

03-06-2020 LETTING ITEM 177

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED STP BRIDGE PROGRAM

T.R. ROUTE 136A (1475E)
OVER SCATTERING FORK
SECTION 07-03122-01-BR
PROJECT T3SZ(142)
DOUGLAS COUNTY
BOWDRE TOWNSHIP
C-95-054-19

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	1
FEDERAL AID PROJECT		ILLINOIS	CONTRACT NO. 91584	

SEE SHEET 2 FOR
INDEX OF SHEETS AND
LIST OF ILLINOIS DOT HIGHWAY STANDARDS

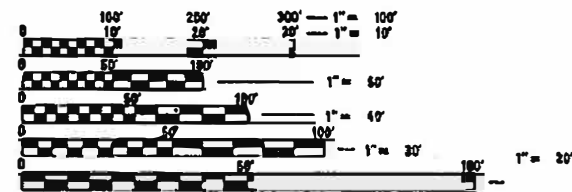
UTILITY CONTACTS:

UTILITY TYPE:

WATER
EMBARRASS AREA WATER DISTRICT
ATTN: BRUCE LEE
(217) 348-3344 (OFFICE)
(217) 276-8510 (CELL)

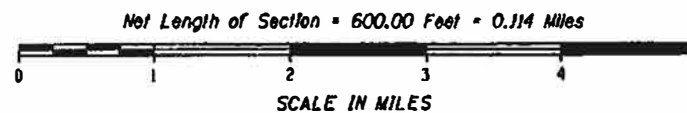
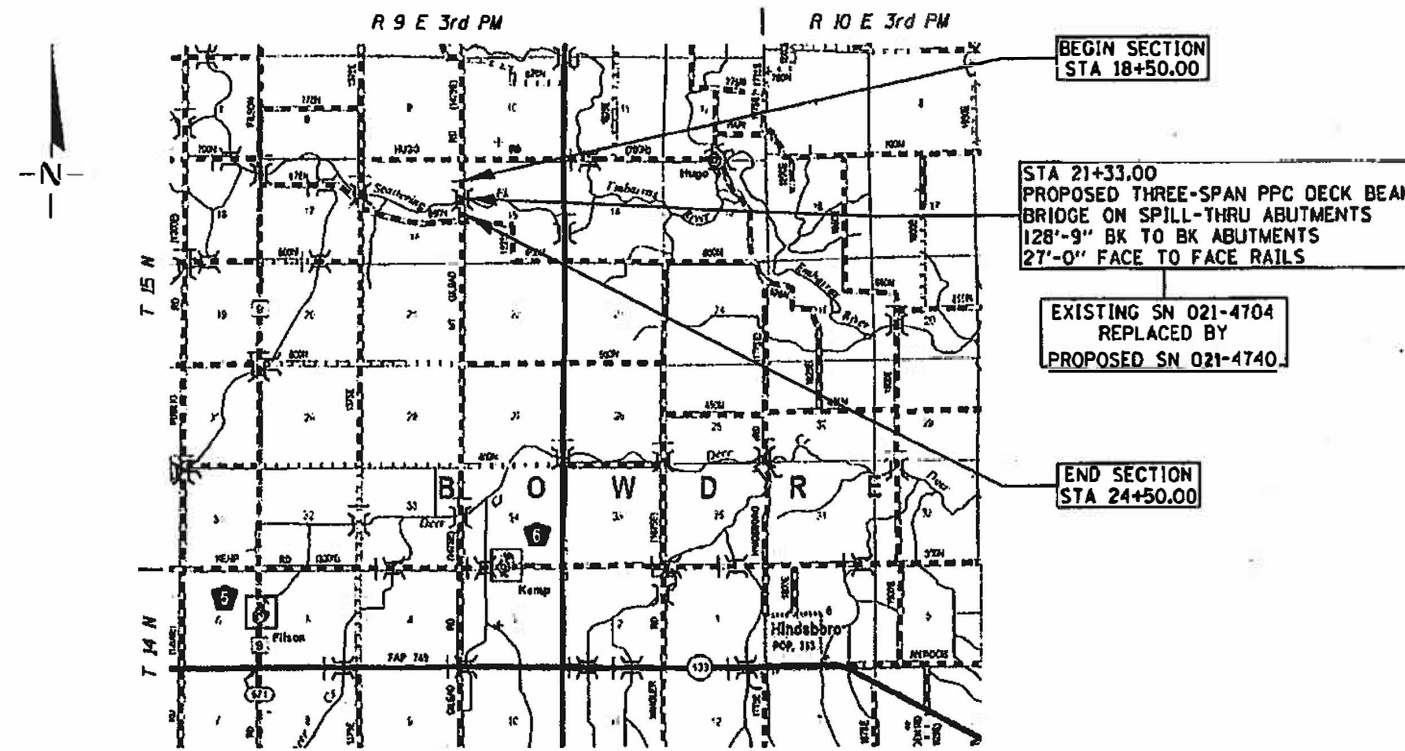
UTILITY TYPE:

ELECTRIC
EASTERN ILLINOIS ELECTRIC COOP.
ATTN: BRAD SMITH
(217) 379-2131 x173



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



FUNCTIONAL CLASSIFICATION : LOCAL ROAD
DESIGN SPEED 30 MPH
CURRENT ADT = <250 (2017)



Michael O. Cummins
ILLINOIS PROFESSIONAL NO. 43244
(Expires 11/30/19)



APPROVED Nov 1 2019
COUNTY ENGINEER

PASSED Nov 1 2019
ROAD DISTRICT COMMISSIONER

PASSED NOVEMBER 14 2019
DISTRICT FIVE ENGINEER OF LOCAL ROADS AND STREETS

RELEASED FOR BID BASED ON LIMITED REVIEW November 14 2019
REGION THREE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

SHEET NO.	TITLE
1	COVER SHEET
2	INDEX OF SHEETS, HIGHWAY STANDARDS, GENERAL NOTES, AND ENTRANCE DETAILS
3-4	SUMMARY OF QUANTITIES
5	TYPICAL SECTIONS
6	SCHEDULE OF QUANTITIES
7	ALIGNMENT, BENCHMARKS, AND CROSS TIES
8	PLAN AND PROFILE
9-19	BRIDGE PLANS
20-23	CROSS SECTIONS

- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE ANY SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.

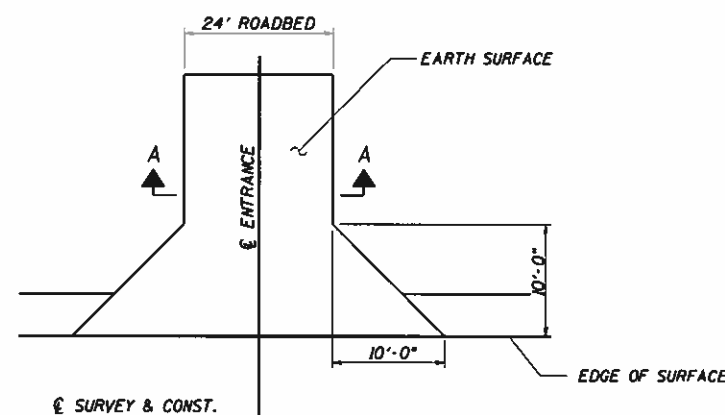
SEEDING CLASS 2 (SPECIAL) = 0.50 ACRES
- ALL ELEVATIONS SHOWN ON THE PLANS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- THE LOCATION OF THOSE BURIED AND ABOVE GROUND UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.26 OF THE STANDARD SPECIFICATIONS. THE J.U.L.I.E NUMBER IS 1 (800) 892-0123. A MINIMUM 48 HOURS ADVANCE NOTICE IS REQUIRED. SEE SPECIAL PROVISIONS FOR STATUS OF UTILITIES WITH UTILITY COMPANIES LISTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO ANY UTILITY LINES AND EXISTING IMPROVEMENTS TO REMAIN THAT ARE DAMAGED AS A RESULT OF THE WORK.
- BEFORE ORDERING PIPE CULVERTS, THE CONTRACTOR SHALL CONSULT THE ENGINEER FOR THE EXACT PIPE LENGTHS.
- LAYOUT OF EROSION CONTROL ITEMS MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

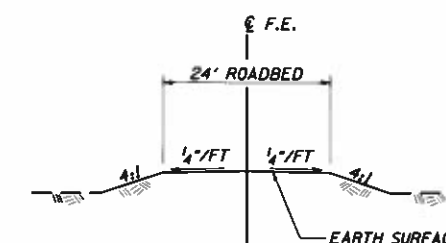
000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-04	NAME PLATE FOR BRIDGES
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 M) FROM PAVEMENT EDGE
701008-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701901-08	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

APPLICATION RATES USED IN QUANTITY CALCULATIONS

GRANULAR MATERIALS	2.05 TON/SCU YD
RIPRAP	1.5 TON/SCU YD
TEMPORARY EROSION CONTROL SEEDING	100 LB/ACRE



FIELD ENTRANCE DETAIL



SECTION A-A

ENTRANCES TO BE CONSTRUCTED
 LT STA 20+35.00 FE 24' ROADWAY
 RT STA 20+40.00 FE 24' ROADWAY
 LT STA 22+30.00 FE 24' ROADWAY
 RT STA 22+79.00 FE 24' ROADWAY

SUMMARY OF QUANTITIES				CONSTRUCTION CODE					
				80% FEDERAL 20% STATE					
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY					
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	94						
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	43						
20200100	EARTH EXCAVATION	CU YD	775						
20300100	CHANNEL EXCAVATION	CU YD	585						
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	150						
28000305	TEMPORARY DITCH CHECKS	FOOT	56						
28000400	PERIMETER EROSION BARRIER	FOOT	570						
28000500	INLET AND PIPE PROTECTION	EACH	1						
28100207	STONE RIPRAP, CLASS A4	TON	365						
28200200	FILTER FABRIC	SQ YD	410						
35101400	AGGREGATE BASE COURSE, TYPE B	TON	593						
50105220	PIPE CULVERT REMOVAL	FOOT	20						
50200100	STRUCTURE EXCAVATION	CU YD	75						
50200300	COFFERDAM EXCAVATION	CU YD	147						



JOB # 2252.1	DESIGNED - CCF	REVISED -
FILE NAME = 2252.1-SUM-530.dgn	DRAWN - CCF	REVISED -
PLOT SCALE = 20.0000 - 1/4"	CHECKED - NAK	REVISED -
PLOT DATE = 11-5-2019	DATE - 8/19/2019	REVISED -

**DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS**

SUMMARY OF QUANTITIES			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	17-03122-01-BR	DOUGLAS	23	3
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
		CONTRACT NO. 91584		

SUMMARY OF QUANTITIES				CONSTRUCTION CODE					
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	80% FEDERAL 20% STATE					
				ROADWAY					
50201121	COFFERDAM (TYPE 2) (LOCATION-1)	EACH	1						
50201122	COFFERDAM (TYPE 2) (LOCATION-2)	EACH	1						
50300225	CONCRETE STRUCTURES	CU YD	108.2						
50300265	SEAL COAT CONCRETE	CU YD	80.0						
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SO FT	3,429						
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	10,970						
△ 50900205	STEEL RAILING, TYPE S1	FOOT	255						
51201400	FURNISHING STEEL PILES HP 10X42	FOOT	860						
51202305	DRIVING PILES	FOOT	860						
51203400	TEST PILE STEEL HP 10X42	EACH	4						
51500100	NAME PLATES	EACH	1						
54200223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	30						
67100100	MOBILIZATION	L SUM	1						
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.50						
XX009289	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1						

△ SPECIALTY ITEMS



JOB # 2252.1
 FILE NAME = 2252.1-TR-136A.dgn
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 PLOT DATE = 11/14/2019

DESIGNED - CGF
 DRAWN - CGF
 CHECKED - NAK
 DATE - 8/19/2019

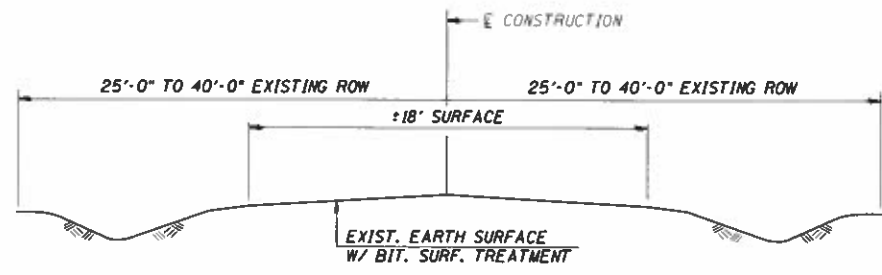
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**DOUGLAS COUNTY
 BOWDRE ROAD DISTRICT
 TR 136A IMPROVEMENTS**

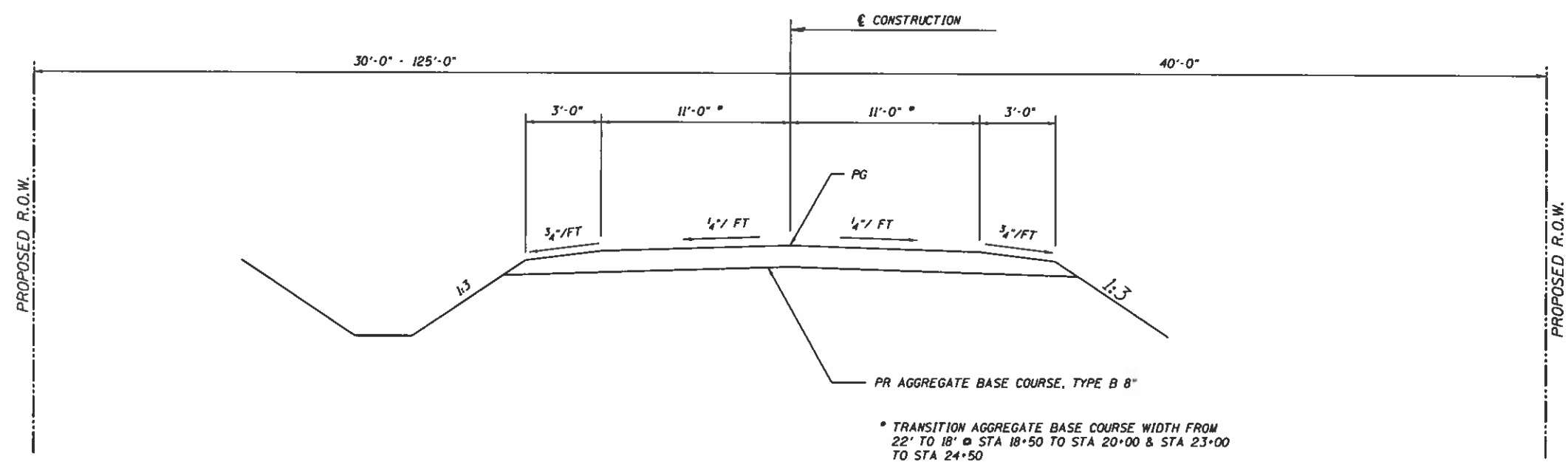
SUMMARY OF QUANTITIES

SCALE: SHEET NO. OF SHEETS STA. TO STA.

