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

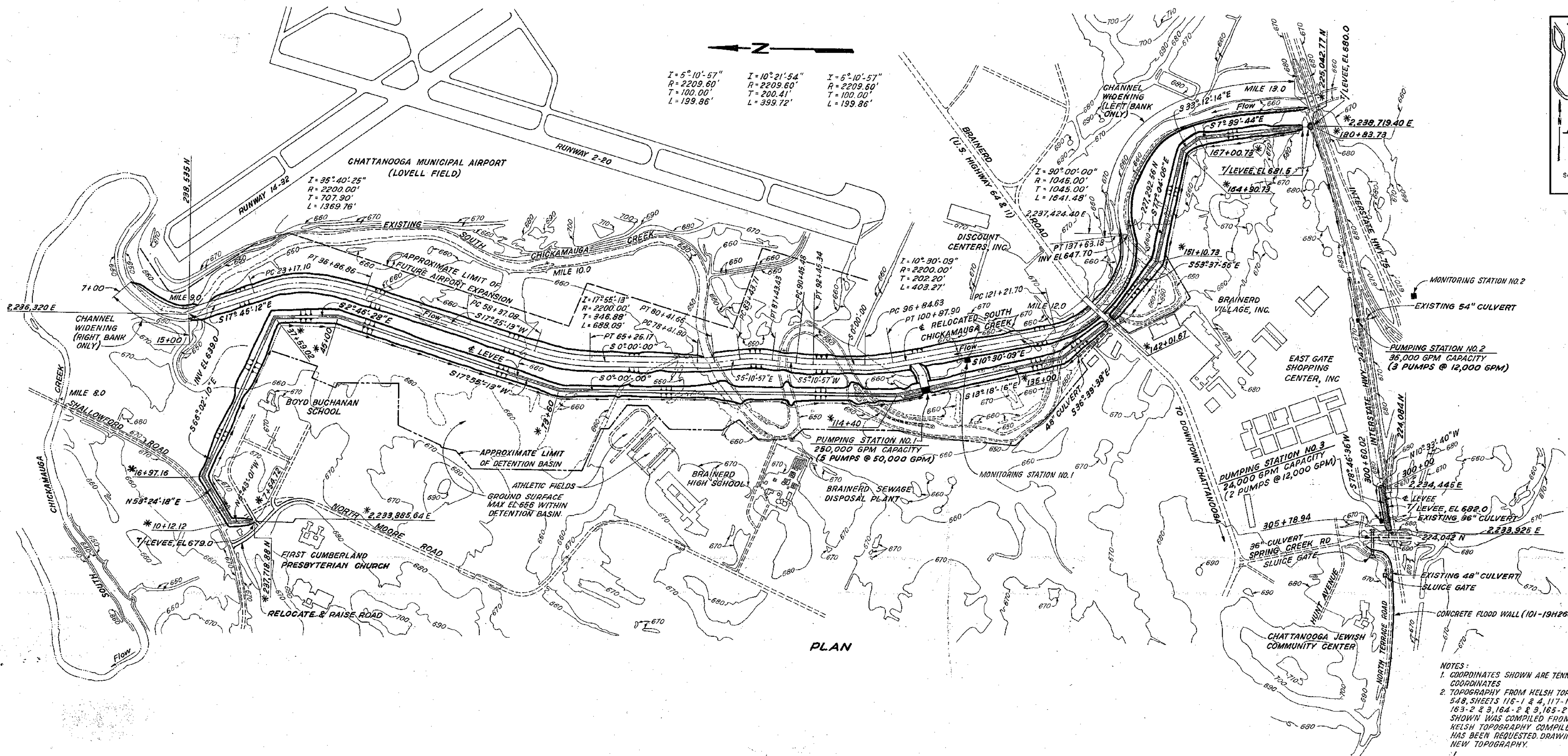
DWG NO. 101-19E240-1 THRU 4

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

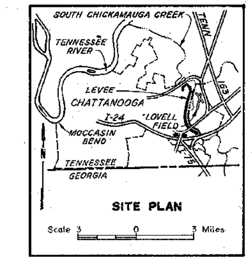
KNOXVILLE, TENN DATE 6-1-77

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

TVA 10573A (DED-11-75)



PLAN

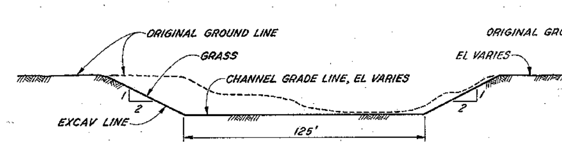


SITE PLAN

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



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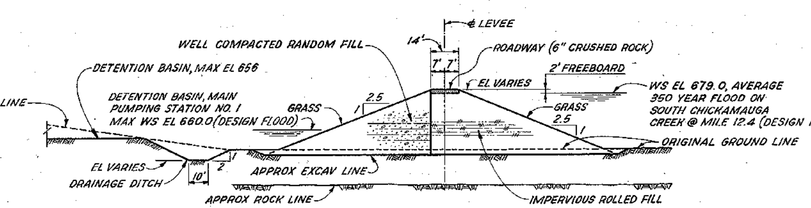
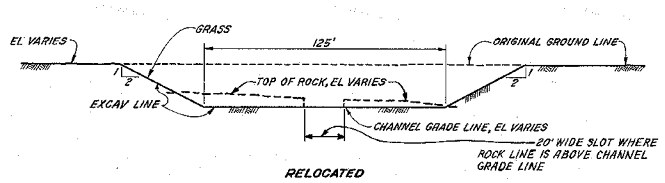
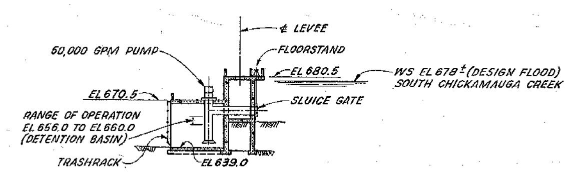


TYPICAL LEVEE SECTION



RELOCATED

TYPICAL CHANNEL SECTIONS



TYPICAL SECTION PUMPING STATION NO. 1

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

1" = 500' 0 500 1000 PLAN

1" = 30' 0 30 60 SECTIONS

CHATTANOOGA FLOOD PROTECTION
ALL FEATURES

GENERAL

PLANS & SECTIONS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

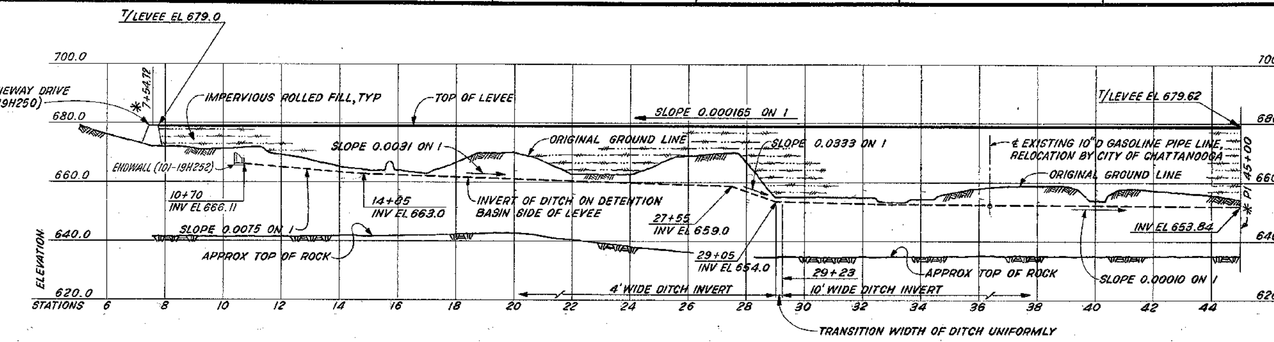
SUBMITTED	RECOMMENDED	APPROVED
[signature]	[signature]	[signature]

INSPECTED AND APPROVED FOR ISSUE

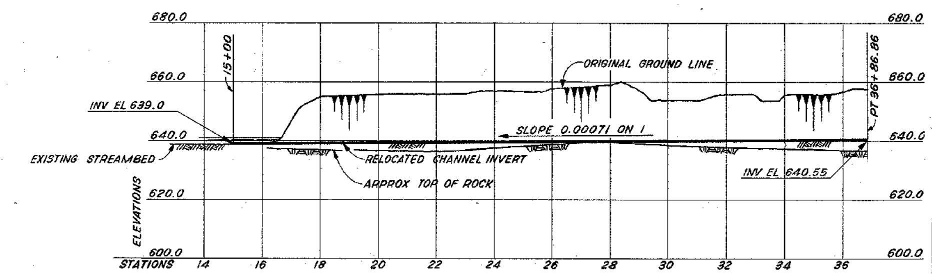
KNOXVILLE 2-17-76 81 C 101-19E200 R7

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

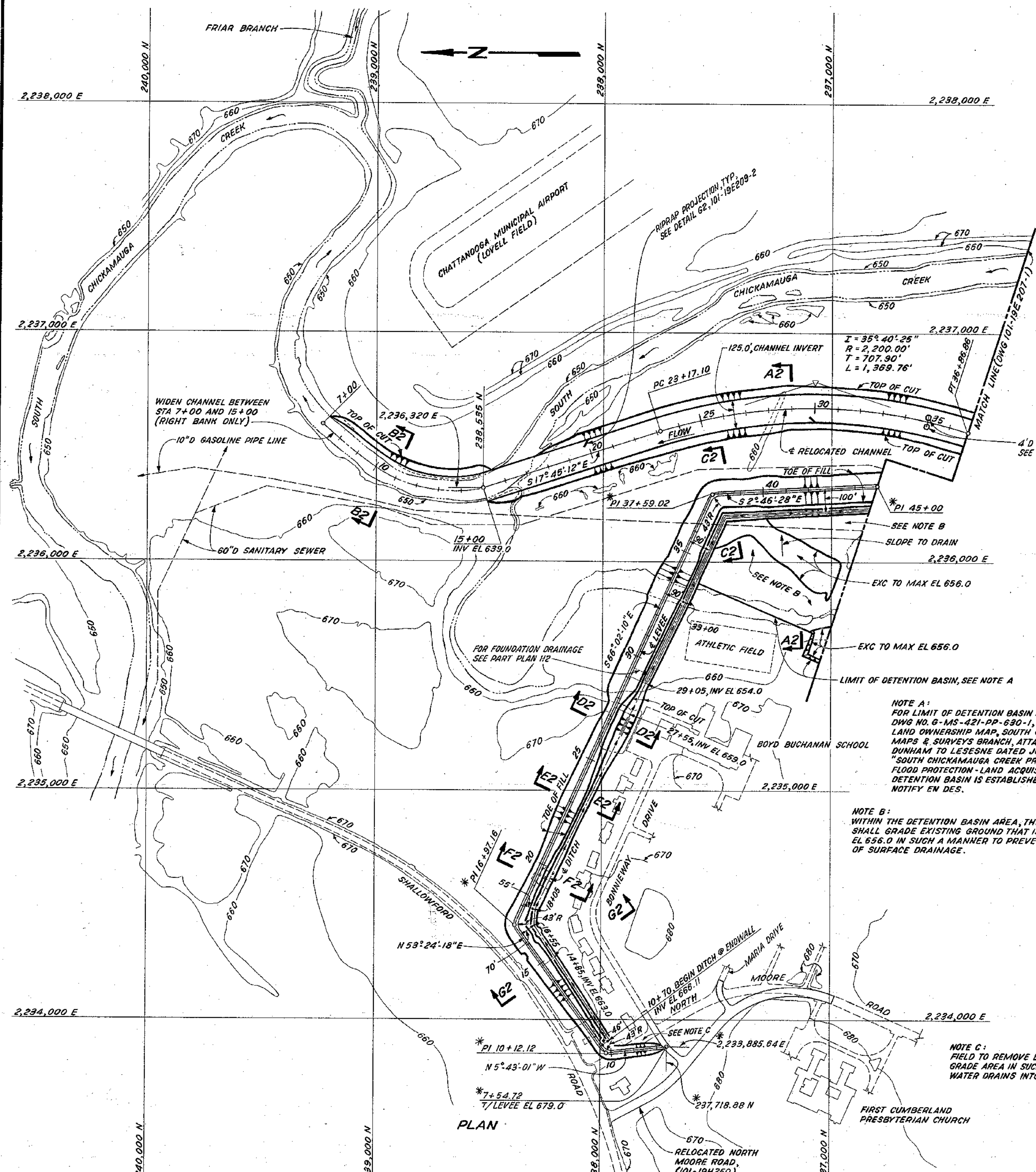
81 C 101-19W200



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	2,233,812.95	237,685.14
PI 7+83.95	2,233,842.94	237,713.62
PI 8+74.21	2,233,874.81	237,798.07
POT 9+84.37	2,233,860.32	237,907.27
PI 10+47.73	2,233,851.99	237,970.08
POT 11+25.69	2,233,924.14	238,023.12
PI 17+32.28	2,234,412.89	238,382.39
PI 37+78.07	2,236,292.73	237,545.61
PI 45+07.53	2,236,330.13	236,803.44
PI 73+64.33	2,235,447.25	234,084.02
PI 114+42.02	2,235,449.51	230,004.91
PI 135+02.98	2,235,923.04	227,998.19
PI 142+01.67	2,236,343.00	227,437.00
PI 149+06.57	2,236,852.07	226,949.42
POT 151+01.22	2,237,051.26	226,903.98
PI 166+07.11	2,238,519.44	226,569.08
END 180+01.68	2,238,705.27	225,132.44

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 PROCTER 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 BORROW 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 HUMUS, ROOTS, ETC. IS NOT PERMITTED IN THE LEVEE FILL MATERIAL. A MINMUM 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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
6	FINAL FIELD REV	1-3-83		JLM		RDM	/	RDM	ELS	GLB	
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., K5, A6; REVISED TITLE BLOCK, K11	11-6-78		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB
4	ADDED RIPRAP PROJECTION, E4, E6 & 4'D BOULDERS, E6	9-13-78		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB
3	ADDED FDN DRAINAGE, G4; REVISED INV OF DITCH, B10, B11, B12, G5	7-25-78		JLM	JWW	/	JWW	ELS		/	GLB
2	REVISED ALIGNMENT & STATIONS OF LEVEE & RELOCATED NORTH MOORE ROAD, J5; PROFILE ALONG ℄ LEVEE, A7 & A10; CHANNEL WIDENING, E2; TITLE BLOCK	5-5-78		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB
1	REMOVED HOLD ON CUTOFF TRENCH, B12; REVISED HORIZONTAL & VERTICAL ALIGNMENT OF LEVEE & CHANGED TO SIZE E DWG	12-10-76		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB

DSGN
DRWN J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 9-20-76
INSP
ENGINEER [signature]

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

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

SCALE 1" = 200' EXCEPT AS NOTED

COMPANION DRAWING: 101-19E205-2

INSPECTED AND APPROVED FOR ISSUE [signature] DESIGN PROJECT MANAGER

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

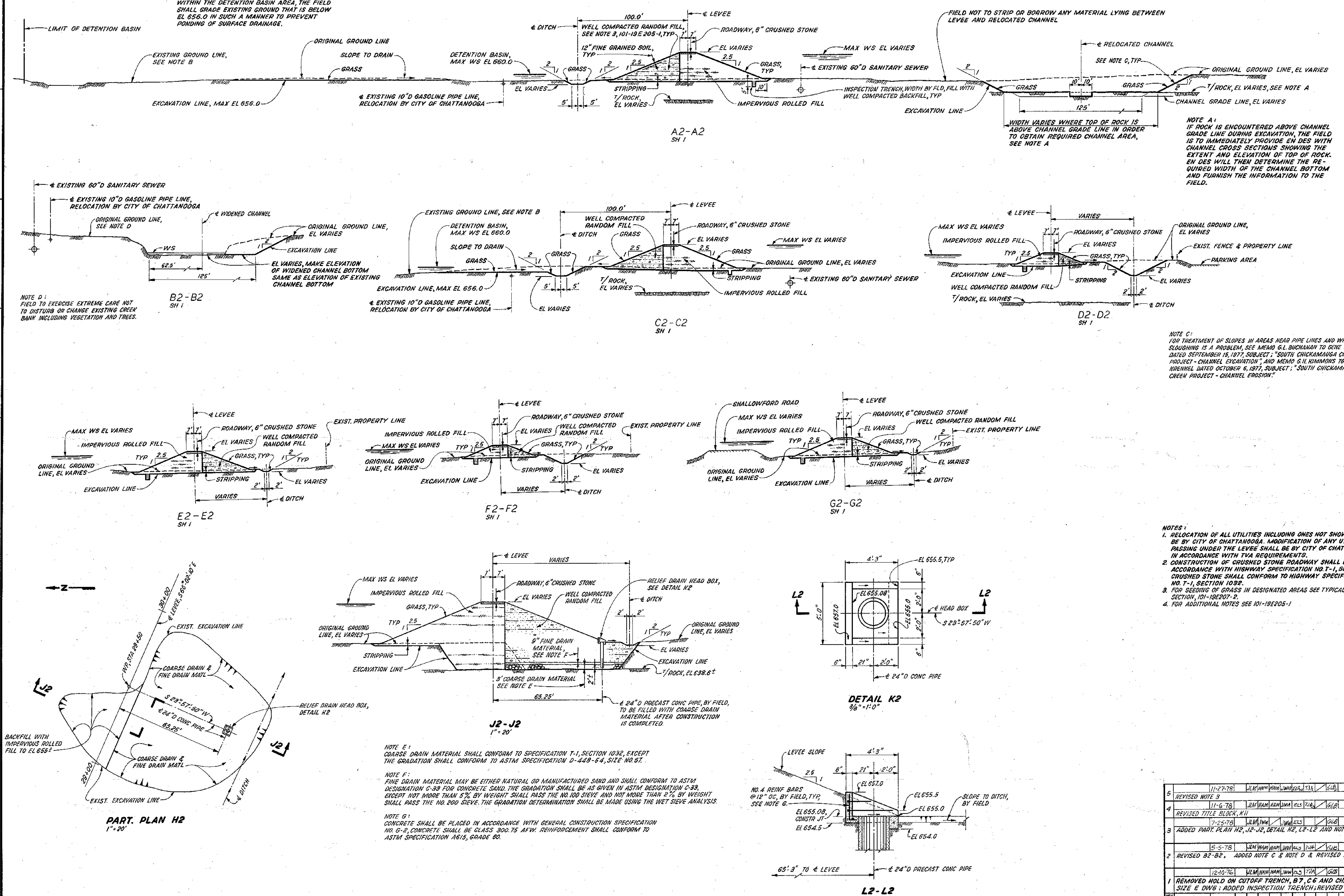
SUBMITTED	RECOMMENDED	APPROVED
E. J. [signature]	T. J. Abraham [signature]	[signature]

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

RECORD DRAWING AS CONSTRUCTED [signature] 1/27/81 R6

81 C 101-19W205-1

81 | C | 101-19E205-2



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

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.H. KIMMONS TO PETER A. KRENKEL DATED OCTOBER 6, 1977, SUBJECT; "SOUTH CHICKAMAUGA CREEK PROJECT - CHANNEL EROSION."

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 1032.
3. FOR SEEDING OF GRASS IN DESIGNATED AREAS SEE TYPICAL SEEDING SECTION, 101-19E207-2.
4. FOR ADDITIONAL NOTES SEE 101-19E205-1

NOTE E:
COARSE DRAIN MATERIAL SHALL CONFORM TO SPECIFICATION T-1, SECTION 1032, EXCEPT THE GRADATION SHALL CONFORM TO ASTM SPECIFICATION D-448-54, SIZE NO. 57.

NOTE F:
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.

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.

SCALE 1" = 30' EXCEPT AS NOTED

COMPANION DRAWING: 101-19E205-1

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

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

DSGN
DRWN J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 9-20-76
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

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

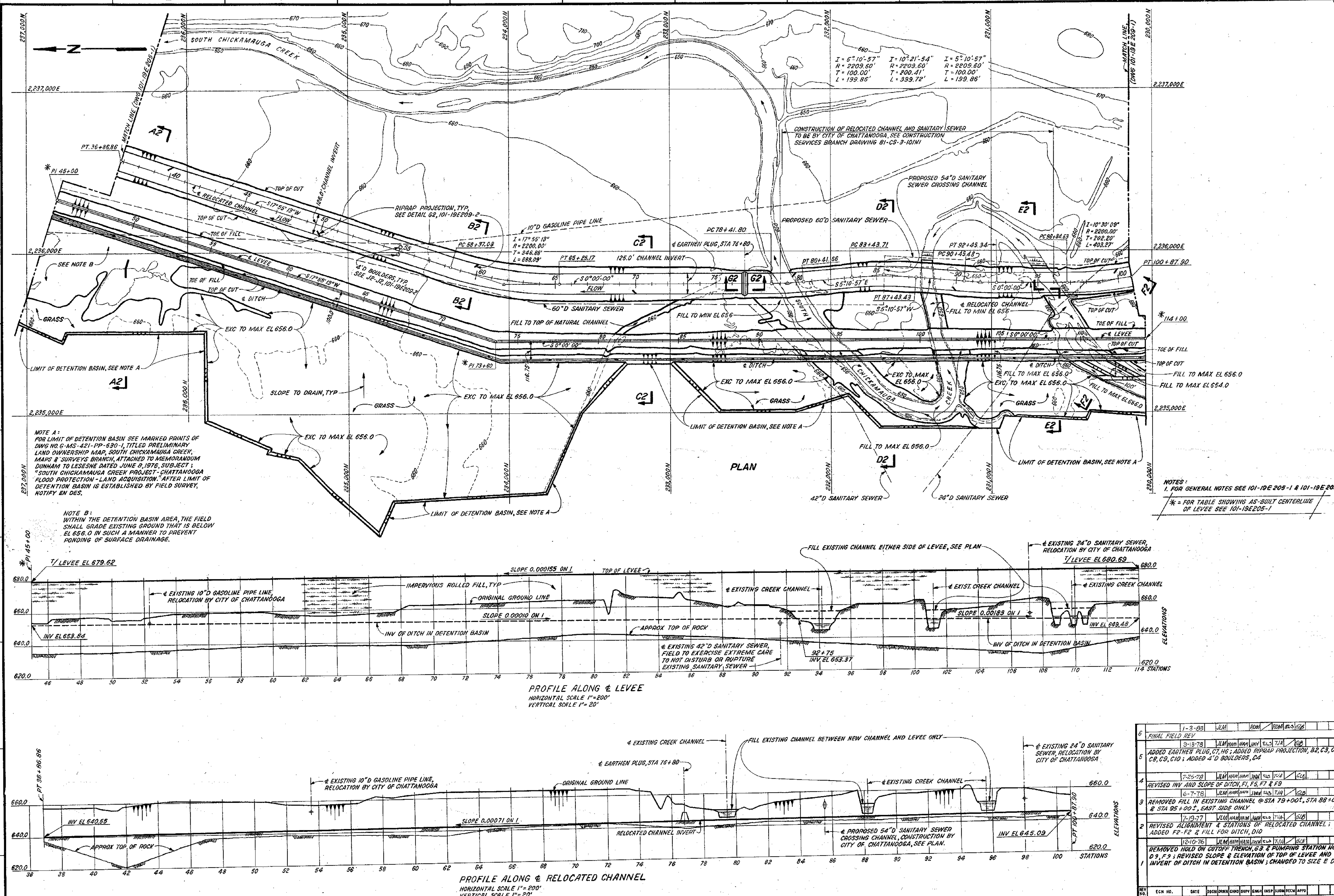
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
E. L. S.	T. J. Abraham	G. L. Buchanan

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

RECORD DRAWING AS CONSTRUCTED
Frank Van Hellen 1/27/81 R5

81 C 101-19W205-2



REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
6		1-3-83	JLM			RDM	/	RDM	ELS	GLB	
	FINAL FIELD REV										
5		9-13-78	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	
	ADDED EARTHEN PLUG, C7, H6; ADDED RIPRAP PROJECTION, B2, C3, C5, C6, C8, C9, C10; ADDED 4'D BOULDERS, C4										
4		7-25-78	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	
	REVISED INV AND SLOPE OF DITCH, F1, F5, F7 & F9										
3		6-7-78	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	
	REMOVED FILL IN EXISTING CHANNEL @ STA 79+00±, STA 88+00± & STA 95+00±, EAST SIDE ONLY										
2		7-19-77	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	
	REVISED ALIGNMENT & STATIONS OF RELOCATED CHANNEL; ADDED F2-F2 & FILL FOR DITCH, D10										
1		12-10-76	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	
	REMOVED HOLD ON CUTOFF TRENCH, G3 & PUMPING STATION NO. 1, D9, F9; REVISED SLOPE & ELEVATION OF TOP OF LEVEE AND INVERT OF DITCH IN DETENTION BASIN; CHANGED TO SIZE E DWG										

DSGN V.F. VANCE & J.L. MAXEY
DRWN V.F. VANCE & J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 9-8-76
INSP
ENGINEER [signature]

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

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

SCALE 1" = 200' EXCEPT AS NOTED
COMPANION DRAWING: 101-19E207-2

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

INSPECTED AND APPROVED FOR ISSUE [signature]

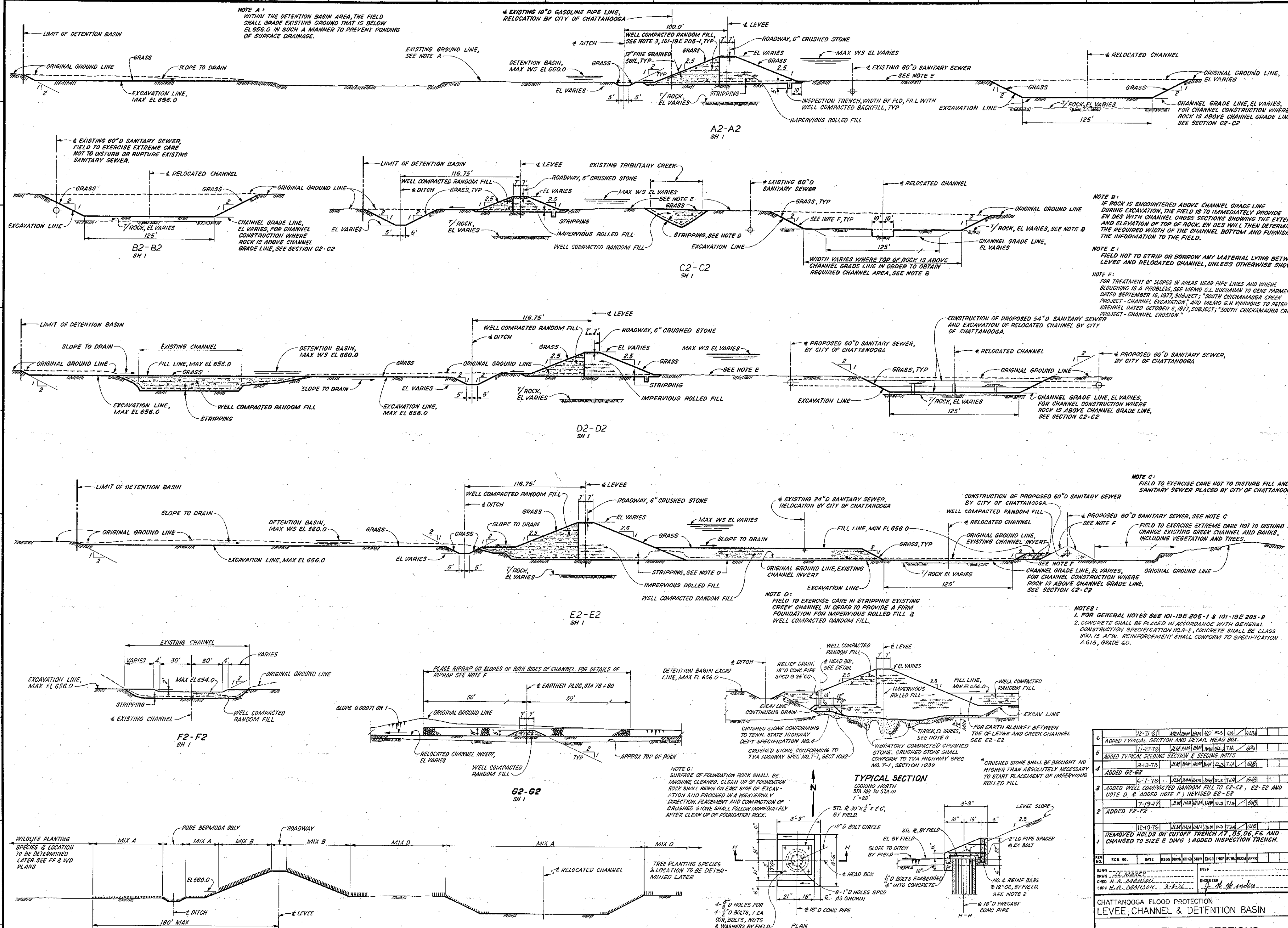
SUBMITTED E.S. [signature] | RECOMMENDED [signature] | APPROVED [signature]

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

RECORD DRAWING/AS CONSTRUCTED [signature] 1/27/81 R6

81 C 101-19W207-1

101-19E207-1 C 81



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.

