6-11-10 Letting, Item 036

93529

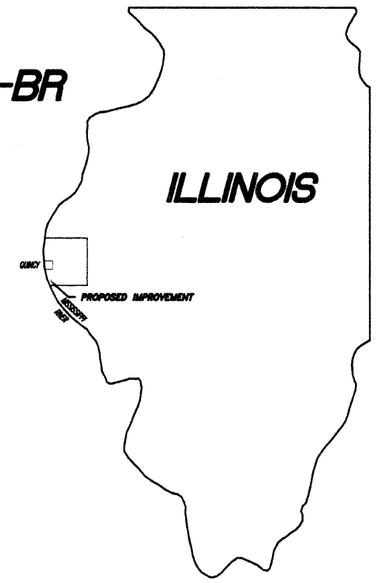
COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	1 OF 14
COVER SHEET			

TOTAL NO. SHEETS - 14

INDEX OF SHEETS:

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM

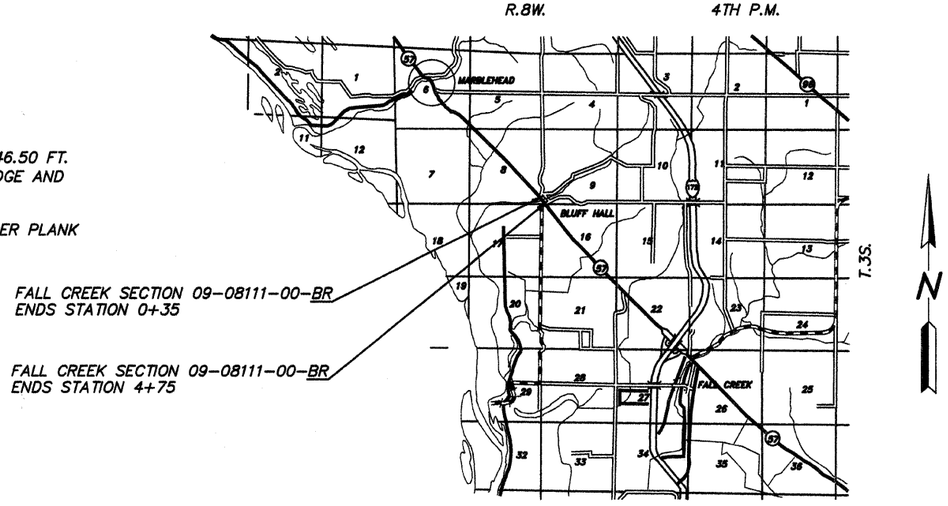
ADAMS COUNTY FALL CREEK ROAD DISTRICT SECTION 09-08111-00-BR
PROJECT NO. BROS-0001(109)
EXISTING STRUCTURE NO. 001-3220
PROPOSED STRUCTURE NO. 001-3430
TR - 549



PROPOSED IMPROVEMENT MARKED THUS ——

PROPOSED IMPROVEMENT TO CONSIST OF THE CONSTRUCTION OF A 46.50 FT. (BK.-BK. ABUT.) PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE AND THE NECESSARY BRIDGE APPROACH ADJUSTMENTS.

EXISTING STRUCTURE - 16' X 42' STEEL TRUSS BRIDGE WITH A TIMBER PLANK DECK ON MASONRY ABUTMENTS AND WINGWALLS.



LOCATION MAP

(IN MILES)

NET LENGTH OF IMPROVEMENT = 440.00 FT. = 0.083 MI.

DESIGN DESIGNATION:
LOCAL ROAD - <50 (2008 ADT)
DESIGN SPEED - 30 M.P.H.

UTILITIES:

J.U.L.I.E. 1-800-892-0123
AMEREN-CIPS ..... QUINCY, IL
A.T.&T. ..... SPRINGFIELD, IL

PLAN SHEETS 0 20 40
PROFILE HORZ. 0 20 40
PROFILE VERT. 0 5 10
CROSS SECTIONS 0 5 10

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.

JOB NO. C-96-238-10
CONTRACT NO. 93529

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

SUBMITTED BY Robert G. Perry DATE 2-18-10
COUNTY ENGINEER
LICENSE NO. 062-032961
LIC. EXPIRES 11/30/2011

APPROVED February 20 2010
Robert G. Perry
ROAD COMMISSIONER

APPROVED February 18 2010
Ralph E. Klinger
COUNTY ENGINEER

PASSED March 9 2010
Ron Duchamberon
DISTRICT ENGINEER OF CONSTRUCTION

PASSED March 10 2010
Terrence H. Fountain MAA
DISTRICT ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW March 12 2010
Roger L. Driskell MAA
DEPUTY DIRECTOR OF HIGHWAYS
REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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

93529

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	2 OF 14

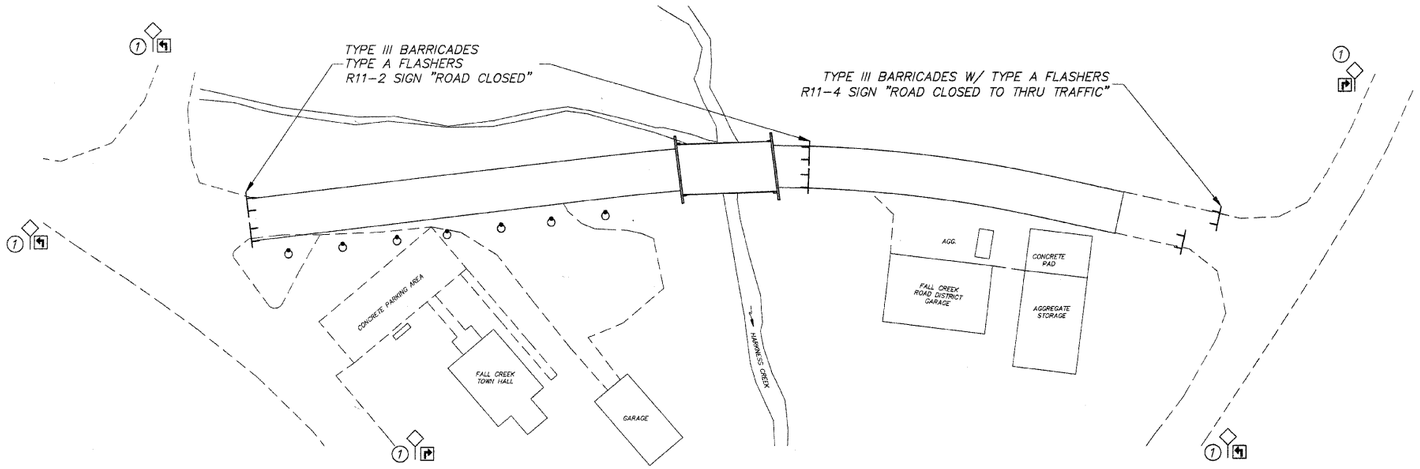
SUMMARY OF QUANTITIES GENERAL NOTES
PROJECT COORDINATE TABLE TRAFFIC CONTROL

TRAFFIC CONTROL AND PROTECTION

① "ROAD CLOSED AHEAD" W/ DIRECTIONAL ARROW AND MONO DIRECTIONAL FLASHING LIGHT

BARREL W/ TYPE A FLASHING LIGHT

BARREL W/ FLASHING LIGHTS TO BE PLACED AT 25' CENTERS ALONG LIMITS OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.



PROJECT COORDINATE TABLE		
STATION – DESCRIPTION	NORTHING	EASTING
STA. 0+00 PI	5418.69	5010.99
STA. 2+11.44 PC	5296.05	5183.23
STA. 2+37.94 BK ABUT	5280.21	5204.47
STA. 2+84.44 BK ABUT	5250.19	5239.99
STA. 3+11.39 PI	5238.08	5264.65
STA. 4+09.52 PT	5156.84	5322.89
STA. 5+40.99 PI	5049.99	5399.47

SUMMARY OF QUANTITIES

TOTAL QUANTITY	UNIT	ITEM	CODE NO.	SPECIAL PROVISIONS
202	CU. YD.	EARTH EXCAVATION	20200100	
165	CU. YD.	CHANNEL EXCAVATION	20300100	
146	CU. YD.	FURNISHED EXCAVATION	20400800	*
20	POUND	TEMPORARY EROSION CONTROL SEEDING	28000250	
305	TON	RIPRAP, SPECIAL	28101700	*
390	TON	AGGREGATE SURFACE COURSE, TYPE B	40200800	
15	TON	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	40603310	*
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100	*
17.2	CU. YD.	CONCRETE STRUCTURES	50300225	*
3.7	CU. YD.	CONCRETE ENCASEMENT	50300280	*
1,080	SQ. FT.	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	50400405	*
2,240	POUND	REINFORCEMENT BARS	50800105	
90	FOOT	STEEL RAILING, TYPE S-1	50900205	△
469	FOOT	FURNISHING METAL SHELL PILES 12" x 0.179"	51200956	
469	FOOT	DRIVING PILES	51202305	
1	EACH	TEST PILE METAL SHELLS	51203200	
1	EACH	NAME PLATES	51500100	
2	EACH	TRAFFIC BARRIER TERMINAL. TYPE 5A	63100075	△
1	L. SUM	MOBILIZATION	67100100	
1	L. SUM	TRAFFIC CONTROL AND PROTECTION	70101700	*
2	EACH	TRAFFIC BARRIER TERMINAL. TYPE 1	LR631020	△

CONSTRUCTION TYPE CODE: X080-2A

△ SPECIALTY ITEMS

BITUMINOUS CONCRETE MIXTURE REQUIREMENTS

ITEM	AGGREGATE COMPOSITION	ASPHALT GRADE	VOIDS
SURFACE, N50	IL-9.5 MIX "C"	PG 58-22	4.0% @ N50

GENERAL NOTES

1. WHERE SECTION OR SUB-SECTION STONES, 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 OR AUTHORIZED SURVEYOR OR REPRESENTATIVE HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

2. ALL PRIVATELY OWNED UTILITIES, UNLESS OTHERWISE SPECIFIED, WILL BE MOVED BY THEIR RESPECTIVE OWNERS WHERE REQUIRED. THE FOLLOWING UTILITY COMPANIES HAVE FACILITIES WITHIN THE LIMITS OF CONSTRUCTION:

AMERENCIPS (ELECTRIC)
A.T.&T.

