

COUNTY	RD DIST	SECTION	SHT. NO.
ADAMS	FALL CREEK	16-08112-00-BR	1

COVER SHEET
TOTAL NO. SHEETS - 23

INDEX OF SHEETS

SHEET NO.	SHEET	
1	TITLE SHEET	01/19/2018 LETTING ITEM 095
2	SUMMARY OF QUANTITIES	
	TRAFFIC CONTROL AND PROTECTION	
3	TYPICAL SECTIONS	
	TYPICAL FIELD ENTRANCE	
	APPLICATION RATES HMA MIXTURE REQUIREMENTS	
	GENERAL NOTES	
4	PLAN AND PROFILE SHEET	
5	CHANNEL CHANGE PLAN AND PROFILE SHEET	
6-8	CROSS SECTIONS (ROADWAY)	
9-11	CROSS SECTIONS (CHANNEL)	
12-23	BRIDGE PLAN SHEETS	

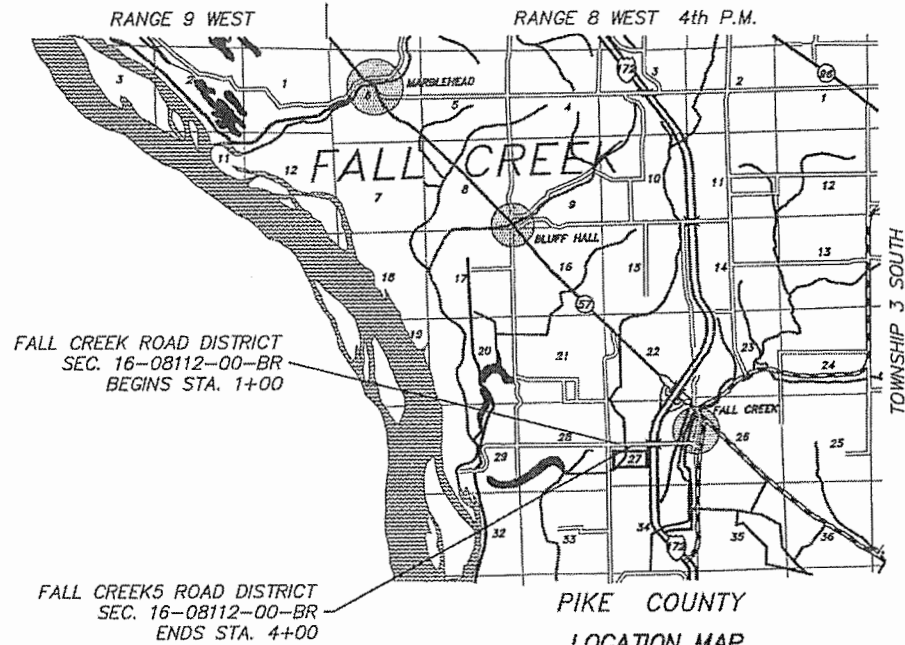
STANDARDS
STANDARD 280001-07
STANDARD 515001-03
STANDARD 701901-01
STANDARD BLR 21-9

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
SURFACE TRANSPORTATION / BRIDGE PROGRAM FUNDS
ADAMS COUNTY FALL CREEK ROAD DISTRICT
SEC. 16-08112-00-BR
PROJECT NO. 22JD(900)
JOB NO. C-96-206-17
EXISTING STR. NO. 001-3225
PROPOSED STR. NO. 001-3434
TR 597 (North 150th Avenue)



PROPOSED IMPROVEMENT MARKED THIS —

PROPOSED IMPROVEMENT TO CONSIST OF REMOVING THE EXISTING STRUCTURE AND CONSTRUCTING A 57.00' B-B ABUTMENT PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE WITH THE NECESSARY APPROACH ROADWAY ADJUSTMENTS.

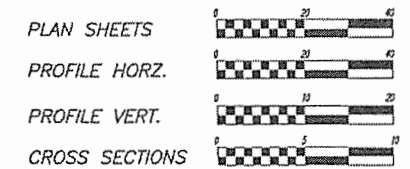
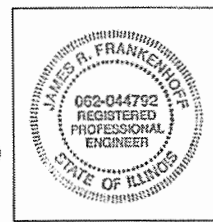


NET LENGTH OF IMPROVEMENT = 300.00 FT. = 0.057 MI.

DESIGN DESIGNATION:
LOCAL ROAD - ADT < 50
DESIGN SPEED - 30 M.P.H.

THESE PLANS WERE PREPARED BY ME OR A FULL TIME MEMBER OF MY STAFF WORKING UNDER MY PERSONAL SUPERVISION.

SUBMITTED BY *James P. Frankenhoff* DATE 9/27/17
COUNTY ENGINEER
LICENSE NO. 062-044792
LIC. EXPIRES 11/30/2017



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.

UTILITIES
J.U.L.I.E. 1-800-892-0123
ILLINOIS ELECTRIC CO-OPERATIVE..... WINCHESTER, IL
AT&T SPRINGFIELD, IL

APPROVED 9/28/17
Robert G. Perry ROAD COMMISSIONER

APPROVED 9/27/17
James P. Frankenhoff COUNTY ENGINEER

PASSED 10-31-17
Chris J. Tubell DISTRICT ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW. 10-31-17
Jeffrey M. South REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREPARED BY
ADAMS COUNTY HIGHWAY DEPARTMENT
101 NORTH 54th STREET, QUINCY, ILLINOIS

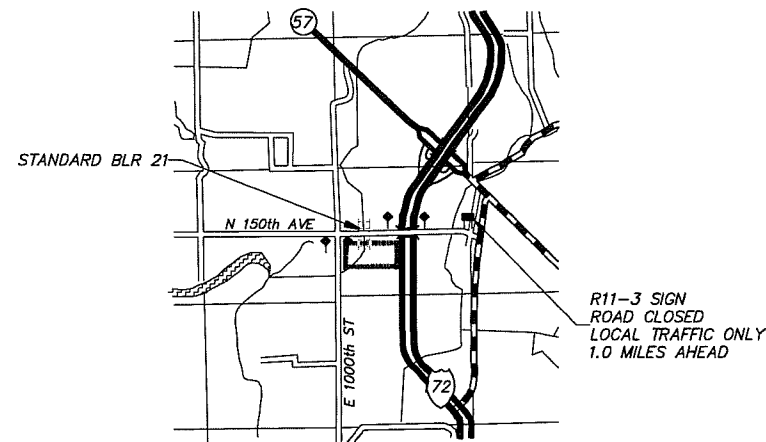
SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	SPECIAL PROVISION
20200100	EARTH EXCAVATION	CU YD	44	*
20300100	CHANNEL EXCAVATION	CU YD	1,723	*
20700110	POROUS GRANULAR EMBANKEMENT	TON	380	
25000200	SEEDING, CLASS 2	ACRE	0.5	
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	45	
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	45	
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	45	
25100115	MULCH, METHOD 2	ACRE	0.5	
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	50	
28100209	STONE RIPRAP, CLASS A5	TON	200	*
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	290	
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX"C", N50	TON	18	
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	*
50200100	STRUCTURE EXCAVATION	CU YD	108	
50300225	CONCRETE STRUCTURES	CU YD	21.4	
50300280	CONCRETE ENCASEMENT	CU YD	40.6	
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,320	*
50700305	HARDWARE	POUND	572	*
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	4,280	
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	110	
51200957	FURNISHING METAL SHELL PILES 12" x 0.250"	FOOT	504	
51202305	DRIVING PILES	FOOT	504	
51203200	TEST PILE METAL SHELLS	EACH	1	
51500100	NAME PLATES	EACH	1	
52200100	FURNISHING SOLDIER PILES (HP SECTION)	FOOT	440	*
52200150	DRIVING SOLDIER PILES	FOOT	440	
52200260	PRECAST CONCRETE LAGGING	SQ FT	639	*
# 20076600	TRAINEES	HOURLY	500	*
67100100	MOBILIZATION	L SUM	1	
# 20076604	TRAINEES TRAINING PROGRAM GRADUATE	HOURLY	500	*
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1	*

CONSTRUCTION TYPE CODE: 0010 #0042

Δ SPECIALTY ITEMS

TRAFFIC CONTROL AND PROTECTION



USER NAME = PLOT SCALE = 1:20 PLOT DATE =	DESIGNED - DRAWN - JRF CHECKED - DATE -	REVISED - REVISED - REVISED - REVISED -	ADAMS COUNTY HIGHWAY DEPARTMENT	SUMMARY OF QUANTITIES, TRAFFIC CONTROL AND PROTECTION TR 597 (N 150th AVENUE)	COUNTY: ADAMS RD. DIST.: FALL CREEK SECTION: 16-08112-00-BR TOTAL SHEETS: 23 SHEET NO.: 2 CONTRACT NO. 93709
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GENERAL NOTES

- WHERE SECTION OR SUB-SECTION STONES, PROPERTY PINS, USGS BENCH MARK MONUMENTS, AND U.S. ARMY CORPS OF ENGINEERS SURVEY MARKERS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH STONES AND MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS UNTIL AN OWNER, AN AUTHORIZED SURVEYOR OR THEIR REPRESENTATIVE HAS WITNESSED OR OTHERWISE REFERENCED THE PROPERTY MARKS LOCATION.
- ALL PRIVATELY OWNED UTILITIES, UNLESS OTHERWISE SPECIFIED, WILL BE MOVED BY THEIR RESPECTIVE OWNERS WHERE REQUIRED. THE FOLLOWING UTILITY COMPANIES MAY HAVE FACILITIES WITHIN THE LIMITS OF CONSTRUCTION:

ILLINOIS ELECTRIC COOP AT&T (TELEPHONE)
- THE NOMINAL THICKNESS FOR AGGREGATE SURFACE COURSE IS SHOWN ON THE TYPICAL SECTION, STANDARDS, SCHEDULES OR SPECIAL DETAILS. THE CONSTRUCTED THICKNESS OF THE ABOVE ITEMS SHALL NOT BE LESS THAN 90% OF THE NOMINAL THICKNESS AT ANY LOCATION.
- THE UTILITY LOCATIONS, IF MARKED ON THE PLANS, ARE FOR REFERENCE ONLY, AND ARE SHOWN FOR CONTRACTOR INFORMATIONAL USE ONLY, AND ARE NOT TO BE REFERENCED FOR CONSTRUCTION PURPOSES. THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUCTED BY THE OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AND TO NOTIFY ALL UTILITY COMPANIES PRIOR TO THE BEGINNING OF CONSTRUCTION. THE REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITIES MUST BE COORDINATED BETWEEN THE CONTRACTOR, UTILITY AND OWNER. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS ASSOCIATED WITH BURIED AND ABOVE GROUND UTILITIES REMAINS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THIS WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- ALL DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE SEEDED, FERTILIZED, AND MULCHED AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.
- ANY EXISTING ROAD SIGNS THAT INTERFERE WITH CONSTRUCTION WILL BE REMOVED OR RELOCATED AS DIRECTED BY THE ENGINEER. AFTER THE CONSTRUCTION IS COMPLETED, THE CONTRACTOR WILL REPLACE THE SIGNS AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPERATELY BUT SHALL BE INCLUDED IN THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

APPLICATION RATES

FERTILIZER NUTRIENTS 10-10-10 @ 270#/ACRE
 NITROGEN 90#/ACRE
 PHOSPHORUS 90#/ACRE
 POTASSIUM 90#/ACRE

AGRICULTURAL GROUND LIMESTONE 2 TON/ACRE
 MULCH, METHOD 2 2 TON/ACRE

BITUMINOUS MATERIALS (PRIME COAT)
 ON EXISTING PAVEMENT 0.05 LB/SQ FT
 BETWEEN HMA LIFTS 0.025 LB/SQ FT
 ON AGGREGATE 0.25 #/SQ FT

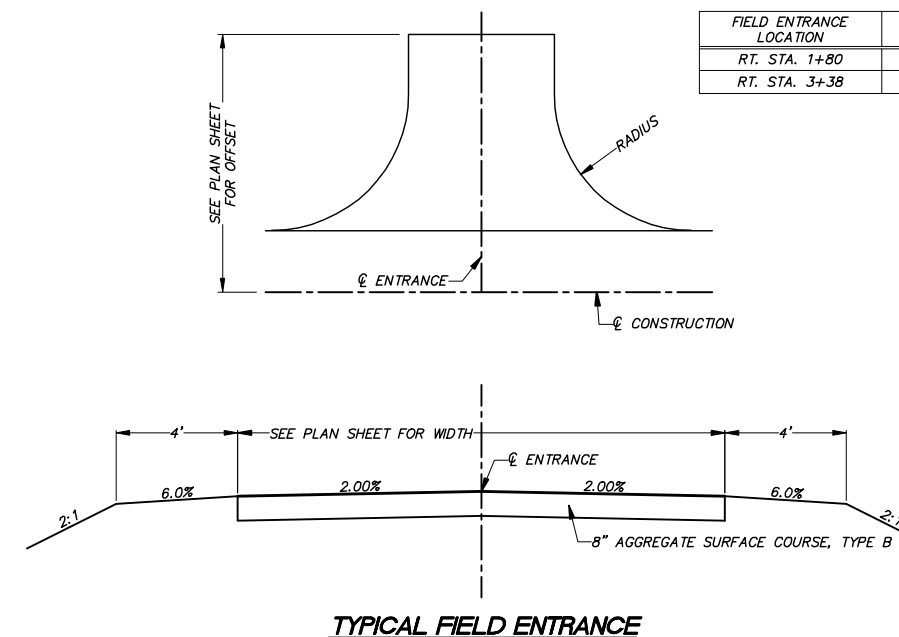
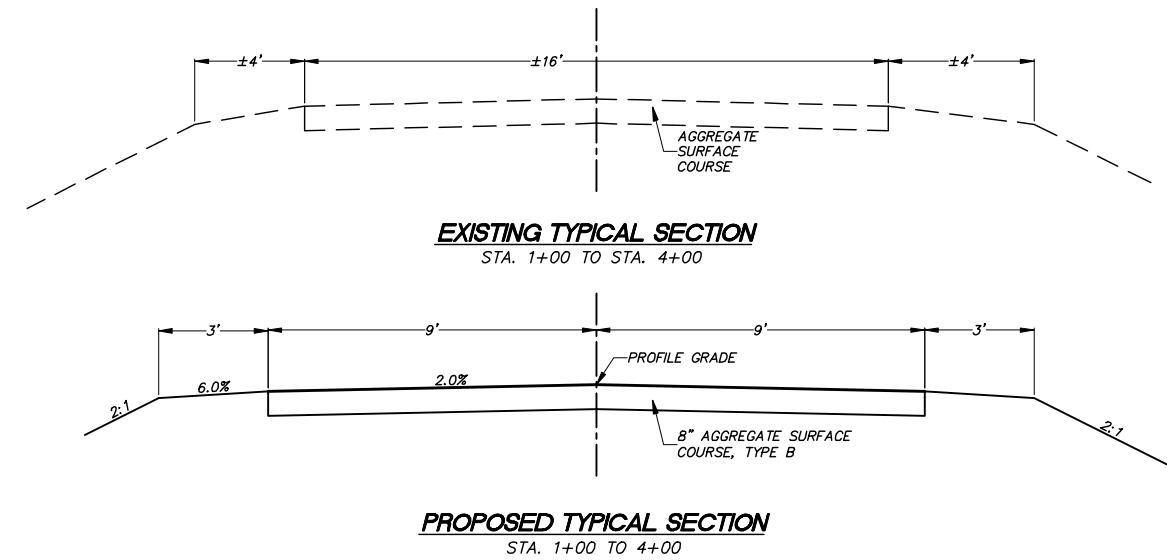
AGGREGATE (SURFACE, SHOULDERS) 1.8 TON/CU YD

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

PAY ITEM	MIXTURE	ASPHALT GRADE	N Design	VOIDS
HOT-MIX ASPHALT SURFACE COURSE	"C"	PG 64-22	N50	4.0%

NOTE: HOT-MIX ASPHALT QUANTITIES CALCULATED @ 112 #/SQ. YD. / IN.

TYPICAL SECTIONS



USER NAME =	DESIGNED --	REVISED --
PLOT SCALE = 1:20	DRAWN -- JRF	REVISED --
PLOT DATE =	CHECKED --	REVISED --
	DATE --	REVISED --

**ADAMS COUNTY
HIGHWAY DEPARTMENT**

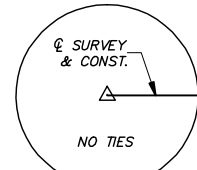
**TYPICAL SECTIONS, TYPICAL FIELD ENTRANCE, APPLICATION RATES,
HOT-MIX ASPHALT REQUIREMENTS AND GENERAL NOTES
TR 597 (N 150th AVENUE)**

SCALE --- SHEET 1 OF 1 SHEETS STA. -- TO STA. --

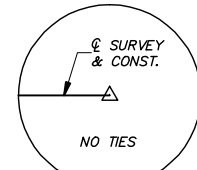
COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	3

CONTRACT NO. 93709

SECTION 27 - TOWNSHIP 3 SOUTH - RANGE 8 WEST OF THE 4th P.M.



STA. 0+00
P.I.
1/2" IRON PIN



STA. 5+00
P.I.
1/2" IRON PIN

J.D. & NANCY ALBSMEYER FARMS, LLC
PART OF THE NORTHWEST QUARTER

STA. 4+00
FALL CREEK ROAD DISTRICT
SEC. 16-08112-00-BR
ENDS

STA. 1+00
FALL CREEK ROAD DISTRICT
SEC. 16-08112-00-BR
BEGINS

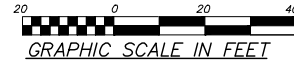
STA. 1+80 CONSTRUCT F.E.
TO 49' RT. & WITH 8" AGG.
SURF. CSE., TY B (35 TONS)

STA. 2+50 REMOVE EXISTING (SN 001-3225) 2 SPAN
(2 @ 30') PRECAST CONCRETE DECK BEAM BRIDGE ON
TIMBER PILING AND CONCRETE PILE CAPS WITH TIMBER
PILE AND CONCRETE PLANK WINGWALLS.
CONSTRUCT A SINGLE SPAN (57' BK.-BK. ABUT)
PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE
(SN 001-3434) AS DETAILED ON SHEETS 12-23.
DRAINS 5.52 SQ. MI.

