

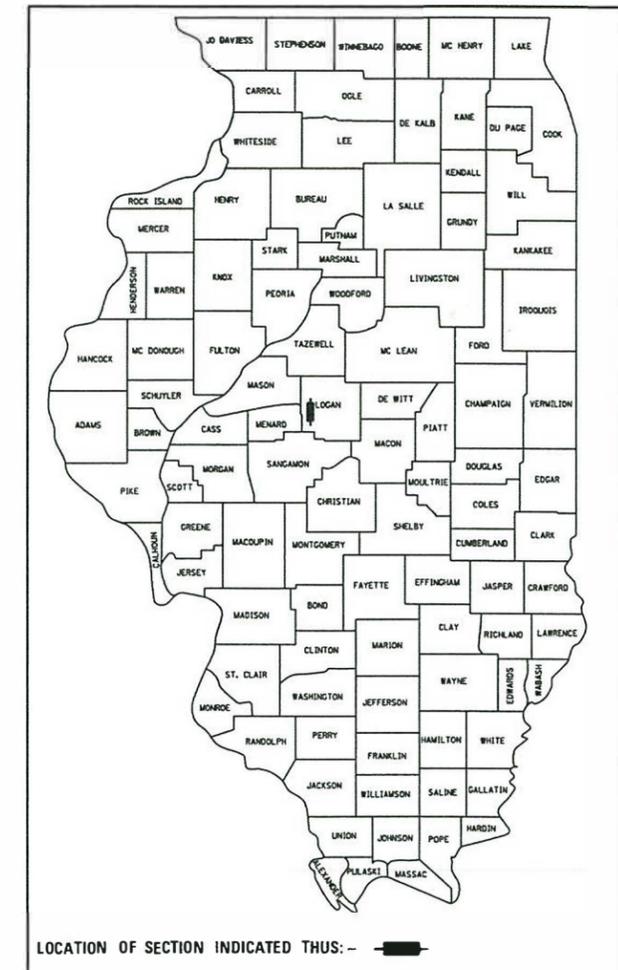
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM**

SECTION 15-00081-04-BR
LOGAN COUNTY
C.H. 22 (FAS 564)
WG04 (419)
C-96-210-17

ROUTE NO.	SECTION	SUBSECTION	SHEET NO.	TOTAL SHEETS
C.H. 22	#	LOGAN	B	1

#15-0008-04-BR

CONTRACT NO. 93708



LOCATION OF SECTION INDICATED THUS: - [black bar] -

CLASSIFICATION: MAJOR COLLECTOR
DESIGN VOLUME: 0 TO 400 ADT
CURRENT ADT: 375 (2017)
DESIGN SPEED: 40 M.P.H.

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NUMBER 1-800-892-0123

APPROVED	<i>[Signature]</i> 9/20/17
COUNTY ENGINEER	
PASSED	12-6 2017
DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS	
RELEASED FOR BID BASED ON LIMITED REVIEW	12-6 2017
REGION FOUR ENGINEER	
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

INDEX OF SHEETS

SHEET NO.	TITLE
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES, GENERAL NOTES & TYPICAL SECTIONS
3.	PLAN AND PROFILE SHEET
4-6.	CULVERT PLANS
7-8.	STATION CROSS SECTIONS

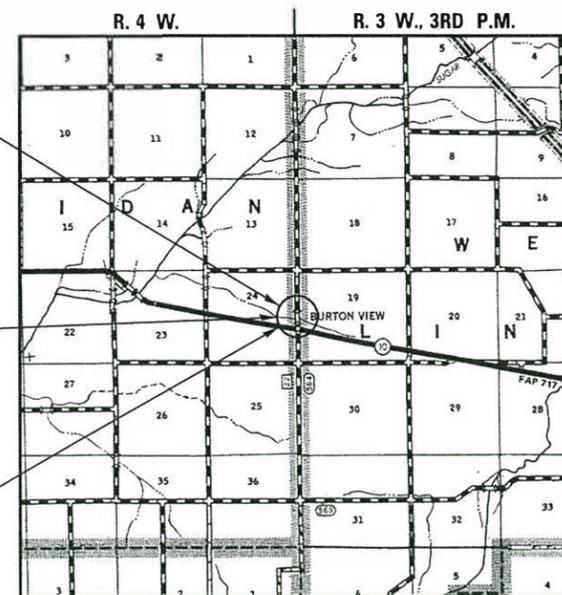
STANDARDS

280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
701901-07	TRAFFIC CONTROL DEVICES
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

STA. 9+98 - REINFORCED CONCRETE BOX CULVERT, 18' SPAN X 7' RISE
53'-1/2" LONG, 36' ROADWAY,
30° SKEW RIGHT FORWARD
EXISTING SN 054-3038
PROPOSED SN 054-3923

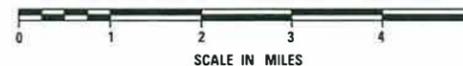
IMPROVEMENT BEGINS
STA. 8+70

IMPROVEMENT ENDS
STA. 11+00.00



LOCATION PLAN

GROSS LENGTH OF SECTION = 230.00 FEET = 0.044 MILES
NET LENGTH OF SECTION = 230.00 FEET = 0.044 MILES



SCALES

PLAN	0" = 50'	0" = 100'
PROFILE HORIZ.	0" = 50'	0" = 100'
PROFILE VERT.	0" = 5'	0" = 10'
CROSS SECTIONS	0" = 5'	0" = 10'

