

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
STREET IMPROVEMENT
H.B.P. & A.R.R.A. FUNDS
CITY OF FAIRFIELD
WAYNE COUNTY
SECTION 06-00047-00-BR
N.E. FOURTH STREET
PROPOSED STRUCTURE NO. 096-6012
PROJECT NO. BRM-ARA-5022(012)
JOB NO. C-97-059-10

INDEX OF SHEETS

1	COVER SHEET
2	PLAN - PROFILE
3	ELEVATIONS, RIPRAP & CHANNEL EXCAVATION
4	CROSS SECTIONS
5-8	CULVERT PLANS

STANDARDS:

420001-07	PAVEMENT JOINTS
424001-05	CURB RAMPS FOR SIDEWALKS
515001-03	NAME PLATE FOR BRIDGE
542301-02	PRC FLARED END SECTIONS
602301-02	INLET - TYPE A
604001-03	FRAME & LIDS - TYPE 1
604036-02	GRATE, TYPE B
606001-04	CONC CURB - TYPE B & COMBO CONC. CURB & GUTTER
701801-4	SIDEWALK CLOSURE
701901-01	TRAFFIC CONTROL DEVICES
BLR 22-6	TRAFFIC CONTROL

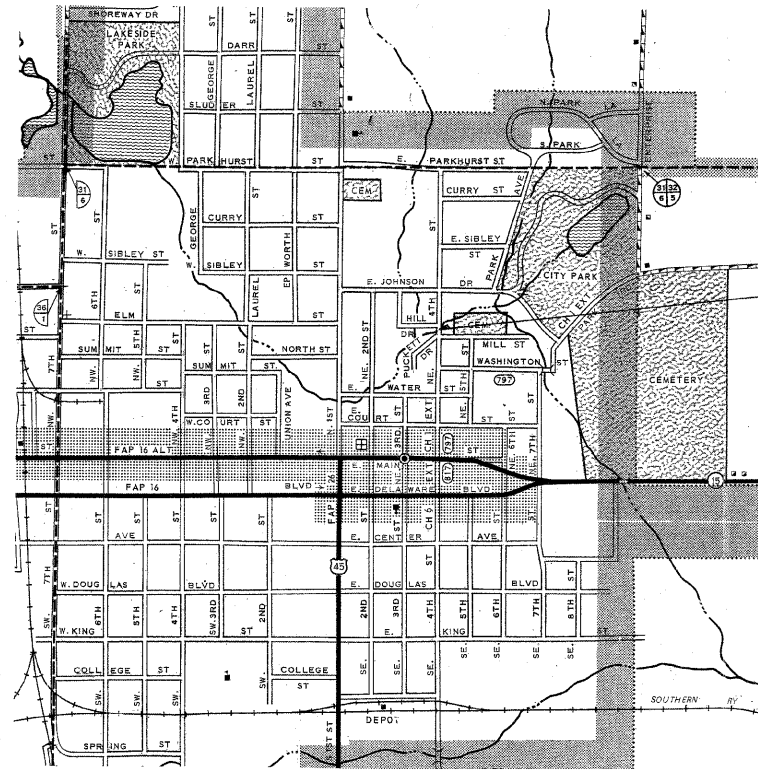
SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	CODE NO.
61	UNITS	TREE REMOVAL, SPECIAL (OVER 15 UNITS DIAMETER)	20100410
122	CU YD	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	20201200
96	CU YD	CHANNEL EXCAVATION	20300100
435	TON	POROUS GRANULAR EMBANKMENT	20700110
0.05	ACRE	SEEDING, CLASS 1 (SPECIAL)	25000900
215	TON	STONE RIPRAP, CLASS A1	28100201
40	TON	STONE RIPRAP, CLASS A4	28100207
193	SQ YD	PORTLAND CEMENT CONCRETE PAVEMENT 8"	42000300
51	SQ YD	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6 INCH	42300200
397	SQ FT	PORTLAND CEMENT CONCRETE SIDEWALK 4 INCH	42400100
390	SQ FT	PORTLAND CEMENT CONCRETE SIDEWALK SPECIAL	42400500
18	SQ FT	DETECTABLE WARNINGS	42400800
221	SQ YD	PAVEMENT REMOVAL	44000100
51	SQ YD	DRIVEWAY PAVEMENT REMOVAL	44000200
45	FOOT	COMBINATION CURB AND GUTTER REMOVAL	44000500
272	SQ FT	SIDEWALK REMOVAL	44000600
7	SQ YD	PAVEMENT REMOVAL (SPECIAL)	44004400
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
8	EACH	FLOOR DRAINS	50300100
38,850	POUND	REINFORCEMENT BARS, EPOXY COATED	50800205
89	FOOT	BICYCLE RAILING	50901720*
1	EACH	NAME PLATES	51500100
193.7	CU YD	CONCRETE BOX CULVERTS	54003000
2	EACH	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 12"	54213657
44	FOOT	STORM SEWERS, CLASS B, TYPE 1, 12"	550 B0050
46	FOOT	STORM SEWERS, CLASS B, TYPE 1, 18"	550 B0090
25	FOOT	STORM SEWER REMOVAL 10"	55100400
19	FOOT	STORM SEWER REMOVAL 12"	55100500
42	FOOT	STORM SEWER REMOVAL 18"	55100900
29	CU YD	CONTROLLED LOW-STRENGTH MATERIAL	59300100
1	EACH	INLETS, TYPE A, TYPE 1 FRAME, OPEN LID	60234200
2	EACH	INLETS, TYPE A, TYPE 8 GRATE	60236200
1	EACH	INLETS TO BE RECONSTRUCTED WITH SALVAGED FRAME AND GRATE	60265110
2	EACH	REMOVING INLETS	60500060
97	FOOT	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	60603800
1	L SUM	MOBILIZATION	67100100
1	L SUM	TRAFFIC CONTROL AND PROTECTION	70101700
1	L SUM	TRAFFIC CONTROL AND PROTECTION, STANDARD 701801	70102640

* SPECIALTY ITEMS

FUNCTIONAL CLASS: URBAN LOCAL STREET
ADT = 600
DESIGN SPEED = 30 MPH

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NO. 1-800-892-0123



LOCATION MAP

APPROXIMATE SCALE: 1 INCH = 800 FEET
NET LENGTH = 85 FEET = 0.016 MILES

SECTION 06-00047-00-BR
ENDS STA. 2+65

STA. 2+19-PROPOSED REINFORCED CONCRETE
BOX CULVERT (TWIN 12'-0" X 7'-6" X 53'-8 1/2")
30'-0" RDWY, SKEW = 35° R.F.
PROPOSED STR. NO. 096-6012
EXISTING STR. NO. 096-6004

