TENNESSEE VALLEY AUTHORITY — DIVISION OF ENGINEERING DESIGN

CONTRACT REFERENCE OR REQUISITION NO.	ITEM	CLASSIFICATION	DESCRIPTION	QUANTITY	UNITS	MARK NO.
C			48"D PRECAST CONCRETE PIPE, ASTM C76-72a, CLASS V, 4'-0" LONG WITH COMPRESSION TYPE RUBBER GASKETS, ASTM C443-72a	173 PCS		101-19E209 -1
C			DUCTILE IRON MANHOLE STEPS, NEENAH R-1982-J, AS MFD BY NEENAH FOUNDARY CO., NEENAH, WISCONSIN, OR EQUAL	46 PCS		-2
C			CAST IRON MANHOLE FRAME & COVER, NEENAH R-1794-V, AS MFD BY NEENAH FOUNDARY CO., NEENAH, WISCONSIN, OR EQUAL	2		-3

NOTE: ALL QUANTITIES ARE NET

MF
RO

TVA 10573A (DED-11-75)

CIVIL BILL OF MATERIAL

PROJECT SOUTH CHICKAMAUGA CREEK - LEVEE, CHANNEL & DETENTION BASIN

DWG NO. 101-19E209-1, 2 & 3

REV NO.	ECN NO.	DATE	MADE	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD	
0		3-30-78	JLM	HAM	HAM	JWW			TJA	GLB	

KNOXVILLE, TENN DATE 3-30-78

SH 1 OF 1 | 81 | C | 101-19BM209 RO

TENNESSEE VALLEY AUTHORITY — DIVISION OF ENGINEERING DESIGN

CONTRACT REFERENCE OR REQUISITION NO.	ITEM	CLASSIFICATION	DESCRIPTION	QUANTITY	UNITS	MARK NO.
C			CAST IRON GRATING, NEENAH R-4890, AS MFD BY NEENAH FOUNDARY CO., NEENAH, WISCONSIN, OR EQUAL	1		101-19E212 -1
C			*36"D PRECAST CONCRETE PIPE, ASTM C76-72a CLASS III, 4'-0" LONG WITH COMPRESSION TYPE RUBBER GASKETS, ASTM C443-72a	85 PCS		-2
C			*24"D PRECAST CONCRETE PIPE, ASTM C76-72a CLASS III, 4'-0" LONG WITH COMPRESSION TYPE RUBBER GASKETS, ASTM C443-72a	30 PCS		-3
C			CAST IRON GRATING, NEENAH R-4891-A, AS MFD BY NEENAH FOUNDARY CO., NEENAH, WISCONSIN, OR EQUAL	2		-4
C			DUCTILE IRON MANHOLE STEPS, NEENAH R-1982-J, AS MFD BY NEENAH FOUNDARY CO, NEENAH, WISCONSIN, OR EQUAL	24 PCS		-5

MF R0 R1

* IF STEEL PIPE IS USED FOR TUNNELING UNDER EXISTING ROADS, QUANTITIES OF CONCRETE PIPE REQUIRED WILL BE REDUCED.

NOTE : ALL QUANTITIES ARE NET

CIVIL BILL OF MATERIAL

PROJECT SOUTH CHICKAMAUGA CREEK-LEVEE, CHANNEL & DETENTION BASIN

DWG NO. 101-19E212-1 & 2

KNOXVILLE, TENN DATE 7-18-78

SH 1 OF 1 | 81 C 101-19BM212R1

REV NO.	ECN NO.	DATE	MADE	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		7-25-78	JLM	JWW		JWW	ELS			
	REVISED QUANTITY OF 36"D CONC PIPE									
0		7-18-78	JLM	HAM	HAM	JWW	ELS			

TVA 10573A (DED-11-75)

TENNESSEE VALLEY AUTHORITY — DIVISION OF ENGINEERING DESIGN

CONTRACT REFERENCE OR REQUISITION NO.	ITEM	CLASSIFICATION	DESCRIPTION	QUANTITY	UNITS	MARK NO.
C			STEEL FRAME AND COVER, HOT DIP GALVANIZED, TYPE Q-3, AS MFD BY THE BILCO CO., NEW HAVEN, CONN, OR EQUAL	2		101-19E220 -1
C			TS 3"x 3"x .2500 STRUCTURAL TUBING: SQUARE, 6" LONG	32 PCS		

CIVIL BILL OF MATERIAL

PROJECT SOUTH CHICKAMAUGA CREEK-LEVEE, CHANNEL & DETENTION BASIN, MONITORING STA NO. 1 & 2

DWG NO. 101-19E220

REV NO.	ECN NO.	DATE	MADE	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD	
0		12-27-78	JLM	HAM	HAM	JWW HAM					

KNOXVILLE, TENN DATE 12-27-78

SH 1 OF 1 | 81 | C | 101-19BM220 RO

TVA 10573A (EN DES-2-77)

TENNESSEE VALLEY AUTHORITY — DIVISION OF ENGINEERING DESIGN

CONTRACT REFERENCE OR REQUISITION NO.	ITEM	CLASSIFICATION	DESCRIPTION	QUANTITY	UNITS	MARK NO.
C			TYPE I PVC SEALS	179	LF	
C			TYPE II PVC SEALS	350	LF	
C			4" D STD WT BLACK STEEL, 22" LONG	14 PCS		101-19E225-4

NOTE: ALL QUANTITIES ARE NET.

MF
20

CIVIL BILL OF MATERIAL

PROJECT SOUTH CHICKAMAUGA CREEK-PUMPING STATION NO. 1

DWG NO. 101-19E225-1 THRU 4

REV NO.	ECN NO.	DATE	MADE	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD	
0		6-24-77	E.P.C.	JLM	HAM	JWW					

KNOXVILLE, TENN DATE 6-24-77

SH 1 OF 1 C 101-19BM225 R0

TVA 10573A (DED-11-75)

TENNESSEE VALLEY AUTHORITY — DIVISION OF ENGINEERING DESIGN

CONTRACT REFERENCE OR REQUISITION NO.	ITEM	CLASSIFICATION	DESCRIPTION	QUANTITY	UNITS	MARK NO.
C			CAST IRON GRATING, NEENAH R-4825, AS MFD BY NEENAH FOUNDARY CO., NEENAH, WISCONSIN, OR EQUAL	1		101-19E230 -1
C			15"D PRECAST CONCRETE PIPE, ASTM C76-72a, CLASS V, 4'-0" LONG WITH COMPRESSION TYPE RUBBER GASKETS, ASTM C443-72a	7 PCS		-2

NOTE: ALL QUANTITIES ARE NET

CIVIL BILL OF MATERIAL

PROJECT SOUTH CHICKAMAUGA CREEK-PUMPING STATION NO. 1 FINAL GRADING

DWG NO. 101-19E230-1 & 2

REV NO.	ECN NO.	DATE	MADE	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
0		3-31-78	JLM	HAM	HAM	JWB	ELS			

KNOXVILLE, TENN DATE 3-31-78

SH 1 OF 1 81 C 101-19BM230 R0

TVA 10573A (DED-11-75)

TENNESSEE VALLEY AUTHORITY — DIVISION OF ENGINEERING DESIGN

CONTRACT REFERENCE OR REQUISITION NO.	ITEM	CLASSIFICATION	DESCRIPTION	QUANTITY	UNITS	MARK NO.
C			Cast iron manhole steps, Neenah R-1982-J, as mfd by Neenah Foundry Co., Neenah, Wisconsin, or equal	17 pcs		101-19E 235 -1
C			4"D std wt black steel pipe, 9" long	6 pcs		-2
C			54"D precast concrete pipe, ASTM C 76-72a, Class III, 4'-0" long with compression type rubber gaskets, ASTM C 443-72a	6 pcs		-3
C			54" D precast concrete pipe adapter section 21" long (see 101-19E 235-5, detail G5). Strength to conform to ASTM C 76-72a, Class III	1		-4
C			Type II PVC seals	1200	lf	

MF
RO

Note: All quantities are net

CIVIL BILL OF MATERIAL

PROJECT SOUTH CHICKAMAUGA CREEK-PUMPING STATION NO. 2

DWG NO. 101-19E235-1 THRU 5

REV NO.	ECN NO.	DATE	MADE	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
0		6-1-77	V.F.V.	RBR	HAM	JNW	ELS			

KNOXVILLE, TENN DATE 6-1-77

SH 1 OF 1 | 81 | C | 101-19BM235 R0

TVA 10573A (DED-11-75)

TENNESSEE VALLEY AUTHORITY — DIVISION OF ENGINEERING DESIGN

CONTRACT REFERENCE OR REQUISITION NO.	ITEM	CLASSIFICATION	DESCRIPTION	QUANTITY	UNITS	MARK NO.
C			Cast iron manhole steps, Neenah R-1982-J, as mfd by Neenah Foundry Co., Neenah, Wisconsin, or equal	17 pcs		101-19E240 -1
C			4"D std wt black steel pipe, 9" long	4 pcs		-2
C			36"D precast concrete pipe, ASTM C76-72a, Class III, 4'-0" long with compression type rubber gaskets, ASTM C443-72a	12 pcs		-3
C			36"D precast concrete pipe adapter section 21" long (see 101-19E240-4, detail G4). Strength to conform to ASTM C76-72a, Class III	1		-4
C			Type II PVC seals	900	lf	

MF
RO

Note: All quantities are net

CIVIL BILL OF MATERIAL

PROJECT SOUTH CHICKAMAUGA CREEK-PUMPING STATION NO. 3

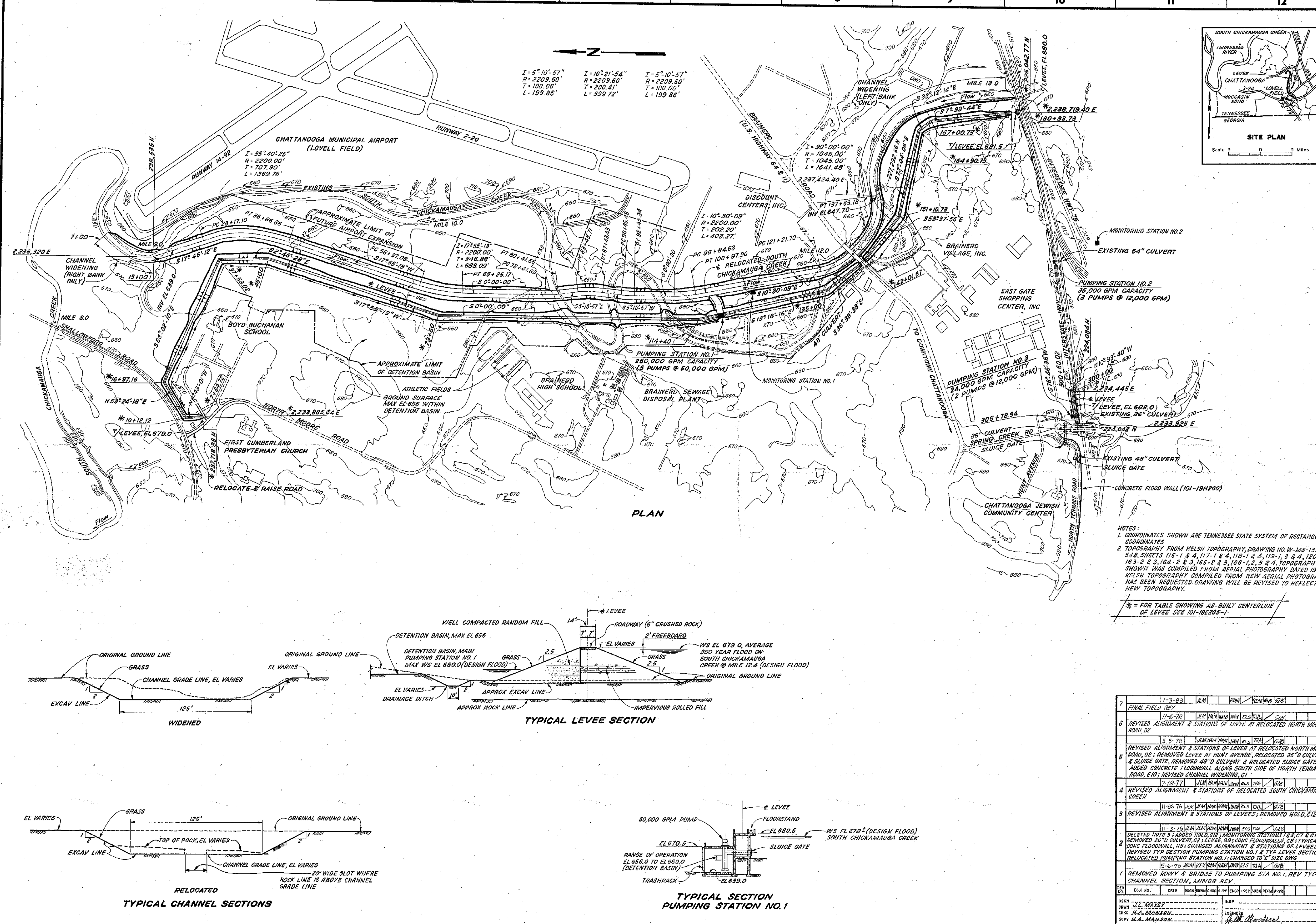
DWG NO. 101-19E240-1 THRU 4

REV NO.	ECN NO.	DATE	MADE	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD	
0		6-1-77	V.F.V.	RBR	HAM	JWW	EGS				

KNOXVILLE, TENN DATE 6-1-77

SH 1 OF 1 | 81 C 101-19BM240 R0

TVA 10573A (DED-11-75)



NOTES:

1. COORDINATES SHOWN ARE TENNESSEE STATE SYSTEM OF RECTANGULAR COORDINATES
2. TOPOGRAPHY FROM KELSH TOPOGRAPHY, DRAWING NO. W-MS-132K-548, SHEETS 116-1 & 4, 117-1 & 4, 118-1 & 4, 119-1, 3 & 4, 120-1, 163-2 & 3, 164-2 & 3, 165-2 & 3, 166-1, 2, 3 & 4. TOPOGRAPHY SHOWN WAS COMPILED FROM AERIAL PHOTOGRAPHY DATED 1964. KELSH TOPOGRAPHY COMPILED FROM NEW AERIAL PHOTOGRAPHY HAS BEEN REQUESTED. DRAWING WILL BE REVISED TO REFLECT NEW TOPOGRAPHY.

✱ = FOR TABLE SHOWING AS-BUILT CENTERLINE OF LEVEE SEE 101-19E205-1

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR	DESCRIPTION
7		1-3-83		JLM			RDM	/	RDM	ELS	GLB	FINAL FIELD REV
6		11-6-78		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	REVISED ALIGNMENT & STATIONS OF LEVEE AT RELOCATED NORTH MOORE ROAD, D2
5		5-5-78		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	REVISED ALIGNMENT & STATIONS OF LEVEE AT RELOCATED NORTH MOORE ROAD, D2; REMOVED LEVEE AT HUNT AVENUE, RELOCATED 36"D CULVERT & SLUICE GATE, REMOVED 48"D CULVERT & RELOCATED SLUICE GATE, ADDED CONCRETE FLOODWALL ALONG SOUTH SIDE OF NORTH TERRACE ROAD, E10; REVISED CHANNEL WIDENING, C1
4		7-19-77		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	REVISED ALIGNMENT & STATIONS OF RELOCATED SOUTH CHICKAMAUGA CREEK
3		11-26-76	JLM	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	REVISED ALIGNMENT & STATIONS OF LEVEES; REMOVED HOLD, C12
2		11-3-76	JLM	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	DELETED NOTE 3; ADDED HOLD, C12; MONITORING STATIONS 1 & 2, C7 & C10; REMOVED 36"D CULVERT, C2; LEVEE, B9; CONC FLOODWALLS, C8; TYPICAL CONC FLOODWALL, H5; CHANGED ALIGNMENT & STATIONS OF LEVEES; REVISED TYP SECTION PUMPING STATION NO. 1 & TYP LEVEE SECTION; RELOCATED PUMPING STATION NO. 1; CHANGED TO "E" SIZE DWG
1		5-6-76	HAM	V.F.V.	HAM	HAM	JWW	ELS	TJA	/	GLB	REMOVED RDWY & BRIDGE TO PUMPING STA NO. 1, REV TYP CHANNEL SECTION, MINOR REV

DSGN
DRWN J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON
INSP
ENGINEER [signature]

CHATTANOOGA FLOOD PROTECTION
ALL FEATURES

GENERAL
PLANS & SECTIONS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

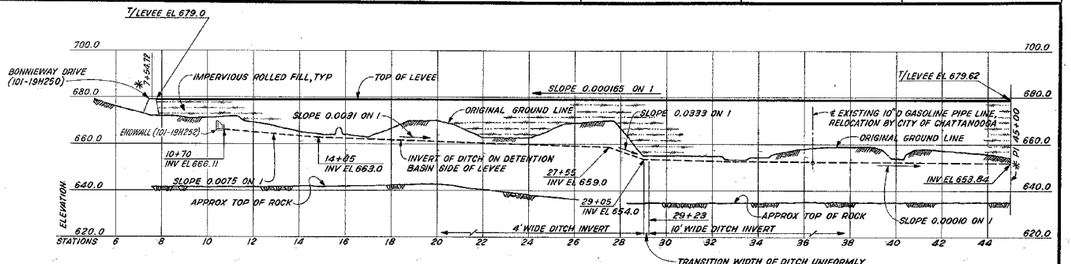
SUBMITTED	RECOMMENDED	APPROVED
E. S. [signature]	T. J. [signature]	[signature]

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 2-17-76 | 81 | C | 101-19E200 R7

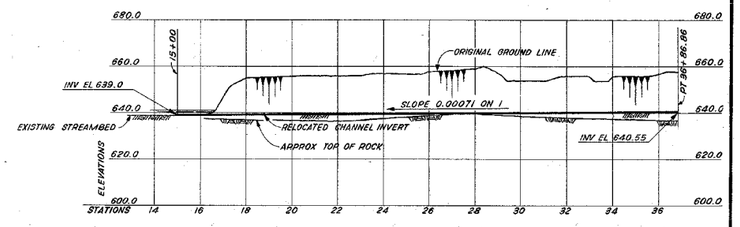
RECORD DRAWING AS CONSTRUCTED Frank Van [signature] 1/27/81 R7

81 C 101-19W200



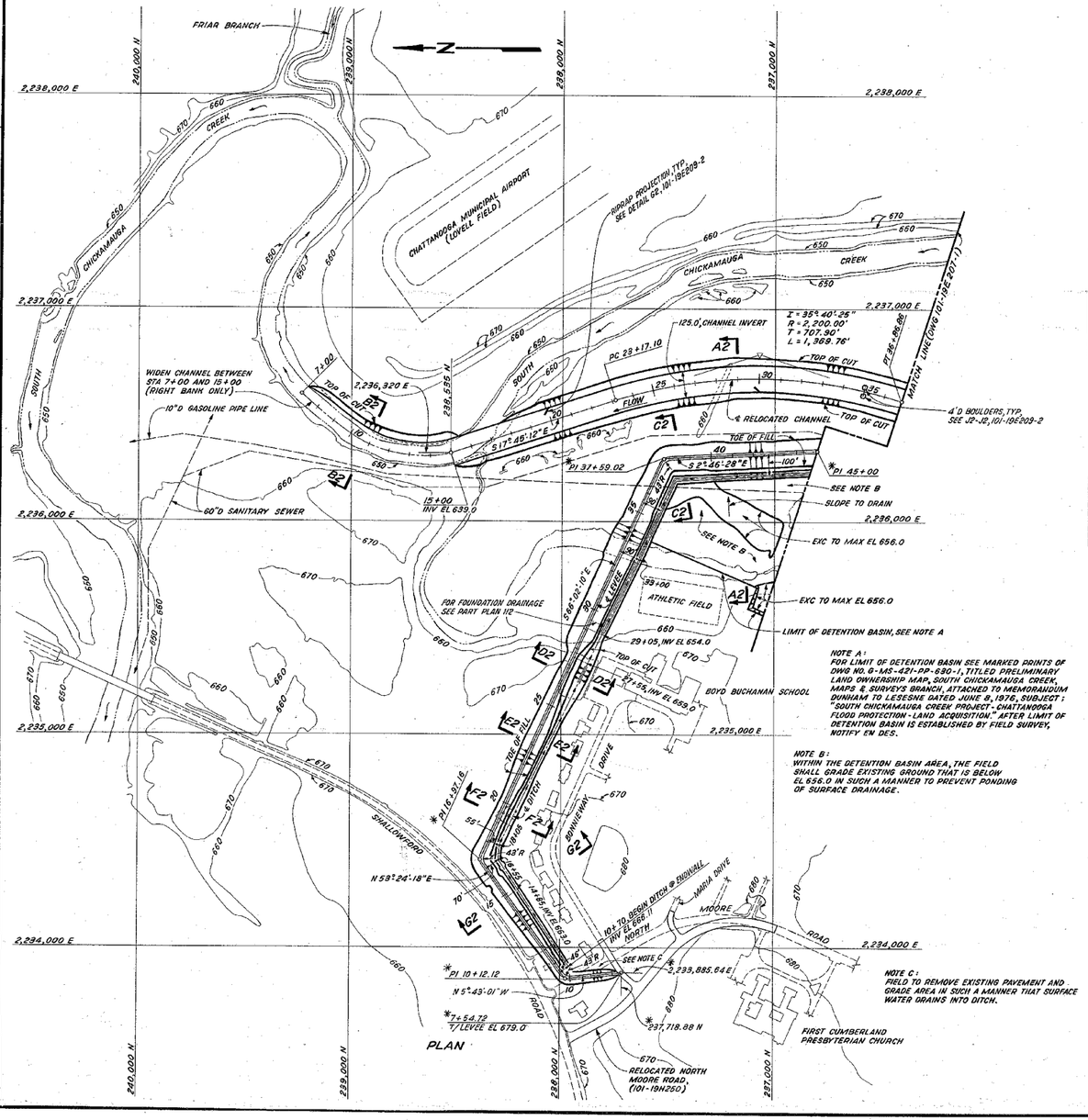
PROFILE ALONG ℄ LEVEE

HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE 1" = 20'



PROFILE ALONG ℄ RELOCATED CHANNEL

HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE 1" = 20'



NOTE A:
FOR LIMIT OF DETENTION BASIN SEE MARKED PRINTS OF DWG NO. G-MS-421-PP-630-1, TITLED PRELIMINARY LAND OWNERSHIP MAP, SOUTH CHICKAMAUGA CREEK, MAPS & SURVEYS BRANCH, ATTACHED TO MEMORANDUM DUNHAM TO LESESNE DATED JUNE 8, 1976, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHATTANOOGA FLOOD PROTECTION - LAND ACQUISITION." AFTER LIMIT OF DETENTION BASIN IS ESTABLISHED BY FIELD SURVEY, NOTIFY EN DES.

NOTE B:
WITHIN THE DETENTION BASIN AREA, THE FIELD SHALL GRADE EXISTING GROUND THAT IS BELOW EL 656.0 IN SUCH A MANNER TO PREVENT PONDING OF SURFACE DRAINAGE.

NOTE C:
FIELD TO REMOVE EXISTING PAVEMENT AND GRADE AREA IN SUCH A MANNER THAT SURFACE WATER DRAINS INTO DITCH.

* TABLE SHOWING AS-BUILT CENTERLINE OF LEVEE

STATION	EAST COORD	NORTH COORD
BEGIN 7+42.69	2,239,812.95	237,685.14
PI 7+83.95	2,233,842.94	237,713.62
PI 9+74.21	2,239,974.81	237,738.07
POT 9+84.37	2,233,860.32	237,907.27
POT 10+67.73	2,233,851.99	237,970.08
POT 11+25.69	2,233,924.14	238,028.12
PI 17+32.28	2,234,412.89	238,382.39
PI 27+78.07	2,236,292.73	237,545.61
PI 45+07.53	2,236,330.19	236,803.44
PI 73+64.33	2,235,447.75	234,084.02
PI 114+42.02	2,235,449.51	230,004.91
PI 135+02.98	2,236,923.04	227,998.19
PI 142+01.67	2,236,349.00	227,487.00
PI 149+06.57	2,236,052.07	226,949.42
POT 151+01.22	2,237,051.26	226,803.98
PI 166+07.11	2,238,519.44	226,569.08
END 180+01.69	2,239,705.27	225,192.44

NOTES:
1. ALL EARTHWORK CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-9.
2. THE REQUIRED COMPACTION FOR IMPERVIOUS ROLLED FILL SHALL BE AT LEAST 95 PERCENT OF STANDARD PROCTOR MAXIMUM DENSITY (ASTM D 698) AS ESTABLISHED BY TVA SOILS LABORATORY, WITH MINIMUM MOISTURE CONTENT NOT MORE THAN 2 PERCENT BELOW OPTIMUM AND MAXIMUM MOISTURE CONTENT AS HIGH AS PLACEMENT OF EMBANKMENT MATERIAL WILL PERMIT TO OBTAIN THE REQUIRED DENSITY.
3. WELL COMPACTED RANDOM FILL MAY BE USED INSTEAD OF IMPERVIOUS ROLLED FILL ON THE DETENTION BASIN SIDE OF THE LEVEE TO UTILIZE THE MORE PERVIOUS RIPRAP MATERIALS FROM THE CHANNEL EXCAVATION. THESE MATERIALS MAY CONSIST OF FINE GRAINED SOILS; SANDY SOILS; OR GRAVELLY SOILS BLENDED WITH SAND, CLAY OR SILT. ORGANIC MATERIAL SUCH AS ROTABLE DEBRIS, ETC. IS NOT PERMITTED IN THE LEVEE FILL MATERIAL. A MINIMUM 12 INCH THICK LAYER OF FINE GRAINED SOILS SHALL BE PLACED AND COMPACTED ON TOP OF RANDOM FILL SLOPES TO PERMIT GRASSING AND TO PREVENT EROSION OF THE SANDY MATERIALS. NO MOISTURE CONTROL IS REQUIRED IN THE RANDOM FILL ZONE.
4. FOR ADDITIONAL NOTES SEE 101-19E205-2

* = SEE TABLE SHOWING AS-BUILT CENTERLINE OF LEVEE, THIS DWG

SCALE 1" = 200' EXCEPT AS NOTED

COMPANION DRAWING: 101-19E205-2

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	CHGD	INSP	SUBM	RECM	APPR
6	FINAL FIELD REV	1-3-83	LEM		PDM		PDM	KLS	WLK		
5	REVISED ALIGNMENT & STATIONS OF LEVEE @ BONNIEWAY DRIVE, J4, A7; REVISED BEGINNING OF DITCH, SLOPE & INV AND ADDED ENDWALL, J5, A7; REVISED RELOCATED NORTH MOORE ROAD AND BONNIEWAY DRIVE REFERENCE DRAWING NO, H5, A8; REVISED TITLE BLOCK, H11	11-6-78	LEM	MAH	HAM	JWW	KLS	TJA	WLK		
4	ADDED RIPRAP PROJECTION, E4, E6 & 4'D BOULDERS, E6	9-19-78	LEM	MAH	HAM	JWW	KLS	TJA	WLK		
3	ADDED PDM DRAINAGE, G4; REVISED INV OF DITCH, B10, B11, B12, G5	7-26-78	LEM	JWW		JWW	SRS		WLK		
2	REVISED ALIGNMENT & STATIONS OF LEVEE & RELOCATED NORTH MOORE ROAD, J6; PROFILE ALONG ℄ LEVEE, A7 & A10; CHANNEL WIDENING, E2; TITLE BLOCK	5-5-78	LEM	MAH	HAM	JWW	CJS	TJA	WLK		
1	REMOVED HOLD ON CUTOFF TRENCH, B12; REVISED HORIZONTAL & VERTICAL ALIGNMENT OF LEVEE & CHANGED TO SIZE E DWG	12-10-76	LEM	MAH	HAM	JWW	CJS	TJA	WLK		

DSGN J.L. MAYEY
DRWN
CHKD W.A. MANSON
SUPV W.E. MADDOX 3-28-76

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS
STATION 7+54.72 TO 45+00

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

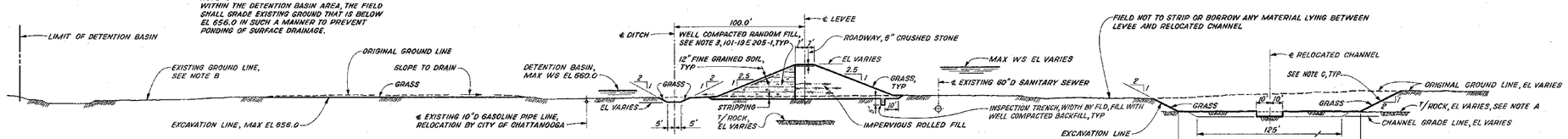
SUBMITTED	RECOMMENDED	APPROVED
E.J. Damm	D.J. Abraham	W.L. Rochow

KNOXVILLE | 10-5-76 | 81 | C | 101-19E205-1 R6

RECORD DRAWING AS CONSTRUCTED
Frankie Martin 1/27/81 R6

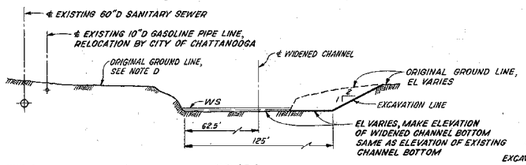
81 C 101-19W205-1

NOTE B:
WITHIN THE DETENTION BASIN AREA, THE FIELD SHALL GRADE EXISTING GROUND THAT IS BELOW EL 656.0 IN SUCH A MANNER TO PREVENT PONDING OF SURFACE DRAINAGE.



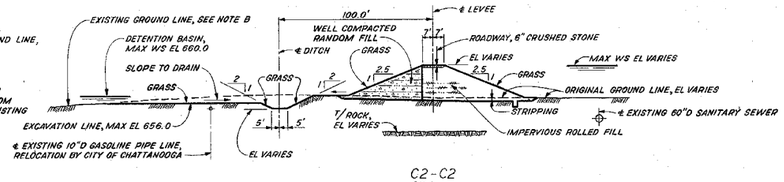
A2-A2
SH 1

NOTE A:
IF ROCK IS ENCOUNTERED ABOVE CHANNEL GRADE LINE DURING EXCAVATION, THE FIELD IS TO IMMEDIATELY PROVIDE EN DES WITH CHANNEL CROSS SECTIONS SHOWING THE EXTENT AND ELEVATION OF TOP OF ROCK. EN DES WILL THEN DETERMINE THE REQUIRED WIDTH OF THE CHANNEL BOTTOM AND FURNISH THE INFORMATION TO THE FIELD.

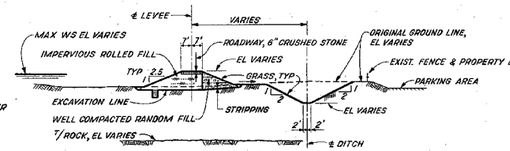


B2-B2
SH 1

NOTE D:
FIELD TO EXERCISE EXTREME CARE NOT TO DISTURB OR CHANGE EXISTING CREEK BANK INCLUDING VEGETATION AND TREES.

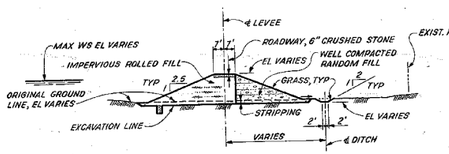


C2-C2
SH 1

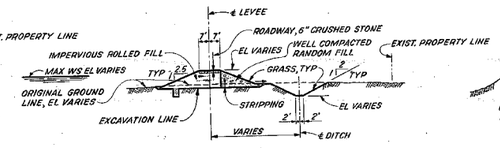


D2-D2
SH 1

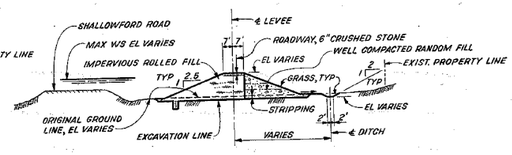
NOTE C:
FOR TREATMENT OF SLOPES IN AREAS NEAR PIPE LINES AND WHERE SLOUGHING IS A PROBLEM, SEE MEMO G.L. BUCHANAN TO GENE FARMER DATED SEPTEMBER 15, 1977, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHANNEL EXCAVATION", AND MEMO G.W. KIMMONS TO PETER A. KIRENKEL DATED OCTOBER 6, 1977, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHANNEL EROSION."



E2-E2
SH 1

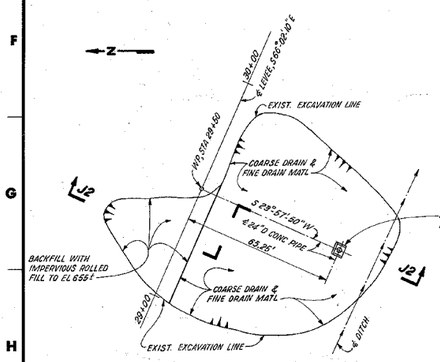


F2-F2
SH 1

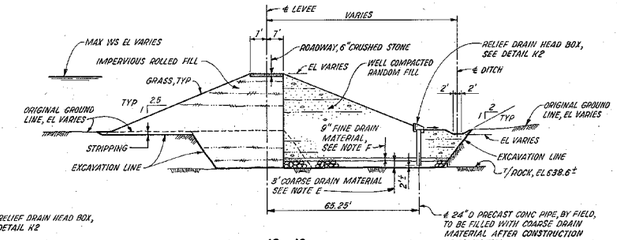


G2-G2
SH 1

NOTES:
1. RELOCATION OF ALL UTILITIES INCLUDING ONES NOT SHOWN SHALL BE BY CITY OF CHATTANOOGA. MODIFICATION OF ANY UTILITIES PASSING UNDER THE LEVEE SHALL BE BY CITY OF CHATTANOOGA IN ACCORDANCE WITH TVA REQUIREMENTS.
2. CONSTRUCTION OF CRUSHED STONE ROADWAY SHALL BE IN ACCORDANCE WITH HIGHWAY SPECIFICATION NO. T-1, SECTION 210. CRUSHED STONE SHALL CONFORM TO HIGHWAY SPECIFICATION NO. T-1, SECTION 1092.
3. FOR SEEDING OF GRASS IN DESIGNATED AREAS SEE TYPICAL SEEDING SECTION, 101-19E207-2.
4. FOR ADDITIONAL NOTES SEE 101-19E205-1



PART. PLAN H2
1"=20'

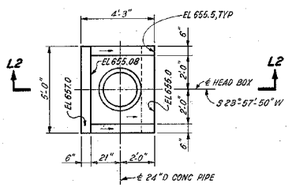


J2-J2
1"=20'

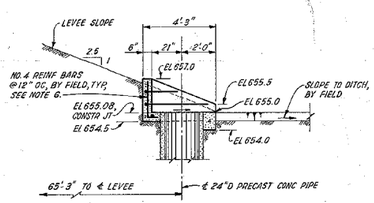
NOTE E:
COARSE DRAIN MATERIAL SHALL CONFORM TO SPECIFICATION T-1, SECTION 1032, EXCEPT THE GRADATION SHALL CONFORM TO ASTM SPECIFICATION D-448-64, SIZE NO 57.

NOTE F:
FINE DRAIN MATERIAL MAY BE EITHER NATURAL OR MANUFACTURED SAND AND SHALL CONFORM TO AST M DESIGNATION C-33 FOR CONCRETE SAND. THE GRADATION SHALL BE AS GIVEN IN ASTM DESIGNATION C-33, EXCEPT NOT MORE THAN 5% BY WEIGHT SHALL PASS THE NO. 100 SIEVE AND NOT MORE THAN 2% BY WEIGHT SHALL PASS THE NO. 200 SIEVE. THE GRADATION DETERMINATION SHALL BE MADE USING THE WET SIEVE ANALYSIS.

NOTE G:
CONCRETE SHALL BE PLACED IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-2, CONCRETE SHALL BE CLASS 300.75 AFW. REINFORCEMENT SHALL CONFORM TO ASTM SPECIFICATION A615, GRADE 60.



DETAIL K2
3/8"=1'0"



L2-L2
3/8"=1'0"

REV NO.	ECN NO.	DATE	DESN	DRWN	CHKD	SUPV	ENGR	VERF	SUBM	TECH	APPR
5		11-27-78	WM	WM	DRW	WM	DRW	CLS	TJA		GLB
4	REVISED NOTE 3	11-6-78	WM	WM	WM	WM	DRW	CLS	TJA		GLB
3	REVISED TITLE BLOCK, K11	7-25-78	WM	WM		WM		CLS			GLB
2	ADDED PART. PLAN H2, J2-J2, DETAIL K2, L2-L2 AND NOTES E, F & G	5-5-78	WM	WM	WM	WM	DRW	CLS	TJA		GLB
1	REVISED B2-B2, ADDED NOTE C & NOTE D & REVISED TITLE BLOCK	12-10-76	WM	WM	WM	WM	CLS		TJA		GLB
	REMOVED HOLD ON CUTOFF TRENCH, B7, C6 AND CHANGED TO SIZE E DWG; ADDED INSPECTION TRENCH, REVISED TITLE BLOCK										

DSGN —
DRWN T.J. MAYER
CHKD H.A. HANSON
SUPV G.L. BUCHANAN 3-28-76
INSP —
ENGINEER —

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS

STATION 7+54.72 TO 45+00

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. S. Bynum	T. J. Abraham	[illegible]

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

SCALE 1"=30' EXCEPT AS NOTED

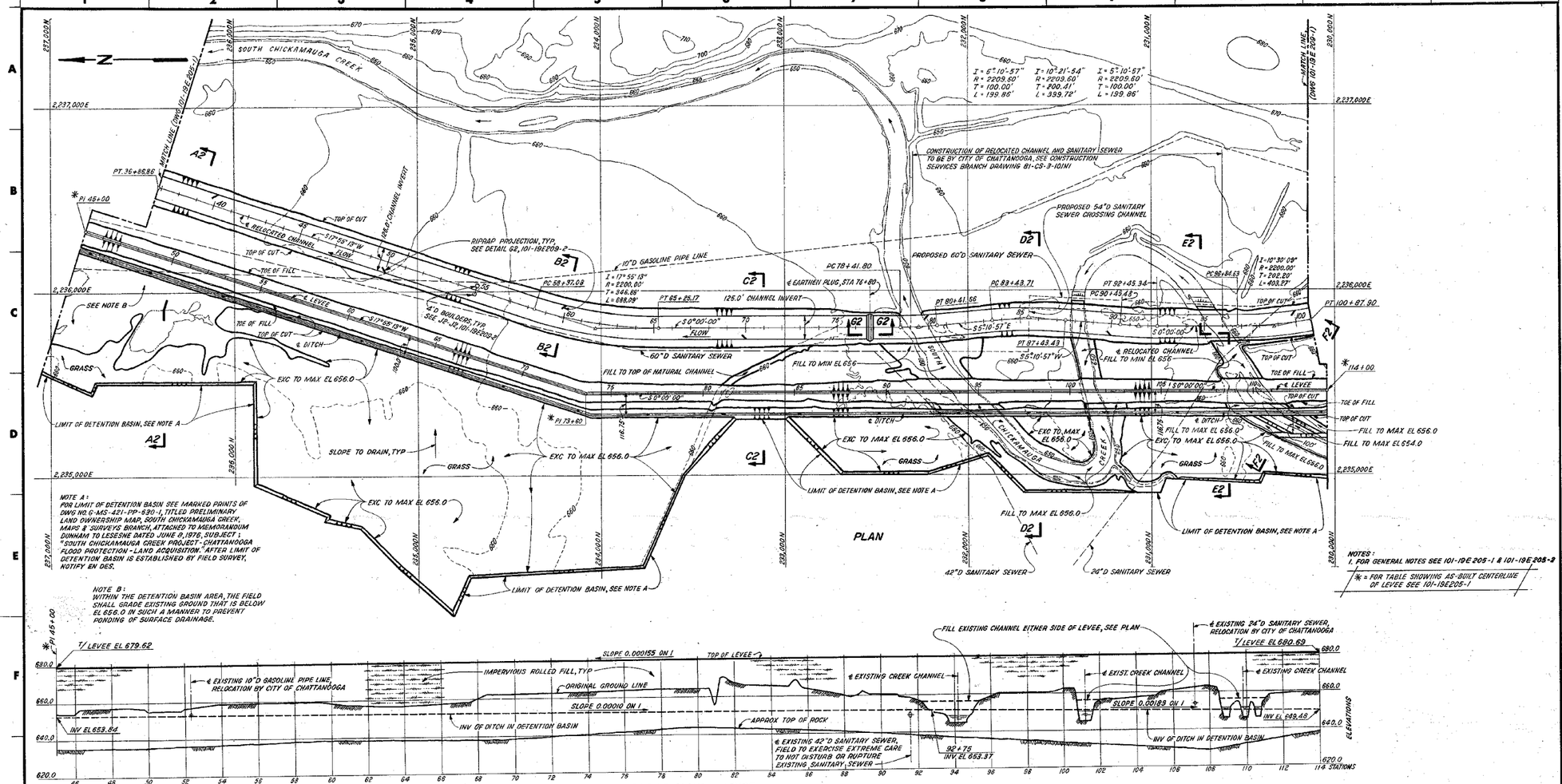
COMPANION DRAWING:
101-19E 205-1

KNOXVILLE	10-5-76	81	C	101-19E205-2 R5

SECOND DRAWING CONSTRUCTED
[illegible] 12/21/81 R5

81 C 101-19W205-2

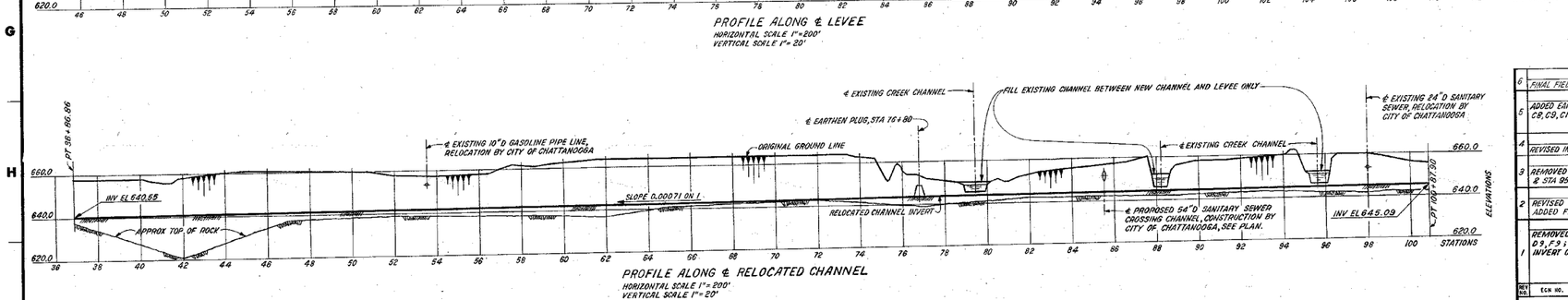
TECHNICAL INFORMATION CENTER
DENVER



NOTE A:
FOR LIMIT OF DETENTION BASIN SEE MARKED PRINTS OF DWG NO C-AGS-421-PP-930-L, TITLED PRELIMINARY LAND OWNERSHIP MAP, SOUTH CHICKAMAUGA CREEK, MAPS & SURVEYS BRANCH, ATTACHED TO MEMORANDUM DUNHAM TO LESESNE DATED JUNE 9, 1972, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHATTANOOGA FLOOD PROTECTION - LAND ACQUISITION." AFTER LIMIT OF DETENTION BASIN IS ESTABLISHED BY FIELD SURVEY, NOTIFY EN DES.

NOTE B:
WITHIN THE DETENTION BASIN AREA, THE FIELD SHALL GRADE EXISTING GROUND THAT IS BELOW EL 656.0 IN SUCH A MANNER TO PREVENT PONDING OF SURFACE DRAINAGE.

NOTES:
1. FOR GENERAL NOTES SEE 101-19E 205-1 & 101-19E 205-2
* = FOR TABLE SHOWING AS-BUILT CENTERLINE OF LEVEE SEE 101-19E205-1



PROFILE ALONG ℄ LEVEE
HORIZONTAL SCALE 1"=200'
VERTICAL SCALE 1"= 20'

PROFILE ALONG ℄ RELOCATED CHANNEL
HORIZONTAL SCALE 1"= 200'
VERTICAL SCALE 1"= 20'

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SURV	RECM	APPD
6		1-3-83	JLM	WAM	WAM	ELS					
	FINAL FIELD REV	3-13-78	JLM	WAM	WAM	JWV	ELS	TJH		VGB	
5	ADDED EARTHEN PLUG, C7, H5; ADDED RIPRAP PROJECTION, B2, C3, C5, C6, C8, C9, C10; ADDED 4'D BOULDERS, C4										
4		7-25-78	JLM	WAM	WAM	JWK	ELS	TJH		VGB	
	REVISED INV AND SLOPE OF DITCH, F1, F5, F7 & F9	6-7-78	JLM	WAM	WAM	JWV	ELS	TJH		VGB	
3	REMOVED FILL IN EXISTING CHANNEL @ STA 79+00±, STA 88+00± & STA 95+00±, EAST SIDE ONLY										
		7-13-77	VLG	WAM	WAM	WAM	ELS	TJH		VGB	
2	REVISED ALIGNMENT & STATIONS OF RELOCATED CHANNEL; ADDED F2-F2 & FILL FOR DITCH, D10										
		12-10-76	JLM	WAM	WAM	WAM	JWV	ELS	TJH		VGB
1	REMOVED HOLD ON CUTOFF TRENCH, G3 & PUMPING STATION NO.1, D3, F3; REVISED SLOPE & ELEVATION OF TOP OF LEVEE AND INVERT OF DITCH IN DETENTION BASIN; CHANGED TO SIZE E DWG										

DSGN
DRWN V.F. VANCE & J.C. MAXEY
CHKD H.A. MANSOR
SUPV H.A. MANSOR
INSP
CHIEF E. M. Lesesne

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS
STATION 45+00 TO 114+00

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E.S.	J.A. Abraham	Ed Buchan

KNOXVILLE | 10-5-76 | 81 | C | 101-19E207-1 R6

RECORD DRAWING AS CONSTRUCTED 1/27/81 R6

81 C 101-19W207-1

SCALE 1"=200' EXCEPT AS NOTED

COMPANION DRAWING: 101-19E207-2

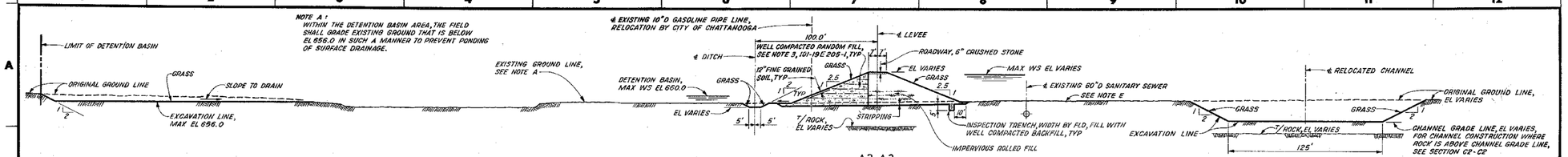
INSPECTED AND APPROVED FOR ISSUE

PRINT N 12/1
SIZE F 3

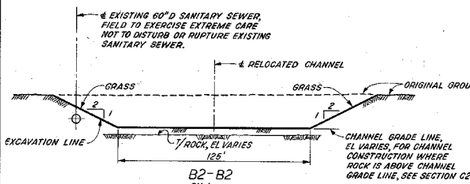
DR OR PROJ | ME | EE | CE | AS | CO | ED | MS | BF | SW | BL | PA
PRINTS RECD-B 2

MF 20
21
22
R3
R4
25
25
R6

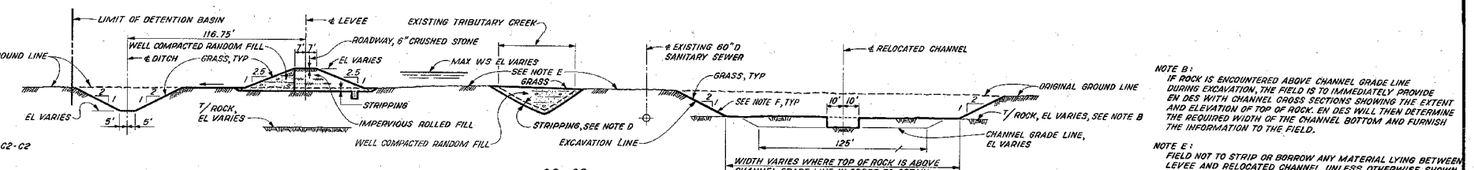
NOTE A :
WITHIN THE DETENTION BASIN AREA, THE FIELD SHALL GRADE EXISTING GROUND THAT IS BELOW EL 656.0 IN SUCH A MANNER TO PREVENT PONDING OF SURFACE DRAINAGE.



A2-A2
SH 1



B2-B2
SH 1

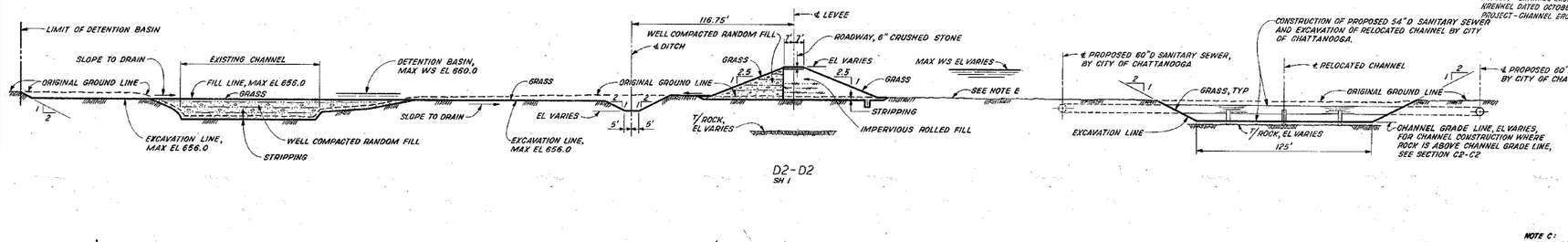


C2-C2
SH 1

NOTE B:
IF ROCK IS ENCOUNTERED ABOVE CHANNEL GRADE LINE DURING EXCAVATION, THE FIELD IS TO IMMEDIATELY PROVIDE EN DES WITH CHANNEL CROSS SECTIONS SHOWING THE EXTENT AND ELEVATION OF TOP OF ROCK. EN DES WILL THEN DETERMINE THE REQUIRED WIDTH OF THE CHANNEL BOTTOM AND FURNISH THE INFORMATION TO THE FIELD.

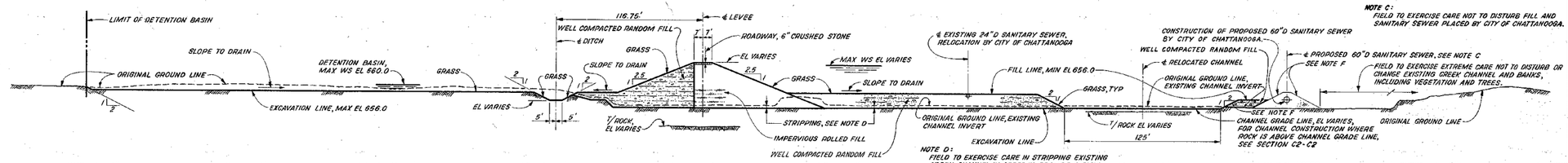
NOTE E:
FIELD NOT TO STRIP OR BORROW ANY MATERIAL LYING BETWEEN LEVEE AND RELOCATED CHANNEL, UNLESS OTHERWISE SHOWN

NOTE F:
FOR TREATMENT OF SLOPES IN AREAS NEAR PIPE LINES AND WHERE SLOUGHING IS A PROBLEM, SEE MEMO G.L. BUCHANAN TO GENE FARMER DATED SEPTEMBER 15, 1977, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHANNEL EXCAVATION", AND MEMO G.H. KIMMONS TO PETER A. KREINKEL DATED OCTOBER 6, 1977, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHANNEL EROSION."



D2-D2
SH 1

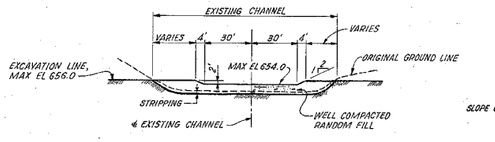
NOTE C:
FIELD TO EXERCISE CARE NOT TO DISTURB FILL AND SANITARY SEWER PLACED BY CITY OF CHATTANOOGA.



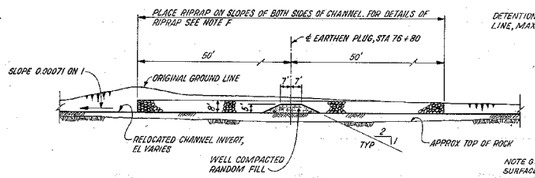
E2-E2
SH 1

NOTE D:
FIELD TO EXERCISE CARE IN STRIPPING EXISTING CREEK CHANNEL IN ORDER TO PROVIDE A FIRM FOUNDATION FOR IMPERVIOUS ROLLED FILL & WELL COMPACTED RANDOM FILL.

NOTES:
1. FOR GENERAL NOTES SEE 101-19E 205-1 & 101-19E 205-2
2. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-2, CONCRETE SHALL BE CLASS 3000 7.5 AFM. REINFORCEMENT SHALL CONFORM TO SPECIFICATION AG 15, GRADE 60.

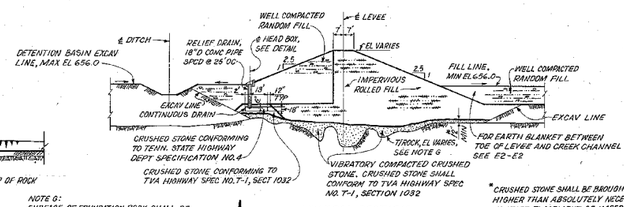


F2-F2
SH 1



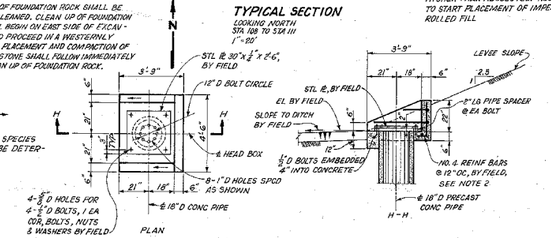
G2-G2
SH 1

NOTE G:
SURFACE OF FOUNDATION ROCK SHALL BE MACHINE CLEANED. CLEAN UP OF FOUNDATION ROCK SHALL BEGIN ON EAST SIDE OF EXCAVATION AND PROCEED IN A WESTERLY DIRECTION. PLACEMENT AND COMPACTION OF CRUSHED STONE SHALL FOLLOW IMMEDIATELY AFTER CLEAN UP OF FOUNDATION ROCK.

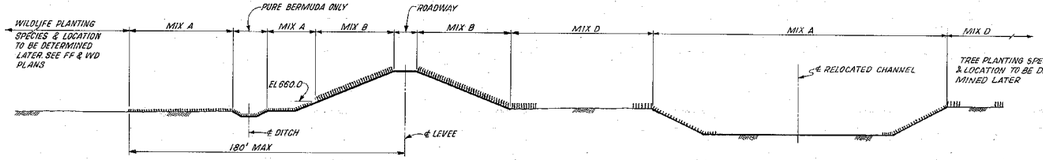


TYPICAL SECTION
LOOKING NORTH
STA 108 TO STA 111
1"=20'

*CRUSHED STONE SHALL BE BROUGHT NO HIGHER THAN ABSOLUTELY NECESSARY TO START PLACEMENT OF IMPERVIOUS ROLLED FILL



DETAIL HEAD BOX
℄ REOD
⅜"=1'-0"



TYPICAL SEEDING SECTION

GRASS SPECIES			
GRASS MIXTURE	NAME	SEEDING RATE (LBS PER AC)	PLANTING SEASON
A	BERMUDA GRASS	40	MAY 15 - JULY 15
	KOREAN LESPEDEZA	10	
B	CROWNVETCH	30	MARCH 15 - MAY 1
	CHEWINGS FESCUE	30	AUG 15 - OCT 15
D	DWARF SERECIA	20	MARCH 15 - MAY 15
	ORCHARD GRASS	20	AUG 15 - OCT 15
	WHITE CLOVER	15	AUG 15 - OCT 15
	CRIMSON CLOVER	15	AUG 15 - OCT 15

SEEDING NOTES:
1. SEEDING OF DESIGNATED AREAS SHALL FOLLOW IMMEDIATELY BEHIND CONSTRUCTION. PLACING OF SEED, COMMERCIAL FERTILIZER AND AGRICULTURE LIMESTONE SHALL CONFORM TO HIGHWAY SPECIFICATION NO. T-1, SECTION 180. SOIL PREPARATION SHALL BE TO A DEPTH OF 2" IN ACCORDANCE WITH PARAGRAPH 190.04.
2. BERMUDA GRASS SEED TO BE HULLED.
3. KOREAN LESPEDEZA AND DWARF SERECIA SEED TO BE SCARIFIED.
4. CROWNVETCH SEED TO BE SCARIFIED AND INOCULATED.
5. LIME AREAS TO BE PLANTED AT RATE OF 2½ TONS PER ACRE.
6. FERTILIZE WITH 19-19-19 AT RATE OF 400 POUNDS PER ACRE.
7. STRAW MULCH ALL PLANTED AREAS AT RATE OF 60 BALES PER ACRE.

COMPANION DRAWING:
101-19E 207-1

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

REV NO.	ECN NO.	DATE	DSGN	DTRN	CHKD	SUPV	ENGR	INSP	SUPN	ECN	APPR
6		12-21-81	MH	Hum	WH	HD	ES	CDC	WHA		
	ADDED TYPICAL SECTION AND DETAIL HEAD BOX.										
5		11-27-78	WM	BAH	WM	DW	ES	TJA	WB		
	ADDED TYPICAL SEEDING SECTION & SEEDING NOTES										
4		9-13-78	JLM	BAH	WM	DW	ES	TJA	WB		
	ADDED G2-G2										
3		6-7-78	VLM	SAM	WM	DW	ES	TJA	WB		
	ADDED WELL COMPACTED RANDOM FILL TO C2-C2, E2-E2 AND NOTE D & ADDED NOTE F; REVISED E2-E2										
2		7-19-77	JLM	BAH	WM	JWM	ES	TJA	WB		
	ADDED F2-F2										
1		12-10-76	VLM	SAM	WM	JWM	ES	TJA	WB		
	REMOVED HOLES ON CUTOFF TRENCH A7, B5, D6, E6 AND CHANGED TO SIZE E DWG ; ADDED INSPECTION TRENCH.										

DSGN: J.G. MARES
CHKD: W.A. MANSON
SUPV: W.A. MANSON 3-8-76
INSP:
ENGINEER: J. G. Mares

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS
STATION 45+00 TO 114+00

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. S. Swinson	J. J. Wiedeman	Carl B. Schmitt

KNOXVILLE	10-5-76	81	C	101-19E207-2 R6

RECORD DRAWING AS CONSTRUCTED
Frank Clan Miller 10/31/84

81 C 101-19W207-2

TECHNICAL INFORMATION CENTER
KNOXVILLE

NOTE A:
FOR LIMIT OF DETENTION BASIN SEE MARKED PRINTS OF DWG NO. G-MS-421-DP-630-1, TITLED PRELIMINARY LAND OWNERSHIP MAP, SOUTH CHICKAMAUGA CREEK, MAPS & SURVEYS BRANCH, ATTACHED TO MEMORANDUM DUNHAM TO LEGESNE DATED JUNE 8, 1976, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHATTANOOGA FLOOD PROTECTION - LAND ACQUISITION." AFTER LIMIT OF DETENTION BASIN IS ESTABLISHED BY FIELD SURVEY, NOTIFY EN DES.

DETAILS AND LOCATION OF FISH ATTRACTORS TO BE PLACED IN CREEK CHANNEL UPSTREAM OF STA 137+69 SHALL BE BY FF & WO.

I = 90°00'-00"
R = 1045.00'
T = 1045.00'
L = 1641.48'

PT 137+69.18 END RELOCATED CHANNEL, BEGIN CHANNEL WIDENING

INV EL 647.70

PI 151+10.79

4'D BOULDERS, TYP

PT 100+87.90

PUMPING STATION NO.1, 101-19E225-1 & 101-19E230-1

PUMPING STATION NO.1, 101-19E225-1 & 101-19E230-1

PT 121+12.20

PI 114+00

PI 118+00.00

PI 137+63.18

PI 157+00

LIMIT OF DETENTION BASIN, SEE NOTE A

LIMIT OF DETENTION BASIN, SEE NOTE A

LIMIT OF DETENTION BASIN, SEE NOTE A

NOTE B:
AREAS OF EXISTING CREEK CHANNEL LOCATED BETWEEN LEVEE & RELOCATED CHANNEL ARE TO BE FILLED WITH WELL COMPACTED RANDOM FILL TO MIN EL 656, SEE E2-E2, 19E 207-2 FOR SIMILAR FILL CONDITIONS.

NOTE C:
FIELD TO EXERCISE EXTREME CARE NOT TO DISTURB OR CHANGE EXISTING CREEK CHANNEL AND BANKS, INCLUDING VEGETATION AND TREES.

PLAN

PART PLAN A1
1" = 50'

NOTE D:
48"D PRECAST CONCRETE PIPE INSTALLATION PROCEDURE ACROSS BRAINERD ROAD TO BE DETERMINED BY FIELD AND COORDINATED WITH EN DES.

NOTE E:
EXISTING GROUND SURFACE UNDER BRIDGE TO BE COVERED WITH RIPRAP AS SHOWN.

NOTE F:
EXISTING STATE HIGHWAY GUARDRAIL TO BE REMOVED AS NECESSARY DURING CONSTRUCTION. AFTER COMPLETION OF CONSTRUCTION, REPLACE TO EDGE OF SECURITY GATE ON ORIGINAL HORIZONTAL ALIGNMENT.

NOTES:
1. RIPRAP SHALL CONFORM TO TVA SPECIFICATION T-1, SECTION 930, AND SHALL BE WELL GRADED. 50% OF RIPRAP BY WEIGHT SHALL BE 200-LB STONES OR LARGER. MAXIMUM SIZE STONE SHALL WEIGH 600-LB AND NOT MORE THAN 5% BY WEIGHT SHALL PASS THE 1" SIEVE.
2. FINE FILTER MATERIAL UNDER RIPRAP SHALL CONFORM TO TVA SPECIFICATION T-1, SECTION 1032, EXCEPT THE GRADATION SHALL BE WELL GRADED FROM 1½" DOWN WITH NOT MORE THAN 5% BY WEIGHT PASSING THE NO. 200 SIEVE.
3. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-8. CONCRETE SHALL BE CLASS 3000 TO AFM. MAX PLACING TEMP OF CONC SHALL BE 70°F.
4. FORMWORK SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-8. FORM LINING FOR EXPOSED CONCRETE SURFACES SHALL BE TYPE A OR TYPE D.
5. CHAMFER ALL EXPOSED EXTENDED EDGES ¾".
6. WELDING OF OR TO HIGH STRENGTH REINFORCING BARS WITHOUT APPROVAL OF CIVIL ENGINEERING AND DESIGN BRANCH IS PROHIBITED.
7. ALL REINFORCEMENT ON THIS DRAWING SHALL CONFORM TO ASTM SPECIFICATION A615, GRADE 60.
8. THE CLEAR COVER FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR SHALL BE 2" UNLESS OTHERWISE NOTED. ALL OTHER DIMENSIONS ARE TO CENTERLINE OF REINFORCEMENT.
9. FOR ADDITIONAL GENERAL NOTES SEE 101-19E205-1 & 2.

* = FOR TABLE SHOWING AS-BUILT CENTERLINE OF LEVEE SEE 101-19E205-1

PROFILE ALONG ℄ RELOCATED CHANNEL
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE 1" = 20'

PROFILE ALONG ℄ LEVEE
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE 1" = 20'

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RTCH	APPR
4	FINAL FIELD REV	1-3-80	VLM		RBM		RDM				
3	REV PLAN, PART PLAN A1 & PROFILE ALONG ℄ LEVEE	9-28-79	DLM	WAR	WAR	JWM	ELS	CJH			
2	REVISED INVERT AND SLOPE OF DITCH IN DETENTION BASIN, H5, G6 & I16	11-1-78	DLM	WAR	WSM	JWM	ELS	CJH			
1	ADDED RIPRAP PROJECTION, CZ C3, B6 & 4'D BOULDERS, B5 & NOTE AT	3-23-78	VLM	WAR	WAR	JWM	ELS	CJH			

DSGN J.C. MAZEY
DRWN
CHKD E.P. CHENEY
SUPV C.L. DRAKEFORD 12-15-77
INSP
CHECKED

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS
STATION 114+00 TO 157+00

SCALE 1"=200' EXCEPT AS NOTED

COMPANION DRAWINGS:
101-19E209-1 THRU 3

REFERENCE DRAWING:
19BM209 - BILL OF MATERIAL

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

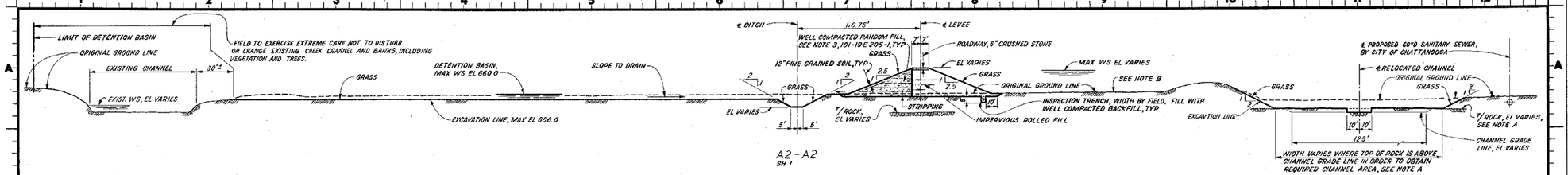
SUBMITTED	RECOMMENDED	APPROVED
E.P. Cheney	W.J. Dunham	W.F. Bibb

KNOXVILLE | 3-30-78 | 81 | C | 101-19E209-1 R4

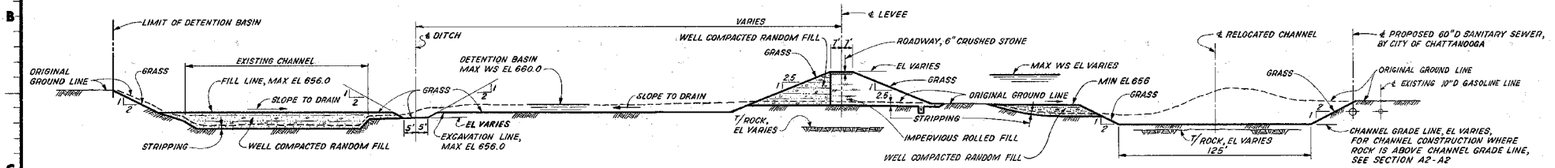
RKOWG DRAWING AS CONSTRUCTED
Frank Van Meter 1/27/81 R4

PRINT H 42
SIZE V 3
BR OR PROJ WE EA CE AD CO EU MO MPP SW BL PA
PRINTS REQD-R

101-19E209-2 | C | 18



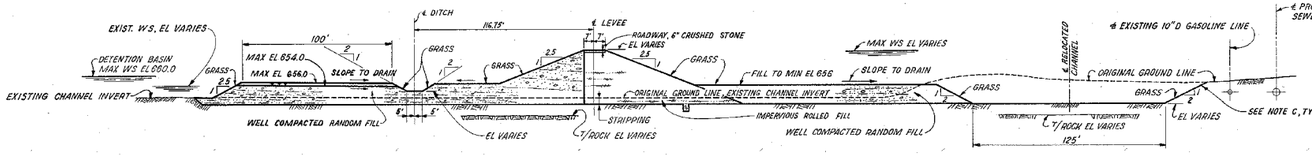
A2 - A2
SH 1



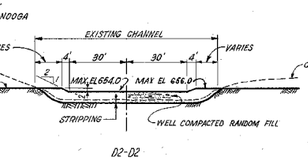
B2 - B2
SH 1

NOTE A:
IF ROCK IS ENCOUNTERED ABOVE CHANNEL GRADE LINE DURING EXCAVATION, THE FIELD IS TO IMMEDIATELY PROVIDE EN DES WITH CHANNEL CROSS SECTIONS SHOWING THE EXTENT AND ELEVATION OF TOP OF ROCK. EN DES WILL THEN DETERMINE THE REQUIRED WIDTH OF THE CHANNEL BOTTOM AND FURNISH THE INFORMATION TO THE FIELD.

NOTE B:
FIELD NOT TO STRIP OR BORROW ANY MATERIAL LYING BETWEEN LEVEE AND RELOCATED CHANNEL, UNLESS OTHERWISE SHOWN.



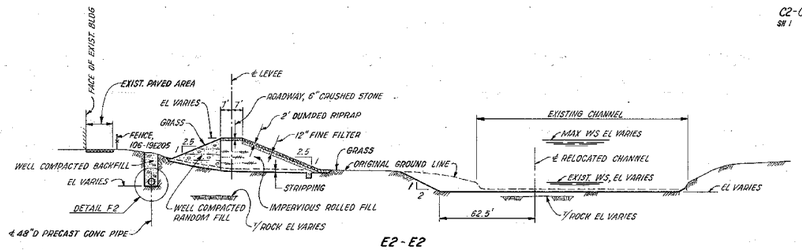
C2-C2
SH 1



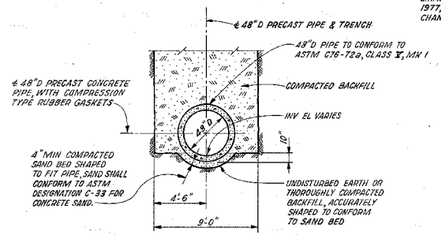
D2-D2
SH 1

NOTE C:
FOR TREATMENT OF SLOPES IN AREAS NEAR PIPE LINES AND WHERE SLOUGHING IS A PROBLEM, SEE MEMO C.L. BUCHANAN TO GENE FARMER DATED SEPTEMBER 15, 1977, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT-CHANNEL EXCAVATION", AND MEMO. G.H. HIMMONS TO PETER A. KREWAU DATED OCTOBER 6, 1977, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT-CHANNEL EROSION."

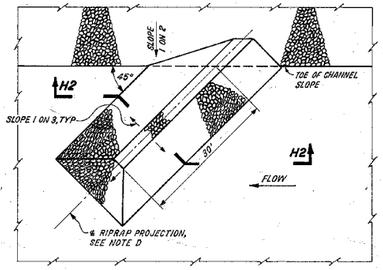
NOTES:
1. FOR GENERAL NOTES SEE 101-19E209-1.



E2 - E2
SH 1

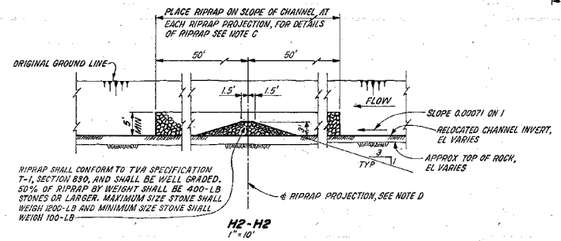


DETAIL F2
FI
1/4" = 1'-0"



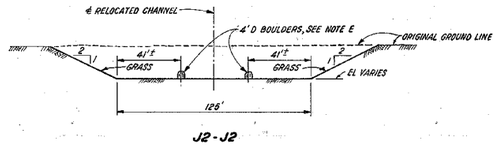
PLAN

DETAIL G2
RIGHT BANK AS SHOWN
LEFT BANK OPP HAND
1" = 10'



H2-H2
1" = 10'

NOTE D:
RIPRAP PROJECTIONS TO BE PLACED AT 1,000 FOOT INTERVALS ON ALTERNATE BANKS OF THE RELOCATED CREEK CHANNEL BEGINNING AT STATION 20+00 AND ENDING AT STATION 190+00.



J2 - J2

NOTE E:
BOULDERS TO BE A MINIMUM OF 4'D AND PLACED AT 1,000 FOOT INTERVALS ON THE BOTTOM OF THE RELOCATED CREEK CHANNEL BEGINNING AT STATION 25+00 AND ENDING AT STATION 195+00.

SCALE 1"=30' EXCEPT AS NOTED

REV	ECN NO.	DATE	DSGN	DRWN	CKHD	SUPV	ENGR	SUPV	SUBM	RCM	APPR
2	REV B2-B2	8-28-79	DLW	MAH	MAH	JWH	CLS	TJH			
1	ADDED DETAIL G2; H2-H2, J2-J2 AND NOTES D & E	9-13-78	LCM	MAH	MAH	JWH	EJC	TJH		GB	

DSGN J.T. MABRY
DRWN E.C. CHEEK
CKHD E.C. CHEEK
SUPV H.A. MANSON 10-17-77
INSP
ENGINEER H. A. Manson

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS
STATION 114+00 TO 157+00

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E.S. Bowman	J.T. Abraham	C.L. Buchanan

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE | 3-30-78 | B1 | C | 101-19E209-2 R2

WORK DRAWINGS CONSTRUCTED
Frank Hamilton 4-27-81 R2

PRINT H 1/2 1
SIZE F 3
BR OR PROJ WE EE CE AD CO ED MD MP SW BL PA
PRINTS REQD-R

TECHNICAL PHOTOGRAPHIC SERVICES

STRAIGHT REINFORCEMENT BAR LIST

(FOR FIELD INFORMATION ONLY)

MADE J.L. MAXEY
CHKD HAM

DATE 10-31-77

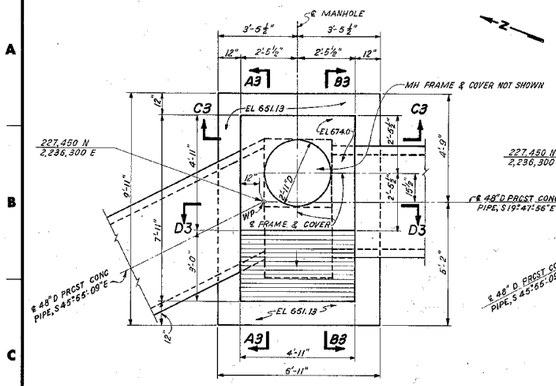
FOR DWG. NO. 101-19E209-3 RO

SHEET NO 1 OF 1

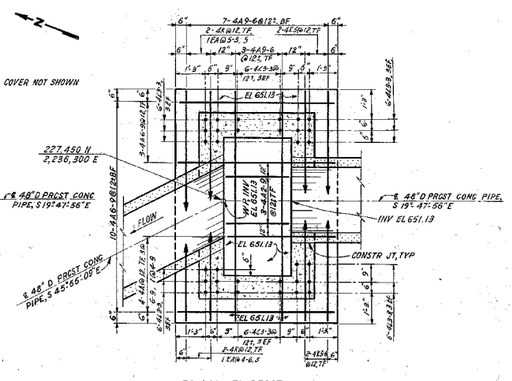
PROJECT SOUTH CHICKAMAUGA CREEK

~~BUILDING~~ MANHOLES & HEADWALLS

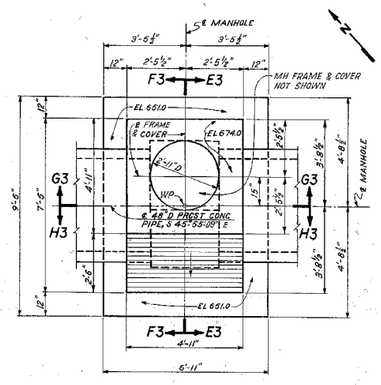
BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D
8	11-6	90	4	19	2	4	5-6	3
			4	18-9	2	4	5-3	5
			4	18-6	2	4	5	4
6	55-6	42	4	18-3	6	4	4-9	7
6	27	4	4	18	8	4	4-6	96
6	25-6	8	4	17-9	2	4	4	6
6	25-3	4	4	17-3	2	4	3-9	4
6	13-3	128	4	14-6	6	4	3-3	5
6	11-6	60	4	14-3	2	4	3	1
6	8-6	2	4	14	4	4	2-9	7
6	8	2	4	13-6	4	4	2-6	4
6	7-6	2	4	13-3	4	4	2-3	2
6	7-3	79	4	13	6	4	1-9	2
6	7	7	4	9-6	10	4	1-6	13
6	6	32	4	9	10	4	1-3	1
6	3-3	2	4	7-6	10	4	1	8
6	2-6	2	4	7-3	8			
6	2-3	1	4	7	3			
			4	6-9	34			
			4	6-6	3			
4	31-6	26	4	6-3	3			
4	22-6	28	4	6	7			
4	19-3	4	4	5-9	7			



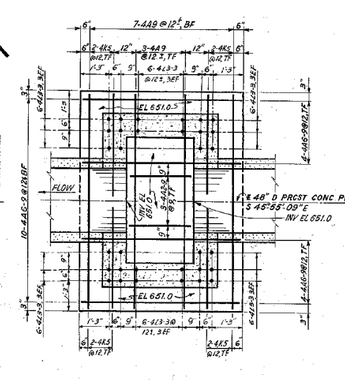
PLAN-MANHOLE NO.1
1/4" = 1'-0"



PLAN - EL 651.13 - MANHOLE NO.1
1/4" = 1'-0"



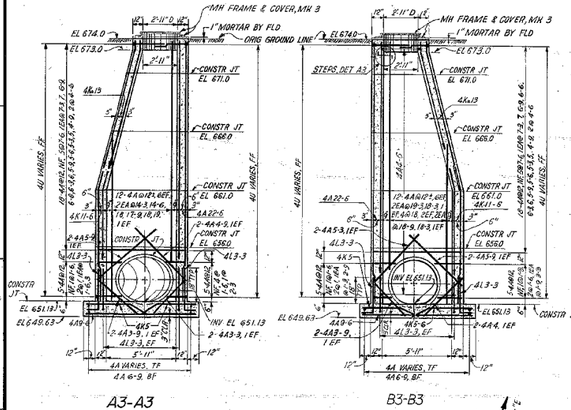
PLAN-MANHOLE NO.2
1/4" = 1'-0"



PLAN - EL 651.0 - MANHOLE NO.2
1/4" = 1'-0"

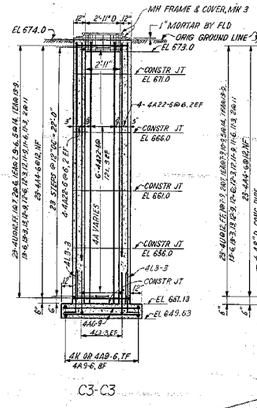
BENT BAR LIST

BAR MARK	NO REQD	BENDING DIMENSIONS a	b	c	e	f	r
4U6	2	0'-6½	4'-6½	EX			
4U6-6	4	1'-0½	4'-6½	EX			
4U7	4	1'-0½	4'-6½	EX			
4U7-3	4	1'-1½	4'-6½	EX			
4U7-9	2	1'-4½	4'-6½	EX			
4U11	8	3'-3½	4'-4½	EX			
4U11-3	6	3'-3½	4'-6½	EX			
4U11-6	2	3'-4½	4'-6½	EX			
4U11-9	6	3'-5½	4'-6½	EX			
4U12	4	3'-9½	4'-6½	EX			
4U12-3	4	3'-10½	4'-6½	EX			
4U12-6	6	4'-0½	4'-6½	EX			
4U12-9	2	4'-2½	4'-6½	EX			
4U13	6	4'-3½	4'-6½	EX			
4U13-3	4	4'-5½	4'-6½	EX			
4U13-6	14	4'-6½	4'-6½	EX			
4U13-9	2	4'-8½	4'-6½	EX			
4U18	10	6'-3½	4'-6½	EX			
4L3-3	72	2'-3	EX				
4L3-6	3	2'-6	EX				
4L4-6	1	3'-6	EX				
4L11	28	10'-0	EX				
4K4-6	1	2'-8	EX			0'-8	
4K5	12	2'-0	EX			0'-8	
4K5-3	1	2'-0	EX			0'-8	
4K5-6	2	2'-0	EX			0'-8	
4K11-6	28	1'-8	EX			0'-5	
4U2-6	2	2'-2½	4'-4½	EX			
4U10-9	1	3'-2½	4'-6½	EX			
4L18	28	0'-9	EX			0'-2½	
6U4-3	1	3'-3½	EX				
6L4-3	2	3'-7½	EX				
6L5-6	54	4'-7	EX				
6K5-6	3	2'-6	EX	0'-9½			
6K4-6	6	3'-3	EX	0'-12			
6K5	2	4'-1½	EX			4'-1½	
6K5-6	76	4'-7	EX			4'-6½	
6K6	2	5'-1½	EX			5'-1½	
6K11	6	10'-0½	EX	0'-5½			

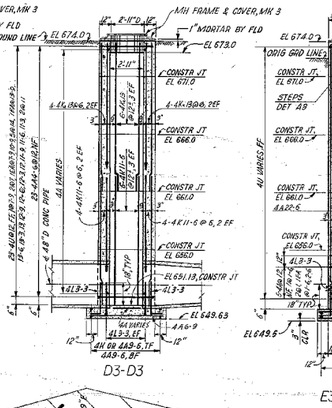


A3-A3

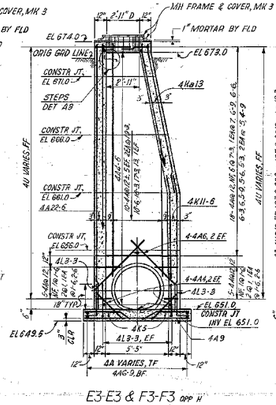
B3-B3



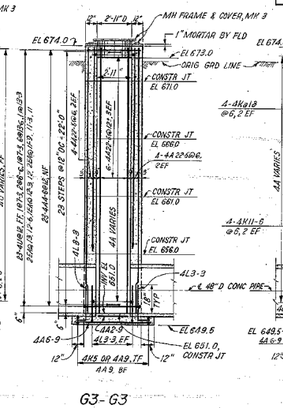
C3-C3



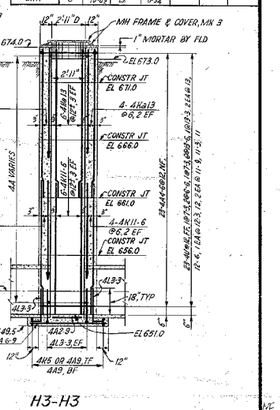
D3-D3



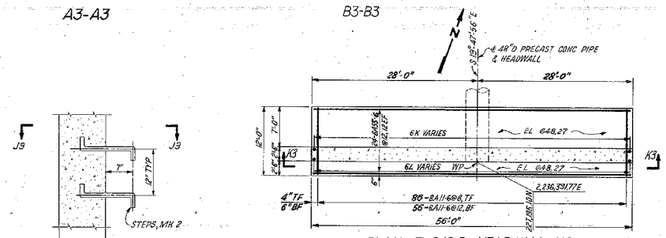
E3-E3 & F3-F3 opp H



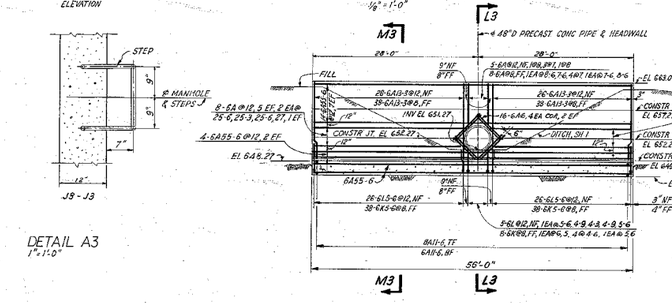
G3-G3



H3-H3

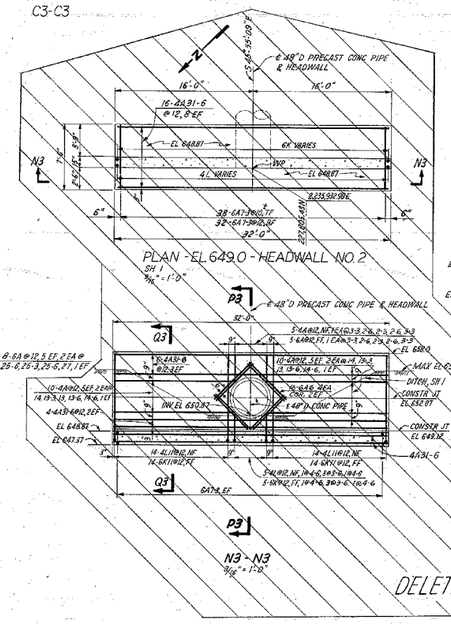


PLAN - EL 649.5 - HEADWALL NO.1
SH 1
1/8" = 1'-0"



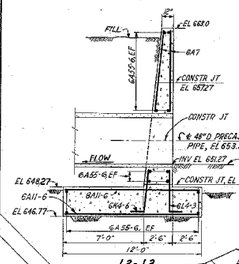
DETAIL A3
1" = 1'-0"

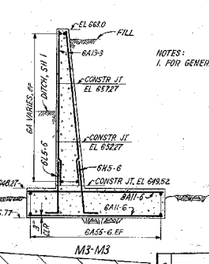
K3 - K3
1/8" = 1'-0"



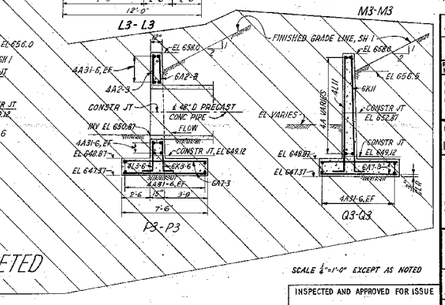
PLAN - EL 649.0 - HEADWALL NO.2
SH 1
1/8" = 1'-0"

N3 - N3
1/8" = 1'-0"





NOTES:
1. FOR GENERAL NOTES SEE 101-19E209-1.