3. 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. THIS WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

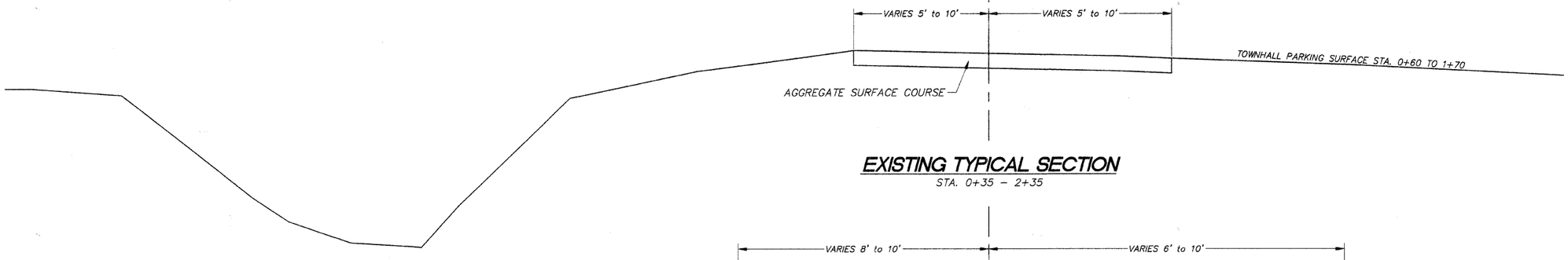
4. THE THICKNESS OF HOT-MIX ASPHALT MIXTURE SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE WHICH THE HOT-MIX ASPHALT MIXTURE IS PLACED.

5. TEMPORARY EROSION CONTROL SEEDING TO BE APPLIED BY THE CONTRACTOR TO ALL DISTURBED AREAS AS DIRECTED BY THE ENGINEER. PERMANENT SEEDING TO BE DONE BY OTHERS.

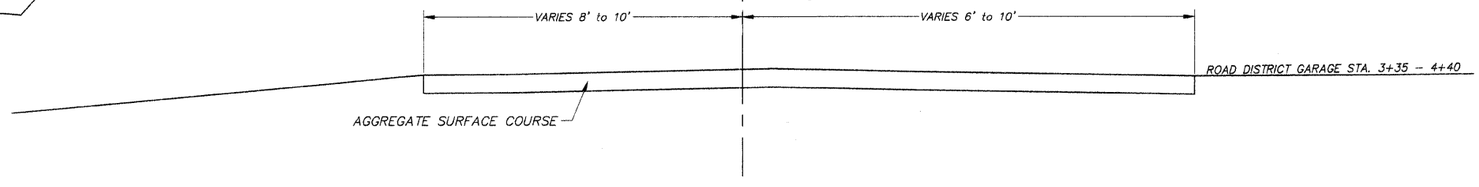
93529

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	3 OF 14
TYPICAL SECTIONS			

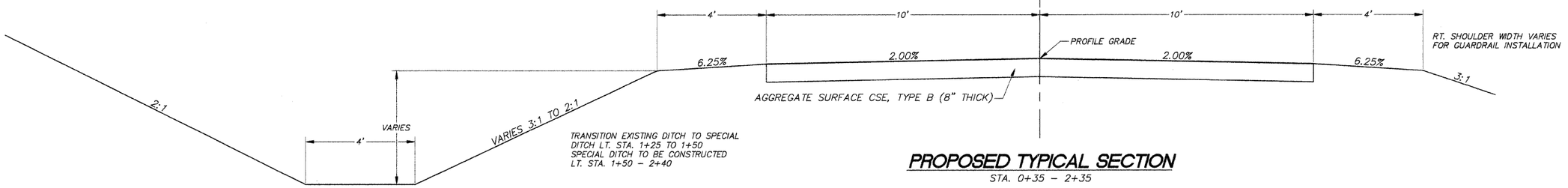
TYPICAL SECTIONS



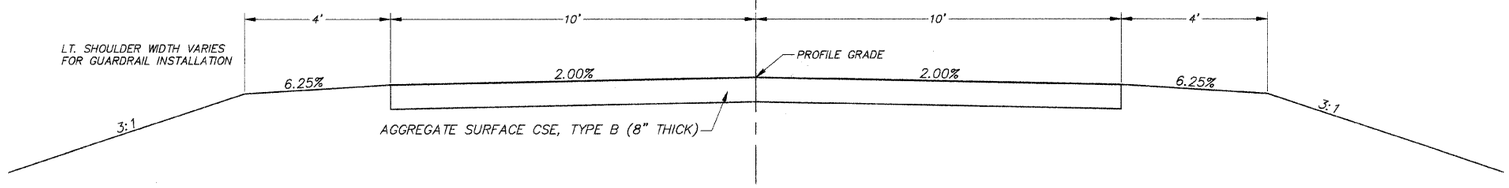
EXISTING TYPICAL SECTION
STA. 0+35 – 2+35



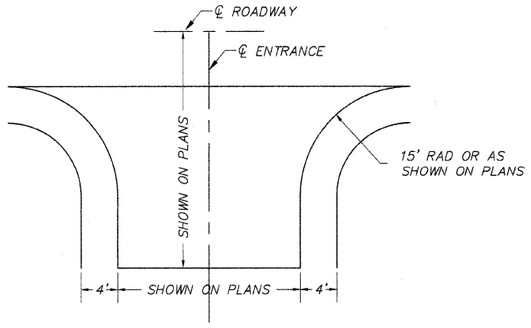
EXISTING TYPICAL SECTION
STA. 2+84 – 4+50



PROPOSED TYPICAL SECTION
STA. 0+35 – 2+35



PROPOSED TYPICAL SECTION
STA. 2+84 – 4+50



TYPICAL ENTRANCE
8" AGGREGATE SURFACE

93529

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	4 OF 14
STA. 0+00 TO STA. 5+40.99			

SECTION 9 – TOWNSHIP 3 SOUTH – RANGE 8 WEST OF THE 4th P.M.

LT. STA. 0+35 – 1+00
TRANSITION TO PROPOSED ROADWAY AND SHOULDER SLOPES

LT. STA. 1+50 – 2+40
CONSTRUCT SPECIAL DITCH

TRAFFIC BARRIER TERMINALS TYPE 5A & TYPE 1 NW & SE APPROACH CORNERS

BERT ROSS & DIANA LYNN MILLER
PART OF THE SW¼

APPROX. CONST. LIMITS

CURVE DATA
PC STA. 2+11.44
PI STA. 3+11.39
PT STA. 4+09.53
Δ = 18°54'56"
D = 9°32'57"
T = 99.95'
L = 198.08'
R = 600.00'
E = 8.27'
SE = NORMAL CROWN

TR 547 AGG. SURF.

TR 76 AGG. SURF.

TR 551 AGG. SURF.

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED ROW LINE

EXISTING ROW LINE

20' AGG SURF.

TR 549

℄ SURVEY & CONST.

STA 0+00.00

STA. 0+35
ADAMS COUNTY
FALL CREEK ROAD DISTRICT
SEC. 09-08111-00-BR
BEGINS

STA. 4+75
ADAMS COUNTY
FALL CREEK ROAD DISTRICT
SEC. 09-08111-00-BR
ENDS

STA. 4+65 ROAD IMPROVEMENT ENDS

PT STA. 4+09.53

PC STA. 2+11.44

RAD. PT. +81.41 25'R

RAD. PT. +27.41 25'R

TEMP. CONST. EASEMENT

APPROX. CONST. LIMITS

AGG.

TCE

CONCRETE PARKING AREA

FALL CREEK ROAD DISTRICT GARAGE

CONCRETE PAD

AGGREGATE STORAGE BINS

STA. 4+00 – 4+65
TRANSITION TO MATCH EXISTING ROADWAY AND SHOULDER SLOPE

RT. STA. 0+35 – 1+50
TRANSITION TO PROPOSED ROADWAY AND SHOULDER SLOPES

RT. STA. 3+43 – 4+40 CONSTRUCT AGGREGATE SURFACE COURSE, TYPE B DRIVEWAY (8" THICK). SEE CROSS SECTIONS FOR PROPOSED SLOPE AND CONSTRUCTION LIMIT OFFSET. (30 TONS)

STA. 2+55.3 REMOVE EXISTING 16' x 42' STEEL TRUSS WITH TIMBER PLANK DECK AND MASONRY ABUTMENTS AND WINGWALLS. STA. 2+61.20 0.45' RT. CONSTRUCT A 46.50' (B–B ABUT.) PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (21" DEPTH) AS DETAILED ON SHEETS 8 – 14. DRAINS 2.35 SQ. MI.

BM

SECTION LINE

TOWN OF FALL CREEK
PART OF THE SW¼

FALL CREEK TOWN HALL

HARKNESS CREEK

RT. STA. 0+65 – 1+66 CONSTRUCT AGGREGATE SURFACE COURSE, TYPE B DRIVEWAY (8" THICK). SEE CROSS SECTIONS FOR PROPOSED SLOPE AND CONSTRUCTION LIMIT OFFSET. (30 TONS)

N

20 0 20 40
GRAPHIC SCALE IN FEET

GUARD RAIL SCHEDULE

STA. – STA.	TRAF. BAR. TERM., TY 5A	TRAF. BAR. TERM., TY 1
RT. 2+01.30 – 2+39.30	1	1
LT. 2+82.23 – 3+18.22	1	1

SHOULDER TRANSITIONS:
RT. 1+66.4 – 1+88.9 (4' – 12' WIDE)
RT. 1+88.9 – 2+13.9 (12' WIDE)
RT. 2+13.9 – 2+38.7 (12' – 4' WIDE)
LT. 2+82.7 – 3+06.2 (4' – 12' WIDE)
LT. 3+06.2 – 3+30.3 (12' WIDE)
LT. 3+30.3 – 3+52.3 (12' – 4' WIDE)

SECTION 9 – TOWNSHIP 3 SOUTH – RANGE 8 WEST OF THE 4th P.M.