STA. 3+38 CONSTRUCT F.E.
TO 25' RT. & WITH 8" AGG.
SURF. CSE., TY B (30 TONS)

THEODORE W. SCHWARTZ AND SARAH SCHWARTZ
THOMAS J. SCHWARTZ AND LESLEY SCHWARTZ
PART OF THE NORTH HALF OF THE
SOUTHWEST QUARTER

SNY ISLAND LEVEE DRAINAGE DISTRICT - AUSTIN CREEK
SETTLING BASIN EASEMENT
PART OF THE NORTH HALF OF THE
SOUTHWEST QUARTER

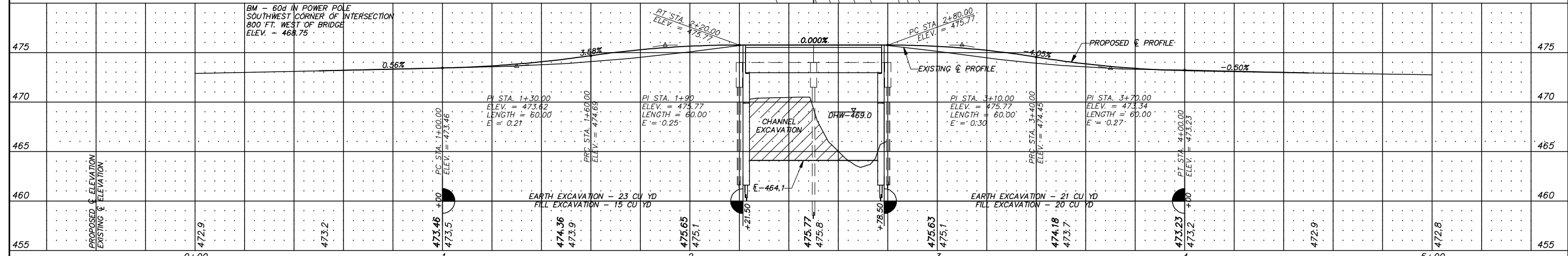


AGGREGATE SURFACE

STA. - STA.	AGGREGATE SURFACE COURSE, TYPE B	TON
1+00 - 2+21		100
2+28 - 4+00		100
TOTAL		200

SEEDING

STA. - STA.	SEEDING, CLASS 2	NITROGEN FERTILIZER NUTRIENTS	POTASSIUM FERTILIZER NUTRIENTS	PHOSPHORUS FERTILIZER NUTRIENTS	MULCH, METHOD 2
	ACRE	POUND	POUND	POUND	ACRE
1+00 - 2+21	0.10	9	9	9	0.10
2+28 - 4+00	0.10	9	9	9	0.10
TOTAL	0.20	18	18	18	0.20



USER NAME = PLOT SCALE = 1:20 PLOT DATE =	DESIGNED - JRF DRAWN - JRF CHECKED - DATE -	REVISED - REVISED - REVISED - REVISED -	ADAMS COUNTY HIGHWAY DEPARTMENT	PLAN AND PROFILE TR 597 (N 150th AVENUE)	COUNTY: ADAMS RD. DIST: FALL CREEK SECTION: 16-08112-00-BR TOTAL SHEETS: 23 SHEET NO.: 4	SCALE 1" = 20' SHEET 1 OF 1 SHEETS STA. 0+00 TO STA. 5+00 CONTRACT NO. 93709
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SECTION 27 - TOWNSHIP 3 SOUTH - RANGE 8 WEST OF THE 4th P.M.

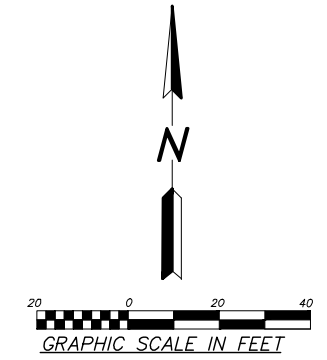
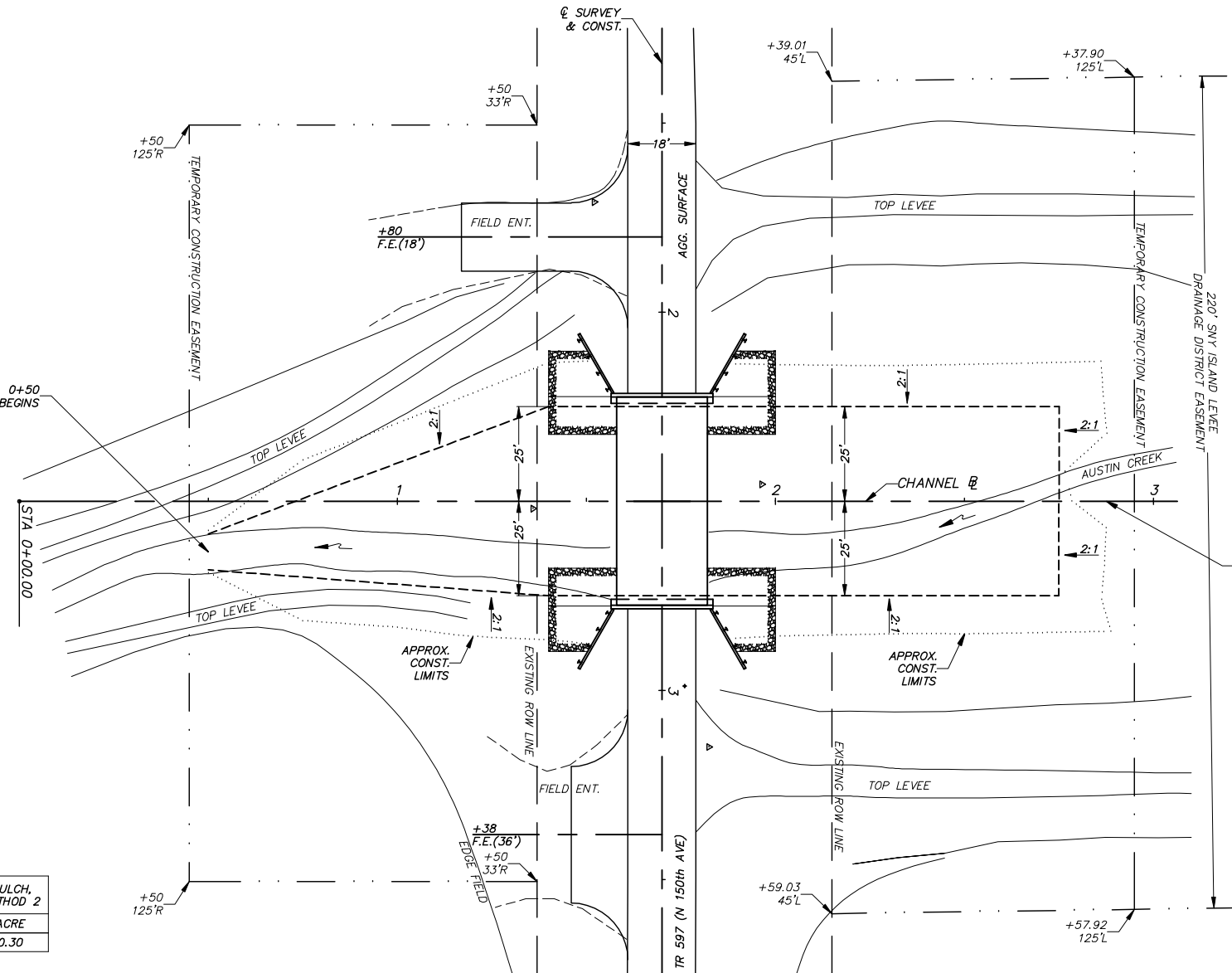
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 THOMAS J. SCHWARTZ AND LESLEY SCHWARTZ
 PART OF THE NORTH HALF OF THE
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SNY ISLAND LEVEE DRAINAGE DISTRICT - AUSTIN CREEK
 SETTLING BASIN EASEMENT
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J.D. & NANCY ALBSMEYER FARMS, LLC
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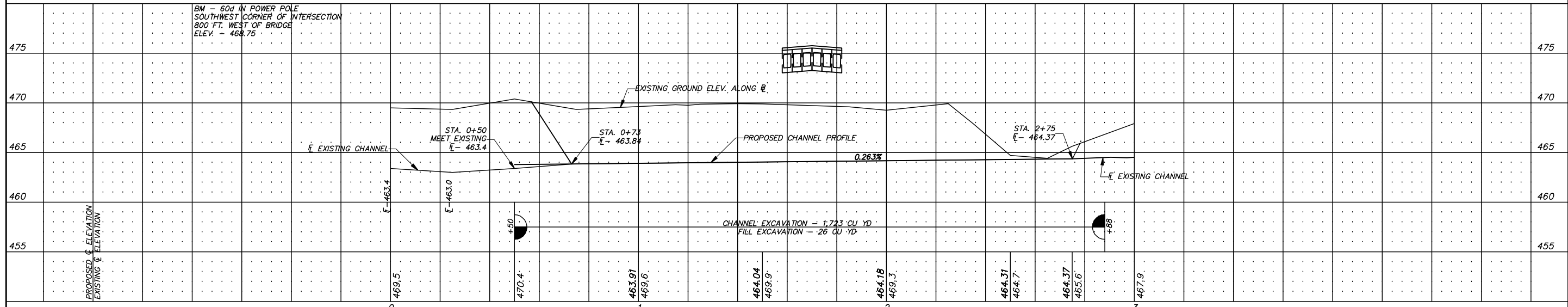
13.4' @ STA. 0+50
 CHANNEL IMPROVEMENT BEGINS

STA. 2+88 CHANNEL
 IMPROVEMENT ENDS

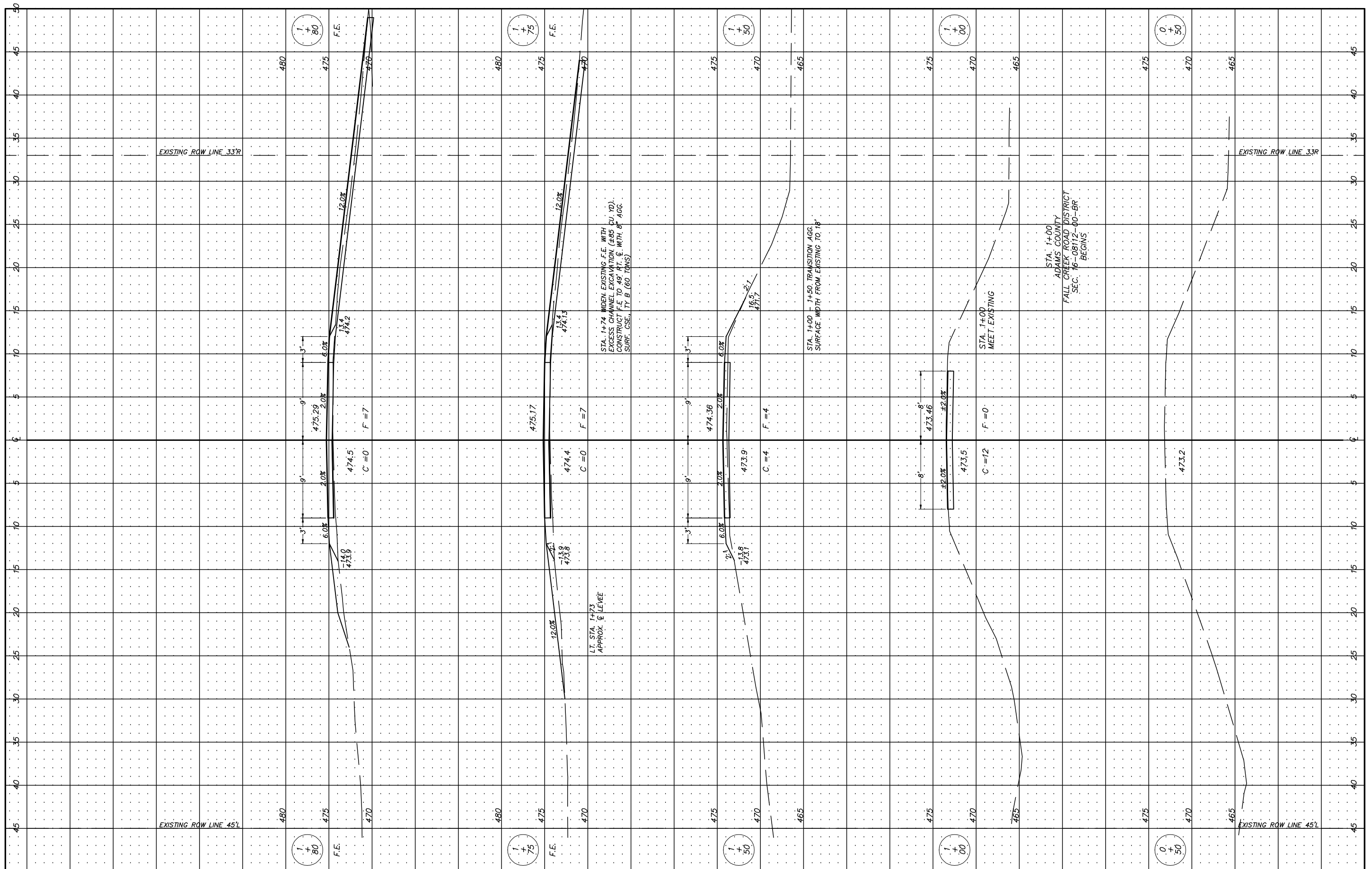


SEEDING

STA. - STA.	SEEDING CLASS 2 ACRE	NITROGEN FERTILIZER NUTRIENTS POUND	POTASSIUM FERTILIZER NUTRIENTS POUND	PHOSPHORUS FERTILIZER NUTRIENTS POUND	MULCH METHOD 2 ACRE
0+50 - 2+88	0.30	27	27	27	0.30



USER NAME = PLOT SCALE = 1:20 PLOT DATE =	DESIGNED - JRF DRAWN - JRF CHECKED - DATE -	REVISED - REVISED - REVISED - REVISED -	ADAMS COUNTY HIGHWAY DEPARTMENT	CHANNEL CHANGE PLAN AND PROFILE TR 597 (N 150th AVENUE)	COUNTY ADAMS	RD. DIST FALL CREEK	SECTION 16-08112-00-BR	TOTAL SHEETS 23	SHEET NO. 5	SCALE 1" = 20' SHEET 1 OF 1 SHEETS STA. 0+00 TO STA. 3+00	CONTRACT NO. 93709
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USER NAME =
 PLOT SCALE = 1:5
 PLOT DATE =

DESIGNED - JRF
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 DATE -

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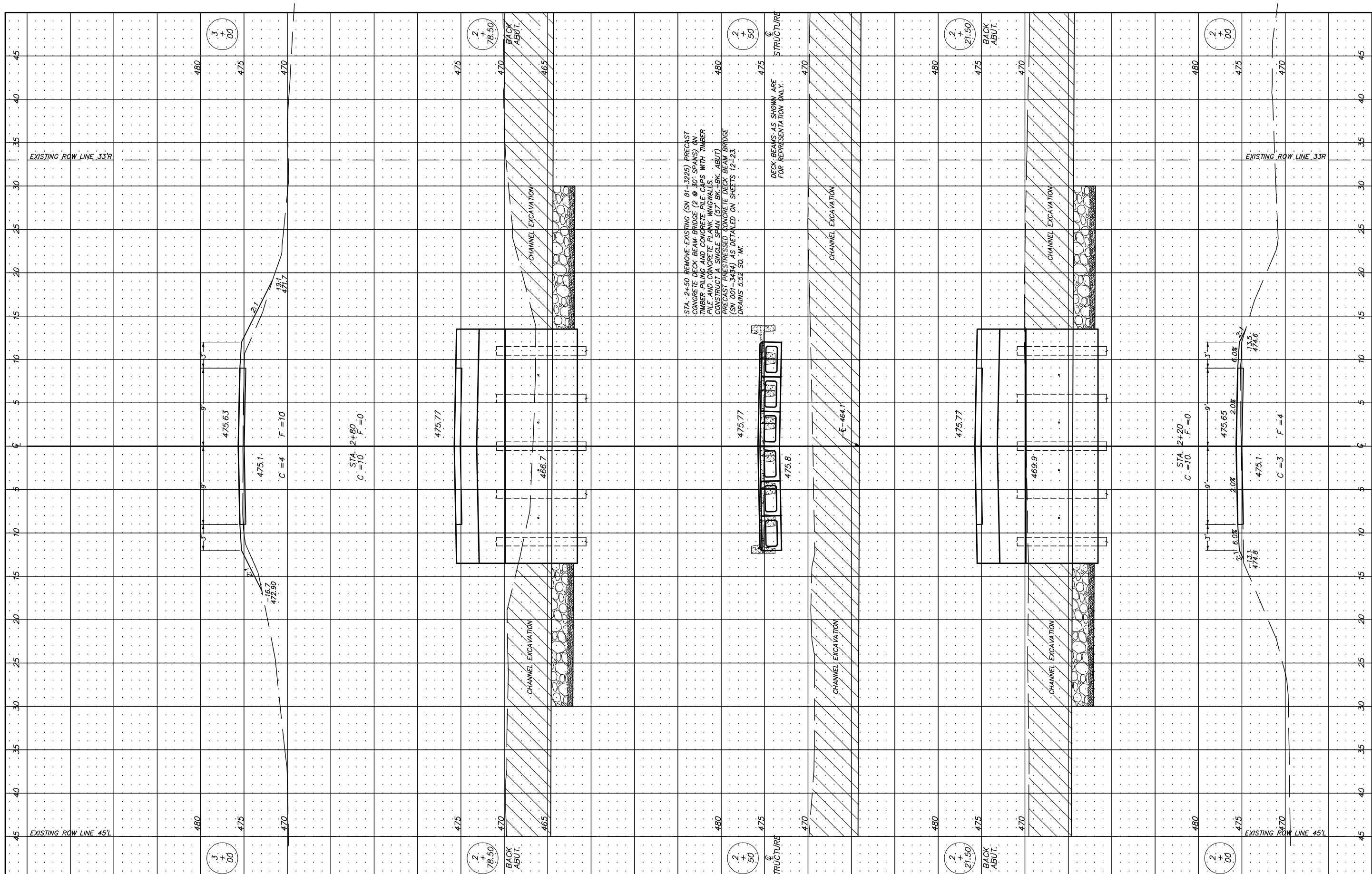
**ADAMS COUNTY
 HIGHWAY DEPARTMENT**

**CROSS SECTIONS
 TR 597 (N 150th AVENUE)**

SCALE 1" = 5' SHEET 1 OF 3 SHEETS STA. 0+50 TO STA. 1+80

COUNTY	RD. DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL DREEK	16-08112-00-BR	23	6