FEHR GRAHAM

ILLINOIS IOWA WISCONSIN

ILLINOIS PROFESSIONAL DESIGN FIRM NUMBER: 184003525



Gary J. Cartwright 9-15-17
ILLINOIS PROFESSIONAL NO. 43408
EXPIRES 11-30-17

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20400800	FURNISHED EXCAVATION	CU YD	49
20700220	POROUS GRANULAR EMBANKMENT	CU YD	156
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	11
28000400	PERIMETER EROSION BARRIER	FOOT	493
28100207	STONE RIPRAP, CLASS A4	TON	78
28200200	FILTER FABRIC	SO YD	71
40200100	AGGREGATE SURFACE COURSE, TYPE A	TON	242
44000100	PAVEMENT REMOVAL	SO YD	448
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50800105	REINFORCEMENT BARS	POUND	29330
51500100	NAME PLATES	EACH	1
54003000	CONCRETE BOX CULVERTS	CU YD	160.1
67100100	MOBILIZATION	L SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
X0322128	MEMBRANE WATERPROOFING FOR BURIED STRUCTURES	SO YD	142
Z0054517	ROCK FILL - FOUNDATION	TON	39
XX004633	FIELD TILE ADJUSTMENT	EACH	1

*SEE SPECIAL PROVISIONS

CONSTRUCTION CODE: 0010

GENERAL NOTES

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

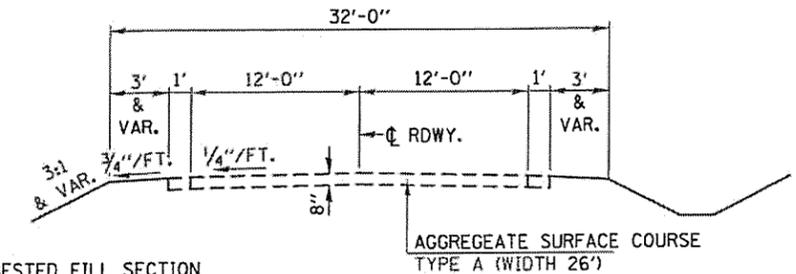
THE AREA TO BE SEEDDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY, AS DIRECTED BY THE ENGINEER.

AREA OF FINAL SEEDING = 0.1 ACRE
(FINAL SEEDING BY OTHERS, FOR INFORMATION ONLY)

BITUMINOUS SURFACE TREATMENT BY OTHERS.

**EROSION CONTROL
BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
TEMPORARY EROSION CONTROL SEEDING	POUND	11
PERIMETER EROSION BARRIER	FOOT	493

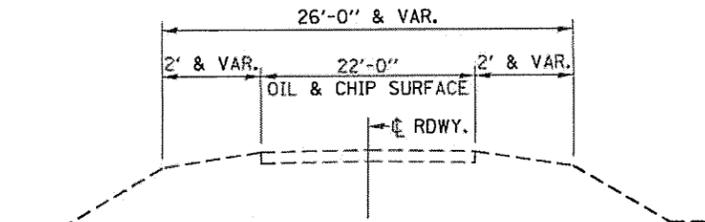


SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN BY
STATION CROSS SECTIONS

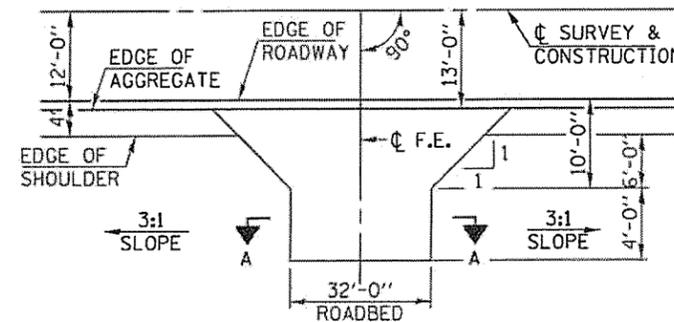
TYPICAL PROPOSED CROSS SECTION

STA. 9+20.00 TO STA. 10+50.00

TRANSITION FROM EXISTING ROADWAY TO PROPOSED ROADWAY
TO BE CONSTRUCTED FROM STA. 8+70 TO STA. 9+20 AND
FROM STA. 10+50 TO STA. 11+00

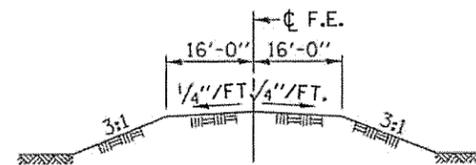


TYPICAL EXISTING CROSS SECTION



FIELD ENTRANCE DETAIL

F.E. RT. STA. 9+00



SECTION A-A

APPLICATION RATES USED IN QUANTITY CALCULATIONS

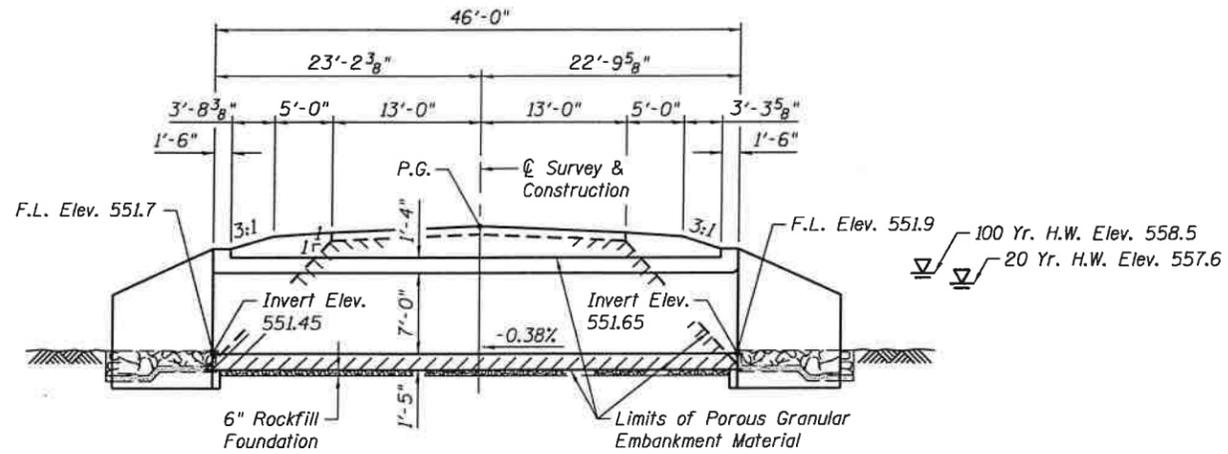
STONE RIPRAP 1.65 TON/CUYD
AGGREGATE SURFACE COURSE 2.05 TON/CUYD