BM– TOP OF WELL CASING
102' RT. STA. 3+24
ELEV. – 100.00 (ASSUMED)

N&W IN POLE
1" IRON PIPE
CORNER CONC. SLAB
STA. 0+00
PI
1/2" REBAR

N&W IN POLE
N&W IN MB POST
N&W IN POLE
STA. 5+40.99
PI
1/2" REBAR

PROPOSED ℄ PROFILE
EXISTING ℄ PROFILE

PC STA. 0+80.00 ELEV. – 100.71
LP STA. 0+71.20 ELEV. – 100.69
PI STA. 1+05.00 ELEV. = 100.57 90.00' VERT. CURVE E = 0.29
PRC STA. 1+50.00 ELEV. – 101.57
PI STA. 1+05.00 ELEV. = 102.58 90.00' VERT. CURVE E = 0.25
PT STA. 2+40.00 ELEV. – 102.58
PC STA. 2+85.00 ELEV. – 102.58
PI STA. 3+30.00 ELEV. = 102.58 90.00' VERT. CURVE E = 0.28
PRC STA. 3+75.00 ELEV. – 101.47
PI STA. 4+20.00 ELEV. = 100.35 90.00' VERT. CURVE E = 0.27
EOP STA. 4+65.00 ELEV. – 100.33
BOP STA. 0+35.00 ELEV. – 100.79

−0.316% 2.236% 0.000% −2.478% −0.052%

HW100–100.3
DHW–99.3

BK. ABUT. STA. 2+37.64
BK. ABUT. STA. 2+84.44
℄–92.9

−1.70% −2.50%

LT. STA. 1+50
℄ ELEV – 94.80
SPECIAL DITCH BEGINS

LT. STA. 2+00
℄ – 93.95
SPECIAL DITCH PI

LT. STA. 2+40
℄ ELEV – 92.95
SPECIAL DITCH ENDS

EARTH EXCAVATION – 182 CU YD
EMBANKMENT – 133 CU YD
FURNISHED EXCAVATION – 22 CU YD (ENTRANCE RAMP)

CHANNEL EXCAVATION
165 CU YD

EARTH EXCAVATION – 20 CU YD
EMBANKMENT – 139 CU YD
FURNISHED EXCAVATION – 124 CU YD

0+35 MEET EXISTING

4+50 MEET EXISTING

PROPOSED ℄ ELEVATION
EXISTING ℄ ELEVATION

101.3
100.74 100.7
100.81 100.5
101.57 100.4
102.38 101.2
102.58 94.8
102.55 101.5
102.00 100.5
100.93 100.4
100.36 100.3
100.3

0+00 1 2 3 4 5+00

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	5 OF 14

STA. 0+00 TO STA. 2+11.44

STA. 0+35
FALL CREEK ROAD DISTRICT
SEC. 09-08111-00-BR
BEGINS

C =0 F =0

C =13 F =0

C =9 F =1

C =33 F =18

C =31 F =32

C =31 F =37

C =27 F =30

C =46 F =42

RT. STA. 0+35 – 1+50
TRANSITION TO PROPOSED ROADWAY AND SHOULDER SLOPES

LT. STA. 0+35 – 1+00
TRANSITION TO PROPOSED ROADWAY AND SHOULDER SLOPES

RT. STA. 0+65 – 1+68 MAINTAIN ACCESS TO TOWN HALL AND ROAD DISTRICT STORAGE AREA BY CONSTRUCTING AGGREGATE SURFACE COURSE, TYPE B DRIVEWAY (6" THICK) AT PROPOSED SHOULDER SLOPE (30 TONS)

LT. STA. 1+50 – 2+30
TRANSITION SLOPE FROM 3:1 TO 2:1

RT. STA. 1+664 – 1+819
TRANSITION SHOULDER WIDTH FROM 4' TO 12'

LT. STA. 1+50
SPECIAL DITCH BEGINS
ELEV. – 94.80

LT. STA. 2+00
SPECIAL DITCH PI
ELEV. – 93.85

PROPOSED R/W 33'L

PROPOSED R/W 40'

TEMP. CONST. EASE. 50'L

TEMP. CONST. EASE. 38'R

AGG. SURFACE

EX. ROW

93529

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	6 OF 14
STA. 2+14 TO STA. 3+50			

STA. 2+55.3 REMOVE EXISTING 16' X 42' STEEL TRUSS WITH TIMBER PLANK DECK AND MASONRY ABUTMENTS AND WINGWALLS.
STA. 2+61.20 0.45° RT. CONSTRUCT 1A 46.50' (B-B ABUT.) PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (21" DEPTH) AS DETAILED ON SHEETS 8 - 14. DRAINS 2.35 SQ. MI.

STA. 2+88.44 BACK ABUTMENT

STA. 2+37.94 BACK ABUTMENT

RT. STA. 2+13.9 – 2+38.7 TRANSITION SHOULDER WIDTH FROM 12" TO 4"

LT. STA. 2+82.7 – 3+06.2 TRANSITION SHOULDER WIDTH FROM 4" TO 12"

LT. STA. 2+40 SPECIAL DITCH ENDS ELEV. = 92.85

LT. STA. 3+30.4 – 3+52.3 TRANSITION SHOULDER WIDTH FROM 12" TO 4"

BK. ABUT. EXISTING

TEMP. CONST. EASE. 30'R

TEMP. CONST. EASE. 38'R

TEMP. CONST. EASE. 50'L

PROPOSED ROW 33'R

PROPOSED ROW 33'L

PROPOSED ROW 40'L

EX. ROW

+40 33'R

+00 33'L

+00 40'L

+00 50'L

3 + 50

3 + 30.30

3 + 06

3 + 00

2 + 86.50

2 + 50

2 + 34

2 + 14

BK. ABUT. EXISTING

93529

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	7 OF 14

STA. 3+52.30 TO STA. 5+40.99

5 + 40.99 | 5 + 00 | 4 + 50 | 4 + 09.53 P.T. | 4 + 00 | 3 + 52.30

100.32 | 100.5

STA. 4+75 FALL CREEK ROAD DISTRICT SEC. 09-08111-00-BR ENDS

+75 15.45'R

STA. 4+65 MEET EXISTING

100.3 | 100.3 C =12 F =0

10' 1.01% | 10' 2.00% | 6.25%

100.36 | 12.30 100.02

-14.00 100.05

EX.ROW

STA. 4+00 TRANSITION TO MATCH EXISTING ROADWAY AND SHOULDER SLOPE

+09.53

100.77 | 14.04 100.31 | 100.3 C =5 F =3

-16.90 98.78

TEMP. CONST. EASE. 30'R

RT. STA. 3+43 - 4+40 CONSTRUCT AGGREGATE SURFACE COURSE, TYPE B DRIVEWAY (8" THICK), SEE CROSS SECTIONS FOR PROPOSED SLOPE AND CONSTRUCTION LIMIT OFFSET. (30 TONS)

100.93 | 17.34 100.27 | 100.4 C =2 F =0

-16.7 99.6

28.92 100.58

4' | 101.96 | 100.5 C =0 F =34

-20.92 99.26

+75 33'L

PROPOSED ROW 33'L

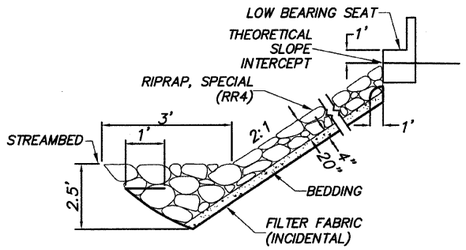
COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	8 OF 14
BRIDGE GENERAL PLAN & ELEVATION			

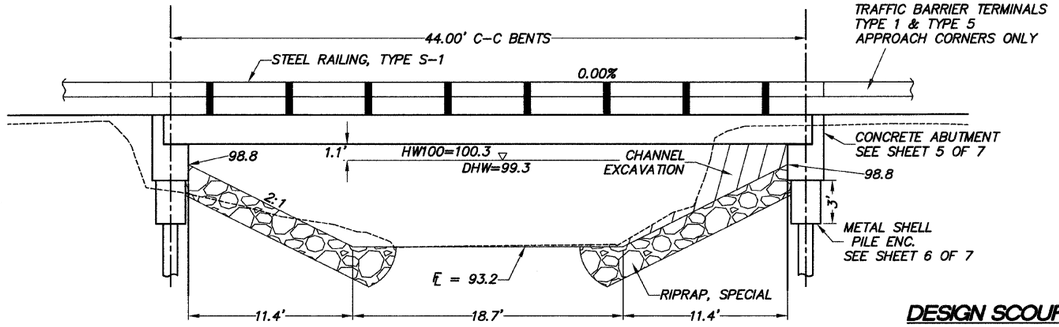
BRIDGE SHEET NO. 1 OF 7

BM #1 – TOP OF WELL CASING
102' RT. STA. 3+24
ELEV. – 100.00 (ASSUMED)

EXISTING STRUCTURE – SN. 001-3220
42' x 16' STEEL TRUSS BRIDGE WITH A TIMBER PLANK DECK ON MASONRY ABUTMENTS WITH MASONRY WINGWALLS

SALVAGE – NO SALVAGEABLE MATERIALS.