CONTRACT NO. 93709



USER NAME =
 PLOT SCALE = 1:5
 PLOT DATE =

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 DATE -

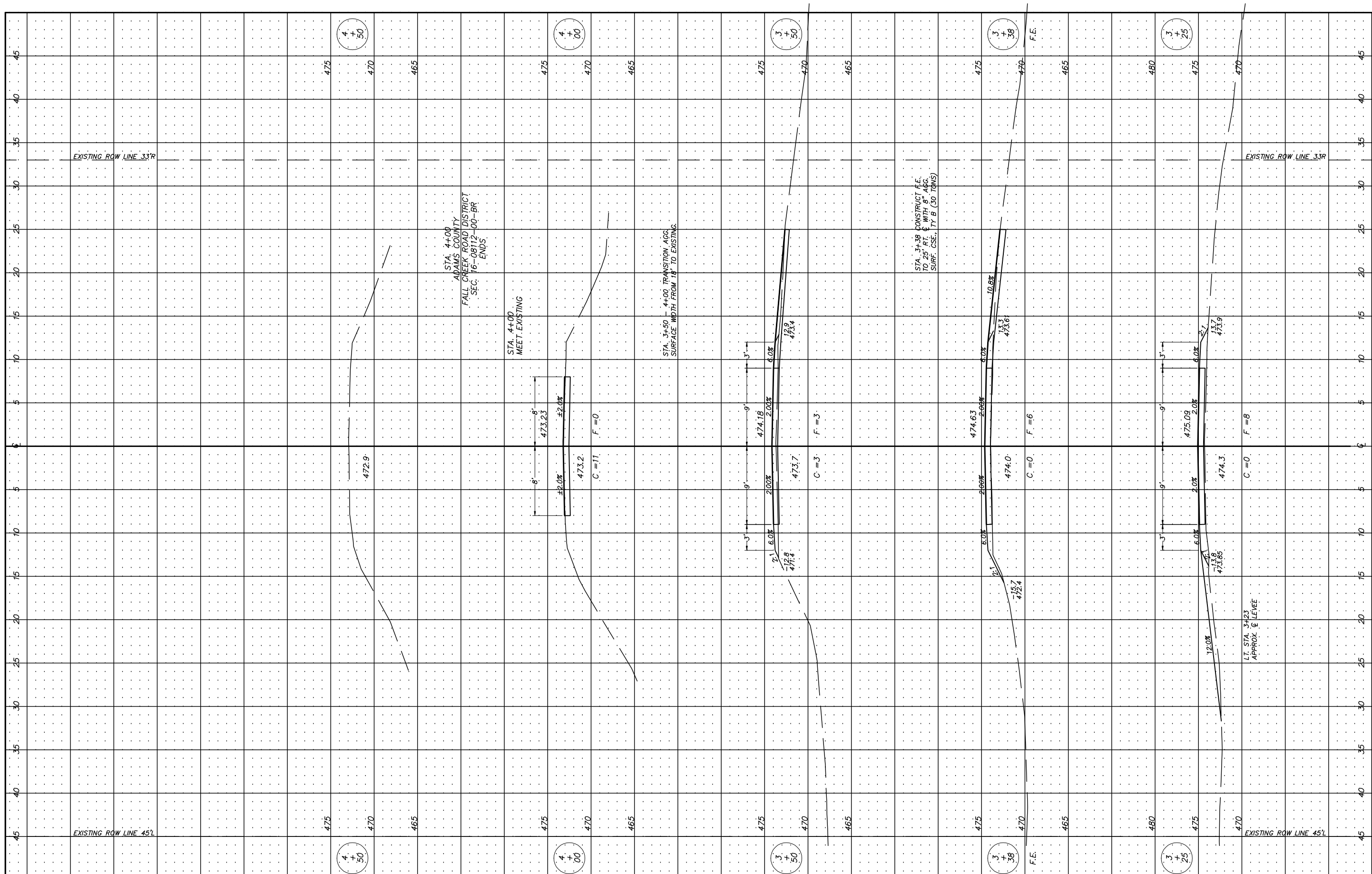
**ADAMS COUNTY
 HIGHWAY DEPARTMENT**

**CROSS SECTIONS
 TR 597 (N 150th AVENUE)**

SCALE 1" = 5' SHEET 2 OF 3 SHEETS STA. 2+00 TO STA. 3+25

COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL DREEK	16-08112-00-BR	23	7

CONTRACT NO. 93709



USER NAME =
 PLOT SCALE = 1:5
 PLOT DATE =

DESIGNED - JRF
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 CHECKED -
 DATE -

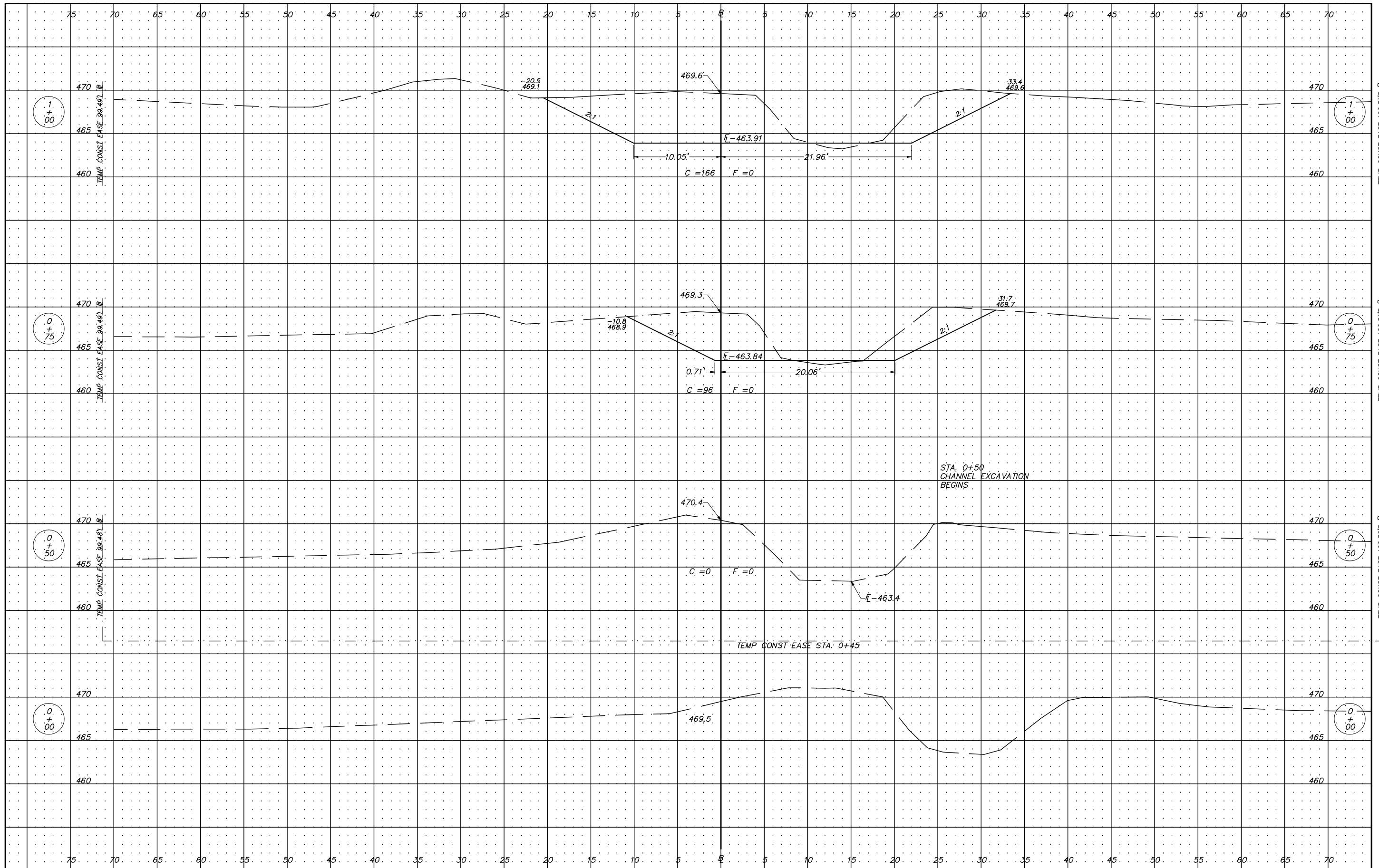
**ADAMS COUNTY
 HIGHWAY DEPARTMENT**

**CROSS SECTIONS
 TR 597 (N 150th AVENUE)**

SCALE 1" = 5' SHEET 3 OF 3 SHEETS STA. 3+38 TO STA. 4+50

COUNTY	RD. DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL DREEK	16-08112-00-BR	23	8

CONTRACT NO. 93709



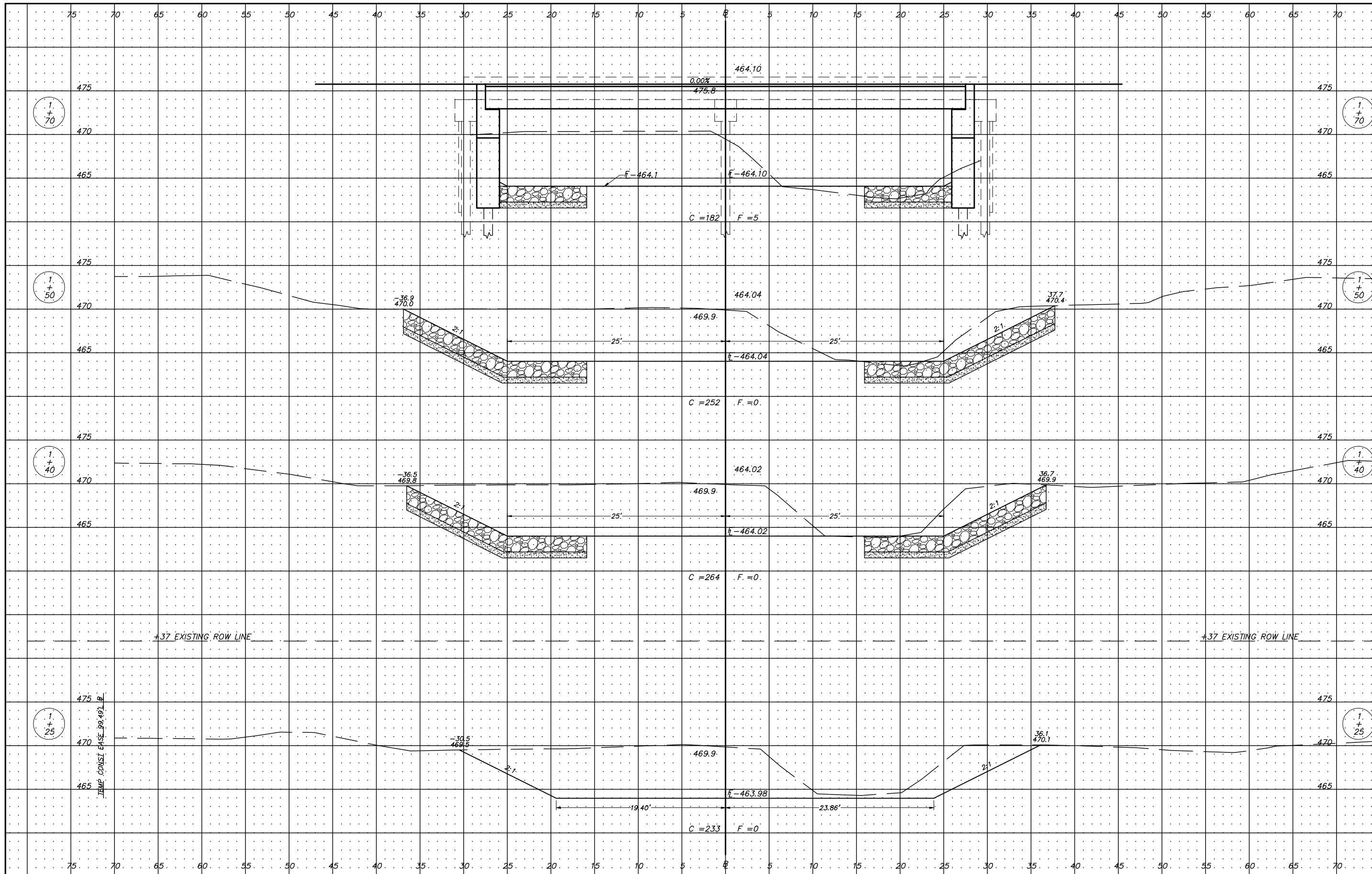
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 PLOT DATE =
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 CHECKED -
 DATE -
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**ADAMS COUNTY
 HIGHWAY DEPARTMENT**

**CHANNEL CROSS SECTIONS
 TR 597 (N 150th AVENUE)**
 SCALE 1" = 5' SHEET 1 OF 3 SHEETS STA. 0+00 TO STA. 1+00

COUNTY	RD. DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	9

CONTRACT NO. 93709



+37' EXISTING ROW LINE

+37' EXISTING ROW LINE

TEMP. CONST. EASE. 99.49'L

TEMP. CONST. EASE. 100.51'R

USER NAME =	DESIGNED - JRF	REVISED -
PLOT SCALE = 1:5	DRAWN - JRF	REVISED -
PLOT DATE =	CHECKED -	REVISED -
	DATE -	REVISED -

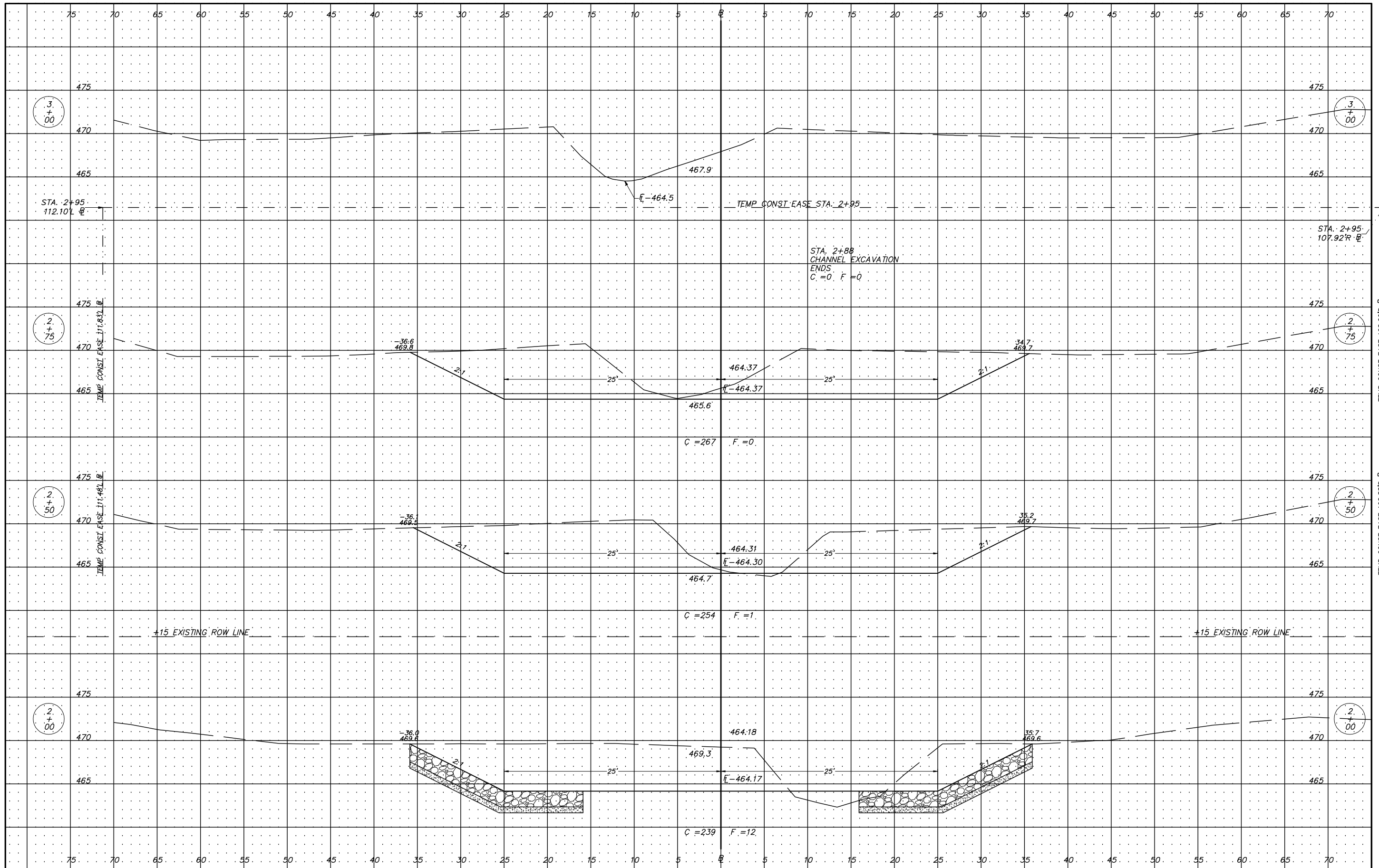
**ADAMS COUNTY
HIGHWAY DEPARTMENT**

**CHANNEL CROSS SECTIONS
TR 597 (N 150th AVENUE)**

SCALE 1" = 5' SHEET 2 OF 3 SHEETS STA. 1+20 TO STA. 1+70

COUNTY	RD. DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	10

CONTRACT NO. 93709



3
+
00

3
+
00

2
+
75

2
+
75

2
+
50

2
+
50

2
+
00

2
+
00

USER NAME =
PLOT SCALE = 1:5
PLOT DATE =

DESIGNED - JRF
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DATE -

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**ADAMS COUNTY
HIGHWAY DEPARTMENT**

**CHANNEL CROSS SECTIONS
TR 597 (N 150th AVENUE)**

SCALE 1" = 5' SHEET 3 OF 3 SHEETS STA. 2+00 TO STA. 3+00

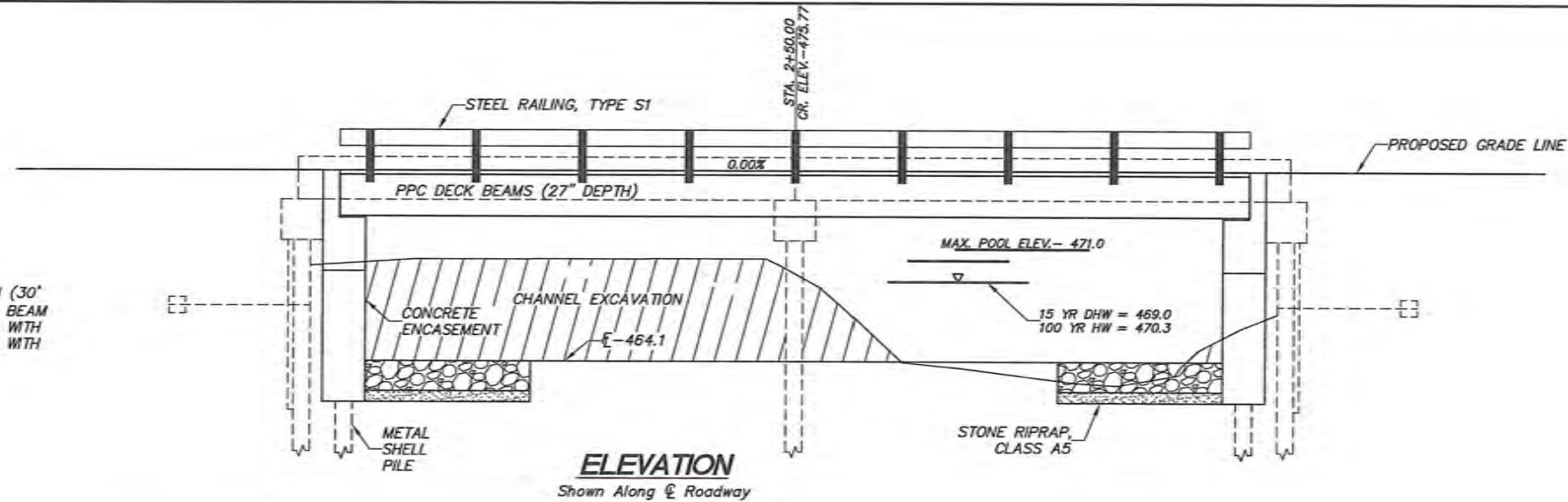
COUNTY	RD. DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	11

CONTRACT NO. 93709

BM - 60d SPIKE IN POWER POLE
SW CORNER INTERSECTION
800' WEST OF BRIDGE
ELEV. - 468.75

EXISTING STRUCTURE (SN 001-3225) - 2 SPAN (30' x 26'-3" o-o DECK) PRECAST CONCRETE DECK BEAM BRIDGE ON CONCRETE CAPS AND TIMBER PILING WITH CONCRETE BACKING PLANKS AND TIMBER PILING WITH CONCRETE PLANK WINGWALLS.