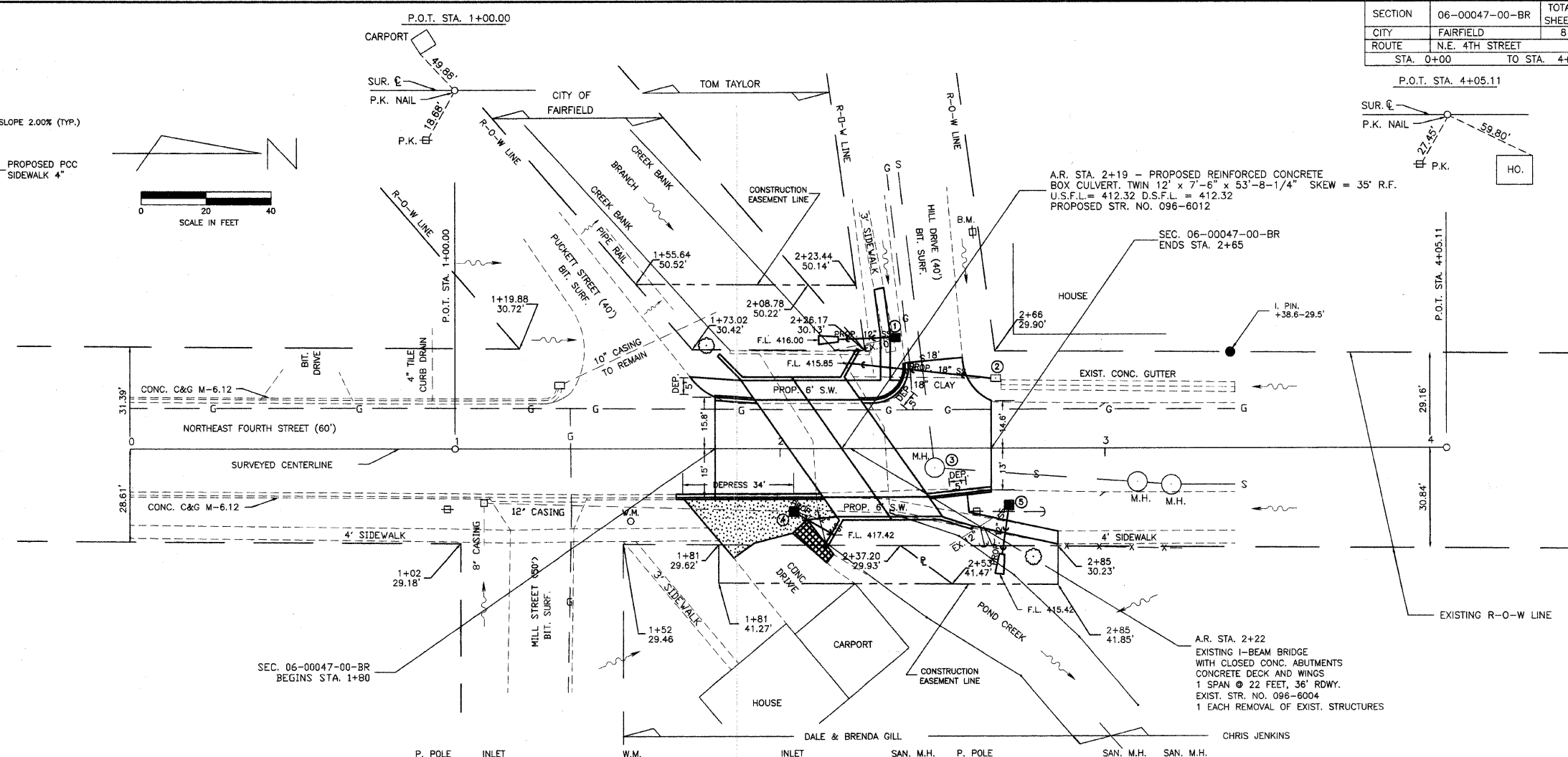
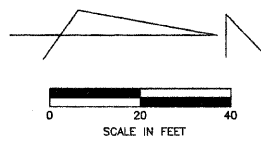
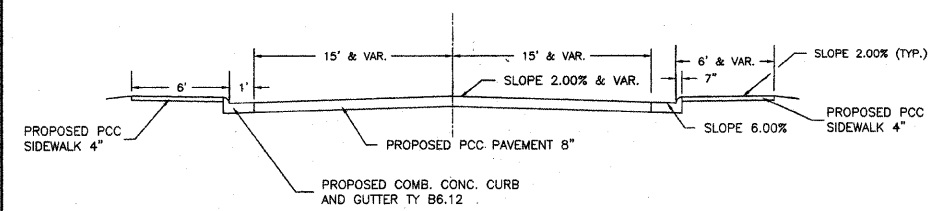
SECTION 06-00047-00-BR
BEGINS STA. 1+80

John A. Stone
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
LICENSE EXPIRES NOVEMBER 30, 2011
12/22/2009

CONNOR & CONNOR, INC.
PROFESSIONAL DESIGN FIRM #184-000832

ILLINOIS DEPARTMENT OF TRANSPORTATION
APPROVED: <i>12-22</i> . 2009 <i>Clayton M. Borch</i> MAYOR, CITY OF FAIRFIELD
PASSED: <i>12-31</i> . 2009 <i>Murray East</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW: <i>12-31</i> . 2009 <i>Roger L. Duchelle</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

SECTION	06-00047-00-BR	TOTAL SHEETS	8	SHEET NO.	2
CITY	FAIRFIELD				
ROUTE	N.E. 4TH STREET				
STA.	0+00	TO STA.	4+05.11		



DRAINAGE STRUCTURES			
LOCATION	TYPE	GRATE	INVERT
① 34' LT. STA. 2+36	INLET TY. A, T 8 GR	419.40	416.09
② 34' LT. STA. 2+36	INLET TO BE REMOVED		
③ 22' LT. STA. 2+66	RECONST. INLET WITH SALV. F & G	418.48	416.33
④ 6' RT. STA. 2+48	EXIST. SAN. M.H. TO REMAN	420.71 (RIM)	
⑤ 19 RT. STA. 2+04	INLET TY. A, T 1 F & OL	420.90	417.50
⑥ 19 RT. STA. 2+04	INLET TO BE REMOVED		
⑦ 17 RT. STA. 2+70	INLET TY. A, T 8 GR	418.00	415.50

STORM SEWER TYPE I, RCCP	
SIZE	LENGTH
12" x 18"	17 FT.
18" x 18"	46 FT.
18" x 18"	13 FT.
18" x 18"	14 FT.
TOTALS	44 FT. 46 FT.

STORM SEWER REMOVAL		
SIZE	LENGTH	REMARKS
10" x 12"	6 FT.	
12" x 12"	19 FT.	
12" x 12"	19 FT.	
12" x 12"	42 FT.	
TOTAL	25 FT. 19 FT. 42 FT.	

* PRECAST CONCRETE FLARED END SECTION 12"	
SIZE	QUANTITY
33' LT. STA. 2+12	1 EACH
38' RT. STA. 2+67	1 EACH
TOTALS	2 EACH

CONTROLLED LOW STRENGTH MATERIAL	
ITEM	QUANTITY
① - 6" SOUTH	2 CU. YD.
② - WING	11 CU. YD.
③ - WING	3 CU. YD.
④ - WING	2 CU. YD.
⑤ - 9" EAST	2 CU. YD.
⑥ - EXIST. BRIDGE	11 CU. YD.
TOTALS	29 CU. YD.

UTILITIES	
TELEPHONE	VERIZON 225 E. CHESTNUT STREET BOX 460 OLNEY, IL 618-395-6189
ELECTRIC	CITY OF FAIRFIELD
GAS	105 N.E. 2ND STREET
SAN. SEWER	FAIRFIELD, IL 62837
WATER	618-842-7015

P.C.C. PAVEMENT 8"	
STA. 1+80.00 TO STA. 2+02.73	= 71 SQ. YD.
STA. 2+35.27 TO STA. 2+65.00	= 122 SQ. YD.
TOTAL	= 193 SQ. YD.

PAVEMENT REMOVAL	
STA. 1+80.00 TO STA. 2+10.00	= 91 SQ. YD.
STA. 2+33.00 TO STA. 2+65.00	= 130 SQ. YD.
TOTAL	= 221 SQ. YD.

PAVEMENT REMOVAL SPECIAL	
RT. STA. 2+10	= 7 SQ. YD.

TREE REMOVAL OVER 15 UNITS DIA.	
30.5' LT. STA. 1+76	= 29 UNITS DIA.
31.4' RT. STA. 2+77	= 32 UNITS DIA.
TOTAL	= 61 UNITS DIA.

COMBINATION CONC. CURB & GUTTER, TYPE B-6.12	
RT. STA. 1+68 TO STA. 2+13	= 45 FT.
LT. STA. 1+80 TO STA. 1+92	= 12 FT.
RT. STA. 2+46 TO STA. 2+65	= 19 FT.
LT. STA. 2+25 TO STA. 2+38	= 21 FT.
TOTAL	= 97 FT.

COMBINATION CONC. CURB & GUTTER REMOVAL	
RT. STA. 1+68 TO STA. 2+13	= 45 FT.

DETECTABLE WARNINGS	
LT. STA. 1+72	= 6 SQ. FT.
LT. STA. 2+37	= 6 SQ. FT.
RT. STA. 2+55	= 6 SQ. FT.
TOTALS	= 18 SQ. FT.

P.C.C. DRIVEWAY PAVEMENT 6"	
RT. STA. 1+85	= 51.0 SQ. YD.

