

HANCOCK COUNTY, ILLINOIS - HIGHWAY DEPARTMENT
BRIDGE REPLACEMENT

FAS	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	28	1

ILLINOIS CONTRACT NO. 93801

INDEX OF SHEETS

- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES /GENERAL NOTES
- 3 SCHEDULE OF QUANTITIES
- 4 TYPICAL SECTIONS
- 5 HORIZONTAL CONTROL
- 6 PLAN AND PROFILE
- 7 TRAFFIC CONTROL PLAN
- 8-24 STRUCTURE PLANS
- 25-29 CROSS SECTIONS

ILLINOIS HIGHWAY STANDARDS

000001-08	630301-09	701901-08	BLR 27-1
280001-07	701001-02	725001-01	
515001-04	701006-05	782006-01	
630001-12	701011-04	BLR 21-9	

DESIGN DESIGNATION

FAS 1600 (CH 12)
FUNCTIONAL CLASS: MAJOR COLLECTOR
AOT = 375 (2018) 225 (2032)
DESIGN SPEED = 55 MPH

UTILITIES

DALLAS RURAL WATER DISTRICT
DANA GNANN
(309) 337-3718

FRONTIER COMMUNICATIONS
KALIN HINSNAW
(815) 895-1515

PROJECT DESCRIPTION

Project consists of removing existing structure number 034-3122, a single-span 21" deep precast reinforced concrete channel beam bridge on concrete abutment caps and timber piling carrying FAS 1600 over Mallard Creek. The back to back length is 29'-6" and the out to out width is 37'-10". New construction consists of a 27" PPC IL27 N beam bridge on integral abutments and metal shell pillog. Additional work includes HMA pavement, concrete pavement, aggregate shoulders, guardrail, seeding, disposing of the existing beams, riprap, and other miscellaneous items.

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

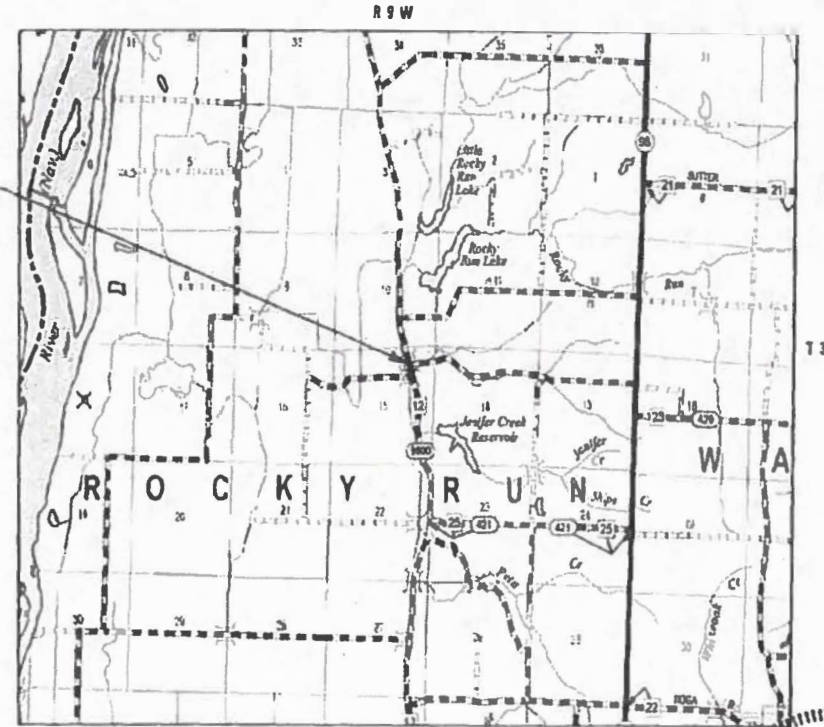


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

FAS 1600 (CH 12)
over MALLARD CREEK

FEDERAL PROJ. NO.: KQRJ(008)
JOB NO.: C-96-091-21
SECTION 21-00138-00-BR
STP - BRIDGE FUNDING

BEGIN STA. 293 + 36.00
PROPOSED S.N. 034-3123
STA. 294 + 05.00
ONE SPAN OVER MALLARD CREEK
64'-0" BK TO BK ABUTMENTS
5-27" PPC IL 27N BEAMS
END STA 295 + 50.00



LOCATION MAP
SCALE: 1" = 4500'
GROSS /NET LENGTH OF SECTION = 214.00 FT. = 0.041 MILE



RYAN J. PHELPS
REGISTERED PROFESSIONAL ENGINEER
STATE OF ILLINOIS NO. 062-063007
LICENSE EXPIRES NOVEMBER 30, 2023
DATE 1-3-2023



LOCATION OF SECTION INDICATED THUS: -

APPROVED 1/3 20 23
Elgin Berry
COUNTY ENGINEER

APPROVED Jan 5, 20 23
[Signature]
DISTRICT SUPERVISOR OF LOCAL ROADS & STREETS

Released For Bid Based on Limited Review Jan 5, 20 23
[Signature]
REGION FOUR ENGINEER

Plans prepared by:
KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors

Quincy, Illinois
818 Main Street
217 223 3878
www.klingner.com
Quincy, IL 62305
ILL. DESIGN FIRM NO.: 1842738

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20200100	EARTH EXCAVATION	CU YD	165
20300100	CHANNEL EXCAVATION	CU YD	511
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	398
25000200	SEEDING, CLASS 2	ACRE	0.25
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	23
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	23
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	23
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.5
25100115	MULCH, METHOD 2	ACRE	0.25
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	50
28000400	PERIMETER EROSION BARRIER	FOOT	445
28100200	STONE RIPRAP, CLASS A5	TON	609
28200200	FILTER FABRIC	SQ YD	408
31101000	SUBBASE GRANULAR MATERIAL, TYPE B	TON	6
35101400	AGGREGATE BASE COURSE, TYPE B	TON	250
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	25
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	798
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	79
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	60
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	30
42000520	PORTLAND CEMENT CONCRETE PAVEMENT 11"	SQ YD	20
44000100	PAVEMENT REMOVAL	SQ YD	614
48101200	AGGREGATE SHOULDERS, TYPE B	TON	41
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	156
50300225	CONCRETE STRUCTURES	CU YD	60.6
50300255	CONCRETE SUPERSTRUCTURE	CU YD	71.5
50300260	BRIDGE DECK GROOVING	SQ YD	380
50300300	PROTECTIVE COAT	SQ YD	425
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	83.4
50401305	FURNISHING AND ERECTING PRECAST PRESTRESSED CONCRETE BEAMS, IL27N	FOOT	307
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	55310
50901050	STEEL RAILING, TYPE SM	FOOT	128
51200959	FURNISHING METAL SHELL PILES 14" X 0.312"	FOOT	460
51202305	DRIVING PILES	FOOT	460
51203200	TEST PILE METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	86
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	54
60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	4

* SEE SPECIAL PROVISIONS

SPECIALTY ITEMS

SUMMARY OF QUANTITIES - CONTINUED

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	130
# 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	25.0
# 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	3
# 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
* 63200310	GUARDRAIL REMOVAL	FOOT	361
67100100	MOBILIZATION	L SUM	1
# 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
# 78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	16
* Z0013798	CONSTRUCTION LAYOUT	L SUM	1
* X6330725	STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)	FOOT	37.5
* X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
Δ Z0076600	TRAINEES	HOOR	500
Δ Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOOR	500

* SEE SPECIAL PROVISIONS

SPECIALTY ITEMS

Δ 0042

GENERAL NOTES

1. THE NOMINAL THICKNESS FOR BASE AND SURFACE COURSES ARE SHOWN ON THE TYPICAL SECTIONS, STANDARDS, SCHEDULES, OR SPECIAL DETAILS. THE CONSTRUCTED THICKNESS OF THE ABOVE ITEMS SHALL NOT BE LESS THAN 90 PERCENT OF THE NOMINAL THICKNESS AT ANY LOCATION.
THE THICKNESS OF THE BITUMINOUS MIXTURE SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE BITUMINOUS MIXTURE IS PLACED.
2. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER AND AN AUTHORIZED SURVEYOR OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
3. UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION, AND THEIR TRUE LOCATION IS NOT GUARANTEED TO BE AS SHOWN ON THE PLANS. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND CARRY OUT HIS OR HER OPERATIONS ACCORDINGLY.
4. ADJUSTMENTS OF UTILITY LOCATIONS SHALL BE MADE BY THE OWNER, UNLESS OTHERWISE NOTED.
5. ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION, AS INDICATED BY THE SUB-NUMBER ON THE COVER SHEET.
6. ALL DETAILS IN THESE PLANS SHALL GOVERN THE CONSTRUCTION OF THIS PROJECT, AND IN CASE OF CONFLICT WITH ANY STANDARD DRAWINGS INCLUDED, THE SAID DETAILS SHALL GOVERN.
7. THE EXISTING ROAD SIGNS THAT INTERFERE WITH CONSTRUCTION SHALL BE REMOVED AND RELOCATED AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED AS PART OF THE CONTRACT AND NO COMPENSATION WILL BE ALLOWED.
8. IN ACCORDANCE WITH STATE OF ILLINOIS P.A. 86-0674, THE CONTRACTOR IS TO NOTIFY ALL UTILITY COMPANIES NOT MORE THAN 14 DAYS NOR LESS THAN 48 HOURS (EXCLUSIVE OF SATURDAYS, SUNDAYS, AND HOLIDAYS) IN ADVANCE OF THE START OF EXCAVATION OR DEMOLITION.

J.U.L.I.E TELEPHONE NUMBER
1-800-892-0123

9. THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT:

LOCATION(S):	HMA BINDER	HMA SURF CSE
MIXTURE USE(S):		
AC/PG:	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4.0% @ N DESIGN=50	4.0% @ N DESIGN=50
MIXTURE COMPOSITION:		
(GRADATION MIXTURE)	IL 19.0	IL 9.5
FRICTION AGGREGATE	N/A	MIX "C"
QUALITY	QA/QC	QA/QC
SUB-LOT SIZE	N/A	N/A

RATES OF APPLICATION TABLE

AGGREGATE (SURFACE, BASE, BASE, OR BACKFILL)	2.05 TON/CU YD
STONE RIPRAP	1.75 TON/CU YD
HOT-MIX ASPHALT:	
BITUMINOUS MATERIALS (TACK COAT)	0.025 POUND / SQ FT (SEE ARTICLE 406.05)
BITUMINOUS MATERIALS (PRIME COAT)	0.250 POUND / SQ FT (ON AGG BASE)
SURFACE / BINDER (112 lbs)	0.056 TON / SQ YD - IN
SEEDING AREAS:	
NITROGEN FERTILIZER NUTRIENT	90 LBS/ACRE
PHOSPHOROUS FERTILIZER NUTRIENT	90 LBS/ACRE
POTASSIUM FERTILIZER NUTRIENT	90 LBS/ACRE
AGRICULTURAL GROUND LIMESTONE	2 TON/ACRE
MULCH	2 TON/ACRE
TEMPORARY EROSION CONTROL SEEDING	100 LBS/ACRE

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KLINGNER ASSOCIATES, P.C.
Engineers • Architects • Surveyors
116 N. 24TH ST. CHICAGO, ILLINOIS 60611 312.223.2570
STATE OF ILLINOIS REGISTRATION NO. 044 9138

USER NAME = rjp	DESIGNED - RJP	REVISED -
PL01 SCALE = 40.000' / 1" =	DRAWN - RJP	REVISED -
PD1 DATE = 1/3 / 2023	CHECKED - EBB	REVISED -
	DATE -	REVISED -

HANCOCK COUNTY
HIGHWAY DEPARTMENT

FAS 1600 (CH 12) OVER MALLARD CREEK
SUMMARY OF QUANTITIES /GENERAL NOTES

F.A.S. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-8R	HANCOCK	29	2
CONTRACT NO. 93801				

SCALE: NONE SHEET 1 OF 1 SHEETS STA. TO STA.

ILLINOIS FED. AID PROJECT

SEEDING SCHEDULE

ITEM	UNIT	TOTAL
SEEDING, CLASS 2	ACRE	0.25
NITROGEN FERTILIZER NUTRIENT	POUND	23
PHOSPHORUS FERTILIZER NUTRIENT	POUND	23
POTASSIUM FERTILIZER NUTRIENT	POUND	23
AGRICULTURAL GROUND LIMESTONE	TON	0.5
MULCH, METHOD 2	ACRE	0.25

THIS SCHEDULE CONTAINS ESTIMATED QUANTITIES. THEY MAY BE REDUCED, INCREASED, OR DELETED BY THE ENGINEER BASED ON ACTUAL FIELD CONDITIONS. NO WORK INVOLVING THIS ESTIMATED QUANTITY SHALL BE PERFORMED WITHOUT THE DIRECTION AND APPROVAL OF THE ENGINEER.

EARTH EXCAVATION SCHEDULE

LOCATION STATION TO STATION	SIDE	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED (25%)	EMBANKMENT	EARTHWORK BALANCE
FAS 1600 (CH 12)					
292+47 293+73	LT & RT	53	39	37	37
294+37 295+50	LT & RT	108	81	74	74
TOTALS		161	120	111	111
USE		165	120	111	

EROSION CONTROL SCHEDULE

ITEM	UNIT	TOTAL
TEMPORARY EROSION CONTROL SEEDING	POUND	50
PERIMETER EROSION BARRIER	FOOT	445

THIS SCHEDULE CONTAINS ESTIMATED QUANTITIES. THEY MAY BE REDUCED, INCREASED, OR DELETED BY THE ENGINEER BASED ON ACTUAL FIELD CONDITIONS. NO WORK INVOLVING THIS ESTIMATED QUANTITY SHALL BE PERFORMED WITHOUT THE DIRECTION AND APPROVAL OF THE ENGINEER.

PAVEMENT SCHEDULE

LOCATION STATION TO STATION	SIDE	SURFACE WIDTH	GEOTECH FABRIC	SUBBASE GRAN MTL TYPE B	PCC PAVEMENT 11"	AGGREGATE BASE COURSE TYPE B	BITUMINOUS MATERIALS (PRIME COAT)	BITUMINOUS MATERIALS (TACK COAT)	HMA BINDER COURSE IL-19.0, N50	HMA SURFACE COURSE MIX "C", N50
FAS 1600 (CH 12)										
293+36.0 293+44.0	LT & RT	22.0	22.2	5.1	19.6					
294+66.0 295+50.0	LT & RT	22.0	231.0			151.5	477.8	46.7	35.3	17.3
CR 380N	LT & RT	VAR	144.3			97.9	320.1	31.9	23.9	11.9
TOTALS			397.5	5.1	19.6	249.4	797.9	78.6	59.1	29.2
USE			398	6	20	250	798	79	60	30

AGGREGATE SURFACE COURSE, TYPE B

STATION TO STATION	SIDE	TON
CR 380N	LT	25
TOTAL		25

GUARDRAIL REMOVAL

STATION TO STATION	SIDE	FOOT
FAS 1600 (CH 12)		
293+17.9 293+90.9	RT	73.0
293+17.9 293+91.0	LT	73.1
294+18.9 295+17.0	RT	98.0
294+19.1 294+37.8	LT	116.3
TOTAL		360.5
USE		361

PAVEMENT REMOVAL

STATION TO STATION	SIDE	SQ YD
FAS 1600 (CH 12)		
293+36.0 293+91.6	LT & RT	132.2
294+18.6 295+50.0	LT & RT	305.2
CR 380N	LT & RT	175.9
TOTAL		613.3
USE		614

AGGREGATE SHOULDERS, TYPE B

STATION TO STATION	SIDE	TON
FAS 1600 (CH 12)		
292+70.2 293+44.0	RT	8.4
292+96.2 293+44.0	LT	5.4
294+37.0 294+31.1	LT	15.3
294+66.0 295+50.0	RT	9.6
295+18.8 295+50.0	LT	1.8
TOTAL		40.5
USE		41

GUARDRAIL SCHEDULE

STATION TO STATION	SIDE	SPBGR TYPE A 6' POSTS	SPBGR (SHORT RADIUS)	TRAF BARRIER TERMINAL		GUARDRAIL REFLECTORS TYPE A	TERMINAL MARKERS DIRECT APPLIED
				TYPE 5A	TYPE 1 SPECIAL (TANGENT)		
		FOOT		EACH			
FAS 1600 (CH 12)							
292+97.25 293+73.00	RT	12.5		1	1	4	1
293+09.75 293+73.00	LT			1	1	4	1
294+37.00 295+00.25	RT			1	1	4	1
294+37.00 294+35.05	LT	12.5	37.5		1	4	1
TOTALS		25.0	37.5	3	4	16	4

CONCRETE HEADWALLS FOR PIPE DRAINS

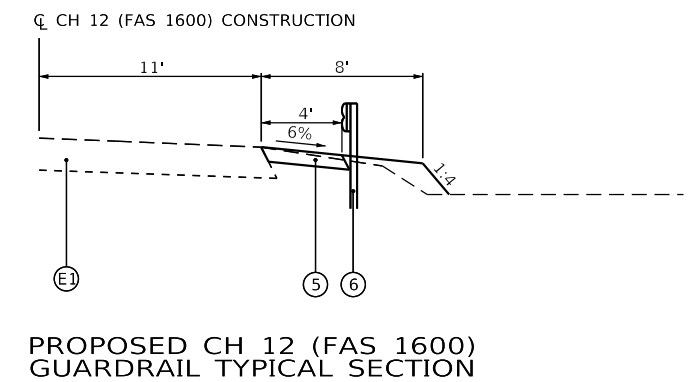
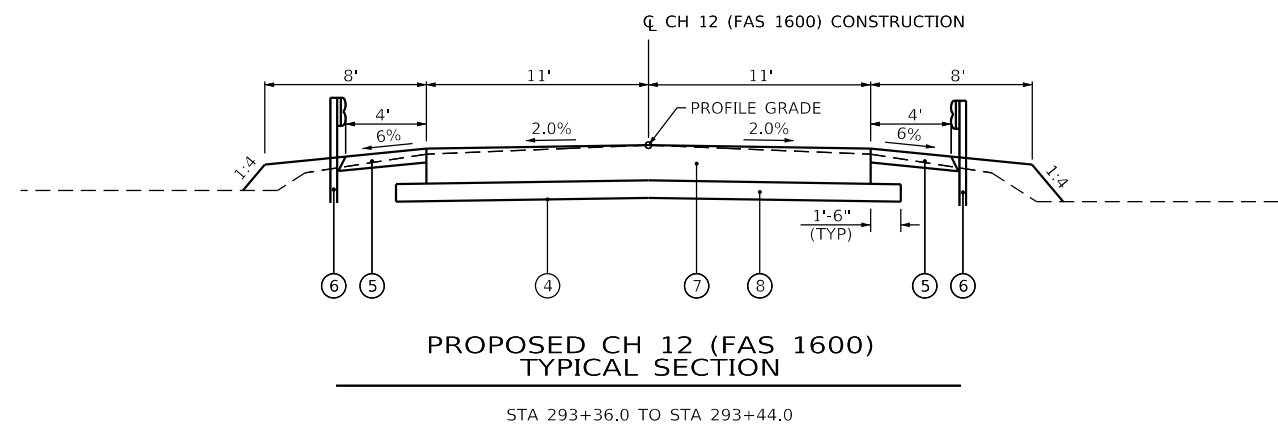
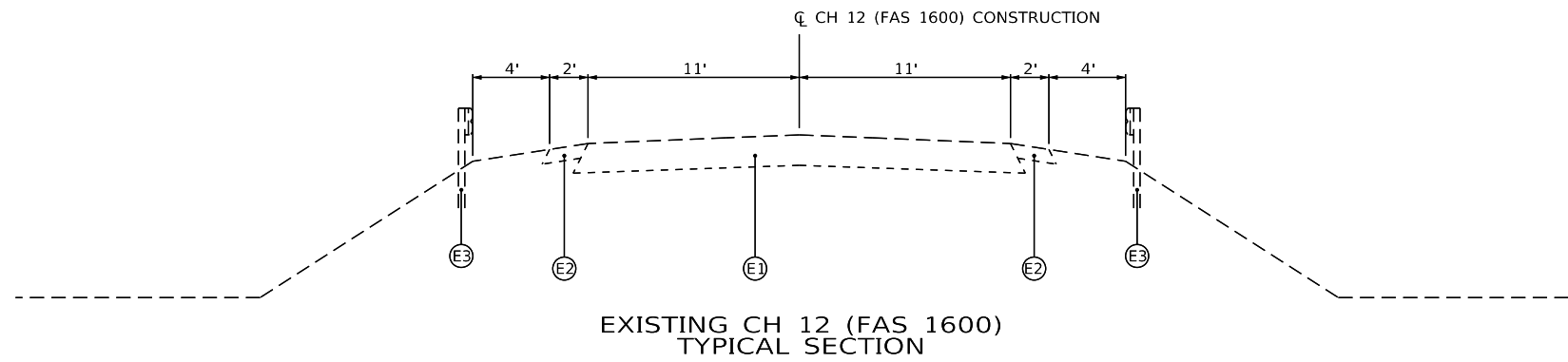
STATION TO STATION	SIDE	EACH
NORTH ABUTMENT	LT & RT	2
SOUTH ABUTMENT	LT & RT	2
TOTAL		4

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LEGEND

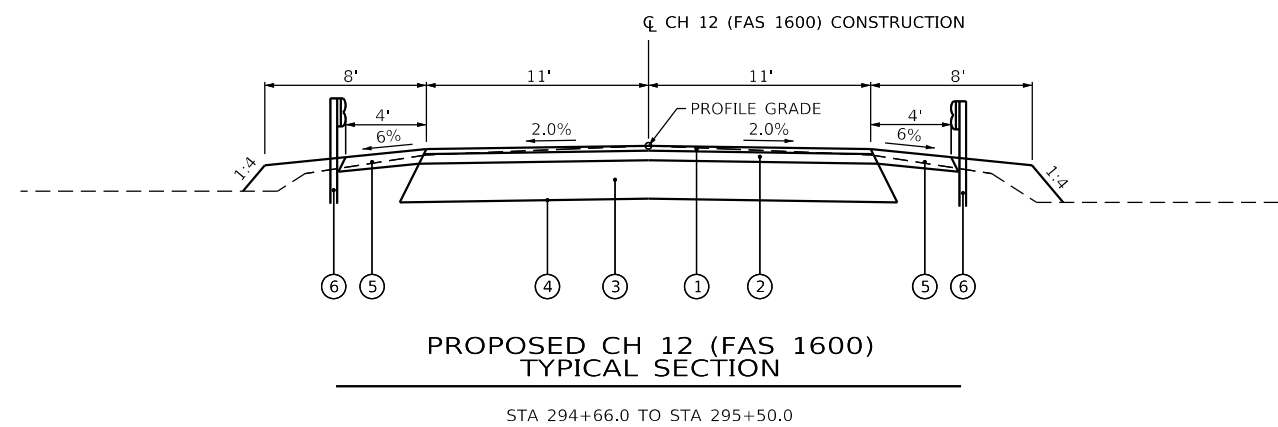
- (E1) EXISTING AGG BSE CSE, 10" W/ HMA
- (E2) EXISTING AGG SHLD
- (E3) EXISTING GUARDRAIL

- (1) PROPOSED HMA SURFACE COURSE, IL-9.5, MIX "C", N50, 1 1/2"
- (2) PROPOSED HMA BINDER COURSE, IL-19.0, N50, 3"
- (3) PROPOSED AGGREGATE BASE COURSE, TYPE B, 12"
- (4) PROPOSED GEOTECHNICAL FABRIC
- (5) PROPOSED AGGREGATE SHOULDER, TYPE B, 4 1/2"
- (6) PROPOSED GUARDRAIL
- (7) PROPOSED PORTLAND CEMENT CONCRETE PAVEMENT, 11"
- (8) PROPOSED SUBBASE GRANULAR MATERIAL, TYPE B, 4"



STA 293+09.75 TO STA 293+73.00 (LT)
 STA 292+97.25 TO STA 293+73.00 (RT)
 STA 294+37.00 TO STA 295+00.25 (RT)
 STA 294+37.00 TO STA 294+35.05 (LT)

NOTE: (SEE BRIDGE PLANS)
 BRIDGE APPROACH PAVEMENT STA 293+44.0 TO STA 293+74.0
 SN 034-3123 STA 293+73.0 TO STA 294+37.0
 BRIDGE APPROACH PAVEMENT STA 294+36.0 TO STA 294+66.0

