

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 12	09-00268-00-DR	CLARK	20	1
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 95612		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED  
AMERICAN RECOVERY  
AND REINVESTMENT ACT

PROJECT ARA - 1660(105)  
SECTION 09-00268-00-DR

CLARK COUNTY  
F.A.S. 1660 /C.H. 12  
PROPOSED STRUCTURE NO. 012-5008  
C-97-053-10

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	SUMMARY OF QUANTITIES AND GENERAL NOTES
3.	SCHEDULE OF QUANTITIES
4.	PLAN AND PROFILE
5.-17.	STATION CROSS SECTIONS
18.-19.	CULVERT PLANS
20.	BORINGS

HIGHWAY STANDARDS:

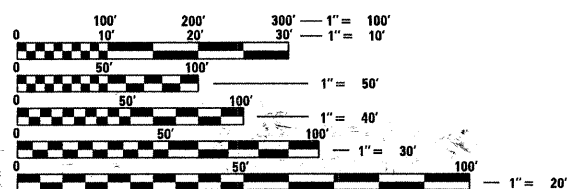
000001-05	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-01	TRAFFIC CONTROL DEVICES
BLR 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL; DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
BLR 23-3	TRAFFIC BARRIER TERMINAL TYPE 1
BLR 26-2	STEEL PLATE BEAM GUARDRAIL 700MM (27 1/2") HEIGHT

UTILITIES

VERIZON NORTH  
110 EAST MONROE  
P.O. BOX 2675  
BLOOMINGTON, IL 61701-2675  
ATTENTION: MARY RUTH WILLIS

ENERSTAR ELECTRIC COOP.  
11597 IL HIGHWAY 1  
PARIS, IL 61944  
ATTENTION: HADDIX

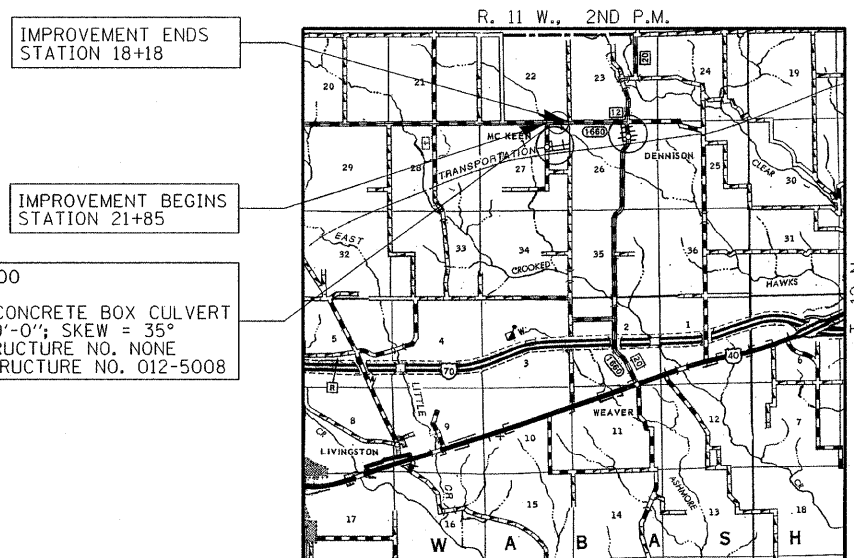
CLARK-EDGAR RURAL WATER DISTRICT  
C/O FRANCIS & ASSOCIATES  
330 NORTH CENTER AVENUE  
PARIS, IL 61944



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.



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



IMPROVEMENT ENDS  
STATION 18+18

IMPROVEMENT BEGINS  
STATION 21+85

STATION 20+00  
DOUBLE 8'X8'  
REINFORCED CONCRETE BOX CULVERT  
LENGTH = 109'-0"; SKEW = 35°  
EXISTING STRUCTURE NO. NONE  
PROPOSED STRUCTURE NO. 012-5008

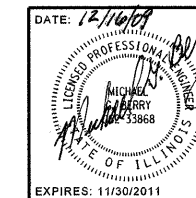
LOCATION MAP

APPROXIMATE SCALE: 0 1 MILE  
NET LENGTH OF SECTION = 367 FEET = 0.070 MILES



FUNCTIONAL CLASSIFICATION:	RURAL MAJOR COLLECTOR
DESIGN SPEED:	50 MPH
POSTED SPEED:	55 MPH
ADT:	400 ADT (2009) 475 (2029)
PV:	79.1%
TRUCKS:	20.09%
SU:	10.05%
MU:	10.05%

CLARK COUNTY HIGHWAY DEPARTMENT	
APPROVED	12-17 20 09 <i>William W. Asher</i> COUNTY ENGINEER
PASSED	12-29 20 09 <i>Maureen Kastl</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	12-29 20 09 <i>Roger L. Druehler</i> DEPUTY DIRECTOR OF HIGHWAYS REGION FOUR ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION



DATE: 12/16/09

**HAMPTON, LENZINI AND RENWICK, INC.**  
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS  
3085 STEVENSON DRIVE, SUITE 201  
SPRINGFIELD, ILLINOIS 62703  
217.546.3400 www.hirengineering.com

184.000959  
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

EXPIRES: 11/30/2011

PROJECT NUMBER: 09.0131.130

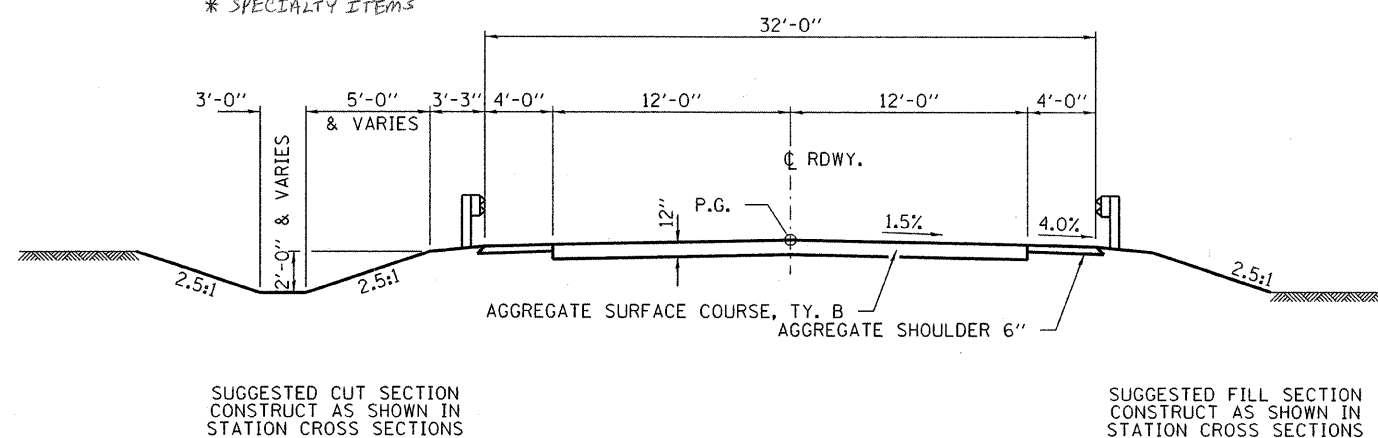
DATE: 11/08/09

CONTRACT NO. 95612

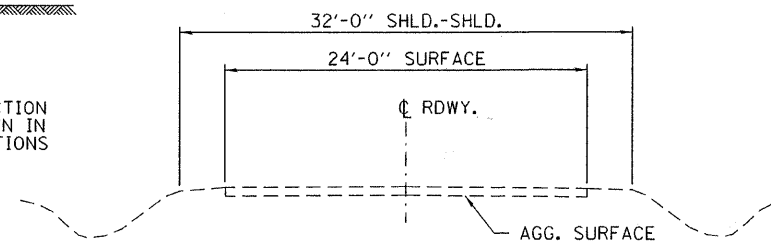
SUMMARY OF QUANTITIES			
	ITEM	UNIT	TOTAL QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	426
20700110	POROUS GRANULAR EMBANKMENT	TON	555
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.46
25100630	EROSION CONTROL BLANKET	SQ YD	2745
28101700	RIPRAP, SPECIAL	TON	200
28102600	STONE RIPRAP DITCH	TON	188
35101400	AGGREGATE BASE COURSE, TYPE B	TON	395
44004000	PAVED DITCH REMOVAL	FOOT	148
48101200	AGGREGATE SHOULDERS, TYPE B	TON	72
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50104650	SLOPE WALL REMOVAL	SQ YD	28
50200100	STRUCTURE EXCAVATION	CU YD	5704
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	42670
51500100	NAME PLATES	EACH	1
54003000	CONCRETE BOX CULVERTS	CU YD	222
*63000002	STEEL PLATE BEAM GUARD RAIL, TYPE A, 6.75 FOOT POSTS	FOOT	475
67100100	MOBILIZATION	L SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1
*78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
*LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	4

^ SEE SPECIAL PROVISIONS

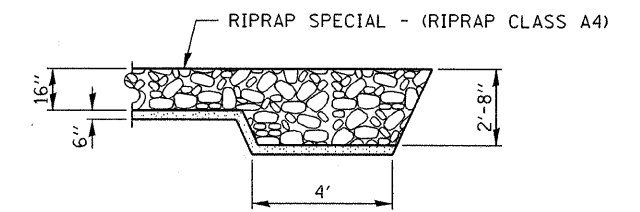
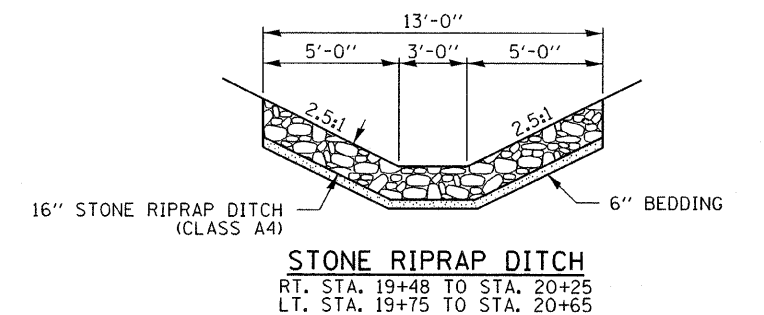
\* SPECIALTY ITEMS