FEHR GRAHAM

ENGINEERING & ENVIRONMENTAL

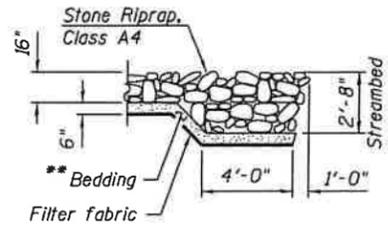
ILLINOIS
IOWA
WISCONSIN

FILE NAME = K161616-467-vb-na\soq.dgn	USER NAME = ccorner	DESIGNED - GJC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES, GENERAL NOTES AND TYPICAL CROSS SECTIONS	F.A.S. RTE. 564	SECTION 15-0001-04-ER	COUNTY LOGAN	TOTAL SHEETS 8	SHEET NO. 2		
Default	PLOT SCALE = 2.000000 ' / in.	DRAWN - CFC	REVISED -			SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT
FEHR GRAHAM PROJECT NUMBER: 16-467	PLOT DATE = 9/13/2017	CHECKED - MRL	REVISED -									CONTRACT NO. 93708
		DATE - 7-6-2017	REVISED -									



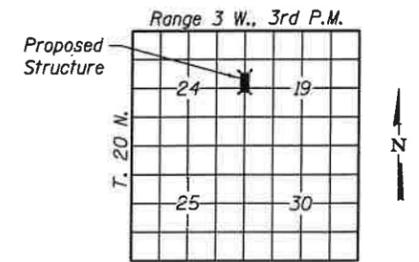
ELEVATION

Note: See Roadway Plans for Embankment and Pavement Details (Looking North - Dim. at Rt. L's to C.Rdwy.)



SECTION A-A

**Excavation and aggregate bedding will not be paid for as separate items and shall be considered as included in Stone Riprap.



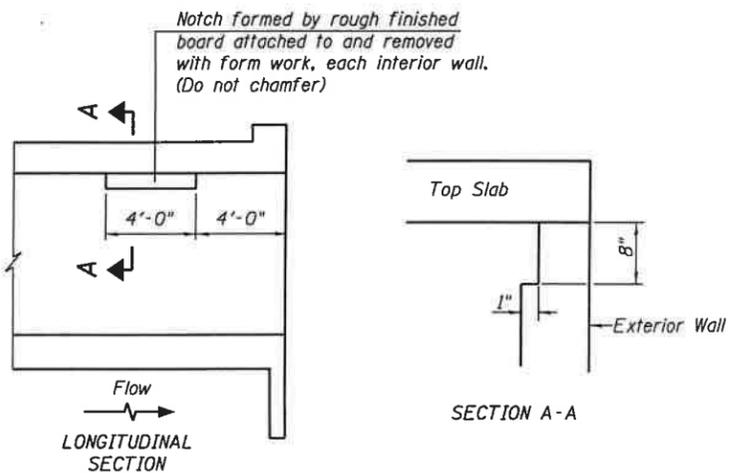
LOCATION SKETCH

TRIBUTARY TO SUGAR CREEK
BUILT 20__ BY
LOGAN COUNTY
SEC 15-00081-04-BR
STR. NO. 054-3923
LOADING HL-93

NAME PLATE
See Std. 515001

GENERAL NOTES

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
A precast concrete culvert alternate will not be allowed.
All construction joints shall be bonded.
Exposed portions of wingwalls and headwalls shall receive a rubbed finish in accordance with Article 503.15(b) of the Standard Specifications. Cost shall be included in the cost for Concrete Box Culverts.



PHOEBE NESTING SITE DETAIL
(Downstream End Only)