SCALE 1/4"=1'-0" EXCEPT AS NOTED

INSPECTED AND APPROVED FOR ISSUE

PRINT H / SIZE F

BR OR PROJ WL EE CL JO CO ED MO BF SW BL FA
DCWITS REGD-R 2

NO	DATE	DSGN	DRWN	CHKD	SUPV	CHKD	W.S.P.	SUBMITTED	APPD
2	1-3-83	JLM		RDM	RDM	RLS	VGA		
1	FINAL FIELD REV								
0	8-20-79	VLM	VGM	ASM	SDM	CLS	V.L.A.	WLE	
REV NO.	REV PLAN-EL 649.5-HEADWALL NO.1 SHEET 157-K3 & K3-K3								

DSGN: J. O. CALHOUN
DRWN: C.S. FISHER
CHKD: L.D. SANDIN
SUPV: DI. DI. DIDDLEBROX
INSP
ENGINEER: J. M. McAndrew

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

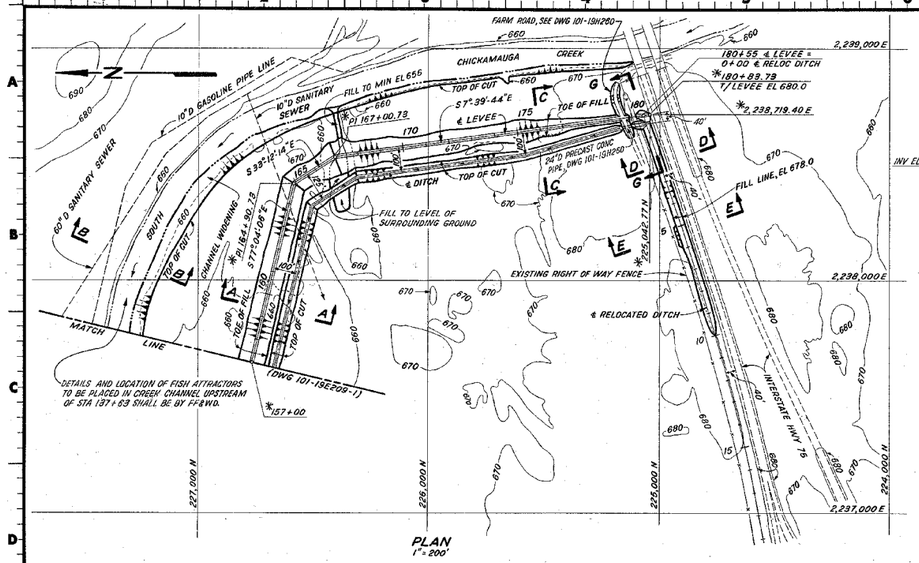
PLANS, PROFILES & SECTIONS
STATION 114+00 TO 157+00

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

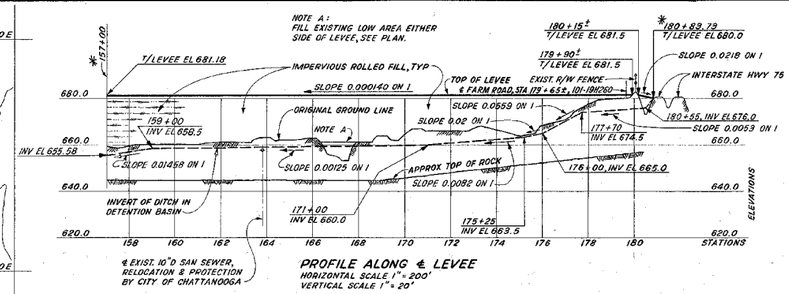
SUBMITTED	RECOMMENDED	APPROVED
R. S. Swanson	J. J. Abraham	C. H. Buchanan

KNOXVILLE | 3-30-78 | 81 | C. | 101-19E209-3 R2

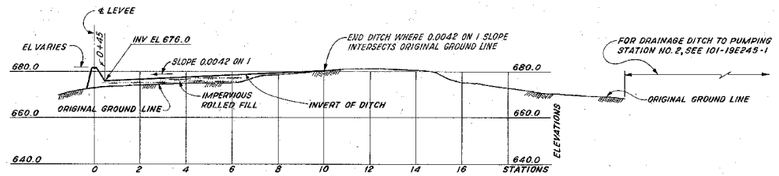
RECORD DRAWING AS CONSTRUCTED
Frank L. Van Hoose 12/7/81 R2



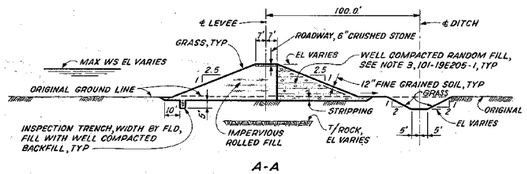
PLAN
1" = 200'



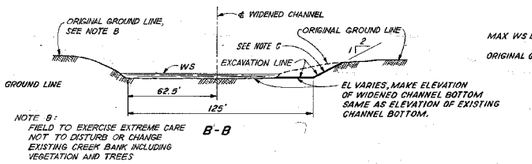
PROFILE ALONG ℄ LEVEE
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE 1" = 20'



PROFILE ALONG ℄ RELOCATED DITCH
HORIZONTAL SCALE 1" = 200'
VERTICAL SCALE 1" = 20'

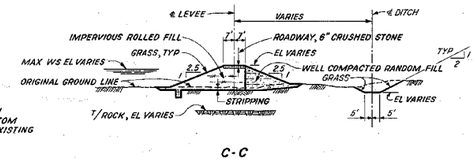


A-A



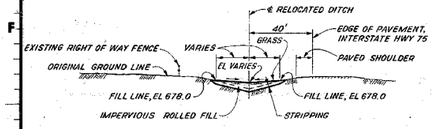
NOTE B:
FIELD TO EXERCISE EXTREME CARE NOT TO DISTURB OR CHANGE EXISTING CREEK BANK INCLUDING VEGETATION AND TREES

B-B

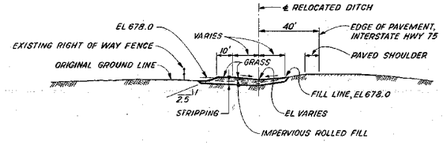


C-C

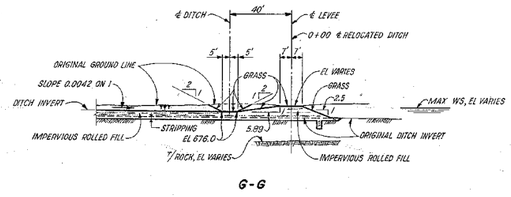
NOTE C:
FOR TREATMENT OF SLOPES IN AREAS NEAR PIPE LINES AND WHERE SLOUGHING IS A PROBLEM, SEE MEMO G.L. BUCHANAN TO GENE FARMER DATED SEPTEMBER 15, 1977, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHANNEL EXCAVATION" AND MEMO G.W. KINNAKIN, JR. TO PETER A. NIEHAUS, DATED OCTOBER 6, 1977, SUBJECT: "SOUTH CHICKAMAUGA CREEK PROJECT - CHANNEL EROSION."



D-D



E-E



G-G

* = FOR TABLE SHOWING AS-BUILT CENTERLINE OF LEVEE SEE 101-19E205-1

NOTES:
1. FOR GENERAL NOTES SEE 101-19E205-1 & 101-19E205-2.

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INST	SUBM	RECM	APPR
4		1-9-80	LEA		RDM	RDM	BCS	KLG			
	FINAL FIELD REV										
		12-21-78	LEA	MAH	KRM	LWM	TLS	KLG			
3	REVISED ALIGNMENT OF DITCH IN DETENTION BASIN & ADDED 24"D CONC PIPE, A-A; DELETED PART OF RELOCATED DITCH, C5; REVISED SLOPE & INVERT OF DITCH IN DETENTION BASIN, A9, A10, B9; REVISED INVERT & SLOPE OF RELOCATED DITCH, G1 THRU G10; REVISED C-C; DELETED F-F, F8; ADDED G-G										
		11-1-78	LEA	MAH	KRM	LWM	BCS	TJS	KLG		
2	REVISED NOTE, B3 AND REVISED INVERT & SLOPE OF DITCH IN DETENTION BASIN, B6, B7 & B8										
1		9-13-78	LEA	MAH	KRM	LWM	℄ LS	TJS	KLG		
	ADDED NOTE, C1										

DSGN J.L. MASEY
DRWN
CHKD E.P. CORNS
SUPV H.A. NABOLSKI 12-18-77
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS
STATION 157+00 TO 180+83.73

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SCALE 1" = 30' EXCEPT AS NOTED

SUBMITTED	RECOMMENDED	APPROVED

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE	6-7-78	81	C	101-19E211 R4

RECORD DRAWING AS CONSTRUCTED
12/81 R4

PRINT H 12/1
SIZE F 3
BR OR PROJ ME EE CL AD CO ED NE NPP SW BL FA
PRINTS R&D0-8

ADVANCED INFORMATION SYSTEMS
MICROFILMED

101-19E212-1 | C | 81

NOTE A :
96"D PRECAST CONCRETE PIPE INSTALLATION PROCEDURE ACROSS NORTH TERRACE ROAD AND SPRING CREEK ROAD TO BE DETERMINED BY FIELD AND COORDINATED WITH EN DES. TRENCHING SHALL NOT BE PERMITTED ACROSS EXISTING ROADWAYS.

NOTE B :
FOR FLOODWALL TO BE CONSTRUCTED ALONG SOUTH SIDE OF NORTH TERRACE ROAD SEE 101-191260

PLAN
1"=100'

DETAIL A1
ENDWALL
D6

DETAIL D1
DROP INLET
C6

B1 - B1

C1 - C1

E1 - E1

F1 - F1
1"=10'

PROFILE ALONG ℄ LEVEE
HORIZONTAL SCALE 1"=100'
VERTICAL SCALE 1"=10'

G1 - G1
1"=10'

NOTES :
1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-2. CONCRETE SHALL BE CLASS 300.75 AFW.
2. FORMWORK SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-8. FORM LINING FOR EXPOSED CONCRETE SURFACES SHALL BE TYPE A OR TYPE D.
3. CHAMFER ALL EXPOSED EXTERIOR EDGES ¾".
4. FOR ADDITIONAL NOTES SEE 101-19E205-1 & 2.

SCALE ⅜"=1'-0" EXCEPT AS NOTED

COMPANION DRAWINGS :
101-19E212-1 & 2

REFERENCE DRAWING :
101-19BM212 BILL OF MATERIAL

INSPECTED AND APPROVED FOR ISSUE

1. REMOVED HOLD ON ENDWALL, B5 ; REVISED DIMENSION, C4 ; REVISED COORDINATE, C5 — 7-25-78 JLM JLM JWM JWM

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SURV	RECM	APPR
			JL MAXEY	JL MAXEY	H.A.JANSON	H.A.JANSON					

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS
STATION 300+00 TO 305+78.94
MISC STRUCTURES – OUTLINE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

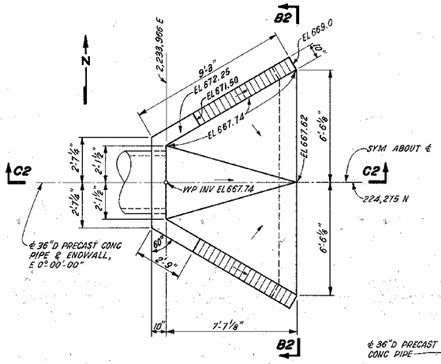
SUBMITTED	RECOMMENDED	APPROVED
E.J. Sorrow	J.J. Anderson	Gilbert Thomas

KNOXVILLE 7-5-78 | 81 | C | 101-19E212-1 R1

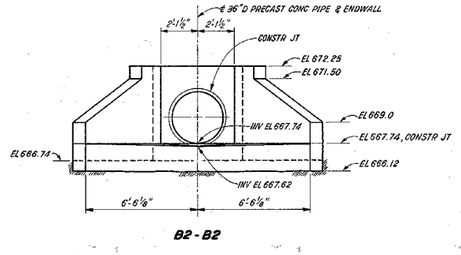
RECORD DRAWING AS CONSTRUCTED — 12/31/81 R1

PRINT H 13 / SIZE F 3

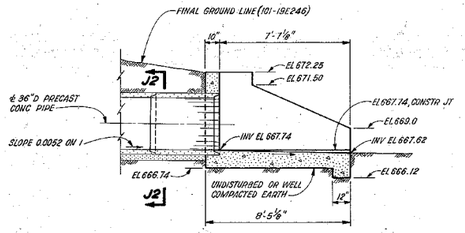
BR OT PROJ MG LL GL AD CO ED RO SF SW EL FA
PRINTS REQD—R.O.



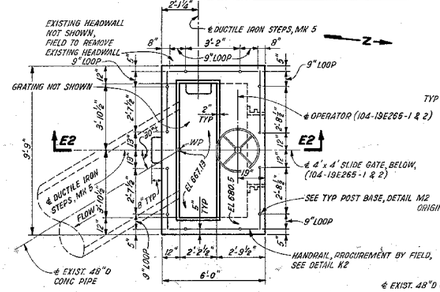
DETAIL A2
ENDWALL
SH 1, C5
⅜" = 1'-0"



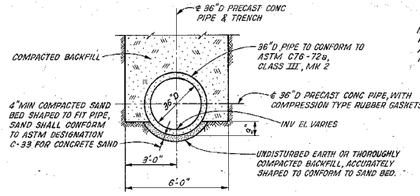
B2 - B2



C2 - C2

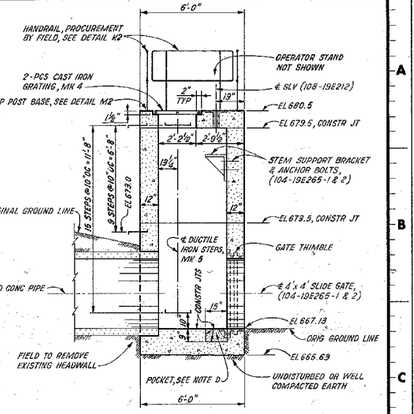


DETAIL D2
GATE STRUCTURE
SH 1, C3



J2 - J2

NOTE D:
ROUGHEN SURFACES OF POCKET FOR BOND AND FILL WITH CONCRETE AFTER GATE SILL IS IN PLACE.



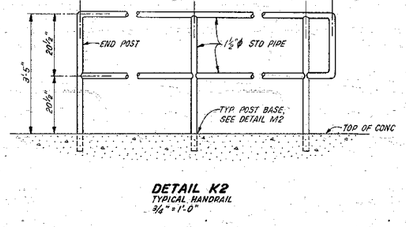
E2 - E2

DETAIL F2
HEADWALL
SH 1, C4

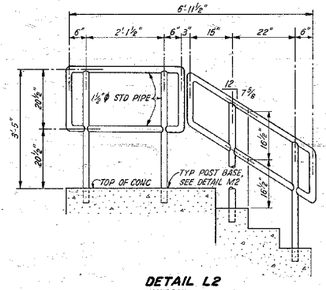
G2 - G2

H2 - H2

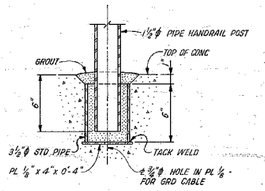
NOTES:
1. FOR GENERAL NOTES SEE 101-19E212-1



DETAIL K2
TYPICAL HANDRAIL
¾" = 1'-0"



DETAIL L2
HANDRAIL
2-RAIL
¾" = 1'-0"



DETAIL M2
TYPICAL HANDRAIL POST BASE
18-DEGD
WTS

HANDRAIL NOTES:
1. ALL MATERIAL AND FABRICATION BY TVA FIELD.
2. HANDRAIL IS SHOWN IN PLAN THUS ——
3. HANDRAIL AND EMBEDDED PIPE SLEEVES SHALL BE ASTM A120, A53 OR A36 STANDARD WEIGHT PIPE.
4. HANDRAIL SHALL BE 1½"ϕ STANDARD PIPE.
5. SMOOTH RADIUS WELDING ELLS, OR PARTS THERE OF, SHALL BE USED FOR ALL HANDRAIL BENDS. ALL JOINTS AT RAILING BENDS TO BE BUTT WELDED, GROUND SMOOTH AND FLUSH.
6. ALL WELDS SHALL BE MADE WITH ANSI A5.1 E70 SERIES ELECTRODES.
7. ALL TVA WELDING SHALL BE PERFORMED IN ACCORDANCE WITH TVA CONSTRUCTION SPEC G26C PROCEDURES APPLICABLE TO AWS D1.1.
8. HANDRAIL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	MGR	CORR	RECM	APPD
2	REVISED HANDRAIL, A3	12-8-78	LEM	JLM	HAM	HAM				
1	REMOVED HOLD ON DETAIL A2, B2-B2 & C2-C2, C6	7-25-78	LEM	JLM	HAM	HAM				

DSGN J.L. MAXEY
DRWN J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 6-27-78
INSP
ENGINEER

SCALE ⅜" = 1'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

PLANS, PROFILES & SECTIONS
STATION 300+00 TO 305+78.94
MISC STRUCTURES - OUTLINE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

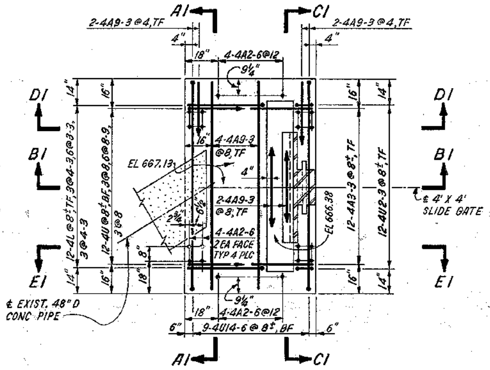
SUBMITTED	RECOMMENDED	APPROVED
E.J.	J.L. Graham	C.H. Burton

INSPECTED AND APPROVED FOR ISSUE
KNOXVILLE 7-5-78

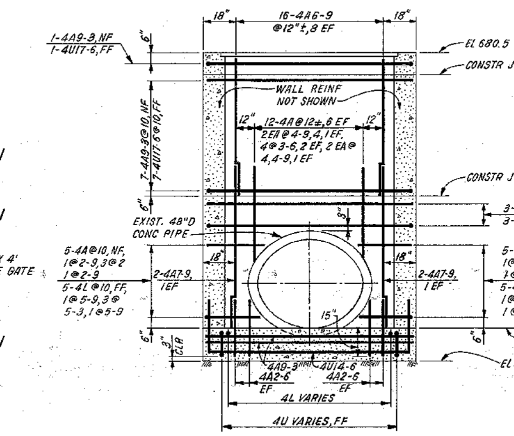
81 | C | 101 - 19E212 - 2 R2

RECORD DRAWING AS CONSTRUCTED
Frank L. Bradley 1/27/81 R1

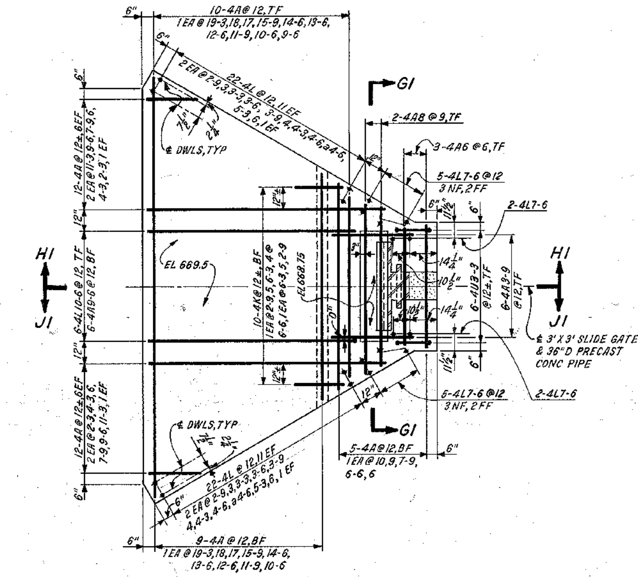
PRINT H
SIZE F
DR OR PROJ WE CE OE AB CO EO NO HP SW EL PA
PRINTS REQD-8 C



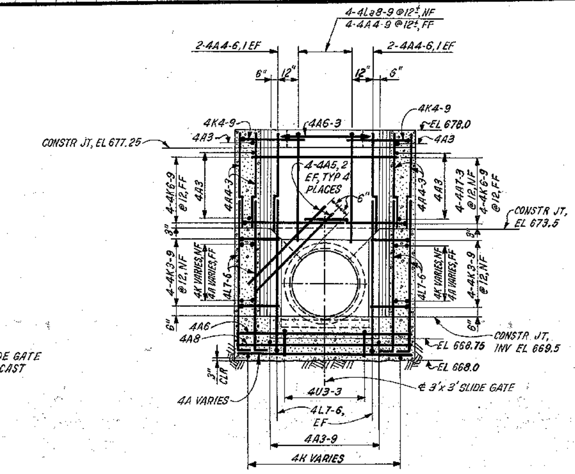
PLAN-EL 667.13
GATE STRUCTURE ON 48"D CONC PIPE



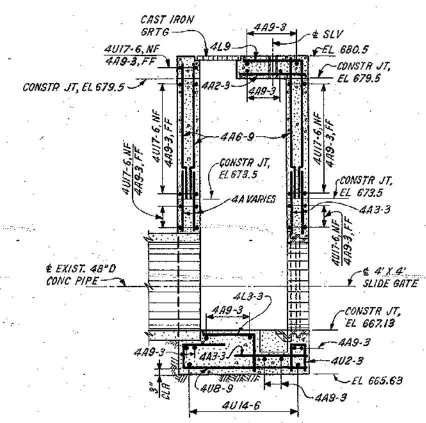
A1-A1



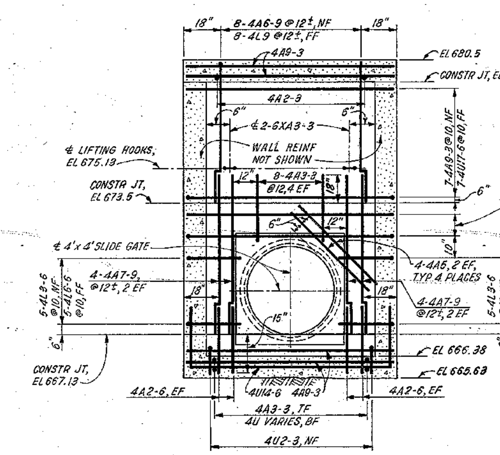
PLAN-EL 669.5
HEADWALL ON 36"D CONC PIPE



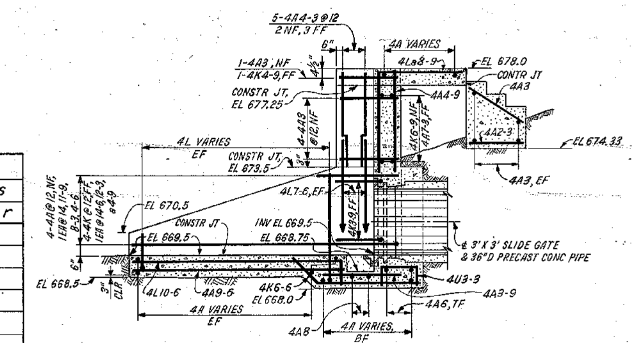
G1-G1



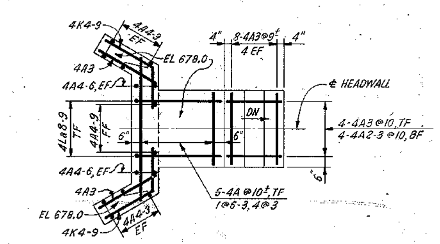
B1-B1



C1-C1

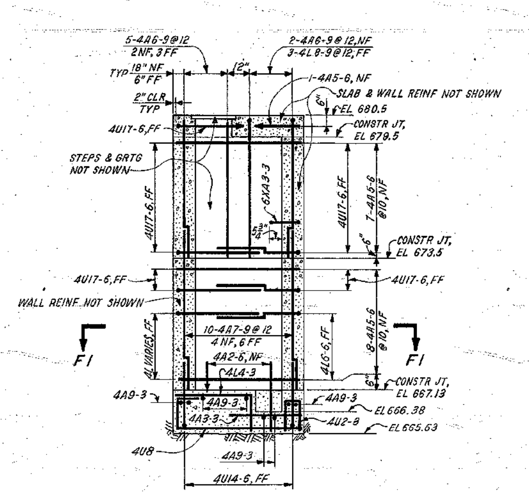


H1-H1 & J1-J1 OPP HAND

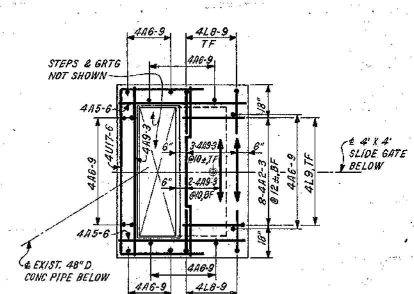


PLAN-EL 678.0

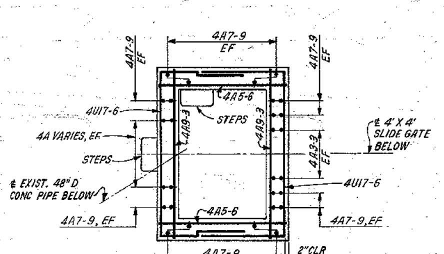
NOTES:
1. ALL REINFORCEMENT ON THIS DRAWING SHALL CONFORM TO ASTM SPECIFICATION A-615, GRADE 60.
2. WELDING OF OR TO HIGH STRENGTH REINFORCING BARS WITHOUT APPROVAL OF CIVIL ENGINEERING AND DESIGN BRANCH IS PROHIBITED.
3. THE CLEAR COVER FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR SHALL BE 2" UNLESS OTHERWISE NOTED. ALL OTHER DIMENSIONS ARE TO CENTERLINE OF REINFORCEMENT.



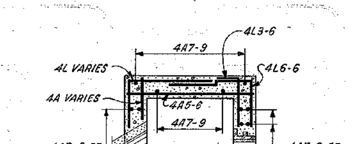
D1-D1 & E1-E1 OPP HAND



PLAN-EL 680.5
GATE STRUCTURE
NTS



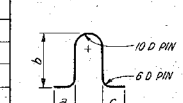
PLAN-EL 673.5
GATE STRUCTURE
NTS



F1-F1

BENT BAR LIST

BAR MARK	NO. REQD	a	b	c	e	f	r
		BENDING DIMENSIONS					
4U17-6	21	4-1	9-5	EX			
4K14-6	2	1-0	EX		0-10½		
4U14-6	9	2-7	9-4	EX			
4K12-3	2	1-0	EX		0-10½		
4L10-6	6	9-6	EX				
4L9	8	6-10	EX				
4L8-9	6	6-9	EX				
4La8-9	4	4-11	EX				
4U8-9	6	2-5	0-9	EX			
4U8	6	1-5	0-11	EX			
4L7-9	2	3-6	EX				
4L7-6	14	6-6	EX				
4K6-9	8	2-7	EX		2-3½		
4K6-6	4	1-6½	EX	1-1			
4L6-6	13	2-3	EX				
4K6-3	2	1-6½	EX	1-1			
4L6	4	4-10	EX				
4L5-9	2	1-7	EX				
4L5-3	7	4-4	EX				
4K5	2	1-6½	EX	1-1			
4K4-9	2	2-7	EX		2-3½		
4Ka4-9	2	1-0	EX		0-10½		
4L4-6	4	3-6	EX				
4La4-6	4	3-7	EX				
4L4-3	10	3-3	EX				
4L4	4	3-0	EX				
4K3-9	8	1-5	EX		1-4		
4L3-9	4	2-8	EX				
4L3-6	14	2-6	EX				
4L3-3	10	2-3	EX				
4U3-3	6	0-9	1-9	EX			
4L3	4	1-11	EX				
4K2-9	2	1-6½	EX	1-1			
4L2-9	4	1-8	EX				
4U2-3	12	0-11	0-7	EX			
6XA3-3	2	0-6	1-2¾	EX			



XA

COMPANION DRAWINGS:
101-19E213-1 & 2

INSPECTED AND APPROVED FOR ISSUE

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD

DSGN
DRWN V.F. VANCE & J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 5-3-78
INSP
ENGINEER (signature)

SCALE 3/8" = 1'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

STATION 300+00 TO 305+78.94 MISCELLANEOUS STRUCTURES REINFORCEMENT

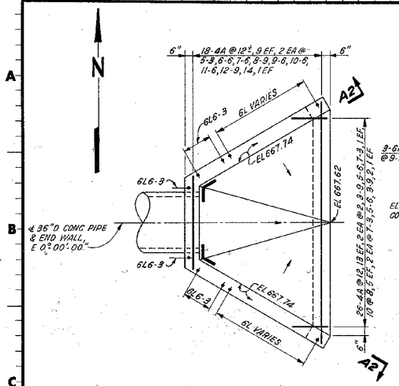
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED (signature) | RECOMMENDED (signature) | APPROVED (signature)

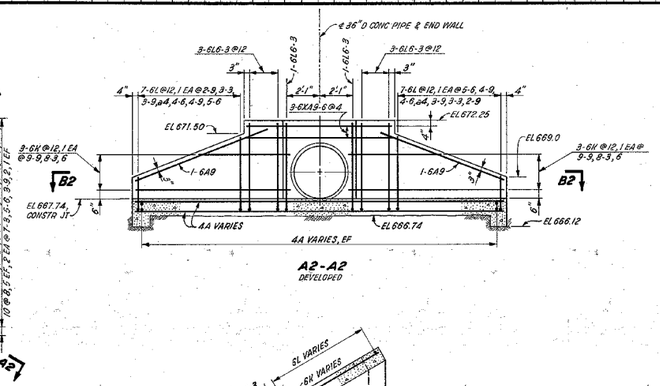
KNOXVILLE 7-5-78 81 C 101-19E213-1 R0

RECORD DRAWING AS CONSTRUCTED (signature) 11/27/81 R0

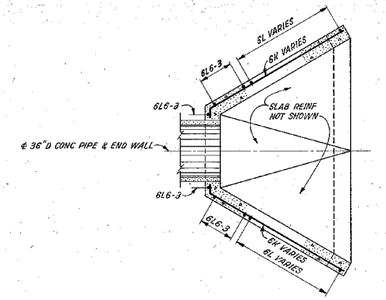
PRINT H 13
SIZE F 3
BR OR PROJ ME EE CE AD CD ED MD HPP SW BL PA
PRINTS REQD-R 0



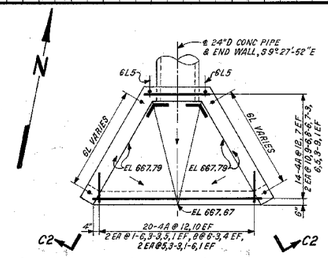
PLAN - EL 667.74
END WALL - 36"D CULVERT



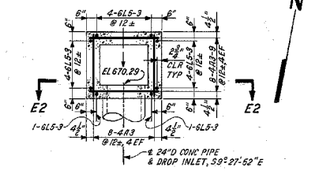
A2-A2
DEVELOPED



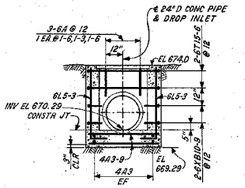
B2-B2

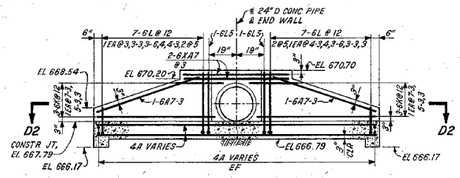


PLAN-EL 667.79
END WALL - 24"D CULVERT

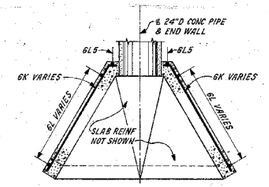


PLAN-EL 670.5
DROP INLET - 24"D CULVERT





C2-C2
DEVELOPED

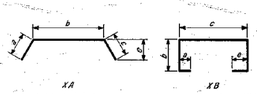


D2-D2

NOTES:
1. FOR GENERAL NOTES SEE 101-19E213-1.

BENT BAR LIST

BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	r
6N9-9	2	0-11	EX		0-10		
6XA9-6	3	2-5	4-11	EX	2-1		
6N8-8	2	0-7	EX		0-6		
6L6-3	8	5-1	EX				
6N6	2	0-11	EX		0-10		
6L5-6	2	4-3	EX				
6T15-6	2	3-3	4-0				
6X810-8	2	0-6	3-3	4-0	EX		
6K7-3	2	0-6	EX		0-5 1/2		
6XA7	2	1-11	3-6	EX	1-0 1/2		
6N5-3	2	0-5	EX		0-4 1/2		
6L5-3	14	4-3	EX				
6L5	6	3-6	EX				
6L4-3	2	3-3	EX				
6L4	2	2-10	EX				
6L3-6	2	2-6	EX				
6L3-3	4	2-3	EX				
6K3	2	1-0	EX		0-10 1/2		
6L3	2	1-9	EX				
6L4-9	2	3-10	EX				
6L4-6	2	3-6	EX				
6L4d	2	3-1	EX				
6L3-9	2	2-8	EX				
6L2-9	2	1-9	EX				



REV NO	DCN NO	DATE	DSTR	DRWN	CHKD	SUPV	ENGR	RESP	SUBMITTED	APPD
1		7-25-78	WHM	WHM	JJM	CG	TCF	GHS		

REMOVED HOLD, CC & REVISED BENT BAR LIST

DSGN J.J. MAYEY
DRWN V.P. VANCE 1-16-78
CHKD H.A. MADISON
SUPV H.A. MADISON 3-29-78

RESP
ENGINEER J. H. Anders

SCALE 3/8"=1'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

STATION 300+00 TO 305+78.94
MISCELLANEOUS STRUCTURES
REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. J. Freeman	J. J. Mayey	H. A. Madison

INSPECTED AND APPROVED FOR ISSUE
KNOXVILLE 7-5-78

81 C 101-19E213-2 R1

RECORD DRAWING AS CONSTRUCTED
Frank Peter 12/7/81 R.I.

PRINT M 18
SIZE T 3
BY OR PROJ ME EE CE AD CO ED MD HPP SW BL PA
PRINTS REQD-N 0

1 TECHNICAL INFORMATION
1 FINANCIAL

STRAIGHT REINFORCEMENT BAR LIST

(FOR FIELD INFORMATION ONLY)

MADE J.L. MAXEY

CHKD: HAM 4-26-78 R0
11 JWW 7-20-78 R1

DATE 4-14-78

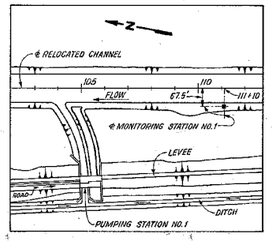
FOR DWG. NO. 101-19E213-2 (R1)

SHEET NO 1 OF 1

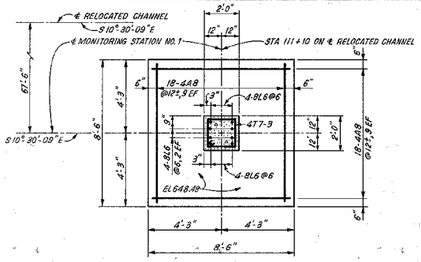
PROJECT SOUTH CHICKAMAUGA CREEK

BUILDING MISCELLANEOUS STRUCTURES

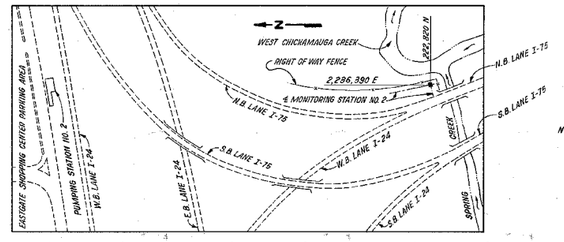
BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D
6	33-6	30	4	1-6	4			
6	15-3	8						
6	15	4	4	14	2			
6	9	60	4	12-9	2			
6	8-6	4	4	11-6	2			
6	7	68	4	10-6	2			
6	6-6	4						
6	5	4	4	8-9	2			
6	4-3	4	4	8	10			
6	1-6	2	4	7-6	2			
6	1-3	1						
6	7-3	2	4	6-6	2			
6	9	2	4	5-6	4			
4	10	2	4	5-3	2			
4	9-6	4						
4	8-6	2	4	2	4			
4	7-3	8						
4	6-3	8						
4	6	2						
4	5	6						
4	3-9	14						
4	3-3	4						
4	3	8						



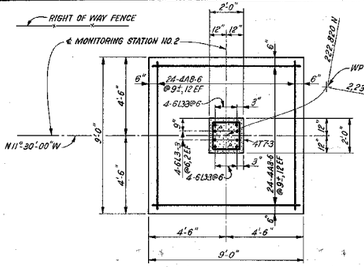
SITE PLAN
MONITORING STATION NO. 1
1" = 200'



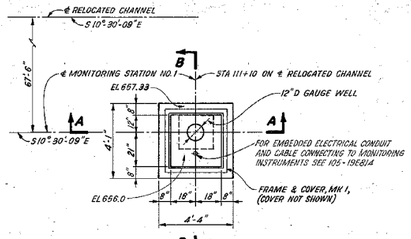
PLAN - EL 649.0
MONITORING STA NO. 1



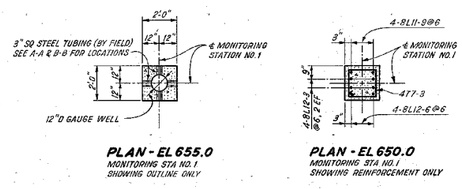
SITE PLAN
MONITORING STATION NO. 2
1" = 200'



PLAN - EL 663.0
MONITORING STA NO. 2

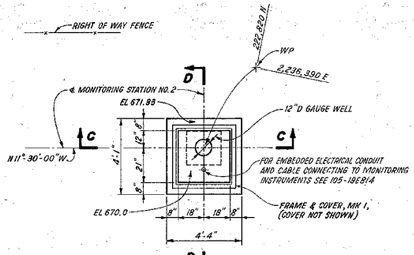


PLAN - EL 657.33
MONITORING STA NO. 1
SHOWING OUTLINE ONLY

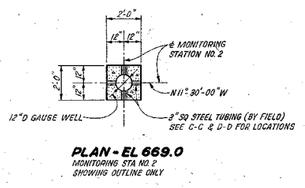


PLAN - EL 655.0
MONITORING STA NO. 1
SHOWING OUTLINE ONLY

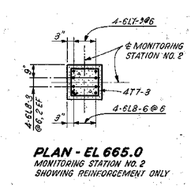
PLAN - EL 650.0
MONITORING STA NO. 1
SHOWING REINFORCEMENT ONLY



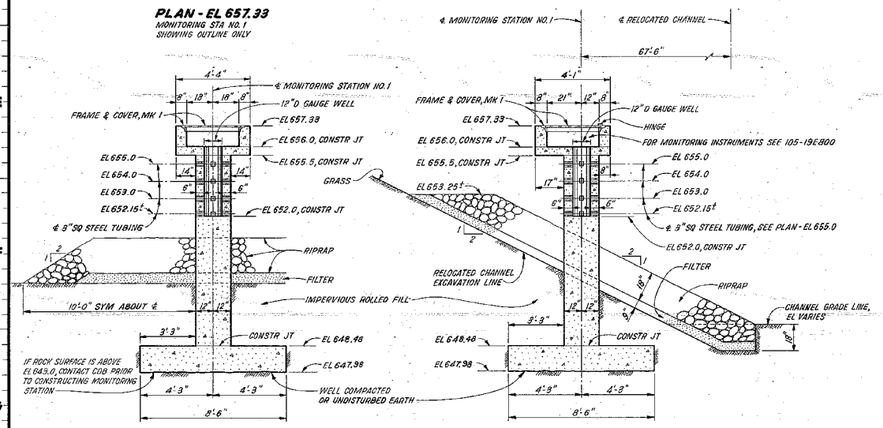
PLAN - EL 671.93
MONITORING STA NO. 2
SHOWING OUTLINE ONLY



PLAN - EL 669.0
MONITORING STA NO. 2
SHOWING OUTLINE ONLY

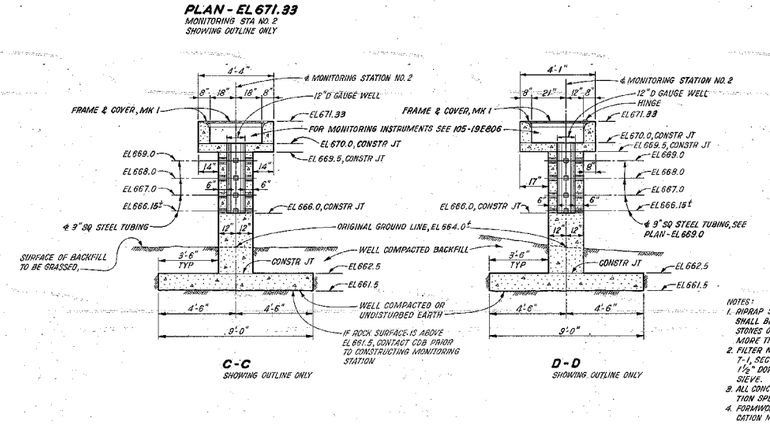


PLAN - EL 665.0
MONITORING STATION NO. 2
SHOWING REINFORCEMENT ONLY



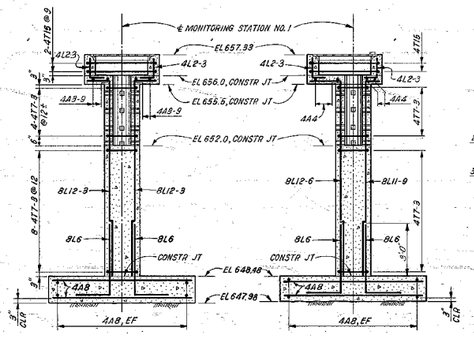
A-A
SHOWING OUTLINE ONLY

B-B
SHOWING OUTLINE ONLY



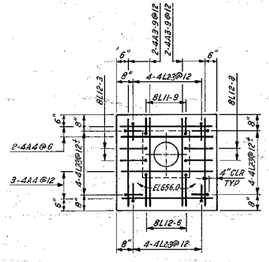
C-C
SHOWING OUTLINE ONLY

D-D
SHOWING OUTLINE ONLY

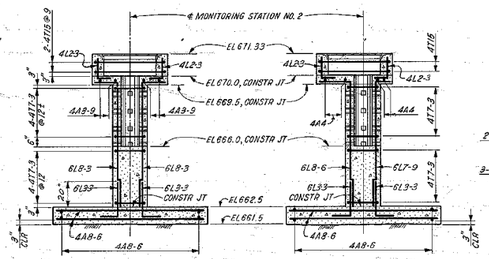


A-A
SHOWING REINFORCEMENT ONLY

B-B
SHOWING REINFORCEMENT ONLY

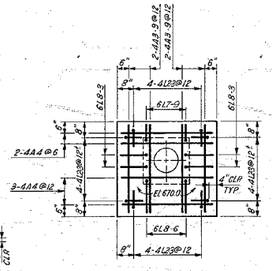


PLAN - EL 656.0
MONITORING STATION NO. 1
SHOWING REINFORCEMENT ONLY
1/2" = 1'-0"



C-C
SHOWING REINFORCEMENT ONLY

D-D
SHOWING REINFORCEMENT ONLY



PLAN - EL 670.0
MONITORING STATION NO. 2
SHOWING REINFORCEMENT ONLY
1/2" = 1'-0"

BENT BAR LIST

BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	r
8L12-6	4	11-3	EX				
8L12-9	4	11-3	EX				
8L11-9	4	11-3	EX				
8L6	12	4-3	EX				
6L8-3	4	7-3	EX				
6L8-6	4	7-3	EX				
6L7-9	4	7-3	EX				
6L3-3	12	2-5	EX				
4T16	4	3-6	3-9				
4T7-3	20	1-8	1-8				
4L2-3	32	1-5	EX				

NOTES:
1. RIPRAP SHALL CONFORM TO TVA SPECIFICATION T-1, SECTION 830, AND SHALL BE WELL GRADED. 50% OF RIPRAP BY WEIGHT SHALL BE 100-LB STONES OR LARGER. MAXIMUM SIZE STONE SHALL WEIGH 300-LB AND NOT MORE THAN 5% BY WEIGHT SHALL PASS THE 1" SIEVE.
2. FILTER MATERIAL UNDER RIPRAP SHALL CONFORM TO TVA SPECIFICATION T-1, SECTION 1082, EXCEPT THE GRADATION SHALL BE WELL GRADED FROM 1½" DOWN WITH NOT MORE THAN 5% BY WEIGHT PASSING THE NO. 200 SIEVE.
3. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-2. CONCRETE SHALL BE CLASS 300.75 AFV.
4. FORMWORK SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-8. FORM LINING FOR EXPOSED CONCRETE SURFACES SHALL BE TYPE A OR TYPE D.
5. CHAMFER ALL EXPOSED EXTERIOR EDGES ¾".
6. WELDING OF GR 70 HIGH STRENGTH REINFORCING BARS WITHOUT APPROVAL OF CIVIL ENGINEERING AND DESIGN BRANCH IS PROHIBITED.
7. ALL REINFORCEMENT ON THIS DRAWING SHALL CONFORM TO ASTM SPECIFICATION A 615, GRADE 60.
8. THE CLEAR COVER FROM FACE OF CONCRETE TO NEAREST REINFORCING BAR SHALL BE 2" UNLESS OTHERWISE NOTED. ALL OTHER DIMENSIONS ARE TO CENTERLINE OF REINFORCEMENT.
9. FOR ADDITIONAL GENERAL NOTES SEE 101-19E205-1 & 2.

NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	QUTY	QVERF	INSP	SUPRVR	ENGR/ARCH
1	FINAL FIELD REV	1-3-93	DLW	JCM	WDM					

DSGN J.L. MAXEY
DRWN J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 8-5-78

INSP
ENGINEER J. R. Windrow

SCALE: 3/8" = 1'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

MONITORING STATIONS NO. 1 & 2
PLANS & SECTIONS
OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
C. J. Swanson	J. J. Anderson	[illegible]

KNOXVILLE | 12-27-78 | 81 | C | 101-19E220 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Deusen 4/27/81 R1

REFERENCE DRAWING:
101-19BM220 BILL OF MATERIAL

INSPECTED AND APPROVED FOR ISSUE

PRINT
SIZE F
SR OR PROJ MC EE CE AD CO EO MO MPP SM BL PA
PRINTS REQD-R

STRAIGHT REINFORCEMENT BAR LIST

(FOR FIELD INFORMATION ONLY)

MADE J.L. MAXEY
CHKD: HAM

DATE 12-27-78

FOR DWG. NO. 101-19E220

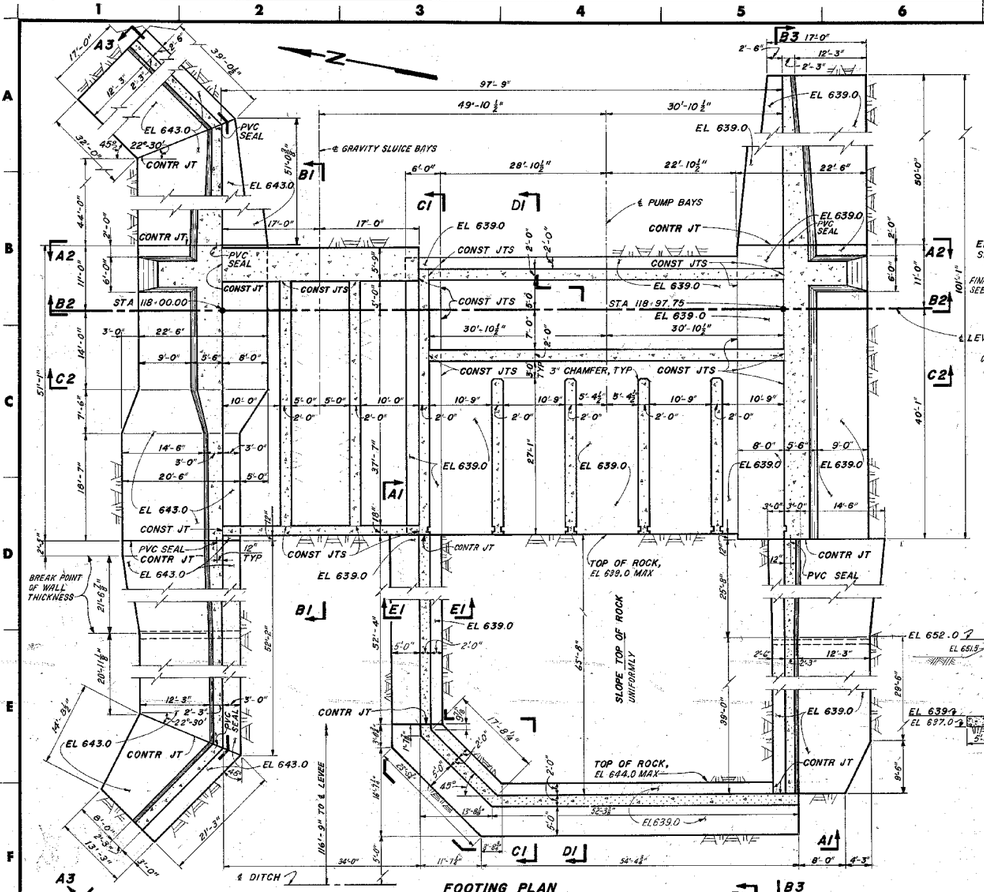
SHEET NO 1 OF 1

PROJECT S. CHICKAMAUGA CREEK

BUILDING MONITORING STATIONS NO. 1 & 2

BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D
4	8-6	48						
4	8-0	36						
4	4-0	10						
4	3-9	8						

OF
RD



NOTES:
1. FORMED CONCRETE SURFACES SHALL BE FINISHED IN ACCORDANCE WITH SECTION 10.4 OF SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301-72), EXCEPT SURFACES EXPOSED TO PUBLIC VIEW SHALL HAVE A GROUT CLEANED FINISH. CONCRETE SLABS SHALL BE FINISHED IN ACCORDANCE WITH SECTION 11.8, ACI 301-72.
2. CRUSHED STONE USED AS FILL MATERIAL UNDER CONCRETE SLABS SHALL CONFORM TO TVA HIGHWAY SPECIFICATION NO. T-1, SECTION 1032.
3. CONSTRUCTION OF EARTH LEVEE, FINAL GRADING AND PLACEMENT OF RIPRAP SHALL BE BY TVA IN ACCORDANCE WITH 101-19E230-1.
4. ALL CONTRACTION JOINTS SHALL BE TREATED TO BREAK BOND ON THE JOINT SURFACE BY PAINTING THE CONCRETE WITH A HEAVY COAT OF EITHER ASPHALT EMULSION, FLAT GRAY PAINT WITH LINSEED OIL VEHICLE OR CONCRETE CURING COMPOUND. ALL MATERIAL SHALL BE OF GOOD COMMERCIAL GRADE.
5. ROCK EXCAVATION TO BE INSPECTED BY A REPRESENTATIVE OF TVA PRIOR TO PLACING OF ANY CONCRETE.
6. FOR ADDITIONAL REQUIREMENTS SEE TVA SPECIFICATION FOR THE CONSTRUCTION OF PUMPING STATIONS 1, 2 & 3 FOR SOUTH CHICKAMAUGA CREEK PROJECT.

SCALE 1/4"=1'-0" EXCEPT AS NOTED

COMPANION DRAWINGS:
101-19E225-1 THRU 4

REFERENCE DRAWINGS:
198M225 BILL OF MATERIAL

INSPECTED AND APPROVED FOR ISSUE

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SCHA	ZOOM	APPR
1	REMOVED HOLD, DIO	9-1-78	WM	RBR	WM	RS	TW	RS			

DSGN J.P. BURKE, E.C. CRANE — INSP
DRWN M. MC CRAIN — CHECKED
CHKD E.C. CRANE
SUPV R.A. MANNOX 9-26-77

CHATTANOOGA FLOOD PROTECTION

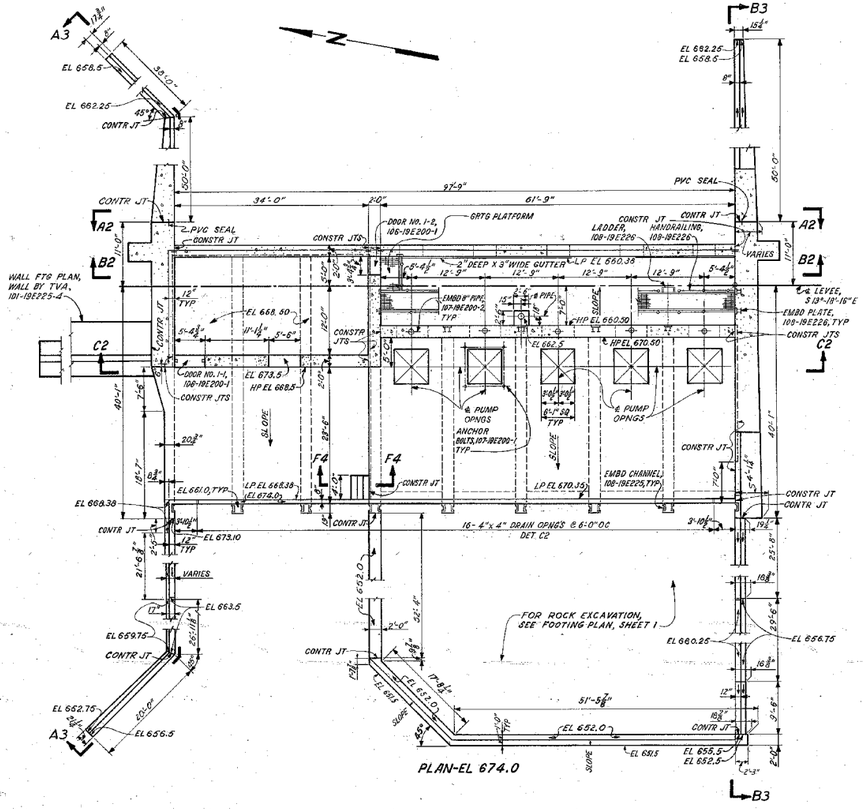
CONCRETE
PUMPING STATION NO. 1
OUTLINE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. C. Crane	J. Abrahams	J. E. Buchanan
KNOXVILLE 6-13-77	BI C.	101-19E225-1 R1

RECORD DRAWING AS CONSTRUCTED
Frank VanHeiden 12/31/81 R1

PRINT H 4 2 2
SIZE V
DR OR PROJ MM EL CE AD CO ED MO BF SW BL PA
PRINTED NEAR-1



NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E225-1.

NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
2		6-29-80	LEM	WAM/MM	WS	RS/TVA	WS				
1		REVISED WALL G1 & D7									
0		8-1-78	WEK	WAM/MM	WS	RS/TVA	WS				
		REVISED SIZE OF OPENINGS, C2, D8 & REMOVED HOLD D9									

DSGN J.P. BURKE P.E. 5-29-80 INSP
DRWN C.A.D.I.C.KEY
CHKD R.E. SLOVER ENGINEER
SUPV 760.WAM/MM-WS-WS-RS/TVA

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 1 OUTLINE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

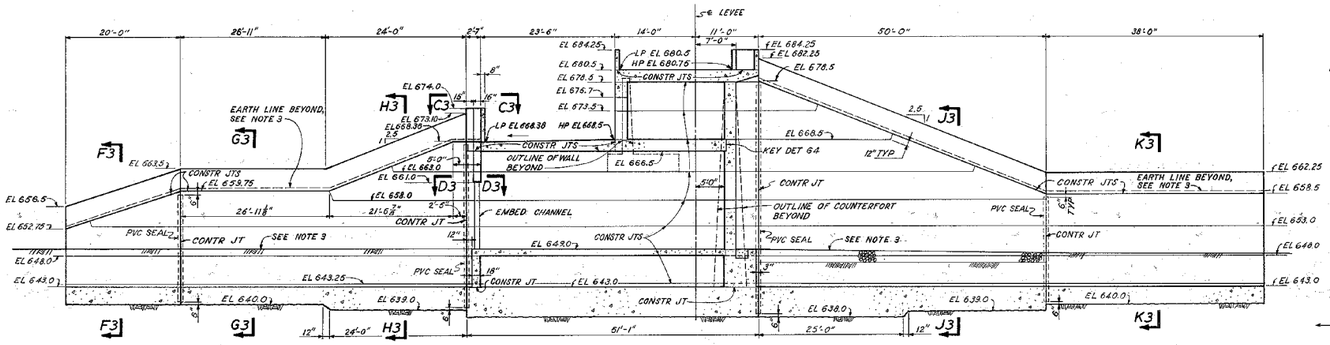
SUBMITTED	RECOMMENDED	APPROVED
E.J. Simmons	J. Abraham	H.L. Breckenridge

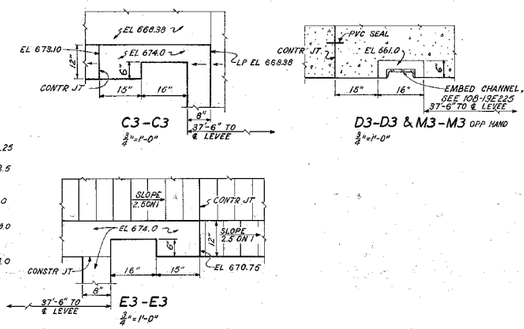
INSPECTED AND APPROVED FOR ISSUE

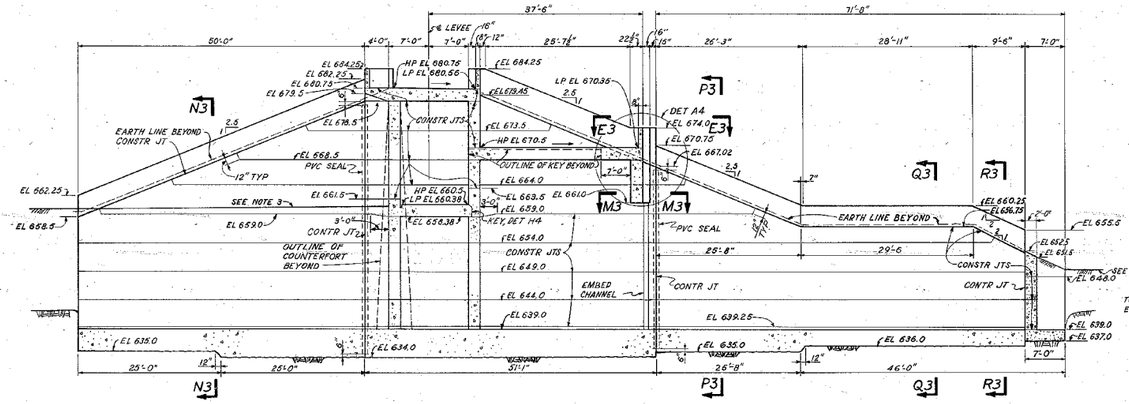
KNOXVILLE 6-13-77 | 81 | C | 101-19E225-2 R2

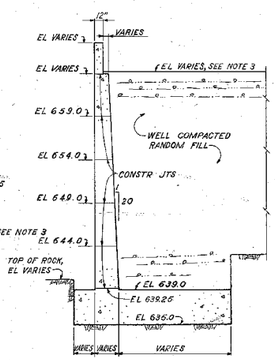
RECORD DRAWING AS CONSTRUCTED 12/31/82

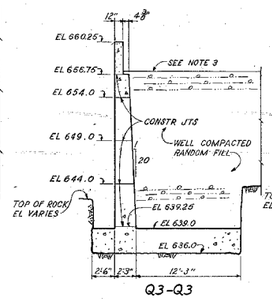
PRINT H 1/4 2
SIZE F
DR OR PROJ ME EE CE AD CS LG NO BF SW EL PA
PRINTS REQD-R 1

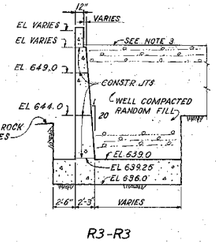


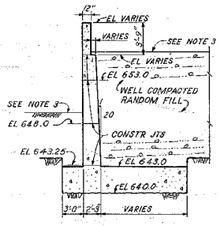


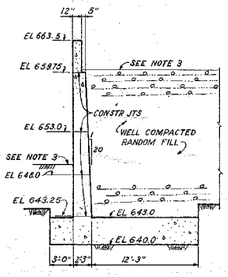


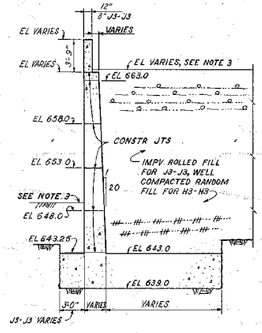


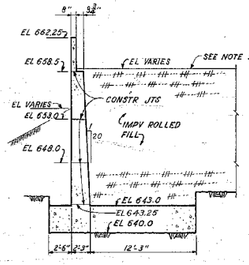


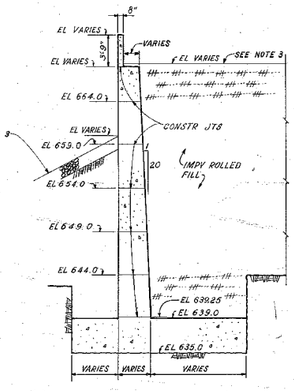












NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E225-1.

SCALE 1/8"=1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	PGGR	DRWR	CHKD	SUPV	ENGR	FNSP	GGBR	RECM	APPR
DSGN	J.B. BURKE	E.P. CHERN						INSP			
DRWN	D.A. DICKEY & J.D. REID										
CHKD	E.E. CHERN							ENGINEER			
SUPV	H.A. NELSON	5-16-77									
0											

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 1
OUTLINE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

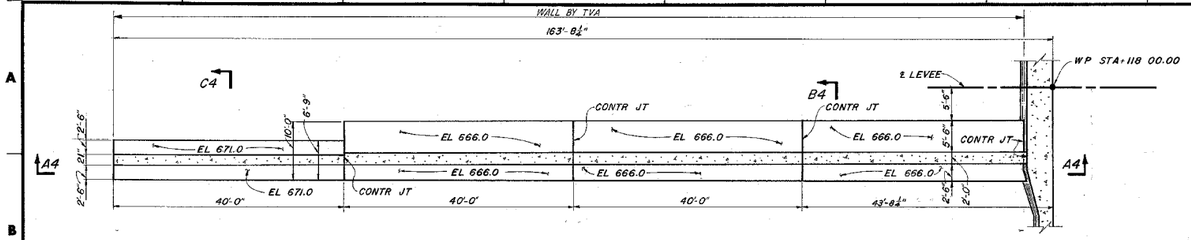
SUBMITTED	RECOMMENDED	APPROVED
C.A. Grammer	J.L. Rhudeen	D.L. Bunkowski
KNOXVILLE 6/13/77	81 C. 101-19E225-3 RO	

INSPECTED AND APPROVED FOR ISSUE

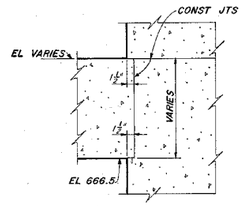
RECORD DRAWING AS CONSTRUCTED
Kenneth Dan Dickey 1/27/81 RO

PRINT N
SIZE F
A2 2
BR DR PROJ INK EE DE JD CD ED WD BP SW BL PA
PRINTS REQD-6

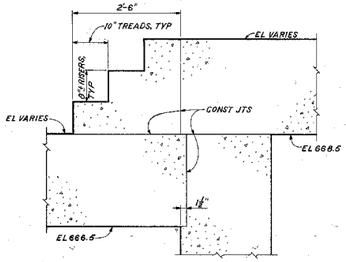
101-19E225-4 | C | 81



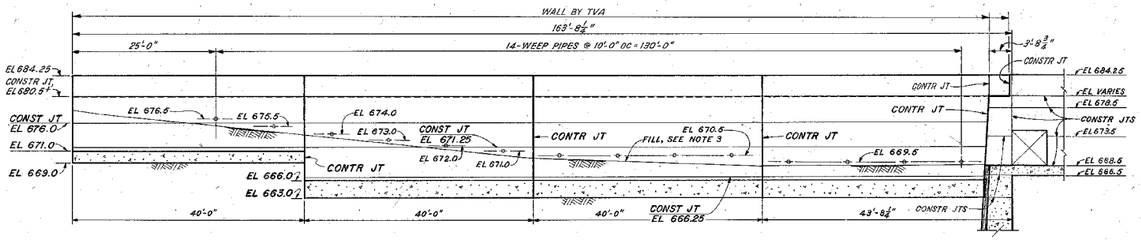
WALL FTG PLAN
SH 2
⅛"=1'-0"



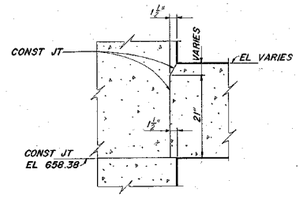
DETAIL G4
SH 2, D9
SH 3, B5



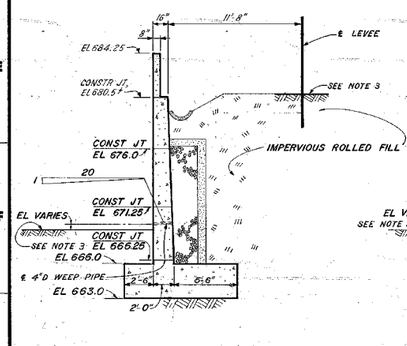
F4-F4
SH 2



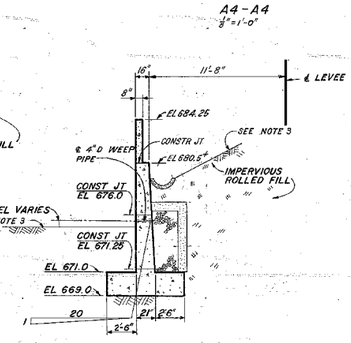
A4-A4
⅛"=1'-0"



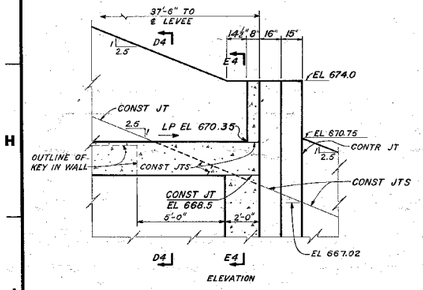
DETAIL H4
SH 2, J4, B9, B11
SH 3, E4



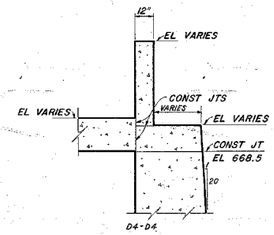
B4-B4
¼"=1'-0"



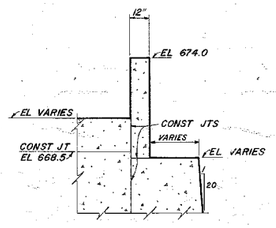
C4-C4
¼"=1'-0"



ELEVATION

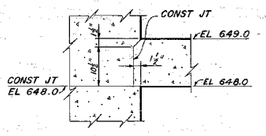


D4-D4

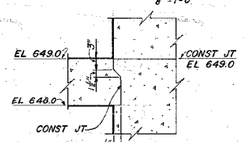


E4-E4

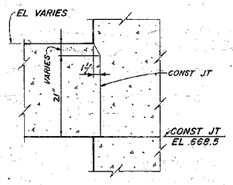
DETAIL A4
SH 3, D5
¾"=1'-0"



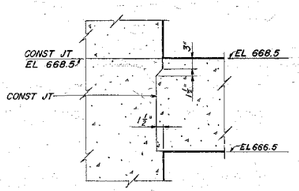
DETAIL C4
SH 2, C8



DETAIL D4
SH 2, C9



DETAIL E4
SH 2, D11



DETAIL F4
SH 2, B7, B9

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E225-1.

SCALE 1"=1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	PDCN	DRWN	CHKD	SUPV	ENGR	TECP	PUDN	RECM	APPR
1	REVISED WALL D1, E1 & E4	6-29-77	JEM	ARM	WAM	JCS	ELS	TJR	WDD		

DESIGN J. P. BURKE E. P. CUDER
DRWN W. McCLAIN & J. H. BOYD
CHKD E. P. COCCO
SUPV H. O. MONSON 5-16-77

DISSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 1
OUTLINE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. P. Cuder	J. H. Boyd	J. E. Gunderman, Jr.

KNOXVILLE 6-13-77 | 81 | C | 101-19E225-4 R1

RECORD DRAWING AS CONSTRUCTED
Frank Clan Parker 1/27/81 R1

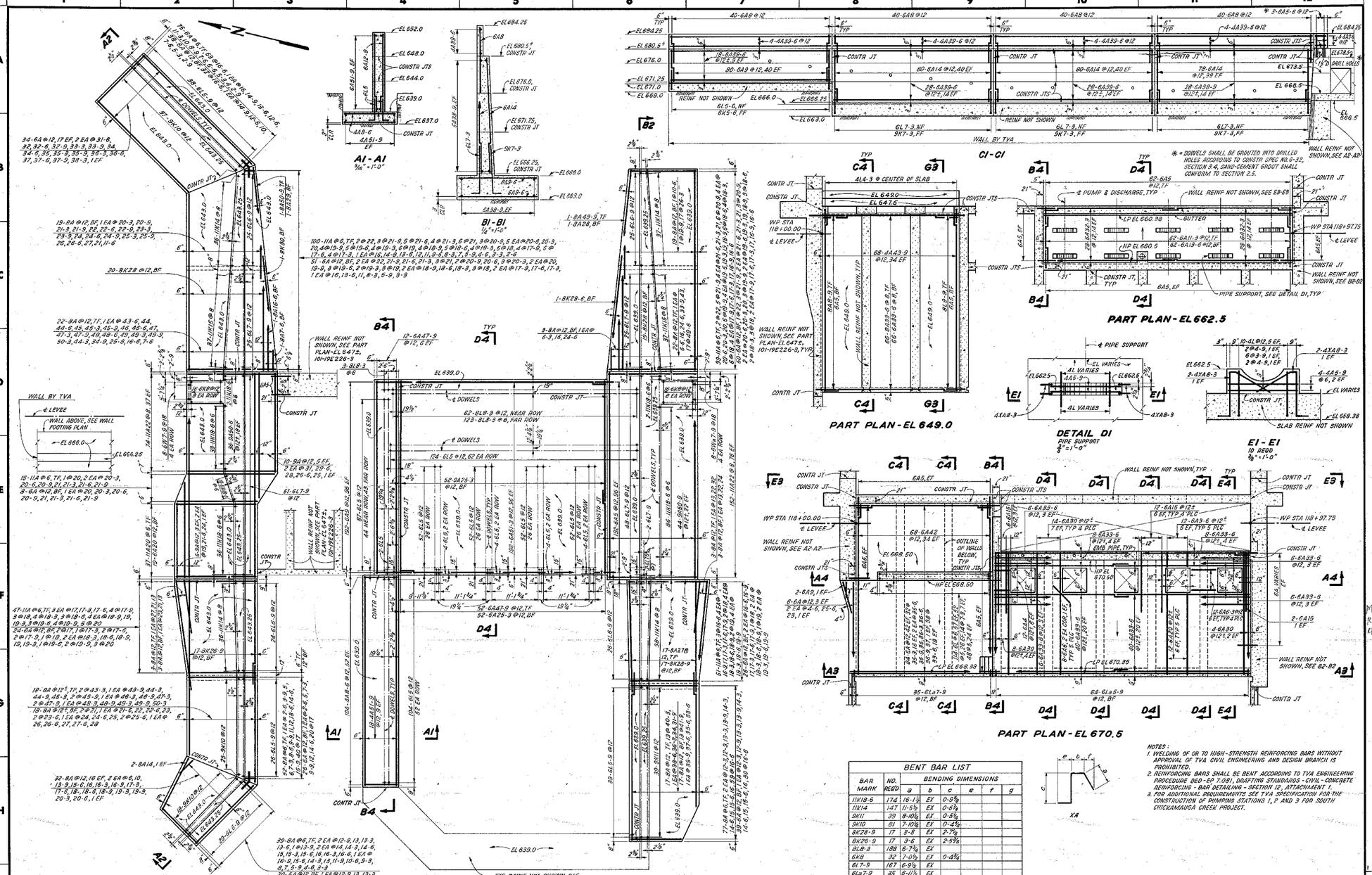
INSPECTED AND APPROVED FOR ISSUE

PRINT H
SIZE F
DR GR PROJ ME EE CE AD CD LU MD EP SW BL PA
PRINTS REQD-W

TECHNICAL INFORMATION CENTER
RECEIVED

1 2 3 4 5 6 7 8 9 10 11 12

A B C D E F G H J K



BENT BAR LIST							
BAR MARK	NO. REQ'D	BENDING DIMENSIONS a	b	c	e	f	g
11K18-6	174	16-1½	EX	0-9⅝			
11K14	147	11-5½	EX	0-6⅞			
9K11	29	8-10⅝	EX	0-5½			
9K10	81	7-10⅝	EX	0-4⅝			
9K26-9	17	9-8	EX	2-7½			
8K26-9	17	9-6	EX	2-5⅞			
8L8-3	188	6-7½	EX				
6K9	32	7-0½	EX	0-4⅝			
6L7-9	167	6-9½	EX				
6La7-9	35	6-11½	EX				
6W7-9	8	2-6	4-7½	EX	0-7⅛		
6Wa7-9	8	2-6	4-7½	EX	0-6⅝		
5K7-3	119	5-4½	EX	0-3½			
6L7-3	119	6-4½	EX				
6L6-9	100	5-9½	EX				
6L5-9	123	4-10½	EX				
6La5-9	64	4-11½	EX				
6K5-6	40	4-8	EX	0-2⅝			
6L5-6	40	4-8	EX				
6L5	641	4-1½	EX				
4JA8-3	40	3-2½	0-6	3-7	EX	2-9	
4L4-9	40	3-8	EX				
4L3-9	60	2-8	EX				
11K15	74	12-5½	EX	0-7½			
8K28	39	3-8	EX	2-7½			
8K28-8	1	4-0	EX	2-10			
8K30	1	5-7½	EX	4-0			

NOTES:
1. WELDING OF OR TO HIGH-STRENGTH REINFORCING BARS WITHOUT APPROVAL OF TVA CIVIL ENGINEERING AND DESIGN BRANCH IS PROHIBITED.
2. REINFORCING BARS SHALL BE BENT ACCORDING TO TVA ENGINEERING PROCEDURE DED-EP 7.081, DRAFTING STANDARDS - CIVIL - CONCRETE REINFORCING - BAR DETAILING - SECTION 12, ATTACHMENT 1.
3. FOR ADDITIONAL REQUIREMENTS SEE TVA SPECIFICATION FOR THE CONSTRUCTION OF PUMPING STATIONS 1, 2 AND 3 FOR SOUTH CHICKAMAUGA CREEK PROJECT.