ELEVATION
Shown Along ℄ Roadway

ITEM	UNIT	BENT 1	BENT 2	TOTAL
RIPRAP, SPECIAL	TON	160	145	305
FILTER FABRIC	SQ. YD.	130	120	250

FILTER FABRIC AND BEDDING MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE PER TON FOR RIPRAP, SPECIAL

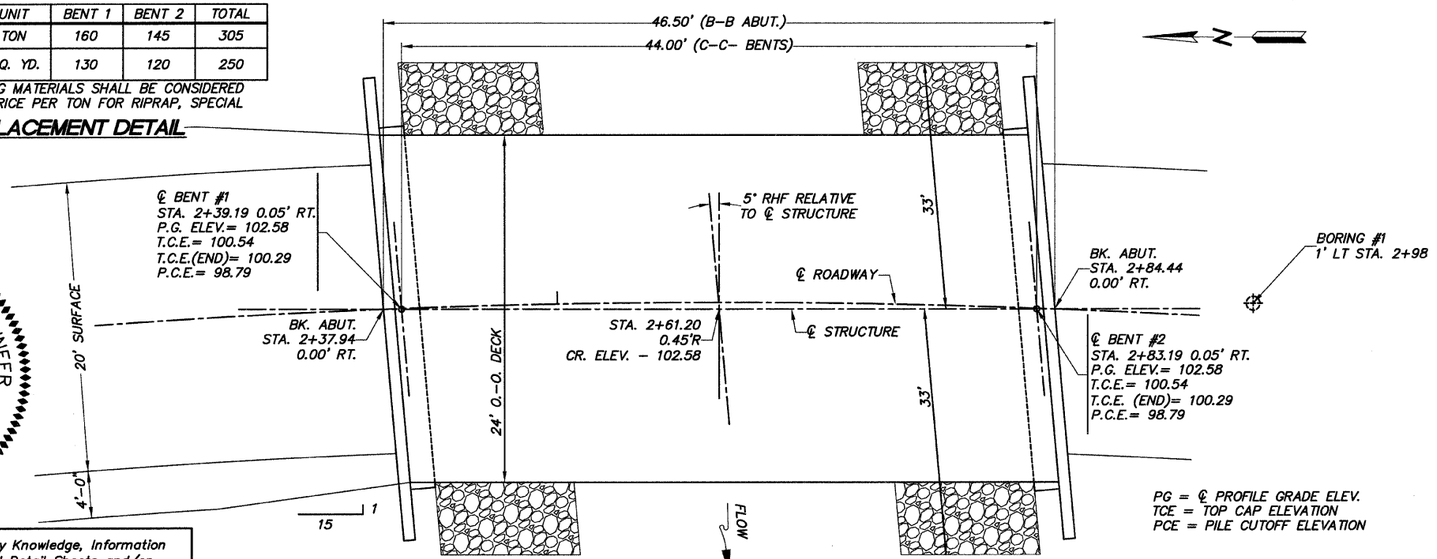
RIPRAP PLACEMENT DETAIL

DESIGN SCOUR ELEVATION TABLE

DESIGN SCOUR ELEVATION (FT.)	BENT #1	BENT #2
	97.79	97.79

GENERAL NOTES

1. SEE SPECIAL PROVISIONS FOR BORING LOGS.
2. WATERPROOFING MEMBRANE SYSTEM SHALL NOT BE REQUIRED ON THIS PROJECT.
3. ALL GROUT ON THIS PROJECT SHALL BE NON-SHRINK.
4. CORROSION INHIBITOR, PER ARTICLE 1020.05(b)(12) AND 1021.06 OF THE STANDARD SPECIFICATIONS, SHALL BE USED IN THE CONCRETE FOR PRECAST PRESTRESSED CONCRETE DECK BEAMS.
5. STONE RIPRAP SHALL BE PLACED TO THE DIMENSIONS SHOWN OVER A GEOTECHNICAL FABRIC IN ACCORDANCE WITH THE RIPRRAP PLACEMENT DETAIL AND APPLICABLE SPECIAL PROVISIONS.
6. THE ENGINEER RESERVES THE RIGHT TO ALTER THE RIPRAP PLACEMENT DETAIL AND/OR ADJUST QUANTITIES TO FIT FIELD CONDITIONS.
7. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60. SEE SPECIAL PROVISIONS.
8. THE CONTRACTOR SHALL DRIVE TEST PILES TO 110% OF THE NOMINAL REQUIRED BEARING SPECIFIED IN PRODUCTION LOCATIONS AT SUBSTRUCTURES SPECIFIED OF APPROVED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.



PLAN

PG = ℄ PROFILE GRADE ELEV.
TCE = TOP CAP ELEVATION
PCE = PILE CUTOFF ELEVATION

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER.	SUBSTRUCTURE PIER	SUBSTRUCTURE ABUT.	TOTAL
CHANNEL EXCAVATION	CU. YD.	-----	-----	165	165
RIRPAP, SPECIAL	TON	-----	-----	305	305
HOT-MIX ASPHALT SURFACE CSE., MIX "C", N50	TON	15	-----	-----	15
REMOVAL OF EXISTING STRUCTURE	EACH	-----	-----	-----	1
CONCRETE STRUCTURES	CU. YD.	-----	-----	17.2	17.2
P.P. CONCRETE DECK BEAMS 21" DEPTH	SQ. FT.	1,080	-----	-----	1,080
REINFORCEMENT BARS	POUND	-----	-----	2,240	2,240
STEEL RAILING, TYPE S-1	FOOT	90	-----	-----	90
FURNISHING METAL SHELL PILES 12"	FOOT	-----	-----	469	469
DRIVING PILES	FOOT	-----	-----	469	469
TEST PILE METAL SHELLS	EACH	-----	-----	1	1
CONCRETE ENCASEMENT	CU. YD.	-----	-----	3.7	3.7
NAME PLATES	EACH	-----	-----	-----	1

I Certify That to the Best of my Knowledge, Information and Belief, the Revised Standard Detail Sheets and/or Special Component Sheets Included with the Standard Bridge Detail Sheets are Structurally Adequate for the Design Loading Shown on the Plans and Comply with the Requirements of the Current AASHTO Standard Specifications for Highway Bridges.

David S. Poland 2-18-10
David S. Poland — Date
Licensed Structural Engineer
State of Illinois No. 81-005124
expires 11/30/2010

I Certify That to the Best of my Knowledge, Information and Belief, the Bridge Plans and, if Included, Revised or Special Non-Standard Detail Sheets Incorporated with the Standard Plans are Structurally Adequate for the Seismic Design Loadings Shown on the Plans and Specified by the Current AASHTO Standard Specifications for Highway Bridges.

David S. Poland 2-18-10
David S. Poland — Date
Licensed Structural Engineer
State of Illinois No. 81-005124
expires 11/30/2010

DESIGN SPECIFICATIONS

AASHTO LRFD BRIDGE DESIGN SPECIFICTIONS – 4th ED. WITH 2009 INTERIMS.

THIS DESIGN COMPLIES WITH ALL REQUIREMENTS OF THE CURRENT AASHTO GUIDE SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES

SEISMIC DATA

SEISMIC PERFORMANCE ZONE (SPZ) = 2
DESIGN SPECTRAL ACCELERATION AT 1.0 SEC. = 0.05
DESIGN SPECTRAL ACCELERATION AT 0.2 SEC = 0.10
SOIL SITE CLASS = E

LOADING HL-93

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

DESIGN STRESSES

(PRESTRESSED UNITS)	(FIELD UNITS)
f'ci = 5.0 KSI	f'c = 3.5 KSI
f'c = 6.0 KSI	fy = 60 KSI
fy = 60 KSI	

PILE DATA (2-ABUTMENTS)

PILE TYPE AND SIZE:	12" METAL SHELL (.179" WALL)	
NOMINAL REQUIRED BEARING:	160 KIPS	
FACTORED RESISTANCE AVAILABLE:	80 KIPS	
ESTIMATED LENGTH:	67 FEET (BENT #1)	67 FEET (BENT #2)
NUMBER OF PRODUCTION PILES:	3 (BENT #1)	4 (BENT #2)
NUMBER OF TEST PILES:	1 (BENT #1)	

HARKNESS CREEK
BUILT 20____ BY
ADAMS COUNTY
FALL CREEK SEC. 09-08111-00-BR
F.A. PROJ. BROS-0001(109)
STATION 2+61.20
STR. NO. 001-3430 LOADING HL-93

LETTERING FOR NAME PLATE

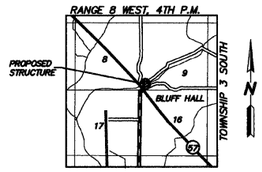
LOCATE NAME PLATE AT SOUTHWEST CORNER OF BRIDGE (SEE SHEET 5 OF 7)

WATERWAY INFORMATION

DRAINAGE AREA – 2.35 SQ. MI — LOW GRADE ELEVATION = 100.3 AT STA. 4+50

FLOOD	FLOOD FREQUENCY (YEAR)	FLOW VOLUME (CFS)	OPENING SQ. FT. EXISTING	OPENING SQ. FT. PROPOSED	NATURAL H.W.E.	HEAD – FT. EXISTING	HEAD – FT. PROPOSED	HEADWATER ELEV. EXISTING	HEADWATER ELEV. PROPOSED
DESIGN	15	1,213	175	191	99.3	0.0	0.0	99.6	99.6
BASE	100	2,160	216	237	100.3	1.0	1.0	101.5	101.5
OVERTOPPING									
MAX. CALC	500	3,020							