SALVAGE - SALVAGEABLE MATERIALS BECOME PROPERTY OF THE CONTRACTOR.



INDEX OF SHEETS

1. GENERAL PLAN & ELEVATION
2. GENERAL NOTES & DETAILS
3. PPC DECK BEAM SUPERSTRUCTURE
4. 27" x 48" PPC DECK BEAM
5. 27" x 48" PPC DECK BEAM DETAILS
6. PILE BENT ABUTMENT DETAILS
7. WING WALL DETAILS
8. PRECAST CONCRETE LAGGING DETAILS
9. HARDWARE DETAILS
10. METAL SHELL PILE DETAILS
11. HP PILE DETAILS
12. STEEL RAILING, TYPE S-1

DESIGN STRESSES

FIELD UNITS
f_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f_c = 6,000 psi
f_{ci} = 5,000 psi
f_{pu} = 270,000 psi (3/8" low lax strands)
f_{pbt} = 201,960 psi (3/8" low lax strands)

PILE DATA (2 ABUTMENTS)

TYPE	METAL SHELL 12"x0.250"
NOMINAL REQUIRED BEARING	262 KIPS
ESTIMATED LENGTH	BENT #1 - 56 FEET BENT #2 - 56 FEET

LOADING HL-93

ALLOW 50#/SQ.FT. FOR FUTURE WEARING SURFACE

SEISMIC DATA

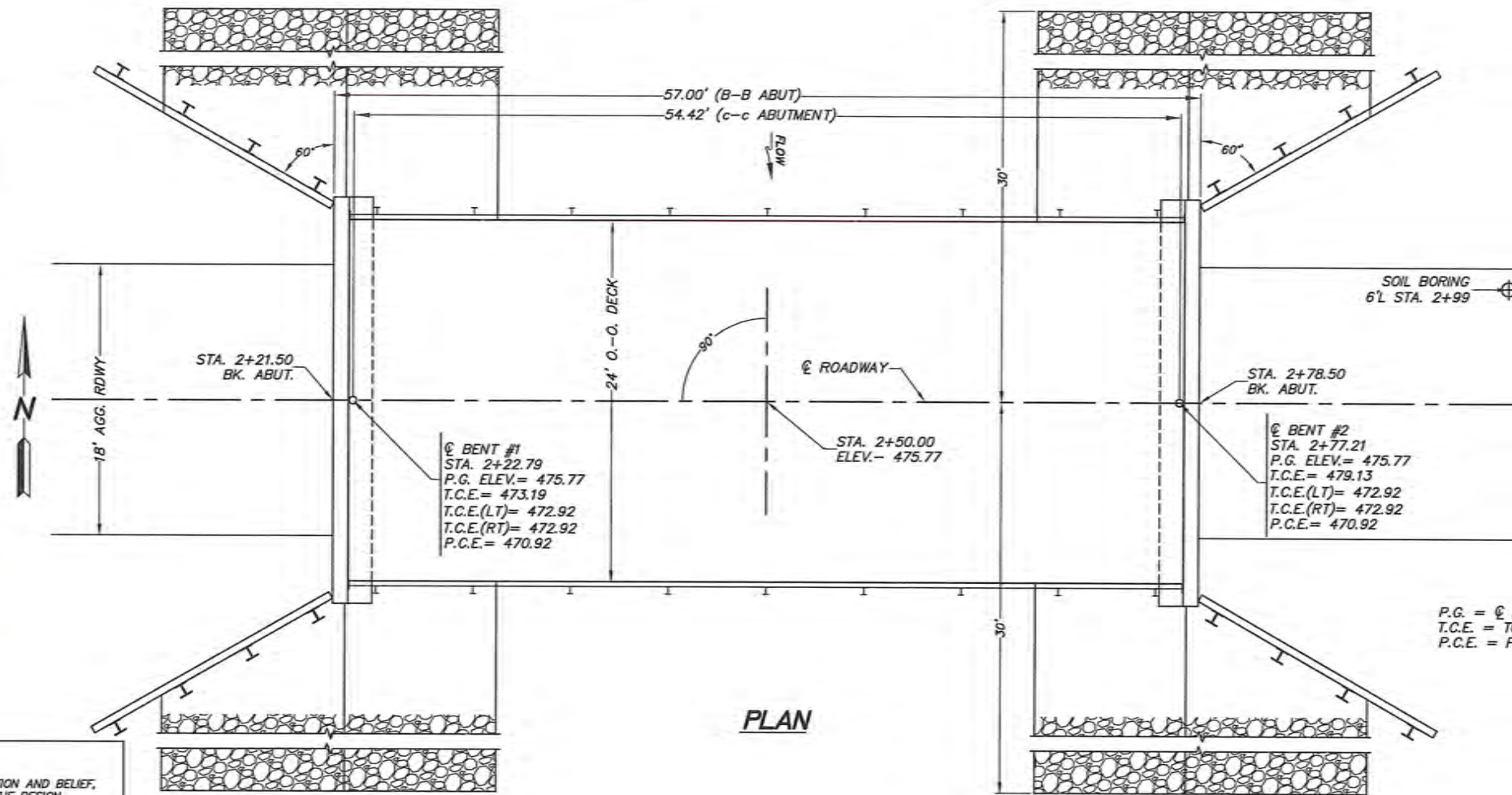
SEISMIC PERFORMANCE ZONE (SPZ) = 2
DESIGN SPECTRAL ACCELERATION AT 1.0 SEC. (SD1) = 0.179g
DESIGN SPECTRAL ACCELERATION AT 0.2 SEC. (SDS) = 0.304g
SOIL SITE CLASS = E

DESIGN SPECIFICATIONS

2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS - 7th EDITION

DESIGN SCOUR ELEVATION TABLE

BENT 1	BENT 2
456.10	456.10



CERTIFICATION
I CERTIFY THAT TO THE BEST OF KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE REPAIR 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 THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.

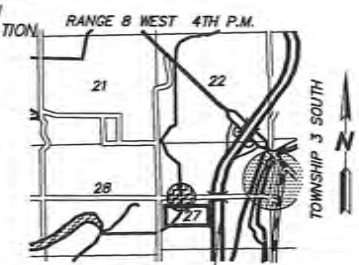
Nathan R. Frankenhoff 9-27-2017
NATHAN R. FRANKENHOFF
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS NO. 081-005610
EXPIRES 11/30/2018

SEE SHEET 13 FOR RIPRAP PLACEMENT DETAILS

WATERWAY INFORMATION

DRAINAGE AREA - 5.52 SQ. MI			LOW GRADE ELEVATION = 472.9 AT STA. 1+00						
FLOOD	FLOOD FREQUENCY (YEAR)	FLOW VOLUME (CFS)	OPENING SQ. FT.		NATURAL H.W.E.	HEAD - FT.		HEADWATER ELEV.	
			EXISTING	PROPOSED		EXISTING	PROPOSED	EXISTING	PROPOSED
DESIGN	15	1,440	237	256	471.6	0.1	0.0	472.10	469.0
BASE	100	2,400	246	327	472.0	0.7	0.2	OVERTOPPING	471.0
OVERTOPPING									
MAX. CALC	500	3,240	398	347	472.4	1.5	0.5	OVERTOPPING	472.0

THE STRUCTURE HAS BEEN DESIGNED TO BE STABLE FOR SCOUR CONDITIONS IN ACCORDANCE WITH THE FHWA TECHNICAL ADVISORY T-5140.23 "EVALUATING SCOUR AT BRIDGES" AND HYDRAULIC ENGINEER CIRCULAR 18 - EVALUATING SCOUR AT BRIDGES.



LOCATION SKETCH

USER NAME =	DESIGNED - JRF	REVISED -	ADAMS COUNTY HIGHWAY DEPARTMENT	GENERAL PLAN AND ELEVATION STRUCTURE NO. 001-3434	COUNTY	RD. DIST.	SECTION	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 1:5	DRAWN - JRF	REVISED -			ADAMS	FALL CREEK	16-08112-00-BR	23	12
PLOT DATE =	CHECKED - NF	REVISED -			CONTRACT NO. 93709				
	DATE -	REVISED -	SCALE 1"=5'	SHEET 1 OF 12 SHEETS	STA. -- TO STA. --				

TOTAL BILL OF MATERIAL

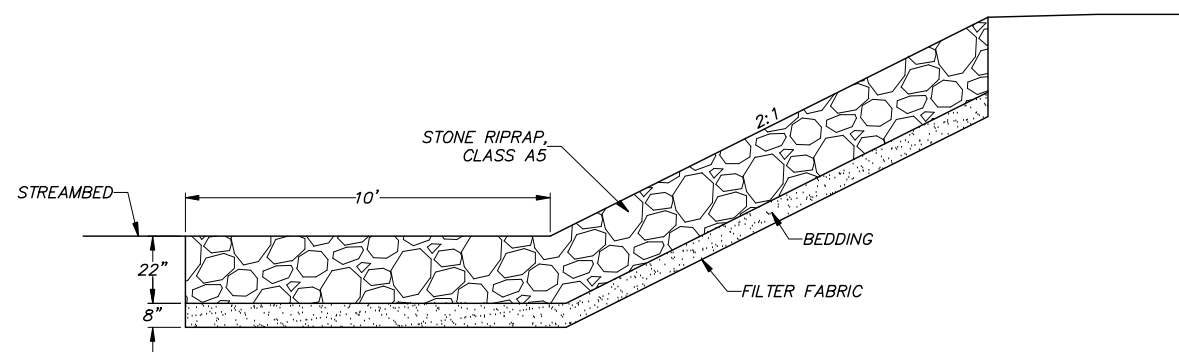
ITEM	UNIT	SUPERSTRUCTURE	SUBSTRUCTURE	TOTAL QUANTITY
CHANNEL EXCAVATION	CU YD			1,723
POROUS GRANULAR EMBANKMENT	TON		380	380
STONE RIPRAP, CLASS A5	TON			200
HOT-MIX ASPHALT SURFACE COURSE, MIX"C", N50	TON	18		18
REMOVAL OF EXISTING STRUCTURES	EACH			1
CONCRETE STRUCTURES	CU YD		21.4	21.4
CONCRETE ENCASEMENT	CU YD		40.6	40.6
PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,320		1,320
HARDWARE	POUND		572	572
REINFORCEMENT BARS, EPOXY COATED	POUND		4,280	4,280
STEEL RAILING, TYPE S1	FOOT	110		110
FURNISHING METAL SHELL PILES 12" x 0.250"	FOOT		504	504
DRIVING PILES	FOOT		504	504
TEST PILE METAL SHELLS	EACH		1	1
NAME PLATES	EACH		1	1
FURNISHING SOLDIER PILES (HP SECTION)	FOOT		440	440
DRIVING SOLDIER PILES	FOOT		440	440
PRECAST CONCRETE LAGGING	SQ FT		639	639

GENERAL NOTES

- SEE SPECIAL PROVISIONS FOR BORING LOGS.
- ALL GROUT ON THIS PROJECT SHALL BE NON-SHRINK.
- STONE RIPRAP SHALL BE PLACED TO THE DIMENSIONS SHOWN OVER A GEOTECHNICAL FABRIC IN ACCORDANCE WITH THE RIPRAP PLACEMENT DETAIL AND APPLICABLE SPECIAL PROVISIONS.
- THE ENGINEER RESERVES THE RIGHT TO ALTER THE RIPRAP PLACEMENT DETAIL AND/OR ADJUST QUANTITIES TO FIT FIELD CONDITIONS.
- THE CONTRACTOR SHALL DRIVE A TEST PILE TO 110% OF THE NOMINAL REQUIRED BEARING SPECIFIED IN A PRODUCTION LOCATION IN BENT 1 BEFORE ORDERING THE REMAINDER OF PILES.

AUSTIN CREEK
 BUILT 20____ BY
 ADAMS COUNTY
 FALL CREEK ROAD DISTRICT
 SEC. 16-08112-00-BR
 STATION 2+50.00
 STR. NO. 001-3434 LOADING HL-93

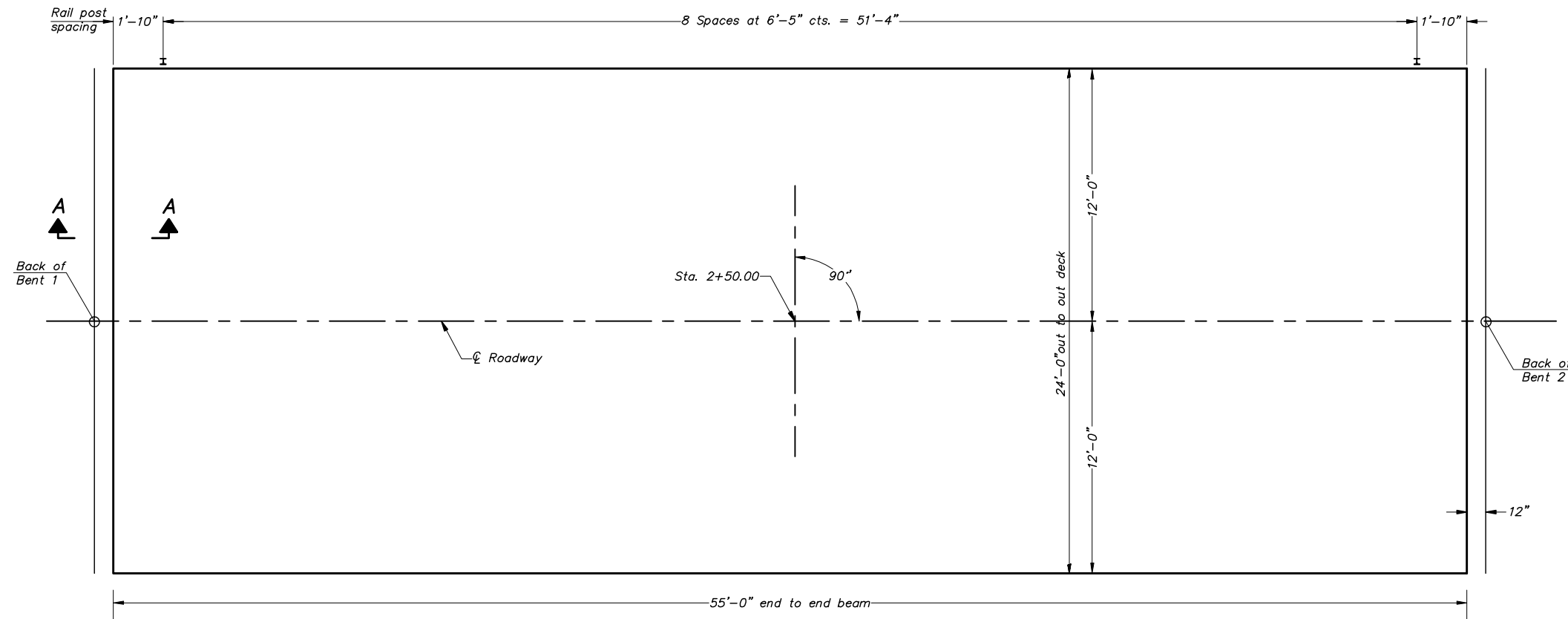
LETTERING FOR NAME PLATE
 LOCATE NAME PLATE AT NORTHEAST CORNER OF
 BRIDGE (SEE STD. 515001)



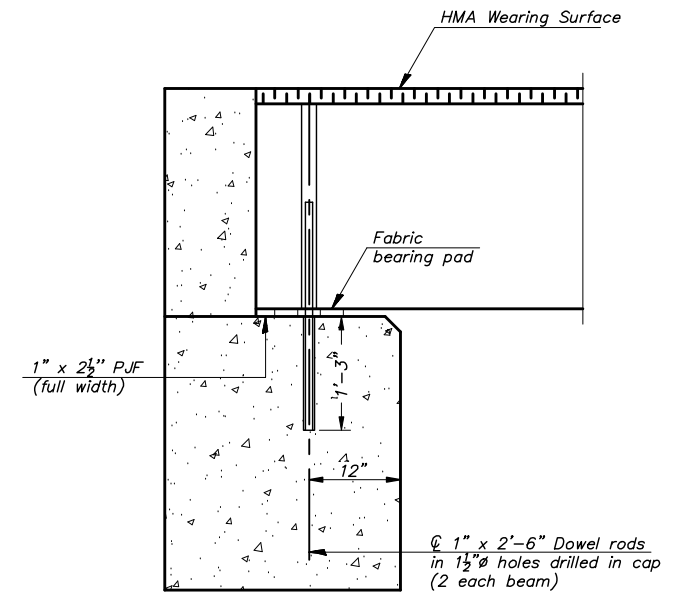
RIPRAP PLACEMENT DETAIL

ITEM	UNIT	BENT 1	BENT 2	TOTAL
STONE RIPRAP, CLASS A5	TON	100	100	200
FILTER FABRIC	SQ. YD.	103	103	206

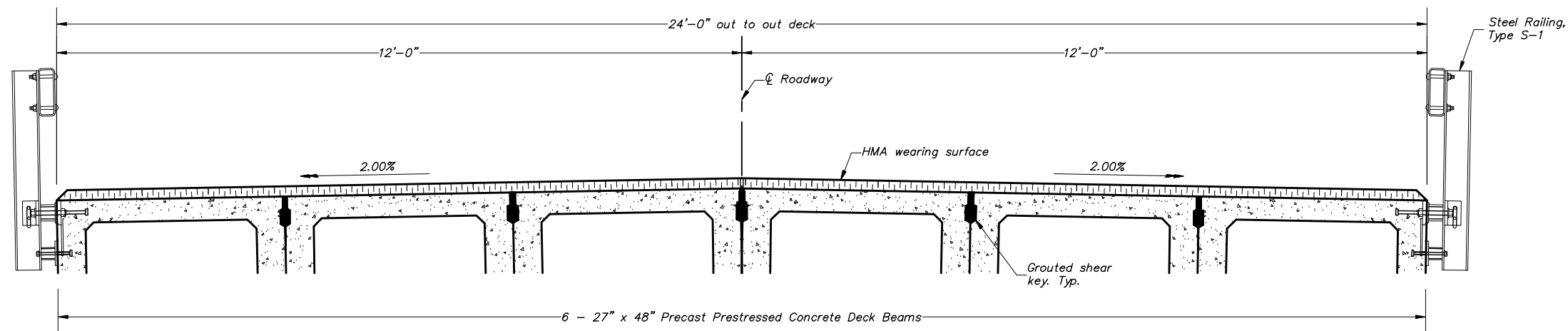
* FILTER FABRIC AND BEDDING MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE FOR STONE RIPRAP, CLASS A5



PLAN

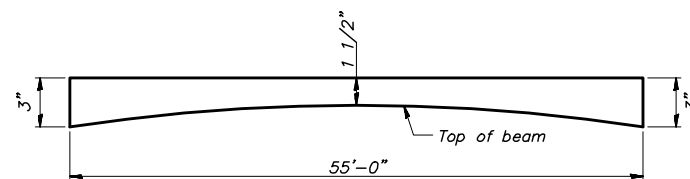


SECTION A-A
 (Dimensions at Rt. L's)
 See Sheet 5 of 12 for fabric bearing pad details.