SCALE ¼"=1'-0" EXCEPT AS NOTED

COMPANION DRAWINGS: 101-19E226-1 THRU 5

INSPECTED AND APPROVED FOR ISSUE

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	DESR	ECN
1	REVISED WALL A6, A6.811	6-23-80	KDM	MAM	MM	ELS	SJH	GAB	

DSGN A.P. BUNKE, E.P. QUENZ
DRWN A.A. KOLEY
CHKD E.P. QUENZ
SUPV H.A. JOHNSON, E.W. ST.
SHEP
ENGINEER J.W. Anderson

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 1
REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

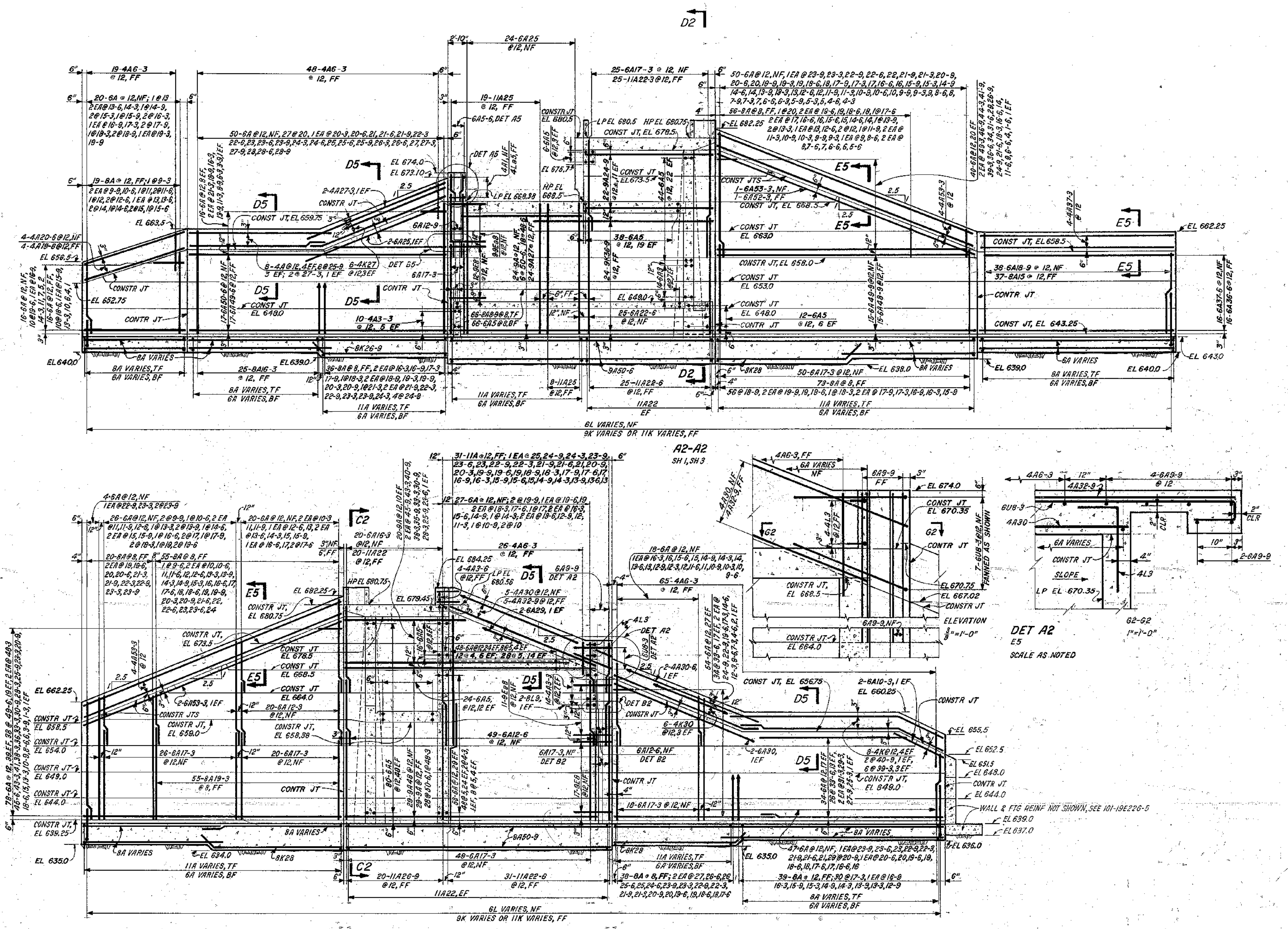
SUBMITTED	RECOMMENDED	APPROVED
E.P. Quenz	J.W. Anderson	[illegible]

KNOXVILLE | 6-24-77 | 81 | C | 101-19E226-1 R1

RECORD DRAWING AS CONSTRUCTED
[illegible] 1/27/81 R1

PRINT H
SIZE F
BR OR PROJ | MC EA CE JD CD ES MD BF RB EL PA
PRINTS RECD-R

101-19E226-2 | C | 81



A2-A2
SH 1, SH 3

B2-B2
SH 1, SH 3

DET A2
E5
SCALE AS NOTED

G2-G2
1"=1'-0"

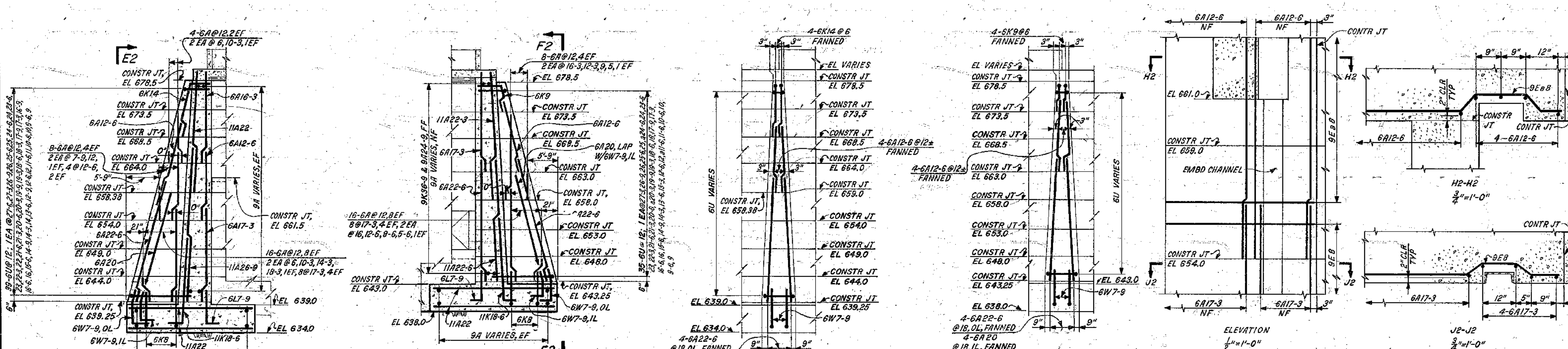
BENT BAR LIST

BAR MARK	NO. REQD	a	b	c	e	f	g
9K36-9	24	24-9	EX		7-0 1/4		
9E8	29	0-11	0-5 5/8	1-1 1/2	EX	0-5 5/8	
9Ea8	18	0-6	0-8 1/2	1-7 1/2	EX	0-7 1/8	
8L9	2	7-6	EX				
6U27-6	1	11-1	5-8	EX			
6U27-3	2	10-11	5-7	EX			
6U26-9	2	10-9	5-6	EX			
6U26	2	10-6	5-4	EX			
6U25-6	2	10-3	5-3	EX			
6U25	2	10-0	5-2	EX			
6U24-6	1	9-11	5-1	EX			
6Ua24-6	1	9-10	5-0	EX			
6U24	2	9-9	4-11	EX			
6U23-6	2	9-6	4-9	EX			
6U23	2	9-3	4-8	EX			
6U22-3	2	9-0	4-7	EX			
6U22	1	8-10	4-6	EX			
6U21-6	2	8-9	4-5	EX			
6U21-3	2	8-7	4-4	EX			
6U20-6	2	8-4	4-3	EX			
6U20-3	1	8-2	4-1	EX			
6Ua20-3	1	8-2	4-2	EX			
6U19-9	2	8-0	4-0	EX			
6U19-3	2	7-9	3-11	EX			
6U18-6	2	7-6	3-10	EX			
6U18-3	1	7-4	3-9	EX			
6U18	1	7-4	3-8	EX			
6U17-9	2	7-3	3-7	EX			
6U17-3	2	7-0	3-6	EX			
6U16-9	1	6-10	3-5	EX			
6U16-6	2	6-8	3-4	EX			
6U16	2	6-6	3-3	EX			
6U15-6	2	6-3	3-2	EX			
6U14-9	2	6-0	3-0	EX			
6U14-3	2	5-10	2-11	EX			
6K14	4	9-9 1/2	EX	2-3 1/2			
6U14	1	5-9	2-10	EX			
6U13-6	2	5-7	2-9	EX			
6U13-3	1	5-5	2-8	EX			
6U12-9	1	5-3	2-7	EX			
6U12-6	2	5-2	2-6	EX			
6U12	2	5-0	2-5	EX			
6U11-6	2	4-9	2-3	EX			
6Ua11-6	1	4-9	2-4	EX			

BENT BAR LIST CONT'D

BAR MARK	NO. REQD	a	b	c	e	f	g
6U11	1	4-6	2-2	EX			
6U10-6	2	4-4	2-1	EX			
6U10	2	4-2	2-0	EX			
6U9-6	2	4-0	1-10	EX			
6K9	4	4-9 1/2	EX	1-3 1/2			
6U9	2	3-9	1-9	EX			
6U8-3	7	0-11	0-6 1/4	EX			
6L5	14	2-9	EX				
4K40-9	2	10-4 1/8	EX		4-7 1/4		
4K39-3	6	10-4 1/8	EX		4-7 1/4		
4K30	6	27-4 1/2	EX		10-2		
4K27	6	25-6	EX		9-5 5/8		
4L5	65	1-5	EX				
4L3	4	2-0	EX				

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E226-1.



C2-C2

D2-D2

E2-E2

F2-F2

DET B2
F5
SCALE AS NOTED

H2-H2
3/4"=1'-0"

J2-J2
3/4"=1'-0"

SCALE 1/8"=1'-0" EXCEPT AS NOTED

INSPECTED AND APPROVED FOR ISSUE

PRINT H
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R

REV NO. | ECN NO. | DATE | DSGN | DRWN | CHKD | SUPV | ENGR | INSP | SUBM | RECM | APPR

DSGN J.P. BURKE, E.P. CHENG
DRWN H. McCLAIN
CHKD E.P. CHENG
SUPV H.A. MANSON 6-16-77
INSP
ENGINEER J.M. [signature]

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO I
REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED E.S. [signature] | RECOMMENDED [signature] | APPROVED [signature]

KNOXVILLE | 6-24-77 | 81 | C | 101-19E226-2 RO

RECORD DRAWING AS CONSTRUCTED
Frank Van Metre 1/27/81 RO

MF
RO

PART PLAN - EL 643±
1/8"=1'-0"

PART PLAN - EL 680.75

A3-A3
SH 1

B3-B3
1/8"=1'-0"

C3-C3
1/8"=1'-0"

D3-D3

E3-E3
SH 1

F3-F3

G3-G3
SH 1
1/8"=1'-0"

H3-H3

DET A3
5 REQD
E10
3/4"=1'-0"

PLAN

NOTE:
FIELD MAY SPREAD REINFORCEMENT AS REQUIRED TO CLEAR EMBEDDED SLEEVES & PIPES

FOR WALL THIS AREA, SEE 101-19E226-1

SCALE 1/8"=1'-0" EXCEPT AS NOTED

BENT BAR LIST

BAR MARK	NO REQ'D	BENDING DIMENSIONS a	b	c	e	f	g
6K24-6	71	3-10⅝	EX	3-9			
8K19-6	51	3-10⅝	EX	3-9			
6K7-9	70	3-10⅝	EX	3-9			
6K7-3	94	3-0	EX	0-8½			
6L6-3	175	5-2⅞	EX				
6L6	68	5-0¼	EX				
6L5-3	36	4-6½	EX				
4T22	41	1-2	5-7				
4T14	4	1-2	5-7				
4L7-6	4	5-5½	EX				
4L7-3	4	5-1	EX				
4L6	4	2-1	EX				
4L5	4	1-1	EX				
4L4-3	34	3-3	EX				
4XB22-9	62	1-8	8-11½	2-0½			
6L9	2	7-6	EX				
6L8-3	10	6-4¼	EX				
4XC4-6	15	1-8½	1-2	EX	1-2½	1-2½	
4L96	20	5-0	EX				

XB

XC

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E226-1.

REV NO.	ECN NO.	DATE	DSGN	DWN	CHKD	SUPV	ENGR	IRSP	SUBM	RECM	APPR
1	ADDED NOTE FOR WALL E7	6-23-80	JTB	WRM	WM	MD	M.S	TCA	WM		

DSGN J. P. BURKE, E. P. CHENG
DRWN J.L. MALEY
CHKD E.P. CHENG
SUPV H.A. MARKSON 5-16-77

IRSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 1
REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. J. Braverman	N. J. Buchanan	

KNOXVILLE 6-24-77 | 81 | C | 101-19E226-3R1

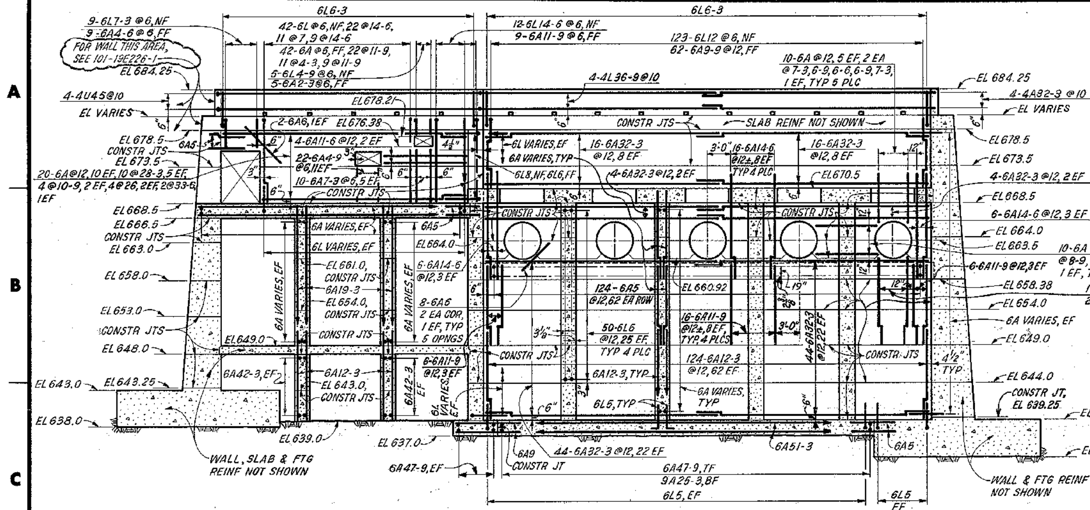
RECORD DRAWING AS CONSTRUCTED
Frank Allen Miller 12/2/81 RJ

INSPECTED AND APPROVED FOR ISSUE

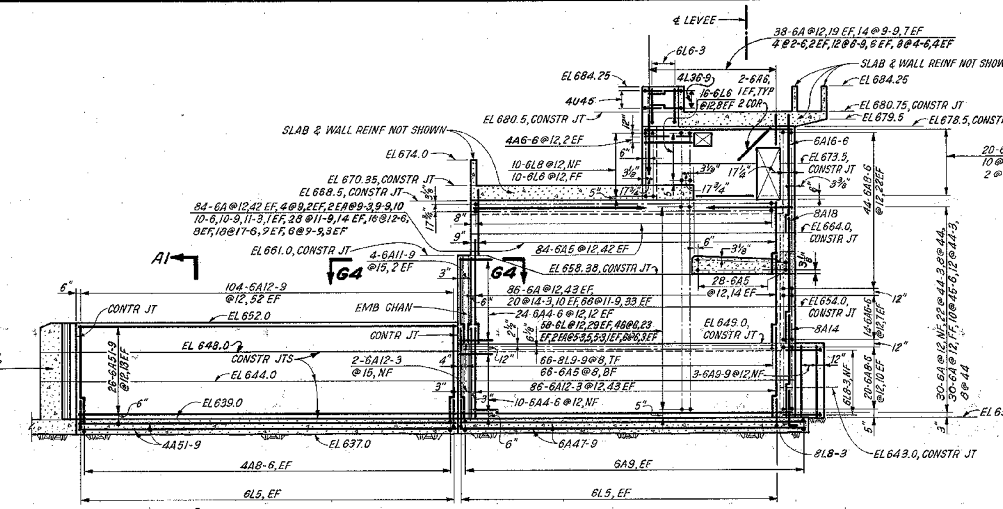
PRINT H
SIZE F
BR GR PRO WE EE OL AD CO ES MO BF SW EL PA
PRINTS PRO'D-8 ____

9DF
R6
R1

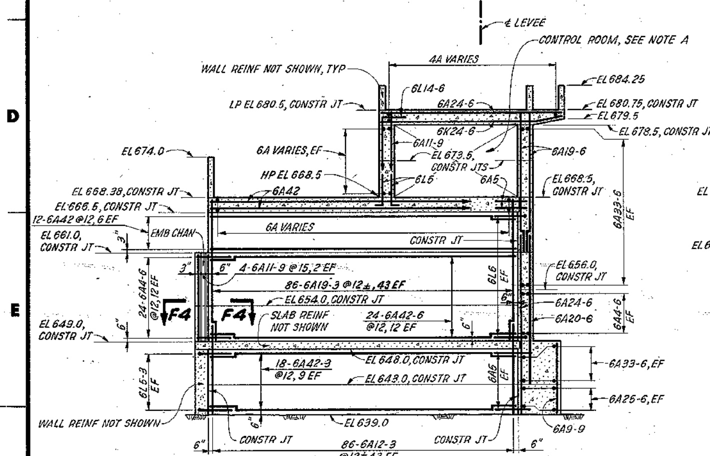
101-19E226-4 | C | 81



A4-A4
SH 1 & 3

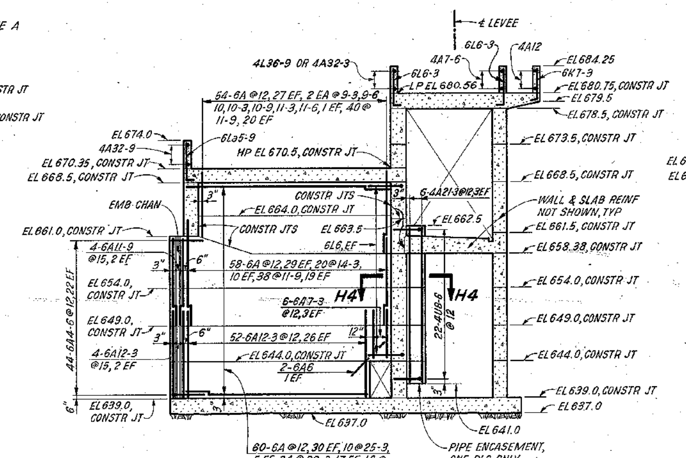


B4-B4
SH 1 & 3

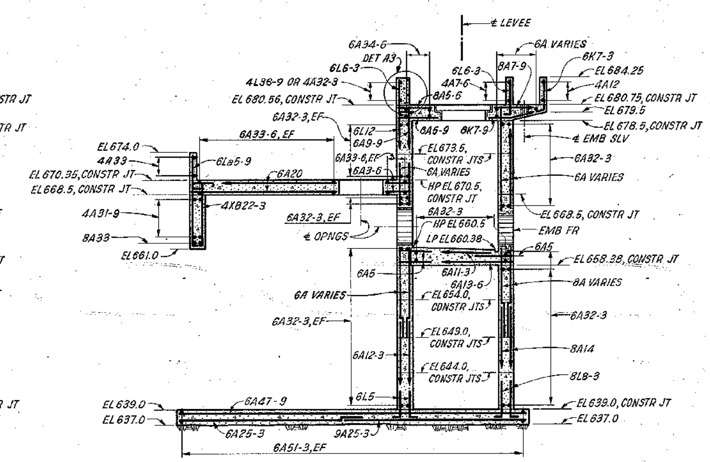


C4-C4
2 REQD
SH 1 & 3

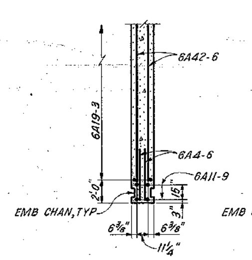
NOTE A:
FIELD MAY SPREAD OR CUT REINFORCEMENT BARS IN THE CONTROL ROOM WALLS WHERE REQUIRED TO CLEAR ANY RECESSES. REPLACE ALL CUT REINFORCEMENT WITH EQUAL SIZE BARS BEHIND RECESS. REPLACEMENT BARS TO PROVIDE LAP LENGTH EITHER SIDE OF OPENING. FOR LOCATION OF RECESSES SEE ELECTRICAL DWGS



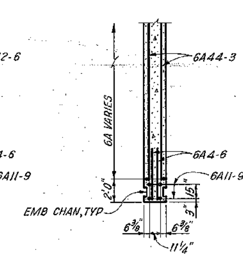
D4-D4
4 REQD
SH 1 & 3



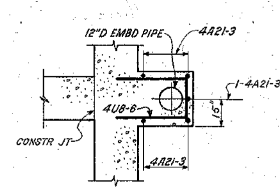
E4-E4
SH 1 & 3



F4-F4
3/16" = 1'-0"



G4-G4
3/16" = 1'-0"



H4-H4
3/8" = 1'-0"

BENT BAR LIST

BAR MARK	NO. REQD	a	b	c	e	f	g
		BENDING DIMENSIONS					
8L9-9	66	7-6½	EX				
6L14-6	44	11-8¾	EX				
6L12	123	9-2	EX				
6L8	10	5-0¼	EX				
6L7-3	9	4-3¾	EX				
6L7	11	4-3¼	EX				
6L6	262	5-0¼	EX				
6L4-9	5	2-3	EX				
4L36-9	4	32-3	EX				
4U45	4	6-6	36-0	EX			
4U8-6	22	3-3½	2-1	EX			
6L5-3	4	4-6½	EX				
6L5	2	4-1¾	EX				

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E226-1.

SCALE 1/8" = 1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
2	ADDED NOTE FOR WALL, A1.	6-23-80	JLM	HAM	HAM	HD	ELS	TJA		GLB	
1	REVISED SIZE OF OPENINGS, A2 & REVISED BENT BAR LIST, D11	9-1-78	V.E.V.	HAM	HAM	JWK	ELS	TJA		GLB	

DSGN J.P. BURKE, E.P. CHENG
DRWN J.L. MAXEY
CHKD E.P. CHENG
SUPV H.A. MANSON 6-16-77
INSP
ENGINEER [signature]

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 1
REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED [signature] | RECOMMENDED [signature] | APPROVED [signature]

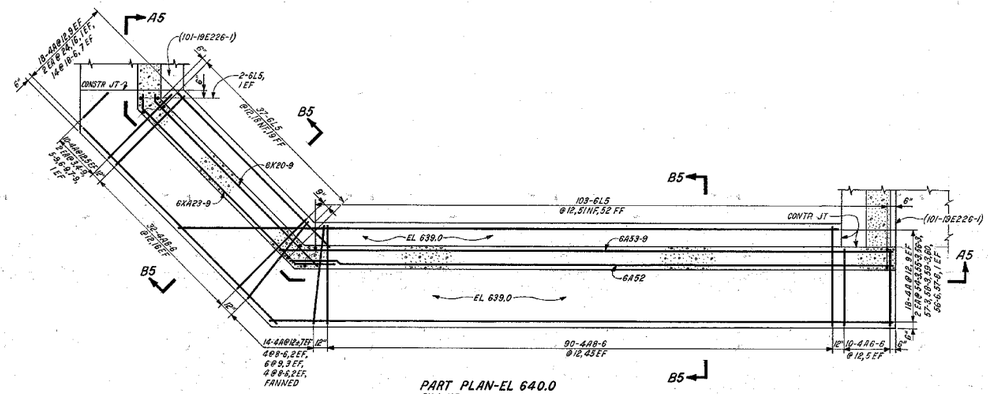
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE | 6-24-77 | 81 | C | 101-19E226-4 R2

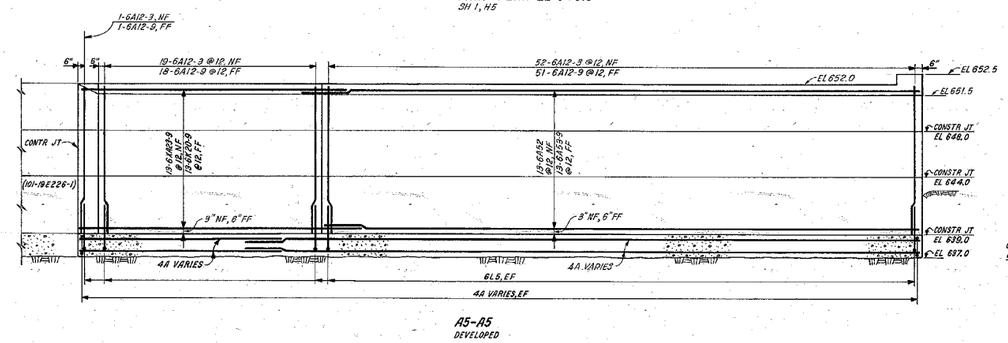
RECORD DRAWING AS CONSTRUCTED [signature] 1/27/80 R2

PRINT H 14
SIZE F
BR OR PROJ ME EE CE AD CD ED ND BF SW BL PA
PRINTS REQD-R 1

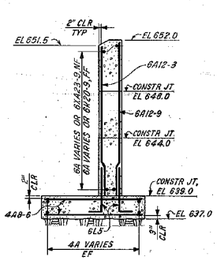
MF RO R1 R2



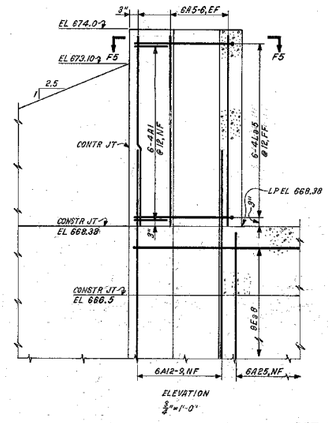
PART PLAN-EL 640.0
SH 1, H5



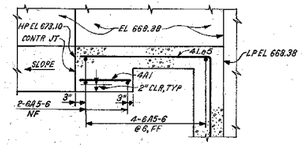
A5-A5
DEVELOPED



B5-B5

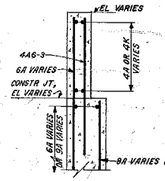


ELEVATION
$\frac{3}{8}$"=1'-0"

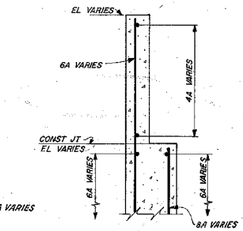


F5-F5
1"=1'-0"

DET A5
SH 2-B4
SCALE AS NOTED

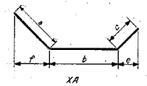


D5-D5
SH 2
$\frac{1}{2}$"=1'-0"

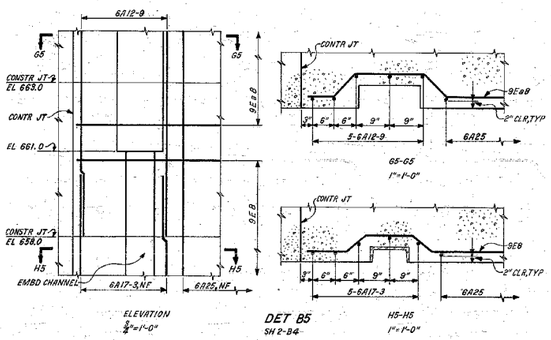


E5-E5
SH 2
$\frac{1}{2}$"=1'-0"

BENT BAR LIST							
BAR MARK	NO. REQD	BENDING DIMENSIONS					
		a	b	c	e	f	g
6XA23-9	13	1-4	19-1/8	EX	2-5	0-11/2	
6X20-9	13	0-8	EX	0-6			
6L5	140	6-1/2	EX				



XA



ELEVATION
$\frac{3}{8}$"=1'-0"

DET B5
SH 2-B4
SCALE AS NOTED

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E226-1.

SCALE $\frac{1}{2}$"=1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
DSGN	J.P. BURKE, E.P. CHENG										
DRWN	D. MCCLAIN										
CHKD	E.P. CHENG										
SUPV	W.O. DAWSON	6-16-77									

INSP

ENGINEER

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO 1
REINFORCEMENT

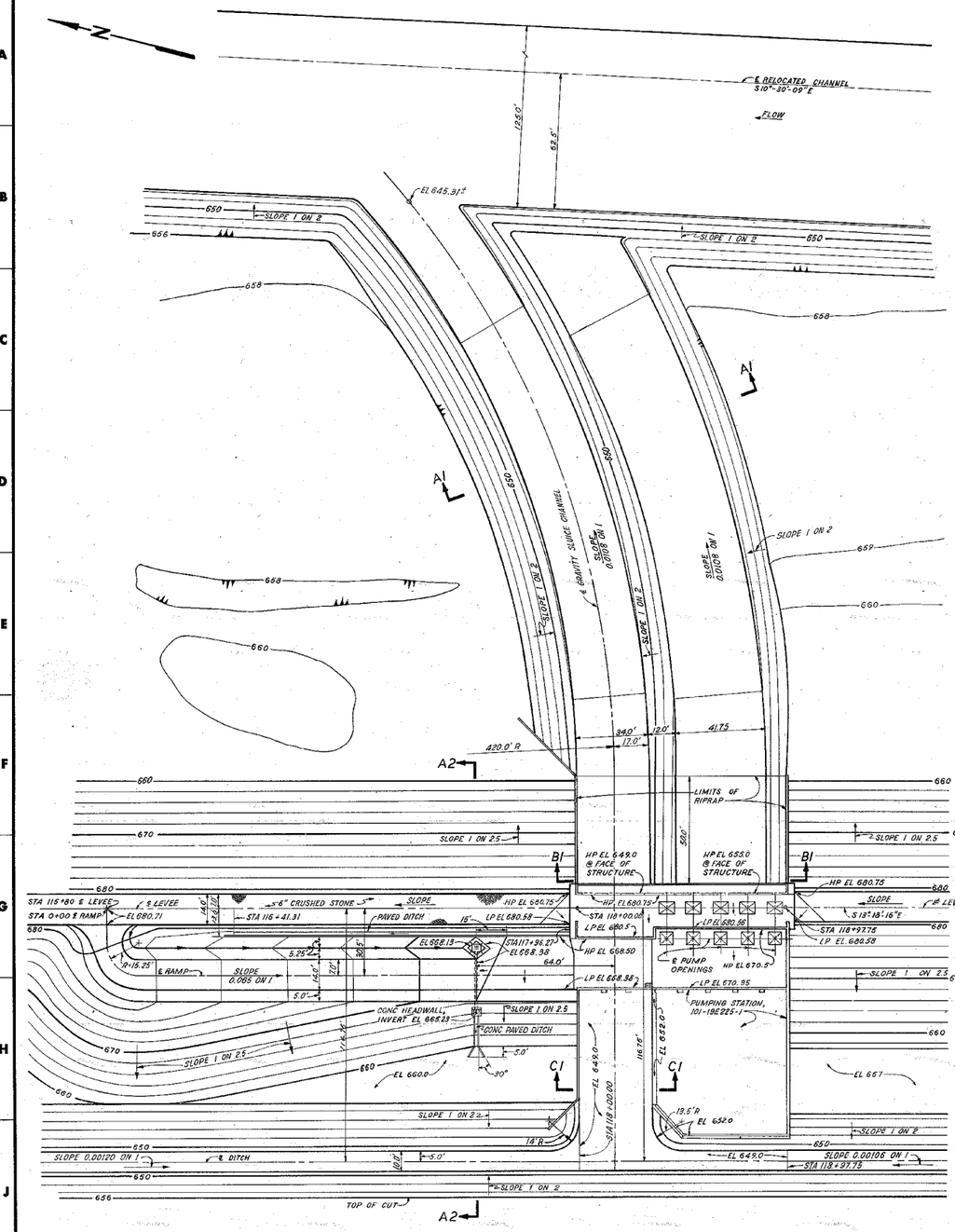
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
KNOXVILLE 6-24-77	DI C.	101-19E226-5 R0

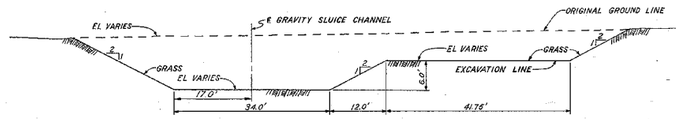
RECORD DRAWING AS CONSTRUCTED
7-27-81

INSPECTED AND APPROVED FOR ISSUE

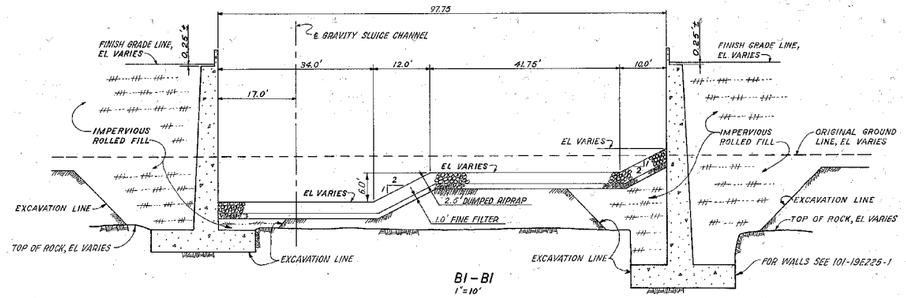
PRINT
SIZE
BR OS PROJ ME EK CE AD CO ED MO BF SM BL FA
PRINTS RECD-R 0



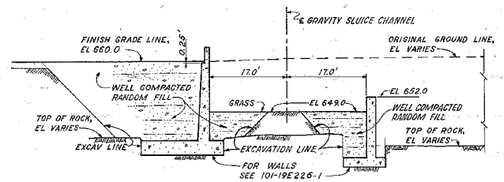
PLAN



A1-A1
1"=10'



B1-B1
1"=10'



C1-C1
1"=10'

NOTES:

1. RIPRAP SHALL CONFORM TO TVA SPECIFICATION T-1, SECTION 630, AND SHALL BE WELL GRADED. 50% OF RIPRAP BY WEIGHT SHALL BE 400-LB STONES OR LARGER. MAXIMUM SIZE STONE SHALL WEIGH 1200-LB AND NOT MORE THAN 5% BY WEIGHT SHALL PASS THE 1" SIEVE.
2. FINE FILTER MATERIAL UNDER RIPRAP SHALL CONFORM TO TVA SPECIFICATION T-1, SECTION 1032, EXCEPT THE GRADATION SHALL BE WELL GRADED FROM 1½" DOWN WITH NOT MORE THAN 5% BY WEIGHT PASSING THE NO. 200 SIEVE.
3. FINE DRAIN MATERIAL MAY BE EITHER NATURAL OR MANUFACTURED SAND AND SHALL CONFORM TO ASTM DESIGNATION C-33 FOR CONCRETE SAND. THE GRADATION SHALL BE AS GIVEN IN ASTM DESIGNATION C-33, EXCEPT NOT MORE THAN 5% BY WEIGHT SHALL PASS THE NO. 100 SIEVE AND NOT MORE THAN 2% BY WEIGHT SHALL PASS THE NO. 200 SIEVE. THE GRADATION DETERMINATION SHALL BE MADE USING THE WET SIEVE ANALYSIS.
4. COARSE DRAIN MATERIAL SHALL CONFORM TO SPECIFICATION T-1, SECTION 1032, EXCEPT THE GRADATION SHALL CONFORM TO THE FOLLOWING LIMITS:

	PERCENT PASSING BY WEIGHT	
SIEVE	MINIMUM	MAXIMUM
2"	90	100
¾"	75	95
⅜"	40	80
NO. 4	10	45
NO. 8	5	15
NO. 20	0	5

5. FOR ADDITIONAL GENERAL NOTES SEE 101-19E205-1 & 2.

SCALE 1"=20' EXCEPT AS NOTED

COMPANION DRAWINGS: 101-19E230-1 & 2

REFERENCE DRAWINGS: 19BM230 BILL OF MATERIAL

INSPECTED AND APPROVED FOR ISSUE

PRINT H 10 | SIZE F 8

DR ON PROJ WE EA CC AD CO CD NO BF BW EL PA

PRINTS NEED-D ☐

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR

DSGN J.P. BURKE
DRWN J. H. BOYD
CHKD E.P. STEELY
SUPV H.A. MARLOW JR. E.P.S.

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 1

FINAL GRADING AND DRAINAGE STRUCTURES PLAN & SECTIONS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E.S. Swanson	J.J. Abraham	J.L. Buchanan
KNOXVILLE 3-31-78	81 C 101-19E230-1 R0	

RECORD DRAWING AS CONSTRUCTED
Frank Van Sutton 11/9/81 R0

TENNESSEE INFORMATION CENTER KNOXVILLE

STRAIGHT REINFORCEMENT BAR LIST

(FOR FIELD INFORMATION ONLY)

MADE J.L. MAXEY

CHKD: HAM
jcw 3-17-78

DATE 8-8-77

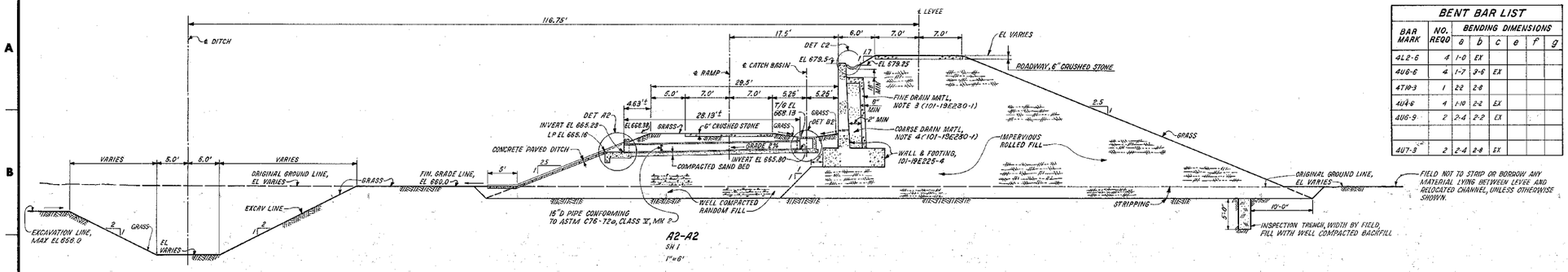
FOR DWG. NO. 101-19E230-1 & 2 RO

SHEET NO 1 OF 1

PROJECT SOUTH CHICKAMAUGA CRK

BUILDING PUMPING STATION NO. 1
FINAL GRADING

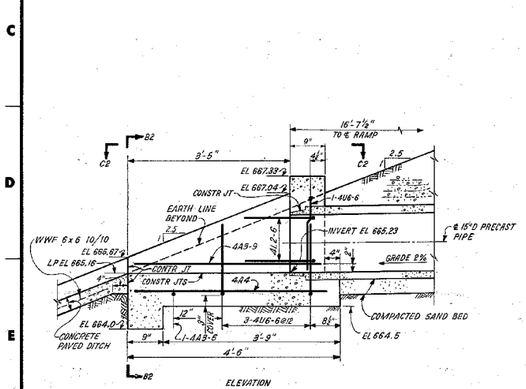
BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D
4	3-6	1						
4	3-9	2						
4	4-0	4						



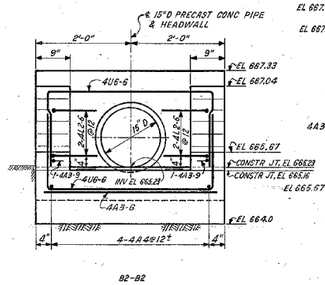
A2-A2
SH 1
1"=6'

BENT BAR LIST

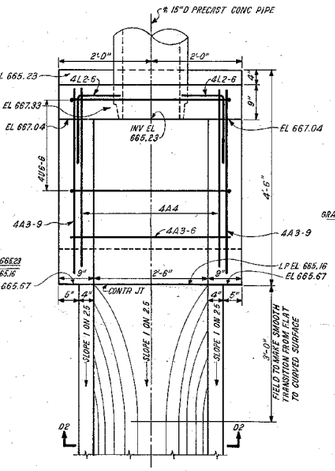
BAR MARK	NO. REQD	BENDING DIMENSIONS					
		a	b	c	e	f	g
4L2-6	4	1-0	EX				
4U6-6	4	1-7	3-6	EX			
4T10-3	1	22	2-8				
4U4-6	4	1-10	2-2	EX			
4U6-9	2	2-4	2-2	EX			
4U7-3	2	2-4	2-8	EX			



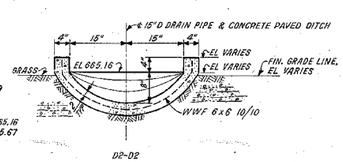
ELEVATION



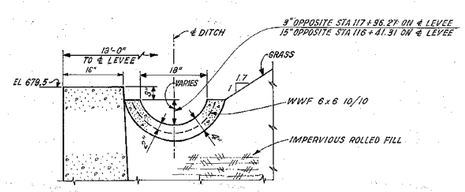
B2-B2



DET A2
B5

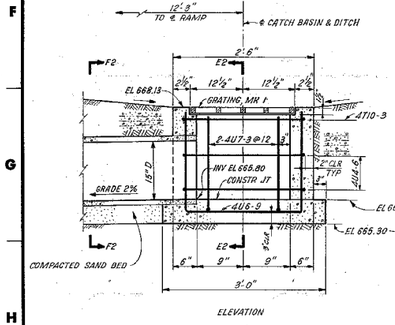


D2-D2

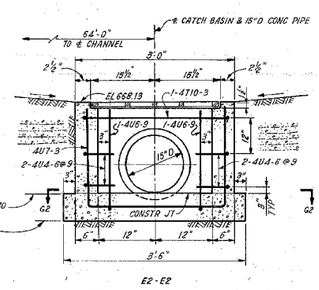


DET C2
A7

NOTES:
1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-2. CONCRETE SHALL BE CLASS 300.75 AFW.
2. FORMWORK SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-8. FORM LINING FOR EXPOSED CONCRETE SURFACES SHALL BE TYPE A OR TYPE D.
3. CHAMFER ALL EXPOSED EXTERIOR EDGES ¾".
4. WELDING OF OR TO HIGH STRENGTH REINFORCING BARS WITHOUT APPROVAL OF CIVIL ENGINEERING AND DESIGN BRANCH IS PROHIBITED.
5. ALL REINFORCEMENT ON THIS DRAWING SHALL CONFORM TO ASTM SPECIFICATION A615, GRADE 60.
6. FOR ADDITIONAL NOTES SEE 101-192290-1.

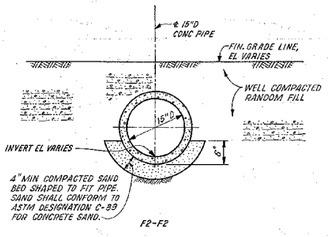


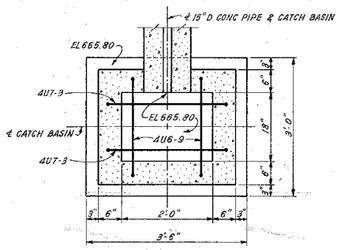
ELEVATION



E2-E2

DET B2
B7





G2-G2

SCALE 1"=1'-0" EXCEPT AS NOTED

INSPECTED AND APPROVED FOR ISSUE

PRINT M | 10
SIZE V | 8
BR OR PROJ MC LO GE AD CO ED RO BF DR BL PA
PRINTS REQD-5

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SURV	ACCM	APPR
1	FINAL FIELD REV	1-3-83	CH.W.	J.M.	RDM						

DSGN J. P. BURKE
DRWN K. E. VANCE 3-8-77
CHKD E. E. CHORE
SUPV G. A. MADISON 3-8-77

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 1

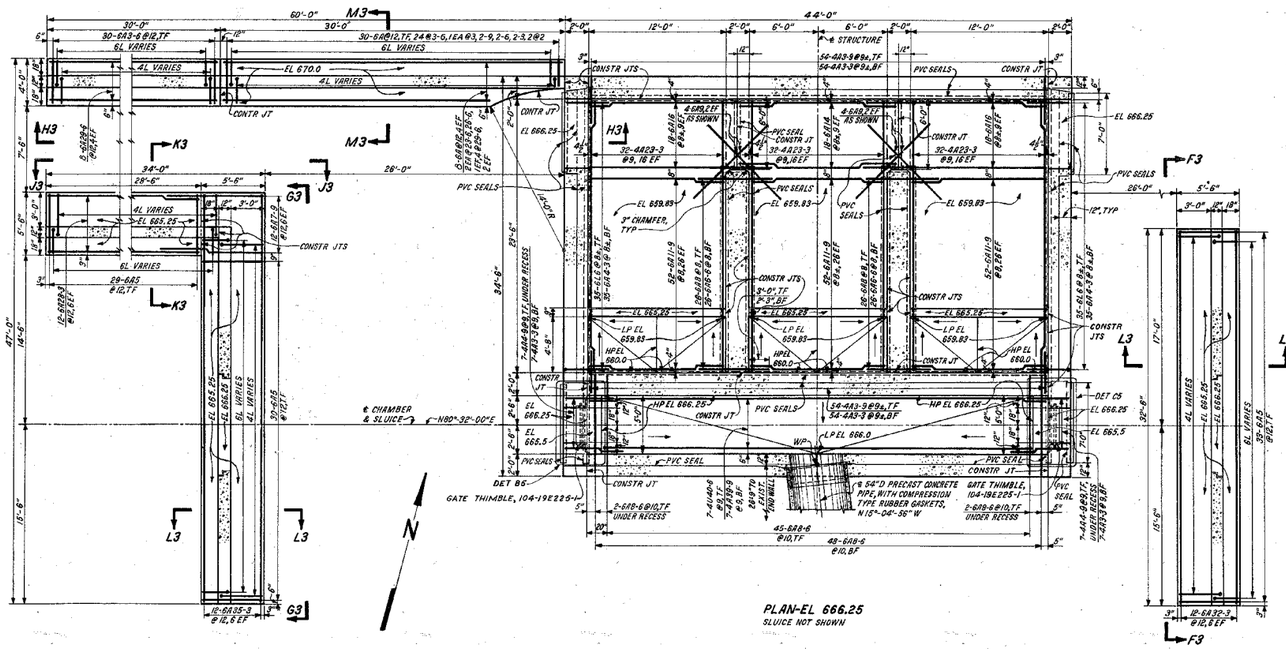
FINAL GRADING AND DRAINAGE STRUCTURES PLAN & SECTIONS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. S. Sammons	J. J. Madison	W. F. Erdmann, Jr.

KNOXVILLE | 3-31-78 | 81 | C | 101-192230-2 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Winkle 4/7/81 R1



BENT BAR LIST

BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6W7-6	31	2-2	1-8	EX	1-7		
6L6	70	1-3	EX				
6W5-6	5	2-2	1-8	EX	1-7		
6L5-3	8	2-0	EX				
4U40-6	7	1-10	37-0	EX			

NOTES:
1. FORMED CONCRETE SURFACES SHALL BE FINISHED IN ACCORDANCE WITH SECTION 10.4 OF SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301-72), EXCEPT SURFACES EXPOSED TO PUBLIC VIEW SHALL HAVE A GROUT CLEANED FINISH. CONCRETE SLABS SHALL BE FINISHED IN ACCORDANCE WITH SECTION 11.8, ACI 301-72.
2. REINFORCING BARS SHALL BE BENT ACCORDING TO TVA ENGINEERING PROCEDURE DED-EP 7.081, DRAFTING STANDARDS - CIVIL - CONCRETE REINFORCING-BAR DETAILING - SECTION 12, ATTACHMENT 1.
3. CRUSHED STONE USED AS FILL MATERIAL UNDER CONCRETE SLABS SHALL CONFORM TO TVA HIGHWAY SPECIFICATION NO. 7-1, SECTION 1032.
4. FINAL GRADING BY TVA IN ACCORDANCE WITH DRAWING NO. 81-C-101-19E245-1 & 2.
5. ALL CONTRACTION JOINTS SHALL BE TREATED TO BREAK BOND ON THE JOINT SURFACE BY PAINTING THE CONCRETE WITH A HEAVY COAT OF EITHER ASPHALT EMULSION, FLAT GRAY PAINT WITH LINSEED OIL VEHICLE OR CONCRETE CURING COMPOUND. ALL MATERIAL SHALL BE OF GOOD COMMERCIAL GRADE.
6. FOR ADDITIONAL REQUIREMENTS SEE TVA SPECIFICATION FOR THE CONSTRUCTION OF PUMPING STATIONS 1, 2 AND 3 FOR SOUTH CHICKAMAUGA CREEK PROJECT.

SCALE 1/4"=1'-0" EXCEPT AS NOTED

COMPANION DRAWINGS: 101-19E 235-1 THRU 5

REFERENCE DRAWINGS: 19BM235.....BILL OF MATERIAL

ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	DSGNCM	APVR
DSGN E.R. CHENG, J. P. BURKE									
DRWN S.E. VANCE 5-30-76									
CHKD E.R.RAY									
SUPV H.G. MANSON 5-24-77									

INSP
ENGINEER J. M. Manson

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 2 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. J. Seymour	J. Alverson	J. M. Manson

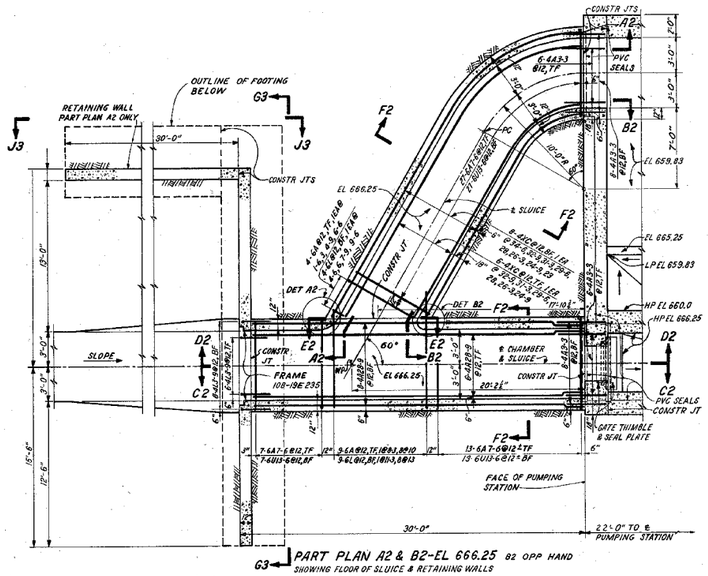
KNOXVILLE 5-6-77 | 81 | C | 101-19E235-1 RO

RECORD DRAWING AS CONSTRUCTED
Frank Vandiver 4/21/81 RO

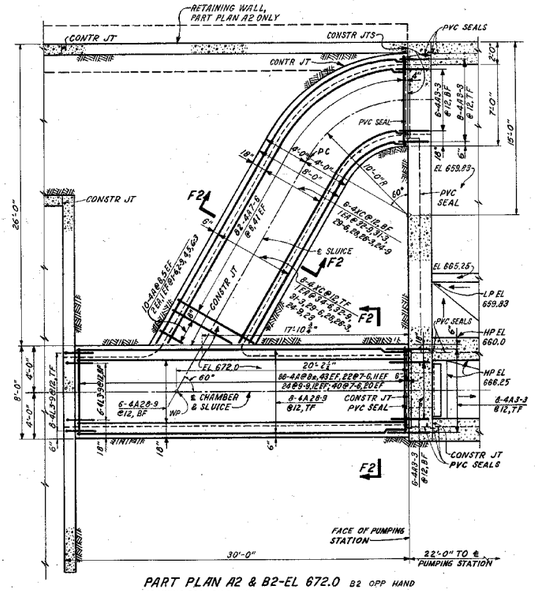
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

PRINT H 1 1/4 2
SIZE F
DR OR PROJ ME EE CE AD LD EO ND BF SW RL PA
PRINTS REQD 5

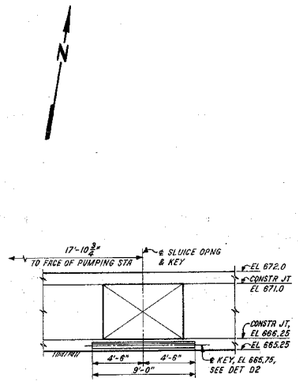
TRACING INFORMATION CHECKED



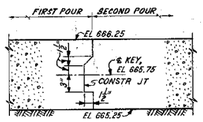
PART PLAN A2 & B2-EL 666.25 B2 OPP HAND
SHOWING FLOOR OF SLUICE & RETAINING WALLS
SH 1-H3,G9



PART PLAN A2 & B2-EL 672.0 B2 OPP HAND
SHOWING ROOF OF SLUICE
SH 1-H3,G9

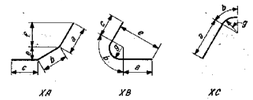


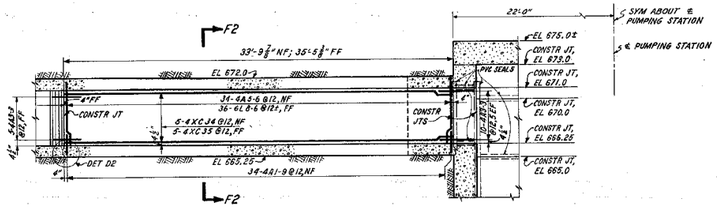
E2-E2



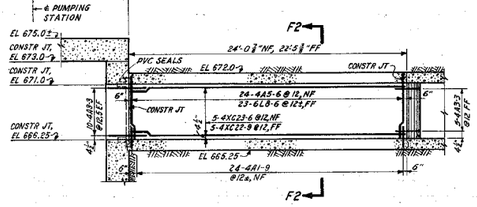
DET D2
B9
1½"=1'-0"

BENT BAR LIST							
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6L14-9	16	12-8	EX				
6U13-6	94	3-1	7-8	EX			
6L13	16	3-1	EX				
6L11-3	2	3-1	EX				
6L9-6	2	3-1	EX				
6L8-6	216	5-7	EX				
6L7-9	2	3-1	EX				
6L7-6	11	5-2	EX				
6L6	2	3-1	EX				
6K5-6	8	1-8	EX	1-2			
6L4-6	2	3-1	EX				
4XC35	10	20-9	EX				19-8½
4XC34-6	4	20-3	EX				13-8
4XC34	10	20-2	EX				13-2½
4XC32-8	8	19-8	EX				12-6
4XC31-3	8	19-3	EX				11-6
4XC29-6	8	18-6	EX				10-6
4XC28	8	18-0	EX				9-6
4XC26-3	8	17-3	EX				8-6
4XC24-9	8	17-0	EX				7-6
4XC23-6	10	16-6	EX				6-8½
4AC23	4	16-3	EX				6-6
4XC22-9	10	16-2	EX				6-2½
4A4-3	10	1-6	1-4	EX	0-7	1-4	
4XB4	10	1-8	0-11	EX	1-11		0-3
4L3-9	110	1-6	EX				

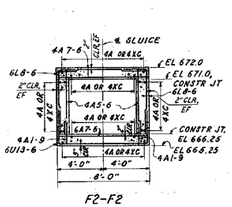




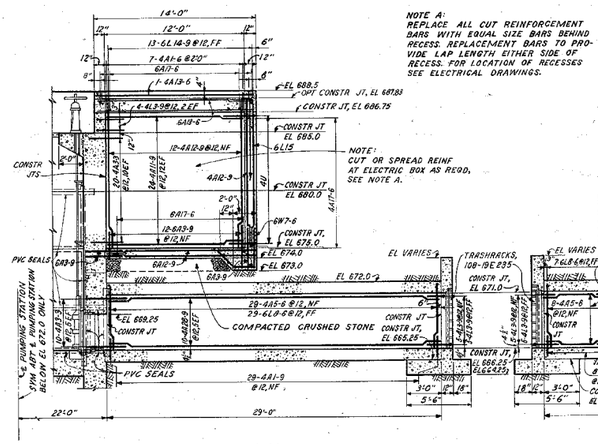
A2-A2
DEVELOPED



B2-B2
DEVELOPED



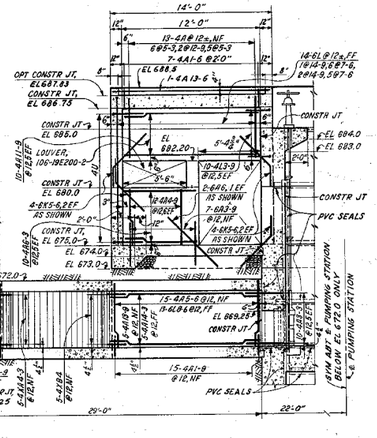
F2-F2



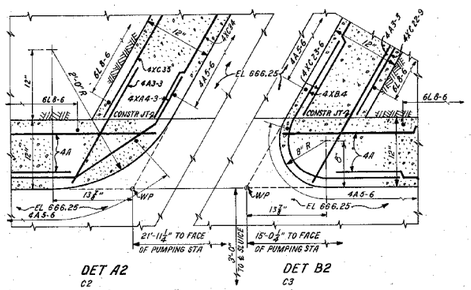
NOTE A:
REPLACE ALL CUT REINFORCEMENT BARS WITH EQUAL SIZE BARS BEHIND RECESS. REPLACEMENT BARS TO PROVIDE LAP LENGTH EITHER SIDE OF RECESS. FOR LOCATION OF RECESSES SEE ELECTRICAL DRAWINGS.

NOTE:
CUT OR SPREAD REINF AT ELECTRIC BOX AS REQD, SEE NOTE A.

C2-C2



D2-D2



DET A2
C2
1½"=1'-0"

DET B2
C3
1½"=1'-0"

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E235-1.

SCALE ½"=1'-0" EXCEPT AS NOTED

1	9-1-78	KEK	WWH	WWH	TWH		
REV NO.	REVISED SIZE OF LOUVER OPENINGS, REVISED BENT BAR LIST, A11, B11						
	REV NO.	DATE	DRAWN	TRACED	CHKD	DSGN	ENGR

DSGN C. P. CHENG, J. R. BURKE, INSP
DRWN S. F. VANCE, B-6-78
CHKD R. B. REX
SUPV H. B. JACKSON, 3-10-77
ENGINEER H. M. Anderson

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 2
OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

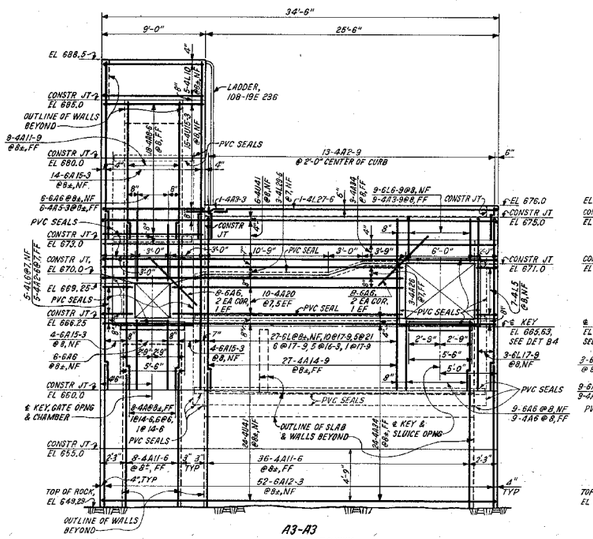
SUBMITTED	RECOMMENDED	APPROVED
C. P. Cheng	J. J. Anderson	[illegible]

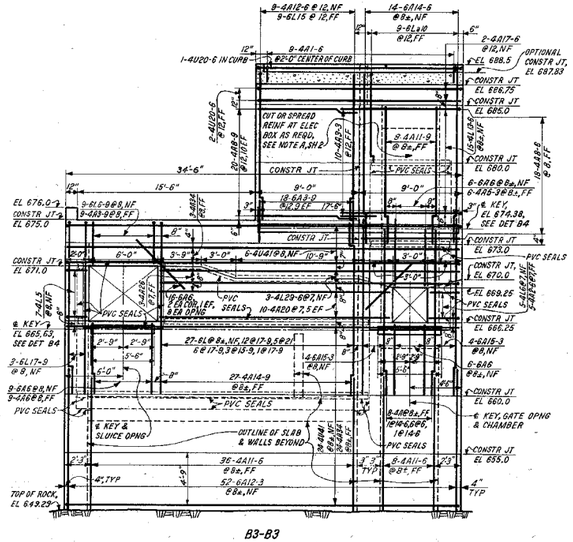
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER
KNOXVILLE 5-6-77 | 81 | C | 101-19E 235-2 R1

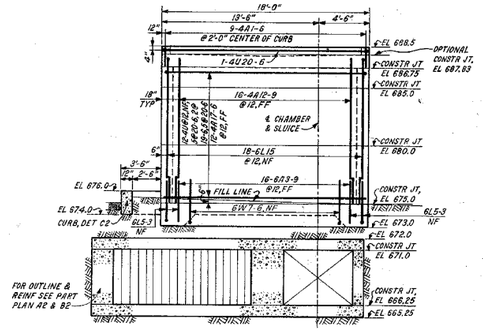
RECORD DRAWING AS CONSTRUCTED
[illegible] 1/27/81 R1

PRINT # 1 1/8 2
SIZE F
BR OR PROJ REL EL CE AD CO LO MO BF SW SL FA
PRINTS REQD-9 1

BM-[illegible]
PPG 204.311
TPL REF. 100
PC-EL 665.25
Tiltup 660
CPE 664
Sta 204+
Offset 381
Elev







BENT BAR LIST

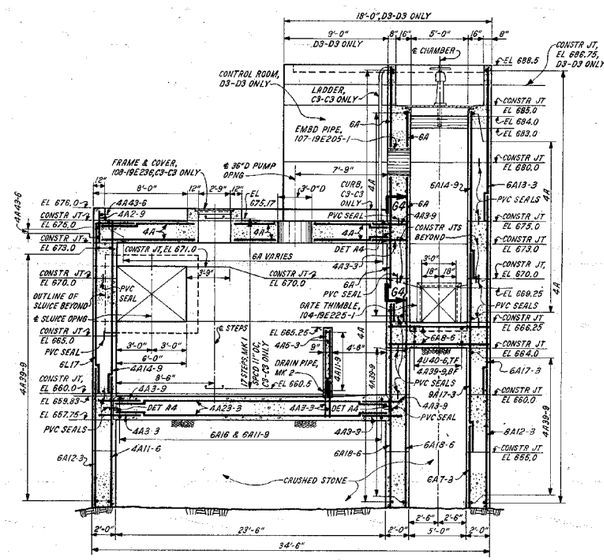
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6L6	3	4-0	EX				
6L5-9	2	3-9	EX				
6L5-6	2	3-6	EX				

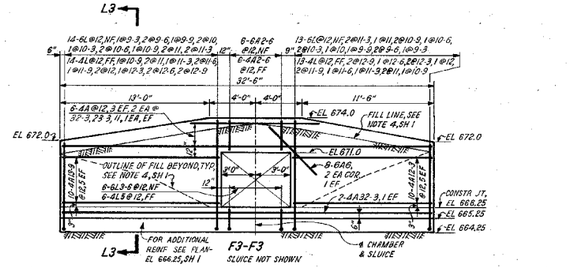
BENT BAR LIST

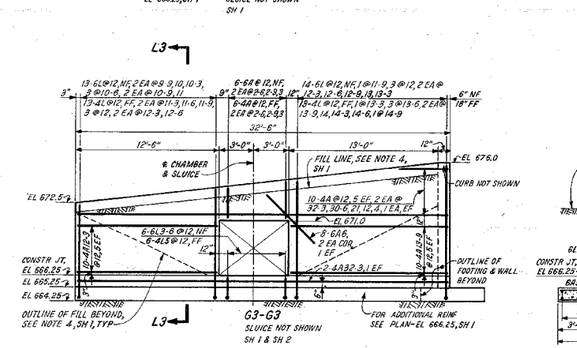
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6L9-6	30	6-6	EX				
6L8-3	3	6-3	EX				
6L8	3	6-0	EX				
6L7-9	2	5-9	EX				
6L7-6	2	5-6	EX				
6L7-3	3	5-3	EX				
6L7	3	5-0	EX				
6L6-9	2	4-9	EX				
6L6-6	2	4-6	EX				
6L6-3	3	4-3	EX				
6L6	3	4-0	EX				
6L5-9	2	3-9	EX				
6L5-6	2	3-6	EX				
4L6-6	24	6-6	EX				
4L6-3	3	6-3	EX				
4L6	3	6-0	EX				
4L6-8	1	6-6	EX				
4L7-9	2	5-9	EX				
4L6-7-9	1	6-6	EX				
4L7-6	2	5-6	EX				
4L6-7-6	1	6-6	EX				
4L7-3	3	5-3	EX				
4L6-7-3	1	6-6	EX				
4L7	3	5-0	EX				
4L6-7	2	6-6	EX				
4L6-9	2	4-9	EX				
4L6-6	2	4-6	EX				
4L6-3	3	4-3	EX				

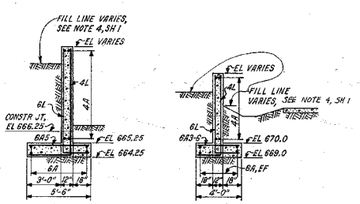
BENT BAR LIST

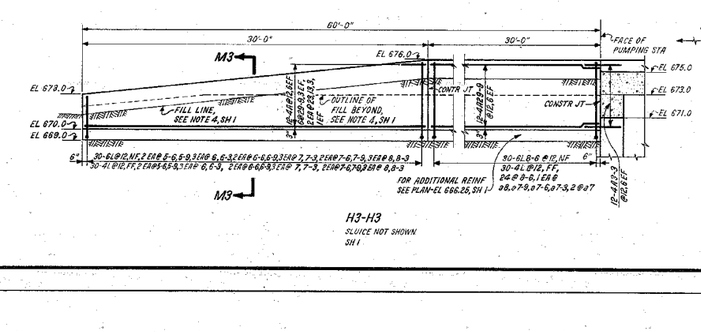
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6L2I	10	14-10	EX				
6L17-9	42	14-10	EX				
6L16-3	5	14-10	EX				
6L15-9	3	14-10	EX				
6L15	27	12-8	EX				
6L13-3	3	11-3	EX				
6L13	5	11-0	EX				
6L12-9	5	10-9	EX				
6L12-6	4	10-6	EX				
6L12-3	4	10-3	EX				
6L12	6	10-0	EX				
6L11-9	4	9-9	EX				
6L11-6	2	9-6	EX				
6L11-3	6	9-3	EX				
6L11	8	9-0	EX				
6L10-9	8	8-9	EX				
6L10-6	5	8-6	EX				
6L10-3	7	8-3	EX				
6L10	5	8-0	EX				
6L9I0	9	7-8	EX				
6L9-9	4	7-9	EX				
6L9-6	4	7-6	EX				
6L9-3	2	7-3	EX				
6L8-9	18	3-7	EX				
6L3-6	12	1-8	EX				
4U41	60	3-7	33-11	EX			
4L29-6	6	26-0	EX				
4L27-6	1	26-0	EX				
4U20-6	14	1-7	17-6	EX			
4UI8-6	2	0-7	17-6	EX			
4UI8-3	15	3-6	8-5	EX			
4L14-9	1	11-3	EX				
4L14-6	5	11-0	EX				
4L14-3	5	10-9	EX				
4L14	4	10-6	EX				
4L13-9	19	10-3	EX				
4L13-6	6	10-0	EX				
4L13-3	4	9-9	EX				
4L13	2	9-6	EX				
4L12-9	6	9-3	EX				
4L12-6	8	9-0	EX				
4L12-3	8	8-9	EX				
4L12	8	8-6	EX				
4L11-9	7	8-3	EX				
4L11-6	5	8-0	EX				
4L11-3	4	7-9	EX				
4L11	4	7-6	EX				
4L10-9	2	7-3	EX				
4L10	5	8-6	EX				
4L6	10	8-6	EX				
4L5	26	1-6	EX				
4L3-9	22	1-6	EX				

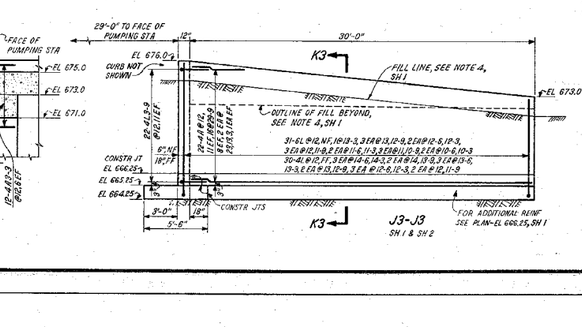


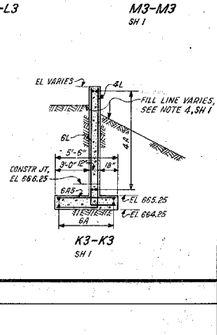












NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E 235-1.

REV NO.	ECN NO.	DATE	DSGN	DWN	CHKD	SUPV	ENGR	WSP	SUBM	RECD	APPD
1	FINAL FIELD REV	1-3-23	DLW	JM	RWM	HWH	ELS	WLG			
0		2-10-22									

DSGN E.P. CHENG, L.F. BURKE
DRWN V.F. VANCE 8-3-76
CHKD R.B. RAY
SUPV W.A. MANSEL 2-10-22
INSP
ENGINEER M. Mendes

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 2
OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

KNOXVILLE 5-6-77 | BI | C | 101-19E 235-3 | R1

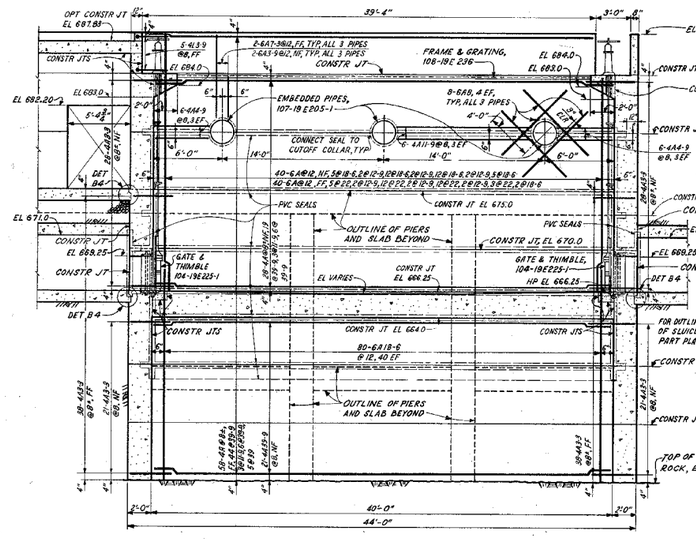
RECORD DRAWING AS CONSTRUCTED

INSPECTED AND APPROVED FOR ISSUE

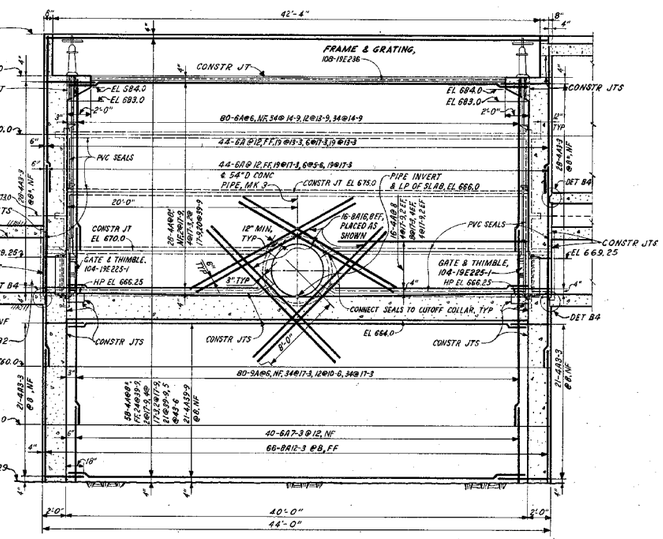
PRINT H 1 1/4 2
SIZE F
SR QR PROJ ME EE CE AD CO CD MD BF SW EL PA
PRINTS REQD-R

C.B.C. 2/28/78
T.P.S. 8/24/78
T.M.S. 8/24/78
W.H.C. 8/24/78
8/28/78 R.B.
8/28/78 R.B.
8/28/78 R.B.

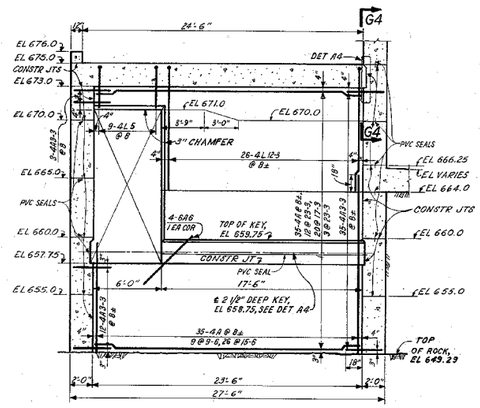
BENT BAR LIST							
BAR MARK	NO. REQD	BENDING DIMENSIONS					
		B	b	c	e	f	g
6L17	44	14-9	EA				
4L12-3	104	10-10	EA				
4L5	36	1-6	EA				
4L3-9	5	1-6	EA				



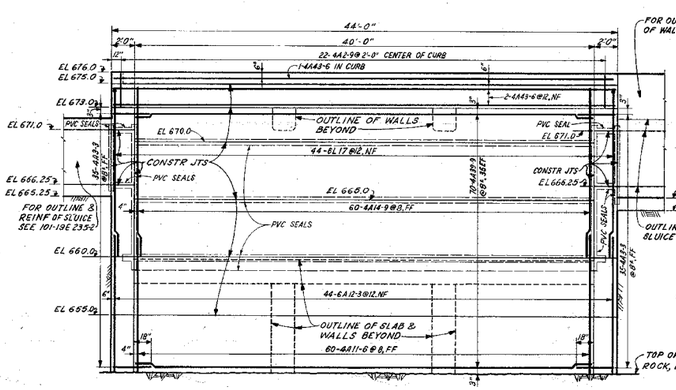
A4–A4
SH 1



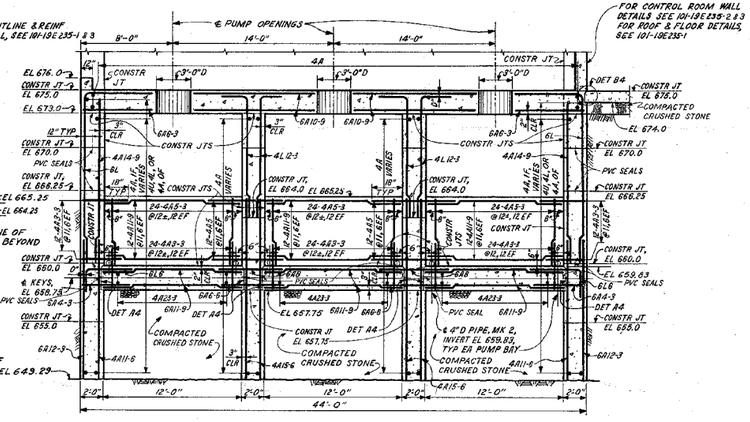
B4–B4
SH 1



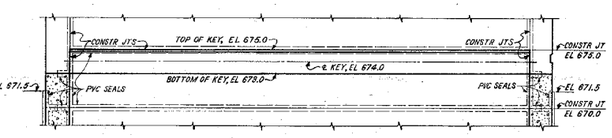
C4-C4 & D4-D4 OPP HAND
2 REQD
SLAB EL 659.83 NOT SHOWN
SH 1



E4–E4
SH 1

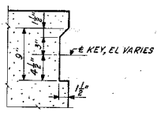


F4–F4
SH 1



G4–G4
EL 678.0 SLAB NOT SHOWN
SH 3

DET A4
1½"=1'-0"



DET B4
1½"=1'-0"

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E 235-1.

SCALE ½"=1'-0" EXCEPT AS NOTED

1	FINAL FIELD REV			1-3-83	DLW	JFH	RDM		DDM	EES	KJS		
REV NO.	ECN NO.			DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	DESN	RECM	APPR
DESIGN	E.P. CHENG, J.P. BURKE									INSP			
DRAWN	R.A. DICKEY												
CHKD	R.B. RAY												
SUPV	E.D. DAWSON, JR.									ENGINEER			

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 2 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

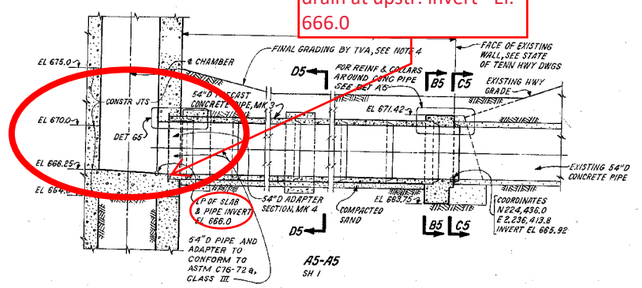
SUBMITTED	RECOMMENDED	APPROVED
E. D. Dawson	W. Anderson	S. L. Buchanan
DESIGN PROJECT MANAGER	KNOXVILLE 5-6-77	81 C 101-19E235-4 R1

INSPECTED AND APPROVED FOR ISSUE

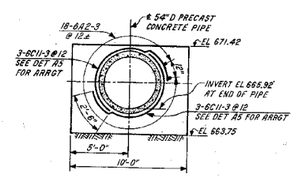
RECORD DRAWING AS CONSTRUCTED
Frank Cox Water 4-27-81 R1

PRINT H 1 14 2
SIZE F
BR OR PROJ MC LC CE AD CO ED MD BF SR BL PA
PRINTS REQD—A 2

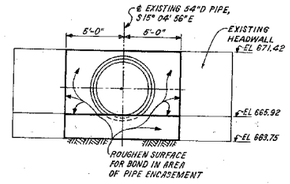
6'x5' Box ties to 54" cross drain at upstr. invert - El. 666.0



A5-A5
SH 1

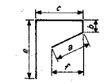


B5-B5

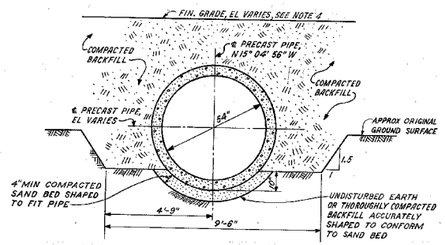


C5-C5

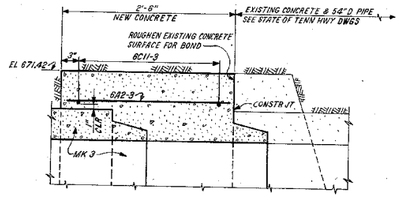
BENT BAR LIST							
BAR MARK	NO. REQD	BENDING DIMENSIONS					
		a	b	c	e	f	g
6XD12-3	16	3-9	0-7½	3-6½	EX	3-4	
6C11-3	6						2-9½
4U11-6	4	3-7	4-5⅞	EX			
4U10	2	2-10	4-5⅜	EX			
4U8-3	2	2-0	4-5⅜	EX			



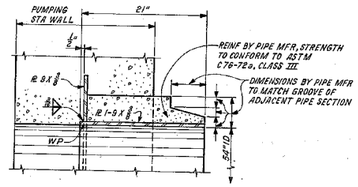
XD



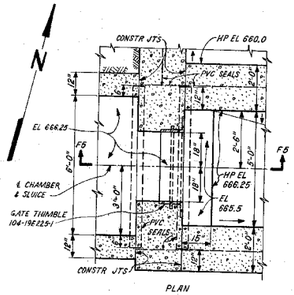
D5-D5
$\frac{1}{4}$"=1'-0"



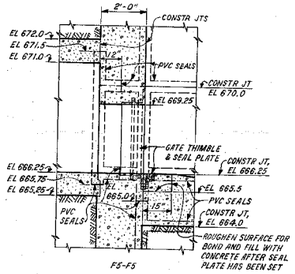
DET A5
A3
$1\frac{1}{2}$"=1'-0"



DET G5
B2
$1\frac{1}{2}$"=1'-0"

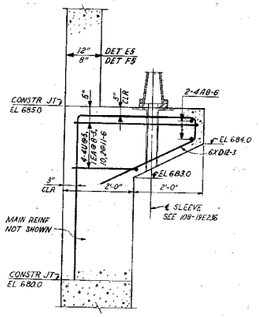


PLAN

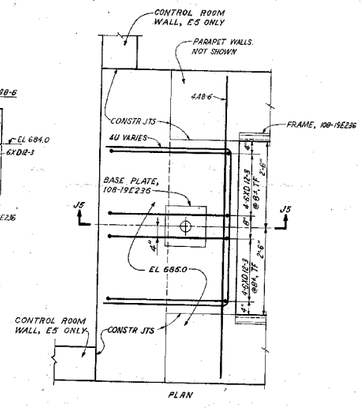


F5-F5

DET B5 & C5 OPP H
REINF NOT SHOWN
SH 1-C4,C7
$\frac{1}{4}$"=1'-0"

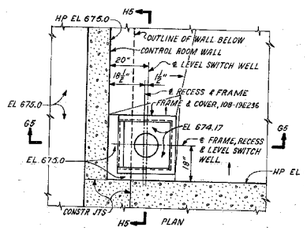


J8-J5

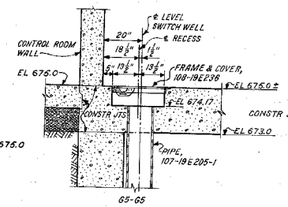


PLAN

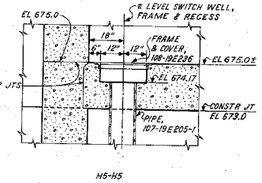
DET E5 & F5 OPP H
SH 1-H6, H7
$\frac{3}{4}$"=1'-0"



PLAN



G5-G5



H5-H5

DET D5
REINF NOT SHOWN
SH 1-G4
$\frac{1}{4}$"=1'-0"

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E235-1.

SCALE $\frac{1}{4}$"=1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	ISSN	PERM	CHKD	DEVP	ENGR	INSP	SUBM	RECM	APPR
1	FINAL FIELD REV	1-3-69	BLW	JJH		JDM	✓		DMcL	ES	
DSGN	E.P. CHENG, J.P. BURKE							INSP			
DRWN	V.V. VANCE										
CHKD	R.B. RAY							ENGINEER			
SUPV	K.A. OLANSON 3-10-67										

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 2
OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED

KNOXVILLE	5-6-77	81	C	101-19E235-5 R1

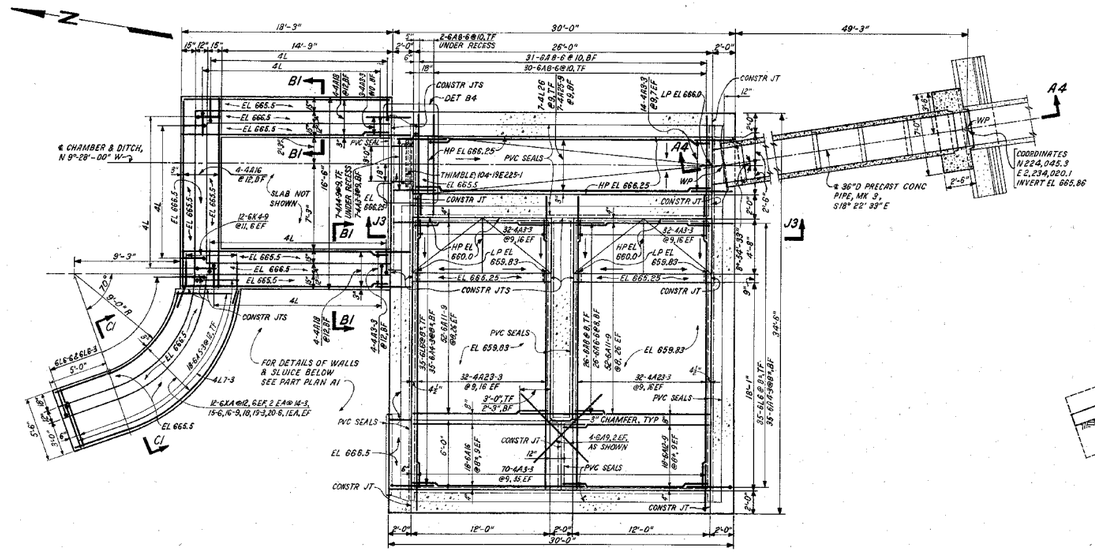
RECORD DRAWING AS CONSTRUCTED

INSPECTED AND APPROVED FOR ISSUE

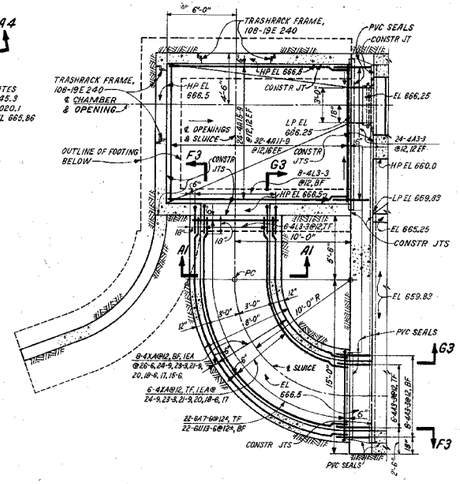
PRINT H 1 A 2
SIZE F

DR OR PROJ WE EE CE AD CO EE MD BF BW EL PA
PRINTS REQD—R 6

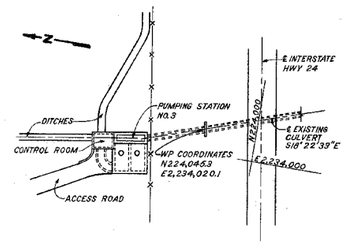
P.B.D. 200.20 P.B.D. 104.1 P.B.D. 104.2 REC'D 1-27-77 REL'D FOR PRINTING 2-1-77 REL'D FOR FILM 2-8-77



PLAN-EL 666.5
SLUICE NOT SHOWN

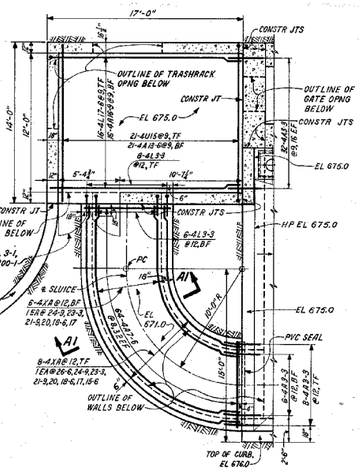


PART PLAN A1-EL 666.5
SHOWING SLAB & FLOOR OF SLUICE
G2

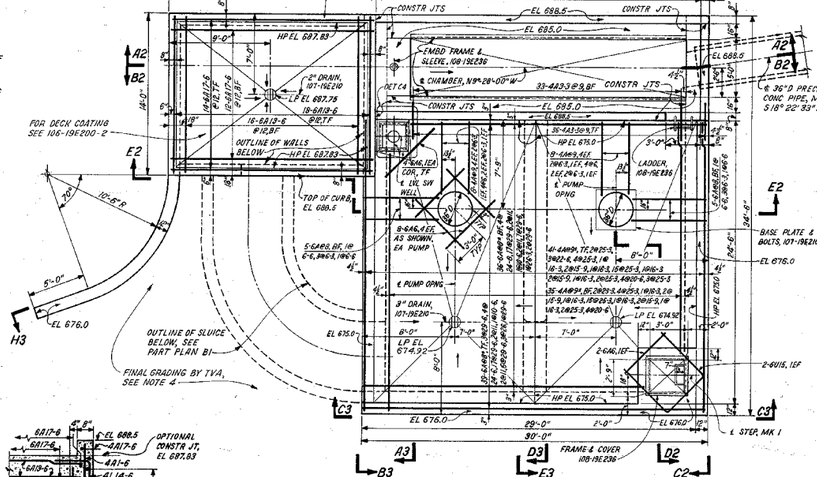


KEY PLAN
1"=40'

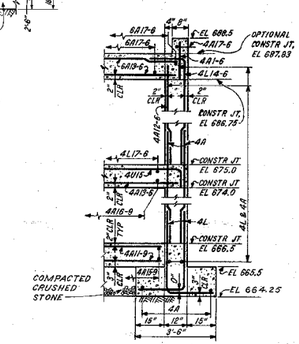
NOTES:
1. FORMED CONCRETE SURFACES SHALL BE FINISHED IN ACCORDANCE WITH SECTION 10.4 OF SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301-72), EXCEPT SURFACES EXPOSED TO PUBLIC VIEW SHALL HAVE A GROUT CLEANED FINISH. CONCRETE SLABS SHALL BE FINISHED IN ACCORDANCE WITH SECTION 11.8, ACI 301-72.
2. REINFORCING BARS SHALL BE BENT ACCORDING TO TVA ENGINEERING PROCEDURE DED-EP 3.08, DRAFTING STANDARDS-CIVIL-CONCRETE REINFORCING-BAR DETAILING-SECTION 12, ATTACHMENT 1.
3. CRUSHED STONE USED AS FILL MATERIAL UNDER CONCRETE SLABS SHALL CONFORM TO TVA HIGHWAY SPECIFICATION NO. 7-1, SECTION 1032.
4. FINAL GRADING BY TVA IN ACCORDANCE WITH DRAWING NO. 81-C-101-19E245-1 & 2.
5. FOR ADDITIONAL REQUIREMENTS SEE TVA SPECIFICATION FOR THE CONSTRUCTION OF PUMPING STATIONS 1, 2 & 3 FOR SOUTH CHICKAMAUGA CREEK PROJECT.