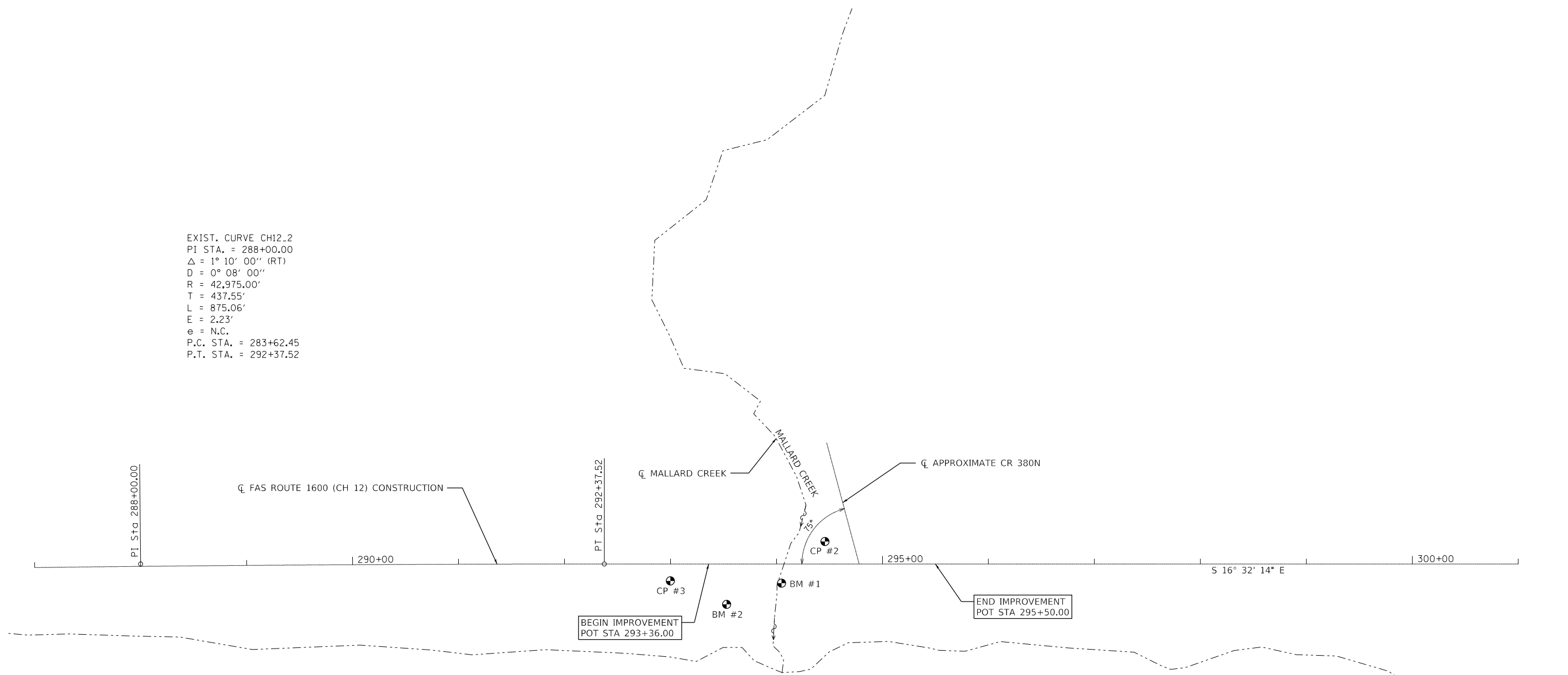


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USER NAME = rjp	DESIGNED - RJP	REVISED -
PLOT SCALE = 48.0000' / in.	DRAWN - RJP	REVISED -
PLOT DATE = 1/3/2023	CHECKED - EBB	REVISED -
	DATE -	REVISED -

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	4
CONTRACT NO. 93801			ILLINOIS FED. AID PROJECT	

EXIST. CURVE CH12.2
 PI STA. = 288+00.00
 $\Delta = 1^{\circ} 10' 00''$ (RT)
 $D = 0^{\circ} 08' 00''$
 $R = 42,975.00'$
 $T = 437.55'$
 $L = 875.06'$
 $E = 2.23'$
 $e = N.C.$
 P.C. STA. = 283+62.45
 P.T. STA. = 292+37.52

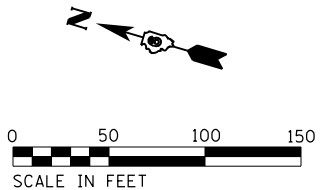


BM#2 - RAILROAD SPIKE IN PP
 NORTH OF SN 034-3122
 STA 293+53.0, 38.1' RT ELEV = 514.61

BM#1 - CHISELED "□" TOP CENTERLINE
 WEST CONCRETE BANISTER SN 034-3122
 STA 294+04.8, 18.1' RT ELEV = 518.32

ALIGNMENT COORDINATES - FAS ROUTE 1600 (CH 12)			
	STATION	NORTHING	EASTING
PI	288+00.00	1,310,298.7969	1,946,686.6966
PT	292+37.52	1,309,879.3486	1,946,811.2391
PI	304+18.67	1,308,747.0574	1,947,147.4385

CONTROL POINT COORDINATES - FAS ROUTE 1600 (CH 12)		
CONTROL POINT #	NORTHING	EASTING
2	1,309,685.8310	1,946,890.8130
3	1,309,815.0720	1,946,813.7090



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KLINGNER & ASSOCIATES, P.C.
 Engineers • Architects • Surveyors
 616 N. 24TH ST. QUINCY, ILLINOIS 62301 217.223.3670
 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

USER NAME = rjp	DESIGNED - RJP	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN - RJP	REVISED -
PLOT DATE = 1/3/2023	CHECKED - EBB	REVISED -
	DATE -	REVISED -

**HANCOCK COUNTY
 HIGHWAY DEPARTMENT**

**FAS 1600 (CH 12) OVER MALLARD CREEK
 HORIZONTAL CONTROL**

SCALE: 1"=50' SHEET 1 OF 1 SHEETS STA. 287+00.00 TO STA. 301+00.00

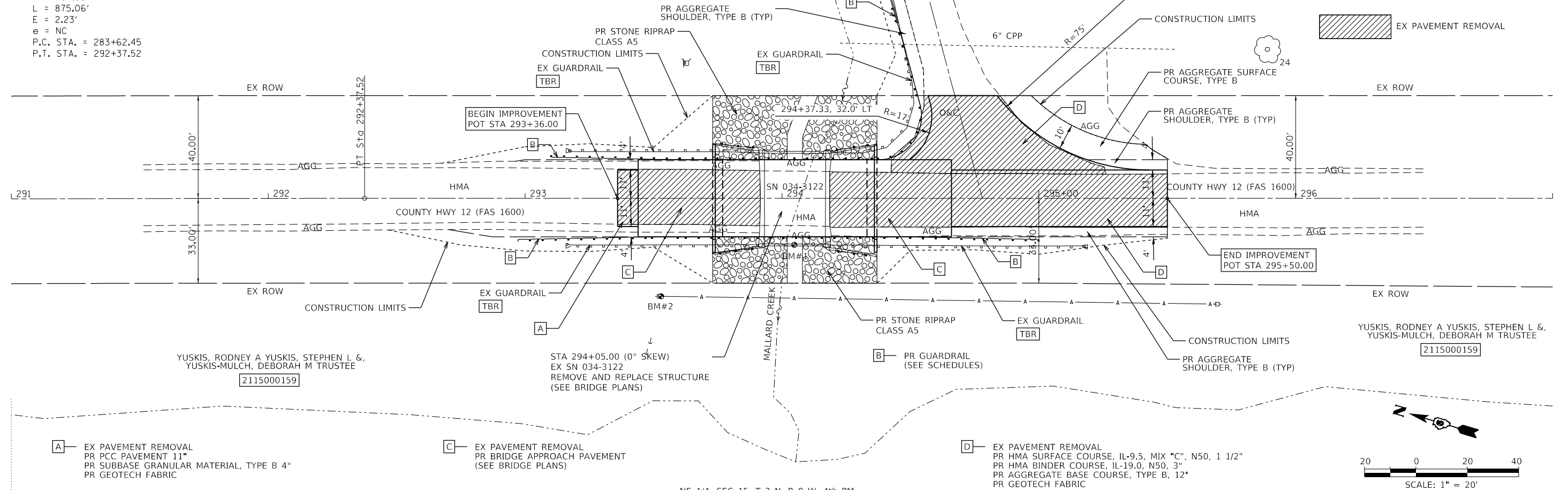
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1600	21-00138-00-BR	HANCOCK	29	5
CONTRACT NO. 93801			ILLINOIS FED. AID PROJECT	

EXIST. CURVE CH12.2
 PI STA. = 288+00.00
 $\Delta = 1^\circ 10' 00''$ (RT)
 $D = 0^\circ 08' 00''$
 $R = 42,975.00'$
 $T = 437.55'$
 $L = 875.06'$
 $E = 2.23'$
 $e = NC$
 P.C. STA. = 283+62.45
 P.T. STA. = 292+37.52

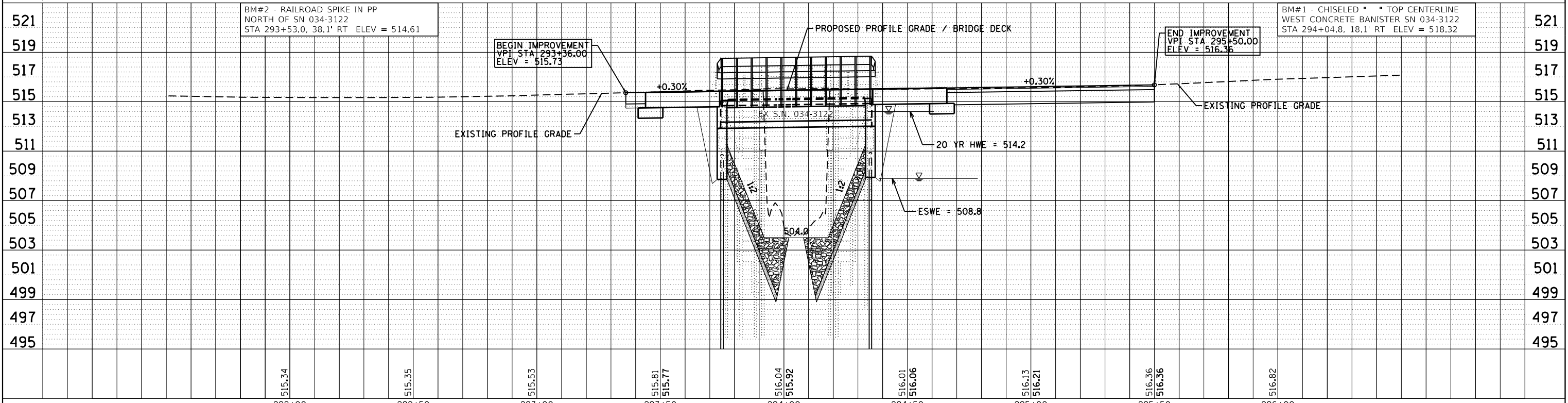
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 2115000157

WEEKS, TERRY
 2115000156

KERR, ROBERT
 2115000154

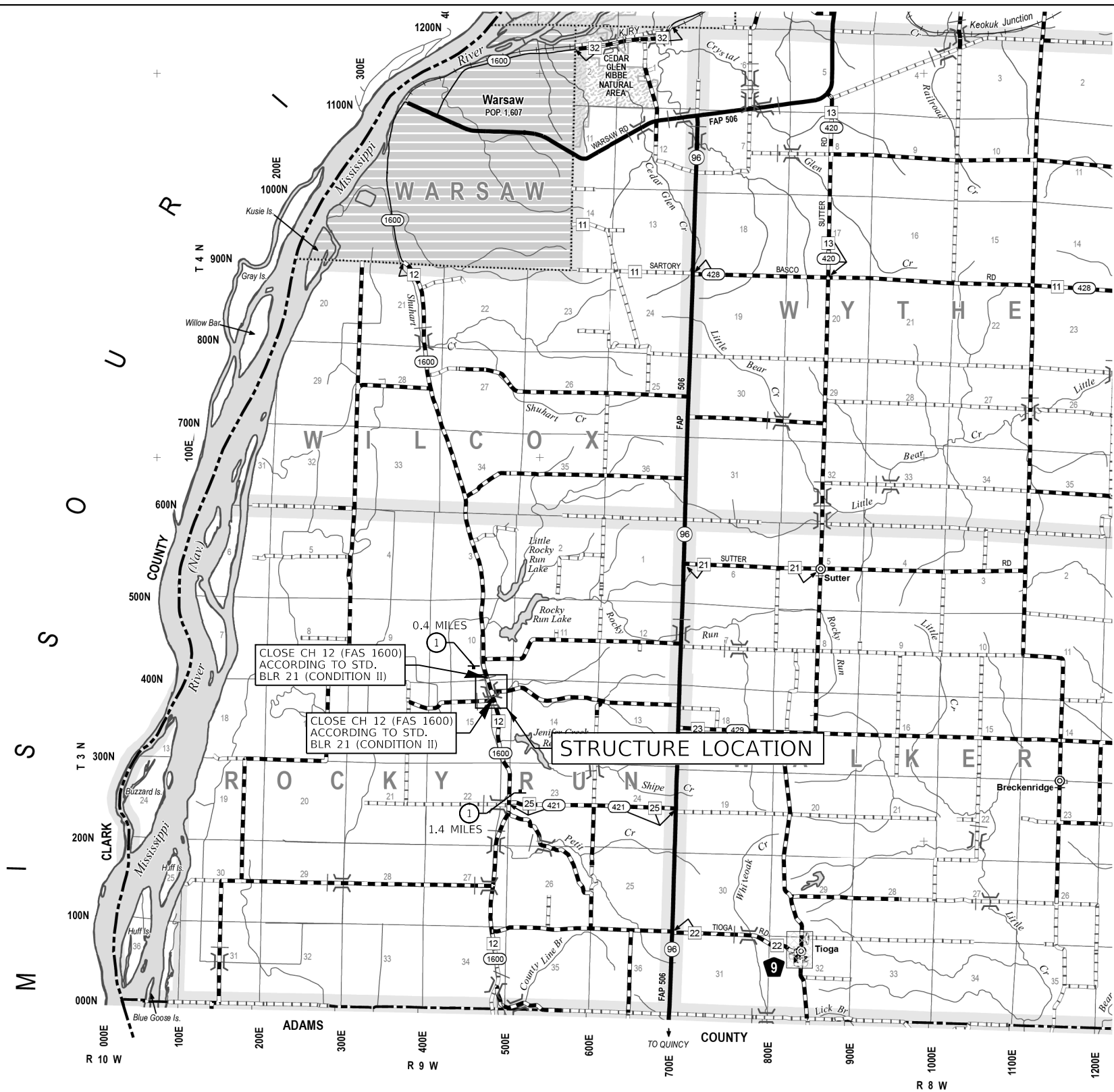


NE 1/4, SEC 15, T 3 N, R 9 W, 4th PM



DATE	
BY	
PLAN	SURVEYED
	NOTED
	CHECKED
	FILED
	NO.

DATE	
BY	
PROFILE	SURVEYED
	NOTED
	CHECKED
	FILED
	NO.



GENERAL NOTES

- 1) ROAD CLOSURE IN ACCORDANCE WITH TRAFFIC CONTROL AND PROTECTION STANDARD BLR-21 ALONG WITH THE DETAILS AND SPECIAL PROVISIONS.
- 2) ALL SIGNS SHALL BE FURNISHED, ERECTED, AND MAINTAINED BY THE CONTRACTOR.
- 3) THE LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS.
- 4) ALL SIGNS SHALL BE REMOVED WHEN NOT REQUIRED FOR FUTURE USE.
- 5) THIS TRAFFIC CONTROL AND PROTECTION SHALL BE PAID FOR ACCORDING TO THE CONTRACT UNIT COST PER LUMP SUM FOR TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21.
- 6) THE EXACT LOCATIONS OF ALL TRAFFIC CONTROL ITEMS SHALL BE APPROVED BY THE ENGINEER.
- 7) PRIOR TO THE CLOSURE OF C.H. 12 (FAS 1600), THE CONTRACTOR SHALL NOTIFY LOCAL EMERGENCY SERVICES, HANCOCK COUNTY ENGINEER, TOWNSHIP ROAD DISTRICT, US POSTAL SERVICE, AND LOCAL SCHOOL DISTRICTS.

HANCOCK COUNTY ENGINEER:

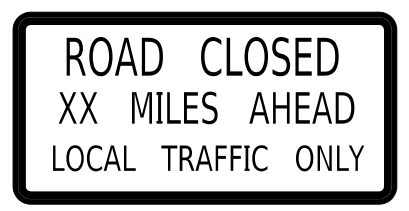
MR. ELGIN BERRY, P.E.
 P.O. BOX 379
 101 SOUTH FIRST STREET
 CARTHAGE, IL 62621
 PHONE: 217-357-3155

ROCKY RUN - WILCOX TOWNSHIP ROAD DISTRICT:

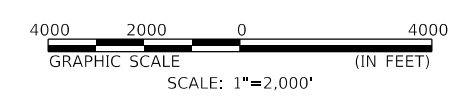
MR. BROCK YUSKIS
 397 NORTH COUNTY ROAD 480
 WARSAW, IL 62379
 PHONE: 217-242-4410

WARSAW COMMUNITY UNIT SCHOOL DISTRICT 316:

SUPERINTENDANT
 MS. KATRINA NIXON
 340 SOUTH 11th STREET
 WARSAW, IL 62379
 PHONE: 217-256-4282



① R11-3a (6030) (O)



TRAFFIC CONTROL PLAN

D:\2011\11-20-2011\11-20-2011\11-20-2011\CADD_Sheets\Sheet-1-C&P.dgn

KLINGNER & ASSOCIATES, P.C.
 Engineers • Architects • Surveyors
 616 N. 24TH ST. QUINCY, ILLINOIS 62301 217.223.3670
 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

USER NAME = rjp	DESIGNED - RJP	REVISED -
PLOT SCALE = 10.0000' / in.	DRAWN - RJP	REVISED -
PLOT DATE = 1/3/2023	CHECKED - EBB	REVISED -
	DATE -	REVISED -

HANCOCK COUNTY HIGHWAY DEPARTMENT

FAS 1600 (CH 12) OVER MALLARD CREEK TRAFFIC CONTROL PLAN

SCALE: 1"=3000' SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	7
			CONTRACT NO. 93801	
ILLINOIS FED. AID PROJECT				

Bench Mark: Chiseled square on west concrete banister of SN 034-3122, Sta. 294+05, 18.1' Rt., NAVD 88 Elev. 518.32.

Existing Structure: Structure Number 034-3122 was originally built in 1971 under Section 42 3-G in Hancock County. The structure consists of 10'-21" deep precast reinforced concrete beams on concrete pile caps and closed timber piles and abutments. The back-to-back abutment length is 29'-6" and the out to out bridge width is 37'-10".

The existing structure shall be removed and replaced. The roadway will be closed and traffic detoured during construction.

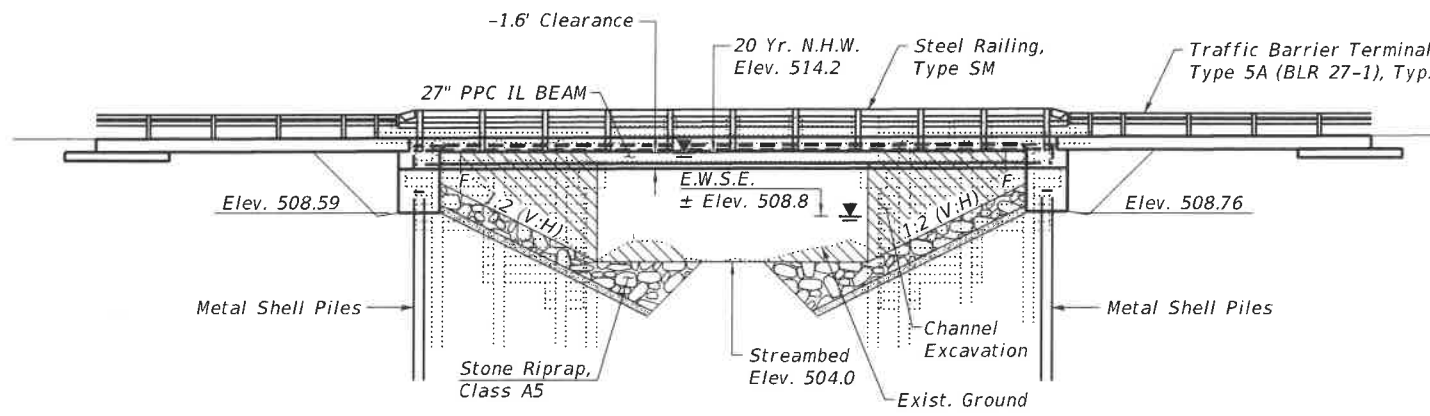
No salvage.

INDEX OF SHEETS

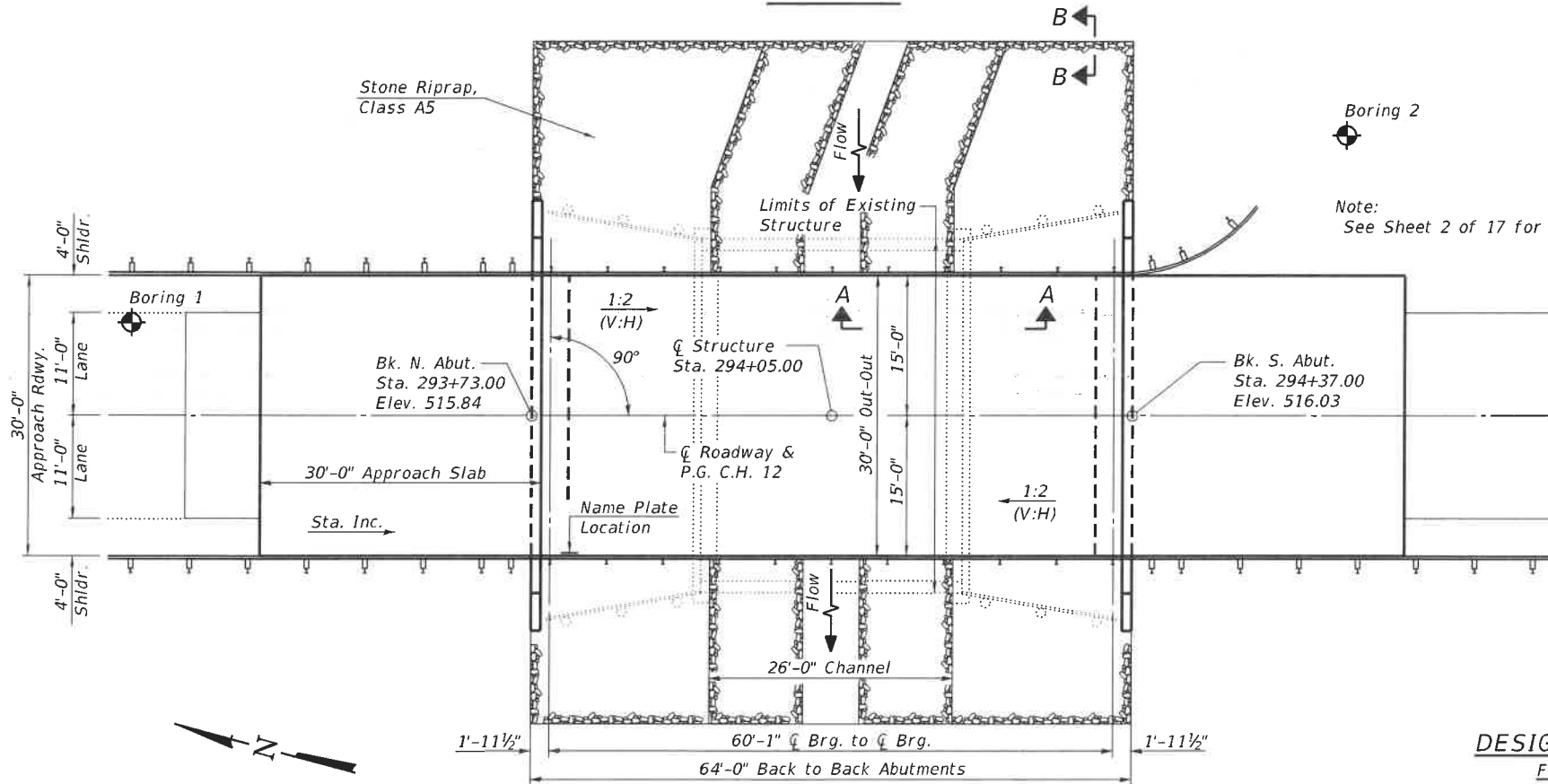
- 1 General Plan & Elevation
- 2 General Notes and Details
- 3 Top of Slab Elevations
- 4 Top of North Approach Slab Elevations
- 5 Top of South Approach Slab Elevations
- 6 Superstructure
- 7 Diaphragm Details
- 8 Steel Railing, Type SM
- 9 Bridge Approach Slab Details
- 10 Framing Plan
- 11 1L27N Beam
- 12 1L27N Beam Details
- 13 North Abutment
- 14 South Abutment
- 15 Metal Shell Pile Details
- 16-17 Boring Logs

TOTAL BILL OF MATERIAL

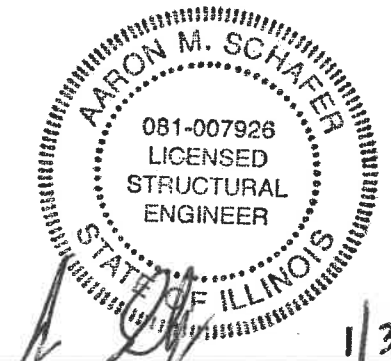
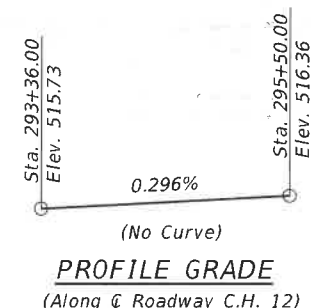
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		511	511
Stone Riprap, Class A5	Ton		609	609
Filter Fabric	Sq. Yd.		408	408
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		156	156
Concrete Structures	Cu. Yd.		60.6	60.6
Concrete Superstructure	Cu. Yd.	71.5		71.5
Bridge Deck Grooving	Sq. Yd.	380		380
Protective Coat	Sq. Yd.	425		425
Concrete Superstructure (Approach Slab)	Cu. Yd.	83.4		83.4
Furnishing and Erecting Precast Prestressed Concrete Beams, 1L27N	Foot	307		307
Reinforcement Bars, Epoxy Coated	Pound	45,190	10,120	55,310
Steel Railing, Type SM	Foot	128		128
Furnishing Metal Shell Piles 14"x0.312"	Foot		460	460
Driving Piles	Foot		460	460
Test Pile Metal Shells	Each		2	2
Name Plates	Each	1		1
Granular Backfill for Structures	Cu. Yd.		86	86
Geocomposite Wall Drain	Sq. Yd.		54	54
Pipe Underdrains for Structures 4"	Foot		130	130



ELEVATION



PLAN



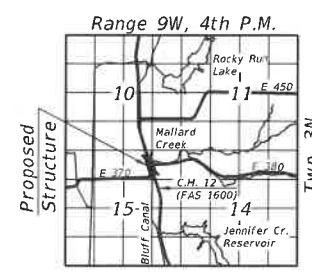
Aaron M. Schaefer
 Licensed Structural Engineer
 State of Illinois No. 081-007926
 License Expires 11/30/2024

1/3/2023
 Date

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 LRFD Specifications for Highway Bridges".