**TYPICAL CROSS SECTION**  
STA. 19+00 TO 21+00



**EXISTING CROSS SECTION**  
STA. 18+18 TO 21+85



**RIPRAP SPECIAL DETAIL**

**GENERAL NOTES**

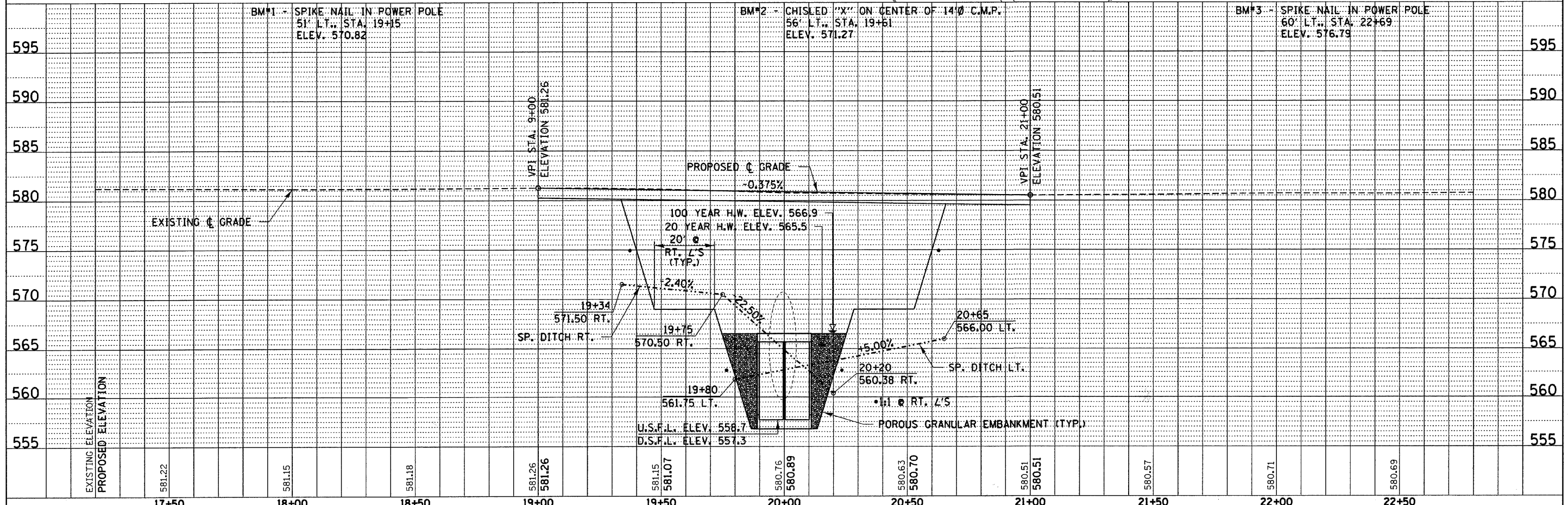
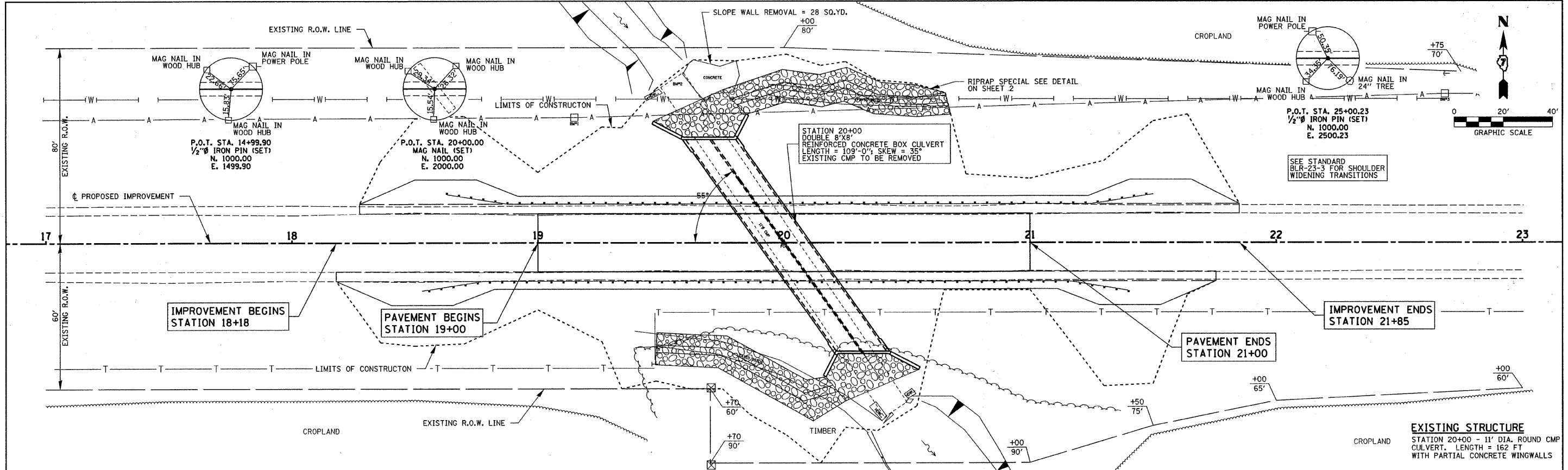
- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2007"; (HERE IN AFTER REFERRED TO AS THE STANDARD SPECIFICATIONS; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" ADOPTED JANUARY 1, 2010; THE LATEST EDITION OF THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE DETAILS IN THE PLANS AND THE "SPECIAL PROVISIONS" INCLUDED IN THE DOCUMENTS.
- 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, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- ANY REFERENCE TO A STANDARDS THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO MEAN THE LATEST STANDARD OF THE DEPARTMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE OWNERS OF ALL UTILITIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF ALL UTILITY FACILITIES. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY OWNERS AS PROVIDED FOR IN THE STANDARD SPECIFICATIONS IF UTILITY RELOCATION, ADJUSTMENTS OR PROTECTION IS NECESSARY.
- THE LOCATION ON THE PLANS OF EXISTING DRAINAGE STRUCTURES, TELEPHONE LINES, ELECTRIC LINES, WATER SERVICE LINES, AND OTHER UTILITY FACILITIES IS APPROXIMATE AND THEIR EXACT LOCATION SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND THIS WORK SHALL BE INCLUDED IN THE CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MIGHT NOT BE SHOWN ON THE PLANS, ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER. THE WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING CONSTRUCTION. OF THE PROJECT.
- PAVEMENT REMOVAL WILL NOT BE PAID FOR SEPARATELY BUT WILL BE CONSIDERED TO BE INCLUDED WITH EARTH EXCAVATION.
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL EARTH SURFACES WITHIN THE RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER SEEDING, CLASS 2 (SPECIAL) = 0.46 ACRES
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES  
AGGREGATE BASE COURSE: 2.05 TON/CU.YD.  
RIPRAP SPECIAL: 1.75 TON/CU.YD.  
STONE RIPRAP DITCH: 1.75 TON/CU.YD.

FILE NAME = 090131-sht-summary.dgn	USER NAME =	DESIGNED - L.F.S.	REVISED -	STATE OF ILLINOIS CLARK COUNTY HIGHWAY DEPARTMENT	HLR	SUMMARY OF QUANTITIES AND GENERAL NOTES C.H. 12 (EAST CULVERT)	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - T.W.K.	REVISED -				12	09-00268-00-DR	CLARK	20	2
		CHECKED - M.G.B.	REVISED -				CONTRACT NO. 95612				
		DATE - 11/06/09	REVISED -				FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				
				SCALE: SHEET NO. OF SHEETS STA. TO STA.							



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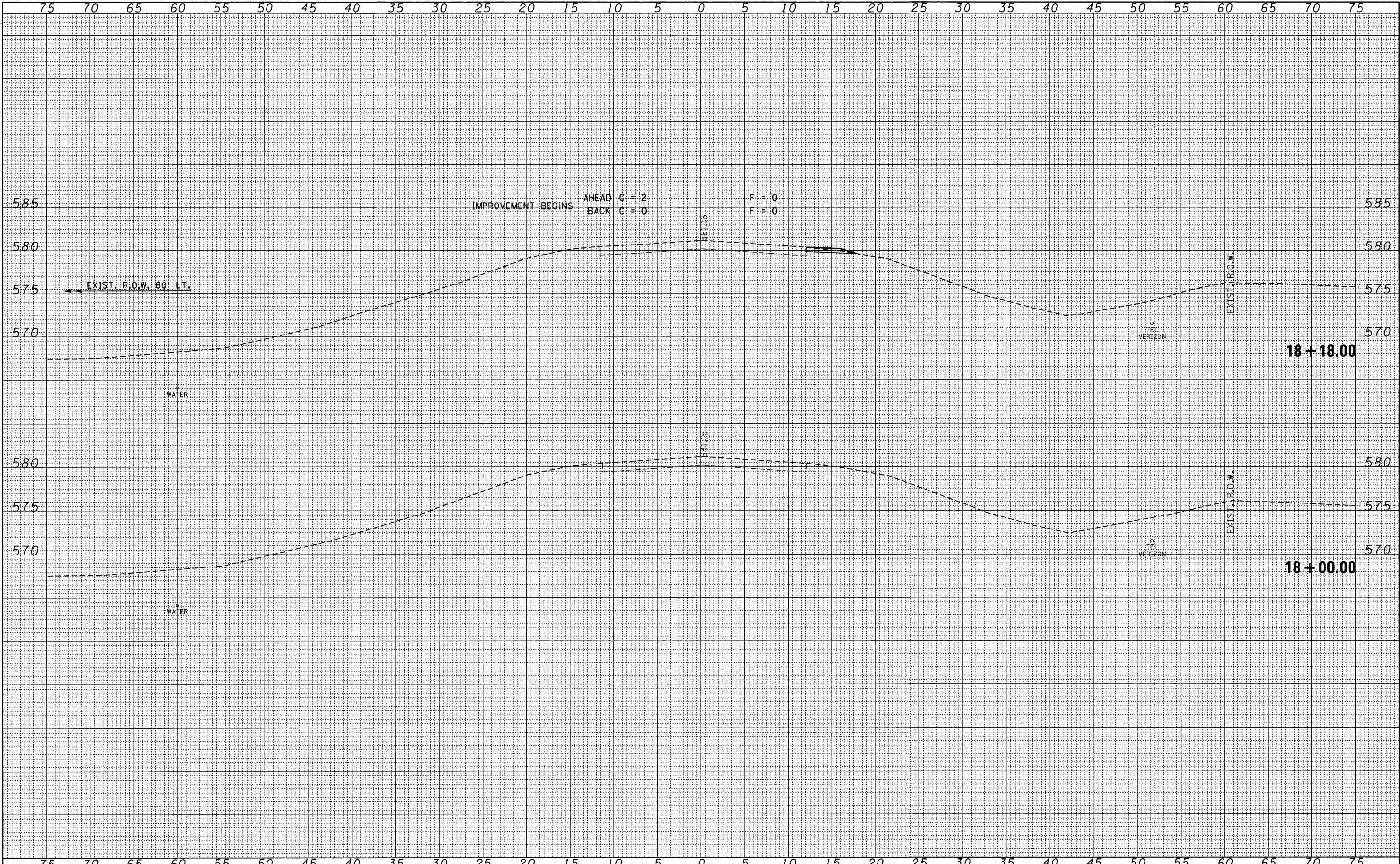
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REVIEWED	
ALIGNMENT	
RT. OF WAY	
NOTE BOOK	
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FILE NAME	



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PLOT DATE = 12/16/2009		DATE - 07/14/09	REVISED -			FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT						

