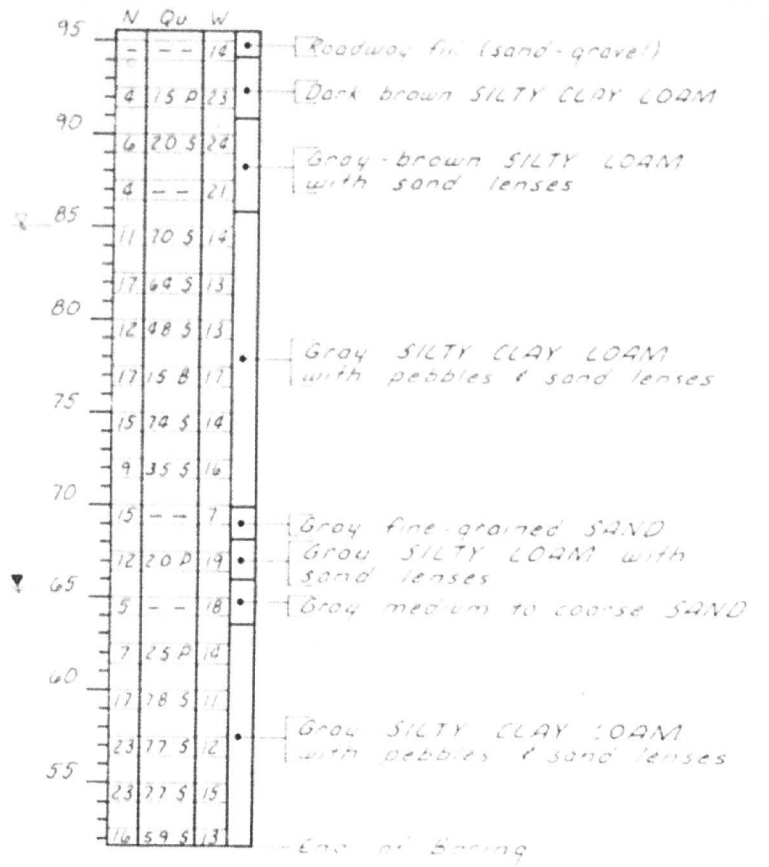
TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	15
CONTRACT NO. 91646				
ILLINOIS		FED. AID PROJECT		



ELEVATION



STRUCTURE NO 010-4187
WILDCAT SLOUGH
SEC 79-14545-05-BR BUILT 198-
LUDLOW ROAD DISTRICT
CHAMPAIGN COUNTY
LOADING HS20
LETTERING FOR NAME PLATE
See Std 2113



BORING NO. 1
E Sta 9+65

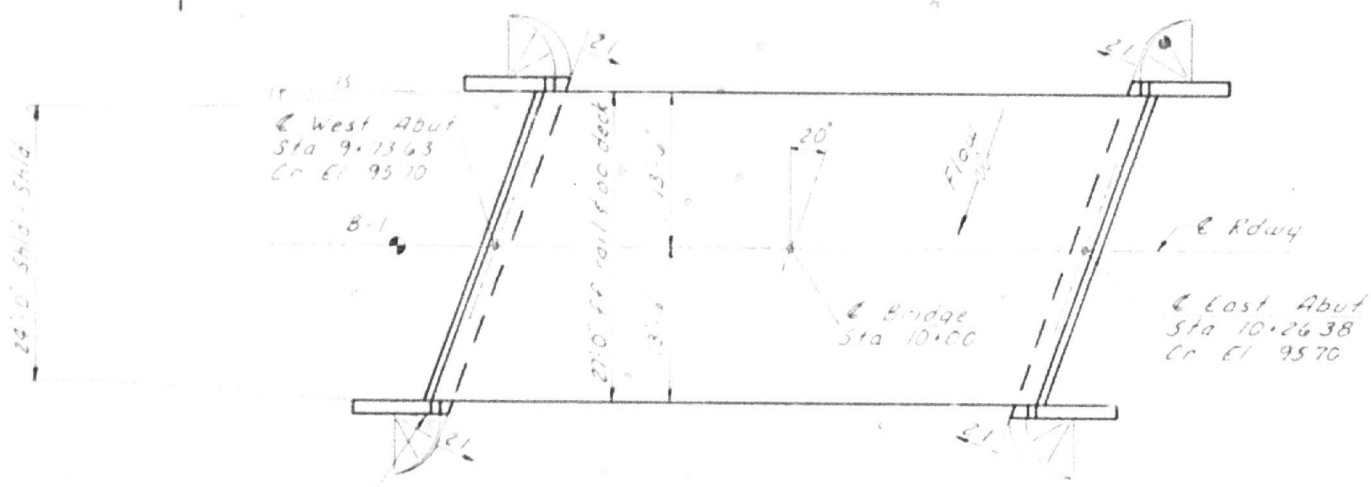
BORING DATA
N = Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140 lb hammer falling 30"
Qu = Unconfined Compressive Strength - lbf
W = Water Content - percentage of oven dry weight - %
B = Bulge Failure S = Shear Failure P = Penetrometer
▽ = Groundwater Elevation at Completion

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq Ft	1458		1458
Class X Concrete	Cu Yd		186	186
Reinforcement Bars	Pound		2,900	2,900
Steel Railing, Type S-1	Lin Ft	104		104
Concrete Piles	Lin Ft		280	280
Name Plates	Each		1	1

DESIGN STRESSES

$f'_c = 5,000$ psi (Prestressed Beams)
 $f'_{ci} = 4,100$ psi (Prestressed Beams)
 $f_c = 1,400$ psi (Class X Concrete)
 $f'_s = 270,000$ psi (Prestressed Strands)
 $f_{si} = 187,000$ psi (Prestressed Strands)
 $f_s = 20,000$ psi (Reinf Bars -- Field Units)
 $f_y = 60,000$ psi (Reinf Bars -- Precast Units)
 $n = 9$ (Class X Concrete)
LOADING HS20-44
DESIGN SPECIFICATIONS: AASHTO 1977 & 1978, 1979, 1980 Interims
25 lb/Sq Ft included in dead load for future wearing surface.