DESIGN STRESSES

- FIELD UNITS**
- f'c = 3,500 psi (Substructure)
 - f'c = 4,000 psi (Approach Slabs)
 - f'c = 5,000 psi (Superstructure)
 - fy = 60,000 psi (Reinforcement)
- PRECAST PRESTRESSED UNITS**
- f'c = 8,500 psi
 - f'ci = 6,500 psi
 - fpu = 270,000 psi (0.6" dia. low lax. strands)
 - fptb = 202,300 psi (0.6" dia. low lax. strands)



LOCATION SKETCH

GENERAL PLAN & ELEVATION
C.H. 12 (FAS RTE 1600)
OVER MALLARD CREEK
SECTION 21-00138-00-BR
HANCOCK COUNTY
STATION 294+05.00
STRUCTURE NO. 034-3123

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (SD1) = 0.12g
 Design Spectral Acceleration at 0.2 sec. (SDS) = 0.16g
 Soil Site Class = D

LOADING HL-93

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

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

FILE NAME: C:\20files\2001182118_Transportation\Structure Plans\Final Bridge Plans.dgn

KLINGNER & ASSOCIATES, P.C.
 Engineers • Architects • Surveyors
 616 N. 24TH ST. QUINCY, ILLINOIS 62201 217.223.3670
 STATE OF ILLINOIS DESIGN FIRM NO. 184-2739

USER NAME	= r.jp
PLOT SCALE	= 1:333333 ' / in.
PLOT DATE	= 1/3/2023

DESIGNED	- RJP
CHECKED	- AMS
DRAWN	- RJP
CHECKED	- AMS

REVISED	-
REVISED	-
REVISED	-
REVISED	-

HANCOCK COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 034-3123

SHEET NO. 1 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	8
ILLINOIS			CONTRACT NO. 93801	

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.
 Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

Current Ratings on File for Existing Structure

S.N. 034-3122:
 Inventory - 0.85
 Operating - 1.42
 Live Load Restrictions: Yes - Legal Loads only
 No loads are to be placed on existing bridge during removal.

WATERWAY INFORMATION

		Drainage Area = 2.1 Sq. Mi.		Exist. Overtopping Elev. 515.3 @ Sta. 292+30		Prop. Overtopping Elev. 515.3 @ Sta. 292+30			
Flood Event	Freq. Yr.	Discharge C.F.S.	Opening Sq. Ft.		Natural H.W.E. Ft.	Head - Ft.		Headwater El. Ft.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	1,250	249	389	513.3	0.0	0.2	513.2	513.5
Base	100	1,930	249	389	514.2	0.4	0.3	514.6	514.5
Scour Design	200	2,245	249	389	515.8	0.8	0.7	516.6	516.5
Overtop Exist.	50	1,630	249	389	516.5	0.3	0.2	516.8	516.7
Overtop Prop.	50	1,630	249	389	515.1	0.8		515.9	
Overtop Prop.	50	1,630	249	389	515.1	0.6		515.7	515.7
Max. Calc.	500	2,690	249	389	517.1	0.3	0.3	517.4	517.4

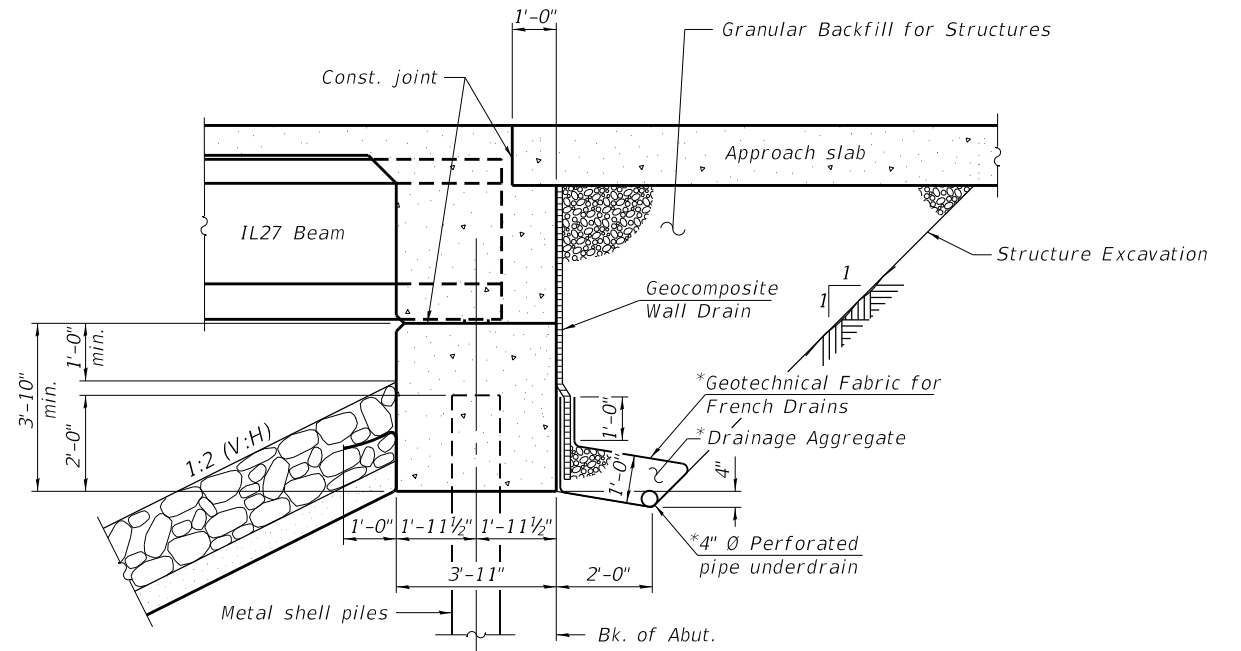
10 year velocity through proposed bridge = 2.8 ft./sec.

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)			Item 113
	N. Abut.	S. Abut.		
Q100	508.59	508.76		8
Q200	508.59	508.76		
Design	508.59	508.76		
Check	508.59	508.76		

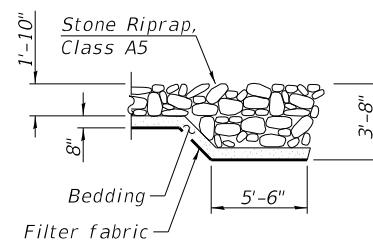
MALLARD CREEK
 BUILT 202_ BY
 HANCOCK COUNTY
 SECTION 21-00138-00-BR
 C.H. 12 STATION 294+05.00
 STR. NO. 034-3123 LOADING HL-93

NAME PLATE
 See Std. 515001

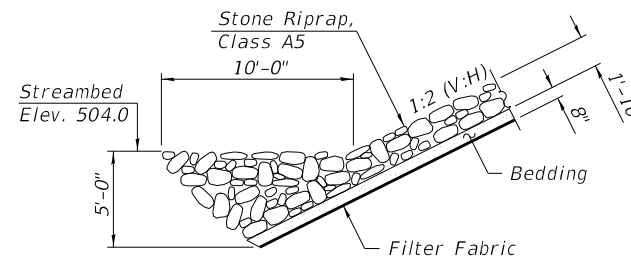


SECTION THRU INTEGRAL ABUTMENT

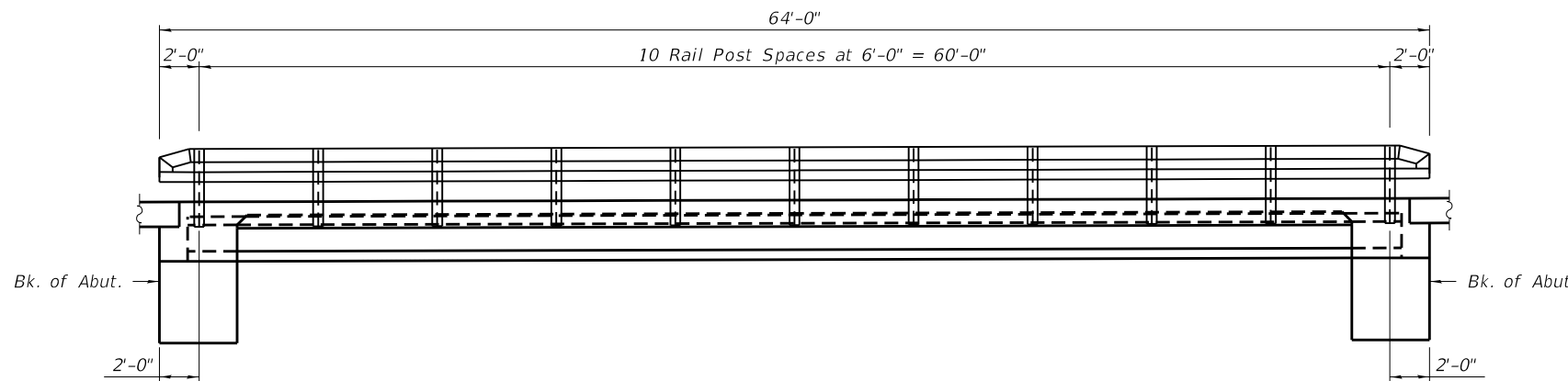
*Included in the cost of Pipe Underdrains for Structures



SECTION B-B



SECTION A-A



RAIL POST SPACING

FILE NAME: C:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.dgn

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 Engineers • Architects • Surveyors
 616 N. 24TH ST. QUINCY, ILLINOIS 62301 217.223.3670
 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

USER NAME = rjp
 PLOT SCALE = 1.333333 1/4" = 1"
 PLOT DATE = 1/3/2023

DESIGNED - RJP
 CHECKED - AMS
 DRAWN - RJP
 CHECKED - AMS

REVISED -
 REVISED -
 REVISED -
 REVISED -

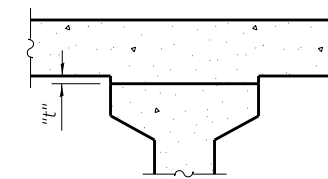
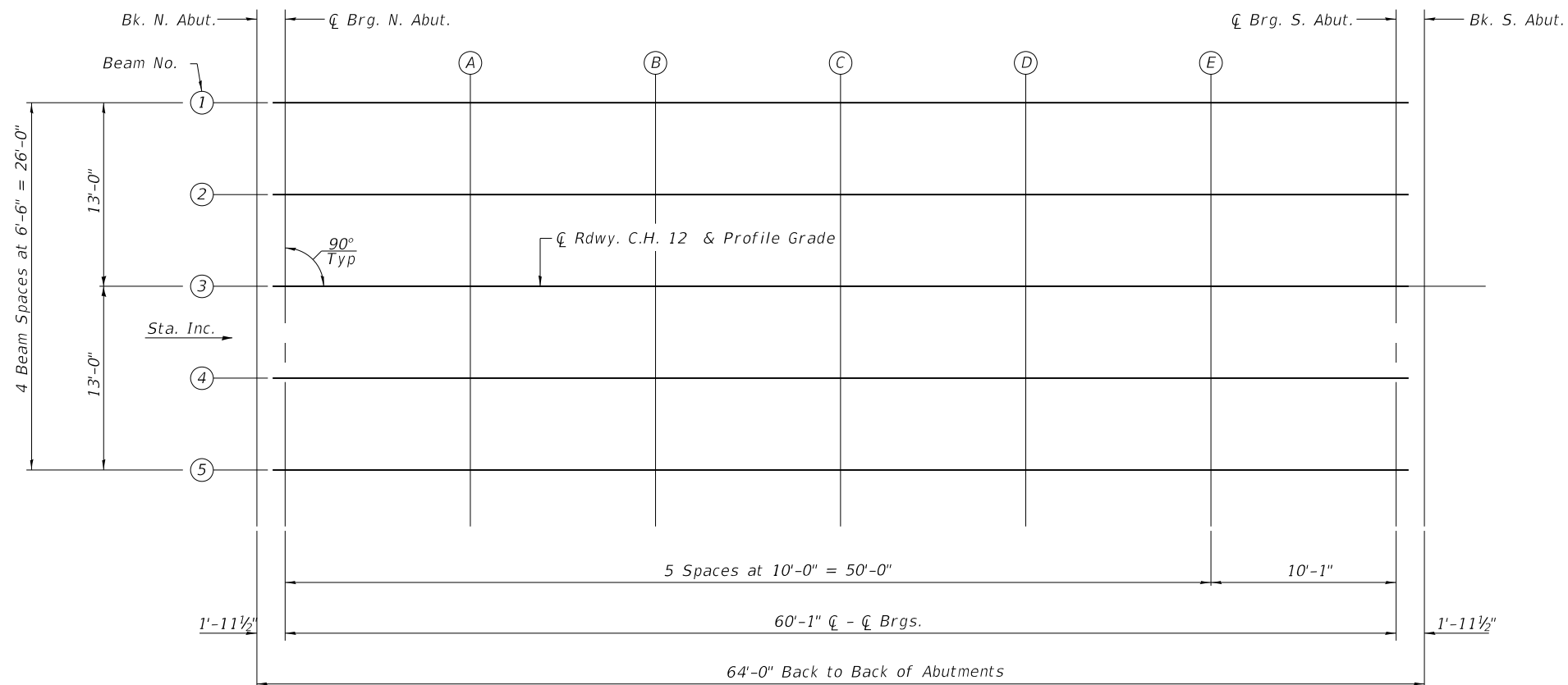
**HANCOCK COUNTY
 HIGHWAY DEPARTMENT**

**GENERAL NOTES AND DETAILS
 STRUCTURE NO. 034-3123**

SHEET NO. 2 OF 17 SHEETS

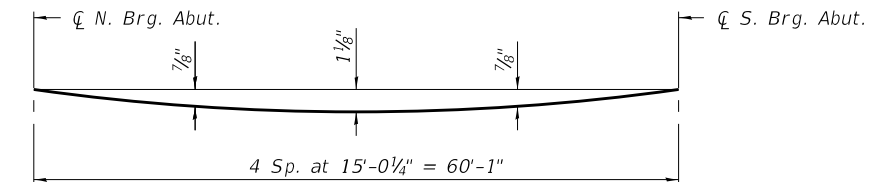
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	9
CONTRACT NO. 93801				

ILLINOIS FED. AID PROJECT



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown below, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.

PLAN

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	293+73.00	-13.00	515.58	515.58
Cl Brg. N. Abut.	293+74.96	-13.00	515.59	515.59
A	293+84.96	-13.00	515.61	515.67
B	293+94.96	-13.00	515.64	515.73
C	294+04.96	-13.00	515.67	515.77
D	294+14.96	-13.00	515.70	515.79
E	294+24.96	-13.00	515.73	515.79
Cl Brg. S. Abut.	294+35.04	-13.00	515.76	515.76
Bk. S. Abut.	294+37.00	-13.00	515.77	515.77

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	293+73.00	-6.50	515.71	515.71
Cl Brg. N. Abut.	293+74.96	-6.50	515.72	515.72
A	293+84.96	-6.50	515.74	515.80
B	293+94.96	-6.50	515.77	515.86
C	294+04.96	-6.50	515.80	515.90
D	294+14.96	-6.50	515.83	515.92
E	294+24.96	-6.50	515.86	515.92
Cl Brg. S. Abut.	294+35.04	-6.50	515.89	515.89
Bk. S. Abut.	294+37.00	-6.50	515.90	515.90

Note:

Offsets to the left of Cl C.H. 12 are negative. Offsets to the right of Cl C.H. 12 are positive.

Cl ROADWAY, PROFILE GRADE, & BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	293+73.00	0.00	515.84	515.84
Cl Brg. N. Abut.	293+74.96	0.00	515.85	515.85
A	293+84.96	0.00	515.87	515.93
B	293+94.96	0.00	515.90	515.99
C	294+04.96	0.00	515.93	516.03
D	294+14.96	0.00	515.96	516.05
E	294+24.96	0.00	515.99	516.05
Cl Brg. S. Abut.	294+35.04	0.00	516.02	516.02
Bk. S. Abut.	294+37.00	0.00	516.03	516.03

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	293+73.00	6.50	515.71	515.71
Cl Brg. N. Abut.	293+74.96	6.50	515.72	515.72
A	293+84.96	6.50	515.74	515.80
B	293+94.96	6.50	515.77	515.86
C	294+04.96	6.50	515.80	515.90
D	294+14.96	6.50	515.83	515.92
E	294+24.96	6.50	515.86	515.92
Cl Brg. S. Abut.	294+35.04	6.50	515.89	515.89
Bk. S. Abut.	294+37.00	6.50	515.90	515.90

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. N. Abut.	293+73.00	13.00	515.58	515.58
Cl Brg. N. Abut.	293+74.96	13.00	515.59	515.59
A	293+84.96	13.00	515.61	515.67
B	293+94.96	13.00	515.64	515.73
C	294+04.96	13.00	515.67	515.77
D	294+14.96	13.00	515.70	515.79
E	294+24.96	13.00	515.73	515.79
Cl Brg. S. Abut.	294+35.04	13.00	515.76	515.76
Bk. S. Abut.	294+37.00	13.00	515.77	515.77

FILE NAME: C:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.sdg

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors
616 N. 24TH ST. QUINCY, ILLINOIS 62301 217.223-3670
STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

USER NAME = r.jp	DESIGNED - RJP	REVISED -
PLOT SCALE = 1:333333 1/4 in.	CHECKED - AMS	REVISED -
PLOT DATE = 1/3/2023	DRAWN - RJP	REVISED -
	CHECKED - AMS	REVISED -

**HANCOCK COUNTY
HIGHWAY DEPARTMENT**

**TOP OF SLAB ELEVATIONS
STRUCTURE NO. 034-3123**

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	10
CONTRACT NO. 93801				

SHEET NO. 3 OF 17 SHEETS

ILLINOIS FED. AID PROJECT

EAST EDGE OF SHOULDER

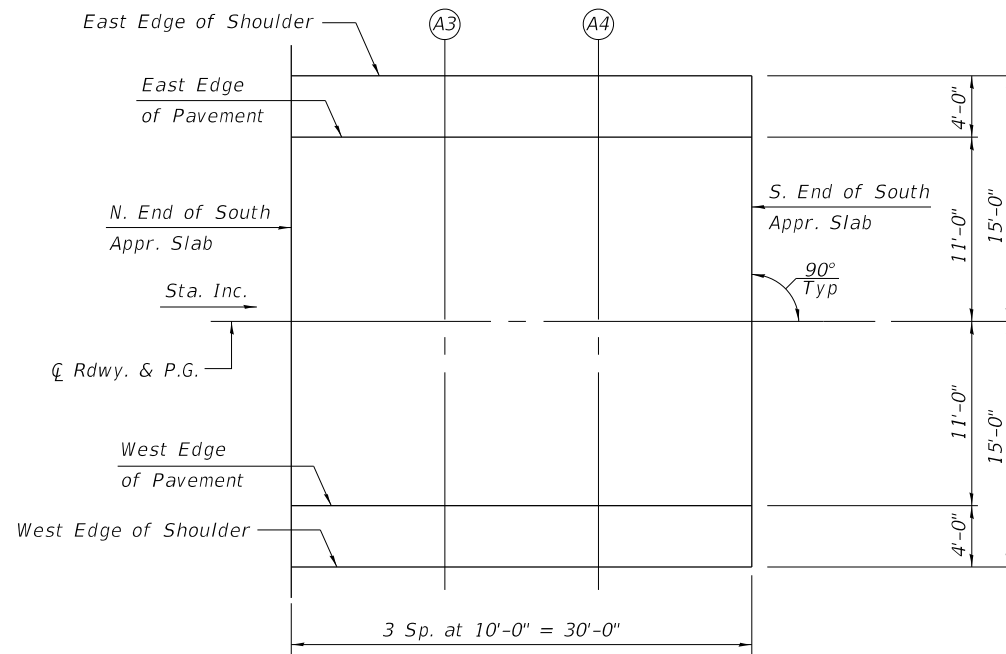
Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	294+36.00	-15.00	515.73
A3	294+46.00	-15.00	515.76
A4	294+56.00	-15.00	515.79
S. End South Appr. Slab	294+66.00	-15.00	515.81

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	294+36.00	-11.00	515.81
A3	294+46.00	-11.00	515.84
A4	294+56.00	-11.00	515.87
S. End South Appr. Slab	294+66.00	-11.00	515.89

☉ ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	294+36.00	0.00	516.03
A3	294+46.00	0.00	516.06
A4	294+56.00	0.00	516.09
S. End South Appr. Slab	294+66.00	0.00	516.11



PLAN

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	294+36.00	11.00	515.81
A3	294+46.00	11.00	515.84
A4	294+56.00	11.00	515.87
S. End South Appr. Slab	294+66.00	11.00	515.89

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End South Appr. Slab	294+36.00	15.00	515.73
A3	294+46.00	15.00	515.76
A4	294+56.00	15.00	515.79
S. End South Appr. Slab	294+66.00	15.00	515.81

Note:
Offsets to the left of ☉ C.H. 12 are negative.
Offsets to the right of ☉ C.H. 12 are positive.