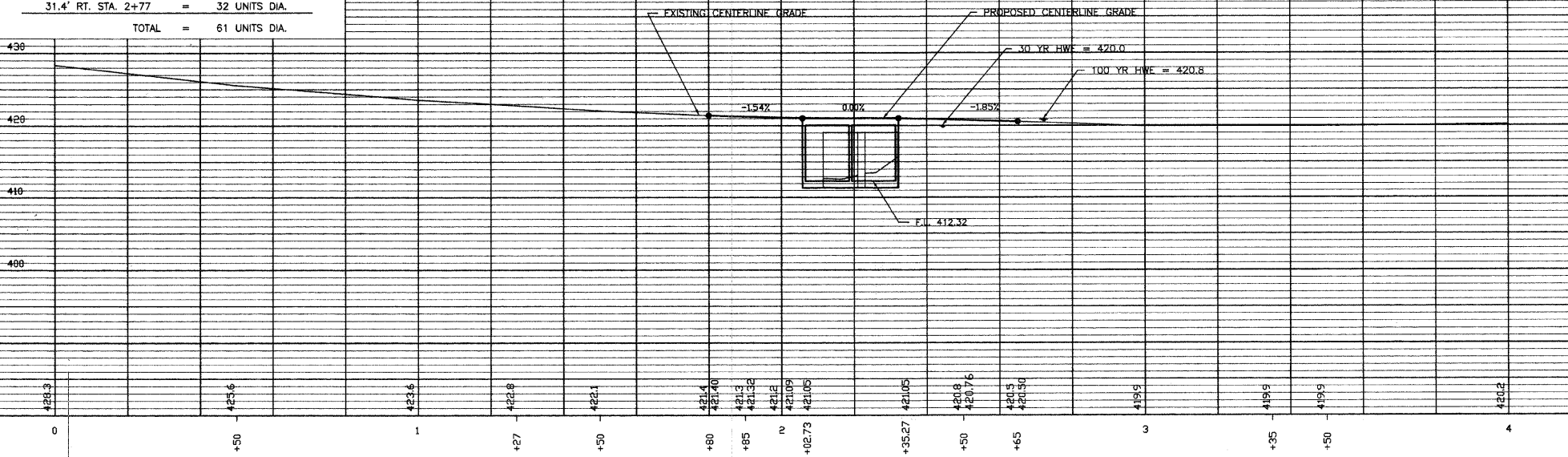
DRIVEWAY PAVEMENT REMOVAL	
RT. STA. 1+85	= 51.0 SQ. YD.

SEEDING, CLASS 1 (SPECIAL)	
STA. 1+80 TO STA. 2+65	= 0.05 ACRES

P.C.C. SIDEWALK 4"	
LT. STA. 1+72 TO CULVERT	= 77 SQ. FT.
LT. CULVERT TO STA. 2+37	= 66 SQ. FT.
LT. STA. 2+31 (3' SIDEWALK)	= 84 SQ. FT.
RT. CULVERT TO STA. 2+85	= 170 SQ. FT.
TOTAL	= 397 SQ. FT.

SIDEWALK REMOVAL	
RT. STA. 2+33 TO STA. 2+85	= 212 SQ. FT.
LT. STA. 2+33 (3' SIDEWALK)	= 60 SQ. FT.
TOTAL	= 272 SQ. FT.

P.C.C. SIDEWALK SPECIAL	
LT. & RT. ON CULVERT	= 390 SQ. FT.



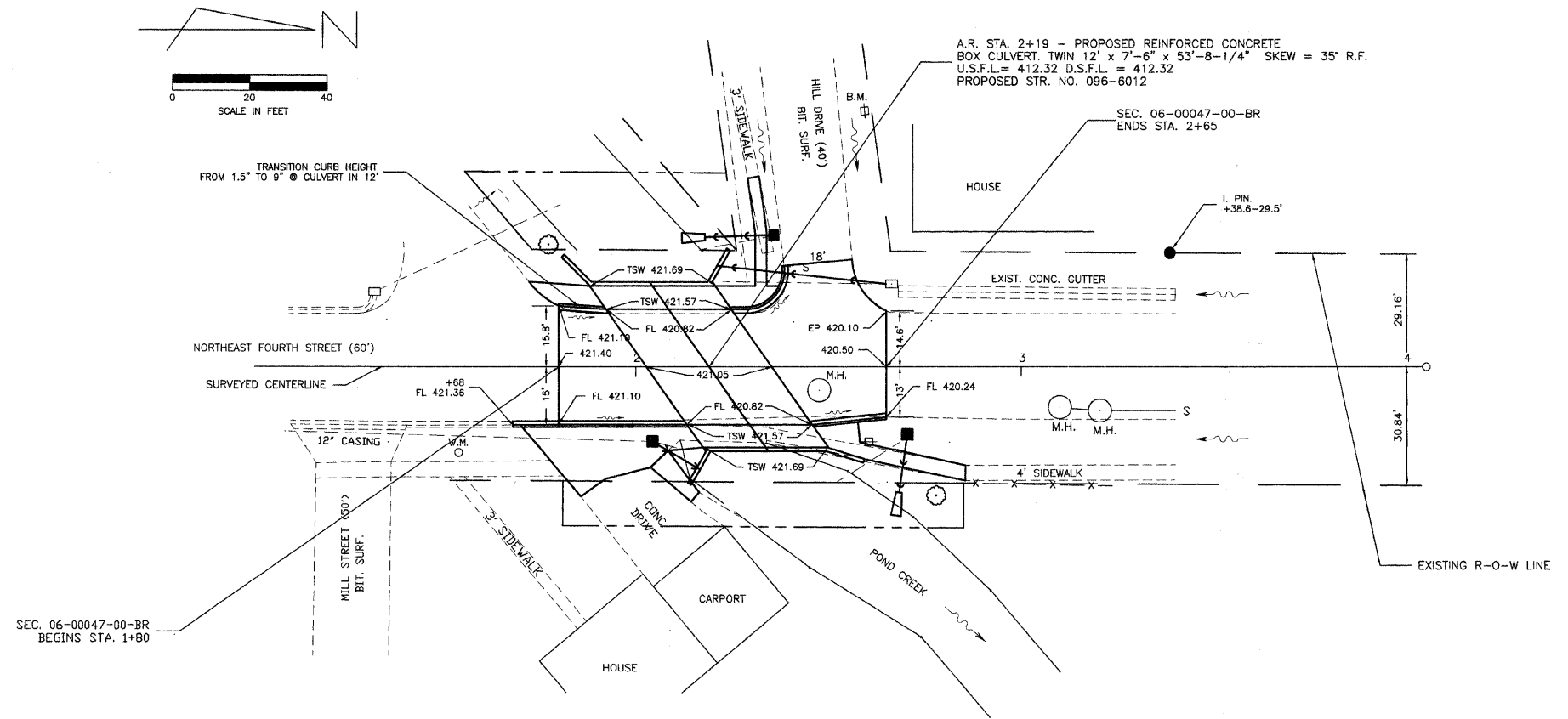
CONNOR & CONNOR, Inc.
 CONSULTING ENGINEERS
 209 North Cross Street
 ROBINSON, ILLINOIS 62454
 Phone 618-544-8663
 Fax 618-544-3842
 Licensed Surveyors

DATE _____
 SCALE 1" = 50'
 DRAWN BY _____
 PROJECT _____
 SHEET 02 OF 08

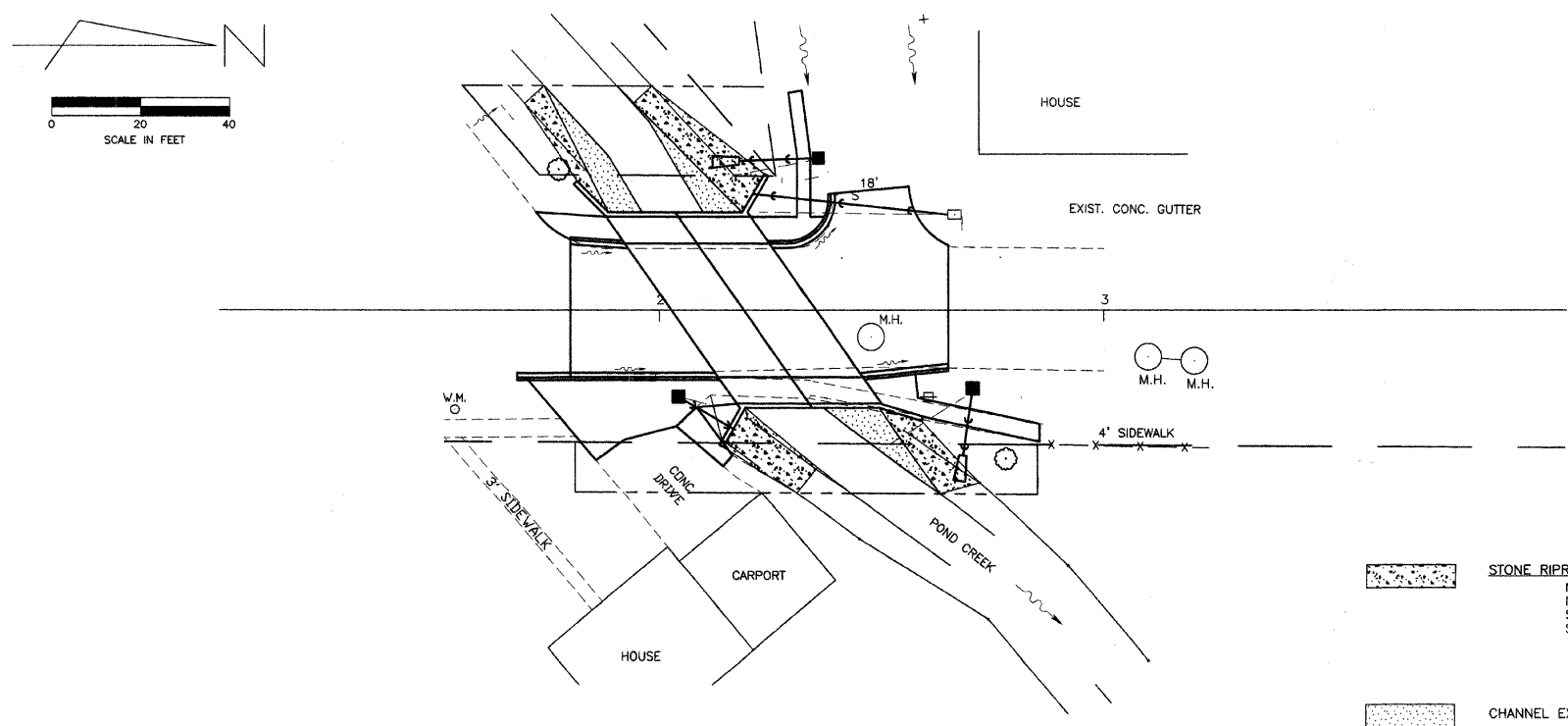
CONTRACT NO. 95617			
SECTION	06-00047-00-BR	TOTAL SHEETS	8
CITY	FAIRFIELD	SHEET NO.	3
ROUTE	N.E. 4TH STREET		
STA.		TO STA.	

