

INDEX OF SHEETS

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- 2. SUMMARY OF QUANTITIES, ROADWAY DETAILS
- 3. PLAN & PROFILE
- 4. GENERAL PLAN & ELEVATION
- 5. DETAIL SHEET
- 6. CROSS SECTIONS
- 7. BORING LOG

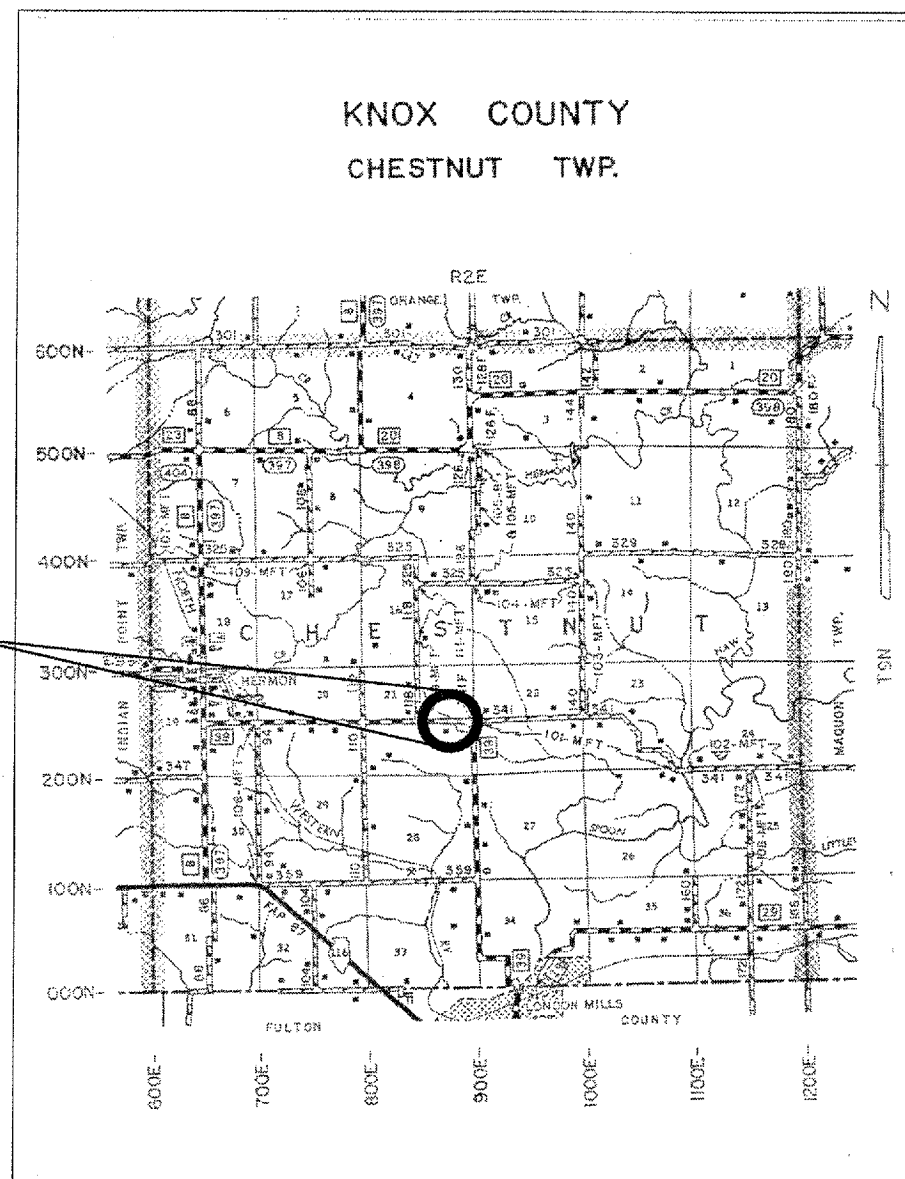
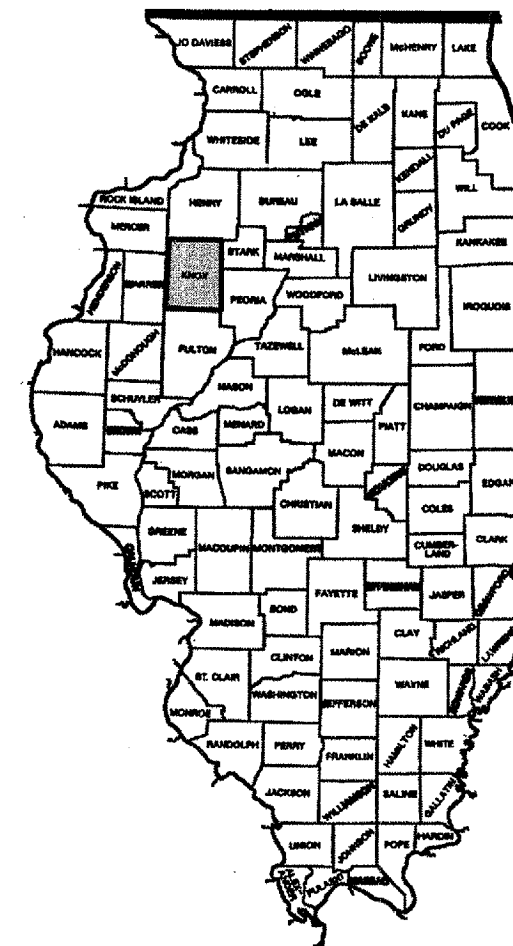
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCAL ROADS & STREETS
BRIDGE REPLACEMENT AND REHABILITATION PROGRAM

COUNTY	ROUTE	CONTRACT	SHEET
KNOX	CH-39	89375	1 OF 7

CH-39 OVER TRIBUTARY TO SPOON RIVER
SECTION 05-00142-00-BR
PROJECT#BR-0S-095(122)
C-94-091-05

STANDARDS IN PLANS

- STD.000001-04 Standard Symbols, Abbreviations, and Patterns
- STD.280001-02 Temporary Erosion Control Systems
- STD.701006-02 Off Road Operations, ect
- STD.701011-01 Off Road Moving Operations, ect
- STD.701301-02 Lane Closure, 2L 2W, Short time Operations
- STD.702001-06 Traffic Control Devices
- BLR.21-6 Typical Applications of Traffic Control Devices
- STD.515001-02 Name Plate for Bridges



END CONSTRUCTION STA. 5+57
CONSTRUCT PROPOSED R.C.B.C.
CENTERLINE STA. 5+13
PROPOSED STRUCTURE #048-3343
BEGIN CONSTRUCTION STA. 4+70

SCALES:
PLAN: 1"=50'
PROFILE HOR.: 1"=50'
PROFILE VERT.: 1"=10'
CROSS SECTIONS VERT.: 1"=N/A
CROSS SECTIONS HOR.: 1"=N/A

Cat# 033082-00

DESIGN INFORMATION

NET LENGTH OF SECTION: 87.00' (0.016mi)
ADT= 275
FUNCTIONAL CLASSIFICATION: LOCAL ROAD
DESIGN SPEED: 40 MPH
DESIGN POLICY: RURAL
VARIANCES GRANTED: NONE
COMMITMENTS: NONE