FINAL SURVEY	SURVISED	BY	DATE
NOTE BOOK NO.	PLOTTED		
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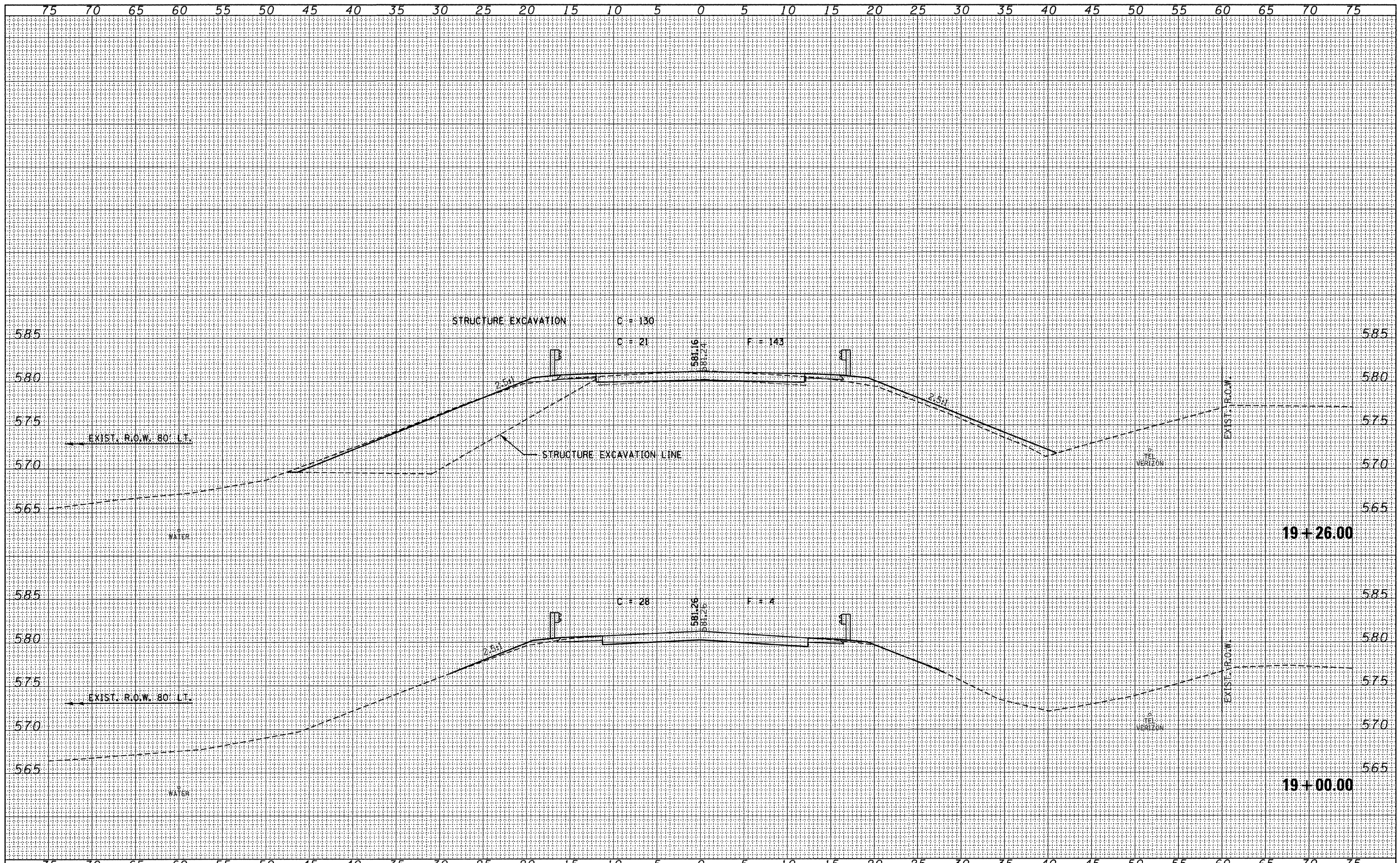


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PLOT DATE = 12/16/2009	DATE - 11/05/09	REVISED -	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT								
SCALE: SHEET NO. OF SHEETS STA. 17+50.00 TO STA. 18+18.00											

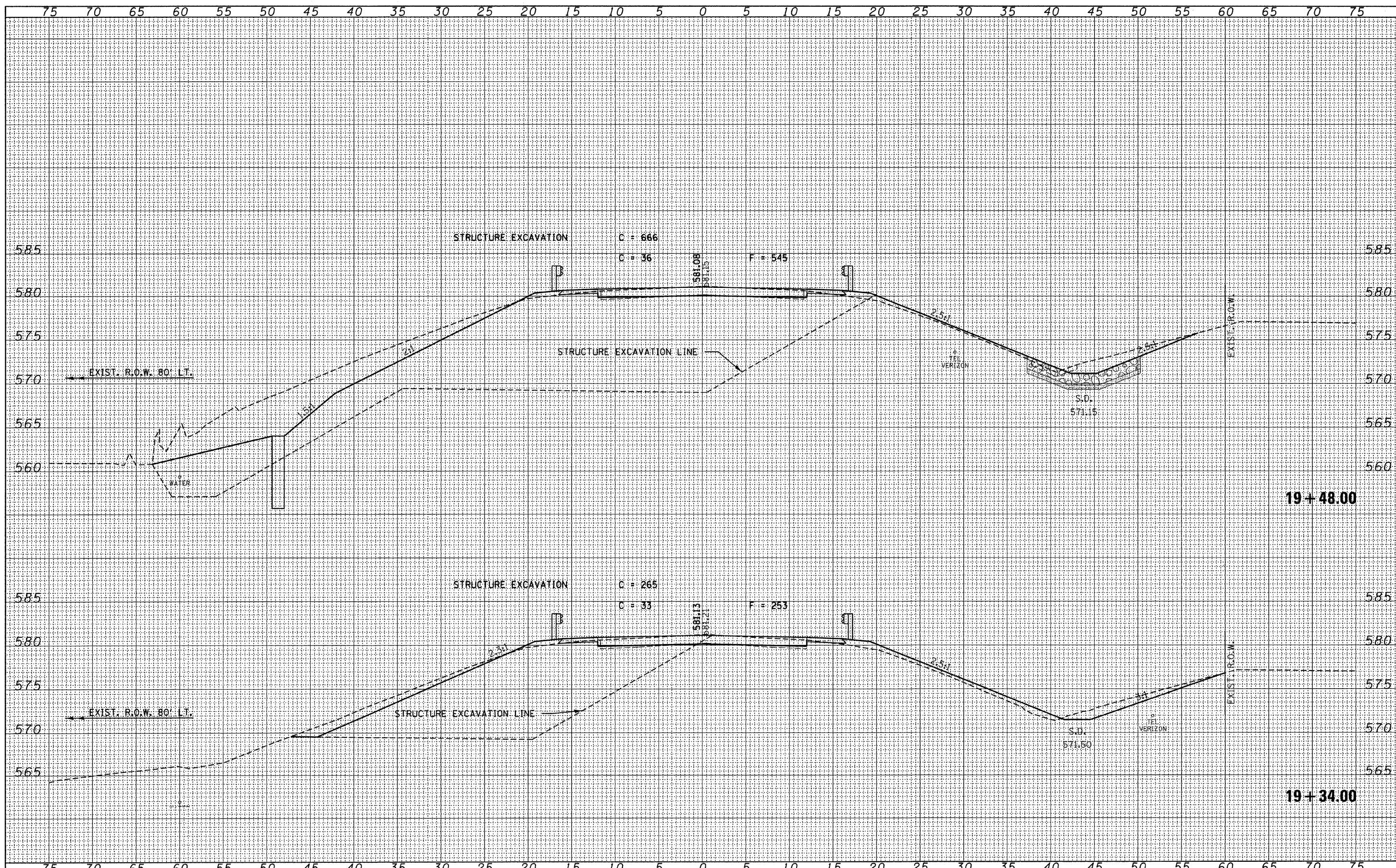


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		DATE - 11/05/09	REVISED -			FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT						
PLOT SCALE =				SCALE:				SHEET NO. OF SHEETS STA. 19+00.00 TO STA. 19+26.00				



BY	DATE
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FLUENT SURVEY	
NOTE BOOK	
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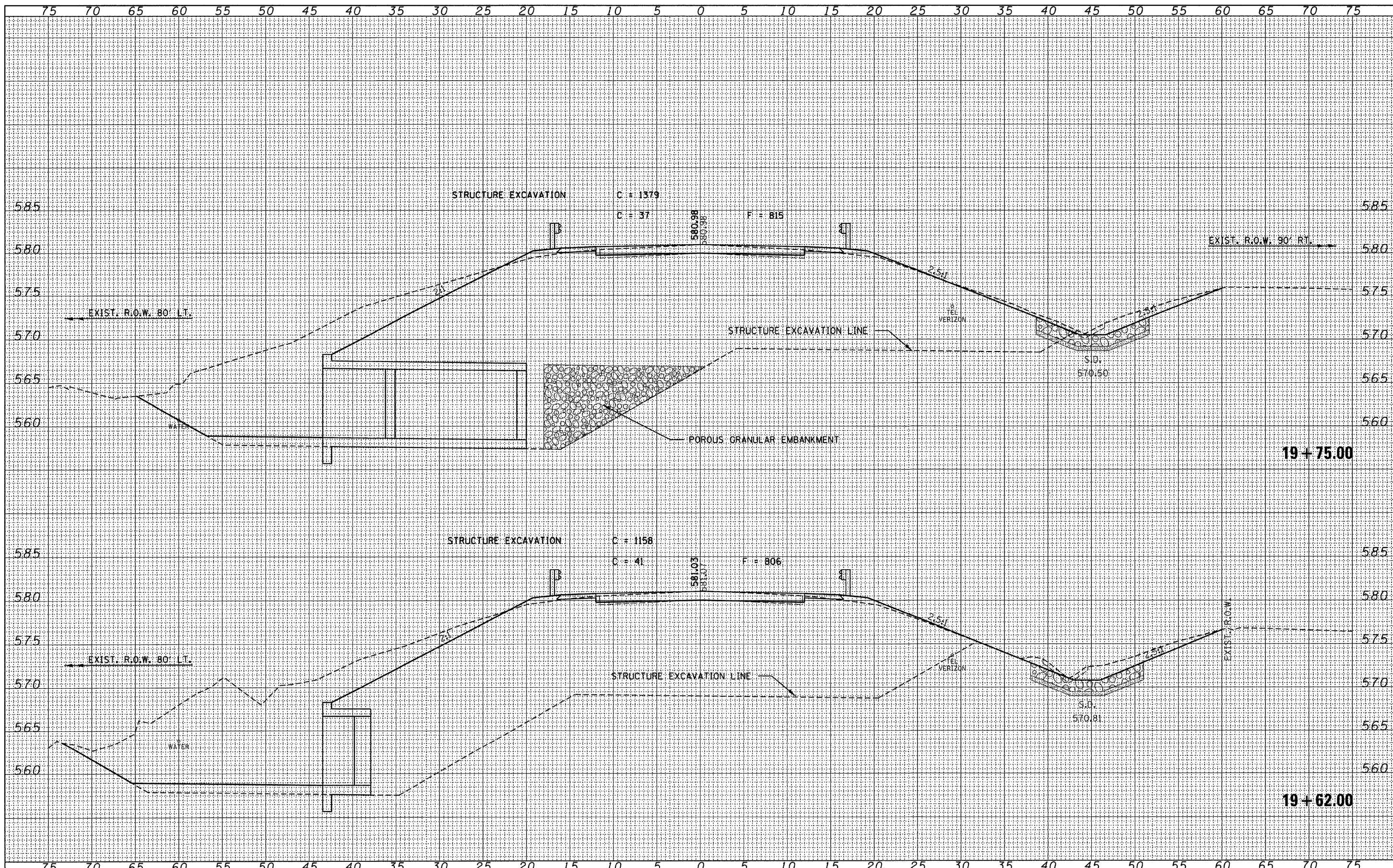
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DATE - 11/05/09	REVISED -

STATE OF ILLINOIS  
 CLARK COUNTY HIGHWAY DEPARTMENT

HLR  
 SCALE: SHEET NO. OF SHEETS STA. 19+34.00 TO STA. 19+48.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	8
FED. ROAD DIST. NO.			CONTRACT NO. 95612	
ILLINOIS			FED. AID PROJECT	