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

INDEX OF SHEETS

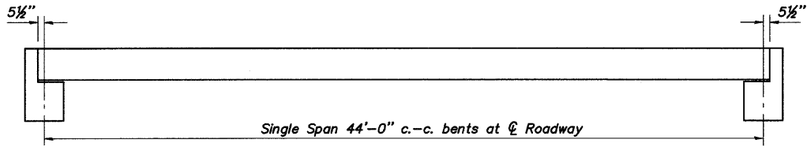
GENERAL PLAN & ELEVATION

STRUCTURE NO. 001-3430
HARKNESS CREEK
ADAMS COUNTY
FALL CREEK SEC. 09-08111-00-BR
STATION 2+61.20

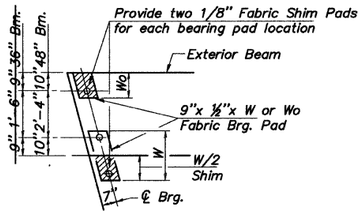
93529

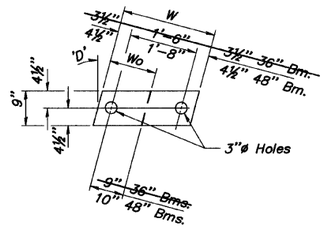
COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	9 OF 14
PPC DECK BEAM SUPERSTRUCTURE			

BRIDGE SHEET 2 OF 7



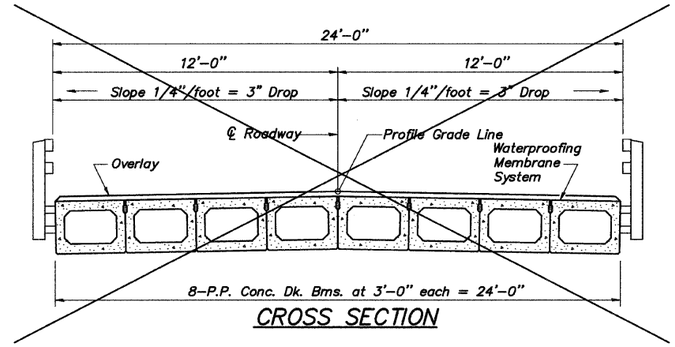
TYPICAL ELEVATION



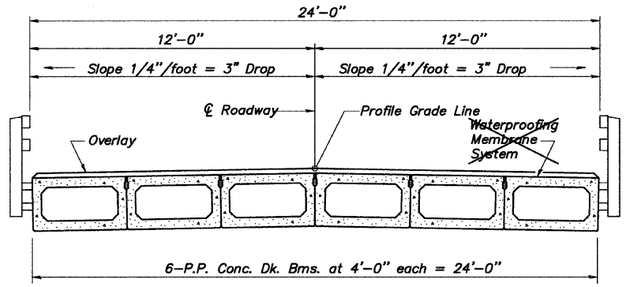


Beam	W	Wo
36"	2'-1"	1'-0½"
48"	2'-5"	1'-2½"

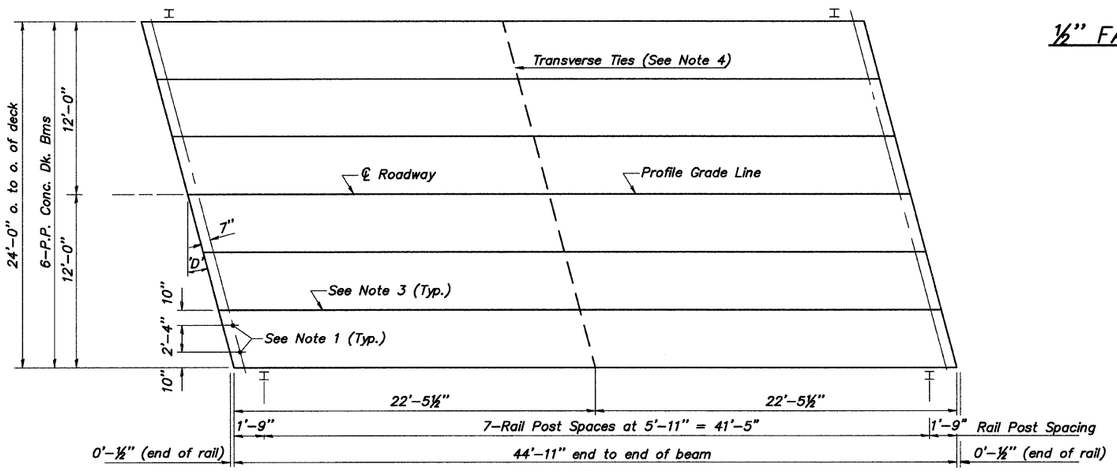
½" FABRIC BRG. PAD DETAILS



CROSS SECTION

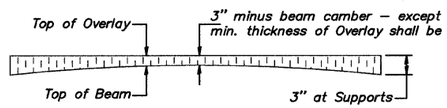


CROSS SECTION



PLAN

('D' = Designated Skew Angle)



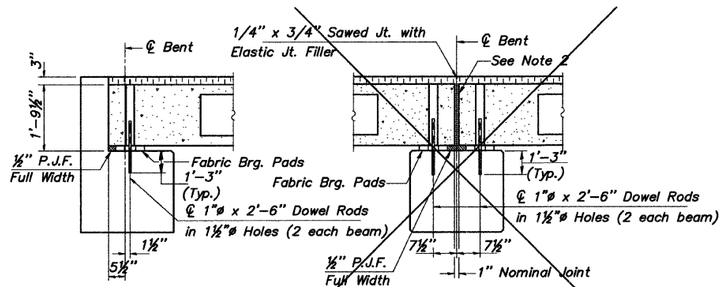
PROFILE OF OVERLAY

DIMENSIONS 'A' AND 'B'

'D'	5°	10°	15°	20°	25°	30°
A	1½"	1⅝"	1¾"	1⅞"	2¼"	2⅝"
B	7½"	7⅞"	7¾"	8"	8¼"	8⅝"

NOTES

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. ~~Nominal 1" joint at ℄ Pier shall be filled with non-shrink grout.~~
3. Longitudinal keys shall be grouted.
4. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.



SECTION AT ABUTS.

(Along ℄ Beams)

SECTION AT PIERS

(Along ℄ Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 21" Dp.	1,080 Sq. Ft.
Steel Railing, Type S-1	90 Ft.
Portland Cement Mortar Fairing Course*	~~315 Ft. 36"~~ 225 Ft. 48"
~~Waterproofing Membrane System~~	~~120.0 Sq. Yds.~~

Note: Quantity of overlay for one span = 15.3 Tons
* - Portland Cement Mortar Fairing Course to be considered incidental to P.P. Conc. Deck Beams

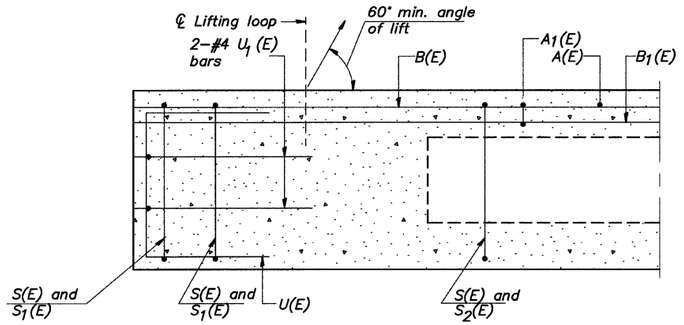
P.P.C. DECK BEAM SUPERSTRUCTURE			
24' RDWY.	21" BMS.	45' SPAN	RIGHT

STRUCTURE NO. 001-3430
HARKNESS CREEK
ADAMS COUNTY
FALL CREEK SEC. 09-08111-00-BR
STATION 2+61.20

93529

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	10 OF 14
21" x 48" PPC DECK BEAM			