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

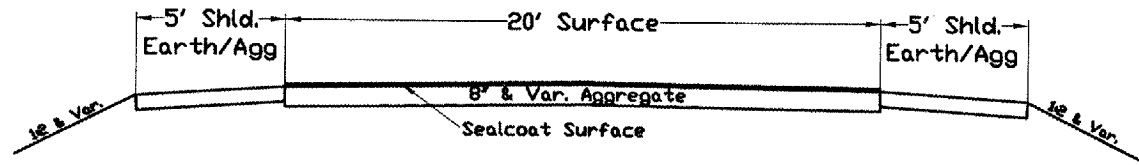
DUANE J. RATERMANN
 IL. PROF. ENG. #062-051696
 EXPIRES 11/30/07
Duane J. Ratermann 4/17/06

APPROVED *April 17* 2006
Duane J. Ratermann
 County Engineer

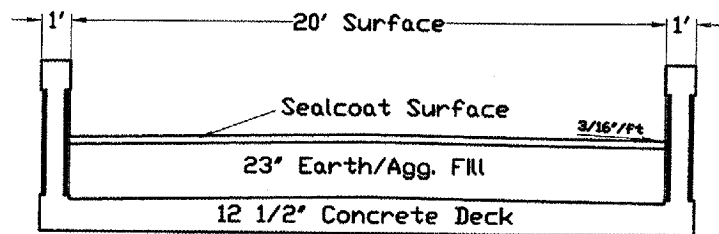
PASSED *APRIL 19* 2006
Libert Laballe
 District Four Engineer of Local Roads & Streets

Releasing For Bid Based On Limited Review
APR 19 2006
Joseph E. Owen
 DEPUTY DIRECTOR OF HIGHWAYS, REGION THREE ENGINEER
 STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

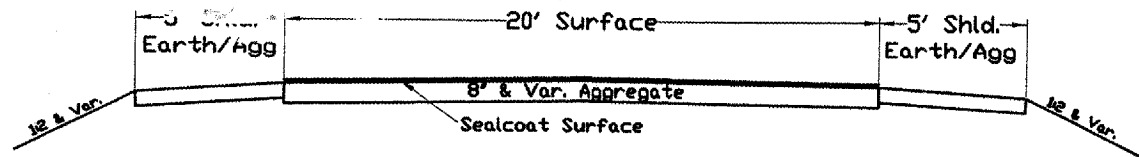
EXISTING CROSS-SECTION
 STA.4+70 to STA.4+94.3
 STA.5+32.5 to STA.5+57.0



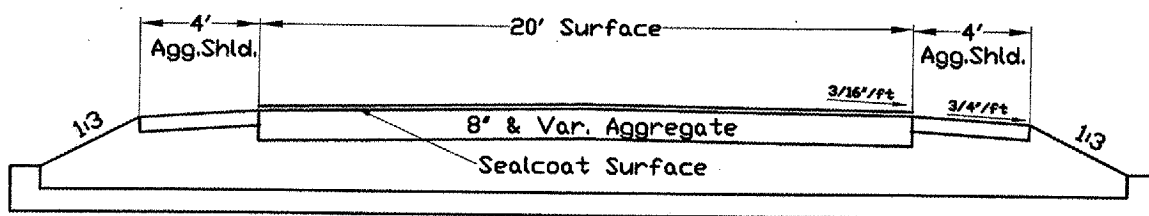
EXISTING CROSS-SECTION
 STA.4+94.3 to STA.5+32.5



PROPOSED CROSS-SECTION
 STA.4+70 to STA.5+00.3
 STA.5+26.5 to STA.5+57.0



PROPOSED CROSS-SECTION
 STA.5+00.3 to STA.5+26.5



COUNTY	ROUTE	CONTRACT	SHEET
KNOX	CH-39	89375	2 of 7

SEC. 05-00142-00-BR
 PROJECT# BR-0S-095(122)

SUMMARY OF QUANTITIES
 CONSTRUCTION TYPE CODE: X028-2A

QUANT.	UNIT	ITEM	CODE NUMBER
1	EACH	REMOVAL OF EXISTING STRUCT	50100200
112.8	CU.YD.	CONCRETE BOX CULVERTS	54003000
24,370	POUNDS	REINFORCEMENT BARS	50800105
1	EACH	NAME PLATES	51500100
40	TON	STONE DUMP RIPRAP	XX000295
100	TON	AGG SURF CSE B	35101400
1	L.SUM	MOBILIZATION	67100100
330	FOOT	PERIMETER EROSION BARRIER	28000400

COUNTY	ROUTE	CONTRACT	SHEET
KNOX	CH-39	89375	3 OF 7

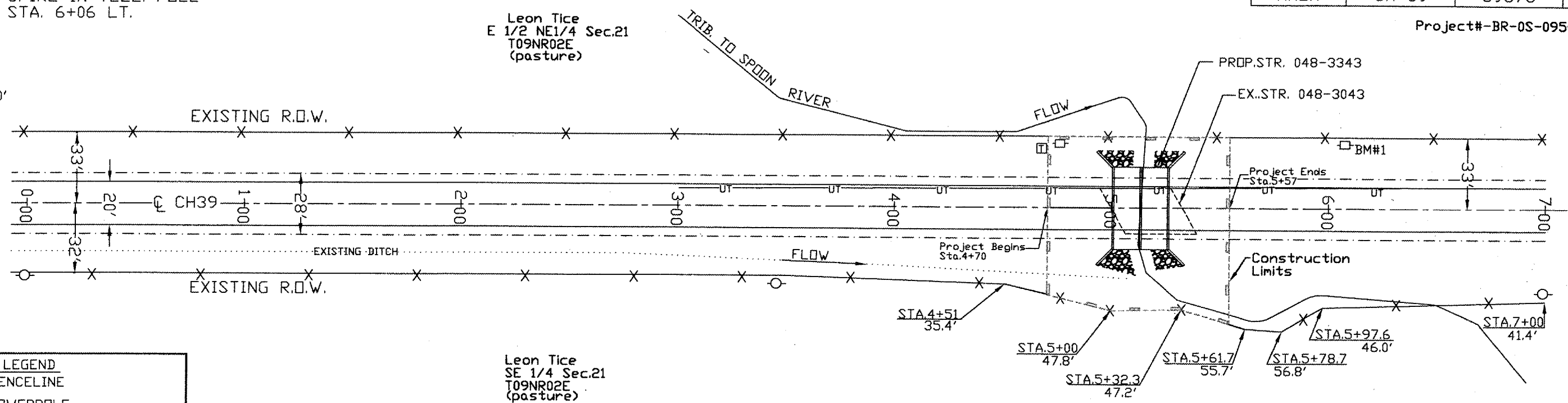
Project#-BR-0S-095(122)

BM#1- ELEV. 100.0'
SPIKE IN TELE. POLE
STA. 6+06 LT.