PLAN

GENERAL NOTES

Class X Concrete shall be used in the abutments

WATERWAY DATA

Drainage Area	2.25	Sq Mi
Design Discharge (15 yr)	520	CFS
Existing Opening (15 yr)	120	Sq Ft
Required Opening (15 yr)	160	Sq Ft
Proposed Opening (15 yr)	160	Sq Ft
Created Head (15 yr)	0.0	Ft
100 yr Discharge	800	CFS
100 yr Created Head	0.0	Ft

GENERAL PLAN & ELEVATION
SECTION 79-14545-05-BR
LUDLOW ROAD DISTRICT
CHAMPAIGN COUNTY
STATION 10+00

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED FS CHECKED RT

FILE NAME: C:\SP\WHKS & COLLABS\Spring - Projects\Champaign County\0766 Champaign Co. TR27 over Wildcat Slough\CADD\10.12\CADD Data\Bldg\ESN 010-4187.dgn



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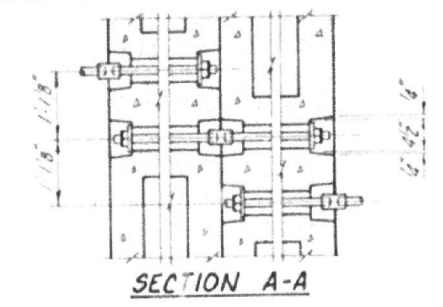
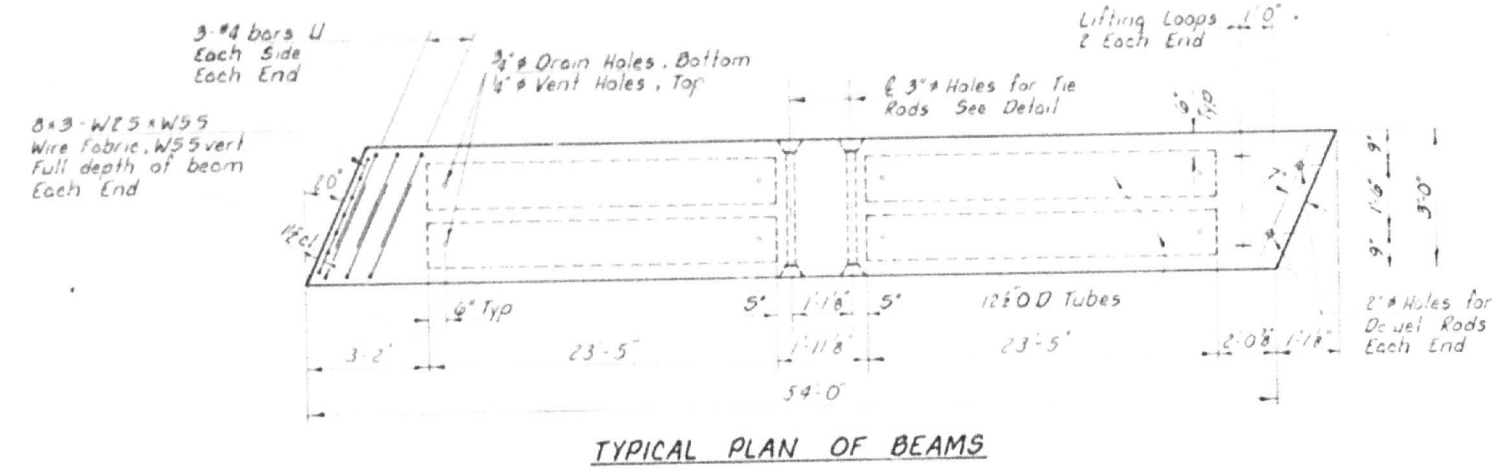
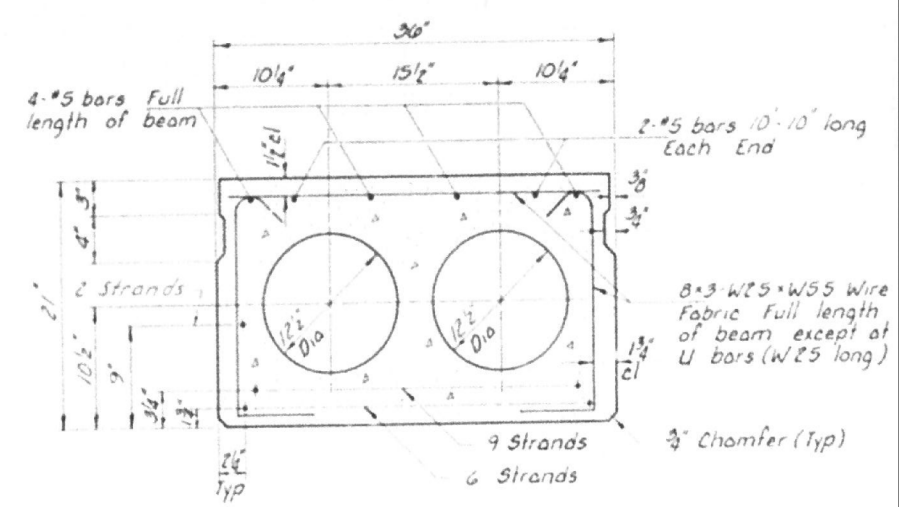
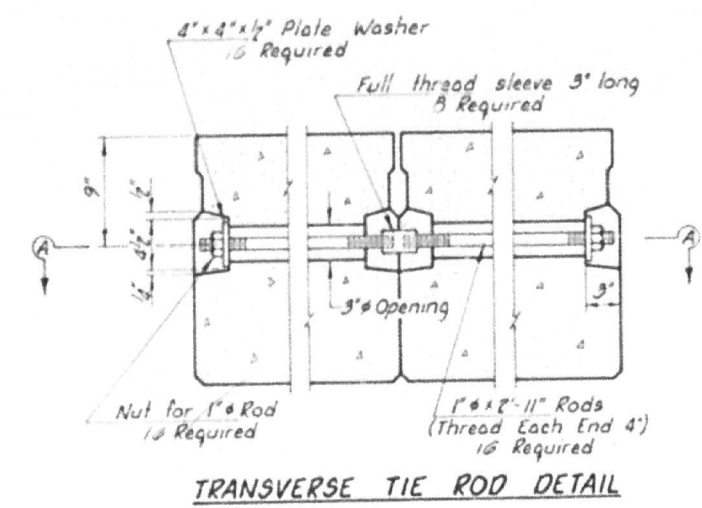
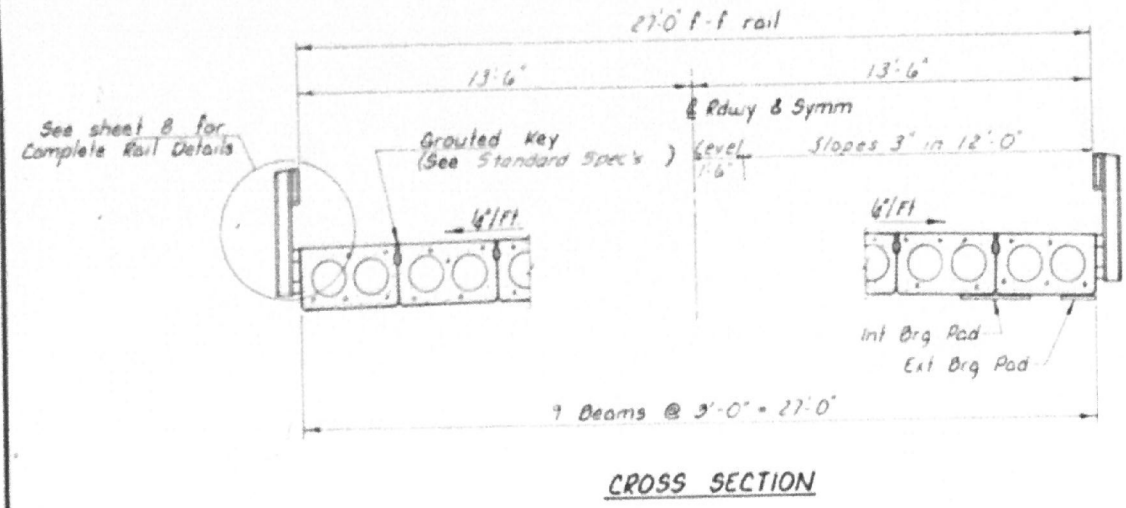
CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 010-4187