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. KRENKEL DATED OCTOBER 6, 1977, SUBJECT; "SOUTH CHICKAMAUGA CREEK PROJECT - CHANNEL EROSION."

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

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 300.75 AFW. REINFORCEMENT SHALL CONFORM TO SPECIFICATION A615, GRADE 60.

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 WESTERNLY DIRECTION. PLACEMENT AND COMPACTION OF CRUSHED STONE SHALL FOLLOW IMMEDIATELY AFTER CLEAN UP OF FOUNDATION ROCK.

GRASS SPECIES

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

SCALE 1" = 30'

COMPANION DRAWING: 101-19E 207-1

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
6		12-31-81	MEN	HAM	HAM	HD	ELS	TJA		GLB	
	ADDED TYPICAL SECTION AND DETAIL HEAD BOX.										
5		11-27-78	JLM	HAM	HAM	JWW	ELS	TJA		GLB	
	ADDED TYPICAL SEEDING SECTION & SEEDING NOTES										
4		9-13-78	JLM	HAM	HAM	JWW	ELS	TJA		GLB	
	ADDED G2-G2										
3		6-7-78	JLM	HAM	HAM	JWW	ELS	TJA		GLB	
	ADDED WELL COMPACTED RANDOM FILL TO C2-C2; E2-E2 AND NOTE D & ADDED NOTE F; REVISED E2-E2										
2		7-19-77	JLM	HAM	HAM	JWW	ELS	TJA		GLB	
	ADDED F2-F2										
1		12-10-76	JLM	HAM	HAM	JWW	ELS	TJA		GLB	
	REMOVED HOLDS ON CUTOFF TRENCH A7, B5, D6, F6 AND CHANGED TO SIZE E DWG; ADDED INSPECTION TRENCH.										

DSGN
DRWN J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 9-8-76
INSP
ENGINEER

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

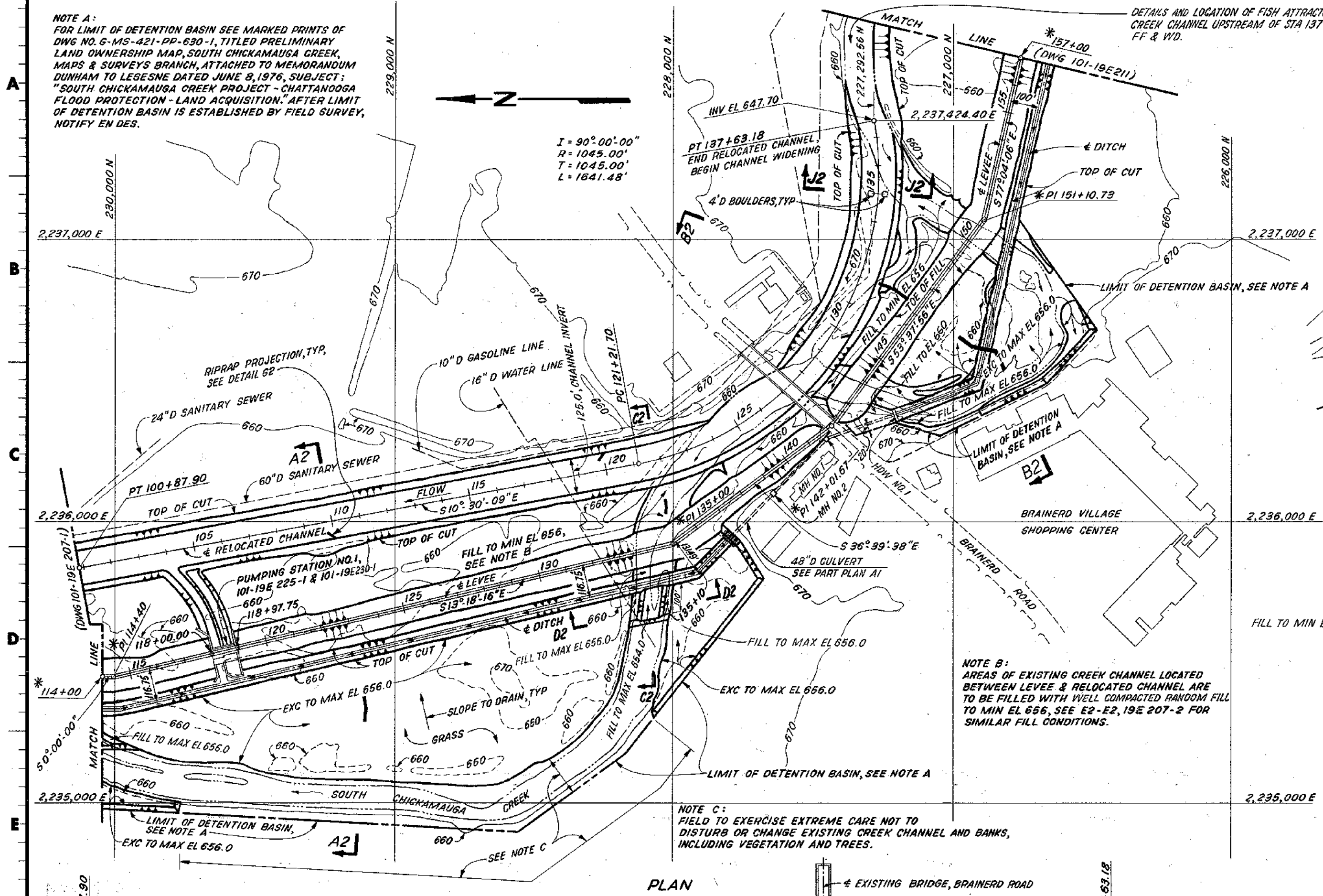
KNOXVILLE 10-5-76 81 C 101-19E207-2 R6

RECORD DRAWING AS CONSTRUCTED 1/27/81 R5

81 C 101-19W207-2

101-19E209-1 | C | 81

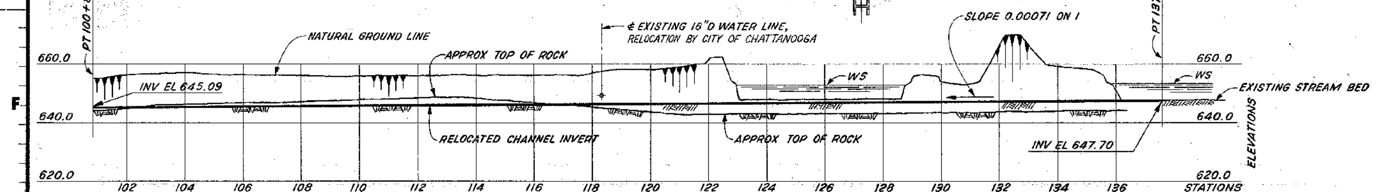
NOTE A:
FOR LIMIT OF DETENTION BASIN SEE MARKED PRINTS OF DWG NO. G-MS-421-PP-630-1, TITLED PRELIMINARY LAND OWNERSHIP MAP, SOUTH CHICKAMAUGA CREEK, MAPS & SURVEYS BRANCH, ATTACHED TO MEMORANDUM DUNHAM TO LESESNE DATED JUNE 8, 1976, SUBJECT; "SOUTH CHICKAMAUGA CREEK PROJECT - CHATTANOOGA FLOOD PROTECTION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



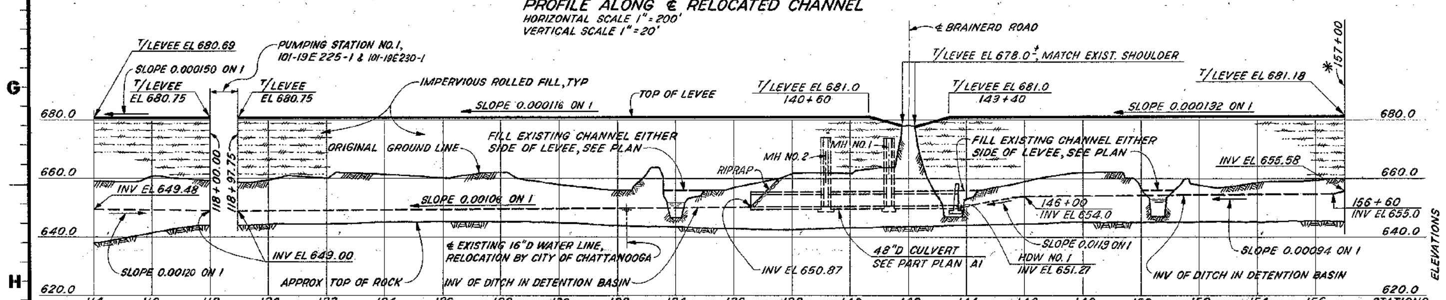
NOTE B:
AREAS OF EXISTING CREEK CHANNEL LOCATED BETWEEN LEVEE & RELOCATED CHANNEL ARE TO BE FILLED WITH WELL COMPACTED RANDOM FILL TO MIN EL 656, SEE E2-E2, 19E 207-2 FOR SIMILAR FILL CONDITIONS.

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

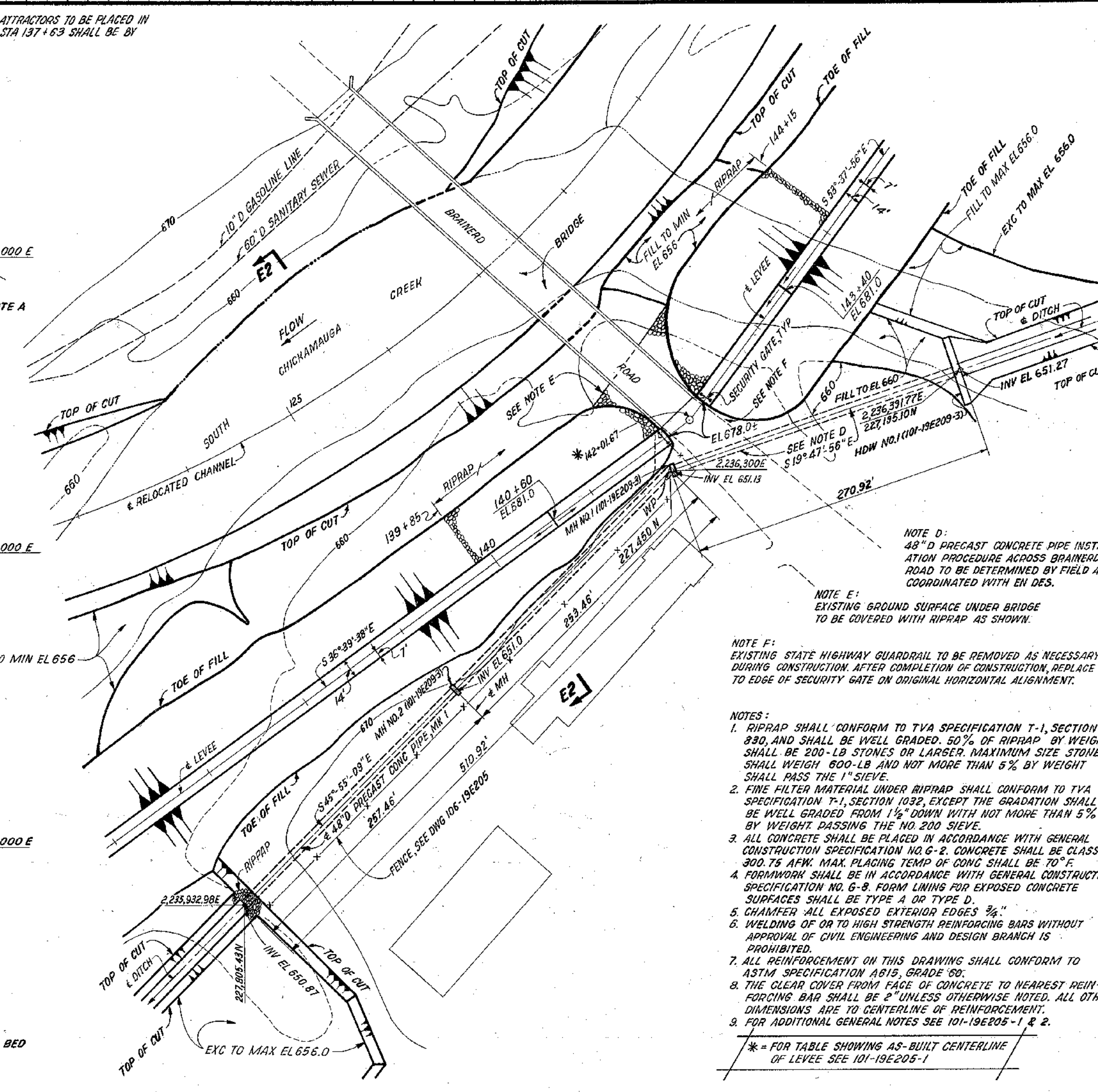
PLAN



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



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



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 830, 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-2. CONCRETE SHALL BE CLASS 300.75 AFW. 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 EXTERIOR 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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
4		1-3-83		JLM			RDM	/	RDM	ELS	GLB
	FINAL FIELD REV										
3		8-28-79		DLW	HAM	HAM	JWW	ELS	TJA	/	GLB
	REV PLAN, PART PLAN A1 & PROFILE ALONG ℄ LEVEE										
2		11-1-78		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB
	REVISED INVERT AND SLOPE OF DITCH IN DETENTION BASIN, H5, G6 & H6										
1		9-13-78		JLM	HAM	HAM	JWW	ELS	TJA	/	GLB
	ADDED RIPRAP PROJECTION, C2, C3, B5 & 4'D BOULDERS, B5 & NOTE, A7										

DSGN
DRWN J.L. MAXEY
CHKD E. B. CHENG
SUPV H. A. MANSON 10-14-77
INSP
ENGINEER (signature)

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

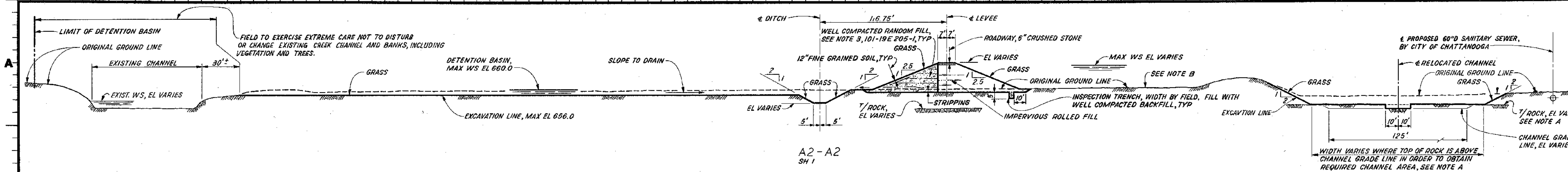
SUBMITTED	RECOMMENDED	APPROVED
E. L. Sorrimon	T. J. Abraham	G. L. Buchanan

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

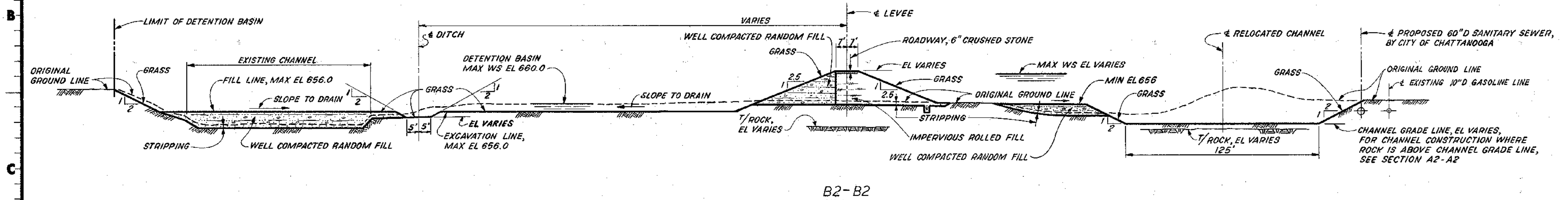
RECORD DRAWING AS CONSTRUCTED
Frank Van Vleet 1/27/81 R4

PRINT	H				12	1
SIZE	F				3	

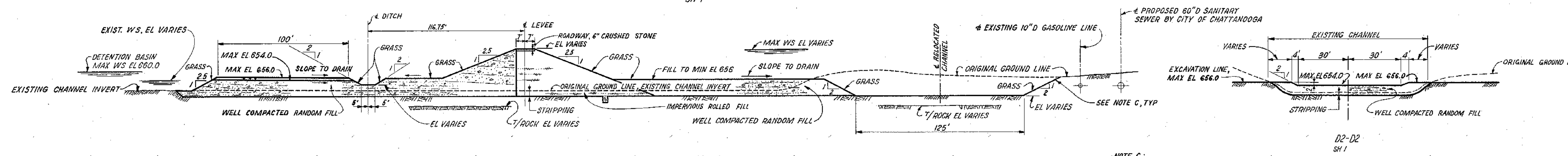
BR OR PROJ ME EE CE AD CO ED MD HPP SW BL PA
PRINTS REQD-R 1



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.

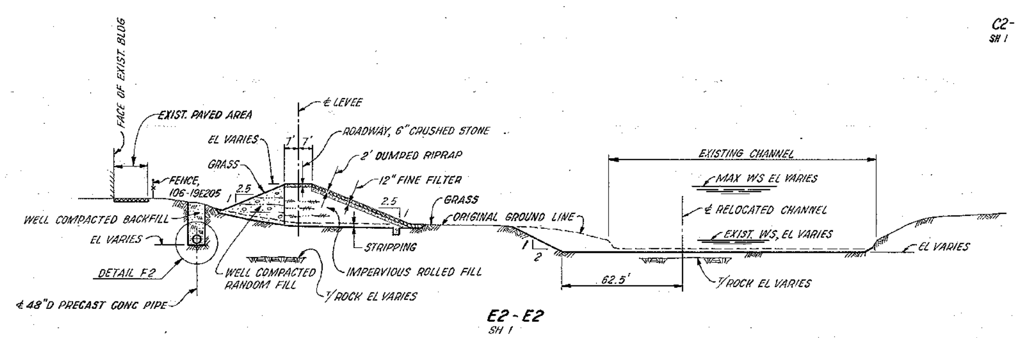


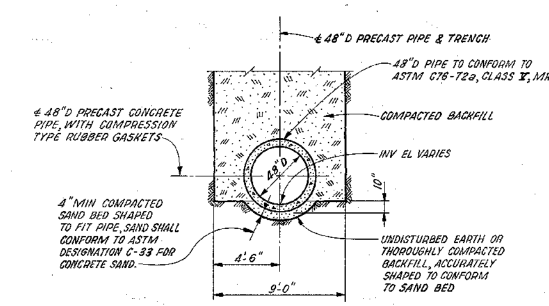
NOTE B:
FIELD NOT TO STRIP OR BORROW ANY MATERIAL LYING BETWEEN LEVEE AND RELOCATED CHANNEL, UNLESS OTHERWISE SHOWN.



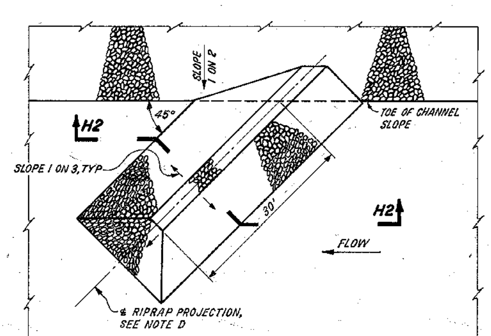
NOTE C:
FOR TREATMENT OF SLOPES IN AREAS NEAR PIPE LINES AND WHERE SLOUGHING IS A PROBLEM, SEE MEMO G.L. BUCHANAN TO GENE FARMER DATED SEPTEMBER 15, 1977, SUBJECT; "SOUTH CHICKAMAUGA CREEK PROJECT-CHANNEL EXCAVATION", AND MEMO G.H. KIMMONS TO PETER A. KRENKEL DATED OCTOBER 6, 1977, SUBJECT; "SOUTH CHICKAMAUGA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

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

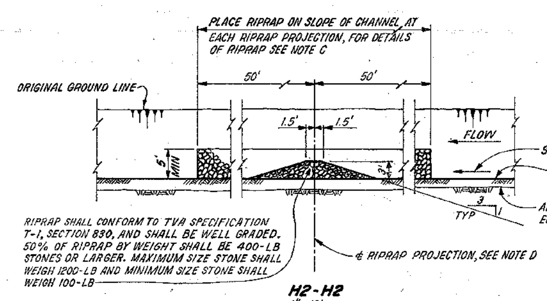




DETAIL F2
F1
1/4" = 1'-0"

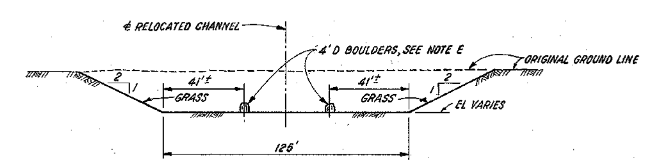


DETAIL G2
RIGHT BANK AS SHOWN
LEFT BANK OPP HAND
1" = 10'



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 130+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 135+00.

SCALE 1" = 30' EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
2		8-28-79		DLW	HAM	HAM	JWW	ELS	TJA	/	DJB
	REV B2-B2										
1		9-13-78		JLM	HAM	HAM	JWW	ELS	TJA	/	GB
	ADDED DETAIL G2; H2-H2, J2-J2 AND NOTES D & E										

DSGN
DRWN J.L. MAXEY
CHKD E.P. CHENG
SUPV H.A. MANSON 10-14-77
INSP
ENGINEER [signature]

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 E.L. [signature] | RECOMMENDED T.J. Abraham | APPROVED G.L. Buchanan

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE 3-30-78 | 81 | C | 101-19E209-2 R2

RECORD DRAWING AS CONSTRUCTED [signature] 1/27/81 R2

PRINT H 12 1
SIZE F 3
BR OR PROJ ME EE CE AD CD ED MD HPP SW BL PA
PRINTS REQD-R 1

STRAIGHT REINFORCEMENT BAR LIST

(FOR FIELD INFORMATION ONLY)

MADE J.L. MAXEY
CHKD HAM

DATE 10-31-77

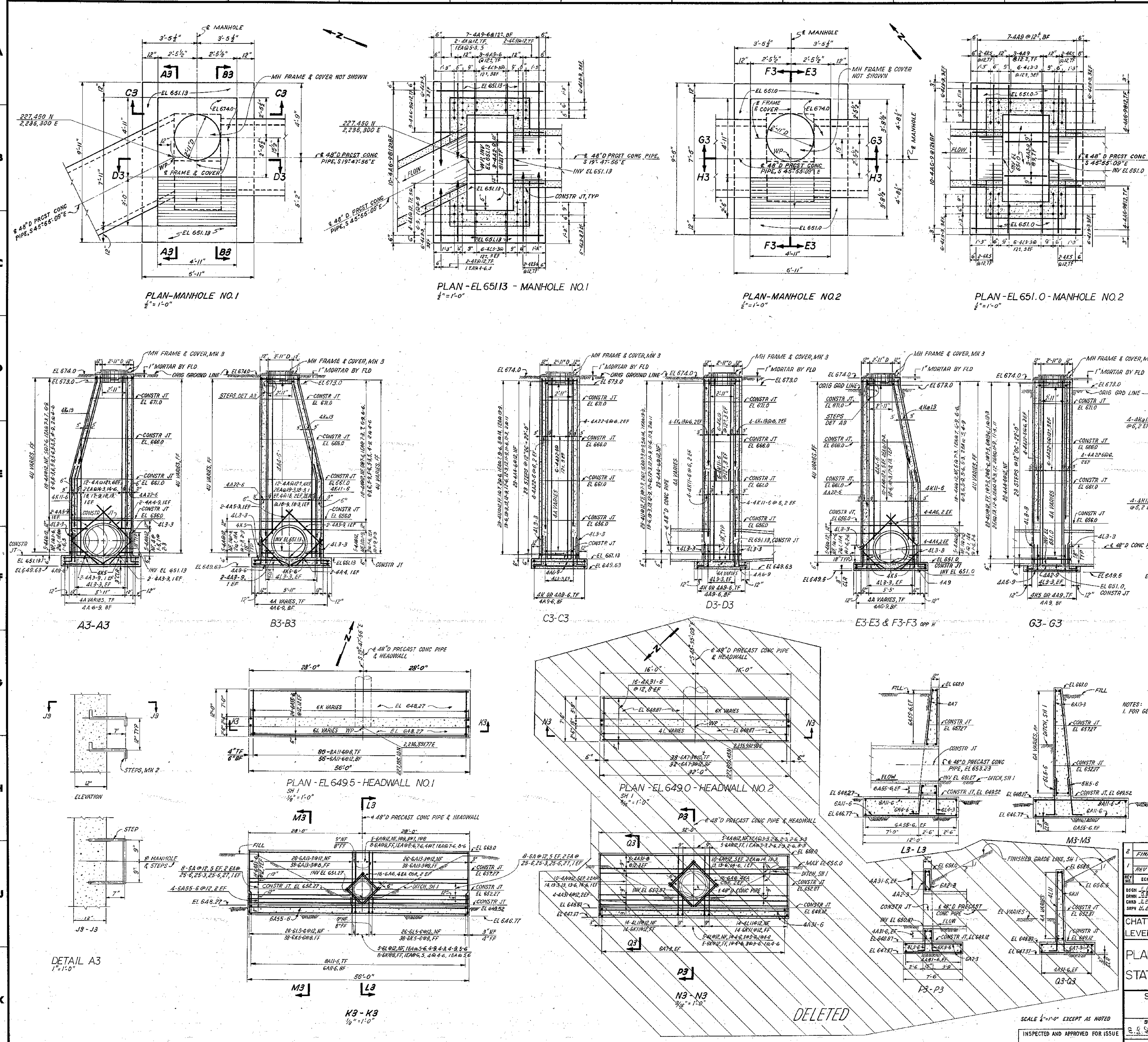
FOR DWG. NO. 101-19E209-3 RO

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			



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

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

BENT BAR LIST

BAR MARK	NO REQ'D	a	b	c	e	f	r
4U6	2	0-6¾	4-6½	EX			
4U6-6	4	1-0¾	4-6½	EX			
4U7	4	1-0¾	4-6½	EX			
4U7-3	4	1-3¼	4-6½	EX			
4U7-9	2	1-6¾	4-6½	EX			
4U11	8	3-3¾	4-6½	EX			
4U11-3	6	3-5¼	4-6½	EX			
4U11-6	2	3-6¾	4-6½	EX			
4U11-9	6	3-8¼	4-6½	EX			
4U12	4	3-9¾	4-6½	EX			
4U12-3	4	3-11¼	4-6½	EX			
4U12-6	6	4-0¾	4-6½	EX			
4U12-9	2	4-2¼	4-6½	EX			
4U13	6	4-3¾	4-6½	EX			
4U13-3	4	4-5¼	4-6½	EX			
4U13-6	14	4-6¾	4-6½	EX			
4U13-9	2	4-8¼	4-6½	EX			
4U14	10	4-9¾	4-6½	EX			
4L3-3	72	2-3	EX				
4L3-6	3	2-6	EX				
4L4-6	2	3-6	EX				
4L11	28	10-0	EX				
4K4-6	1	2-0	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		
4U9-6	2	2-6½	4-6½	EX			
4U10-9	1	3-2½	4-6½	EX			
4Ka13	28	0-9	EX		0-2½		
6L4-3	1	3-4½	EX				
6L4-9	2	3-7½	EX				
6L5-6	54	4-7	EX				
6K3-6	3	2-6	EX	0-0⅞			
6K4-6	6	3-8	EX	0-1¼			
6K5	2	4-1½	EX		4-1¼		
6K5-6	76	4-7	EX		4-6⅝		
6K6	2	5-1½	EX		5-1⅛		
6K11	8	10-0½	EX	0-3¼			