1"=50'

Leon Tice
E 1/2 NE1/4 Sec.21
T09NR02E
(pasture)

Leon Tice
SE 1/4 Sec.21
T09NR02E
(pasture)



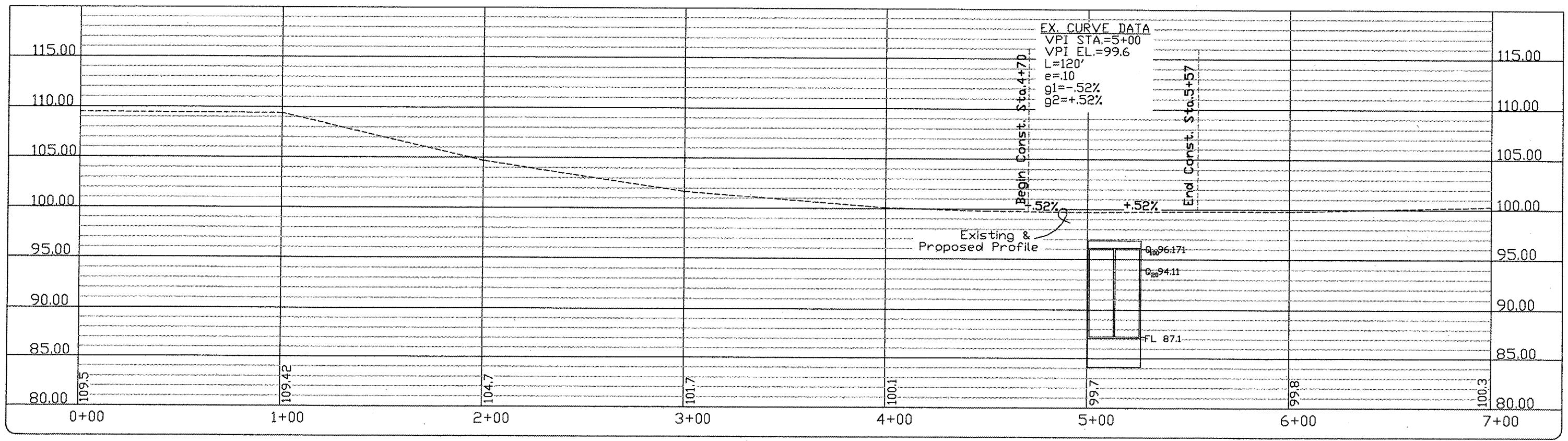
LEGEND

- X FENCELINE
- POWERPOLE
- TELEPHONE PEDISTAL
- TELEPHONE POLE
- UT- UNDERGROUND TELEPHONE
- ▬ EROSION CONTROL BARRIER

UTILITIES

AMERINIP 1-800-755-5000
FRONTIER 1-800-921-8101

*SEEDING/APPROACHES DONE BY KNOX COUNTY
**16L.F OF 24"dia. c.s.p to be installed in south ditch from Sta.4+78 to Sta.4.94 by Knox County



SCALES: 1"=10' VERT.
1"=50' HOR.

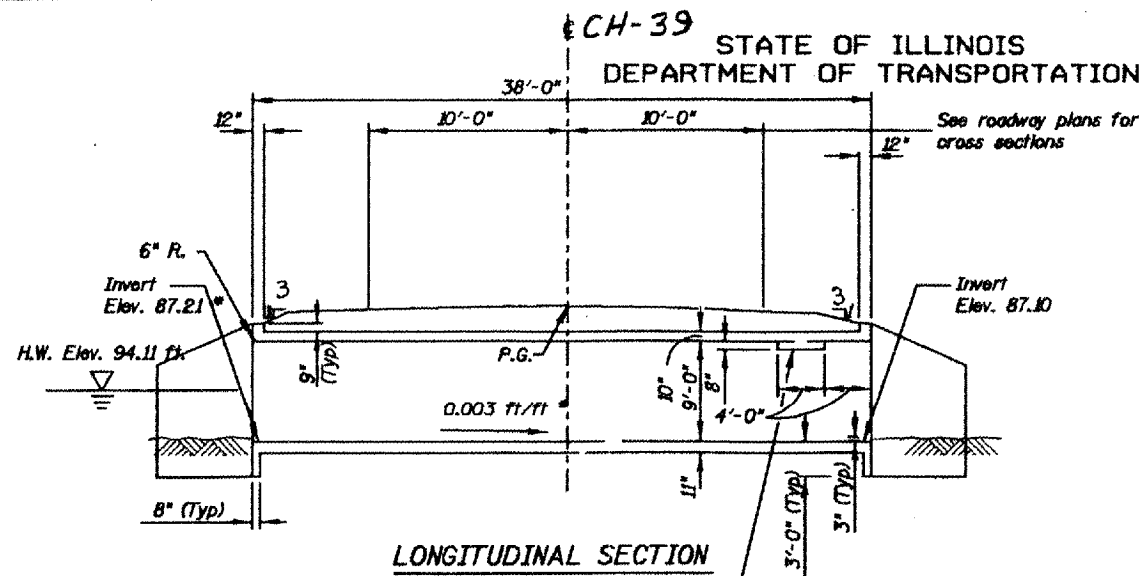
BENCHMARK

B.M. - Spike in PP, Station 6+06 Lt. Elevation 100.00 ft

EXISTING STRUCTURE

A twin 12' X 9' reinforced concrete box culvert, with headwalls and wingwalls to be removed.