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	17-03122-01-BR	DOUGLAS	23	4
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 91584	



EXISTING TYPICAL CROSS SECTION



PROPOSED TYPICAL CROSS SECTION

STA 20+00 TO STA 23+00

BRIDGE OMISSION
STA 20+68.63 TO STA 21+97.38

MODEL: Default
FILE NAME: 2252.1 - typs.dgn

CEC Cummins
Engineering
Corporation
Civil and Structural Engineering

JOB = 2252.1
FILE NAME = 2252.1 - typs.dgn
PLOT SCALE = 8.0000 R / IN.
PLOT DATE = 11/5/2019

DESIGNED - NAK
DRAWN - CGF
CHECKED - NAK
DATE - 8/09/2019

REVISED -
REVISED -
REVISED -
REVISED -

**DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS**

TYPICAL SECTIONS

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR136A	07-3122-01-8R	DOUGLAS	23	5
CONTRACT NO. 91584				
ILLINOIS FED. AID PROJECT				

TREE REMOVAL

STA	OFFSET	20100110 (6 TO 15 UNITS DIAMETER)	20100210 (OVER 15 UNITS DIAMETER)
		UNIT	UNIT
RT 19+26.7	25.1		26
RT 19+48.1	25.5	14	
RT 19+48.1	25.5	14	
RT 19+90.9	27.6	12	
LT 20+68.5	30.7	8	
LT 20+68.5	30.7	8	
RT 22+97.5	23.0		17
RT 23+12.4	23.6	14	
RT 24+13.9	20.1	12	
RT 24+23.4	19.1	12	
TOTAL		94	43

28000400 PERIMETER EROSION BARRIER

LOCATION	FOOT
LT STA 8+50.00 TO STA 20+29.00	192
LT STA 21+97.00 TO STA 22+25.00	60
RT STA 8+50.00 TO STA 20+34.00	196
RT STA 20+44.00 TO STA 20+92.00	53
RT STA 21+97.00 TO STA 22+59.00	69
TOTAL	570

28000500 INLET AND PIPE PROTECTION

LOCATION	EACH
RT STA 22+79.00	1
TOTAL	1

EARTHWORK

LOCATION	20200100 EXCAVATION	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD
EARTH EXCAVATION				
STA 18+00.00 TO STA 20+68.63	90	70	120	-50
STA 21+97.38 TO STA 25+00.00	685	515	175	340
TOTAL	775	585	295	290

SHRINKAGE = 25%

35101400 AGGREGATE BASE COURSE, TYPE B

LOCATION	WIDTH FOOT	THICKNESS INCH	QUANTITY TON
STA 18+50.00 TO STA 20+00.00	18 - 28	8	175.39
STA 20+00.00 TO STA 20+68.63	28	8	97.96
STA 21+97.38 TO STA 23+00.00	28	8	146.48
STA 23+00.00 TO STA 24+50.00	28 - 18	8	173.11
TOTAL			592.94
USE			593

50105220 PIPE CULVERT REMOVAL

LOCATION	SIZE	FOOT
RT STA 22+79.00	18" CMP	20
TOTAL		20

542D0223 PIPE CULVERTS, CLASS D, TYPE 1 18"

LOCATION	FOOT
RT STA 22+79.00	30
TOTAL	30

28000250 TEMPORARY EROSION CONTROL SEEDING

LOCATION	POUND
LT STA 18+50.00 TO STA 21+00.00	10
LT STA 21+58.00 TO STA 24+50.00	15
RT STA 18+50.00 TO STA 21+00.00	8
RT STA 21+58.00 TO STA 24+50.00	9
TOTAL	42
USE (PER APPLICATION)	50
USE (3 APPLICATIONS)	150

28000305 TEMPORARY DITCH CHECKS

LOCATION	FOOT
LT STA 22+77.00	8
LT STA 23+00.00	8
RT STA 23+00.00	8
LT STA 23+50.00	8
RT STA 23+50.00	8
LT STA 24+00.00	8
RT STA 24+00.00	8
TOTAL	56

X2501000 SEEDING, CLASS 2 (SPECIAL)

LOCATION	ACRE
LT STA 18+50.00 TO STA 21+00.00	0.10
LT STA 21+58.00 TO STA 24+50.00	0.15
RT STA 18+50.00 TO STA 21+00.00	0.08
RT STA 21+58.00 TO STA 24+50.00	0.09
TOTAL	0.42
USE	0.50



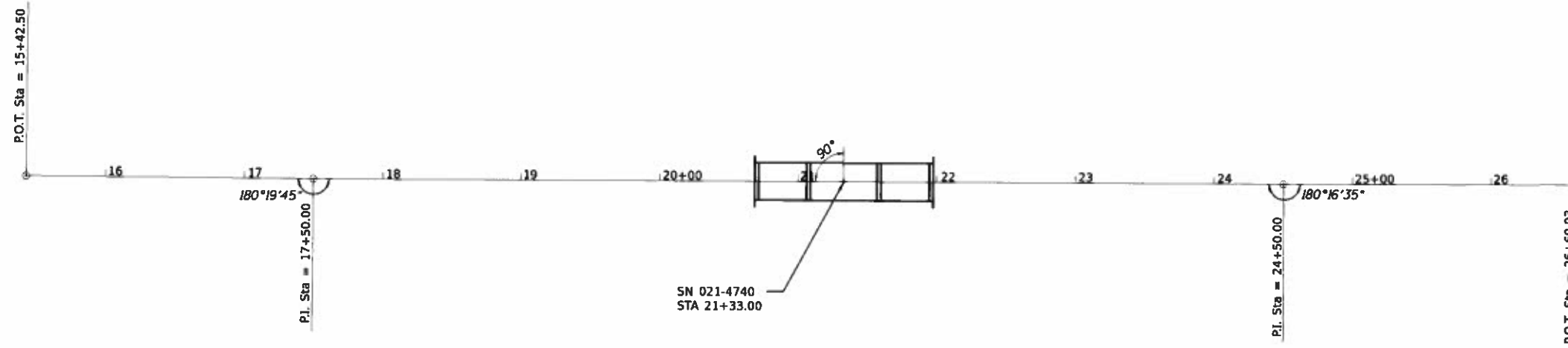
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PLOT SCALE : 2.0000 / IN.	CHECKED - NAK	REVISED -
PLOT DATE : 11/5/2019	DATE - 8/09/2019	REVISED -

**DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS**

SCHEDULE OF QUANTITIES

SCALE:	SHEET NO.	OF	SHEETS	STA.	TO STA.
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR136A	07-03122-00-BR	DOUGLAS	23	6
CONTRACT NO. 91584			FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT	



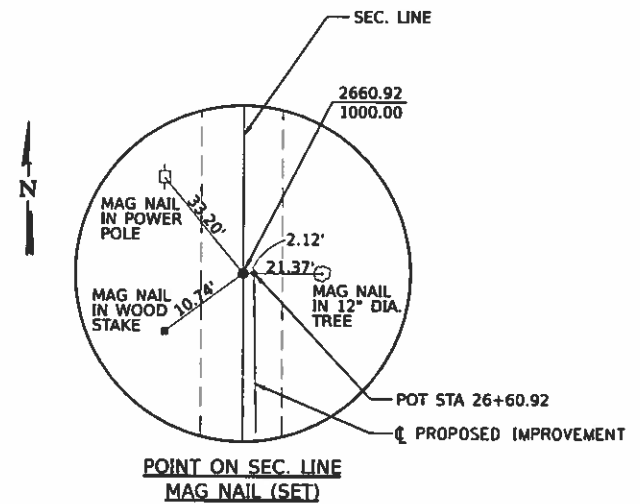
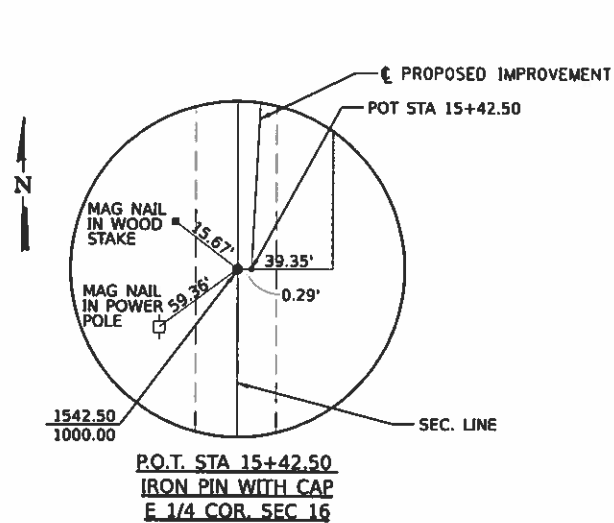
BM#1 - MAG SPIKE IN POWER POLE
 STA. 17+40, 22' LT
 ELEV. 630.33

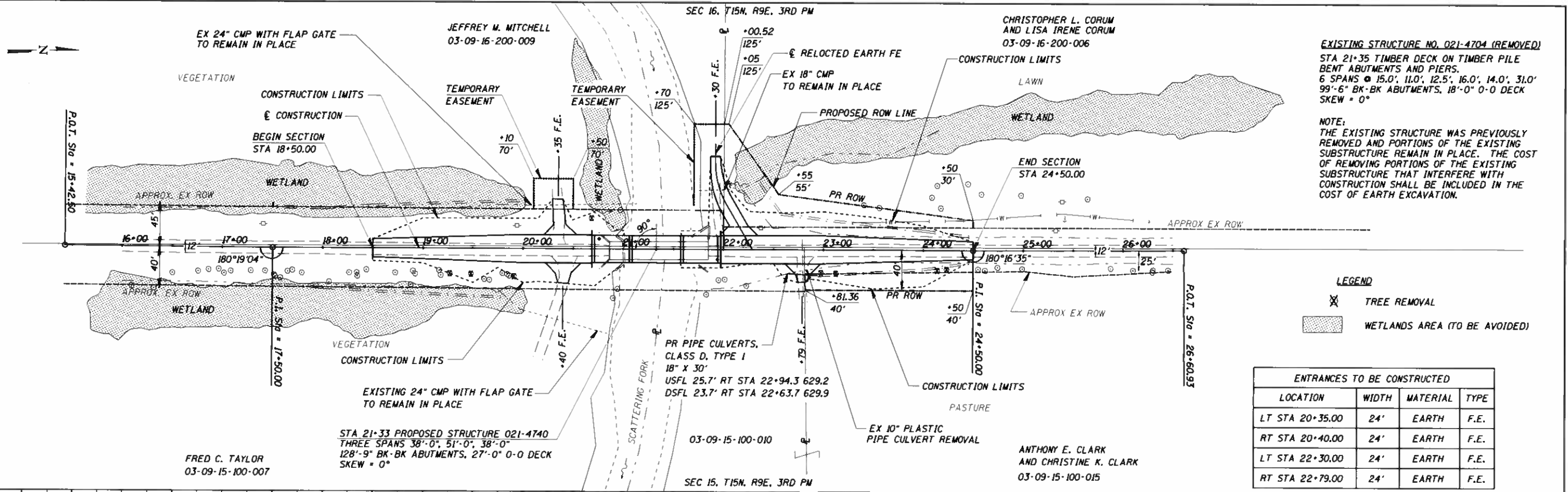
BM#2 - TOP OF RIVET, S.E. CORNER BRIDGE RAIL
 STA. 20+88, 126' RT
 ELEV. 633.49

BM#3 - MAG SPIKE IN POWER POLE
 STA. 25+33, 17' LT
 ELEV. 639.56

CENTERLINE CONSTRUCTION			
CONTROL POINT	STATION	COORDINATES	
		NORTHING	EASTING
P.O.T.	15+42.50	1542.500	1000.290
PI	17+50.00	1749.996	1001.785
PI	24+50.00	2449.995	1002.834
POT	26+60.93	2660.920	1002.133

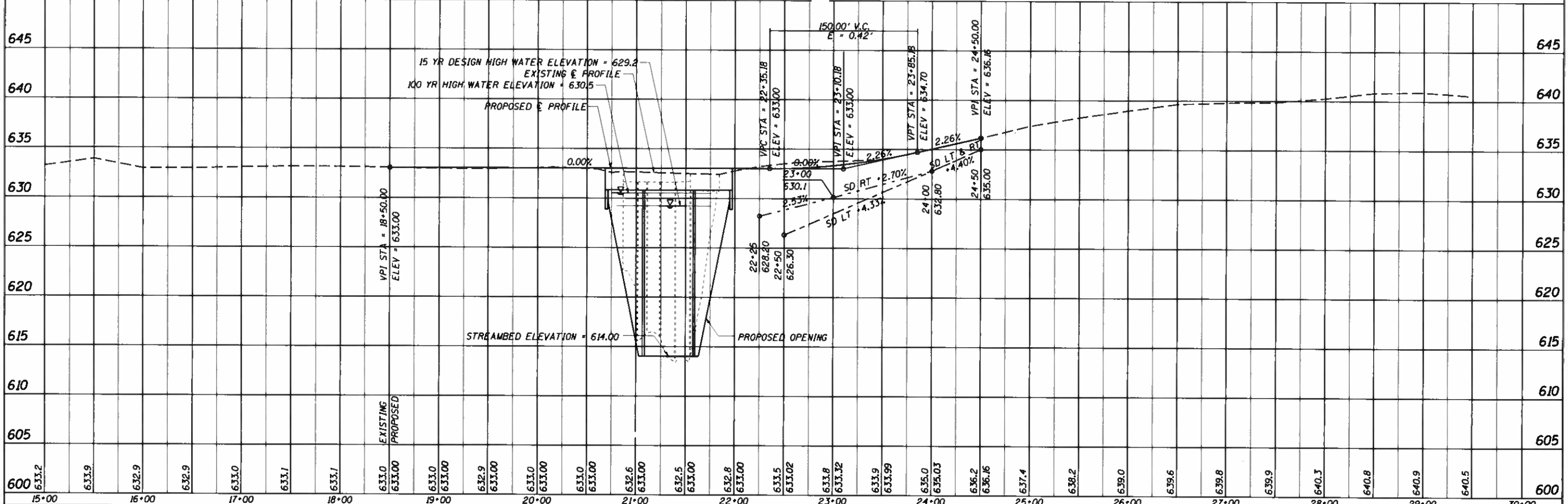
ASSUMED COORDINATES:
 E 1/4 CORNER, SEC. 16: N 1542.50, E 1000.00
 N.E. CORNER, SEC. 16: N 4171.97, 1000.00





ENTRANCES TO BE CONSTRUCTED

LOCATION	WIDTH	MATERIAL	TYPE
LT STA 20+35.00	24'	EARTH	F.E.
RT STA 20+40.00	24'	EARTH	F.E.
LT STA 22+30.00	24'	EARTH	F.E.
RT STA 22+79.00	24'	EARTH	F.E.



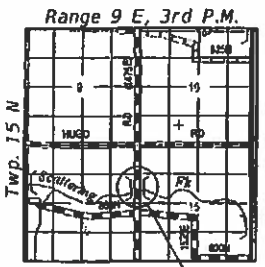
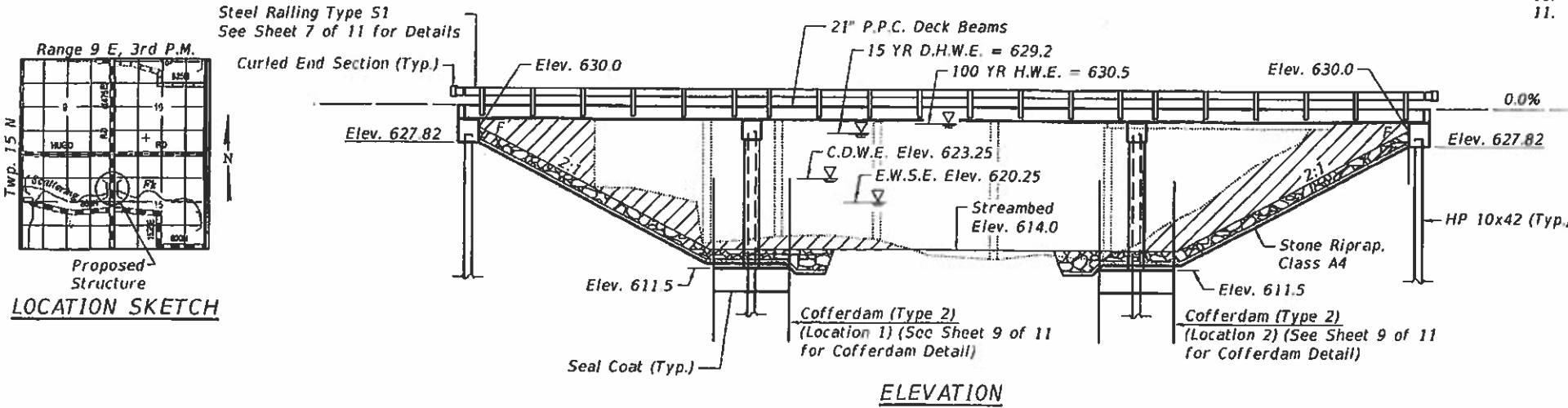
Benchmark: #1 Mag Spike in power pole. 22' Lt. Sta. 17+40 Elev. 630.33

Existing Structure: S.N. 021-4704, Sta 21+35 timber deck on timber pile bent abutments and piers. 6 spans @ 15.0', 11.0', 12.5', 16.0', 14.0', 31.0', 99'-6" Bk. to Bk. abutments, 18'-0" O. to O. deck, skew = 0°

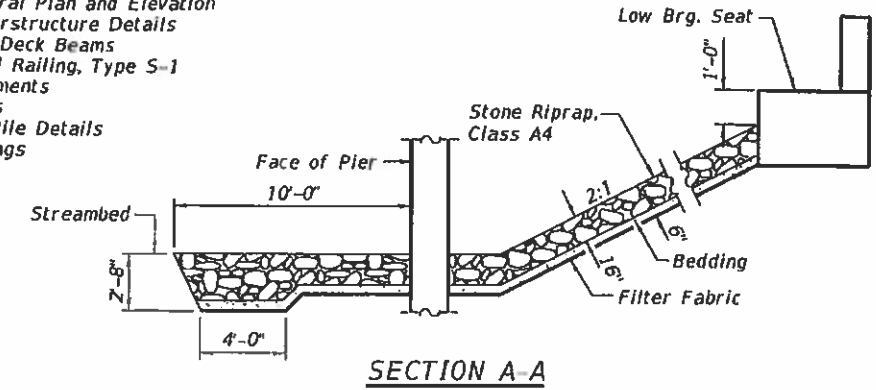
The existing structure was previously removed and portions of the existing substructure remain in place. The cost of removing portions of the existing substructure that interfere with construction shall be included in the cost of earth excavation.