FILE NAME: C:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.dgn

KLINGNER & ASSOCIATES, P.C.
Engineers • Architects • Surveyors
616 N. 24TH ST. QUINCY, ILLINOIS 62301 217.223-3670
STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

USER NAME = r.jp	DESIGNED - RJP	REVISED -
	CHECKED - AMS	REVISED -
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PLOT DATE = 1/3/2023	CHECKED - AMS	REVISED -

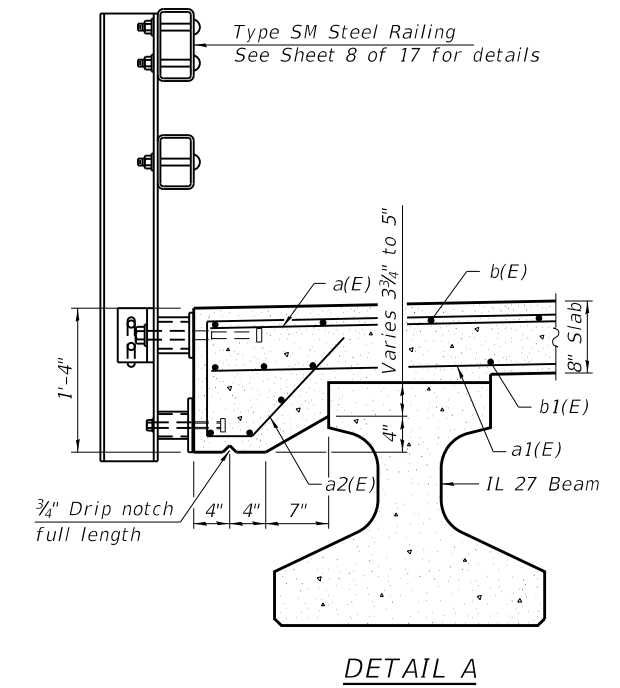
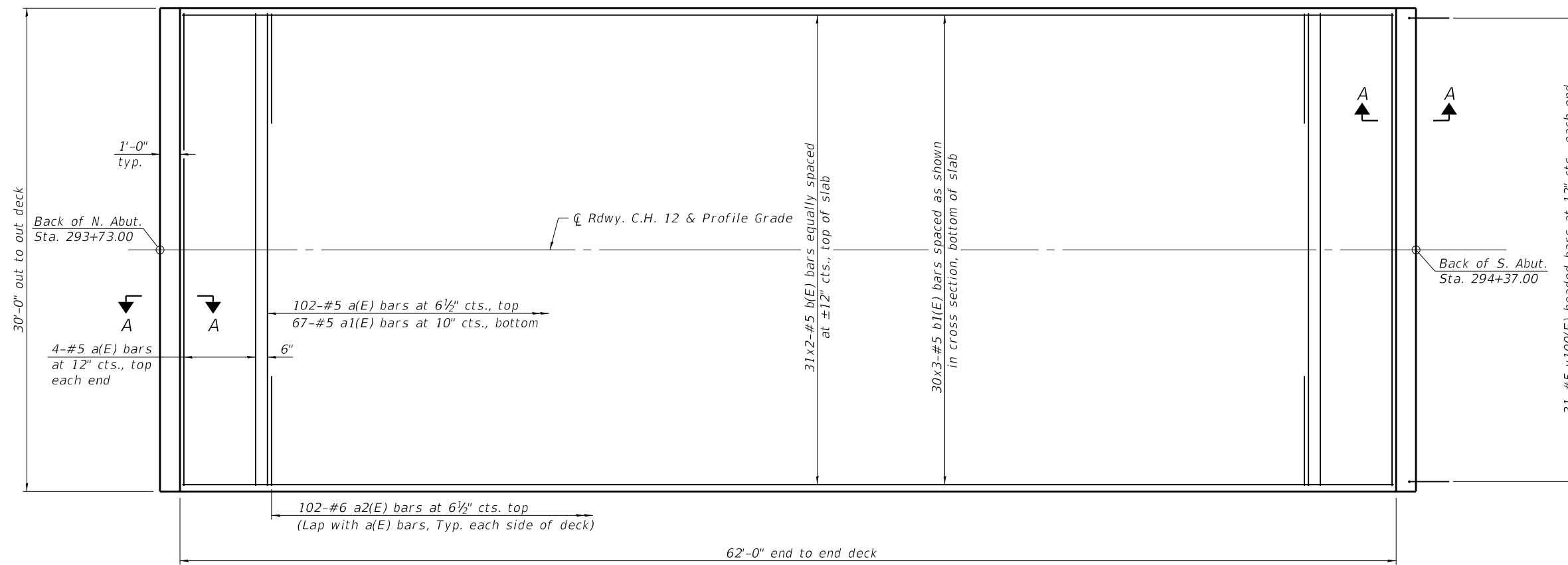
**HANCOCK COUNTY
HIGHWAY DEPARTMENT**

**TOP OF SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 034-3123**

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	12
CONTRACT NO. 93801				

SHEET NO. 5 OF 17 SHEETS

ILLINOIS FED. AID PROJECT

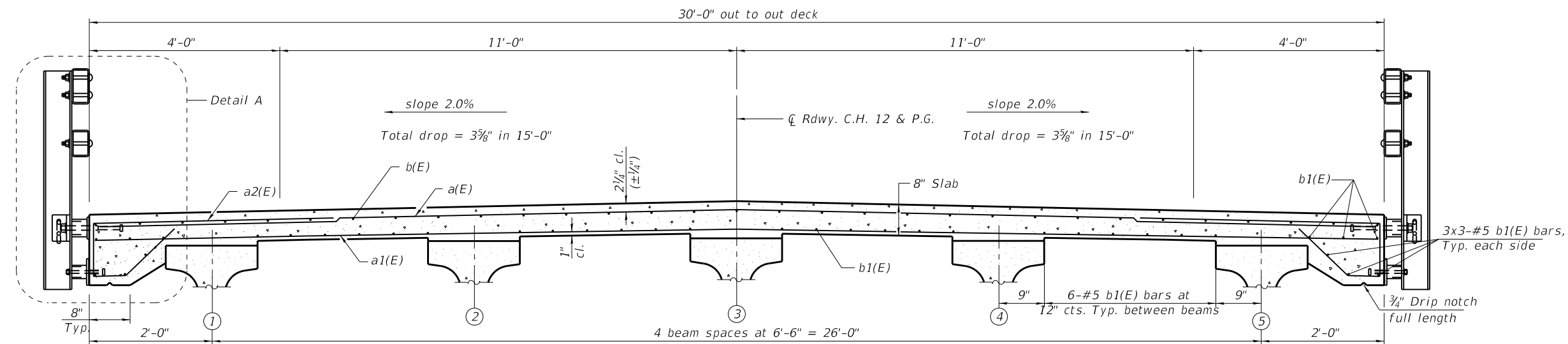


MINIMUM BAR LAP
#5 bar = 3'-6"

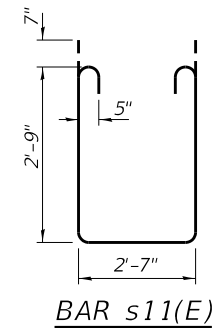
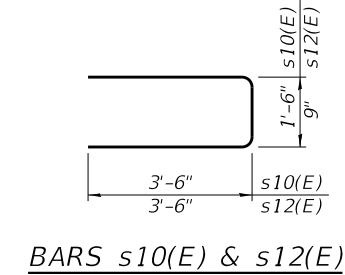
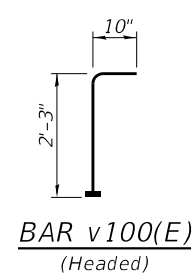
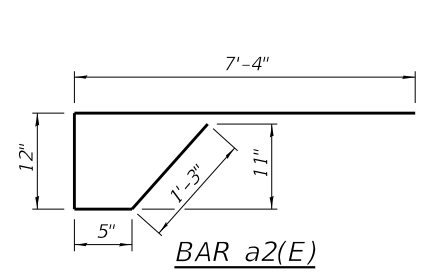
PLAN

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	110	#5	29'-9"	—
a1(E)	67	#5	29'-9"	—
a2(E)	204	#6	10'-0"	┌
b(E)	62	#5	32'-8"	—
b1(E)	108	#5	22'-11"	—
m10(E)	8	#6	29'-8"	—
m11(E)	16	#6	5'-6"	—
m12(E)	8	#6	1'-3"	—
m13(E)	8	#6	3'-8"	—
m14(E)	20	#6	4'-0"	—
s10(E)	44	#5	8'-6"	U
s11(E)	44	#5	9'-3"	U
s12(E)	40	#5	7'-9"	U
v100(E)	62	#5	3'-1"	L
Reinforcement Bars, Epoxy Coated			Pound	15,260
Concrete Superstructure			Cu. Yd.	71.5
Bridge Deck Grooving			Sq. Yd.	193
Protective Coat			Sq. Yd.	207



CROSS SECTION
(Looking South)



Notes:
For Section A-A and Diaphragm Details, see Sheet 7 of 17.
See Sheet 8 of 17 for Railing Details.
Bars indicated thus 31x2-#5 etc. indicates 31 lines of bars with 2 lengths per line.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

FILE NAME: C:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.sgn

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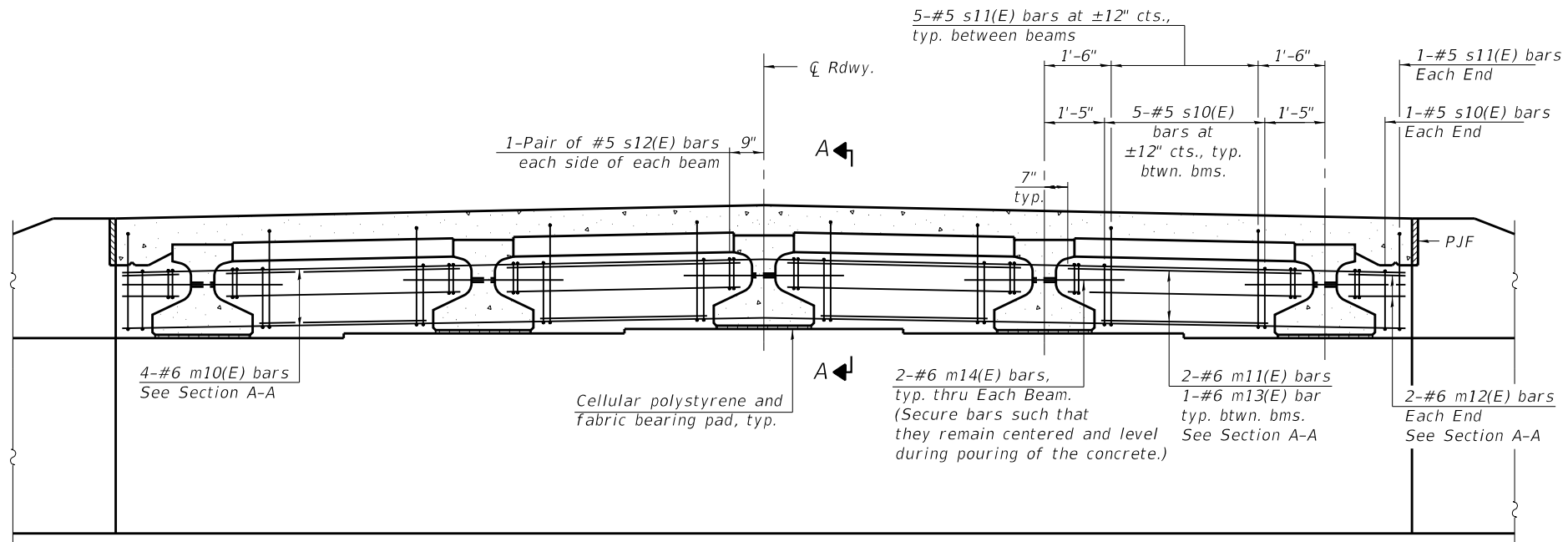
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PLOT DATE = 1/3/2023	DRAWN - RJP	REVISED -
	CHECKED - AMS	REVISED -

**HANCOCK COUNTY
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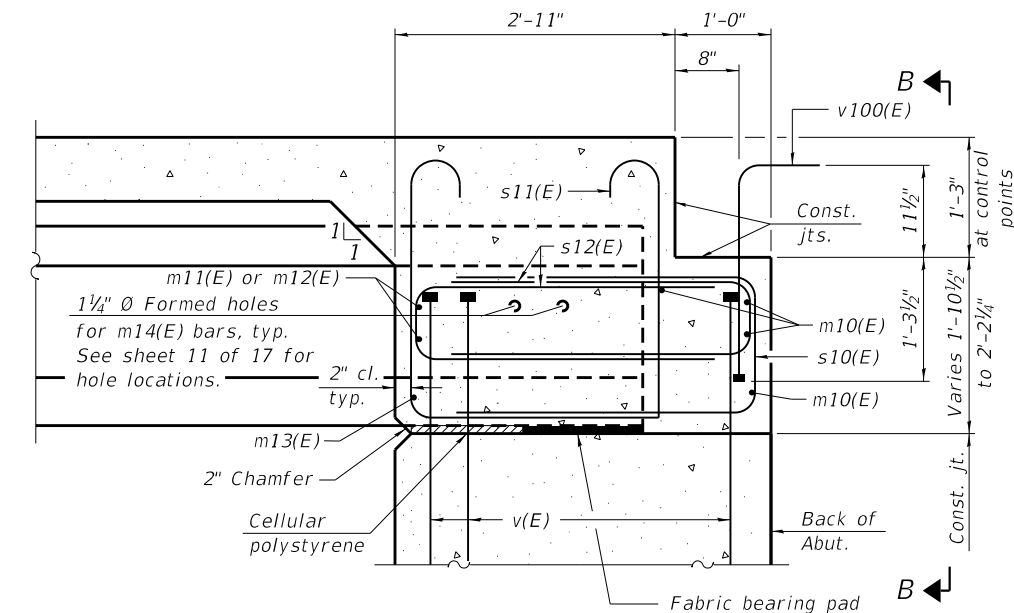
**SUPERSTRUCTURE
STRUCTURE NO. 034-3123**

SHEET NO. 6 OF 17 SHEETS

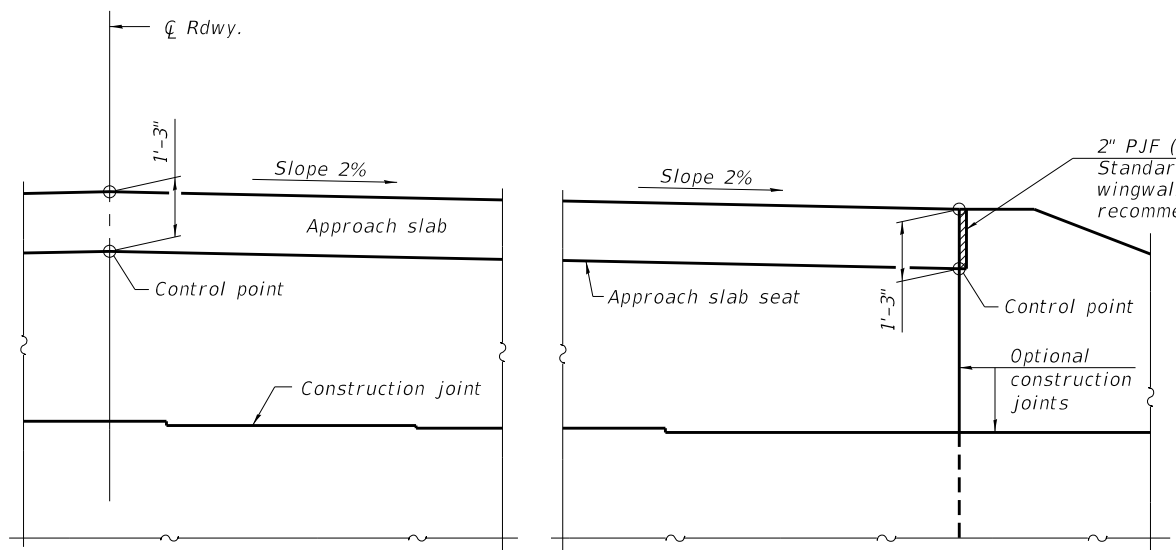
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1600	21-00138-00-BR	HANCOCK	29	13
CONTRACT NO. 93801				
ILLINOIS		FED. AID PROJECT		



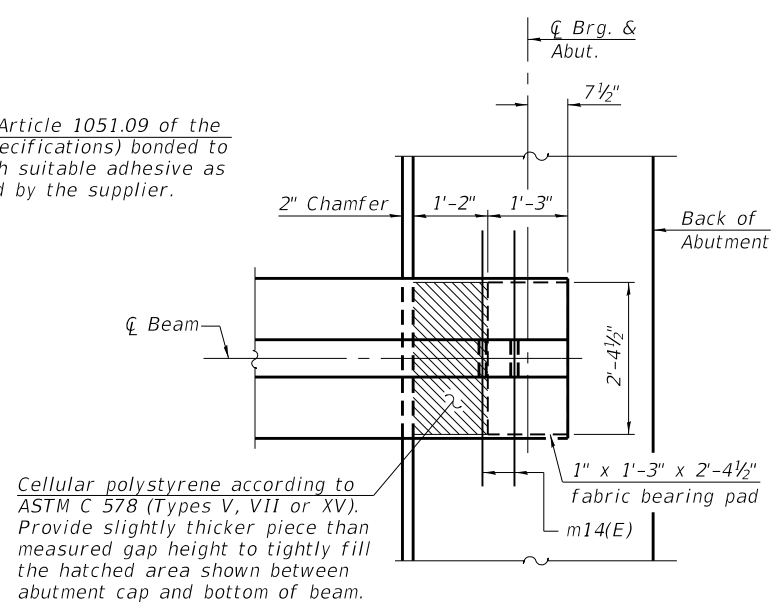
DIAPHRAGM AT ABUTMENT
(Typical at North and South Abutment)



SECTION A-A



VIEW B-B



PLAN AT ABUTMENT
(Showing bottom flange of beam)

Notes:
See sheet 6 of 17 for superstructure details and Bill of Material.
The approach slab seat shall have a constant slope determined from the control points shown.
Cost of cellular polystyrene is included with Concrete Superstructure.
Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

FILE NAME: C:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.dgn

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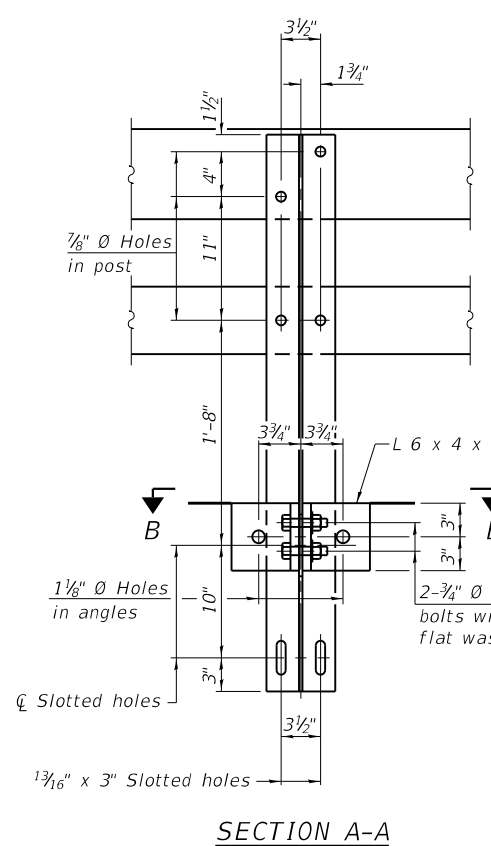
**HANCOCK COUNTY
HIGHWAY DEPARTMENT**

**DIAPHRAGM DETAILS
STRUCTURE NO. 034-3123**

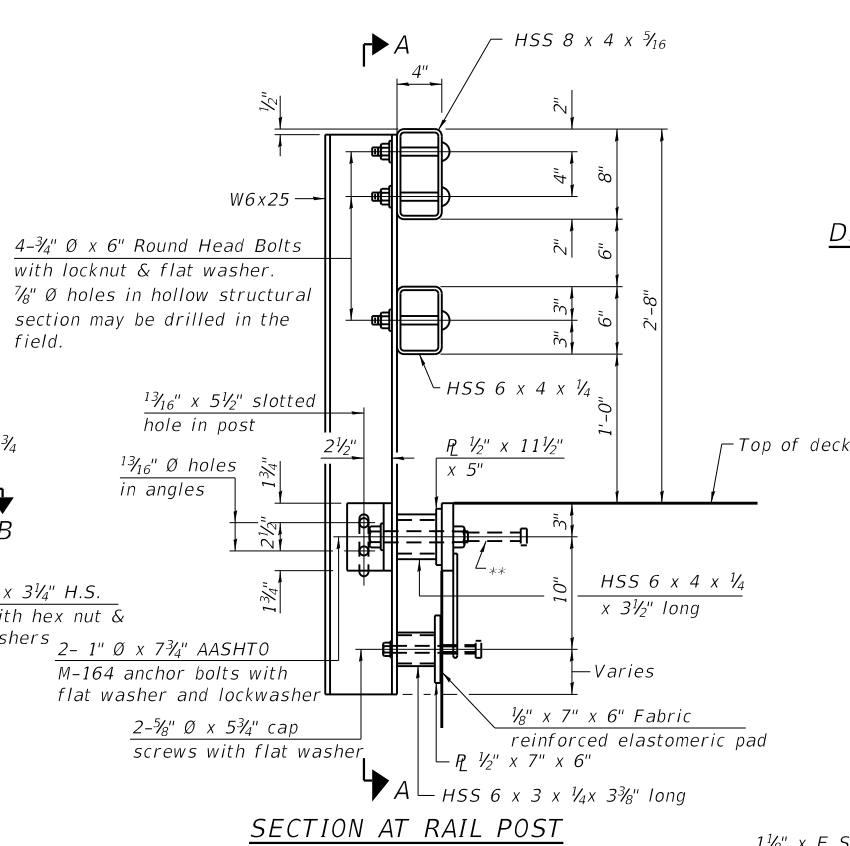
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CONTRACT NO. 93801				
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SHEET NO. 7 OF 17 SHEETS

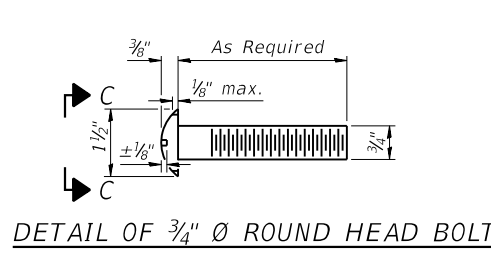
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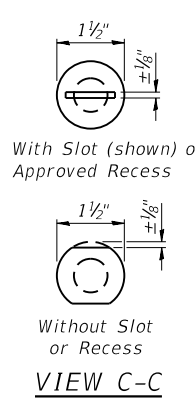
SECTION A-A



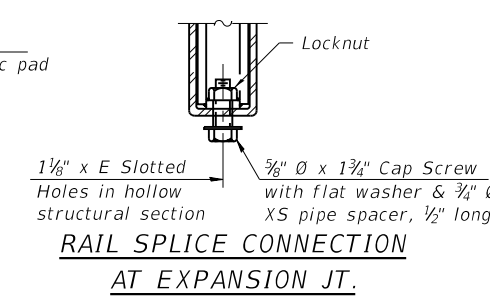
SECTION AT RAIL POST



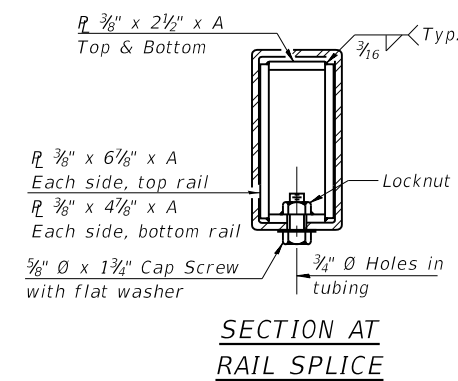
DETAIL OF 3/4" Ø ROUND HEAD BOLT



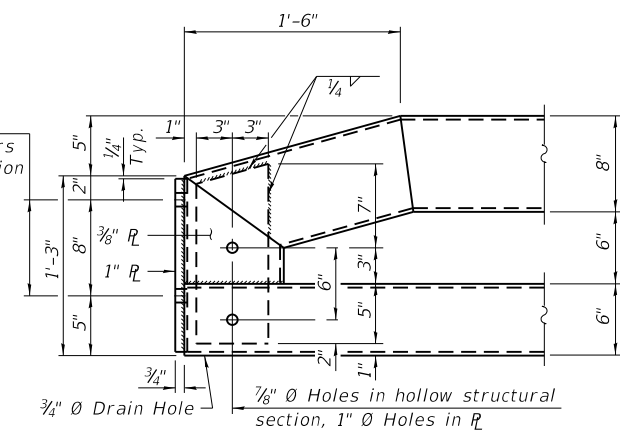
VIEW C-C



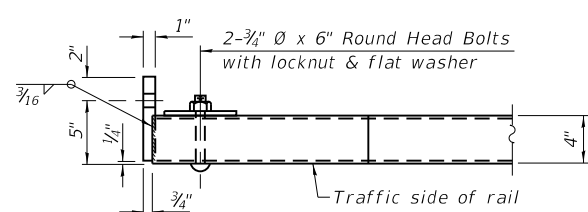
RAIL SPLICE CONNECTION AT EXPANSION JT.