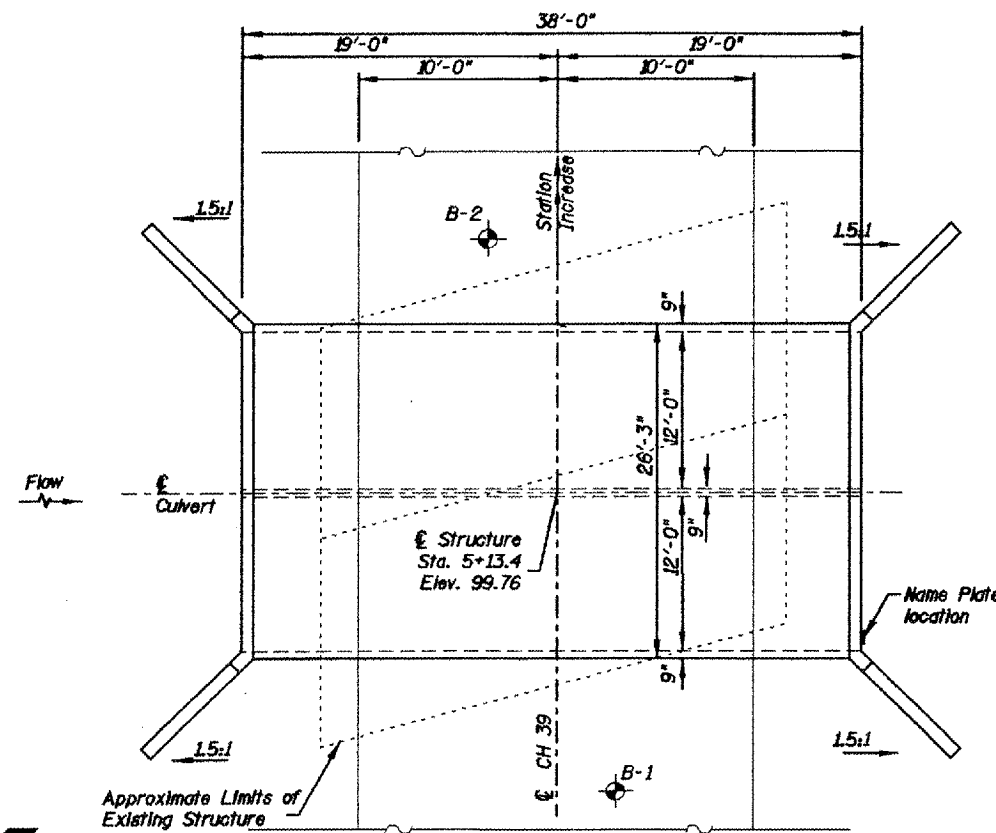
No salvage



LONGITUDINAL SECTION

* Field verify

1" Notch each side of interior wall for Phoebe Bird nesting site.



PLAN

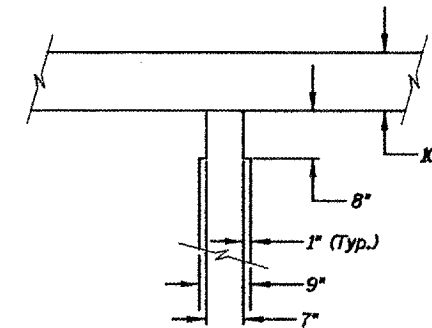
WATERWAY INFORMATION

Drainage Area = 3.70 sq. mi. Low Grade Elev. 96.1 ft @ Sta. 5+13.4									
Flood	Freq. Yr.	Q of s	Opening ft ²		Nat. H.W.E. ft	Head - ft		Headwater Elev. - ft	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20		166	168					94.11
Base									
Overtopping									
Max. Calc.									

TRIBUTARY OF SPOON RIVER
BUILT 2005 BY
KNOX COUNTY
SEC. 05-00142-00-BR
STATION 5+13.4
STR. NO.048-3343 LOADING HS20

NAME PLATE

See Std. 515001



PHOEBE NESTING SITE DETAIL

(At downstream end only)

Note: Notch formed by rough-finished board attached to and removed with formwork.

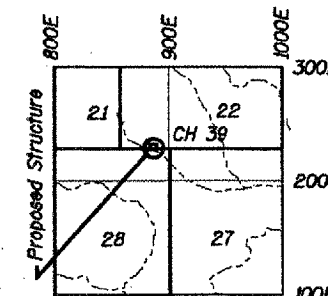
DESIGN SPECIFICATIONS

AASHTO SEVENTEENTH EDITION

LOADING HS 20-44

DESIGN STRESSES

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



LOCATION SKETCH

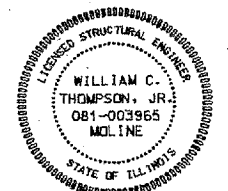
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures	Each	1.0
Concrete Box Culverts	cu.yd.	112.8
Reinforcement Bars	pounds	24,370
Name Plates	Each	1.0
Stone Dumped Riprap	Ton	40.0
Aggregate Surface Course B	Ton	100.0
Mobilization	L.Sum	1.0
Perimeter Erosion Barrier	Foot	330.0

GENERAL NOTES:

- 1.) A distance of half the length of the wingwall but not less than 6'-6" of barrel shall be poured monolithically with the reinforced concrete wing walls.
- 2.) Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.
- 3.) Exposed edges shall have standard 3/4" chamfer.
- 4.) The Contractor shall excavate behind the existing abutment before removing the Superstructure.

I certify that to the best of knowledge, information and belief, this bridge/box 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.



Signed William Thompson 11/20/06
Date 3/2/2007
L. License No. 081-003965 Expires

GENERAL PLAN
CH39 OVER
TRIBUTARY OF THE SPOON RIVER
SEC. 05-00142-00-BR
KNOX COUNTY
STATION 5+13.4 STRUCTURE NO. 048-3343