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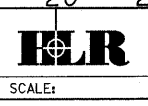
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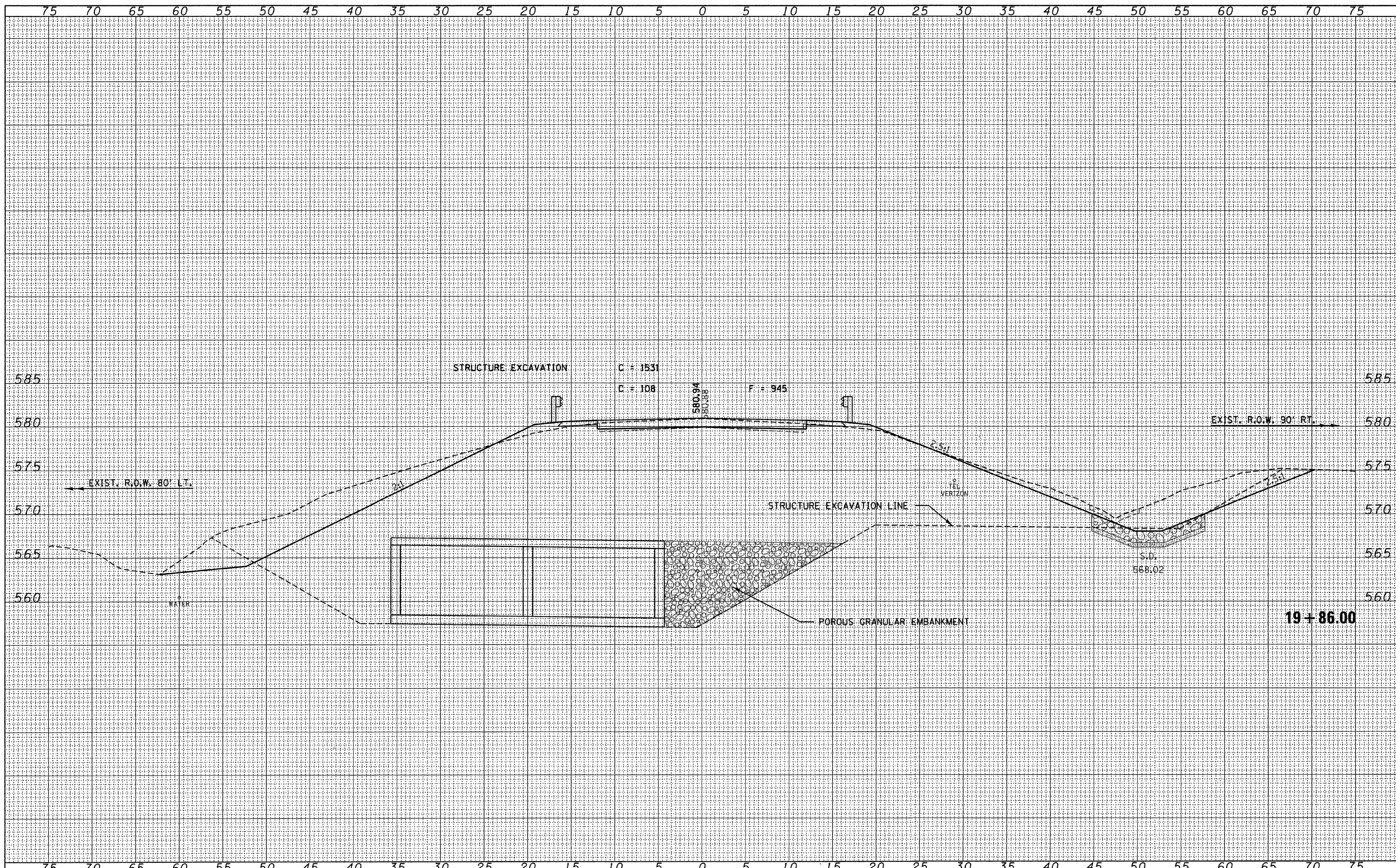
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STATE OF ILLINOIS  
 CLARK COUNTY HIGHWAY DEPARTMENT



CROSS SECTIONS  
 EAST CULVERT  
 SCALE:  
 SHEET NO. OF SHEETS STA. 19+62.00 TO STA. 19+75.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	9
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO. 95612



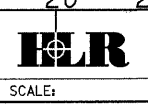
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DATE - 11/05/09	REVISED -

STATE OF ILLINOIS  
 CLARK COUNTY HIGHWAY DEPARTMENT

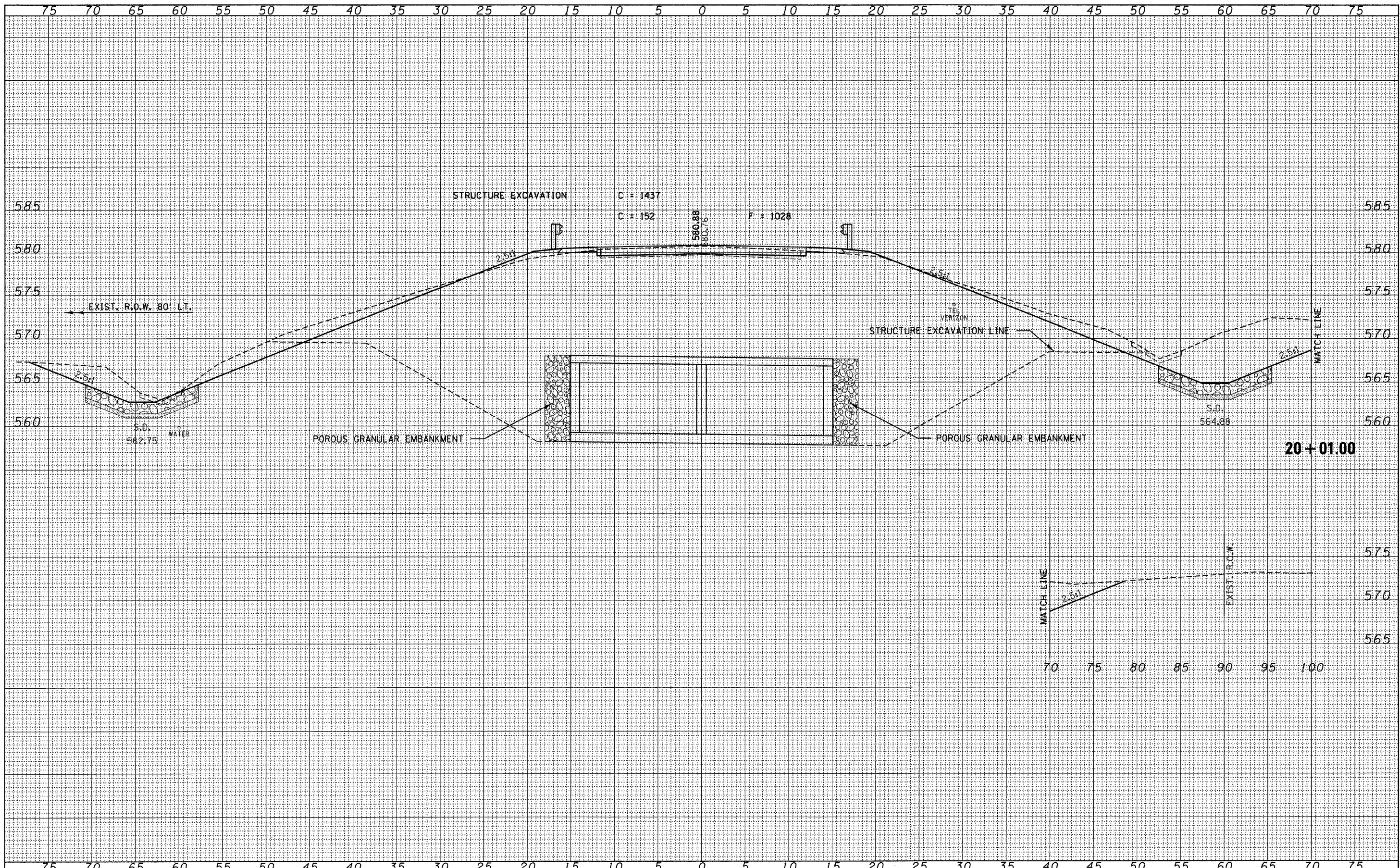


CROSS SECTIONS  
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C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	10
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	CONTRACT NO. 95612	

DATE	
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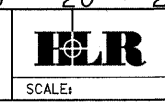
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PLOT SCALE =	CHECKED - M.G.B.	REVISED -
PLOT DATE = 12/16/2009	DATE - 11/05/09	REVISED -

STATE OF ILLINOIS  
 CLARK COUNTY HIGHWAY DEPARTMENT



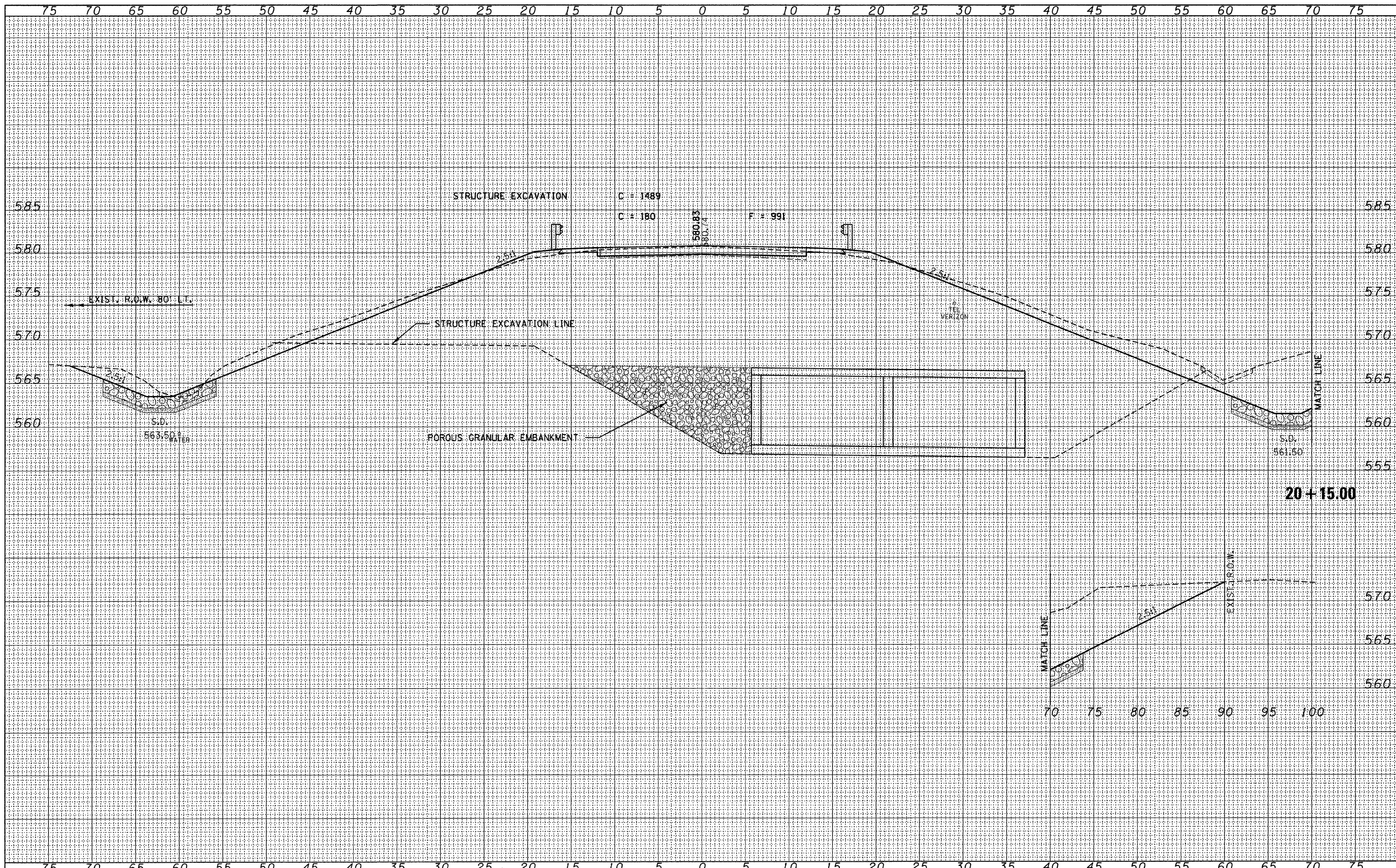
CROSS SECTIONS  
 EAST CULVERT

SCALE: SHEET NO. OF SHEETS STA. 20+01.00 TO STA. 20+01.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	11
CONTRACT NO. 95612				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

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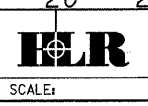
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 PLOT SCALE =  
 PLOT DATE = 12/16/2009