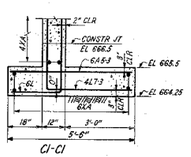
PART PLAN B1-EL 675.0+
SHOWING CONTROL ROOM SLAB & ROOF OF SLUICE
G5



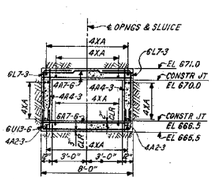
PLAN-EL 688.5



B1-B1
1/4"=1'-0"

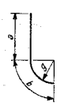


C1-C1
1/4"=1'-0"



A1-A1

BENT BAR LIST							
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	r	g
6XA20-6	2	4-9	EX				14-3
6XA19-3	2	4-9	EX				13-3
6XA18	2	4-9	EX				12-3
6XA16-9	2	4-9	EX				11-3
6XA15-6	2	4-9	EX				10-3
6U15	2	5-4	4-7	EX			
6XA14-3	2	4-9	EX				9-3
6U13-6	22	3-1	7-8	EX			
6L6	70	1-3	EX				
6X4-9	12	2-7	EX	2-6			
4XA26-6	2	5-6	EX				13-6
4L26	7	24-6	EX				
4XA26-9	4	5-6	EX				12-6
4XA23-3	4	5-6	EX				11-6
4XA21-9	4	5-6	EX				10-6
4XA20	4	5-6	EX				9-6
4XA18-6	4	5-6	EX				8-6
4L17-6	16	18-9	EX				
4XA17	4	5-6	EX				7-6
4XA15-6	2	5-6	EX				6-6
4U15	21	0-10	13-6	EX			
4L3-3	28	8-3	EX				



REFERENCE DRAWING:
19BM240.....BILL OF MATERIAL

SCALE 1/4"=1'-0" EXCEPT AS NOTED

COMPANION DRAWINGS:
101-19E240-1 THRU 4

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

REV NO.	ECN NO.	DATE	DSGN	DTRN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
C	19BM240	4-13-77	EAC	JPB							

DSGN E.A. CHENG J.P. BURNE
DRWN V.T. VANCE
CHKD R.D. TAY
SUPV R.A. MARSDEN 4-26-77
INSP
ENGINEER J. A. Marsden

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 3 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

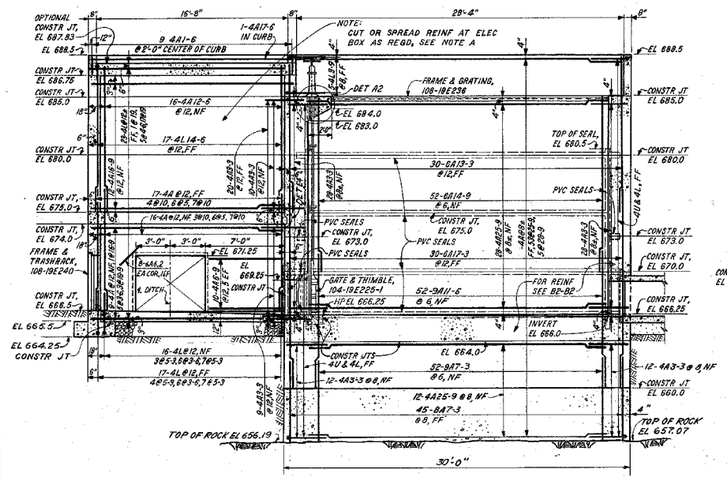
SUBMITTED	RECOMMENDED	APPROVED
C. S. Swanson	J. A. Marsden	Bob Parker

KNOXVILLE 4-13-77 | 81 | C | 101-19E240-1 RO

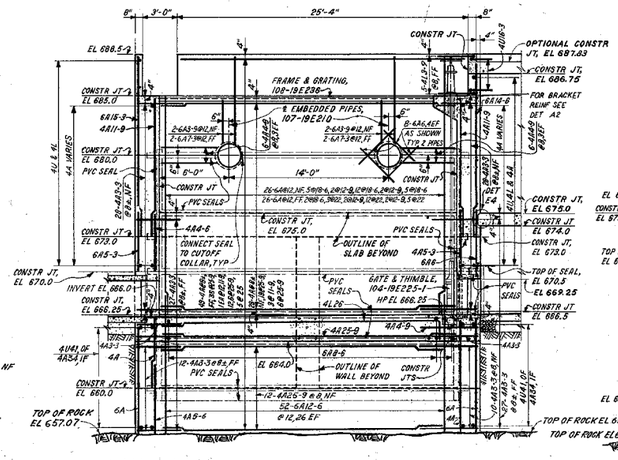
RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1/27/81 RO

PRINT H 1/4 2
SIZE F
MK OR PROJ MK EE GE AD CO ED NO BF SW BL PA
DWNTR 8500-3

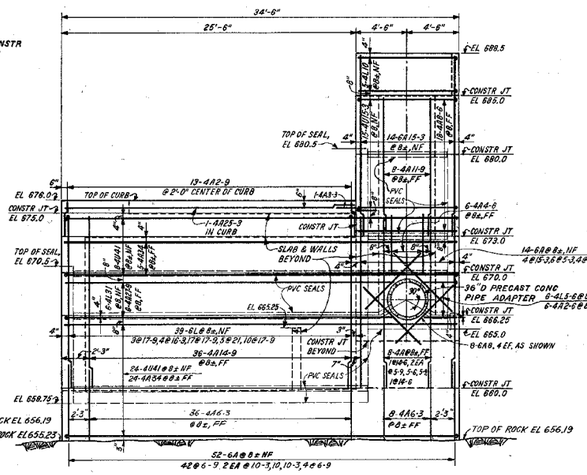
REVISIONS & APPROVALS



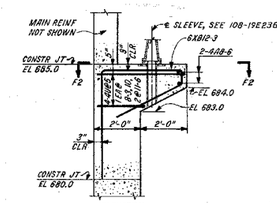
A2-A2
SH 1



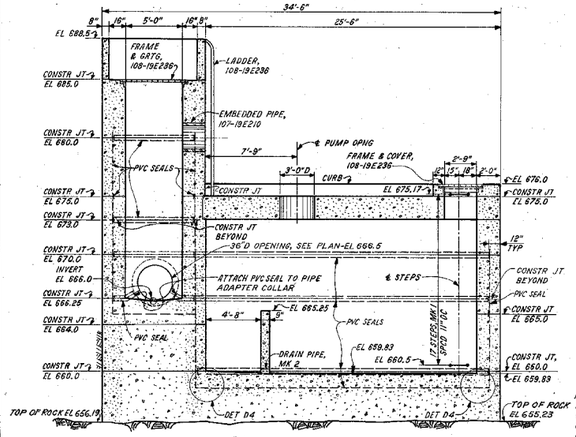
B2-B2
SH 1



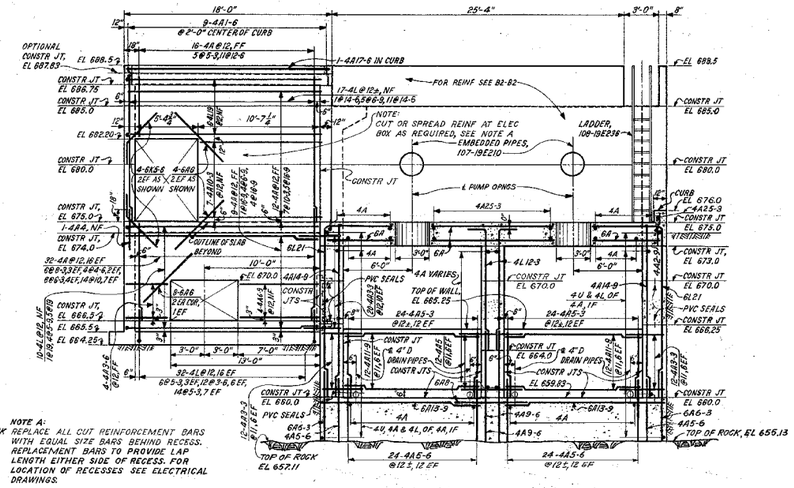
C2-C2
SH 1



DET A2
A2
1/2"=1'-0"



D2-D2
REINF NOT SHOWN
SH 1



NOTE A:
REPLACE ALL CUT REINFORCEMENT BARS WITH EQUAL SIZE BARS BEHIND RECESS. REPLACEMENT BARS TO PROVIDE LAP LENGTH EITHER SIDE OF RECESS. FOR LOCATION OF RECESSES SEE ELECTRICAL DRAWINGS.

E2-E2
SLUICE NOT SHOWN
SH 1

BENT BAR LIST

BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6L21	5	14-10	EX				
6L17-9	30	14-10	EX				
6LI6-3	4	14-10	EX				
6XB12-3	8	3-9	0-7½	3-6½	EX	3-4	
6K5-6	4	1-8	EX	1-2			
4U41	32	3-7	33-11	EX			
4L31	6	27-9	EX				
4LI9	30	16-9	EX				
4UI5-3	15	3-6	8-5	EX			
4LI6-6	28	12-8	EX				
4UI1-6	2	3-7	4-5½	EX			
4LI10	5	8-6	EX				
4UI0	1	2-10	4-5½	EX			
4UI0-3	1	2-0	4-5½	EX			
4L6-9	5	5-3	EX				
4L5-9	4	3-6	EX				
4L5-6	6	2-5	EX				
4L5-3	41	3-6	EX				
4L4-6	5	3-6	EX				
4L3-9	10	1-6	EX				
4L3-6	24	1-9	EX				

SCALE 1/8"=1'-0" EXCEPT AS NOTED

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E 240-1.

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SHDN	RECM	APPD
1	FINAL FIELD REV	1-3-78	DLW	JJM	RDM						

DESIGN E. P. CHENG, J. P. BURKE — INSP
DRWN T.P. VANCE
CHKD R. B. RAY — ENGINEER
SUPV W.J. RAWLSON 3-28-77

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 3
OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. S. Sparrow	J. W. Abraham	Joe Buchanan

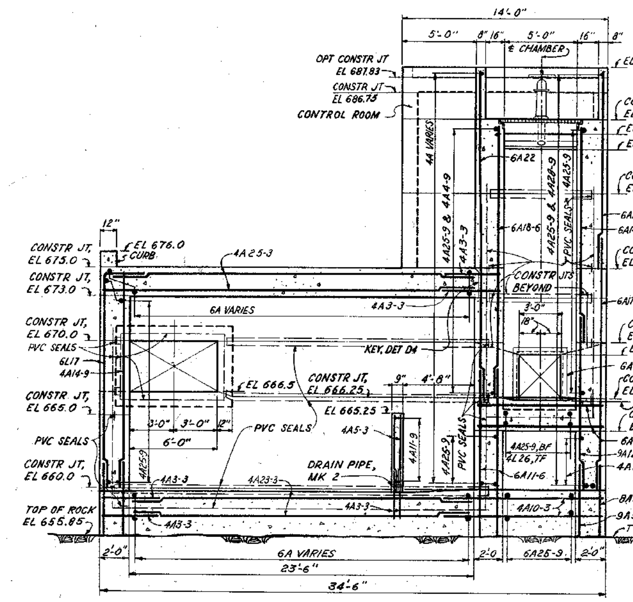
KNOXVILLE 4/9/77 | 61 | C | 101-19E240-2 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1/31/81 R1

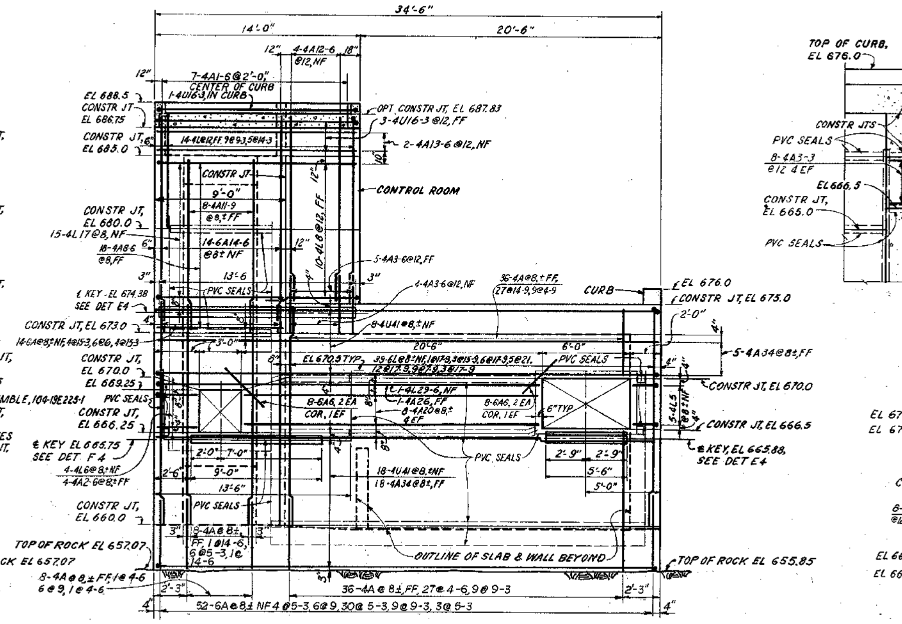
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

PRINT H 1/4 2
SIZE F
BR OR PROJ ME EE CE AD CO LO MO BF SW RL PA
PRINTS #CDD-8

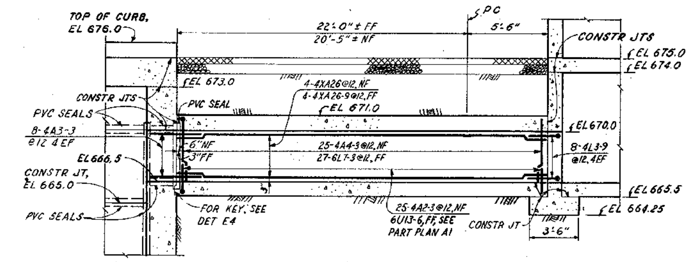
0



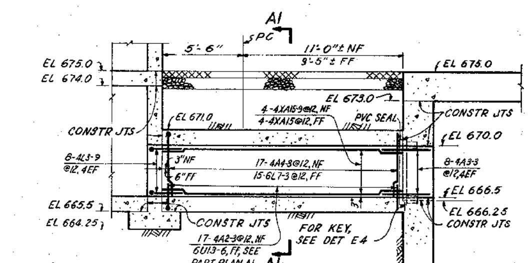
A3-A3
SH 1



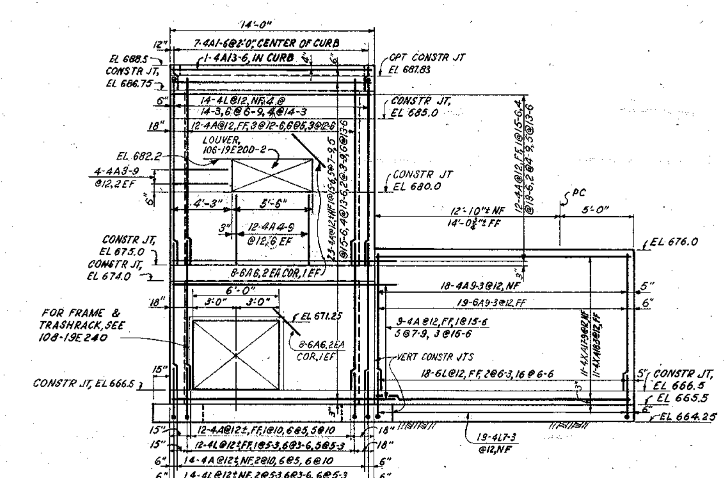
B3-B3
SH 1



F3-F3
DEVELOPED
SH 1



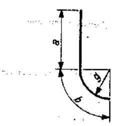
G3-G3
DEVELOPED
SH 1



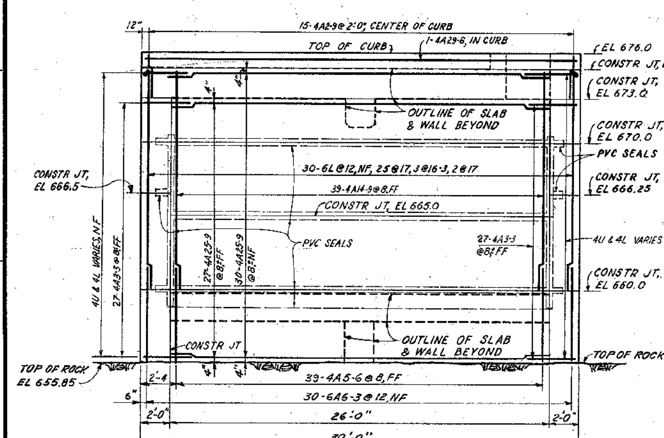
H3-H3
DEVELOPED
SH 1

BENT BAR LIST

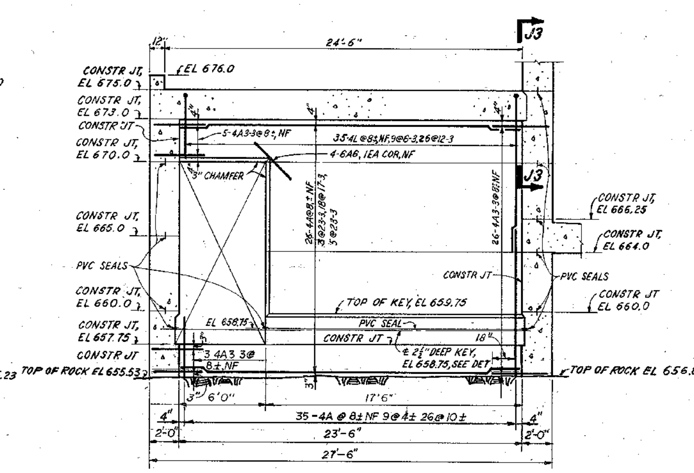
BAR MARK	NO. REQD	a	b	c	e	f	g
6L21	5	14-10	EX				
6L17-9	22	14-10	EX				
6L17	27	14-9	EX				
6L16-3	3	14-9	EX				
6L15-9	3	14-10	EX				
6L7-9	9	4-7	EX				
6L7-3	42	3-0	EX				
6L6-6	16	4-6	EX				
6L6-3	2	4-6	EX				
4U41	33	3-7	33-11	EX			
4L29-6	1	26-0	EX				
4XA26-9	4	5-6	EX				13-9
4XA26	4	5-6	EX				13-3
4XA18-3	11	4-9	EX				11-3
4XA17-9	11	4-9	EX				10-9
4L17	15	13-6	EX				
4U16-3	4	1-7	13-3	EX			
4XA15-9	4	5-6	EX				6-9
4XA15	4	5-6	EX				6-3
4L14-3	13	12-7	EX				
4L12-3	52	10-10	EX				
4L9-3	9	7-7	EX				
4L8	10	1-7	EX				
4L7-3	19	3-8	EX				
4L6-9	2	5-3	EX				
4L6-3	18	4-7	EX				
4L6	4	2-6	EX				
4L5-3	14	3-6	EX				
4L5	5	1-6	EX				
4L3-9	16	1-6	EX				
4L3-6	12	1-9	EX				



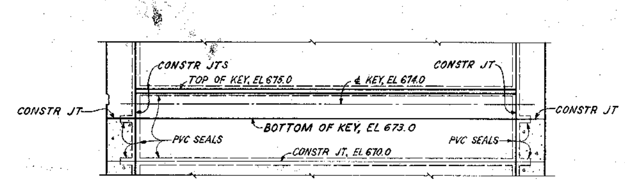
XA



C3-C3
SH 1



D3-D3 & E3-E3 OPP HAND
SLAB EL 659.83 NOT SHOWN
SH 1



J3-J3
EL 675.0 SLAB NOT SHOWN
SH 1

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E240-1.

SCALE ¼"=1'-0"

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
2	FINAL FIELD REV	1-3-83	DLW	JLM		RDM		RDM			GLB
1	REVISED SIZE OF LOUVER OPENING, E8, REVISED BENT BAR LIST, C11, D11	9-1-78	V.F.V.	HAM	HAM			TJA			GLBA

DSGN E. P. CHENG, J. P. BURKE
DRWN C A DICKEY
CHKD R B RAY
SUPV H. A. MANSON 3-28-77
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 3 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

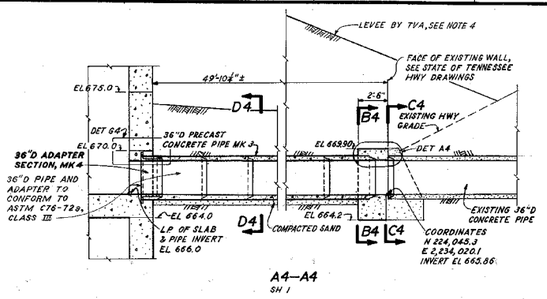
SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

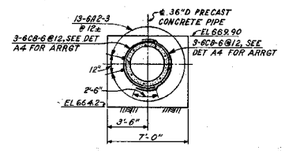
KNOXVILLE 4-19-77 | 81 | C | 101-19E240-3 R2

RECORD DRAWING AS CONSTRUCTED 4/27/81 R2

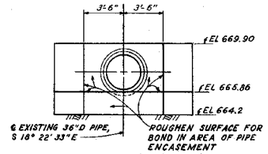
PRINT H 1 14 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1



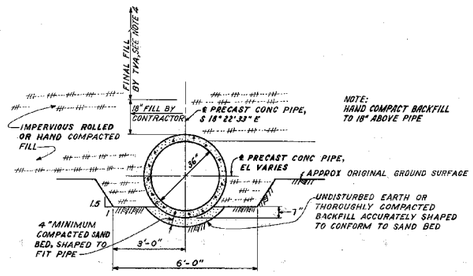
A4–A4
SH 1



B4–B4



C4–C4

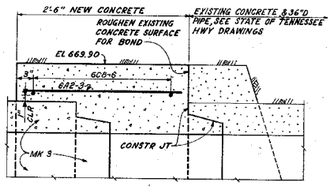


D4–D4
½"=1'-0"

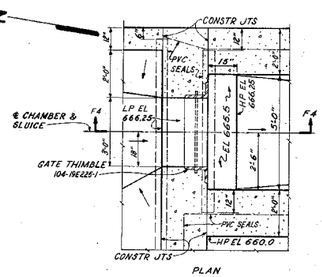
NOTE:
HAND COMPACT BACKFILL TO 18" ABOVE PIPE

BENT BAR LIST

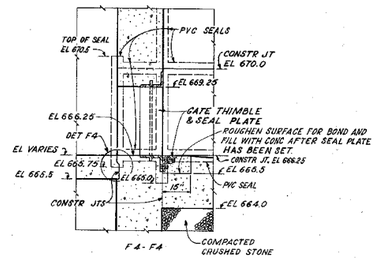
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6CB-6	6						1-11



DET A4
A3
1½"=1'-0"

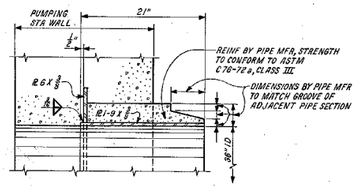


PLAN

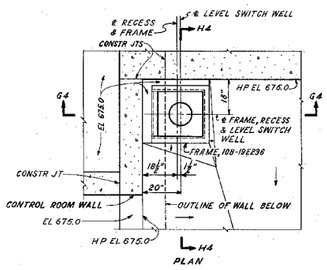


F4–F4

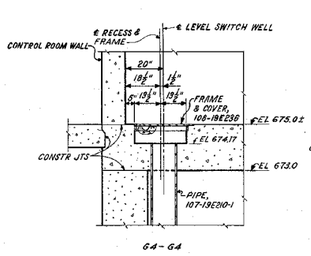
DET B4
SHOWING OUTLINE ONLY
SH 1-A3
½"=1'-0"



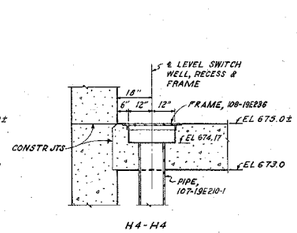
DET G4
A1
1½"=1'-0"



PLAN

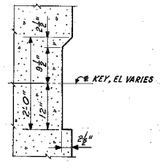


G4–G4

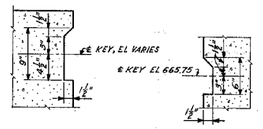


H4–H4

DET C4
SHOWING OUTLINE ONLY
SH 1-F8
½"=1'-0"



DET D4
SHOWING OUTLINE ONLY
SH 2-H2, H3
1"=1'-0"



DET E4
SHOWING OUTLINE ONLY
SH 2-B2, B8
1½"=1'-0"

DET F4
SHOWING OUTLINE ONLY
D7
1½"=1'-0"

NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E240-1.

SCALE ½"=1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	CHAR	INSP	SUBM	SECM	APPR

DSGN E.D. CHENEY, J.F. BURKE — INSP
DRWN D.F. DICKEY — ENGINEER
CHKD R.B. RAY
SUPV H.A. HOUSTON 12-13-71 — H.M. Hendrix

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 3 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
S.A. Swanson	W.H. Abraham	S.H. Richardson

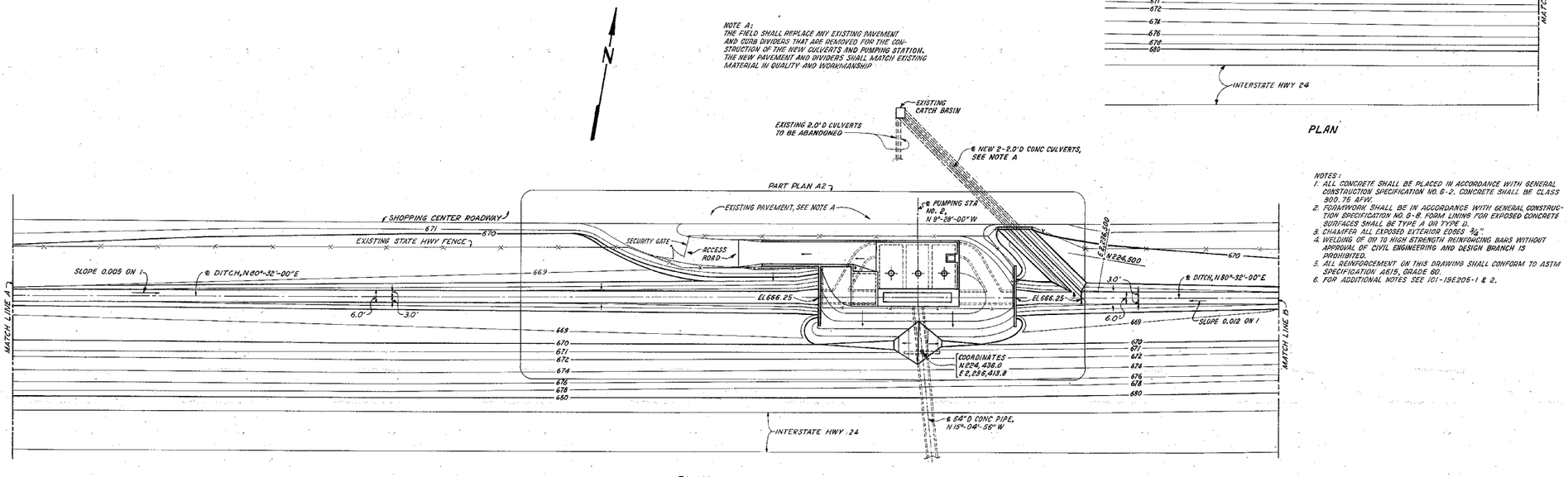
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE 4-19-72 | 81 | C | 101-19E240-4 R0

RECORD DRAWING AS CONSTRUCTED
Frank Whitlock 1/3/01 R0

PRINT H 1 14 2
SIZE F
BR OR PROJ MK EA CE AD LO EG NO BF ON RL PK
PRINTS RECD-R.O

MF R.O



NOTES:
1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-2. CONCRETE SHALL BE CLASS 300.75 AFW.
2. FORMWORK SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-8. FORM LINING FOR EXPOSED CONCRETE SURFACES SHALL BE TYPE A OR TYPE D.
3. CHAMFER ALL EXPOSED EXTERIOR EDGES 3/4".
4. WELDING OF OR TO HIGH STRENGTH REINFORCING BARS WITHOUT APPROVAL OF CIVIL ENGINEERING AND DESIGN BRANCH IS PROHIBITED.
5. ALL REINFORCEMENT ON THIS DRAWING SHALL CONFORM TO ASTM SPECIFICATION A615, GRADE 60.
6. FOR ADDITIONAL NOTES SEE 101-19E206-1 & 2.

SCALE 1" = 20' EXCEPT AS NOTED
COMPANION DRAWINGS:
101-19E245-1 & 2

REV NO.	ECN NO.	DATE	DSGN	DRWN	CKED	SUPV	ENGR	INSP	SCHM	RECM	APPR
DSGN	C.A. DICKEY							INSP			
DRWN	C.A. DICKEY										
CHKD	R. B. RAY							ENGINEER			
SUPV	W. A. MANSON 8-1-77							W. M. Manders			

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 2

FINAL GRADING AND DRAINAGE STRUCTURES PLAN & SECTIONS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
C. S. Sparkman	J. Chubern	D. I. Richman

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE | 3-31-78 | 81 | C | 101-19E245-1 RO

RECORD DRAWING AS CONSTRUCTED
Date 12/7/81 RO

PRINT H 18 3
SIZE F 9
DR CH PROJ ME EE CE AD CO ED MO BF BM EL PA
POINTS Regd=n 0

STRAIGHT REINFORCEMENT BAR LIST

(FOR FIELD INFORMATION ONLY)

MADE J.L. MAXEY

CHKD: HAM
[signature] 3-17-78

DATE 10-31-77

FOR DWG. NO. 101-19E245-1&2 R0

SHEET NO 1 OF 1

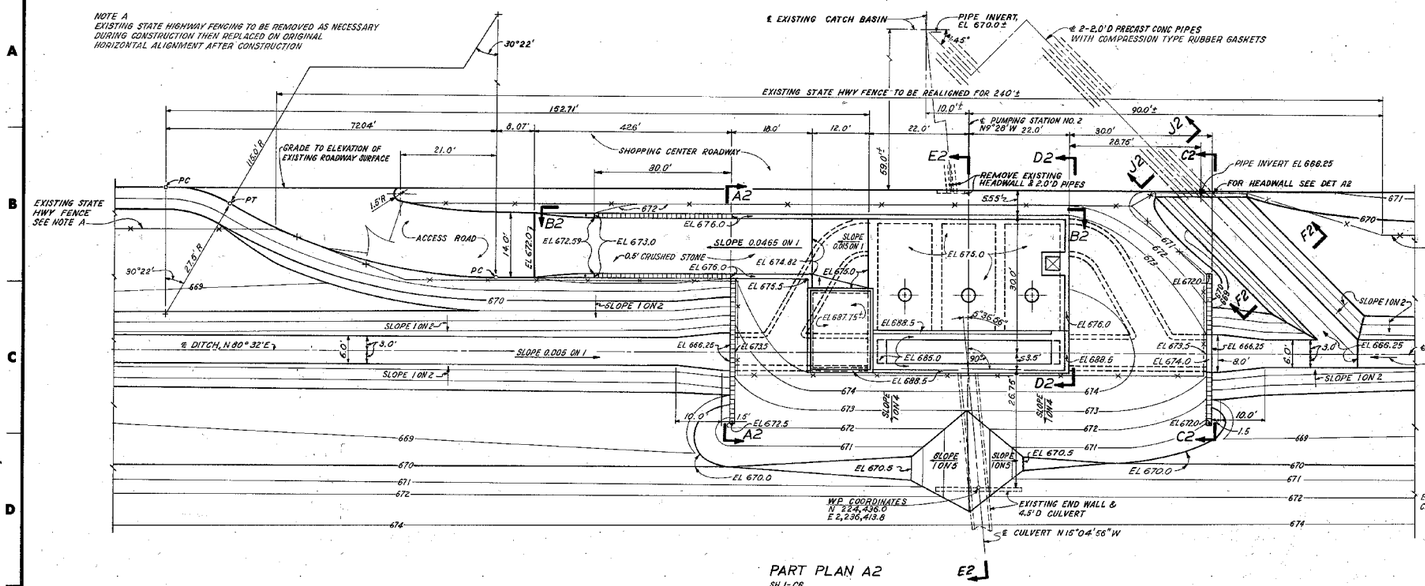
PROJECT S. CHICKAMAUGA CREEK

BUILDING PUMPING STATION NO. 2
FINAL GRADING

BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D	BAR SIZE	BAR LENGTH	NO. REQ'D
6	7-0	4						

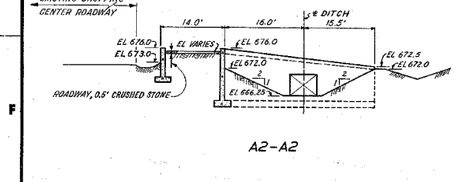
TVA 10590 (DED-6-75)

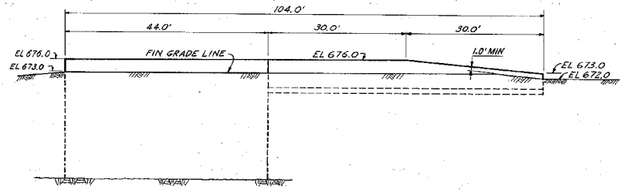
NOTE A
EXISTING STATE HIGHWAY FENCING TO BE REMOVED AS NECESSARY DURING CONSTRUCTION THEN REPLACED ON ORIGINAL HORIZONTAL ALIGNMENT AFTER CONSTRUCTION

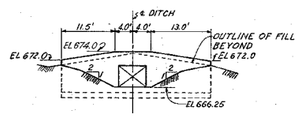


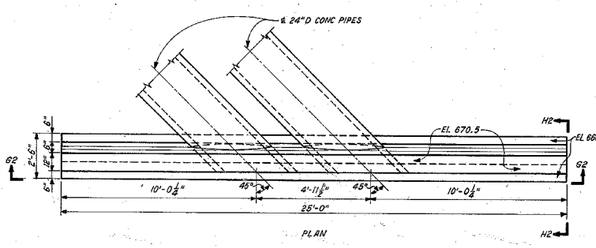
PART PLAN A2
SH 1-C8

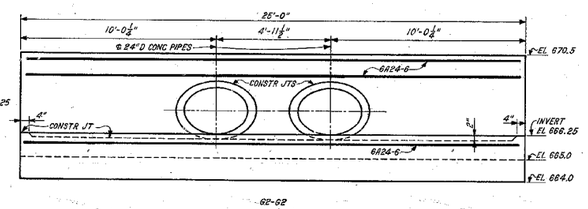
NOTES:
1. FOR NOTES SEE 101-19E245-1



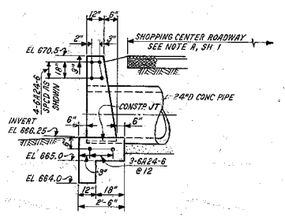


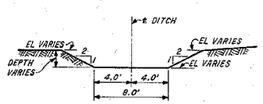


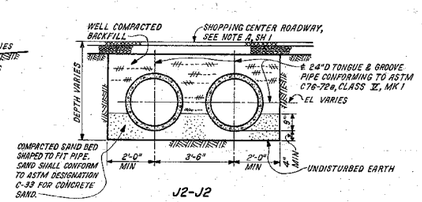




DET A2
B8
½"=1'-0"







SCALE 1"=10' EXCEPT AS NOTED

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

REV NO.	ECN NO.	DATE	DSGN	DWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
DSGN	CA DICKEY & J.W. GOTT							INSP			
DRWN	R.A. RAY							ENGR			
CHKD											
SUPV	H.A. MADISON 8-17-77										

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 2

FINAL GRADING AND DRAINAGE STRUCTURES PLAN & SECTIONS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
C.S. Swanson	H.J. Abrahamson	J.E. Buchanan, Jr.

KNOXVILLE | 3-31-78 | 81 | C | 101-19E245-2 RO

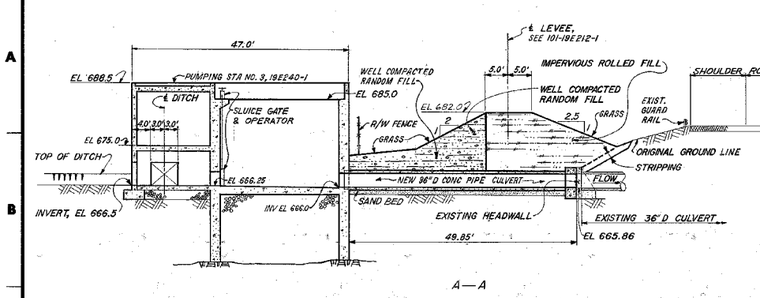
RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1/23/81 RO

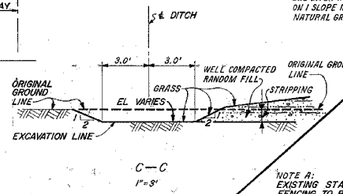
PRINT	H				10	3					
SIZE	V				3	3					

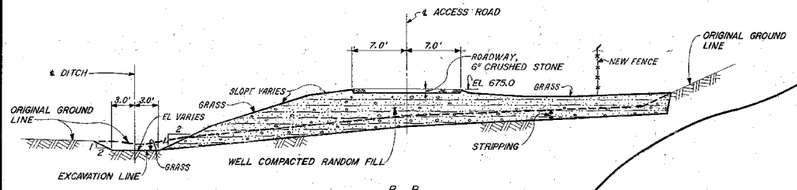
DR OR PROJ | WE LL GE AD CO CO MD BF SW EL PA
PRINTS RIGID-8 0

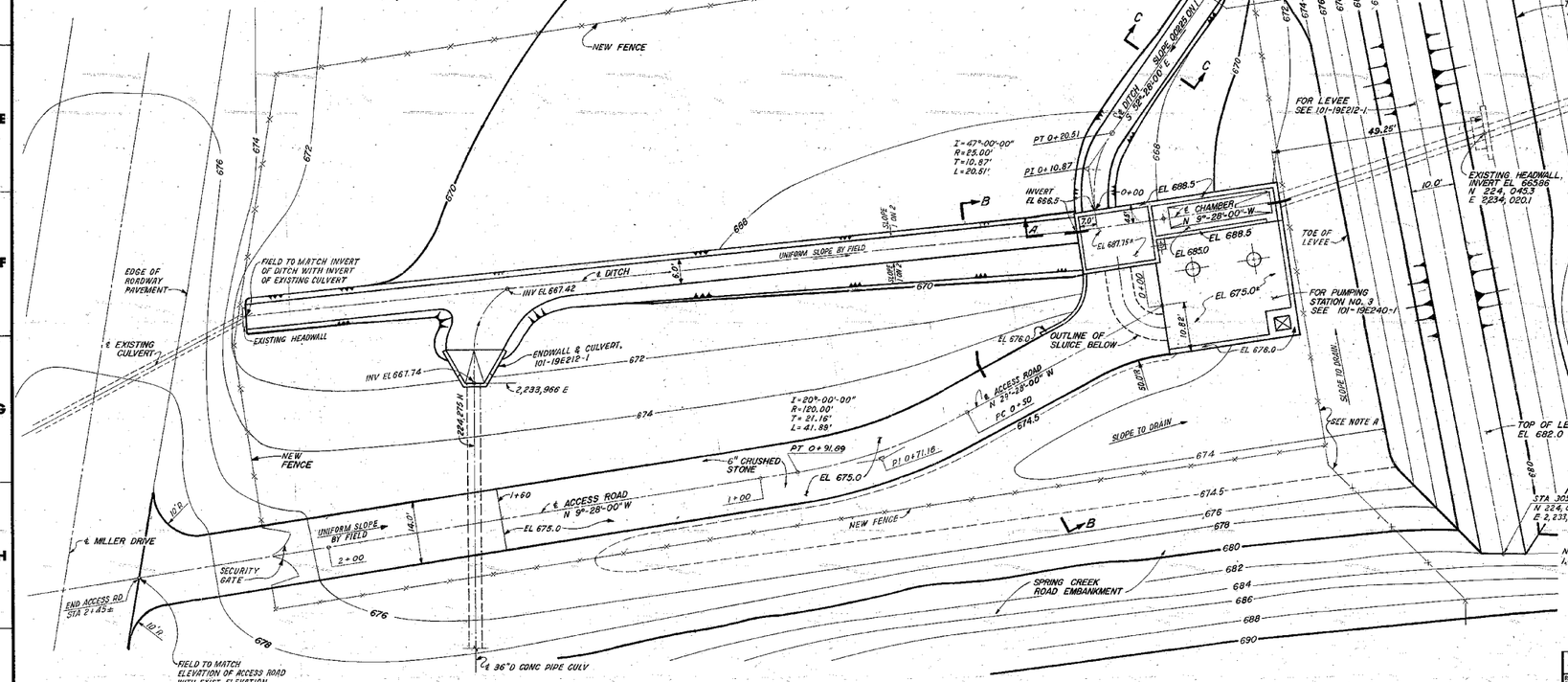
TECHNICAL INFORMATION CENTER KNOXVILLE BRANCH

101-19E246 | C | RI









NOTES:
1. FOR GENERAL NOTES SEE 101-19E205-1 & 2.

SCALE 1"=10' EXCEPT AS NOTED

1		7-25-78	WCM	DWH		DLH							
REV NO.	REVISED DITCH, ENDWALL & CULVERT, G-4 ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	DSGR	DSGN	RECM	APPR		

DSGN John D. Boyce
DRWN Alexander McCain
CHKD R.R. Strong
SUPV W.A. Dawson 11-16-77
INSP
ENGINEER W.A. Dawson

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 3

FINAL GRADING PLAN & SECTIONS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. J. Squyres	L. J. Abraham	H. Burchett

KNOXVILLE | 6-7-78 | BI | C | 101-19E246 RI

RECORD DRAWING AS CONSTRUCTED
W.A. Dawson 12/31/81 RI

INSPECTED AND APPROVED FOR ISSUE

PRINT 15 (22")
SIZE F
BR OR PROJ MK EL CE AB CO ED MS RF SM BL PA
PRINTS REQD-R 0

TECHNICAL SYNCHRONIZATION CONTROL

CONCRETE CURB

LOCATION	ITEM NO. 390 LIN. FT.
10+30 - 21+42.57 R	1142.57
10+30 - 14+29.52 L	407.42'
14+51.52 - 17+25.20 L	352.22'
17+47.20 - 22+11.13 L	478.20'
BONNIEWAY DRIVE	369.00'
MARIA AVENUE	174.00'
TOTAL	2923.41' *

*TOTAL INCLUDES 5 DROP CURBS.

GRADING

ITEM NO. / STATION TO STATION	120 UNCLASS EXCAV. CU YDS	123 EARTH BOR EXCAV CU YDS
10+30 - 22+11.13	893	7,374
BONNIEWAY DRIVE	0	455
MARIA AVENUE	0	409
12+50 - 17+50 L	0	4,798
TOTAL	893	13,536

GRASSING

ITEM NO. / LOCATION	180 SEEDING SQ. YDS.	182 MULCHING SQ. YDS.	183 SODDING SQ. FT.
BONNIEWAY			1240
10+30 - 22+11.13 R	1925	1925	
MARIA			730
12+50 - 17+50 L	16,127	16,127	
10+30 - 22+11.13 R & L			7170
TOTAL	18,052	18,052	9140

TRAFFIC SIGNS

LOCATION	DESCRIPTION	UNIT	QUANTITY
4+40 R BONNIEWAY	STOP SIGN (RI-1) *	EACH	1
4+45 R MARIA	STOP SIGN (RI-1) *	EACH	1
12+50 L N MOORE ROAD	SIGNAL AH (W3-3) *	EACH	1
15+00 L N MOORE ROAD	RIGHT LANE MUST TURN RIGHT (R3-7)	EACH	1
18+00 L N MOORE ROAD	RIGHT LANE MUST TURN RIGHT (R3-7)	EACH	1

*REFERS TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

LENGTH OF PROJECT

END OF PROJECT	22+11.13
BEGINNING OF PROJECT	10+00
NET LENGTH IN FEET	1,211.13'
NET LENGTH IN MILES	0.23
BONNIEWAY DR. EXTENSION	209.50'
MARIA AVE. EXTENSION	112'

SURFACING

ITEM NO. / LOCATION	225 STAB CR STONE BASE 10" TONS	302 BIT PRIME COAT TONS	308 CR STONE BIT CONC. BASE-2" TONS	308b TACK COAT TONS	346 ASPHALTIC CONC. SURF. 1" TONS
10+00 - 22+11.13	3995	10	760	3.00	380
BONNIEWAY DR.	(400)	.90	(75)	0.25	(40)
MARIA AVENUE	215	0.5	45	0.15	25
PVT DRIVEWAYS	150	0.60	45	0.20	25
TOTAL	4,760	12.0	925	3.60	470

DRAINAGE STRUCTURES

ITEM NO. / LOCATION	TYPE STR	602 PIPE LIN. FT. 12"	15"	18"	CONC CU YDS	REINF STEEL LBS	CAST IRON LBS	CITY STD CATCH BASIN-EA	129 STR EXCAV CU YDS
19+20 R N. MOORE RD (1)	CB							1	
		100'							30
18+20 R N. MOORE RD (2)	CB							1	
			56'						35
18+20 L N. MOORE RD (3)	CB							1	
			115'						50
4+09.91 R MARIA AVE (4)	CB							1	
			216'						80
FIELD ENTRANCE (5)	CB-TVA37				2.16		(430)		
				85'					20
3+37.97 L BONNIEWAY DR (6)	CB							1	
				22'					5
3+37.97 R BONNIEWAY DR (7)	CB							1	
				(165')					105
NW CORNER C.W. WEST R.	JB				(2.00)	(130)			
				(65')					20
HEAD OF DITCH	ENDWALL TVA-4				0.90	20			
10+60 R N MOORE RD (9)	CB							1	
		45'							15
10+60 L N MOORE RD (10)	CB							1	
		32'							10
EXIST. CB SHALLOWFORD RD (11)									
EXIST CB 2+52 R BONNIEWAY DR (12)									
		86'							40
3+37.97 R BONNIEWAY DR (7)									
TOTAL		263	387	(337)	(5.06)	(150)	(860)	8	410

DROP CURB ENTRANCE

ITEM NO. / LOCATION	PVT DRIVE WIDTH, FT	395 CONC SIDEWALK SQ. YDS.
19+23L N MOORE ROAD	16'	12.5
20+95L N MOORE ROAD	18'	13.5
2+98L BONNIEWAY DRIVE	14'	11.5
3+86.64R BONNIEWAY DRIVE	14'	11.5
3+85 R MARIA AVENUE	16'	12.5
TOTAL		61.5

INDEX TO DRAWINGS

* CITY OF CHATTANOOGA

REMOVAL OF STRUCTURES & PAVEMENT

LOCATION	DESCRIPTION	ITEM NO. 110 REMOVAL OF STR	134 REMOVAL PAVEMENT SQ YDS
80' L STA 18+00	CATCH BASIN	1	
110' L STA 16+00	CATCH BASIN	1	
190' L STA 15+00	CATCH BASIN	1	
EXT. N. MOORE RD. LEVEE TO STA 22+11.13	REMOVAL OF PAVEMENT		4600
EXT. N. MOORE RD LEVEE TO STA 22+11.13	REMOVAL OF EXIST. CURB & GUTTER	2000'	

NO.	REVISED SURFACING, GRATES, ADDED JUNCTION BOX	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		10-3-79	WLP	VRL	WWW	ESL	WET	DJB	RAB	RAB	WWW

DSGN H. L. PETTY — INSP J.R. Fox
DRWN J.R. Fox — CHKD W. W. Wasson — SUPV W. W. Wasson — ENGINEER E. B. Lazenby

NORTH MOORE ROAD RELOCATION

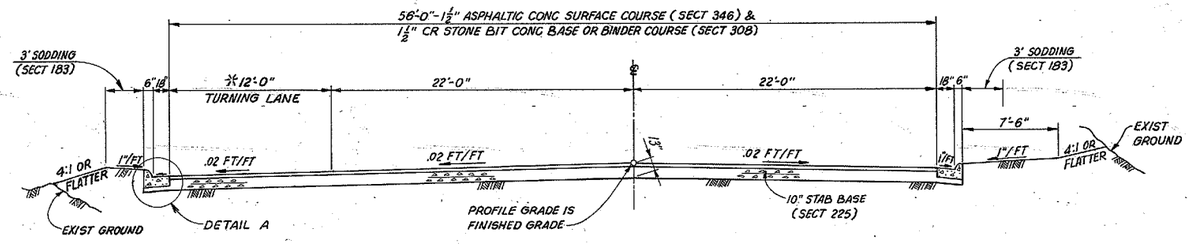
SUMMARY OF QUANTITIES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Brown	T.D. Stanley	A. J. Burton

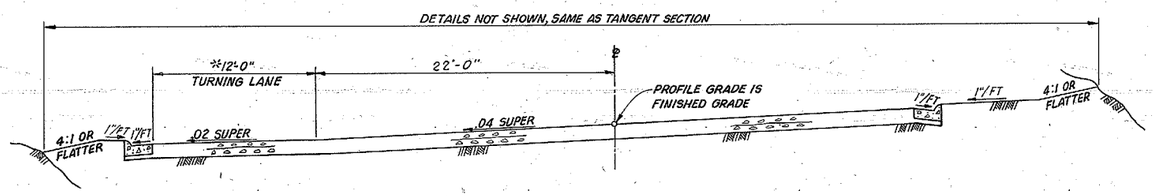
KNOXVILLE 12-4-78 81 HR 101-19H250 RI

81 HR 101-19H251

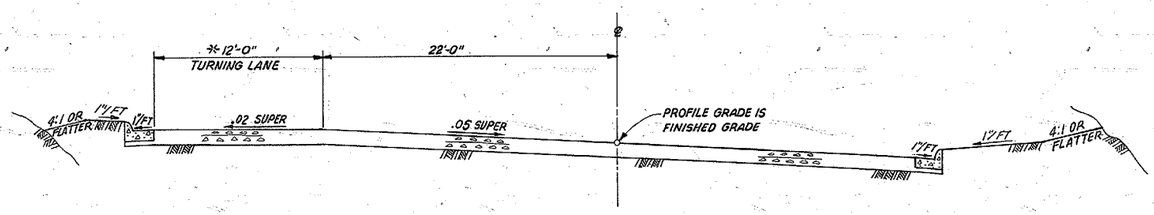


TANGENT SECTION

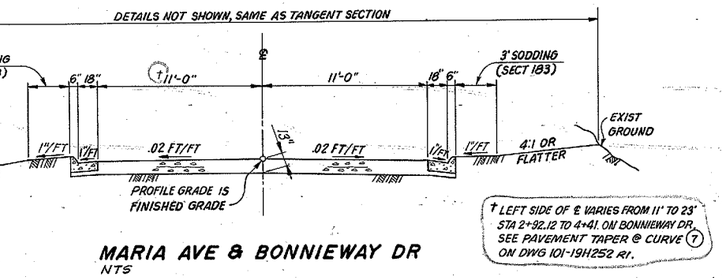
* VARIES FROM 0'-0" TO 12'-0"



SUPERELEVATED SECTION (L)

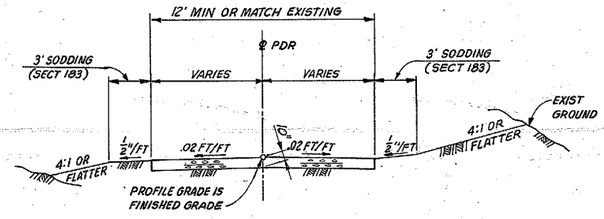


SUPERELEVATED SECTION (R)

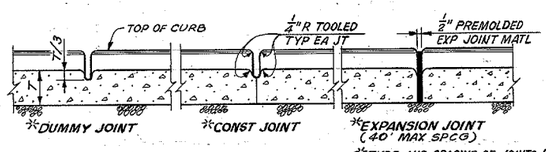


† LEFT SIDE OF ℄ VARIES FROM 11' TO 23' STA 2+92.12 TO 4+41. ON BONNIEWAY DR SEE PAVEMENT TAPER @ CURVE (7) ON DWG 101-19H252 R1.

MARIA AVE & BONNIEWAY DR
NTS



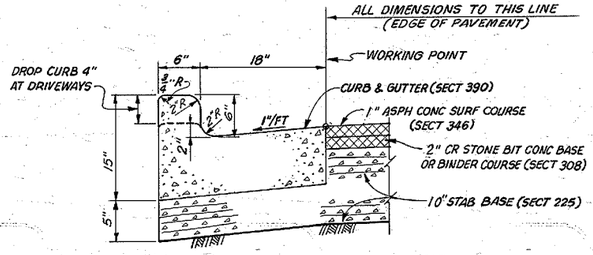
PRIVATE DRIVE
NTS



*TYPE AND SPACING OF JOINTS, BY FIELD, MAX 10' BETWEEN JOINTS.

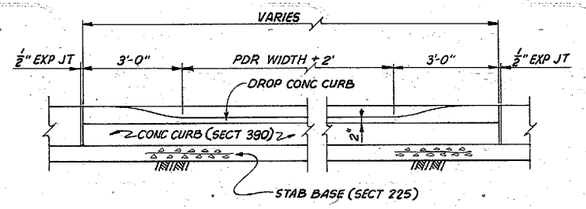
CURB & GUTTER JOINT DETAIL
NTS

SUPERELEVATED SECTION (R)

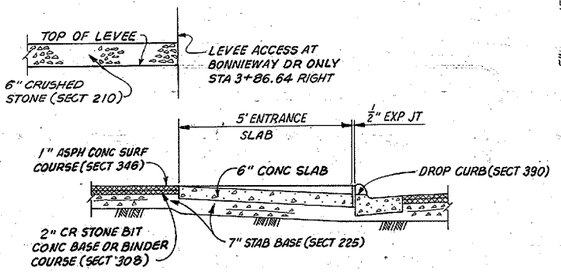


DETAIL A
PAVEMENT, CURB & GUTTER
NTS

NOTES:
1. FOR NOTES & REFERENCE DWGS SEE 101-19H252.



ELEVATION



SECTION

PRIVATE DR, SIDEWALK, CURB & GUTTER DETAILS
NTS (SEE 19H257)

SCALE: 1" = 5'-0" EXCEPT AS NOTED

INSPECTED AND APPROVED FOR ISSUE

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		10-3-78	WLP	VRL	WWM	WWM	JSP				

REVISED BONNIEWAY DR; ADDED LEFT TURN LANE

DSGN H. L. PETTY — INSP. JR Sop
DRWN V. R. LEE
CHKD Wmartin — ENGINEER E. B. Fogerm
SUPV Wmartin

NORTH MOORE ROAD RELOCATION

GRADING & PAVING-TYPICAL SECTIONS & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman	H. D. Stone	C. H. Buchanan

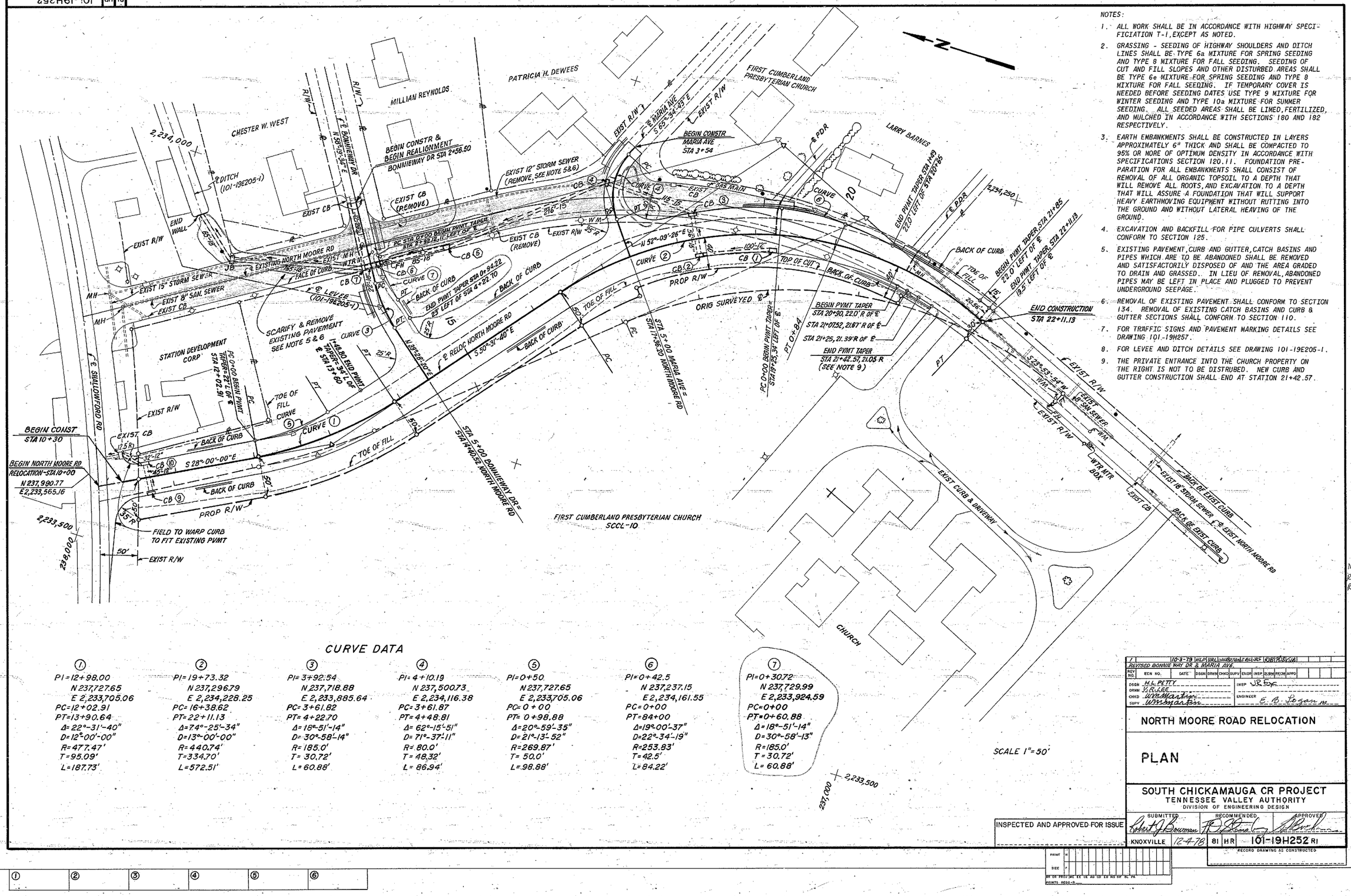
KNOXVILLE 12-4-78 81 HR 101-19H251 R1

*RECORD DRAWING AS CONSTRUCTED

PRINT
SIZE
DR GR PROJ WE EE CE AD CO EO MG MM SM BC PA
PRINTS NEED-5

① ② ③ ④ ⑤ ⑥

81 HR 101-19H252



NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH HIGHWAY SPECIFICIATION T-1, EXCEPT AS NOTED.
2. GRASSING - SEEDING OF HIGHWAY SHOULDERS AND DITCH LINES SHALL BE TYPE 6a MIXTURE FOR SPRING SEEDING AND TYPE 8 MIXTURE FOR FALL SEEDING. SEEDING OF CUT AND FILL SLOPES AND OTHER DISTURBED AREAS SHALL BE TYPE 6e MIXTURE FOR SPRING SEEDING AND TYPE 8 MIXTURE FOR FALL SEEDING. IF TEMPORARY COVER IS NEEDED BEFORE SEEDING DATES USE TYPE 9 MIXTURE FOR WINTER SEEDING AND TYPE 10a MIXTURE FOR SUMMER SEEDING. ALL SEEDED AREAS SHALL BE LIMED, FERTILIZED, AND MULCHED IN ACCORDANCE WITH SECTIONS 180 AND 182 RESPECTIVELY.
3. EARTH EMBANKMENTS SHALL BE CONSTRUCTED IN LAYERS APPROXIMATELY 6" THICK AND SHALL BE COMPACTED TO 95% OR MORE OF OPTIMUM DENSITY IN ACCORDANCE WITH SPECIFICATIONS SECTION 120.11. FOUNDATION PREPARATION FOR ALL EMBANKMENTS SHALL CONSIST OF REMOVAL OF ALL ORGANIC TOPSOIL TO A DEPTH THAT WILL REMOVE ALL ROOTS, AND EXCAVATION TO A DEPTH THAT WILL ASSURE A FOUNDATION THAT WILL SUPPORT HEAVY EARTHMOVING EQUIPMENT WITHOUT RUTTING INTO THE GROUND AND WITHOUT LATERAL HEAVING OF THE GROUND.
4. EXCAVATION AND BACKFILL FOR PIPE CULVERTS SHALL CONFORM TO SECTION 125.
5. EXISTING PAVEMENT, CURB AND GUTTER, CATCH BASINS AND PIPES WHICH ARE TO BE ABANDONED SHALL BE REMOVED AND SATISFACTORILY DISPOSED OF AND THE AREA GRADED TO DRAIN AND GRASSED. IN LIEU OF REMOVAL, ABANDONED PIPES MAY BE LEFT IN PLACE AND PLUGGED TO PREVENT UNDERGROUND SEEPAGE.
6. REMOVAL OF EXISTING PAVEMENT SHALL CONFORM TO SECTION 134. REMOVAL OF EXISTING CATCH BASINS AND CURB & GUTTER SECTIONS SHALL CONFORM TO SECTION 110.
7. FOR TRAFFIC SIGNS AND PAVEMENT MARKING DETAILS SEE DRAWING 101-19H257.
8. FOR LEVEE AND DITCH DETAILS SEE DRAWING 101-19E205-1.
9. THE PRIVATE ENTRANCE INTO THE CHURCH PROPERTY ON THE RIGHT IS NOT TO BE DISTRUBED. NEW CURB AND GUTTER CONSTRUCTION SHALL END AT STATION 21+42.57.

CURVE DATA

①	②	③	④	⑤	⑥	⑦
PI=12+98.00	PI=19+73.32	PI=3+92.54	PI=4+10.19	PI=0+50	PI=0+42.5	PI=0+30.72
N 237,727.65	N 237,296.79	N 237,718.88	N 237,500.73	N 237,727.65	N 237,237.15	N 237,729.99
E 2,233,705.06	E 2,234,228.25	E 2,233,885.64	E 2,234,116.38	E 2,233,705.06	E 2,234,161.55	E 2,233,924.59
PC=12+02.91	PC=16+38.62	PC=3+61.82	PC=3+61.87	PC=0+00	PC=0+00	PC=0+00
PT=13+90.64	PT=22+11.13	PT=4+22.70	PT=4+48.81	PT=0+98.88	PT=84+00	PT=0+60.88
Δ=22°-31'-40"	Δ=74°-25'-34"	Δ=18°-51'-14"	Δ=62°-15'-51"	Δ=20°-59'-35"	Δ=19°-00'-37"	Δ=18°-51'-14"
D=12°-00'-00"	D=13°-00'-00"	D=30°-58'-14"	D=71°-37'-11"	D=21°-13'-52"	D=22°-34'-19"	D=30°-58'-13"
R=477.47'	R=440.74'	R=185.0'	R=80.0'	R=269.87'	R=253.83'	R=185.0'
T=95.09'	T=334.70'	T=30.72'	T=48.32'	T=50.0'	T=42.5'	T=30.72'
L=187.73'	L=572.51'	L=60.88'	L=86.94'	L=98.88'	L=84.22'	L=60.88'

SCALE 1"=50'

10-3-79 WLP VAL Submitted as-built per KJB 10/5/79

REVISED BONNIE WAY DR & MARIA AVE.

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD

DSGN H.L. PETTY — INSP J.R.B.
DRWN V.R. LEE
CHKD W.M.Martin — ENGINEER E.B. Jensen Jr.
SUPV W.M.Martin

NORTH MOORE ROAD RELOCATION

PLAN

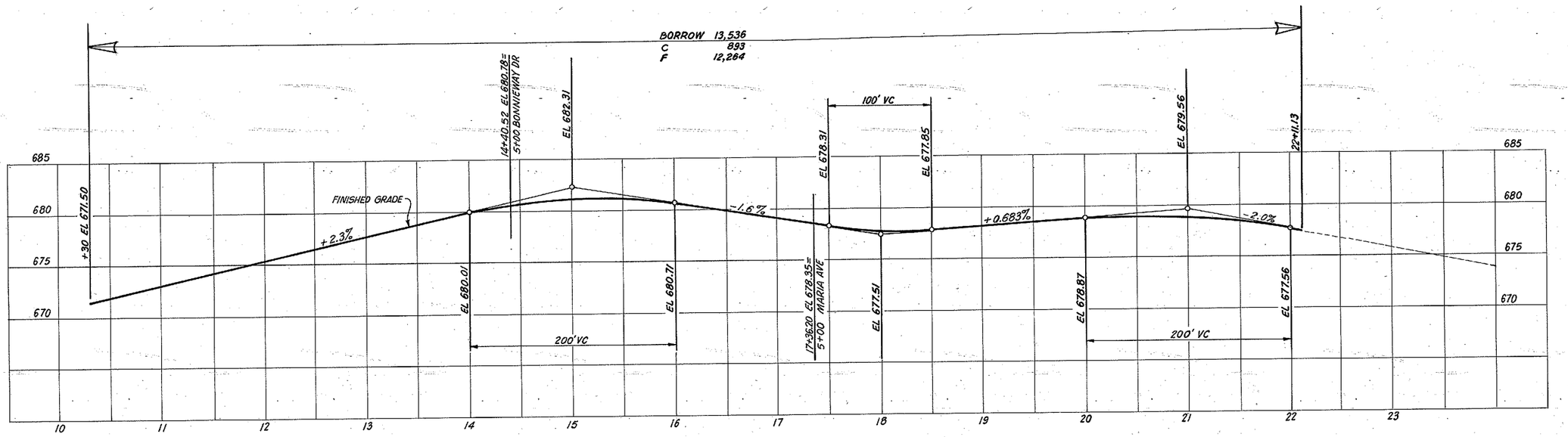
SOUTH CHICKAMAUGA CR PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman	W. D. Stevens	J. B. Brock
KNOXVILLE 12-4-78	81 HR 101-19H252 R1	

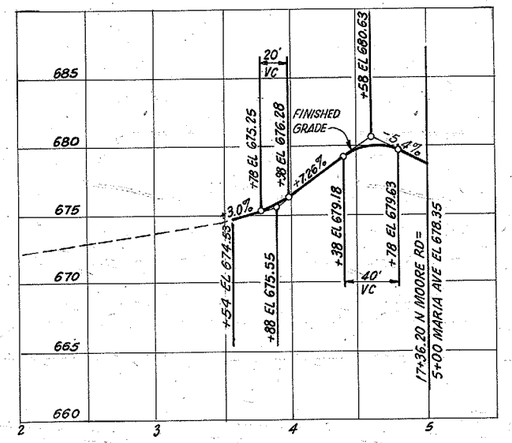
INSPECTED AND APPROVED FOR ISSUE

RECORD DRAWING AS CONSTRUCTED

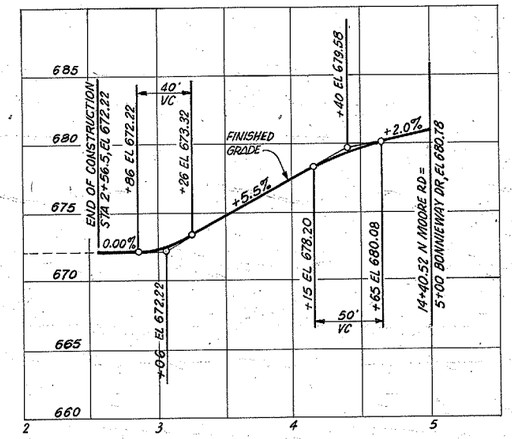
①	②	③	④	⑤	⑥



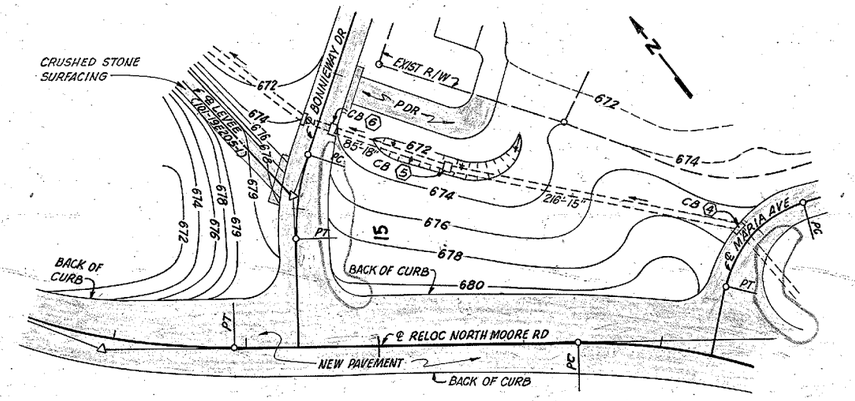
PROFILE–NORTH MOORE RD



PROFILE–MARIA AVE



PROFILE–BONNIEWAY DR



PLAN–GRADING

SCALE: 1"=50'

NOTES:
1. CONTOURS: DASHED CONTOURS REPRESENT EXISTING GROUND, SOLID CONTOURS REPRESENT FINISHED GRADING.
2. FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS SEE 101-19H252.

SCALE: 1" = 5' VERT
1" = 50' HORIZ
EXCEPT AS NOTED

INSPECTED AND APPROVED FOR ISSUE

10-3-79 WLP VAL 11-6-81 VRE 10-15-82 WLP 12-6-82

REVISED INTERSECTIONS AT BONNIEWAY AND MARIA

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD

DSGN H.L. PETTY
DRWN T.A. LEE
CHKD W.M. Martin
SUPV W.M. Martin
INSP R. Stoe
ENGINEER E. P. Sogaard

NORTH MOORE ROAD RELOCATION

PROFILES & GRADING PLAN

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowron	W. D. Sloan	S. L. Burchett

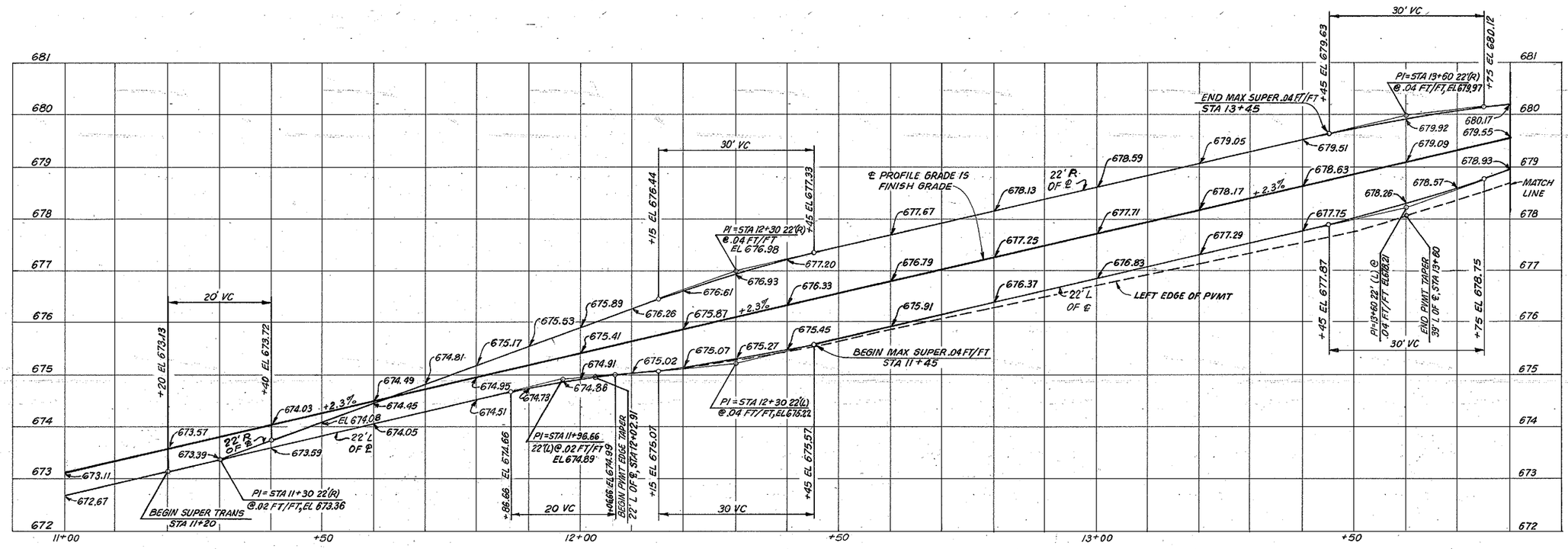
KNOXVILLE 12-4-78 81 HR 101-19H253 R1

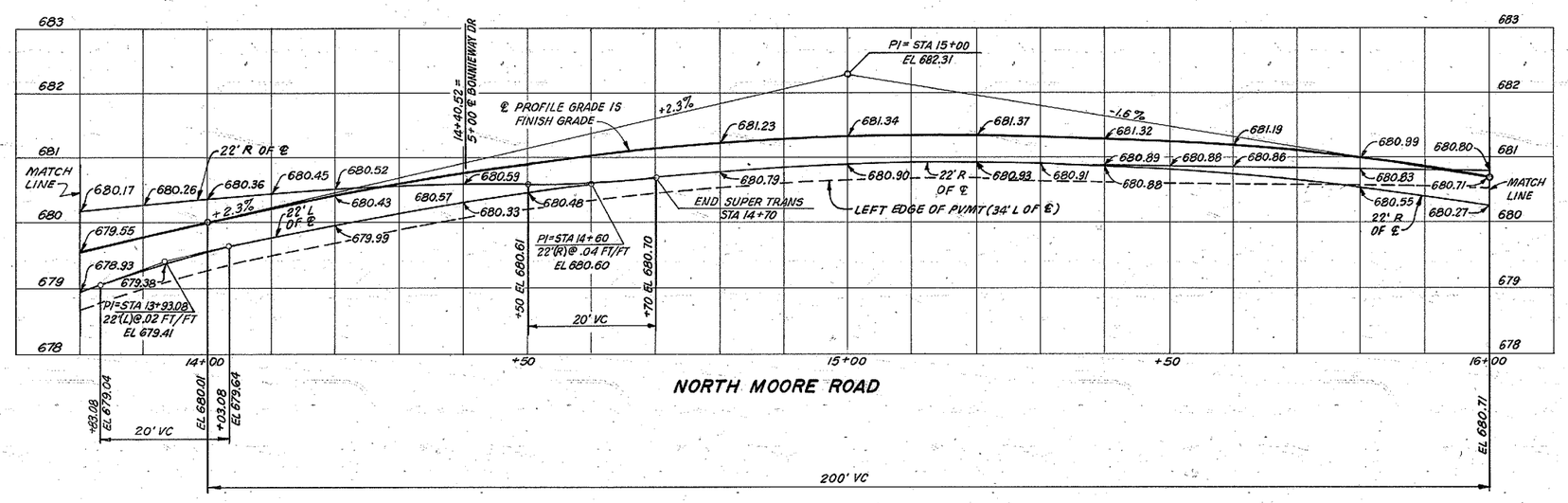
RECORD DRAWING AS CONSTRUCTED

PRINT H
SIZE F

MF 2.0 R1

TJA 2-5 Jua Ham





NORTH MOORE ROAD

NOTES:
FOR NOTES AND REFERENCE DRAWINGS SEE 101-19H252.

SCALE 1" = 1' VERT
1" = 10' HOR

INSPECTED AND APPROVED FOR ISSUE

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD

DSGN H.L. PETTY
DRWN T.R. LEE
CHKD [illegible]
SUPV [illegible]
ENGR [illegible]
ENGINEER E. B. Fagan

NORTH MOORE ROAD RELOCATION

FINISHED PAVEMENT PROFILE

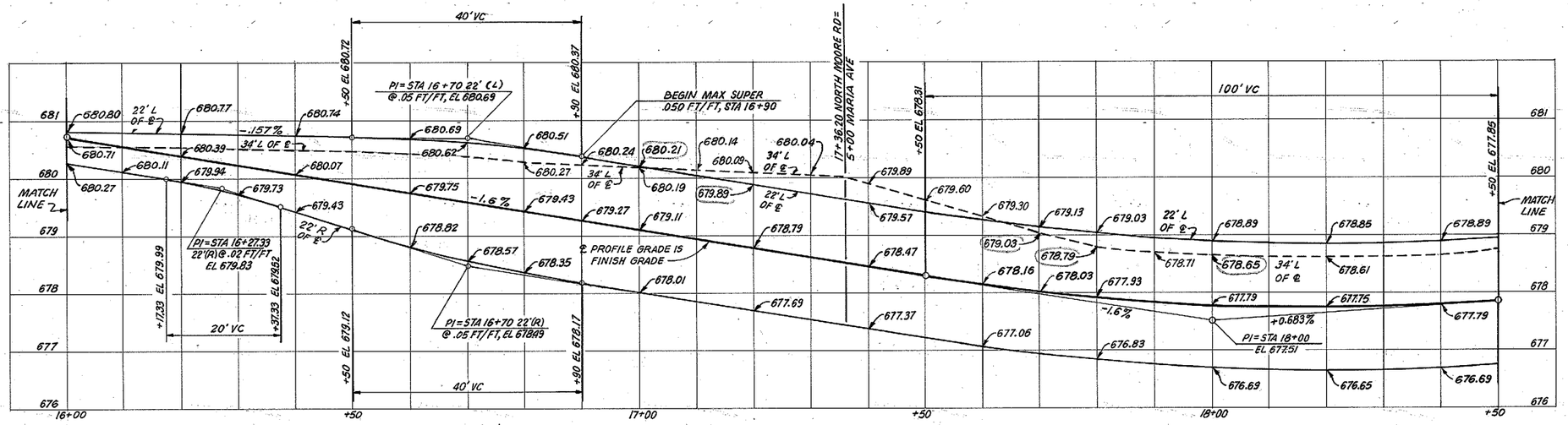
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

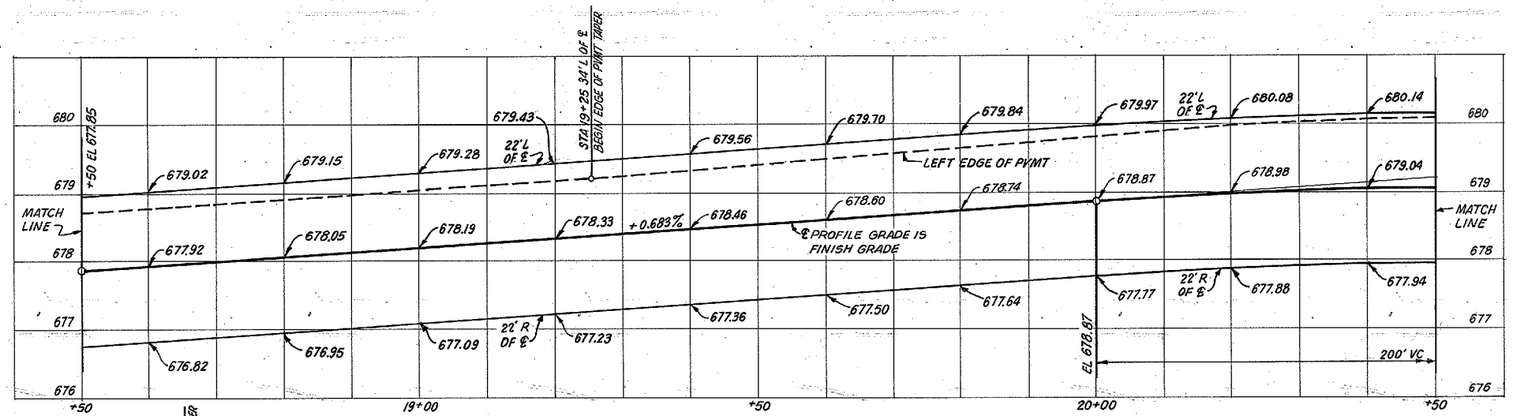
SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman	[illegible]	[illegible]

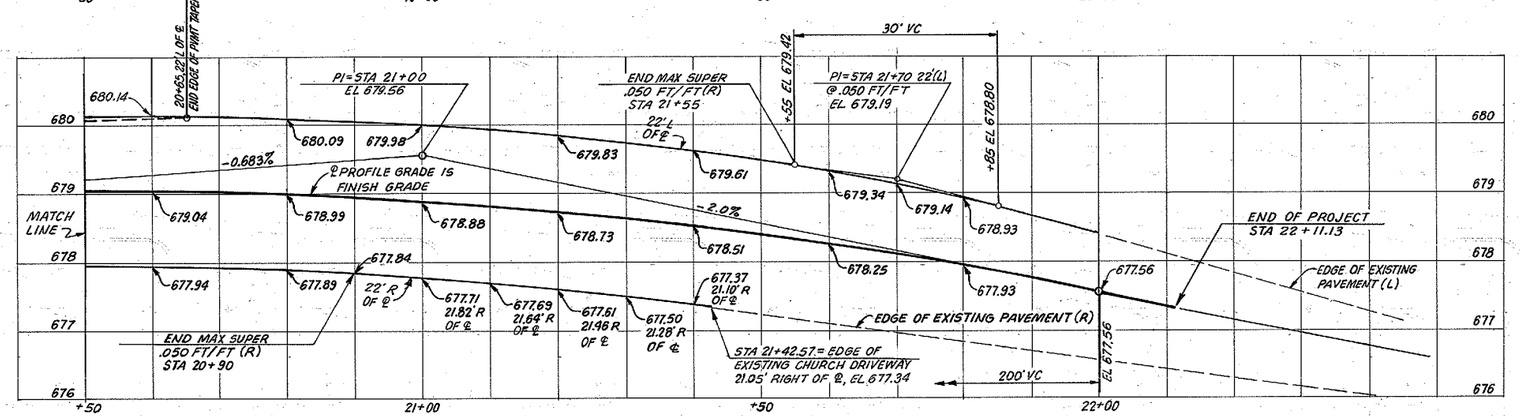
KNOXVILLE 12-4-78 81 HR 101-19H254-1 RO

RECORD DRAWING AS CONSTRUCTED

PRINTS RECD-R







NORTH MOORE ROAD

NOTES:
FOR NOTES AND REFERENCE DRAWINGS SEE 101-19H 252.