INDEX OF SHEETS

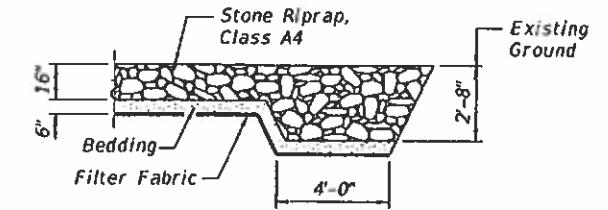
1. General Plan and Elevation
2. Superstructure Details
- 3-6. PPC Deck Beams
7. Steel Railing, Type S-1
8. Abutments
9. Piers
10. HP Pile Details
11. Borings



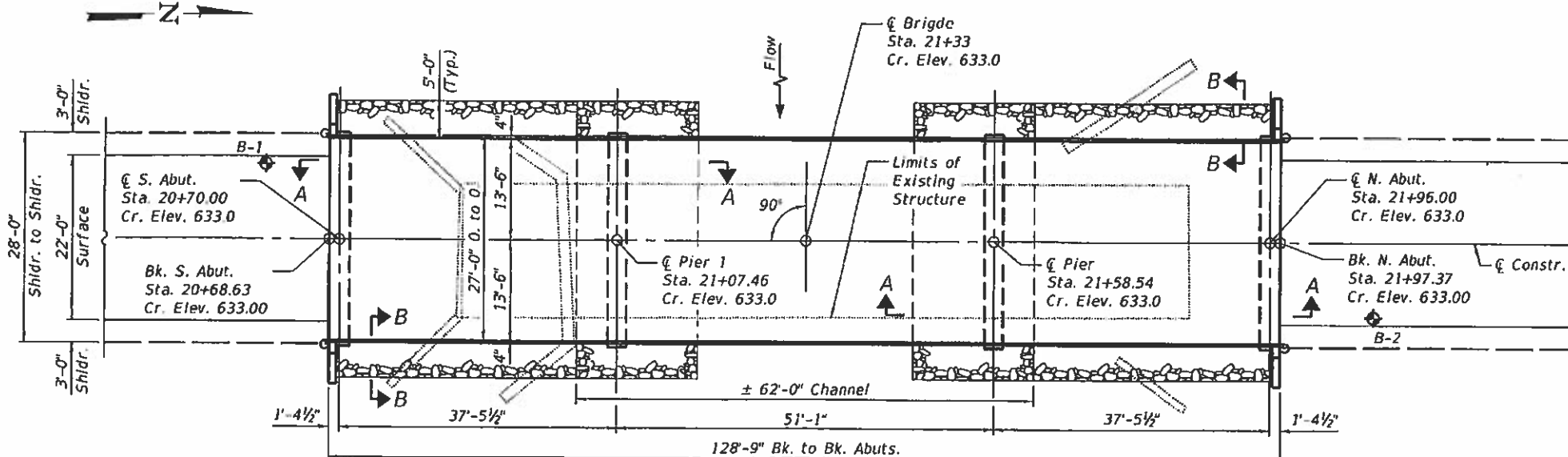
LOCATION SKETCH



SECTION A-A



**SECTION B-B
STONE RIPRAP DETAIL**



PLAN

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Abutments	Piers
	627.8	611.5

WATERWAY INFORMATION

Drainage Area	107 Sq. Mi.
Required Opening (15 Yr.)	1195 Sq. Ft.
Existing Opening (15 Yr.)	1015 Sq. Ft.
Approach Opening (15 Yr.)	0 Sq. Ft.
Proposed Opening (15 Yr.)	1195 Sq. Ft.
Required Opening (100 Yr.)	1351 Sq. Ft.
Existing Opening (100 Yr.)	1130 Sq. Ft.
Approach Opening (100 Yr.)	0 Sq. Ft.
Proposed Opening (100 Yr.)	1351 Sq. Ft.
Design Discharge (15 Yr.)	6074 C.F.S.
Created Head (15 Yr.)	0.1 Ft.
100 Year Discharge	9645 C.F.S.
100 Yr. Created Head	0.6 Ft.

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specification, 8th Edition

LOADING HL-93

Allow 50#/Sq. Ft. for Future Wearing Surface

DESIGN STRESSES

FIELD UNITS (New Construction)

$f'_c = 3,500$ psi (Substructure)
 $f_y = 60,000$ psi (Reinforcement)

PRECAST PRESTRESSES UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($1/2$ " \emptyset low lax. strands)
 $f_{pbt} = 201,960$ psi ($1/2$ " \emptyset low lax. strands)
 $f_y = 60,000$ psi (Reinforcement)

SCATTERING FORK
BUILT 20__ BY
BOWDRE ROAD DISTRICT
DOUGLAS COUNTY
SEC. 07-03122-01-BR
STATION 21+33
STR. NO. 021-4740 LOADING HL-93

NAME PLATE
See Std. 515001

"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 Bridge Design Specifications'."

Michael D. Cummins 11-5-19
ILLINOIS STRUCTURAL NO. 4822 (Expires 11/30/20)



GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		365	365
Filter Fabric	Sq. Yd.		410	410
Structure Excavation	Cu. Yd.		75	75
Cofferdam Excavation	Cu. Yd.		147	147
Cofferdam (Type 2) (Location - 1)	Each		1	1
Cofferdam (Type 2) (Location - 2)	Each		1	1
Concrete Structures	Cu. Yd.		108.2	108.2
Seal Coat Concrete	Cu. Yd.		80.0	80.0
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	3429		3429
Reinforcement Bars, Epoxy Coated	Pound		10970	10970
Steel Railing, Type S1	Foot	255		255
Furnishing Steel Piles, HP10x42	Foot		860	860
Driving Piles	Foot		860	860
Test Pile Steel HP10x42	Each		4	4
Name Plates	Each		1	1

GENERAL PLAN AND ELEVATION
TR 136A OVER
SCATTERING FORK
BOWDRE ROAD DISTRICT
SECTION 07-03122-01-BR
DOUGLAS COUNTY
STA 21+33
STRUCTURE NO. 021-4740

MODEL: Default
FILE NAME: 021-4740-01-GPE.dgn



JOB = 2262.1
FILE NAME = 021-4740-01-GPE.dgn
PLOT DATE = 11/5/2019

DESIGNED - AAN	REVISED -
CHECKED - JGY	REVISED -
DRAWN - SJS	REVISED -
CHECKED - MDC	REVISED -

**DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS**

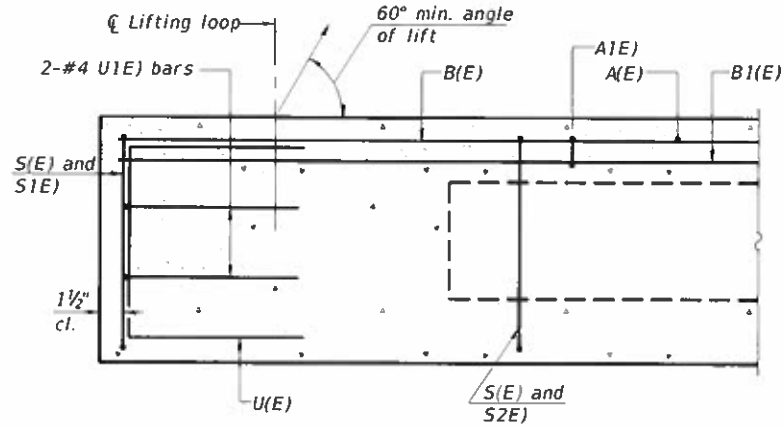
**GENERAL PLAN AND ELEVATION
STRUCTURE NO. 021-4740**

SHEET 1 OF 11 SHEETS

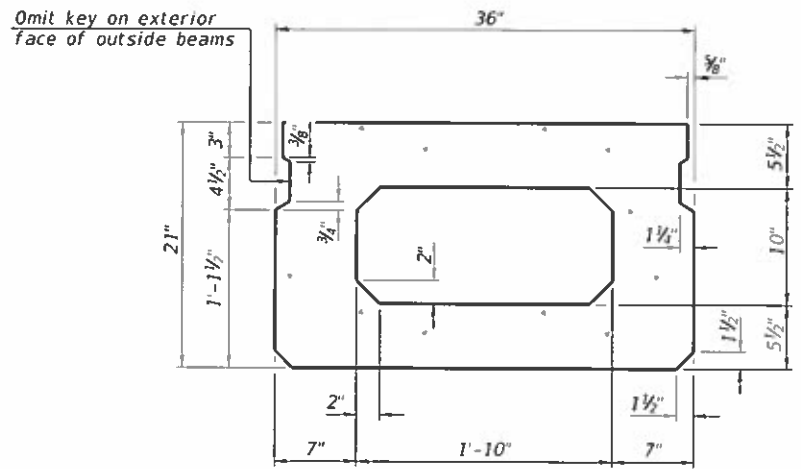
TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	9

CONTRACT NO. 91584

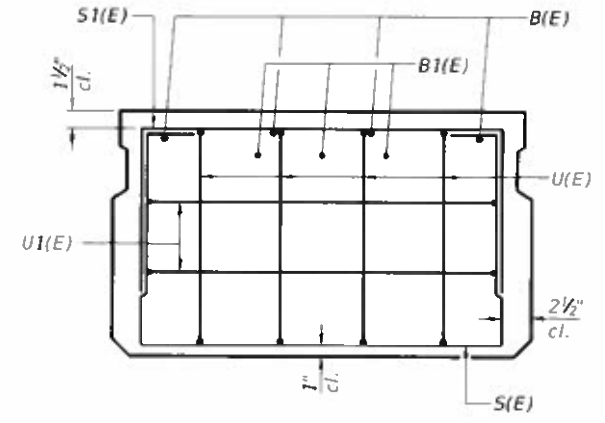
ILLINOIS FED. AID PROJECT



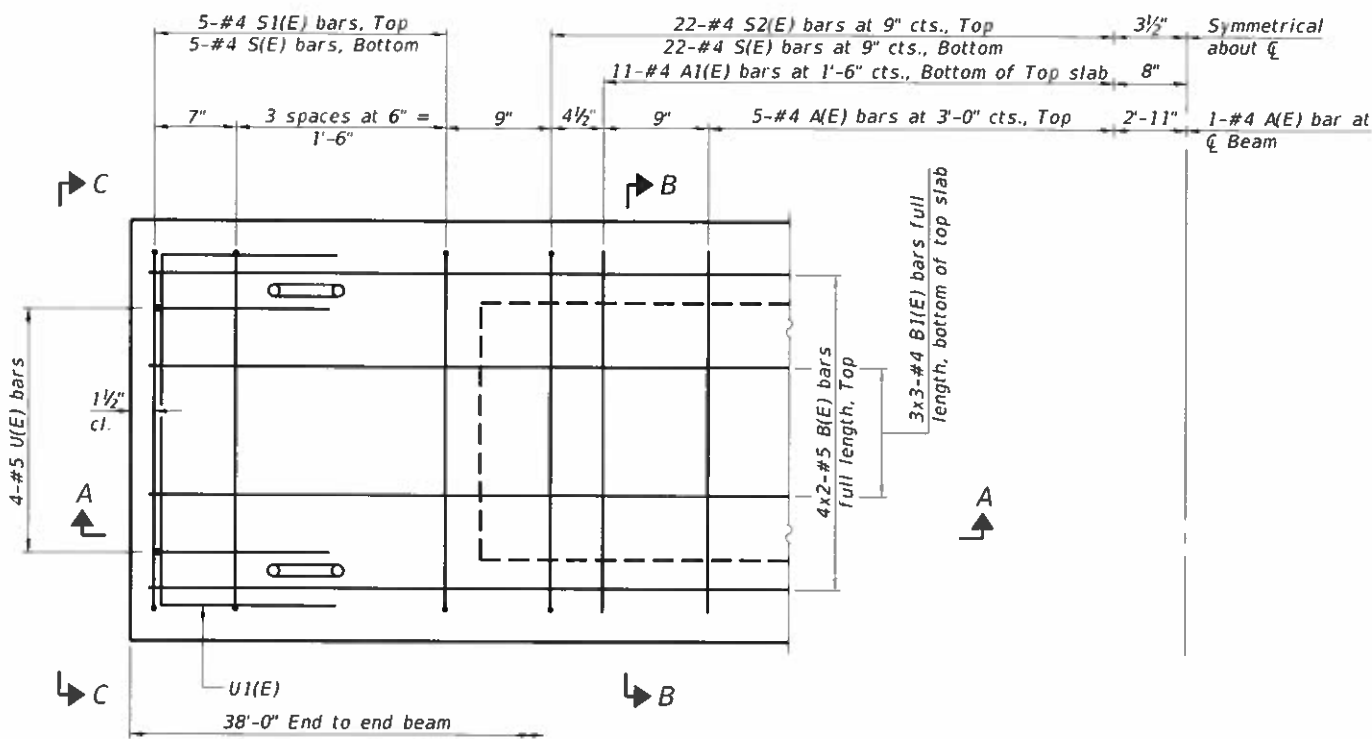
SECTION A-A



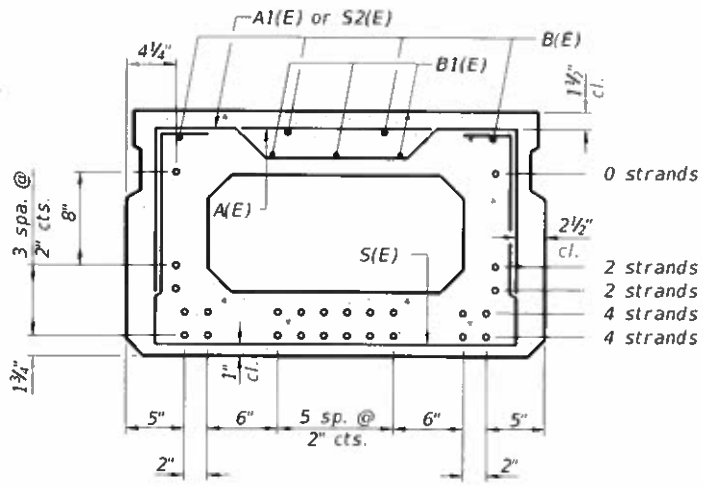
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



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

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	11	#4	2'-7"	—
A1(E)	22	#4	2'-10"	~
B(E)	8	#5	20'-2"	—
B1(E)	9	#4	13'-10"	—
S(E)	54	#4	6'-5"	U
S1(E)	10	#4	4'-11"	U
S2(E)	44	#4	5'-2"	U
U(E)	8	#5	4'-0"	C
U1(E)	4	#4	5'-0"	C

Note: See sheet 4 of 11 for additional details and Bill of Material.

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.

MINIMUM BAR LAP
#4 bar = 1'-11"
#5 bar = 2'-6"

MODEL: \$MODELNAME\$
FILE NAME: \$FILES\$

PD-2136-0

2-17-2017

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB # 2252.1
FILE NAME \$FILES\$
PLOT DATE \$DATE\$

DESIGNED - AAN
CHECKED - JGY
DRAWN - SJS
CHECKED - MDC

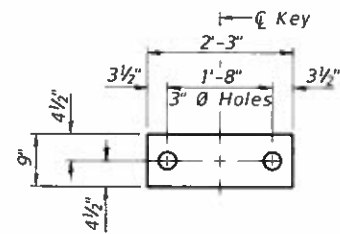
REVISED -
REVISED -
REVISED -
REVISED -

DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS

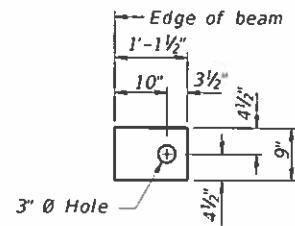
21" x 36" PPC DECK BEAM, SPANS 1 & 3
STRUCTURE NO. 021-4740

SHEET 3 OF 11 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	11
CONTRACT NO. 91584				
ILLINOIS FED. AID PROJECT				



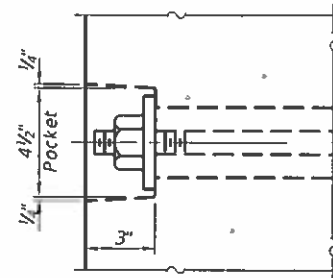
FABRIC BEARING PAD
(Interior-32 required)



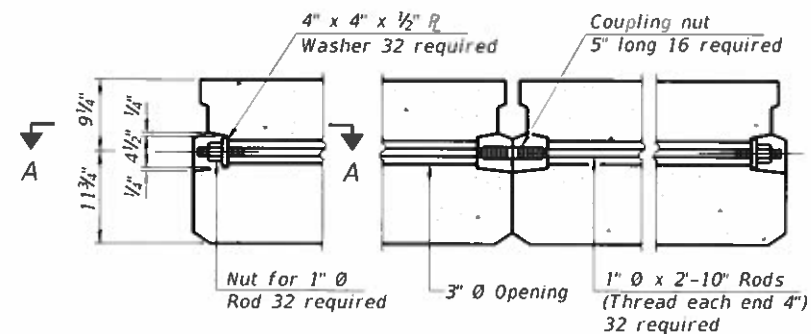
FABRIC BEARING PAD
(Exterior-8 required)

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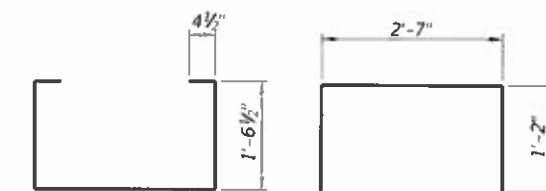
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A

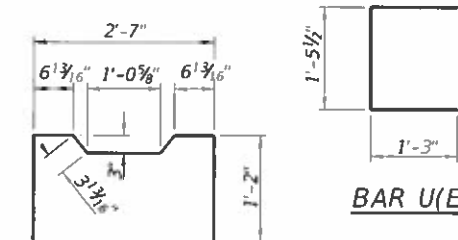


TYPICAL TRANSVERSE TIE ASSEMBLY



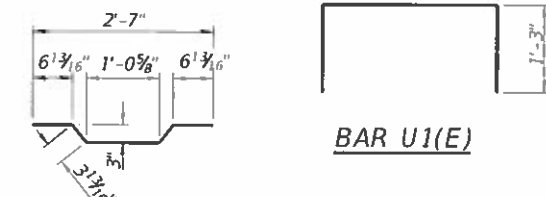
BAR S(E)