DESIGNED - J.W.F.	REVISED -
DRAWN - T.W.K.	REVISED -
CHECKED - M.G.B.	REVISED -
DATE - 11/05/09	REVISED -

STATE OF ILLINOIS  
 CLARK COUNTY HIGHWAY DEPARTMENT

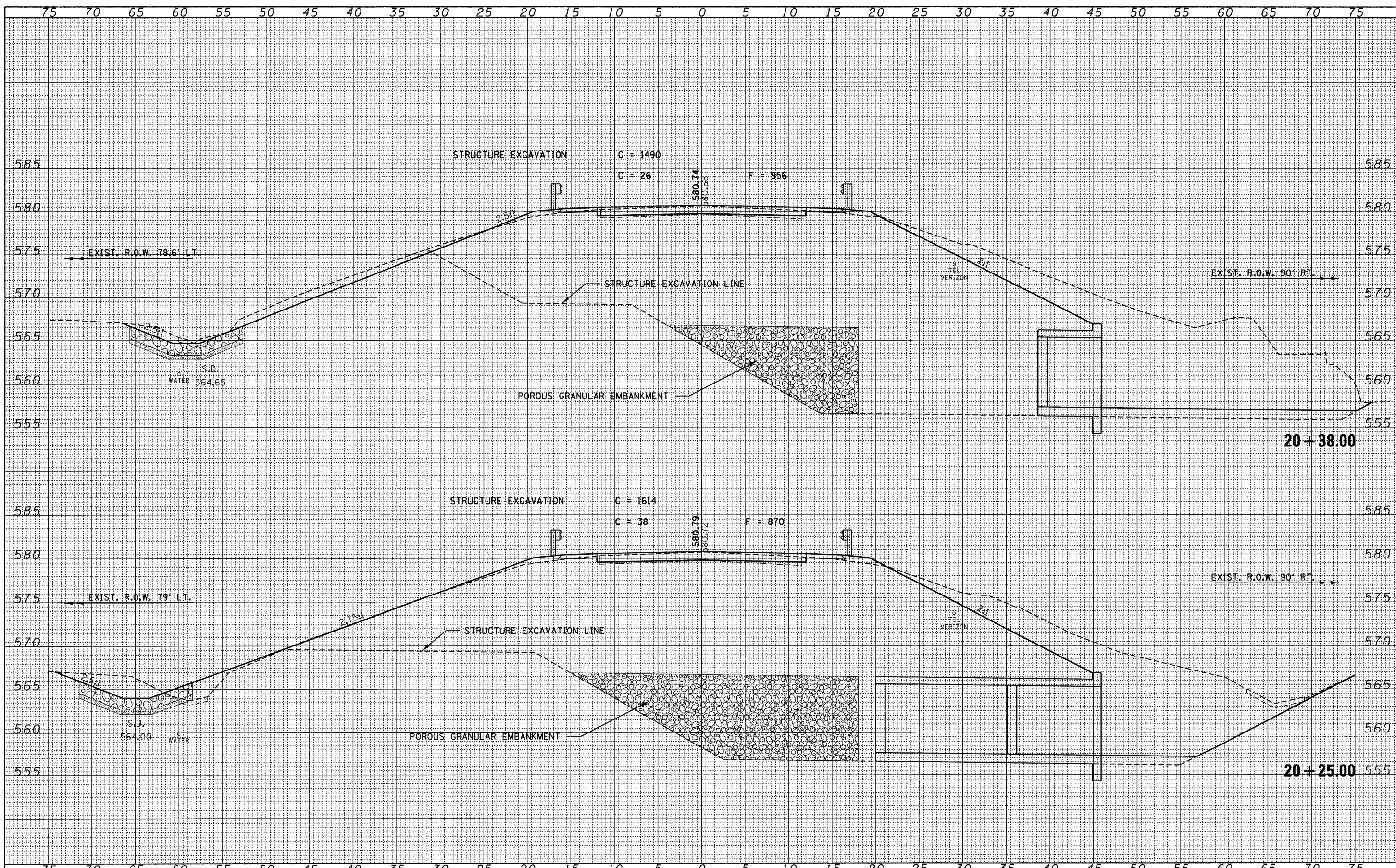


CROSS SECTIONS  
 EAST CULVERT  
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C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	12
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 95612	

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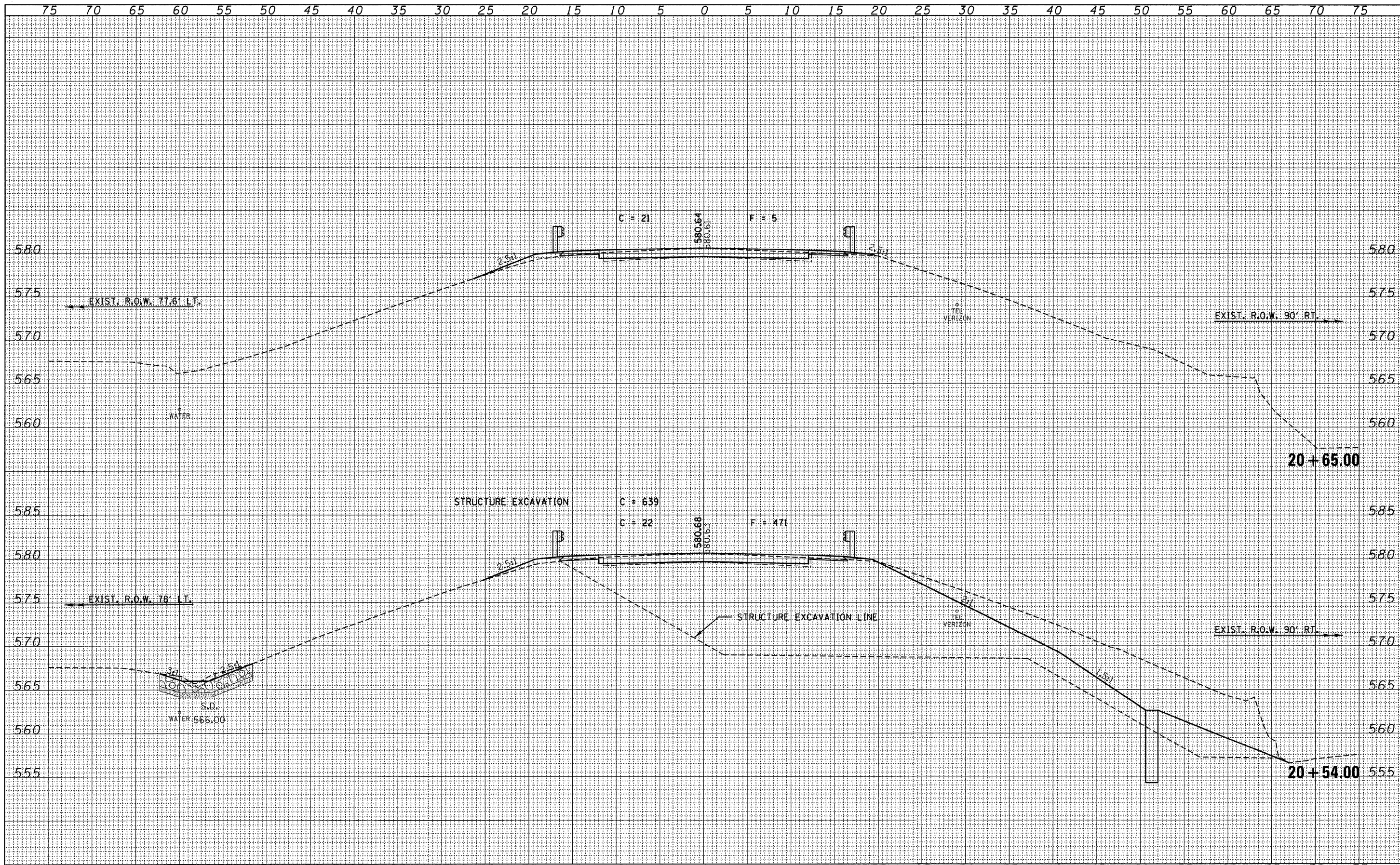
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		DRAWN - T.W.K.	REVISED -				12	09-00268-00-DR	CLARK	20	13
		CHECKED - M.G.B.	REVISED -				CONTRACT NO. 95612				
		DATE - 11/05/09	REVISED -				FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

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NOTE BOOK	
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 DATE - 11/05/09

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STATE OF ILLINOIS  
 CLARK COUNTY HIGHWAY DEPARTMENT



SCALE:

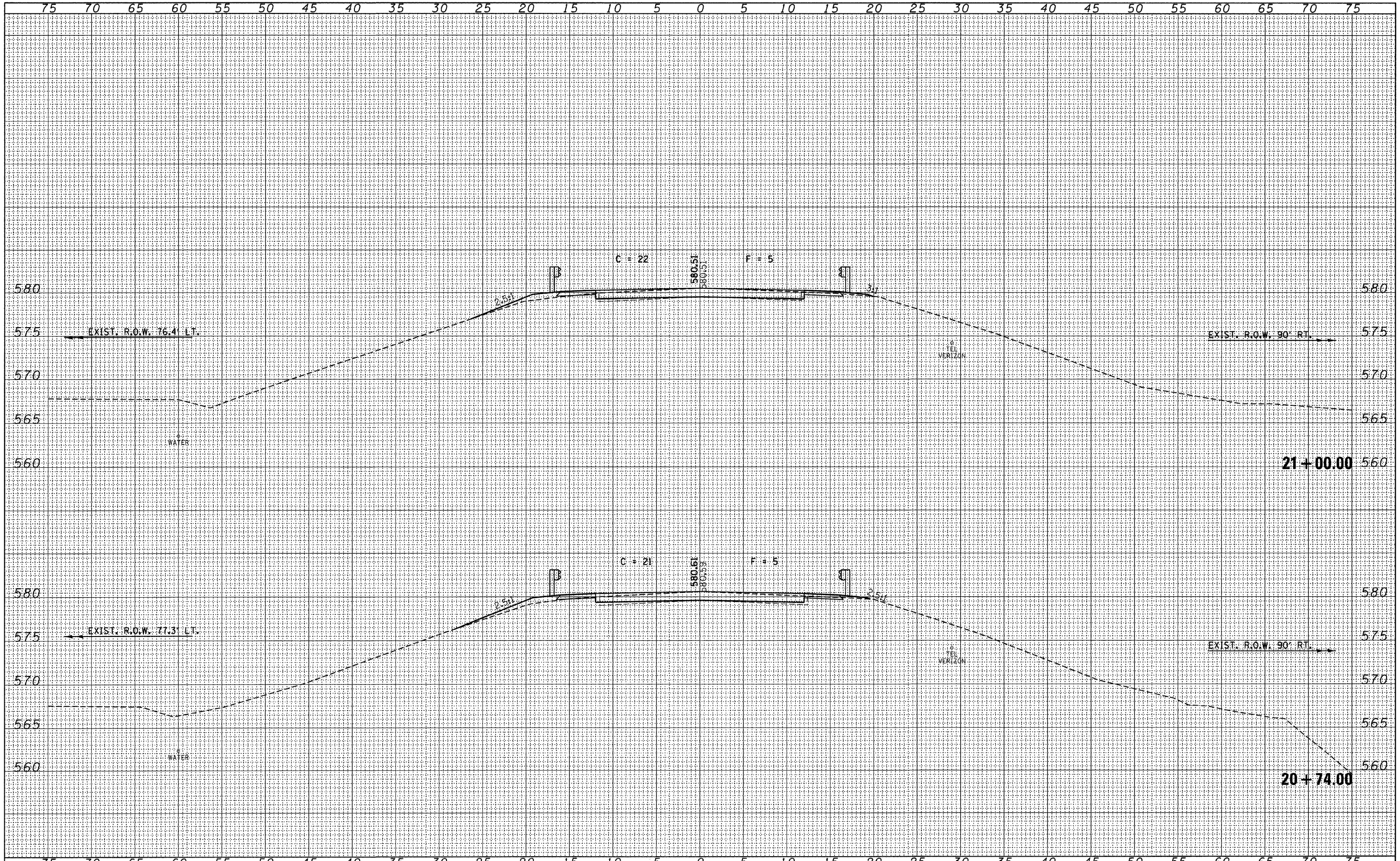
CROSS SECTIONS  
 EAST CULVERT

SHEET NO. OF SHEETS STA. 20+54.00 TO STA. 20+65.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	14
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 95612	