PLAN VIEW SHOWING ELEVATIONS

TSW 421.69 DENOTES TOP OF SIDEWALK ELEVATION
 EP 420.10 DENOTES EDGE OF PAVEMENT ELEVATION
 FL 421.10 DENOTES FLOWLINE OF GUTTER ELEVATION



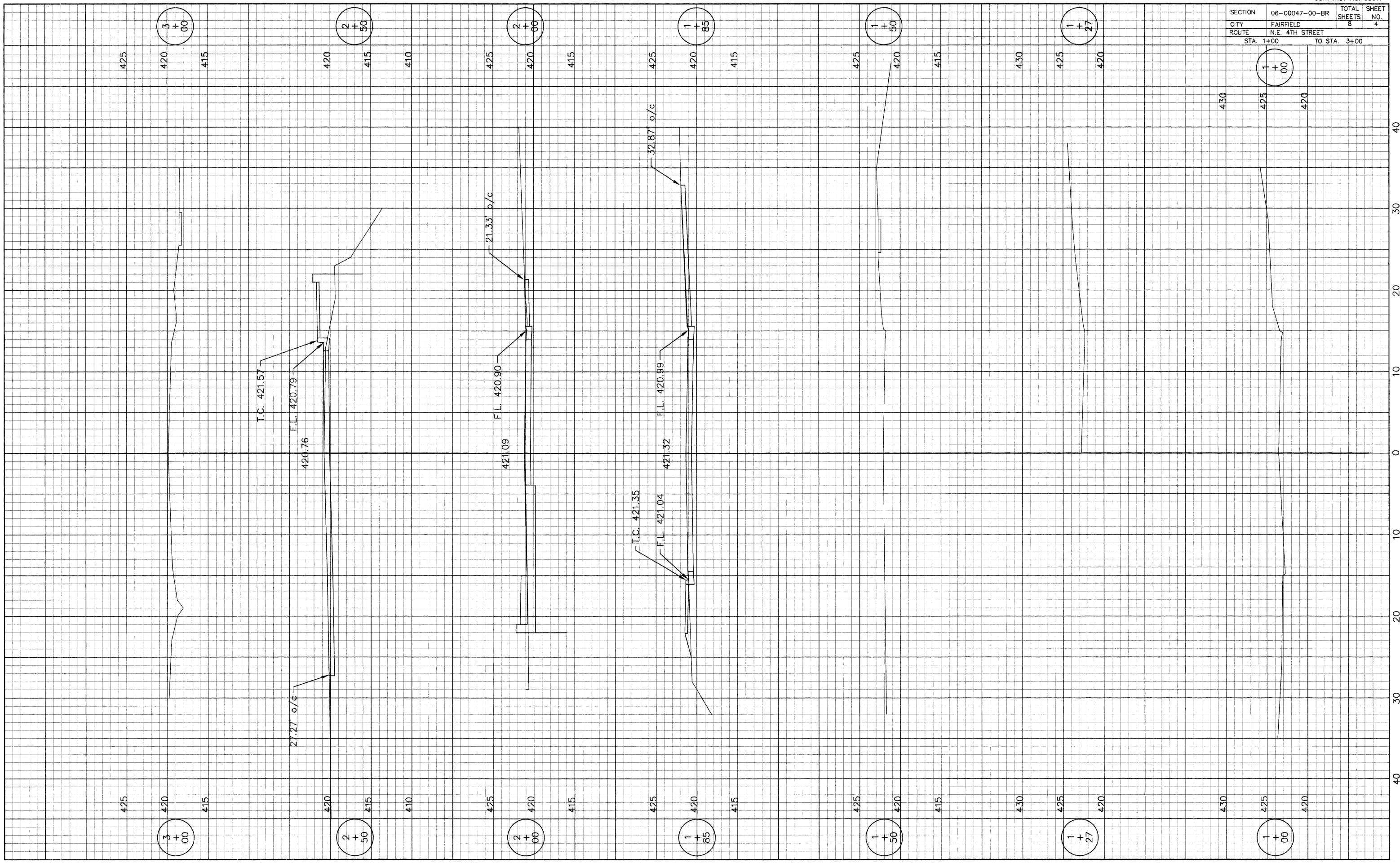
PLAN VIEW SHOWING RIPRAP AND CHANNEL EXCAVATION



CONNOR & CONNOR, Inc.
 CONSULTING ENGINEERS
 209 North Cross Street
 ROBINSON, ILLINOIS 62454
 Phone: 618-544-8623
 Fax: 618-544-3012
 Licensed Surveyors
 Licensed Engineers

DATE	
SCALE	1" = 50'
DRAWN BY	
PROJECT	P-1468
SHEET	OF

SECTION	06-00047-00-BR	TOTAL SHEETS	8	SHEET NO.	4
CITY	FAIRFIELD				
ROUTE	N.E. 4TH STREET				
STA. 1+00		TO STA. 3+00			



3
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50

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85

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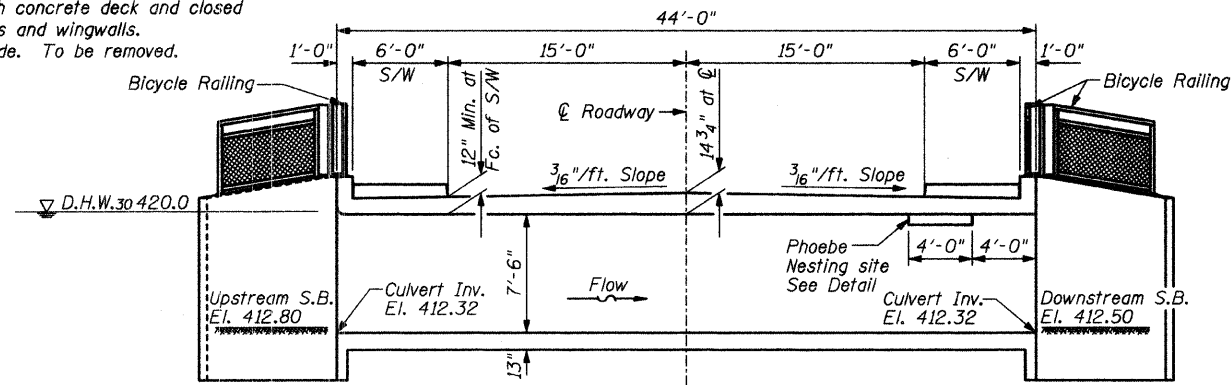
1
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27

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Bench Mark #1: P.K. nail is power pole,
66' Lt., Sta. 2+59 - Elev. 420.55

Existing Structure: S.N. 096-6004. Single span
I-beam bridge with concrete deck and closed
concrete abutments and wingwalls.
22' long x 36' wide. To be removed.
No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



LONGITUDINAL SECTION

(Horizontal dimensions
at Rt. L's to \bar{C} Roadway)
(Looking North)

STATION 2+19.00
BUILT 2010 BY
CITY OF FAIRFIELD
SEC. 06-00047-00-BR
LOADING HS20-44
STRUCTURE NO. 096-6012

NAME PLATE
See Std. 515001

BILL OF MATERIALS (CULVERT ONLY)

ITEM	UNIT	QUANTITY
Removal and Disposal of Unsuitable Material	Cu Yd	122
Channel Excavation	Cu Yd	96
Porous Granular Embankment	Ton	435
Stone Riprap, Class A1	Ton	215
Removal of Existing Structures	Each	1
Floor Drains	Each	8
Reinforcement Bars, Epoxy Coated	Pound	40,270
Bicycle Railing	Foot	89
Name Plates	Each	1
Concrete Box Culverts	Cu Yd	193.7

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified). See Special Provisions.