SCALE { 1"=1'-0" VERT
1"=10'-0" HORIZ

INSPECTED AND APPROVED FOR ISSUE

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1	ADJUSTED ELEVATIONS	10-3-78	HLP	WRL							

DSGN H. L. PETTY — INSP
DRWN W. R. LEE —
CHKD
SUPV
ENGINEER E. B. Fagan

NORTH MOORE ROAD RELOCATION

FINISHED PAVEMENT PROFILE

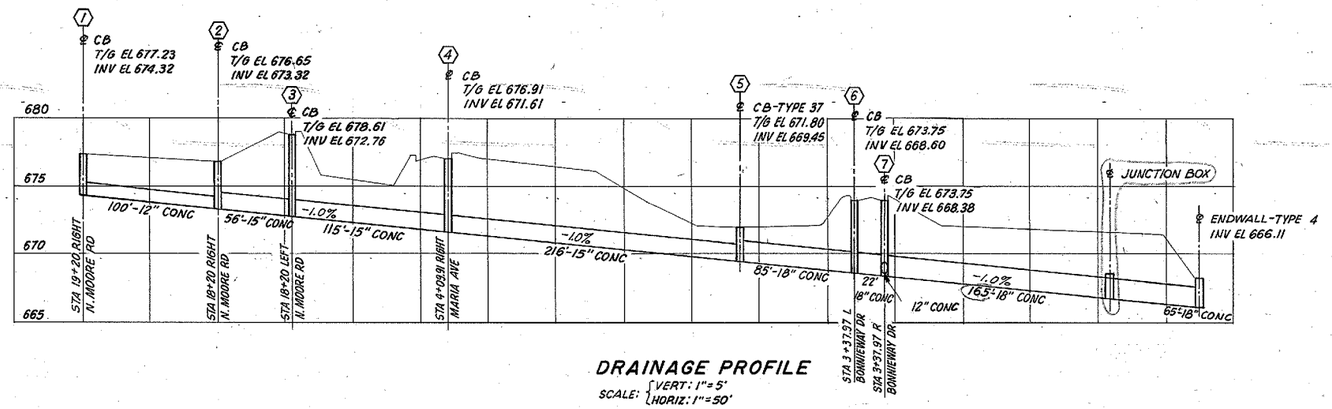
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman	H. D. Goodloe	S. L. Rowe

KNOXVILLE 12-4-78 81 HR 101-19H254-2 R1
RECORD DRAWING AS CONSTRUCTED

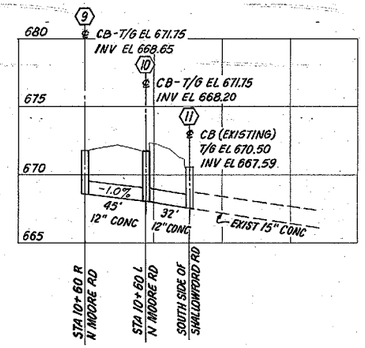
PRINTS REQD=

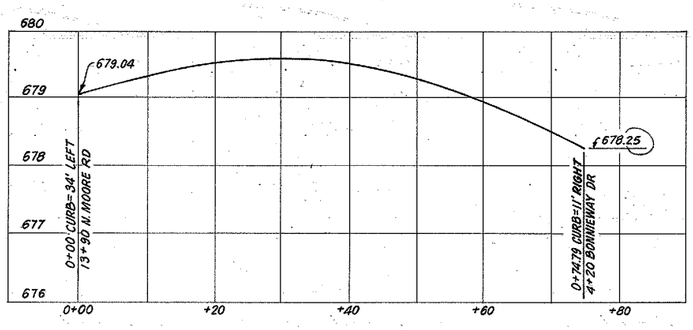
①	②	③	④	⑤	⑥

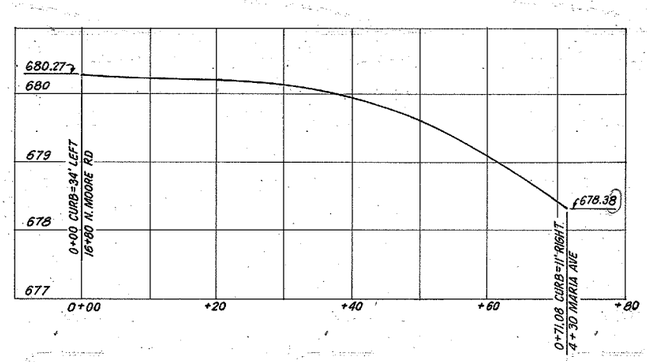


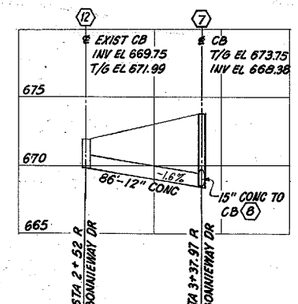
DRAINAGE PROFILE

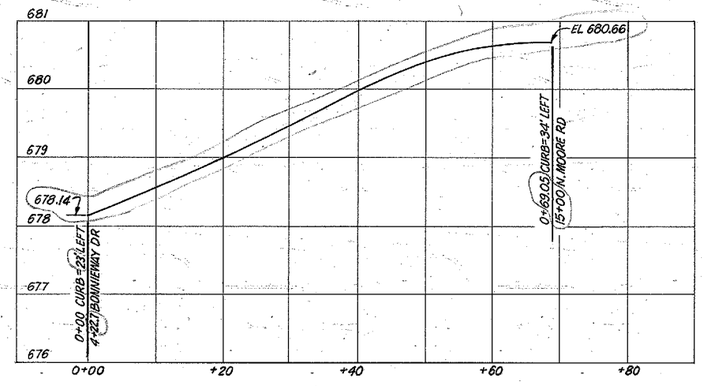
SCALE: VERT: 1"=5' HORIZ: 1"=50'



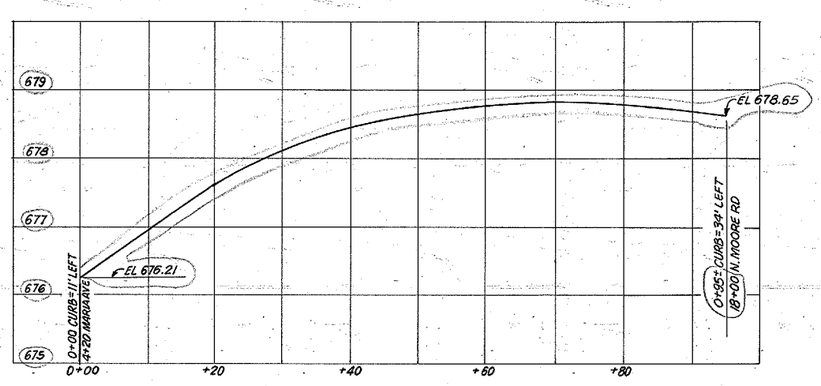








BONNIEWAY DR INTERSECTION



MARIA AVE INTERSECTION

TURNING RADIUS PROFILES FOR CURBS

SCALE: VERT: 1"=5' HORIZ: 1"=10'

SCALE AS NOTED

NOTES:
1. FOR CITY OF CHATTANOOGA STANDARD CATCH BASIN DETAILS SEE 101-19H256-1.
2. FOR TVA-TYPE 37 CATCH BASIN DETAILS SEE 101-19H256-2.
3. FOR TVA-TYPE 4 ENDWALL DETAILS SEE 101-19H256-3.
4. FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS SEE 101-19H252.
5. ALL CATCH BASINS SHOWN ARE CITY OF CHATTANOOGA STANDARD CATCH BASINS EXCEPT AS NOTED.

INSPECTED AND APPROVED FOR ISSUE

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		10-3-79	WLP	VRL	WMW	WMW	CBL	JDF	RLP	BJS	GM

REVISED TURNING RADIUS PROFILES FOR CURBS, DRAINAGE PROFILE

DSGN H.L. PETTY
DRWN V.R. LEE
CHKD W.M. Wingate
SUPV W.M. Wingate
INSP J.D. Fox
ENGINEER E. B. Logan, Jr.

NORTH MOORE ROAD RELOCATION

DRAINAGE PROFILES AND TURNING RADIUS PROFILES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

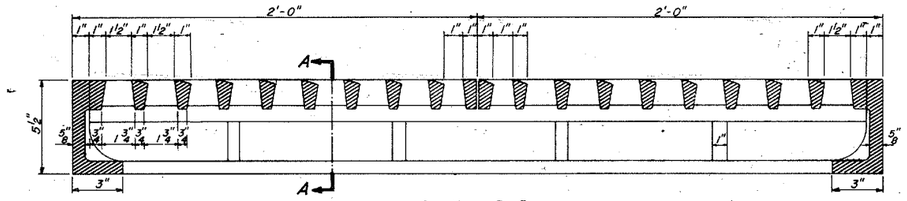
SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman	F. D. Stone	K. H. Bacon

KNOXVILLE 12-4-78 81 HR 101-19H255 R1

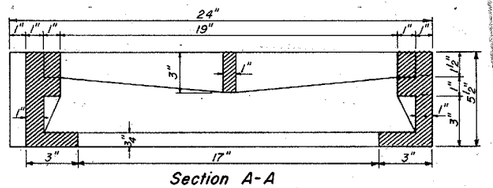
RECORD DRAWING AS CONSTRUCTED

PRINT
SIZE
BR GR FRDJ WE EL CE AG CO CD MO WM DM BL PA
PRINTS RECD-R

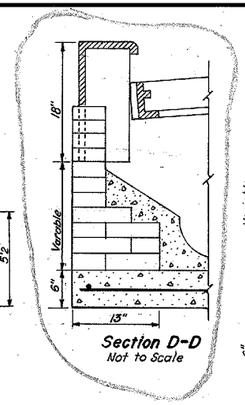
①	②	③	④	⑤	⑥



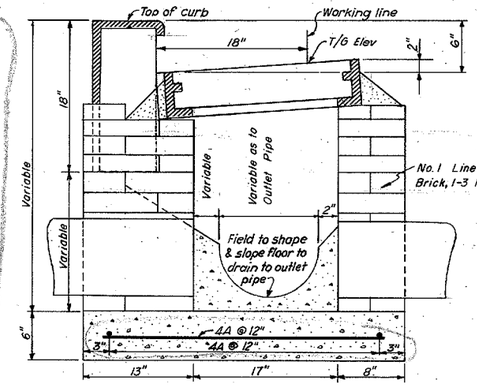
Section B-B



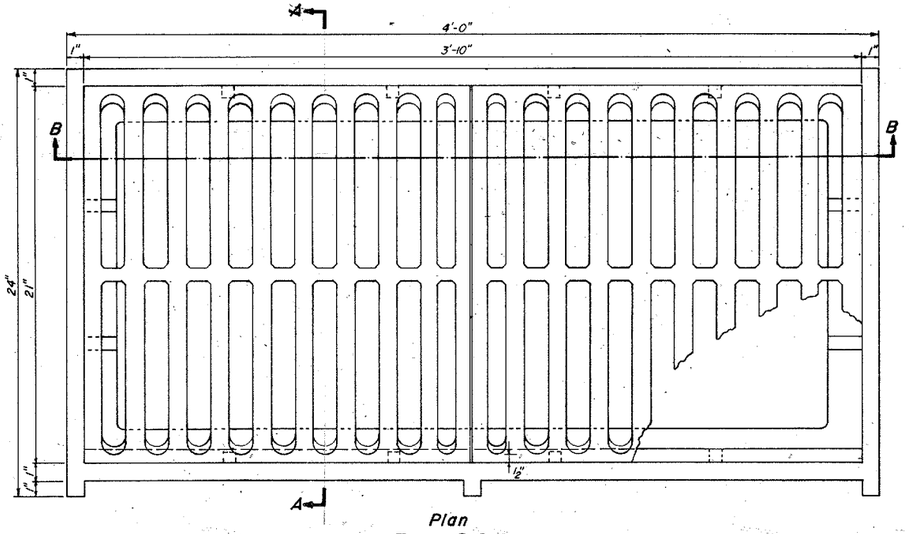
Section A-A



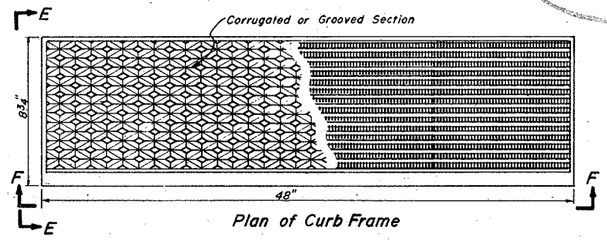
Section D-D
Not to scale



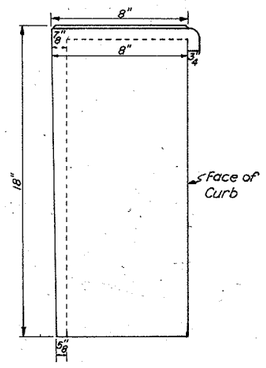
Section C-C
Scale: 1½"=1'-0"



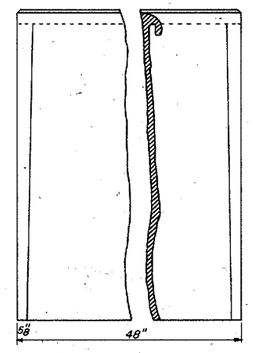
Plan
Frame & Grate
Scale: 3"=1'-0"



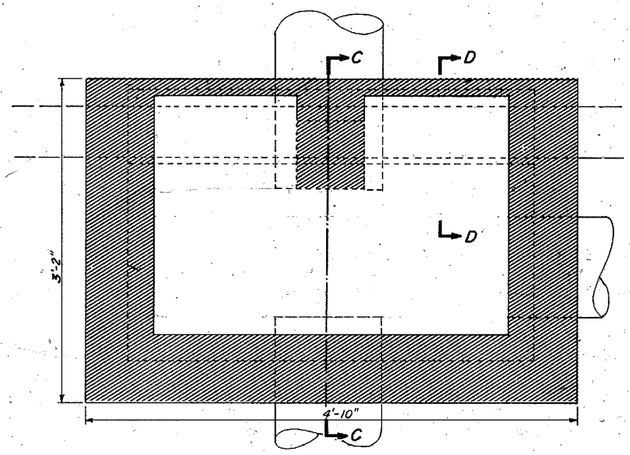
Plan of Curb Frame



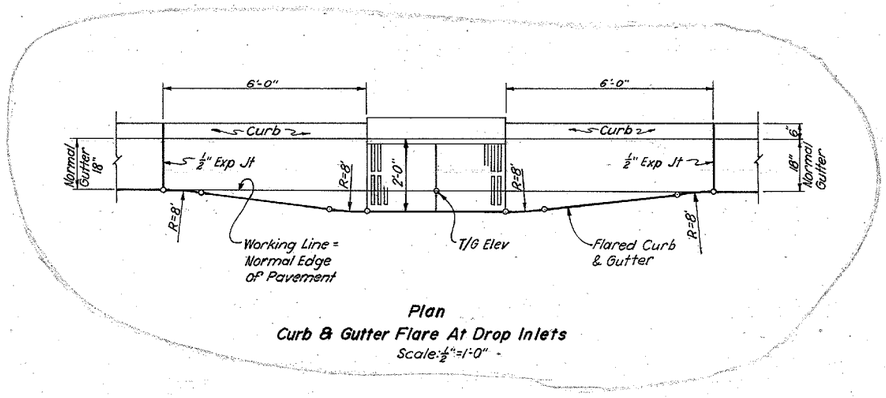
E-E



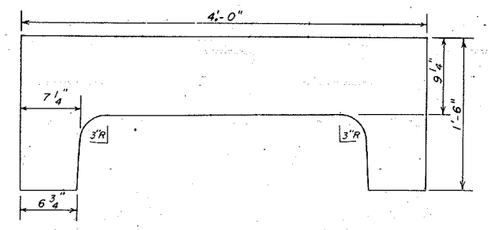
F-F



Plan of Inlet
Frame & Grates Removed
Scale: 1½"=1'-0"



Plan
Curb & Gutter Flare At Drop Inlets
Scale: ½"=1'-0"



Alternate Back View Of Curb Frame
Scale: 1½" = 1'-0"

NOTES:
1. ALL MATERIALS REQUIRED FOR CONSTRUCTION OF THIS TYPE CATCH BASIN SHALL CONFORM TO THE CITY OF CHATTANOOGA STANDARDS & SPECS & SHALL BE OF THE SAME MANUFACTURE AS USED CURRENTLY BY THE CITY.
2. FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS SEE 101-19H252.

Scale as noted

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		6-25-79	WLP	WRL	WMA	WMA	LBL	RJB	RJR	SRB	SRB
ADD. CURB & GUTTER FLARE, SECTION D-D, MINOR REVISIONS											

DSGN H. L. PETTY — INSP S R Bap
DRWN V. R. LEE — ENGINEER E. B. Logan
CHKD W M A — SUPV W M A

NORTH MOORE ROAD RELOCATION

STANDARD CATCH BASIN
CITY OF CHATTANOOGA

SOUTH CHICKAMAUGA CR PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

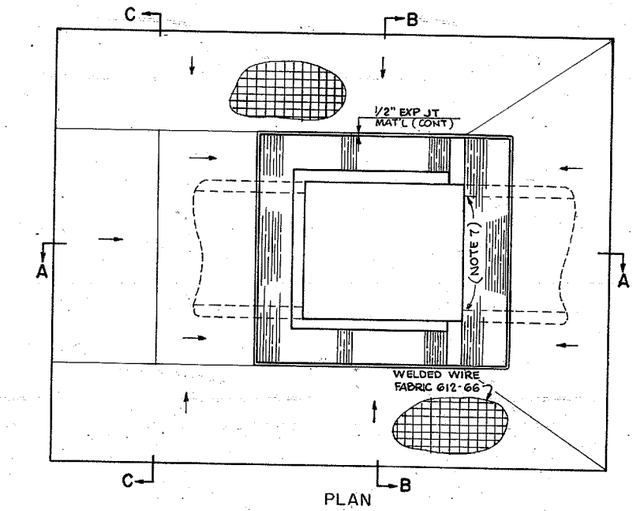
SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman	R. D. Stout	J. L. Berdia
KNOXVILLE 12-4-78	81 HR 101-19H256-1 RI	

RECORD DRAWING AS CONSTRUCTED

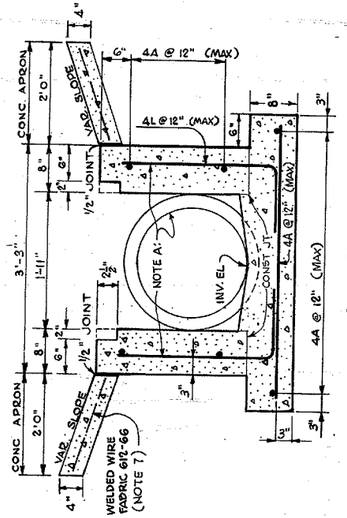
PRINT H
SIZE F
AR CR FRDU ME EE OE AD CD ED MD BP BL PA
PRINTS REQD-9

NF RD RI

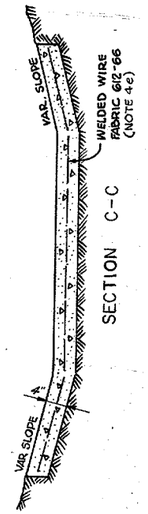
Nov '79 Add HAM TVA ECN Yard Work



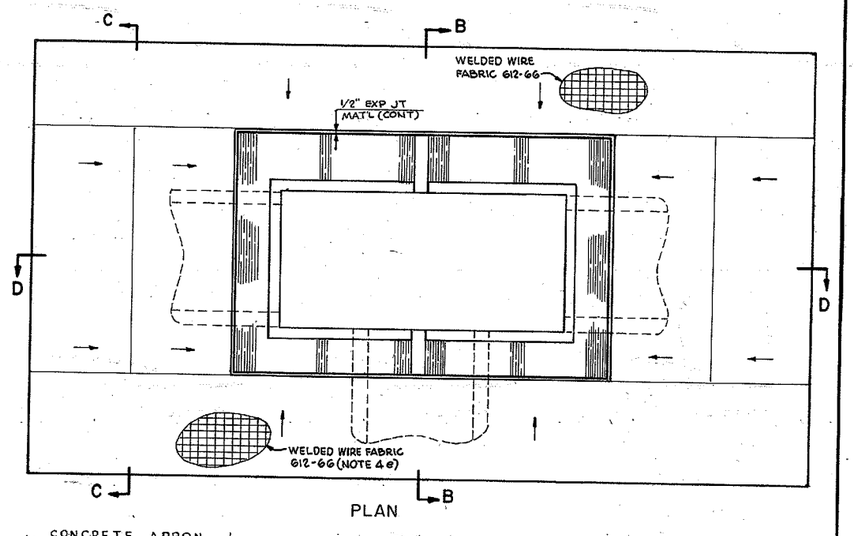
PLAN



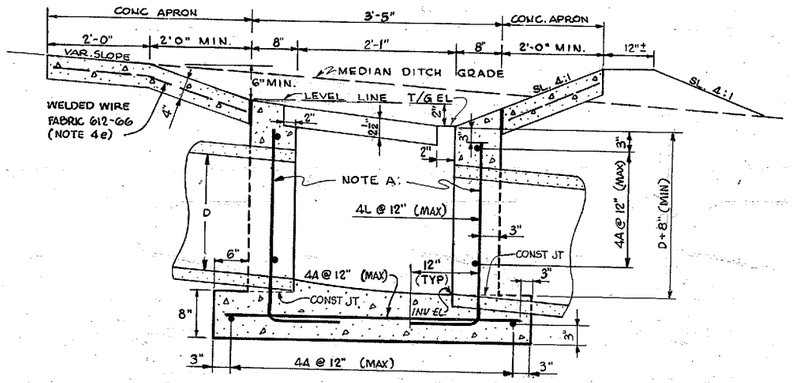
SECTION B-B



SECTION C-C



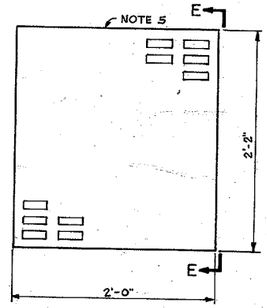
PLAN



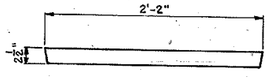
SECTION A-A

No. 36 CATCH BASIN

For Median Drain on Straight Grade



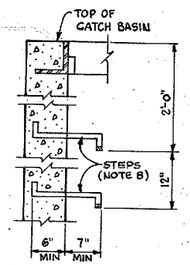
PLAN



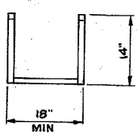
SECTION E-E

WEIGHT = 215 LBS

CASTING DETAIL



SECTIONAL ELEVATION THRU BASIN AND INLET



PLAN

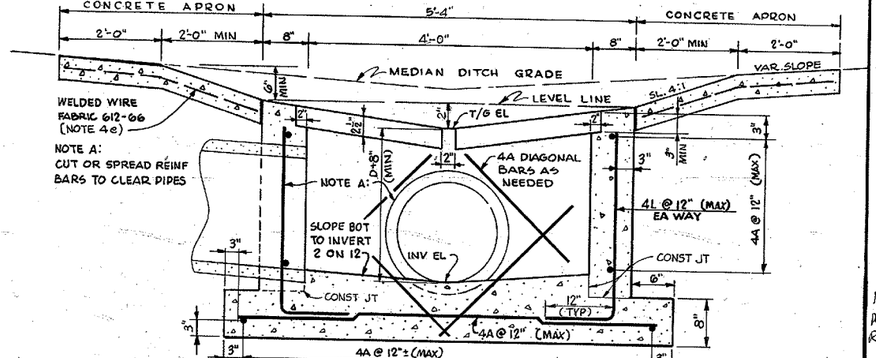
DETAIL-BASIN AND INLET STEPS

REQUIRED FOR BASIN & INLETS THAT ARE GREATER THAN 3'-0" IN DEPTH

Estimated Quantities*		
DIAMETER PIPE "D"	CL. A CONCRETE Cu. Yd.	
	No. 36 C.B.	No. 37 C.B.
12"	0.70	0.98
15"	0.77	1.07
18"	0.84	1.16
24"	0.98	1.35
Each Add'l. Ft. of Depth	0.28	0.37

* QUANTITIES FOR CONCRETE APRON BY FIELD.

Pipe Deductions	
DIAMETER	CONC. Cu. Yd.
12"	0.03
15"	0.05
18"	0.07
24"	0.11



SECTION D-D

No. 37 CATCH BASIN

For Median Drain At Sag Point

NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH HIGHWAY SPECIFICATION NO TI, UNLESS OTHERWISE NOTED.
2. EXCAVATION AND BACKFILL FOR PIPE CULVERTS SHALL CONFORM TO SECTION 125.
3. CONCRETE SHALL BE CLASS "A" IN ACCORDANCE WITH SECTION 400.
4. REINFORCEMENT
   (a) ALL REINFORCEMENT SHALL BE GRADE 60 IN ACCORDANCE WITH SECTION 418.
   (b) ALL REINFORCEMENT TO BE FURNISHED AND BENT BY FIELD.
   (c) PLACE ALL REINFORCEMENT IN WALLS AND SLABS 3" MINIMUM FROM FACE OF CONCRETE TO THE NEAREST REINFORCING BAR.
   (d) LAP SPLICES SHALL BE 12" MINIMUM WHERE REQUIRED.
   (e) WELDED WIRE FABRIC SHALL CONFORM TO ASTM-A185 PLAIN FINISH AND SHALL HAVE A MINIMUM LAP DISTANCE OF 8".
5. USE NEENAH NO. R 4822-F GRADE TYPE A OR EQUAL.
6. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
7. THE CONNECTION OF PIPE TO STRUCTURE SHALL BE NEAT AND SECURE. WHERE ENTIRE END OF PIPE DOES NOT EXTEND TO INSIDE FACE OF STRUCTURE THE WALL OF THE STRUCTURE SHALL BE EXTENDED WITH SMOOTH, RIGID, CIRCULAR FORMS EXACTLY FITTING THE INNER CIRCUMFERENCE OF THE PIPE. WHERE A PORTION OF PIPE EXTENDS BEYOND THE REQUIRED INSIDE FACE OF STRUCTURE IT SHALL BE CUT OFF SMOOTH AND FLUSH THEREWITH. WHERE BELL AND SPIGOT PIPE IS USED, THE BELL END IS TO BE PLACED UPSTREAM WITH THE END OF THE PIPE FLUSH WITH FACE OF WALL UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. BASIN AND INLET STEPS SHALL CONFORM TO TYPE R-1982-J AS MANUFACTURED BY NEENAH FOUNDRY CO. OR EQUAL. ALTERNATE TO CONFORM TO TVA HAZARD CONTROL STANDARD NO. 502.

NOT TO SCALE

REV NO	ECN NO	DATE	DSGN	DRWG	CHKD	SUPV	ENGR	INSP	SUBM	REL'D	APPR
1		6-25-79	WLP	VRL	JAM	JAM	CGM	LSB	LSB	JSS	LSB

MAJOR REVISION: REV CASTING DET, B.BSINS; ADD. BASIN & INLET STEPS, NOTES.

DSGN M.L. PETTY
DRWN V.R.L.
CHKD W.L.P.
SUPV J.A.M.

INSP
ENGINEER E. B. Logan

NORTH MOORE ROAD RELOCATION

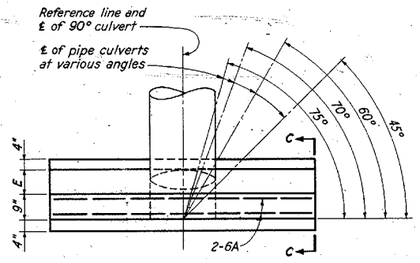
CATCH BASINS AND GRATE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman	W. D. Hunt	S. L. Buchanan

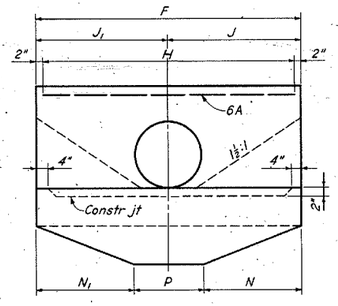
KNOXVILLE | 12-4-78 | 81 | HR | 101-19H256-2 RI

81 HR 101-19H256-3

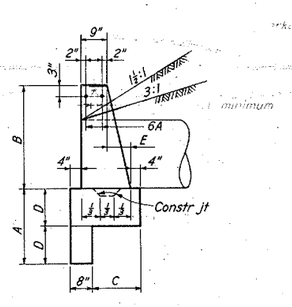


PLAN

DIMENSIONS FOR TYPE 1 ENDWALL														QUANTITIES FOR ONE TYPE 1 ENDWALL	
DIA	ANG	A	B	C	D	E	F	H	J	J_1	N	N_1	P	CONCRETE CU YDS	STEEL LBS
18"	90°	2'-0"	2'-6"	1'-3"	1'-0"	6"	6'-0"	5'-8"	3'-0"	3'-0"	2'-3"	2'-3"	1'-6"	1.00	17.0
	75°	2'-0"	2'-6"	1'-3"	1'-0"	6"	6'-1"	5'-9"	3'-0"	3'-1"	2'-3"	2'-4"	1'-6"	1.01	17.5
	70°	2'-0"	2'-6"	1'-3"	1'-0"	6"	6'-2"	5'-10"	3'-0"	3'-2"	2'-2"	2'-4"	1'-8"	1.02	17.5
	60°	2'-0"	2'-6"	1'-3"	1'-0"	6"	6'-7"	6'-3"	3'-1"	3'-6"	2'-2"	2'-7"	1'-10"	1.09	19.0
	45°	2'-0"	2'-6"	1'-3"	1'-0"	6"	7'-5"	7'-1"	3'-2"	4'-3"	2'-1"	3'-2"	2'-2"	1.22	21.5
24"	90°	2'-2"	3'-0"	1'-5"	1'-1"	8"	7'-10"	7'-6"	3'-11"	3'-11"	2'-11"	2'-11"	2'-0"	1.59	22.5
	75°	2'-2"	3'-0"	1'-5"	1'-1"	8"	8'-0"	7'-8"	3'-11"	4'-1"	2'-11"	3'-1"	2'-0"	1.62	23.0
	70°	2'-2"	3'-0"	1'-5"	1'-1"	8"	8'-2"	7'-10"	4'-0"	4'-2"	2'-11"	3'-1"	2'-2"	1.65	23.5
	60°	2'-2"	3'-0"	1'-5"	1'-1"	8"	8'-6"	8'-2"	4'-0"	4'-6"	2'-10"	3'-4"	2'-4"	1.71	24.5
	45°	2'-2"	3'-0"	1'-5"	1'-1"	8"	9'-8"	9'-4"	4'-2"	5'-6"	2'-9"	4'-1"	2'-10"	1.93	28.0
	30°	2'-2"	3'-0"	1'-5"	1'-1"	8"	13'-0"	12'-8"	5'-0"	8'-0"	3'-0"	6'-0"	4'-0"	2.59	38.0
30"	90°	2'-4"	3'-6"	1'-7"	1'-2"	10"	9'-6"	9'-2"	4'-9"	4'-9"	3'-6"	3'-6"	2'-6"	2.29	27.5
	75°	2'-4"	3'-6"	1'-7"	1'-2"	10"	9'-8"	9'-4"	4'-9"	4'-11"	3'-6"	3'-8"	2'-6"	2.33	28.0
	70°	2'-4"	3'-6"	1'-7"	1'-2"	10"	9'-11"	9'-7"	4'-10"	5'-1"	3'-6"	3'-9"	2'-8"	2.39	29.0
	60°	2'-4"	3'-6"	1'-7"	1'-2"	10"	10'-4"	10'-0"	4'-10"	5'-6"	3'-5"	4'-1"	2'-10"	2.48	30.0
	45°	2'-4"	3'-6"	1'-7"	1'-2"	10"	11'-10"	11'-6"	5'-1"	6'-9"	3'-4"	5'-0"	3'-6"	2.82	34.5

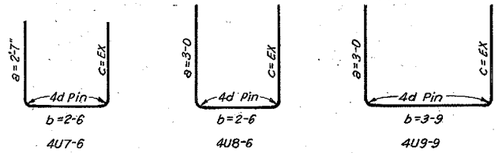


FRONT ELEVATION

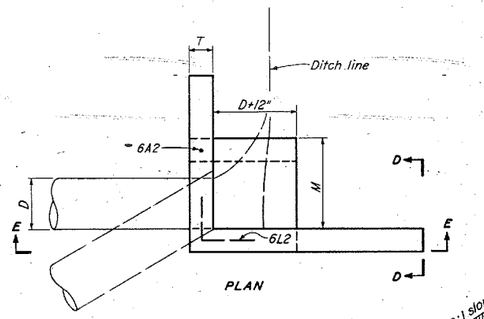


C - C

TYPE 1 ENDWALL

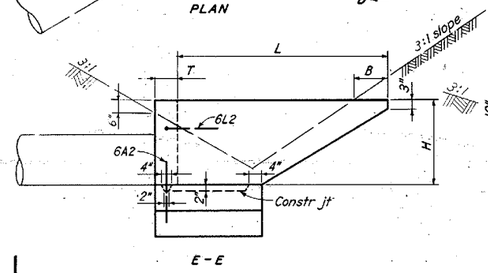


JUNCTION BOX
BAR BENDING DETAILS
NTS

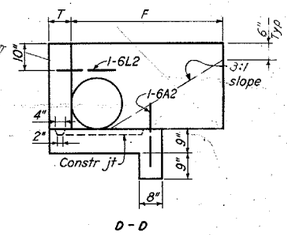


PLAN

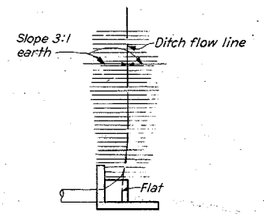
DIMENSIONS FOR TYPE 2 ENDWALL								QUANTITIES FOR ONE TYPE 2 ENDWALL	
1½:1 SLOPE	D	H	F	L	T	M	B	CONCRETE CU YDS	STEEL LBS
	18"	2'-6"	4'-6"	6'-3"	0'-8"	2'-8"	1'-0"	0.91	None
	24"	3'-0"	7'-0"	6'-6"	0'-9"	4'-5"	1'-3"	1.57	6
	30"	3'-6"	10'-0"	7'-0"	0'-10"	6'-8"	1'-9"	2.58	6
3:1	30"	3'-6"	11'-0"	13'-3"	0'-10"	6'-8"	1'-9"	3.05	6



E - E

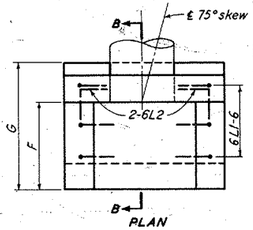


D - D

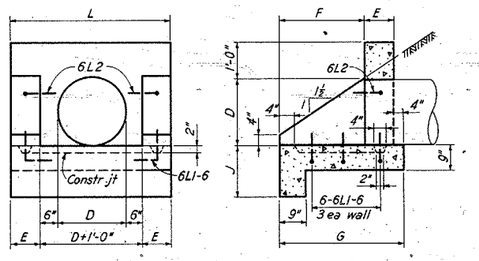


PLAN
SHOWING DITCH FLOW LINE
NTS

TYPE 2 ENDWALL
Not to Scale

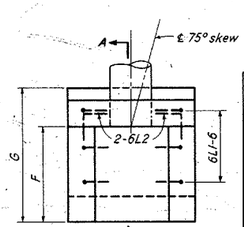


DIMENSIONS FOR TYPE 3 ENDWALL							QUANTITIES FOR ONE TYPE 3 ENDWALL	
PIPE SIZE		WALL		FOOTING			CONCRETE CU YDS	STEEL LBS
D	AREA	L	E	F	J	G		
12"	0.79	3'-6"	9"	1'-0"	1'-3"	2'-1"	0.46	20
15"	1.23	3'-9"	9"	1'-5"	1'-3"	2'-6"	0.58	"
18"	1.77	4'-0"	9"	1'-9"	1'-3"	2'-10"	0.69	"
24"	3.14	4'-8"	10"	2'-6"	1'-6"	3'-8"	1.09	"
30"	4.91	5'-2"	10"	3'-3"	1'-6"	4'-5"	1.43	"

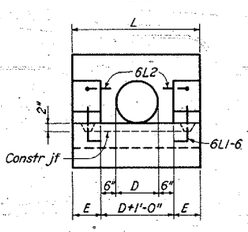


FRONT ELEVATION B - B

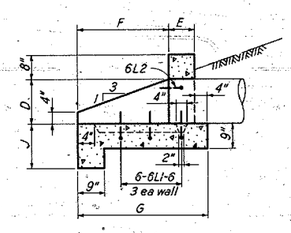
TYPE 3 ENDWALL



DIMENSIONS FOR TYPE 4 ENDWALL							QUANTITIES FOR ONE TYPE 4 ENDWALL	
PIPE SIZE		WALL		FOOTING			CONCRETE CU YDS	STEEL LBS
D	AREA	L	E	F	J	G		
12"	0.79	3'-6"	9"	2'-0"	1'-3"	3'-1"	0.55	20
15"	1.23	3'-9"	9"	2'-9"	1'-3"	3'-10"	0.72	"
18"	1.77	4'-0"	9"	3'-6"	1'-3"	4'-7"	0.90	"
24"	3.14	4'-8"	10"	5'-0"	1'-6"	6'-2"	1.49	"
30"	4.91	5'-2"	10"	6'-6"	1'-6"	7'-8"	2.06	"

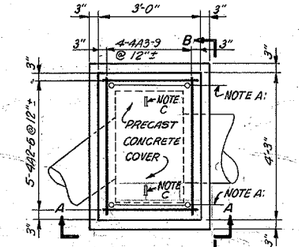


FRONT ELEVATION



A - A

TYPE 4 ENDWALL

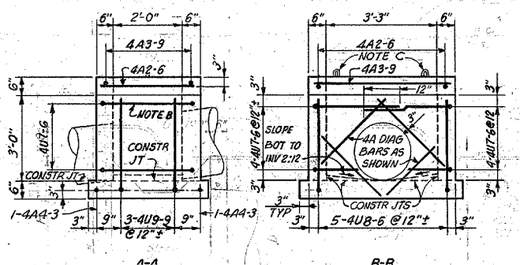


PLAN

NOTE A:
DRILL 4-$\frac{5}{8}$" D HOLES THRU PRECAST COVER AND INTO WALLS AND PLACE #4 REINF INTO HOLES TO STABLIZE COVER UNTIL BACKFILL HAS BEEN COMPLETED, BY FIELD.

NOTE B:
CUT OR BEND BARS TO CLEAR PIPES.

NOTE C:
LIFTING COVER HOOKS BY FIELD.



JUNCTION BOX
1 REQD
NTS

NOTES:
SPECIFICATIONS: Construction of these structures to be in accordance with Highway Specification No. T1.
EXCAVATION, FOUNDATION, AND BACKFILL: Section 125.
CONCRETE: Section 400, Class B concrete, type II portland cement.
REINFORCING STEEL: Section 418.
CHAMFER: All exposed edges shall be chamfered ¾".
ENDWALL TYPES: Types 3 and 4 may be used for pipes skewed from 75° to 90°. Use dimensions and quantities given for 90° pipes. For all other skews use walls of type 1 and 2 only.
CONNECTION TO PIPE: The connection of pipe to endwalls shall be neat and secure. Where entire end of pipe does not extend to front face of endwall, the barrel of the culvert shall be extended with smooth, rigid, circular forms exactly fitting the inner circumference of the pipe. Where a portion of pipe extends beyond the required front face of endwall, it shall be cut off smooth and flush therewith.
Where bell and spigot pipe is used, the bell end is to be placed upstream with the end of the pipe flush with face of wall, unless otherwise directed by the Engineer.
ENDWALL IN ROCK: Where solid rock is encountered the apron and cut-off wall shall be omitted and the endwall otherwise modified as required. Provide adequate construction keyways between concrete and the rock fdns.
For additional notes & reference dwgs see 101-19H252.

Scale ½" = 1'-0"
Except as noted

PRINTS REQD-R	
BR of PROJ	
DWG F	SIZE H
ME	
EE	
CE	
AD	
CD	
ED	
MD	
BF	
SW	
BL	
PA	

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	10-3-78 WLP LRL WWM LRL WWM LRL WWM										
REMOVED SURVEY MARKER, ADDED JUNCTION BOX BAR BEND DETAILS											

DSGN H. L. PETTY
DRWN L.R. LEE
CHKD WWMartin
SUPV WWMartin
INSP RRoe
ENGINEER E.B. Logan, Jr.

NORTH MOORE ROAD RELOCATION

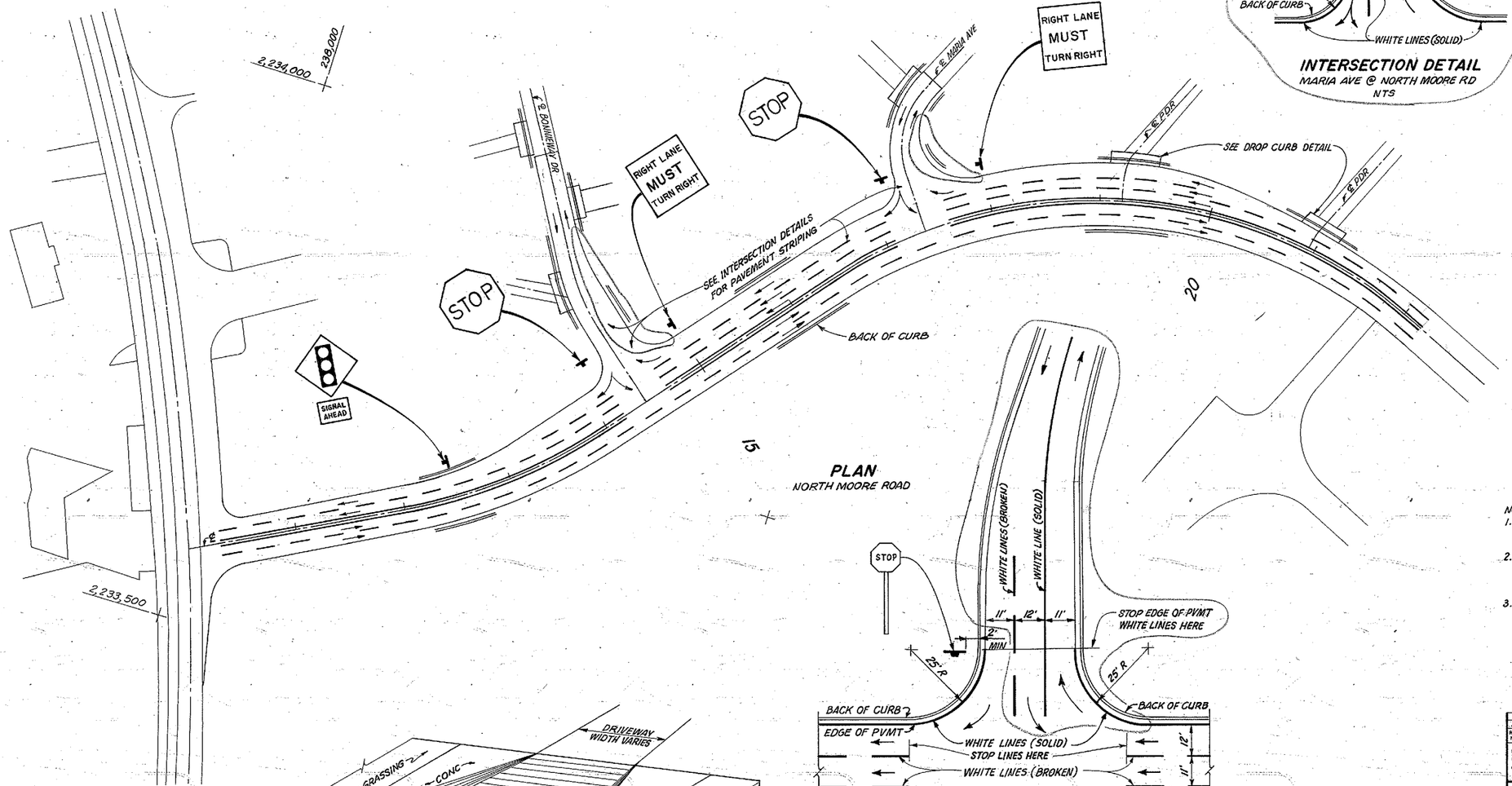
CONCRETE ENDWALLS AND INLETS FOR PIPE CULVERTS

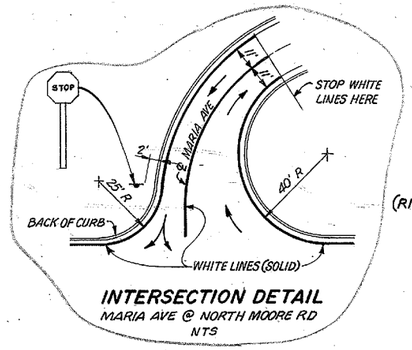
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Beaman	R.O. Stone	E.B. Buchanan

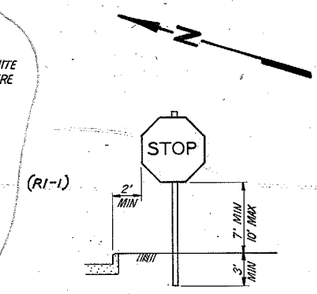
INSPECTED AND APPROVED FOR ISSUE

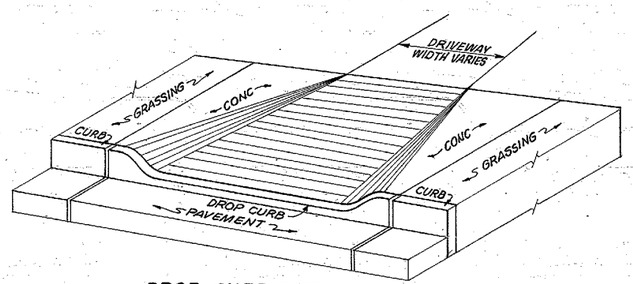
KNOXVILLE 12-4-78 81 HR 101-19H256-3 R1





INTERSECTION DETAIL
MARIA AVE @ NORTH MOORE RD
NTS





DROP CURB DETAIL
NTS (SEE 19H251)

INTERSECTION DETAIL
BONNIEWAY DR @ NORTH MOORE RD
SCALE 1"=20'

NOTES:
1. FOR TRAFFIC SIGN AND PAVEMENT STRIPING DETAILS SEE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (D6, 1-197)
2. ALL MATERIALS REQUIRED FOR SIGNING AND STRIPING SHALL CONFORM TO CITY OF CHATTANOOGA STANDARDS AND SPECIFICATIONS AND SHALL BE OF THE SAME MANUFACTURE AS USED CURRENTLY BY THE CITY.
3. FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS SEE 101-19H252.

SCALE: 1" = 50'
EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1	REVISED INTERSECTIONS	10-8-79	HLP	VRL	VRL	WMM	WMM	LEB	JRF	RJB	

DSGN H. L. PETTY — INSP J.R. Fox
DRWN V.R. LEE
CHKD W. M. Martin
SUPV W. M. Martin — ENGINEER E. B. Logan

NORTH MOORE ROAD RELOCATION

TRAFFIC CONTROL DEVICES PAVEMENT STRIPING AND DROP CURB DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman		

INSPECTED AND APPROVED FOR ISSUE

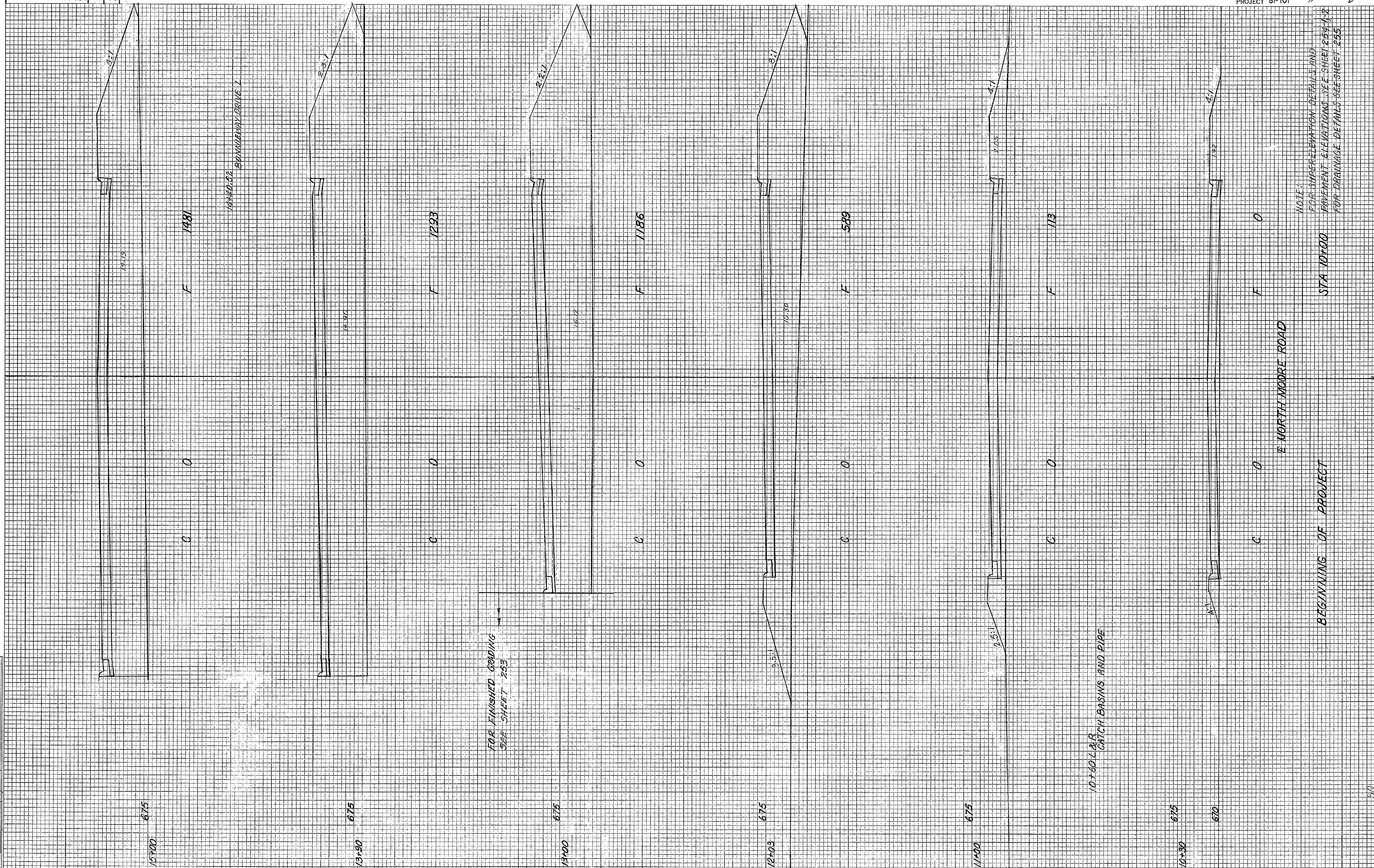
KNOXVILLE 12-4-78 | 81 HR | 101-19H257 R1

RECORD DRAWING AS CONSTRUCTED

PRINTS REQD-8

PROJECT 81-101 Sheets 2

81 HR 101-19H258-1

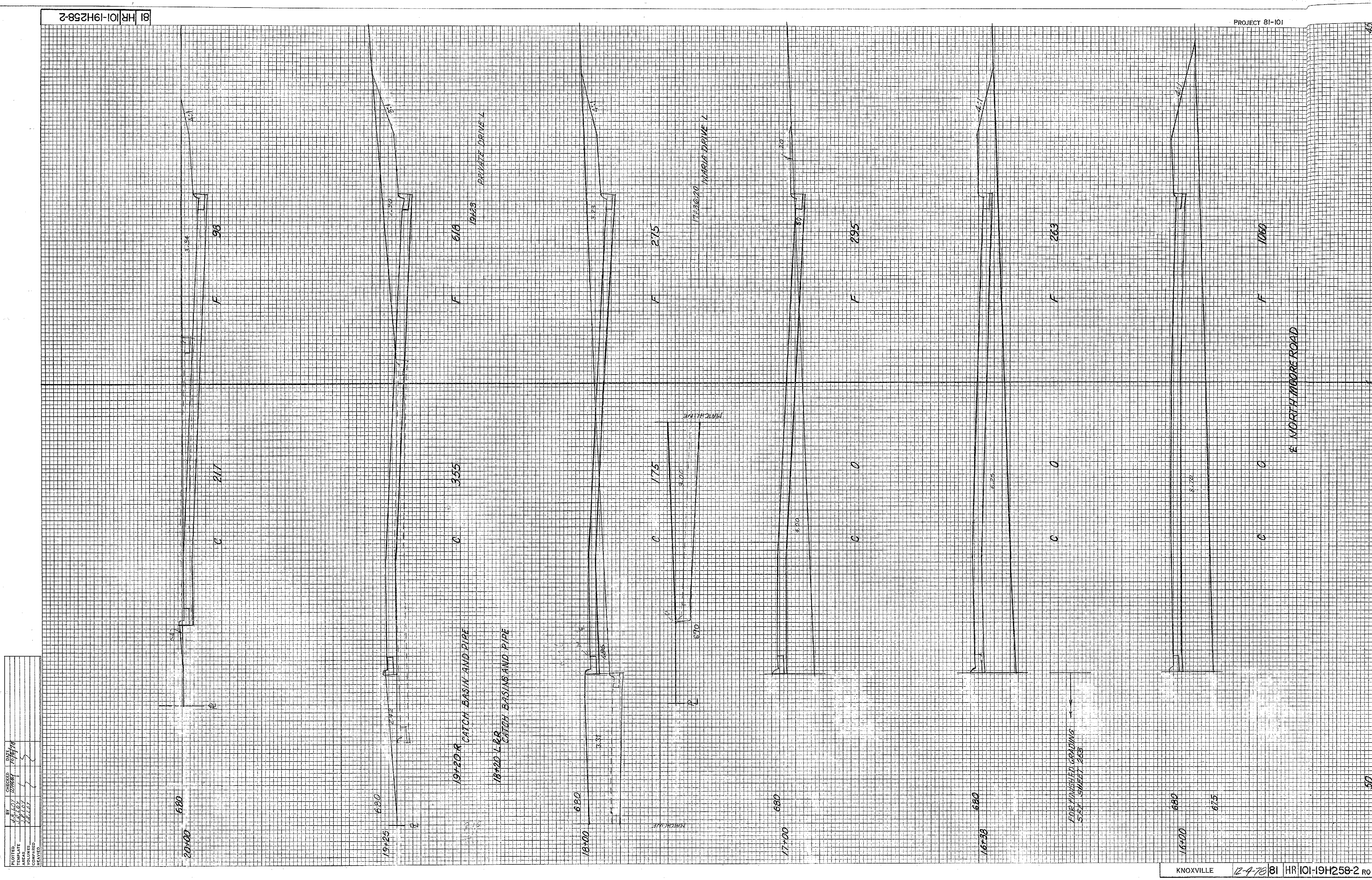


	BY	CHECKED	DATE
PLOTTED	J.R.LOY		12/4/78
TEMPLATE	J.R.LOY		
AREAS	J.R.LOY		
VOLUMES	J.R.LOY		
COMPARED			
HEAVIED			

K&E 353 3009

NF
R0

KNOXVILLE 12-4-78 81 HR 101-19H258-1 R0


81 HR 101-19H258-2
PROJECT 81-101
20+00
19+25
18+00
17+00
16+38
16+00
680
675
670
4:1
3.34
2.90
3.23
3.00
3.39
4.86
4.00
6.25
8.70
98
217
618
355
275
175
295
263
1060
F
C
0
19+23 PRIVATE DRIVE L
17+36.20 MARIA DRIVE L
19+20 R CATCH BASIN AND PIPE
18+20 L&R CATCH BASINS AND PIPE
MATCHLINE
FOR FINISHED GRADING SEE SHEET 258
℄ NORTH MOORE ROAD
50
PLOTTED J.R. LOY
TEMPLATE J.R. LOY
AREAS J.R. LOY
VOLUMES J.R. LOY
COMPARED
HEAVIED
BY
CHECKED
DATE 10/4/78
KNOXVILLE 12-4-76 81 HR 101-19H258-2 RO
K&E 353 3009

STA 22+11.13

END OF PROJECT

22+11.13 680

21+85 680

21+63.57 680

20+95 PRIVATE DRIVE L

END NEW CURB CONSTRUCTION RIGHT

20+90 675

E. NORTH MOORE ROAD

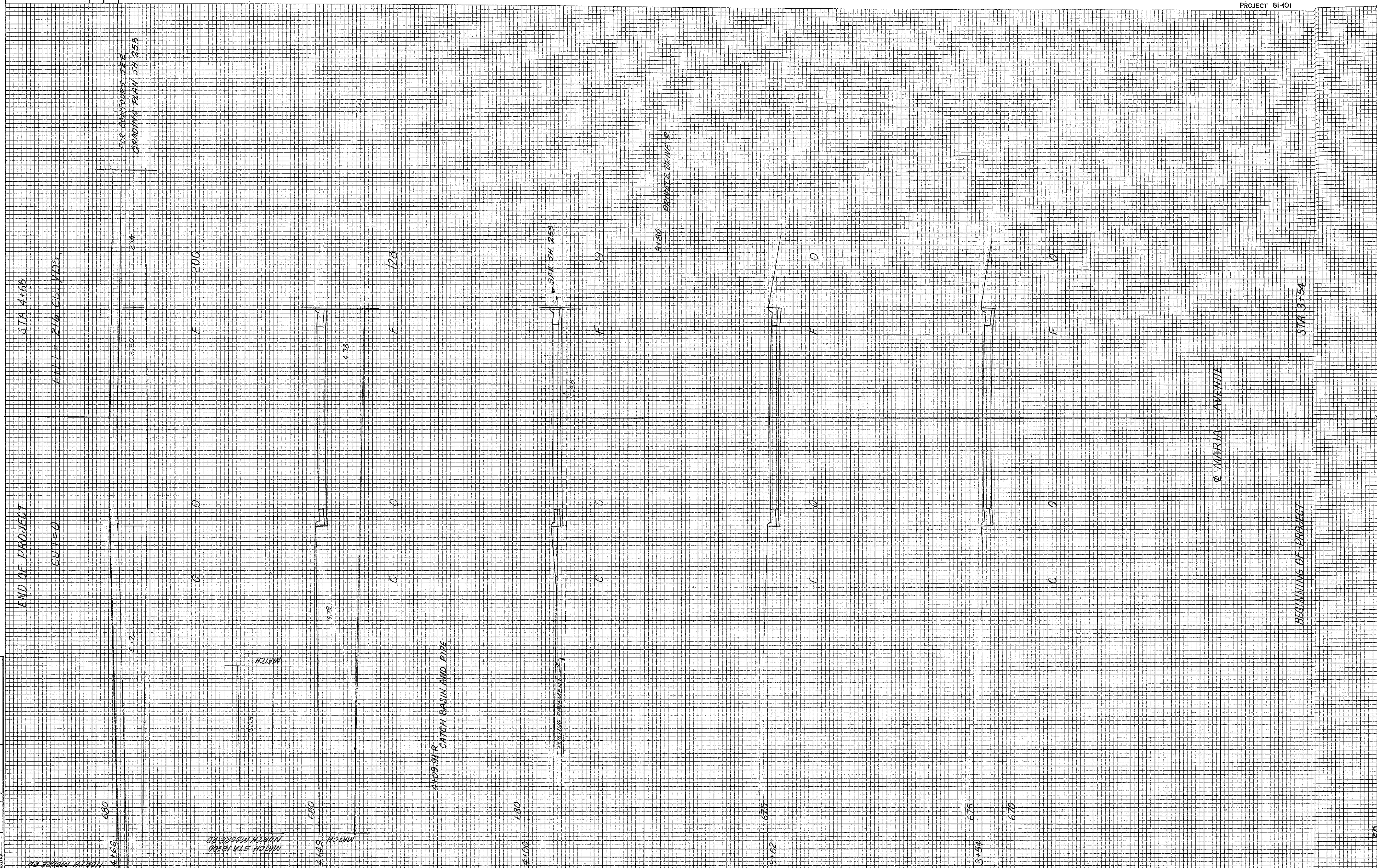
	BY	CHECKED	DATE
PLOTTED	W.L.O.Y.		12/4/78
TEMPLATE	W.L.O.Y.		
X-SECS	W.L.O.Y.		
WORKING			
COMPARED			
REVISED			

KNOXVILLE | 12-4-78 | 81 | HR | 101-19H258-3 RO

KBE 353 3069

81 HR 101-19H258-4

PROJECT 81-101



	BY	CHECKED	DATE
PLOTTED	J.R. LOY		
TEMPLATE	J.R. LOY		
AREAS	J.R. LOY		
VOLUMES	J.R. LOY		
COMPARED			
HEAVIED			

K&E 353 3009

KNOXVILLE	12-4-78	81	HR	101-19H258-4 RO

81 HR 101-19H258-5

PROJECT 81-101

END OF PROJECT
CUT = 0

STA 4+66
FILL = 287 CU. YDS.

4+66 680 C 0 F 175

4+23 680 C 0 F 145

3+62 680 C 0 F 30

3+00 680 C 0 F 111

2+92 PRIVATE DRIVE 2

2+37.97 24" CATCH BASINS AND PIPES

EDGE CONTOURS SEE GRADING PLAN, SH. 2 OF 2

3+66.84 LEVEE ACCESS R

EL. 669.96

EL. 669.62

2+37.97 P & A EXISTING CATCH BASIN AND PIPE

2+56.5 680 C 0 F 175

STA 2+56.5

2 BONNEWAY DRIVE

BEGINNING OF PROJECT

50

50

	BY	CHECKED	DATE
PLOTTED	W.E.Lee	[illegible]	10-8-81
TEMPLATE	W.E.Lee		
MATERIALS	W.E.Lee		
VOLUMES	W.E.Lee		
CHANGED			
REVISED			

66 '639

KNOXVILLE | 124-78 | 81 | HR | 101-19H258-5 RD

101-19H259 | HR | 81

SOUTH CHICKAMAUGA CREEK PROJECT

NORTH MOORE ROAD RELOCATION

TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN
RIGHT-OF-WAY MAP
SHEET NO. 1 OF 1
SCALE 1" = 50'

N

PRELIMINARY LAND OWNERSHIP MAP
NO. 6-NS-421-PP-630-1

CHURCH

FIRST CUMBERLAND PRESBYTERIAN CHURCH
SCCL-10
2.7 ACRES

P1 = 19+73.32
Δ = 74°-25'-34"
D = 13°-00'
R = 440.74'
T = 334.70'
L = 572.51'

PC 16+38.62

17+30

ORIG SURVEYED ℄

PT 22+11.13

21+05

02

R/W

40'

30'

EXIST R/W

$S 23°-53'-54"W

PT

EXIST R/W

END CONSTRUCTION
STA 22+25.00

LARRY BARNES

℄ PITT DR

N 237,296.79
E 2,234,228.25

FIRST CUMBERLAND PRESBYTERIAN CHURCH

℄ MARIA AVE

PATRICIA N. DEWEES

MILLIAN REYNOLDS

CHESTER W. WEST

℄ BEJUNIE WAY DR.

EXIST R/W

DRAINAGE EASEMENT (101-19CI)

EXIST R/W

℄ EXIST NORTH MOORE RD

N 5°-55'-58"W

℄ LEVEE

EXIST R/W

N 58°-04'-18"E

℄ SHALLOWFORD RD

EXIST R/W

STA DEVELOP CORP

N 237,727.65
E 2,233,705.06

℄ RELOC NORTH MOORE RD

15

50'

S 5°-31'-40"E

PT 13+80.64

PI = 12+98.00
Δ = 22°-31'-40"
D = 12°-00'
R = 477.47'
T = 95.09'
L = 187.73

℄ R 15' R/W

N 237,814.00
E 2,233,709.11

PC 12+02.91

℄ R 15' R/W

N 237,960.30
E 2,233,619.12

S 28°-00'-00"E

R/W

N 237,990.77
E 2,233,565.16

BEGIN CONSTRUCTION
STA 10+00

N 237,837.71
E 2,233,696.75

2,233,750

2,234,000

2,234,250

2,234,500

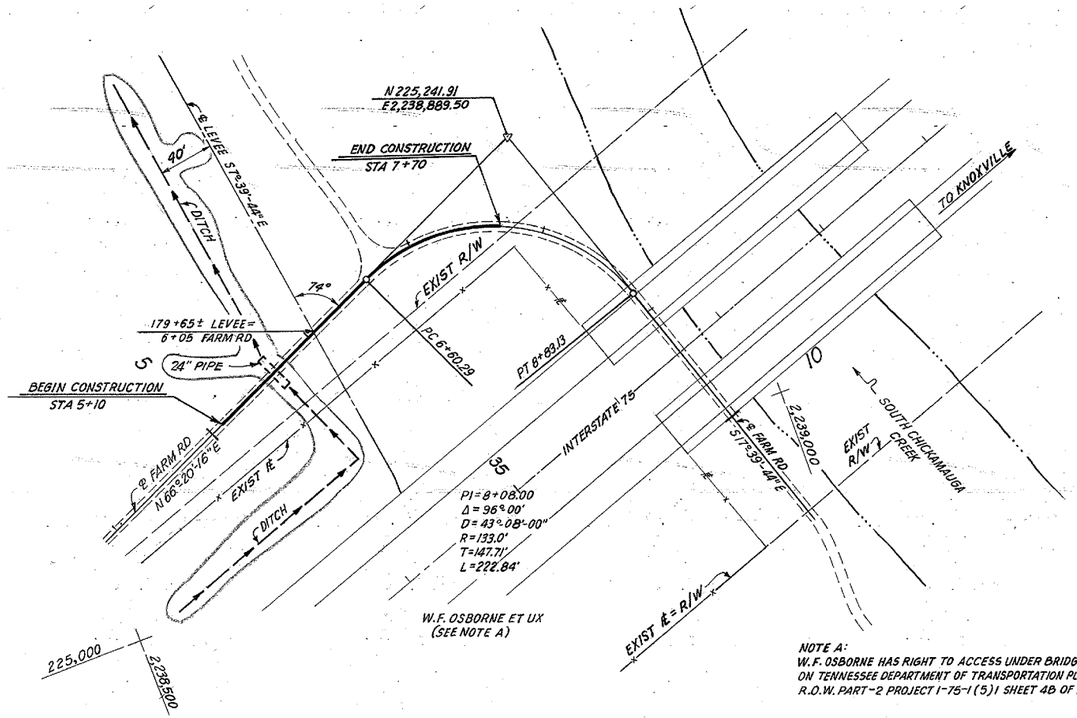
CITY OF CHATTANOOGA
HAMILTON COUNTY, TENNESSEE

DRAWN V.B. LEE
CHECKED R.B.R.
INSP. E.B. LEE
INSP. R.I.B.

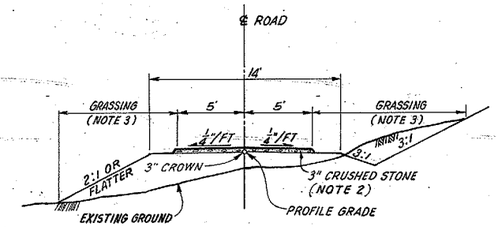
KNOXVILLE | 2-10-78 | 81 | HR | 101-19H259 RO

101-19H260 | HR | 81

LAND MAP G MS-421-P-630-I



NOTE A:
W. F. OSBORNE HAS RIGHT TO ACCESS UNDER BRIDGE GRANTED ON TENNESSEE DEPARTMENT OF TRANSPORTATION PLANS FOR R.O.W. PART-2 PROJECT I-75-1(5)1 SHEET 4B OF 244.



TYPICAL SECTION
NTS

LENGTH OF PROJECT = .05 MILE

SUMMARY OF QUANTITIES		
ITEM NO	DESCRIPTION	QUANTITY
123	EARTH BORROW EXCAVATION	350 C.Y.
180 & 182	SEEDING & MULCHING	580 S.Y.
210	CRUSHED STONE	39 TONS
129	STRUCTURAL EXCAVATION	20 C.Y.
402	CLASS B CONCRETE	3.18 C.Y.
418	REINFORCING STEEL	45 LBS
602	24" CONCRETE PIPE	28 L.F.

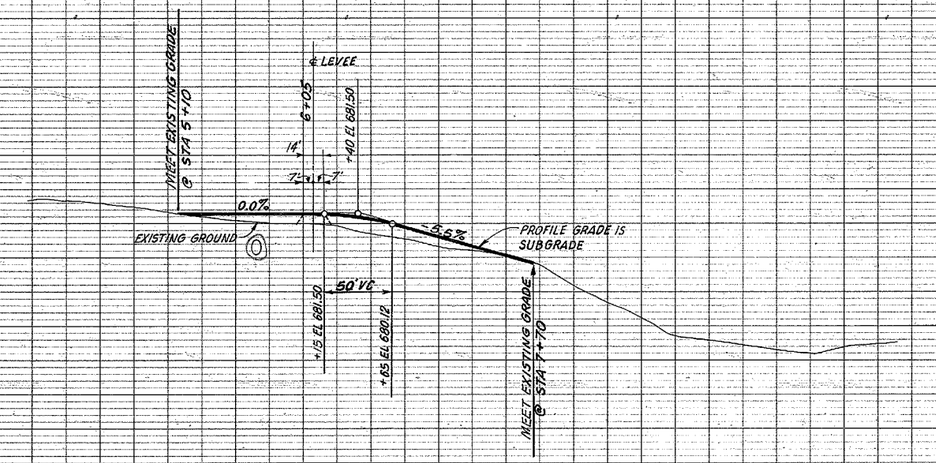
INDEX TO SHEETS	
TITLE	SHEET NO
PLAN AND PROFILE	101-19H260

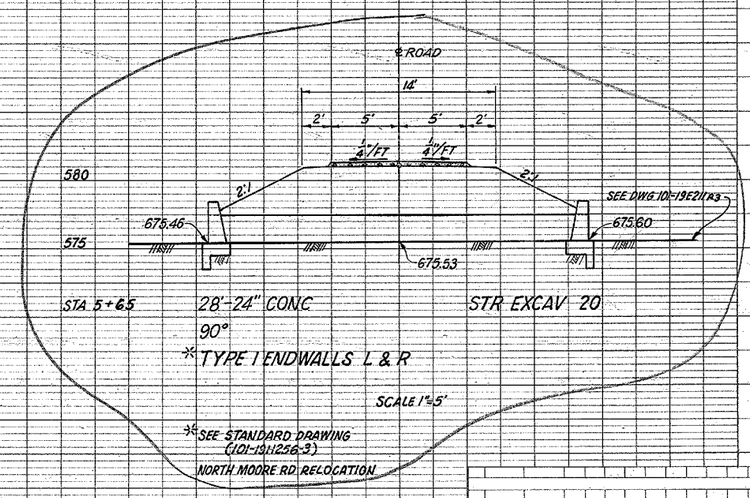
NOTES:
1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE HIGHWAY T-1 SPECIFICATIONS UNLESS OTHERWISE NOTED
2. SURFACING SHALL BE 3" OF CRUSHED STONE PLACED IN ACCORDANCE WITH SECTION 210.
3. GRASSING: ALL CUT AND FILL SLOPES AND DISTURBED AREAS SHALL BE SEEDED, TYPE 7 MIXTURE, SHOULDERS AND DITCH SLOPES SHALL BE SEEDED WITH TYPE 5 MIXTURE. ALL GRASSED AREAS SHALL BE FERTILIZED AND MULCHED IN ACCORDANCE WITH SECTION 180 & 182 RESPECTIVELY.

CITY OF CHATTANOOGA
HAMILTON COUNTY, TENN

OSBORNE FARM ROAD ACROSS LEVEE
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SCALES: PLAN - 1"=50'
PROFILE - HORIZ: 1"=50'
VERT: 1"=10'

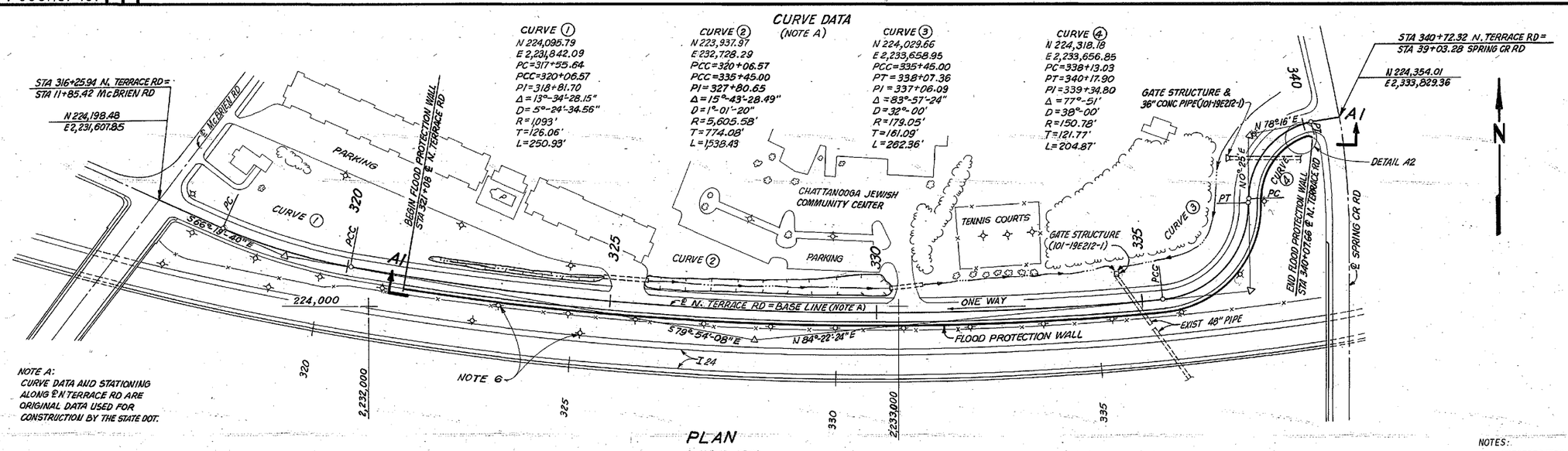




REV NO.	ECN NO.	DATE	DSGN	DRWD	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		11-28-78	HLP	VRL							
ADDED PIPE SECTION											

DSGN L.B. RESPASS — INSP JR. FOX
DRWN V.R. LEE
CHKD Wimpenton — ENGINEER E.B. Logan
SUPV Wimpenton

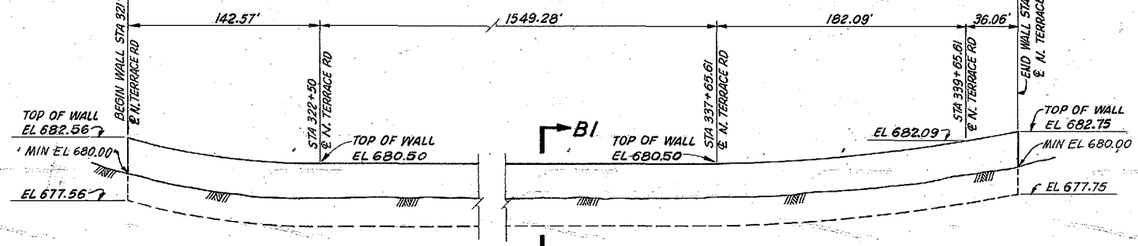
SUBMITTED	RECOMMENDED	APPROVED				
Robert J. Bowman	J.D. Timmons	D.S. Buchanan	KNOXVILLE	12-27-77	81	HR	101-19H260 R1

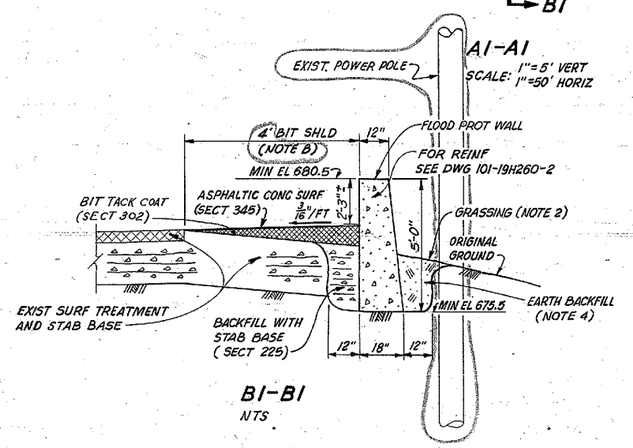


NOTE A:
CURVE DATA AND STATIONING ALONG ℄ N TERRACE RD ARE ORIGINAL DATA USED FOR CONSTRUCTION BY THE STATE DOT.

PLAN

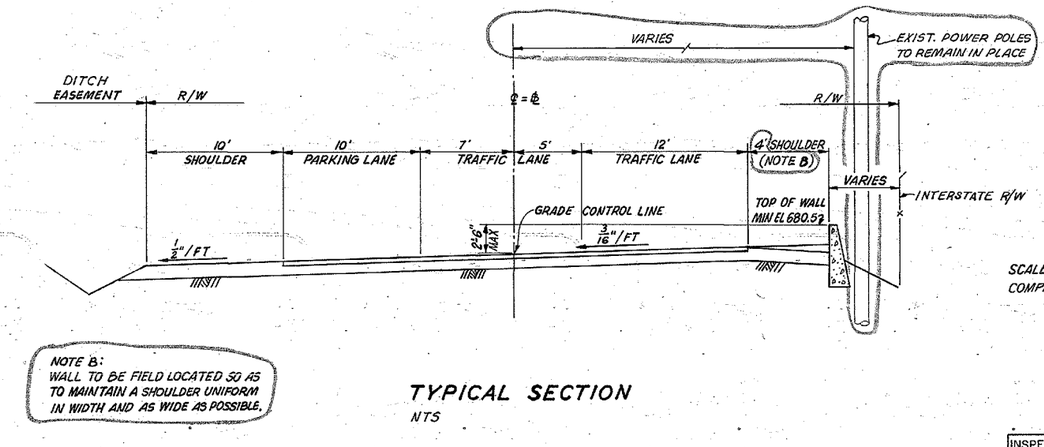
SCALE: 1"=100'





B1-B1

NTS



NOTE B:
WALL TO BE FIELD LOCATED SO AS TO MAINTAIN A SHOULDER UNIFORM IN WIDTH AND AS WIDE AS POSSIBLE.

TYPICAL SECTION

NTS

SUMMARY OF QUANTITIES

ITEM NO	DESCRIPTION	QUANTITY
129	EXCAVATION FOR STRUCTURE	560 C.Y.
180 & 182	SEEDING & MULCHING	1,060 S.Y.
225	STABILIZED BASE	250 TONS
302	BITUMINOUS TACK COAT	.75 TON
345	ASPHALTIC CONC SURF COURSE	190 TONS
	✲CLASS 300.75 AFW CONC-WALL	450 C.Y.
418	REINFORCEMENT STEEL	12,300 LBS
	TYPE I PVC SEAL	260 L.F.