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

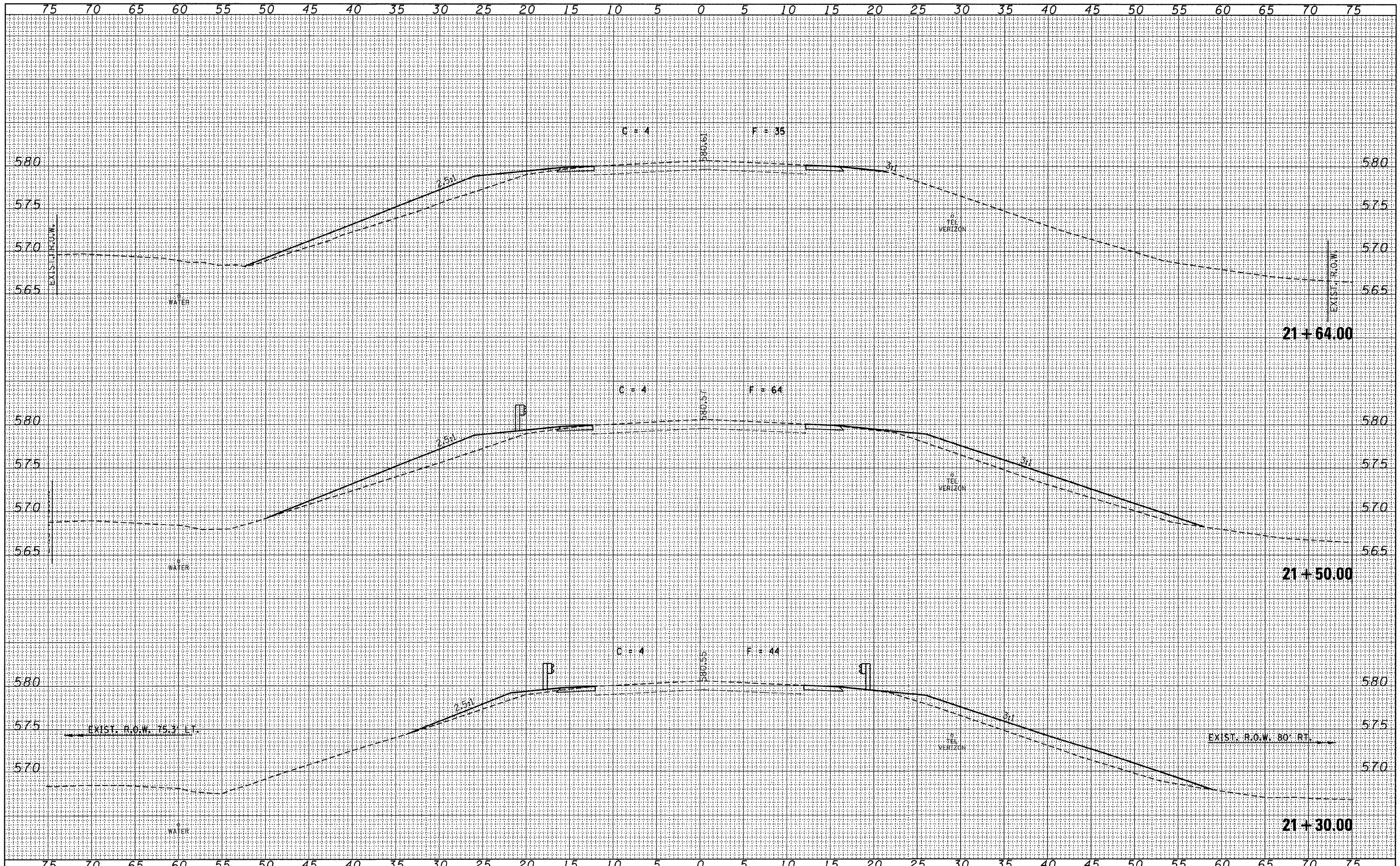
DATE	BY
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	AREAS CHECKED



FILE NAME = 090131-sht-xxs-0001.dgn	USER NAME =	DESIGNED - J.W.F.	REVISED -	<b>STATE OF ILLINOIS</b> <b>CLARK COUNTY HIGHWAY DEPARTMENT</b>		<b>CROSS SECTIONS</b> <b>EAST CULVERT</b>	C.H. 12	SECTION 09-00268-00-DR	COUNTY CLARK	TOTAL SHEETS 20	SHEET NO. 15	
	PLOT SCALE =	CHECKED - M.G.B.	REVISED -				SCALE: 1" = 10'	SHEET NO. OF SHEETS	STA. 20+74.00 TO STA. 21+00.00	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 95612
	PLOT DATE = 12/16/2009	DATE - 11/05/09	REVISED -									

DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
NO.	
AREAS CHECKED	

DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
NO.	
AREAS CHECKED	



FILE NAME =  
 @90131-sht-xx-east.dgn

USER NAME =  
 DESIGNED - J.W.F.  
 DRAWN - T.W.K.  
 CHECKED - M.G.B.  
 DATE - 11/05/09

REVISIONS:  
 REVISIONS -  
 REVISIONS -  
 REVISIONS -  
 REVISIONS -

STATE OF ILLINOIS  
 CLARK COUNTY HIGHWAY DEPARTMENT



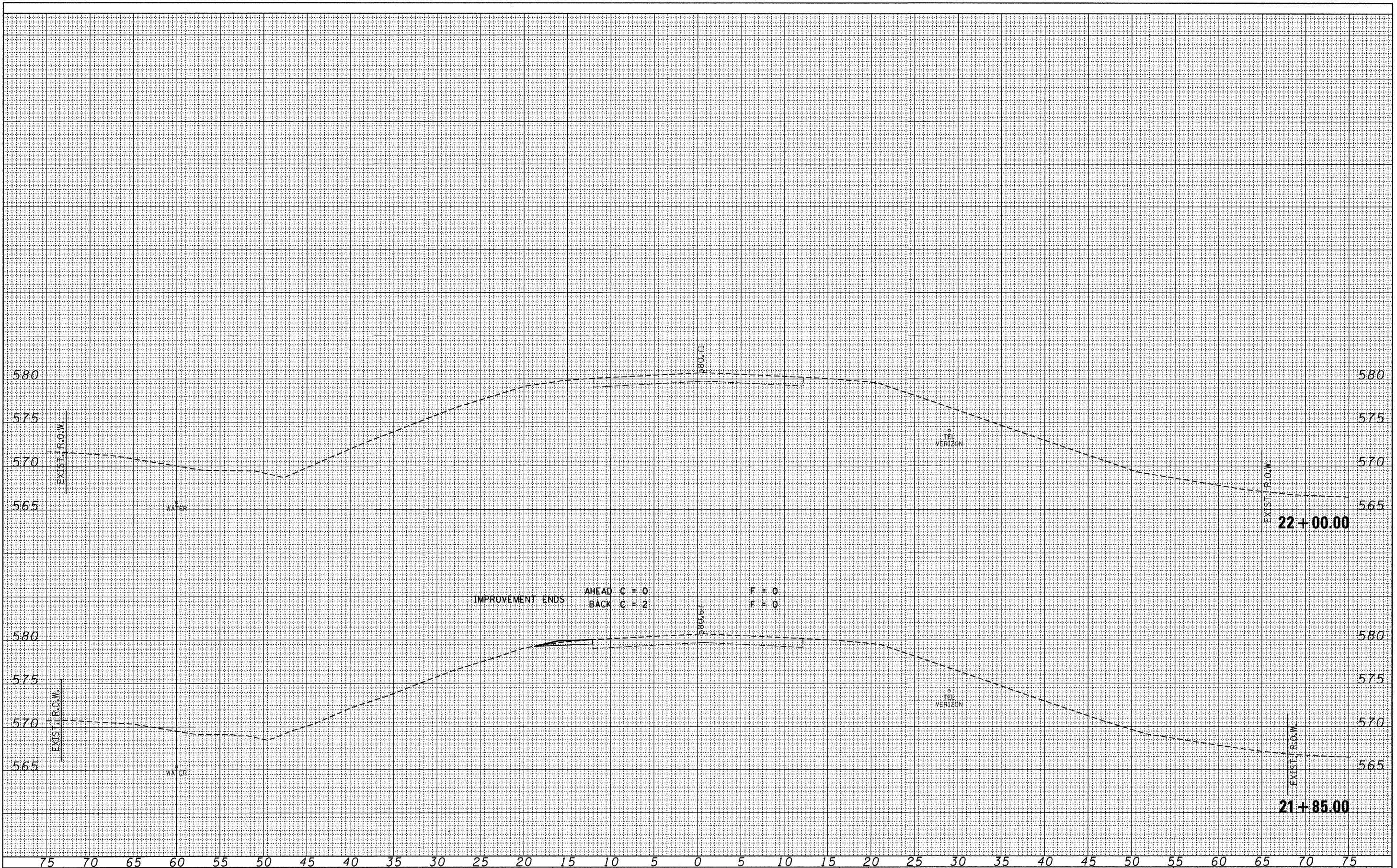
CROSS SECTIONS  
 EAST CULVERT  
 SCALE: SHEET NO. OF SHEETS STA. 21+30.00 TO STA. 21+64.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	16
CONTRACT NO. 95612				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



DATE	BY	NO.	AREAS CHECKED
FINN	SURVEYED	NO. BOOK	DATE
	PLOTTED	DATE	
	AREAS		
	CHECKED		

DATE	BY	NO.	AREAS CHECKED
ORIGINAL	SURVEYED	NO. BOOK	DATE
	PLOTTED	DATE	
	AREAS		
	CHECKED		



FILE NAME = 090131-shr-ssr-east.dgn  
 USER NAME =  
 PLOT SCALE =  
 PLOT DATE = 12/16/2009

DESIGNED - J.W.F.	REVISED -
DRAWN - T.W.K.	REVISED -
CHECKED - M.G.B.	REVISED -
DATE - 11/05/09	REVISED -

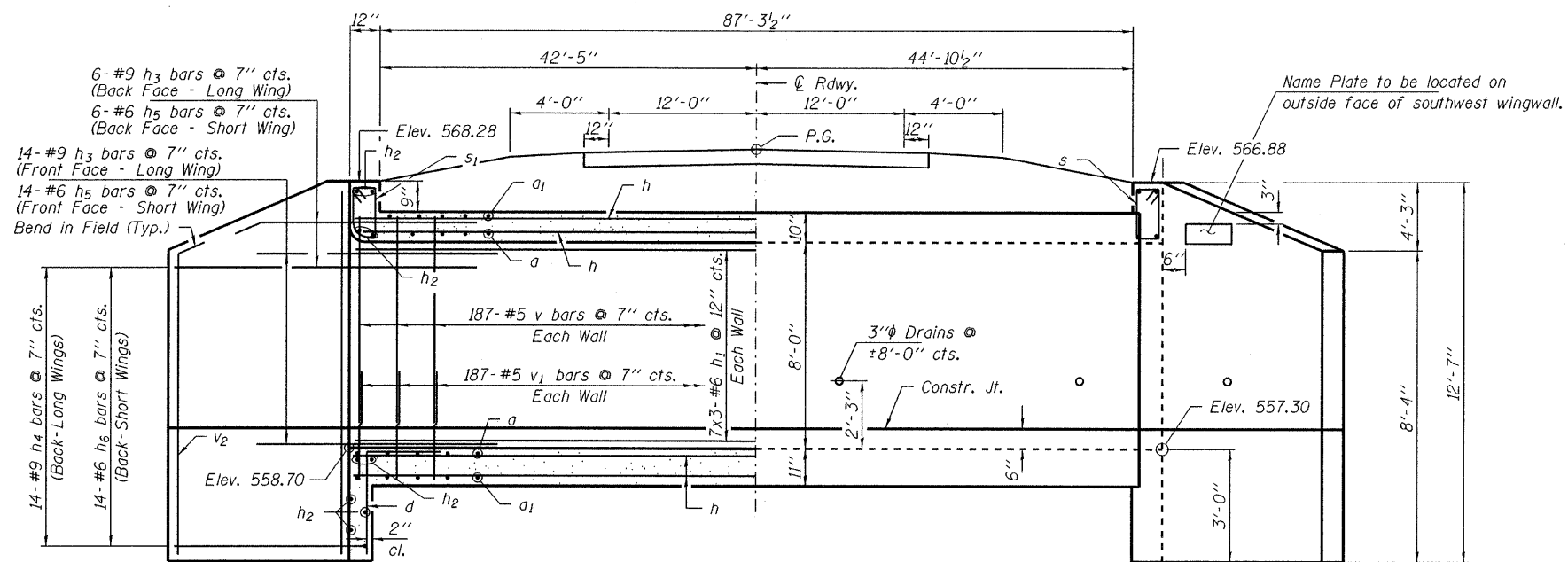
IMPROVEMENT ENDS  
 AHEAD C = 0  
 BACK C = 2