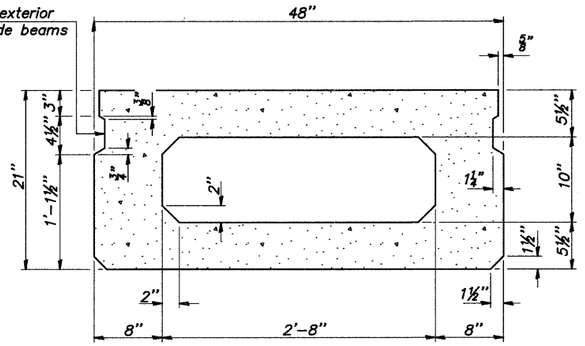
BRIDGE SHEET 3 OF 7



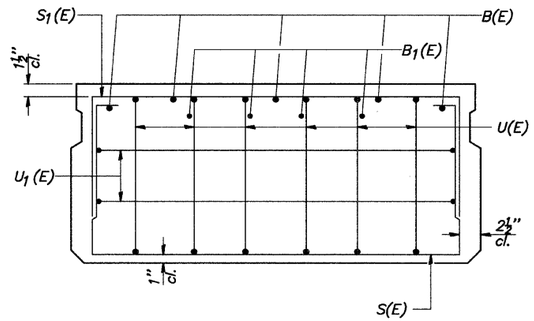
SECTION C–C

* Omit key on exterior face of outside beams

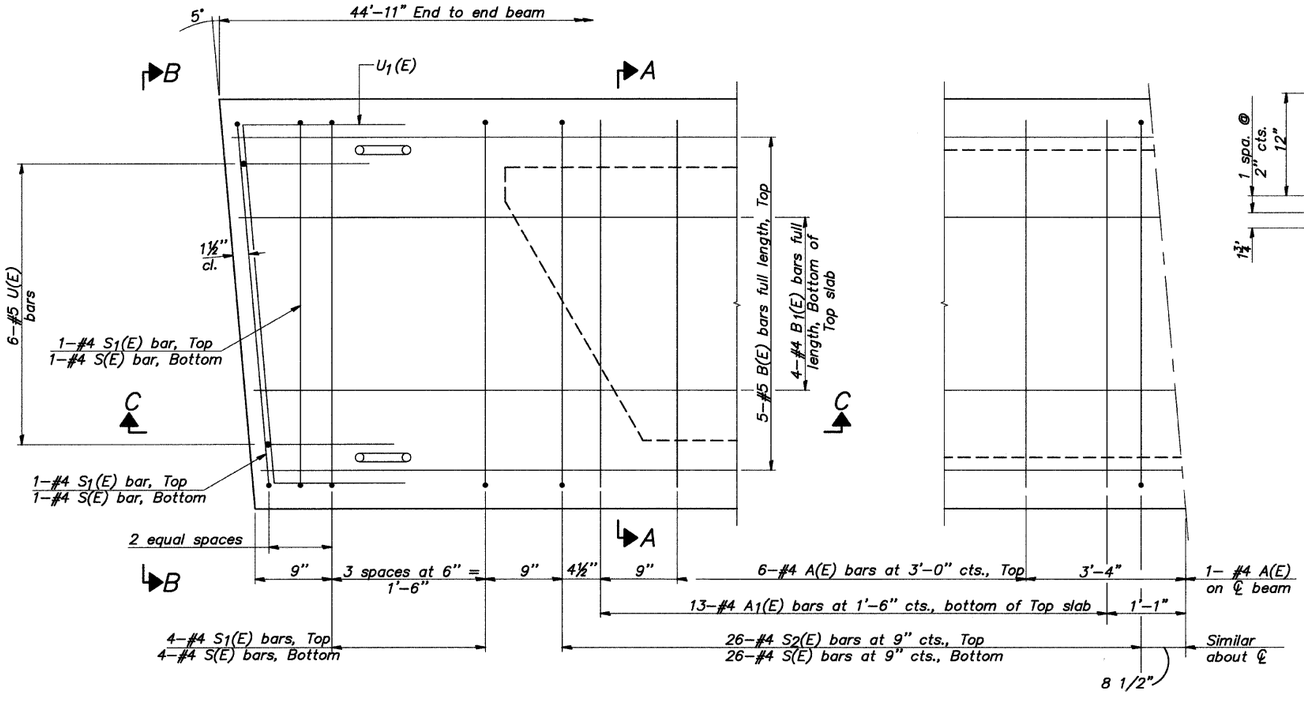
* Rail post anchor devices (specified elsewhere) to be cast into exterior face of outside beams.



SECTION A–A
(Showing dimensions)

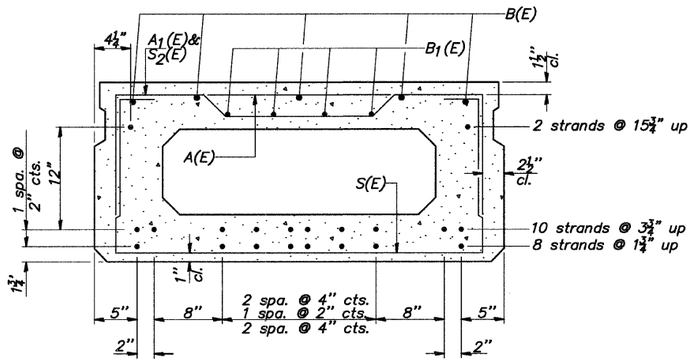


VIEW B–B



PLAN VIEW

Note: Spacing of S(E) and S_2(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 A–A
(Showing reinforcement and permissible strand locations)

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	13	#4	3'–7"	—
A_1(E)	26	#4	3'–10"	~
B(E)	5	#5	44'–8"	—
B_1(E)	4	#4	44'–8"	—
S(E)	64	#4	7'–5"	⊏
S_1(E)	12	#4	5'–11"	⊐
S_2(E)	52	#4	6'–2"	⊐
S_3(E)		#4		⊐
S_4(E)		#4		⊐
U(E)	12	#5	4'–0"	⊏
U_1(E)	4	#4	6'–4"	⊏

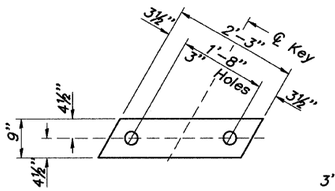
Note: See sheet 4 of 7 for additional details and Bill of Material.

21" x 48" PPC DECK BEAM

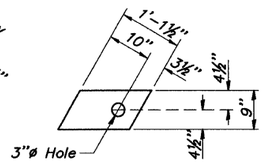
STRUCTURE NO. 001–3430
HARKNESS CREEK
ADAMS COUNTY
FALL CREEK SEC. 09–08111–00–BR
STATION 2+61.20

93529

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	11 OF 14
21" x 48" PPC DECK BEAM DETAILS			
BRIDGE SHEET 4 OF 7			



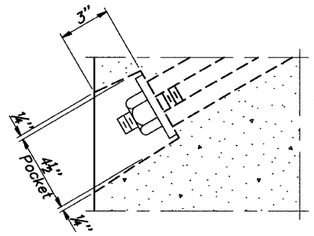
FABRIC BEARING PAD
(Interior)



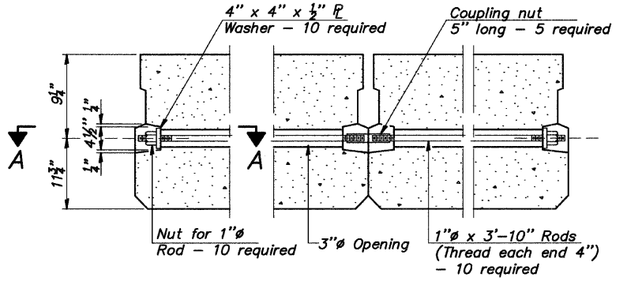
FABRIC BEARING PAD
(Exterior)

FIXED

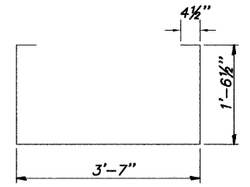
Note: Omit holes when using expansion bearings.



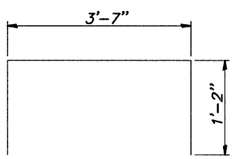
SECTION A–A



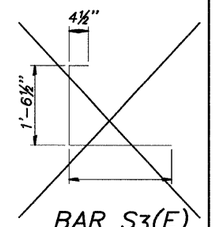
TYPICAL TRANSVERSE TIE ASSEMBLY



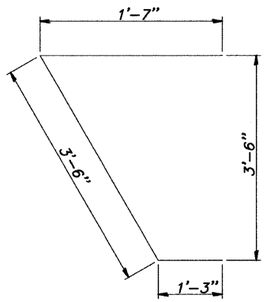
BAR S(E)



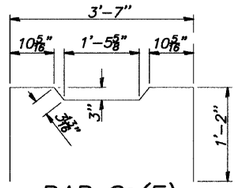
BAR S1(E)



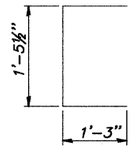
BAR S3(E)



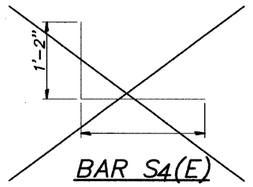
BAR U1(E)



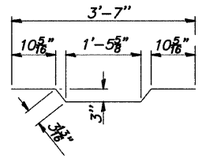
BAR S2(E)



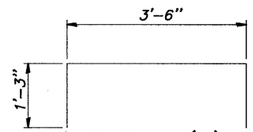
BAR U(E)



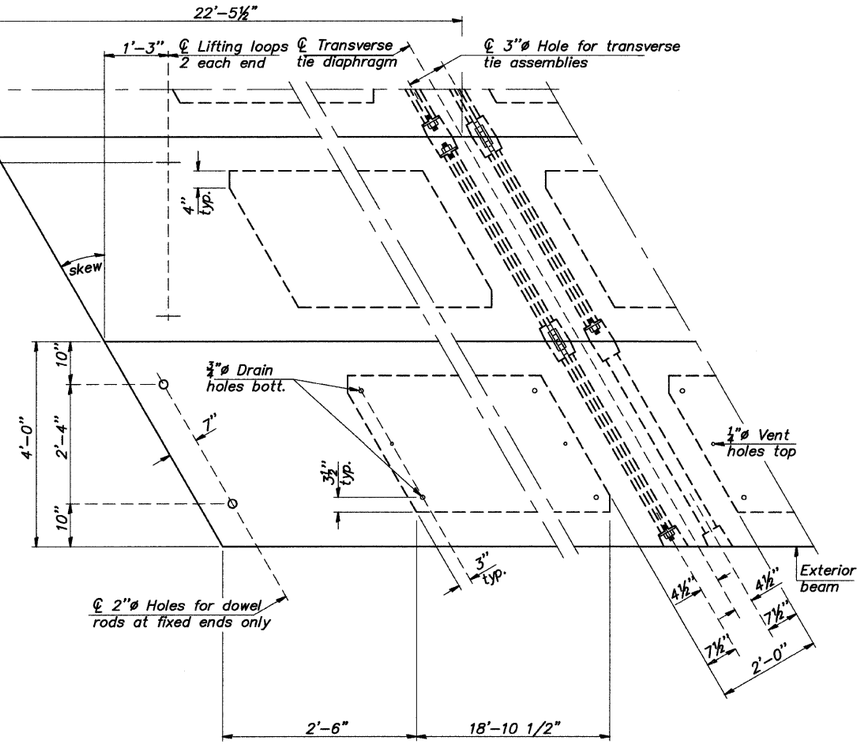
BAR S4(E)



BAR A1(E)

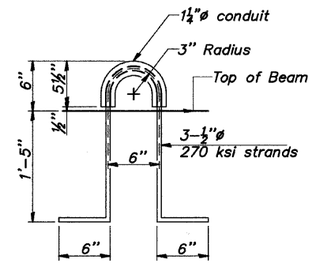


BAR U1(E)



PLAN VIEW

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



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7–wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross–sectional area shall be 0.153 sq. in.