BAR S1(E)



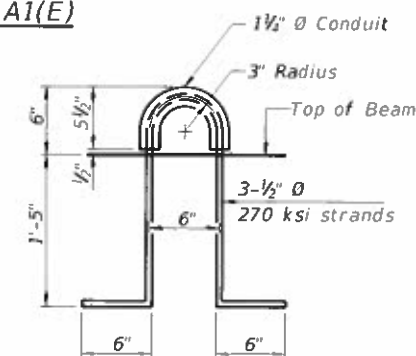
BAR U(E)

BAR S2(E)

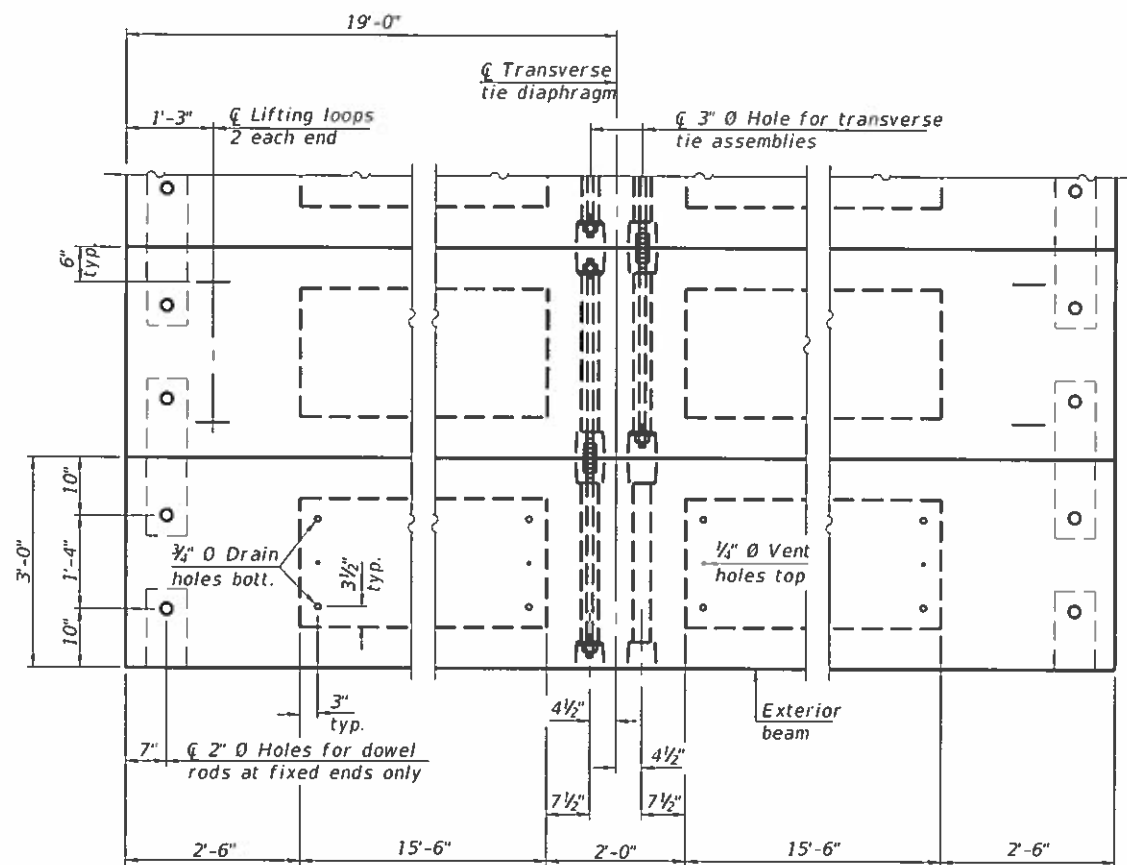


BAR U1(E)

BAR A1(E)



LIFTING LOOP DETAIL



PLAN VIEW

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

NOTES

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

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	2052
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MODEL: \$MODELNAME\$
FILE NAME: \$FILES\$

PD-2136-0D

2-17-2017

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB #	2252.1
FILE NAME	\$FILES\$
PLOT DATE	\$DATES\$

DESIGNED	- AAN
CHECKED	- JGY
DRAWN	- SJS
CHECKED	- MDC

REVISED	-
REVISED	-
REVISED	-
REVISED	-

**DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS**

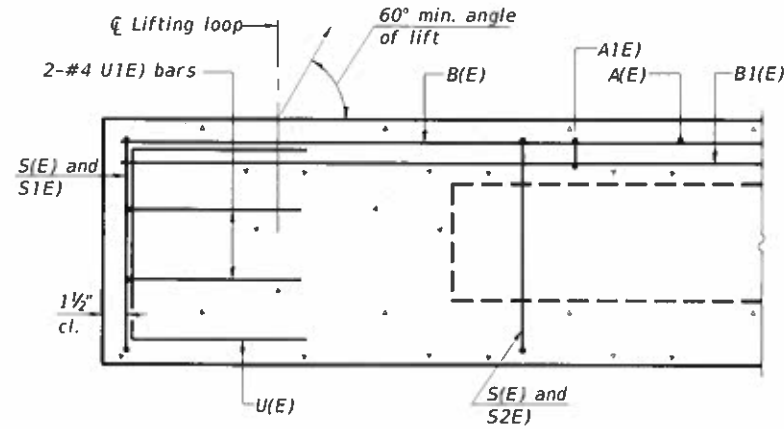
**21" x 36" PPC DECK BEAM DETAILS, SPANS 1 & 3
STRUCTURE NO. 021-4740**

SHEET 4 OF 11 SHEETS

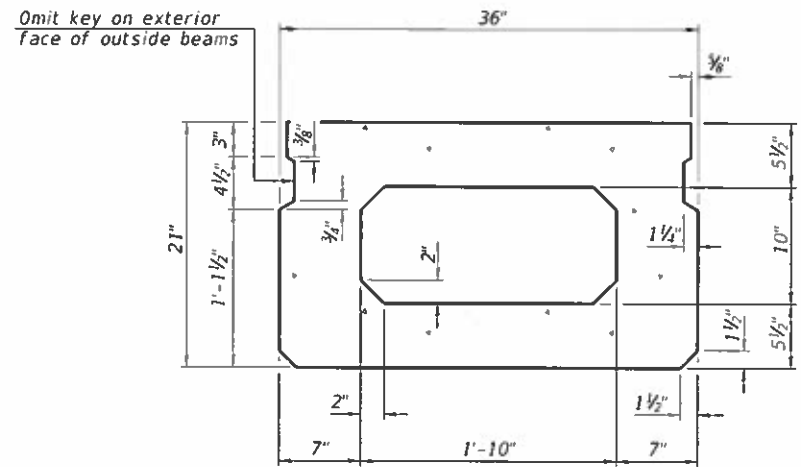
TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	12

CONTRACT NO. 91584

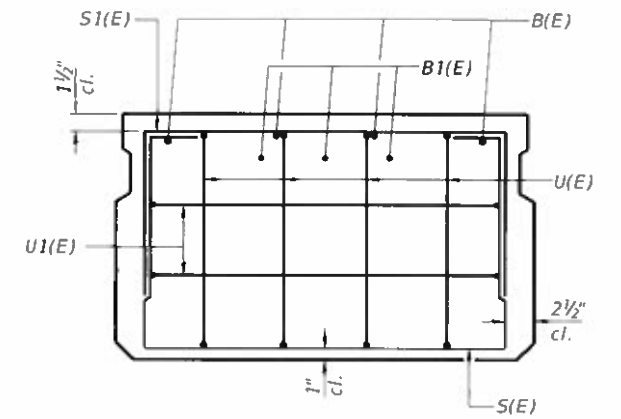
BLINSON | FED. AID PROJECT



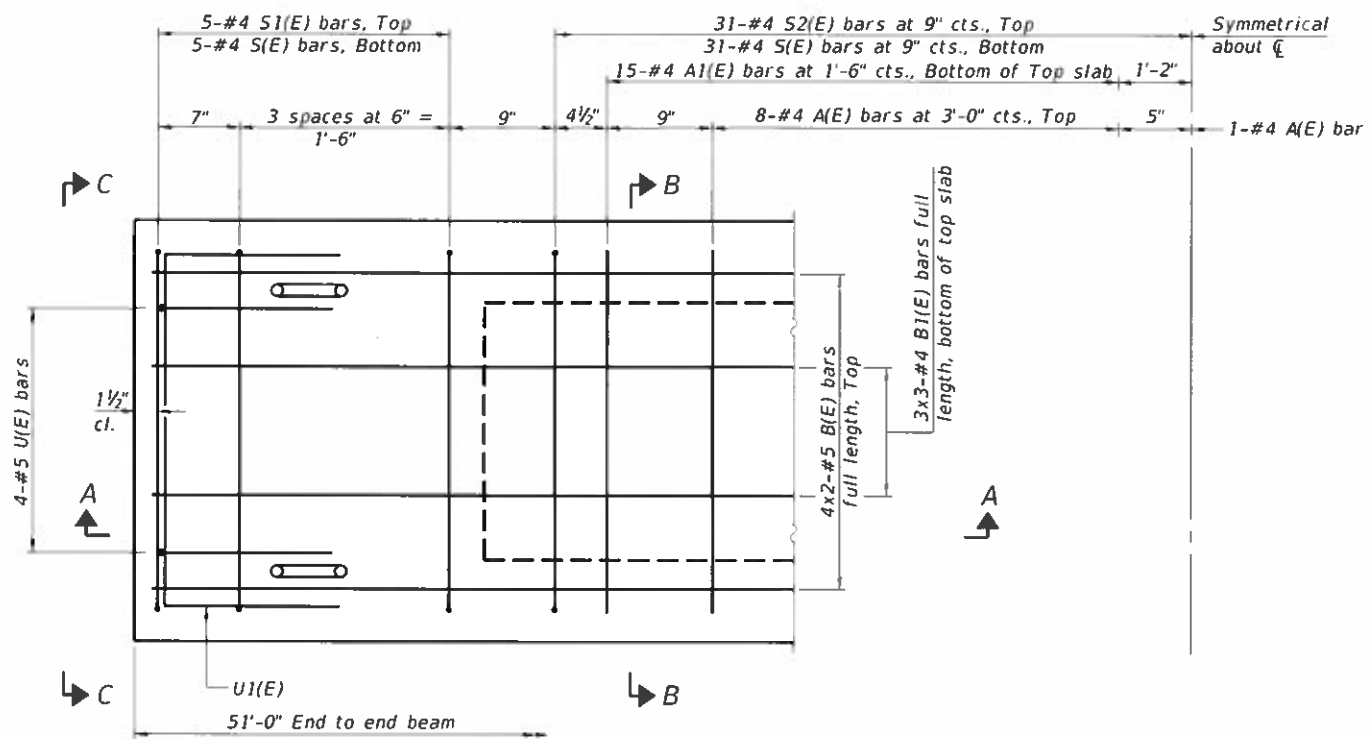
SECTION A-A



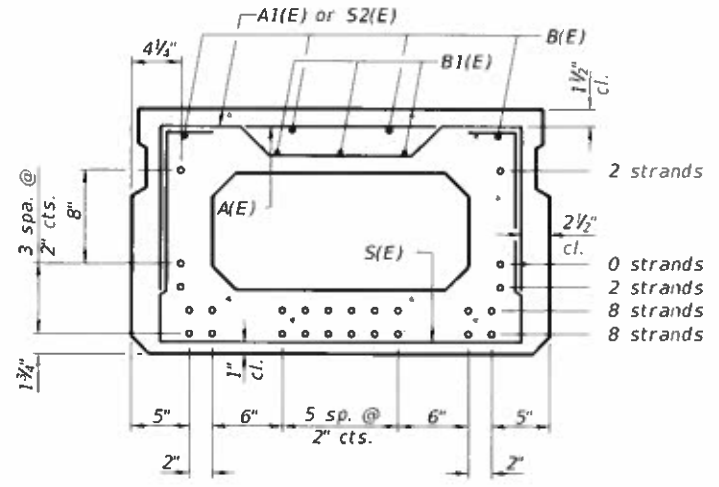
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



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

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	2'-7"	—
A1(E)	31	#4	2'-10"	—
B(E)	8	#5	26'-8"	—
B1(E)	9	#4	18'-2"	—
S(E)	71	#4	6'-5"	U
S1(E)	10	#4	4'-11"	U
S2(E)	61	#4	5'-2"	U
U(E)	8	#5	4'-0"	C
U1(E)	4	#4	5'-0"	C

Note: See sheet 6 of 11 for additional details and Bill of Material.

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.

MINIMUM BAR LAP
#4 bar = 1'-11"
#5 bar = 2'-6"

MODEL: \$MODELNAME\$
FILE NAME: \$FILE\$

PD-2136-0

2-17-2017

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB # 2252.1
FILE NAME \$FILE\$
PLOT DATE \$DATE\$

DESIGNED - AAN
CHECKED - JGY
DRAWN - SJS
CHECKED - MDC

REVISD -
REVISD -
REVISD -
REVISD -

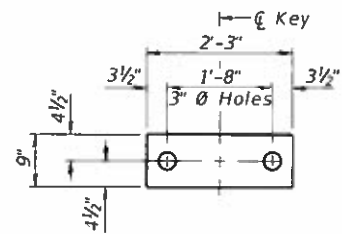
DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS

21" x 36" PPC DECK BEAM, SPAN 2
STRUCTURE NO. 021-4740

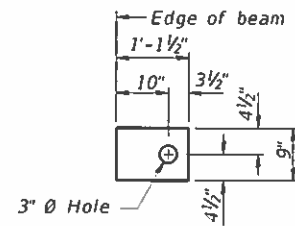
SHEET 5 OF 11 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	13

CONTRACT NO. 91584
ILLINOIS FED. AID PROJECT



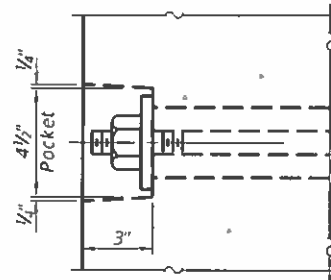
FABRIC BEARING PAD
(Interior-16 required)



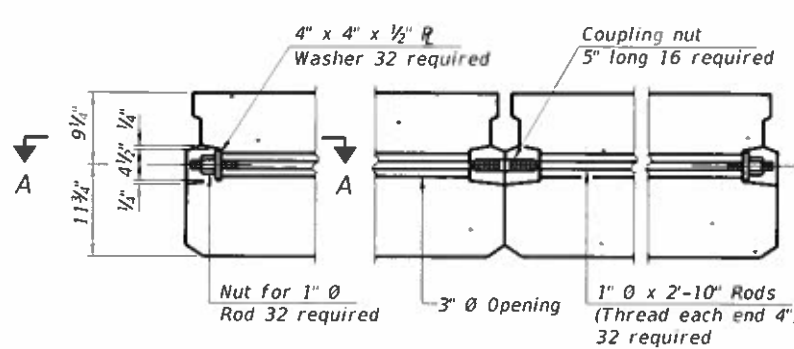
FABRIC BEARING PAD
(Exterior-4 required)

FIXED

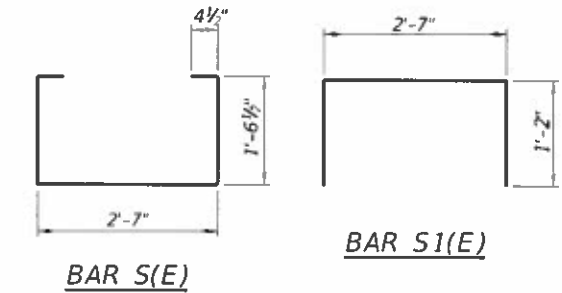
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A

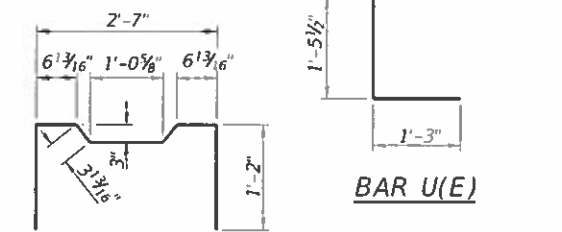


TYPICAL TRANSVERSE TIE ASSEMBLY

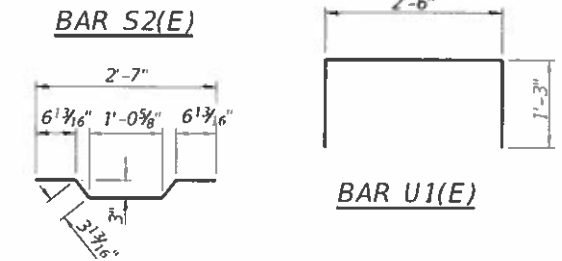


BAR S(E)

BAR S1(E)