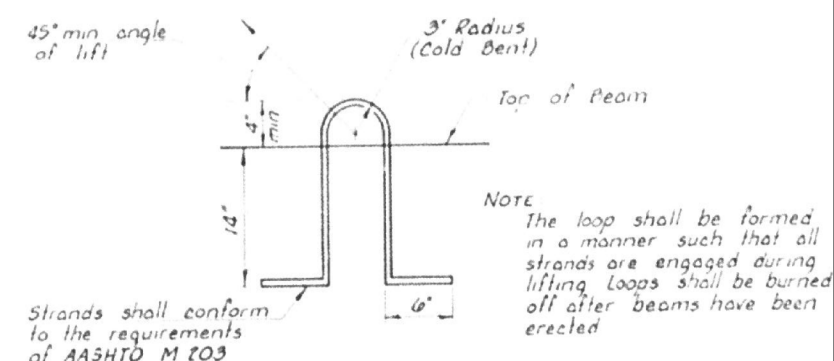
SHEET 8 OF 12 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	16
CONTRACT NO. 91646			ILLINOIS FED. AID PROJECT	

Note: Omit key on exterior face of outside beams

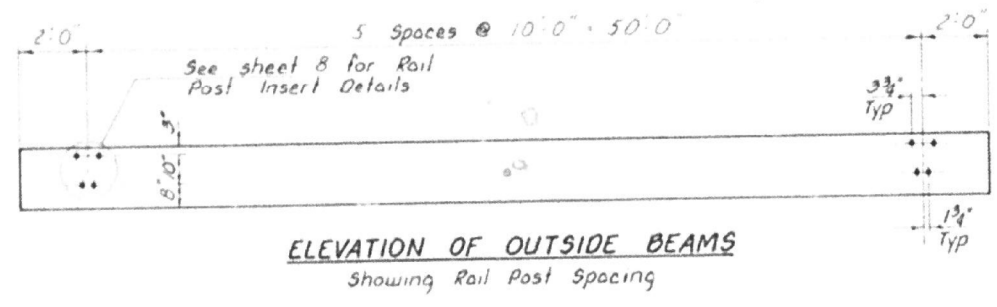


TYPICAL SECTION THRU BEAM
 17 - 1/2" Strands Stressed to 20,900 Lbs Each
 Place strands symmetrically about C of beam
 Use Standard Grid Pattern



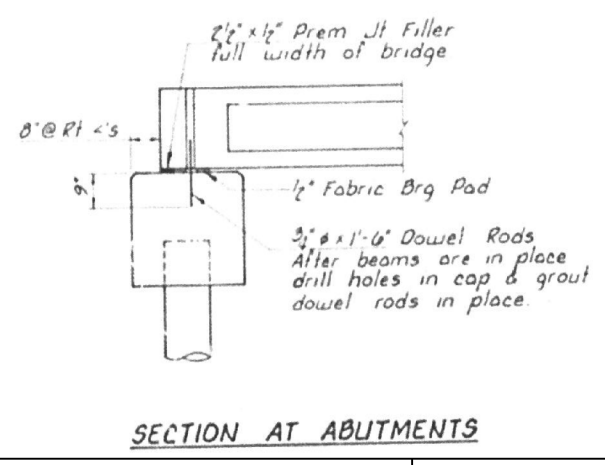
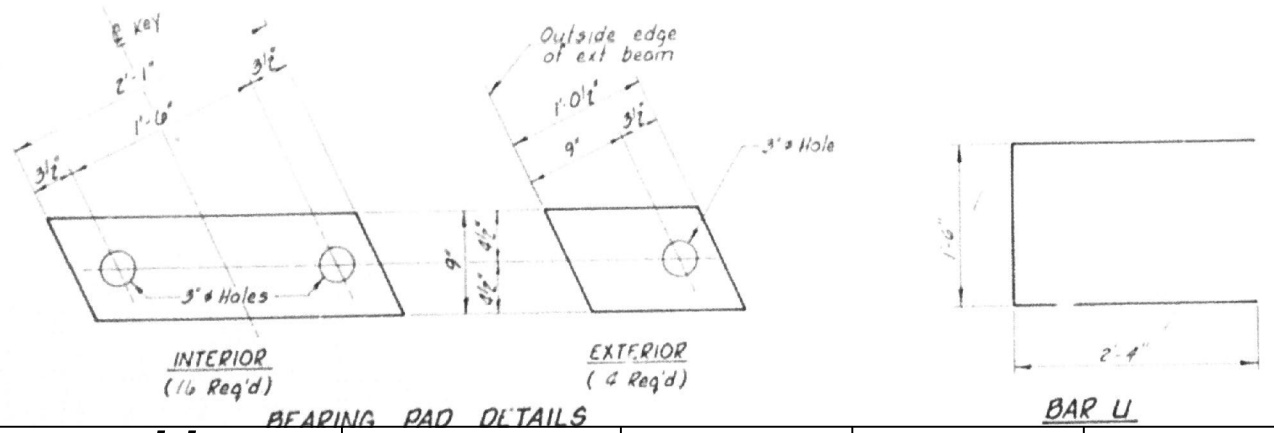
NOTES