STATE OF ILLINOIS  
 CLARK COUNTY HIGHWAY DEPARTMENT

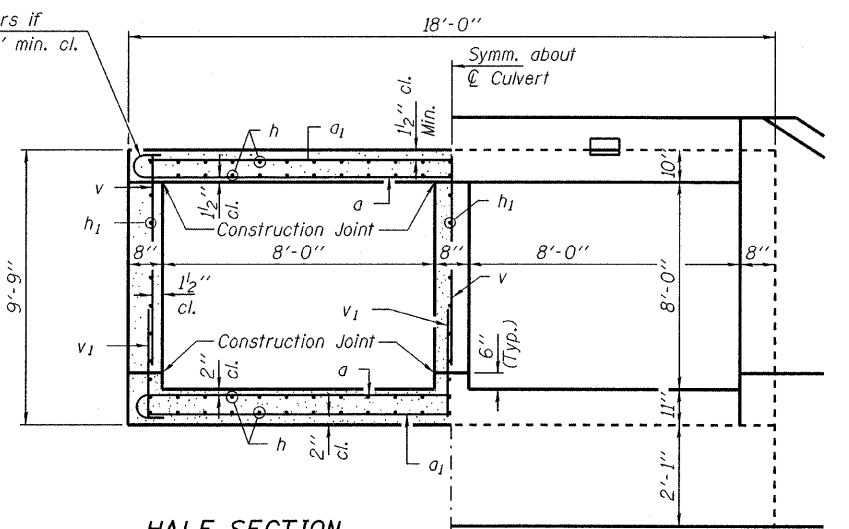


CROSS SECTIONS  
 EAST CULVERT  
 SCALE: SHEET NO. OF SHEETS STA. 21+85.00 TO STA. 22+50.00

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	17
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 95612	



**HALF LONG SECTION**  
Showing Reinforcement  
**HALF ELEVATION**  
Showing Outlines  
Dimensions are at Rt. L's to  $\odot$  Roadway.



**HALF SECTION THRU BARRELS**  
Showing Reinforcement  
**HALF END ELEVATION**  
Showing Outlines

**MIN. BAR LAP**  
#5 - 1'-8" (Barrel)  
#6 - 2'-0" (Barrel)

Tilt hook of a bars if necessary for 1/2" min. cl.

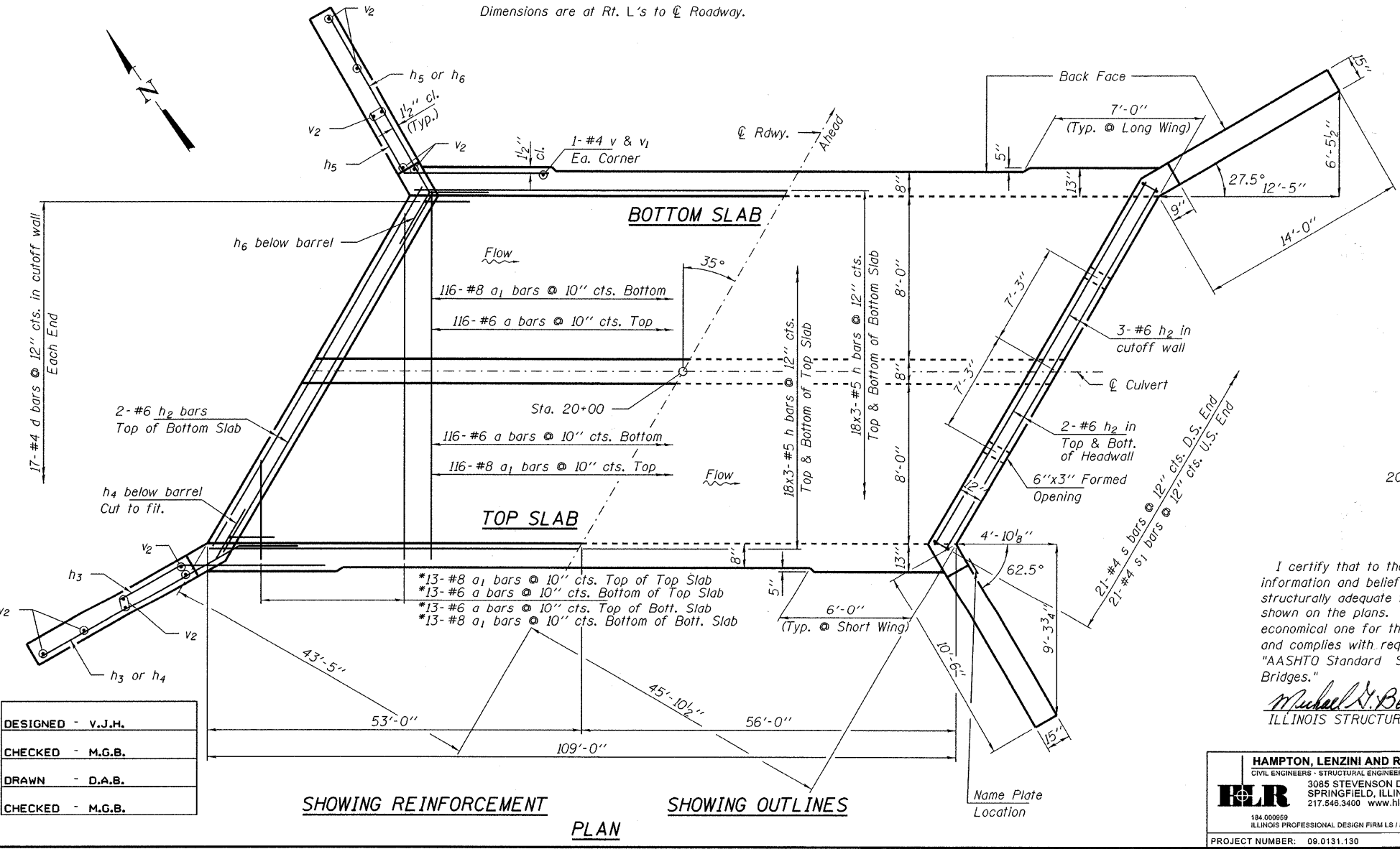
Name Plate to be located on outside face of southwest wingwall.

6-#9  $h_3$  bars @ 7" cts. (Back Face - Long Wing)  
6-#6  $h_5$  bars @ 7" cts. (Back Face - Short Wing)  
14-#9  $h_3$  bars @ 7" cts. (Front Face - Long Wing)  
14-#6  $h_5$  bars @ 7" cts. (Front Face - Short Wing)  
Bend in Field (Typ.)

14-#9  $h_4$  bars @ 7" cts. (Back-Long Wings)  
14-#6  $h_6$  bars @ 7" cts. (Back-Short Wings)

Elev. 568.28  
Elev. 566.88  
Elev. 558.70  
Elev. 557.30

**NOTES**  
Exposed edges shall be beveled 3/4".  
For backfilling and embankment, see Standard Specifications, except that porous granular embankment shall be placed as shown, in the detail.  
Reinforcement bars shall conform to the requirements of AASHTO M-31, or M-322 Grade 60. It shall be the responsibility of the Contractor to divert flow during construction in order to keep construction areas free of water. The method of water diversion shall be subject to the approval of the Engineer and shall be considered included in the cost of Concrete Box Culverts. Bars indicated thus 23x3-#6 etc. indicates 23 lines of bars with 3 lengths per line.  
All construction joints shall be bonded.  
Precast concrete box culverts will not be allowed.  
See sheets 20 & for borings.  
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with wingwalls.  
All reinforcement bars shall be epoxy coated.



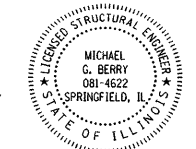
**SHOWING REINFORCEMENT**  
**SHOWING OUTLINES**  
**PLAN**

\* a & a1 bars in skew portion of slab shall be ordered full length and cut to fit. Balance of bar to be used in opposite end of culvert.

**LOADING HS-20 DESIGN STRESSES**  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinf.)  
**DESIGN SPECIFICATIONS**  
2002 AASHTO and all applicable inferences

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 current "AASHTO Standard Specifications for Highway Bridges."

Michael N. Berry 12/16/09  
ILLINOIS STRUCTURAL NO. 081-4622



Expires 11-30-2010

**BILL OF MATERIAL**

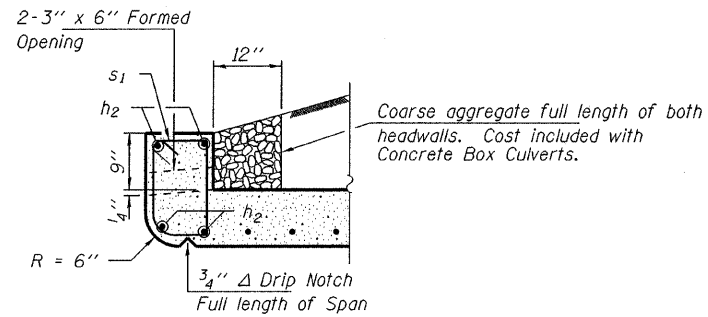
Bar	No.	Size	Length	Shape
a	258	#6	19'-0"	—
a1	258	#8	17'-8"	—
d	34	#4	4'-6"	└
h	216	#5	37'-4"	—
h1	63	#6	37'-7"	—
h2	18	#6	21'-8"	—
h3	40	#9	8'-0"	—
h4	28	#9	18'-5"	—
h5	40	#6	8'-0"	—
h6	28	#6	13'-8"	—
s	21	#5	4'-9"	□
s1	21	#5	4'-7"	□
v	565	#5	8'-2"	—
v1	565	#5	2'-4"	—
v2	24	#4	12'-3"	—
Concrete Box Culverts		Cu. Yd.	222.0	
Reinf. Bars, Epoxy Coated		Pound	42,670	
Porous Granular Embankment		Ton	555	
Name Plates		Each	1	

**STRUCTURE NO. 012-5008**

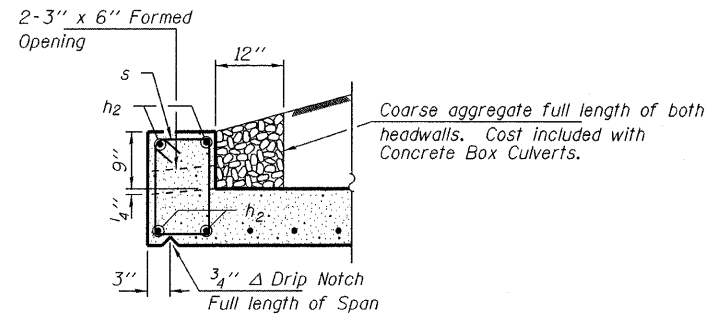
DESIGNED - V.J.H.  
CHECKED - M.G.B.  
DRAWN - D.A.B.  
CHECKED - M.G.B.