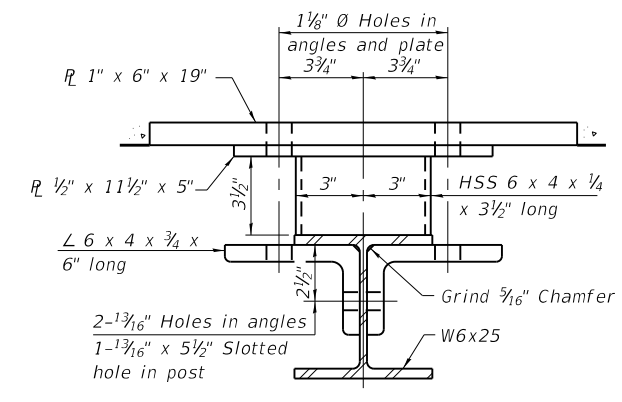
SECTION AT RAIL SPLICE



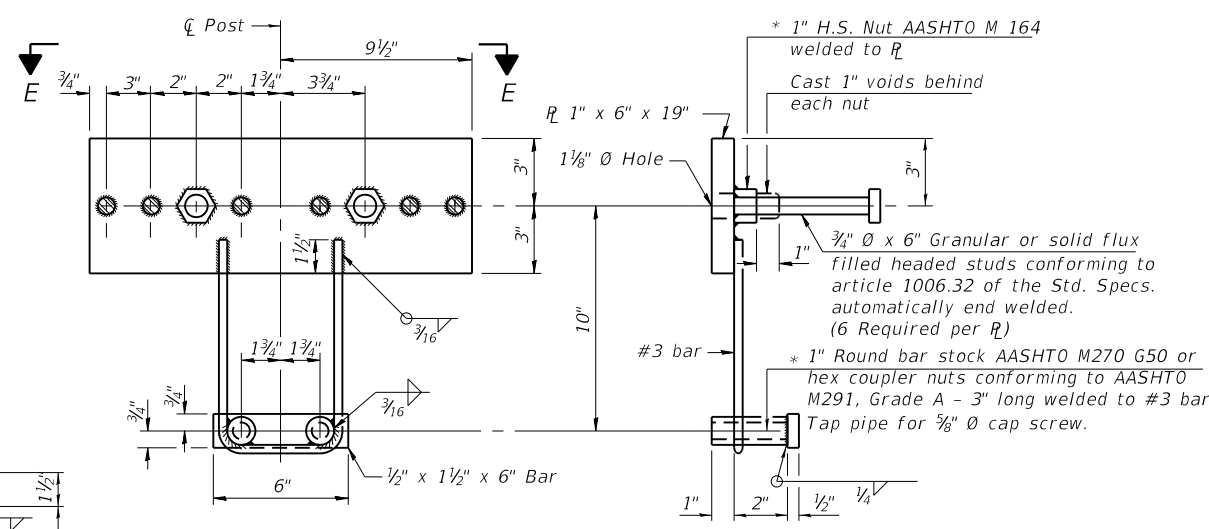
END OF RAIL DETAILS



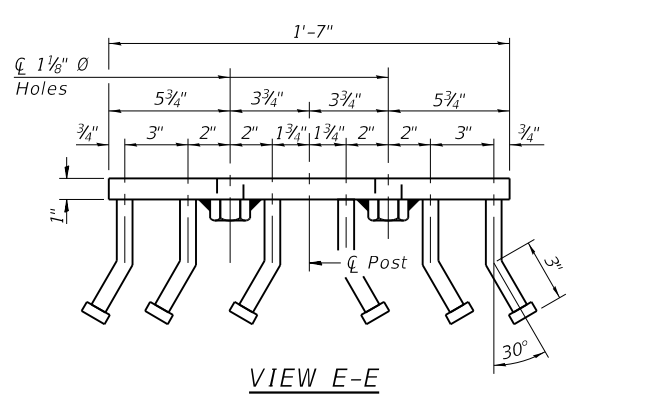
PLAN-BOTT. SPLICE R TYPICAL



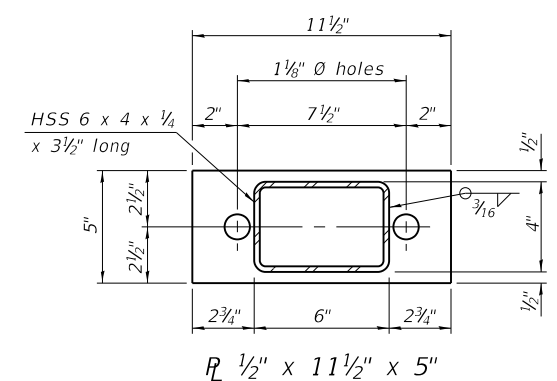
SECTION B-B



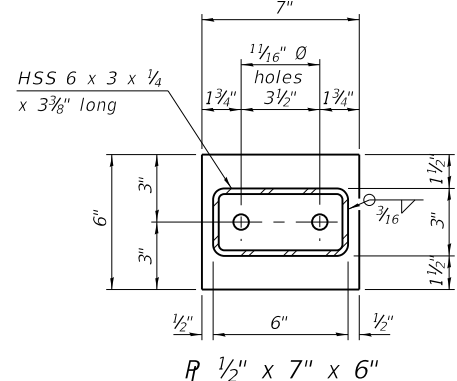
ANCHOR DEVICE



VIEW E-E



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



R 1/2" x 7" x 6"

Notes:
 All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.
 *Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.
 **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.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	128

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 REVISED -
 REVISED -

HANCOCK COUNTY
 HIGHWAY DEPARTMENT

STEEL RAILING, TYPE SM
 STRUCTURE NO. 034-3123

SHEET NO. 8 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	15

CONTRACT NO. 93801
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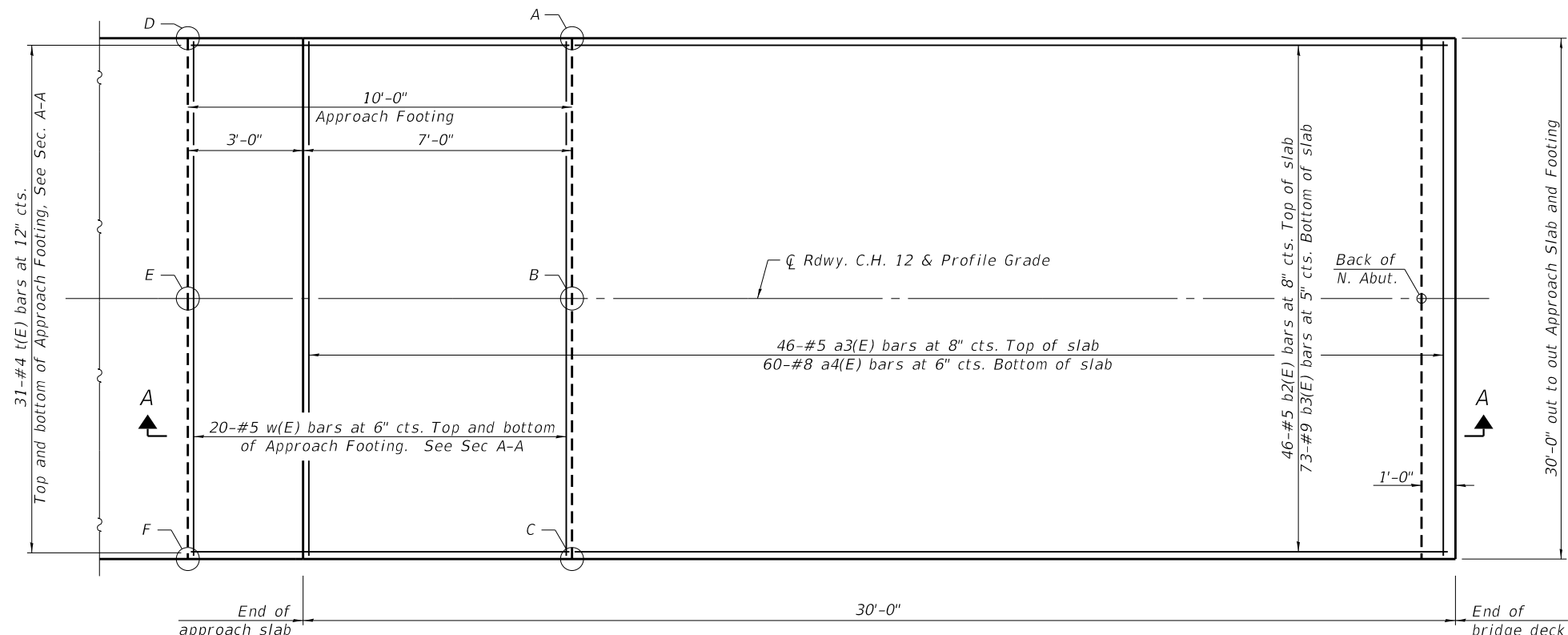
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**TOP AND BOTTOM ELEVATIONS
FOR APPROACH FOOTING**

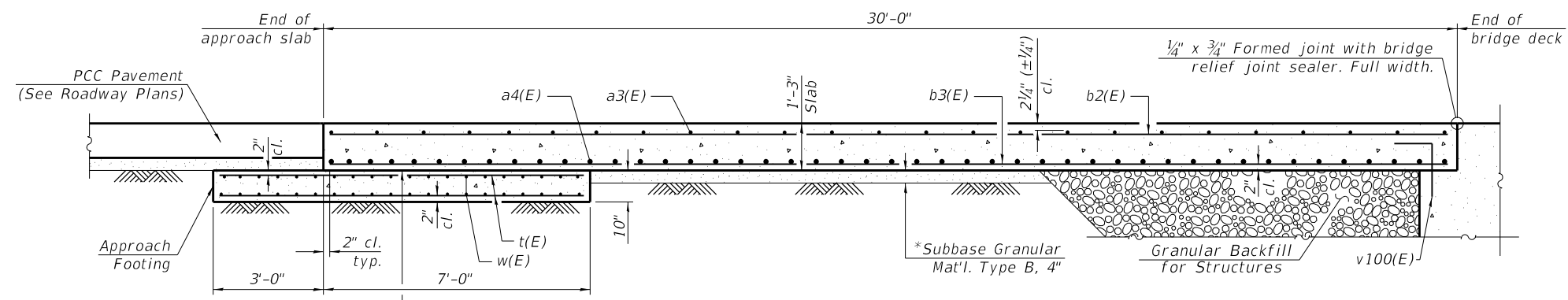
Point	North Approach		South Approach	
	Top	Bottom	Top	Bottom
A	514.22	513.39	514.54	513.71
B	514.52	513.69	514.84	514.01
C	514.22	513.39	514.54	513.71
D	514.19	513.36	514.57	513.74
E	514.49	513.66	514.87	514.04
F	514.19	513.36	514.57	513.74

**TWO APPROACHES
BILL OF MATERIAL**

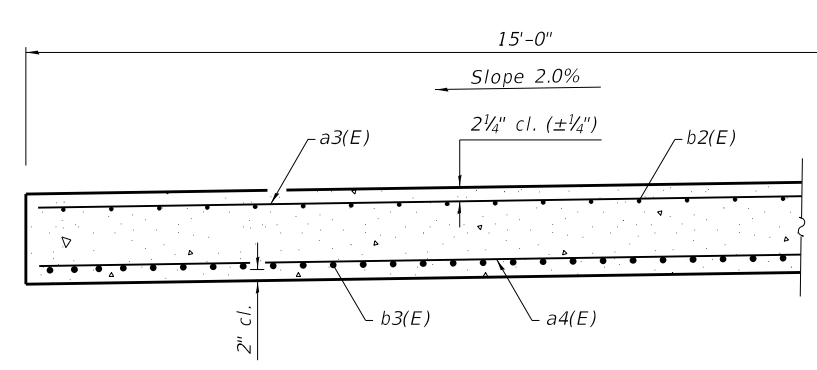
Bar	No.	Size	Length	Shape
a3(E)	92	#5	29'-8"	———
a4(E)	120	#8	29'-8"	———
b2(E)	92	#5	29'-8"	———
b3(E)	146	#9	29'-8"	———
t(E)	124	#4	9'-8"	———
w(E)	80	#5	29'-8"	———
Bridge Deck Grooving		Sq. Yd.	187	
Protective Coat		Sq. Yd.	200	
Concrete Superstructure (Approach Slab)		Cu. Yd.	83.4	
Concrete Structures		Cu. Yd.	18.6	
Reinforcement Bars, Epoxy Coated		Pound	33,210	



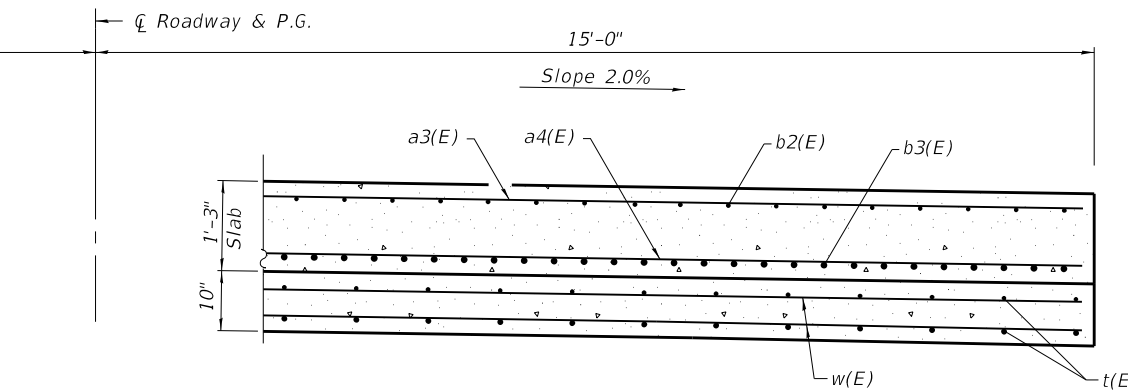
PLAN
(North Approach shown, South Abutment Mirrored)



SECTION A-A



NEAR ABUTMENT



CROSS SECTION (Looking South)
AT APPROACH FOOTING

Notes:
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
 Approach footing concrete shall be paid for as Concrete Structures.
 The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 17.
 For v100(E) bar detail, see sheet 6 of 17.

* Cost included with Concrete Superstructure (Approach Slab).

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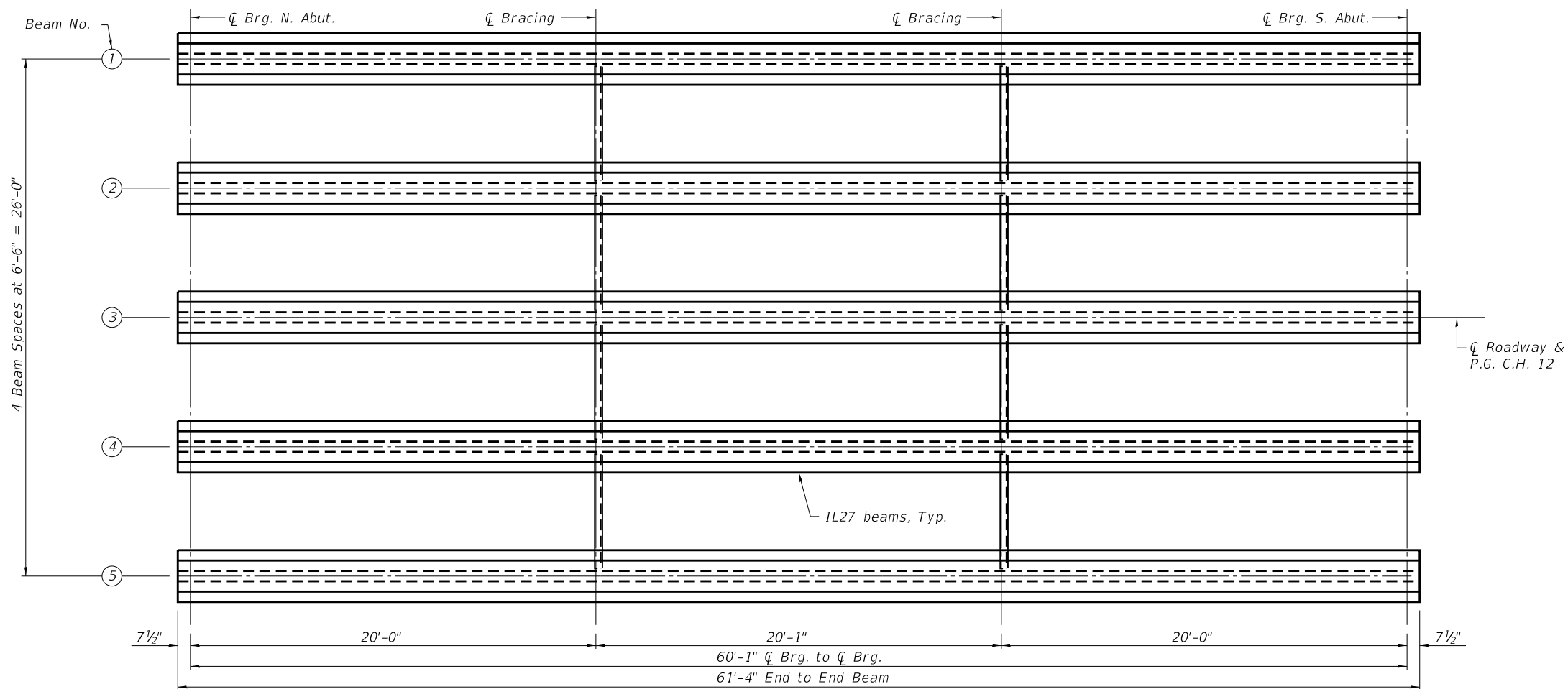
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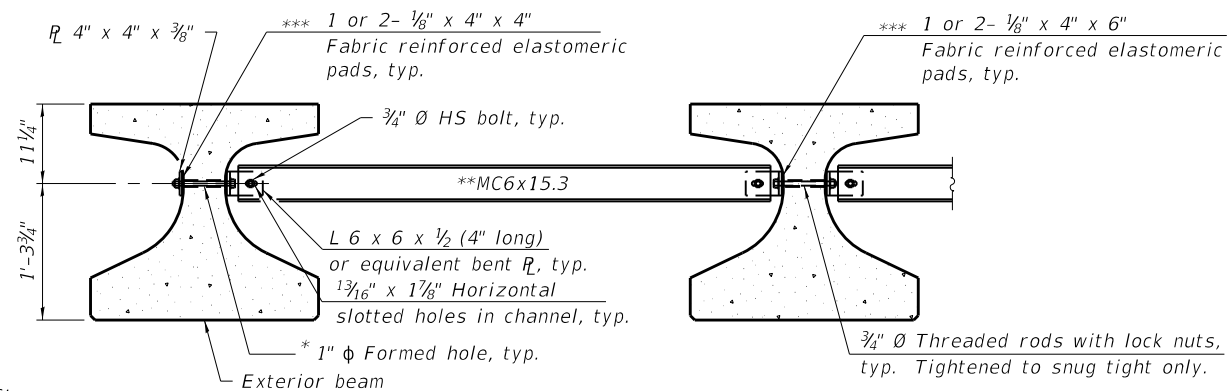
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**BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 034-3123**

F.A.S. RTE. 1600	SECTION 21-00138-00-BR	COUNTY HANCOCK	TOTAL SHEETS 29	SHEET NO. 16
CONTRACT NO. 93801				
ILLINOIS		FED. AID PROJECT		



FRAMING PLAN



Notes:

All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.

Two hardened washers are required for each set of oversized holes.

All holes shall be 1 3/16" $\bar{\phi}$ unless otherwise noted.

3/16" x 3" x 3" plate washers are required over all slotted holes.

All bolts, threaded rods, and hardware shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

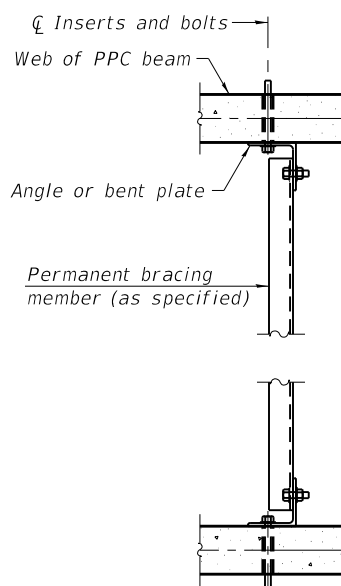
Bracing shall be installed as beams are erected and tightened as soon as possible during erection.

Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Beams.

* Fabricator shall locate to miss strands within permissible tolerances.

** Alternate MC6x18 channels are permitted to facilitate material acquisition.

*** Place pads as necessary to provide a flat mounting surface between the steel and concrete.



PLAN

(When 90° bracing is specified)

- I: Non-composite moment of inertia of beam section (in.⁴).
- I': Composite moment of inertia of beam section (in.⁴).
- Sb: Non-composite section modulus for the bottom fiber of the prestressed beam (in.³).
- Sb': Composite section modulus for the bottom fiber of the prestressed beam (in.³).
- St: Non-composite section modulus for the top fiber of the prestressed beam (in.³).
- St': Composite section modulus for the top fiber of the prestressed beam (in.³).
- DC1: Un-factored non-composite dead load (kips/ft.).
- MDC1: Un-factored moment due to non-composite dead load (kip-ft.).
- DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
- MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
- DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
- MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- M \bar{L} + 1M: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

INTERIOR BEAM MOMENT TABLE		
0.5 Span 1		
I	(in. ⁴)	33,879
I'	(in. ⁴)	127,668
Sb	(in. ³)	3,060
Sb'	(in. ³)	6,056
St	(in. ³)	2,127
St'	(in. ³)	21,566
DC1	(k/ft.)	1.207
MDC1	(k)	545
DC2	(k/ft.)	0.020
MDC2	(k)	9
DW	(k/ft.)	0.325
MDW	(k)	147
M \bar{L} + 1M	(k)	776

INTERIOR BEAM REACTION TABLE		
Abutment		
RDC1	(k)	36
RDC2	(k)	0.5
RDW	(k)	8.2
R \bar{L} + 1M	(k)	71
RTotal	(k)	116

PERMANENT BRACING DETAILS FOR IL27 BEAMS

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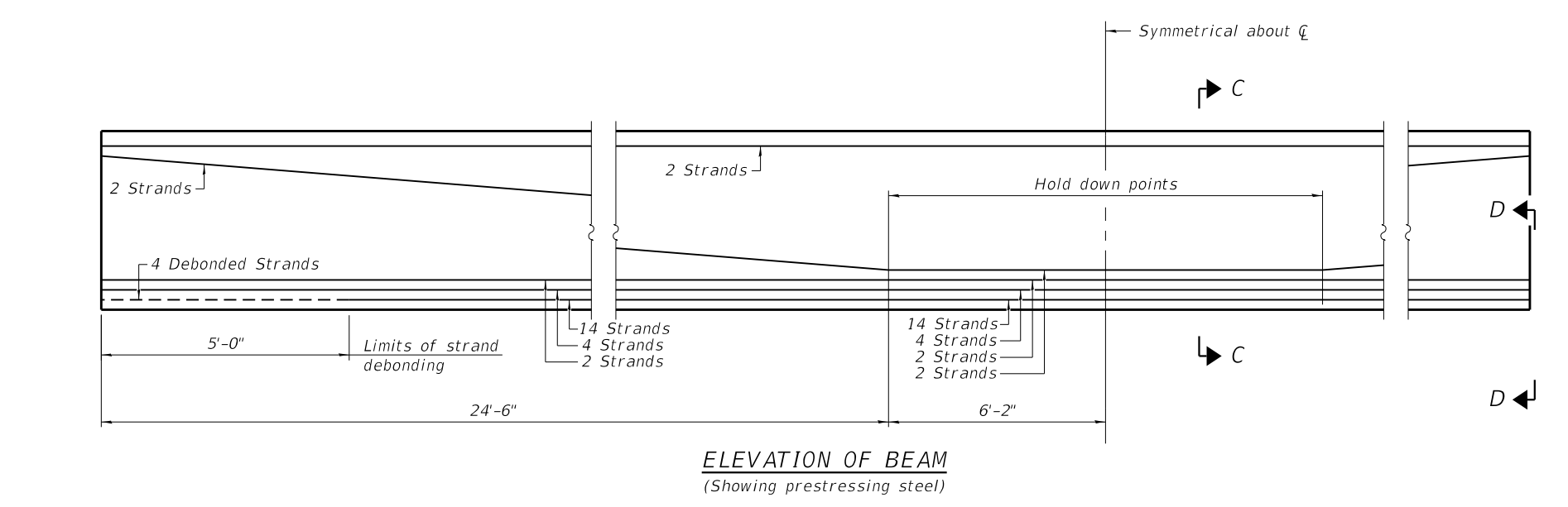
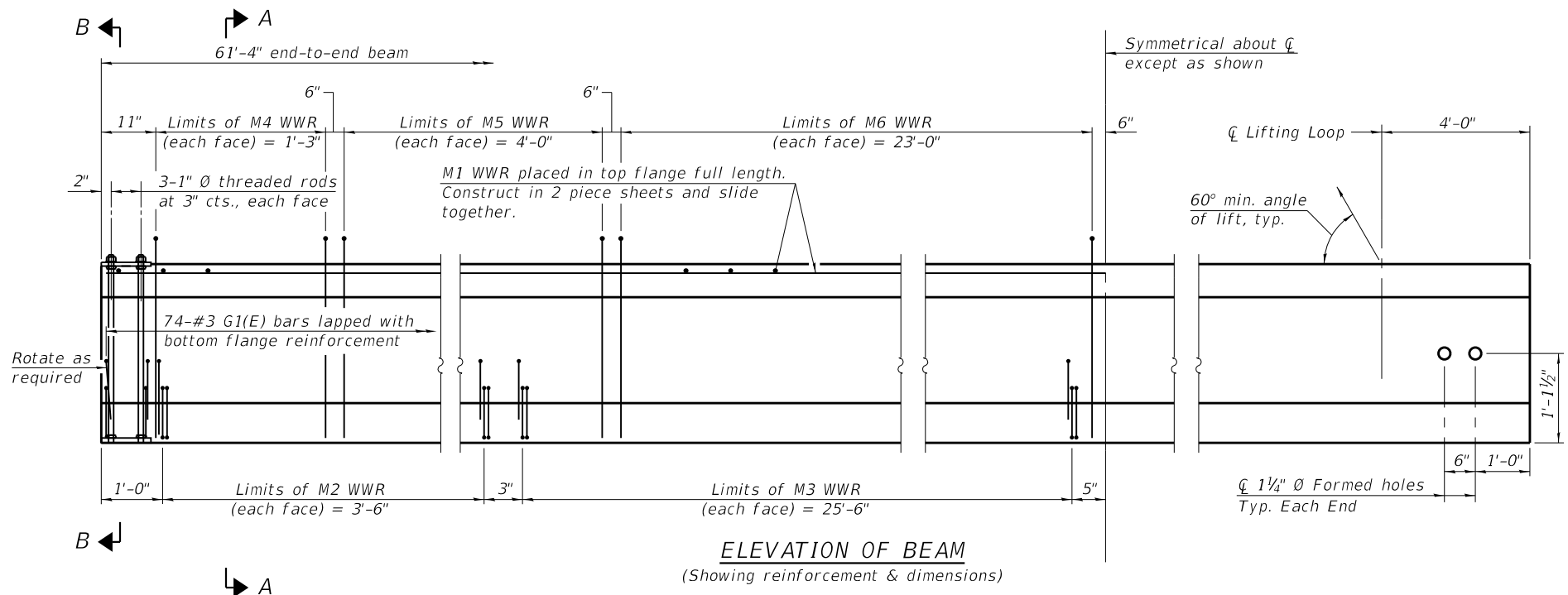
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FRAMING PLAN
STRUCTURE NO. 034-3123

SHEET NO. 10 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	17
CONTRACT NO. 93801				
ILLINOIS		FED. AID PROJECT		

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Note:
See sheet 12 of 17 for additional details and Bill of Material.