1. Prestressing steel shall be non-galvanized high strength, stress-relieved T-wire strand, Grade 270.
 The nominal diameter shall be 1/2" and the nominal cross sectional area shall be 0.153 sq in.
 Lifting Loops shall be T-wire stress relieved, 2-1/2" - 270 ksi strands.
 The 1" rods in the transverse tie assembly shall be tightened to a snug fit & the threads set. Rods that receive tie rods on outside shall be filled with grout after ties are in place.
 Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60.
 The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/2" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq Ft	1,458



SUPERSTRUCTURE
 SECTION 79-14545-05-BR
 LUDLOW ROAD DISTRICT
 CHAMPAIGN COUNTY
 STATION 10+00

COLLINS AND RICE
 CONSULTING ENGINEERS

DESIGNED ES CHECKED RI
 DRAWN RI DATE 8-10-81 NO 1484

FILE NAME: C:\SP\WHKS & COL\Jobs-Spring - Projects\Champaign County\9766 Champaign Co. TR27 over Wlfricat, Slough\CAD\10-12\CADD Data\Bldg\CSN 010-4187.dgn
 design firm no. 184001036



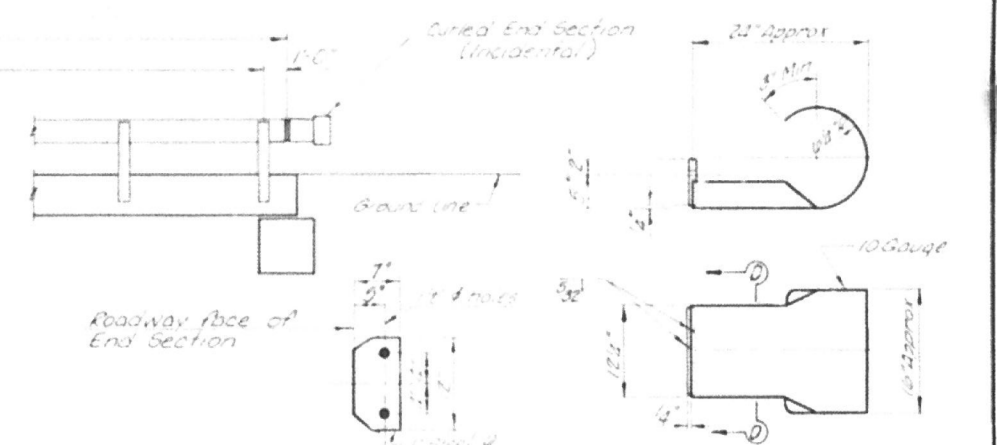
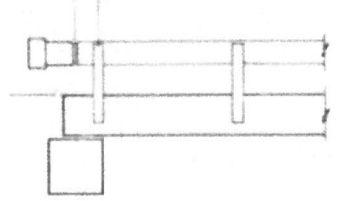
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CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

EXISTING PLANS (FOR INFORMATION ONLY)
 STRUCTURE NO. 010-4187

TR. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	17
CONTRACT NO. 91646			ILLINOIS FED. AID PROJECT	

52'-0" end to end of rail
5 Rail Post Spaces @ 10'-0" = 50'-0"



ELEVATION

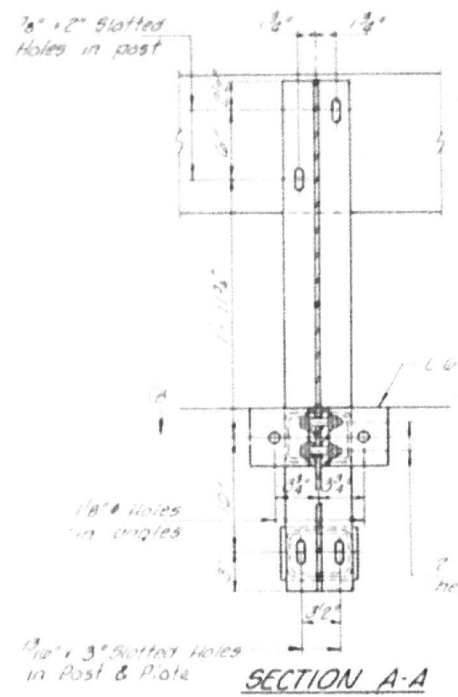
SECTION D-D

CURLED END SECTION DETAILS

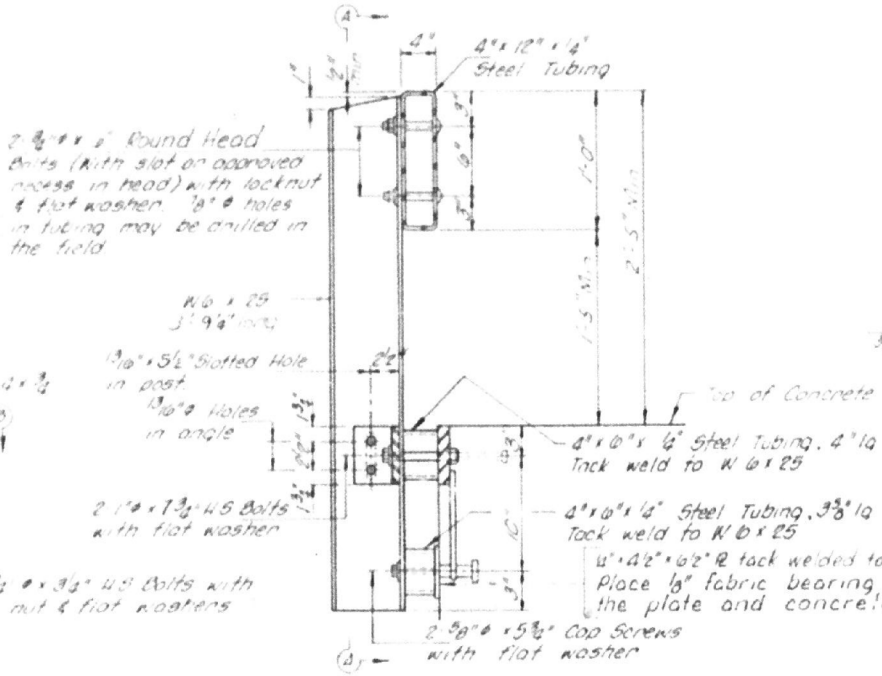
NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing. All other steel shapes and plates shall conform to the requirements of AASHTO designation M-183 except posts and angles shall conform to AASHTO M-223, Grade 50. Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO designation M-104. All bolts, nuts, cap screws, washers and lockwashers shall be galvanized in accordance with AASHTO designation M-232. All posts, railing, rail slices, anchor devices and angles shall be galvanized after shop fabrication in accordance with ASTM A-385 and AASHTO M-111. Galvanized rail shall not be painted. Railing shall be in accordance with Section 608 of the Standard Specifications, except as noted, and shall be painted on the contract unit price per linear foot for STEEL RAILING, TYPE S-1, ITEM S-1. All field drilled holes shall be coated with an approved zinc rich paint before erection.