✲ PER GEN CONSTR SPEC NO. G-2

NOTES:

1. SPECIFICATIONS: ALL WORK SHALL BE IN ACCORDANCE WITH THE T-1 HIGHWAY SPECIFICATIONS, EXCEPT AS NOTED.
2. GRASSING: ALL DISTURBED AREAS SHALL BE SEEDED WITH TYPE 6a MIXTURE (SPRING SEEDING), TYPE 7a MIXTURE (SUMMER SEEDING), OR TYPE 8 MIXTURE (FALL SEEDING). SEEDING AND FERTILIZING AND MULCHING SHALL BE IN ACCORDANCE WITH SECTION 180 AND 182, RESPECTIVELY, OF T-1 SPECS.
3. ~~FLOOD PROT WALL X JT CONSTRUCTION ELECTS TO USE AN AUTOMATIC CYCLOPIC MACHINE WITH CONTINUOUS CORD PLACEMENT IN CONSTRUCTING THE FLOOD PROT WALL, THE REINFORCEMENT STEEL AND KEYED JOINTS MAY BE ELIMINATED.~~
4. EARTH BACKFILL: EARTH BACKFILL SHALL BE PLACED AND THOROUGHLY COMPACTED PER SECTION 120.
5. SURFACING: STABILIZED BASE SHALL BE PLACED IN ACCORDANCE WITH SECTION 225, ASPHALTIC CONCRETE SURFACE COURSE PER SECTION 345, AND BIT TACK COAT PER SECTION 302 OF THE T-1 SPECS.
6. UTILITY POLES: THOSE UTILITY POLES (◇) THAT CONFLICT WITH THE CONSTRUCTION OF THE FLOOD PROTECTION WALL SHALL BE RELOCATED BY OTHERS.

SCALE AS NOTED
COMPANION DWG: 101-19H260-2

INSPECTED AND APPROVED FOR ISSUE

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		4-12-79	WHR	WAL	WLP	WHR	ALEBL				

REVISED WALL LOCATION

DSGN T.H. Rogers, Jr.
DRWN W.A. Lee
CHKD T.H. Rogers, Jr.
SUPV W.H. Rogers

INSP J.R. Cox
ENGINEER E.B. Logan

NORTH TERRACE ROAD
FLOOD PROTECTION WALL

PLAN AND SECTIONS

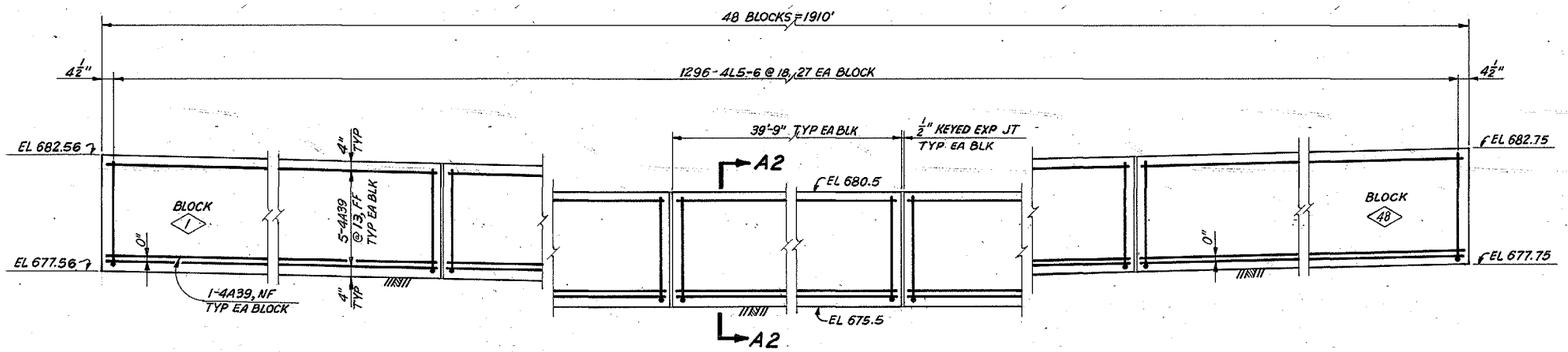
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED — RECOMMENDED — APPROVED

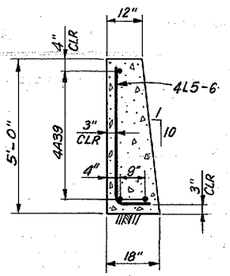
KNOXVILLE 8-10-78

81 HR 101-19H260-1R

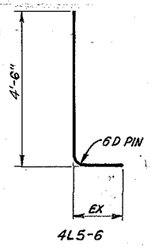
RECORD DRAWING AS CONSTRUCTED



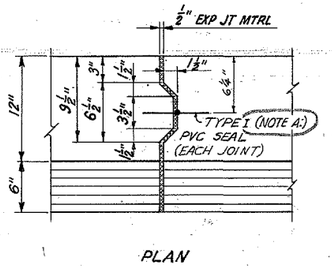
ELEVATION
NTS



A2-A2
NTS



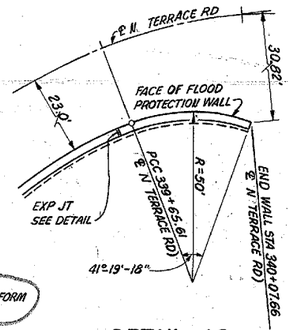
BAR BEND DETAIL
NTS



PLAN

KEYED EXP JT DETAIL
SCALE: 1 1/2" = 1'-0"

NOTE A:
PVC SEAL TYPE I SHALL CONFORM TO TVA SPEC NO. PF1026.



DETAIL A2
NTS

NOTES:

1. GENERAL NOTES: FOR GENERAL NOTES SEE DRAWING 101-19H260-1.
2. CONCRETE: CONCRETE SHALL BE PLACED IN ACCORDANCE WITH THE GENERAL CONSTRUCTION SPECS NO. G-2. CONCRETE SHALL BE CLASS 300.75 AFW. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4 INCHES.
3. REINFORCEMENT: BARS SHALL CONFORM TO LATEST ASTM SPECS FOR HIGH STRENGTH BARS, DESIGNATION A615-60. ALL DIMENSIONS RELATIVE TO REINFORCED STEEL ARE TO CENTER OF BARS, EXCEPT WHERE OTHERWISE NOTED.
4. FORMWORK: ALL FORMWORK SHALL BE IN ACCORDANCE WITH THE GENERAL CONSTRUCTION SPECIFICATION NO. G-8. BOTH SIDES OF THE FLOOD PROTECTION WALL SHALL RECEIVE A SMOOTH FORM FINISH AS DEFINED IN SECT 1.4.

1 4-12-79 UNK LVRL WCP UNK LEBL REVISED KEYED EXP JT DETAIL

REV NO.	EGN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD

DSGN T.H. Rogers, Jr.
DRWN V.R. LEE
CHKD TVA - WPMaster
SUPV WPMaster
INSP JE Fox
ENGINEER E.B. Lyon

NORTH TERRACE ROAD
FLOOD PROTECTION WALL

OUTLINE, REINFORCEMENT AND MISCELLANEOUS DETAILS

SCALE AS NOTED
COMPANION DWG 101-19H260-1

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
D.J. Bowman	E.B. Lyon	John E. Burkhalter

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 8-10-78 81 HR 101-19H260-2 R0 1
RECORD DRAWING AS CONSTRUCTED

PRINT H 10
SIZE - F 3
PRINTS REQD-#2

1 2 3 4 5 6

		Quantity Cubic Yard Unless Noted
1	Construction Plant	
2		
3	Clearing & Grubbing	
4		
5	Detention Basin - Clearing	10 acres
6	- Excavation and Backfill	620,000
7	- Seeding	794,000
8		
9	Channel - Widening (Existing)	
10	downstream	28,500
11	upstream	64,500
12	- Excavation	
13	Overburden (Sta 13+00 to 79+00)	625,500
14	" (Sta. 79+00 to 96+80)	122,200
15	" (Sta. 96+80 to 121+20)	207,500
16	" (Sta. 121+20 to 137+60)	23,600
17	Rock (Sta. 15+00 to 79+00)	2,000
18	" (Sta. 79+00 to 96+80)	-0-
19	" (Sta. 96+80 to 121+20)	1,100
20	" (Sta. 121+20 to 137+60)	-0-
21	- Seeding	
22	- Fill Existing Channel	500,000
23	Levee - Stripping	163,200
24	- Excavation - Cut-Off Trench	
25	(Sta 5+00 to 92+00)	98,500
26	(Sta. 92+00 to 114+00)	15,000
27	(Sta. 114+00 to 138+00)	29,000
28	(Sta. 143+75 to 243+65) Intermittent	38,000
29		
30	- Impervious Rolled Fill	
31	(Sta. 5+00 to 92+00)	562,000
32	(Sta. 92+00 to 114+00)	164,500
33	(Sta. 114+00 to 138+00)	245,300
34	(Sta. 143+75 to 243+65) Intermittent	276,500
35	- Mechanical Sluice Gates (3)	
36	- Seeding	
37		
38	Floodwall - Excavation	2,800
39	- Sheet Piling	67 Tons
40	- Concrete	1,705
41	- Backfill	1,125
42		
43	Pumping Stations	
44	No.1 - Excavation	
45	- Concrete	
46	- Mechanical - Sluice Gates	
47	- Pumps & Piping	
48	- Trash Racks	
49	- Electrical - Embedded Material	
50	- Other	
51	- Architectural	
52	No.2 - Excavation	
53	- Concrete	
54	- Mechanical - Sluice Gates	
55	- Pumps & Piping	
56	- Trash Racks	
57	- Electrical - Embedded Material	
58	- Other	
59	- Architectural	
60	No.3 - Excavation	
61	- Concrete	
62	- Mechanical - Sluice Gates	
63	- Pumps & Piping	
64	- Trash Racks	
65	- Electrical - Embedded Material	
66	- Other	
67	- Architectural	
68		
69		
70	Roads & Bridges	
71		
72	Utility Relocation (City of Chattanooga)	

Divert thru Partially Complete Channel

Divert thru Completed Channel

J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

1976 | TQ | 1977 | 1978 | 1979

REV NO.	DATE	MADE	CHKD	SUPV	INSP	SUBM	RECM
3	5-25-76	RHCH	WAC	WAC			TAB
Revised per GLB memo dated 5/24/76							
2	3-15-76	WAC					TAB
Minor Revision							
1	12-2-75	RCH	ESH	WAC		JaH	
Changed Quantities, Add 22 & 35							

DSGN. G.T. Neibert
DRWN. M. Burris
CHKD.
TRCD.
COMP.
SUPV.
INSP.
ENGINEER W.A. Carroll

Frank Van Meter
CONSTRUCTION SUPERINTENDENT

GENERAL

CONSTRUCTION SCHEDULE
SOUTH CHICKAMAUGA CREEK

CHATTANOOGA FLOOD PROTECTION
TENNESSEE VALLEY AUTHORITY
DIVISION OF CONSTRUCTION

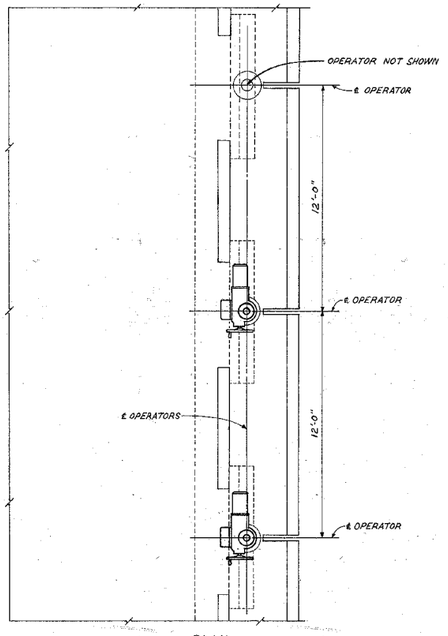
SUBMITTED.	RECOMMENDED	APPROVED
J.O. Henson	for Bowles	Kenneth Tarwater

KNOXVILLE	1-30-76	81	CS	3	102KI	R3

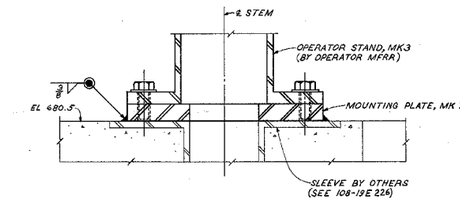
RECORD DRAWING AS CONSTRUCTED

MC 23200

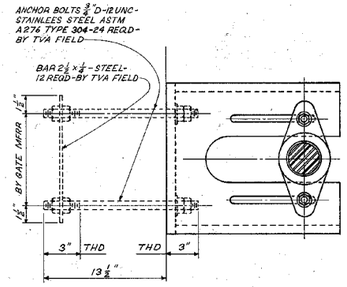
CHARLES BRUNING CO. NO. 40-138



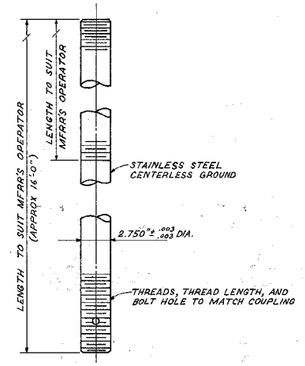
PLAN
3/8"=1'-0"



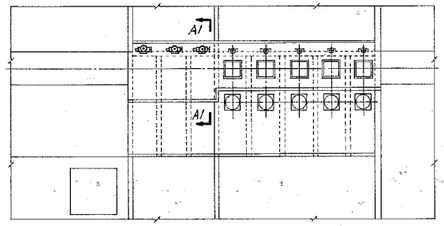
DETAIL B1



SECTION C1-C1



TOP STEM SECTION
3 REQD - MK 8
BY OPERATOR MFRR

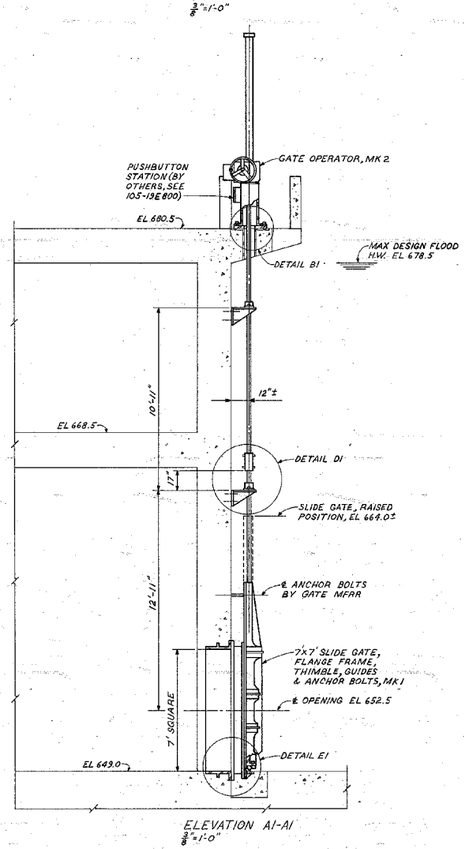


KEY PLAN
1"=20'

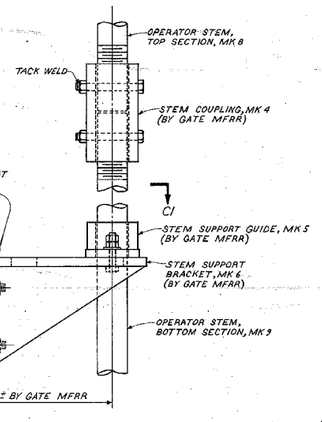
GENERAL NOTES:
1. DIMENSIONS FOLLOWED BY ℄ MAY BE MODIFIED WITHIN THE SCOPE OF THE DESIGN AS REQUIRED TO SUIT THE DETAILS OF FURNISHED EQUIPMENT.
2. UNLESS OTHERWISE SPECIFIED MACHINED TOLERANCES FOR FEET, INCHES, AND FRACTIONS 61/64" AND DECIMAL DIMENSIONS ±0.010".
3. UNLESS OTHERWISE SPECIFIED MACHINED SURFACES 125 OR LESS MICRO-INCHES ARITHMETIC MEAN AVERAGE.
4. SLIDE GATE TRAVEL IS 7'-0"; STEM THREADS DESIGNED FOR A MINIMUM OF 3" OVERTRAVEL IN BOTH DIRECTIONS.
5. INSIDE DIAMETER OF STEM SUPPORT GUIDE 1/16" LARGER THAN STEM DIAMETER.

PARTS:
ITEM NUMBERS ON THIS DRAWING HAVE THE PREFIX 104-19E200-1
MK 1 - SLIDE GATE ASSEMBLY - 3 REQD
MK 2 - GATE OPERATOR. SELF-CONTAINED, WEATHERPROOF, ELECTRIC-MOTOR-OPERATED WORM GEAR STEM SCREW LIFT WITH INTEGRAL ROTARY GEARED LIMIT SWITCH, AUXILIARY HANDWHEEL, AND STEM COVER - 3 REQD
MK 3 - OPERATOR FLOOR STAND WITH MOUNTING BOLTS - 3 REQD
MK 4 - STEM COUPLING. THREADED AND BOLTED - 3 REQD
MK 5 - STEM SUPPORT GUIDE. ONE-PIECE CAST IRON WITH BRONZE-SLEEVE BUSHING AND MOUNTING. BOLTS WITH TWO HEX NUTS EACH - 6 REQD
MK 6 - STEM SUPPORT BRACKET. CAST IRON, FULLY ADJUSTABLE, 4-BOLT WALL MOUNTED TYPE - 6 REQD.
MK 7 THROUGH MK 9 DETAILED ON THIS DRAWING.

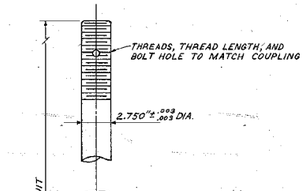
FIELD NOTES:
1. FIELD TO FURNISH ANCHOR BOLTS AND NUTS AS SHOWN IN DETAIL "D1" AND SECTION "C1-C1."
2. FIELD TO INSTALL AND ALIGN SLIDE GATE, STEM, AND OPERATOR PER MANUFACTURER'S DRAWINGS AND INSTRUCTIONS.
3. ALL SLIDE GATE FASTENERS TORQUED IN ACCORDANCE WITH GATE MANUFACTURER'S RECOMMENDATIONS.



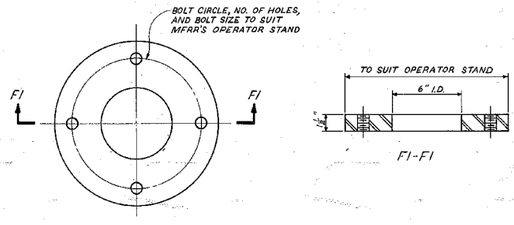
ELEVATION A1-A1
3/8"=1'-0"



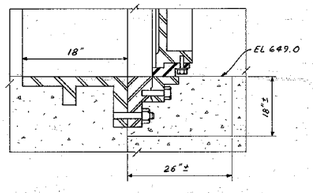
DETAIL D1



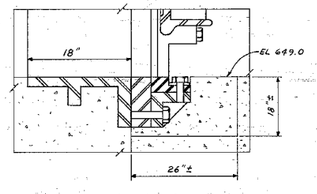
BOTTOM STEM SECTION
3 REQD - MK 9
BY GATE MFRR



OPERATOR STAND MOUNTING PLATE
3 REQD-STEEL-MK 7



DETAIL E1
NTS



DETAIL E1
ALTERNATE
NTS

SCALE 3"=1'-0"

REV NO.	ECN NO.	DATE	DSGN	DRFTR	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
DSGN	T. M. SUAREZ										
DRWN	T. M. SUAREZ	9-9-76									
CHKD	W. T. CORNELIUS	9-16-									
SUPV	W. E. CONEY	9-16-									

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION PUMPING STATION 1

7'X7' SLIDE GATE ARRANGEMENT & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
[illegible]	J. B. Cochran, Jr.	J. T. Peeler

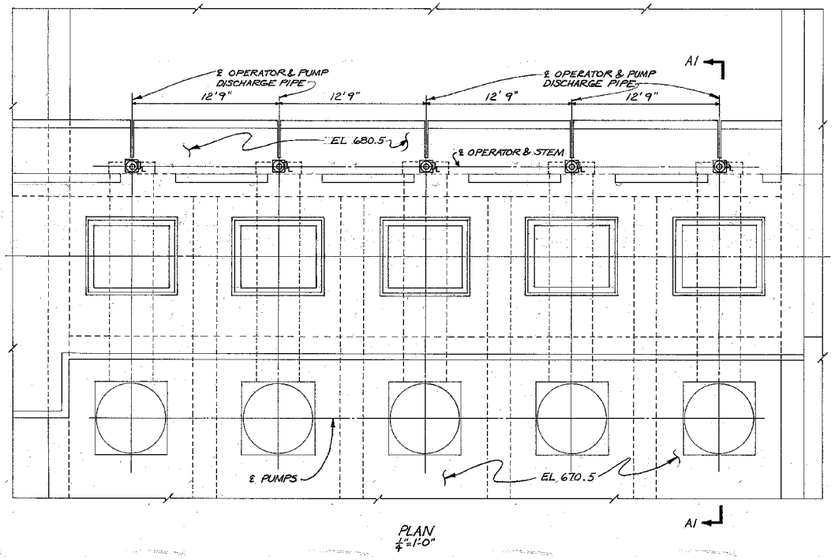
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE | 9-16-76 | 81 | H | 104-19E200-1 R0

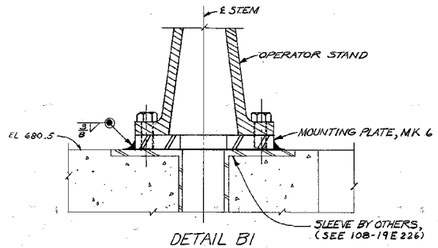
RECORD DRAWING AS CONSTRUCTED

PRINT H 3 6
SIZE F
BY OR PROJ ME EE CE AD CD ED MO BF SW BL PA
POINTS REQD-12

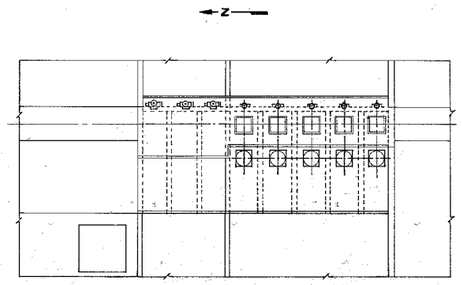
Tennessee Valley Authority Knoxville



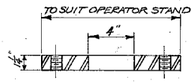
PLAN
1/4"=1'-0"



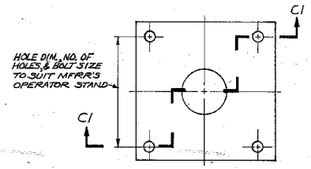
DETAIL B1



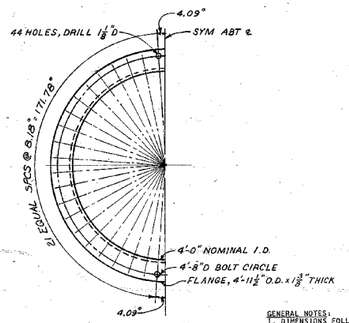
KEY PLAN
1"=20'



C1-C1

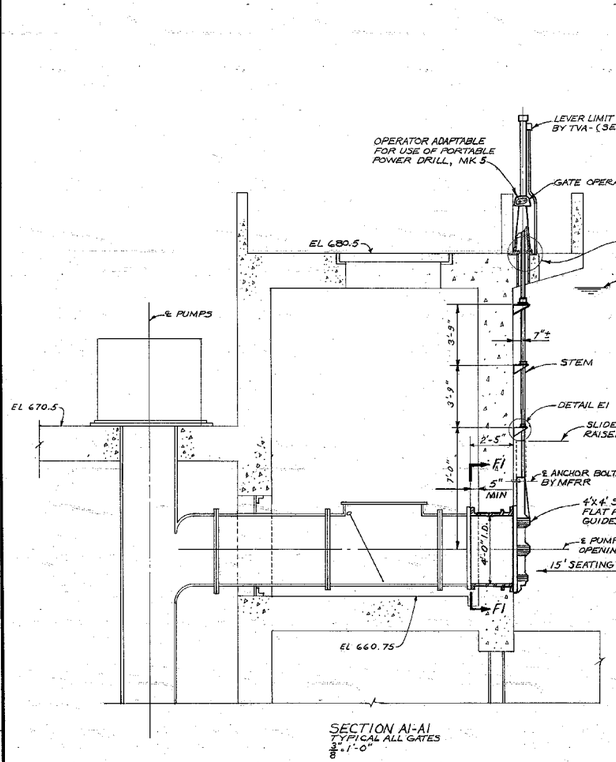


OPERATOR STAND MOUNTING PLATE
5 REQD STEEL-MK 6

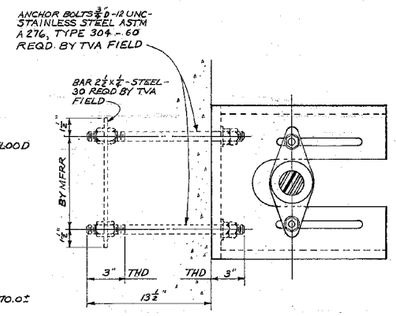


F1-F1
THIMBLE FLANGE
1"=1'-0"

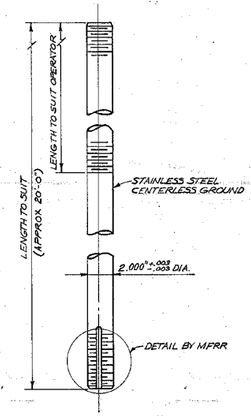
GENERAL NOTES:
1. DIMENSIONS FOLLOWED BY ± MAY BE MODIFIED WITHIN THE SCOPE OF THE DESIGN AS REQUIRED TO SUIT THE DETAILS OF FURNISHED EQUIPMENT.
2. UNLESS OTHERWISE SPECIFIED MACHINED TOLERANCES FOR FEET, INCHES, AND FRACTIONS ±1/64" AND DECIMAL DIMENSIONS ±0.010".
3. UNLESS OTHERWISE SPECIFIED MACHINED SURFACES 125 OR LESS MICRO-INCHES ARITHMETIC MEAN AVERAGE.
4. SLIDE GATE TRAVEL IS 4'-6"; STEM THREADS DESIGNED FOR A MINIMUM OF 3" OVERTRAVEL IN BOTH DIRECTIONS.
5. LIMIT SWITCH ON GATE OPERATOR SERVES AS AN INTERLOCK SO THAT THE PUMP CANNOT OPERATE UNLESS GATE IS FULLY OPEN.
6. A PORTABLE POWER DRILL WITH SLIP CLUTCH IS USED TO DRIVE THE OPERATORS.
7. INSIDE DIAMETER OF STEM SUPPORT GUIDE 1/16" LARGER THAN STEM DIAMETER.
8. THE WALL THIMBLE IS AN "HE" TYPE WITH A STANDARD ANSI PIPE FLANGE AS SHOWN IN SECTION A1-A1 AND F1-F1.



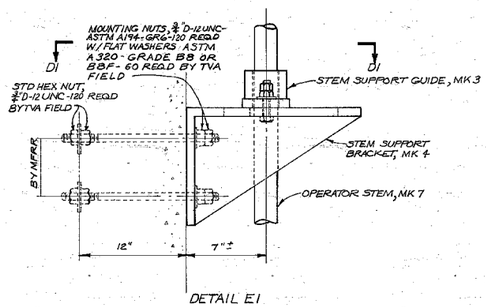
SECTION A1-A1
TYPICAL ALL GATES
3/4"=1'-0"



D1-D1



OPERATOR STEM
5 REQD-MK 7



DETAIL E1

PARTS:
MARK NUMBERS ON THIS DRAWING HAVE THE PREFIX 104-19E205-1.
MK 1 - SLIDE GATE ASSEMBLY - 5 REQD
MK 2 - GATE OPERATOR, ENCLOSED GEAR, PEDESTAL MOUNTED, HAND CRANK TYPE WITH POSITION COUNTER INDICATOR, STOP NUTS, STEM COVER, AND FLOOR STAND - 5 REQD
MK 3 - STEM SUPPORT GUIDE, ONE-PIECE CAST IRON WITH BRONZE SLEEVE BUSHING AND MOUNTING BOLTS WITH TWO HEX NUTS EACH - 15 REQD
MK 4 - STEM SUPPORT BRACKET, CAST IRON, FULLY ADJUSTABLE, 4-BOLT WALL MOUNTED TYPE - 15 REQD
MK 5 - PORTABLE POWER DRILL WITH ADJUSTABLE SLIP CLUTCH - 1 REQD
MK 6 AND MK 7 DETAILED ON THIS DRAWING.

FIELD NOTES:
1. FIELD TO FURNISH ANCHOR BOLTS AND NUTS AS SHOWN IN DETAIL "E1" AND SECTION "D1-D1."
2. FIELD TO INSTALL AND ALIGN SLIDE GATE, STEM, AND OPERATOR PER MANUFACTURER'S DRAWINGS AND INSTRUCTIONS.
3. ALL SLIDE GATE FASTENERS TORQUED IN ACCORDANCE WITH GATE MANUFACTURER'S RECOMMENDATIONS.
4. FIELD TO INSTALL LEVER LIMIT SWITCH ON THE OPERATOR STEM COVER.

SCALE 3"=1'-0"

REV. NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUPR	RECM	APPR

DSGN T. M. SUAREZ
DRWN R.W. COATES, II 6-19-76
CHKD W.T. CRAWFORD
SUPV W.H. Connell

INSP
ENGINEER T.E. Whitaker

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION 1

4'X 4' SLIDE GATE ARRANGEMENT & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
J.J. Daugherty	J.B. Anderson, Jr.	D. Forbes
KNOXVILLE 9-22-76	81 H 104-19E205-1 R0	

RECORD DRAWING AS CONSTRUCTED

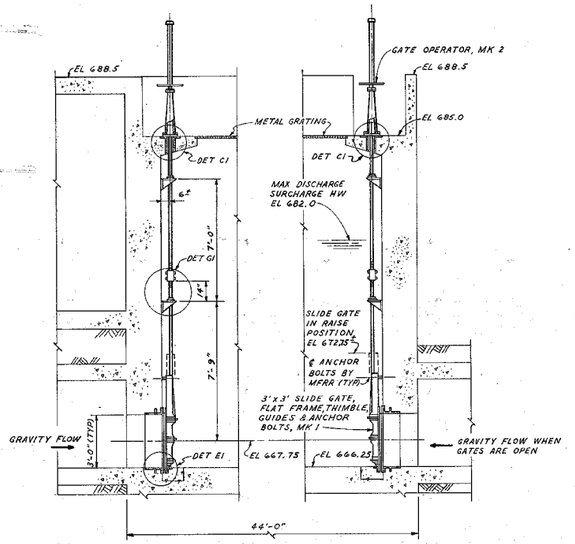
INSPECTED AND APPROVED FOR ISSUE

PRINT H 1 2 6
SIZE F

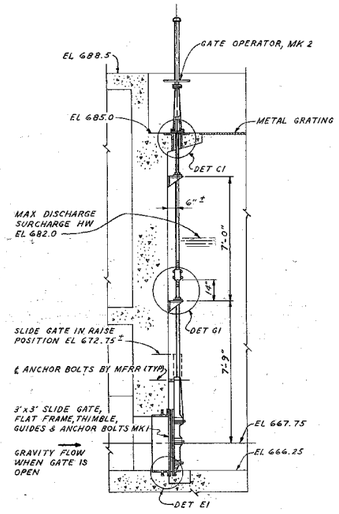
OR OR PROJ WE CL CE AD CO ED MO BF SW BL PA
PRINTS MADE 9-22

Tennessee Valley Authority Graphics Branch

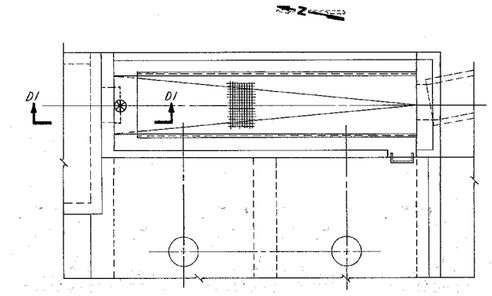
104-19E225-1 | H | 18



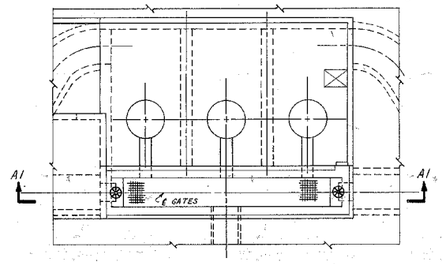
ELEVATION A1-A1
PUMPING STATION 2
SETS 4 DIMS TYP FOR BOTH GATES
3/8" = 1'-0"



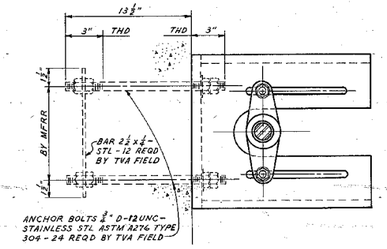
ELEVATION D1-D1
PUMPING STATION 3
3/8" = 1'-0"



KEY PLAN
PUMPING STATION 3
1/4" = 1'-0"

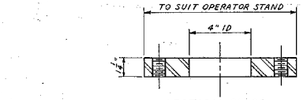


KEY PLAN
PUMPINS STATION 2
1/4" = 1'-0"

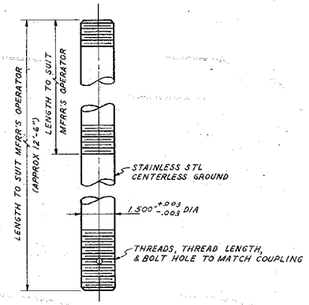


ANCHOR BOLTS ¾"-10 D-12UNC-STAINLESS STL ASTM A276 TYPE 304 - 24 REQD BY TVA FIELD

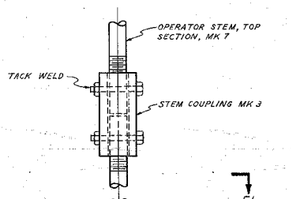
F1-F1



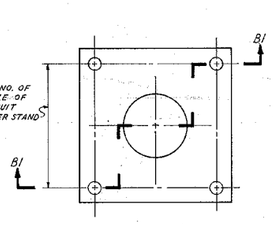
SECTION B1-B1



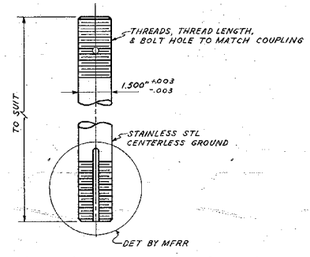
TOP STEM SECTION
3 REQD - MK 7
6"=1'-0"



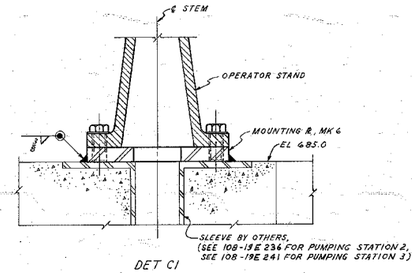
DET G1



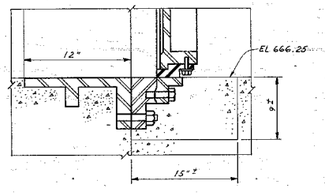
OPERATOR STAND MOUNTING ℞
3 REQD-MK 6
4"=1'-0"



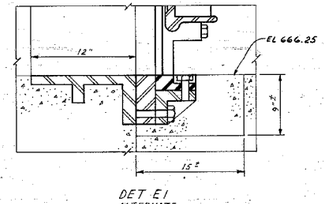
BOTTOM STEM SECTION
3 REQD - MK 8
6"=1'-0"



DET C1



DET E1
NTS



DET E1
ALTERNATE
NTS

SCALE 3"=1'-0"

GENERAL NOTES:
1. DIMENSIONS FOLLOWED BY ± MAY BE MODIFIED WITHIN THE SCOPE OF THE DESIGN AS REQUIRED TO SUIT THE DETAILS OF FURNISHED EQUIPMENT.
2. UNLESS OTHERWISE SPECIFIED MACHINED TOLERANCES, FOR FEET, INCHES, AND FRACTIONS ±1/64" AND DECIMAL DIMENSIONS ±0.010".
3. UNLESS OTHERWISE SPECIFIED MACHINED SURFACES 125 OR LESS MICRO-INCHES ARITHMETIC MEAN AVERAGE.
4. SLIDE GATE TRAVEL IS 3'-0". STEM THREADS DESIGNED FOR A MINIMUM OF 3" OVERTRAVEL IN BOTH DIRECTIONS.
5. INSIDE DIAMETER OF STEM SUPPORT GUIDE 1/16" LARGER THAN STEM DIAMETER.

PARTS:
MARK NUMBERS ON THIS DRAWING HAVE THE PREFIX 104-19E225-1.
MK 1 - SLIDE GATE ASSEMBLY - 3 REQD
MK 2 - GATE OPERATOR, PEDESTAL MOUNTED, HANDWHEEL TYPE WITH POSITION COUNTER INDICATOR, STOP NUT, STEM COVER, AND FLOOR STAND - 3 REQD
MK 3 - STEM COUPLING, THREADED AND BOLTED - 3 REQD
MK 4 - STEM SUPPORT GUIDE, ONE-PIECE CAST IRON WITH BRONZE-SLEEVE BUSHING AND MOUNTING BOLTS WITH TWO HEX NUTS EACH - 6 REQD
MK 5 - STEM SUPPORT BRACKET, CAST IRON, FULLY ADJUSTABLE, 4-BOLT WALL MOUNTED TYPE - 6 REQD
MK 6 THROUGH MK 8 DETAILED ON THIS DRAWING.

FIELD NOTES:
1. FIELD TO FURNISH ANCHOR BOLTS AND NUTS AS SHOWN IN DETAIL "G1" AND SECTION "F1-F1."
2. FIELD TO INSTALL AND ALIGN SLIDE GATE, STEM, AND OPERATOR PER MANUFACTURER'S DRAWINGS AND INSTRUCTIONS.
3. ALL SLIDE GATE FASTENERS TORQUED IN ACCORDANCE WITH GATE MANUFACTURER'S RECOMMENDATIONS.

REV NO.	ECN NO.	DATE	PSCH	DWNR	CHKD	COPY	ENGR	INSP	SUBM	TECH	APPR
DSGN	T.M. SUAREZ							INSP			
DWNR	G.S. BAKER 4-23-76										
CHKD	W.T. CARRAWELL							ENGINEER			
SUPV	C.R. Sowell							J.S. Wilbanks			

CHATTANOOGA FLOOD PROTECTION PUMPING STATION 2&3

3'X3' SLIDE GATE ARRANGEMENT & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
J.J. Daugherty	J.B. Anderson, Jr.	S. Kistler

KNOXVILLE 9-22-76 | 81 H | 104-19E225-1 R0

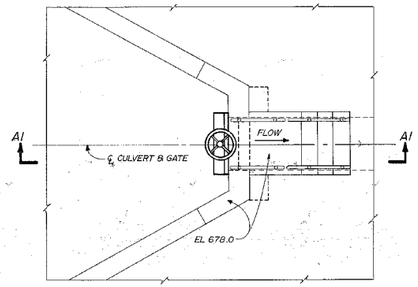
RECORD DRAWING AS CONSTRUCTED

INSPECTED AND APPROVED FOR ISSUE

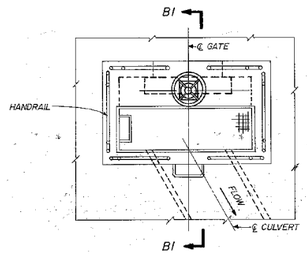
PRINT H 1 2 6
SIZE F

BR OR PROJ WE EK CE AC CO ED MO EF SW RL PA
PRINTS REQD-40

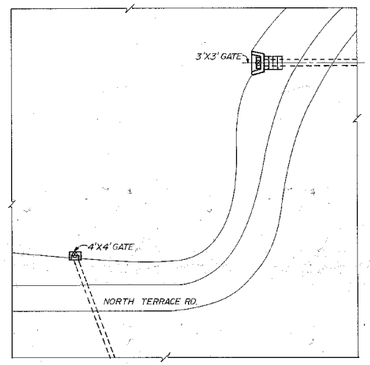
Technical Information Center Knoxville



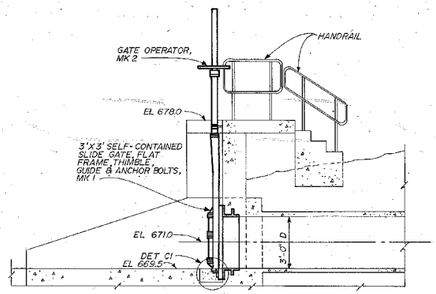
PLAN
3'X3' SLIDE GATE



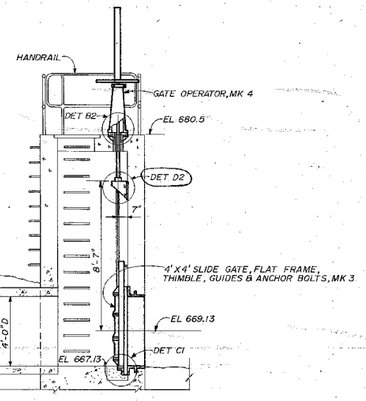
PLAN
4'X4' SLIDE GATE



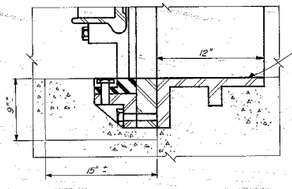
KEY PLAN
FOR LOCATION SEE DWG 101-19E212-1
1" = 40'



A1-A1

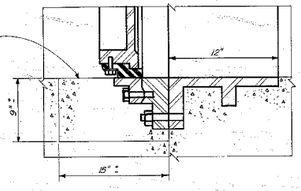


B1-B1



DET C1
NTS

EL 667.13, 4'X4' SLIDE GATE
EL 669.5, 3'X3' SLIDE GATE



DET C1
ALTERNATE
NTS

GENERAL NOTES:

1. DIMENSIONS FOLLOWED BY ± MAY BE MODIFIED WITHIN THE SCOPE OF THE DESIGN AS REQUIRED TO SUIT THE DETAILS OF FURNISHED EQUIPMENT.
2. UNLESS OTHERWISE SPECIFIED MACHINED TOLERANCES FOR FEET, INCHES, AND FRACTIONS 1/64" AND DECIMAL DIMENSIONS ±0.010".
3. UNLESS OTHERWISE SPECIFIED MACHINED SURFACES 125 OR LESS MICRO-INCHES ARITHMETIC MEAN AVERAGE.
4. SLIDE GATE TRAVEL IS 3'-0" FOR MK 1 AND 4'-0" FOR MK 3; STEM THREADS DESIGNED FOR A MINIMUM OF 3" OVERTRAVEL IN BOTH DIRECTIONS.
5. INSIDE DIAMETER OF STEM SUPPORT GUIDE 1/16" LARGER THAN STEM DIAMETER.

PARTS:

MARK NUMBERS ON THIS DRAWING HAVE THE PREFIX 104-19E265.

MK 1 - SELF-CONTAINED SLIDE GATE ASSEMBLY - 1 REQD
MK 2 - GATE OPERATOR. YOKE MOUNTED, HANDWHEEL TYPE WITH POSITION COUNTER INDICATOR, STOP NUT, AND STEM COVER - 1 REQD.
MK 3 - SLIDE GATE ASSEMBLY - 1 REQD
MK 4 - GATE OPERATOR. PEDESTAL MOUNTED, HANDWHEEL TYPE WITH POSITION COUNTER INDICATOR, STOP NUT, STEM COVER, AND FLOOR STAND - 1 REQD
MK 5 - STEM SUPPORT GUIDE. ONE-PIECE CAST IRON WITH BRONZE-SLEEVE BUSHING AND MOUNTING BOLTS WITH TWO HEX NUTS EACH - 1 REQD
MK 6 - STEM SUPPORT BRACKET. CAST IRON, FULLY ADJUSTABLE, 4 BOLT WALL MOUNTED TYPE - 1 REQD
MK 7 THROUGH MK 9 DETAILED ON SHEET 2 OF THIS DRAWING

FIELD NOTES:

1. FIELD TO FURNISH ANCHOR BOLTS AND NUTS AS SHOWN IN DETAIL "C2" AND SECTION "D2-D2."
2. FIELD TO INSTALL AND ALIGN SLIDE GATE, STEM, AND OPERATOR PER MANUFACTURER'S DRAWINGS AND INSTRUCTIONS.
3. ALL SLIDE GATE FASTENERS TORQUED IN ACCORDANCE WITH GATE MANUFACTURER'S RECOMMENDATIONS.

COMPANION DRAWING:
104-19E265-2

REVISED & REDRAWN												
REV NO	ECN NO	DATE	DSGN	DRWN	CHKD	SUPV	REVWR	PROJ ENGR	SUPERVISOR	APPR		
1		5-31-78	TM	RW	WC	WC	DHD	WC	WC	WC		
0												

DSGN TM SUAREZ
DRWN RW COATES III 8-22-76
CHKD WT CORNWELL
SUPV D.D. Goodrich

DWGR
ENGINEER T. M. Wilkerson

SCALE 3/8" = 1'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
LEVEE INSTALLATIONS

3'X3' AND 4'X4' SLIDE GATE ARRANGEMENT & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
J.L. Daughtry	W.F. Hunter	D. Fowlkes

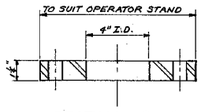
INSPECTED AND APPROVED FOR ISSUE
KNOXVILLE 9-22-76

81 | H | 104-19E265-1 | R1

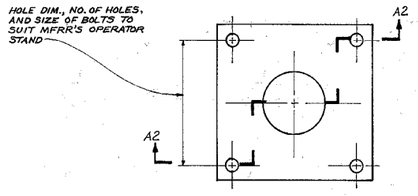
RECORD DRAWING AS CONSTRUCTED

PRINT SIZE F

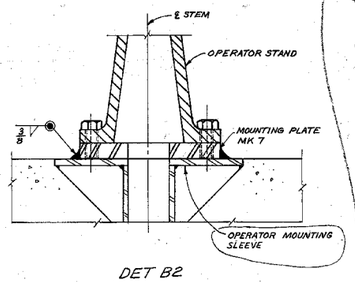
DR OR PROJ ME EE CE AD TD EO MO MPP SW TL PE
PRINTS NEED 4



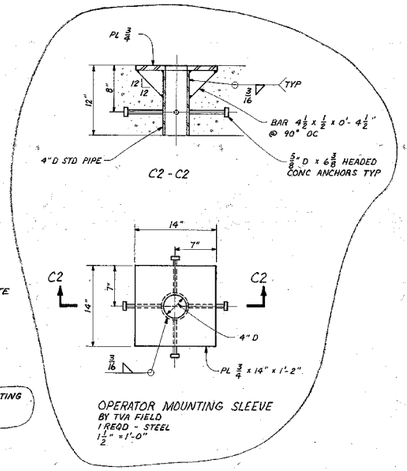
SECTION A2-A2



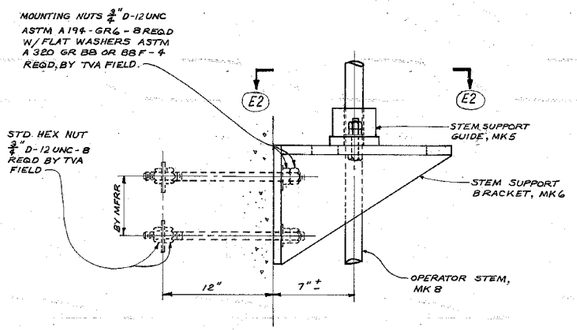
OPERATOR STAND MOUNTING ℄
1 REQD, STEEL, MK 7



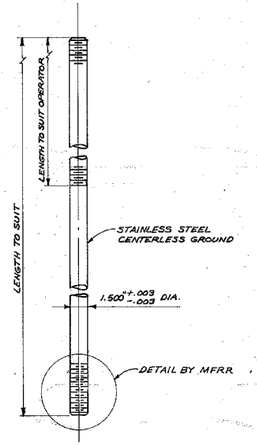
DET B2



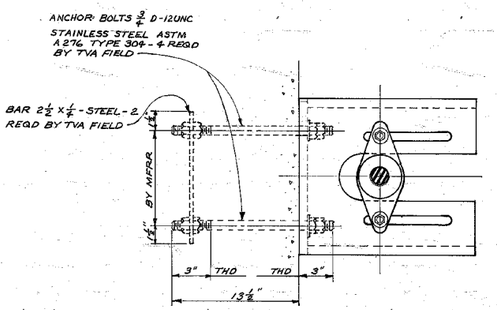
OPERATOR MOUNTING SLEEVE
BY TVA FIELD
1 REQD - STEEL
1½" x 1'-0"



DETAIL D2



OPERATOR STEM
1 REQD - MK 8 (FOR 4'X4' GATE)
1 REQD - MK 9 (FOR 3'X3' GATE)



E2 - E2

SCALE 3"=1'-0"

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPT	ENGR	INSP	SUBM	RECM	APPR
1		5-31-79	RWC	MT	MT	DWD	DWD	MT	MT		KJB
0											

REVISED DET B2 AND ADDED MOUNTING SLEEVE DETAIL

DSGN T.M. SUAREZ
DRWN R.W. COATES III 8-4-76.
CHKD W.T. CARMELL
SUPT W.B. Conrath

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
LEVEE INSTALLATIONS

3'X3' AND 4'X4' SLIDE GATE DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
J.A. Douglas	J.B. Anderson Jr.	D. Fowler

INSPECTED AND APPROVED FOR ISSUE
D. Fowler

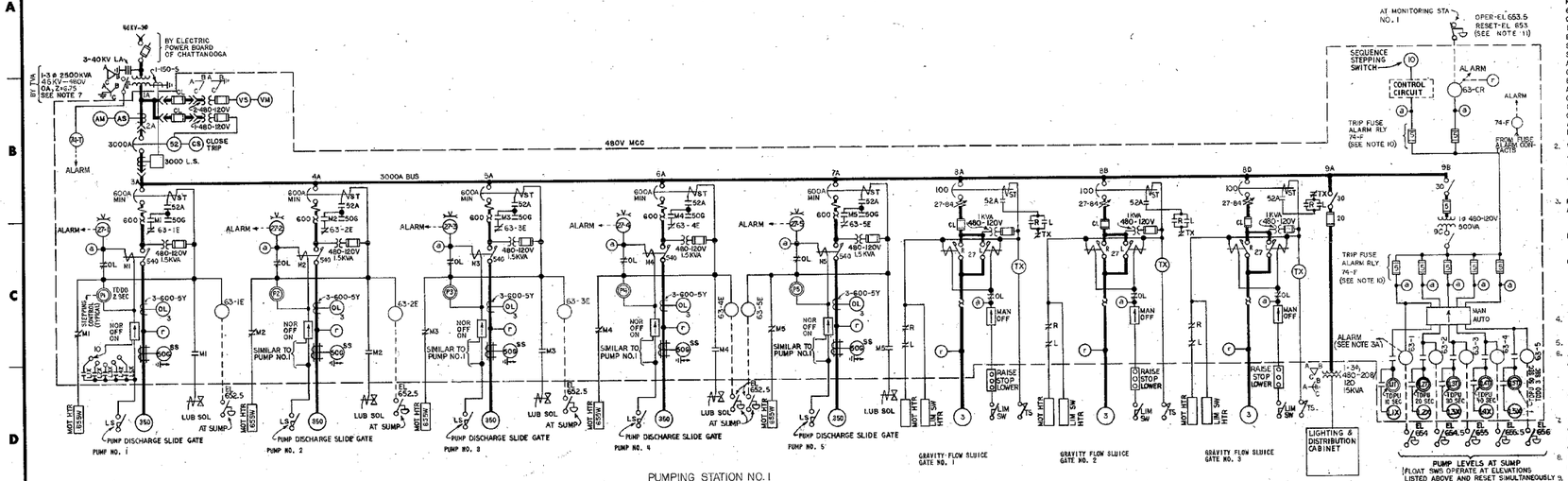
KNOXVILLE 9-22-76 | 81 | H | 104-19E265-2 R1
RECORD DRAWING AS CONSTRUCTED

PRINT H 15
SIZE F 0
BR ON PROJ WE KL GE AD CD ED RO BF SW GL RA
PRINTS REQ'D 4

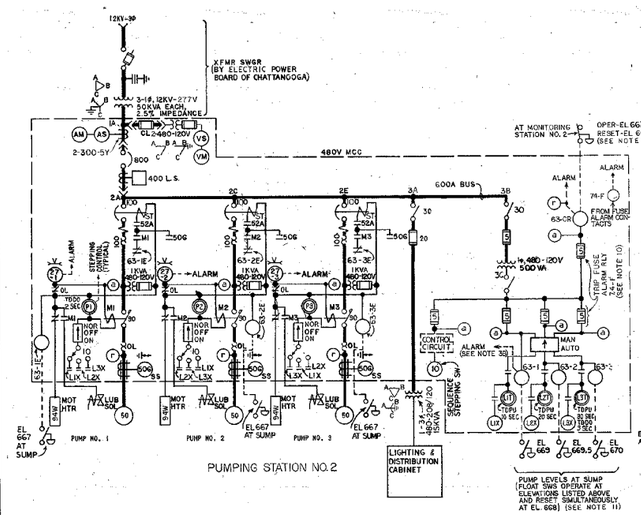
105-19E500 | 3 | 18

1 2 3 4 5 6 7 8 9 10 11 12

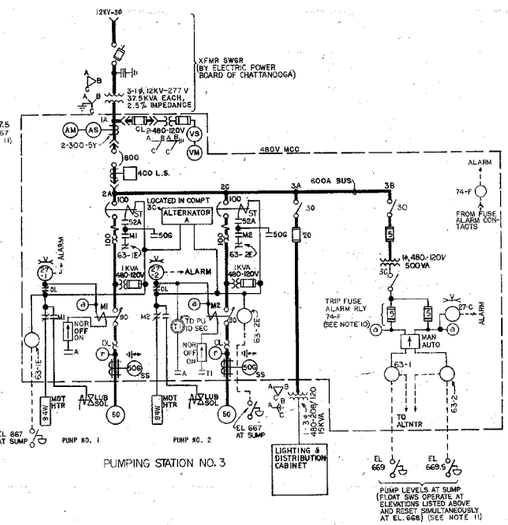
A B C D E F G H J K



PUMPING STATION NO. 1



PUMPING STATION NO. 2



PUMPING STATION NO. 3

NOTES:

1. WHEN THE COMMON PUMP CONTROL SWITCH IS IN AUTO POSITION AT ANY STATION, PUMPS AT THAT PUMPING STATION WILL BE STARTED WITH RISING WATER LEVEL AS MEASURED BY LEVEL SENSORS LOCATED IN THE SUMPS AT EACH STATION - ONE SENSOR FOR EACH PUMP. AT STATION NO. 1, THESE SENSORS ARE SET TO OPERATE AT EL 654 THROUGH EL 656 AT 0.5' INCREMENTS. AT STATION NO. 2, THE SENSORS ARE SET TO OPERATE AT EL 669, 669.5, AND 670. AT PUMPING STATION NO. 3, THE SENSORS ARE SET TO OPERATE AT EL 669 AND EL 669.5. ALL PUMPS IN OPERATION AT STATIONS 1, 2, AND 3 WILL SHUT OFF SIMULTANEOUSLY AT EL 653.5, EL 668, AND EL 668 RESPECTIVELY WITH FALLING WATER LEVEL. A STEPPING SCHEME ENERGIZED AFTER EACH PUMPING CYCLE AT THE THREE STATIONS WILL ALTERNATE THE PUMPS SUCH THAT THE SENSORS OPERATING AT THE LOWEST LEVELS WILL OPERATE THE PUMPS IDLED THE LONGEST ON THE PRECEDING PUMPING CYCLE. SUFFICIENT TIME DELAY OF 10 SEC BETWEEN STARTING ANY TWO PUMPS WILL PREVENT SIMULTANEOUS STARTING. AT STATION NO. 1, THE PUMPS ARE ELECTRICALLY INTERLOCKED TO PREVENT OPERATION IF THEIR INDIVIDUAL PUMP DISCHARGE SLUICE GATES ARE NOT FULLY OPEN. IF ANY PUMPS AT STATIONS 1, 2 & 3 ARE STILL OPERATING AT EL 652.5, 667 AND 667 RESPECTIVELY, A BACKUP LEVEL SWITCH WILL TRIP THE INDIVIDUAL PUMP BREAKER.
2. WHEN MONITORING STATIONS NO1 OR NO.2 SENSE CREEK LEVEL ABOVE EL653.5 OR EL667.5 RESPECTIVELY, THE APPROPRIATE GRAVITY FLOW SLUICE GATES ARE TO BE CLOSED AND THE AFFECTED PUMPING STATIONS PLACED IN AUTOMATIC CONTROL THROUGH THE COMMON CONTROL SWITCH LOCATED AT EACH STATION.
3. REMOTE ALARMS ARE GROUPED AS FOLLOWS:
   A. CREEK LEVEL ABOVE EL653.5 BY SENSORS AT MONITORING STATION NO1 OR SUMP LEVEL AT PUMPING STATION NO.1 ABOVE EL 654 WITH THE COMMON PUMP CONTROL SWITCH IN MANUAL POSITION.
   B. CREEK LEVEL ABOVE EL667.5 BY SENSORS AT MONITORING STATION NO.2 OR SUMP LEVEL AT PUMPING STATION NO.2 ABOVE EL 669 WITH THE COMMON PUMP CONTROL SWITCH IN MANUAL POSITION.
   C. ABNORMAL CONDITION AT ANY OF THE THREE PUMPING STATIONS AS DETECTED BY DEVICE 27 (THERMAL OVERLOAD TRIPOUT, CONTROL TRANSFORMER FUSE BLOWN, OPEN BREAKER OR LOSS OF VOLTAGE FOR ALL PUMPS) OR BLOWN FUSE IN THE PUMP SEQUENCING CONTROL CIRCUITS. ADDITIONALLY STATION #1 ABNORMAL INCLUDES THE MAIN TRANSFORMER ALARMS FOR HIGH TEMP, LOW LIQUID LEVEL, AND PRESSURE RELIEF VALVE OPERATION.
4. DISCONNECT SWITCHES ON THE AUXILIARY BOARD ARE HEAVY DUTY TYPE RATED 600V AND CAPABLE OF INTERRUPTING NOT LESS THAN 18 TIMES THEIR RATED CURRENT.
5. ALL 480V FUSES TO BE TIME DELAY CLASS J.
6. ALL BREAKERS ARE 3-POLE RATED 600V INTERRUPTING RATING:
   A. AT STATION #1
      DRAWOUT - 65,000A RMS SYM AT 480V
      MOLDED CASE & MOLDED CASE/CL FUSE COMBINATION - 50,000A RMS SYM AT 480V
   B. AT STATIONS #2 & 3
      DRAWOUT - 35 000A RMS SYM AT 480V
      MOLDED CASE - 14 000A RMS SYM AT 480V
7. THE TRANSFORMER IS TO BE PROVIDED WITH A NO-LOAD TAP CHANGER PER ANSI STANDARD C57.12.10. THE TRANSFORMER RATING MUST NOT BE INCREASED BY THE ADDITION OF FORCED COOLING.
8. BRANCH CIRCUIT GROUND RELAYS ARE SET TO TRIP AT 5 AMP PRIMARY GROUND CURRENT.
9. VENDOR TO ESTABLISH FRONT VIEW AND COMPARTMENT ASSIGNMENTS BASED ON PHYSICAL REQUIREMENTS. THE PANELS DO NOT HAVE TO BE FLUSH MOUNTED.
10. FUSES ARE RATED AT 5 AMPERES AND ARE SIGNAL ACTUATING TYPE, RATED AT 125 VAC BUSS TYPE FNA, OR EQUAL. THESE FUSES ARE USED IN CONJUNCTION WITH SIGNAL FUSE BLOCK, 4 POLE, BUSS TYPE 3639 OR EQUAL.
11. FLOAT SWITCHES SHOWN ARE SYMBOLIC OF THE FUNCTION BEING PERFORMED AND DO NOT NECESSARILY REPRESENT EQUIPMENT INSTALLED.

1A	2A	3A	4A	5A	6A	7A	8A	9A
INCOMING FEEDER AND METERS	FEEDER BKR	PUMP 1	PUMP 2	PUMP 3	PUMP 4	PUMP 5	8A SLUICE GATE 1	9A LIGHTING FEED
							8B SLUICE GATE 2	9B COMMON CONTROL XFMR
							8D SLUICE GATE 3	9C PUMP SEQUENCING AND ALARM RELAYS
							8E FUTURE	

PUMPING STATION NO.1
MCC PANEL LAYOUT
(SEE NOTE 9)

1A	2A	3A
INCOMING FEEDER, METERS AND BKR	PUMP 1	LIGHTING FEED
	2C PUMP 2	3B COMMON CONTROL XFMR
	2E PUMP 3	3C PUMP SEQUENCING AND ALARM RELAYS

PUMPING STATION NO.2
MCC PANEL LAYOUT
(SEE NOTE 9)

1A	2A	3A
INCOMING FEEDER, METERS, AND BKR	PUMP 1	LIGHTING FEED
	2C PUMP 2	3B COMMON CONTROL XFMR
	2E FUTURE	3C PUMP ALTERNATOR AND ALARM RELAYS

PUMPING STATION NO.3
MCC PANEL LAYOUT
(SEE NOTE 9)

REFERENCE DWGS:

105-19E511-1 PUMPING STA #1 SCHEMATIC
105-19E511-2 PUMPING STA #2 SCHEMATIC
105-19E512 PUMPING STA #3 SCHEMATIC
105-19E513

INSPECTED AND APPROVED FOR ISSUE
E.L. Buck

REV	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	CODE	DESIGN	APPR
2		7-10-79	MTC	LT	EBT	Tech	MM				
1	MINOR REVISION										
0		7-27-77	LT	JNSS	MTC	EBT	MM				

RELOCATED MONITORING STATION NO2, ADDED BACKUP ALARMS TO BOTH MONITORING STATIONS, MANUFACTURERS AND MINOR CHANGES. CHANGED TO "E" SIZE DRAWING.

DSGN T.S. LITTLE
DRWN W.S. SHARPE
CHKD T.H. LITTLE
SUPV B.L. DAGG

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NOS. 1,2,3

WIRING DIAGRAMS
AC AUXILIARY POWER
SINGLE LINE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

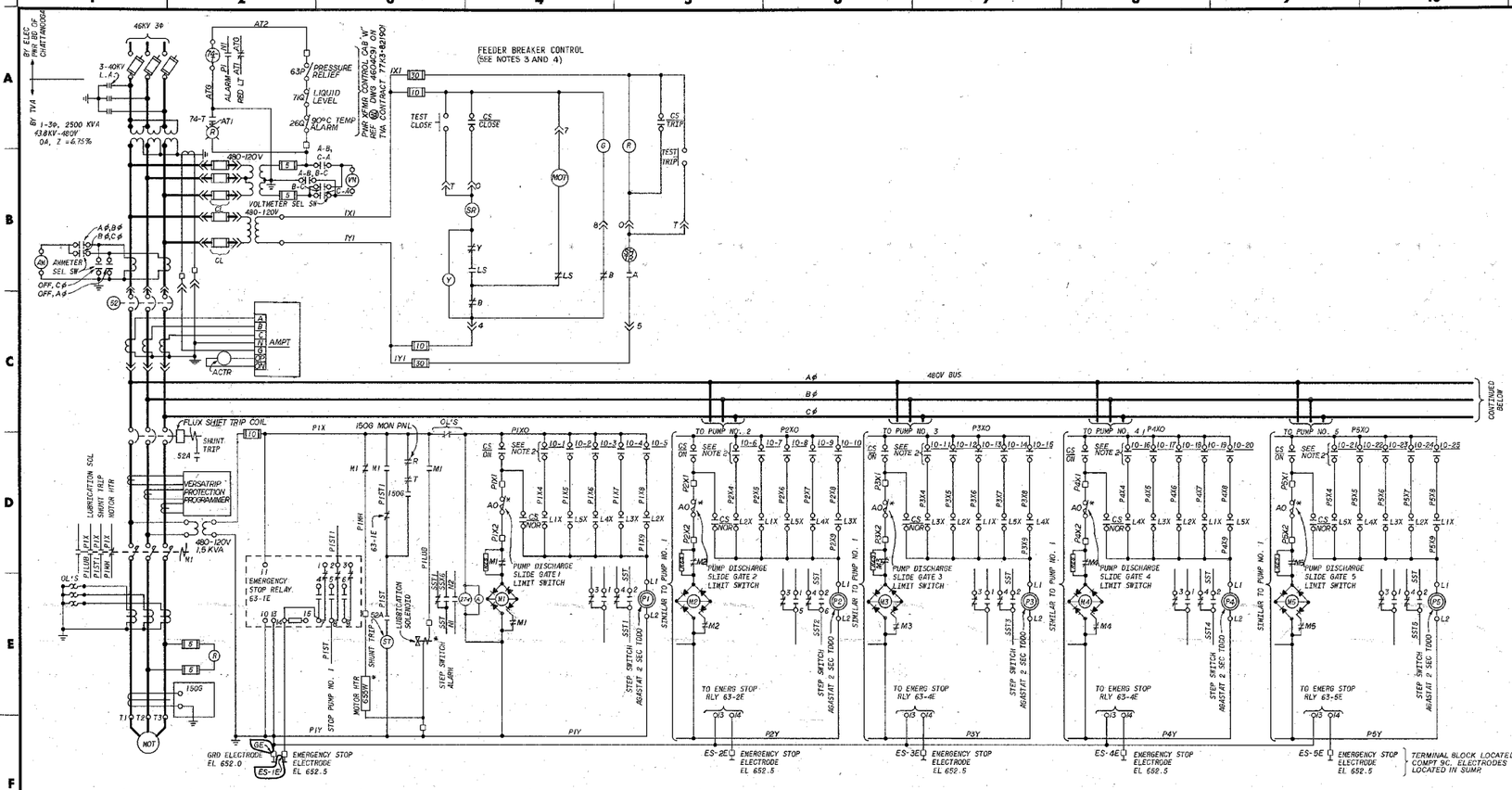
SUBMITTED	RECOMMENDED	APPROVED
Robert F. Hewett	R.H. Henderson	John E. Holladay

KNOXVILLE 8-18-76 | 81 | E | 105-19E500 R2

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 11/15 R2

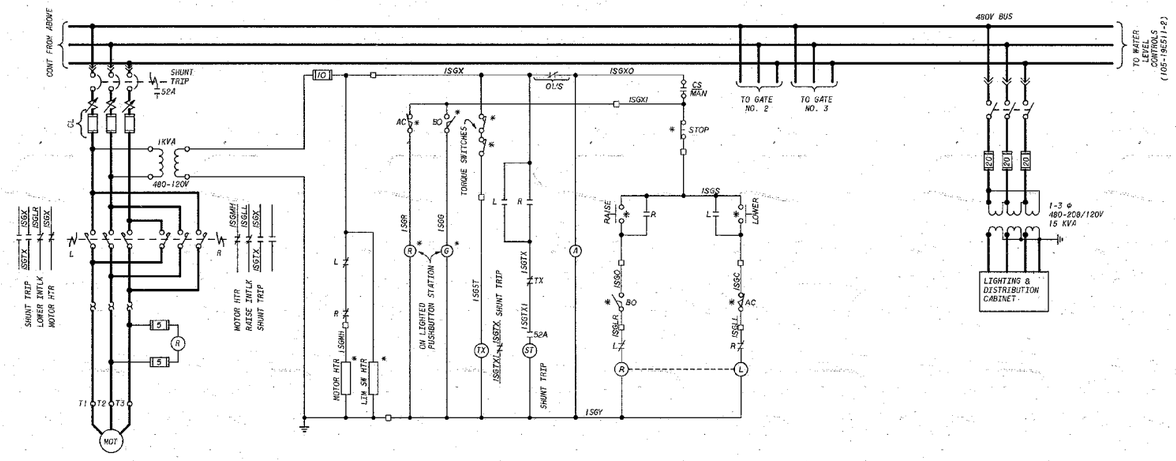
PRINT M 3 2 3
SIZE F
BR ON PROJ MF EE CE AD CO ED MO OP OW RL PA
PRINTS RECD-R.2

REPRODUCTIVE SERVICES KNOXVILLE



NOTES

1. ASTERISKS (*) INDICATE CONTROL EQUIPMENT LOCATED REMOTE FROM THE MOTOR CONTROL CENTER. RECTANGULAR SYMBOLS (□) INDICATE WIRING THAT THE MOTOR CONTROL CENTER VENDOR IS TO MAKE AVAILABLE AT TERMINAL BLOCKS IN THE RESPECTIVE COMPARTMENTS (UNLESS OTHERWISE NOTED) FOR TVA CABLES.
2. THE CONTACTS OF SEQUENCE STEPPING SWITCH ARE LABELLED 10-1, 10-2 ETC. FOR CONTACT DIAGRAM OF SEQUENCE STEPPING SWITCH SEE DETAIL A ON DWG 105-19E511-2.
3. "O" INDICATES CONTACT MADE ONLY IN THE "OPERATING" POSITION OF THE BREAKER.
4. "T" INDICATES CONTACT MADE ONLY IN THE "TEST" POSITION OF THE BREAKER.
5. FOR FURTHER DETAILS AND AS PURCHASED STATUS, SEE CONTROL POWER SYSTEMS INC. DRAWING R-51999, TVA CONTRACT 77K3-82190.



GATE LIMIT SWITCH POSITION DESIGNATION

AO - CLOSED ONLY WHEN GATE IS FULLY OPEN
BC - CLOSED ONLY WHEN GATE IS FULLY CLOSED
AC - OPEN ONLY WHEN GATE IS FULLY CLOSED
BO - OPEN ONLY WHEN GATE IS FULLY OPEN

(LIMIT SWITCHES SHOWN IN GATE FULLY OPEN POSITION)

REFERENCE DWGS:
105-19E500....SINGLE LINE

COMPANION DWGS:
105-19E511-2....PUMPING STA NO. 1 SCHEMATIC SH 1

MINOR CHANGES

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUPR	PSTN	APPR
		7-12-79		D.R. TABLER							
				T.D.E. II ANKRAM							
				T.E. LEWIS							
				J.W. ADAMS							

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 1

WIRING DIAGRAMS
A-C AUXILIARY POWER
SCHEMATIC DIAGRAMS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

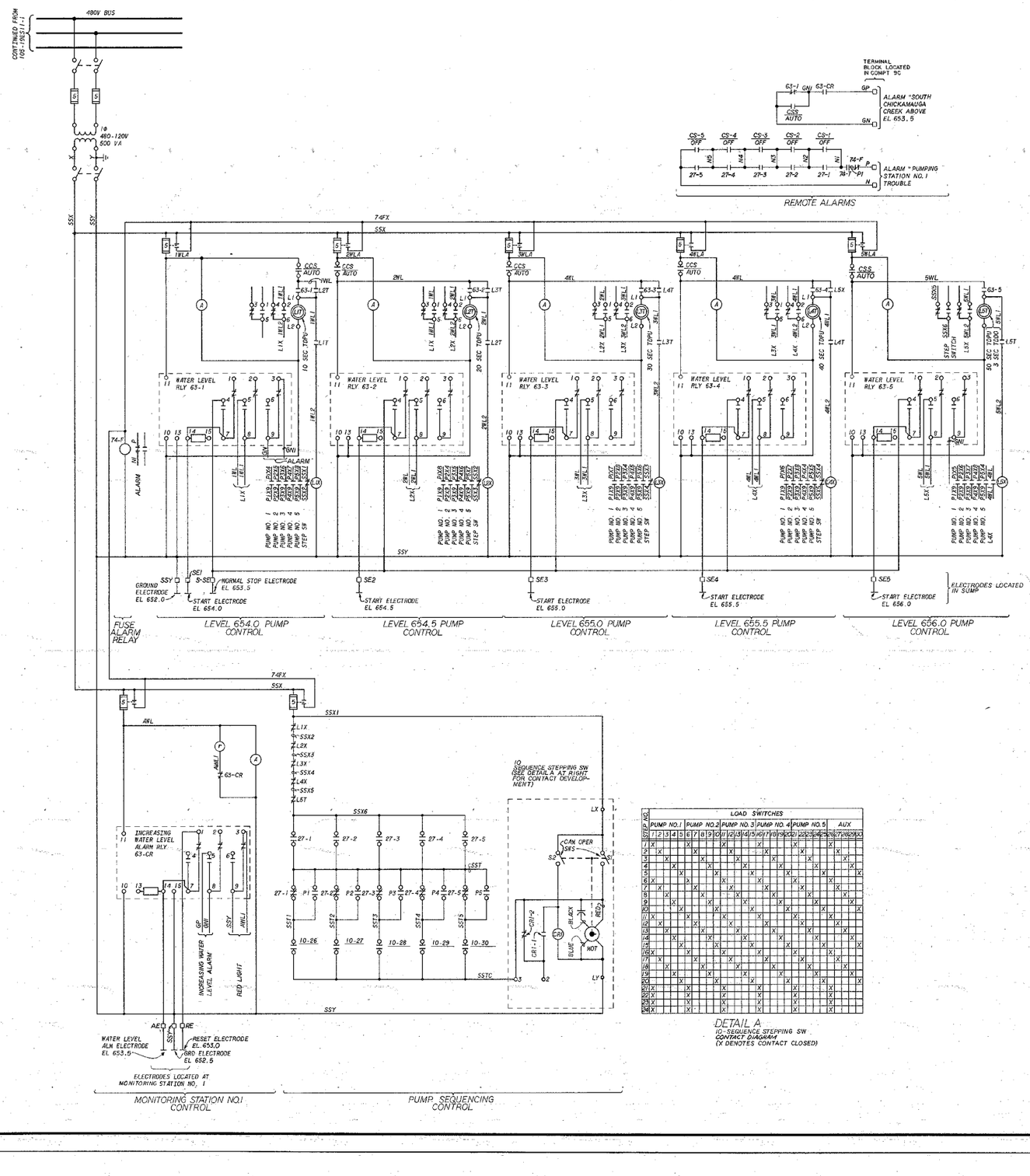
SUBMITTED	RECOMMENDED	APPROVED
Robert J. Hewitt	K. A. Henderson	John E. Wallsley
KNOXVILLE 1-31-77	81 E	105-19E511-1 R1

RECORD DRAWING AS CONSTRUCTED
Fred Van Mate 12/83

INSPECTED AND APPROVED FOR ISSUE
G. L. Bilkhovan Jr.

PRINT H 3 1
SIZE F
SR OR PROJ MC EE CC AD CO CS NO BF SW BL PA
PRINTS REQD-R 1

NOTES:
1. FOR GENERAL NOTES SEE DWG 105-19E501-1
2. FOR FURTHER DETAILS AND AS PURCHASED STATUS, SEE CONTROL POWER SYSTEMS INC. DRAWING R-41600, TVA CONTRACT 77K3-821901.



REFERENCE DWGS:
105-19E500 ---SINGLE LINE

COMPANION DWGS
105-19E511-1 --- PUMPING STA. NO.1, SCHEMATIC SH. 1

REV NO.	ECN NO.	DATE	OSGR	OSRN	CIVIL	RSPV	ENGR	INSP	SUBM	MECH	APPR
1	----	7-10-79	WE	JT	JT						

MINOR CHANGES

DSGN D.R. TABLER
DRWN J.B. JAMES, W.S. SHARPE
CHKD J.F. LEECH
SUPV J.L. REECE

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 1

WIRING DIAGRAMS
A-C AUXILIARY POWER
SCHEMATIC DIAGRAMS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert F. Smith	R. H. Henderson	John E. McKelvey

INSPECTED AND APPROVED FOR ISSUE
G. L. Buchanan
KNOXVILLE 1-31-77

BI | E | 105-19E511-2 R1

RECORD DRAWING AS CONSTRUCTED
Ronald Von Mohr 4-6-81

PRINT H 3 1
SIZE F
DR OR PROJ WE EE OE AE CO EO MD EF SM EL PA
PRINTS RECD-R_E_

NOTES:

1. ASTERISKS (*) INDICATE CONTROL EQUIPMENT LOCATED REMOTE FROM THE MOTOR CONTROL CENTER, RECTANGULAR SYMBOLS (□) INDICATE WIRING THAT THE MOTOR CONTROL CENTER VENDOR IS TO MAKE AVAILABLE AT TERMINAL BLOCKS IN THE RESPECTIVE COMPARTMENT (UNLESS OTHERWISE NOTED) FOR TVA CABLES.
2. THE CONTACTS OF SEQUENCE STEPPING SWITCH ARE LABELLED 10-1, 10-2, ETC. FOR CONTACT DIAGRAM OF SEQUENCE STEPPING SWITCH SEE DETAIL A.
3. FOR FURTHER DETAILS AND AS PURCHASED STATUS, SEE CONTROL POWER SYSTEMS INC. DRAWING R-41604, TVA CONTRACT 77K3-82190.

STEP NO.	LOAD SWITCH											
	PUMP NO.1			PUMP NO.2			PUMP NO.3			AUX		
	1	2	3	4	5	6	7	8	9	10	11	12
1	X			X			X					
2		X			X			X				
3			X			X			X			
4	X			X			X					
5		X			X			X				
6			X			X			X			
7	X			X			X					
8		X			X			X				
9			X			X			X			
10	X			X			X					
11		X			X			X				
12			X			X			X			
13	X			X			X					
14		X			X			X				
15			X			X			X			
16	X			X			X					
17		X			X			X				
18			X			X			X			
19	X			X			X					
20		X			X			X				
21			X			X			X			
22	X			X			X					
23		X			X			X				
24			X			X			X			

DETAIL A
10-SEQUENCE STEPPING SW
CONTACT DIAGRAM
(X DENOTES CONTACT CLOSED)

PUMP NO. 1
(PUMPS 2 & 3 ARE SIMILAB TO PUMP 1 EXCEPT WIRE PREFIX)

PUMP NO. 2

PUMP NO. 3

REMOTE ALARMS

PUMP SEQUENCING CONTROL

MONITORING STATION NO.2 CONTROL

LEVEL 670.0 PUMP CONTROL

LEVEL 669.5 PUMP CONTROL

FUSE ALARM RELAY

LEVEL 669.0 PUMP CONTROL

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		7-10-78	ST	SF	TSC	Kmd					

MINOR CHANGES

DSGN D.R. TABLER
DRWN R.E. SPENCER/T.E. BUNDAHL
CHKD T.E. BUNDAHL
SUPV R.L. DEEDS

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO.2

WIRING DIAGRAMS
A-C AUXILIARY POWER
SCHEMATIC DIAGRAMS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert F. Hewitt	T.H. Herndon	John E. Gilleland

INSPECTED AND APPROVED FOR ISSUE
G.L. Buckhannon

KNOXVILLE 1-31-77 | 81 E | 105-19E512 R1

RECORD DRAWING AS CONSTRUCTED
Issued Nov Mate 2/1/83 KJ

PRINT H
SIZE F

BR OR PRO WE LL OL AO OD ED MO BF DW BL PA
PRINTS REQD-2

105-19E513 | E | 18

1 2 3 4 5 6 7 8 9 10 11 12

A B C D E F G H J K

12KV 3Ø

TRANSFORMER SWGR BY ELECTRIC POWER BOARD OF CHATTANOOGA

3-10, 12KV-277V 37.5KVA EACH 2.5% IMPEDANCE

A-B, B-C, C-A

480-120V

CT, CØ, BØ

AMMETER SEL SW

OFF, AØ

OFF, CØ

VOLTMETER SELECTOR SW

400 LS

480-120V 1KVA

SHUNT TRIP 52A/T

MI

LUBRICATION SOL. P1LUB, P1ST1, P1X1
SHUNT TRIP P1ST1, P1X1
MOTOR HTR P1HH

150 G

T1 T2 T2

MOT

PUMP NO.1

P1X

P1XO

P1X3

P1X1

P1X4

P1X5

EMERGENCY STOP RELAY 63-1E

STOP PUMP NO.1 P1ST1

63-1S 150G

P1ST

52A

SHUNT TRIP

MOTOR HTR P1HH

LUBRICATION SOLENOID P1LUB

ALARM

OLS

CS-1 ON

CS-1 NOR

63-1

63-2

RA

RB

CR

CS-2 OFF

PUMP NO. 1 TIMER TI RELAY SEAL-IN

PUMP ALTERNATOR

PUMP NO. 2

10 SEC TDPU

T1

P2X3

P2X4

P2X5

CS-2 NOR

CS-2 ON

CS-1 OFF

LATE BREAK

SEAL-IN RELAY CR

PUMP NO. 2 PUMP NO. 1 SEAL IN

P2XO

P2X1

P2X6

P2X5

P2X4

P2X3

P2ST1

P2LUB

P2HH

P2Y

STOP PUMP NO. 2

EMERGENCY STOP RELAY 63-2E

P2ST

52A SHUNT TRIP

480-120V 1KVA

250Q

MOTOR HTR P2HH
SHUNT TRIP P2ST1
LUBRICATION SOL P2LUB

10, 490-120V 500VA

1-3Ø 480-208/120V 15KVA

LIGHTING & DISTRIBUTION CABINET

PUMP NO.2

ES-1E EMERGENCY STOP ELECTRODE EL 667.0

GRD ELECTRODE EL 666.5

ES-2E EMERGENCY STOP ELECTRODE EL 667.0

CS-2 OFF | CS-1 OFF

TERMINAL BLOCK LOCATED IN COMPT 3C

27-2 27-1 27-C 74-F

ALARM "PUMPING STATION NO.3 TROUBLE"

REMOTE ALARM

AØ BØ CØ

NOTES:

1. ASTERISKS (*) INDICATE CONTROL EQUIPMENT LOCATED REMOTE FROM FROM THE MOTOR CONTROL CENTER. RECTANGULAR SYMBOLS (□) INDICATE WIRING THAT THE MOTOR CONTROL CENTER VENDOR IS TO MAKE AVAILABLE AT TERMINAL BLOCKS IN THE RESPECTIVE COMPARTMENTS (UNLESS OTHERWISE NOTED) FOR TVA CABLES.
2. FOR FURTHER DETAILS AND AS PURCHASED STATUS, SEE CONTROL POWER SYSTEMS INC. DRAWING R-41605, TVA CONTRACT 77K3-821901.