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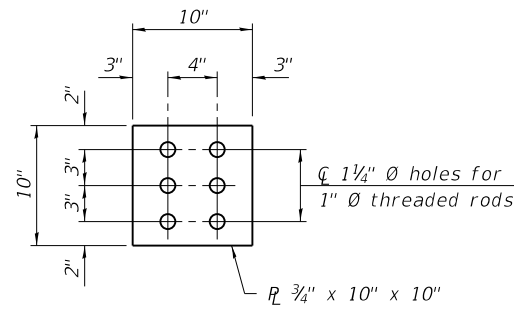
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**HANCOCK COUNTY
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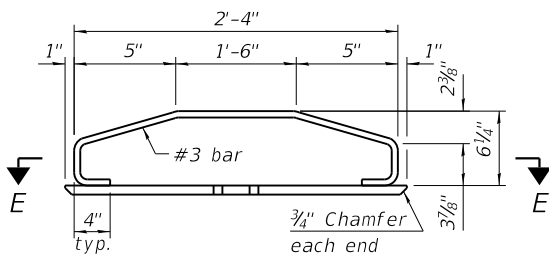
**IL27N BEAM
STRUCTURE NO. 034-3123**

SHEET NO. 11 OF 17 SHEETS

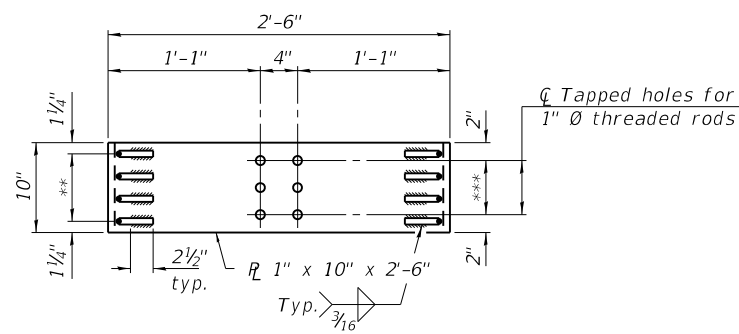
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1600	21-00138-00-BR	HANCOCK	29	18
CONTRACT NO. 93801				
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PLAN - TOP PLATE



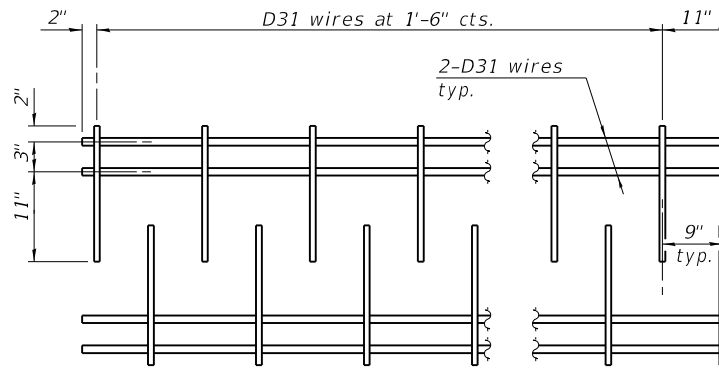
ELEVATION - BOTTOM PLATE ASSEMBLY



SECTION E-E

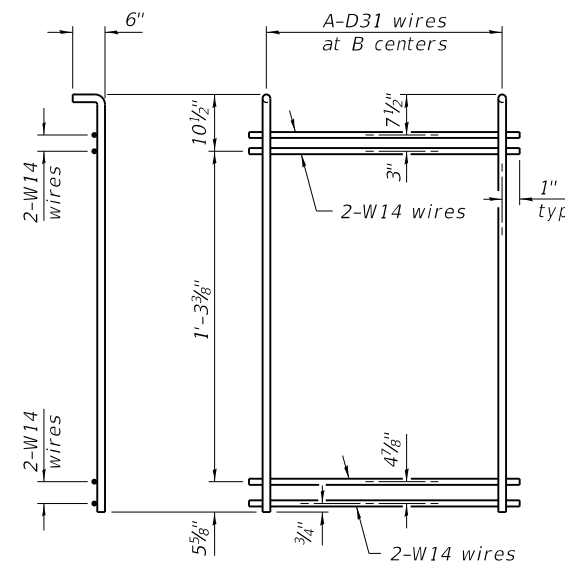
** 3 Spaces at 2 1/2" = 7 1/2"

*** 2 Spaces at 3" = 6"



M1 WWR DETAIL

When multiple sheets of M1 WWR are required along the beam length, #5(E) bars (5'-0" long) shall be used to splice the longitudinal D31 wires together (Min. Lap 2'-2").



M4 THRU M6 WWR DETAIL

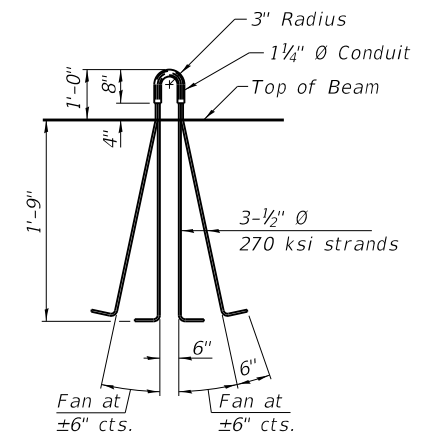
(See Table of Dimensions)

TABLE OF DIMENSIONS

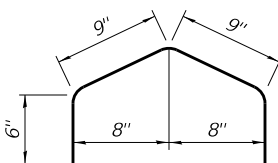
(WWR tables are based on Grade 60)

SPAN 1

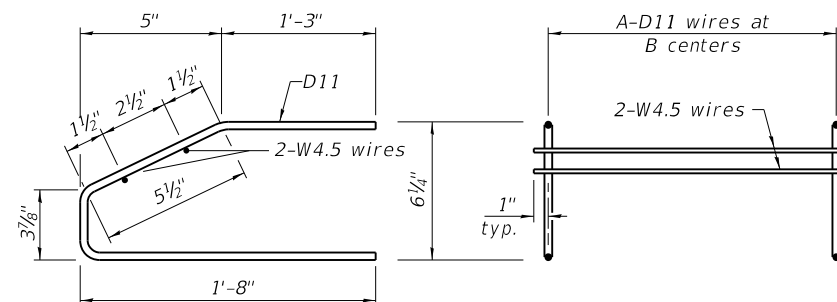
WWR	A	B
M2	15	3"
M3	18	1'-6"
M4	6	3"
M5	9	6"
M6	24	1'-0"



LIFTING LOOP DETAIL



BAR G1(E)



M2 AND M3 WWR DETAIL

(See Table of Dimensions)

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Beams, IL27N	Ft.	307

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REVISED -
REVISED -

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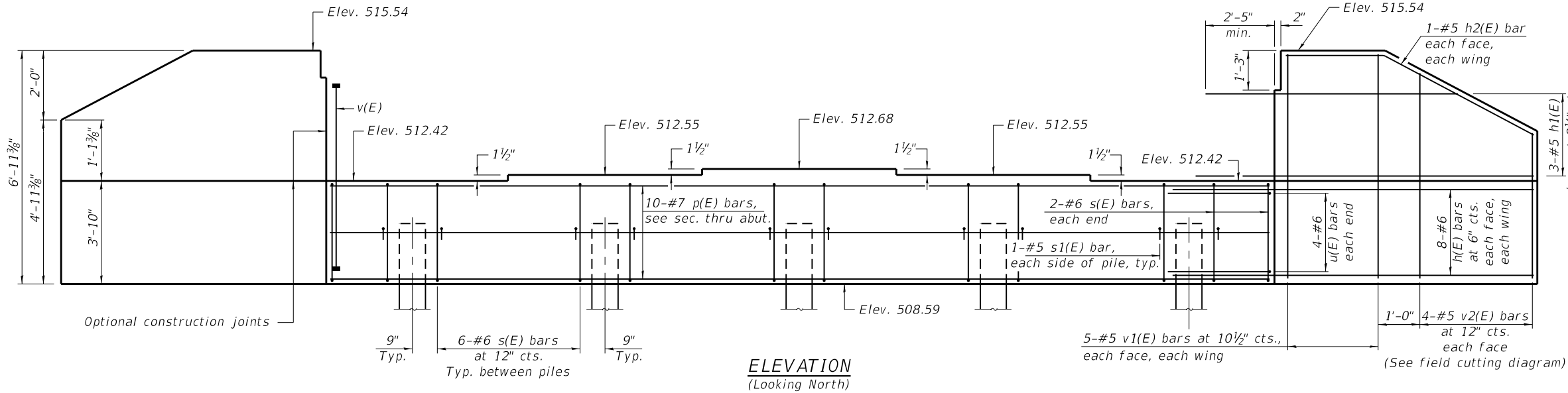
IL27N BEAM DETAILS
STRUCTURE NO. 034-3123

SHEET NO. 12 OF 17 SHEETS

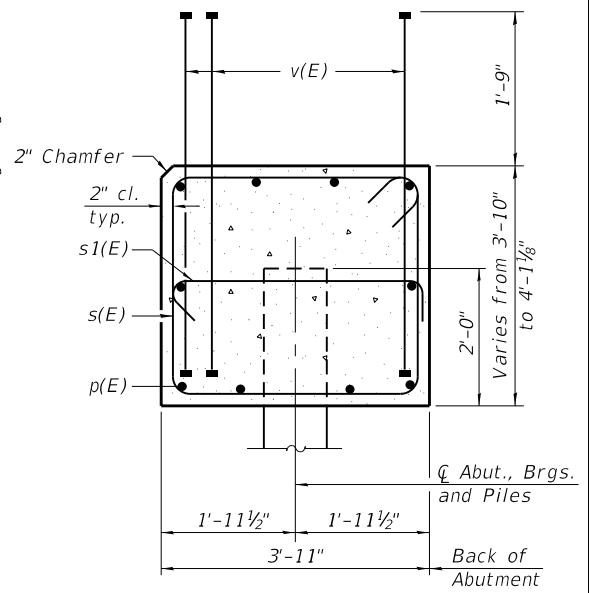
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	19
CONTRACT NO. 93801				

ILLINOIS FED. AID PROJECT

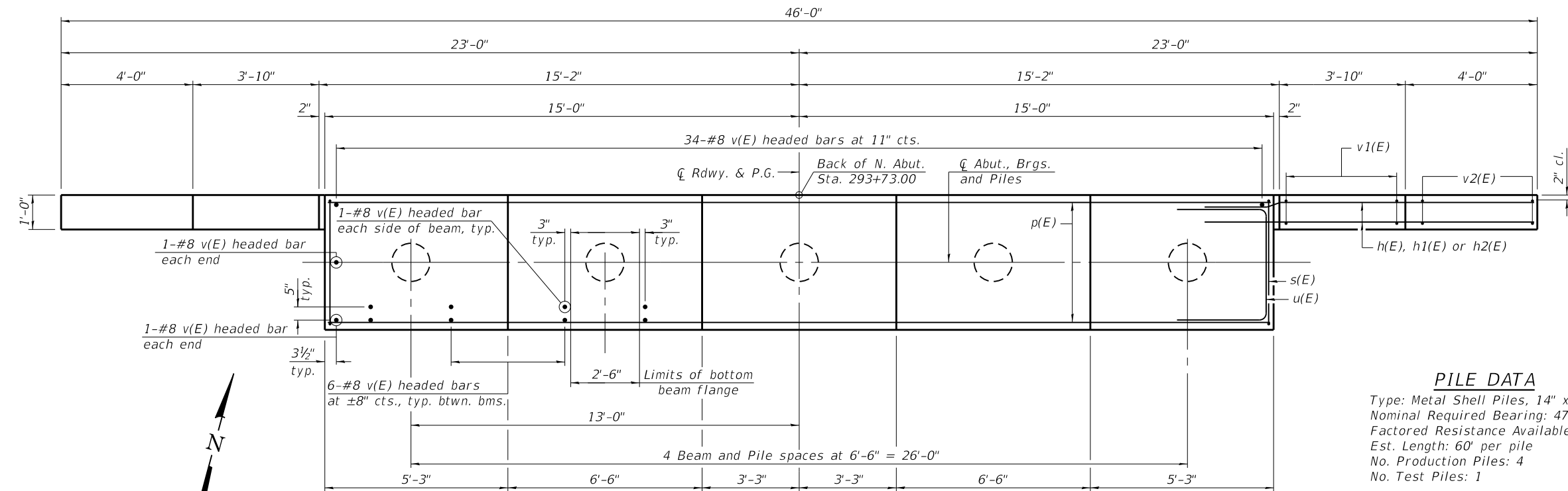
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ELEVATION
(Looking North)



SEC. THRU ABUT.



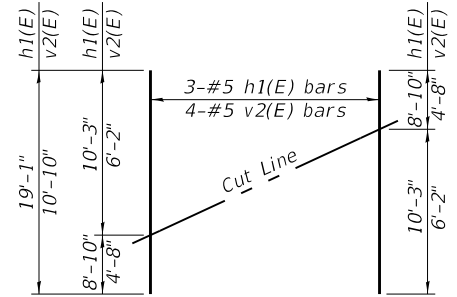
PLAN

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	11'-0"	▬
h1(E)	6	#5	19'-1"	▬
h2(E)	4	#5	7'-11"	▬
p(E)	10	#7	29'-8"	▬
s(E)	28	#6	15'-6"	▬
s1(E)	10	#5	4'-7"	▬
u(E)	8	#6	12'-1"	▬
v(E)	72	#8	5'-6"	▬
v1(E)	20	#5	6'-8"	▬
v2(E)	8	#5	10'-10"	▬
Structure Excavation			Cu. Yd.	78
Concrete Structures			Cu. Yd.	21.0
Reinforcement Bars, Epoxy Coated			Pound	3,420
Furnishing Metal Shell Piles, 14" x 0.312"			Foot	240
Driving Piles			Foot	240
Test Pile, Metal Shells			Each	1
Granular Backfill for Structures			Cu. Yd.	43
Geocomposite Wall Drain			Sq. Yd.	27
Pipe Underdrains for Structures 4"			Foot	65

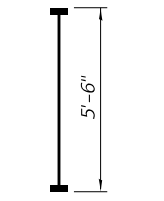
PILE DATA

Type: Metal Shell Piles, 14" x 0.312"
 Nominal Required Bearing: 479 Kips
 Factored Resistance Available: 263 Kips
 Est. Length: 60' per pile
 No. Production Piles: 4
 No. Test Piles: 1

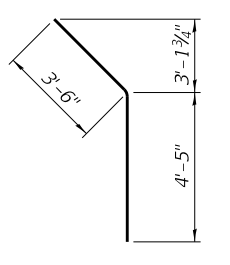


FIELD CUTTING DIAGRAM

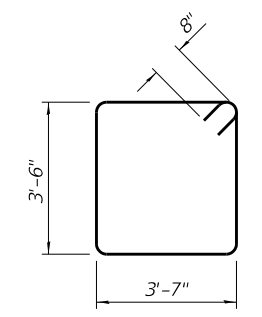
Order h1(E) and v2(E) bars full length. Cut as shown and use remainder of bars in opposite wing.



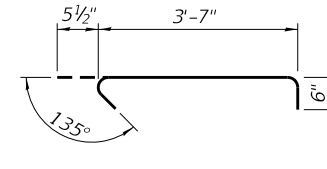
BAR v(E)
(Headed)



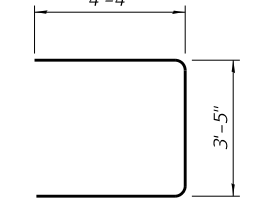
BAR h2(E)



BAR s(E)



BAR s1(E)



BAR u(E)

Notes:
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details of piles see sheet 15 of 17.

FILE NAME: C:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.dgn

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 STATE OF ILLINOIS DESIGN FIRM NO. 184-2738

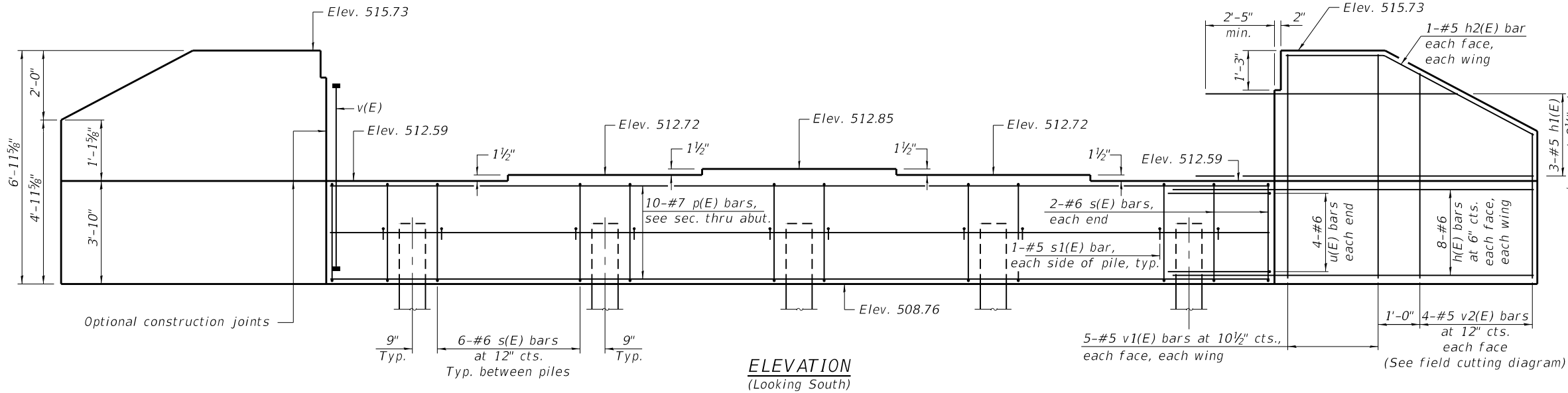
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HANCOCK COUNTY HIGHWAY DEPARTMENT

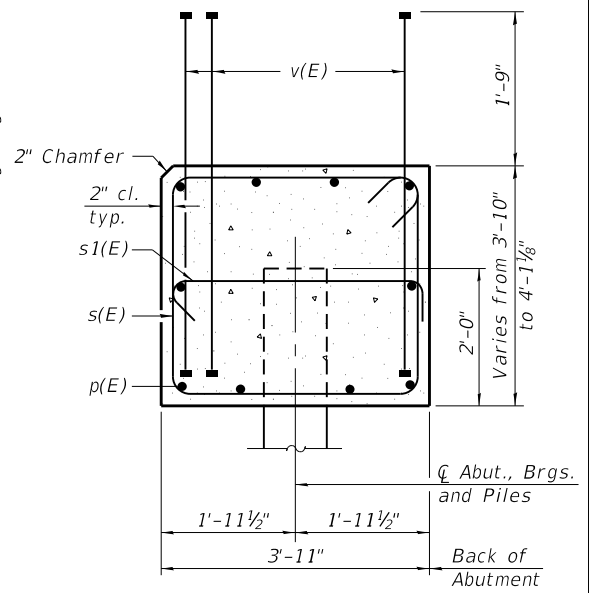
NORTH ABUTMENT STRUCTURE NO. 034-3123

SHEET NO. 13 OF 17 SHEETS

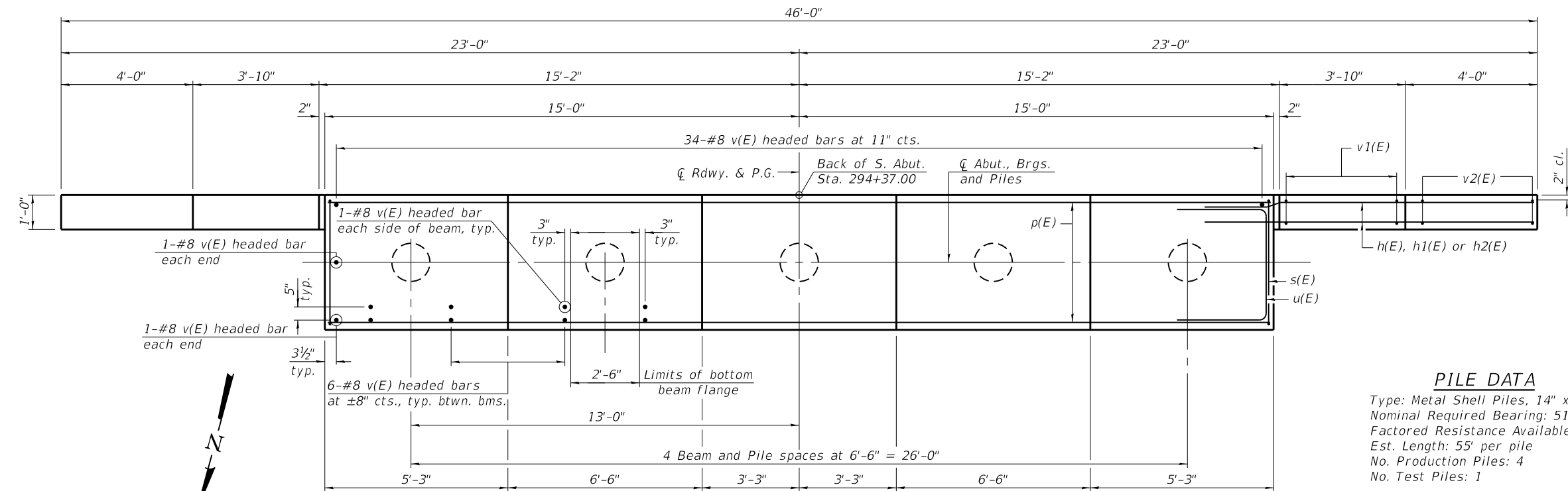
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1600	21-00138-00-BR	HANCOCK	29	20
CONTRACT NO. 93801				
ILLINOIS		FED. AID PROJECT		



ELEVATION
(Looking South)



SEC. THRU ABUT.