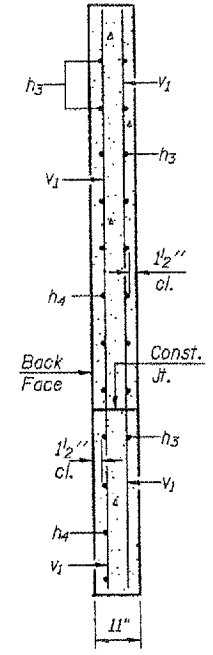
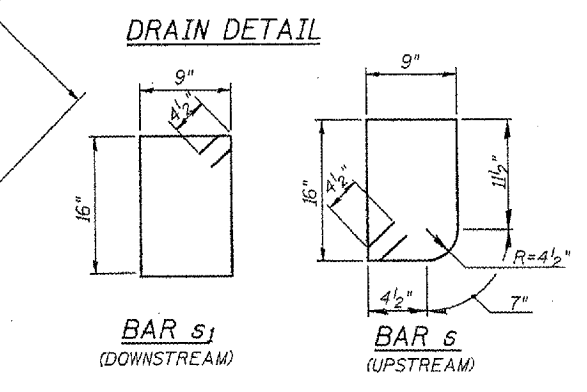
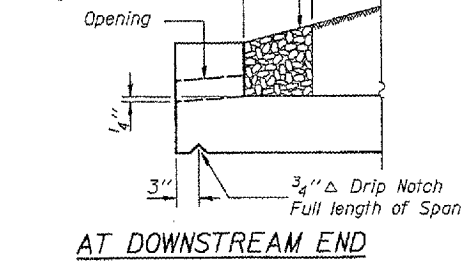
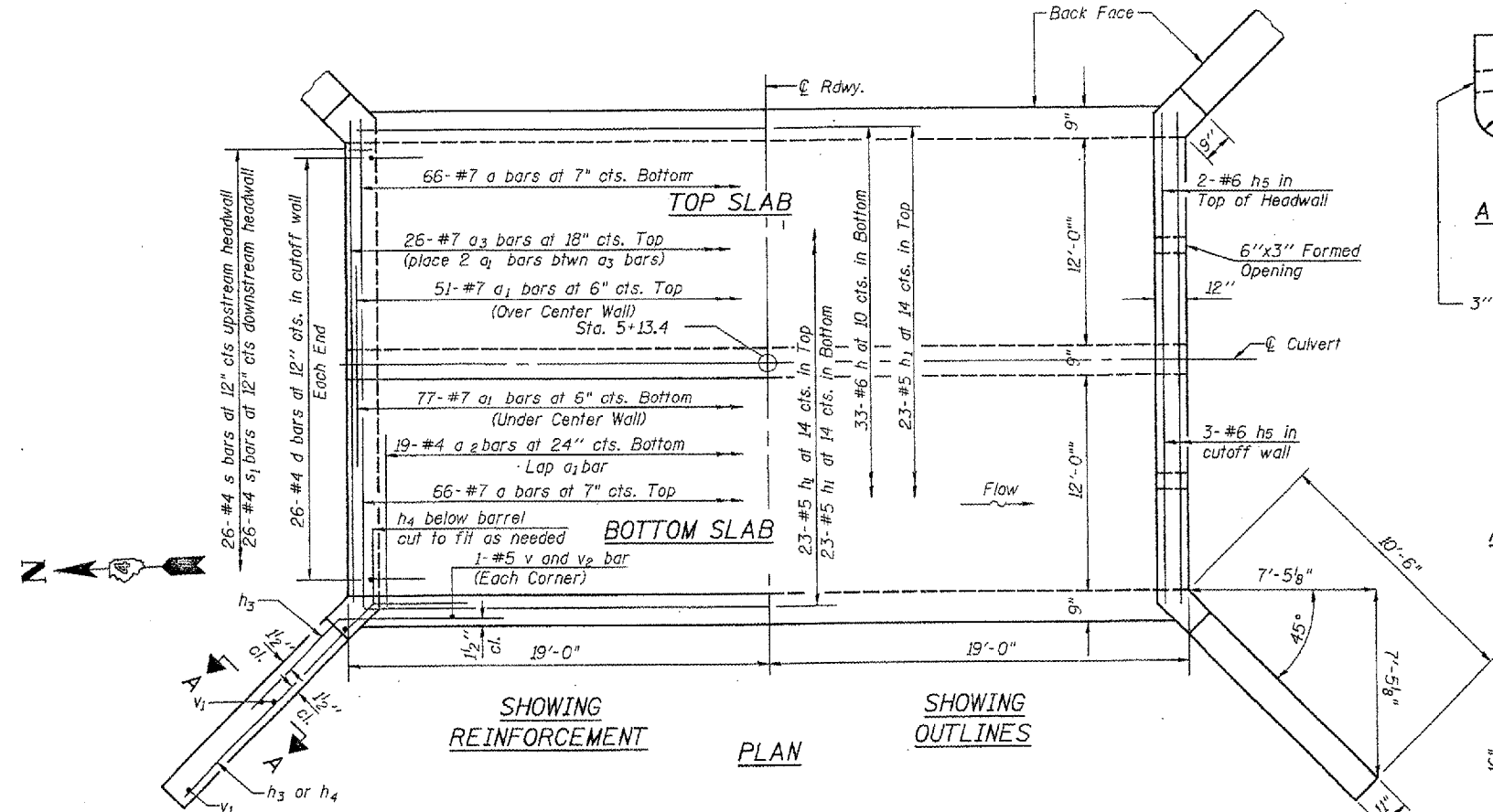
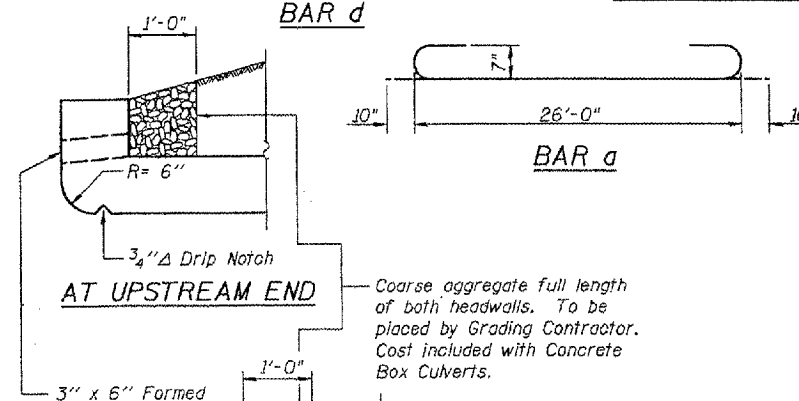
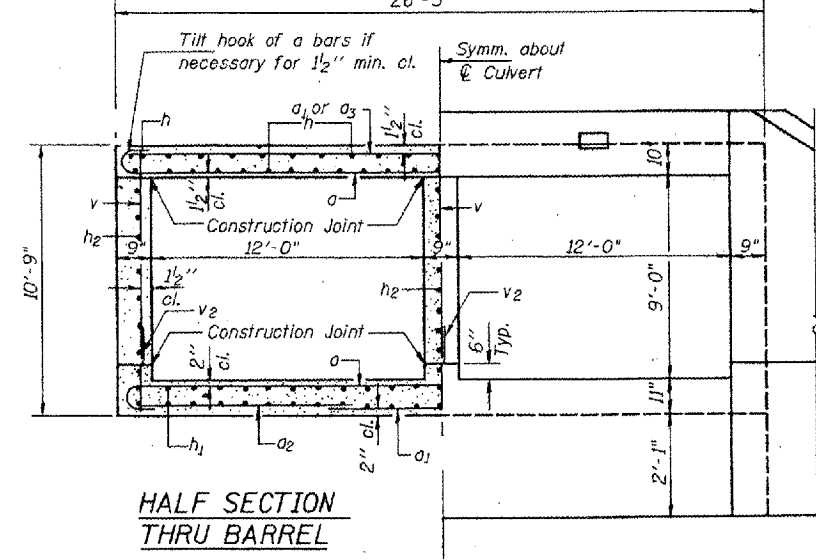
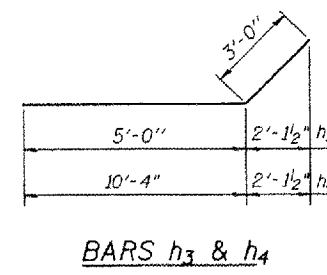
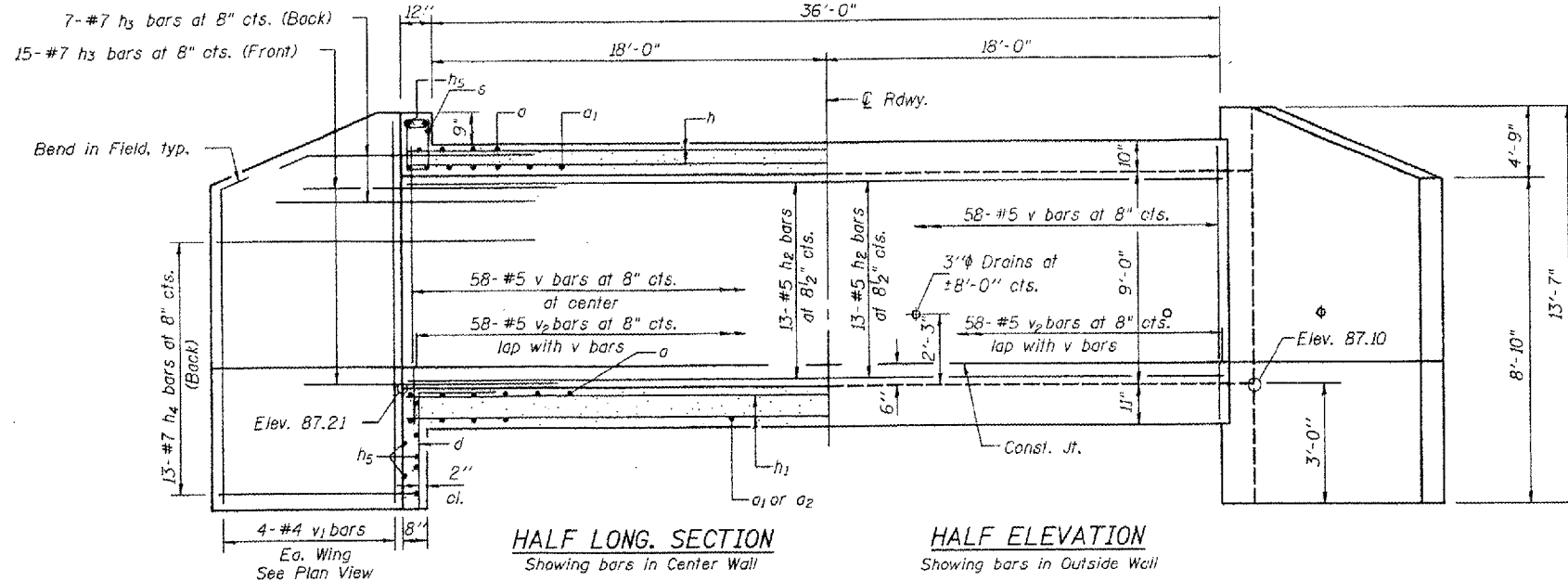
DESIGNED	D. FENDER
CHECKED	W. THOMPSON
DRAWN	D. FENDER
CHECKED	W. THOMPSON