All reinforcement shall be Epoxy Coated, (E).

All exposed edges shall be chamfered 3/4", unless noted otherwise.

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

See Section 502 of the Standard Specifications for Structural Excavation.

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel at the ROW line. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

See Special Provisions for Soil Borings.

Do not scale these drawings.

LOADING AASHTO HS 20-44

50#/sq. ft. included in dead load for future wearing surface.

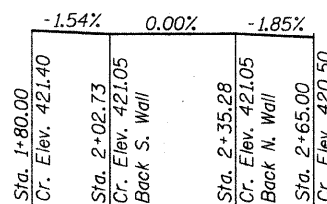
DESIGN SPECIFICATIONS

AASHTO Standard Specifications for Highway Bridges, 17th Edition - 2002

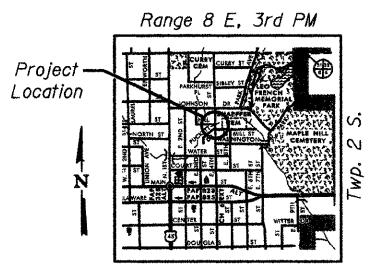
DESIGN STRESSES

FIELD UNITS

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



PROFILE GRADE ACROSS STRUCTURE
(along \bar{C} N. E. 4th St.)



LOCATION SKETCH

I certify that to the best of knowledge, information and belief, this culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.



Gary L. Hahn
Gary L. Hahn
12-21-2009
Date of Signing
11-30-2010
Date of License Expiration

GENERAL PLAN AND ELEVATION
N.E. 4th STREET OVER BRANCH OF POND CREEK
CITY OF FAIRFIELD, WAYNE COUNTY
STATION 2+19.00
STRUCTURE NO. 096-6012

SHEET NO. 1	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4 SHEETS	NE 4th	06-00047-00-BR	WAYNE	8	5
CONTRACT NO. 95617					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

WATERWAY INFORMATION

(By Connor & Connor, Inc.)

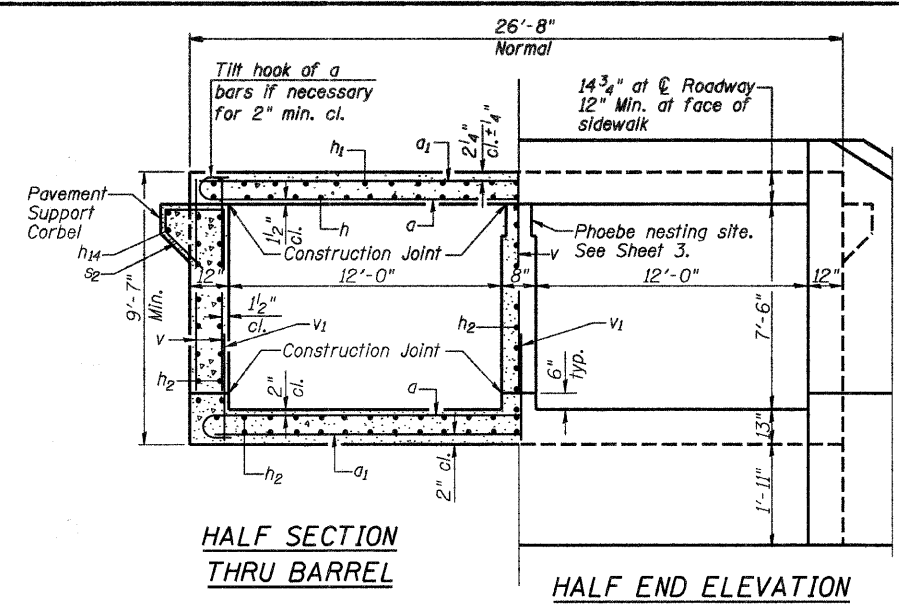
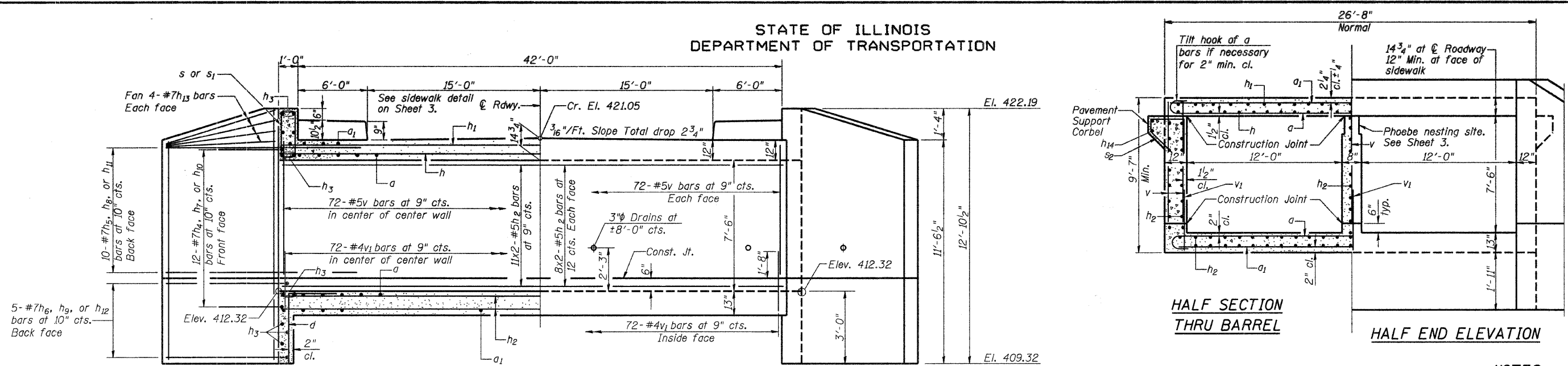
Drainage Area = 1.78 sq. mi. Low Grade Elev. 419.9 @ Sta. 3+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Prop.	Nat. H.W.E.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	30	965	103	180	420.0	0.2	0.2	420.2	420.2
Base	100	1530	103	180	420.8	0.1	0.1	420.9	420.9
Overtopping Max. Calc.	500	2120	103	180	421.4	-0.1	0.4	421.3	421.8

DESIGNED - GLH
CHECKED - GLH
DRAWN - JN
CHECKED - GLH

12/21/2009 RAAI #50809

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

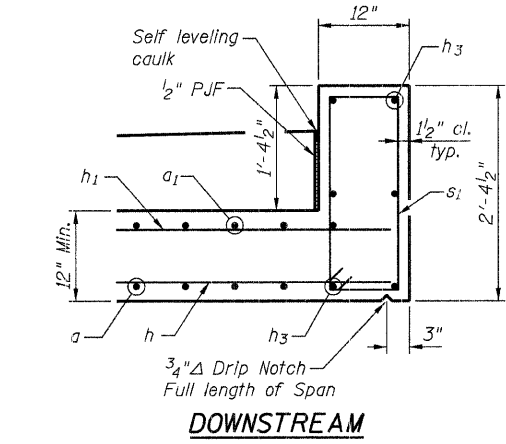
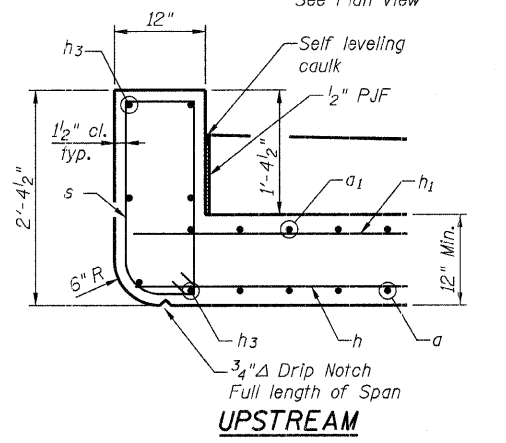