**HAMPTON, LENZINI AND RENWICK, INC.**  
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS  
3085 STEVENSON DRIVE, SUITE 201  
SPRINGFIELD, ILLINOIS 62703  
217.546.3400 www.hlrengineering.com  
184.000659  
ILLINOIS PROFESSIONAL DESIGN FIRM L3 / PE / SE CORPORATION  
PROJECT NUMBER: 09.0131.130 DATE: 11/03/09

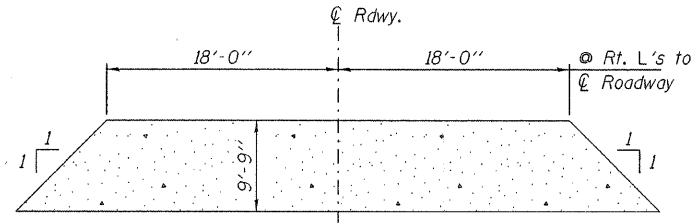
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	18
EAST CULVERT		CONTRACT NO. 95612		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



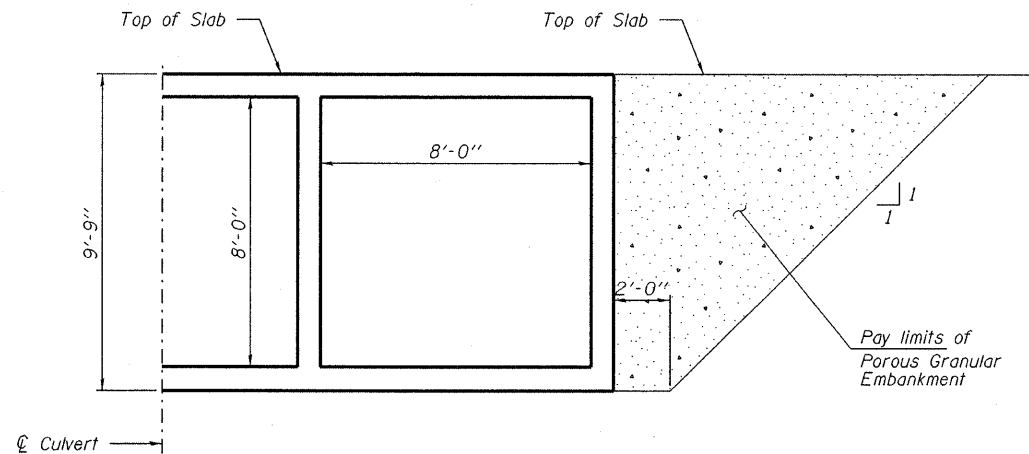
**UPSTREAM END**



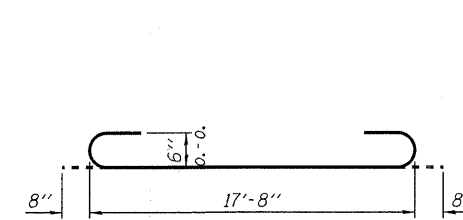
**DOWNSTREAM END**



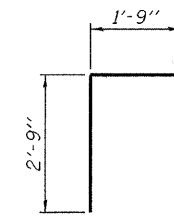
**LENGTH OF POROUS GRANULAR EMBANKMENT**



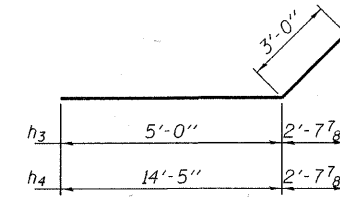
**POROUS GRANULAR EMBANKMENT DETAILS**



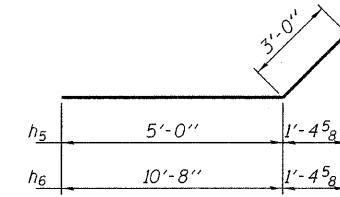
**BAR a**



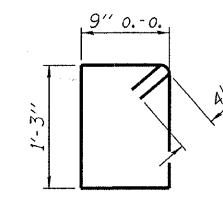
**BAR d**



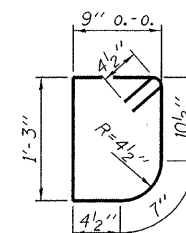
**BARS h3 & h4**



**BARS h5 & h6**



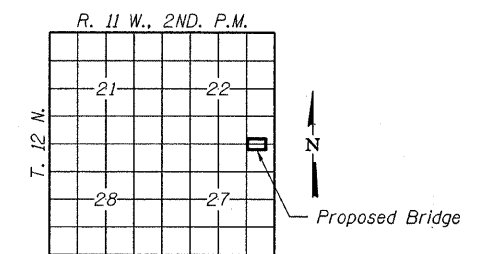
**BAR s**



**BAR s1**

HAWKS CREEK  
 BUILT 20 BY  
 CLARK COUNTY  
 SEC. 09-00268-00-DR  
 C.H. 12  
 STR. NO. 012-5008  
 LOADING HS20

**NAME PLATE**  
 See Std. 515001



**LOCATION SKETCH**

**WATERWAY INFORMATION**

Existing Low Grade Elev. 580.51 @ Sta. 21+00  
 Drainage Area = 1.73 Sq. Mi. Proposed Low Grade Elev. 580.51 @ Sta. 21+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	20	730	34	109	564.82	3.25	0.16	568.07	564.98
Base	100	1120	46	132	566.92	6.60	0.26	573.52	567.18
Max. Calc.	500	1530	54	147	567.87	11.48	1.78	579.35	569.65

10 Year Velocity through Existing Bridge = 20.3 fps      10 Year Velocity through Proposed Bridge = 5.9 fps

DESIGNED - V.J.H.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

**CULVERT DETAILS**  
**STRUCTURE NO. 012-5008**

HAMPTON, LENZINI AND RENWICK, INC. CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 217.546.3400 www.hirengineering.com 184.000959 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	12	09-00268-00-DR	CLARK	20	19
EAST CULVERT			CONTRACT NO. 95612		
PROJECT NUMBER: 09.0131.130		DATE: 11/03/09			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

NOBLE		Project: East Culvert E2150th Rd.		BORING No. B-1		water level reading			
ENGINEERING CONSULTANTS		County: Clay, IL		Sheet No. 1 of 2		1st encounter: Dry			
Client: Clark County Highway Dept.		Weather: Sunny		Temperature: low 80's		water level reading			
Driller: Noble Engineering Consultants		Date Start: 7-28-09		Surface Elevation: NA		@completion 19'			
Location: Section 09-00268-00-BR		Date Finished: 7-28-09		Driller: Bill Sudduth		Backfill: soil cuttings			
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Q <sub>u</sub> (tsf)	Soil Description	Moisture %	Elev.
1									
2	SS-1	1.0'-2.5'	9	3-4-5	40	-	0.0'-0.5' Gravelly topsoil	5.9	
3									
4	SS-2	3.5'-5.0'	11	2-4-7	100	-	0.5'-15.0' silty, clayey, gravelly sandy, etc. FILL	20.8	
5									
6	SS-3	6.0'-7.5'	10	2-4-6	100	-		18.5	
7	ST-1	7.5'-8.5'	FILL					17.3	
8									
9	SS-4	8.5'-10.0'	12	3-4-8	100	-		24.2	
10									
11									
12									
13									
14	SS-5	13.5'-15.0'	5	2-2-3	100	-	15.0'-34.0' CLAYEY SILT, TILL,	22.9	
15	ST-2	15.0'-16.0'				0.86	moist to wet to 21.5' moist to dry	22.2	
16							below, trace to some sand, trace		
17							gravel, w/ occ. sat. sand seams		
18							below 32', medium to hard, gray		
19	SS-6	18.5'-20.0'	6	2-2-4	100	-		9.9	
20	ST-3	20.0'-21.0'				0.56		11.4	
21									
22									
23									
24	SS-7	23.5'-25.0'	56	14-28-28	100	-		8.0	
25									
26									
27									
28	SS-8	27.5'-29.0'	58	13-24-34	100	-		6.9	
29									
30	SS-9	29.0'-30.0'	59	20-29-30	100	-		7.4	
Drilling Method: HSA (2-1/4" ID)		comments		Auger refusal encountered at 31' below existing grade.					
Depth: 34'									
Drill Rig: Mobile B-47									
Sampling: split-spoon (SS)									
shelby tube (ST)									

NOBLE		Project: East Culvert E2150th Rd.		BORING No. B-1		water level reading			
ENGINEERING CONSULTANTS		County: Clay, IL		Sheet No. 2 of 2		1st encounter: Dry			
Client: Clark County Highway Dept.		Weather: Sunny		Temperature: low 80's		water level reading			
Driller: Noble Engineering Consultants		Date Start: 7-28-09		Surface Elevation: NA		@completion 19'			
Location: Section 09-00268-00-BR		Date Finished: 7-28-09		Driller: Bill Sudduth		Backfill: soil cuttings			
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Q <sub>u</sub> (tsf)	Soil Description	Moisture %	Elev.
31									
32	SS-10	31.0'-32.5'	61	15-31-30	100	-	15.0'-34.0' CLAYEY SILT, TILL,	8.2	
33							moist to wet to 21.5' moist to dry		
34	SS-11	32.5'-34.0'	128	16-57-71	100	-	below, trace to some sand, trace		
35							gravel, w/ occ. sat. sand seams		
36							below 32', medium to hard, gray		
37							EOB 34.0'		
38									
39									
40									
Drilling Method: HSA (2-1/4" ID)		comments		Auger refusal encountered at 34' below existing grade.					
Depth: 34'									
Drill Rig: Mobile B-47									
Sampling: split-spoon (SS)									
shelby tube (ST)									

NOBLE		Project: East Culvert E2150th Rd.		BORING No. B-2		water level reading			
ENGINEERING CONSULTANTS		County: Clay, IL		Sheet No. 1 of 1		1st encounter: Dry			
Client: Clark County Highway Dept.		Weather: Sunny		Temperature: low 70's		water level reading			
Driller: Noble Engineering Consultants		Date Start: 7-29-09		Surface Elevation: NA		@completion cave			
Location: Section 09-00268-00-BR		Date Finished: 7-29-09		Driller: Bill Sudduth		Backfill: soil cuttings			
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Q <sub>u</sub> (tsf)	Soil Description	Moisture %	Elev.
1									
2	SS-1	1.0'-2.5'	9	4-4-5	10	-	0.0'-0.5' Gravelly topsoil	20.9	
3									
4	SS-2	3.5'-5.0'	13	3-4-9	100	-	0.5'-15.0' silty, clayey, gravelly	17.2	
5							sandy, etc. FILL		
6	SS-3	6.0'-7.5'	10	2-5-5	100	-		18.4	
7									
8	ST-1	7.5'-8.5'					FILL	14.9	
9	SS-4	8.5'-10.0'	9	3-4-5	100	-		20.4	
10									
11									
12									
13									
14	SS-5	13.5'-15.0'	7	5-2-3	10	-	15.0'-27.0' CLAYEY SILT, TILL	12.4	
15							trace to some sand, trace gravel,		
16							occ. cobbles below 22', hard, gray		
17							with brown mottling to gray below		
18							22'		
19	SS-6	18.5'-20.0'	63	9-26-37	100	-		9.1	
20									
21									
22									
23									
24	SS-7	22.5'-24.0'	47	7-22-25	100	-		7.5	
25									
26									
27									
28									
29									
30									
Drilling Method: HSA (2-1/4" ID)		comments		Auger Refusal encountered at 27' below existing grade					
Depth: 27'									
Drill Rig: Mobile B-47									
Sampling: split-spoon (SS)									
shelby tube (ST)									

BORING 1

BORING 2

BORINGS  
STRUCTURE NO. 012-5008

DESIGNED - V.J.H.
CHECKED - M.G.B.
DRAWN - D.A.B.
CHECKED - M.G.B.

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 PROJECT NUMBER: 09.0131.130 DATE: 11/03/09

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	09-00268-00-DR	CLARK	20	20
EAST CULVERT		CONTRACT NO. 95612		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		