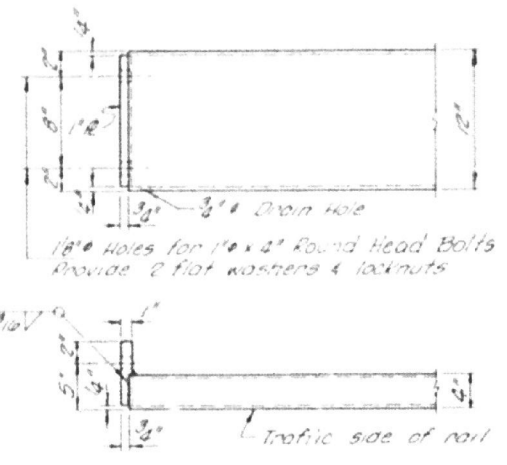
The 3/8" high strength bolts used to connect the 6" x 4" x 3/8" angles to the post shall be tightened in accordance with Art 507.01(q)(3) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 1/2" x 3/4" bolts in bottom of posts shall be tightened to a snug fit only, after the 3/8" high strength bolts have been tightened in accordance with Article 507.01(q)(3).



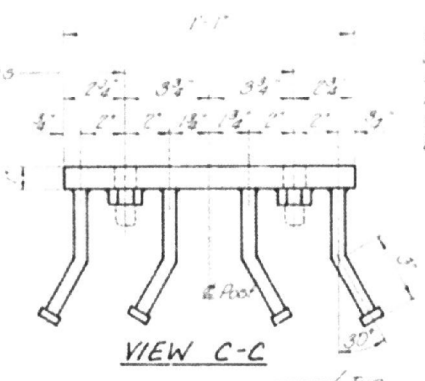
SECTION A-A



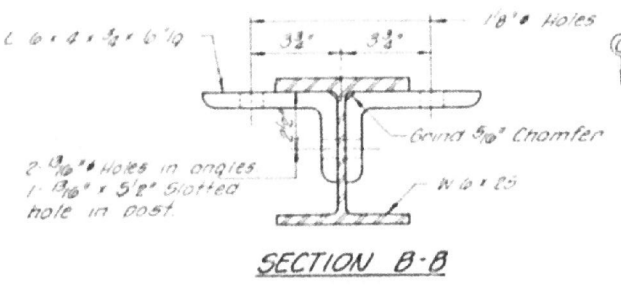
SECTION AT RAIL POST



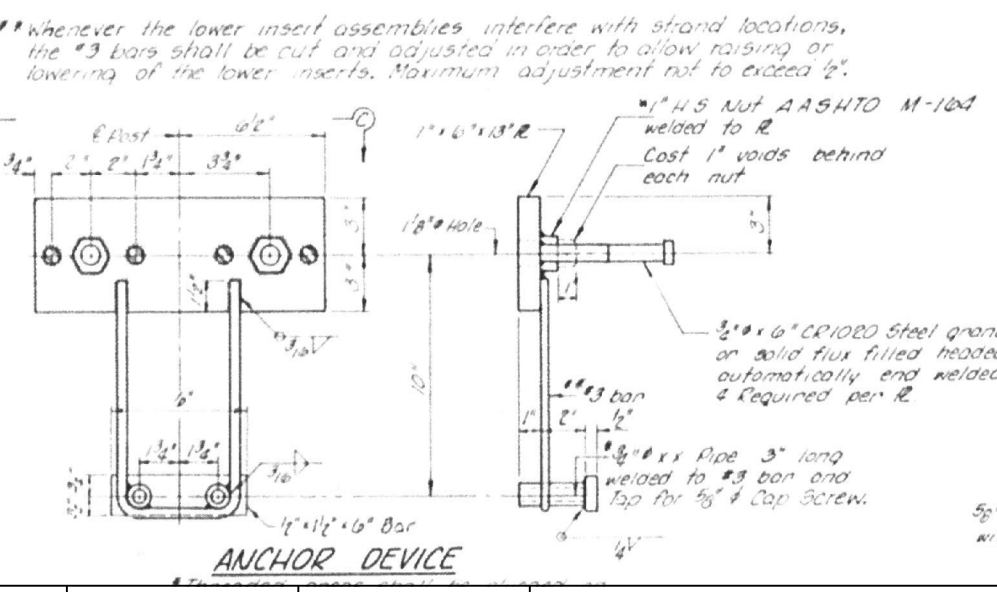
END OF RAIL DETAILS



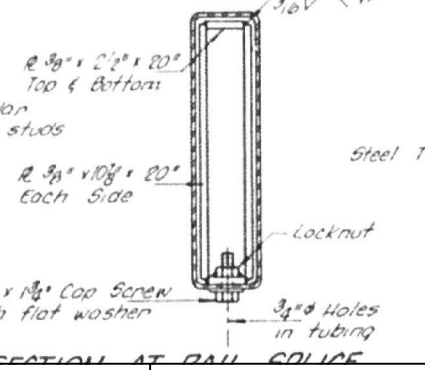
VIEW C-C



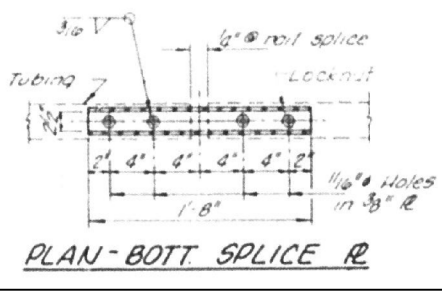
SECTION B-B



ANCHOR DEVICE



SECTION AT RAIL SLICE