NOTES

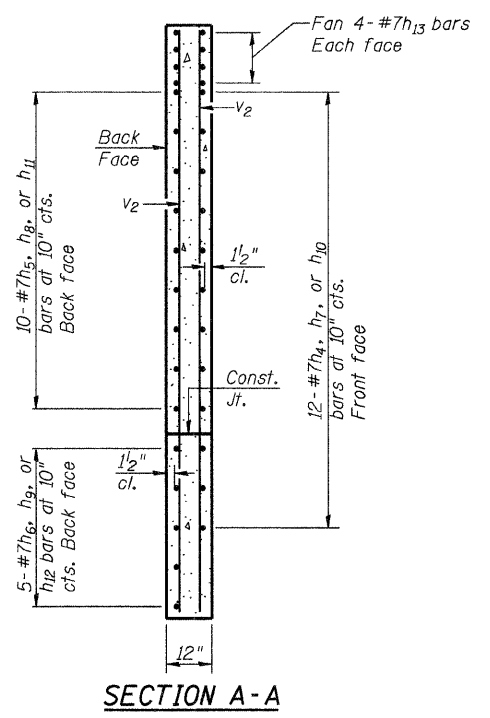
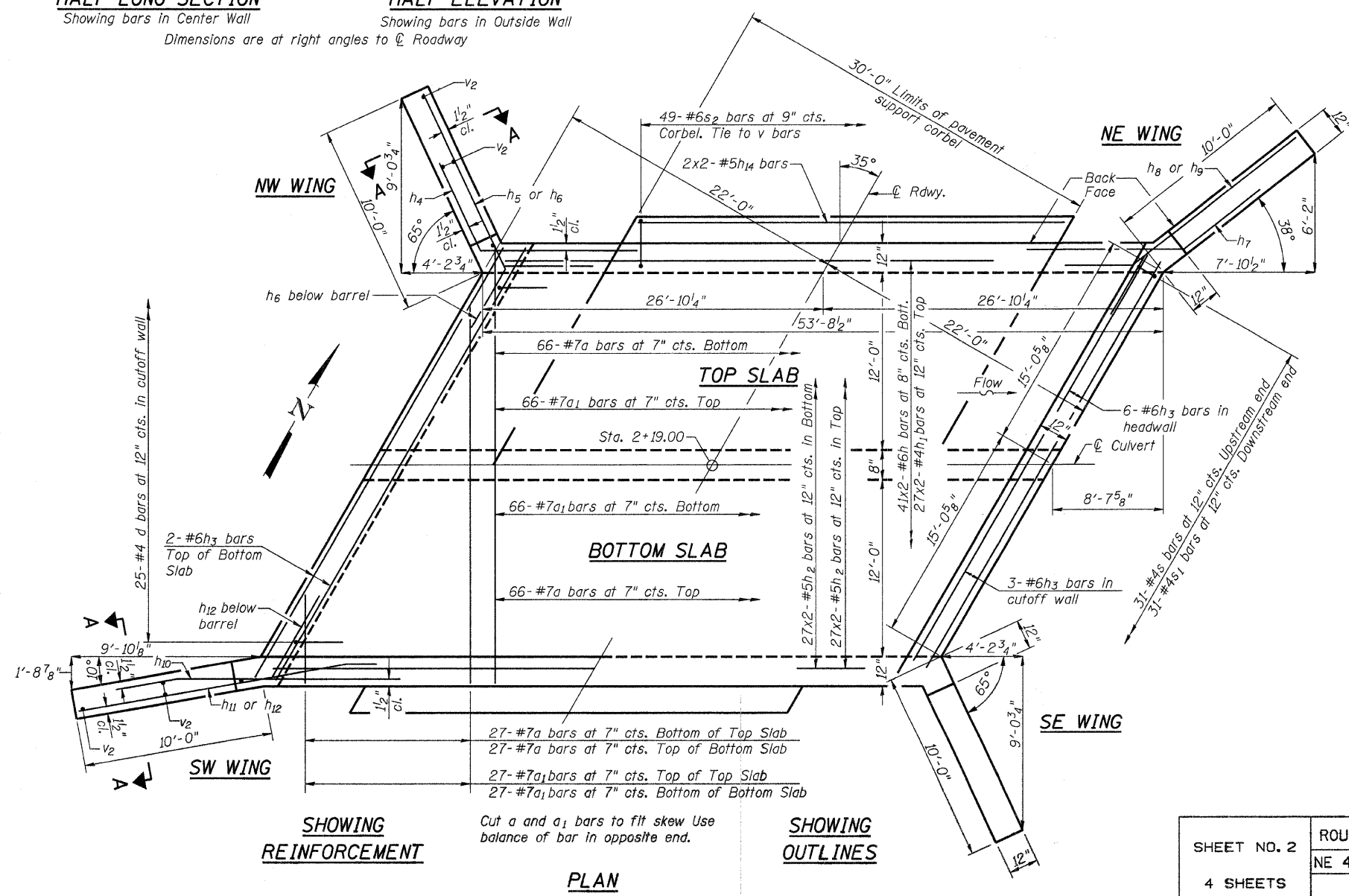
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.

Bars indicated thus 12x4-#5 etc. indicates 12 lines of bars with 4 lengths per line.

All reinforcement bars shall be epoxy coated.



HEADWALL DETAILS



CULVERT DETAILS
STRUCTURE NO. 096-6012

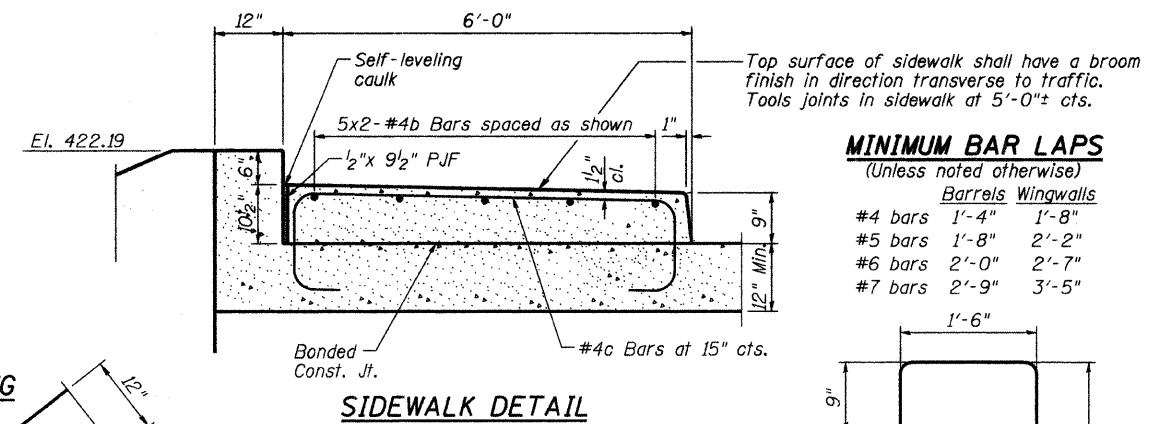
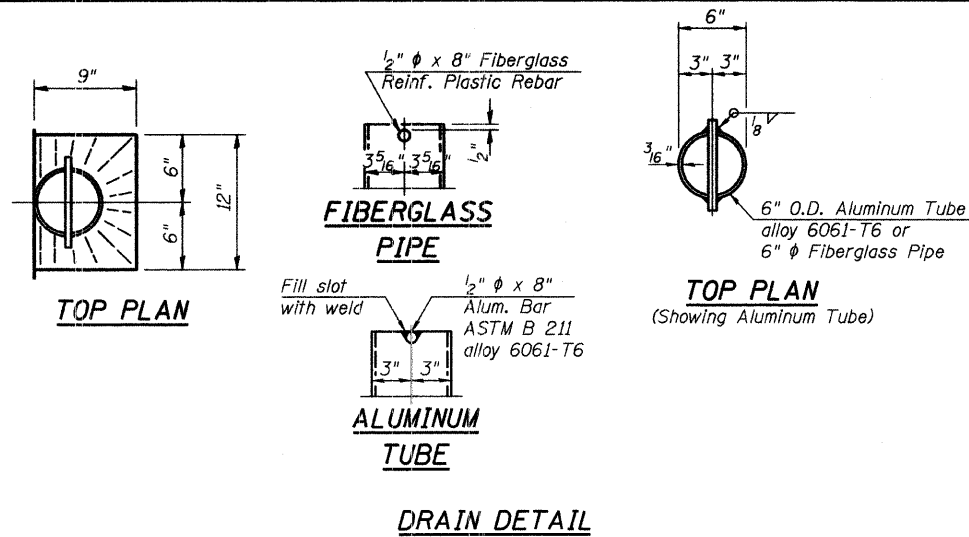
DESIGNED - GLH
CHECKED - GLH
DRAWN - JN
CHECKED - GLH
DB-H-R