DATE: 1-13-06

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILES	POST
CH 39		KNOX	7.5	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

* 05-00142-00-BR BR-05-095(122)



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	132	#7	27'-8"	C
a ₁	128	#7	12'-0"	—
a ₂	38	#4	8'-10"	—
a ₃	26	#7	26'-0"	—
d	52	#4	4'-6"	—
h	33	#6	37'-9"	—
h ₁	69	#5	37'-9"	—
h ₂	39	#5	37'-9"	—
h ₃	88	#7	8'-0"	—
h ₄	52	#7	13'-4"	—
h ₅	10	#6	25'-8"	—
s	26	#4	4'-9"	C
s ₁	26	#4	4'-11"	C
v	178	#5	9'-2"	—
v ₁	16	#5	13'-3"	—
v ₂	178	#5	2'-11"	—
Concrete Box Culverts			Cu. Yd.	112.8
Reinforcement Bars			Pound	24,370

BOX CULVERT DETAILS
CH39 OVER
TRIBUTARY OF THE SPOON RIVER
SEC. 05-00142-00-BR
KNOX COUNTY
STATION 5+13.4
STRUCTURE NO. 048-3343

SHIVE HATTERY

DESIGNED	D. FENDER
CHECKED	W. THOMPSON
DRAWN	D. FENDER
CHECKED	W. THOMPSON

Min. Bar Laps

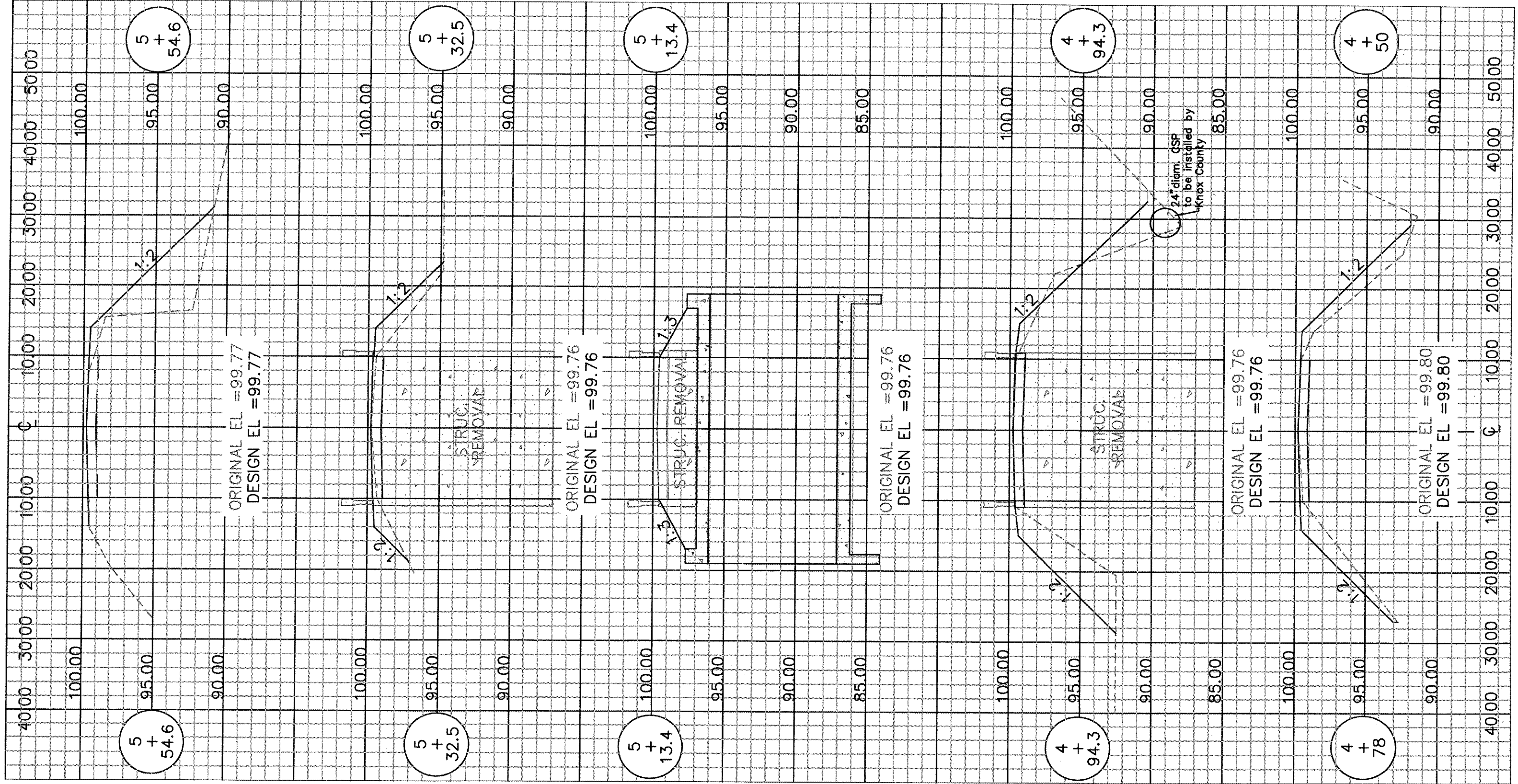
#4	1'-4"
#5	1'-8"
#6	2'-0"
#7	2'-9"

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.