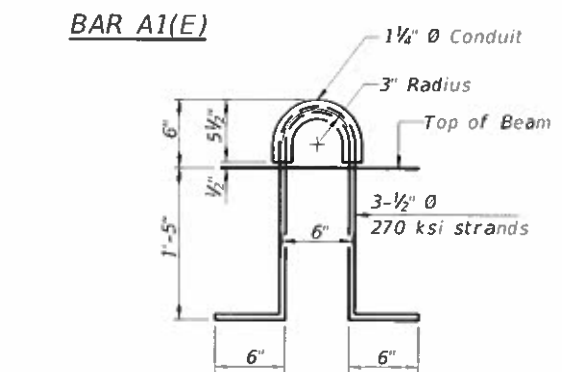


BAR U(E)

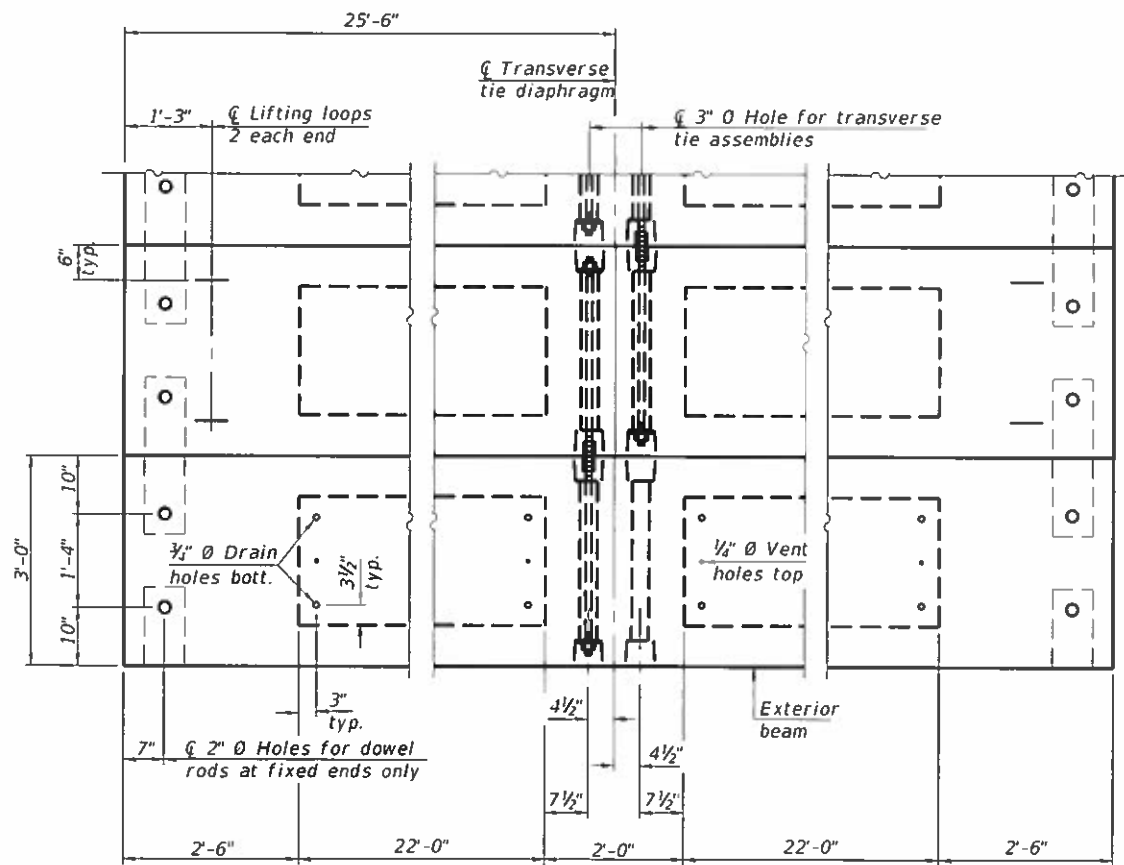


BAR S2(E)

BAR U1(E)



LIFTING LOOP DETAIL



PLAN VIEW

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

NOTES

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

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	1377
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MODEL: \$MODELNAME\$
FILE NAME: \$FILES\$

PD-2136-0D 2-17-2017

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB #	2252.1
FILE NAME	\$FILES\$
PLOT DATE	\$DATE\$

DESIGNED	- AAN
CHECKED	- JGY
DRAWN	- SJS
CHECKED	- MDC

REVISED	-
REVISED	-
REVISED	-
REVISED	-

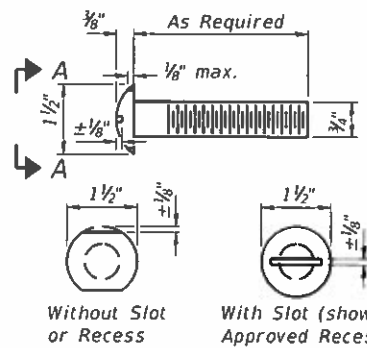
**DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS**

**21" x 36" PPC DECK BEAM DETAILS, SPAN 2
STRUCTURE NO. 021-4740**

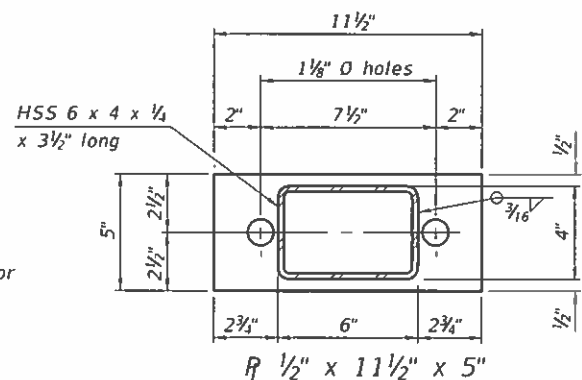
SHEET 6 OF 11 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	14
CONTRACT NO. 91584				

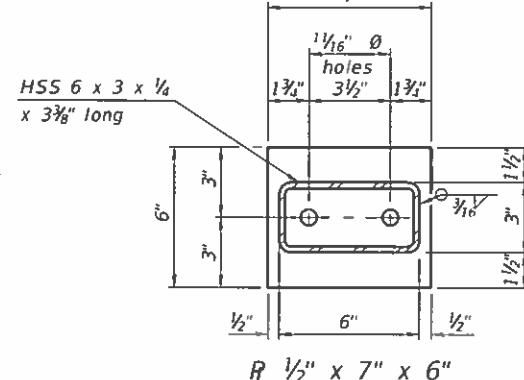
ILLINOIS | FED. AID PROJECT



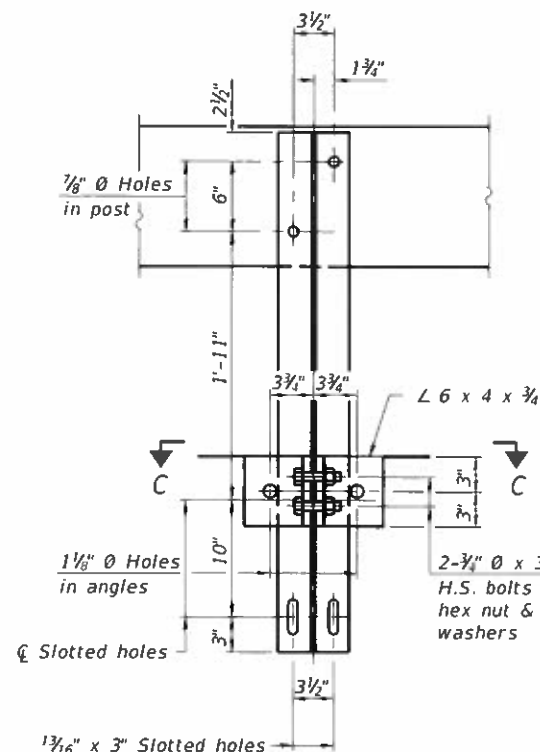
VIEW A-A
ROUND HEAD BOLT



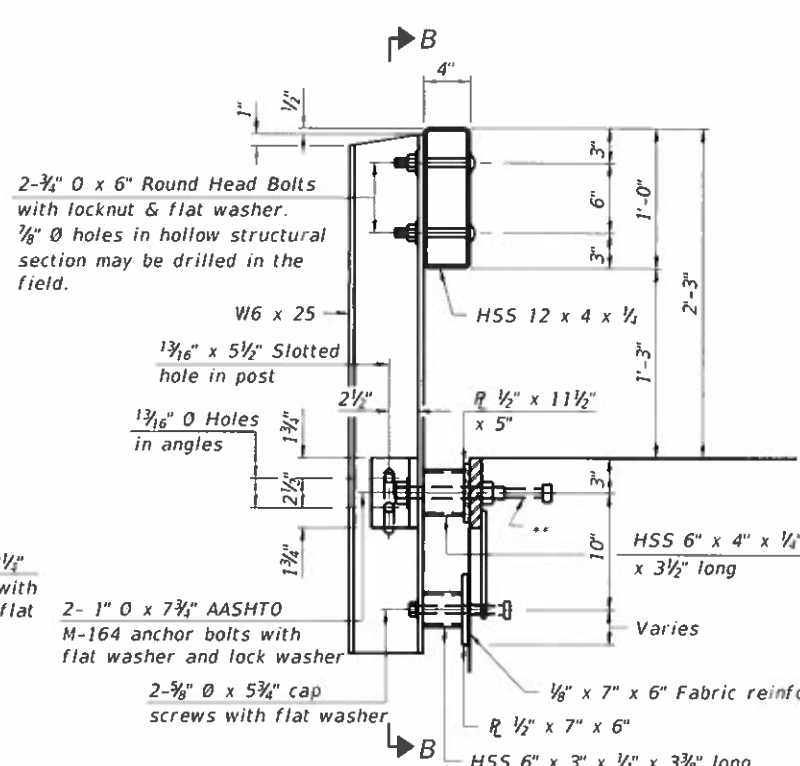
R 1/2" x 11 1/2" x 5"



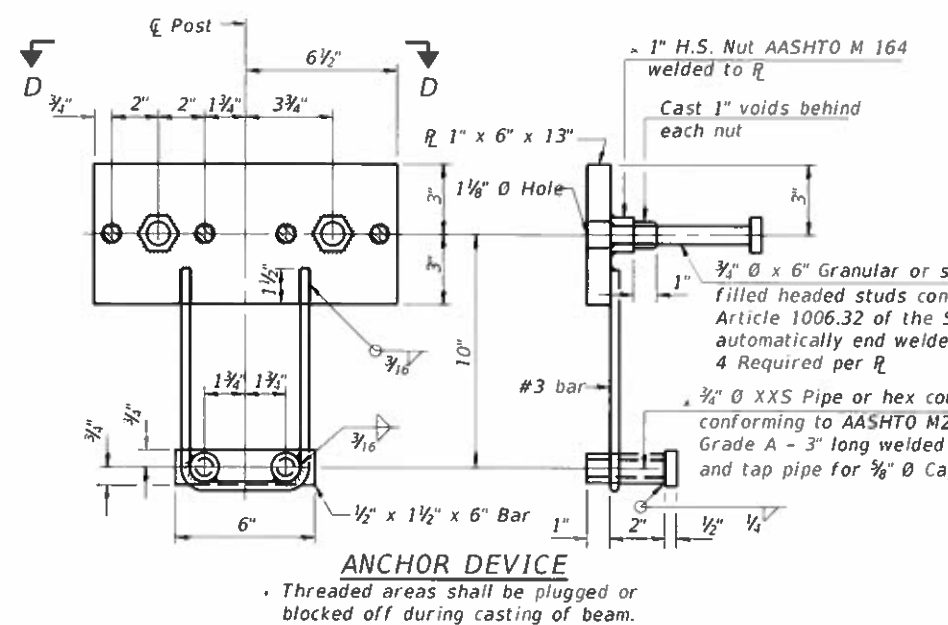
R 1/2" x 7" x 6"



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

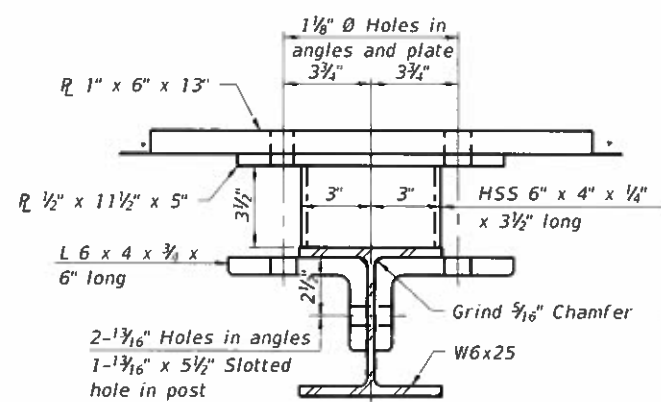
SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 1/4"	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"	

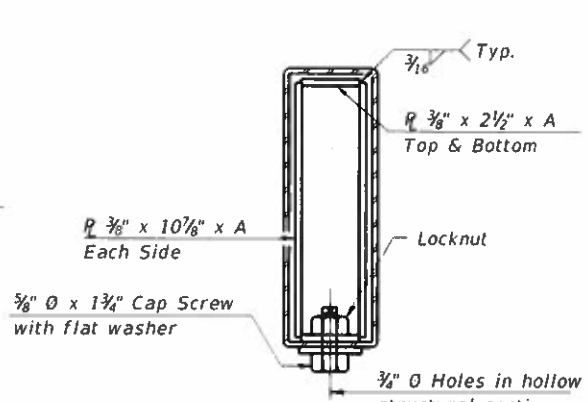
T = Total movement at expansion joint as shown on the design plans.

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 S-1.
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

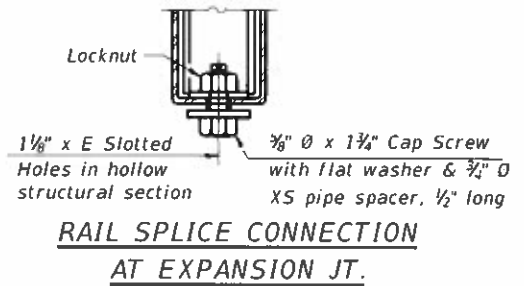
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



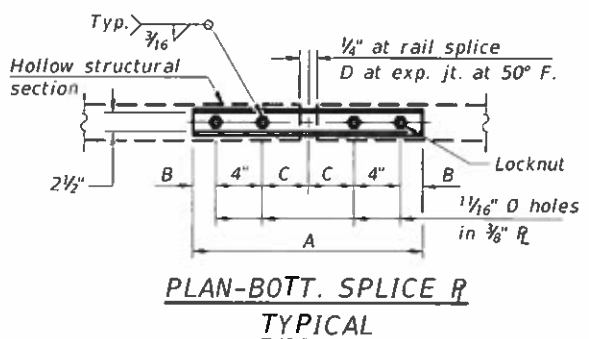
SECTION C-C



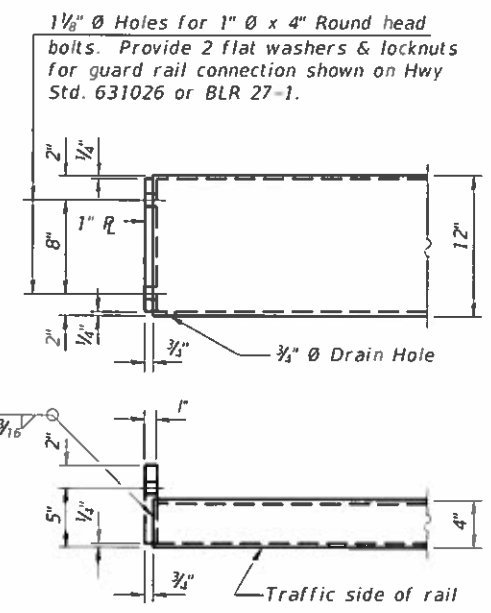
SECTIONS AT RAIL SPLICE



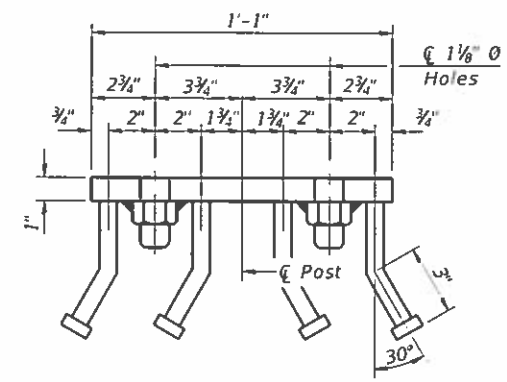
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE R TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	255

MODEL: \$MODELNAME\$
FILE NAME: \$FILES\$

R-23A 2-17-2017 (10'-9" Maximum Post Spacing)

CEC Civil and Structural Engineering	Cummins Engineering Corporation	JOB # 2252.1	DESIGNED - AAN	REVISED -
		FILE NAME = \$FILES\$	CHECKED - JGY	REVISED -
		PLOT DATE = \$DATES\$	DRAWN - SJS	REVISED -
			CHECKED - MDC	REVISED -

DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS

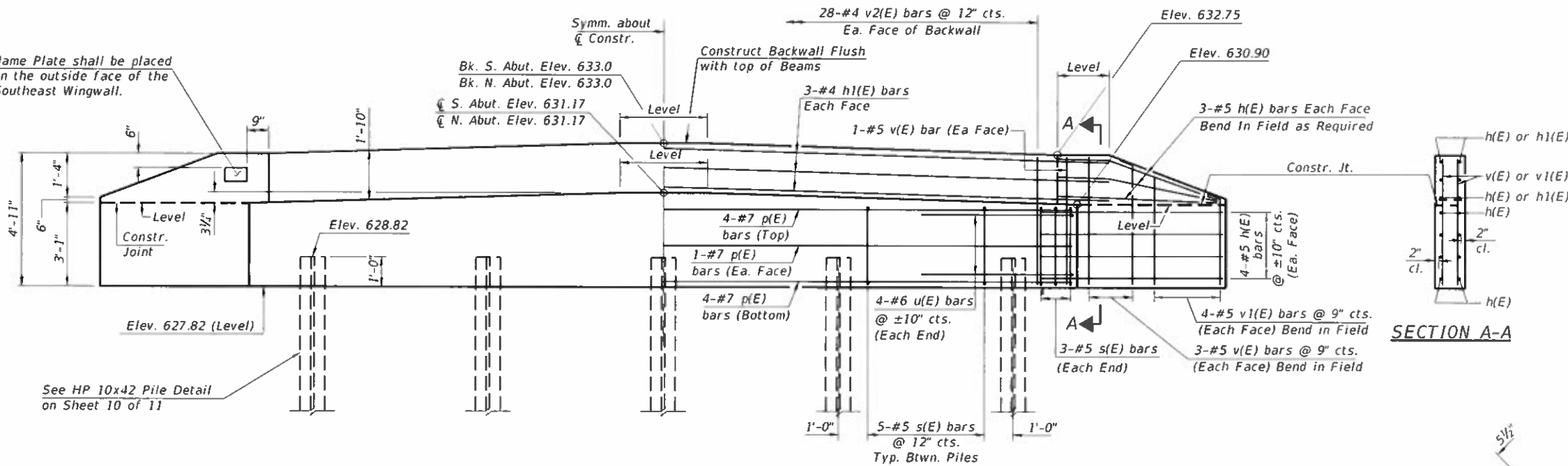
STEEL RAILING, TYPE S-1
STRUCTURE NO. 021-4740

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	15

CONTRACT NO. 91584
ILLINOIS FED. AID PROJECT

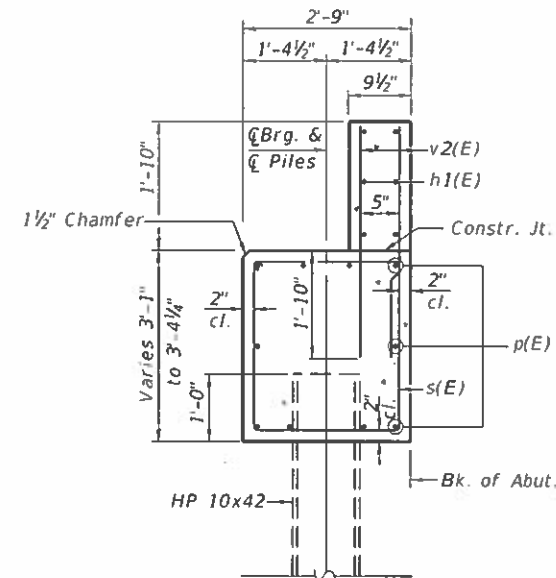
Name Plate shall be placed on the outside face of the Southeast Wingwall.

Bk. S. Abut. Elev. 633.0
Bk. N. Abut. Elev. 633.0
S. Abut. Elev. 631.17
N. Abut. Elev. 631.17

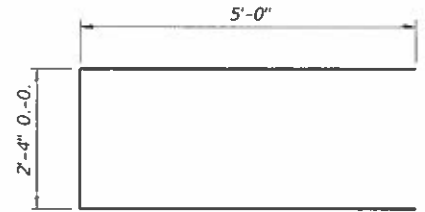


ELEVATION

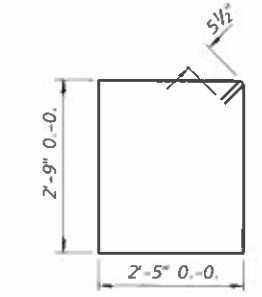
SECTION A-A



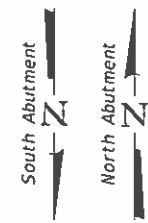
SECTION THRU ABUTMENT



BAR u(E)



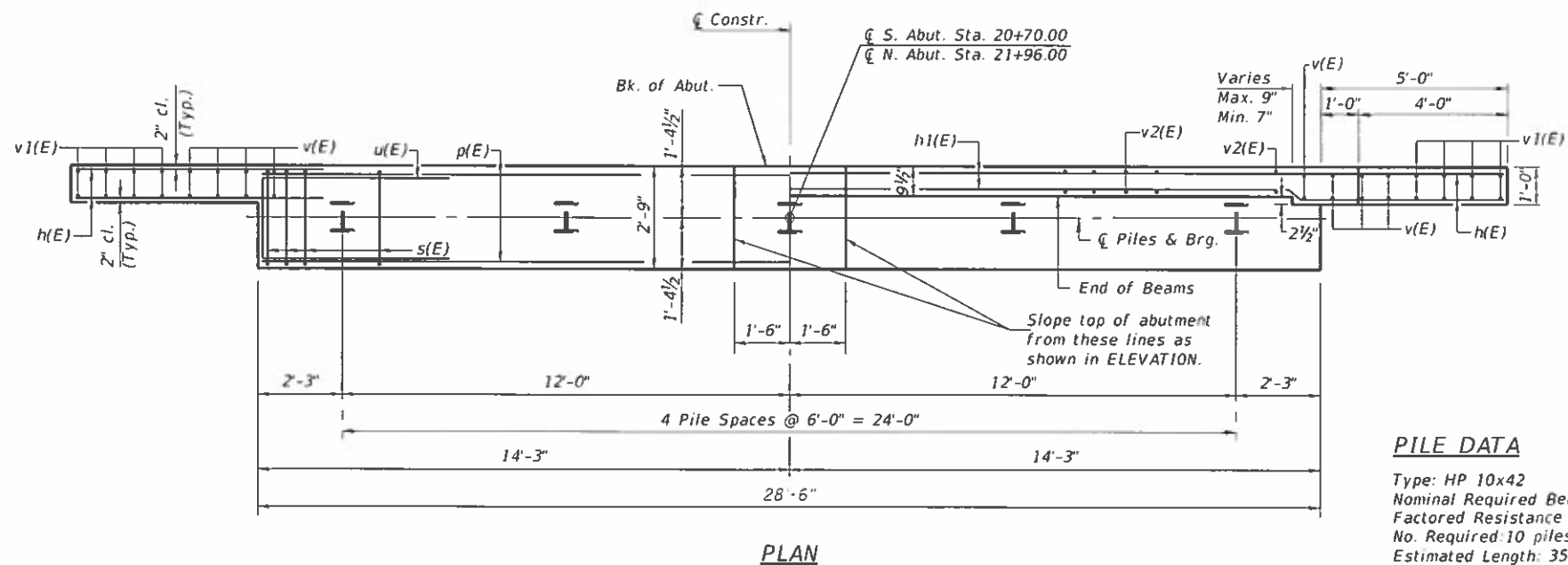
BAR s(E)



See HP 10x42 Pile Detail on Sheet 10 of 11

BILL OF MATERIAL
TWO ABUTMENTS

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	56	#5	7'-4"	—
h1(E)	12	#4	30'-6"	—
p(E)	20	#7	28'-2"	—
s(E)	52	#5	11'-3"	□
u(E)	16	#6	12'-4"	—
v(E)	32	#5	4'-6"	—
v1(E)	32	#5	3'-10"	—
v2(E)	112	#4	3'-6"	—
Concrete Structures		Cu. Yd.	25.2	
Reinforcement Bars, Epoxy Coated		Pound	3280	
Name Plates		Each	1	
Furnishing Steel Piles HP 10x42		Foot	260	
Driving Piles		Foot	260	
Structure Excavation		Cu. Yd.	75	
Test Pile Steel HP 10x42		Each	2	



PLAN

PILE DATA

Type: HP 10x42
Nominal Required Bearing: 181 kips
Factored Resistance Available: 100 kips
No. Required: 10 piles*
Estimated Length: 35 ft. @ S. Abut.
30 ft. @ N. Abut.

Note:
The Steel H-Piles shall be according to AASHTO M270 Grade 50.

* Includes one test pile to be driven in a permanent location at each Abutment, 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.

Note:
After beams are in place and dowel rods grouted, the backwall and the portions of the wingwalls above the construction joint shall be poured.

MODEL: \$MODELNAME\$
FILE NAME: \$FILES\$

CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB # 2252.1
FILE NAME \$FILES\$
PLOT DATE \$DATES\$

DESIGNED - AAN
CHECKED - JGY
DRAWN - SJS
CHECKED - MDC

REVISED -
REVISED -
REVISED -
REVISED -

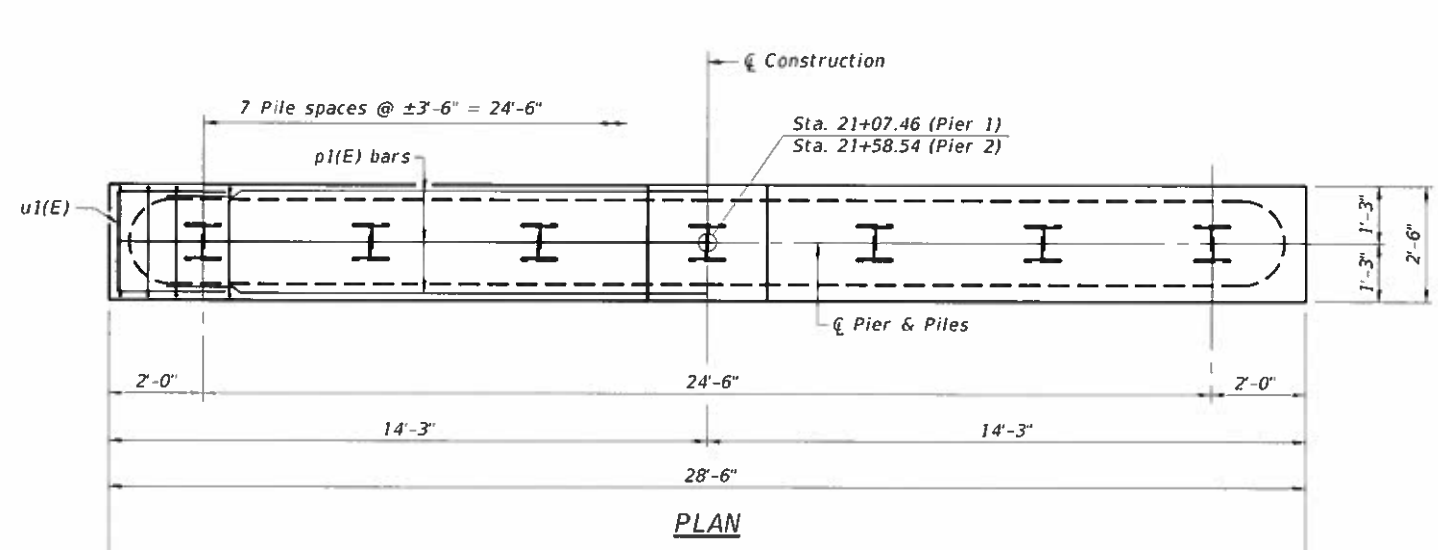
**DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS**

**ABUTMENTS
STRUCTURE NO. 021-4740**

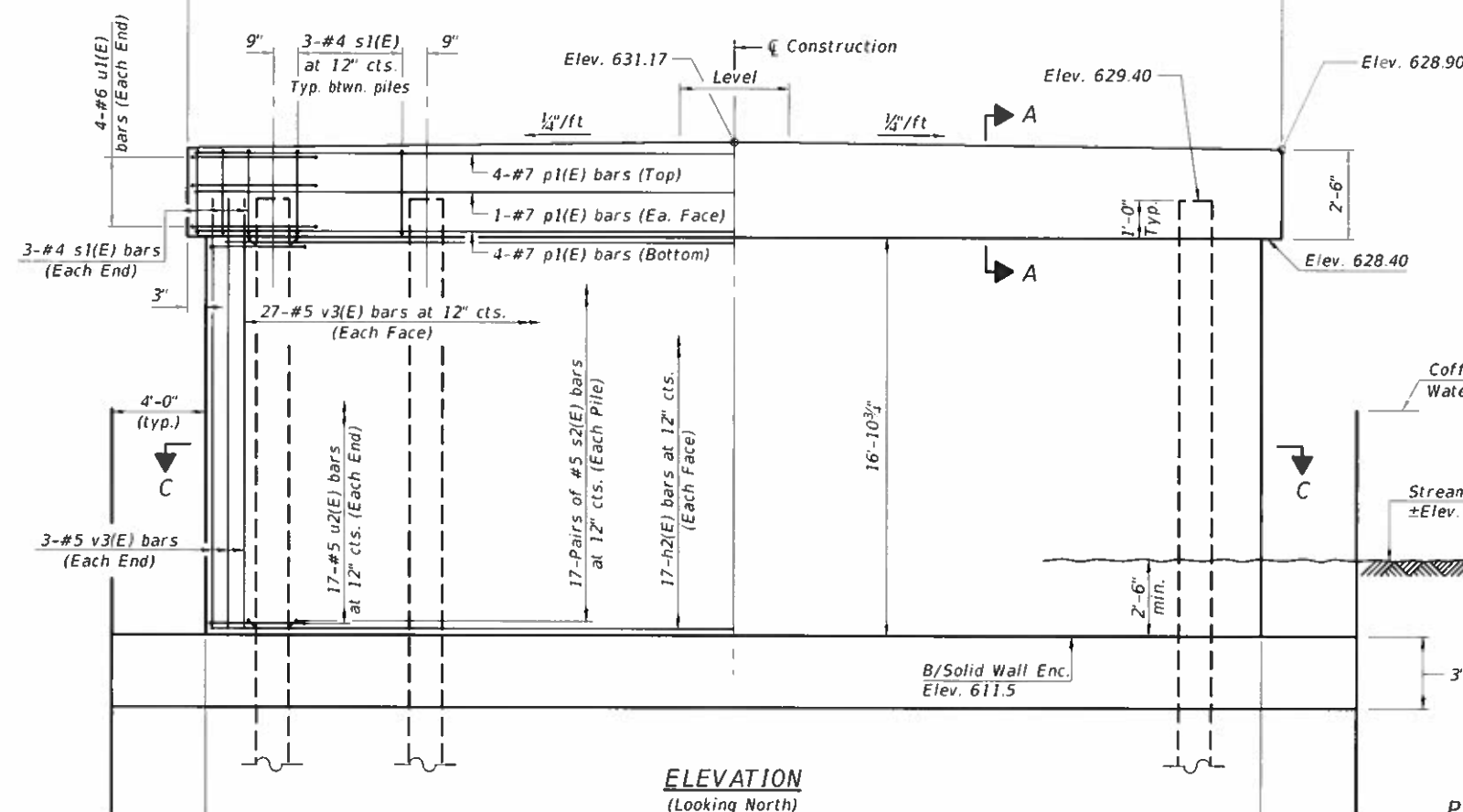
SHEET 8 OF 11 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	16
CONTRACT NO. 91584				

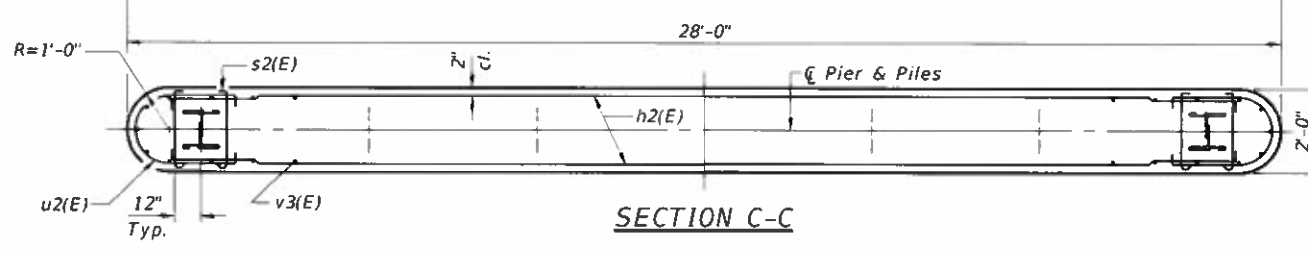
ILLINOIS | FED. AID PROJECT



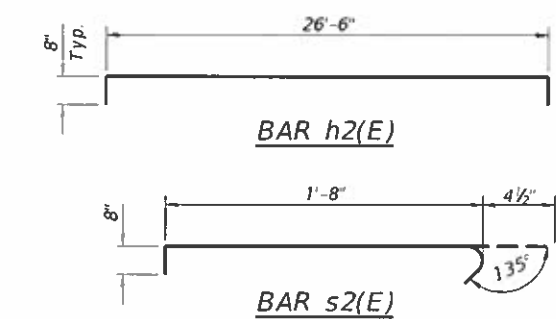
PLAN



ELEVATION
(Looking North)

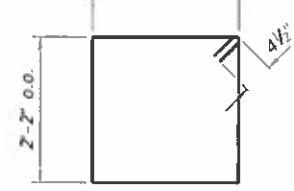


SECTION C-C

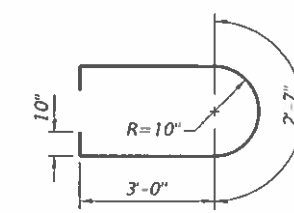


BAR h2(E)