The 1"ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½"ø lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 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

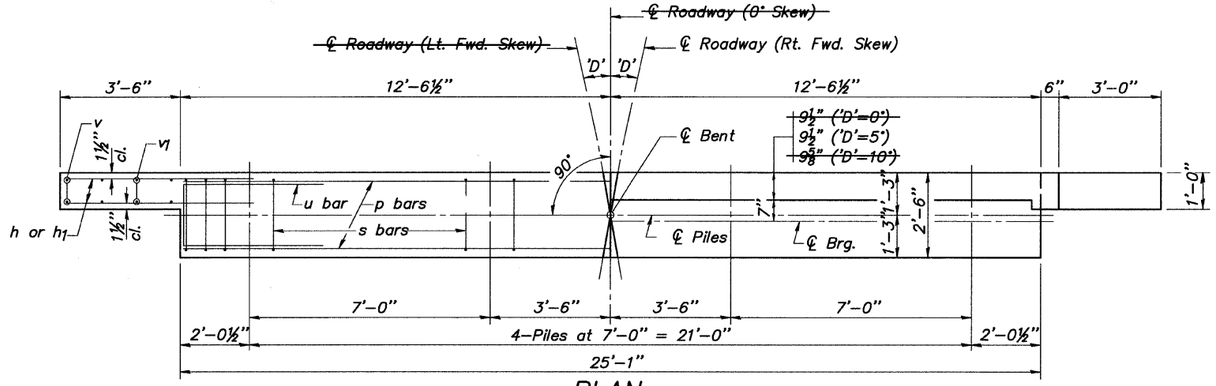
Precast Prestressed Concrete Deck Beams (21" depth)	Sq. Ft.	1,080

21" X 48" PPC DECK BEAM DETAILS

STRUCTURE NO. 001–3430
HARKNESS CREEK
ADAMS COUNTY
FALL CREEK SEC. 09–08111–00–BR
STATION 2+61.20

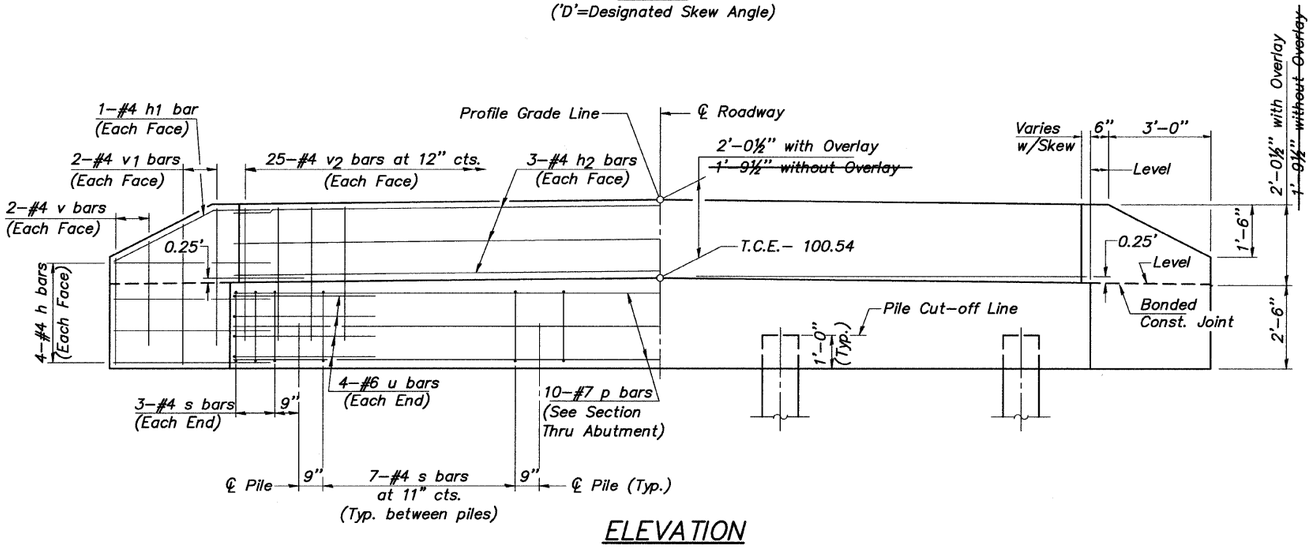
93529

COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	12 OF 14
P.P.C. DECK BEAMS PILE BENT ABUTMENT			
BRIDGE SHEET 5 OF 7			

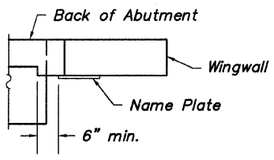


PLAN

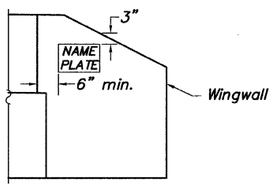
('D'=Designated Skew Angle)



ELEVATION



PLAN



ELEVATION

LOCATION OF NAME PLATE

NOTES

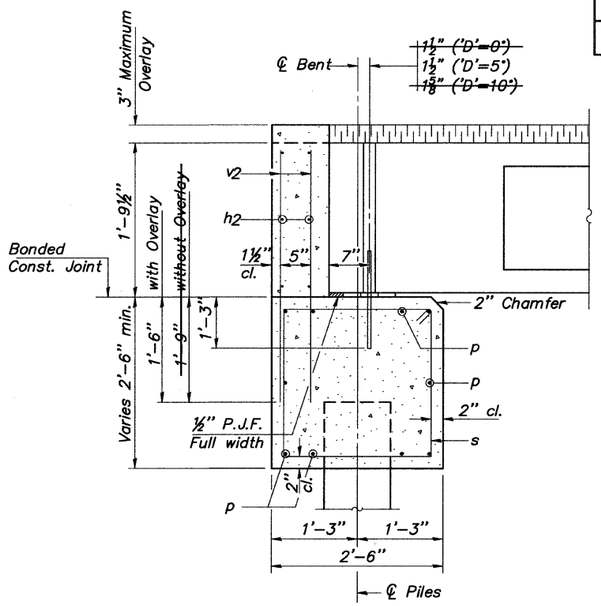
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60.
3. Space reinforcement in cap to miss anchor bolts.

PILE DATA (2 ABUTMENTS)

TYPE	12" METAL SHELL (0.179" WALL)
NOMINAL REQUIRED BEARING	160 kips
FACTORED RESISTANCE AVAILABLE	80 kips
ESTIMATED LENGTH	BENT #1- 67 FEET
	BENT #2- 67 FEET

NUMBER REQUIRED- 8 (INCLUDES 1 TEST PILE IN BENT #1)

THE TEST PILE(S) SHALL BE DRIVEN TO 110% OF THE NOMINAL REQUIRED BEARING INDICATED IN THE PILE INFORMATION DATA.

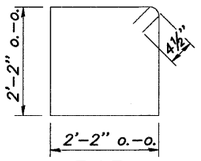


SECTION THRU ABUTMENT

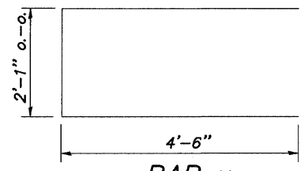
(At Right Angles)

BILL OF MATERIAL FOR ONE ABUTMENT

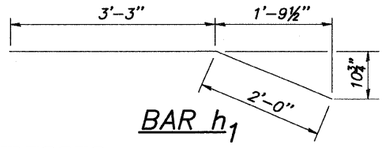
Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	
h 1	4	#4	5'-3"	
h 2	6	#4	24'-9"	
p	10	#7	24'-9"	
s	27	#4	9'-5"	
u	8	#6	11'-1"	
v	8	#4	2'-8"	
v 1	8	#4	3'-8"	
v 2	50	#4	3'-5"	
Concrete Structures			8.6 Cu. Yds.	
Reinforcement Bars			1120 Lb.	



BAR s



BAR u



BAR h_1

DESIGN STRESSES

f'c = 3,500 psi
fy = 60,000 psi

P.P.C. DECK BEAM PILE BENT ABUTMENT

24' RDWY.	21" BMS.	'D'=0°, 5° OR 10°

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ADAMS COUNTY
FALL CREEK SEC. 09-08111-00-BR
STATION 2+61.20

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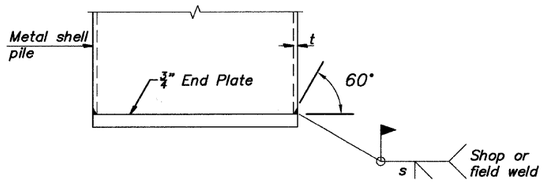
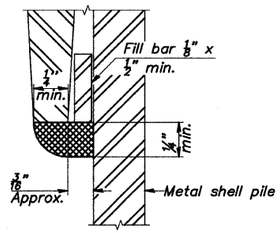
COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	13 OF 14
METAL SHELL PILE DETAILS			
BRIDGE SHEET 6 OF 7			

METAL SHELL PILE TABLE

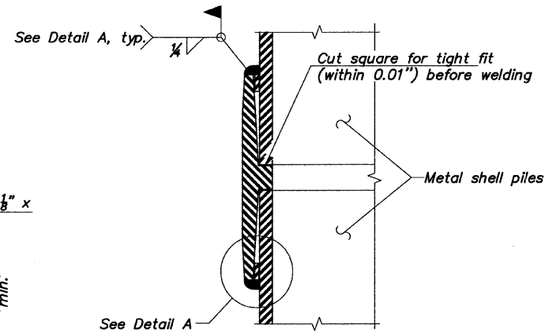
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.3/ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



END PLATE ATTACHMENT

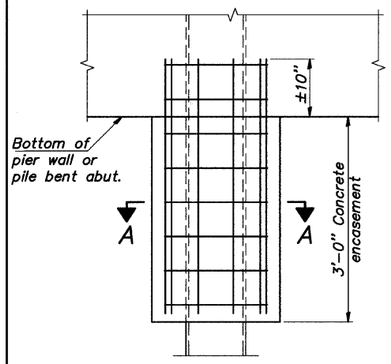


DETAIL A

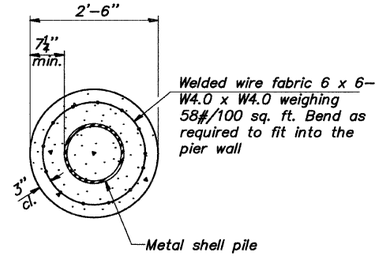


WELDED COMMERCIAL SPLICE

Notes:
The ⅛" x ½" min. fill bar may be constructed of 2 bars with a ⅛" max. gap between them. Pile segments shall be driven to solid contact with splicer before welding.