10-1-08

SHEET NO. 2 4 SHEETS	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	NE 4th	06-00047-00-BR	WAYNE	8	6
	CONTRACT NO. 95617				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					

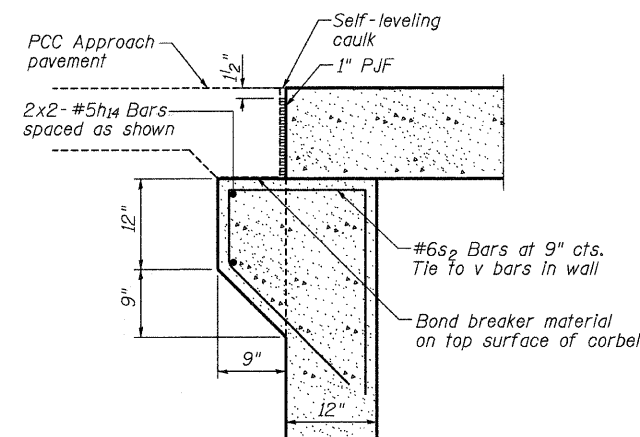
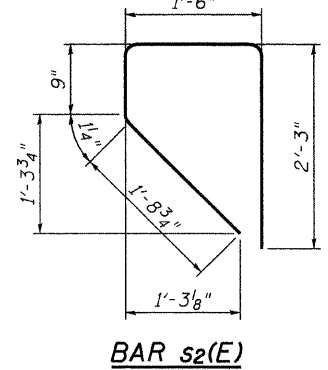
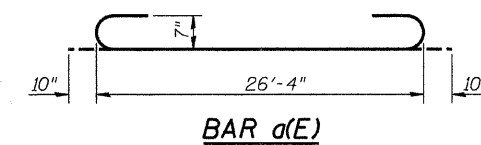
10/26/2009 RAAI #50809

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



MINIMUM BAR LAPS
(Unless noted otherwise)

	Barrels	Wingwalls
#4 bars	1'-4"	1'-8"
#5 bars	1'-8"	2'-2"
#6 bars	2'-0"	2'-7"
#7 bars	2'-9"	3'-5"

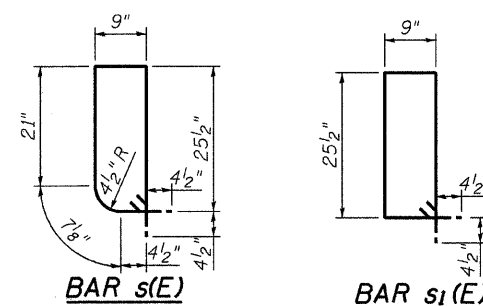


BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	186	#7	28'-0"	U
a1(E)	186	#7	26'-4"	U
b(E)	20	#4	16'-10"	—
c(E)	54	#4	9'-8"	L
d(E)	50	#4	4'-6"	L
h(E)	82	#6	27'-9"	—
h1(E)	54	#4	27'-6"	—
h2(E)	194	#5	27'-9"	—
h3(E)	22	#6	32'-0"	—
h4(E)	24	#7	8'-0"	—
h5(E)	20	#7	13'-0"	—
h6(E)	10	#7	8'-0"	—
h7(E)	12	#7	8'-0"	—
h8(E)	10	#7	10'-10"	—
h9(E)	5	#7	13'-0"	—
h10(E)	12	#7	11'-0"	—
h11(E)	10	#7	13'-6"	—
h12(E)	5	#7	13'-2"	—
h13(E)	32	#7	10'-0"	—
h14(E)	8	#5	19'-0"	—
s(E)	31	#4	6'-4"	I
s1(E)	31	#4	6'-6"	I
s2(E)	98	#6	6'-4"	I
v(E)	360	#5	7'-9"	—
v1(E)	216	#4	3'-0"	—
v2(E)	16	#4	12'-6"	—
Concrete Box Culverts			Cu Yd	193.7
Reinforcement Bars, Epoxy Coated			Pound	40,270

PAVEMENT SUPPORT CORBEL

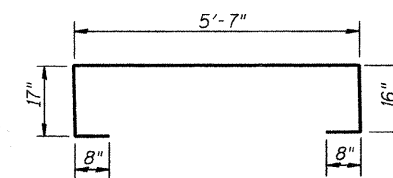
See Plan for limits
(Wall reinf. not shown for clarity)



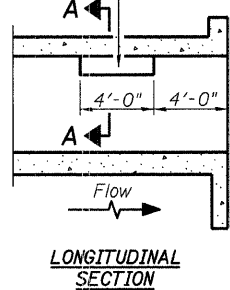
BARS h4(E) THRU h12(E)

BAR	A	B
h4	5'-0"	2'-8 5/8"
h5	10'-0"	2'-8 5/8"
h6	10'-3"	2'-7 7/8"
h7	5'-0"	1'-10 1/8"
h8	10'-7"	1'-10 1/8"
h9	10'-0"	10 1/2"
h10	8'-0"	6 1/4"
h11	13'-7"	6 1/4"
h12	10'-2"	2'-1 1/2"

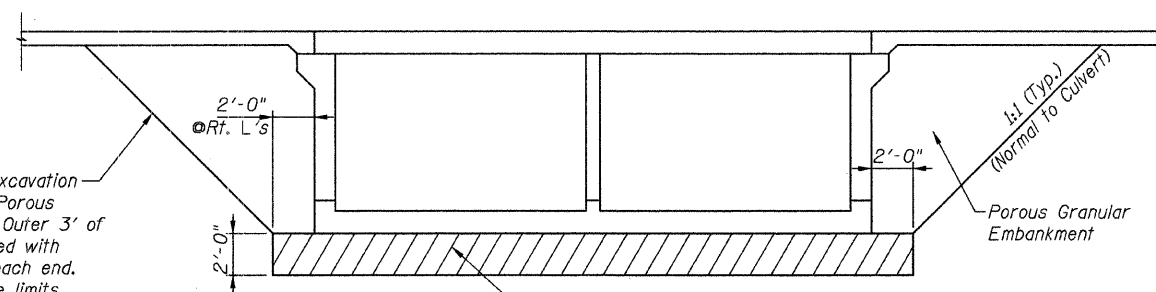
BAR c(E)



Notch formed by rough finished board attached to and removed with form work, each interior wall. (Do not chamfer).



PHOEBE NESTING SITE DETAILS
(Downstream End Only)



DETAIL FOR PAVEMENT REPLACEMENT AND EXCAVATION AND BACKFILL TYPES AND LIMITS

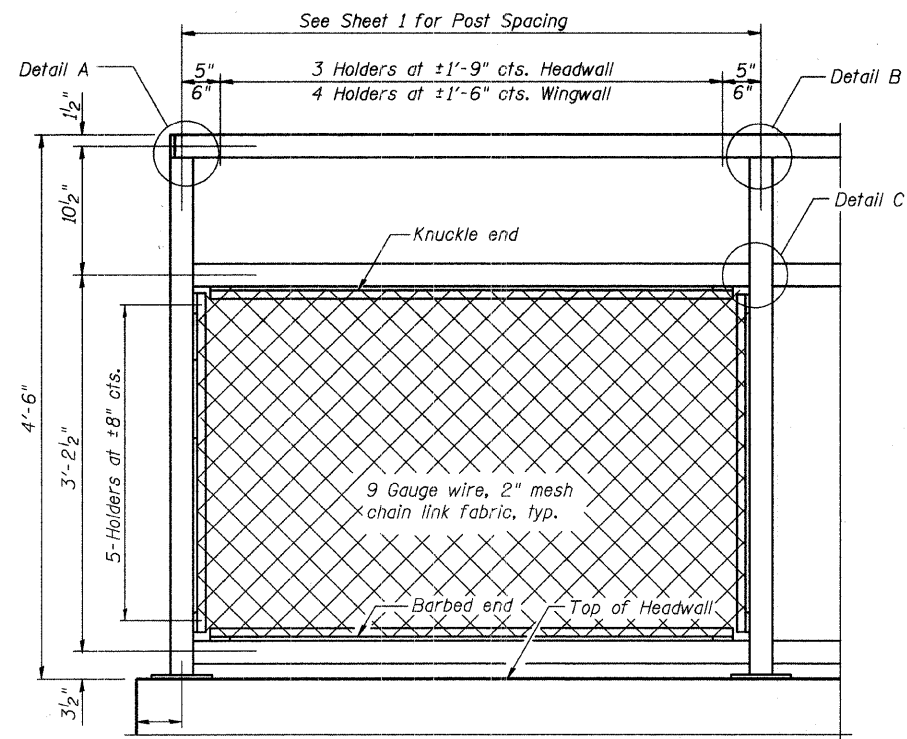
DESIGNED - GLH
CHECKED - GLH
DRAWN - JN
CHECKED - GLH