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2016 Interims

LOADING HL-93

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

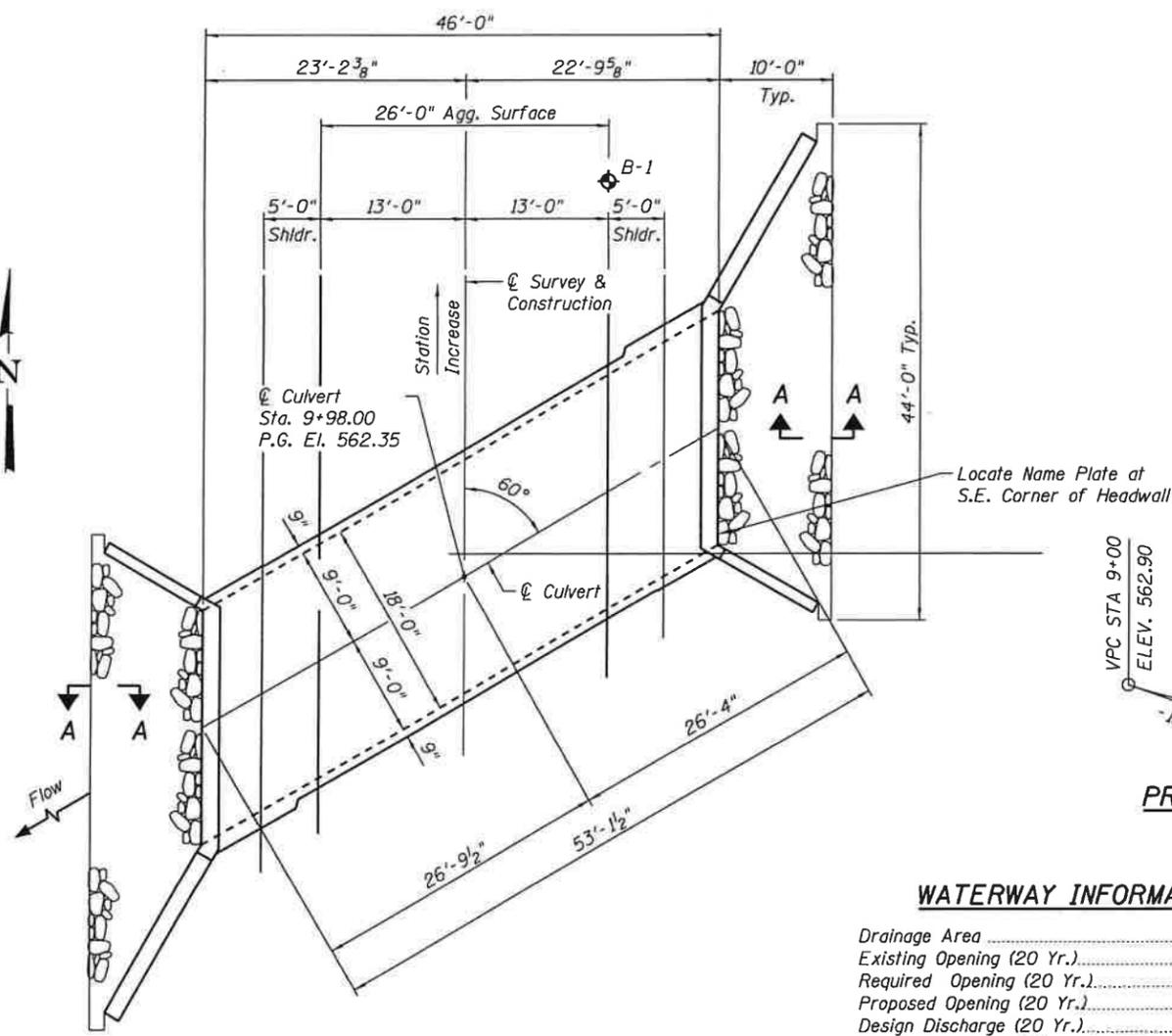
DESIGN STRESSES

FIELD UNITS

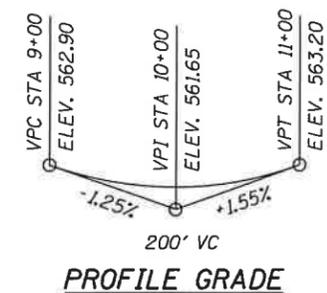
f'c = 3,500 psi (Concrete)
fy = 60,000 psi (Reinforcement)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Stone Riprap, Class A4	Ton	78
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	29330
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	160.1
Filter Fabric	Sq. Yd.	71
Membrane Waterproofing for Buried Structures	Sq. Yd.	142
Porous Granular Embankment	Cu. Yd.	156
Rock Fill - Foundation	Ton	39



PLAN



PROFILE GRADE

WATERWAY INFORMATION

Drainage Area	1.37 Sq. Mi.
Existing Opening (20 Yr.)	128 Sq. Ft.
Required Opening (20 Yr.)	106 Sq. Ft.
Proposed Opening (20 Yr.)	106 Sq. Ft.
Design Discharge (20 Yr.)	424 C.F.S.
Created Head (20 Yr.)	0.0 Ft.
100 Year Discharge	638 C.F.S.
100 Yr. Created Head	0.2 Ft.

"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the specified 'AASHTO LRFD Bridge Design Specifications'."



Mary Anne Bledsoe
ILLINOIS STRUCTURAL NO. 4859
EXPIRES 11/30/18
DATE: 09/15/17

GENERAL PLAN & ELEVATION

C.H. 22
SECTION 15-00081-04-BR
LOGAN COUNTY
STATION 9+98.00
S.N. 054-3923

FILE NAME: \\VPS4\3923-93788-001-gem.dgn



USER NAME = cconnor	DESIGNED - ARK	REVISED -
PLOT SCALE = 1/8" = 1'-0"	CHECKED - MCB	REVISED -
PLOT DATE = 9/13/2017	DRAWN - CFC	REVISED -
	CHECKED - ARK MCB	REVISED -