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
2		1-3-83		JLM			RDM	/	RDM	ELS	GLB
	FINAL FIELD REV										
1		8-28-79		DLW	HAM	HAM	JWM	ELS	TJA	/	USB
	REV PLAN-EL 649.5-HEADWALL NO.1, SECT K3-K3, L3-L3 & M3-M3										

DSGN E.P. CHENG
DRWN D.B. FLICKER
CHKD E.P. CHENG
SUPV H.A. MANSON 10-14-77
INSP
ENGINEER J. W. Minders

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

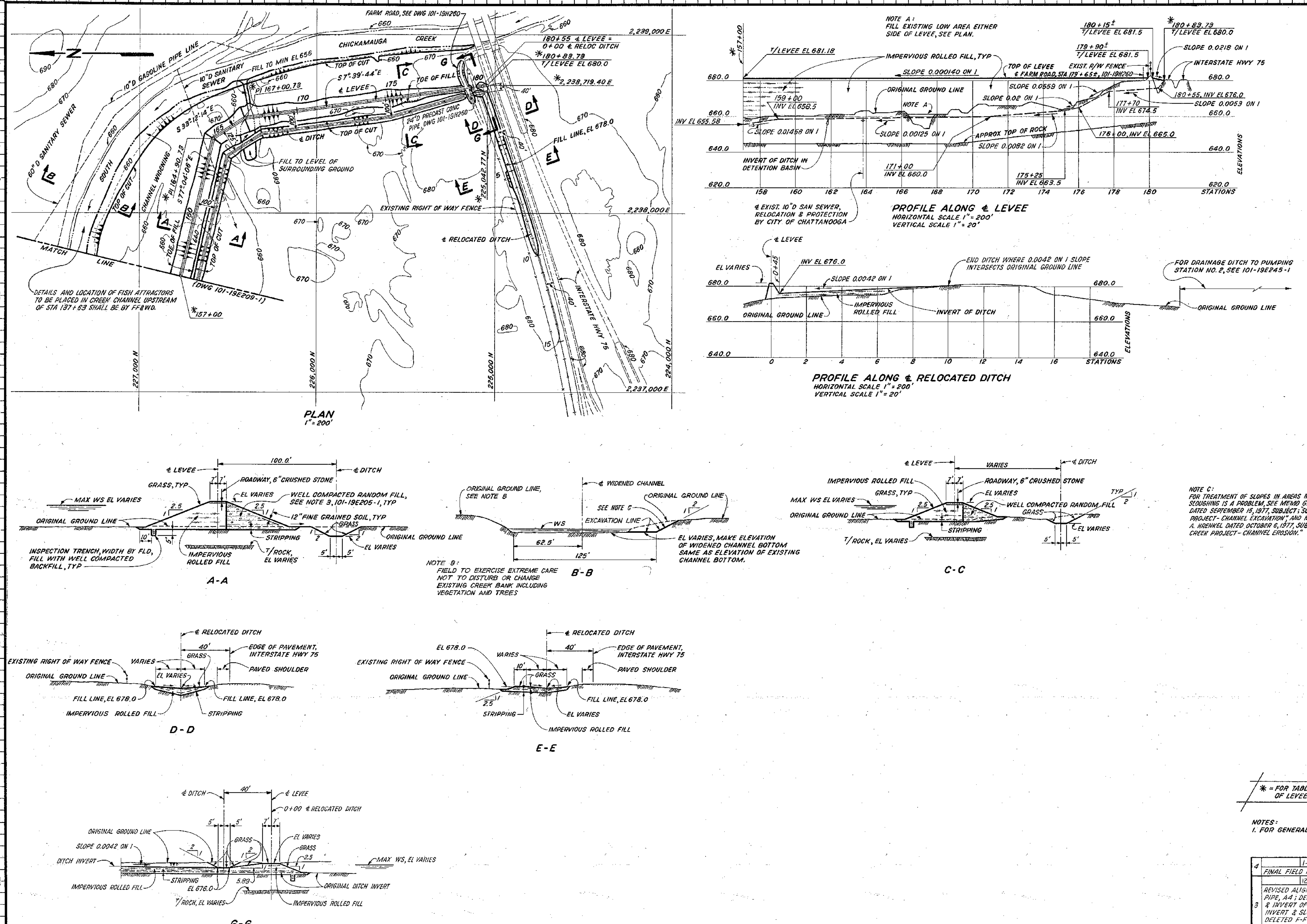
SUBMITTED	RECOMMENDED	APPROVED
E.L. Sammon	T.J. Abraham	G.L. Buchanan

INSPECTED AND APPROVED FOR ISSUE

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

RECORD DRAWING AS CONSTRUCTED
Frank Van Vetter 1/27/81 R2

101-19E209-3 C 81



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.H. KIMMONS TO PETER A. KRENKEL DATED OCTOBER 6, 1977, SUBJECT; "SOUTH CHICKAMAUGA CREEK PROJECT- CHANNEL EROSION."

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

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

SCALE 1" = 20' EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
4		1-3-83	JLM			RDM	/	RDM	ELS	GLB	
	FINAL FIELD REV										
3		12-21-78	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	
	REVISED ALIGNMENT OF DITCH IN DETENTION BASIN & ADDED 24"D CONC PIPE, A4; DELETED PART OF RELOCATED DITCH, C5; REVISED SLOPE & INVERT OF DITCH IN DETENTION BASIN, A9, A10, B9; REVISED INVERT & SLOPE OF RELOCATED DITCH, C7 THRU C10; REVISED C-C; DELETED F-F, F8; ADDED G-G										
2		11-1-78	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	
	REVISED NOTE, B3 AND REVISED INVERT & SLOPE OF DITCH IN DETENTION BASIN, B6, B7 & B8										
1		9-13-78	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	
	ADDED NOTE, C1										

DSGN
DRWN J.L. MAXEY
CHKD E. P. CHENG
SUPV H.A. MANSON 10-14-77
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
LEVEE, CHANNEL & DETENTION BASIN

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

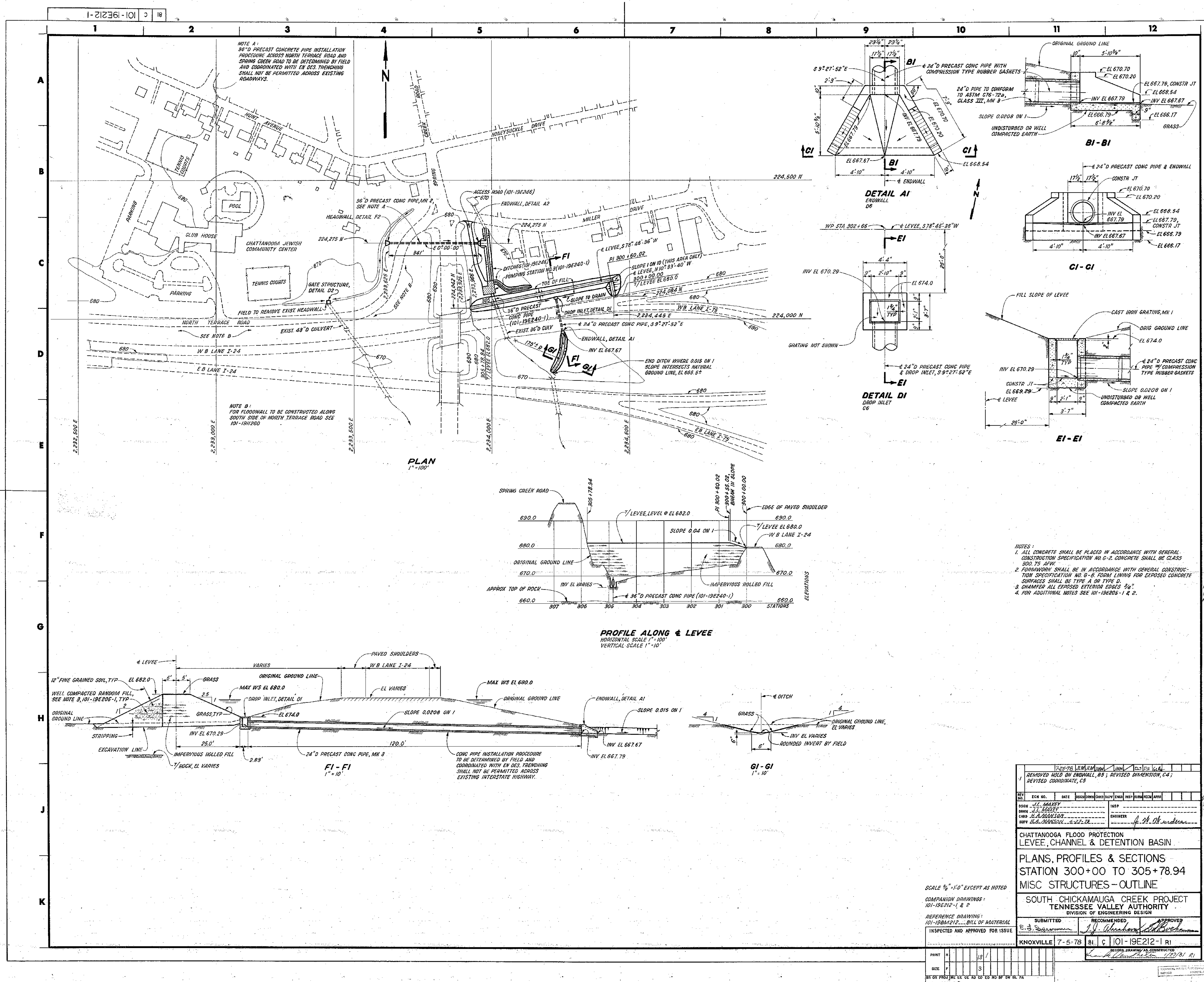
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

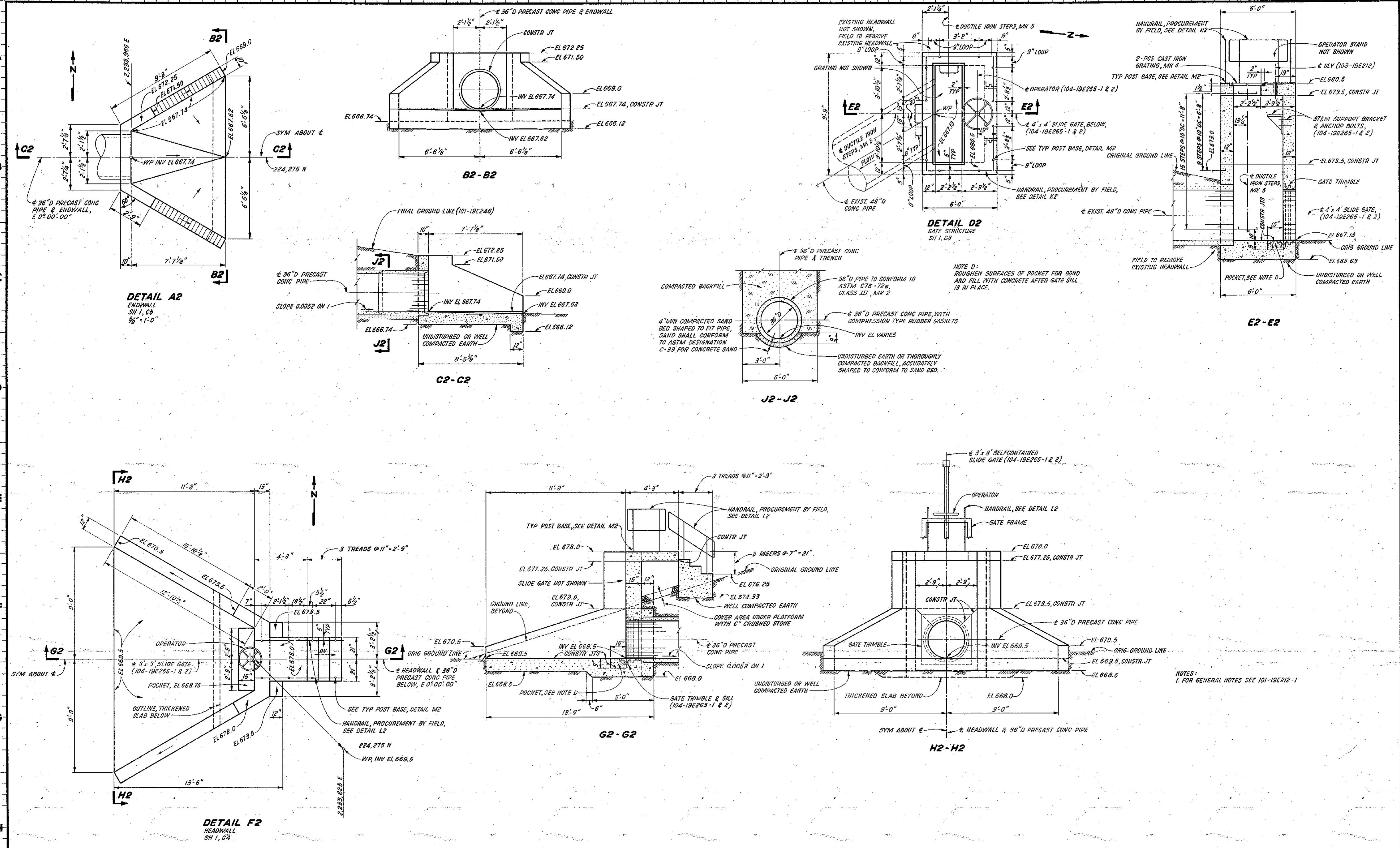
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

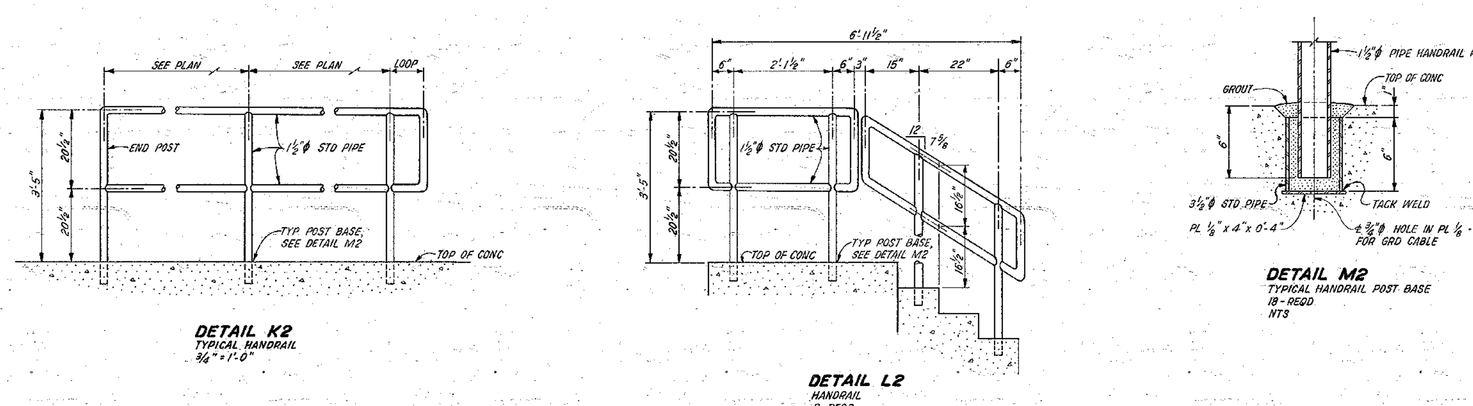
KNOXVILLE 6-7-78 81 C 101-19E211 R4

RECORD DRAWING AS CONSTRUCTED 1/27/81 R4



101-19E212-1
NOTE A: 36"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 101-19112G0
HUNT AVENUE
HONEYSUCKLE DRIVE
SPRING CREEK ROAD
MILLER DRIVE
TENNIS COURTS
POOL
CLUB HOUSE
PARKING
CHATTANOOGA JEWISH COMMUNITY CENTER
NORTH TERRACE ROAD
W B LANE I-24
E B LANE I-24
PLAN
1" = 100'
DETAIL A1
ENDWALL
D6
B1 - B1
C1 - C1
DETAIL D1
DROP INLET
C6
E1 - E1
PROFILE ALONG ℄ LEVEE
HORIZONTAL SCALE 1" = 100'
VERTICAL SCALE 1" = 10'
F1 - F1
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-6. FORM LINING FOR EXPOSED CONCRETE SURFACES SHALL BE TYPE A OR TYPE D.
3. CHAMFER ALL EXPOSED EXTERIOR EDGES 3/4".
4. FOR ADDITIONAL NOTES SEE 101-19E205-1 & 2.
SCALE 3/8" = 1'-0" EXCEPT AS NOTED
COMPANION DRAWINGS: 101-19E212-1 & 2
REFERENCE DRAWING: 101-19BM212... BILL OF MATERIAL
REMOVED HOLD ON ENDWALL, B5; REVISED DIMENSION, C4; REVISED COORDINATE, C5
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
KNOXVILLE 7-5-78 81 101-19E212-1 R1





HANDRAIL NOTES:

1. ALL MATERIAL AND FABRICATION BY TVA FIELD.
2. HANDRAIL IS SHOWN IN PLAN THUS ——o——o——
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. SHORT 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 AWS A5.1 E70 SERIES ELECTRODES.
7. ALL TVA WELDING SHALL BE PERFORMED IN ACCORDANCE WITH TVA CONSTRUCTION SPEC G29C PROCEDURES APPLICABLE TO AWS D1.1.
8. HANDRAIL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
2	REVISED HANDRAIL, A9	12-8-78	JLM	JLM	HAM	HAM	JWW	/	ELSW	TJA	GLB
1	REMOVED HOLD ON DETAIL A2, B2-B2 & C2-C2, C6	7-25-78	JLM	JLM	JWW	/	JWW	/	ELS	TJA	GLB

DSGN J.L. MAXEY
DRWN J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 4-27-78
INSP
ENGINEER [signature]

SCALE 3/8" = 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
[signature]	[signature]	[signature]

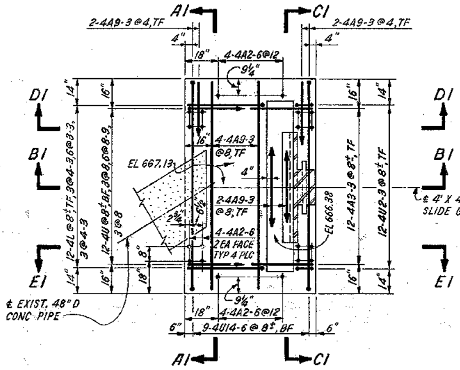
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE | 7-5-78 | 81 | C | 101-19E212-2 R2

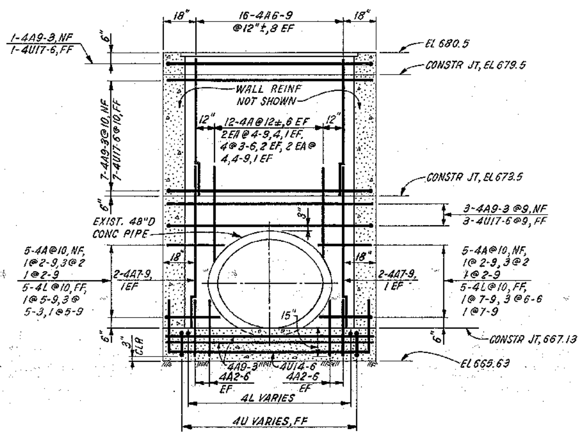
RECORD DRAWING AS CONSTRUCTED [signature] 1/27/81 R1

PRINT | SIZE | 13 | 1 | 3
MR OR PROJ MC CE OE AD CD ED MD HPP SW BL PA

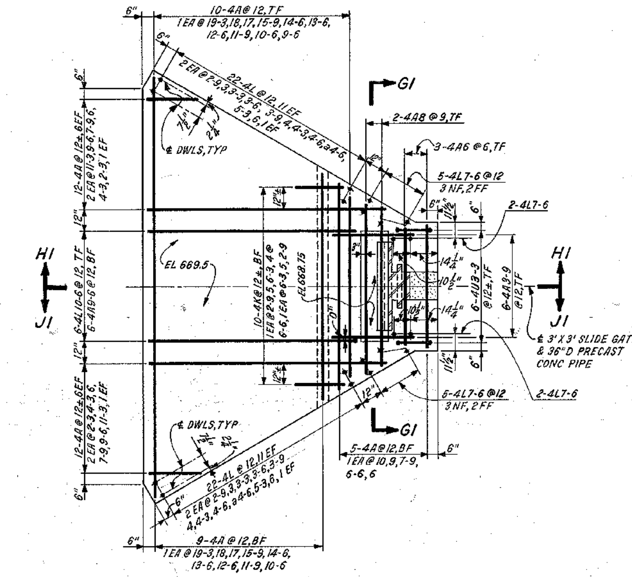
101-19E213-1 | C | 18



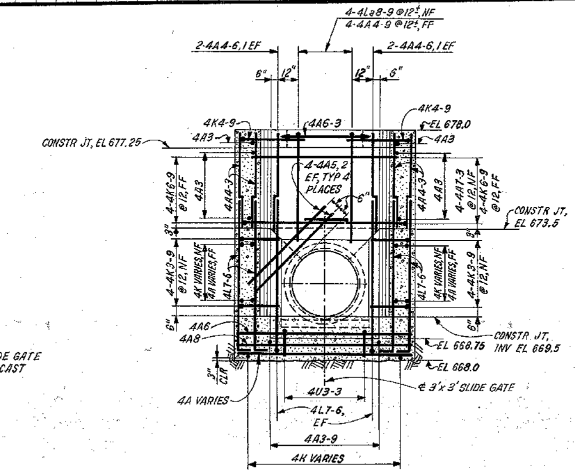
PLAN-EL 667.13
GATE STRUCTURE ON 48" D CONC PIPE



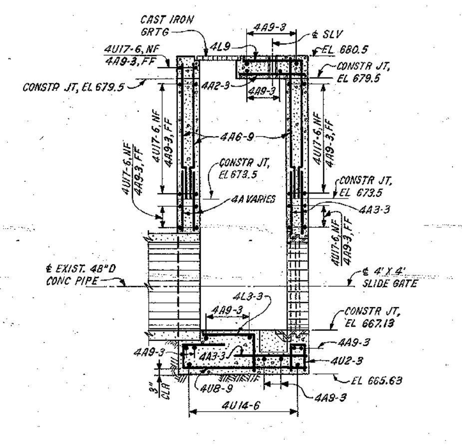
A1-A1



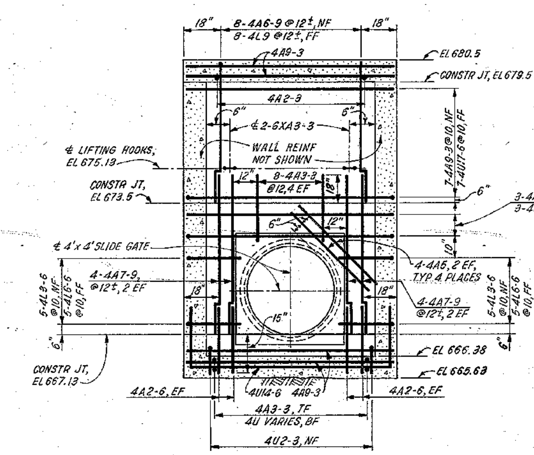
PLAN-EL 669.5
HEADWALL ON 36" D CONC PIPE



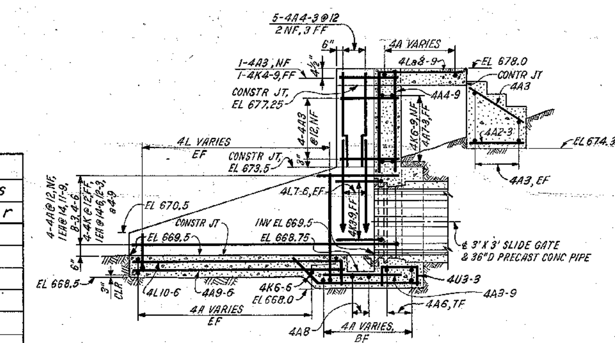
G1-G1



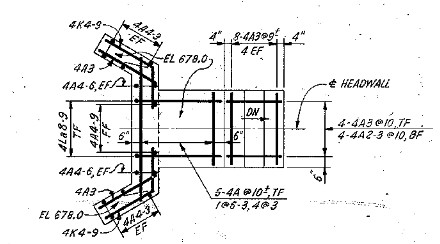
B1-B1



C1-C1



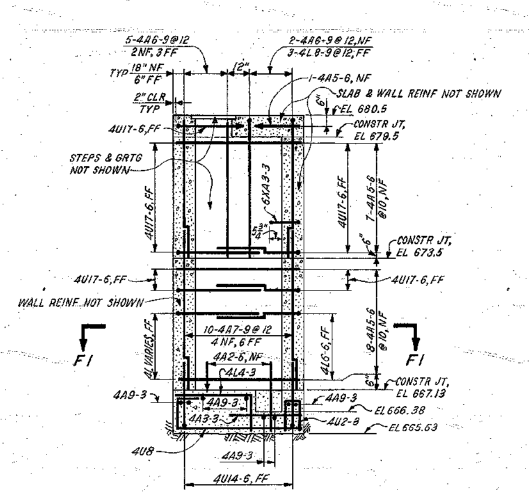
H1-H1 & J1-J1 OPP HAND



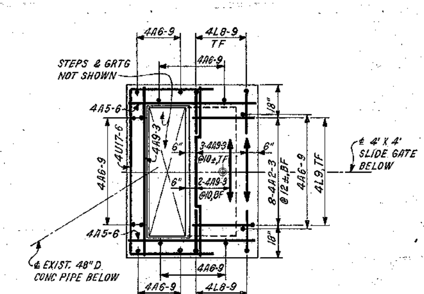
PLAN-EL 678.0

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.