PLAN-BOTT SPLICE R

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1 lin. Ft.		108

RAILING DETAILS
SECTION 19-14545-05-BR
LUDELOW ROAD DISTRICT
CHAMPAIGN COUNTY
STATION 10+00

COLLINS AND RICE
CONSULTING ENGINEERS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	18
				CONTRACT NO. 91646

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Design Firm
no. 184001036

engineers • planners • land surveyors

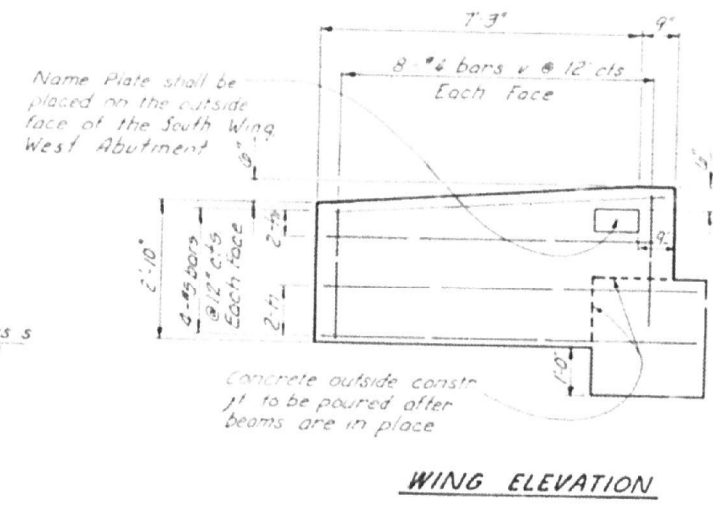
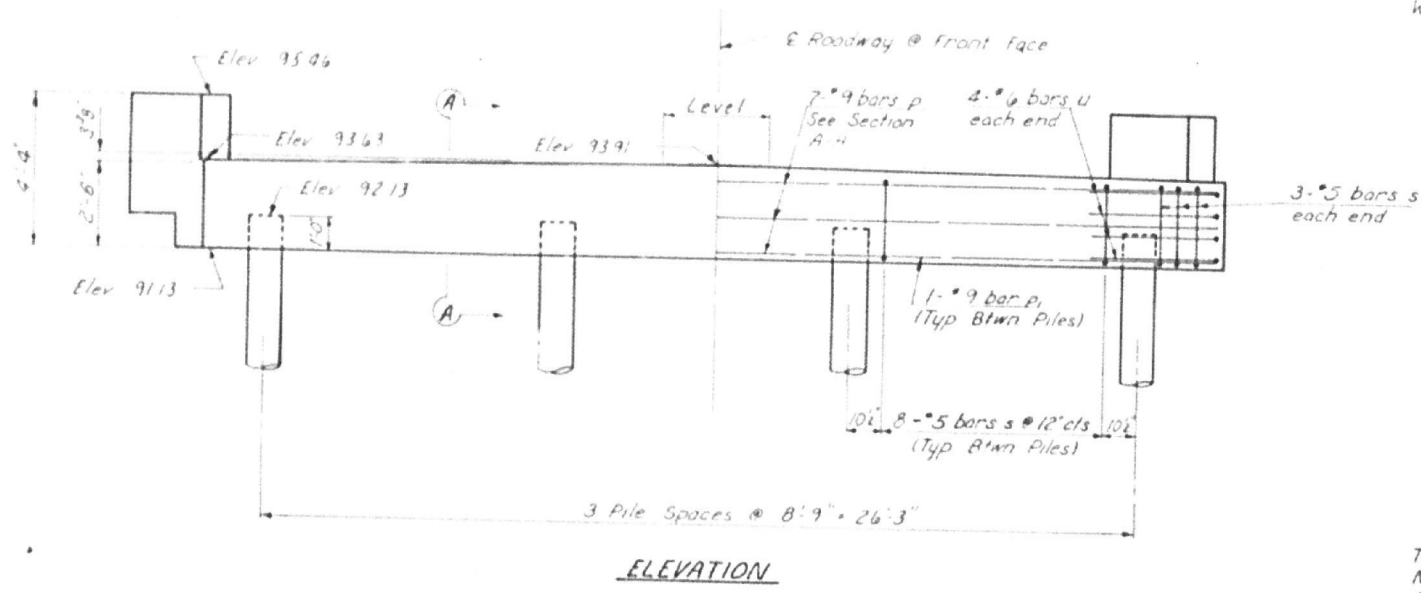
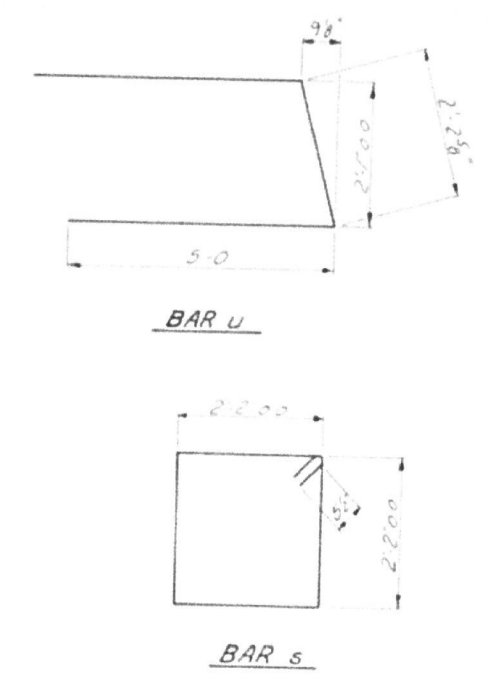
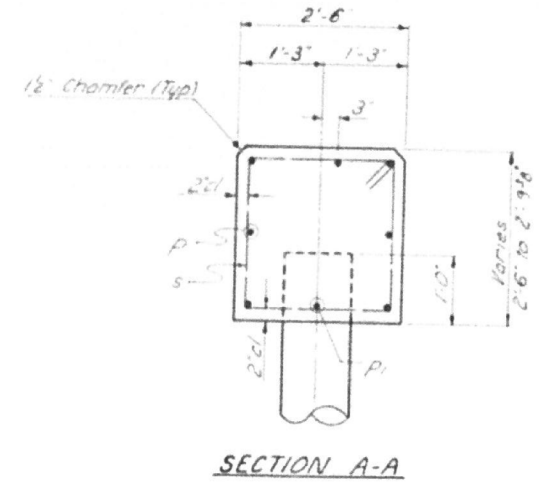
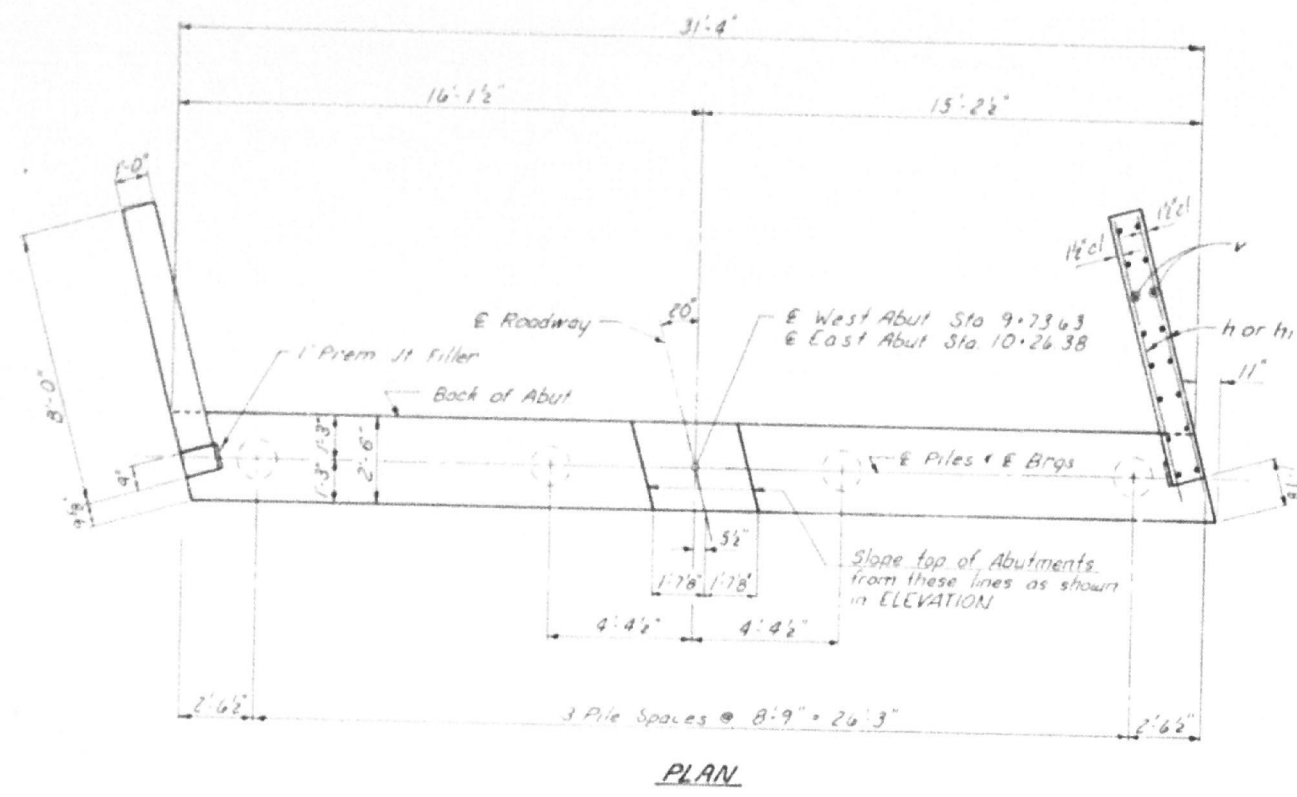
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CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 010-4187