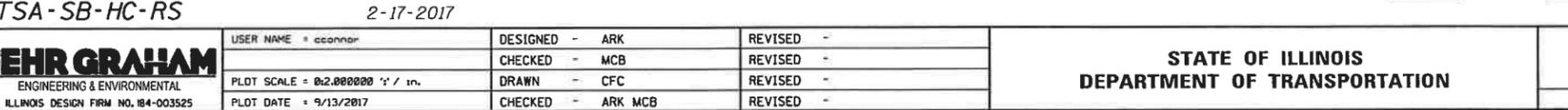
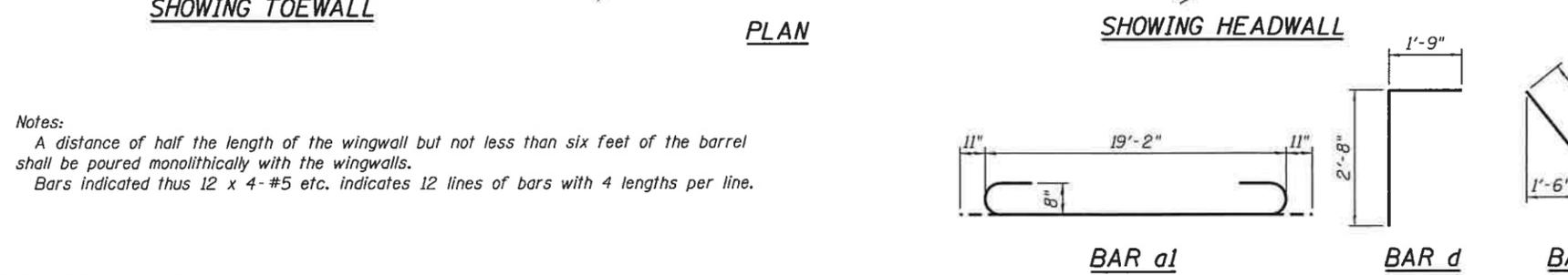
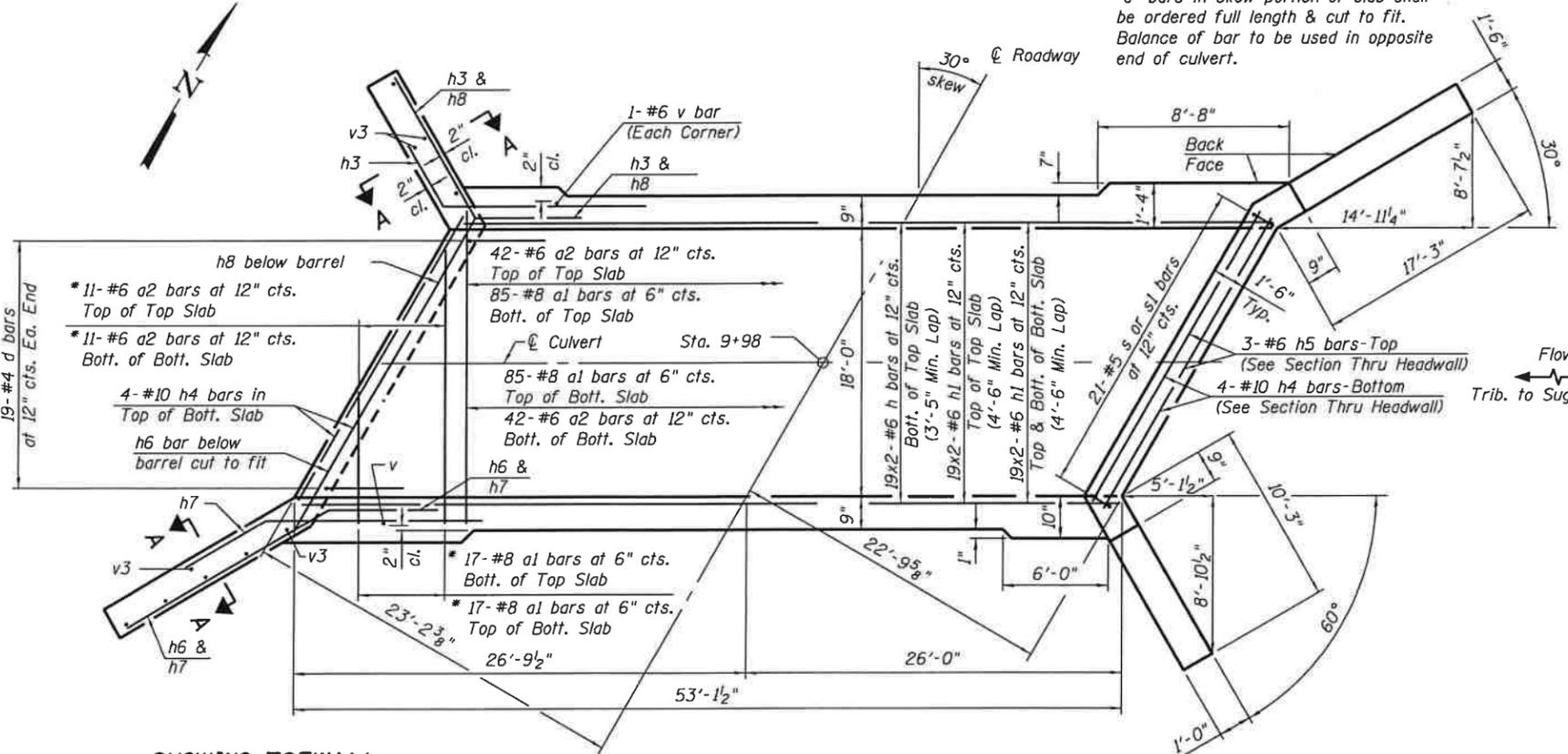
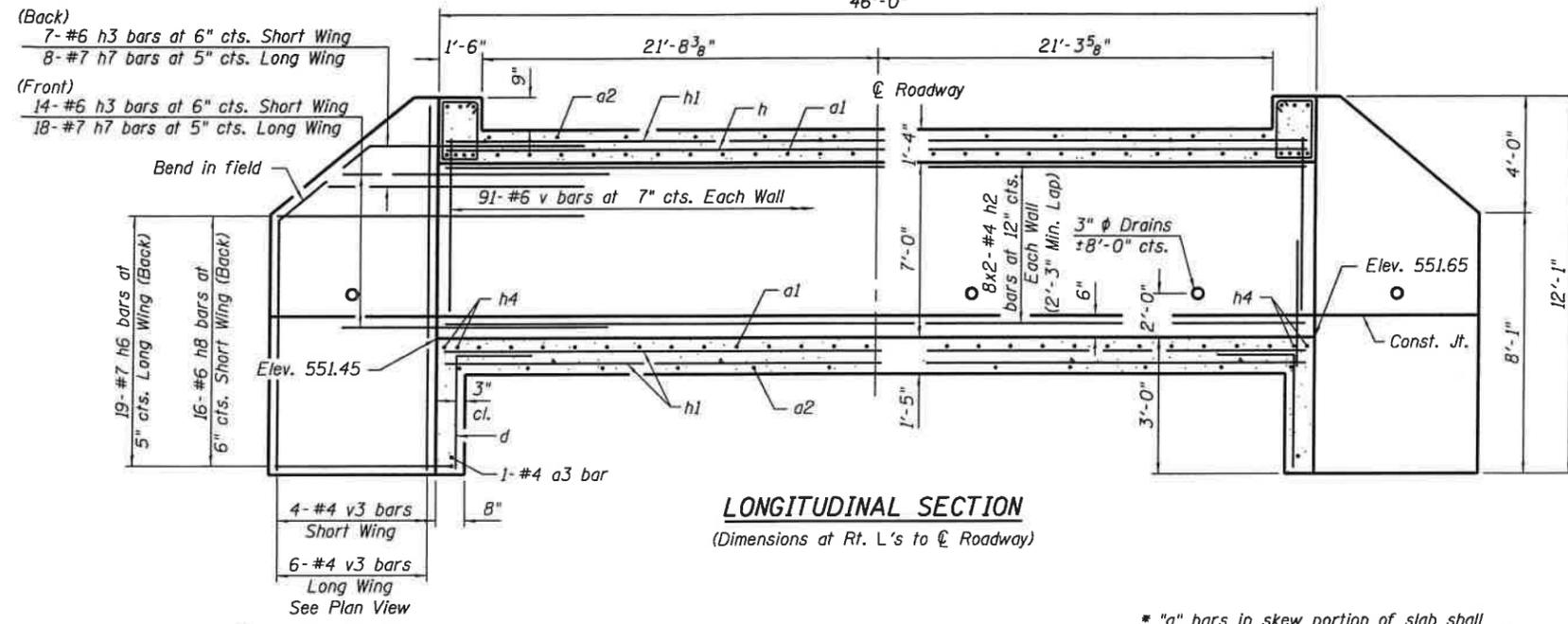
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
S.N. 054-3923