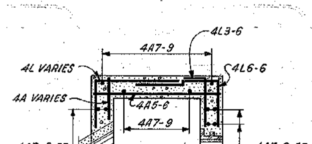
D1-D1 & E1-E1 OPP HAND



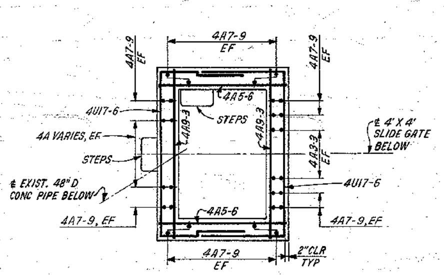
PLAN-EL 680.5
GATE STRUCTURE
NTS

BENT BAR LIST

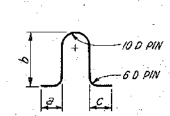
BAR MARK	NO. REQD	a	b	c	e	f	r
4U17-6	21	4-1	9-5	EX			
4K14-6	2	1-0	EX		0-10½		
4U14-6	9	2-7	9-4	EX			
4K12-3	2	1-0	EX		0-10½		
4L10-6	6	9-6	EX				
4L9	8	6-10	EX				
4L8-9	6	6-9	EX				
4La8-9	4	4-11	EX				
4U8-9	6	2-5	0-9	EX			
4U8	6	1-5	0-11	EX			
4L7-9	2	3-6	EX				
4L7-6	14	6-6	EX				
4K6-9	8	2-7	EX		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			



F1-F1



PLAN-EL 673.5
GATE STRUCTURE
NTS



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

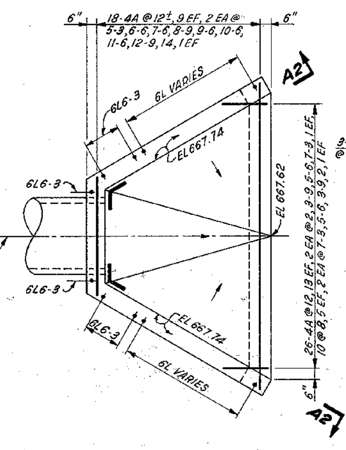
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

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

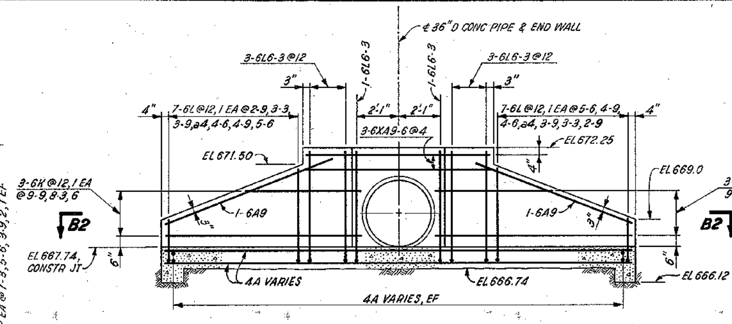
KNOXVILLE | 7-5-78 | 81 | C | 101-19E213-1 R0

RECORD DRAWING AS CONSTRUCTED [signature] 11/27/81 R0

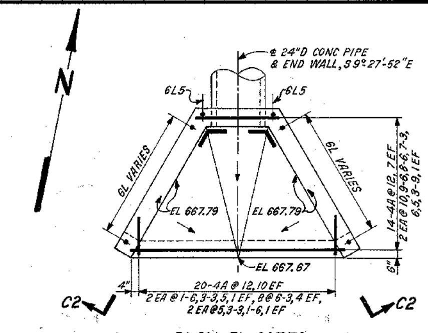
PRINT H 13
SIZE F 3
BR OR PROJ ME EE CE AD CD ED MD HPP SW BL PA
PRINTS REQD-R 0



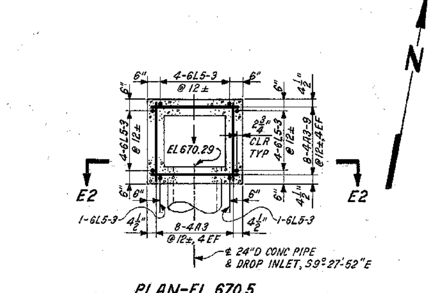
PLAN - EL 667.74
END WALL - 36"D CULVERT



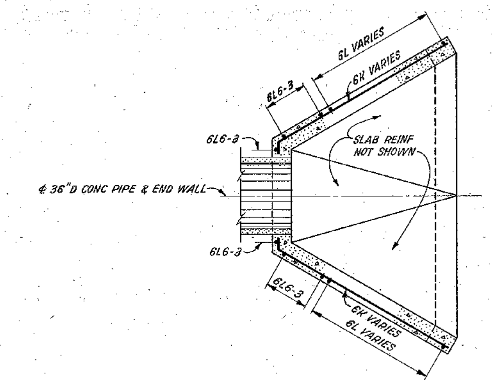
A2-A2
DEVELOPED



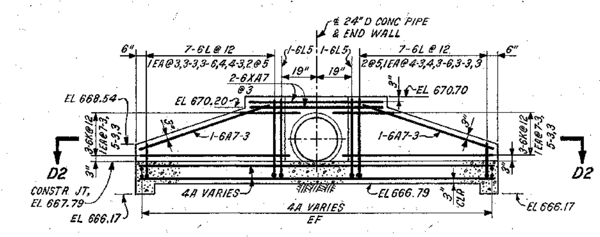
PLAN-EL 667.79
END WALL - 24"D CULVERT



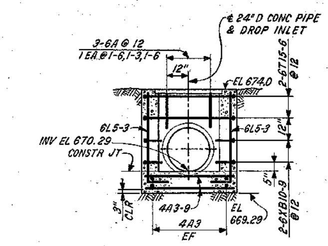
PLAN-EL 670.5
DROP INLET - 24"D CULVERT



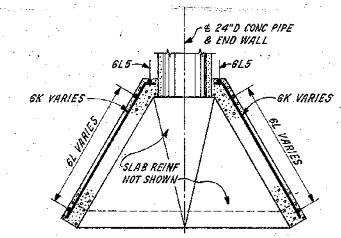
B2-B2



C2-C2
DEVELOPED

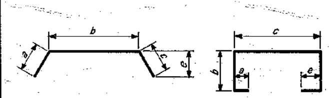


E2-E2



D2-D2

BENT BAR LIST							
BAR MARK	NO. REQD	BENDING DIMENSIONS					
		a	b	c	e	f	r
6K9-9	2	0-11	EX		0-10		
6XA9-6	3	2-5	4-11	EX	2-1		
6K8-3	2	0-7	EX		0-6		
6L6-3	8	5-1	EX				
6K6	2	0-11	EX		0-10		
6L5-6	2	4-3	EX				
6T15-6	2	3-3	4-0				
6XB10-9	2	0-6	3-3	4-0	EX		
6K7-3	2	0-6	EX		0-5 1/4		
6XA7	2	1-11	3-6	EX	1-8 1/2		
6K5-3	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				
6La4	2	3-1	EX				
6L3-9	2	2-8	EX				
6L2-9	2	1-9	EX				



XA XB

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		7-25-78	JLM	JLM	JWW	/	JWW	ELS	TJA	/	GLB
	REMOVED HOLD, C6 & REVISED BENT BAR LIST										

DSGN J.L. MAXEY
DRWN V.F. VANCE 1-16-78
CHKD H.A. MANSON
SUPV H.A. MANSON 3-29-78
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]

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 7-5-78 81 C 101-19E213-2 R1

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

PRINT	H					13	
SIZE	F					3	

BR OR PROJ ME EE CE AD CD ED MD HPP SW BL PA
PRINTS REQD-R 0

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

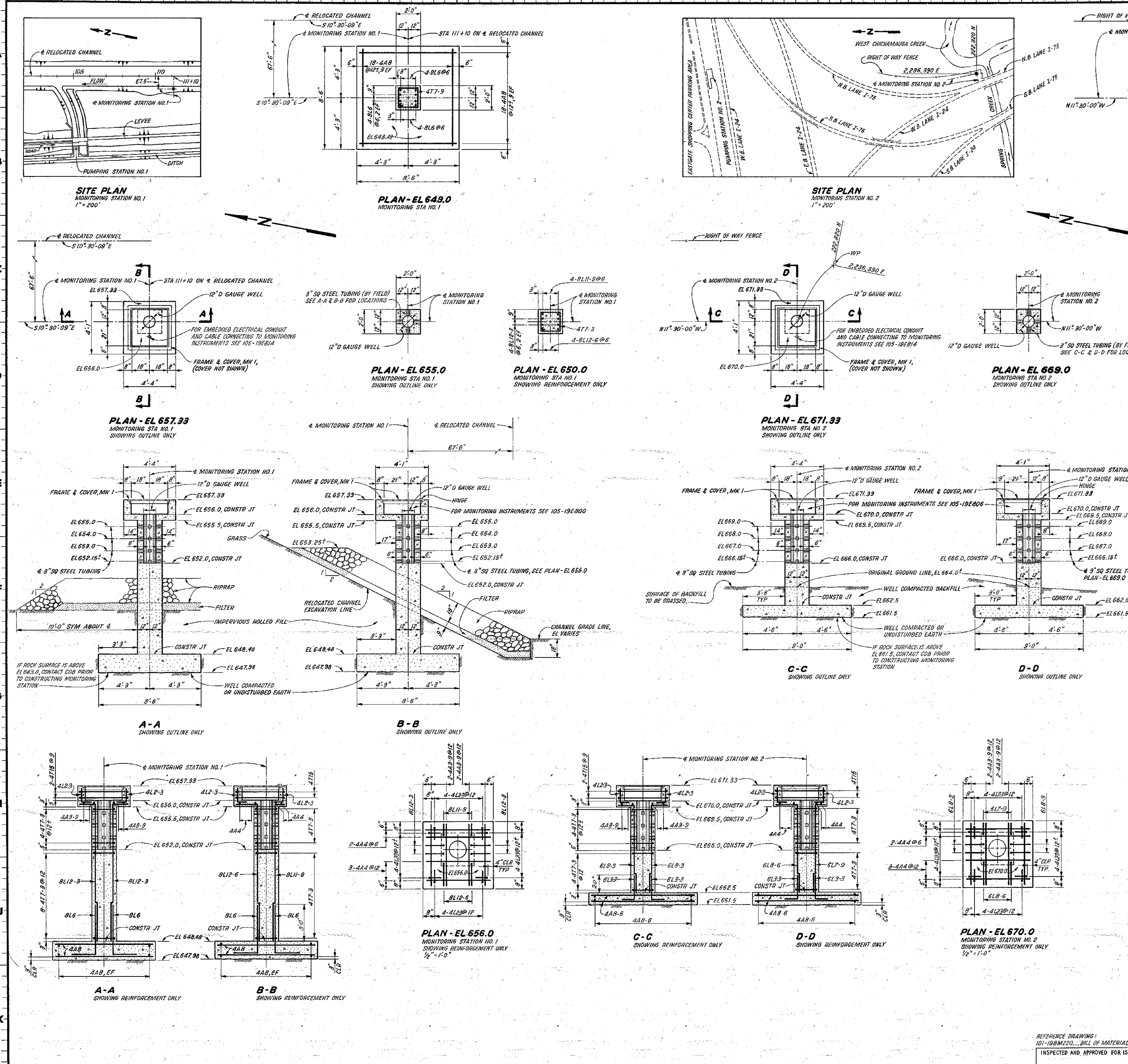
FOR DWG. NO. 101-19E213-2 (R1)

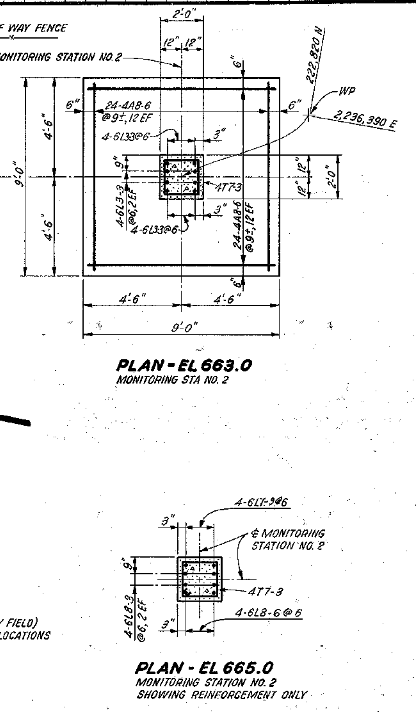
SHEET NO 1 OF 1

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						





BENT BAR LIST

BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	r
8L12-6	4	11-3	EX				
8L12-3	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 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-2. CONCRETE SHALL BE CLASS 300.75 AFW.
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 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 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.

REFERENCE DRAWING:
101-19BM220... BILL OF MATERIAL

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1	FINAL FIELD REV	1-3-83	DLW	JLM		RDM	/	RDM	FLS	GB	

DSGN J.L. MAXEY
DRWN J.L. MAXEY
CHKD H.A. MANSON
SUPV H.A. MANSON 6-5-78
INSP
ENGINEER

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

INSPECTED AND APPROVED FOR ISSUE

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

RECORD DRAWING AS CONSTRUCTED 1/27/81 R1

PRINT H 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD HPP SW 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

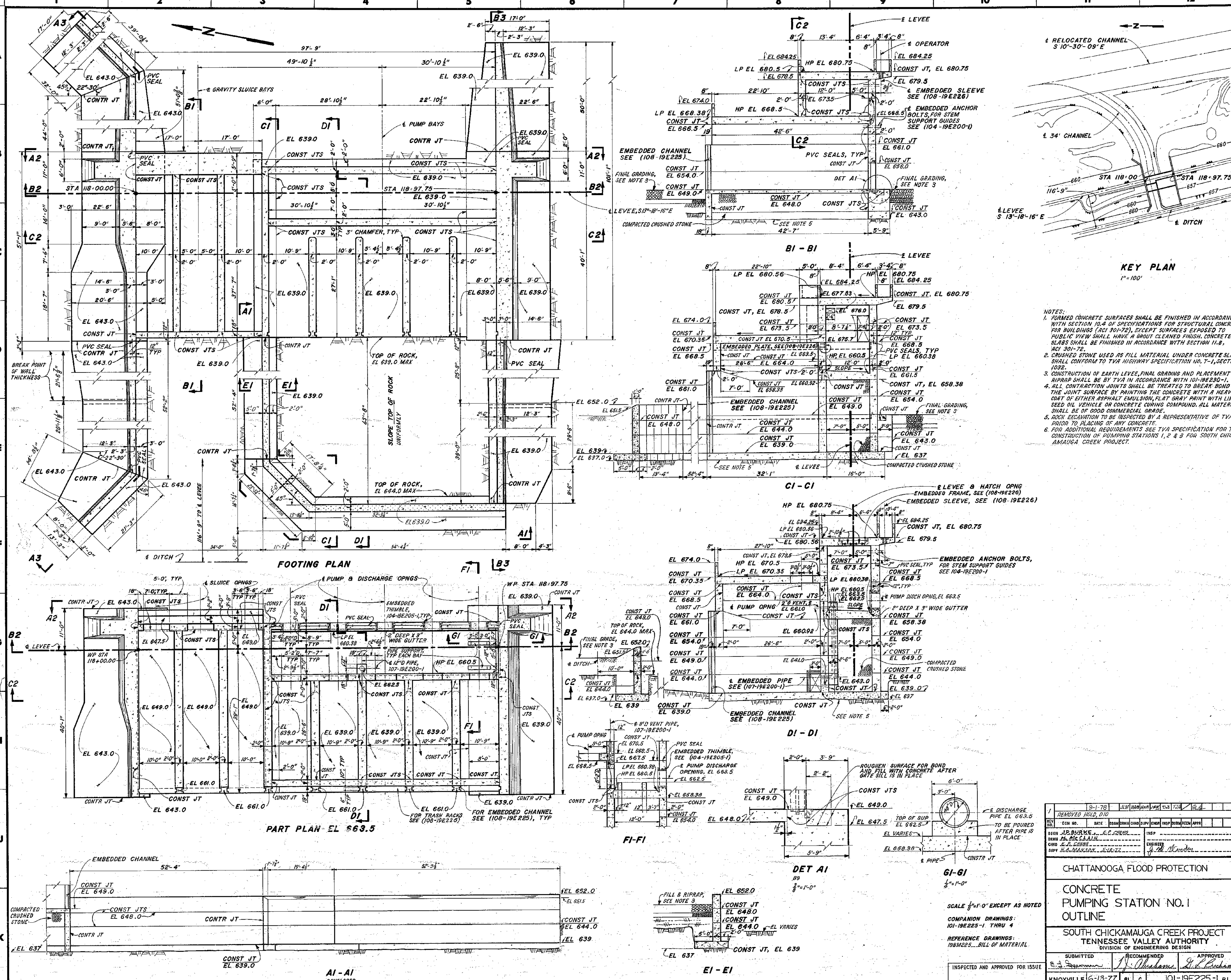
SHEET NO 1 OF 1

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

COMPANION DRAWINGS:
101-19E225-1 THRU 4

REFERENCE DRAWINGS:
198M225 — BILL OF MATERIAL

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	REMOVED HOLD, D10	9-1-78	JLM	HAM	HAM	JWW	ELS	TJA	/	GLB	

DSGN J.P. BURKE, E.P. CHENG
DRWN H. McCLAIN
CHKD E.P. CHENG
SUPV H.A. MANSON 5-18-77
INSP
ENGINEER J.M. Vander

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. Bosemann	J. Abraham	G.L. Buchanan

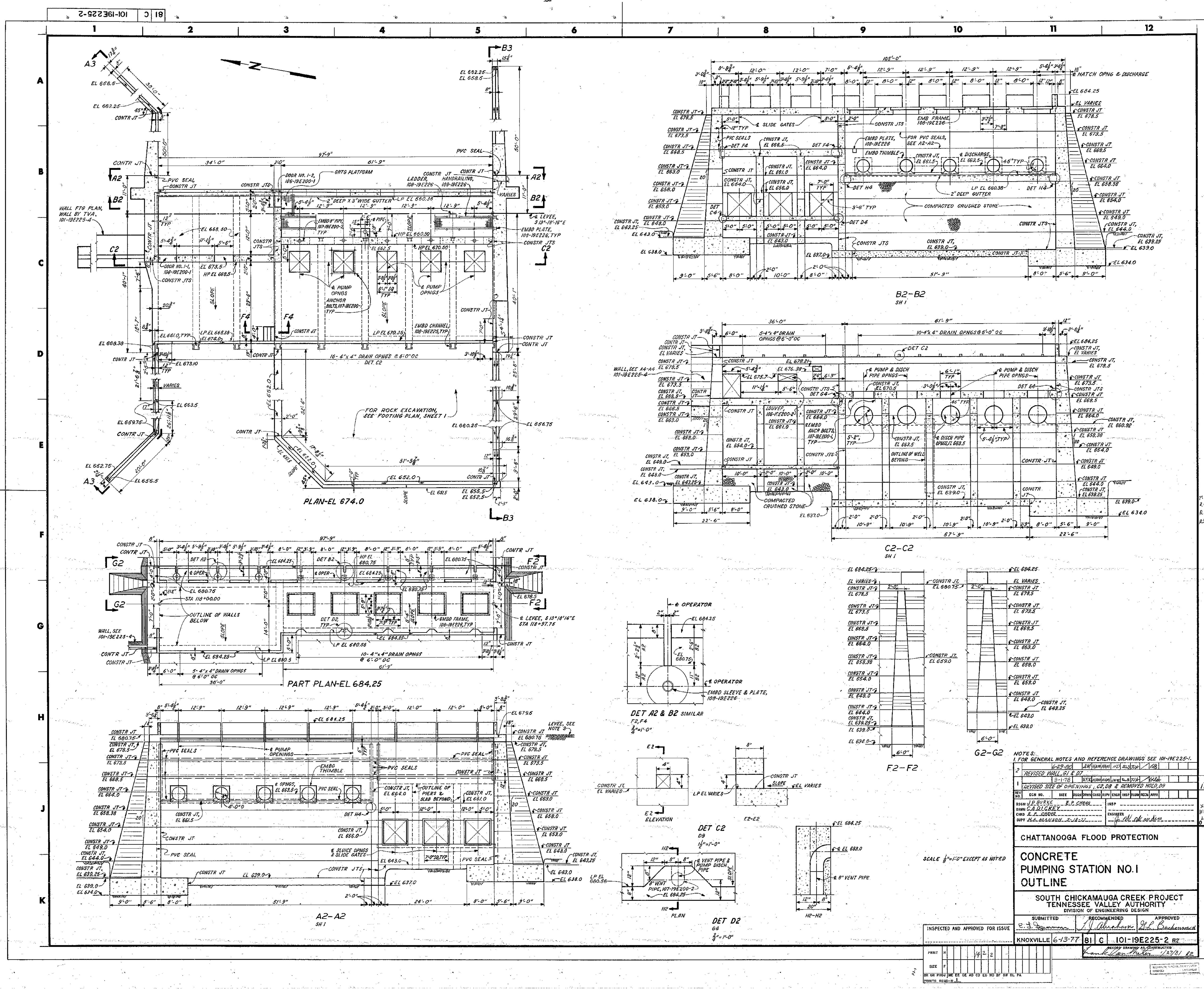
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 6-13-77 81 C 101-19E225-1 R1

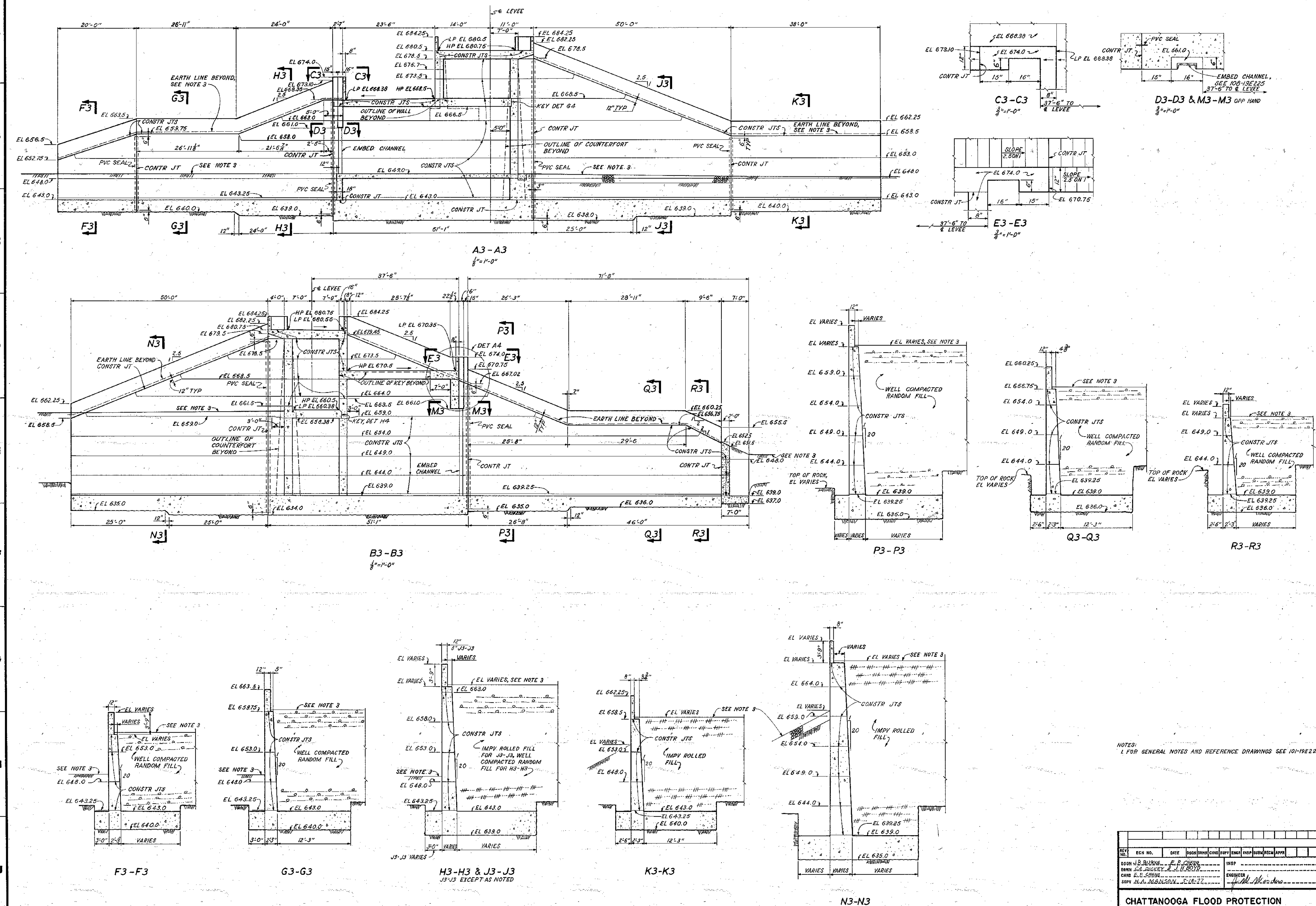
RECORD DRAWING AS CONSTRUCTED
Frank Van Vleter 1/27/81 R1

PRINT	H				14	2	2
SIZE	F						

BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1



PLAN-EL 674.0
PART PLAN-EL 684.25
A2-A2
B2-B2
C2-C2
F2-F2
G2-G2
DET A2 & B2 SIMILAR
DET C2
DET D2
E2 ELEVATION
E2-E2
H2-H2
NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E225-1.
REVISED WALL, G1 & D7
REVISED SIZE OF OPENINGS, C2, D8 & REMOVED HOLD, D9
SCALE 1/8"=1'-0" EXCEPT AS NOTED
CHATTANOOGA FLOOD PROTECTION
CONCRETE
PUMPING STATION NO. 1
OUTLINE
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN
SUBMITTED
RECOMMENDED
APPROVED
INSPECTED AND APPROVED FOR ISSUE
KNOXVILLE 6-13-77 81 C 101-19E225-2 R2
RECORD DRAWING AS CONSTRUCTED



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

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

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 1
OUTLINE

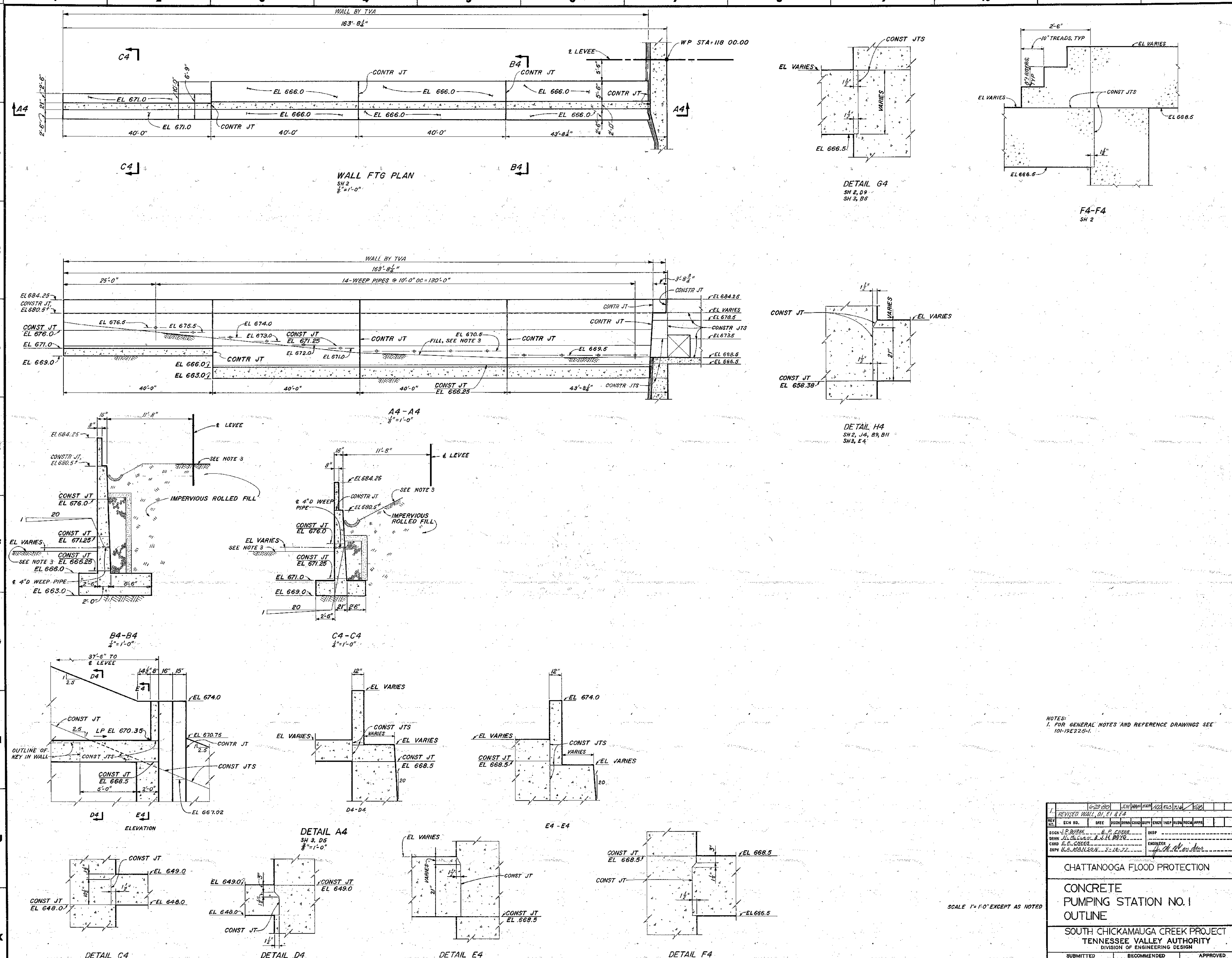
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 6-13-77 81 C. 101-19E225-3 R0