SHEET NO. 3	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4 SHEETS	NE 4th	06-00047-00-BR	WAYNE	8	7
CONTRACT NO. 95617					
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					

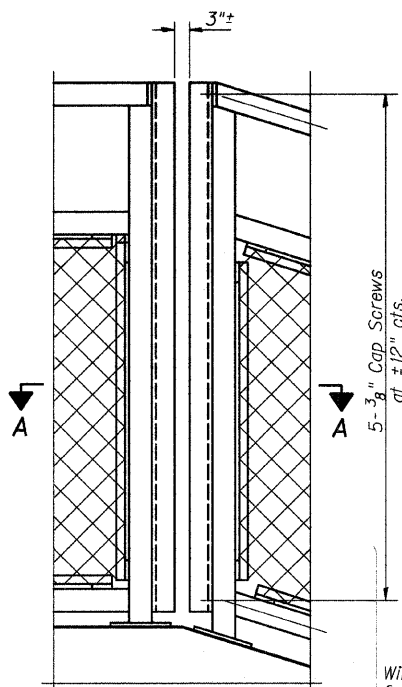
CULVERT DETAILS
STRUCTURE NO. 096-6012

12/21/2009 RAAI #50809

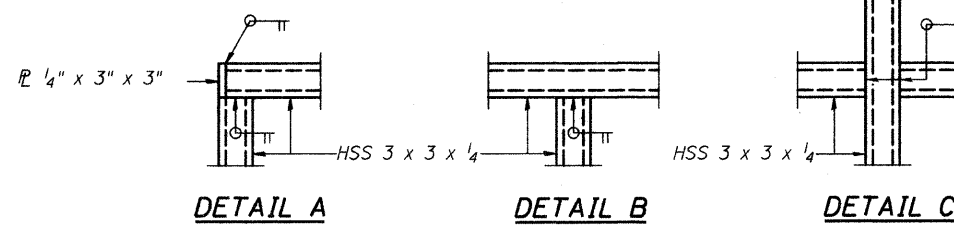
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BICYCLE RAILING

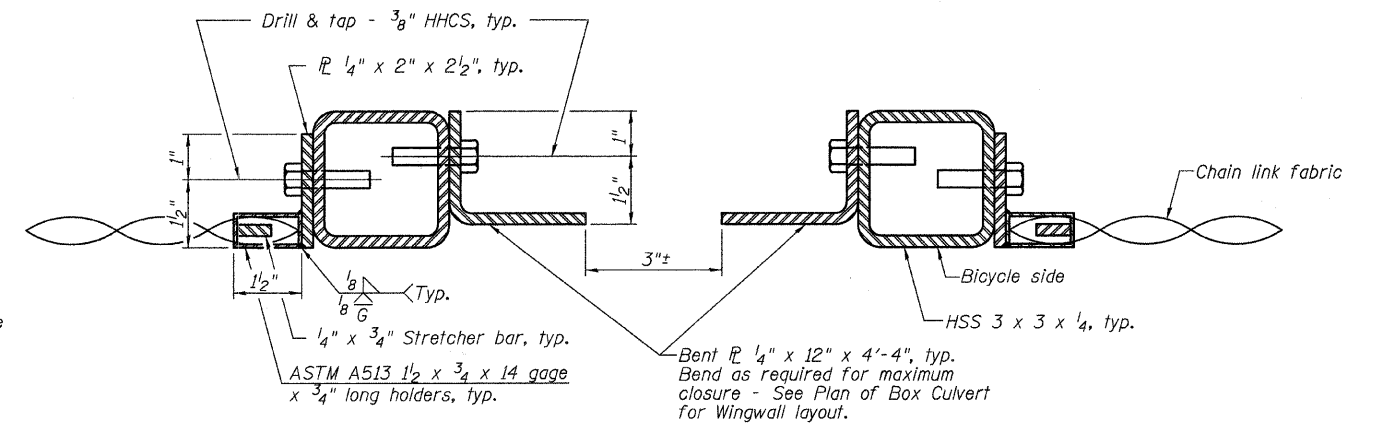


BICYCLE RAILING

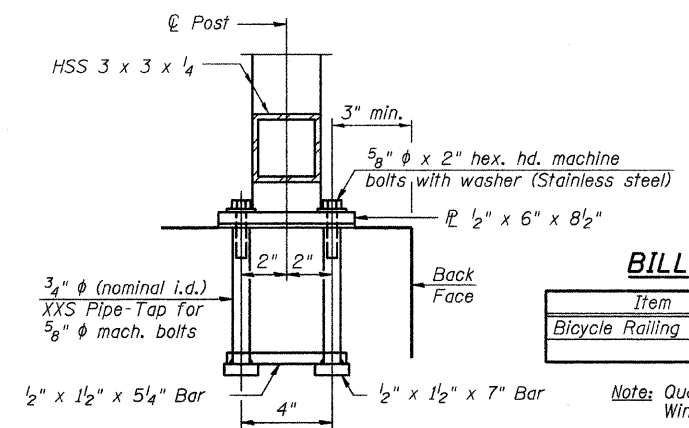
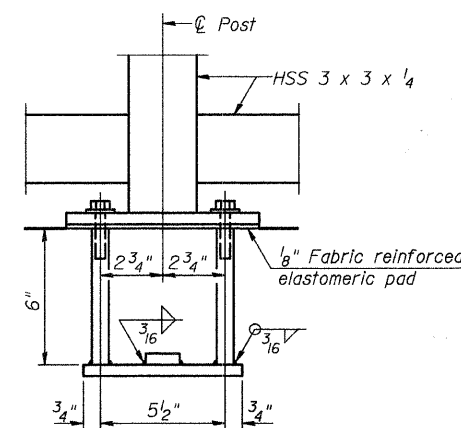
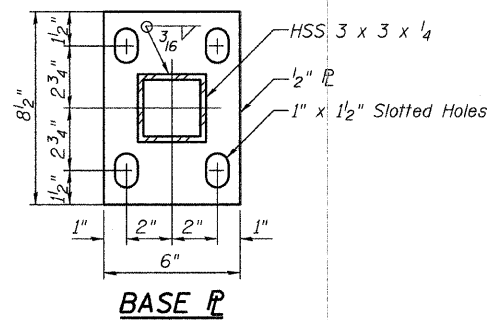
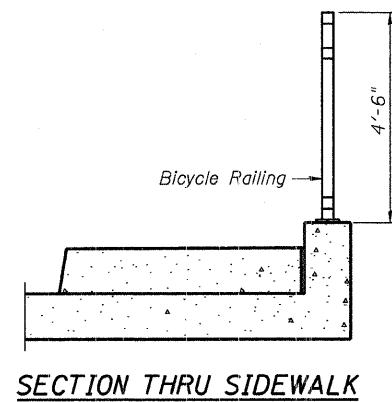


NOTES

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



SECTION A-A



ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" φ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	89

Note: Quantity shown includes Wingwall railing.

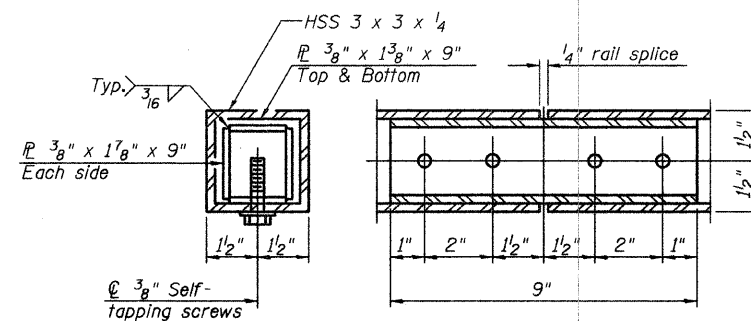
**BICYCLE RAILING
STRUCTURE NO. 096-6012**

DESIGNED - GLH
CHECKED - GLH
DRAWN - JN
CHECKED - GLH

R-29

10-1-08 (10'-0" Maximum Post Spacing)

RAIL SPLICE



SHEET NO. 4 4 SHEETS	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	NE 4th	06-00047-00-BR	WAYNE	8	8
	CONTRACT NO. 95617				
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

12/21/2009 RAAI #50809