COUNTY	ROUTE	CONTRACT	SHEET
KNOX	CH-39	89375	6 OF 7

Project#-BR-05-095(122)

SEC. 05-00142-00-BR



WHITNEY & ASSOCIATES
INCORPORATED
2408 West McDermott Avenue
PEORIA, ILLINOIS 61604

BORING LOG
(CONTINUATION)
PROJECT Chestnut Township Bridge #05-00142-00-BR
LOCATION Knox County, Illinois

BORING NO. B-01
DATE 2-08-05
W.A.A. FILE NO. 4109
SHEET 1 OF 6

PROJECT CHESTNUT TOWNSHIP BRIDGE #05-00142-00-BR
LOCATION Knox County, Illinois
BORING LOCATION Station 9+82.1 5' Right of Centerline
DRILLED BY Fern Hollon-Slee Ruder
WEATHER CONDITIONS Partly Cloudy & Mild
SOIL CLASSIFICATION SYSTEM U.S.B.C.
SEEPAGE WATER ENCOUNTERED AT ELEVATION (-) 100.3
GROUND SURFACE ELEVATION 100.3
GROUND WATER ELEVATION AT COMPLETION
BORING DISCONTINUED AT ELEVATION 39.3

DEPTH IN FEET	DEPTH SAMPLE IN FEET	N	Qp	Qu	Du	Mc
04	1.5'	2	1.3	1.0	94	25
SS	3(15)	2	1.2	0.9	92	26
SS	3(15)	2	1.3	1.2	94	25
SS	8(17)	4	0.8	0.7	90	29
SS	3(15)	2	1.1	0.9	90	29
SS	2(3)	2	1.1	1.1	90	29
SS	2(3)	2	1.8	1.6	87	34
SS	3(15)	2	1.6	1.4	85	36
SS	3(15)	2	1.5	1.3	83	36
SS	4(13)	2	1.5	1.3	84	36
SS	2(3)	2	1.5	1.3	84	36

DESCRIPTION
OIL AND CHIPS
Brown, Medium-Grained Sand and Gravel
Medium to Stiff, Brown and Dark Brown Silty Clay (Fill)
Medium, Brown and Dark Brown Silty Clay (Fill)
Medium, Gray and Dark Gray Silty Clay
Stiff, Gray Clay

N - BLOWS DELIVERED PER FOOT BY A 140 LB. HAMMER
Qp - CALIBRATED PENETROMETER READING - T.S.F.
Qu - UNCONFINED COMPRESSIVE STRENGTH - T.S.F.
Du - NATURAL DRY DENSITY - P.C.F.
Mc - NATURAL MOISTURE CONTENT - %
ST - SHELBY TUBE SAMPLE

WHITNEY & ASSOCIATES
PEORIA, ILLINOIS

WHITNEY & ASSOCIATES
INCORPORATED
2408 West McDermott Avenue
PEORIA, ILLINOIS 61604

BORING LOG
(CONTINUATION)
PROJECT Chestnut Township Bridge #05-00142-00-BR
LOCATION Knox County, Illinois

BORING NO. B-01
DATE 2-08-05
W.A.A. FILE NO. 4109
SHEET 2 OF 6

PROJECT CHESTNUT TOWNSHIP BRIDGE #05-00142-00-BR
LOCATION Knox County, Illinois
BORING LOCATION Station 10+21.5' Left of Centerline
DRILLED BY Fern Hollon-Slee Ruder
WEATHER CONDITIONS Partly Cloudy & Mild
SOIL CLASSIFICATION SYSTEM U.S.B.C.
SEEPAGE WATER ENCOUNTERED AT ELEVATION (-) 92.2
GROUND SURFACE ELEVATION 92.2
GROUND WATER ELEVATION AT COMPLETION
BORING DISCONTINUED AT ELEVATION 38.9

DEPTH IN FEET	DEPTH SAMPLE IN FEET	N	Qp	Qu	Du	Mc
30	30	2	1.2	1.1	82	38
SS	3(15)	2	1.2	1.0	89	33
SS	11	7	1.5	1.2	90	32
SS	15(18)	10	3.1	2.9	102	20
SS	13(17)	19	-	-	-	16
SS	23(32)	29	-	-	-	12
SS	101(4)	101(4)	-	-	-	12
SS	105(6)	105(6)	-	-	-	12

DESCRIPTION
See Sheet 1 of 6
Stiff, Gray Silty Clay
Very Stiff, Gray Silty Clay
Very Dense, Gray, Medium-Grained Sand
Very Dense, Gray, Weathered Sandstone

N - BLOWS DELIVERED PER FOOT BY A 140 LB. HAMMER
Qp - CALIBRATED PENETROMETER READING - T.S.F.
Qu - UNCONFINED COMPRESSIVE STRENGTH - T.S.F.
Du - NATURAL DRY DENSITY - P.C.F.
Mc - NATURAL MOISTURE CONTENT - %
ST - SHELBY TUBE SAMPLE

WHITNEY & ASSOCIATES
PEORIA, ILLINOIS

WHITNEY & ASSOCIATES
INCORPORATED
2408 West McDermott Avenue
PEORIA, ILLINOIS 61604

BORING LOG
(CONTINUATION)
PROJECT Chestnut Township Bridge #05-00142-00-BR
LOCATION Knox County, Illinois

BORING NO. B-01
DATE 2-08-05
W.A.A. FILE NO. 4109
SHEET 3 OF 6

PROJECT CHESTNUT TOWNSHIP BRIDGE #05-00142-00-BR
LOCATION Knox County, Illinois
BORING LOCATION Station 10+94.5' Left of Centerline
DRILLED BY Fern Hollon-Slee Ruder
WEATHER CONDITIONS Partly Cloudy & Mild
SOIL CLASSIFICATION SYSTEM U.S.B.C.
SEEPAGE WATER ENCOUNTERED AT ELEVATION (-) 92.2
GROUND SURFACE ELEVATION 92.2
GROUND WATER ELEVATION AT COMPLETION
BORING DISCONTINUED AT ELEVATION 38.9

DEPTH IN FEET	DEPTH SAMPLE IN FEET	N	Qp	Qu	Du	Mc
60	117(3)	117(3)	-	-	-	11
64	-	-	-	-	-	-
68	-	-	-	-	-	-
72	-	-	-	-	-	-
76	-	-	-	-	-	-
80	-	-	-	-	-	-
84	-	-	-	-	-	-

DESCRIPTION
See Sheet 2 of 6
EXPLORATORY BORING DISCONTINUED

NOTE: Benchmark (100.0') - Spike in Power Pole at Station 10+94; Left of Centerline

N - BLOWS DELIVERED PER FOOT BY A 140 LB. HAMMER
Qp - CALIBRATED PENETROMETER READING - T.S.F.
Qu - UNCONFINED COMPRESSIVE STRENGTH - T.S.F.
Du - NATURAL DRY DENSITY - P.C.F.
Mc - NATURAL MOISTURE CONTENT - %
ST - SHELBY TUBE SAMPLE