CROSS SECTION

Notes:
 Dowel rods drilled in cap are to be included in the cost of Prestressed Precast Concrete Deck Beams (27" Depth).



ANTICIPATED HMA WEARING SURFACE PROFILE
 (For information only)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
HMA Surface Course, Mix "C", N50	Tons	18

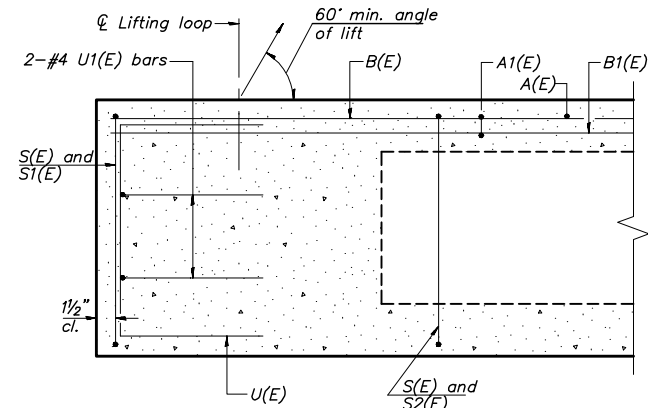
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PLOT SCALE = 1:1	DRAWN - JRF	REVISED -
PLOT DATE =	CHECKED - NF	REVISED -
	DATE -	REVISED -

**ADAMS COUNTY
 HIGHWAY DEPARTMENT**

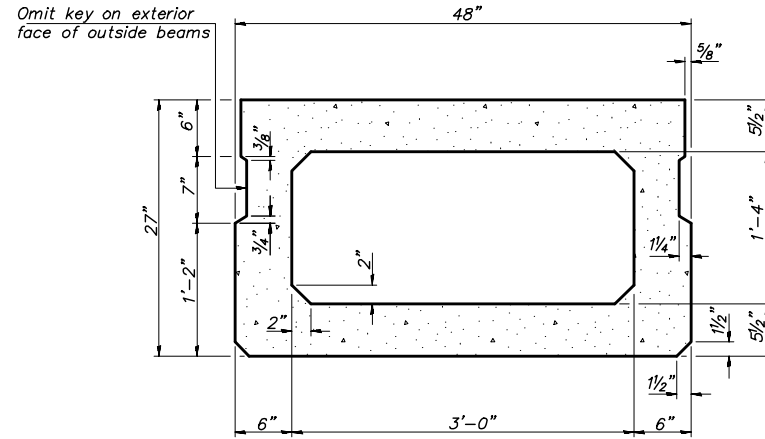
**PPC DECK BEAM SUPERSTRUCTURE
 STRUCTURE NO 001-3434**

COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	14

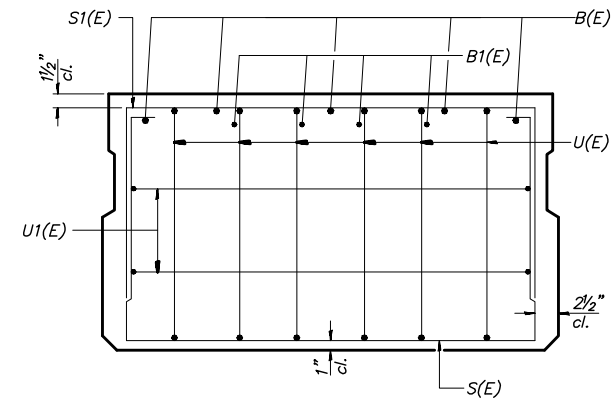
SCALE: NTS SHEET 3 OF 12 SHEETS STA. -- TO STA. -- CONTRACT NO. 93709



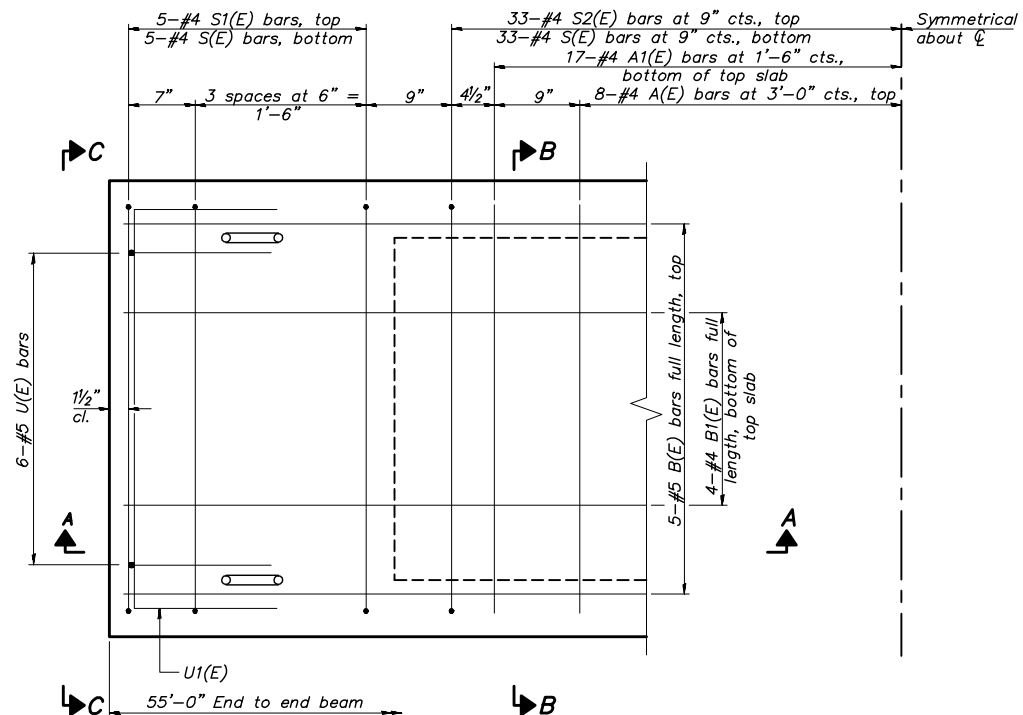
SECTION A-A



SECTION B-B
(Showing dimensions)

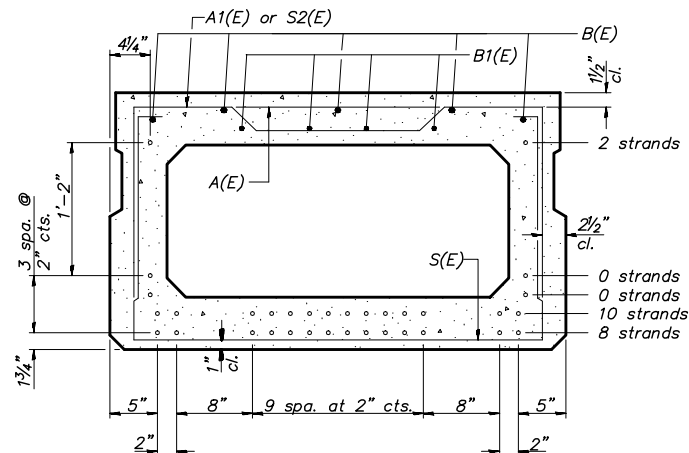


VIEW C-C



PLAN VIEW

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



SECTION B-B

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

MINIMUM BAR LAP

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	3'-7"	—
A1(E)	33	#4	3'-10"	—
B(E)	10	#5	28'-8"	—
B1(E)	8	#4	28'-4"	—
S(E)	76	#4	8'-5"	□
S1(E)	10	#4	6'-11"	□
S2(E)	66	#4	7'-2"	□
U(E)	12	#5	4'-6"	□
U1(E)	4	#4	6'-0"	□

Note:
See sheet 5 of 12 for additional details and Bill of Material.

PD-2748-0 2-17-2017

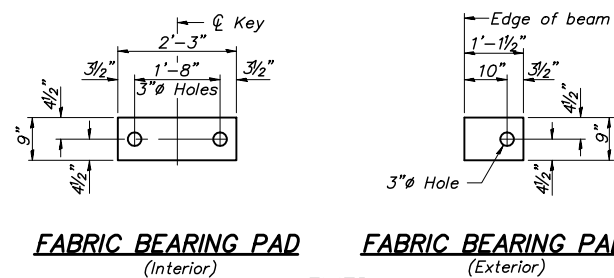
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PLOT SCALE = 1:1	DRAWN - JRF	REVISED -
PLOT DATE =	CHECKED - NF	REVISED -
	DATE -	REVISED -

ADAMS COUNTY
HIGHWAY DEPARTMENT

27" x 48" PPC DECK BEAM
STRUCTURE NO. 001-3434

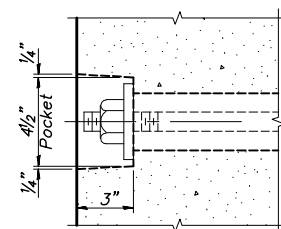
SCALE: NTS SHEET 4 OF 12 SHEETS STA. -- TO STA. --

COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	15
			CONTRACT NO. 93709	

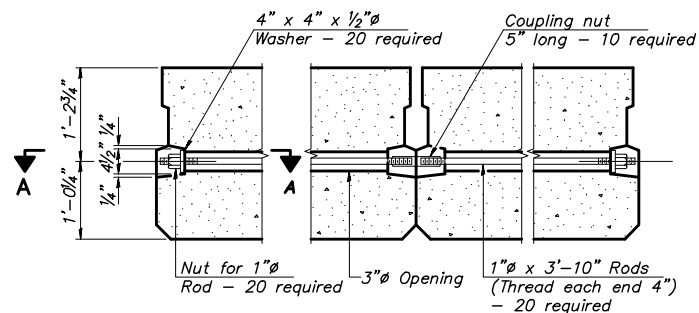


FABRIC BEARING PAD (Interior) **FABRIC BEARING PAD** (Exterior)

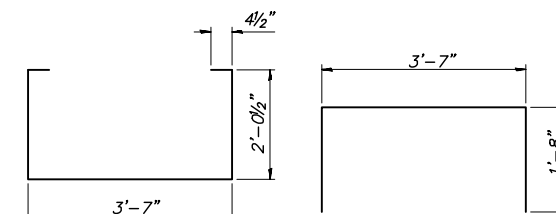
Notes:
 All bearing pads shall be 1" thick.
 Omit holes when using expansion bearings.
 Expansion bearing pad shall be bonded to the substructure.



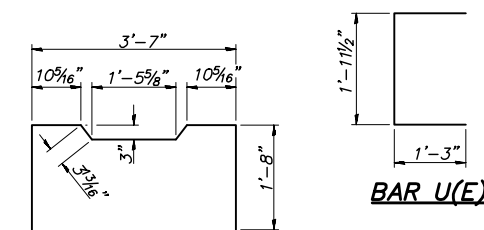
SECTION A-A



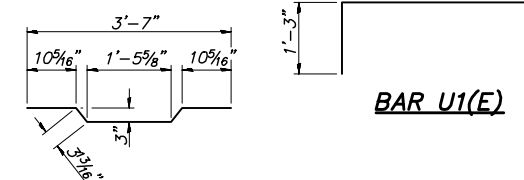
TYPICAL TRANSVERSE TIE ASSEMBLY



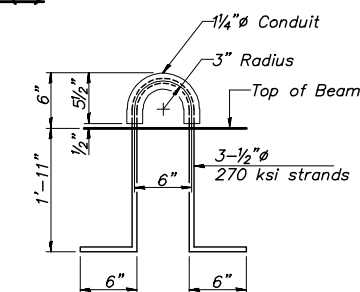
BAR S(E) **BAR S1(E)**



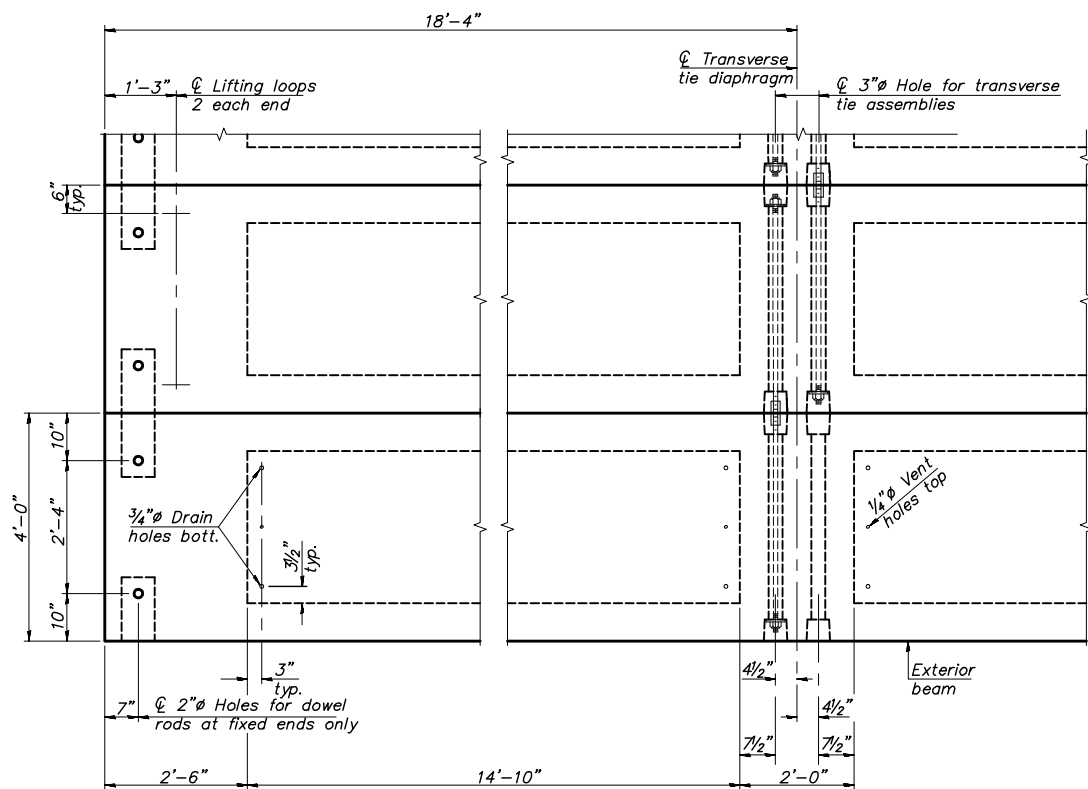
BAR U(E) **BAR S2(E)**



BAR A1(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" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces 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. (27" depth)	Sq. Ft.	1,320
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PD-2748-0D 2-17-2017

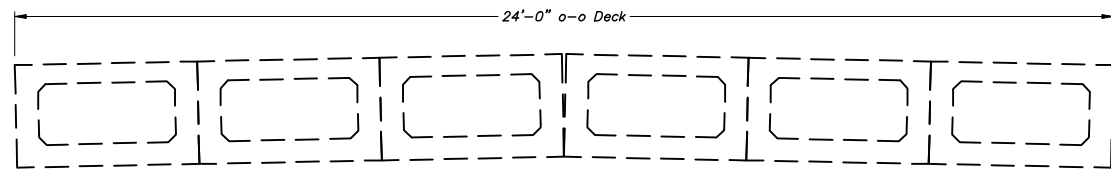
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PLOT DATE =	CHECKED - NF	REVISED -
	DATE -	REVISED -

**ADAMS COUNTY
 HIGHWAY DEPARTMENT**

**27" x 48" PPC DECK BEAM DETAILS
 STRUCTURE NO. 001-3434**

SCALE: NTS SHEET 5 OF 12 SHEETS STA. -- TO STA. --

COUNTY	RD. DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	16
			CONTRACT NO. 93709	



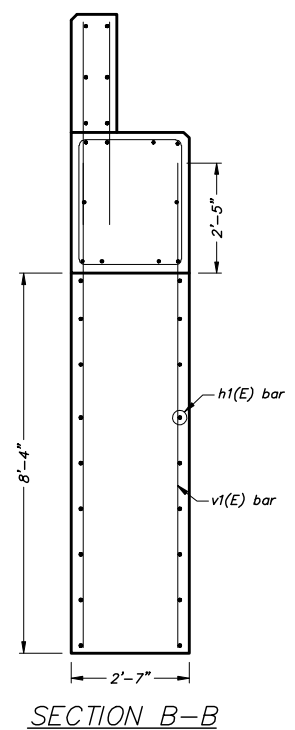
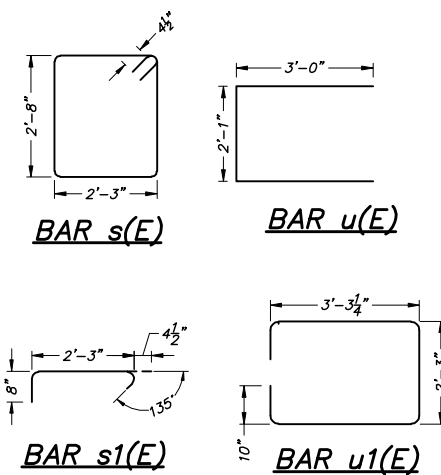
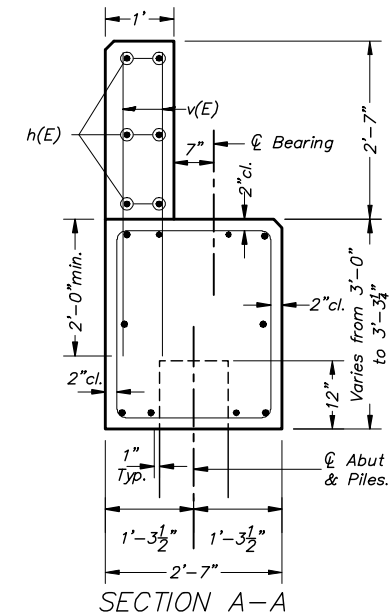
BILL OF MATERIAL FOR BENT #1

Bar	No.	Size	Length	Shape
h(E)	6	#4	26'-8"	—
h1(E)	18	#4	26'-8"	—
p(E)	10	#6	26'-8"	—
s(E)	32	#4	10'-7"	□
s1(E)	90	#4	3'-4"	┌
u(E)	8	#4	8'-1"	┌
u1(E)	18	#4	10'-5"	┌
v(E)	54	#4	4'-5"	—
v1(E)	50	#5	10'-7"	—
Concrete Structures			10.7 Cu.Yd.	
Reinforcement Bars, Epoxy Coated			2,140 pound	
Furnishing Metal Shell Piles, 12" x 0.250"			224	
Driving Piles			224	
Test Pile, Metal Shells			1 each	
Concrete Encasement			20.3 Cu.Yd.	

BILL OF MATERIAL FOR BENT #2

Bar	No.	Size	Length	Shape
h(E)	6	#4	26'-8"	—
h1(E)	18	#4	26'-8"	—
p(E)	10	#6	26'-8"	—
s(E)	32	#4	10'-7"	□
s1(E)	90	#4	3'-4"	┌
u(E)	8	#4	8'-1"	┌
u1(E)	18	#4	10'-5"	┌
v(E)	54	#4	4'-5"	—
v1(E)	50	#5	10'-7"	—
Concrete Structures			10.7 Cu.Yd.	
Reinforcement Bars, Epoxy Coated			2,140 pound	
Furnishing Metal Shell Piles, 12" x 0.250"			280	
Driving Piles			280	
Concrete Encasement			20.3 Cu.Yd.	