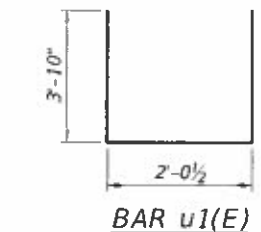
BAR s2(E)



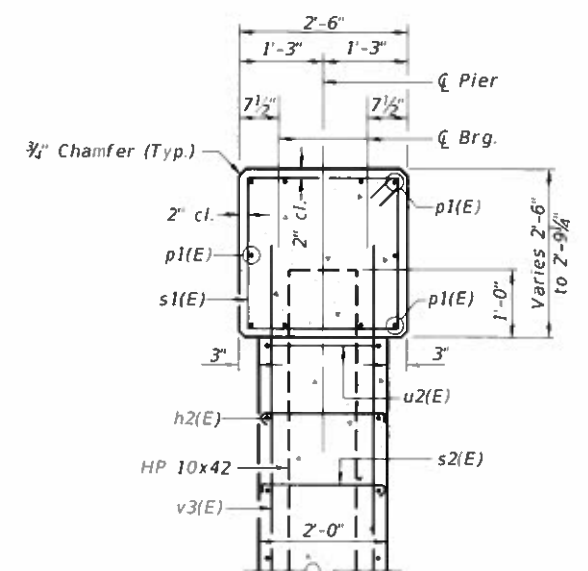
BAR s1(E)



BAR u2(E)



BAR u1(E)



SECTION A-A

TWO PIERS
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h2(E)	68	#5	27'-10"	[Symbol]
p1(E)	20	#7	28'-2"	[Symbol]
s1(E)	54	#4	9'-5"	[Symbol]
s2(E)	544	#4	2'-9"	[Symbol]
u1(E)	16	#6	9'-9"	[Symbol]
u2(E)	68	#5	10'-3"	[Symbol]
v3(E)	120	#5	18'-1"	[Symbol]
Concrete Structures			Cu. Yd.	83.0
Reinforcement Bars, Epoxy Coated			Pound	7690
Furnishing Steel Piles HP 10x42			Foot	600
Test Pile Steel HP 10x42			Each	2
Cofferdam (Type 2) (Location 1)			Each	1
Cofferdam Excavation			Cu. Yd.	147
Driving Piles			Foot	700
Cofferdam (Type 2) (Location 2)			Each	1
Seal Coat Concrete			Cu. Yd.	80.0

PILE DATA

Type: HP 10x42
 Nominal Required Bearing: 210 kips
 Factored Resistance Available: 115 kips
 No. Required: 10 piles*
 Estimated Length: 50 ft.
 Note:
 The Steel H-Piles shall be according to AASHTO M270 Grade 50.

* Includes one test pile to be driven in a permanent location at each Abutment, 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.

MODEL: SNODELNAMES
FILE NAME: SFILES

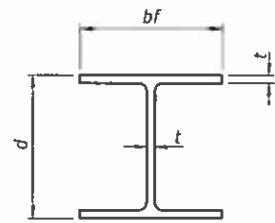


JOB #	2252.1	DESIGNED -	AAN	REVISED -	
FILE NAME	SFILES	CHECKED -	JGY	REVISED -	
PLOT DATE	SDATES	DRAWN -	SJS	REVISED -	
		CHECKED -	MDC	REVISED -	

DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS

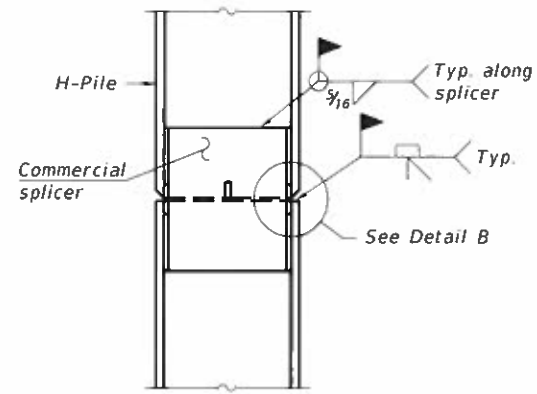
PIERS
STRUCTURE NO. 021-4740
SHEET 9 OF 11 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	17
CONTRACT NO. 91584				
ILLINOIS FED. AID PROJECT				

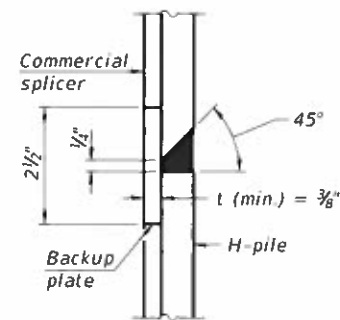


STEEL PILE TABLE

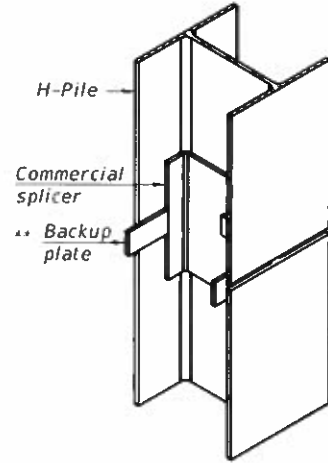
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 3/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 3/8"	14 3/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"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

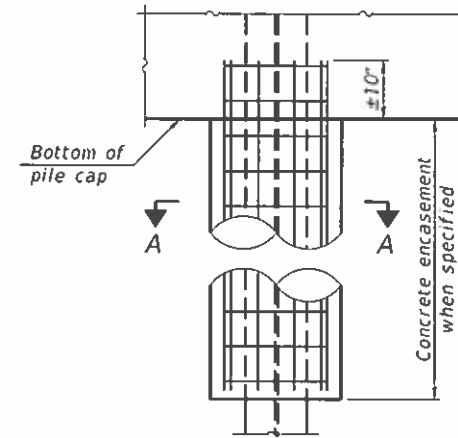


DETAIL "B"

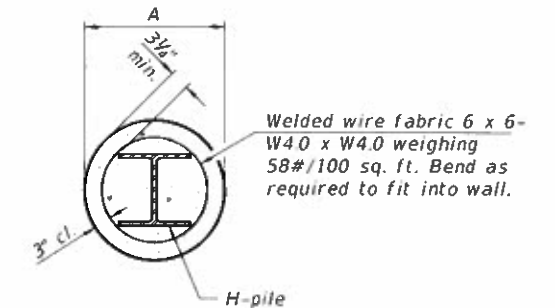


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

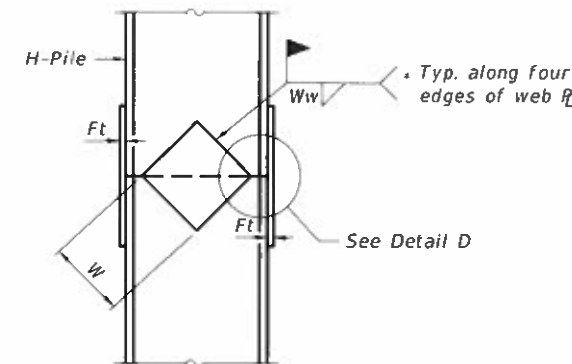


ELEVATION

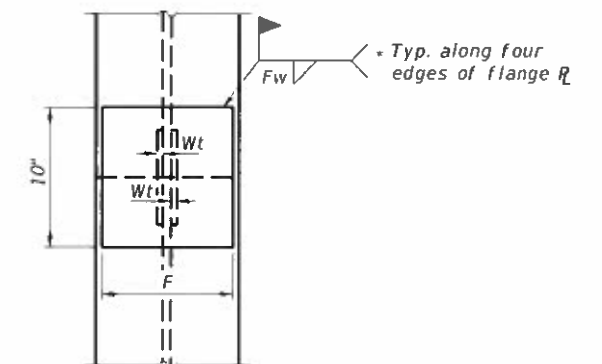


SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASUREMENT
(Forms for encasement may be omitted when soil conditions permit).



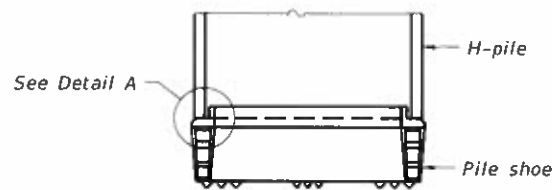
ELEVATION



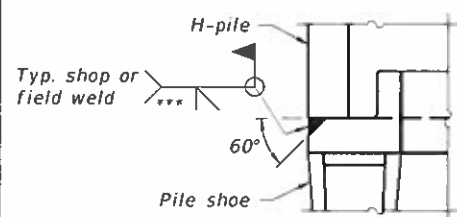
END VIEW

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	1/8"	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"	3/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	3/8"	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"	3/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	3/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE



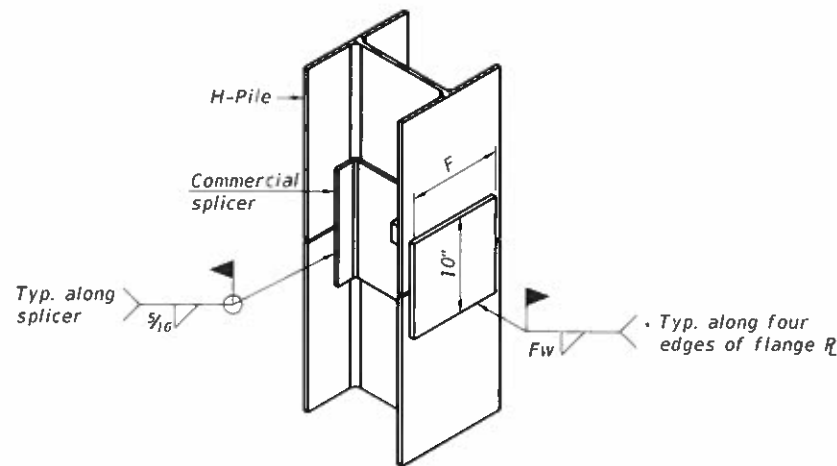
ELEVATION



DETAIL A

SHOE ATTACHMENT

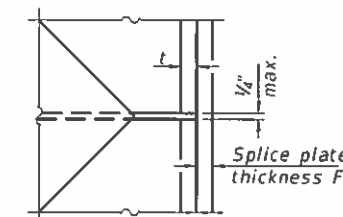
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



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 (7/16" min.).



DETAIL D

MODEL: SMOELNAMES
FILE NAME: SFILLE1

F-HP
Civil and Structural Engineering

8-11-2017
JOB # 2252.1
FILE NAME # \$FILESS
PLOT DATE # \$DATES

DESIGNED - AAN
CHECKED - JGY
DRAWN - SJS
CHECKED - MDC

REVISED -
REVISED -
REVISED -
REVISED -

DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS

HP PILE DETAILS
STRUCTURE NO. 021-4740
SHEET 10 OF 11 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	18
CONTRACT NO. 91584				
ILLINOIS FED. AID PROJECT				

BRIDGE FOUNDATION SOIL BORING LOG
MEET Midwest Engineering and Testing, Inc. Inc.

Route: TR 136 A over Scattering Fork
 Section: 07-03122-01-EG
 County: Douglas, (Bowdre Township)
 Structure No. Existing 021-4704 / Proposed 021-4740
 Station: Sta: 20+60
 Offset: 10 ft left

Boring: B-1 (SW)
 Page: Page 1 of 1
 Date of Boring: February 3, 2010
 Drilled By: Zach Wilcoxon
 Checked By: Daniel E. Tappendorf, P.E.
 MET Project No: 1-03008

Surface Water Elevation: 610.8 ft Ground Water Elevation: when drilling: Dry at completion: Dry	DEPTH (ft.)	BLOW S (6")	QU (tsf)	MC (%)	Sec 15 & 16, T15N, R9E 3rd PM	DEPTH (ft.)	BLOW S (6")	QU (tsf)	MC (%)
Ground Surface Elevation 633.4 ft.									
11" Black silty CLAY (OH) Topsoil			69						
Dark brown silty CLAY (CL) Fill	3				Gray silty CLAY with sand and small gravel (CL) Till	28		6	
	4	3.6B	90	50+					
	5								
	2								
	3	2.0P	21						
EL: 626.4 ft.									
Dark brown and gray silty CLAY (CL)	2				Gray silty CLAY with sand and small gravel (CL) Till	31		6	
	3	1.6B	25	50+					
	4								
EL: 621.4 ft.									
Dark gray silty CLAY with sand (CL)	2				Gray silty CLAY with sand and small gravel (CL) Till	42		6	
	3	2.0B	23	50+					
	3								
EL: 618.9 ft.									
Brown and gray sandy CLAY (SC)	1				Gray weathered SHALE	22		7	
	2	0.8B	26	44					
	3					50+			
EL: 610.4 ft.									
Brown silty CLAY with sand and small gravel (CL) Till	3				Brown weathered SHALE	21		7	
	4	1.0P	17	44					
	6					50+			
EL: 610.4 ft.									
Brown silty CLAY with sand and small gravel (CL) Till	8				End of Boring at 51.5 ft.	21		7	
	27	9.6S	7	43					
	46					50+			
End of Boring at 51.5 ft.									

N - Standard Penetration Test (SPT) = Sum of last two blow values in sample
 MC - Moisture Content - Percent of dry weight
 Qu - Unconfined Compressive Strength- tons per square foot (tsf)
 Type Failure
 Qu test
 B-Bulge
 S-Shear
 P-Penetrometer

BRIDGE FOUNDATION SOIL BORING LOG
MEET Midwest Engineering and Testing, Inc. Inc.

Route: TR 136 A over Scattering Fork
 Section: 07-03122-01-EG
 County: Douglas, (Bowdre Township)
 Structure No. Existing 021-4704 / Proposed 021-4740
 Station: Sta: 22+10
 Offset: 10 ft right

Boring: B-2 (NE)
 Page: Page 1 of 1
 Date of Boring: February 3, 2010
 Drilled By: Zach Wilcoxon
 Checked By: Daniel E. Tappendorf
 MET Project No: 1-03008

Surface Water Elevation: 610.8 ft Ground Water Elevation: when drilling: 613.0 ft at completion:	DEPTH (ft.)	BLOW S (6")	QU (tsf)	MC (%)	Sec 15 & 16, T15N, R9E 3rd PM	DEPTH (ft.)	BLOW S (6")	QU (tsf)	MC (%)
Ground Surface Elevation: 633.0 ft.									
10" Dark brown silty CLAY (OH) Topsoil				14					
Brown silty CLAY (CL) F#	2				Brown silty CLAY with sand and small gravel (CL) Till	6		12	
	3	4.3P	16	13					
	2			30					
	2								
	3	2.3P	16						
EL: 626.0 ft.									
Dark gray silty CLAY (CL)	2				Gray silty CLAY with sand and small gravel (CL) Till	17		8	
	3	1.2S	17	55					
	4			50+					
	3	2.8B	23						
EL: 618.5 ft.									
Brown and gray silty CLAY (CL)	3				Gray weathered SHALE	15		11	
	3	2.6B	20	21					
	5			31					
EL: 615.0 ft.									
Brown and gray silty CLAY (CL)	2				Gray weathered SHALE	8		17	
	3	2.0B	25	12					
	3					24			
EL: 615.0 ft.									
Gray sandy CLAY (SC)	16				Brown weathered SHALE	13		21	
	26	3.0P	13	37					
	37					50+			
EL: 610.0 ft.									
Dark brown SILT (OL) Organic	13				End of Boring at 51.5 ft.	13		7	
	13	1.6S	35	37					
	19					50+			
End of Boring at 51.5 ft.									