WHITNEY & ASSOCIATES
PEORIA, ILLINOIS

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INCORPORATED
2408 West McDermott Avenue
PEORIA, ILLINOIS 61604

BORING LOG
(CONTINUATION)
PROJECT Chestnut Township Bridge #05-00142-00-BR
LOCATION Knox County, Illinois

BORING NO. B-02
DATE 2-08-05
W.A.A. FILE NO. 4109
SHEET 4 OF 6

PROJECT CHESTNUT TOWNSHIP BRIDGE #05-00142-00-BR
LOCATION Knox County, Illinois
BORING LOCATION Station 10+21.5' Left of Centerline
DRILLED BY Fern Hollon-Slee Ruder
WEATHER CONDITIONS Partly Cloudy & Mild
SOIL CLASSIFICATION SYSTEM U.S.B.C.
SEEPAGE WATER ENCOUNTERED AT ELEVATION (-) 92.2
GROUND SURFACE ELEVATION 92.2
GROUND WATER ELEVATION AT COMPLETION
BORING DISCONTINUED AT ELEVATION 38.9

DEPTH IN FEET	DEPTH SAMPLE IN FEET	N	Qp	Qu	Du	Mc
1.5'	1.5'	1	0.6	0.5	90	28
SS	1(3)	1	0.7	0.5	89	30
SS	2(3)	1	0.8	0.8	94	24
SS	2(4)	1	0.8	0.7	91	27
SS	2(4)	2	0.8	0.6	90	29
SS	4(8)	3	1.6	1.3	96	22
SS	5(9)	3	1.3	1.1	96	23
SS	5(10)	2	1.6	1.3	98	22
SS	5(8)	4	3.5	3.2	100	20
SS	4(13)	5	4.2	3.9	103	17
SS	11(18)	11(18)	-	-	-	-

DESCRIPTION
OIL AND CHIPS
Brown, Medium-Grained Sand and Gravel
Medium, Brown and Dark Brown Silty Clay (Fill)
Medium, Gray-Brown and Dark Gray Silty Clay (Fill)
Stiff, Dark Gray Silty Clay with Some Course-Grained Sand
Stiff, Dark Gray and Gray Silty Clay
Very Stiff, Dark Gray and Gray Silty Clay

N - BLOWS DELIVERED PER FOOT BY A 140 LB. HAMMER
Qp - CALIBRATED PENETROMETER READING - T.S.F.
Qu - UNCONFINED COMPRESSIVE STRENGTH - T.S.F.
Du - NATURAL DRY DENSITY - P.C.F.
Mc - NATURAL MOISTURE CONTENT - %
ST - SHELBY TUBE SAMPLE

WHITNEY & ASSOCIATES
PEORIA, ILLINOIS

WHITNEY & ASSOCIATES
INCORPORATED
2408 West McDermott Avenue
PEORIA, ILLINOIS 61604

BORING LOG
(CONTINUATION)
PROJECT Chestnut Township Bridge #05-00142-00-BR
LOCATION Knox County, Illinois

BORING NO. B-02
DATE 2-08-05
W.A.A. FILE NO. 4109
SHEET 5 OF 6

PROJECT CHESTNUT TOWNSHIP BRIDGE #05-00142-00-BR
LOCATION Knox County, Illinois
BORING LOCATION Station 10+94.5' Left of Centerline
DRILLED BY Fern Hollon-Slee Ruder
WEATHER CONDITIONS Partly Cloudy & Mild
SOIL CLASSIFICATION SYSTEM U.S.B.C.
SEEPAGE WATER ENCOUNTERED AT ELEVATION (-) 92.2
GROUND SURFACE ELEVATION 92.2
GROUND WATER ELEVATION AT COMPLETION
BORING DISCONTINUED AT ELEVATION 38.9

DEPTH IN FEET	DEPTH SAMPLE IN FEET	N	Qp	Qu	Du	Mc
30	5	5	2.2	1.3	100	17
SS	9(13)	9	1.8	1.5	102	18
SS	8(13)	6	2.0	1.5	86	36
SS	12(16)	22	-	-	-	15
SS	47(61)	15	-	-	-	18
SS	27(33)	14	-	-	-	-
SS	47(65)	38	-	-	-	-
SS	97(4)	97(4)	-	-	-	-

DESCRIPTION
See Sheet 4 of 6
Stiff, Dark Gray and Gray Silty Clay
Stiff, Gray-Brown Silty Clay
Stiff, Dark Gray Clay
Very Dense, Gray-Brown, Fine- to Medium-Grained Sand and Fine-Grained Gravel with Considerable Silty Clay
Very Dense, Gray-Brown, Fine- to Medium-Grained Sand with Some Silty Clay
Very Dense, Gray-Brown, Fine-Grained Sand with Considerable Silty Clay
Very Dense, Gray Sandstone

N - BLOWS DELIVERED PER FOOT BY A 140 LB. HAMMER
Qp - CALIBRATED PENETROMETER READING - T.S.F.
Qu - UNCONFINED COMPRESSIVE STRENGTH - T.S.F.
Du - NATURAL DRY DENSITY - P.C.F.
Mc - NATURAL MOISTURE CONTENT - %
ST - SHELBY TUBE SAMPLE

WHITNEY & ASSOCIATES
PEORIA, ILLINOIS

WHITNEY & ASSOCIATES
INCORPORATED
2408 West McDermott Avenue
PEORIA, ILLINOIS 61604

BORING LOG
(CONTINUATION)
PROJECT Chestnut Township Bridge #05-00142-00-BR
LOCATION Knox County, Illinois

BORING NO. B-02
DATE 2-08-05
W.A.A. FILE NO. 4109
SHEET 6 OF 6

PROJECT CHESTNUT TOWNSHIP BRIDGE #05-00142-00-BR
LOCATION Knox County, Illinois
BORING LOCATION Station 10+94.5' Left of Centerline
DRILLED BY Fern Hollon-Slee Ruder
WEATHER CONDITIONS Partly Cloudy & Mild
SOIL CLASSIFICATION SYSTEM U.S.B.C.
SEEPAGE WATER ENCOUNTERED AT ELEVATION (-) 92.2
GROUND SURFACE ELEVATION 92.2
GROUND WATER ELEVATION AT COMPLETION
BORING DISCONTINUED AT ELEVATION 38.9

DEPTH IN FEET	DEPTH SAMPLE IN FEET	N	Qp	Qu	Du	Mc
60	SS	103(3)	-	-	-	-
64	-	-	-	-	-	-
68	-	-	-	-	-	-
72	-	-	-	-	-	-
76	-	-	-	-	-	-
80	-	-	-	-	-	-
84	-	-	-	-	-	-

DESCRIPTION
See Sheet 5 of 6
EXPLORATORY BORING DISCONTINUED

N - BLOWS DELIVERED PER FOOT BY A 140 LB. HAMMER
Qp - CALIBRATED PENETROMETER READING - T.S.F.
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