SHEET 10 OF 12 SHEETS

ILLINOIS FED. AID PROJECT



PILE DATA
 Type ——— Concrete
 No. Req'd (2 Abuts) — 8
 Capacity ——— 39 Tons/Pile
 Est. Length ——— 35 Feet/Pile

BILL OF MATERIAL - 2 ABUTS.

BAR	NO	SIZE	LENGTH	SHAPE
P	14	#9	31'-0"	—
P1	6	#9	7'-4"	—
H	16	#5	8'-6"	—
H1	16	#5	7'-9"	—
V	64	#2	2'-8"	—
U	16	#6	12'-3"	—
S	60	#5	4'-7"	□
Class A Concrete		cu ft	186	
Reinforcement Bars		Pound	2,900	
Name Plates		each	1	
Concrete Piles		cu ft	280	

See sheet 10 for pile alternates

ABUTMENTS
 SECTION 79-14545-05-BR
 LUDLOW ROAD DISTRICT
 CHAMPAIGN COUNTY
 STATION 10+00
 COLLINS AND RICE
 CONSULTING ENGINEERS

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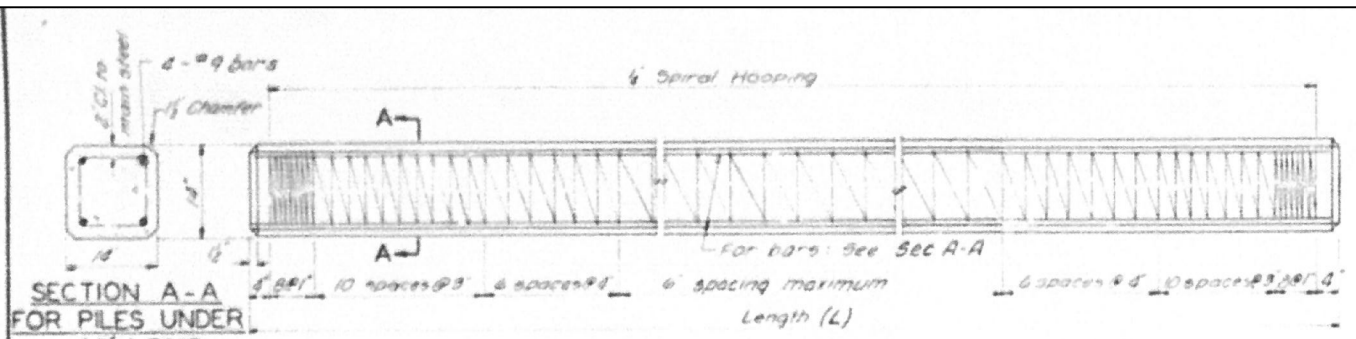
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CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

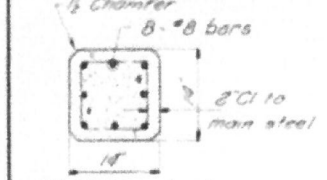
EXISTING PLANS (FOR INFORMATION ONLY)
 STRUCTURE NO. 010-4187

SHEET 11 OF 12 SHEETS

TR. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	23-14134-00-BR	CHAMPAIGN	20	19
CONTRACT NO. 91646				
ILLINOIS FED. AID PROJECT				