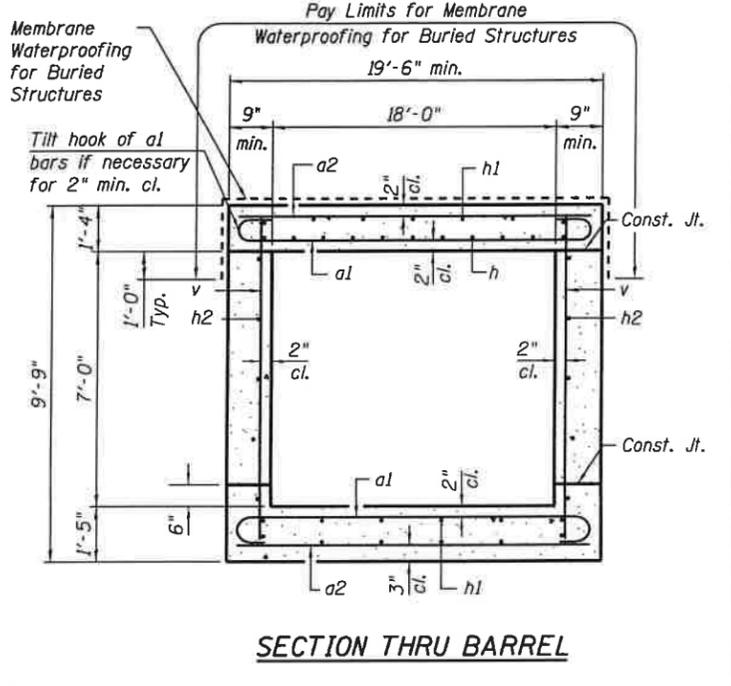
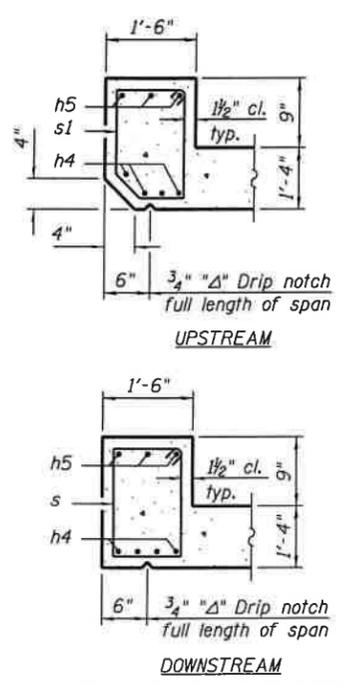
SHEET NO. 1 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
564	15-00081-04- BR	LOGAN	8	4
CONTRACT NO. 93708				

ILLINOIS FED. AID PROJECT



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 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1	204	#8	21'-0"	U
a2	106	#6	18'-10"	—
a3	2	#4	20'-6"	—
d	38	#4	4'-5"	L
h	38	#6	27'-10"	—
h1	114	#6	28'-4"	—
h2	32	#4	27'-3"	—
h3	42	#6	8'-0"	—
h4	8	#10	22'-3"	—
h5	6	#6	22'-3"	—
h6	38	#7	21'-11"	—
h7	52	#7	8'-0"	—
h8	32	#6	13'-3"	—
s	21	#5	7'-1"	U
s1	21	#5	6'-11"	U
v	186	#6	9'-4"	—
v3	20	#4	11'-9"	—
Concrete Box Culverts	Cu. Yd.	160.1		
Reinforcement Bars	Pound	29330		
Membrane Waterproofing for Buried Structures	Sq. Yd.	142		
Rock Fill - Foundation	Ton	39		

TSA-SB-HC-RS

2-17-2017

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
 STRUCTURE NO. 054-3923

SHEET NO. 2 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
564	15-00081-04-BR	LOGAN	8	5

CONTRACT NO. 93708
 ILLINOIS FED. AID PROJECT

FILE NAME: \\V95413231-93708-802-desalldgn

FEHR GRAHAM
 ENGINEERING & ENVIRONMENTAL
 ILLINOIS DESIGN FIRM NO. 184-003525

USER NAME	DESIGNED	CHECKED	DRAWN	CHECKED
ccorner	ARK	MCB	CFC	ARK MCB

FEHR GRAHAM PROJECT NUMBER: 16-467

SOIL BORING LOG

ROUTE C.H. 22 DESCRIPTION BRIDGE BORING - C.H. 22 LOGGED BY PS

SECTION 15-00081-04-BR LOCATION BURTONVIEW, ILLINOIS

COUNTY LOGAN STRUCTURE NO. SN 054-3038 (Exist) X (Prop.)