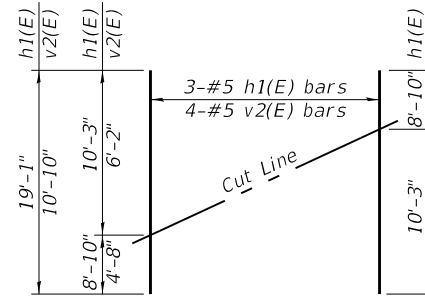
PLAN

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	11'-0"	—
h1(E)	6	#5	19'-1"	—
h2(E)	4	#5	7'-11"	—
p(E)	10	#7	29'-8"	—
s(E)	28	#6	15'-6"	—
s1(E)	10	#5	4'-7"	—
u(E)	8	#6	12'-1"	—
v(E)	72	#8	5'-6"	—
v1(E)	20	#5	6'-8"	—
v2(E)	8	#5	10'-10"	—
Structure Excavation		Cu. Yd.	78	
Concrete Structures		Cu. Yd.	21.0	
Reinforcement Bars, Epoxy Coated		Pound	3,420	
Furnishing Metal Shell Piles, 14" x 0.312"		Foot	220	
Driving Piles		Foot	220	
Test Pile, Metal Shells		Each	1	
Granular Backfill for Structures		Cu. Yd.	43	
Geocomposite Wall Drain		Sq. Yd.	27	
Pipe Underdrains for Structures 4"		Foot	65	

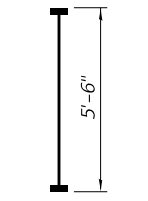
PILE DATA

Type: Metal Shell Piles, 14" x 0.312"
 Nominal Required Bearing: 516 Kips
 Factored Resistance Available: 284 Kips
 Est. Length: 55' per pile
 No. Production Piles: 4
 No. Test Piles: 1

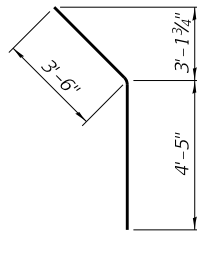


FIELD CUTTING DIAGRAM

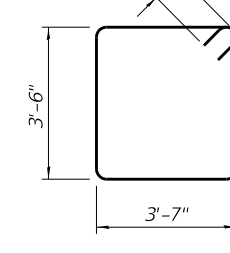
Order h1(E) and v2(E) bars full length. Cut as shown and use remainder of bars in opposite wing.



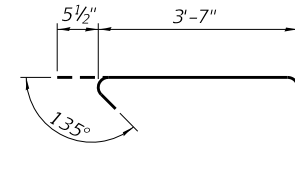
BAR v(E)
(Headed)



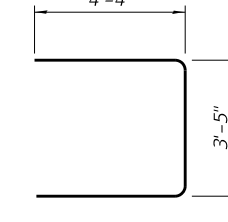
BAR h2(E)



BAR s(E)



BAR s1(E)



BAR u(E)

Notes:
 Pour steps monolithically with cap.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 For details of piles see sheet 15 of 17.

FILE NAME: C:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.dgn

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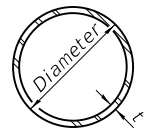
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HANCOCK COUNTY HIGHWAY DEPARTMENT

SOUTH ABUTMENT STRUCTURE NO. 034-3123

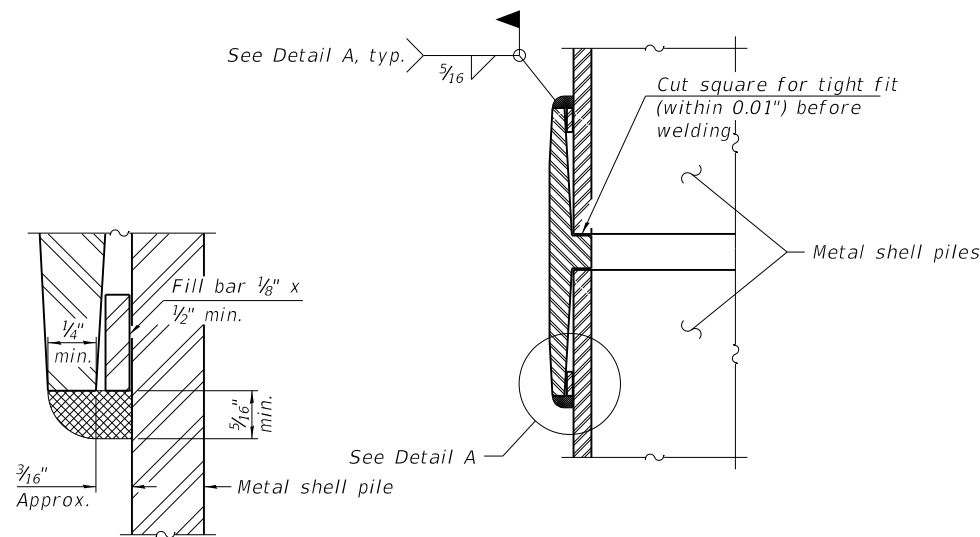
SHEET NO. 14 OF 17 SHEETS

F.A.S. RTE. 1600	SECTION 21-00138-00-BR	COUNTY HANCOCK	TOTAL SHEETS 29	SHEET NO. 21
CONTRACT NO. 93801				
ILLINOIS FED. AID PROJECT				



METAL SHELL PILE TABLE

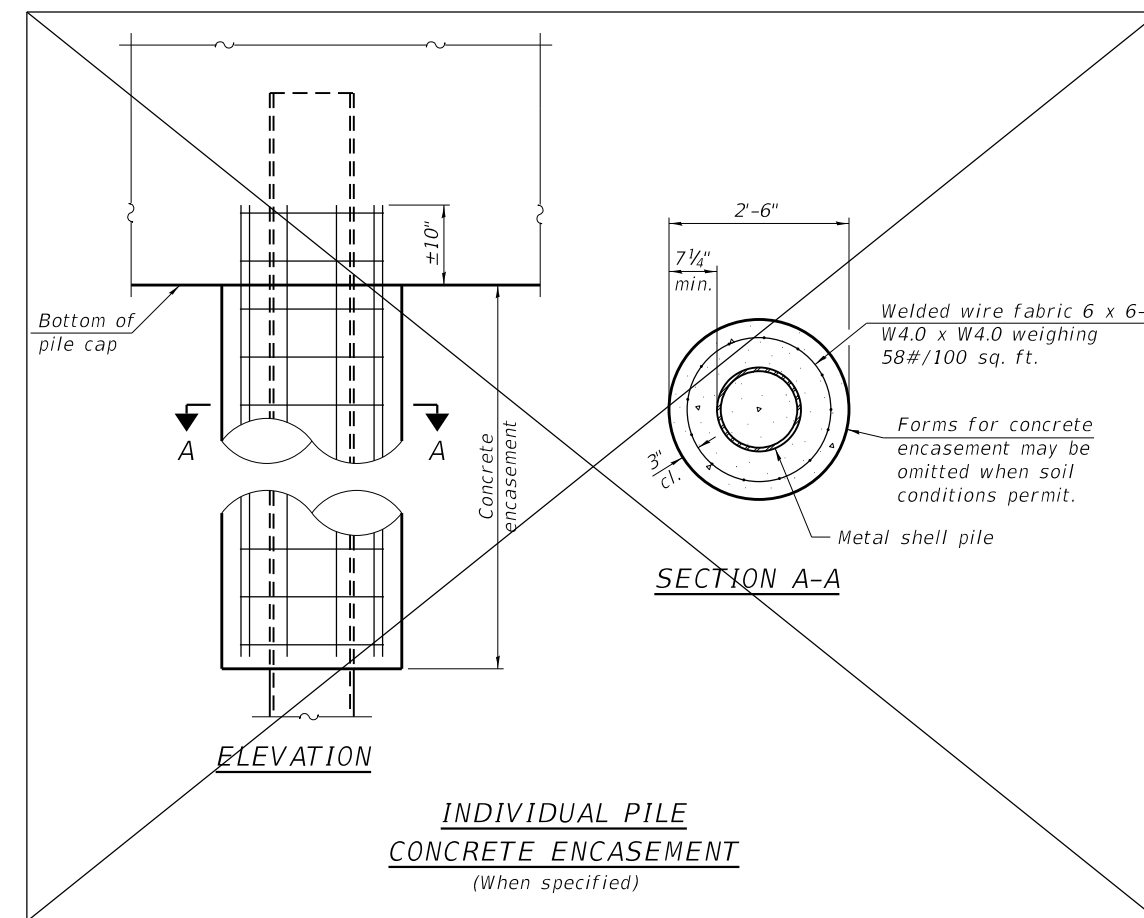
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



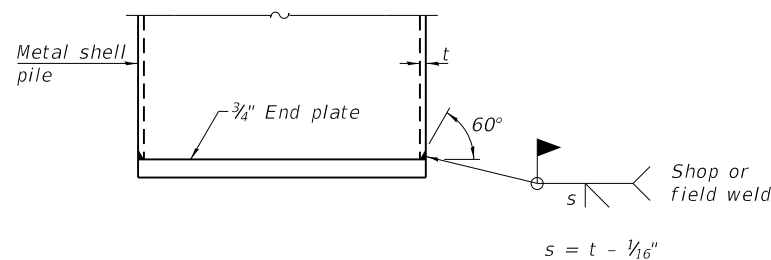
DETAIL A

WELDED COMMERCIAL SPLICE

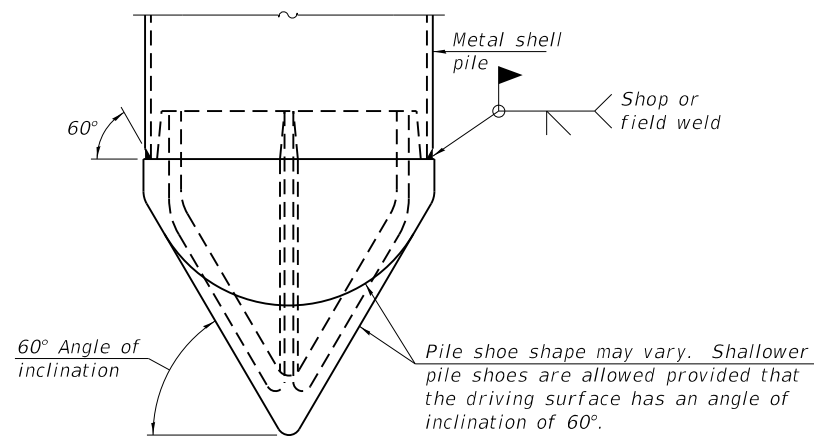
Notes:
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
 Pile segments shall be driven to solid contact with splicer before welding.



INDIVIDUAL PILE CONCRETE ENCASEMENT
 (When specified)

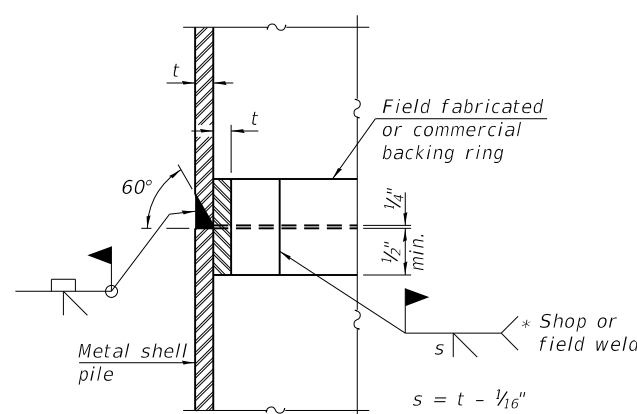


END PLATE ATTACHMENT



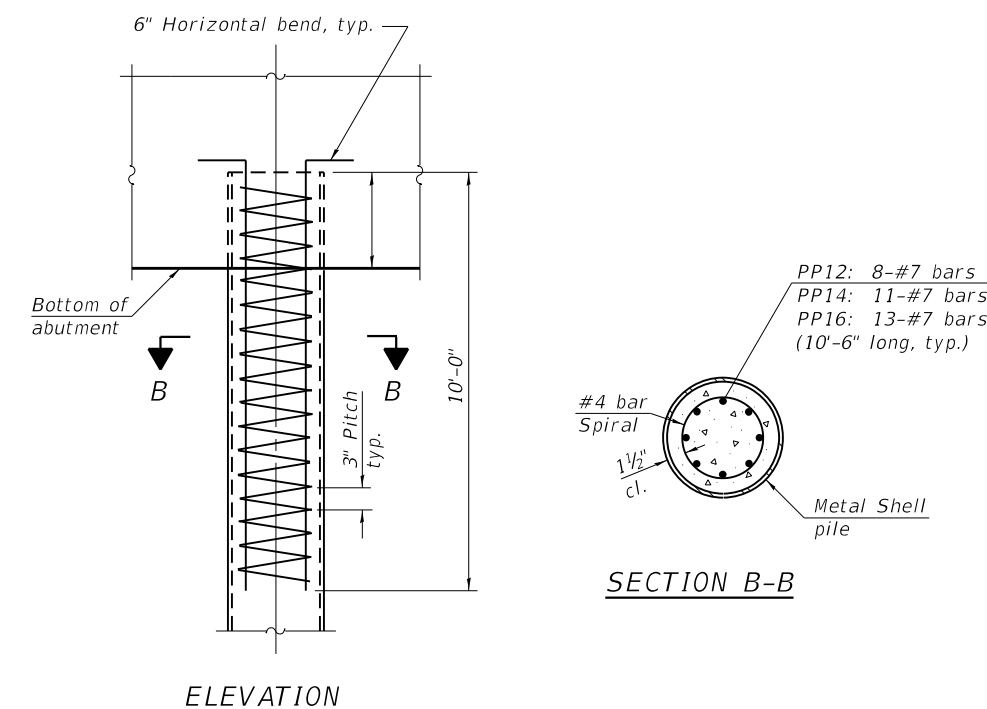
PILE SHOE ATTACHMENT

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



COMPLETE PENETRATION WELD SPLICE

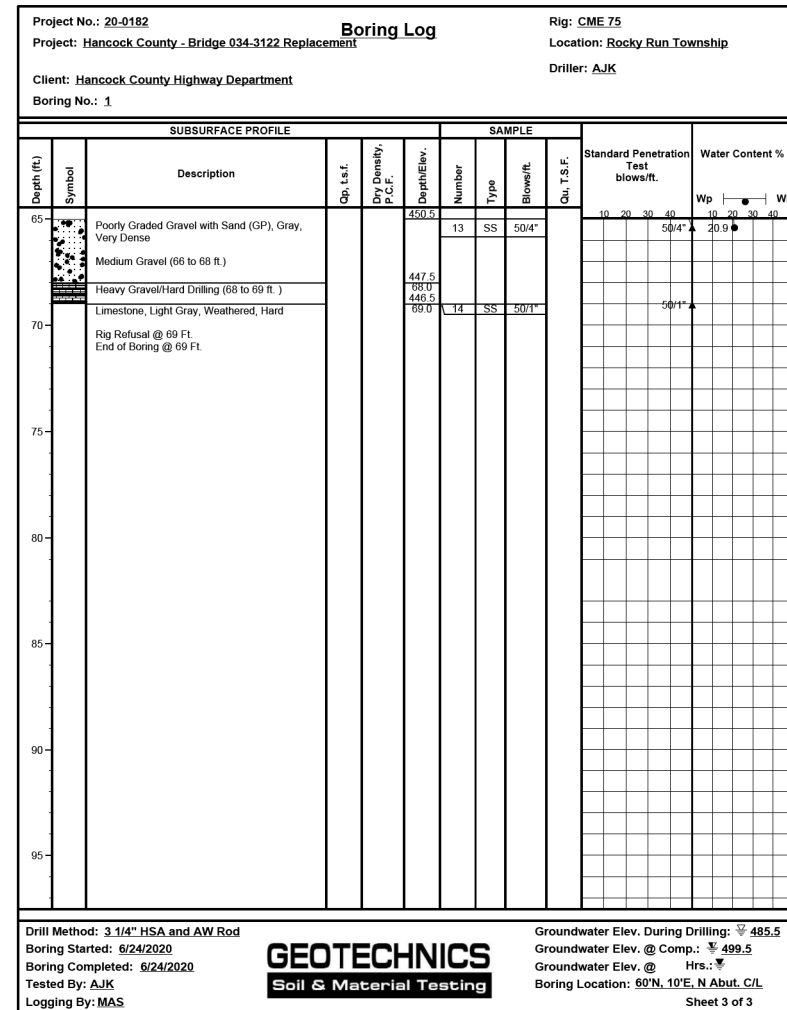
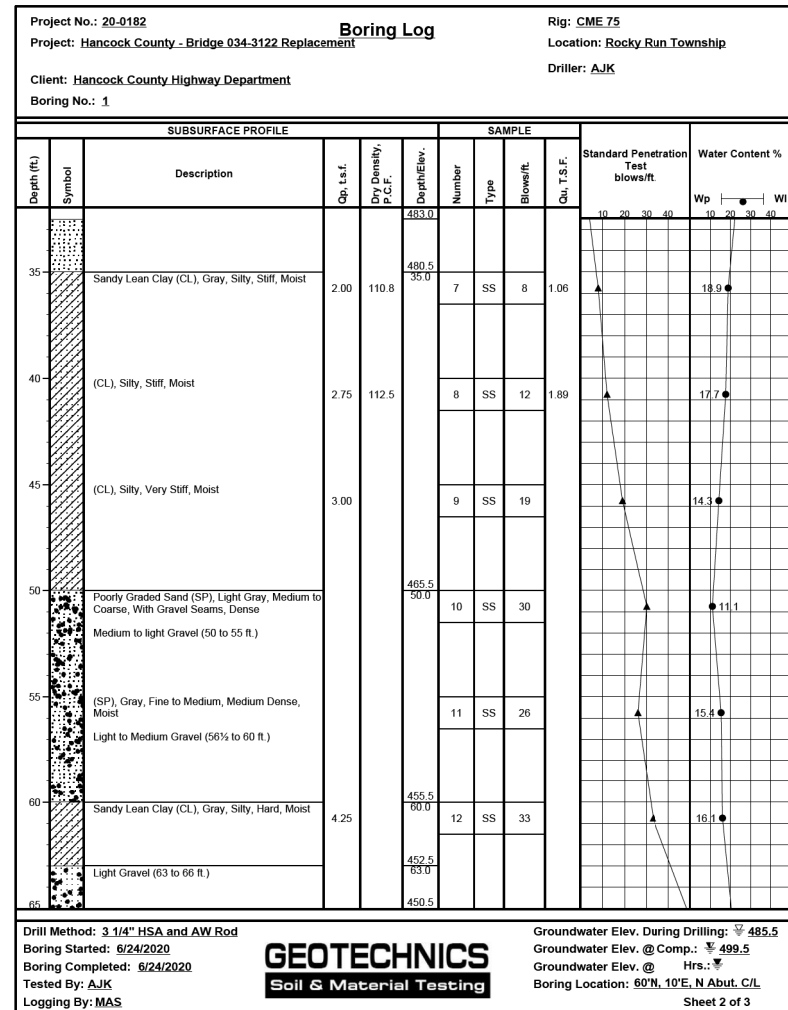
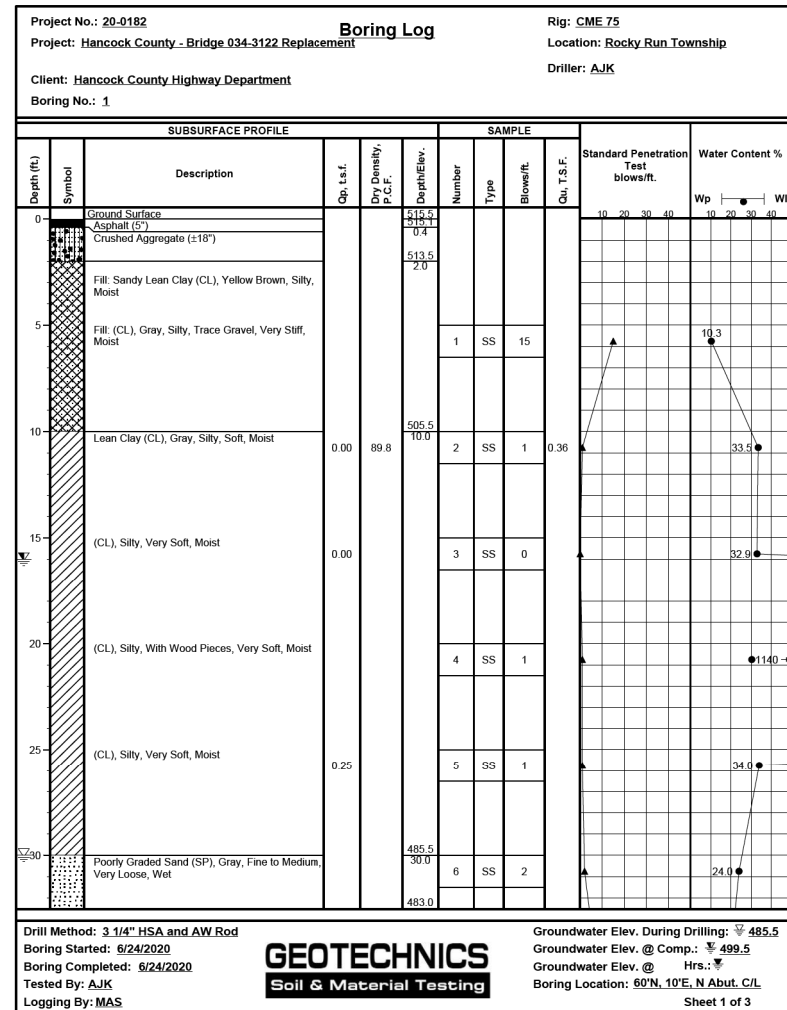
* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



REINFORCEMENT AT ABUTMENTS
 (Omit when concrete encasement is specified)

Note:
 The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

FILE NAME: C:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.dgn



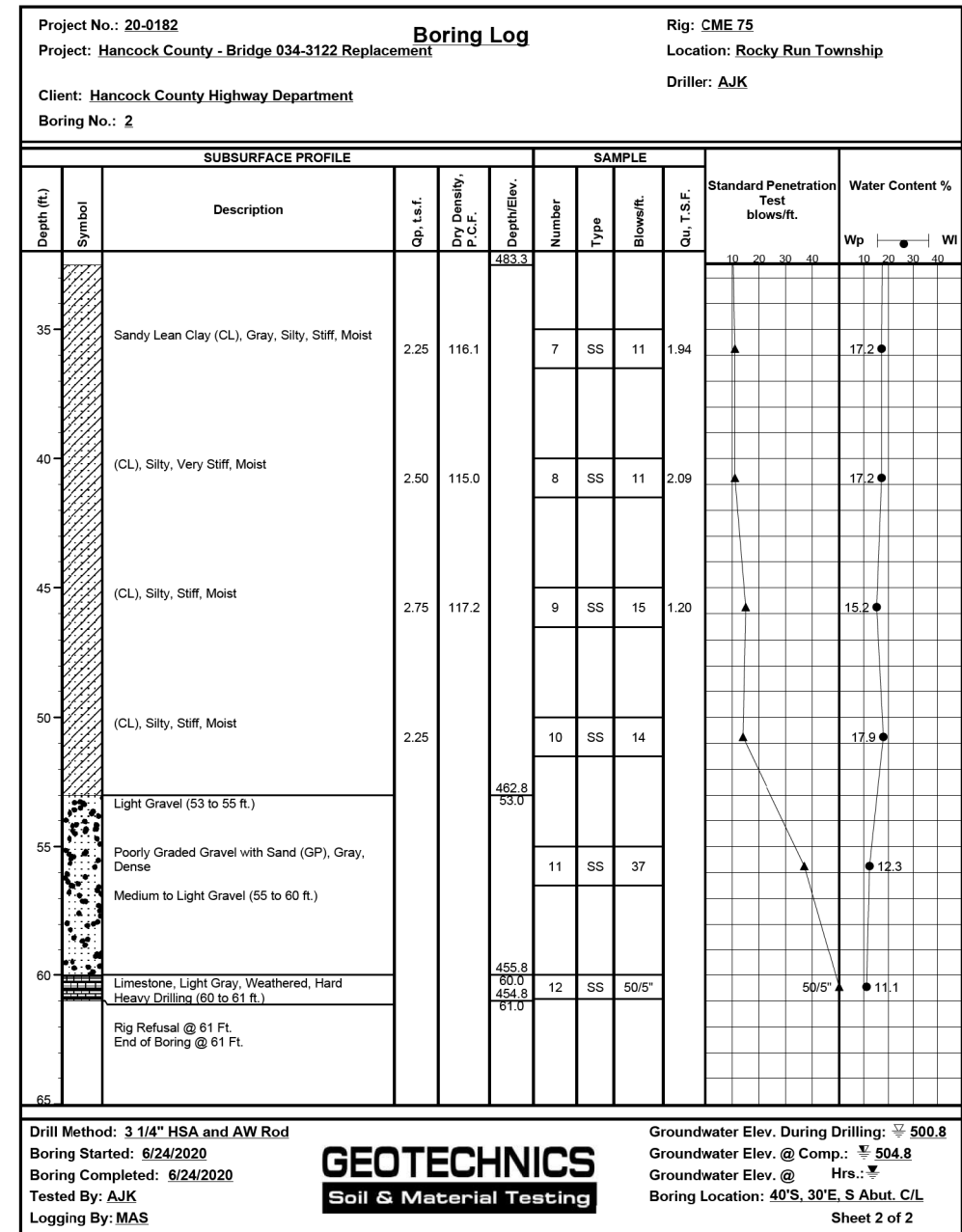
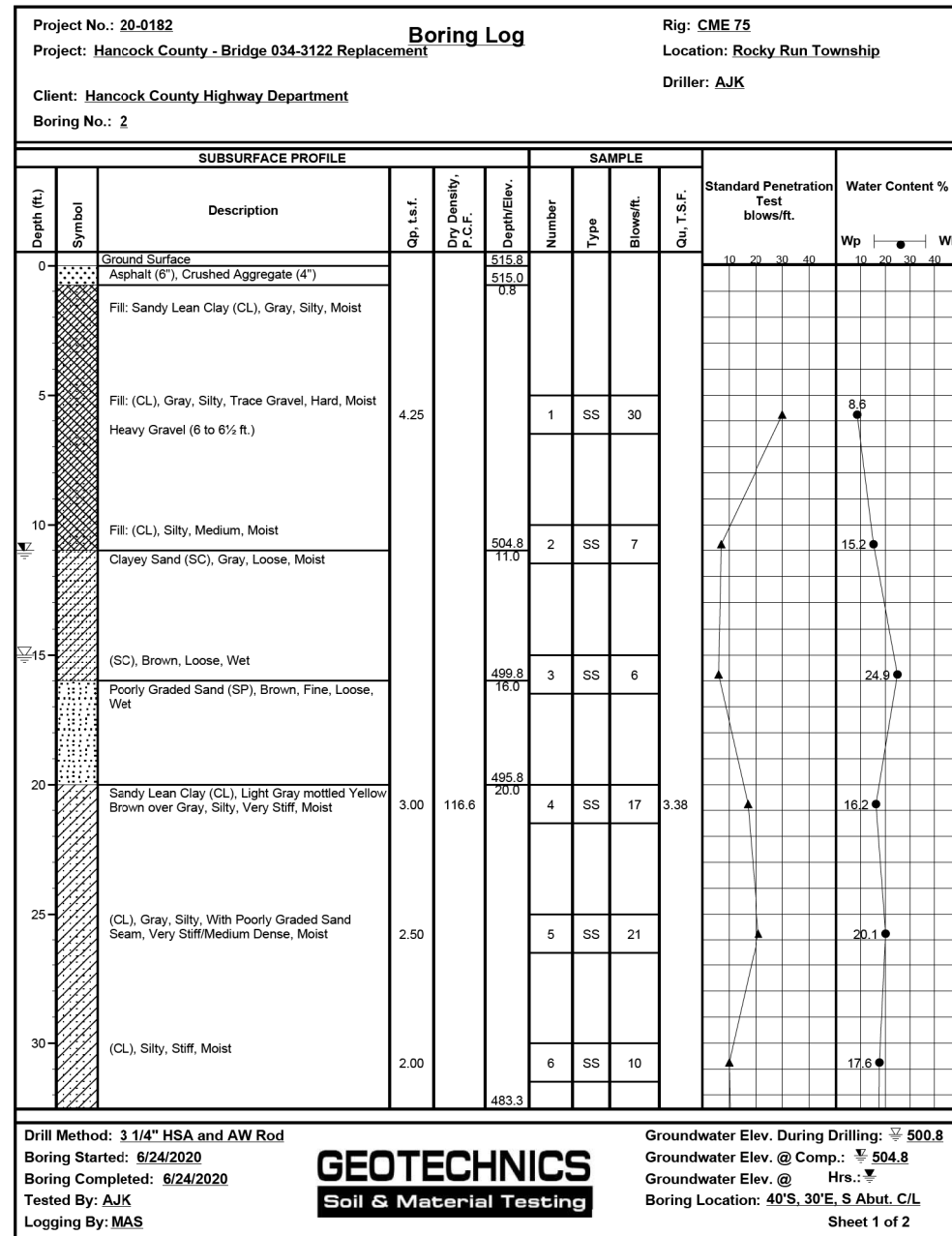
BORING #1