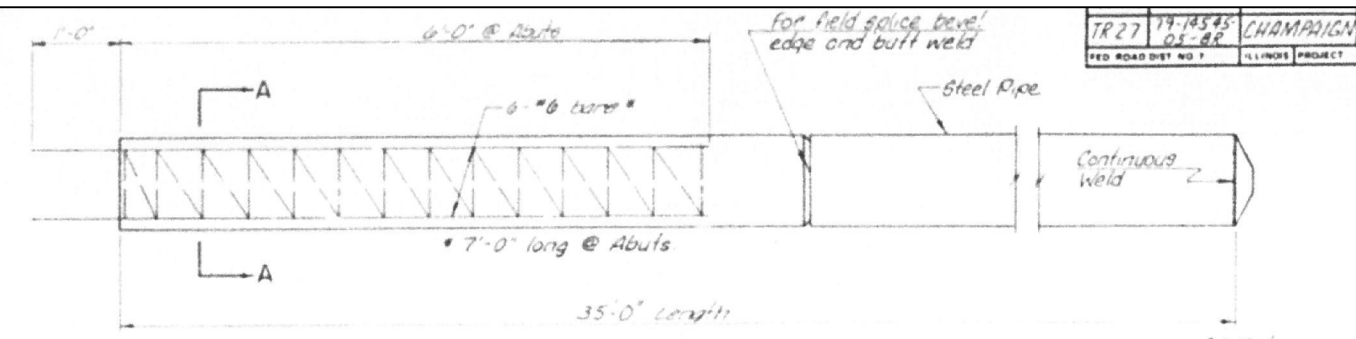
SECTION A-A FOR PILES UNDER 45' LONG



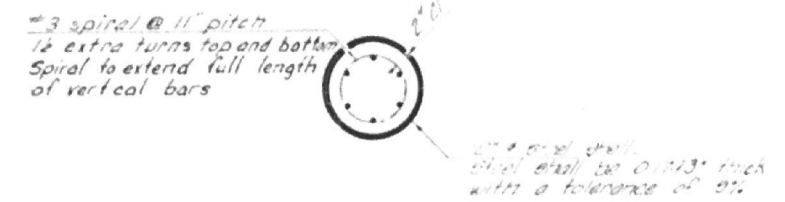
SECTION A-A FOR PILES 45' OR MORE

Handling
 For Pile Lengths up to 35 ft use two slings placed at a distance of 0.21L from each end. For piles longer than 35 ft use three slings placed at a distance of 0.12L from each end and at mid-point of pile.
 *L: Over all length of pile to be handled

DETAIL OF PRECAST CONCRETE PILES

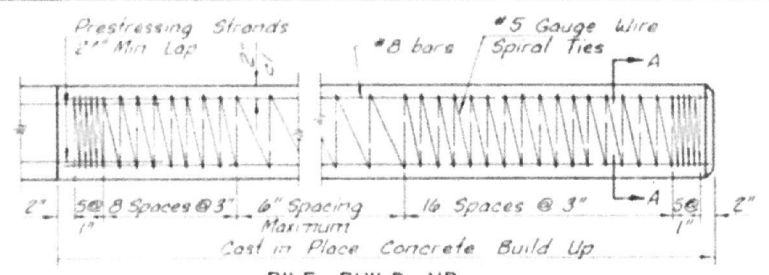


OPTIONAL FLAT END

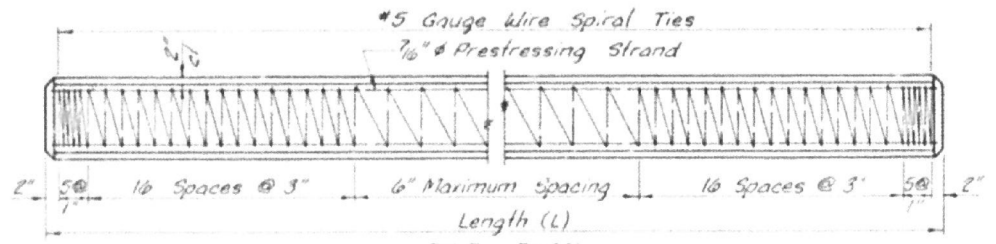


SECTION A-A
 Note: Cost of reinforcement in piling is incidental to the cost of furnishing piles.

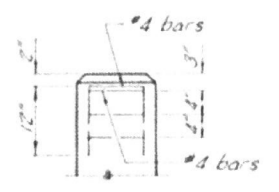
DETAIL OF CAST IN PLACE CONCRETE PILES



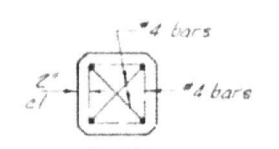
PILE BUILD UP



PILE PLAN



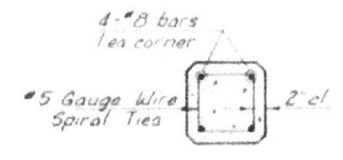
ELEVATION (End Reinforcement)



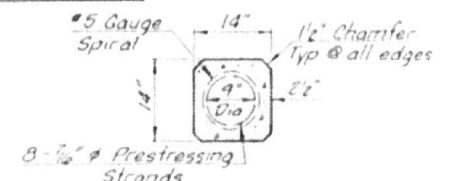
PLAN (End Reinforcement)

DESIGN STRESSES

f_c'	= 5,000 psi
f_{ci}	= 4,000 psi
f_s'	= 270,000 psi (31,000 lbs)
f_{si}	= 189,000 psi (21,700 lbs)
f_s'	= 270,000 psi (41,300 lbs)
f_{si}	= 189,000 psi (28,900 lbs)



SECTION A-A



SECTION THRU PILE

NOTES
 Prestressing steel shall be non-galvanized extra high strength, stress-relieved 7-wire strand. The nominal diameter shall be 7/16 inch and the minimum nominal cross-sectional area shall be 0.115 sq in or the equivalent 6-1/2 inch strands with a cross-sectional area of 0.153 sq in may be used.
 For Pile lengths up to 65', use two slings placed at a distance of 0.21L from each end. For Piles longer than 65', use three slings placed at a distance of 0.12L from each end and at midpoint of pile.
 *L: Overall Length of Pile to be handled

DETAIL OF PRECAST PRESTRESSED CONCRETE PILES

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PLOT DATE = 3/11/2024	CHECKED - JLM	REVISED -
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CHAMPAIGN COUNTY HIGHWAY DEPARTMENT

EXISTING PLANS (FOR INFORMATION ONLY)
 STRUCTURE NO. 010-4187

SHEET 12 OF 12 SHEETS

PILE DETAILS SECTION 79-14545-05-BR LUDLOW ROAD DISTRICT CHAMPAIGN COUNTY STATION 10+00			
COLLINS AND RICE CONSULTING ENGINEERS			
DESIGNED FS DATE 8-10-81	CHECKED RI DATE 8-10-81	TOTAL SHEETS 20	SHEET NO. 20
TR RTE. 27	SECTION 23-14134-00-BR	COUNTY CHAMPAIGN	CONTRACT NO. 91646
ILLINOIS FED. AID PROJECT			

LUDLOW 242