BORING NO. B-1 DRILLING METHOD HOLLOW STEM HAMMER TYPE AUTO HAMMER

Station <u>0+35</u>	ELEV	DPTH	BLOG	UCS	MOS	Surface Water Elev. <u>551.9</u> (ft.)	ELEV	DPTH	BLOG	UCS	MOS
Offset <u>13RT</u>	(ft.)	(ft.)	(ft.)	(tsf)	(%)	Groundwater Elev. <u>548.37</u> (ft.)	(ft.)	(ft.)	(ft.)	(tsf)	(%)
Ground Surface Elev. <u>562.37</u> (ft.)						First Encounter <u>548.37</u> (ft.)					
						Upon Completion <u>548.37</u> (ft.)					
						After <u> </u> Hrs. <u> </u> (ft.)					

SOIL DESCRIPTION	(ft.)	(ft.)	/ft"	(tsf)	(%)	SOIL DESCRIPTION	(ft.)	(ft.)	/ft"	(tsf)	(%)
4" OIL & CHIP					12.9						
4" CRUSHED ROCK							35	10			
SILTY CLAY A-6			1		29.2			12	8.1	8.0	
Dark Brown, very moist, firm, medium plasticity, trace sand			2					24			
			1					14			
			5	WOH				20		9.0	
			3	1.4	23.6			22			
			3					40	10		
			1					12	7.6	7.7	
SILTY CLAY A-6			1	.8	23.8			16			
Brown-Mottled-Gray, very moist, soft, low plasticity, trace sand			1					6			
			10	WOH				6	1.5	10.0	
			1	.7	21.9			10			
			2					45			
			WOH					60-2			
CLAY LOAM A-6			1	1.1	20.2						
Brown-Mottled-Gray, very moist, soft, low plasticity, with clay			2								
(*free water @ 12.0'			15	2	19.0			60-5		14.4	
			3	1.0							
			3								
CLAY LOAM A-6			2					50	13		
Brown, very moist, firm, low plasticity, with sand, trace gravel			3		17.2			16	4.2	14.6	
-stiff			5					22			
			20	5							
-moist, very stiff			9	4.7	11.7						
			12					55			
			10								
			14	6.2	10.7						
			16								
			25	13							
			19		10.5						
CLAY LOAM A-6			20					60			
Gray, moist, hard, low plasticity, with sand, trace gravel			13								
			16	5.8	9.3						
			25								
			30	16							
-sand lens			24		10.2						
			32					65			
			18								
			14	5.0	8.8						

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer).
 The Standard Penetration Test (SPT) N Value is per (AASHTO T206)

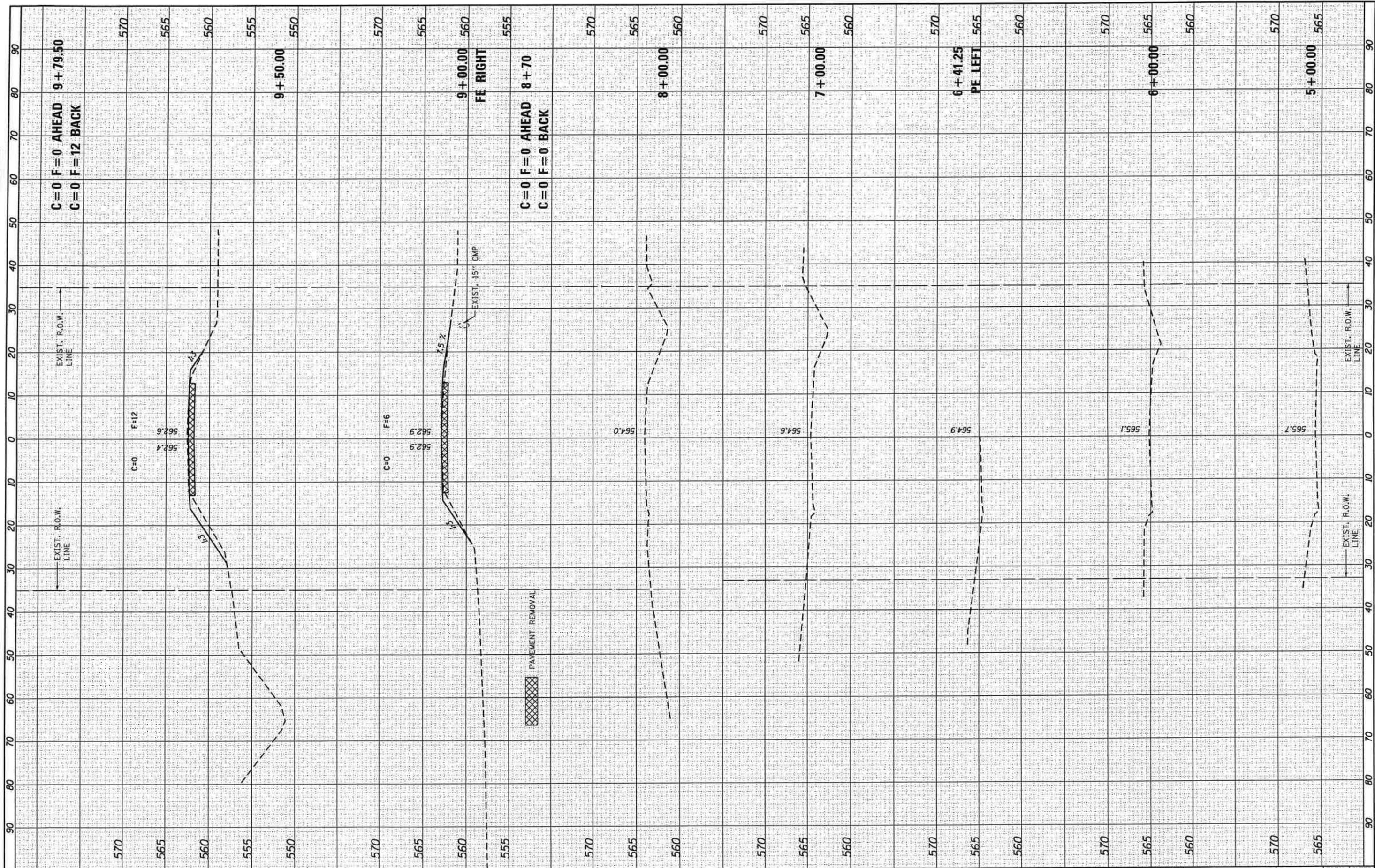
BBS 137 (9/05)