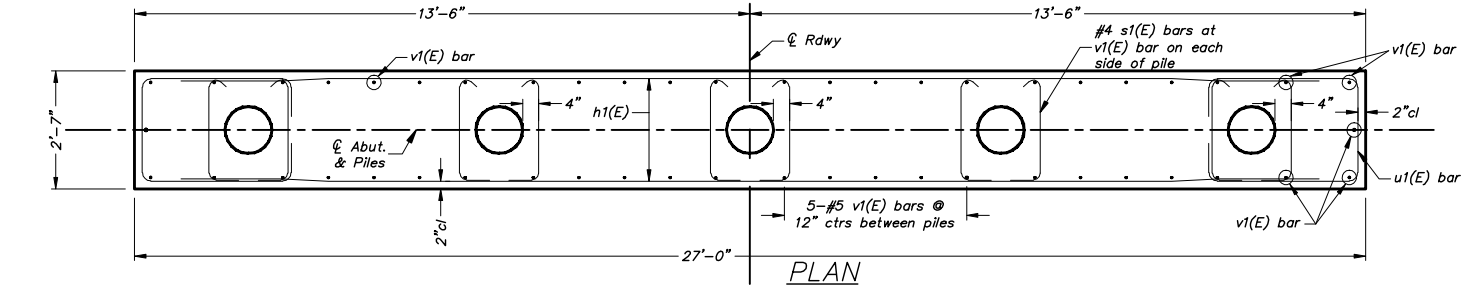
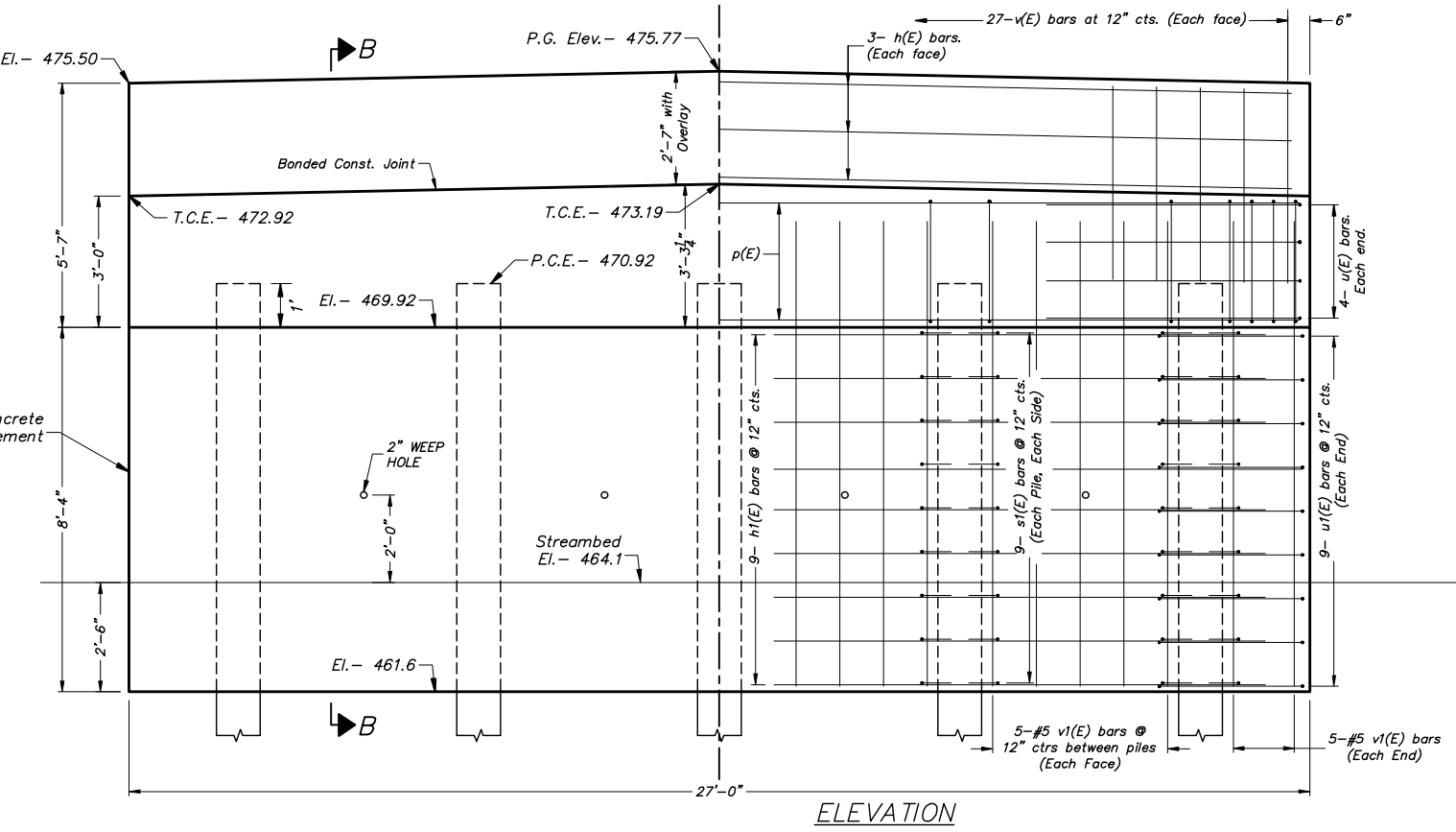
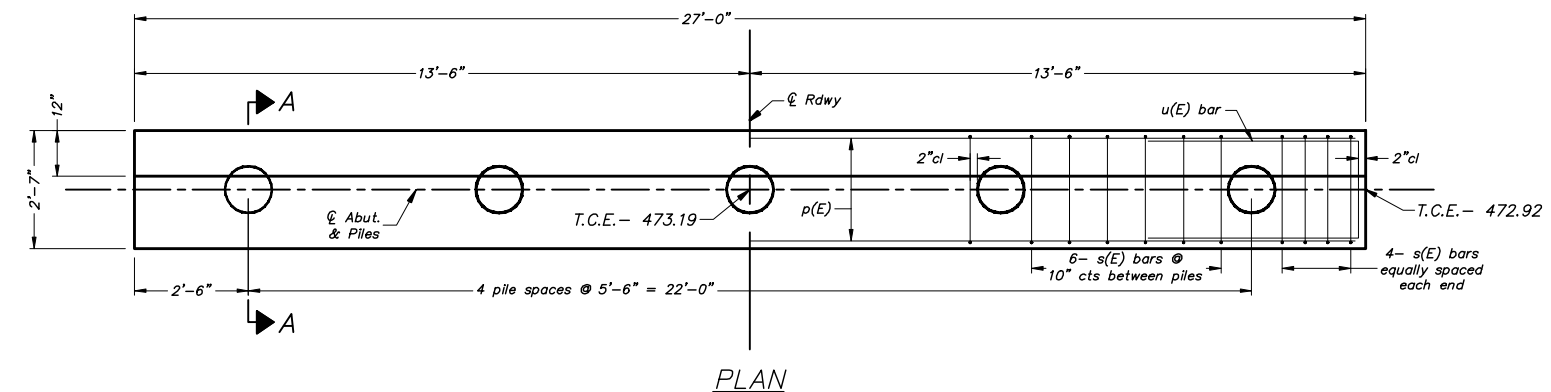
PILE DATA
 Type: Metal Shells 12" X 0.250"
 Nominal Required Bearing: 262k
 Factored Resistance Available: 144k
 Est. Length: 56 ft.



BAR LAP
 #4 bar - 2'-0"
 #5 bar - 2'-5"
 #6 bar - 2'-11"

GENERAL NOTES

- Class SI concrete shall be used throughout.
- Abutment and encasement corners to be chamfered 2".
- Reinforcement bars designated (E) shall be epoxy coated.
- The contractor shall drive a test pile to 110% of the nominal required bearing specified in a production location in Bent 1 before ordering the remainder of piles.
- The backwall above the bonded construction joint shall be cast against the in-place beams.
- Reinforcement bars in the concrete encasement shall be considered as included in the contract unit price per cubic yard for CONCRETE ENCASUREMENT.

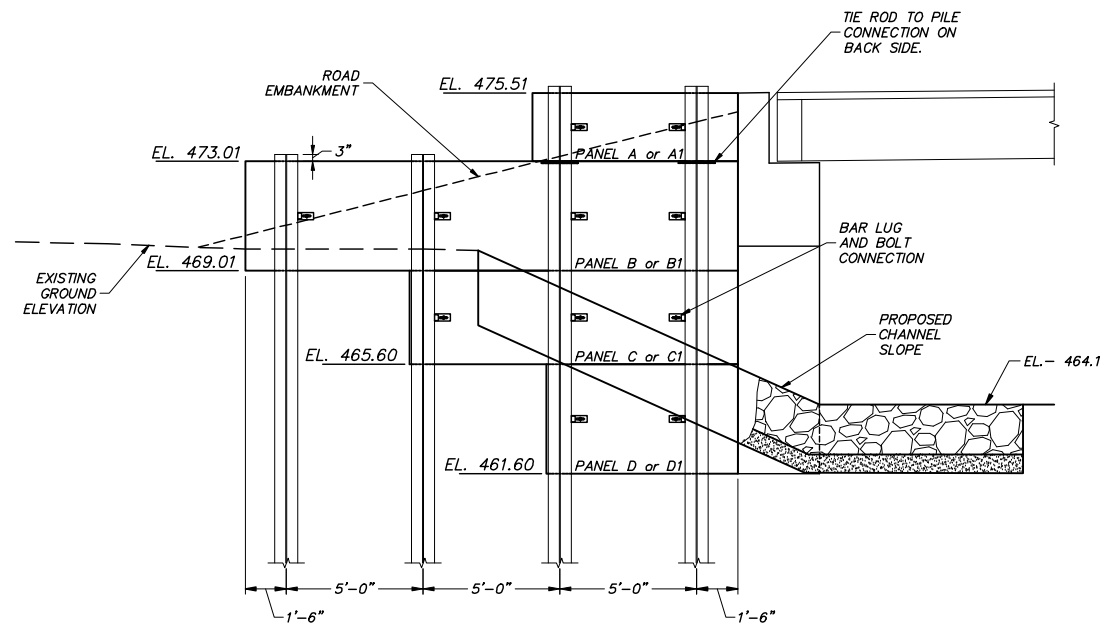


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	DATE -	REVISED -

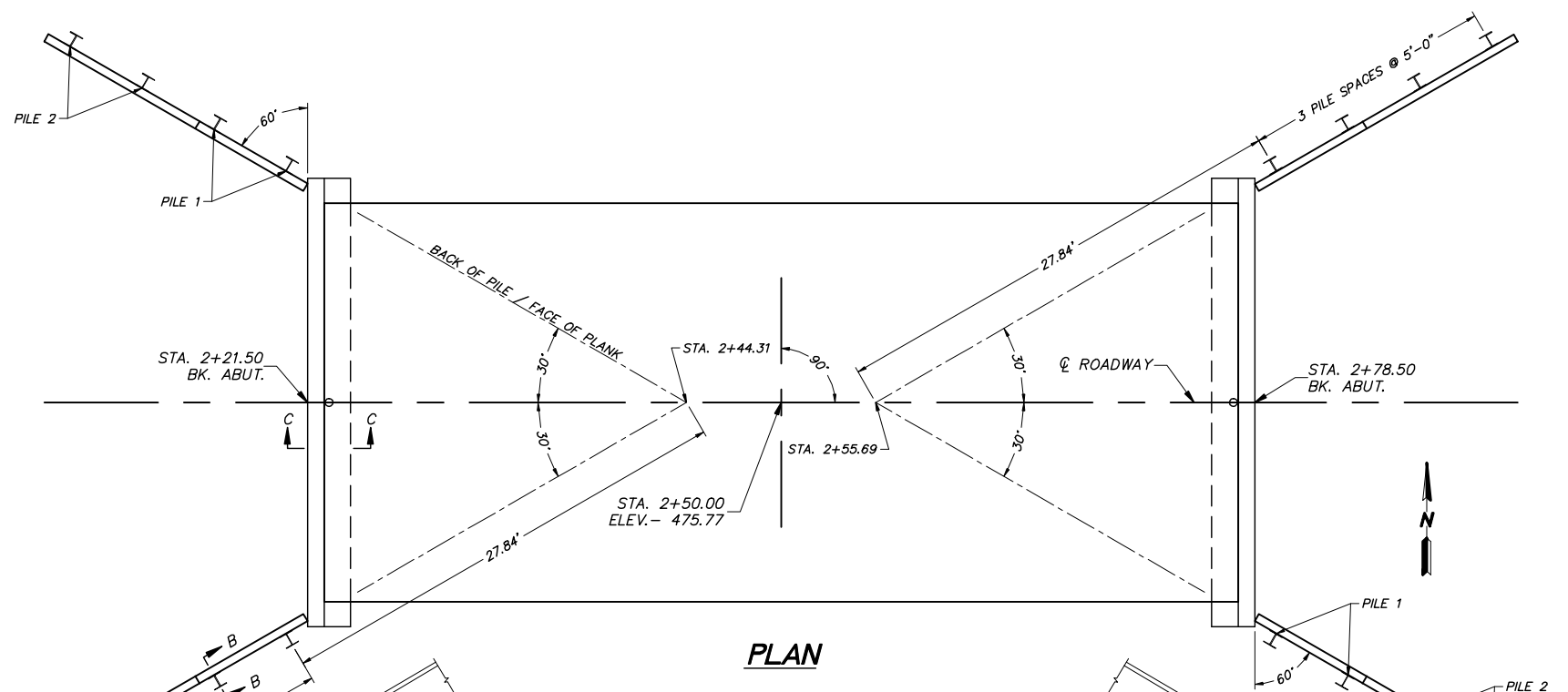
**ADAMS COUNTY
HIGHWAY DEPARTMENT**

**PILE BENT ABUTMENT DETAILS
STRUCTURE NO. 001-3434**

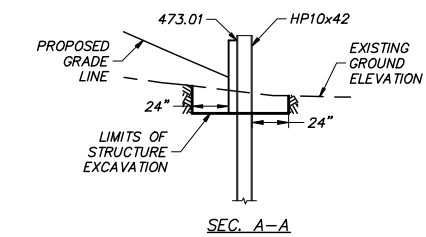
COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	17
SCALE 1:1			SHEET 6 OF 12 SHEETS	STA. -- TO STA. --
CONTRACT NO. 93709				



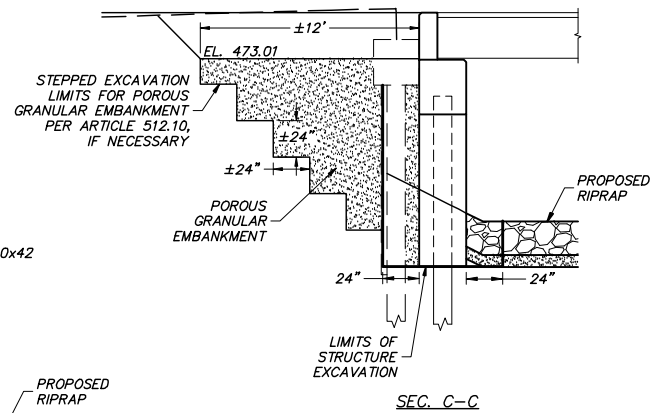
LAGGING ELEVATION AND PLACEMENT LOCATION
LAYOUT TYPICAL ALL FOUR CORNERS



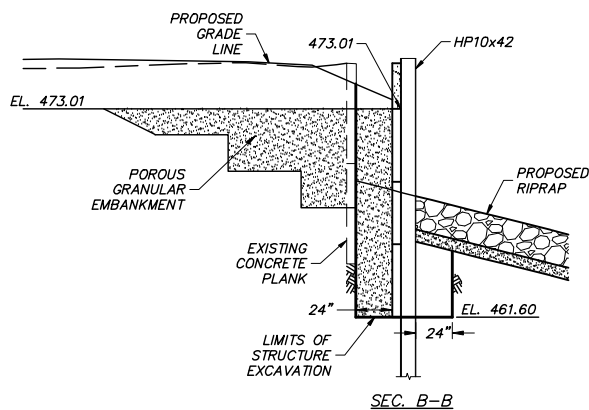
LAGGING PLAN AND PLACEMENT LOCATION



SEC. A-A



SEC. C-C



SEC. B-B

GENERAL NOTES:

POROUS GRANULAR EMBANKMENT MAY BE PLACED TO ELEVATION 466.0 PRIOR TO ERECTION OF DECK BEAMS.

REMAINDER OF POROUS GRANULAR EMBANKMENT TO BE PLACED AFTER THE DECK BEAMS HAVE BEEN SET AND PINS GROUDED AND THE ABUTMENT BACK WALL CONCRETE HAS ATTAINED THE REQUIRED FLEXURAL STRENGTH.