RECORD DRAWING AS CONSTRUCTED



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

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	REVISED WALL, D1, E1 & E4	6-23-80	JLM	HAM	HAM	HD	ELS	TJA	/	GLB	

DSGN J.P. BURKE   E.P. CHENG
DRWN H. McCLAIN & J.H. BOYD
CHKD E.P. CHENG
SUPV H.A. MANSON 5-18-77
INSP
ENGINEER [signature]

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 1
OUTLINE

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

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

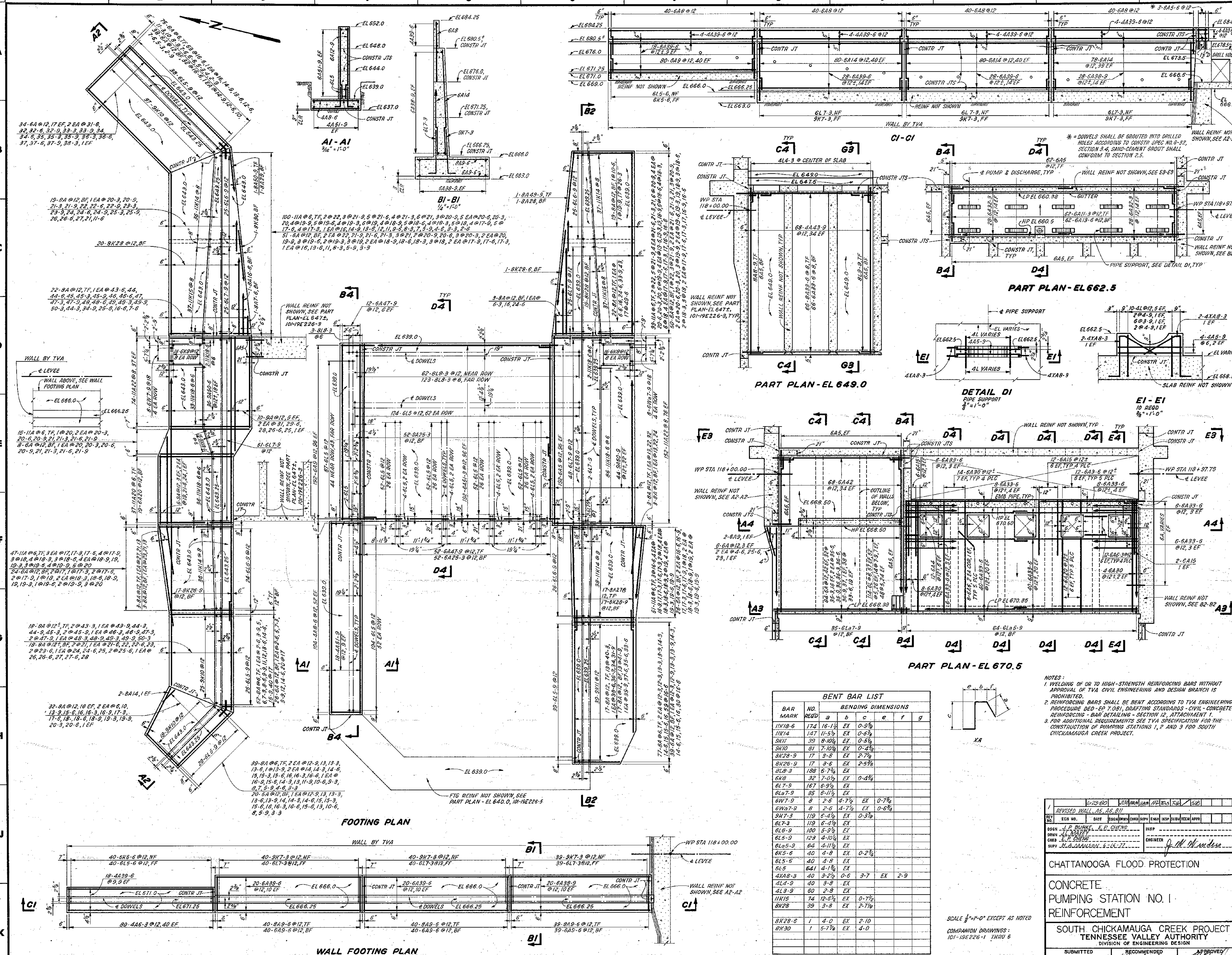
INSPECTED AND APPROVED FOR ISSUE

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

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

PRINT H 4 2 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R

TECHNICAL INFORMATION CENTER INDEXED KNOXVILLE



BAR MARK	NO. REQ'D	a	b	c	e	f	g
		BENDING DIMENSIONS					
11K18-6	174	16-1½	EX	0-9⅝			
11K14	147	11-5½	EX	0-6⅞			
9K11	39	8-10¼	EX	0-5¼			
9K10	81	7-10¼	EX	0-4¾			
8K28-9	17	3-8	EX	2-7⅛			
8K26-9	17	3-6	EX	2-5⅜			
8L8-3	188	6-7¾	EX				
6K8	32	7-0½	EX	0-4¾			
6L7-9	167	6-9½	EX				
6La7-9	35	6-11½	EX				
6W7-9	8	2-6	4-7½	EX	0-7¾		
6Wa7-9	8	2-6	4-7½	EX	0-6¾		
9K7-3	119	6-4½	EX	0-3⅞			
6L7-3	119	6-4½	EX				
6L6-9	100	5-9½	EX				
6L5-9	123	4-10¼	EX				
6La5-9	64	4-11½	EX				
6K5-6	40	4-8	EX	0-2¾			
6L5-6	40	4-8	EX				
6L5	641	4-1¾	EX				
4XA8-3	40	3-2½	0-6	3-7	EX	2-9	
4L4-9	40	3-8	EX				
4L3-9	60	2-8	EX				
11K15	74	12-6½	EX	0-7½			
8K28	39	3-8	EX	2-7⅛			
8K28-6	1	4-0	EX	2-10			
8K30	1	5-7⅞	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 1/8"=1'-0" EXCEPT AS NOTED

COMPANION DRAWINGS: 101-19E226-1 THRU 5

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	REVISED WALL, A5, A6, B11	6-23-80		JLM	HAM	HAM	HD	ELS	TJA	/	SIB

DSGN J. P. BURKE, E. P. CHENG
DRWN J. L. MAXEY
CHKD E. P. CHENG
SUPV H. A. MANSON 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

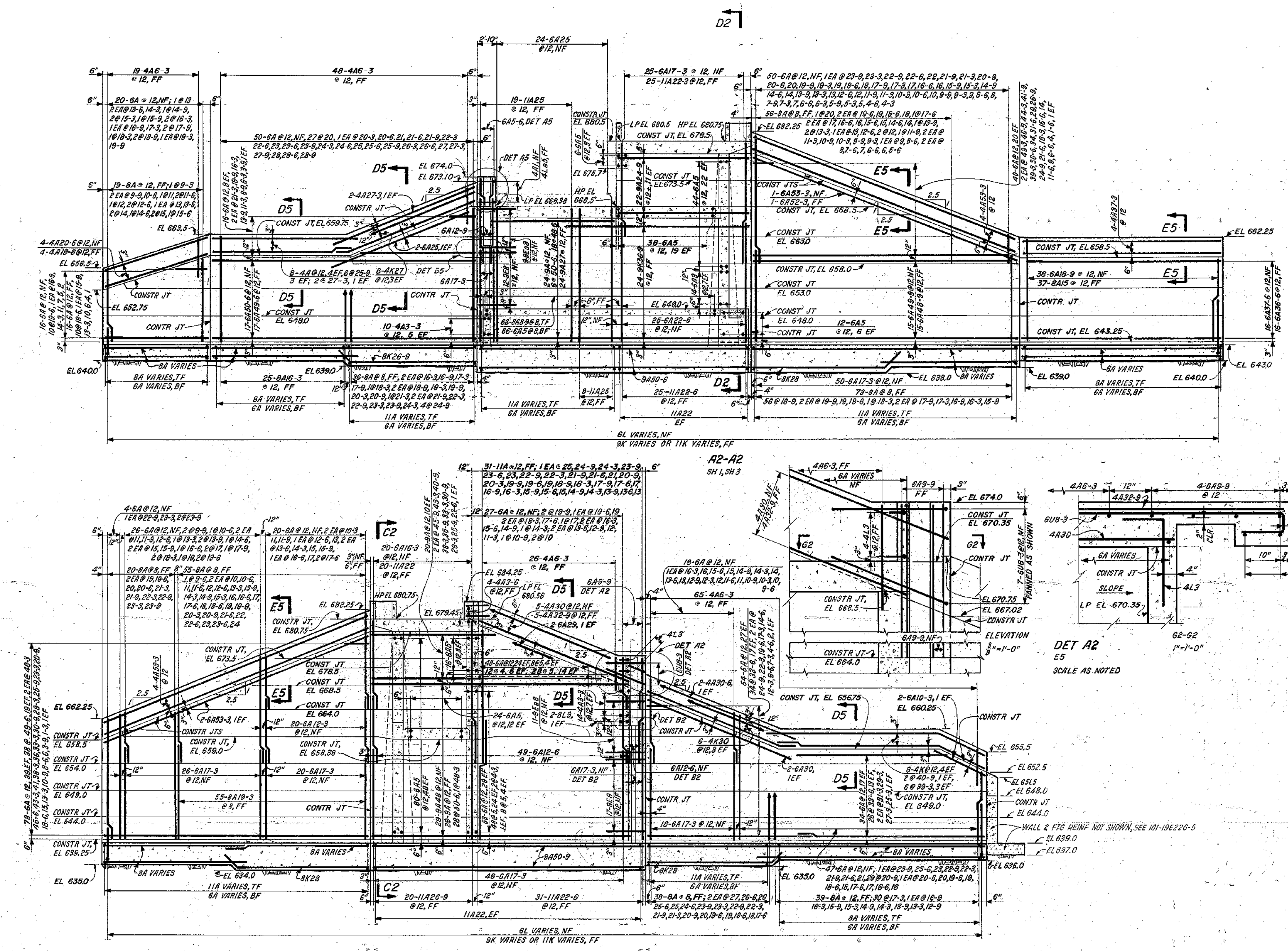
INSPECTED AND APPROVED FOR ISSUE

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

RECORD DRAWING AS CONSTRUCTED 1/27/81 R1

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

101-19E226-2 | C | 81

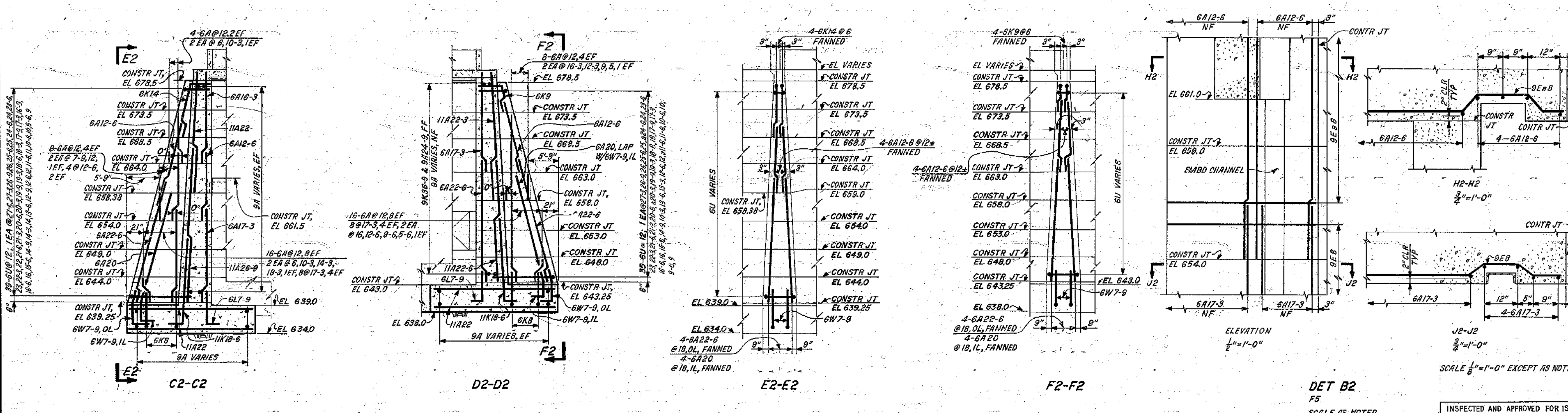


BENT BAR LIST

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.

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

INSPECTED AND APPROVED FOR ISSUE

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

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO 1
REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

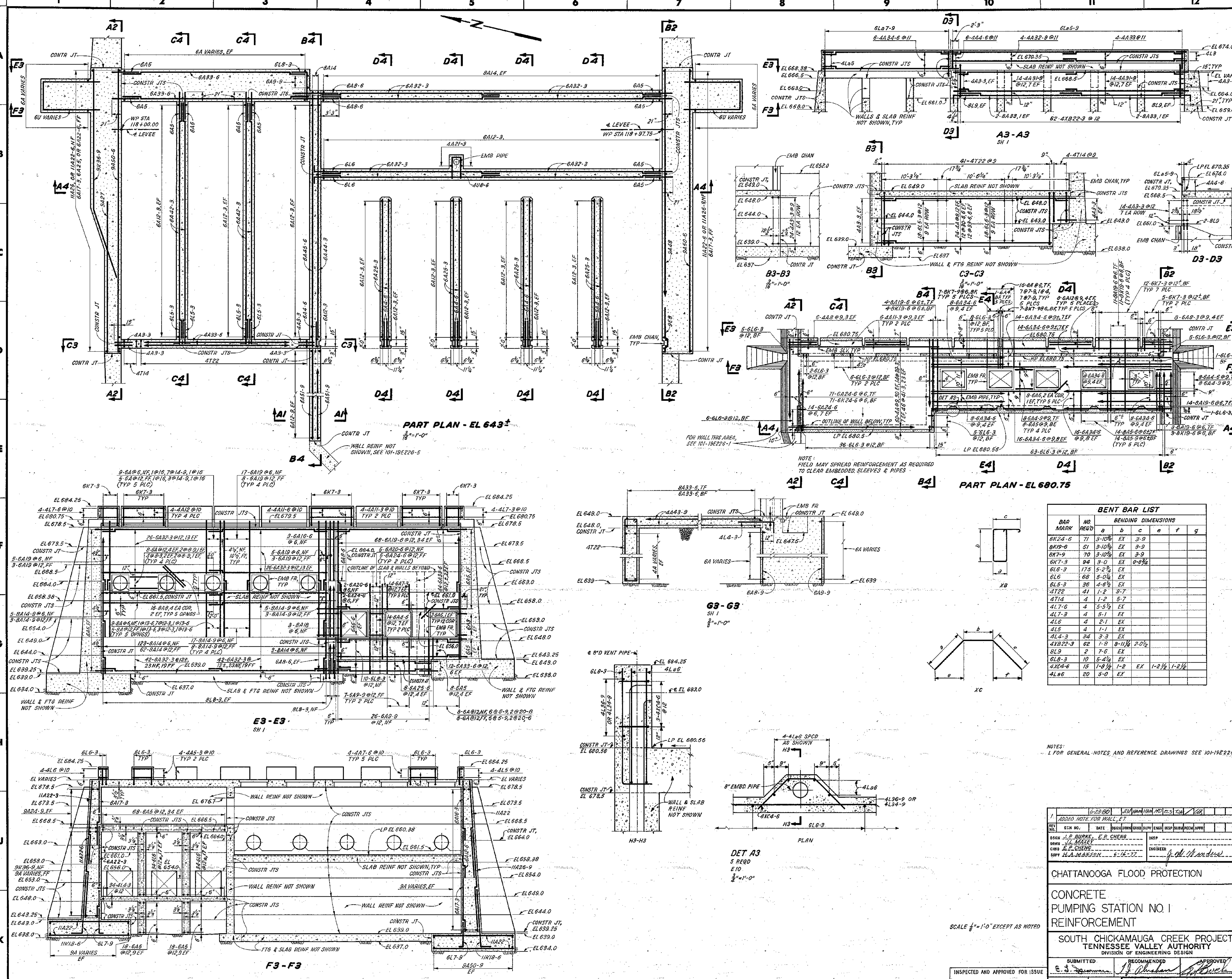
SUBMITTED E. S. [signature] | RECOMMENDED J. J. Abraham | APPROVED [signature]

KNOXVILLE 6-24-77 81 C 101-19E226-2 R0

RECORD DRAWING AS CONSTRUCTED Frank Van Meter 1/27/81 R0

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

MF R0



BAR MARK	NO. REQ'D	BENDING DIMENSIONS a	b	c	e	f	g
6K24-6	71	3-10⅜	EX	3-9			
8K19-6	51	3-10⅜	EX	3-9			
8K7-9	70	3-10⅜	EX	3-9			
6K7-3	94	3-0	EX	0-8¾			
6L6-3	175	5-2¾	EX				
6L6	68	5-0¼	EX				
6L5-3	36	4-6½	EX				
4T22	41	1-2	9-7				
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				
4XB22-3	62	1-8	8-11¼	2-0½			
8L9	2	7-6	EX				
6L8-3	10	5-4¼	EX				
4XC4-6	15	1-8½	1-2	EX	1-2½	1-2½	
4La6	20	5-0	EX				

Table title: BENT BAR LIST

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

SCALE $\frac{1}{8}$" = 1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1 ADDED NOTE FOR WALL, E7		6-23-80		JLM	HAM	HAM	HD	ELS	TJA	/	GLR

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

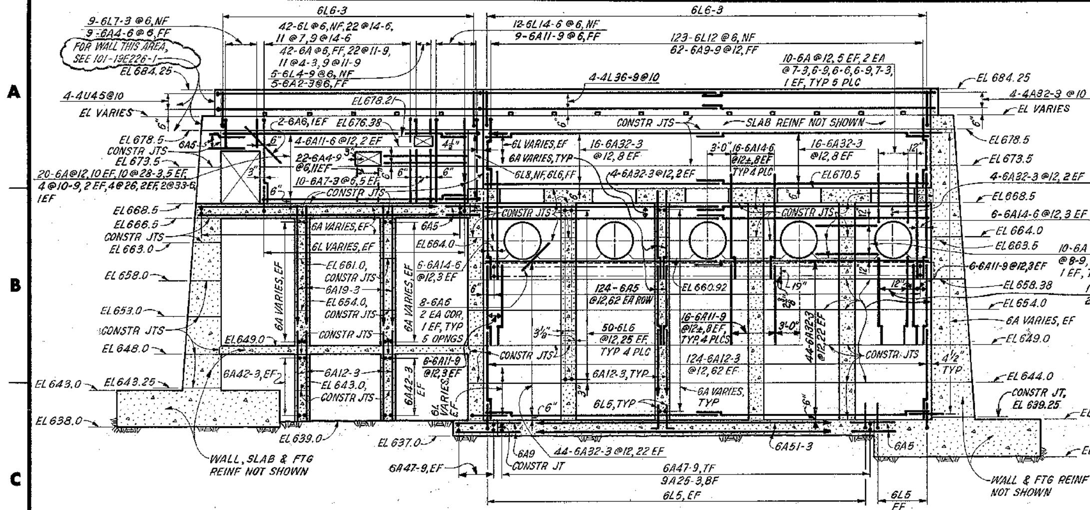
SUBMITTED [signature] RECOMMENDED [signature] APPROVED [signature]

INSPECTED AND APPROVED FOR ISSUE

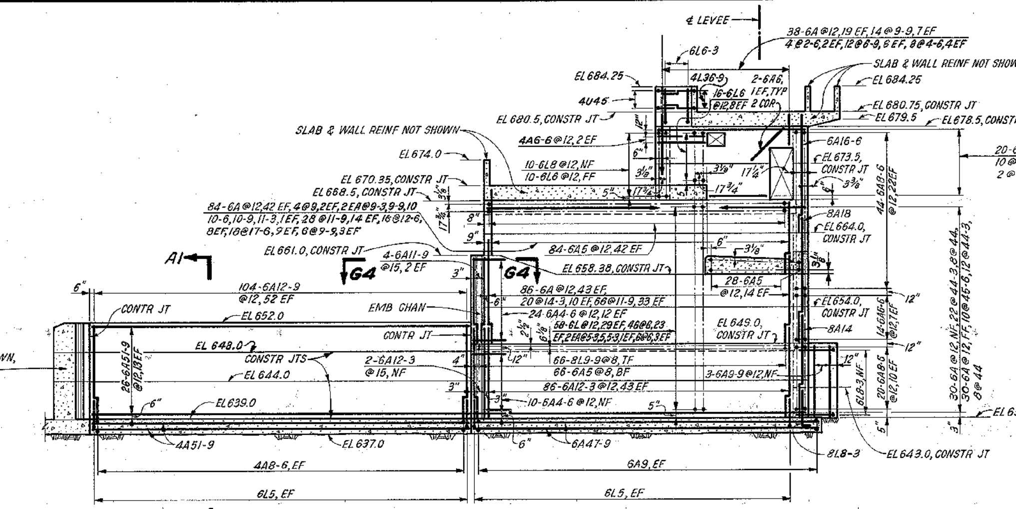
KNOXVILLE 6-24-77 | 81 | C | 101-19E226-3R1

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

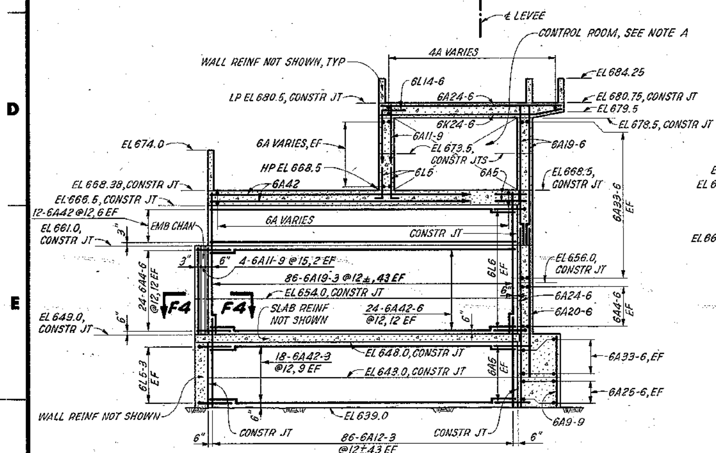
PRINT H
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R



A4-A4
SH 1 & 3

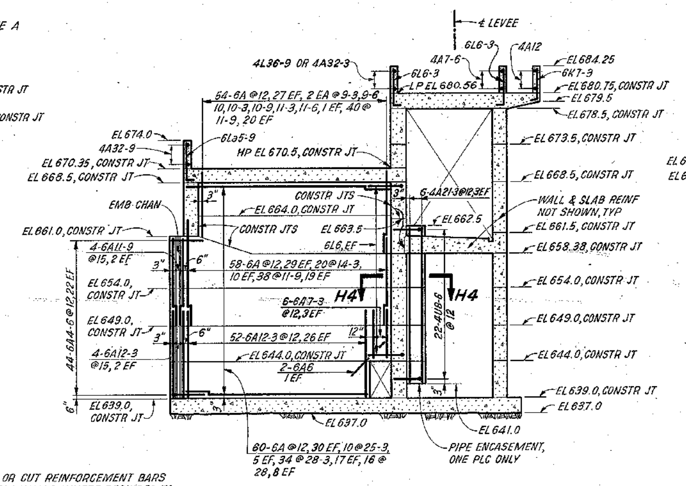


B4-B4
SH 1 & 3

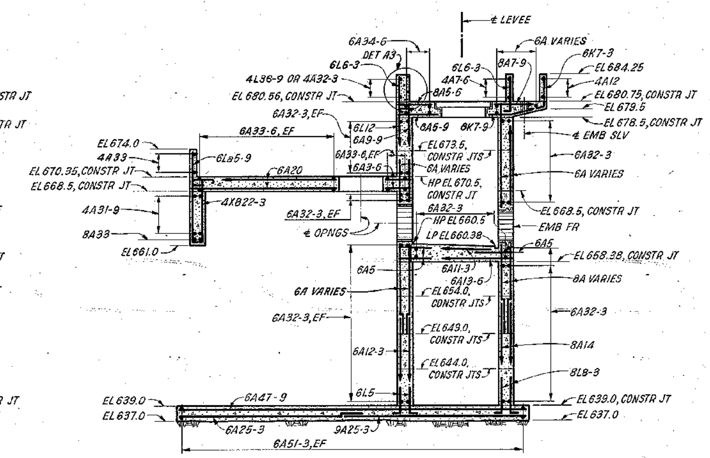


C4-C4
2 REQD
SH 1 & 3

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



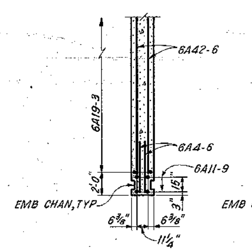
D4-D4
4 REQD
SH 1 & 3



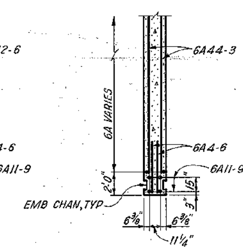
E4-E4
SH 1 & 3

BENT BAR LIST

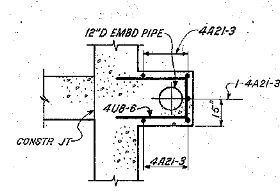
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
8L9-9	66	7-6½	EX				
6L14-6	44	11-8¾	EX				
6L12	123	9-2	EX				
6L8	10	5-0¼	EX				
6L7-3	9	4-3¾	EX				
6L7	11	4-3¼	EX				
6L6	262	5-0¼	EX				
6L4-9	5	2-3	EX				
4L36-9	4	32-3	EX				
4U45	4	6-6	36-0	EX			
4U8-6	22	3-3½	2-1	EX			
6L5-3	4	4-6½	EX				
6L5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



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



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



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

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	JD	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