N - Standard Penetration Test (SPT) = Sum of last two blow values in sample
 MC - Moisture Content - Percent of dry weight
 Qu - Unconfined Compressive Strength- tons per square foot (tsf)
 Type Failure
 Qu test
 B-Bulge
 S-Shear
 P-Penetrometer

MODEL: \$MODELNAME\$
 FILE NAME: \$FILES\$



JOB #	2252.1	DESIGNED -	AAN	REVISED -	
FILE NAME	\$FILES\$	CHECKED -	JGY	REVISED -	
PLOT DATE	\$DATES\$	DRAWN -	SJS	REVISED -	
		CHECKED -	MDC	REVISED -	

DOUGLAS COUNTY
 BOWDRE ROAD DISTRICT
 TR 136A IMPROVEMENTS

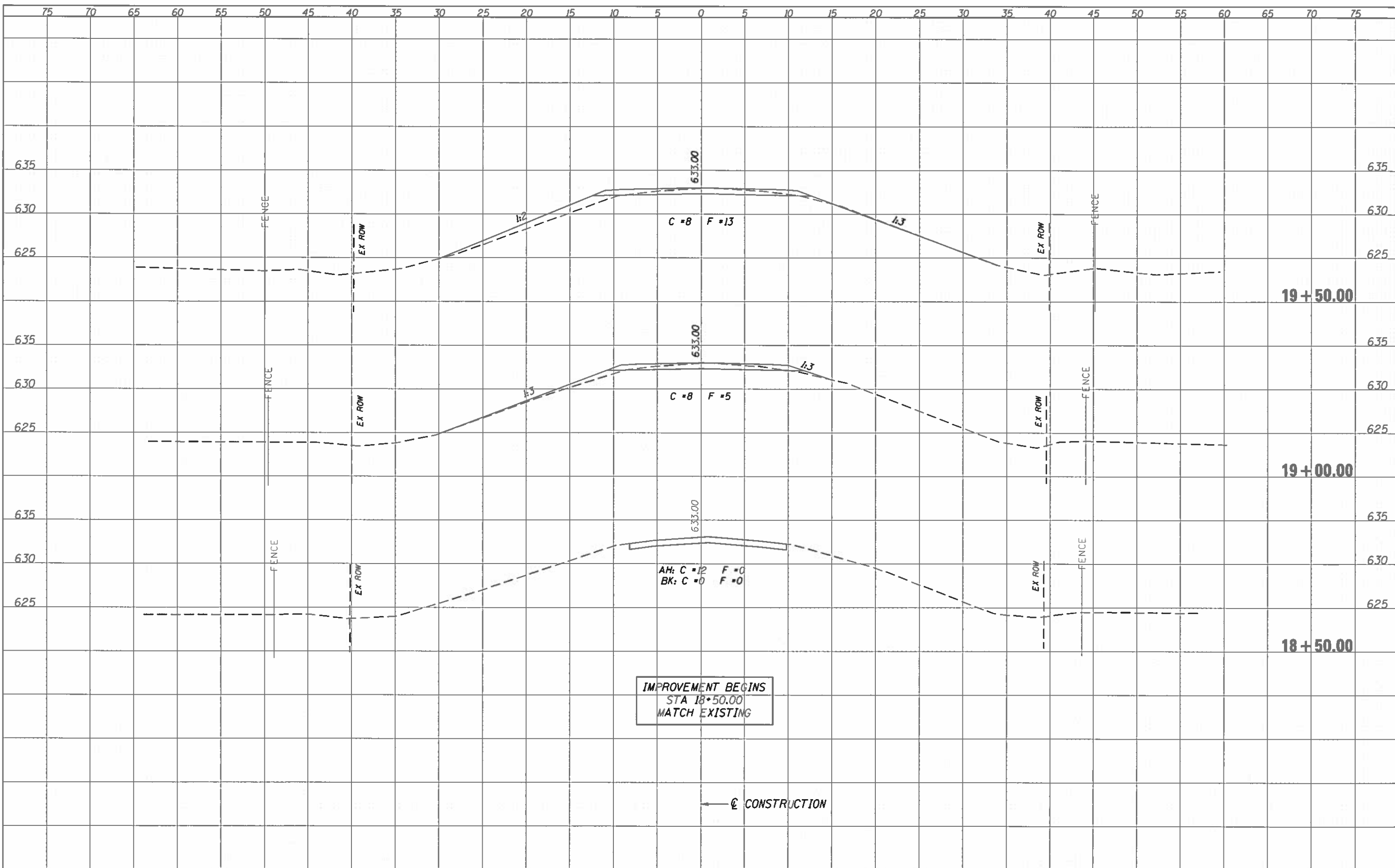
BORINGS
 STRUCTURE NO. 021-4740

SHEET 11 OF 11 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	19
CONTRACT NO. 91584				
ILLINOIS FED. AID PROJECT				

DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	

DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	



JOB : 2252.1
 FILE NAME : 2252.1rsw.dgn
 PLOT SCALE : 10.0000 / IN.
 PLOT DATE : 11/5/2019

DESIGNED - NAK
 DRAWN - TJD
 CHECKED - CCF
 DATE - 08/19/2019

REVISED -
 REVISED -
 REVISED -
 REVISED -

**DOUGLAS COUNTY
 BOWDRE ROAD DISTRICT
 TR 136A IMPROVEMENTS**

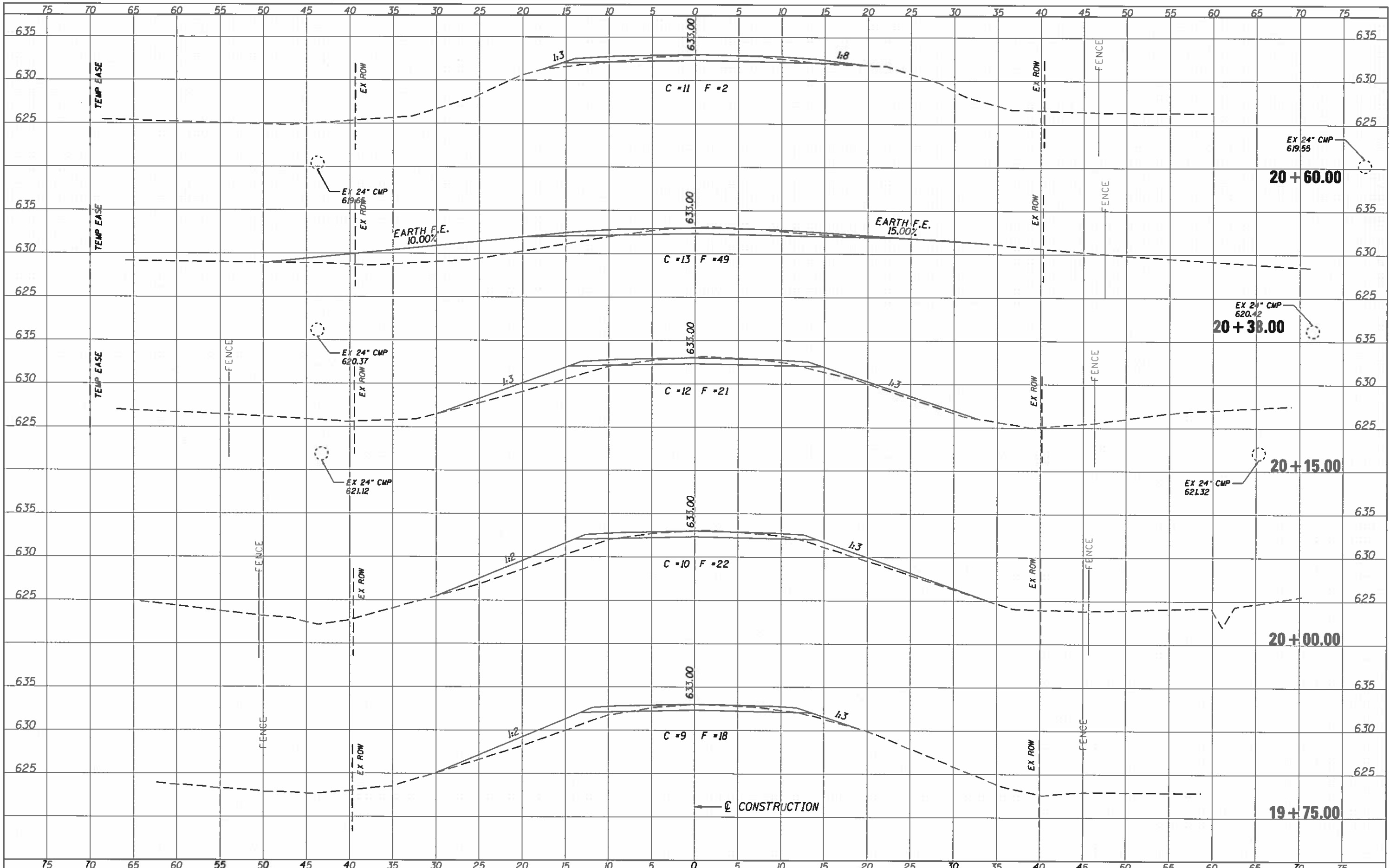
CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. 18+00.00 TO STA. 19+50.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	20
CONTRACT NO. 91584				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	
BY	
FINAL SURVEY	
SURVEY	
NOTE BOOK	
TEMPLATE	
AREAS	
CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
SURVEY	
NOTE BOOK	
TEMPLATE	
AREAS	
CHECKED	



CEC Cummins Engineering Corporation
Civil and Structural Engineering

JOB # 2252.1
FILE NAME = 2252.1-sec.dgn
PLOT SCALE = 10.0000 / IN.
PLOT DATE = 11/5/2019

DESIGNED - NAK
DRAWN - TJO
CHECKED - CGF
DATE - 08/19/2019

REVISED -
REVISED -
REVISED -
REVISED -

**DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS**

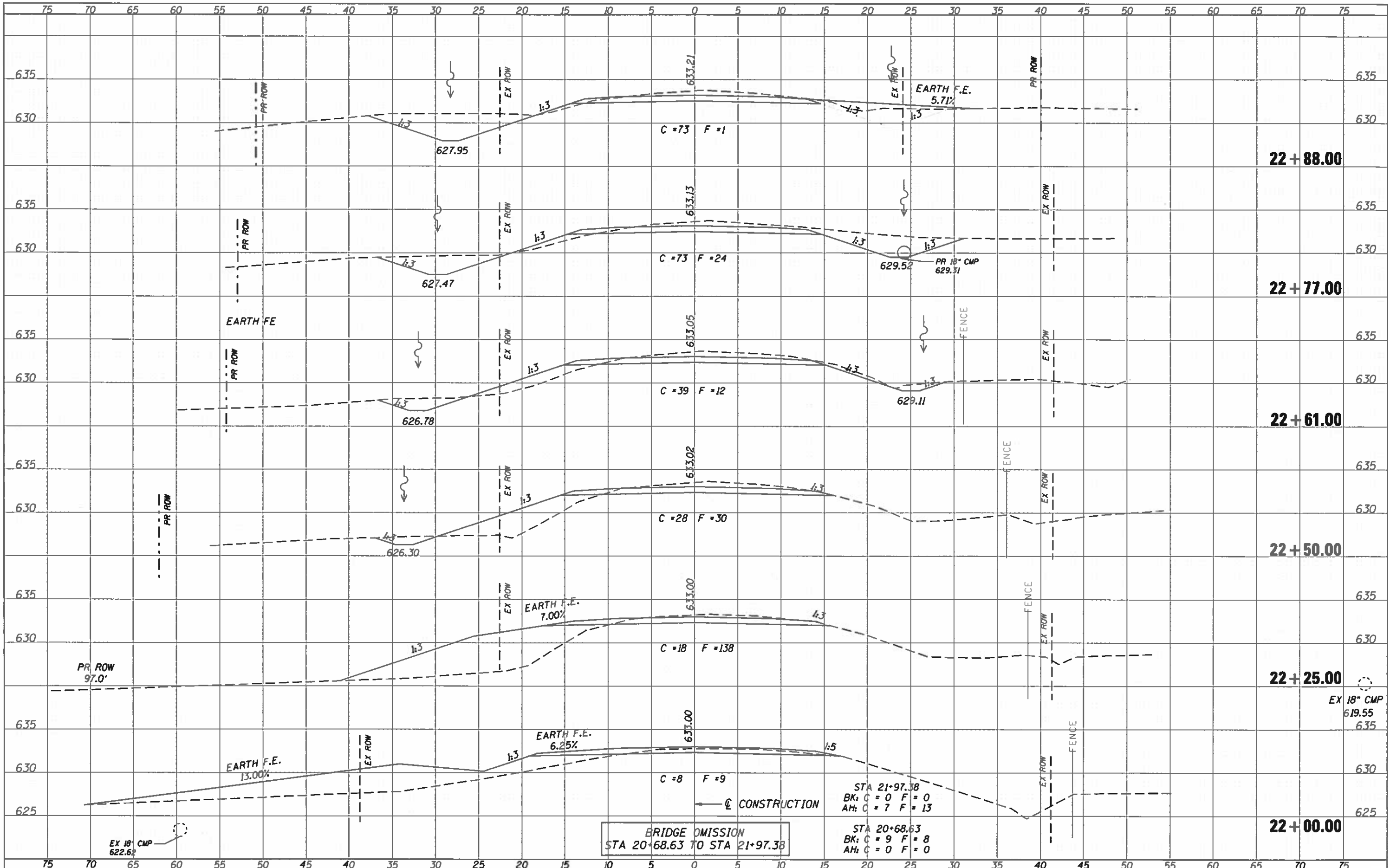
CROSS SECTIONS

SCALE: SHEET NO. OF SHEETS STA. 19+75.00 TO STA. 20+60.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	21
CONTRACT NO. 91584				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	
BY	
FINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	



JOB #	2252.1	DESIGNED	NAK	REVISED	
FILE NAME	2252.1.spc.dgn	DRAWN	TJD	REVISED	
PLOT SCALE	10.0000' / 1" =	CHECKED	CGF	REVISED	
PLOT DATE	11/5/2019	DATE	08/19/2019	REVISED	

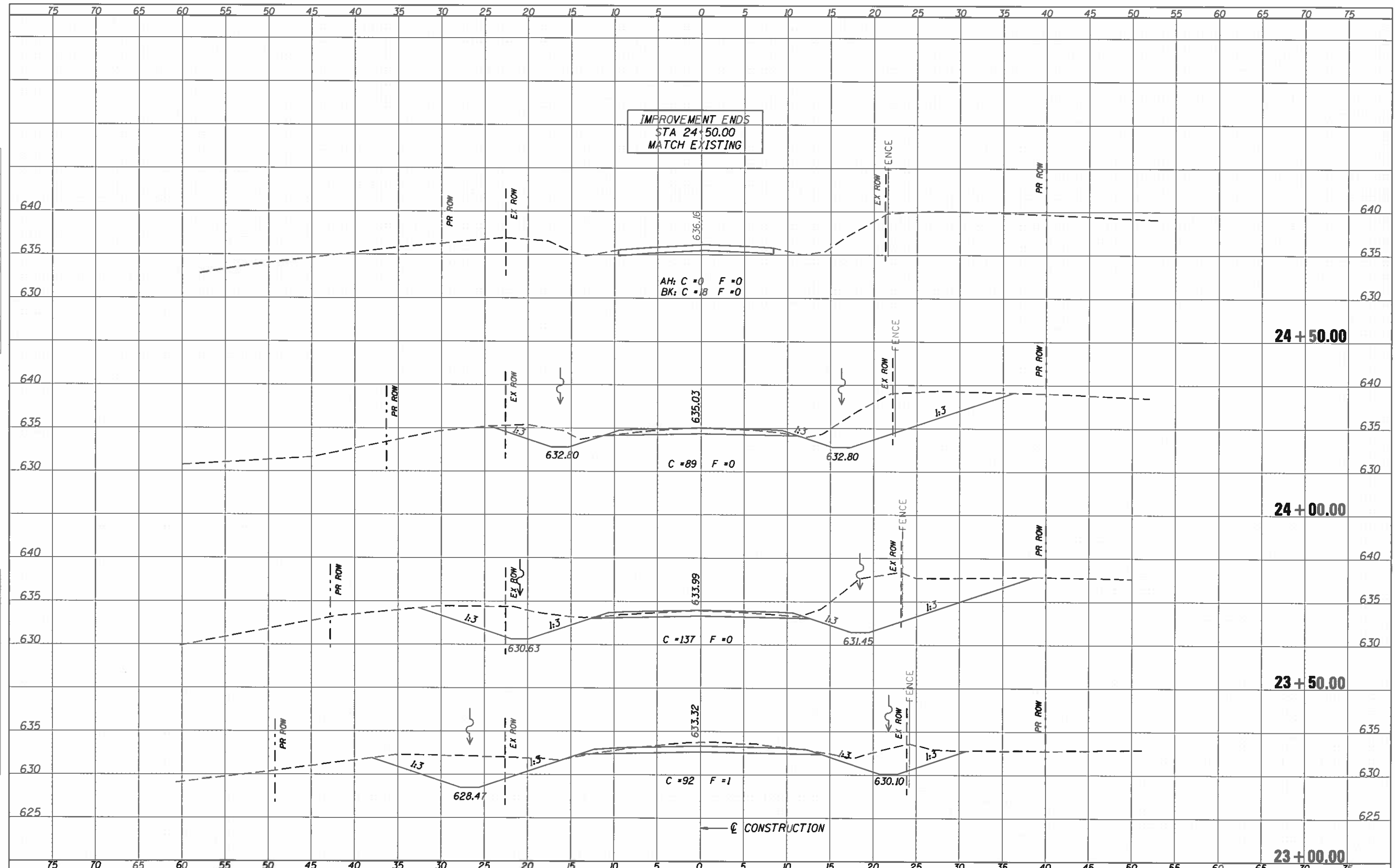
DOUGLAS COUNTY
BOWDRE ROAD DISTRICT
TR 136A IMPROVEMENTS

CROSS SECTIONS			
SCALE:	SHEET NO.	OF SHEETS	STA. 22+00.00 TO STA. 22+88.00

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
136A	07-03122-01-BR	DOUGLAS	23	22
CONTRACT NO. 91584				
FED. ROAD DIST. NO. (ILLINOIS) FED. AID PROJECT				

DATE	
BY	
FINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	



CEC Cummins Engineering Corporation Civil and Structural Engineering	JOB = 2252.1	DESIGNED - NAK	REVISED -	DOUGLAS COUNTY BOWDRE ROAD DISTRICT TR 136A IMPROVEMENTS	CROSS SECTIONS			T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	FILE NAME = 2252.1.sec.dgn	DRAWN - T.JD	REVISED -		136A	07-03122-01-BR	DOUGLAS	23	23			
	PLOT SCALE = 10.0000' / IN.	CHECKED - CCF	REVISED -							CONTRACT NO. 91584		
	PLOT DATE = 11/5/2019	DATE - 08/19/2019	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA. 23+00.00	TO STA. 24+50.00	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	