74FX

LRX

2WL

CCS AUTO

2WLA

ALARM

27-C

WATER LEVEL RLY 63-2

P1X3 P1X5 P2X3 P2X5

PUMP NO. 1 PUMP NO. 2

74F

IWL

IWLA

WATER LEVEL RLY 63-1

P1X4 P1X3 P2X4 P2X3

LRY

SE-2

GRD ELECTRODE EL 666.5

START ELECTRODE EL 669.5

SE-1

5-SE

START ELECTRODE EL 669.0

NORMAL STOP ELECTRODE EL 668.0

ELECTRODES LOCATED IN SUMP

POWER SUPPLY TO REMOTELY MOUNTED XMITTERS. WIRES AVAILABLE IN COMP. 3C

LEVEL 669.5 PUMP CONTROL

FUSE ALARM RELAY

LEVEL 669.0 PUMP CONTROL

REFERENCE DWGS: 105-19E500 SINGLE LINE

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	ESSP	DSGN	TECH	APPR
1	—	7-10-78	TGW	JC	BB	JCT	and	MW	WH	gsh	

MINOR REVISIONS

DSGN D. R. TABLER
DRWN Richardson
CHKD [illegible]
SUPV D.C. Rollins

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO.3

WIRING DIAGRAMS
A-C AUXILIARY POWER
SCHEMATIC DIAGRAMS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Heuett	K.H. Herndon	John E. McKelvey

INSPECTED AND APPROVED FOR ISSUE
G. L. Buchanan

KNOXVILLE 1-31-77

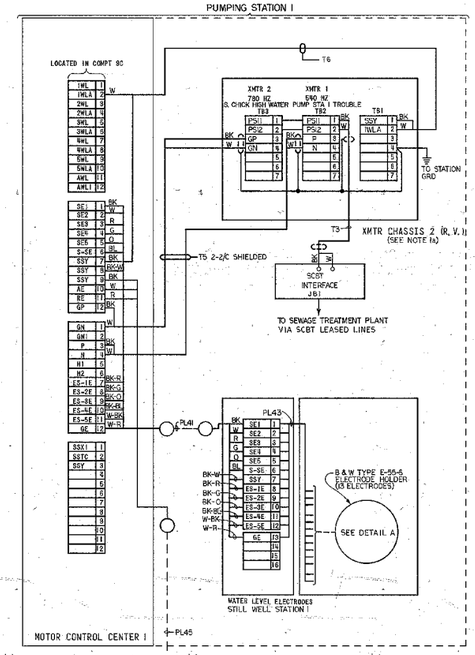
81 E 105-19E513 R1

RECORD DRAWING AS CONSTRUCTED
Donald Lee Mills 11/1/82 RJ

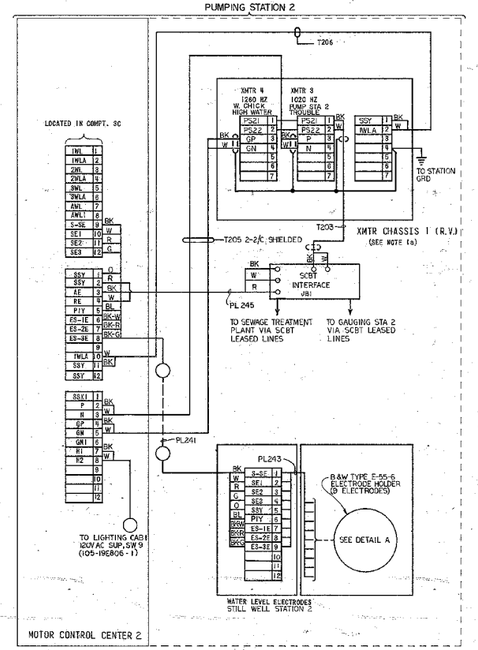
PRINT H 3 1
SIZE F
BR GR PROJ ME EE CE AD CO LE MO BF SW WL PA
PRINTS RECD-9 1

PHOTOGRAPHIC COPY
SYSTEMS 7/20/82

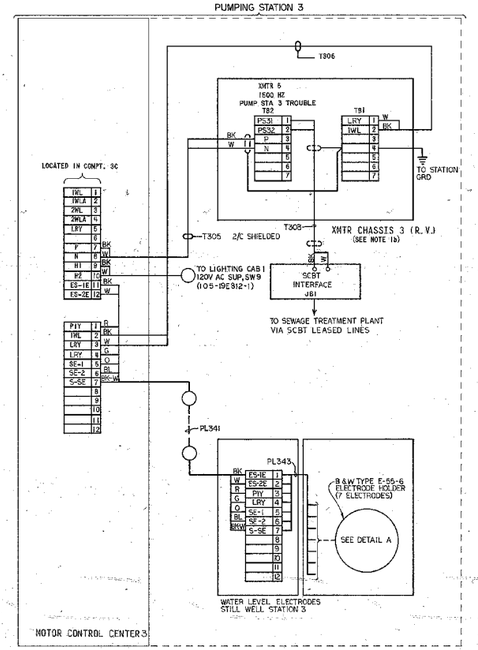
PUMPING STATION 1



PUMPING STATION 2



PUMPING STATION 3



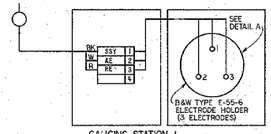
NOTES:
1. FOR XMTR AND PWR SUPPLY INTERNALS SEE TVA CONTRACT NO. 77E15-822428-1.
   a) DWG NO. CB-21423-1
   b) DWG NO. CB-21424-1
2. FOR REC. AND PWR SUPPLY INTERNALS SEE TVA CONTRACT NO. 77E15-822428-1. DWG NO. CB-21425-1.
3. FIELD TO LOCATE AND MOUNT POWER SUPPLY, SWITCHES, AND ALARM BELL PER TVA DWG 105-19E814.
4. FOR MCC 12 & 3 DETAILS, SEE TVA CONTRACT NO. 77K3-821901, DWGS R-41658, R-41666 & R-41678.
5. FOR ANNUNCIATOR PANEL DETAILS, SEE TVA CONTRACT NO. 77K15-822428-2. FIELD TO REPLACE EXISTING NAMEPLATE ENGRAVING WITH SPARE NAMEPLATES ENGRAVED AS SHOWN.
6. SCBT IS SOUTH CENTRAL BELL TELEPHONE.

REFERENCE DWGS:
105-19E511-1,2
105-19E512
105-19E513
101-19E220

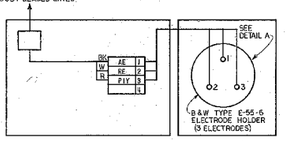
ELECTRODE NO.	PUMP STA 1 WIRE NO.	PUMP STA 1 ELEC ELEV	PUMP STA 2 WIRE NO.	PUMP STA 2 ELEC ELEV	PUMP STA 3 WIRE NO.	PUMP STA 3 ELEC ELEV	GAUGE STA 1 WIRE NO.	GAUGE STA 1 ELEC ELEV	GAUGE STA 2 WIRE NO.	GAUGE STA 2 ELEC ELEV
1	SE1	664	S-SE	668	ES-1E	667	SSY	662.5*	AE	667.5
2	SE2	664.5	SE1	669	ES-2E	667	AE	663.5	RE	667.0
3	SE3	655	SE2	669.5	PIY	666.5*	RE	663.0	SSY	666.5*
4	SE4	666.5	SE3	670	LRY	666.5*				
5	SE5	656	SSY	660.0*	SE-1	669				
6	S-SE	663.5	PIY	666.0*	SE-2	669.5				
7	SSY	662	ES-1E	667	S-SE	668				
8	ES-1E	662.5	ES-2E	667						
9	ES-2E	662.5	ES-3E	667						
10	ES-3E	662.5								
11	ES-4E	662.5								
12	ES-5E	662.5								
13	GE	662*								

* GROUND ELECTRODE

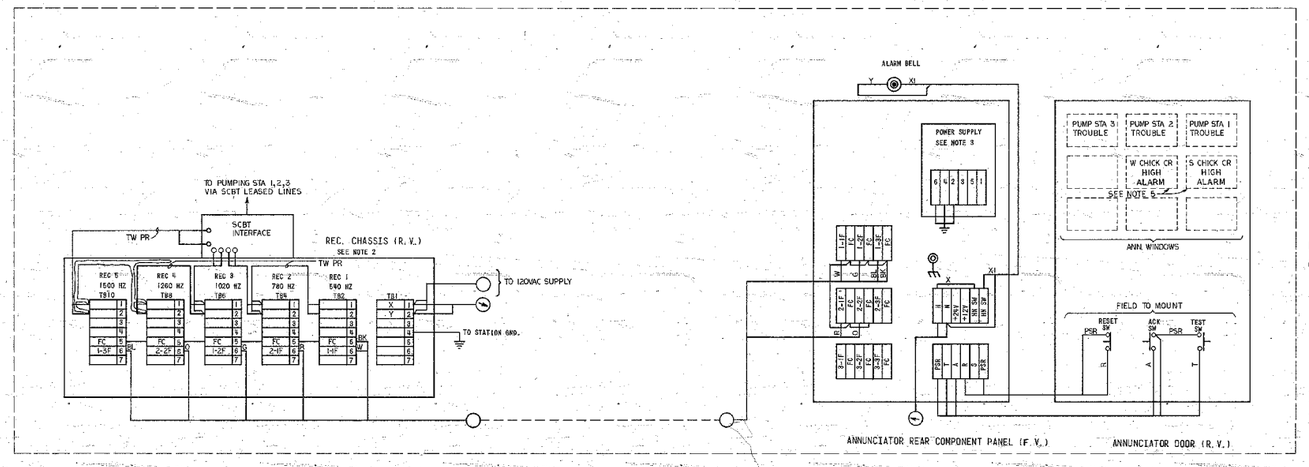
DETAIL A



GAUGING STATION 1
FOR LOCATION OF WATER LEVEL ELECTRODES SEE 101-19E220



GAUGING STATION 2
FOR LOCATION OF WATER LEVEL ELECTRODES SEE 101-19E220



LOCATED AT SEWAGE TREATMENT PLANT (SEE NOTE 3)

COMPANION DWGS: 105-19E520-2

INSPECTED AND APPROVED FOR ISSUE

REV BY	ECN NO	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUPR	PROJ MGR	APPR
2	———	1-25-79	EDJ	JT	CH	[illegible]	[illegible]				
1	———	12-12-78	JT	[illegible]	[illegible]	[illegible]	[illegible]				

FLD CHG PER MEMO MMM TO JEH 4-3-81, TECHNICAL REPORT CS-1259.

MINOR REVISION

DSGN D. REINS
DRWN J. BINGHAM
CHKD [illegible]
SUPV R.E. DISTRICT

SCALE EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
PUMP STA 1,2,3 & SEWAGE TREATMENT PLANT

WIRING DIAGRAMS CONTROL AND ALARM EQPT CONNECTION DIAGRAM

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
[signature]	[signature]	[signature]

KNOXVILLE | 1-25-79 | 81 | E | 105-19E520-1 A2

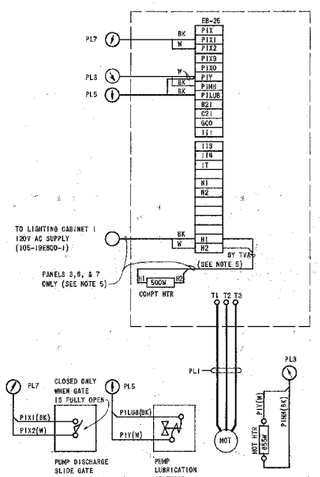
RECORD DRAWING AS CONSTRUCTED

PRINT H 2 1
SIZE V

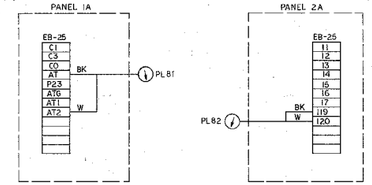
DR CR PROJ MR EE CE AD CD EO MD MMP SW BL PA
PRINTS REQD-N 2

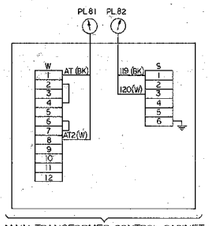
REPRODUCTION SERVICES KNOXVILLE

MOTOR CONTROL CENTER NO. 1
PANEL 3 (SHOWN)



MOTOR CONTROL CENTER NO. 1





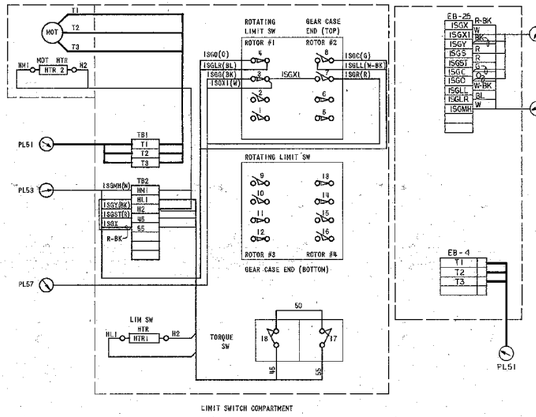
MAIN TRANSFORMER CONTROL CABINET W

PUMP NO.	MCC PANEL NO.	MCC COMPT NO.	CABLE NUMBERS MOTOR	MOTOR HTR	LUB SOL	LIMIT SW	WIRE NO. PREFIX
1	3		PL1	PL3 ,	PL5	PL7	P1
2	4		PL9	PL11	PL13	PL15	P2
3	5		PL17	PL19	PL21	PL23	P3
4	6		PL25	PL27	PL29	PL31	P4
5	7		PL33	PL35	PL37	PL39	P5

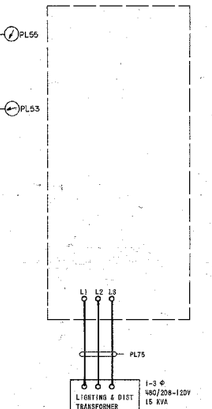
TABLE 1A

TYPICAL PUMP
CABLE AND WIRE NUMBERS ARE SHOWN FOR PUMP NO. 1 ONLY-
OTHERS SIMILAR (SEE TABLE 1A ABOVE)

MOTOR CONTROL CENTER NO.1
PANEL 8, COMPT 8A (SHOWN)

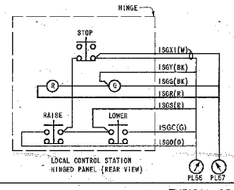


MOTOR CONTROL CENTER NO. 1
PANEL 9, COMPT 9A



GATE NO.	MCC PANEL NO.	MCC COMPT NO.	CABLE NUMBERS FROM: MCC TO: LIMIT SW	FROM: MCC TO: CONT STA	FROM LIMIT SW TO CONT STA	WIRE NO. PREFIX
1	8	8A	PL51 , PL53	PL55	PL57	15
2	8	8B	PL59, PL61	PL63	PL65	25
3	8	8C	PL67, PL69	PL71	PL73	35

TABLE 1B



TYPICAL GRAVITY FLOW SLUICE GATE
CABLE AND WIRE NUMBERS ARE SHOWN FOR GATE NO.1
ONLY OTHERS SIMILAR (SEE TABLE 1B ABOVE)

LIGHTING & DISTRIBUTION

PUMPING STATION NO.1

NOTES:

1. FOR MANUFACTURER DETAILS OF MOTOR CONTROL CENTERS SEE DRAWINGS ON TVA CONTRACT 77K3-821801.
2. FOR MANUFACTURER DETAILS OF THE SLUICE GATE LIMIT SWITCH COMPARTMENT SEE TVA CONTRACT 77K73-821909, LIMITORQUE CORP. DRAWING 15-477-65A2-8.
3. FOR MANUFACTURER DETAILS OF LIGHTING TRANSFORMERS & DISTRIBUTION CABINETS SEE DRAWINGS ON TVA CONTRACT 77K11-821810.
4. FOR MANUFACTURER DETAILS OF PUMPS SEE DRAWINGS ON TVA CONTRACT 76K31-821060.
5. FIELD TO MODIFY EXISTING MOTOR CONTROL CENTER PANEL STRIP HEATER CIRCUIT FOR PUMPING STATION NO. 1. HEATERS ON PANELS 1,2, & 3 WILL BE PARALLELED ON ONE SUPPLY,HEATERS ON PANELS 4,5, & 6 WILL BE PARALLELED ON SECOND SUPPLY,AND HEATERS ON PANELS 7,8, & 9 WILL BE PARALLELED ON THIRD SUPPLY.
6. FOR MANUFACTURERS DETAILS OF THE MAIN TRANSFORMER,SEE TVA CONTRACT 77K3-821901,WESTINGHOUSE DWG 4604C91.

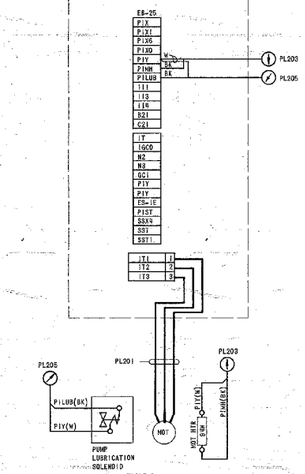
REFERENCE DWGS:
105-19E511-1,-2
105-19E512
105-19E513

LIMIT SWITCH CONTACT DEVELOPMENT

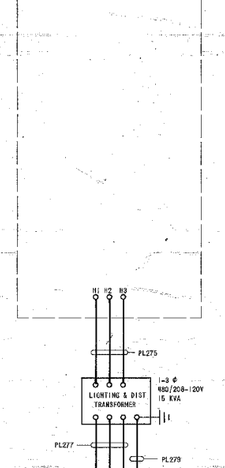
SWITCH	CONTACT	GATE POSITION FULLY RAISED	A	B	FULLY LOWERED	FUNCTION
1	1					SPARE
	2					SPARE
	3					IND LIGHT
	4					RAISE LIMIT
2	5					SPARE
	6					SPARE
	7					IND LIGHT
	8					LOWER LIMIT
3	9					SPARE
	10					SPARE
	11					SPARE
	12					SPARE
4	13					SPARE
	14					SPARE
	15					SPARE
	16					SPARE

SWITCH DEVELOPMENT

MOTOR CONTROL CENTER NO. 2
PANEL 2, COMPT 2A (SHOWN)



MOTOR CONTROL CENTER NO. 2
PANEL 3, COMPT 3A



PUMP NO.	MCC PANEL NO.	MCC COMPT NO.	CABLE NUMBERS MOTOR	MOTOR HTR	LUB SOL	WIRE NO. PREFIX
1	2	2A	PL201	PL203	PL205	P1
2	2	2C	PL209	PL211	PL213	P2
3	2	2E	PL217	PL219	PL221	P3

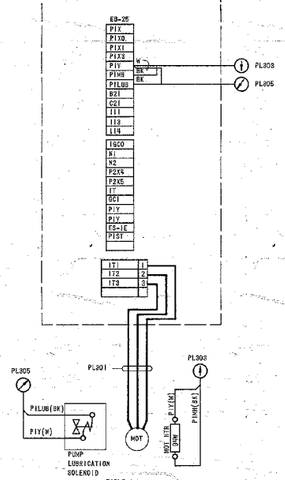
TABLE 2

TYPICAL PUMP
CABLE AND WIRE NUMBERS ARE SHOWN FOR PUMP NO. 1 ONLY-
OTHERS SIMILAR (SEE TABLE 2 ABOVE)

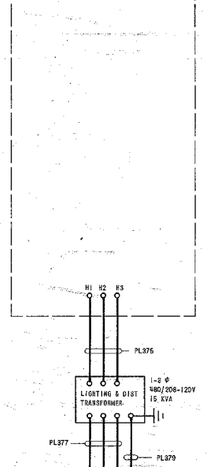
LIGHTING & DISTRIBUTION

PUMPING STATION NO. 2

MOTOR CONTROL CENTER NO. 3
PANEL 2, COMPT 2A (SHOWN)



MOTOR CONTROL CENTER NO. 3
PANEL 3, COMPT 3A



PUMP NO.	MCC PANEL NO.	MCC COMPT NO.	CABLE NUMBERS MOTOR	MOTOR HTR	LUB SOL.	WIRE NO. PREFIX
1	2	2A	PL301	PL303	PL305	P1
2	2	2C	PL309	PL311	PL313	P2

TABLE 3

TYPICAL PUMP
CABLE AND WIRE NUMBERS ARE SHOWN FOR PUMP NO. 1 ONLY-
OTHERS SIMILAR (SEE TABLE 3 ABOVE)

LIGHTING & DISTRIBUTION

PUMPING STATION NO. 3

COMPANION DWGS:
105-19E520-1

MINOR REVISION

REV SEC	ECN NO	DATE	DESN	DRAW	CHKD	TSUP'V	DESIGN	INSP	SUPER	RECM	ENGR

DESN D. HELMS
DRAWN
CHKD D.T. DOYLE
SUP'V E.K. WRIGHT
INSP
ENGINEER

SCALE EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
PUMPING STATIONS NO.1,2,&3

WIRING DIAGRAMS
A-C AUXILIARY POWER
CONNECTION DIAGRAM

SOUTH CHICAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

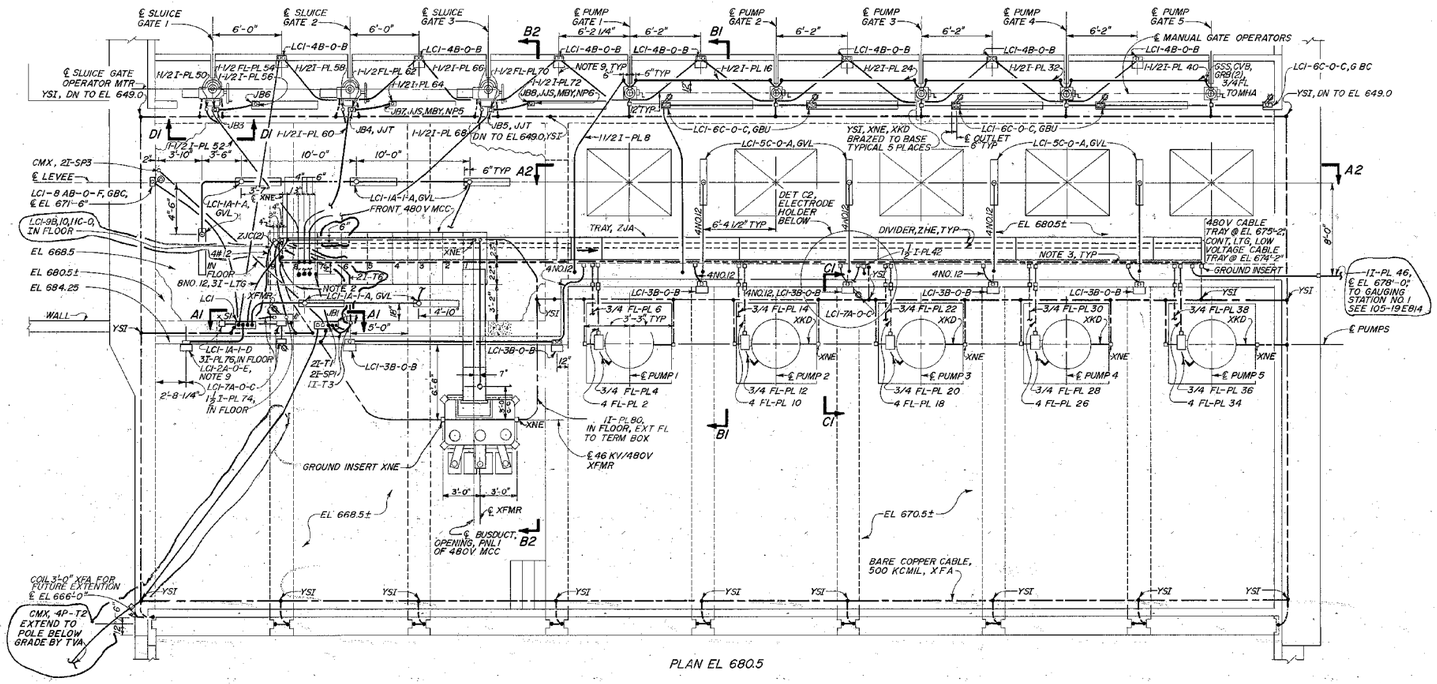
SUBMITTED	RECOMMENDED	APPROVED
Robert H. Hewitt	K. H. Herndon	John E. Mackey
KNOXVILLE 1-25-73	81 E 105-19E520-2 R1	

INSPECTED AND APPROVED FOR ISSUE
S.M. Beck

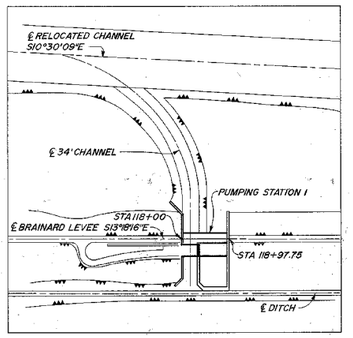
WELDING DRAWING AS CONSTRUCTED
Frank Van Meter 4/1/83 R1

PRINT H F N 1
SIZE F
DR OR PROJ WE EE CE AD CD ED MP MPFSW SL PA
UNITS ASCO-2

REPRODUCTION SERVICES
KNOXVILLE



PLAN EL 680.5



KEY PLAN
1"=100'

NOTES:

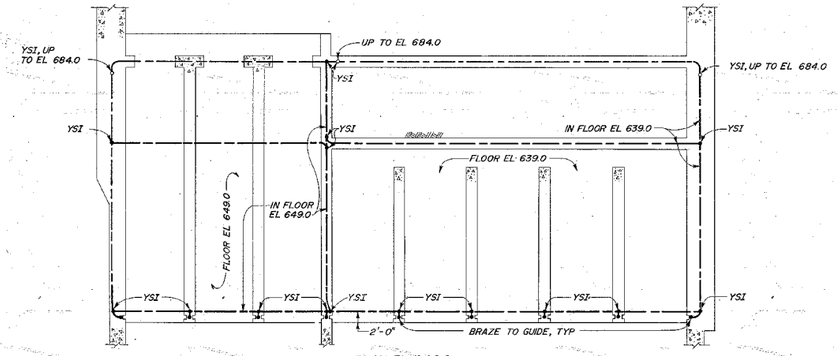
1. CONDUITS SHOWN EMBEDDED IN PLAN, ARE IN THE EL 680.5 SLAB UNLESS OTHERWISE NOTED.
2. EXTEND GROUND CABLE XFA, TO LOW VOLTAGE CABLE TRAY AND USE YCC TO CONNECT TO XNE IN BASE OF BAY 8.
3. US YKP TO FASTEN CABLE TO TOP TRAY SUPPORTS.
4. USE XFA, YCC(2) TO CONNECT TO GROUND BUS IN BOARD.
5. ALL LIGHTING CIRCUITS ARE ½" IRON CONDUIT WITH 2C NO 12 AWG CABLE UNLESS OTHERWISE NOTED.
6. ALL GROUND CABLE IS 500 KCMIL XFA, UNLESS OTHERWISE NOTED.
7. LIGHTING BRANCH CIRCUIT CONDUCTORS ARE COLOR CODED; BLACK-PHASE A, RED-PHASE B, BLUE-PHASE C. LIGHTING CABINET IS BIASED PHASE A, PHASE B & PHASE C FROM LEFT TO RIGHT WHEN FACING FRONT OF CABINET.
8. CABLE TRAY SUPPORTS SHALL BE SUPPLIED AND LOCATED BY FIELD. SUPPORTS ARE TO BE UNISTRUT WITH ½" DIA THREADED RODS AND SPRING NUTS CONSTRUCTED IN A "TRAPEZE" OR "H" PATTERN, CINCH-ANCHORED TO THE CEILING WITH MIN ½" DIA CINCH-ANCHORS AND A MAXIMUM OF 8'-0" BETWEEN SUPPORTS. USE HOLDOWN CLAMP ZHK.
9. MOUNT OUTLET BOX, GVL, FOR ALL EXTERIOR LIGHTS ℄ 10" BELOW TOP OF WALL.
10. THE CIRCUIT INDEX CARD LOCATED ON LCI SHALL BE LABELED PER DETAIL E1.
11. INSTALLATION FOR PUMP GATE LIMIT SWITCHES 2 THRU 4 IS SIMILAR TO PUMP GATE LIMIT SWITCH 1 AS SHOWN IN BI-BI. SEE CONDUIT & CABLE SCHEDULES.
12. FIELD TO GROUND ALL STRUCTURAL STEEL, EQUIPMENT FRAMES, AND MISC STEEL.

REFERENCE DRAWINGS:

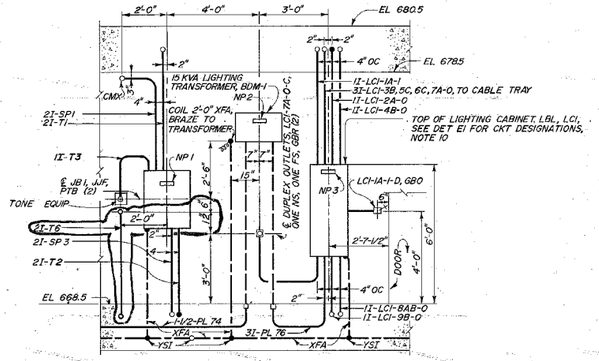
105-19C800 — CONDUIT & CABLE SCHEDULE
105-19BM800 — BILL OF MATERIAL

SYMBOLS:

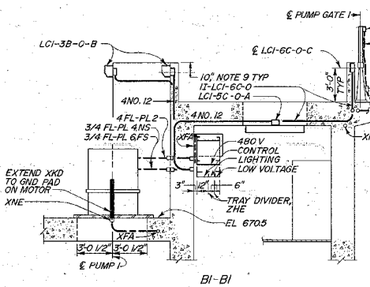
——— EXPOSED CONDUIT TURNING DOWN
——— EMBEDDED CONDUIT TURNING UP
⅋ 120V AC DUPLEX OUTLET
⅋ 208V AC OUTLET
TSI SINGLE POLE SWITCH



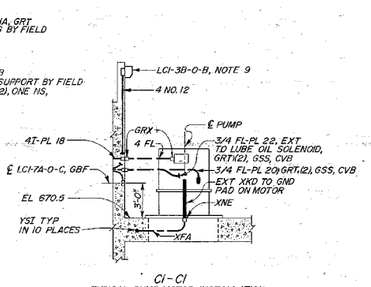
PLAN EL 649.0
1/8"=1'-0"



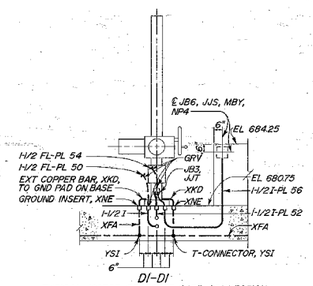
A1-A1
1/2"=1'-0"



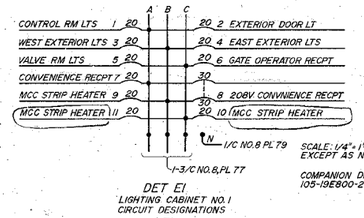
B1-B1



C1-C1
TYPICAL PUMP MOTOR INSTALLATION



D1-D1
TYPICAL MOTOR OPERATED GATE CONNECTION
3/8"=1'-0"



DET E1
LIGHTING CABINET NO. 1 CIRCUIT DESIGNATIONS
NTS

SCALE: 1/4"=1'-0" EXCEPT AS NOTED.

COMPANION DRAWING: 105-19E800-2

NO.	DATE	DSGN	DRWN	CHKD	COPY	ENGR	INSP	SUPR	TECH	APPD
3	8-5-78	JK	MTK	SK	RWS					
	MINOR REVISION									
2	1-3-77	DC	DW	RW	RWS					
	MINOR REVISION									
1	6-14-77	BCA	CTC	RW	RWS					
	MINOR REVISION									

DSGN: R.T. KING
DRWN: WILLIAM C. ALLEN
CHKD: R.T. KING
SUPR: ENGINEER
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 1

CONDUIT & GROUNDING & LIGHTING GENERAL ARRANGEMENT PLAN & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

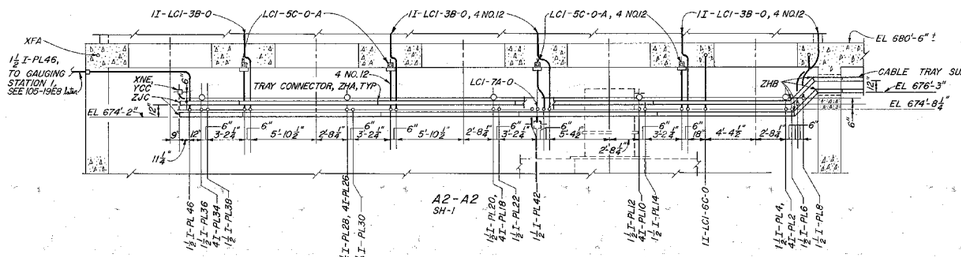
SUBMITTED	RECOMMENDED	APPROVED
W.H. Drummond	George D. Watkins	John E. Gilleland

KNOXVILLE 1-25-77 | BI | E | 105-19E800-1 | R3

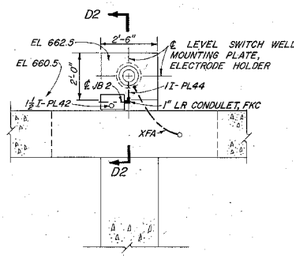
RECORD DRAWING AS CONSTRUCTED 3/24/83
FRANK VAN METER R3

INSPECTED AND APPROVED FOR ISSUE

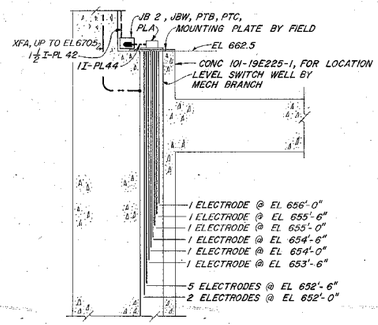
PRINT H F 7 9
SIZE F 3
SH OR PROJ WE EE CC AD CD ED WO DF SW BL PA
PRINTS PSOD-8-1



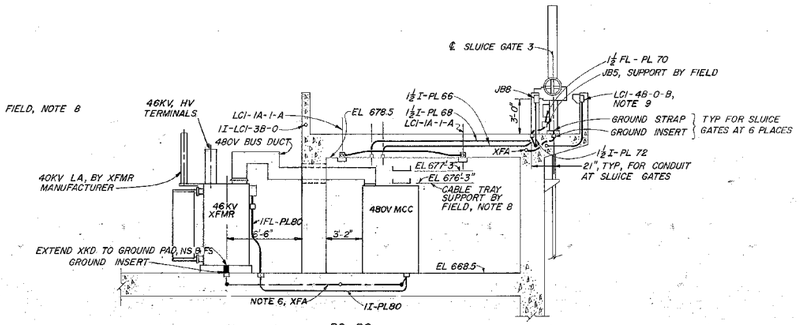
A2-A2
SH-1



DET C2
PLAN EL 662.5
SH 1, B6
½"=1'-0"



D2-D2
½"=1'-0"



B2-B2
SH-1, B4

FOR NOTES AND REFERENCES SEE 105-19E800-1.

NAME PLATE INDEX

NP NO	TYPE	NOTES	FIRST LINE	SECOND LINE	THIRD LINE
1	A	1	TEL TERM CAB.		JB1
2	A	1			
3	A	1	LIGHTING CABINET	LCI	36-4W, 120-208V
4	A	1	SLUICE GATE 1	LOCAL CONT STA	JB6
5	A	1	SLUICE GATE 2	LOCAL CONT STA	JB7
6	A	1	SLUICE GATE 3	LOCAL CONT STA	JB8

* SEE TVA DWG NO. GE 4 30A 360

JUNCTION BOX INDEX

NO.	MK	SIZE(INCHES) H	W	D	LOCATION	USAGE	NP NO.
1	JJF	30	24	8	SECT A1-A1	TELEPHONE TERM CAB.	1
2	JBW	12	8	6	SECT D2-D2	TERM BOX, PL 41, PL 43	—
3	JJT	6	6	6	SECT D1-D1	PULL BOX	—
4	JJT	6	6	6	PLAN EL 680'3	PULL BOX	—
5	JJT	6	6	6	PLAN EL 680'3	PULL BOX	—
6	WJS	6	6	6	SECT D1-D1	LOCAL CONT STA, SLUICE GATE 1	4
7	WJS	6	6	6	PLAN EL 680'3	LOCAL CONT STA, SLUICE GATE 2	5
8	WJS	6	6	6	PLAN EL 680'3	LOCAL CONT STA, SLUICE GATE 3	6

LIGHTING FIXTURE SCHEDULE

DESCRIPTION	FIXTURE TYPES / FIXTURE TOTALS MK LTR	A 8	B 13	C 8	D 1	E 1	F 1	MK. LTR TOTALS
WALL LIGHT, 100W, HIGH PRESS. SODIUM, HOLOPHANE, 486-120	LCK-1		1					13
WALL LIGHT 100W, HIGH PRESS. SODIUM WITH PHOTO CONTROL, HOLOPHANE, 487-120	LCK2					1		1
FLUORESCENT UNIT 2-40W, SURFACE MOUNTED, DAY BRITE, 48240-4	LHD	1						10
LAMP, 40W COOL WHITE, RAPID START, GE F40 CW	LPA-1	2						20
LAMP 100W, HIGH PRESS. SODIUM; MOGUL BASE, 120V, GE LU100/BU	LPP-1		1			1		14
DUPLEX RECEPTACLE, 2P-3W GROUNDING, HUBBELL 5362, FOR 120V USE	LR97			1				8
RECEPTACLE, 2P-3W GROUNDING, HUBBELL 9330, FOR 208V USE	LR96						1	1
COVER PLATE WITH SPRING DOOR COVER, FOR USE WITH LRB-8, CAST ALUMINUM, CROUSE HINDS-1030G	LR99						1	1
TUMBLER SWITCH, IP, 20A, 277V, HUBBELL 1221	LSE				1			1
SWITCH PLATE, HINGED COVER, CAST ALUMINUM, HUBBELL 7420	LVD				1			1
RECEPTACLE COVER, CAST ALUMINUM, SPRING DOORS WITH GASKET, FOR USE WITH LRB-7, HUBBELL 5206	LVO			1				8

SCALE: 1/4" = 1'-0" EXCEPT AS NOTED

COMPANION DRAWING: 105-19E800-1

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	PROP	WRKG	MECH	APPR
2	MINOR REVISION	11-3-77	DC	KW	KWS	WHS	GP	WGA			WHS
1	MINOR REVISION	6-14-77	BCA	LFK	CN	GNG	WHS	GP	WGA		WHS

DSGN R.T. KING
DRWN L.R. SPIVA
CHKD R.T. KING
SUPV F.O. HOYT
INSP
ENGINEER W.H. Norwood

CHATTANOOGA FLOOD PROTECTION PUMPING STATION NO. 1

CONDUIT & GROUNDING & LIGHTING GENERAL ARRANGEMENT PLAN & DETAILS

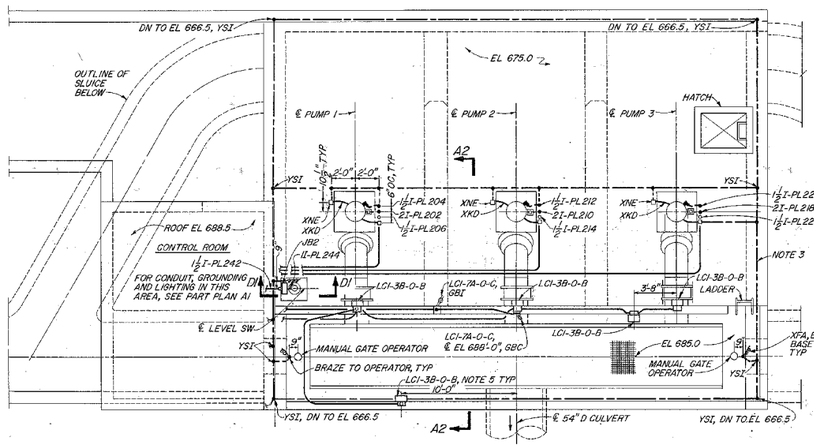
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
W.H. Norwood	George Bulloday	John E. Blakeley
KNOXVILLE 1-25-77	81 E	105-19E800-2 R2

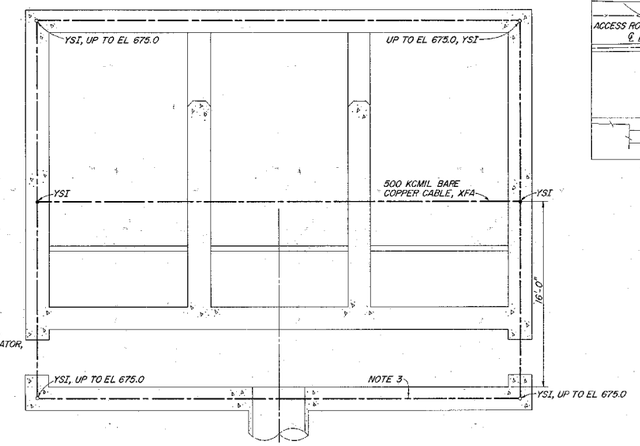
RECORD DRAWING AS CONSTRUCTED 12-83 FRANK VAN METER 82

INSPECTED AND APPROVED FOR ISSUE

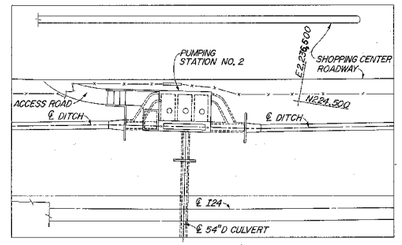
PRINT H 42
SIZE F
DR OR PROJ WE CE CE AD CO EO MO IW SW EL PA
PRINTS WE28-B.1.



PLAN EL 688.5



PLAN EL 666.5

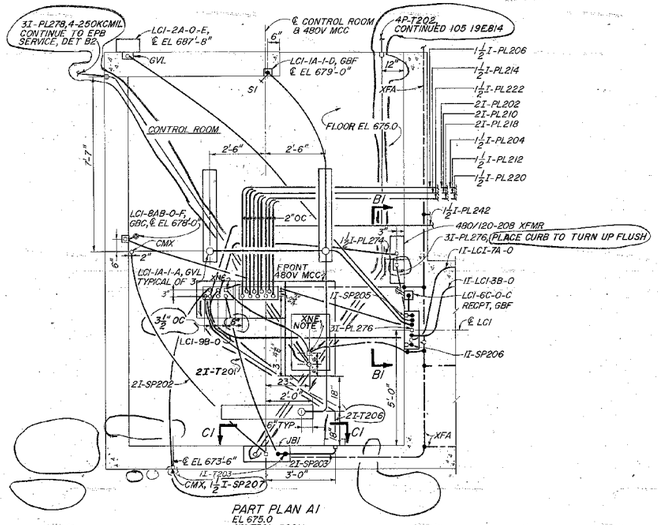


KEY PLAN
1"=40'

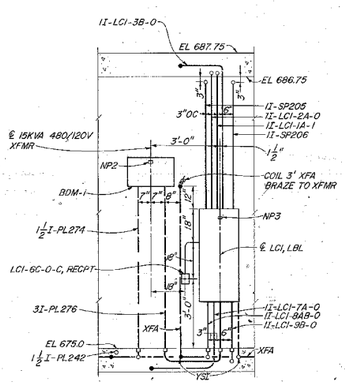
NOTES:
1. USE XFA, YCC. TO CONNECT TO GROUND BUS IN BOARD.
2. ALL LIGHTING CIRCUITS ARE ¾" IRON CONDUIT WITH #C NO.12 AWG CABLE UNLESS OTHERWISE NOTED.
3. ALL GROUND CABLE IS 500KCMIL XFA UNLESS OTHERWISE NOTED.
4. LIGHTING BRANCH CIRCUIT CONDUCTORS ARE COLOR CODED; BLACK-PHASE A, RED-PHASE B, BLUE-PHASE C. LIGHTING CABINET IS BUSSED PHASE A, PHASE B & PHASE C FROM LEFT TO RIGHT, WHEN FACING FRONT OF CABINET.
5. MOUNT OUTLET BOX, GVL, FOR EXTERIOR LIGHTS ℄ 10" BELOW TOP OF WALL UNLESS OTHERWISE NOTED.
6. THE CIRCUIT INDEX CARD LOCATED ON LCI SHALL BE LABELED PER DETAIL E1.
7. FIELD TO GROUND ALL STRUCTURAL STEEL, EQUIPMENT FRAMES, AND MISC STEEL.

REFERENCE DRAWINGS:
105-19C800 __ CONDUITS CABLE SCHEDUAL
105-19BM806 __ BILL OF MATERIAL

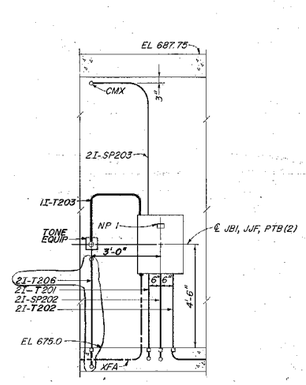
SYMBOLS:
- EXPOSED CONDUIT TURNING DOWN
- EMBEDDED CONDUIT TURNING UP
- 120V AC DUPLEX OUTLET
- 208V AC SINGLE OUTLET
- S_1 SINGLE POLE SWITCH



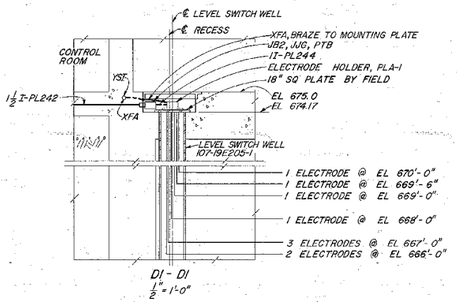
PART PLAN A1
EL 675.0
CONTROL ROOM
½"= 1'-0"



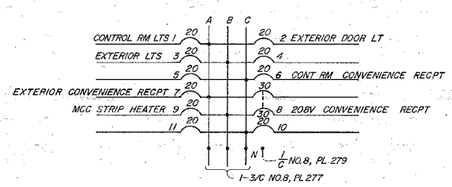
B1-B1
½"= 1'-0"



C1-C1
½"= 1'-0"



D1-D1
½"= 1'-0"



DET E1
LIGHTING CABINET NO. 1 CIRCUIT DESIGNATIONS
NTS

SCALE: ½"= 1'-0" EXCEPT AS NOTED

COMPANION DRAWING: 105-19E806-2

REV NO.	ECN NO.	DATE	DSGN	DWN	CHD	SUPV	ENGR	INSP	SUPR	DSGN	APPR
3	MINOR REVISION	12-5-78	LJK	KFA	SRT	RWS		WHB	RJK		
2	MINOR REVISION	1-5-77	DC	KFA	RWS			WHB	RJK		
1	MINOR REVISION	6-14-77	BCA	KFA	RWS			WHB	RJK		

DSGN R.T. KING
DWN L.R. SAVA
CKD R.T. KING
SUPV E.G. WYATT
INSP
ENGINEER R.H. McCUTCHEON

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 2

CONDUIT & GROUNDING & LIGHTING GENERAL ARRANGEMENT PLAN & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

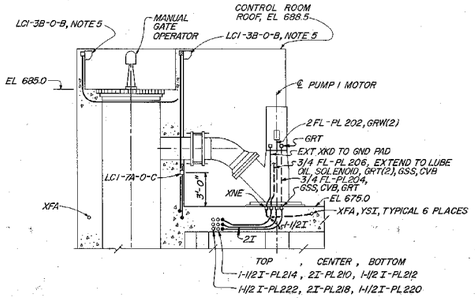
SUBMITTED	RECOMMENDED	APPROVED
W.H. Weinmann	George Prillaman	John E. Whitley
KNOXVILLE 1-25-77	81 E 105-19E806-1 R3	

RECORD DRAWING AS CONSTRUCTED 9 FEB 83
FROM KOV MEEC

INSPECTED AND APPROVED FOR ISSUE
S.E. Kerr

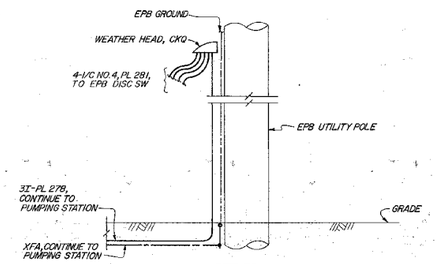
PRINT H
SIZE F
DR OR PROJ WC EL CE AD CO ES MO SP SW EL PA
PRINTS REQD-R.E.

TECHNICAL SERVICES KNOXVILLE



A2-A2

TYPICAL PUMP MOTOR INSTALLATION
SH 1, C4



DET B2

EPB SERVICE
SH 1, H2
NTS

FOR NOTES AND REFERENCES SEE 105-19E806-1.

NAME PLATE INDEX

NP NO.	TYPE	NO. REQD	FIRST LINE	SECOND LINE	THIRD LINE
1	A	1	TELEPHONE TERM CAB	----------	J B 1
2	A	1	----------	480/120-208V XFMR	----------
3	A	1	----------	LC 1	3 Ø, 4W, 120-208V

* SEE TVA DWG GE 4 30A 360

JUNCTION BOX INDEX

NO.	MK	SIZE (INCHES) H	W	D	LOCATION	USAGE	NP NO.
1	JJF	30	24	8	SECT C1-C1	TELEPHONE TERM CAB	1
2	JJG	12	6	4	SECT D1-D1	TERM BOX, PL 241, PL 243	----

LIGHTING FIXTURE SCHEDULE

DESCRIPTION	FIXTURE TYPES / FIXTURE TOTALS MK LTR	A 3	B 5	C 3	D 1	E 1	F 1	MK LTR TOTALS
WALL LIGHT 100W, HIGH PRESS. SODIUM, HOLOPHANE, 486-120.	LOK1		1					5
WALL LIGHT 100W, HIGH PRESS. SODIUM, WITH PHOTO CONTROL, HOLOPHANE, 487-120.	LOK2					1		1
FLUORESCENT UNIT 2-40W, SURFACE MOUNTED, DAY BRITE, 48240-4.	LHD	1						3
LAMP 40W COOL WHITE, RAPID START, GE F40 CW.	LPAH	2						6
LAMP 100W, HIGH PRESS. SODIUM, MOGUL BASE, 120V, GE LU100/BU	LPPH		1			1		6
DUPLEX RECEPTACLE 2P, 20A, 3W GROUNDING, HUBBELL 5362, FOR 120V USE.	LRB7			1				3
RECEPTACLE, 2P-3W GROUNDING, HUBBELL 9330, FOR 208V USE.	LRB8						1	1
COVER PLATE WITH SPRING DOOR COVER FOR USE WITH LRB-8, CAST ALUMINUM, CROUSE-HINDS DS-1030G.	LRB9						1	1
TUMBLER SWITCH, 1P, 20A, 277V, HUBBELL 1221.	LSE				1			1
SWITCH PLATE HINGED COVER, CAST ALUMINUM, HUBBELL 7420.	LVD				1			1
RECEPTACLE COVER, CAST ALUMINUM SPRING DOORS WITH GASKET, FOR USE WITH LRB-7, HUBBELL 5206.	LVQ			1				3

SCALE: 1" = 1'-0" EXCEPT AS NOTED

COMPANION DRAWING: 105-19E806-1

INSPECTED AND APPROVED FOR ISSUE

REV. NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	MINOR REVISION.	6-14-77	BCR	KWK	FJW	RWS	WHM	WF	RWS		

DSGN R.T. KING
DRWN R.S. WILLIAMS
CHKD R.T. KING
SUPV R.W. WYATT
INSP
ENGINEER R.W. Stevens

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 2

CONDUIT & GROUNDING & LIGHTING GENERAL ARRANGEMENT PLAN & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
W.H. Wainwood	George Tabberday	John E. McKelvey

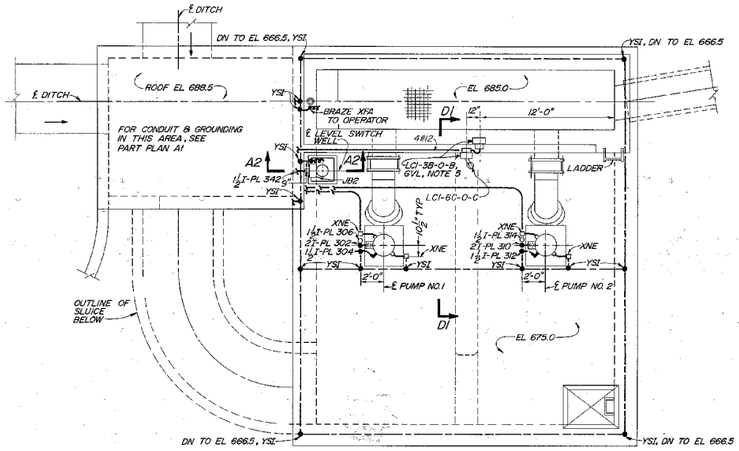
KNOXVILLE | 1-25-77 | 81 | E | 105-19E806-2 | R1

RECORD DRAWING AS CONSTRUCTED 7 Feb 83
FRANK VAN METER R1

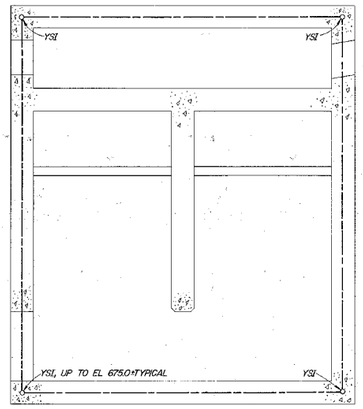
PRINT SIZE D

BY OR PROJ BR EE CE AD CO ED MO BP SW SL PA
PRINTS RCDD-9-1

REPRODUCTION BY TVA KNOXVILLE



PLAN EL 688.5



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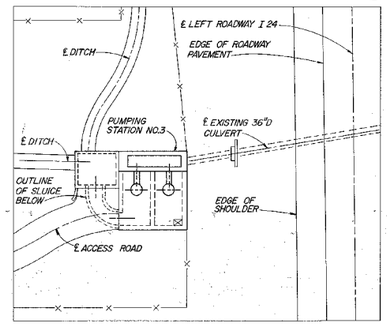
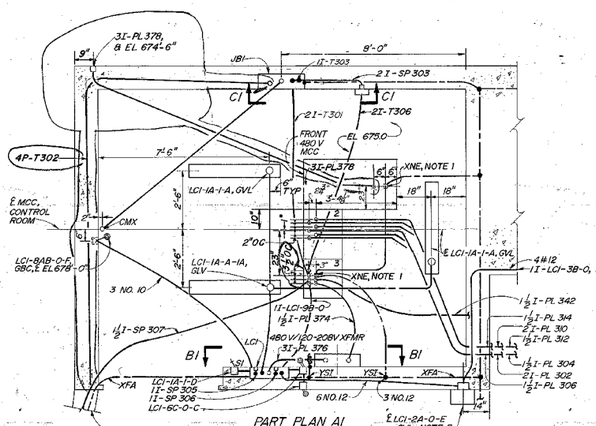


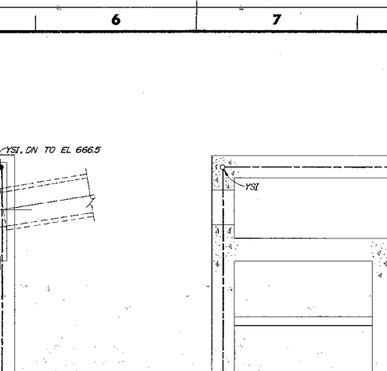
KEY PLAN
1"=20'-0"

NOTES:
1. USE XFA, YCC TO CONNECT TO GROUND BUS IN BOARD.
2. ALL LIGHTING CIRCUITS ARE 1" IRON CONDUIT WITH 2C NO.12 AWG CABLE UNLESS OTHERWISE NOTED.
3. ALL GROUND CABLE IS 500KCMIL, XFA UNLESS OTHERWISE NOTED.
4. LIGHTING BRANCH CIRCUIT CONDUCTORS ARE COLOR CODED, BLACK-PHASE A, RED-PHASE B, BLUE-PHASE C. LIGHTING CABINET IS BUSSED PHASE A, PHASE B & PHASE C FROM LEFT TO RIGHT WHEN FACING FRONT CABINET.
5. MOUNT OUTLET BOX, GVL, FOR EXTERIOR LIGHTS ℄ 10" BELOW WALL UNLESS OTHERWISE NOTED.
6. THE CIRCUIT INDEX CARD LOCATED ON LCI SHALL BE LABELED, PER DETAIL E1.
7. FIELD TO GROUND ALL STRUCTURAL STEEL, EQUIPMENT FRAMING, AND MISC. STEEL.

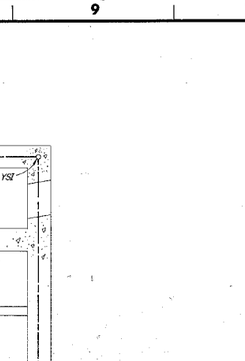
REFERENCE DRAWINGS:
105-19C-800-CONDUIT & CABLE SCHEDULE
105-19BM812-BILL OF MATERIAL



PART PLAN A1
EL675.0
CONTROL ROOM
1/2"=1'-0"

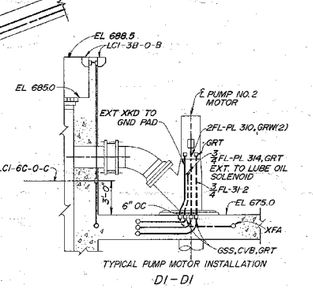


B1-B1
1/2"=1'-0"

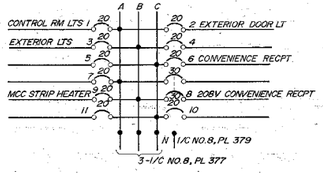


C1-C1
1/2"=1'-0"

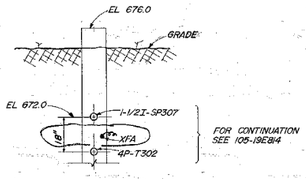
SYMBOLS:
- EXPOSED CONDUIT TURNING DOWN
- EMBEDDED CONDUIT TURNING UP
- 120V AC DUPLEX OUTLET
- 208 V AC SINGLE OUTLET
- S1 SINGLE POLE SWITCH



TYPICAL PUMP MOTOR INSTALLATION
D1-D1



DETAIL E1
LIGHTING CABINET NO.1
CIRCUIT DESIGNATIONS
NTS



FOR CONTINUATION SEE 105-19E814

FI-FI
CONDUIT AT FACE OF RETAINING WALL
1/2"=1'-0"

SCALE: 1/8"=1'-0" EXCEPT AS NOTED.

COMPANION DRAWING: 105-19E812-2

REV. NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	DISP	SUBM	TECH	APPR
3	1-2-78 LCI, 1A, 1B, 2A, 3B, 6C, 9B, RELOCATED PL 378, T302			RTK	CLY	RTK					
2	11-3-77 MINOR REVISION		DC	RTK	CLY	RTK					
1	8-26-77 MINOR REVISION.		BCA	RTK	CLY	RTK					

DSGN R.T. KING
DRWN C.L. YOUNG
CHKD R.T. KING
SUPV [illegible]
DISP
ENGR
ENGINEER R.W. [illegible]

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 3

CONDUIT & GROUNDING & LIGHTING GENERAL ARRANGEMENT PLAN & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

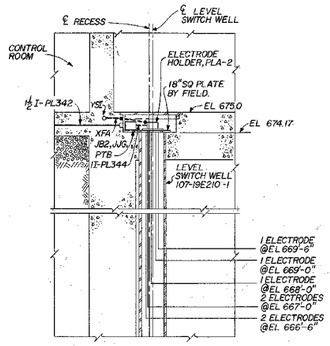
SUBMITTED	RECOMMENDED	APPROVED
W.H. Weinwood	Gregg Doolittle Jr.	John E. McKelley
KNOXVILLE 1-25-77		

INSPECTED AND APPROVED FOR ISSUE

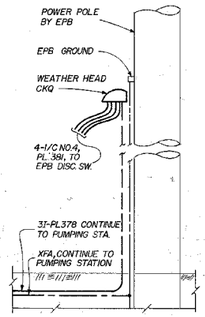
81 | E | 105-19E812-1 | R 4

RECORD DRAWING AS CONSTRUCTED 7-6-83
TRACE NO. 19E812 A4

PRINT H 7 2
SIZE F 3
DR OR PROJ GS EL CE AD CO ED MD BF SW BL PA
PRINTS REQD-4



A2 - A2
SH 1, B5
3/4" = 1'-0"



DET B2
EPB SERVICE
SH 1, E2
NTS

FOR NOTES AND REFERENCES SEE 105-19E812-1.

NAME PLATE INDEX

NP NO.	TYPE*	NO. REQD	FIRST LINE	SECOND LINE	THIRD LINE
1	A	1	TELEPHONE TERM. CAB.	———	JB1
2	A	1	———	480/120-208V XFMR	———
3	A	1	———	LCI	3Ø 4W, 120-208 V.

*SEE TVA DWG NO. GE 30A360

JUNCTION BOX INDEX

NO.	MARK	SIZE (INCHES) H	W	D	LOCATION	USAGE	NP NO.
1	JJF	30	24	8	SECT C1-C1	TELEPHONE TERM CAB.	1
2	JJG	12	6	4	SECT A2-A2	TERMINAL BOX, PL 341, PL 343	—

LIGHTING FIXTURE SCHEDULE

DESCRIPTION	FIXTURE TYPES / FIXTURE TOTALS MARK LTR	A	B	C	D	E	F	MARK LTR TOTALS
WALL LIGHT, 100W, HIGH PRESS. SODIUM, HOLOPHANE, 486-120	LQK1		1					2
WALL LIGHT, 100W, HIGH PRESS. SODIUM, WITH PHOTO CONTROL, HOLOPHANE, 487-120	LQK2					1		1
FLORESCENT UNIT 2-40W, SURFACE MOUNTED, DAY BRITE, 48240-4.	LHD	1						3
LAMP, 40W COOL WHITE, RAPID START, GE F40 CW.	LPA1	2						6
LAMP, 100W, HIGH PRESS. SODIUM, MOGUL BASE, 120V, GE LU100/BU	LPP1		1			1		3
DUPLEX RECEPTACLE, 2P, 20A, 3W GROUNDING HUBBELL 5362, FOR 120 V USE.	LRB7			1				2
RECEPTACLE, 2P-3W GROUNDING, HUBBELL 9330, FOR 208V USE.	LRB8						1	1
COVER PLATE WITH SPRING DOOR COVER, FOR USE WITH LRB-8, CAST ALUMINUM, CROUSE-HINDS DS-10306.	LRB9						1	1
TUMBLER SWITCH, 1P, 20A, 277V, HUBBELL 1221.	LSE				1			1
SWITCH PLATE, HINGED COVER CAST ALUMINUM HUBBELL 7420.	LVD				1			1
RECEPTACLE COVER, CAST ALUMINUM, SPRING DOORS WITH GASKET FOR USE WITH LRB-7 HUBBELL 5206.	LVQ			1				2

SCALE: 1/2" = 1'-0" EXCEPT AS NOTED

COMPANION DRAWING: 105-19E812-1

INSPECTED AND APPROVED FOR ISSUE

PRINT SIZE F

BR, OR PROJ ME EE CE AD CO ED NO BF SW BL PA

PRINTS RIGD-R.J.

MINOR REVISION. 6-29-77 BCA

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR

DSGN R.T. KING
DRWN J.A. WINTER
CHKD R.T. KING
SUPV T.E. WILKES
INSP
ENGINEER B.W. Stevens

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 3

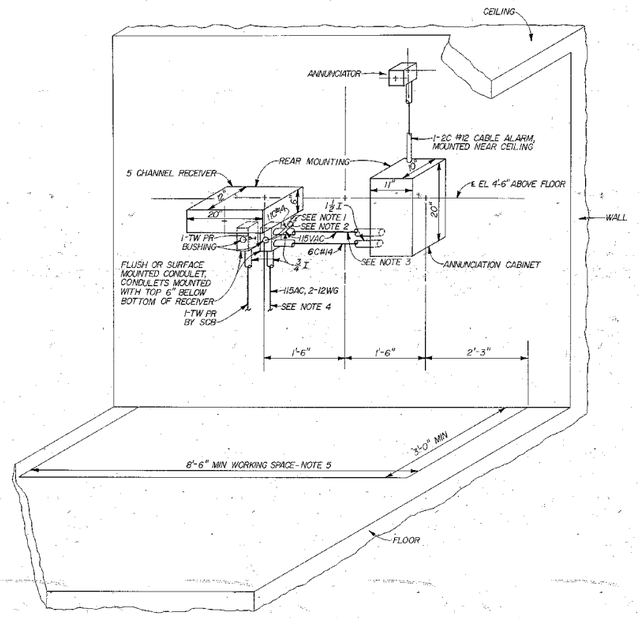
CONDUIT & GROUNDING & LIGHTING GENERAL ARRANGEMENT PLAN & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
W.H. Dainwood	George D. Udlburg	John E. Holladay

KNOXVILLE 1-25-77 | 81 | E | 105-19E812-2 | R1

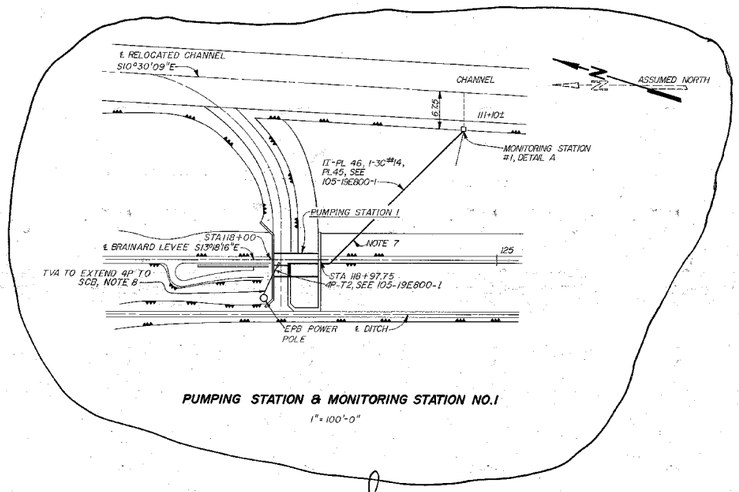
RECORD DRAWING AS CONSTRUCTED 7-14-83
Francis Udell ARCH. R1



CENTRAL CONTROL CENTER

WORKING SPACE REQUIREMENTS

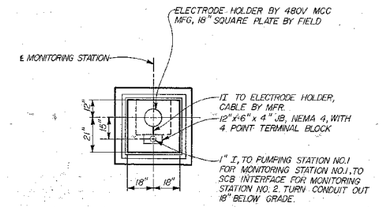
1"=1'-0"



PUMPING STATION & MONITORING STATION NO.1

1"=100'-0"

HOLD



DETAIL A

MONITORING STATIONS 1 & 2, NOTE 6

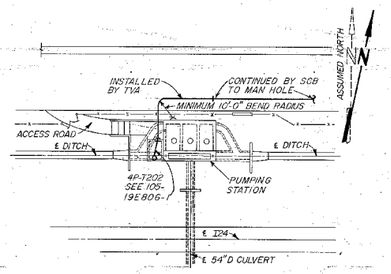
3/8"=1'-0"

NOTES:

1. RUN EXPOSED TO RECEIVER
2. 115V AC AND TEL (1-TW-PR) 1-1IC CABLE, STA GND CONDUCTOR TO ANN. CABINET.
3. 1-11 COND CABLE, 115V AC (2-# 12AWG SPLICED TO FEEDER IN JB, STA GND CONDUCTOR.
4. 115V AC, 60 HZ FEEDER FUSED FOR 15A, STA GND CONDUCTOR.
5. WORKING SPACE MAY BE OCCUPIED BY REMOVABLE EQUIPMENT.
6. FOR LOCATION OF MONITORING STATIONS 1 & 2 SEE 101-19E220.
7. FIELD TO INSTALL PULL POINTS AS NEEDED TO MEET FIELD CONDITIONS.
8. TELEPHONE CABLE SUPPLIED BY SOUTH CENTRAL BELL.

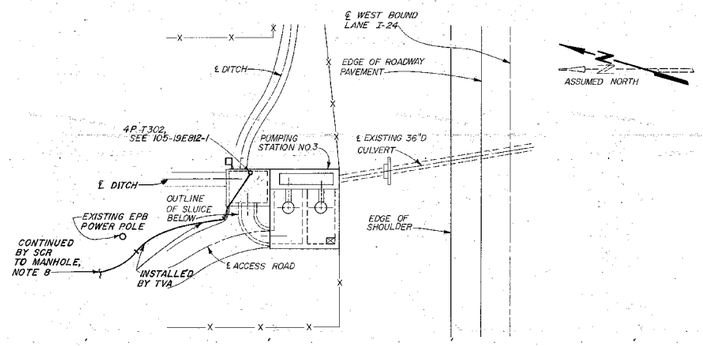
REFERENCE DRAWINGS:

105-19C800 ____ CONDUIT & CABLE SCHEDULE
105-19E820 ____ CONNECTION DIAGRAM



PUMPING STATION NO. 2

1"=40'-0"



PUMPING STATION NO. 3

1"=20'-0"

REV. NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	KCHK	ENGR	SUBM	ECM	APPV

DSGN R. KING
DRWN D.E. MELLON
CHKD R.L. WHITE
SUPV S.R. THOMAS
INSP
CHGNEER R.W. Stevenson

SCALE: AS NOTED — EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION

CONDUIT & GROUNDING
GENERAL ARRANGEMENT
PLANS & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
W.H. Brunswood Jr.	George Cauldwell	John L. Hall Jr.

INSPECTED AND APPROVED FOR ISSUE: G.L. Cochran Jr. — KNOXVILLE — 9-5-78

81 E 105-19E814 6

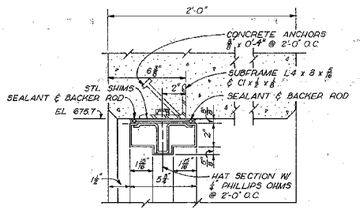
RECORD DRAWING AS CONSTRUCTED 7 FEB 83 AD
FRANK VAN METER

PRINT H 7
SIZE F 3

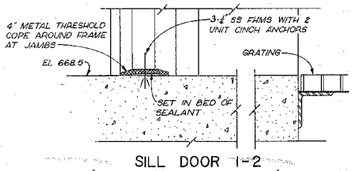
DR OF PROJ WE CE CE AD CU ED MU MP SW BL PA
PRINTS REQ'D 8

DOOR AND HARDWARE SCHEDULE

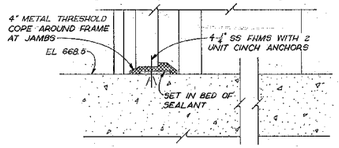
OPN'G NO.	DRAWING NO.	DOOR TYPE	NO. DOOR IN OPNG	MATERIAL		DOOR OPENING		DOOR THKNS	FRAME DET NO.	SIDE FROM WHICH SECURITY IS DESIRED	HAND OF DOOR	LOCK	OPERATION	KEY	SADDLE TYPE	DOOR STOPS	HINGES	DOOR CHECKS	FLUSH BOLTS	FIRE LABEL	W STRIP	ELEC STRIKE	DETEAT SWITCH	CARD READER	ALARM	REMARKS	OPN'G NO.
				DR FR	DOOR	WIDTH	HEIGHT																			
1-1	101-19E225-2	A	2	HM	HM	5'-0"	7'-0"	1¾"	A1	OUTSIDE	RHRB	5402	HNDR EA SIDE; OUT SIDE HNDR BY KEY	1	115-5	----	3 PR FBB 199-4½ x 4½	1-PISTON (HCT LEAD) 1-TYPE (SHCT LEAD)	2-298, 12"	---	---	---	---	---	---	1-1
1-2	101-19E225-2	A	1	HM	HM	3'-0"	7'-0"	1¾"	A1	OUTSIDE	RH	5402	HNDR OUTSIDE BY KEY	1	115	----	1½ PR FBB 199-4½ x 4½	P2596H	----	---	---	---	---	---	---	1-2
2-1	101-19E235-1	A	2	HM	HM	5'-0"	7'-0"	1¾"	B1	OUTSIDE	RHRB	5402	HNDR EA SIDE; OUT SIDE HNDR BY KEY	1	115-5	----	3 PR FBB 199-4½ x 4½	1-PISTON (HCT LEAD) 1-TYPE (SHACT LEAD)	2-298, 12"	---	---	---	---	---	---	2-1
3-1	101-19E240-1	A	2	HM	HM	5'-0"	7'-0"	1¾"	B1	OUTSIDE	RHRB	5402	HNDR EA SIDE; OUT SIDE HNDR BY KEY	1	115-5	----	3 PR FBB 199-4½ x 4½	1-PISTON (HCT LEAD) 1-TYPE (SHACT LEAD)	2-298, 12"	---	---	---	---	---	---	3-1



HEAD
JAMBS SIMILAR

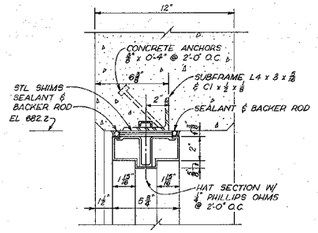


SILL DOOR 1-2

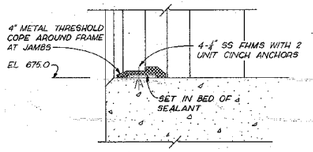


SILL DOOR 1-1

DETAIL A1
3"=1'-0"

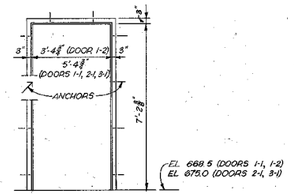


HEAD
JAMBS SIMILAR

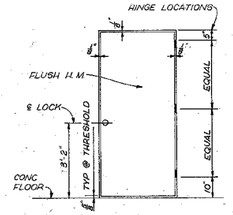


SILL

DETAIL B1
3"=1'-0"



SUBFRAMES
3"=1'-0"



DOOR CLEARANCES
DOOR TYPE A SHOWN
3"=1'-0"

SCALE AS NOTED

INSPECTED AND APPROVED FOR ISSUE
K.T. Buchanan

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SURV	MTCH	APPR			DPM

DSGN
DRWN J.M. MUSICK
CHKD J.S. LOWDERMILK
SUPV J.S. LOWDERMILK

INSP
ARCHITECT

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NOS. 1, 2 & 3

ARCHITECTURAL
DOOR & HARDWARE SCHEDULE
DOOR & FRAME DETAILS

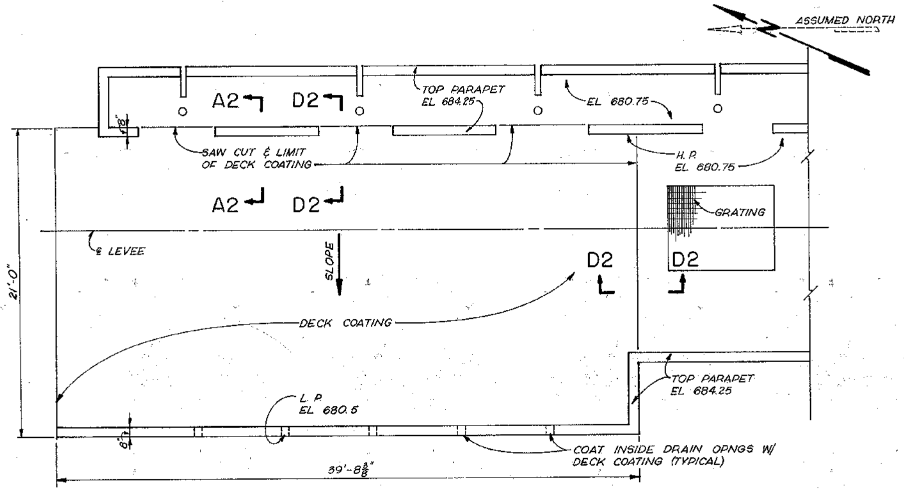
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
	L. N. Tinney	

KNOXVILLE	3-22-77	81	A	106-19E200-1 R6

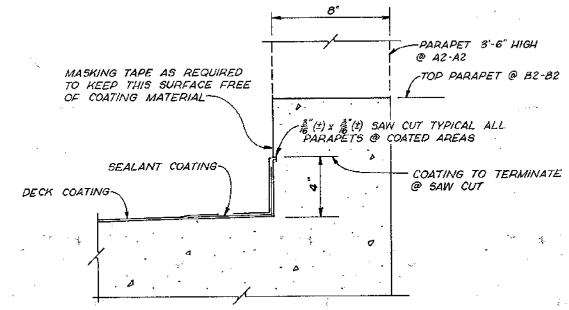
RECORD DRAWING AS CONSTRUCTED

PRINT H 2 4 2 3
SIZE V 1 1
BR OR PROJ NE EL CE AD CO CO MD DF DW BL PA
PROJECT RECORD FILE



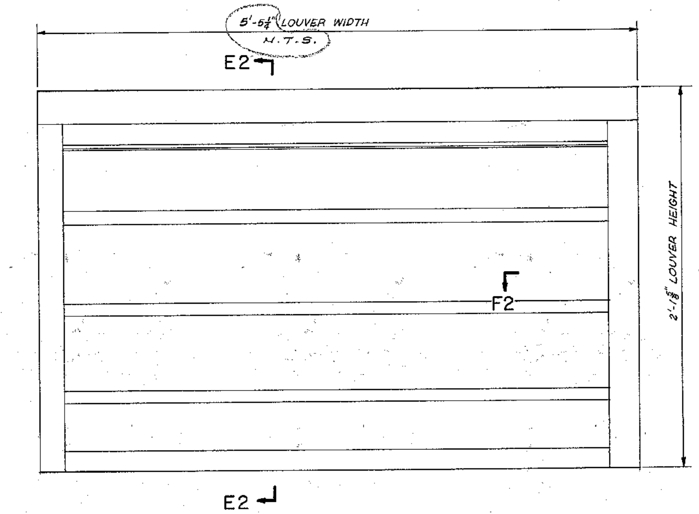
PART PLAN - EL 684.25

PUMPING STATION NO. 1

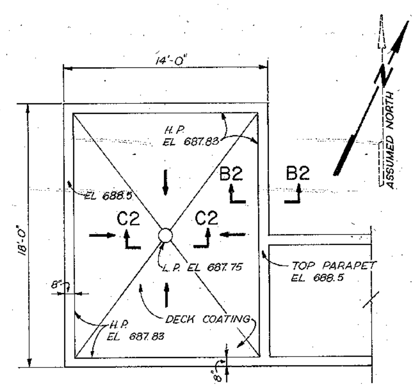


SECTION A2-A2 & B2-B2

3" = 1'-0"

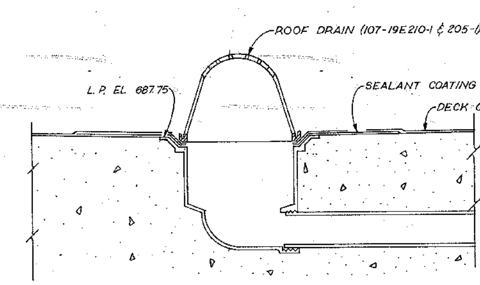


ELEVATION LOUVER - TYPE A



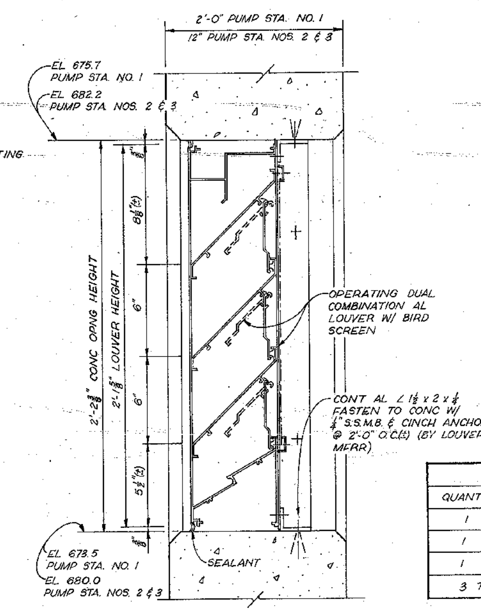
PART PLAN - EL 688.5

PUMPING STATION NO. 2

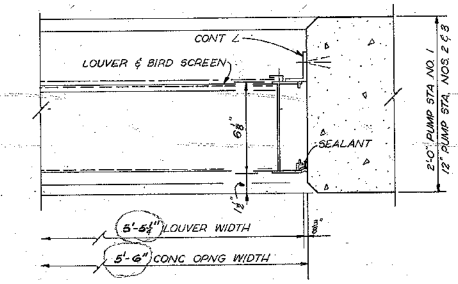


C2 - C2

3" = 1'-0"

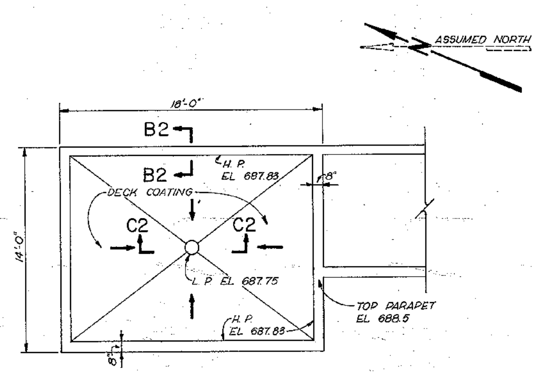


E2 - E2



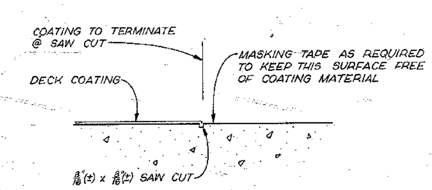
F2 - F2

LOUVER SCHEDULE			
QUANTITY	TYPE	LOCATION	DRAWING REFERENCE NO.
1	A	PUMPING STATION NO. 1	101-19E225-2
1	A	PUMPING STATION NO. 2	101-19E235-2
1	A	PUMPING STATION NO. 3	101-19E240-3
3 TOTAL REQUIRED			



PART PLAN - EL 688.5

PUMPING STATION NO. 3



D2-D2

3" = 1'-0"

LOUVER DETAILS

3" = 1'-0"