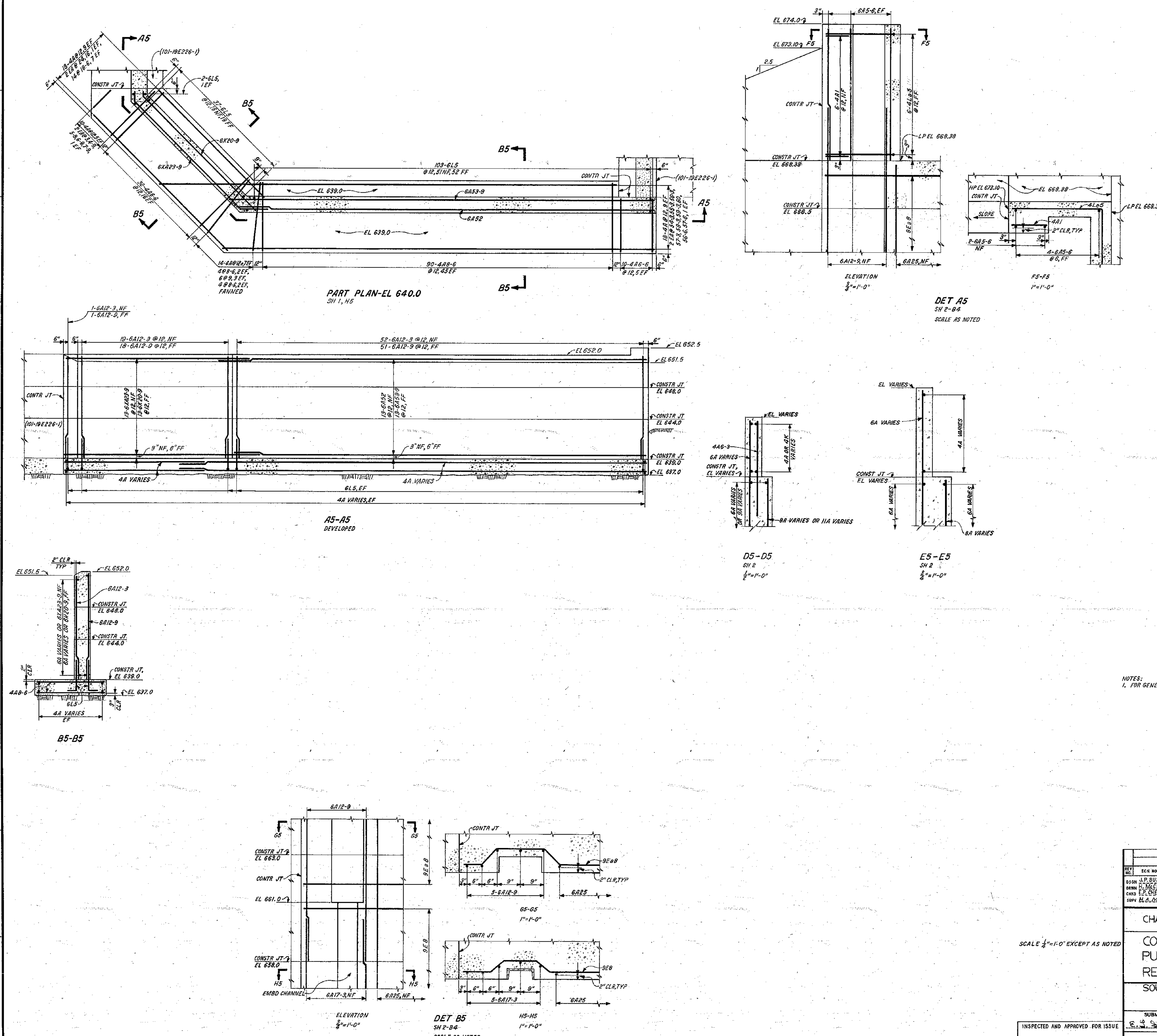
SUBMITTED [signature] | RECOMMENDED [signature] | APPROVED [signature]

INSPECTED AND APPROVED FOR ISSUE

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

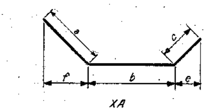
RECORD DRAWING AS CONSTRUCTED [signature] 1/27/80 R2

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



BENT BAR LIST

BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6XA23-9	13	1-4	19-1 7/8	EX	2-5	0-11 1/4	
6K20-9	13	0-8 1/2	EX	0-6			
6L5	140	4-1 3/4	EX				



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

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

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

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO 1
REINFORCEMENT

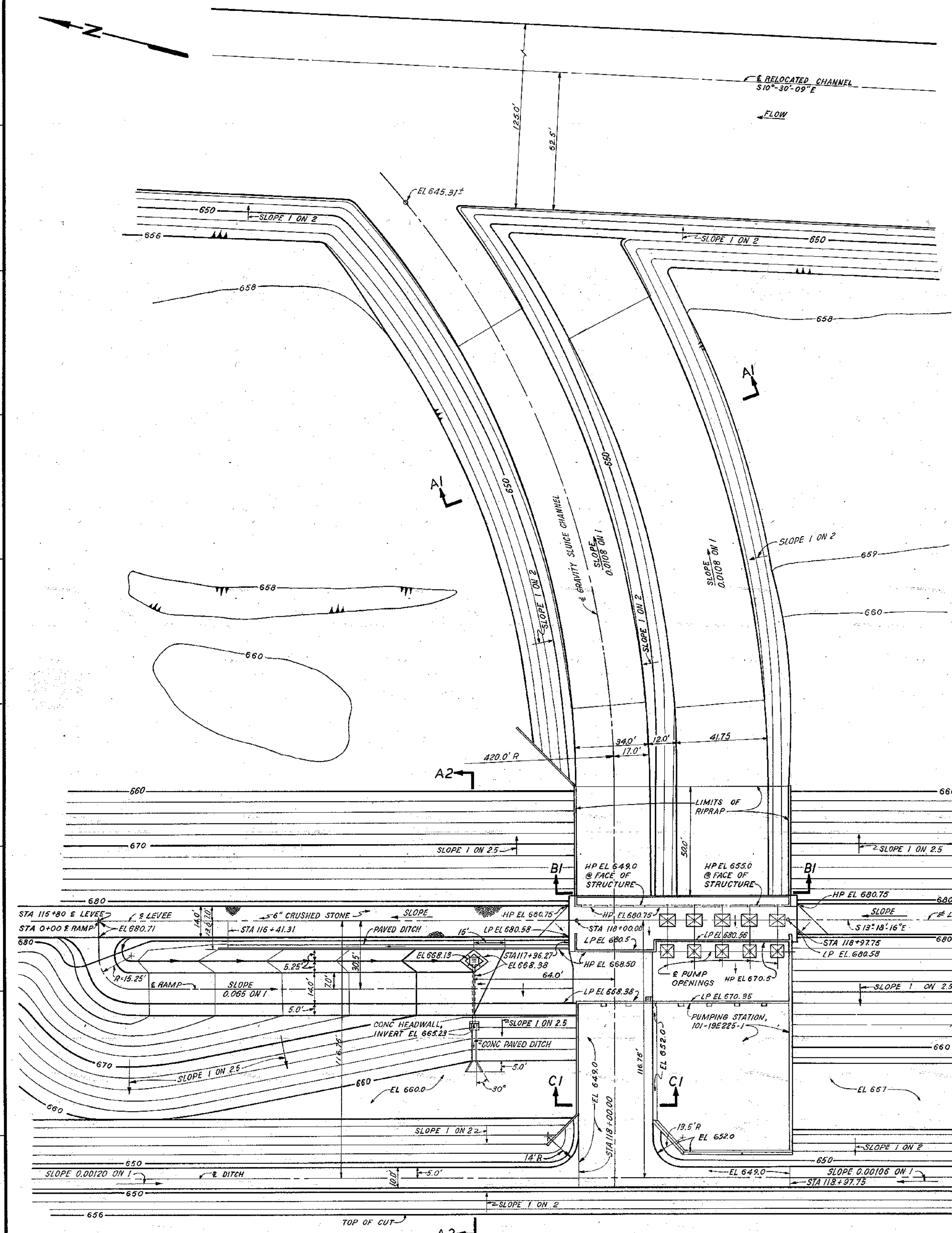
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

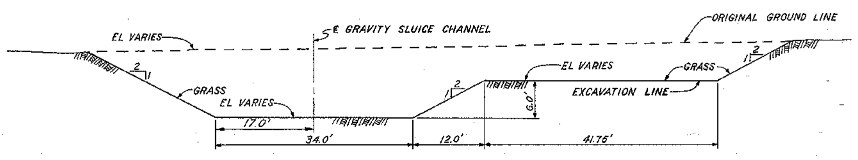
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 6-24-77 81 C 101-19E226-5R0

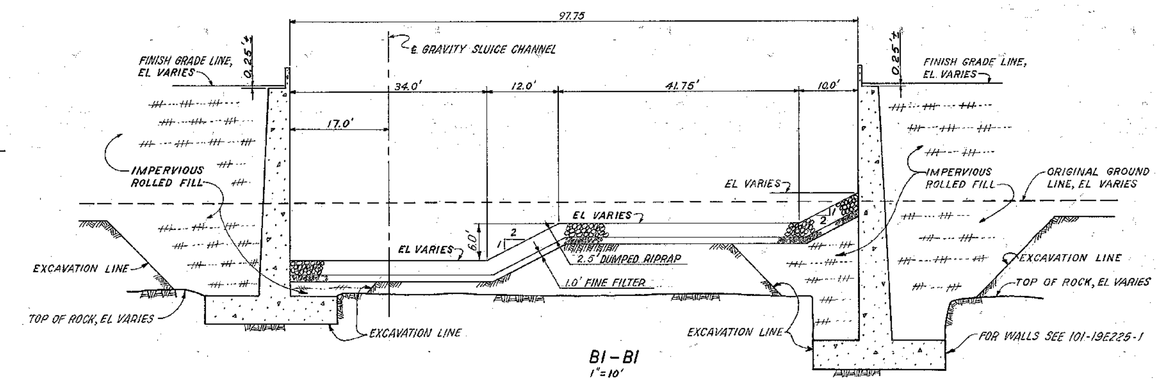
RECORD DRAWING AS CONSTRUCTED 1/27/81 R0



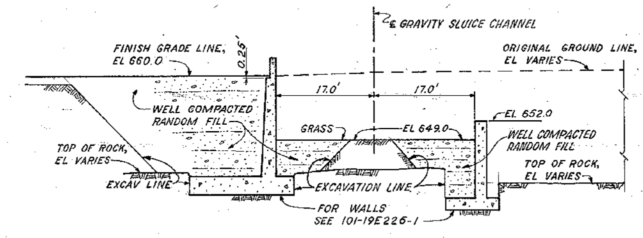
PLAN



A1–A1
1" = 10'



B1–B1
1" = 10'



C1–C1
1" = 10'

NOTES:

1. RIPRAP SHALL CONFORM TO TVA SPECIFICATION T-1, SECTION 830, 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:

SIEVE	PERCENT PASSING BY WEIGHT MINIMUM	MAXIMUM
2"	90	100
3/4"	75	95
3/8"	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

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. CHENG
SUPV H.A. MANSON 8-8-77
INSP
ENGINEER [signature]

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
[signature]	[signature]	[signature]

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 3-31-78 | 81 | C | 101-19E230-1 R0

RECORD DRAWING AS CONSTRUCTED [signature] 1/27/81 R0

PRINT H 10
SIZE F 3
BR OR PROJ ME EE CE AD CD ED ND BF SW BL PA
PRINTS REQD-R 0

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

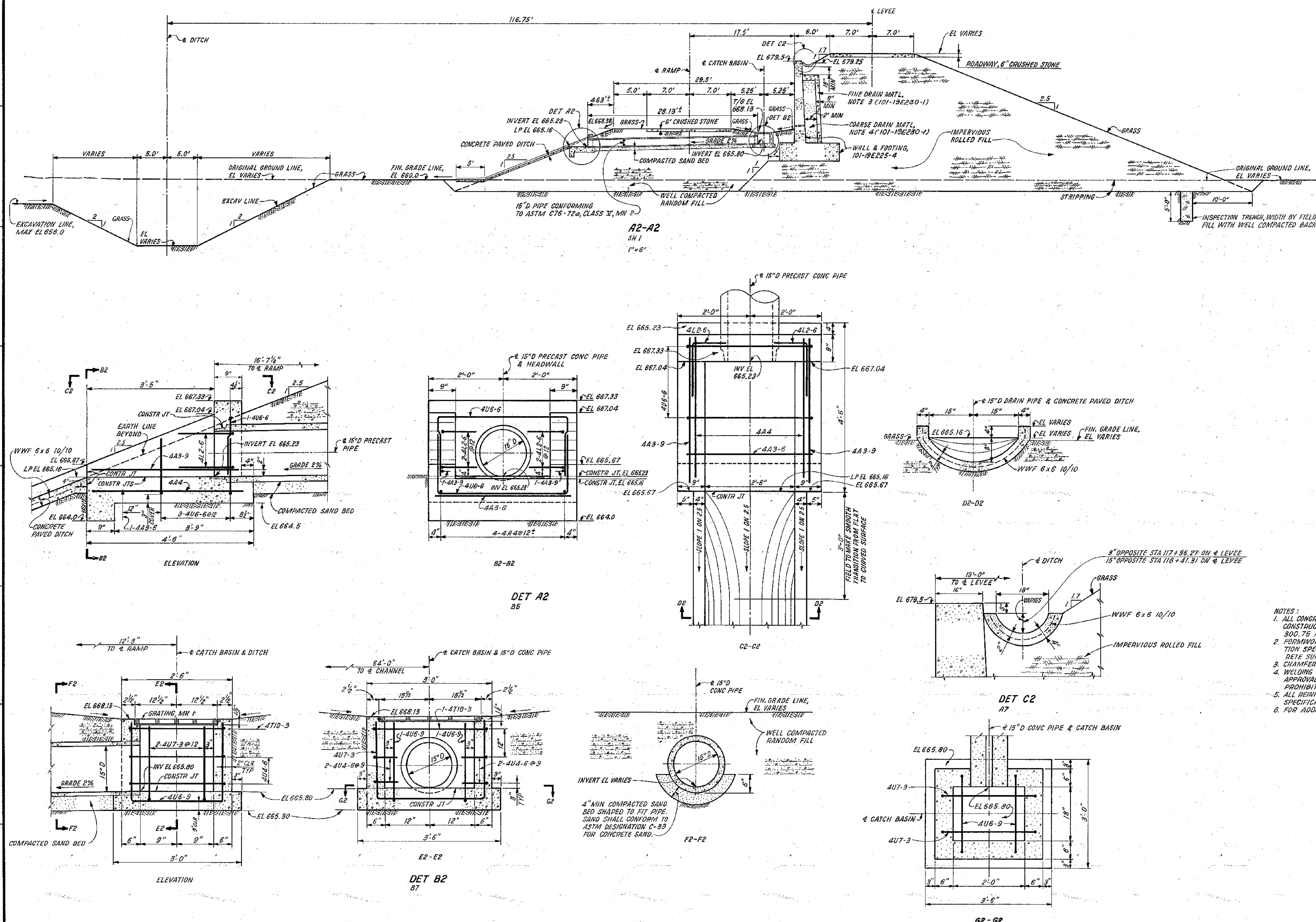
SHEET NO 1 OF 1

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						

TVA 10590 (DED-6-75)



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	2-2	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			

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

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 101-19E230-1.

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		1-3-83		DLW	JLM		RDM	/	RDM	ELS	GLB
	FINAL FIELD REV										

DSGN J.P. BURKE
DRWN V.F. VANCE 3-8-77
CHKD E.P. CHENG
SUPV H.A. MANSON 8-8-77
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 1

FINAL GRADING AND DRAINAGE STRUCTURES PLAN & SECTIONS

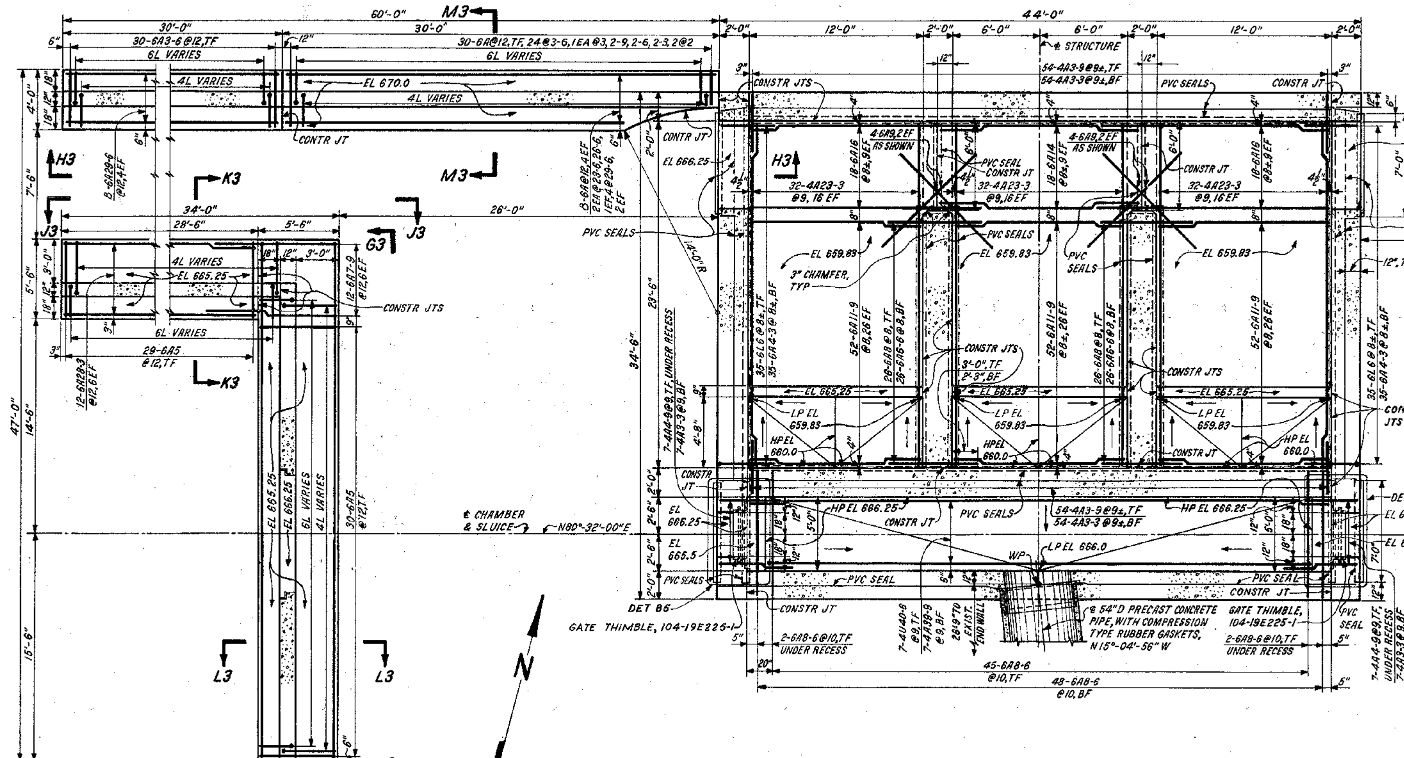
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

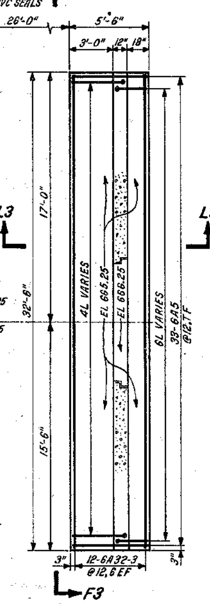
INSPECTED AND APPROVED FOR ISSUE

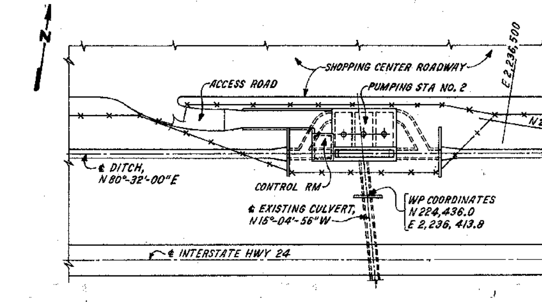
KNOXVILLE 3-31-78 | 81 | C | 101-19E230-2 R1

RECORD DRAWING AS CONSTRUCTED 1/27/81 R1



PLAN-EL 666.25
SLUICE NOT SHOWN

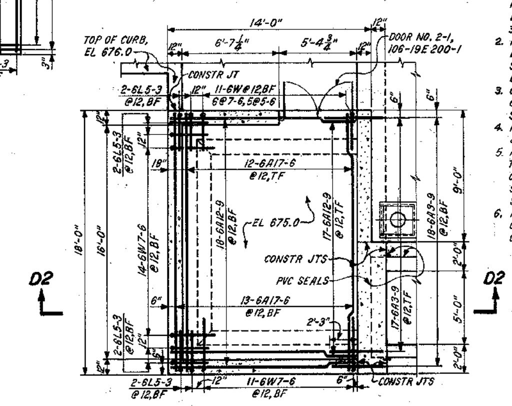




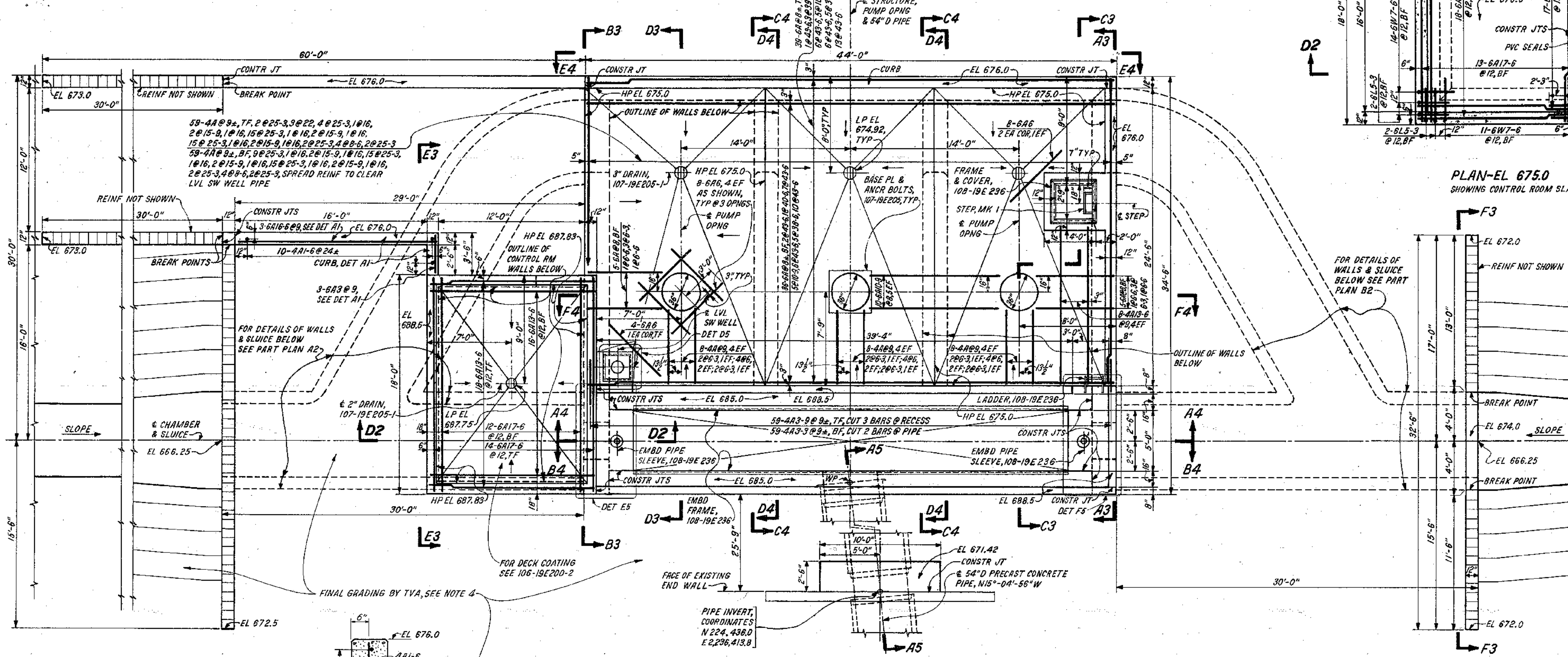
KEY PLAN
1"=40'

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			

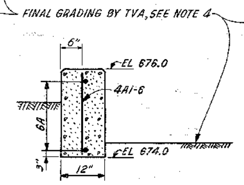
NOTES:
1. FORMED CONCRETE SURFACES SHALL BE FINISHED IN ACCORDANCE WITH SECTION 10.4 OF SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301-72), EXCEPT SURFACES EXPOSED TO PUBLIC VIEW SHALL HAVE A GROUT CLEANED FINISH. CONCRETE SLABS SHALL BE FINISHED IN ACCORDANCE WITH SECTION 11.8, ACI 301-72.
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. T-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.