ITEM	UNIT	WEST ABUT.	EAST ABUT.
STRUCTURE EXCAVATION	CU YD	51	57
POROUS GRANULAR EMBANKMENT	TON	190	190

PILE DATA (WINGWALLS)

TYPE	HP10x42
ESTIMATED LENGTH	PILE 1 - 30 FEET (8 REQUIRED) PILE 2 - 25 FEET (8 REQUIRED)
MIN. PILE TIP ELEVATION	PILE 1 - 447.8 PILE 2 - 449.3

BILL OF MATERIAL PER ABUTMENT

ITEM	UNIT	QUANTITY
FURNISHING SOLDIER PILES (HP SECTION)	FOOT	220
DRIVING SOLDIER PILES	FOOT	220

USER NAME =	DESIGNED -	REVISED -
PLOT SCALE = 1:5	DRAWN - JRF	REVISED -
PLOT DATE =	CHECKED - NF	REVISED -
	DATE -	REVISED -

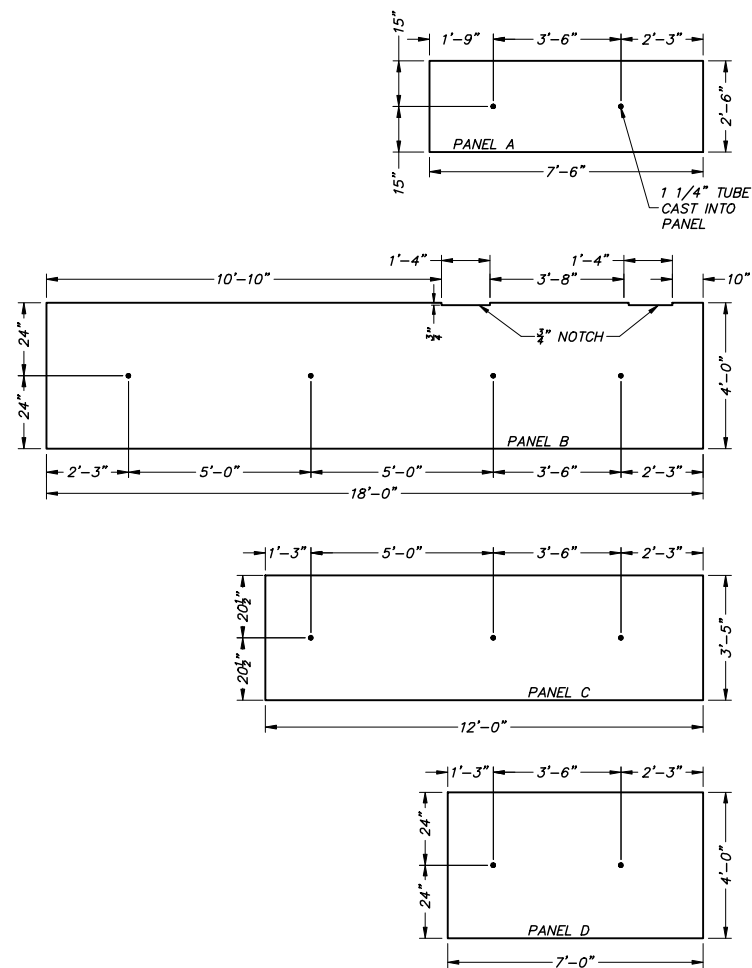
**ADAMS COUNTY
HIGHWAY DEPARTMENT**

**WING WALL DETAILS
STRUCTURE NO. 001-3434**

COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	ADAMS	16-08112-00-BR	23	18

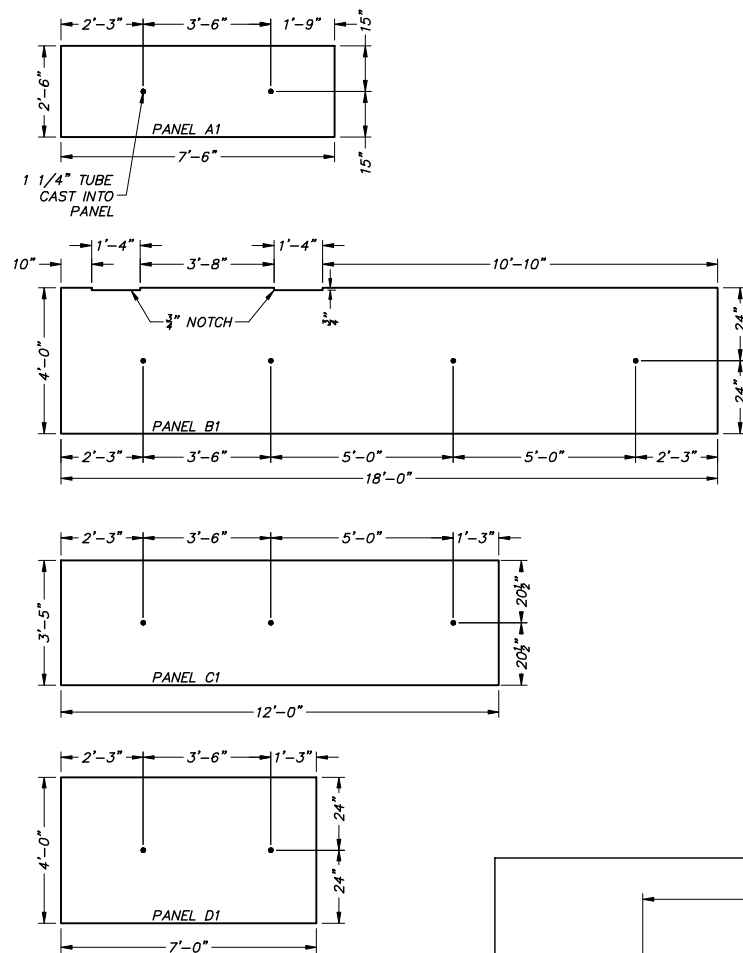
SCALE 1"=5' SHEET 7 OF 12 SHEETS STA. -- TO STA. --

CONTRACT NO. 93709



PRECAST CONCRETE LAGGING FOR
SOUTHWEST AND NORTHEAST CORNER.
EXTERIOR FACE OF LAGGING SHOWN ABOVE.

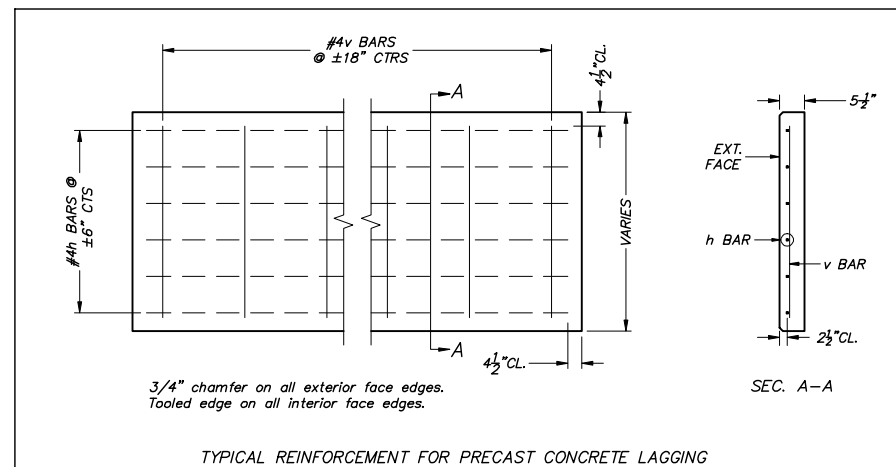
PRECAST CONCRETE LAGGING DIMENSIONS



PRECAST CONCRETE LAGGING FOR
NORTHWEST AND SOUTHEAST CORNER.
EXTERIOR FACE OF LAGGING SHOWN ABOVE.

EDGE PLACED AGAINST CONCRETE ENCASUREMENT AND ABUTMENT

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (reinforcement)



TYPICAL REINFORCEMENT FOR PRECAST CONCRETE LAGGING

INCIDENTAL BILL OF MATERIALS - LAGGING REINFORCEMENT

BAR	NUMBER	SIZE	LENGTH
PANEL A & A1 h	10	#4	7'-0"
PANEL A & A1 v	10	#4	2'-0"
PANEL B & B1 h	16	#4	17'-6"
PANEL B & B1 v	24	#4	3'-6"
PANEL C & C1 h	14	#4	11'-6"
PANEL C & C1 v	16	#4	3'-0"
PANEL D & D1 h	16	#4	6'-6"
PANEL D & D1 v	10	#4	3'-6"

GENERAL NOTES:

- FIELD DRILLING OF INITIAL HOLES IS PROHIBITED. IF DRILLING IS NECESSARY DUE TO MISALIGNMENT, A HOLLOW BIT CORE DRILL SHALL BE USED.
- PRECAST CONCRETE LAGGING SHALL COMPLY WITH SECTIONS 504 AND 522 OF THE STANDARD SPECIFICATIONS EXCEPT CLASS SI CONCRETE MAY BE USED.
- REINFORCEMENT SHALL BE ASTM A706 GRADE 60 BARS.
- PRECAST CONCRETE LAGGING MAY BE EQUIPPED WITH SHAPED WIRE LIFTING LOOPS WHERE THEY ARE BACKED WITH EARTH AND NEED NOT BE REMOVED AFTER PLACEMENT. EXPOSED LAGGING SHALL HAVE SUITABLE EDGE INSERTS FOR LIFTING EYE BOLTS OR SIMILAR DEVICE. SEAL INSERTS WITH CEMENT GROUT OR SILICONE BUILDING SEALANT AFTER EYE BOLTS ARE REMOVED.
- A THIN LAYER OF SAND/CEMENT MORTAR SHALL BE PLACED ON THE HORIZONTAL SURFACE OF THE PRECAST CONCRETE LAGGING PRIOR TO THE PLACEMENT OF THE NEXT PANEL.
- THE BACK OF THE PRECAST CONCRETE LAGGING SHALL BE WATERPROOFED IN ACCORDANCE WITH ARTICLE 503.18 OF THE STANDARD SPECIFICATIONS.
- THE LATERAL ACTIVE EARTH PRESSURE ACTING ON THE PRECAST CONCRETE LAGGING IS ASSUMED AS AN EQUIVALENT FLUID PRESSURE OF 45 LBS/CF INCLUDING A LIVE LOAD SURCHARGE PRESSURE EQUAL TO 2 FEET OF EARTH.

BILL OF MATERIAL PER ABUTMENT

ITEM	UNIT	TOTAL QUANTITY
PRECAST CONCRETE LAGGING	SQ FT	319.5

USER NAME =	DESIGNED -	REVISED -
PLOT SCALE = 1:5	DRAWN - JRF	REVISED -
PLOT DATE =	CHECKED - NF	REVISED -
	DATE -	REVISED -

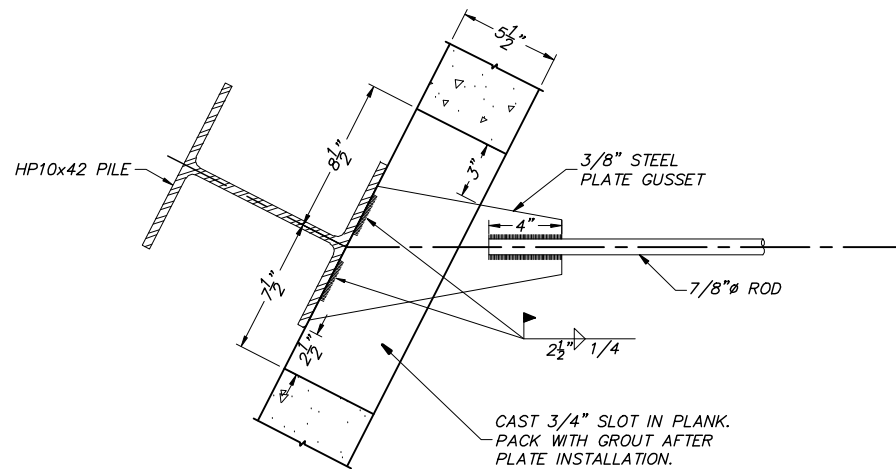
**ADAMS COUNTY
HIGHWAY DEPARTMENT**

**PRECAST CONCRETE LAGGING DETAILS
STRUCTURE NO. 001-3434**

SCALE NTS SHEET 8 OF 12 SHEETS STA. -- TO STA. --

COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	ADAMS	16-08112-00-BR	23	19

CONTRACT NO. 93709



TYPICAL TIE ROD TO PILE CONNECTION

GENERAL NOTES:

STEEL FOR THE TRANSVERSE TIE RODS SHALL BE ACCORDING TO AASHTO M 227 GRADES 70-80. AFTER FABRICATION, THE TIE ROD ASSEMBLIES SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO AASHTO M 232.

TURN BUCKLES SHALL BE DROP-FORGED AND CONFORM IN DIMENSION AND WEIGHT OF THE LATEST MANUAL OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION.

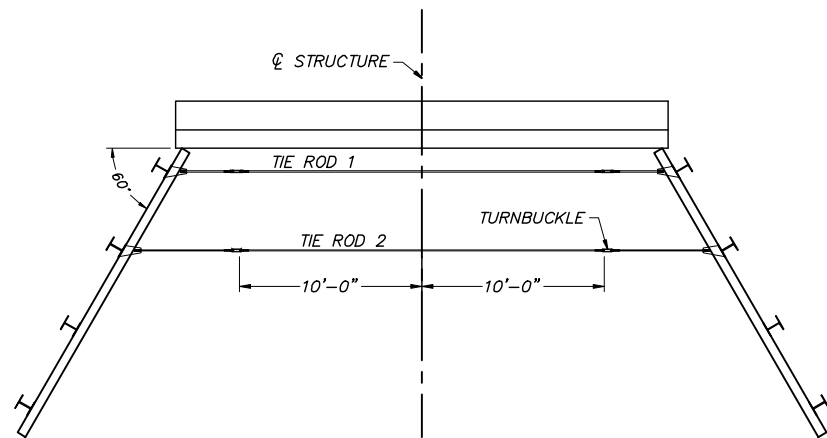
GRADE 36 STEEL SHALL BE USED FOR THE BAR LUGS.

THE BOLTS, NUTS, CUT WASHERS, OGEE WASHERS AND BAR LUGS, AFTER FABRICATION, SHALL BE HOT-DIPPED GALVANIZED ACCORDING TO AASHTO M 232, CLASS C, EXCEPT THE MINIMUM WEIGHT OF ZINC COATING SHALL BE 2.0 OZ/SQ FT.

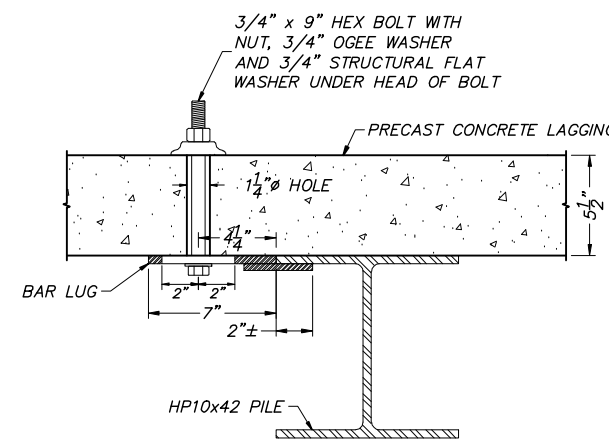
THE STEEL PILE SHALL BE CLEANED TO SHINY METAL PRIOR TO WELDING THE TIE ROD ASSEMBLY. THE COMPLETED WELD AND HEAT DAMAGED AREAS OF THE CUT-TO-FIT SHALL BE GIVEN A THOROUGH COATING OF ZINC-RICH PAINT.

BILL OF MATERIALS PER ABUTMENT

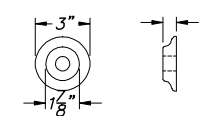
ITEM	MARK	NUMBER	SIZE	WEIGHT
TIE RODS	Ø	2	20'-0"	164
	1	2	2'-11"	24
	2	2	5'-5"	44
TURNBUCKLES		4	7/8"	8
	TIE RODS	4	14" x 3" to 8" x 3/8"	33
PLATES	LUG	22	7" x 3" x 3/8"	49
	LUG	22	3 3/4" x 2 1/2" x 3/8"	22
HEX BOLTS		22	3/4" x 9"	27
WASHERS	OGEE	22	3/4" Ø CAST	16
	FLAT	22	3/4" Ø CUT	1
NUTS		22	3/4" Ø HEX	4
TOTAL WEIGHT OF HARDWARE, LBS				276
ALLOWABLE WEIGHT OF HARDWARE PER ART. 507.17, LBS				286



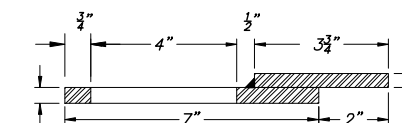
PLAN



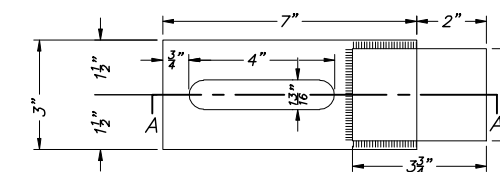
TYPICAL PANEL TO PILE CONNECTION



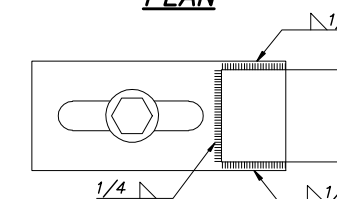
3/4" Ø OGEE WASHER



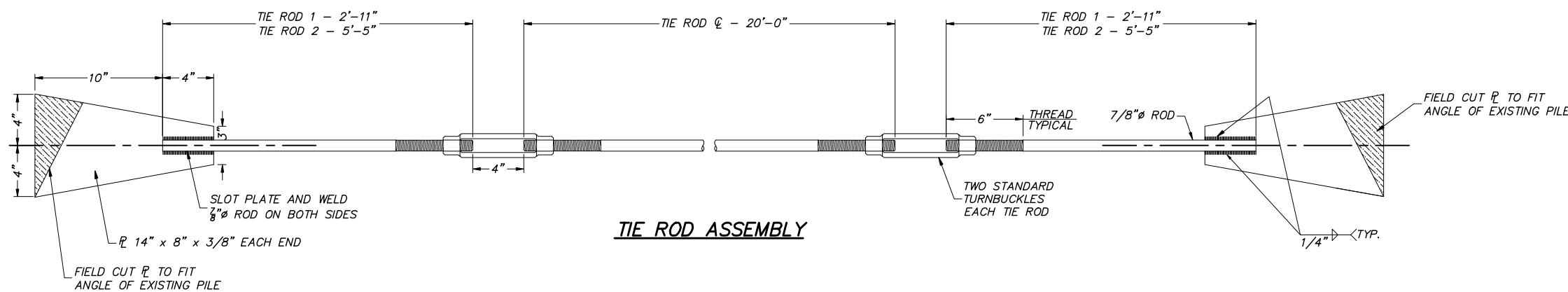
SEC. A-A



PLAN



BAR LUG



TIE ROD ASSEMBLY

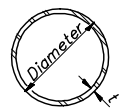
USER NAME =	DESIGNED -	REVISED -
PLOT SCALE = 1:5	DRAWN - JRF	REVISED -
PLOT DATE =	CHECKED - NF	REVISED -
	DATE -	REVISED -

**ADAMS COUNTY
HIGHWAY DEPARTMENT**

**HARDWARE DETAILS
STRUCTURE NO. 001-3434**

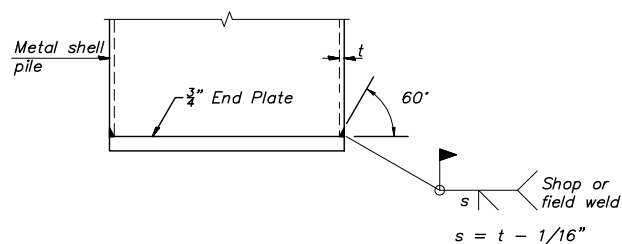
COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	ADAMS	16-08112-00-BR	23	20
SCALE NTS			CONTRACT NO. 93709	

SHEET 9 OF 12 SHEETS STA. -- TO STA. --

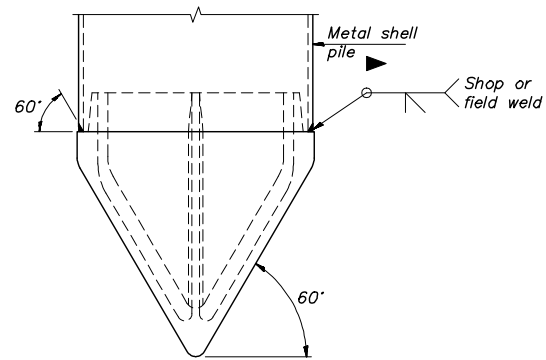


METAL SHELL PILE TABLE

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

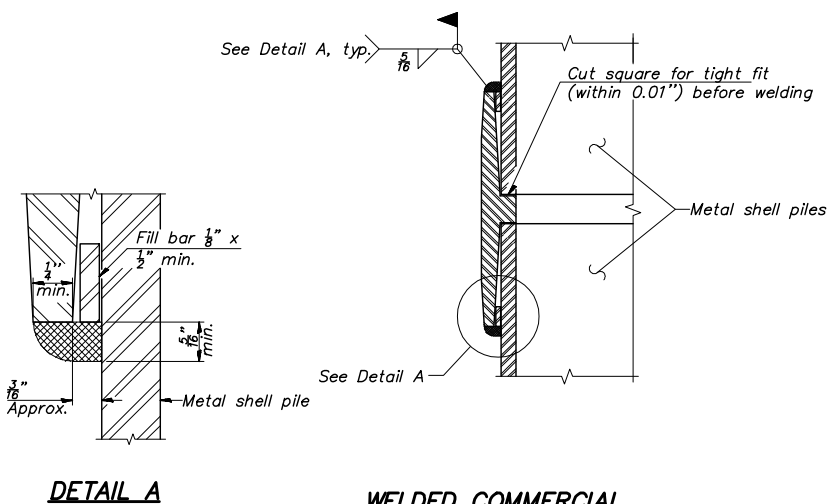


END PLATE ATTACHMENT



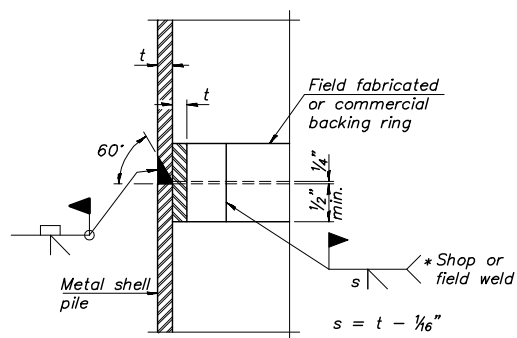
PILE SHOE ATTACHMENT

(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 90-60 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.