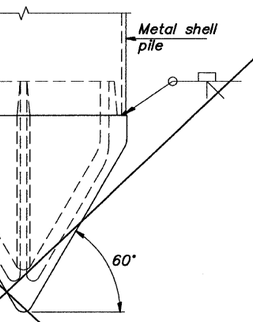
ELEVATION



SECTION A–A

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

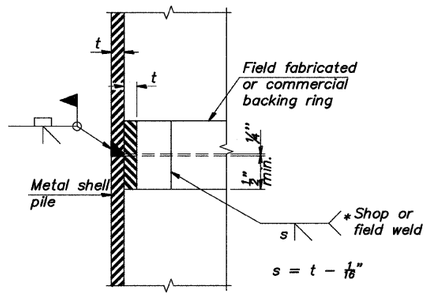
CONCRETE ENCASEMENT AT PIERS & ABUTMENTS



METAL SHELL PILE SHOE ATTACHMENT

(See Note A)

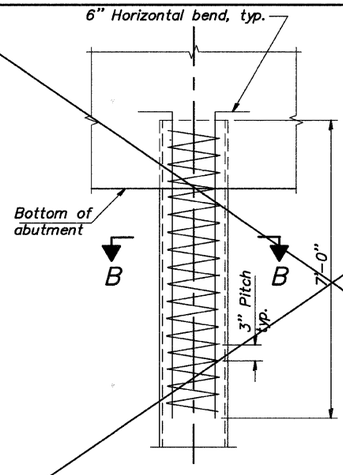
Note A:
When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90–60 or AASHTO M 103 Grade 65–35 and shall provide full bearing over 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.

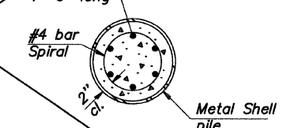


COMPLETE PENETRATION WELD SPLICE

* 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 ASTM A 252 Grade 3.





ELEVATION

SECTION B–B

METAL SHELL REINFORCEMENT AT ABUTMENTS

METAL SHELL PILE DETAILS

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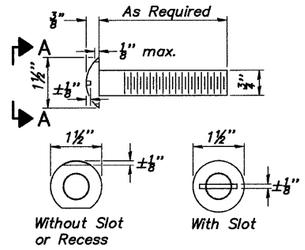
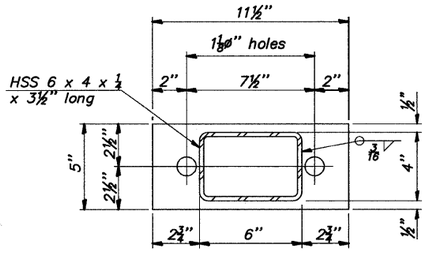
COUNTY	RD. DIST.	SECTION	SHT. NO.
ADAMS	FALL CREEK	09-08111-00-BR	14 OF 14
STEEL RAILING, TYPE S-1			

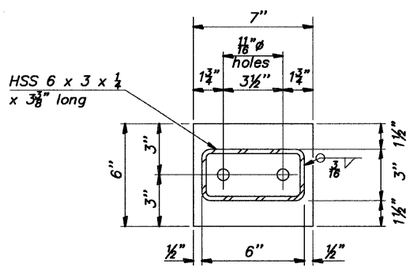
BRIDGE SHEET 7 OF 7



VIEW A–A
ROUND HEAD BOLT

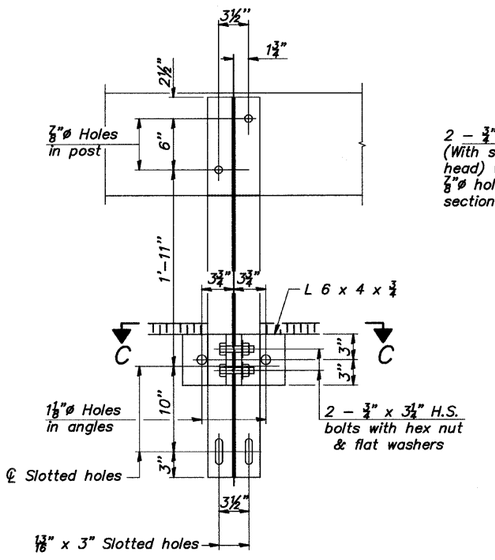


PL ½" x 11½" x 5"

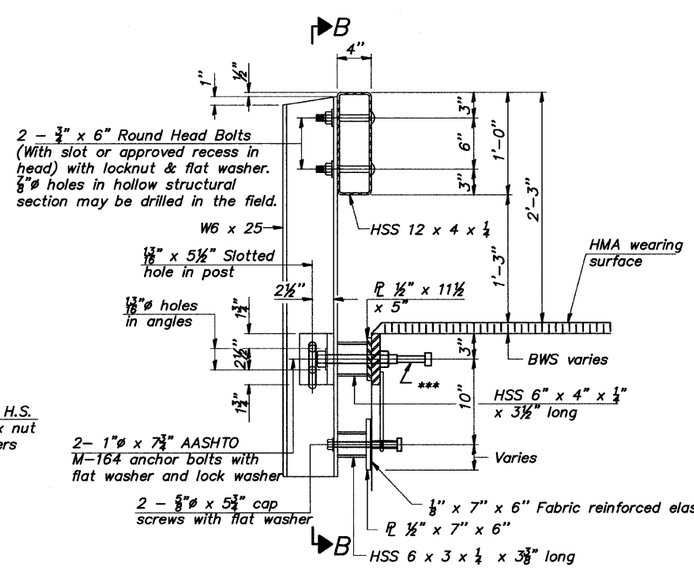


PL ½" x 7" x 6"

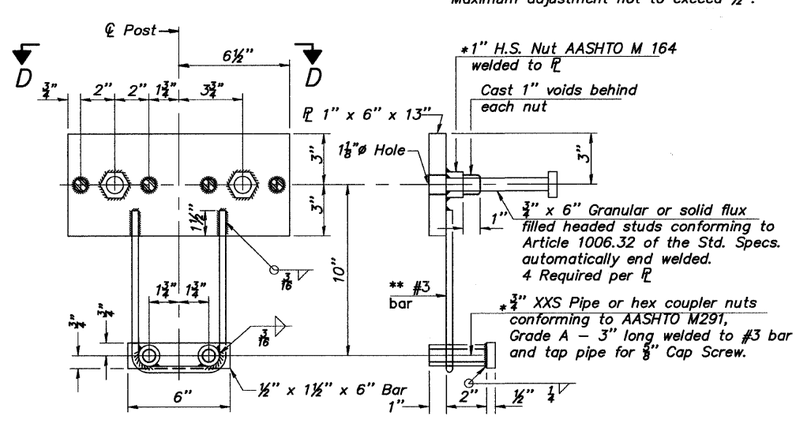
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed ½".



SECTION B–B



SECTION AT RAILING POST



ANCHOR DEVICE

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

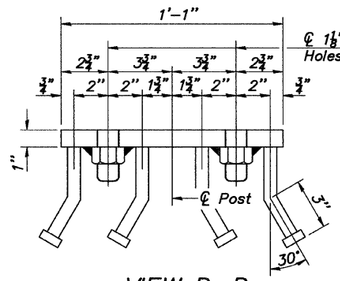
Notes:

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

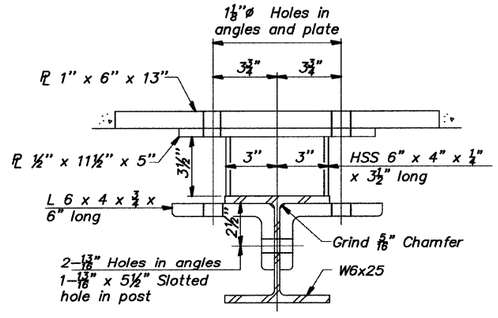
For multi–span bridges, sufficient ¼" x 6" x 1'–2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S–1.

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

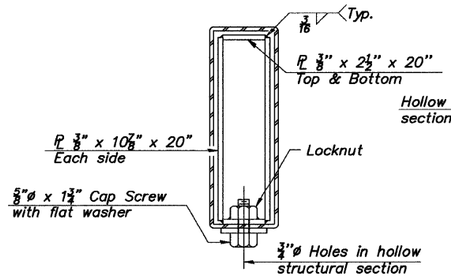
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



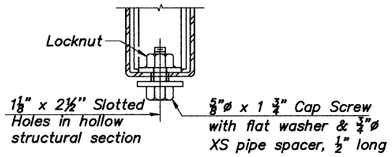
VIEW D–D



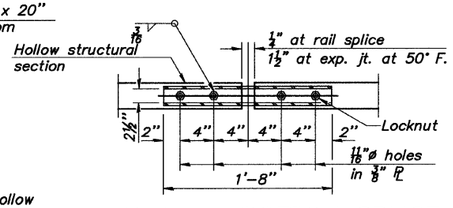
SECTION C–C



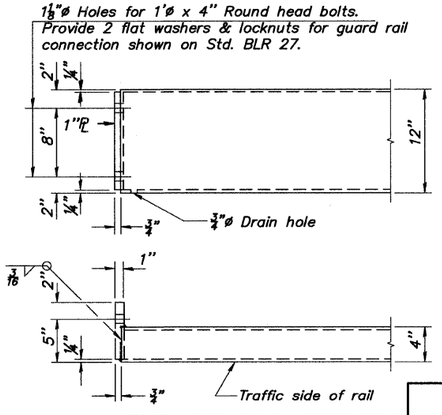
SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN – BOTTOM SPLICE PL TYPICAL



END OF RAIL DETAILS

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S–1	Foot	90

STEEL RAILING, TYPE S–1

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