PLAN-EL 675.0
SHOWING CONTROL ROOM SLAB



PLAN-EL 688.5



DET A1
G3
3/4"=1'-0"

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

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

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

DSGN E.R. CHENG, J.R. BURKE
DRWN V.F. VANCE 6-30-76
CHKD R.B. RAY
SUPV H.B. MANSON 3-11-77
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 2
OUTLINE & REINFORCEMENT

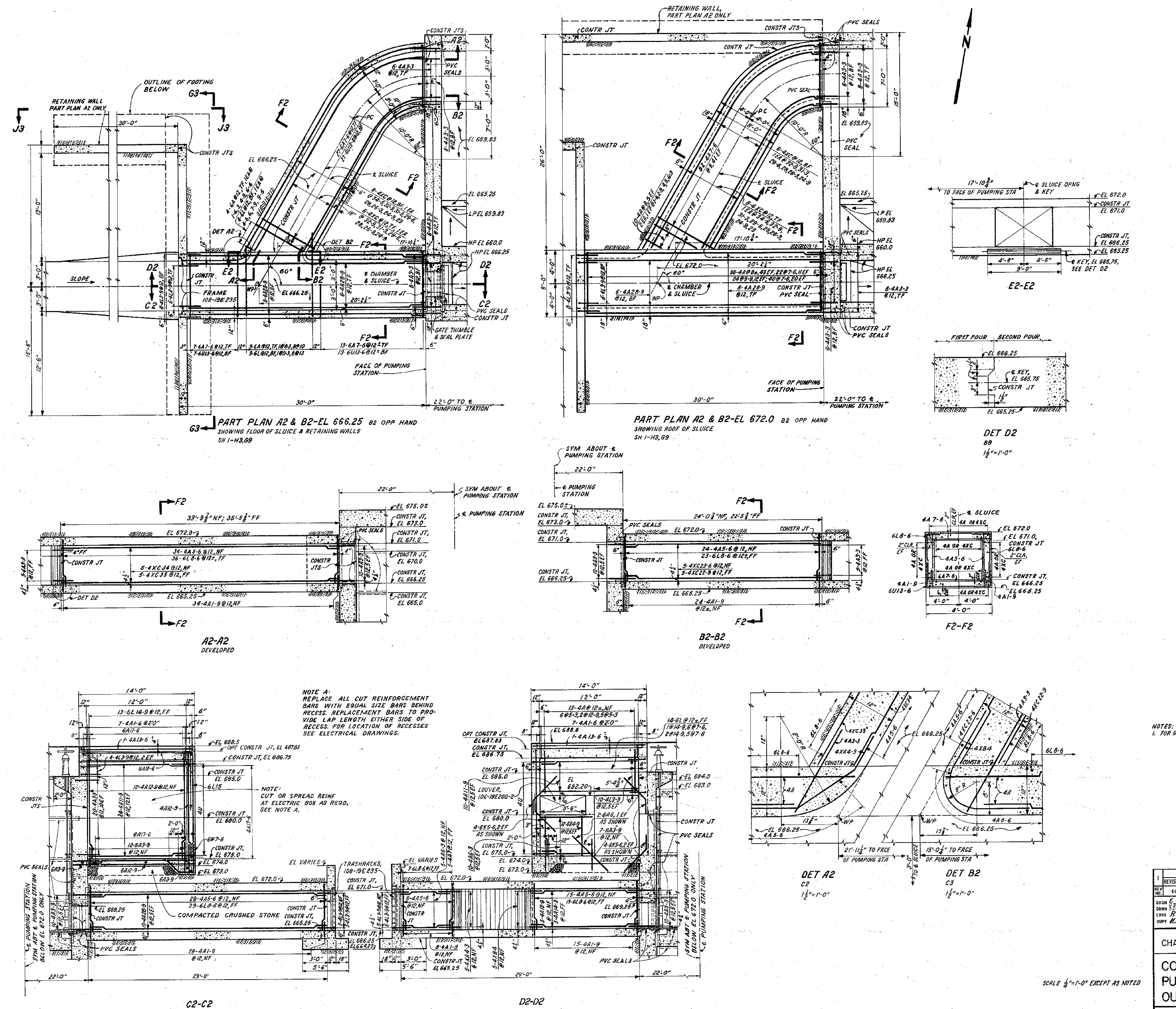
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

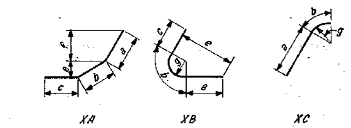
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE 5-6-77 81 C 101-19E235-1 R0

RECORD DRAWING AS CONSTRUCTED 1/27/81 R0



BENT BAR LIST							
BAR MARK	NO. REQD	BENDING DIMENSIONS					
		a	b	c	e	f	g
6L14-9	16	12-6	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				13-8$\frac{3}{4}$
4XC34-6	4	20-3	EX				13-6
4XC34	10	20-2	EX				13-2$\frac{1}{2}$
4XC32-9	8	19-9	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				6-8$\frac{1}{2}$
4XC23	4	16-3	EX				6-6
4XC22-9	10	16-2	EX				6-2$\frac{3}{4}$
4XA4-3	10	1-6	1-4	EX	0-7	1-4	
4XB4	10	1-6	0-11	EX	1-11		0-5
4L3-9	110	1-6	EX				



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	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		9-1-78		V.F.V.	HAM	HAM			TJA		

REVISED SIZE OF LOUVER OPENING,H6, REVISED BENT BAR LIST, A11, B11

DSGN E. P. CHENG, J. P. BURKE
DRWN V.F. VANCE 8-2-76
CHKD R.B. RAY
SUPV H.A. MANSON 3-11-77
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 2 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

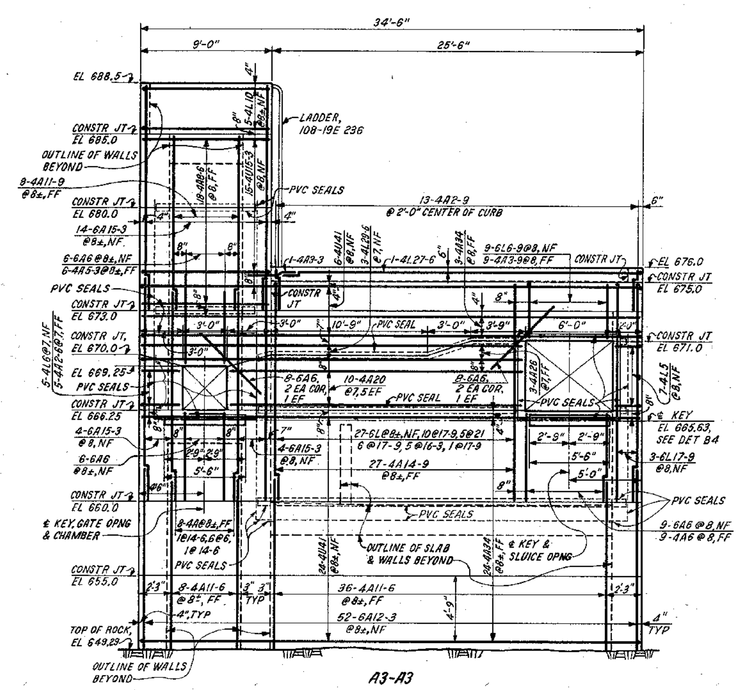
SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

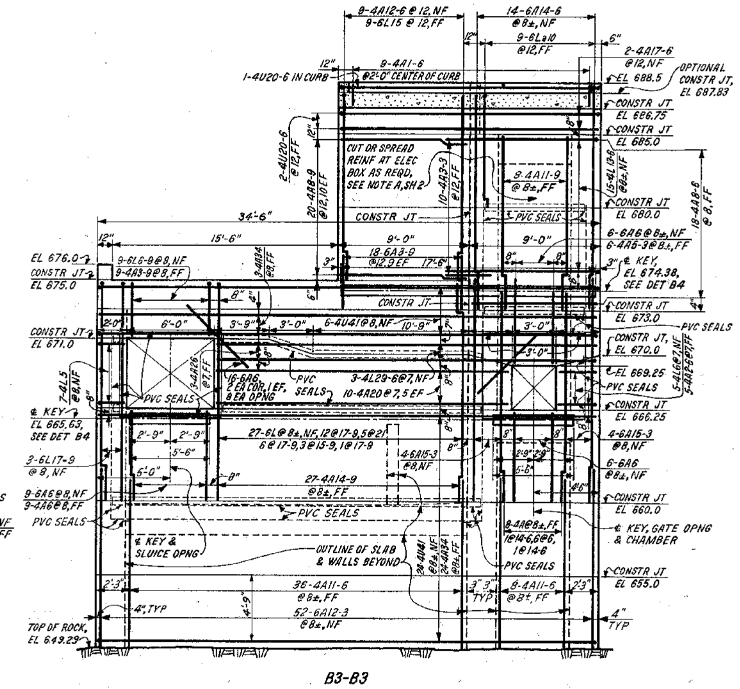
KNOXVILLE 5-6-77 81 C 101-19E 235-2 R1

RECORD DRAWING AS CONSTRUCTED 11/27/81 R1

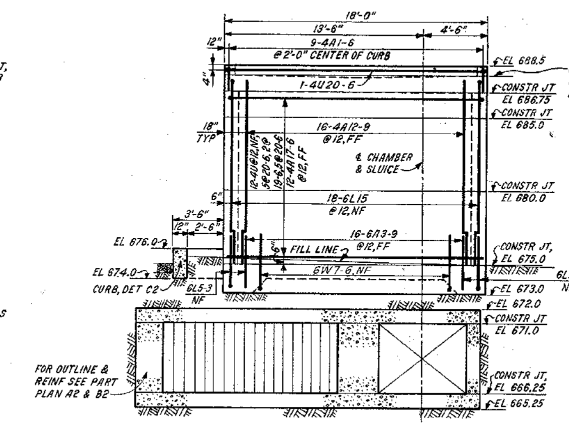
PRINT H 1 14 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1



A3-A3
SLUICE NOT SHOWN
SH 1



B3-B3
SLUICE NOT SHOWN
SH 1



E3-E3
SH 1

BENT BAR LIST

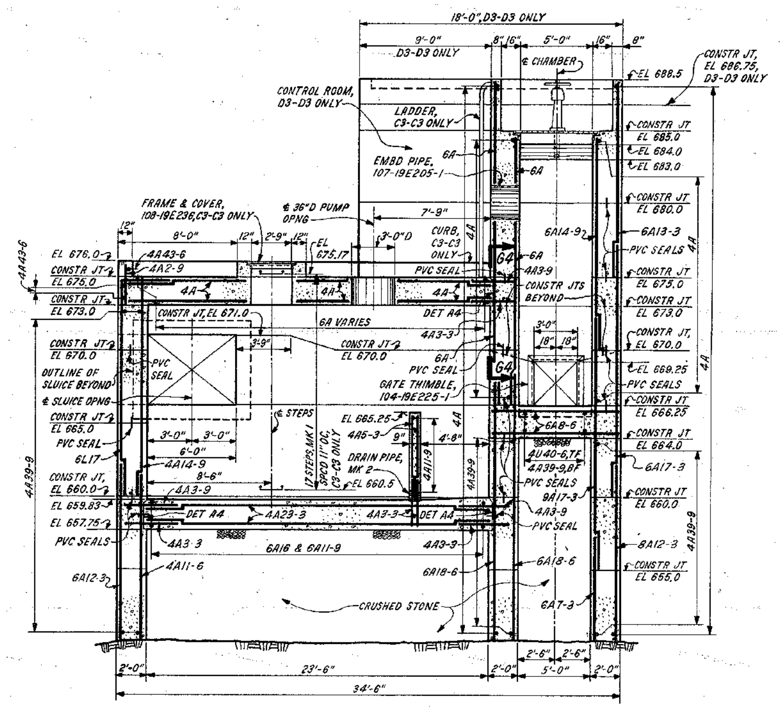
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
4L6	3	4-0	EX				
4L5-9	2	3-9	EX				
4L5-6	2	3-6	EX				

BENT BAR LIST

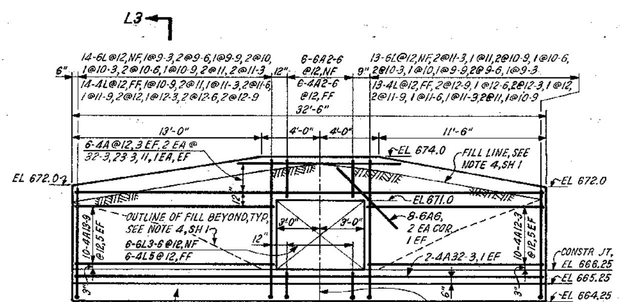
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6L8-6	30	6-6	EX				
6L8-3	3	6-3	EX				
6L8	3	6-0	EX				
6L7-9	2	5-9	EX				
6L7-6	2	5-6	EX				
6L7-3	3	5-3	EX				
6L7	3	5-0	EX				
6L6-9	2	4-9	EX				
6L6-6	2	4-6	EX				
6L6-3	3	4-3	EX				
6L6	3	4-0	EX				
6L5-9	2	3-9	EX				
6L5-6	2	3-6	EX				
4L8-6	24	6-6	EX				
4L8-3	3	6-3	EX				
4L8	3	6-0	EX				
4La8	1	6-6	EX				
4L7-9	2	5-9	EX				
4La7-9	1	6-6	EX				
4L7-6	2	5-6	EX				
4La7-6	1	6-6	EX				
4L7-3	3	5-3	EX				
4La7-3	1	6-6	EX				
4L7	3	5-0	EX				
4La7	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

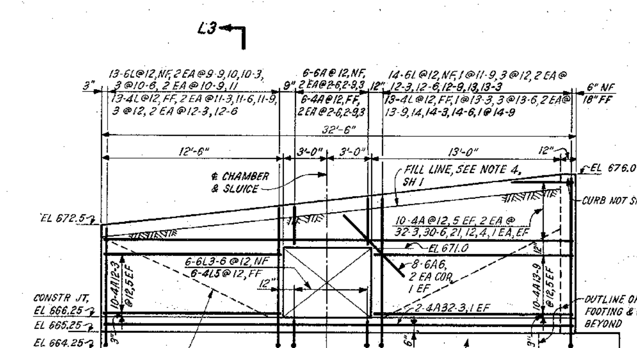
BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	g
6L21	10	14-10	EX				
6L17-9	42	14-10	EX				
6L16-3	5	14-10	EX				
6L15-9	3	14-10	EX				
6L15	27	12-8	EX				
6L13-3	3	11-3	EX				
6L13	5	11-0	EX				
6L12-9	5	10-9	EX				
6L12-6	4	10-6	EX				
6L12-3	4	10-3	EX				
6L12	6	10-0	EX				
6L11-9	4	9-9	EX				
6L11-6	2	9-6	EX				
6L11-3	6	9-3	EX				
6L11	8	9-0	EX				
6L10-9	8	8-9	EX				
6L10-6	8	8-6	EX				
6L10-3	7	8-3	EX				
6L10	5	8-0	EX				
6La10	9	7-8	EX				
6L9-9	4	7-9	EX				
6L9-6	4	7-6	EX				
6L9-3	2	7-3	EX				
6L6-9	18	3-7	EX				
6L3-6	12	1-6	EX				
4U41	60	3-7	33-11	EX			
4L29-6	6	26-0	EX				
4L27-6	1	25-0	EX				
4U20-6	14	1-7	17-6	EX			
4U19-6	2	0-7	17-6	EX			
4U16-3	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	2-6	EX				
4L5	26	1-6	EX				
4L3-9	22	1-6	EX				



C3-C3 & D3-D3 OPP H
SH 1

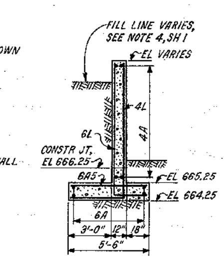


F3-F3
SLUICE NOT SHOWN
SH 1

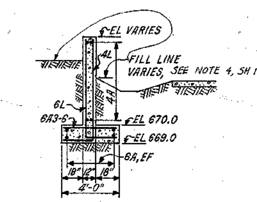


G3-G3
SLUICE NOT SHOWN
SH 1 & SH 2

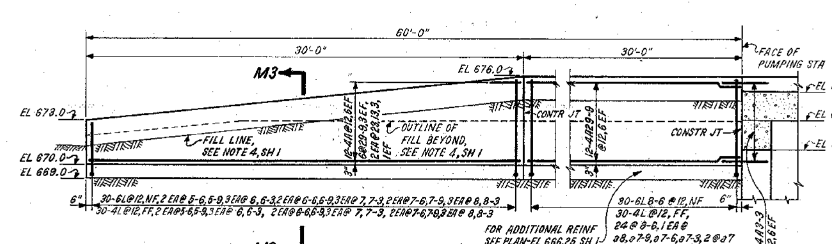
NOTES:
1. FOR GENERAL NOTES AND REFERENCE DRAWINGS SEE 101-19E235-1.



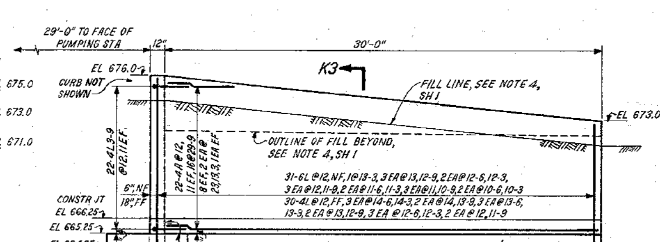
L3-L3
SH 1



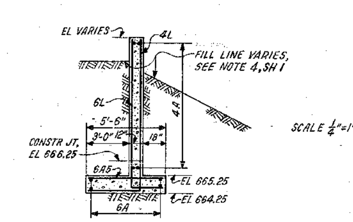
M3-M3
SH 1



H3-H3
SLUICE NOT SHOWN
SH 1



J3-J3
SH 1 & SH 2



K3-K3
SH 1

SCALE 1/4"=1'-0

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	FINAL FIELD REV	1-3-83		DLW	JLM		RDM	/	RDM	ELS	JJB

DSGN E.P. CHENG, J.P. BURKE
DRWN V.F. VANCE 8-9-76
CHKD R.B. RAY
SUPV H.A. MANSON 3-11-77
INSP
ENGINEER J.W. Sanders

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 2 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 5-6-77 | B1 | C | 101-19E235-3 R1

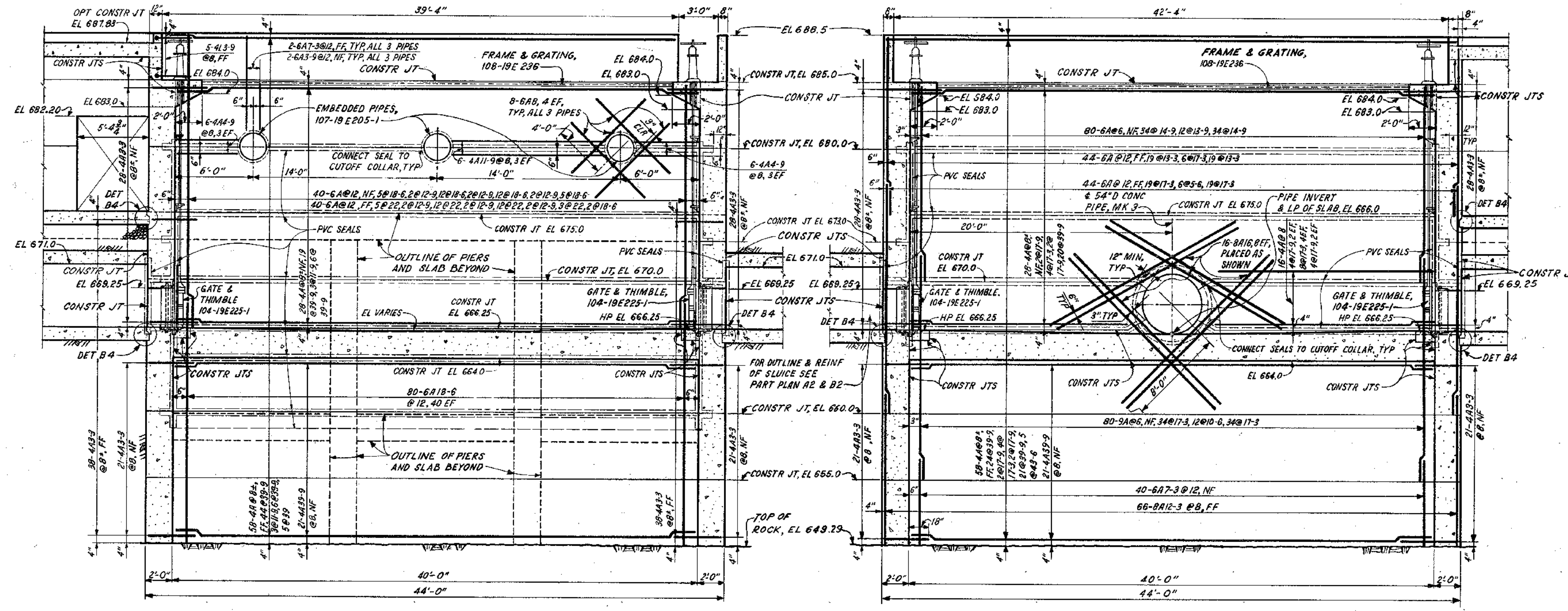
RECORD DRAWING AS CONSTRUCTED Frank Van Meter 1/27/81 R1

PRINT H 1 14 2
SIZE F
BR OR PROJ ME EE CE AD CO ED MD BF SW BL PA
PRINTS REQD-R 0

101-19E235-3 C B1

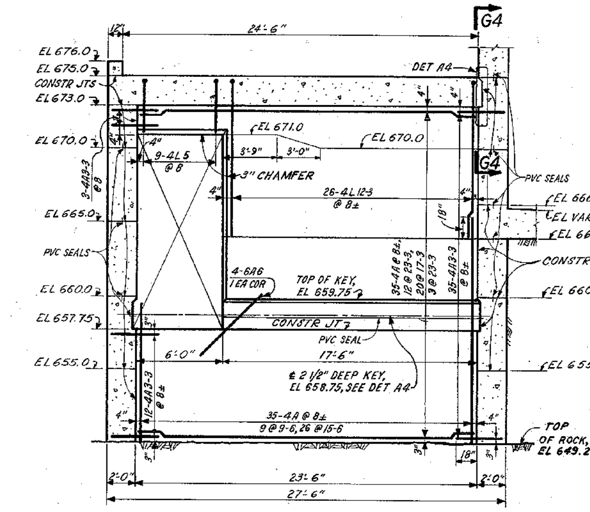
101-19E235-4 | C | 81

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

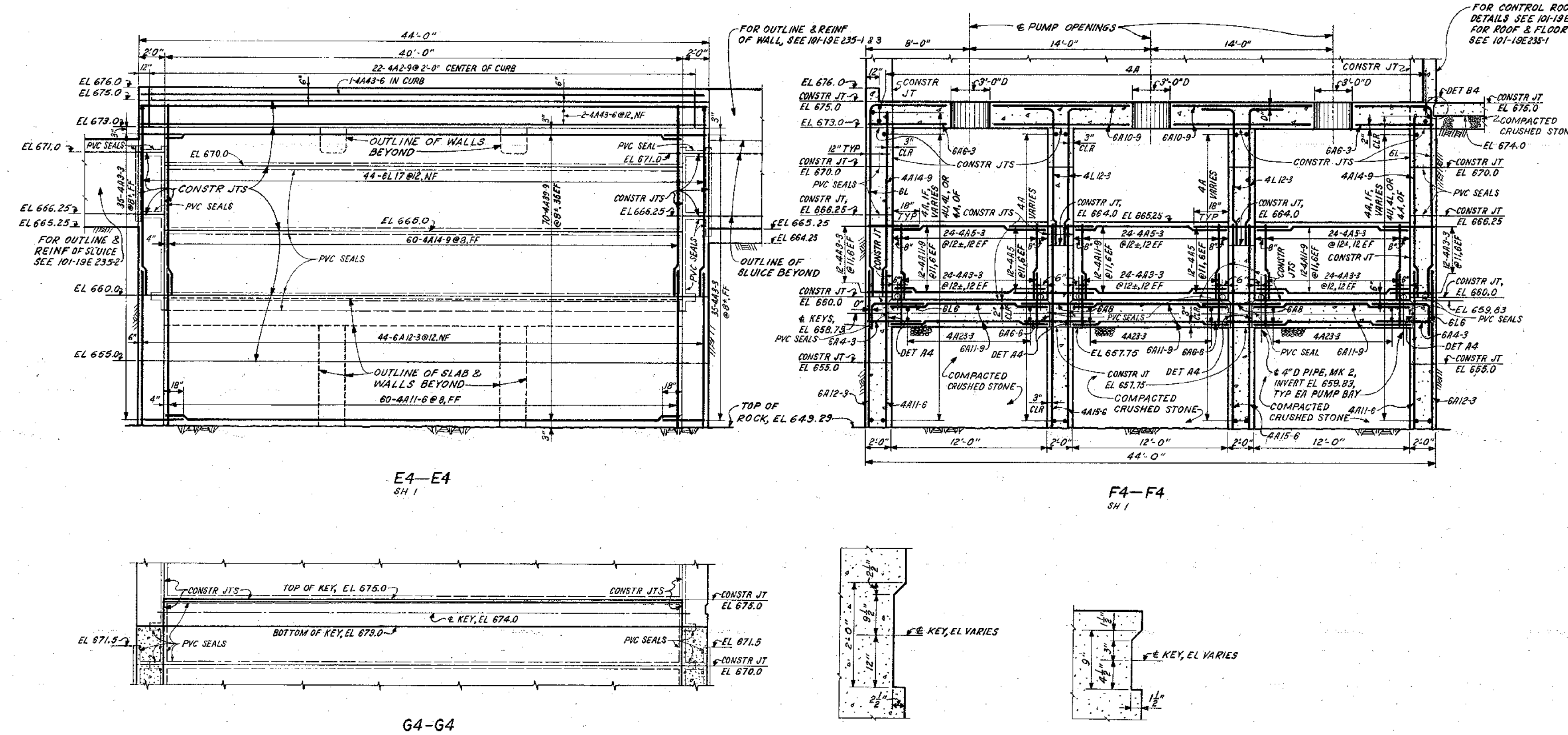


A4—A4
SH 1

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 675.0 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 ¼"=1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1 FINAL FIELD REV		1-3-83		DLW	JLM		RDM	/	RDM	ELS	FLB

DSGN E.P. CHENG, J.P. BURKE
DRWN C.A. DICKEY
CHKD R.B. RAY
SUPV H.A. MANSON 3-11-77
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO.2 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

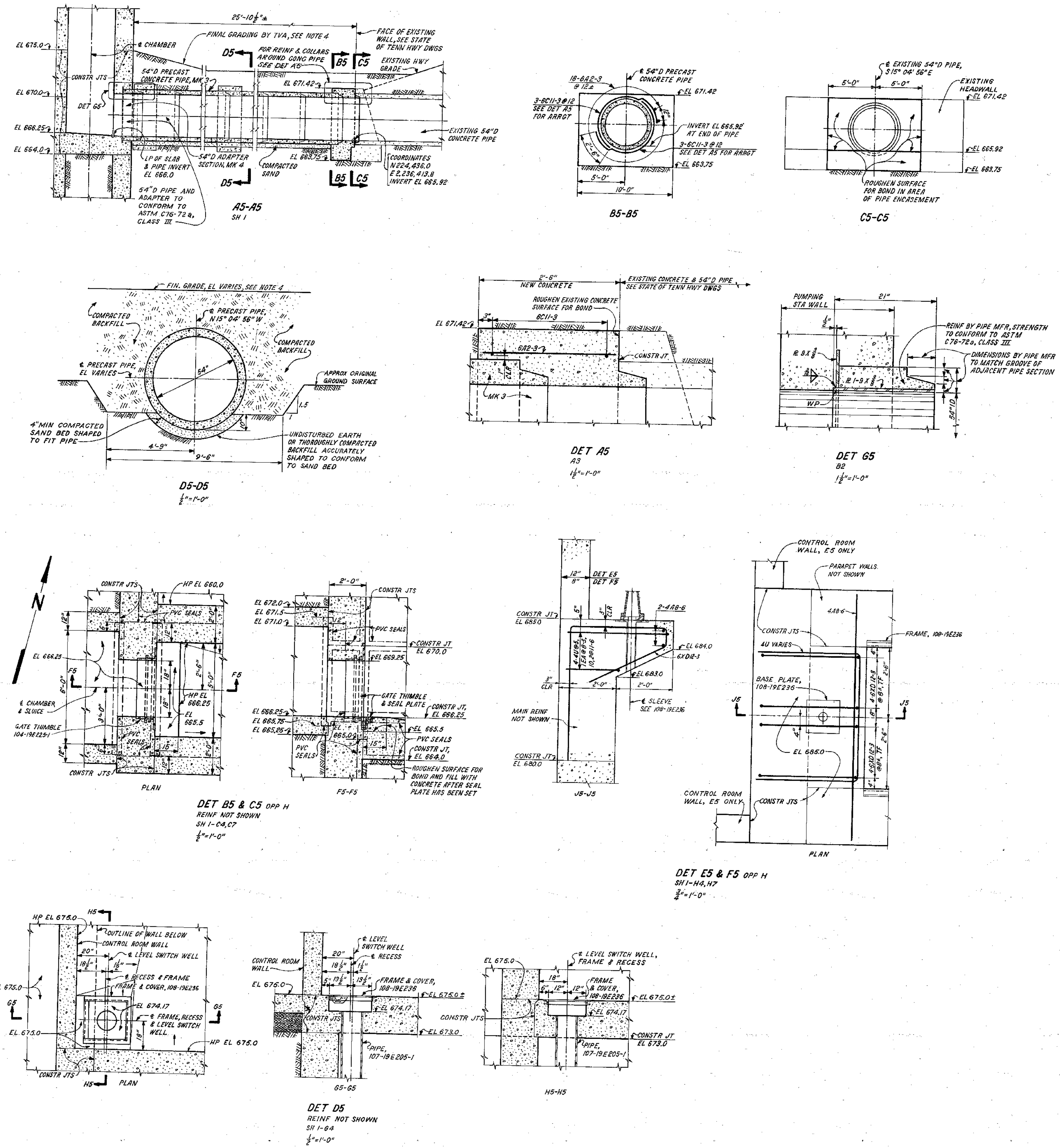
SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

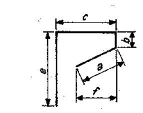
KNOXVILLE 5-6-77 | 81 | C | 101-19E235-4 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1/27/81 R1

PRINT H 1 14 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 0



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	4-5¾	EX			
4U10	2	2-10	4-5¾	EX			
4U8-3	2	2-0	4-5¾	EX			



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

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1 FINAL FIELD REV		1-3-83		DLW	JLM		RDM		RDM	ELS	SLB