CONTROL ROOM ROOF PLANS

SCALE: 1/4" = 1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	REVISED LOUVER SIZE	9-1-78	JCL	JCL	JCL	AMJ		AMJ			

DSGN
DRWN J. MUSICK
CHKD J. C. LONGMIRE
SUPV J. C. LONGMIRE
INSP
ARCHITECT A. Maston Jones

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NOS. 1, 2 & 3

ARCHITECTURAL
ROOF PLANS & DETAILS
LOUVER DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

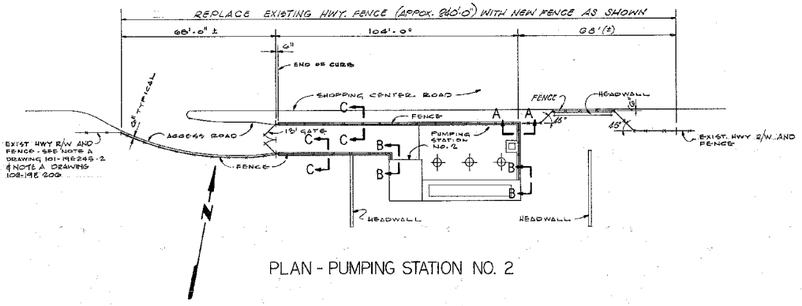
SUBMITTED A. Maston Jones | RECOMMENDED L. V. Gebney | APPROVED

INSPECTED AND APPROVED FOR ISSUE

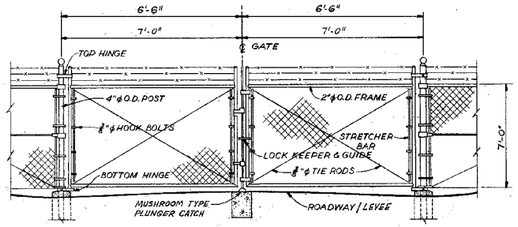
KNOXVILLE 3-22-77 81 A 106-19E200-2 R1

RECORD DRAWING AS CONSTRUCTED

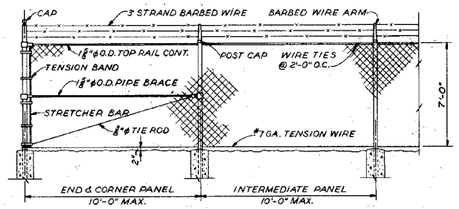
PRINT H 2 7 2 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1



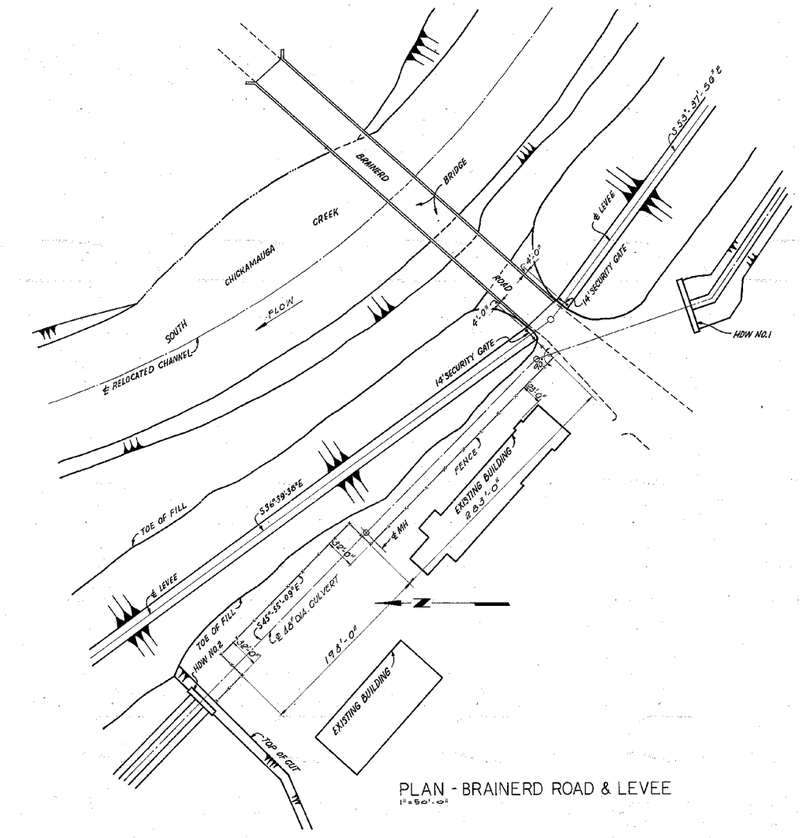
PLAN - PUMPING STATION NO. 2



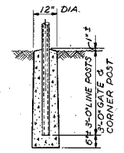
CHAIN LINK GATE (TYPICAL)
SCALE: ⅜"=1'-0"



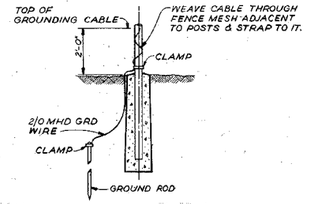
CHAIN LINK FENCE (TYPICAL)
SCALE: ⅜"=1'-0"



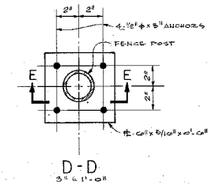
PLAN - BRAINERD ROAD & LEVEE
1"=50'-0"



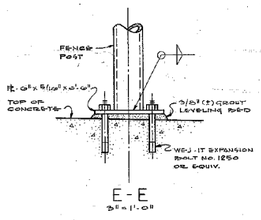
TYP POST SETTING DETAIL
Scale: ½"=1'-0"



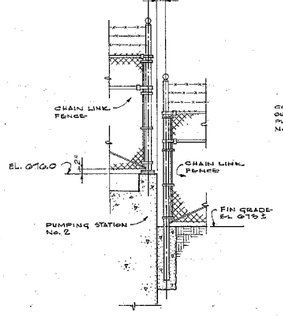
FENCE GROUNDING DETAIL
Scale: ½"=1'-0"



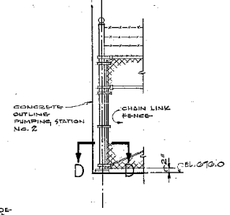
D - D
3"=1'-0"



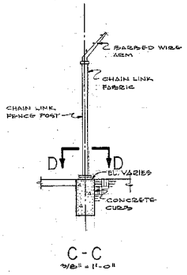
E - E
3"=1'-0"



SECTION A - A
⅜"=1'-0"



B - B
⅜"=1'-0"



C - C
⅜"=1'-0"

COMPANION DRAWING:
106-19E206

INSPECTED AND APPROVED FOR ISSUE
KNOXVILLE 6-9-78

REV NO	DCN NO	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBMITTED	APPRD			CPNT

DSGN H. PRUNINOS
DRWN H. PRUNINOS
CHKD J. C. CONCILIO
SUPV J. S. CONCILIO
INSP.
ARCHITECT A. Masterson

SCALE 1"=20'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
CHAIN LINK FENCE

ARCHITECTURAL
PLANS & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
A. Masterson	C. H. Aubrey	Walter L. Wilson

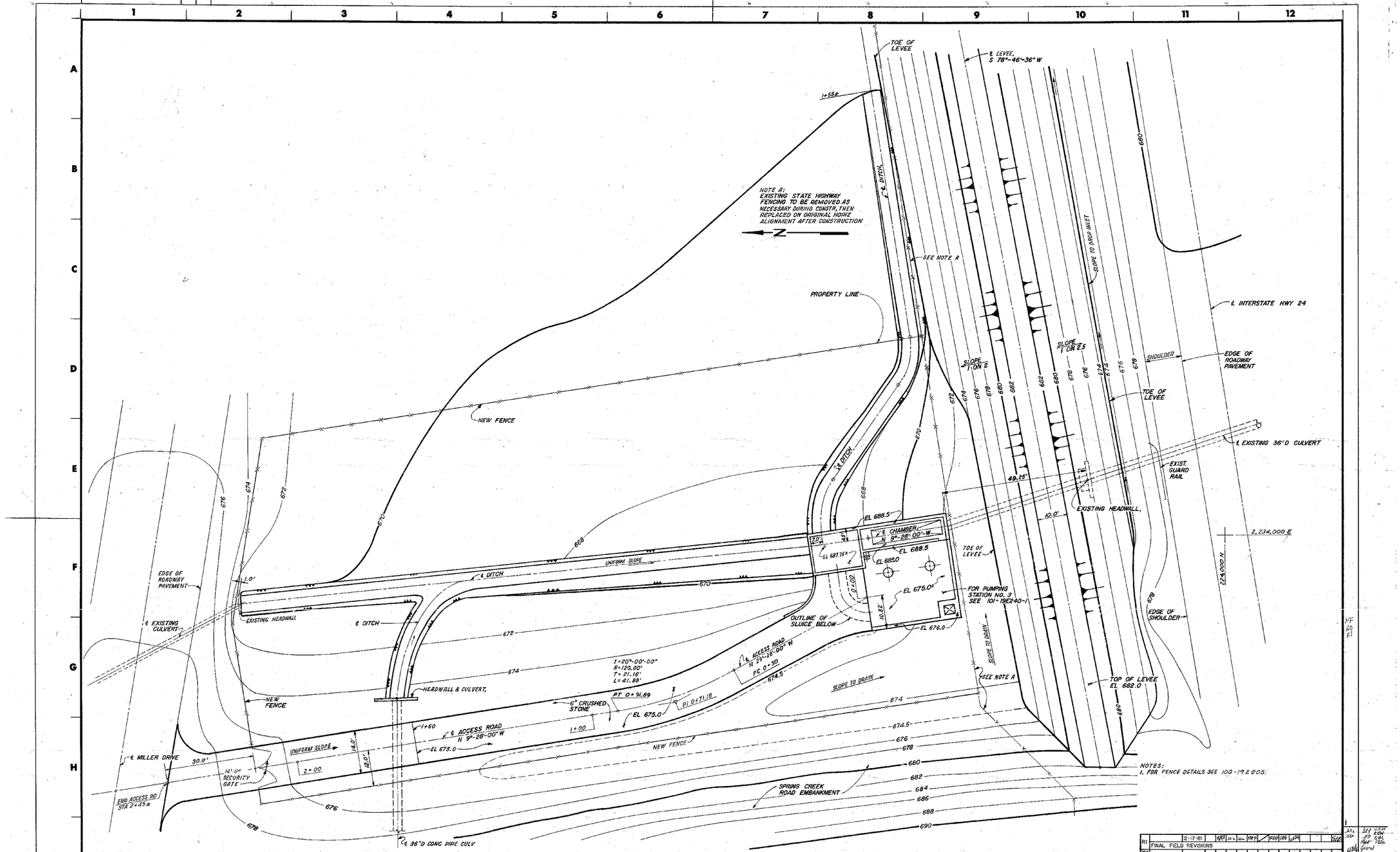
KNOXVILLE	6-9-78	81	A	106-19E205	R0

RECORD DRAWING AS CONSTRUCTED

PRINT H 1 2
SIZE V 3
BR ON PRINT ME EE CE AD CO ED ND MP SW BL PE
PRINTS REQD-8

TENNESSEE VALLEY AUTHORITY
KNOXVILLE

81 | A | 106-19E206



PLAN

SCALE 1"=10' EXCEPT AS NOTED

COMPANION DRAWING: 106-19E205

REV NO.	ECN NO.	DATE	DSGN	DFTR	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
R1	FINAL FIELD REVISIONS	2-17-81	KKP	JA L	JGL	WAP					

DSGN JL HOLINGER
DTNR JL HOLINGER
CHKD J.G. LONGMIRE
SUPV J.G. LONGMIRE

INSP
ARCHITECT

CHATTANOOGA FLOOD PROTECTION
CHAIN LINK FENCE

ARCHITECTURAL
PLAN-PUMPING STATION NO. 3

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED

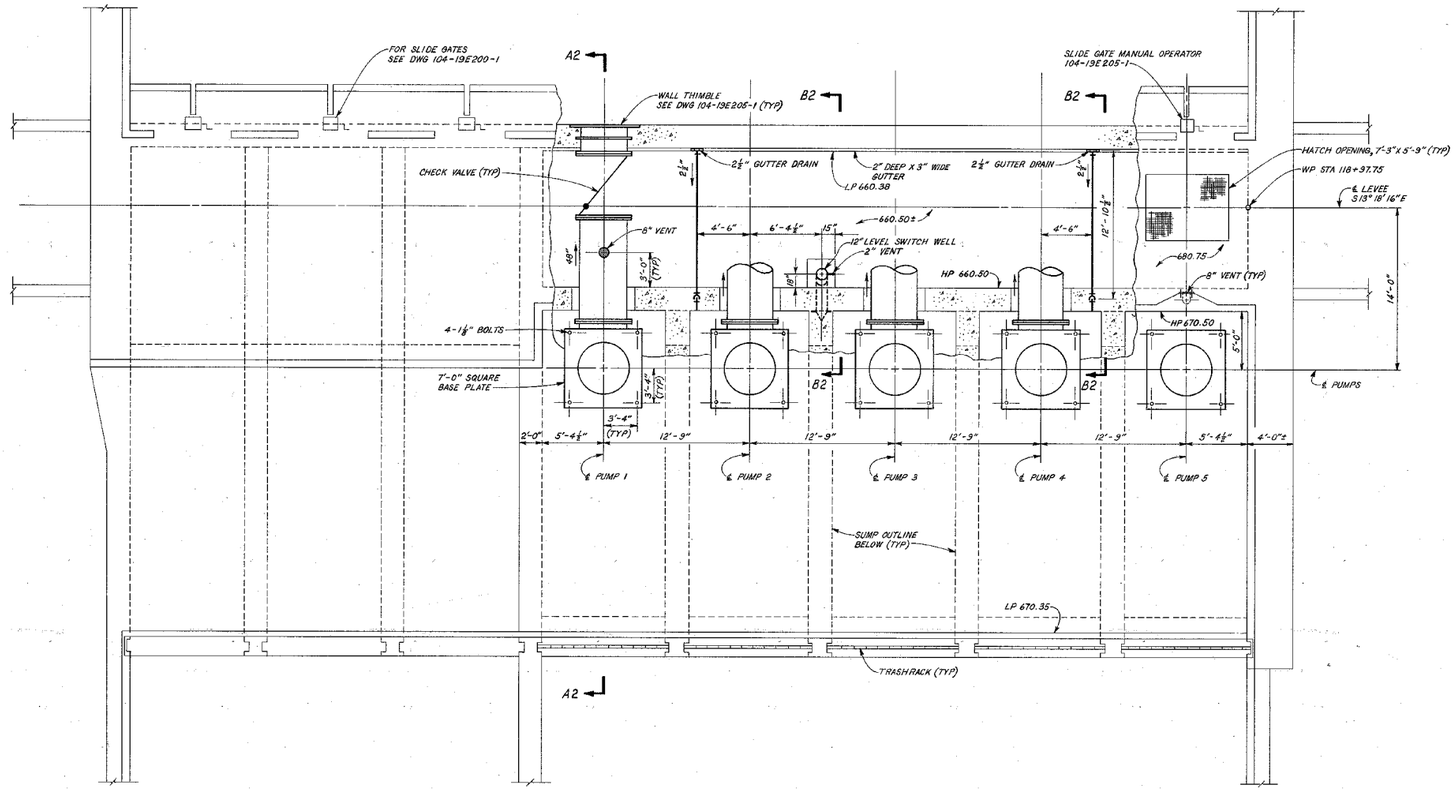
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 6-9-78 | 81 | A | 106-19E206 R1

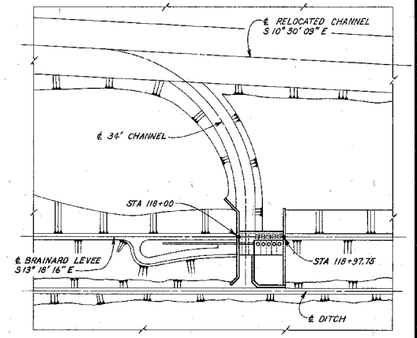
RECORD DRAWING AS CONSTRUCTED
Frank Vanwalter RI JAN 27, 1981

PRINT H 1/2
SIZE F 3

ON OR PROJ ME EE CE AD CD ED MD BP SW RL PA
PRINTS NEED-0



PLAN - EL 670.5



KEY PLAN
NTS

NOTES:

1. THE FIRST PUMP STARTS AUTOMATICALLY WHEN WATER SURFACE IN SUMP REACHES ELEVATION 654.0. REMAINING PUMPS COME ON AUTOMATICALLY AND SEQUENTIALLY WITH INCREASE OF WATER SURFACE IN SUMP IN 0.5 FOOT INCREMENTS. PUMPS STOP AUTOMATICALLY AND SIMULTANEOUSLY WHEN WATER SURFACE IN SUMP DROPS TO 653.5.
2. FOR EQUIPMENT MANUFACTURER'S DETAILS REFER TO THE FOLLOWING:

ITEM	CONTRACTOR	TVA CONTR NO.
DEWATERING PUMPS	SOUTHEAST SUPPLY CO., INC.	76K31-821060

COMPANION DRAWINGS:
107-19E200-1 & -2

INSPECTED AND APPROVED FOR ISSUE

REV BY	ECN NO.	DATE	DSGN	DRWN	CHKD	QUTY	ENGR	INSP	FLDN	RECM	APPD			SEA

DSGN R. G. PLETZ - M. L. SUTPHIN
DRWN G. L. YATES
CHKD N. M. COWAN
SUPV R. G. PLETZ

INSP
ENGINEER H. A. Mounger

SCALE: 1/4" = 1'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION 1

MECHANICAL PUMPS AND PIPING ARRANGEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

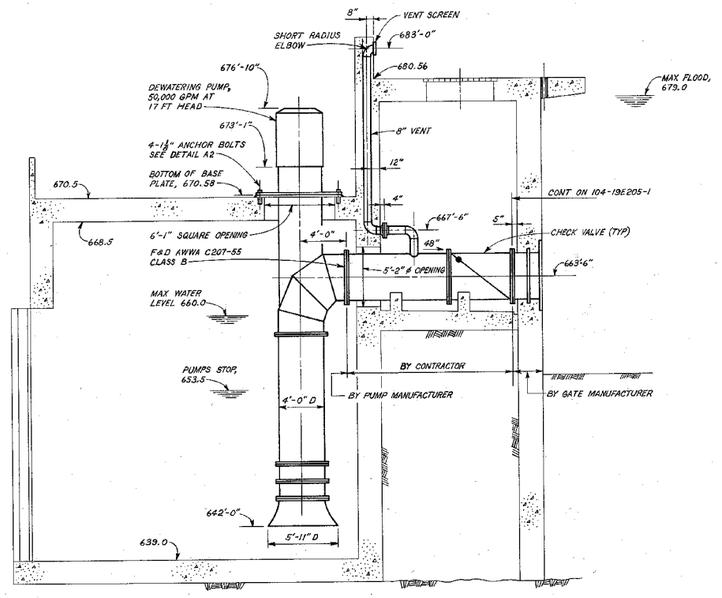
SUBMITTED	RECOMMENDED	APPROVED
J. S. Kelland	D. F. Ford	L. Fessler

KNOXVILLE 2-24-77 | 81 | M | 107-19E200-1 RO

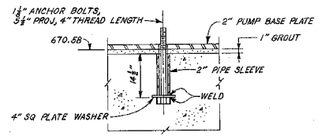
RECORD DRAWING AS CONSTRUCTED

PRINT 4 2 3
SIZE F
BA OR PROJ MIL EL GL AD OD ID MORPP SW BL PA
PRINTS REQD-8 0

TECHNICAL INFORMATION CENTER
KNOXVILLE



SECTION A2-A2



DETAIL A2
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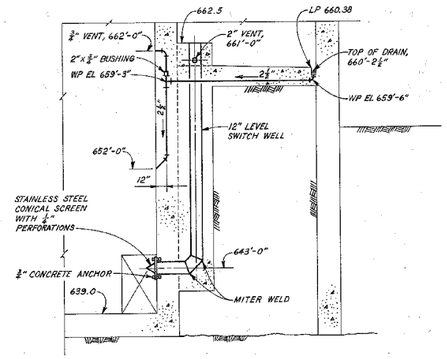


B2-B2

REV NO. | BDV. NO. | DATE | DSGN | DRWN | CHKD | CUPV | ENGR | ENGR | SUPV | RECDM | APPD | | | TVA

DSGN R.G. PLETZ - M.L. SUTPHIN
DRWN G.L. YATES
CHKD W.M. COWAN
SUPV R.G. PLETZ

INSP:
ENGINEER: H.A. Menges

SCALE 1/4"=1'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION 1

MECHANICAL PUMPS AND PIPING ARRANGEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
K.B. Hollaway C.	D.A. York	A. Kistler

KNOXVILLE 2-24-77 | 81 | M | 107-19E200-2 R0

RECORD DRAWING AS CONSTRUCTED

INSPECTED AND APPROVED FOR ISSUE
E.E. Burch

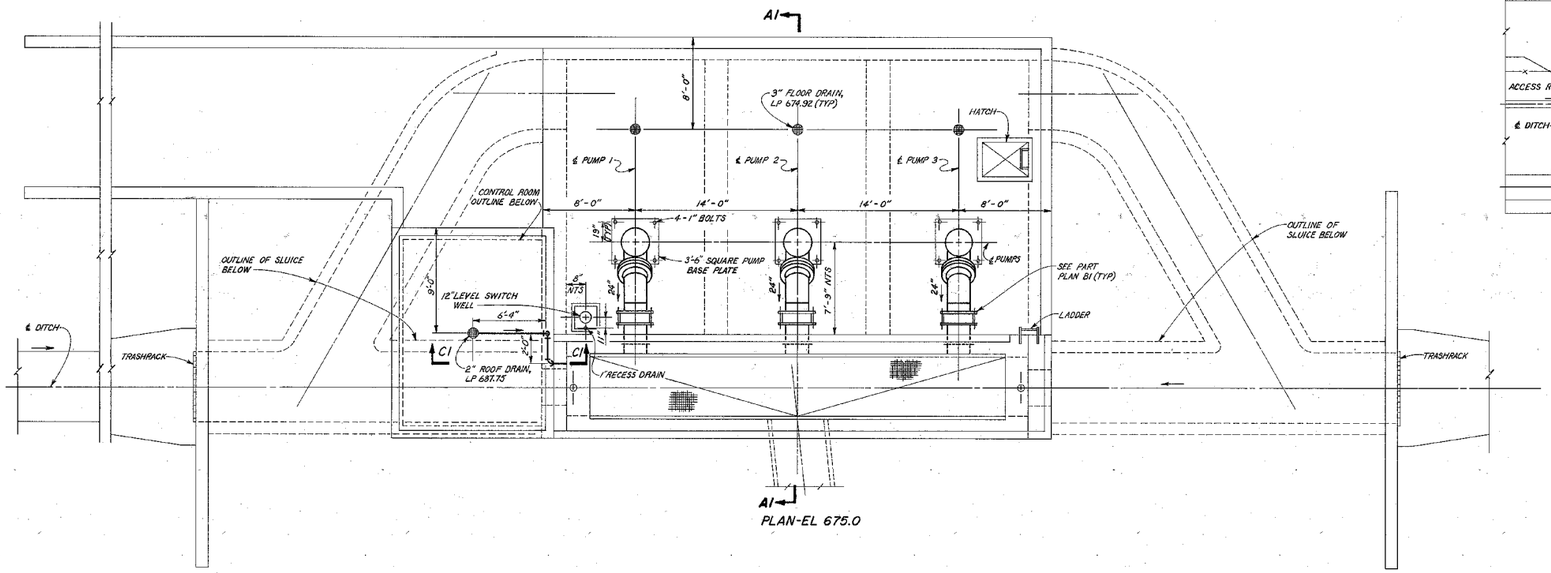
PRINT 4 2 3
SIZE F

FX-1

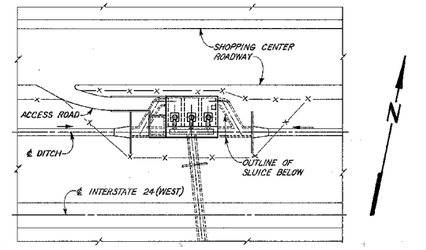
BR OR PROJ WE EE CE AS CO ES MO PP EN EL PA
PRINTS REQD-R 0

TECHNICAL INFORMATION CENTER
KNOXVILLE

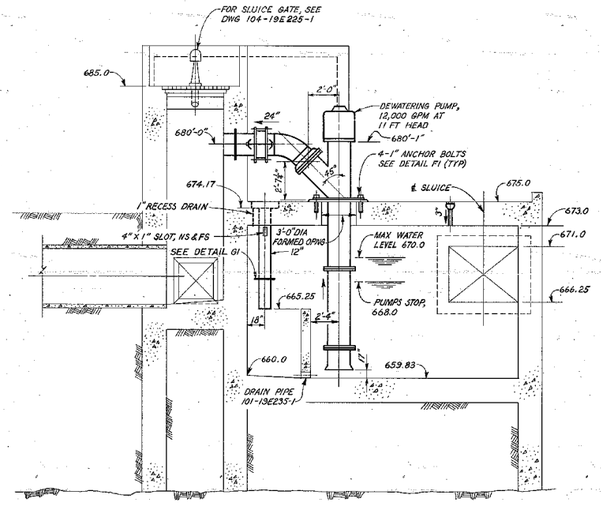
107-19E205-1 | M | 81



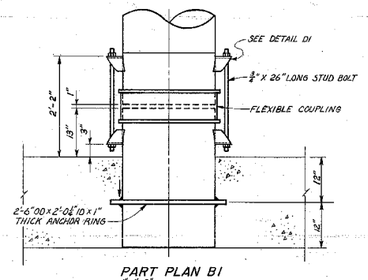
PLAN-EL 675.0



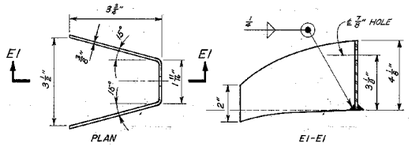
KEY PLAN
NTS



A1-A1



PART PLAN B1
1"-1"-0"



DETAIL D1
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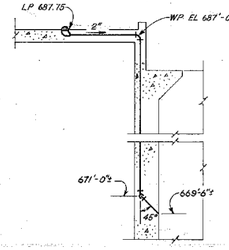
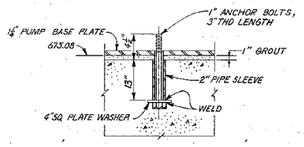


C1-C1



DETAIL F1
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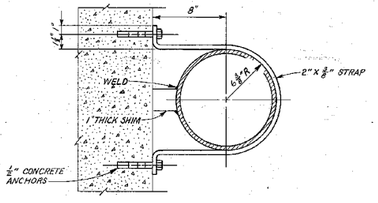


DETAIL G1
NTS

NOTES:
1. THE FIRST PUMP STARTS AUTOMATICALLY WHEN WATER SURFACE IN SUMP REACHES ELEVATION 669.0. REMAINING PUMPS COME ON AUTOMATICALLY AND SEQUENTIALLY WITH INCREASE OF WATER SURFACE IN SUMP IN 0.5 FOOT INCREMENTS. PUMPS STOP AUTOMATICALLY AND SIMULTANEOUSLY WHEN WATER SURFACE IN SUMP DROPS TO ELEVATION 668.0.
2. FOR DETAILS OF PUMPS REFER TO SOUTHEAST SUPPLY CO., INC., FILE, TVA CONTRACT 76K31-821060.

SCALE ¼"=1'-0"
EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	SUSP	SUBM	RECM	APPR			FAA
DSGN	B.C. PLETZ - M.J. SUTPHIN													
DRWN	W.A. OATES													
CHKD	N.P. CRAWLEY													
SUPV	B.C. PLETZ													

SUSP
ENGINEER H.A. Menges

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION 2

MECHANICAL
PUMPS AND PIPING
ARRANGEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
J.R. Russell	B.L. Ford	D. Fisher

KNOXVILLE 2-24-77 | 81 | M | 107-19E205-1 R0

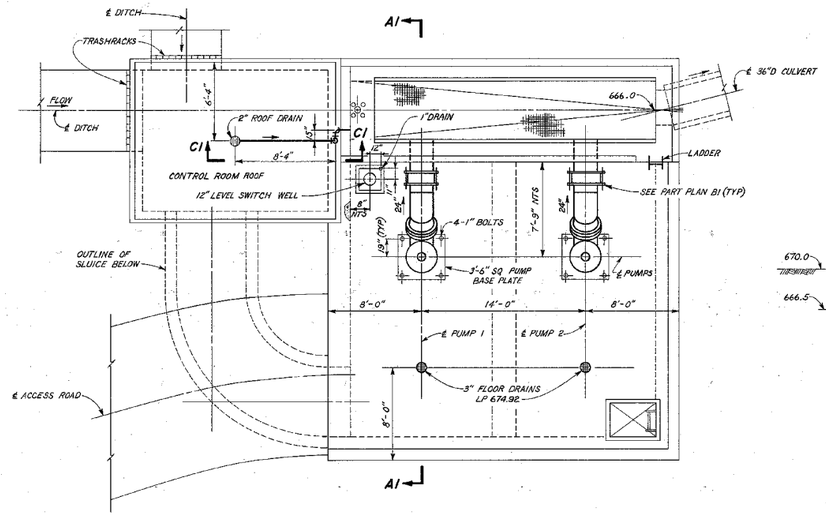
RECORD DRAWING AS CONSTRUCTED

INSPECTED AND APPROVED FOR ISSUE

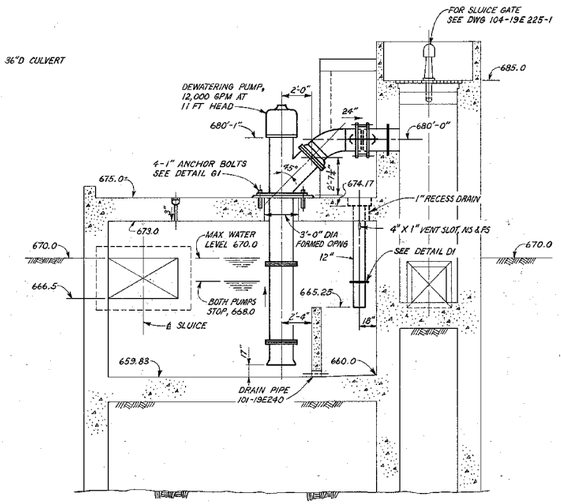
PRINT H 4 2 3
SIZE F

BR SR PROJ WE LE CE AD CO EE MD BF SW BL PA
PRINTS RCDD-H C

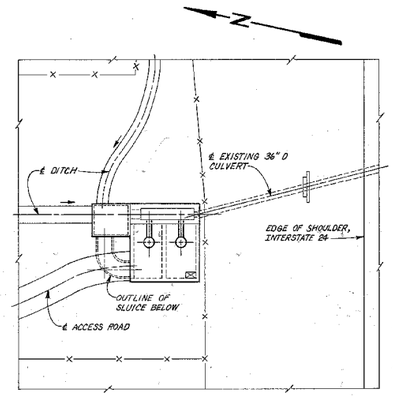
TECHNICAL INFORMATION CT-1151
TVA 40230
4/27/77



PLAN EL 675.0



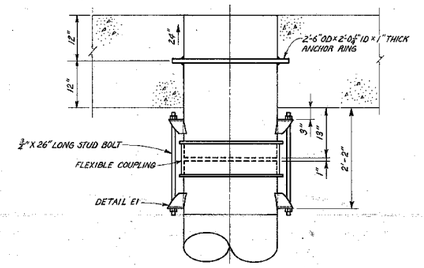
A1-A1



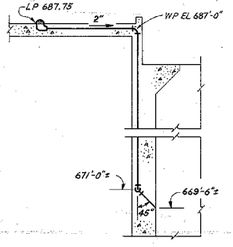
KEY PLAN
NTS

NOTES

1. THE FIRST PUMP STARTS AUTOMATICALLY WHEN WATER SURFACE IN SUMP REACHES ELEVATION 669.0. THE SECOND PUMP STARTS AUTOMATICALLY WHEN WATER SURFACE IN SUMP REACHES ELEVATION 669.5. PUMPS SHUTOFF AUTOMATICALLY AND SIMULTANEOUSLY WHEN WATER SURFACE IN SUMP RECEDES TO ELEVATION 668.0.
2. FOR DETAILS OF PUMPS REFER TO SOUTHEAST SUPPLY CO., INC. FILE, TVA CONTRACT 76K51-821060.

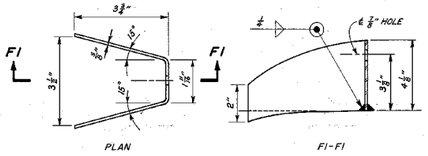


PART PLAN B1
1"=1'-0"

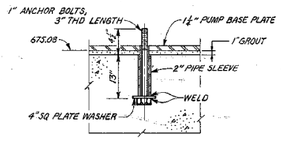


C1-C1

DETAIL D1
NTS



DETAIL E1
NTS



DETAIL G1
NTS

SCALE ¼"=1'-0"
EXCEPT AS NOTED

REV. NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	PGRM	RECM	APPR			T.V.A.
DSGN	R. C. PLETZ - M. L. SUTPHIN													
DRWN	G. L. YATES													
CHKD	H.M. CONDRY													
SUPV	R. C. PLETZ													

INSP

ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION 3

MECHANICAL PUMPS AND PIPING ARRANGEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED

KNOXVILLE 2-24-77 | B1 | M | 107-19E210-1 R0

RECORD DRAWING AS CONSTRUCTED

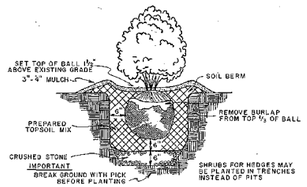
INSPECTED AND APPROVED FOR ISSUE

PRINT N 4 2 3
SIZE F

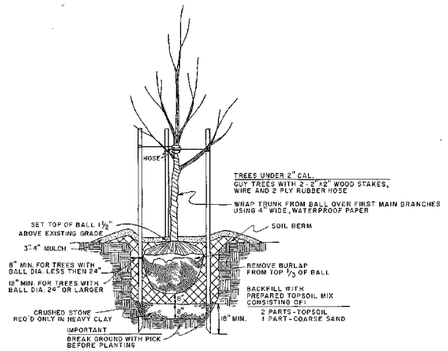
BR OR PROJ WE LC CE AD CO ED MO BF SW BL PA
PRINTS REQD-3 2

TECHNICAL INFORMATION CENTER KNOXVILLE

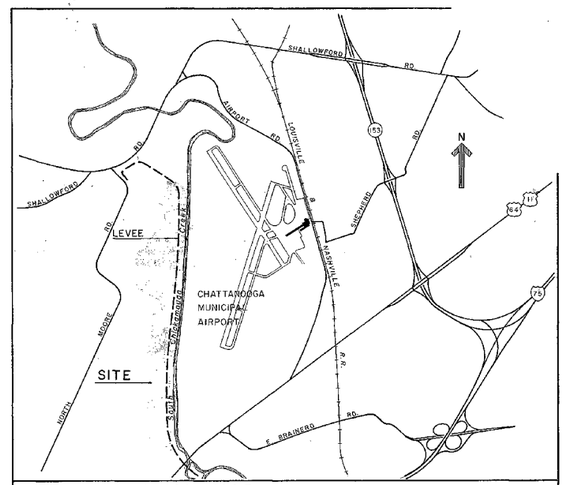
LEGEND	
MATERIAL	SYM.
EXISTING TREES	
PROPOSED TREES	
PROPOSED SHRUBS	



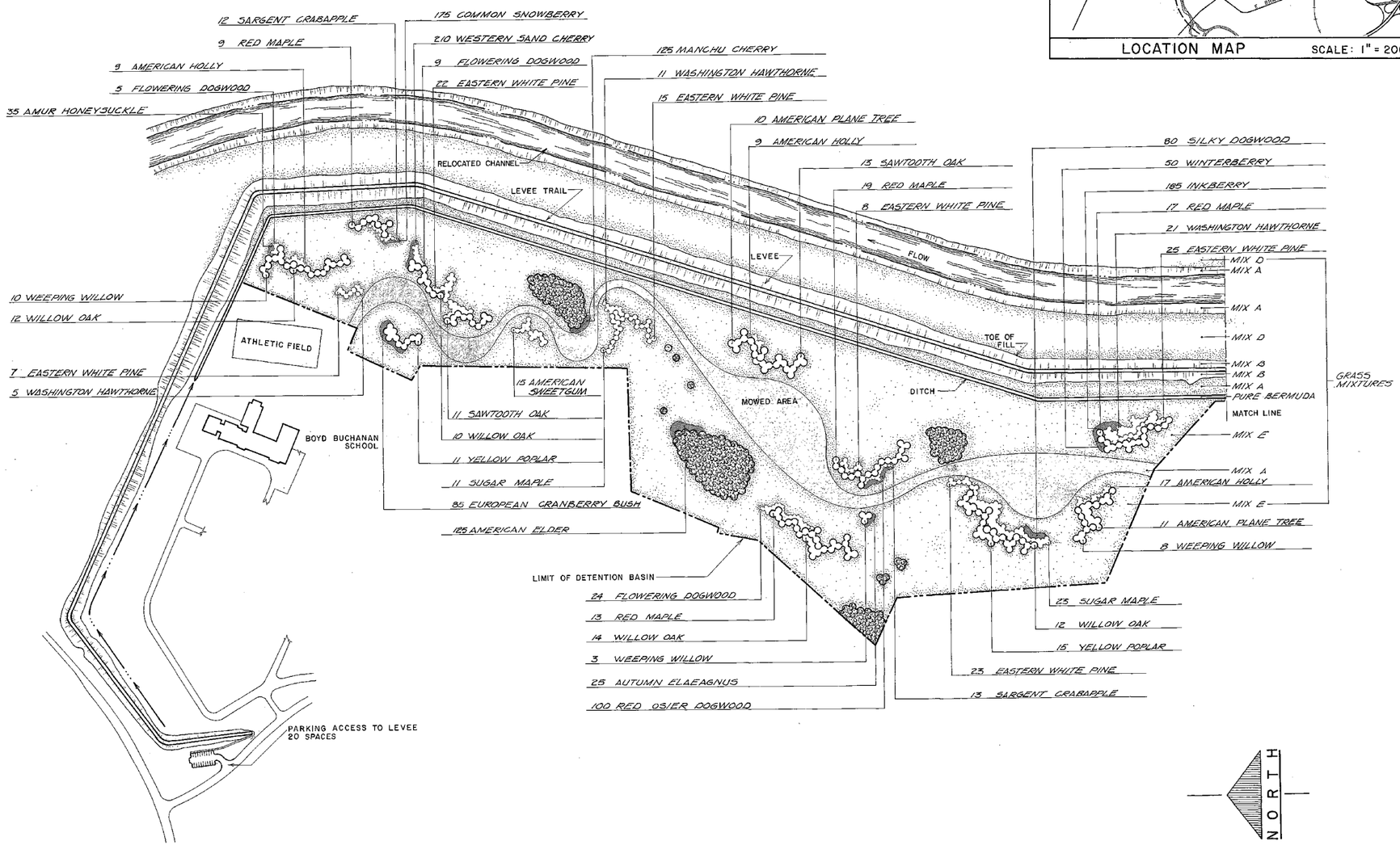
TYPICAL SHRUB – PLANTING DETAIL
NOT TO SCALE



TYPICAL TREE – PLANTING DETAIL
NOT TO SCALE



LOCATION MAP SCALE: 1" = 2000'



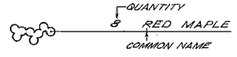
TENNESSEE VALLEY AUTHORITY	DIVISION OF FORESTRY, FISHERIES, AND WILDLIFE DEVELOPMENT RECREATION RESOURCES BRANCH	CHATTANOOGA, TENNESSEE PROPOSED RECREATION - WILDLIFE PLANTING PLAN SOUTH CHICKAMAUGA CREEK PROJECT	REVISED APRIL 1979	DESIGNED KATY CRONE SUBMITTED SAM PERRY	RECOMMENDED APPROVED Robert A. Curtis	SCALE 1" = 200' - 0" CONTOUR INTERVAL	SHEET 1 of 2	DATE FEB. 1979 FILE NO. 107-15

108-15

LEGEND

MATERIAL	SYM.
EXISTING TREES	
PROPOSED TREES	
PROPOSED SHRUBS	
BALL AND BURLAP	B & B
MOWED AREA	

PLANTING KEY



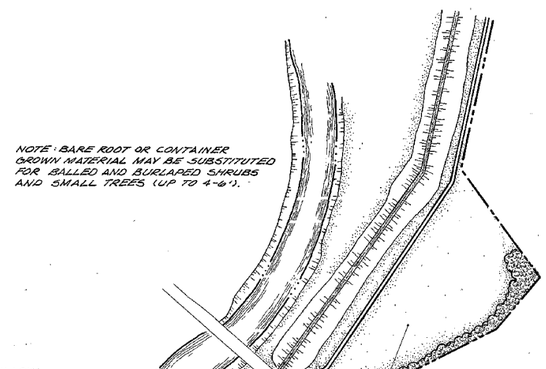
PLANT LIST

ITEM	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING	QUANTITY	REMARKS
TREES							
1	ACER RUBRUM	RED MAPLE	6-8'	B & B	30'	58	
2	ACER SACCHARUM	SUGAR MAPLE	6-8'	B & B	22'	34	
3	BETULA NIGRA	RIVER BIRCH	6-8'	B & B	22'	41	
4	CORNUS FLORIDA	FLOWERING DOGWOOD	4-6'	B & B	15'	88	WHITE FLOWERING
5	CRATAEGUS PHAENOPYRUM	WASHINGTON HAWTHORNE	4-6'	B & B	15'	46	
6	ILEX OPACA	AMERICAN HOLLY	24-30"	B & B	15'	44	
7	LIQUIDAMBAR STYRACIFLUA	AMERICAN SWEETGUM	6-8'	B & B	22-30'	54	
8	LIRIODENDRON TULIPIFERA	YELLOW POPLAR	6-8'	B & B	30'	35	
9	MALUS SARGENTII	SARGENT CRABAPPLE	4-6'	B & B	15'	45	
10	PINUS STROBUS	EASTERN WHITE PINE	6-8'	B & B	22'	149	DENSE FOLIAGE
11	PLATANUS OCCIDENTALIS	AMERICAN PLANE TREE	6-8'	B & B	30'	34	
12	QUERCUS ACCUTISSIMA	SAWTOOTH OAK	6-8'	B & B	30'	64	
13	QUERCUS PHELLOS	WILLOW OAK	6-8'	B & B	30'	63	
14	SALIX BABYLONICA	WEEPING WILLOW	6-8'	B & B	30'	56	
SHRUBS							
15	CORNUS AMOMUM	SILKY DOGWOOD	18-24"	B & B	5'	85	
16	CORNUS STOLONIFERA	RED OSIER DOGWOOD	18-24"	B & B	3'	100	
17	ELAEAGNUS UMBELLATUS	AUTUMN ELAEAGNUS	18-24"	B & B	6'	25	
18	ILEX GLABRA	INKBERRY	18-24"	B & B	4'	285	
19	ILEX VERTICILLATA	WINTERBERRY	18-24"	B & B	5'	86	
20	LONICERA MAACKI	AMUR HONEYSUCKLE	18-24"	B & B	6'	55	
21	PRUNUS BESSEYI	WESTERN SAND CHERRY	18-24"	B & B	3'6"	310	
22	PRUNUS TOMENTOSA	MANCHU CHERRY	18-24"	B & B	4'	125	
23	SAMBUCUS CANADENSIS	AMERICAN ELDER	18-24"	B & B	6'	125	
24	SYMPHORICARPOS ALBUS	COMMON SNOWBERRY	15-18"	B & B	3'	175	
25	VIBURNUM DILATATUM	LINDEN VIBURNUM	18-24"	B & B	7'	DELETE	
26	VIBURNUM OPULUS	EUROPEAN CRANBERRY BUSH	18-24"	B & B	6'	85	
27	VIBURNUM SIEBOLDII	SIEBOLD VIBURNUM	18-24"	B & B	8'	20	

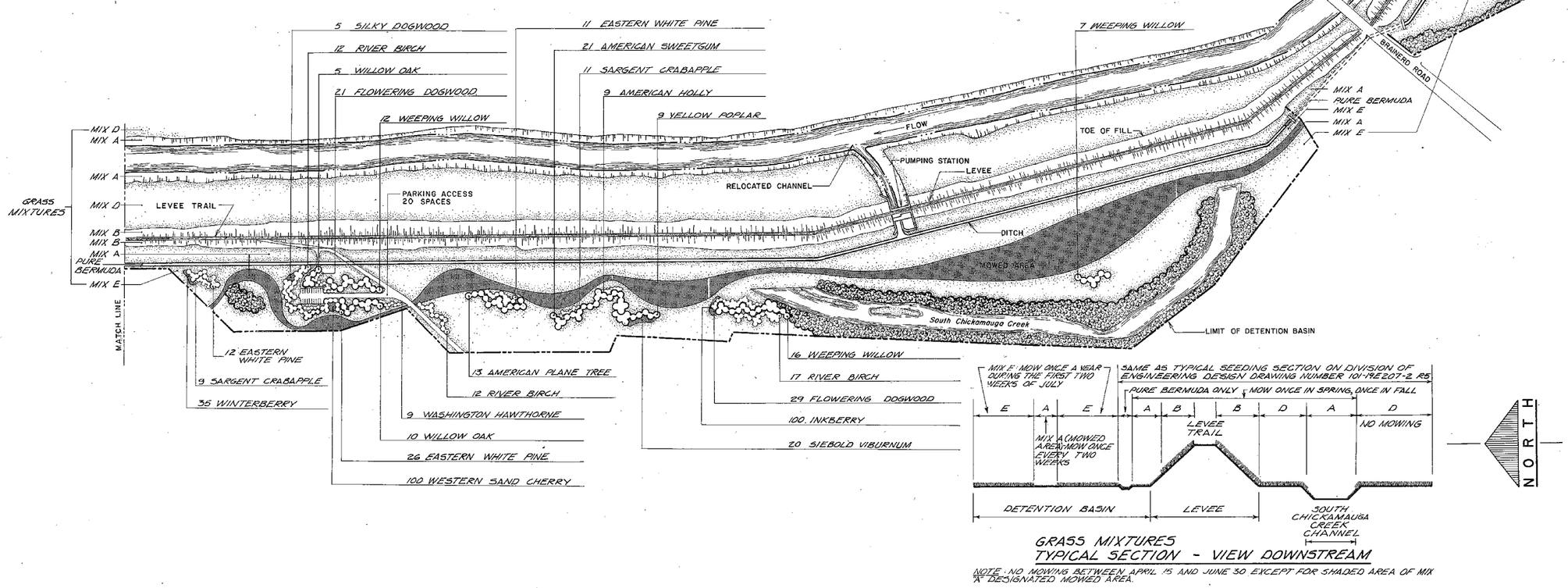
GRASS MIXTURES			SEEDING RATE - POUNDS PER ACRE	PLANTING SEASON
A	CYNODON DACTYLON	BERMUDA GRASS	40 +	MAY 15 - JULY 15
	LESPEDEZA STIPULACEA	KOREAN LESPEDEZA	10 = 50 TOTAL	MAY 15 - JULY 15
B	CORONILLA VARIA	CROWNVETCH	30 +	MARCH 15 - MAY 1
	FESTUCA RUBRA COMMUTATA	CHEWINGS FESCUE	30 = 60 TOTAL	AUG. 15 - OCT. 15
C	EREMOCHLOA OPHIUROIDES	CENTIPEDE GRASS	DELETE	MAY 15 - JULY 15
	TRIFOLIUM REPENS	WHITE CLOVER	DELETE	AUG. 15 - OCT. 15
D	LESPEDEZA CUNEATA	DWARF SERECIA "INTERSTATE"	20 +	MARCH 15 - MAY 15
	DACTYLIS GLOMERATA	ORCHARD GRASS	20 +	AUG. 15 - OCT. 15
	TRIFOLIUM REPENS	WHITE CLOVER	15 +	AUG. 15 - OCT. 15
	TRIFOLIUM INCARNATUM	CRIMSON CLOVER	15 = 70 TOTAL	AUG. 15 - OCT. 15
E	PHLEUM PRATENSE	TIMOTHY GRASS	20 +	AUG. 15 - OCT. 15
	POA TRIVIALIS	SABRE BLUEGRASS	30 +	AUG. 15 - OCT. 15
	TRIFOLIUM HYBRIDUM	ALSIKE CLOVER	20 = 70 TOTAL	AUG. 15 - OCT. 15

SEEDING NOTES

1. SEEDING OF DESIGNATED AREAS SHALL FOLLOW IMMEDIATELY BEHIND CONSTRUCTION. PLACING OF SEED, COMMERCIAL FERTILIZER AND AGRICULTURE LIMESTONE SHALL CONFORM TO HIGHWAY SPECIFICATION NO. 711, SECTION 180. SOIL PREPARATION SHALL BE TO A DEPTH OF 2" IN ACCORDANCE WITH PARAGRAPH 180.04.
2. BERMUDA GRASS SEED TO BE HULLED.
3. KOREAN LESPEDEZA AND DWARF SERECIA SEED TO BE SCARIFIED.
4. CROWNVETCH SEED TO BE SCARIFIED AND INOCULATED.
5. LIME AREAS TO BE PLANTED AT RATE OF 3½ TONS PER ACRE.
6. FERTILIZE WITH 19-19-19 AT RATE OF 400 POUNDS PER ACRE.
7. STRAW MULCH ALL PLANTED AREAS AT RATE OF 60 BALES PER ACRE.



NOTE: BARE ROOT OR CONTAINER GROWN MATERIAL MAY BE SUBSTITUTED FOR BALLED AND BURLAPED SHRUBS AND SMALL TREES (UP TO 4-6').



NORTH

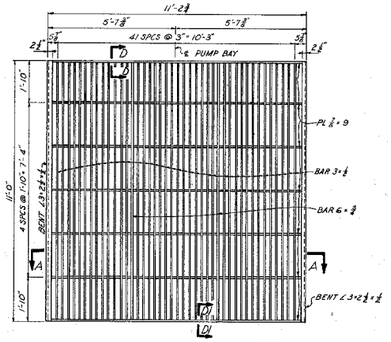
GRASS MIXTURES TYPICAL SECTION - VIEW DOWNSTREAM

NOTE: NO MOWING BETWEEN APRIL 15 AND JUNE 30 EXCEPT FOR SHADED AREA OF MIX "A" DESIGNATED MOWED AREA.

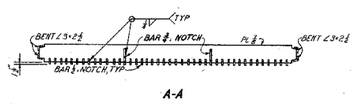
TENNESSEE VALLEY AUTHORITY	DIVISION OF FORESTRY, FISHERIES, AND WILDLIFE DEVELOPMENT RECREATION RESOURCES BRANCH	CHATTANOOGA, TENNESSEE PROPOSED RECREATION - WILDLIFE PLANTING PLAN SOUTH CHICKAMAUGA CREEK PROJECT	REVISED APRIL 1979	DESIGNED KATY CRONE SUBMITTED SAM PERRY	RECOMMENDED APPROVED Robert A. Curtis Jr.	SCALE 1" = 200' - 0" CONTOUR INTERVAL	SHEET 2 of 2	DATE FEB. 1979 FILE NO. 107-15

108-15

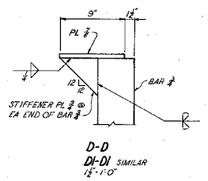
81 | C | 108-19E225



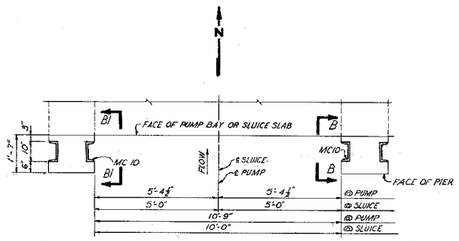
ELEVATION - PUMP TRASH RACK - MK I
10 REQ'D MK I.



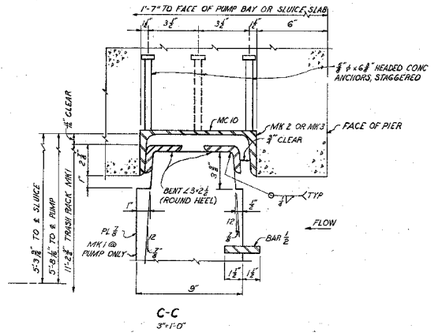
A-A



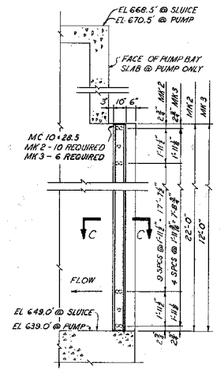
D-D
DI-DI SIMILAR
12"=1'-0"



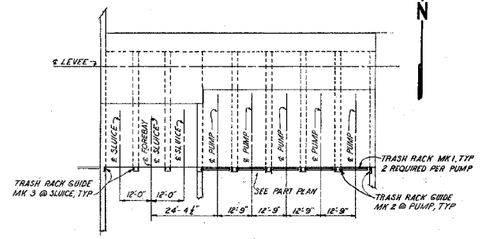
PART PLAN PUMP & SLUICE TRASH RACK GUIDES



C-C
3"=1'-0"



B-B
B1-B1 OPP H
⅜"=1'-0"



KEY PLAN
NTS

NOTES:
1. ALL STRUCTURAL SHAPES, PLATES AND BARS TO BE ASTM A36.
2. ALL WELDS BY FABRICATOR TO BE IN ACCORDANCE WITH THE LATEST AWS CODE.
3. WELDING ELECTRODES TO BE AWS A5.1 E70 SERIES.
4. ALL WELDED JOINTS TO BE SEAL WELDED.
5. CONCRETE HEADED STUD ANCHORS TO BE ASTM A108.
6. ALL MARK NUMBERS THIS DRAWING TO HAVE PREFIX 108-19E 225.
7. FOR MANUFACTURER'S DETAILS REFER TO VENETIAN IRON WORKS, INC. FILE TVA CONTRACT NO. 77K71-822290.

SCALE ½"=1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SURV	RECM	APPR
1	2870	2-8-77	MJB	MJB	RRP						

1 CHANGED DIMENSIONS PART PLAN & SECTION C-C.

DSGN M.J. BROWN — INSP
DRWN M.J. BROWN
CHKD R.R. PARDUE — ENGINEER
SUPV E.E. LAWLESS

CHATTANOOGA FLOOD PROTECTION

STRUCTURAL STEEL
PUMPING STATION NO. I
TRASH RACKS & GUIDES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Steven J. Scarbrough	C.E. Harris	Joe Hutcheson

KNOXVILLE 2-8-77 | 81 | C | 108-19E225 R1

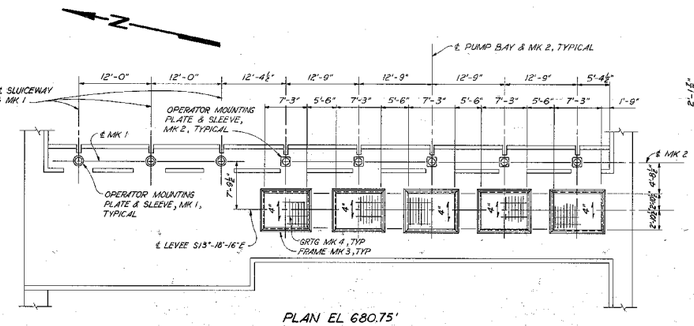
RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 12-7-81 R1

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

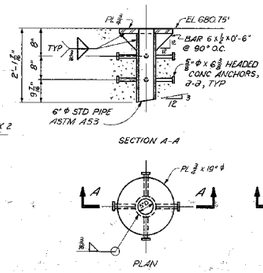
PRINT
SIZE
BR OR PROJ MS EE OR AD CO ED MO BP SW BC PA
PRINTS REQ'D-R

TECHNICAL INFORMATION CENTER
KNOXVILLE

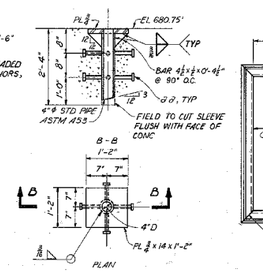
108-19E226 C 19



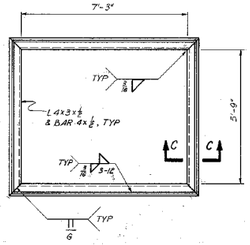
PLAN EL 680.75'
$\frac{1}{8}$" = 1'-0"



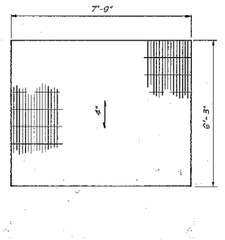
OPERATOR MOUNTING SLEEVE MARK 1
3 REQ'D
$\frac{3}{4}$" = 1'-0"



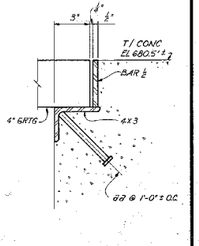
OPERATOR MOUNTING SLEEVE MARK 2
5 REQ'D
$\frac{3}{4}$" = 1'-0"



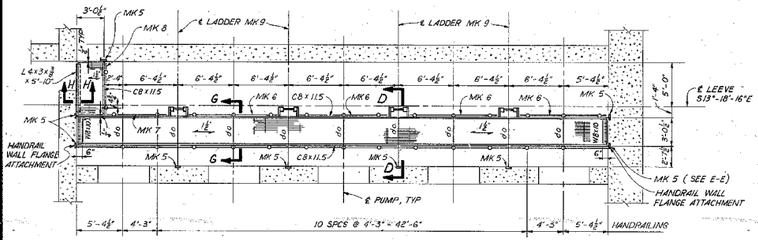
FRAME - MK 3
5 REQ'D
$\frac{1}{8}$" = 1'-0"



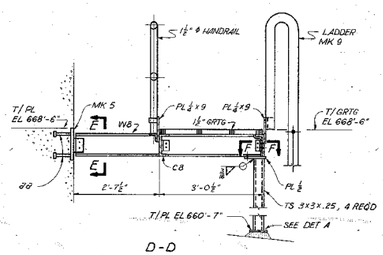
GRATING MK 4
5 REQ'D
$\frac{1}{8}$" = 1'-0"



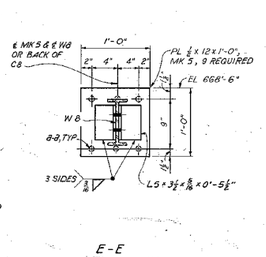
C-C
3" = 1'-0"



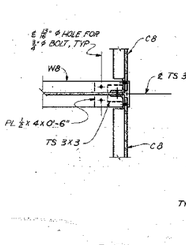
PLATFORM EL 668'-6"
$\frac{1}{8}$" = 1'-0"



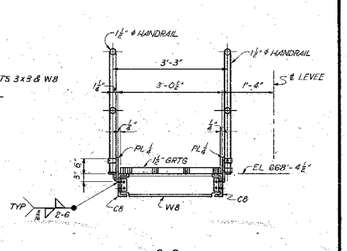
D-D
$\frac{3}{4}$" = 1'-0"



E-E
$\frac{1}{2}$" = 1'-0"



F-F
1½" = 1'-0



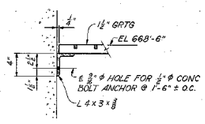
G-G
$\frac{3}{4}$" = 1'-0"

NOTES :
1. ALL SHAPES, PLATES AND BARS TO BE ASTM A36 EXCEPT STRUCTURAL TUBING.
2. STRUCTURAL TUBING TO BE ASTM A500 GRADE B OR A501.
3. ALL MATERIAL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC CODE.
4. ALL CONNECTIONS TO BE STANDARD AISC FRAMED BEAM CONNECTIONS (TABLE I) WITH MAXIMUM NUMBER OF ROWS OR EQUIVALENT WELDED CONNECTION.
5. ALL HOLES ⅞" ø FOR ¾" ø BOLTS EXCEPT AS NOTED.
6. ALL BOLTS TO BE ASTM A307.
7. WELDING ELECTRODES TO BE AWS A5.1 E 70 SERIES.
8. ALL WELDS BY FABRICATOR TO BE IN ACCORDANCE WITH THE LATEST AWS CODE.
9. FIELD WELDS TO BE IN ACCORDANCE WITH THE LATEST AWS CODE. INSPECTION OF WELDS NOT REQUIRED.
10. CONCRETE BOLT ANCHORS TO BE PHILLIPS RED HEAD OR EQUAL.
11. CONCRETE HEADED STUD ANCHORS TO BE ASTM A108.

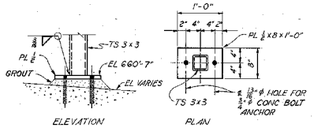
GRATING :
12. PLATFORM EL 668'-6" GRATING TO BE OF STEEL WITH RECTANGULAR TYPE LOAD BARS 1¼" x ⅛" x 1¼" O.C. WITH CROSS BARS @ 4" O.C.
13. GRATING MARK 4 TO BE OF STEEL WITH RECTANGULAR TYPE LOAD BARS 4" x ¼" x 1⅛" O.C. WITH CROSS BARS @ 4" O.C.
14. BANDING BARS TO BE SAME SIZE AS LOAD BARS.
15. BANDING BARS TO BE SPACED 8" MINIMUM FROM LOAD BARS TO PERMIT COMPLETE GALVANIZED COATING.
16. END BANDING BARS TO BE WELDED TO EVERY FOURTH LOAD BAR WITH A FILLET WELD, ONE SIDE ONLY.
17. DIRECTION OF GRATING SPAN SHOWN THUS ⟷ ON PLANS.
18. PLATFORM EL 668'-6" GRATING SHALL HAVE TWO (2) SADDLE CLIPS AT EACH SUPPORT FOR EACH SECTION OF GRATING.
19. GRATING MARK 4 SHALL HAVE TWO (2) SADDLE CLIPS AT SUPPORTS AT EACH END OF GRATING SPAN.
20. ALL GRATING SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

HANDRAIL :
21. HANDRAIL TO BE 1½" ø STD PIPE, ASTM A120 OR A53
22. HANDRAIL IS INDICATED ON PLANS THUS —○—○—○—
23. SHORT RADIUS WELDING ELLS TO BE USED AT ALL HANDRAIL BENDS.
24. HANDRAIL TO BE PAINTED AFTER FABRICATION.
25. ALL MARK NUMBERS THIS DRAWING TO HAVE PREFIX 108-19E226.

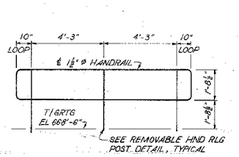
FOR MFR'S DETAILS REFER TO VENETIAN IRON WORKS, INC. FILE, TVA CONTRACT 77K71-822230.



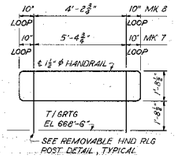
H-H
1½" = 1'-0"



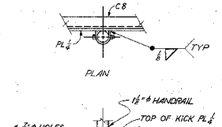
DET A
1" = 1'-0"

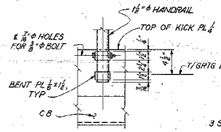


HANDRAIL MK 6
4 REQUIRED
NTS

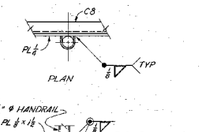


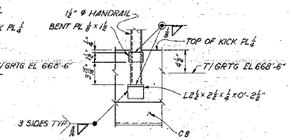
HANDRAIL MK 7 & 8
1 REQUIRED MK 7
1 REQUIRED MK 8
NTS



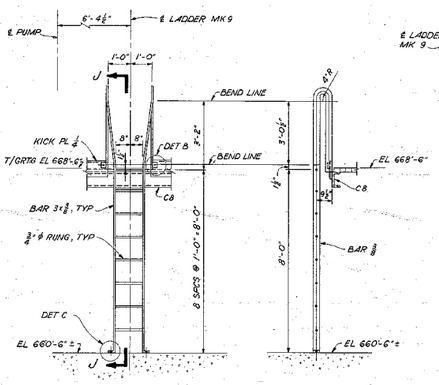


REMOVABLE HANDRAIL POST DETAIL
1½" = 1'-0"



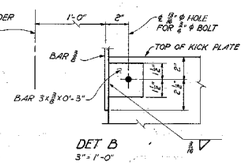


FIXED HANDRAIL POST DETAIL
1½" = 1'-0"

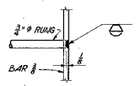


LADDER MK 9
4 REQUIRED
½" = 1'-0"

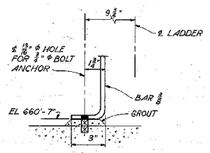
J-J
½" = 1'-0"



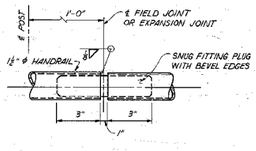
DET B
3" = 1'-0"



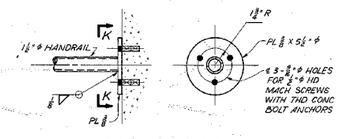
RUNG DETAIL
3" = 1'-0"



DET C
3" = 1'-0"



TYPICAL RAIL JOINT
NTS



HANDRAIL WALL FLANGE ATTACHMENT
3" = 1'-0"

SCALE AS NOTED

INSPECTED AND APPROVED FOR ISSUE

PRINT
SIZE
DR OR PROJ WE CE CC AD CO ED MO SF GW BL PA
PRINTS REQD—R 2

REV NO.	ECN NO.	DATE	DSGN	DRWG	CKED	SUPV	ENGR	INSP	CORR	RECM	APPR
2		2-8-79	RLA	CTC	RLA	RLA	BDS				
2	REMOVED HOLD										
1		5-25-77	WDT	WDT	RLA	RLA	RDH				
1	CHANGED L SIZE, SECT E-E.										

DSGN E. K. FARRIOR
DRWG C. T. CROSBY
CKED M. L. BROWN
SUPV R. L. APPLEBY
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

MISCELLANEOUS STEEL
PUMPING STATION NO. 1
PLATFORM, FRAMES & GRATING

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

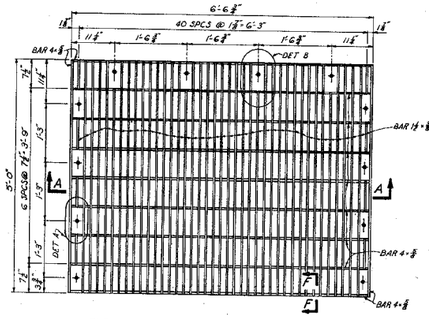
SUBMITTED	RECOMMENDED	APPROVED
KNOXVILLE 2-8-77		

61 C 108-19E226 R2

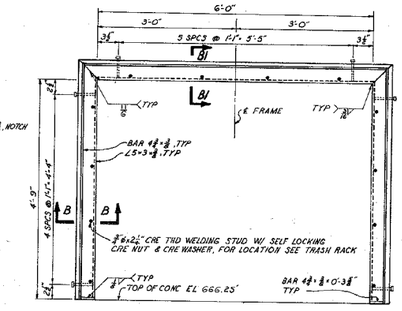
RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1-27-81 R2

TECHNICAL INFORMATION CENTER KNOXVILLE

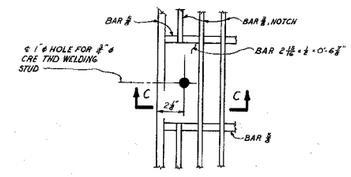
MF RD RL RR



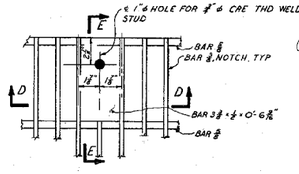
ELEVATION - TRASH RACK - MK 1
2 REQUIRED
1"=1'-0"



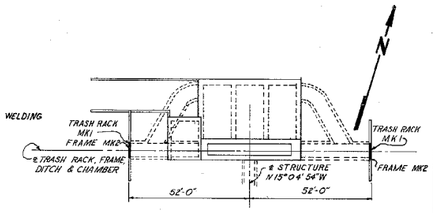
ELEVATION - FRAME - MK 2
2 REQUIRED
1"=1'-0"



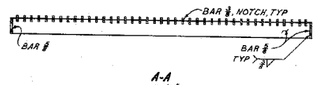
DET A



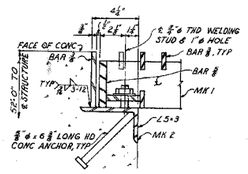
DET B



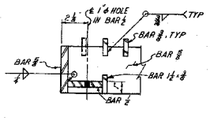
KEY PLAN
NTS



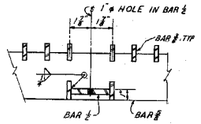
A-A
1"=1'-0"



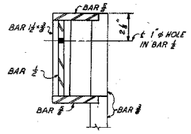
B-B
B1-B1 SIMILAR



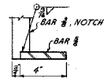
C-C



D-D



E-E



F-F

NOTES:
1. STRUCTURAL SHAPES, PLATES AND BARS TO BE ASTM A-36.
2. ALL WELDS BY FABRICATOR TO BE IN ACCORDANCE WITH LATEST AWS CODE.
3. WELDING ELECTRODES TO BE AWS A5.1 E70 SERIES.
4. ALL WELDED JOINTS TO BE SEAL WELDED.
5. CONCRETE HEADED STUD ANCHORS TO BE ASTM A108.
6. THREADED STUD WELDING FASTENERS SHALL BE KSM PRODUCT INC. STANDARD WELDING STUDS OR EQUAL.
7. ALL SELF LOCKING NUTS TO BE ANCO OR EQUAL.
8. A MARK NUMBERS TO HAVE PREFIX 108-19E230.
9. FOR MANUFACTURER'S DETAILS REFER TO VENETIAN IRON WORKS, INC. FILE TVA CONTRACT NO. 77K71-822230.

SCALE 3"=1'-0"
EXCEPT AS NOTED

NO.	SCN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	CHIEF	108 RECM	APPR
1	~	12-8-78	EKP	EBP	RLA	RLA	JWW	WEA	BCH	RCA

CORRECTED DIMENSION MK 1

DSGN M.L. BROWN
DRWN E.K. PARDUE
CHKD E.K. PARDUE
SUPV D.L. SPIVEY

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

STRUCTURAL STEEL
PUMPING STATION NO. 2
TRASH RACKS & FRAMES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
[signature]	[signature]	[signature]
KNOXVILLE 2-8-77	81	C	108-19E235 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Metre 1-27-81 R1

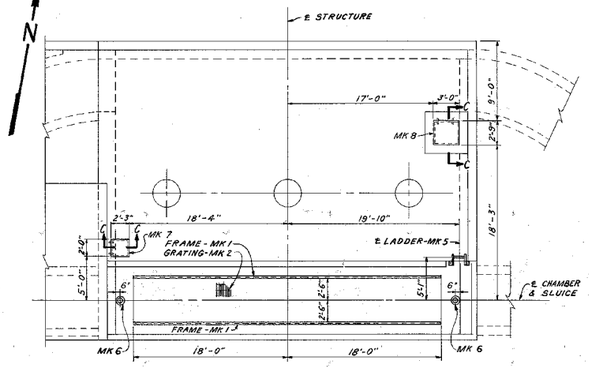
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

PRINT H 5 2
SIZE F

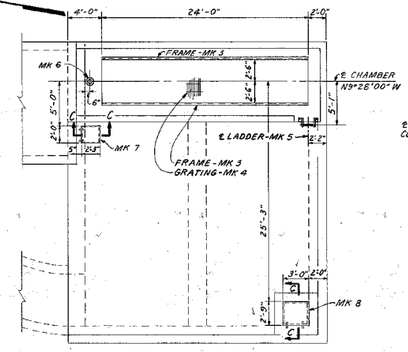
BR OR PROJ ML EK CE AD CO LD MD BF SW BL PA
PRINTS REQD-R

TECHNICAL INFORMATION CENTER
KNOXVILLE

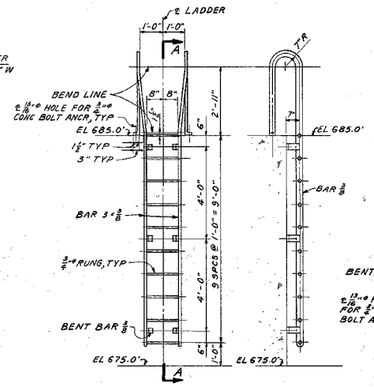
81 | C | 108-19E236



PLAN - EL 688.5
PUMPING STATION NO. 2

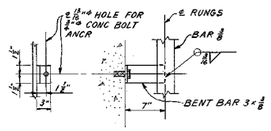


PLAN - EL 688.5
PUMPING STATION NO. 3

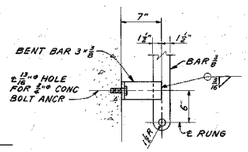


LADDER - MK 5
1 REQ'D - PUMPING STA NO. 2
1 REQ'D - PUMPING STA NO. 3
½" = 1'-0"

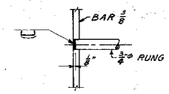
A - A
½" = 1'-0"



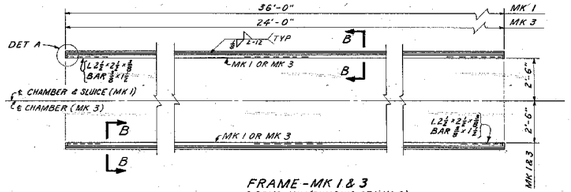
LADDER SUPPORT DET
1½" = 1'-0"



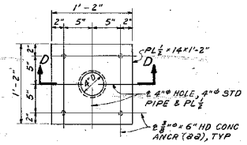
LADDER END DET
1½" = 1'-0"



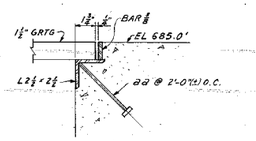
LADDER RUNG DET
3" = 1'-0"



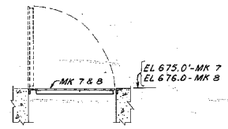
FRAME - MK 1 & 3
2 REQ'D - MK 1 (PUMPING STA NO. 2)
2 REQ'D - MK 3 (PUMPING STA NO. 3)
⅜" = 1'-0"



PIPE SLEEVE - MK 6
2 REQ'D (PUMPING STA NO. 2)
1 REQ'D (PUMPING STA NO. 3)
1½" = 1'-0"



B - B
3" = 1'-0"

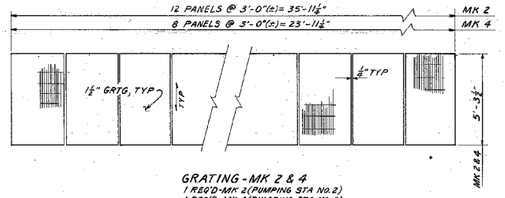


C - C
2 REQ'D - MK 7
2 REQ'D - MK 8
NTS

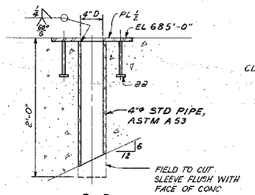
NOTES:
1. ALL SHAPES, PLATES & BARS TO BE ASTM A 36.
2. WELDING ELECTRODES TO BE AWS A5.1 E70 SERIES.
3. ALL WELDS BY FABRICATOR TO BE IN ACCORDANCE WITH THE LATEST AWS CODE.
4. FIELD WELDS TO BE IN ACCORDANCE WITH THE LATEST AWS CODE. INSPECTION OF WELDS NOT REQUIRED.
5. CONCRETE HEADED STUD ANCHORS TO BE ASTM A108.
6. FRAME & COVER MARK 7 SHALL BE TYPE 01, AND FRAME & COVER MARK 8 SHALL BE TYPE 03, AS MANUFACTURED BY THE BILCO CO., NEW HAVEN, CONN, OR EQUAL. FRAMES & COVERS SHALL BE HOT DIP GALVANIZED.

GRATING:
6. GRATING TO BE OF STEEL WITH RECTANGULAR TYPE LOAD BARS 1½" x ⅜" x 1 3/16" O.C. WITH CROSS BARS @ 4" O.C.
7. BANDING BARS TO BE SAME SIZE AS LOAD BARS.
8. BANDING BARS TO BE SPACED ⅜" MINIMUM FROM LOAD BARS TO PERMIT COMPLETE GALVANIZED COATING.
9. END BANDING BARS TO BE WELDED TO EVERY FOURTH LOAD BAR WITH A FILLET WELD, ONE SIDE ONLY.
10. DIRECTION OF GRATING SPAN SHOWN THUS —— ON PLAN.
11. GRATING MK 2 AND MK 4 SHALL HAVE TWO (2) SADDLE CLIPS AT SUPPORTS AT EACH END OF GRATING SPAN.
12. ALL GRATING SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
13. ALL MARK NO'S THIS DRAWING TO HAVE PREFIX 108-19E236.

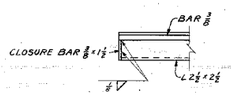
FOR MFR'S DETAILS REFER TO VENETIAN IRON WORKS, INC FILE, TVA CONTRACT 77K71-822830.



GRATING - MK 2 & 4
1 REQ'D - MK 2 (PUMPING STA NO. 2)
1 REQ'D - MK 4 (PUMPING STA NO. 3)
⅜" = 1'-0"



D - D
1½" = 1'-0"



DET A
TYPICAL FRAME END DET
3" = 1'-0"

SCALE ⅛" = 1'-0"

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	PURCH	APPR	PM
1	REMOVED HOLDS	8-6-79	RLA	CTC	RLA	RLA	RGA	VAR	DEMOLA		

DSGN N. D. TERRELL
DRWN N. D. TERRELL
CHKD R. L. ARNOLD
SUPV E. G. APPLEBY

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

MISCELLANEOUS STEEL
PUMPING STATION NO. 2 & 3
LADDERS, GRATING & FRAMES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Thomas J. Beckham	K. E. Harris	

KNOXVILLE | 2-8-77 | 81 | C | 108-19E236 R1

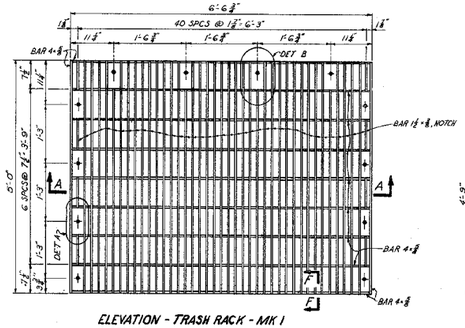
RECORD DRAWING AS CONSTRUCTED
Frank Van Metre 1-22-81 RI

INSPECTED AND APPROVED FOR ISSUE

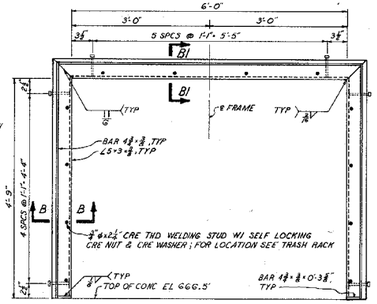
PRINT N ___ -0
SIZE F ___ -0

BR OR PROJ MK EE CL AD CO ED WO RF SW BL PA
PRINTS 8000-8

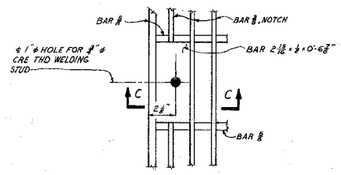
TECHNICAL INFORMATION SYSTEM
INDEXED KNOXVILLE



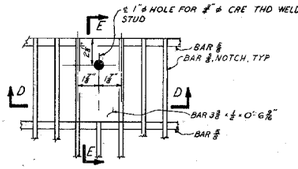
ELEVATION - TRASH RACK - MK 1
2 REQUIRED
1"=1'-0"



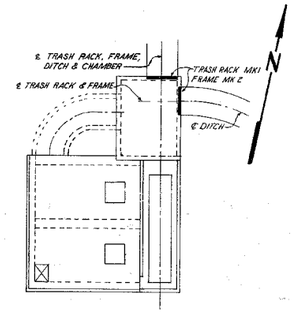
ELEVATION - FRAME - MK 2
2 REQUIRED
1"=1'-0"



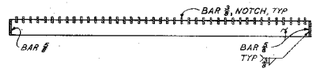
DET A



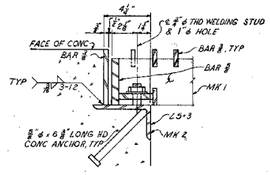
DET B



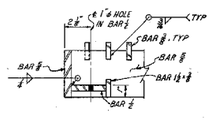
KEY PLAN
NTS



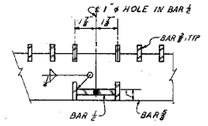
A-A
1"=1'-0"



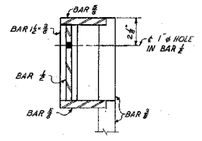
B-B
B1-B1 SIMILAR



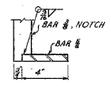
C-C



D-D



E-E



F-F

NOTES:
1. STRUCTURAL SHAPES, PLATES AND BARS TO BE ASTM A-36.
2. ALL WELDS BY FABRICATOR TO BE IN ACCORDANCE WITH LATEST AWS CODE.
3. WELDING ELECTRODES TO BE AWS A5.1 E70 SERIES.
4. ALL WELDED JOINTS TO BE SEAL WELDED.
5. CONCRETE HEADED STUD ANCHORS TO BE ASTM A108.
6. THREADED STUD WELDING FASTENERS SHALL BE KSM PRODUCT INC. STANDARD WELDING STUDS OR EQUAL.
7. ALL SELF LOCKING NUTS TO BE ANCO OR EQUAL.
8. ALL MARK NUMBERS TO HAVE PREFIX 108-19E240.
9. FOR MANUFACTURER'S DETAILS REFER TO VENETIAN IRON WORKS, INC. FILE TVA CONTRACT NO. 77K71-822230.

SCALE 3"=1'-0"
EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	NUSM	RECM	APPR
1	~	8-20	SEP	MLB	RLA	RLA	JDH		KRL	JDH	KRL

CORRECTED DIMENSION MK1

DSGN M.L. BROWN
DRWN M.L. BROWN
CHKD E.K. RAGUE
SUPV R.L. APPERT

INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

STRUCTURAL STEEL
PUMPING STATION NO. 3
TRASH RACKS & FRAMES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Steven L. Gardner	K. E. Tarver	J. P. Burch

KNOXVILLE 2-8-77 | 81 | C | 108-19E240 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1-27-81 RJ

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

PRINT
SIZE
BR DR PROJ ME EL CE AD CO ED MD BF SW RL PA
PRINTS PROD-R

TECHNICAL INFORMATION CENTER KNOXVILLE