Note:
 Boring B-1 Sta. 0+35
 = Project Sta. ±10+33

FILE NAME: \\S05A3321-53788-883-boringpad.dgn

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
AREAS CHECKED	TEMPLATE		
NO.	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
AREAS CHECKED	TEMPLATE		
NO.	AREAS CHECKED		



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USER NAME = cconnor	DESIGNED = GJC	REVISED =
	DRAWN = CFC	REVISED =
	CHECKED = MRL	REVISED =
	DATE = 7-6-2017	REVISED =

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

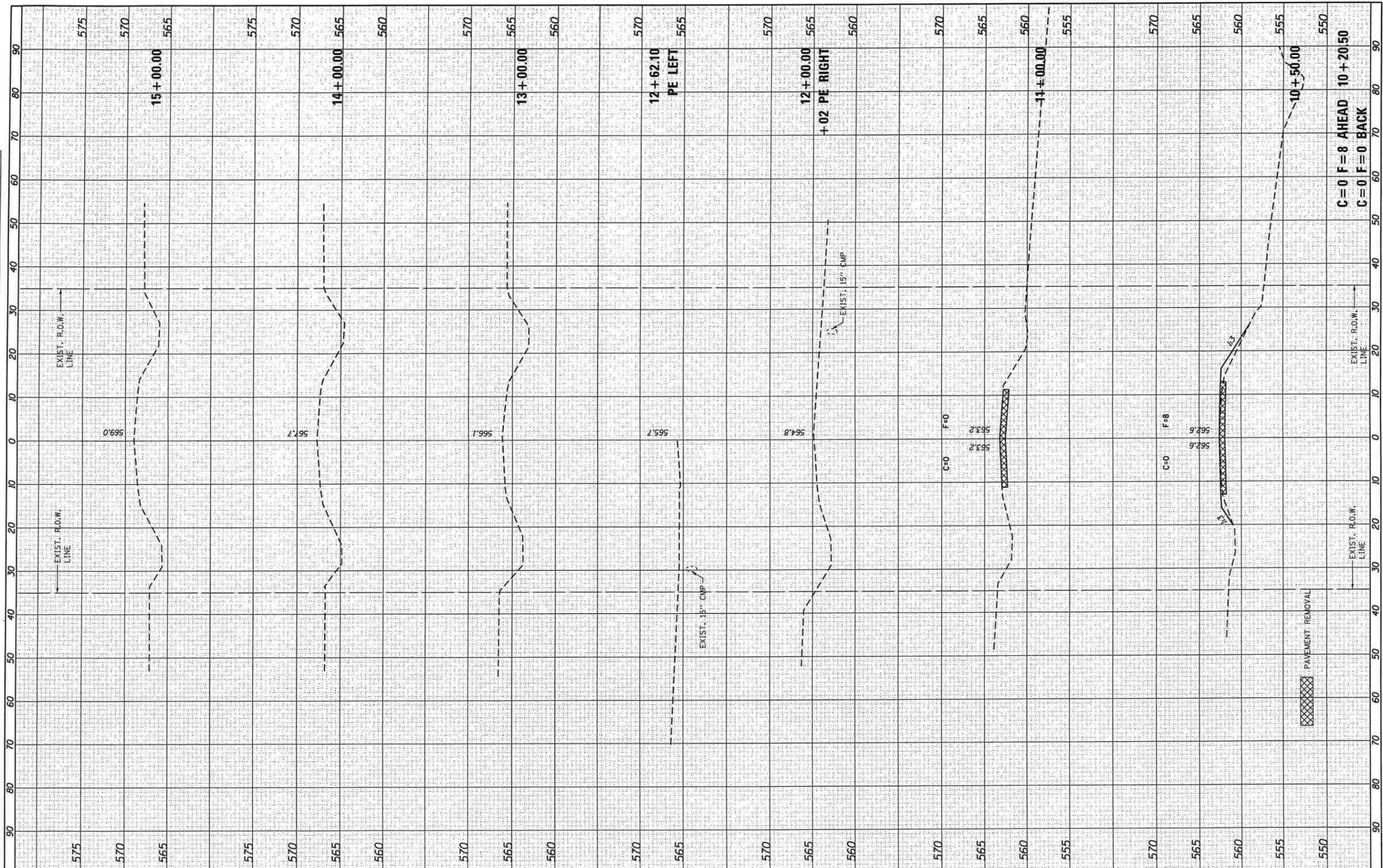
CROSS SECTIONS

SCALE: SHEET OF SHEETS STA. 5+00.00 TO STA. 9+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
564	15-00081-04-BR		8	7
CONTRACT NO. 93708			ILLINOIS FED. AID PROJECT	

FINAL SURVEY	DATE
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ORIGINAL SURVEY	DATE
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		CHECKED - MRL	REVISED -
		DATE - 7-6-2017	REVISED -
PLOT SCALE = 20.000000' / 1"			
PLOT DATE = 9/13/2017			

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

CROSS SECTIONS			
SCALE:	SHEET	OF	SHEETS
			STA. 10+50.00 TO STA. 15+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
564	15-00081-04-BR		8	8
CONTRACT NO. 93708			ILLINOIS FED. AID PROJECT	