Sheet 1 of 2

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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	23
CONTRACT NO. 93801				
ILLINOIS		FED. AID PROJECT		

FILE NAME: O:\20files\200182\18.Transportation\Structure Plans\Final Bridge Plans.dgn



BORING #2

Sheet 2 of 2

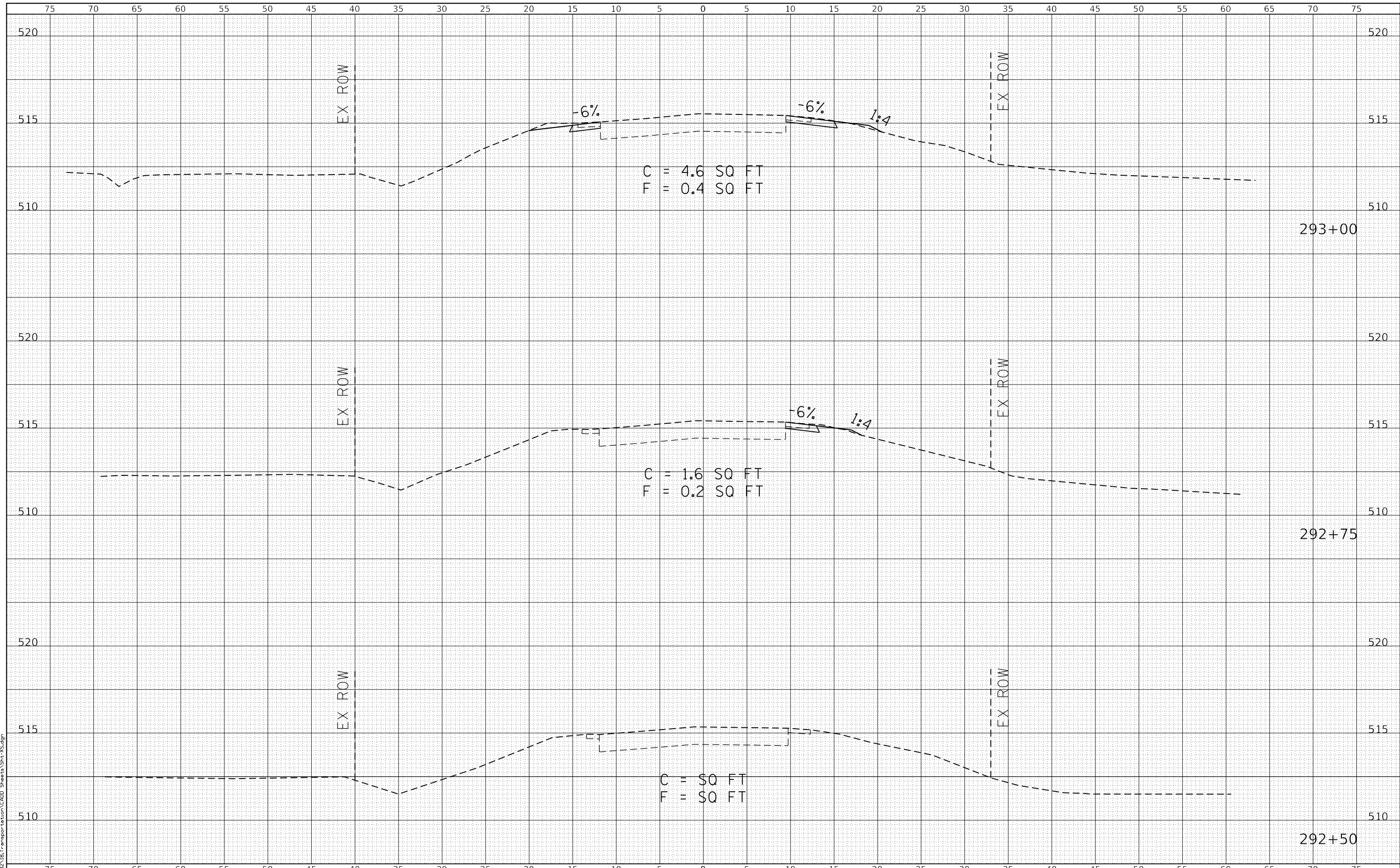
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CONTRACT NO. 93801				
ILLINOIS		FED. AID PROJECT		

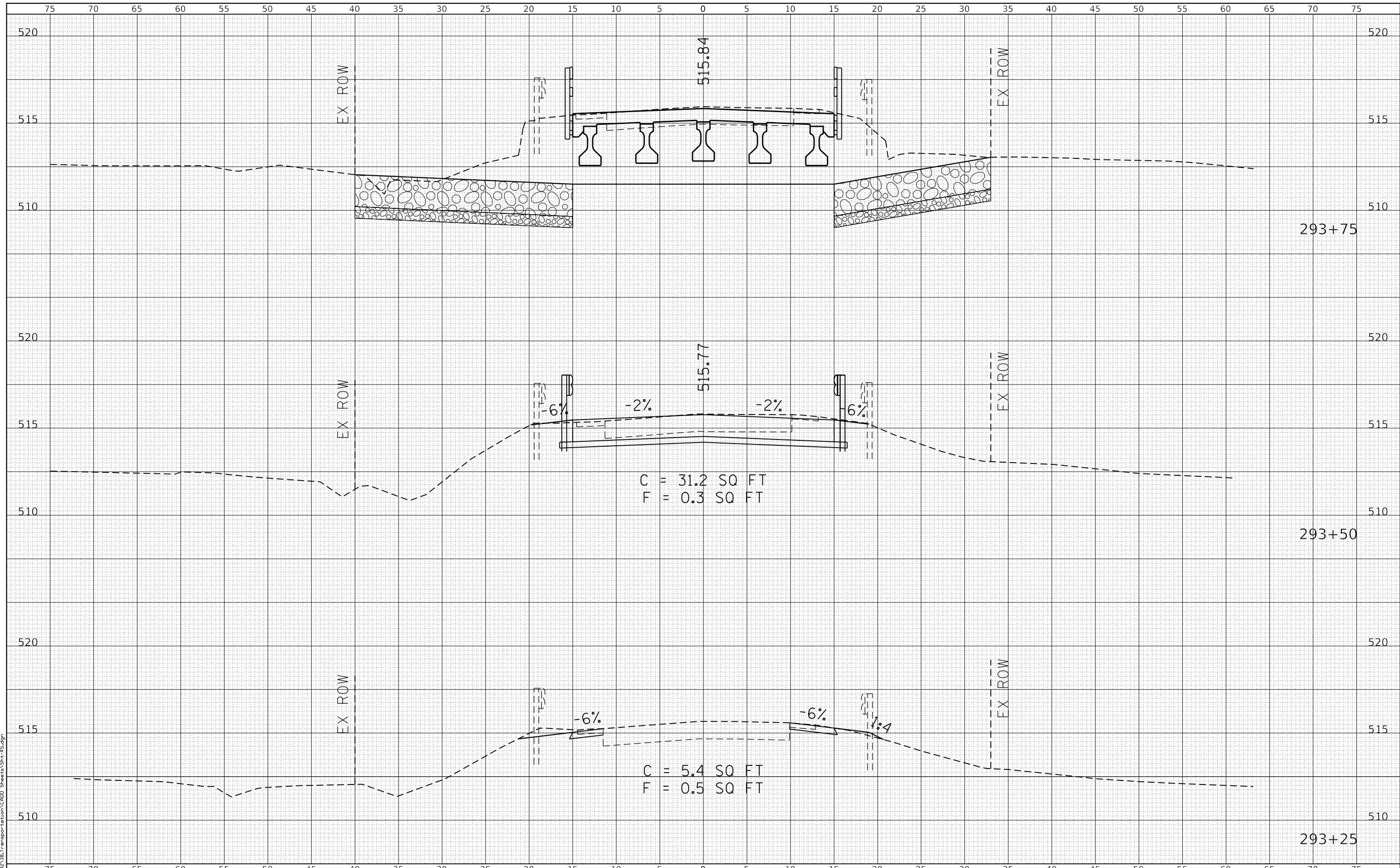
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NOTE BOOK	
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DATE	
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DATE	
BY	
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DATE	
BY	
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FINISH SURVEY	
NOTE BOOK	
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NO.	



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**HANCOCK COUNTY
HIGHWAY DEPARTMENT**

**FAS 1600 (CH 12) OVER MALLARD CREEK
CROSS SECTIONS**

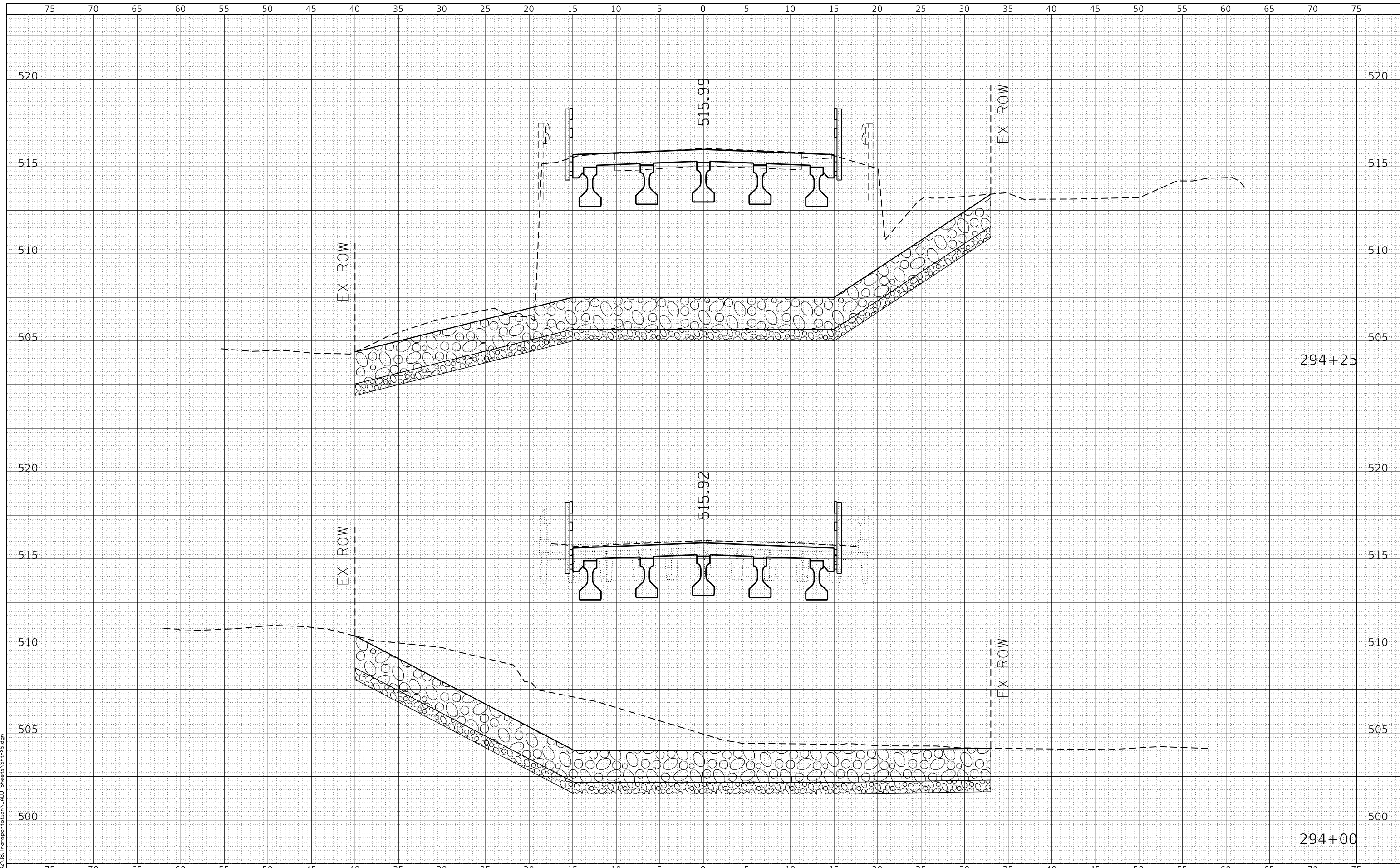
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1"=25.5'V

SHEET 2 OF 5 SHEETS STA. 293+25 TO STA. 293+75

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	26
CONTRACT NO. 93801			ILLINOIS FED. AID PROJECT	

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 616 N. 24TH ST. QUINCY, ILLINOIS 62451-2233-3670
 STATE OF ILLINOIS DESIGN FIRM NO. 154-2736

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**HANCOCK COUNTY
HIGHWAY DEPARTMENT**

**FAS 1600 (CH 12) OVER MALLARD CREEK
CROSS SECTIONS**

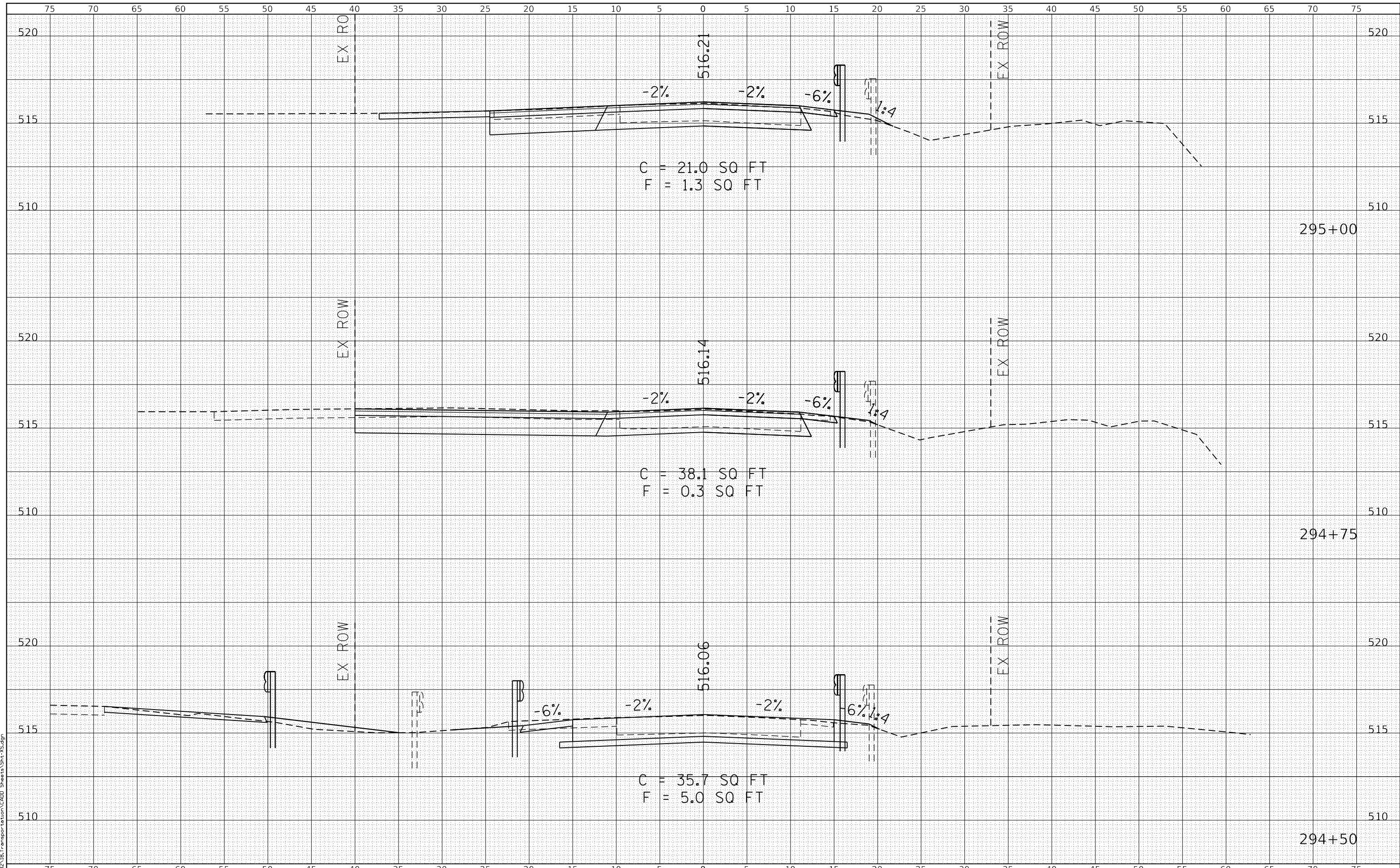
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SHEET 3 OF 5 SHEETS STA. 294+00 TO STA. 294+25

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1600	21-00138-00-BR	HANCOCK	29	27
			CONTRACT NO. 93801	
ILLINOIS FED. AID PROJECT				

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DATE	
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NOTE BOOK	PLOTTED
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	AREAS
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 STATE OF ILLINOIS DESIGN FIRM NO. 154-2736

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**HANCOCK COUNTY
HIGHWAY DEPARTMENT**

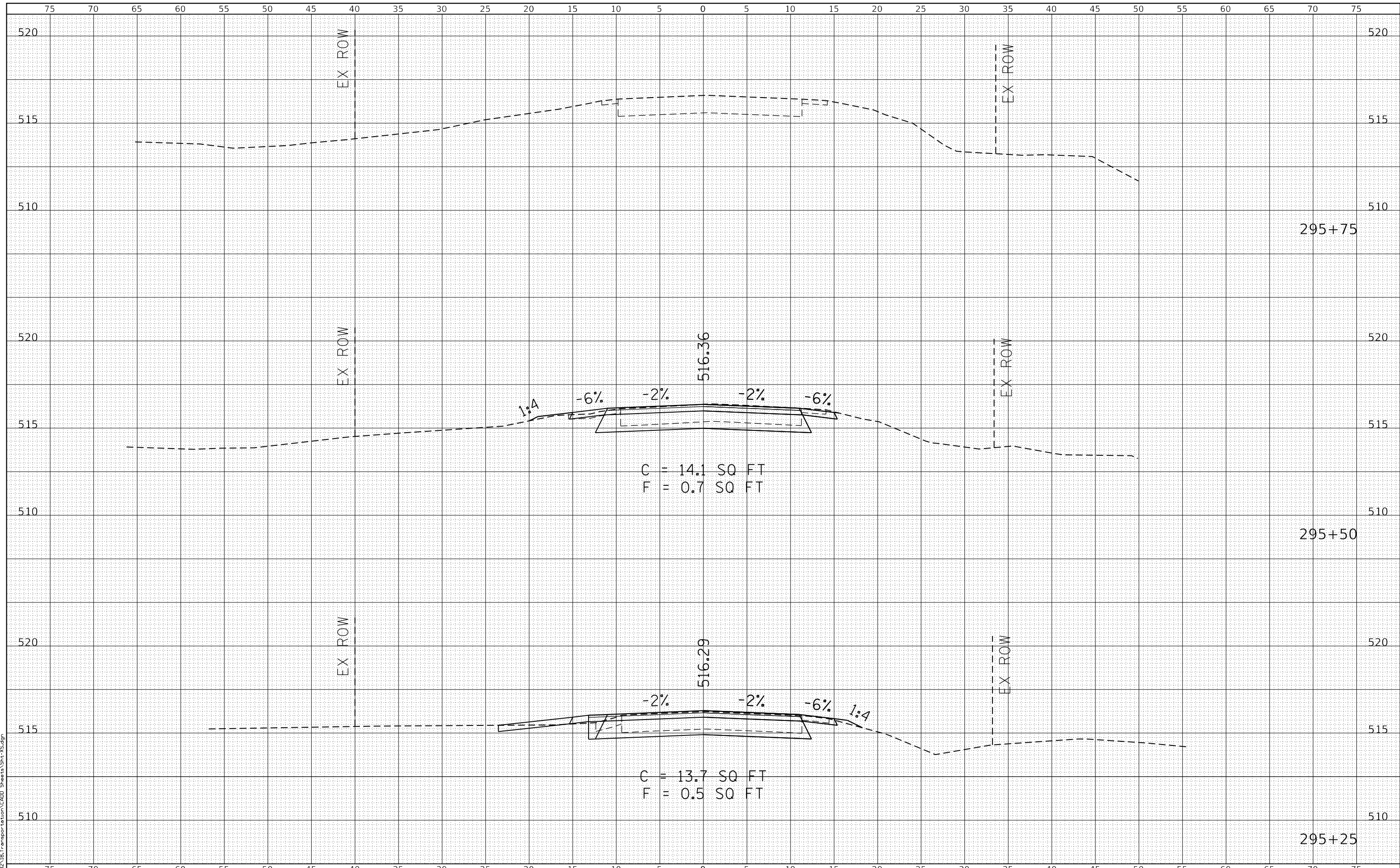
**FAS 1600 (CH 12) OVER MALLARD CREEK
CROSS SECTIONS**

SCALE: 1"=5'H
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	28
CONTRACT NO. 93801			ILLINOIS FED. AID PROJECT	

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DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
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	AREAS
	CHECKED



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 STATE OF ILLINOIS DESIGN FIRM NO. 194-2736

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**HANCOCK COUNTY
 HIGHWAY DEPARTMENT**

**FAS 1600 (CH 12) OVER MALLARD CREEK
 CROSS SECTIONS**

SCALE: 1"=5'H
 1"=2.5'V

SHEET 5 OF 5 SHEETS STA. 295+25 TO STA. 295+75

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1600	21-00138-00-BR	HANCOCK	29	29
CONTRACT NO. 93801				
ILLINOIS FED. AID PROJECT				