WELDED COMMERCIAL SPLICE

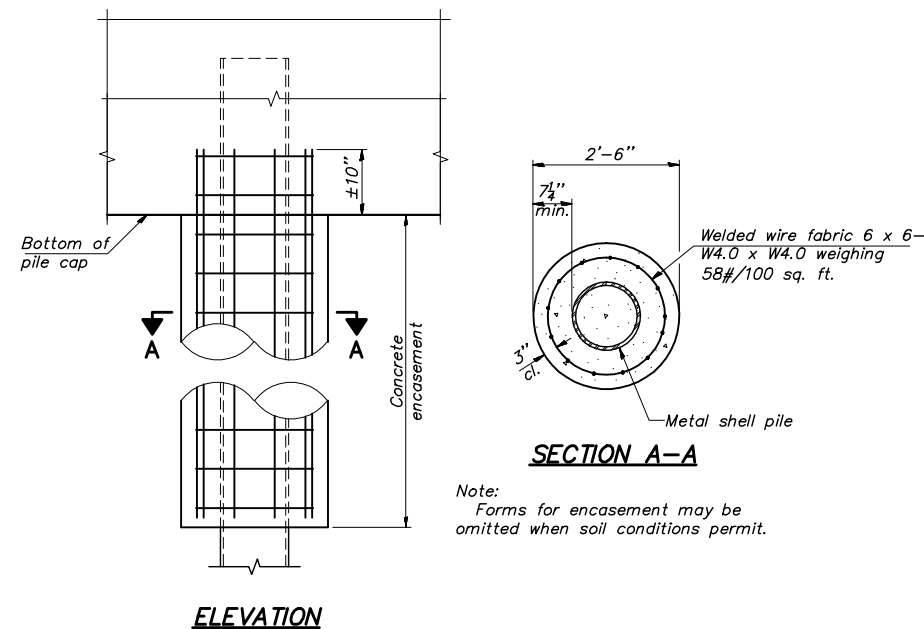
Notes:
The 1/8 inch x 1/2 inch min. fill bar may be constructed of 2 bars with a 1/8 inch max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.



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.

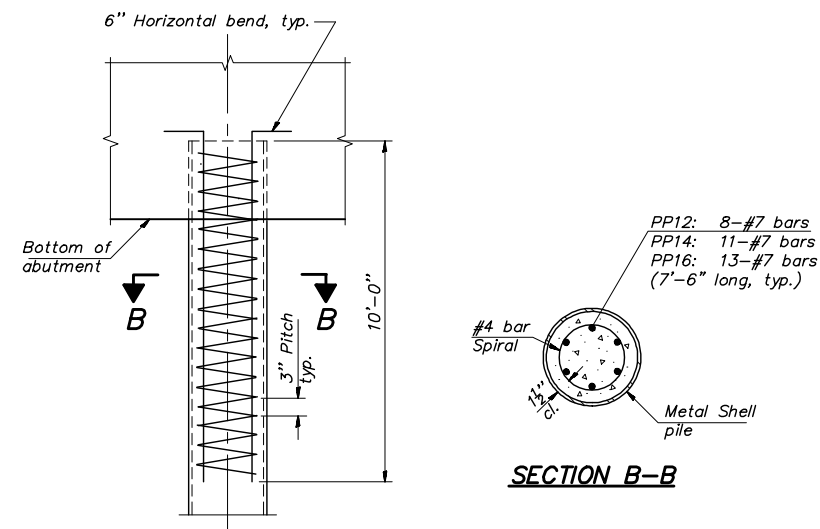
Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.



ELEVATION

INDIVIDUAL PILE CONCRETE ENCASEMENT AT PIERS

Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION

REINFORCEMENT AT ABUTMENTS

PP12: 8-#7 bars
PP14: 11-#7 bars
PP16: 13-#7 bars (7'-6" long, typ.)
#4 bar Spiral
Metal Shell pile

USER NAME =	DESIGNED -	REVISED - 2/17/2017
PLOT SCALE = 1:1	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -
	DATE -	REVISED -

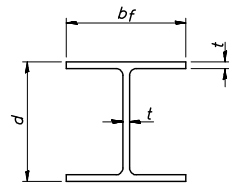
ADAMS COUNTY HIGHWAY DEPARTMENT

METAL SHELL PILE DETAILS STRUCTURE NO. 001-3434

SCALE: NTS SHEET 10 OF 12 SHEETS STA. -- TO STA. --

COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	21

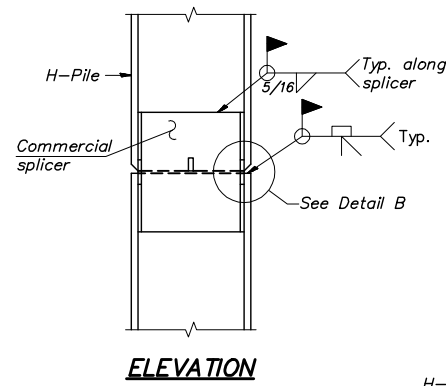
CONTRACT NO. 93709



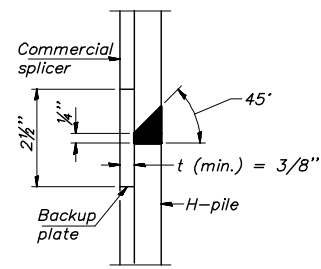
STEEL PILE TABLE

Designation	Depth d	Flange Width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	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"
HP10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP8x36	8"	8 1/8"	7/16"	18"

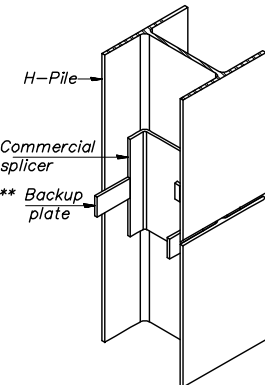
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



ELEVATION

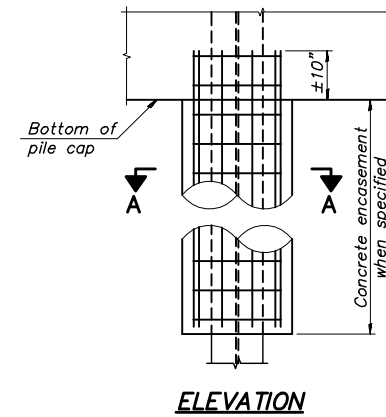


DETAIL "B"

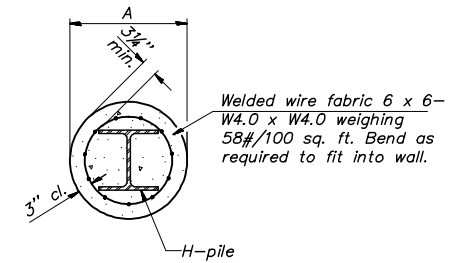


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

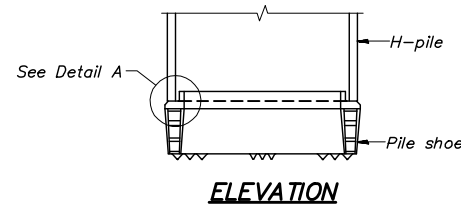


ELEVATION

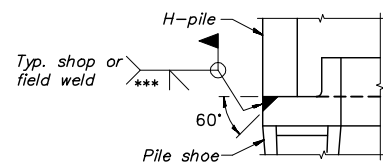


SECTION A-A

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

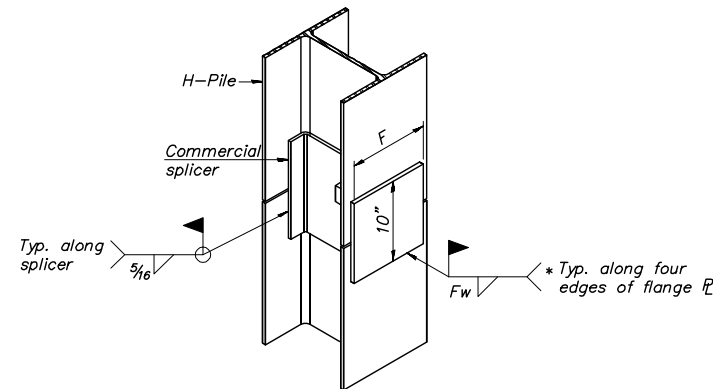


ELEVATION



DETAIL A

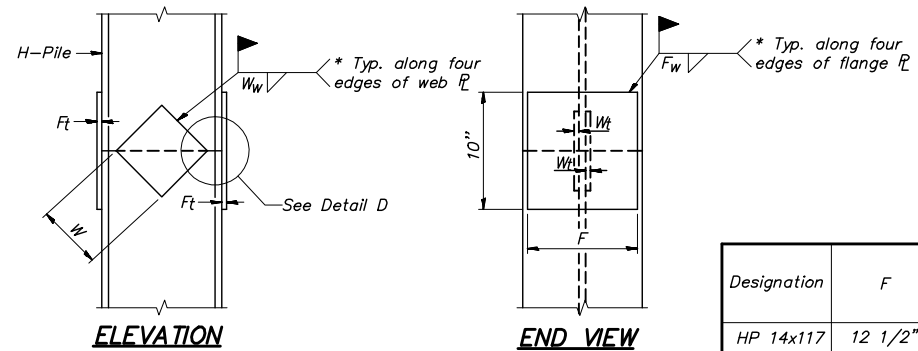
SHOE ATTACHMENT



ISOMETRIC VIEW

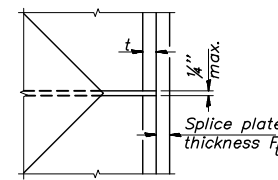
WELDED COMMERCIAL SPLICE ALTERNATE

- * 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 (3/16" min.).



ELEVATION

END VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

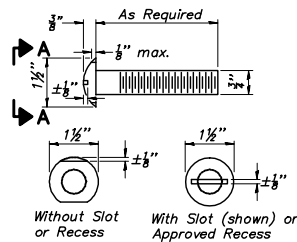
Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

USER NAME =	DESIGNED -	REVISED - 2/17/2017
PLOT SCALE = 1:1	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -
	DATE -	REVISED -

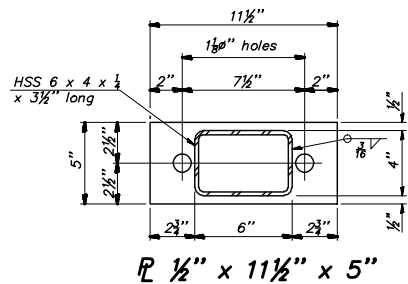
ADAMS COUNTY HIGHWAY DEPARTMENT

HP PILE DETAILS STRUCTURE NO. 001-3434

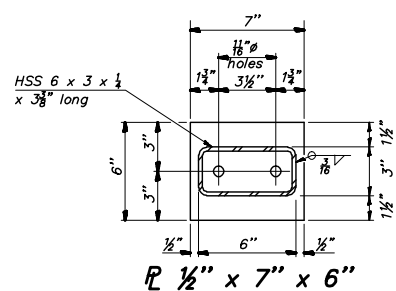
COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	22
SCALE: NTS			SHEET 11 OF 12 SHEETS	
STA. -- TO STA. --			CONTRACT NO. 93709	



VIEW A-A
ROUND HEAD BOLT



SECTION B-B
R 1/2" x 11 1/2" x 5"



SECTION C-C
R 1/2" x 7" x 6"

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	1/2"	1'-8"	2"	4"	—

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

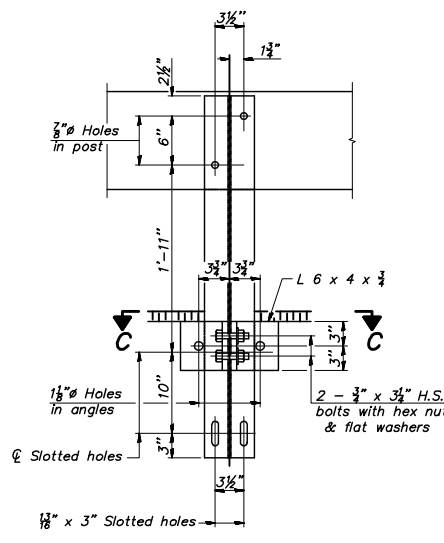
Notes:

All field drilled holes shall be coated with an approved zinc rich paint before erection.

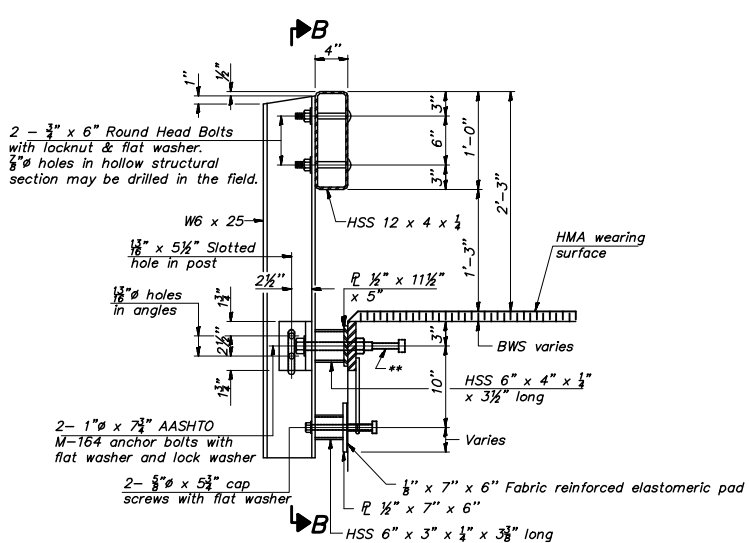
For multi-span bridges, sufficient 1/2" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.

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

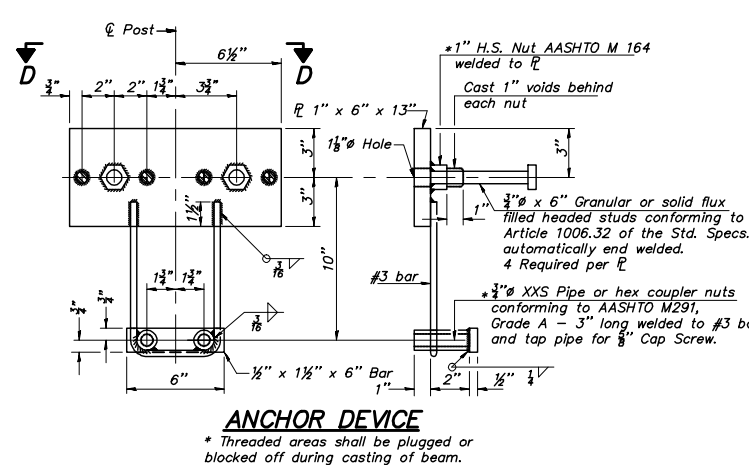
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement placement.



SECTION B-B

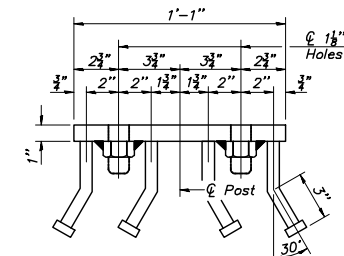


SECTION AT RAILING POST

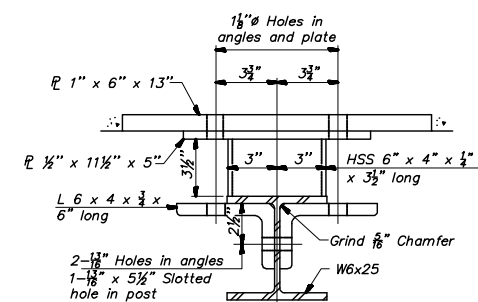


ANCHOR DEVICE

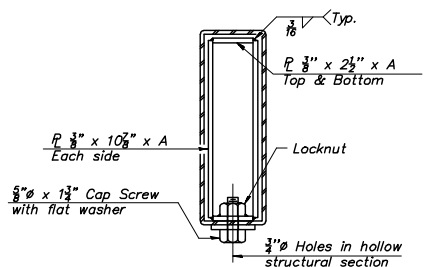
* Threaded areas shall be plugged or blocked off during casting of beam.



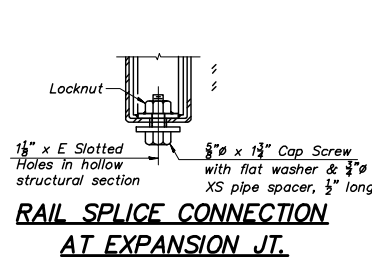
VIEW D-D



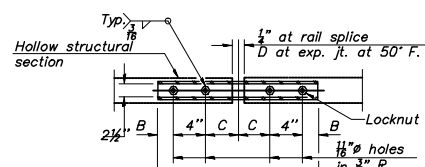
SECTION C-C



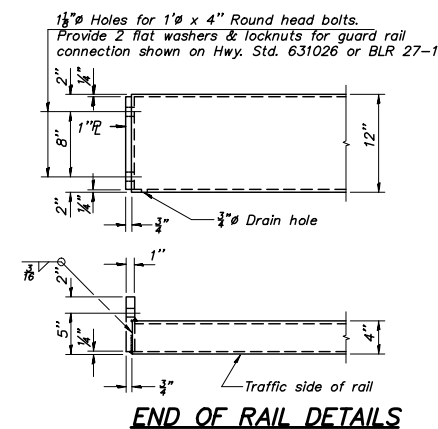
SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN - BOTTOM SPLICE TYPICAL



END OF RAIL DETAILS

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	110

USER NAME =	DESIGNED -	REVISED - 2/17/2017
PLOT SCALE = 1:1	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -
	DATE -	REVISED -

ADAMS COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1 STRUCTURE NO. 001-3434

COUNTY	RD.DIST.	SECTION	TOTAL SHEETS	SHEET NO.
ADAMS	FALL CREEK	16-08112-00-BR	23	23

SCALE: NTS SHEET 12 OF 12 SHEETS STA. -- TO STA. --

CONTRACT NO. 93709