DSGN E.P. CHENG, J.P. BURKE
DRWN V.F. VANCE
CHKD R.B RAY
SUPV H.A MANSON 3-11-77
INSP
ENGINEER J.W. Winders

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 2 OUTLINE & REINFORCEMENT

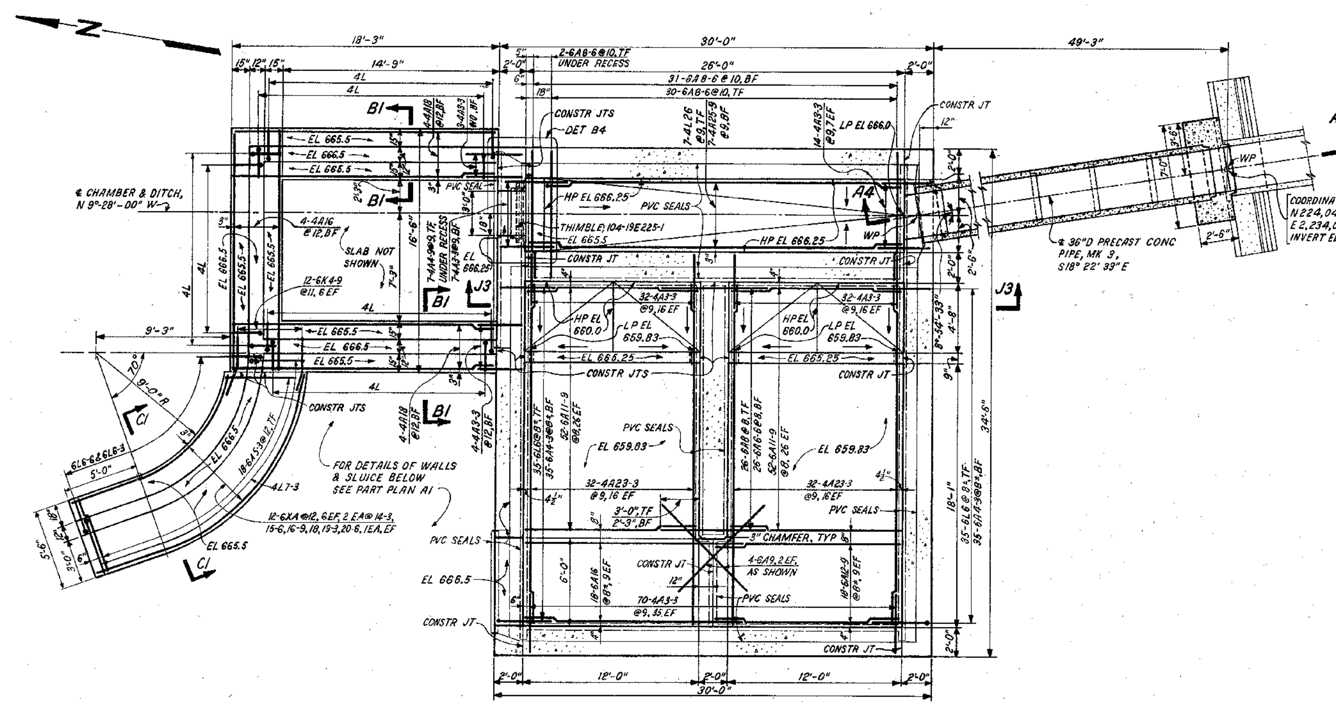
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE

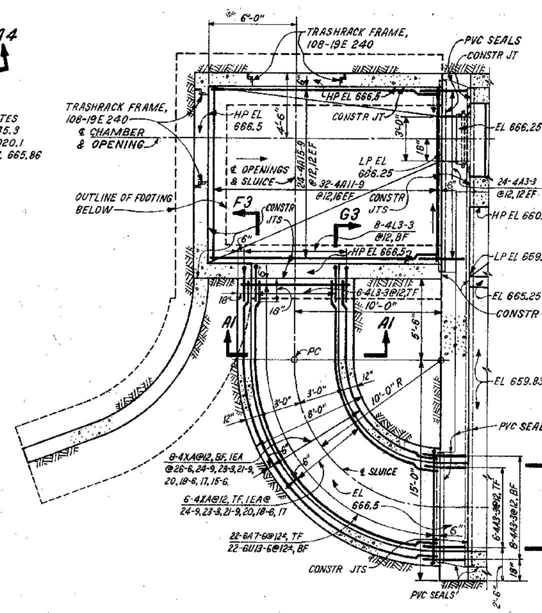
KNOXVILLE 5-6-77 | 81 | C | 101-19E235-5 R1

RECORD DRAWING AS CONSTRUCTED Frank Van Meter 1/27/81 R1



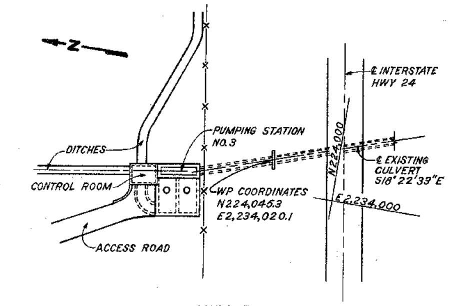
PLAN-EL 666.5

SLUICE NOT SHOWN



PART PLAN A1-EL 666.5

SHOWING SLAB & FLOOR OF SLUICE

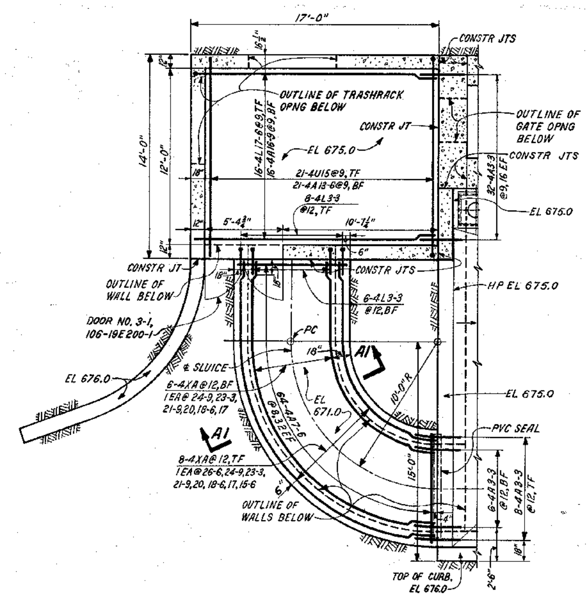


KEY PLAN

1"=40'

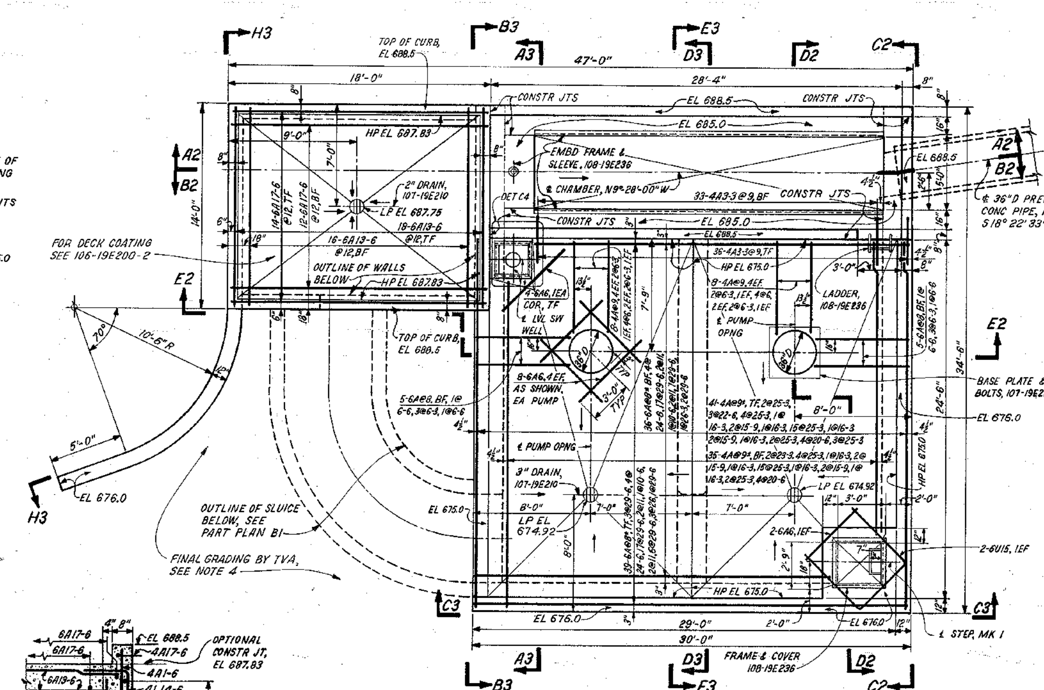
NOTES:

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 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. T-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±

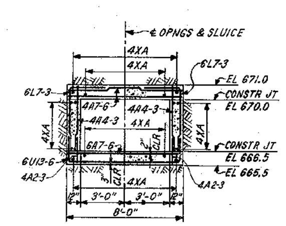
SHOWING CONTROL ROOM SLAB & ROOF OF SLUICE



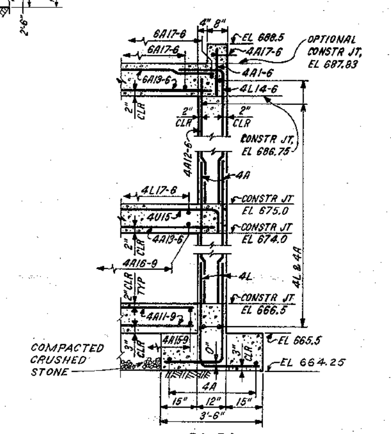
PLAN-EL 688.5

BENT BAR LIST

BAR MARK	NO. REQD	BENDING DIMENSIONS a	b	c	e	f	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				
6K4-9	12	2-7	EX	2-6			
4XA26-6	2	5-6	EX				13-6
4L26	7	24-6	EX				
4XA24-9	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	16-9	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	2-3	EX				

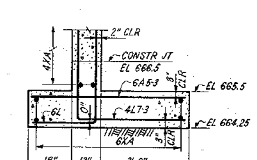


A1-A1



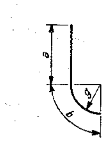
B1-B1

1/2"=1'-0"



C1-C1

1/2"=1'-0"



XA

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

DSGN E.R. CHENG, J.P. BURKE
DRWN V.F. VANCE
CHKD R.B. RAY
SUPV H.A. MANSON 3-22-77
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

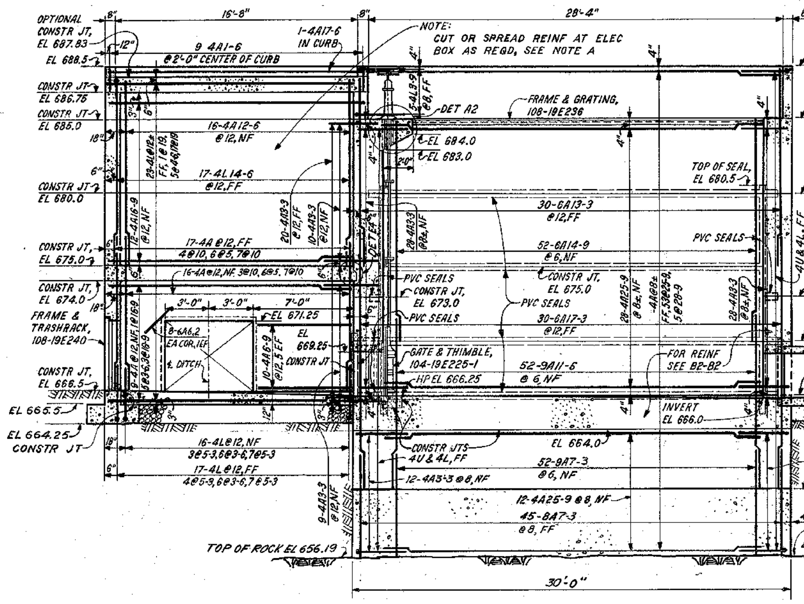
KNOXVILLE 4-19-77 | 81 | C | 101-19E240-1 R0

RECORD DRAWING AS CONSTRUCTED 1/27/81 R0

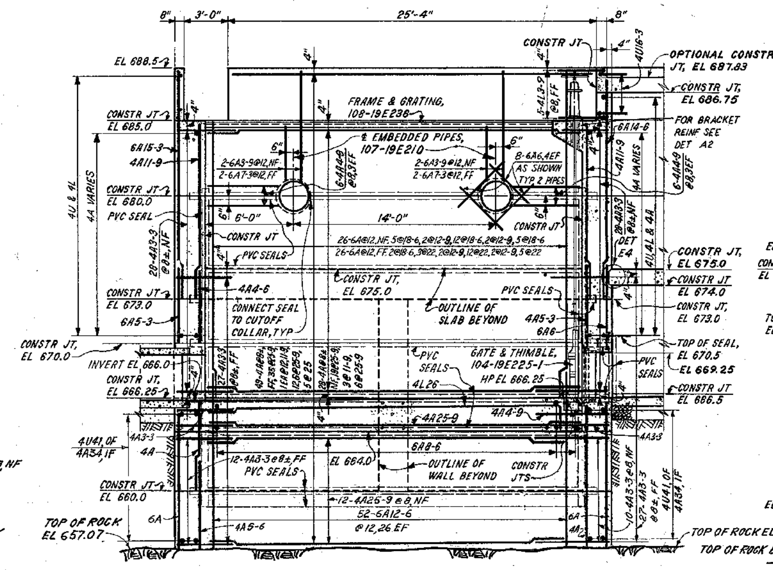
PRINT H 1 14 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 0

101-19E240-1 | C | 18

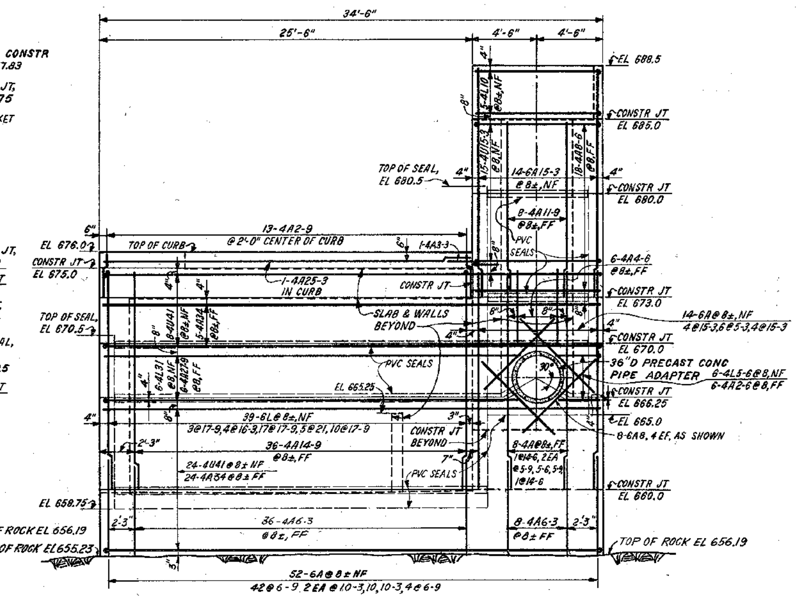
101-19E240-2 | C | 81



A2-A2
SH 1

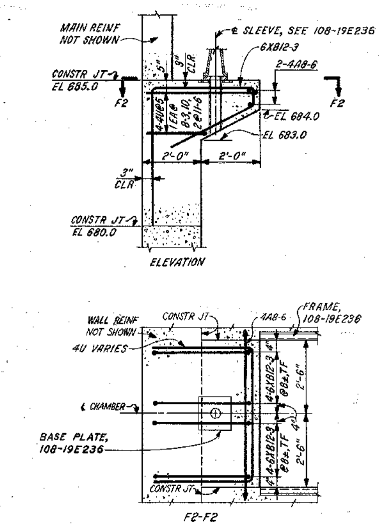


B2-B2
SH 1

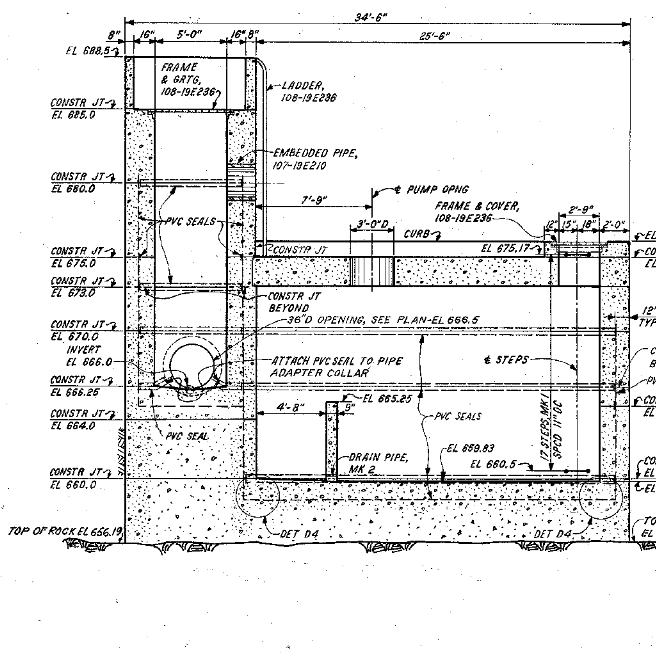


C2-C2
SH 1

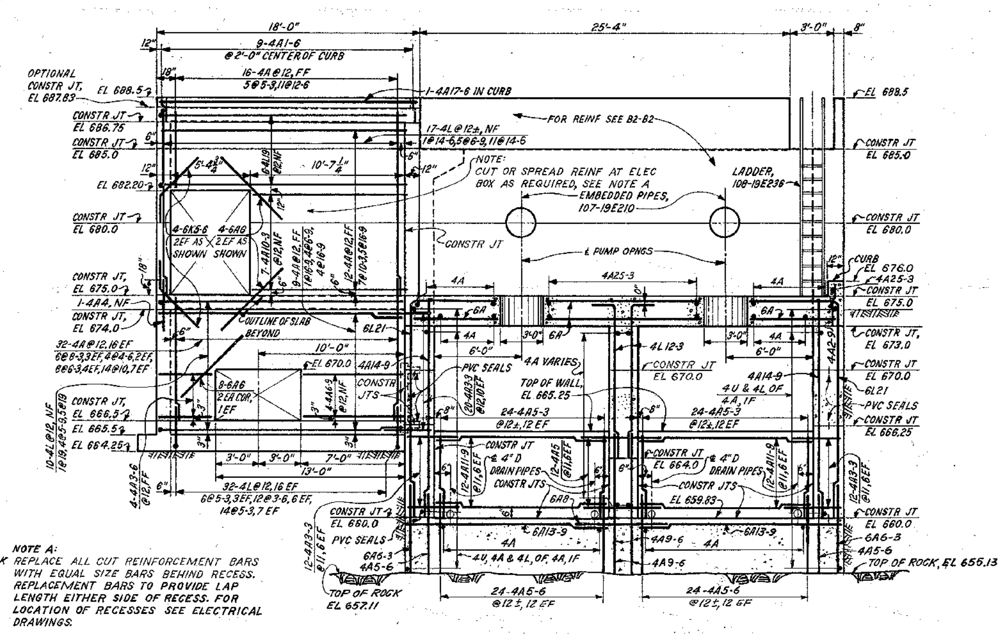
BENT BAR LIST							
BAR MARK	NO. REQD	BENDING DIMENSIONS					
		a	b	c	e	f	g
6L21	5	14-10	EX				
6L17-9	30	14-10	EX				
6L16-3	4	14-10	EX				
6XB12-3	8	3-9	0-7½	3-6½	EX	3-4	
6K5-6	4	1-8	EX	1-2			
4U41	32	3-7	33-11	EX			
4L31	6	27-9	EX				
4L19	30	16-9	EX				
4U15-3	15	3-6	8-5	EX			
4L14-6	29	12-8	EX				
4U11-6	2	3-7	4-5¾	EX			
4L10	5	8-6	EX				
4U10	1	2-10	4-5¾	EX			
4U8-3	1	2-0	4-5¾	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				



DET A2
A2
½"=1'-0"



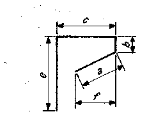
D2-D2
REINF NOT SHOWN
SH 1



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

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



XB

SCALE ¼"=1'-0" EXCEPT AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1 FINAL FIELD REV		1-3-83	DLW	JLM		RDM	/	RDM	ELS	GLB	

DSGN E. P. CHENG, J. P. BURKE
DRWN V. F. VANCE
CHKD R B RAY
SUPV H. A. MANSON 3-28-77
INSP
ENGINEER [signature]

CHATTANOOGA FLOOD PROTECTION

CONCRETE PUMPING STATION NO. 3 OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

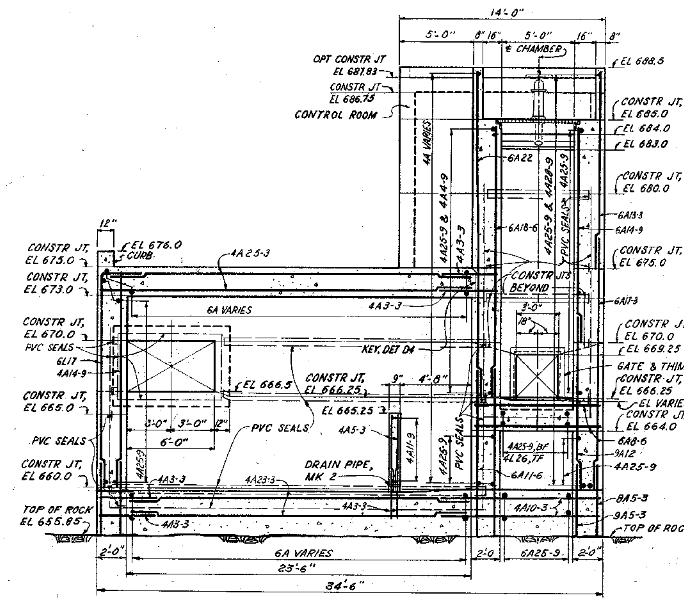
SUBMITTED [signature] | RECOMMENDED [signature] | APPROVED [signature]

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

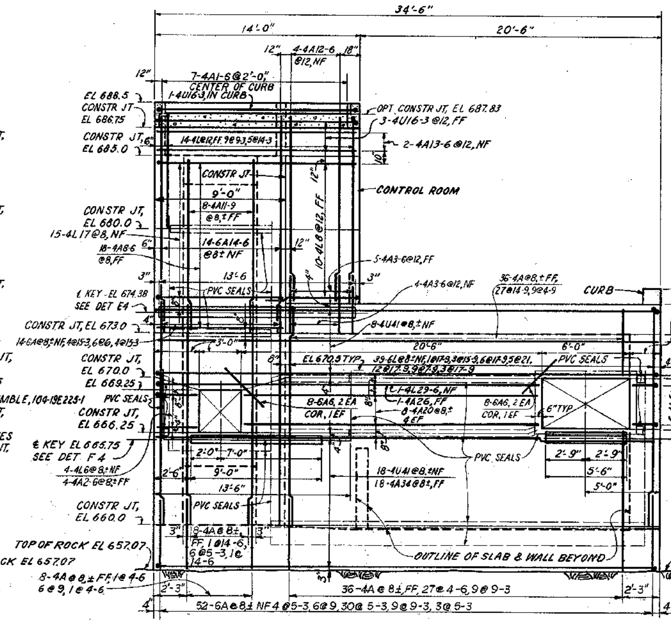
KNOXVILLE 4-19-77 | 81 | C | 101-19E240-2 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1/27/81 R1

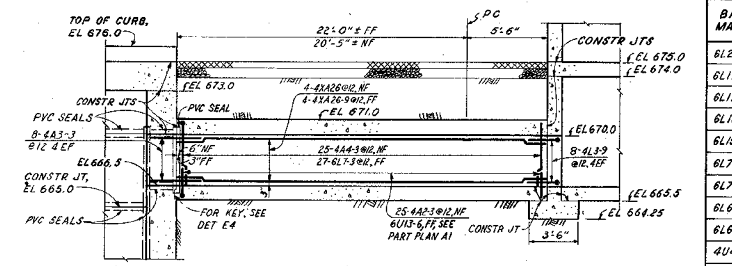
PRINT H 1 14 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 0



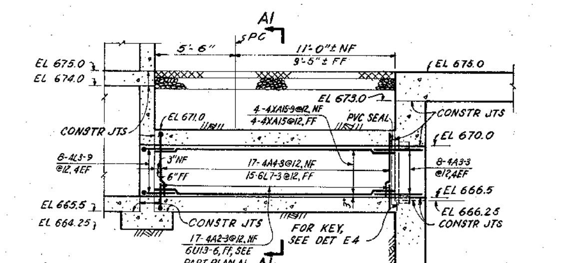
A3-A3
SH 1



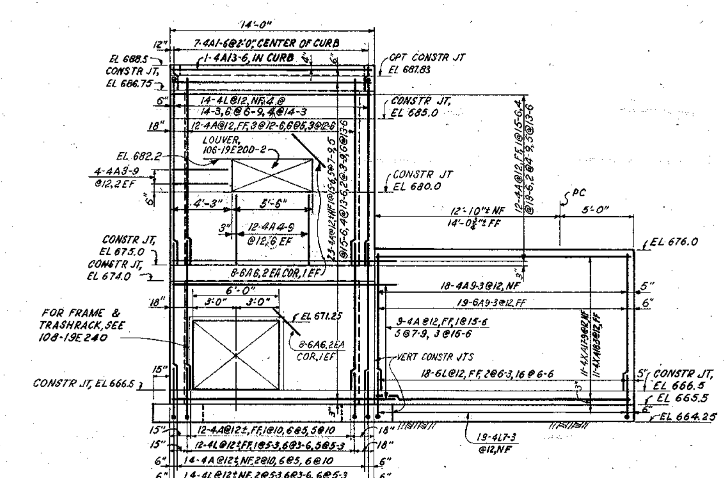
B3-B3
SH 1



F3-F3
DEVELOPED
SH 1



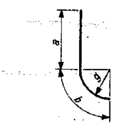
G3-G3
DEVELOPED
SH1



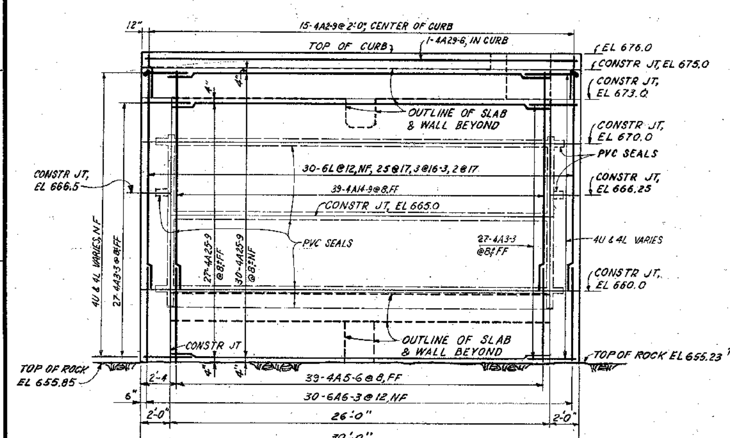
H3-H3
DEVELOPED
SH 1

BAR MARK	NO. REQD	a	b	c	e	f	g
		BENDING DIMENSIONS					
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				

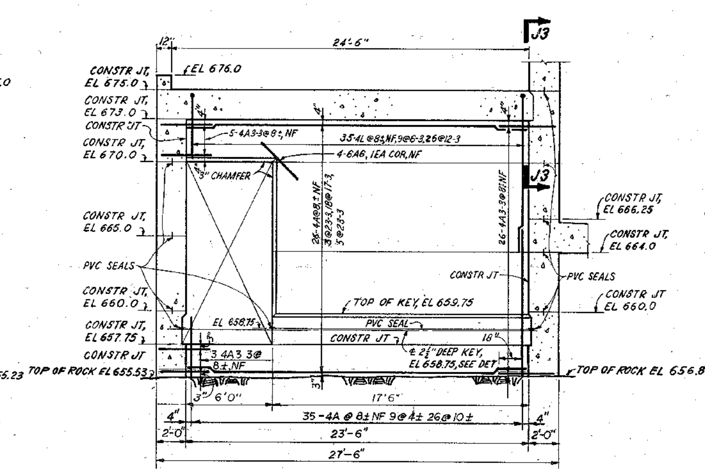
BENT BAR LIST



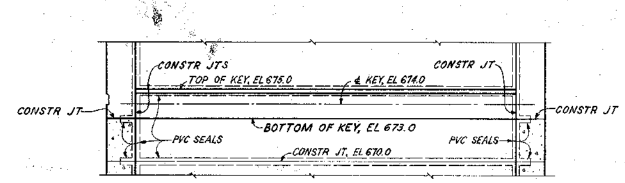
XA



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 [signature]

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 3
OUTLINE & REINFORCEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

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

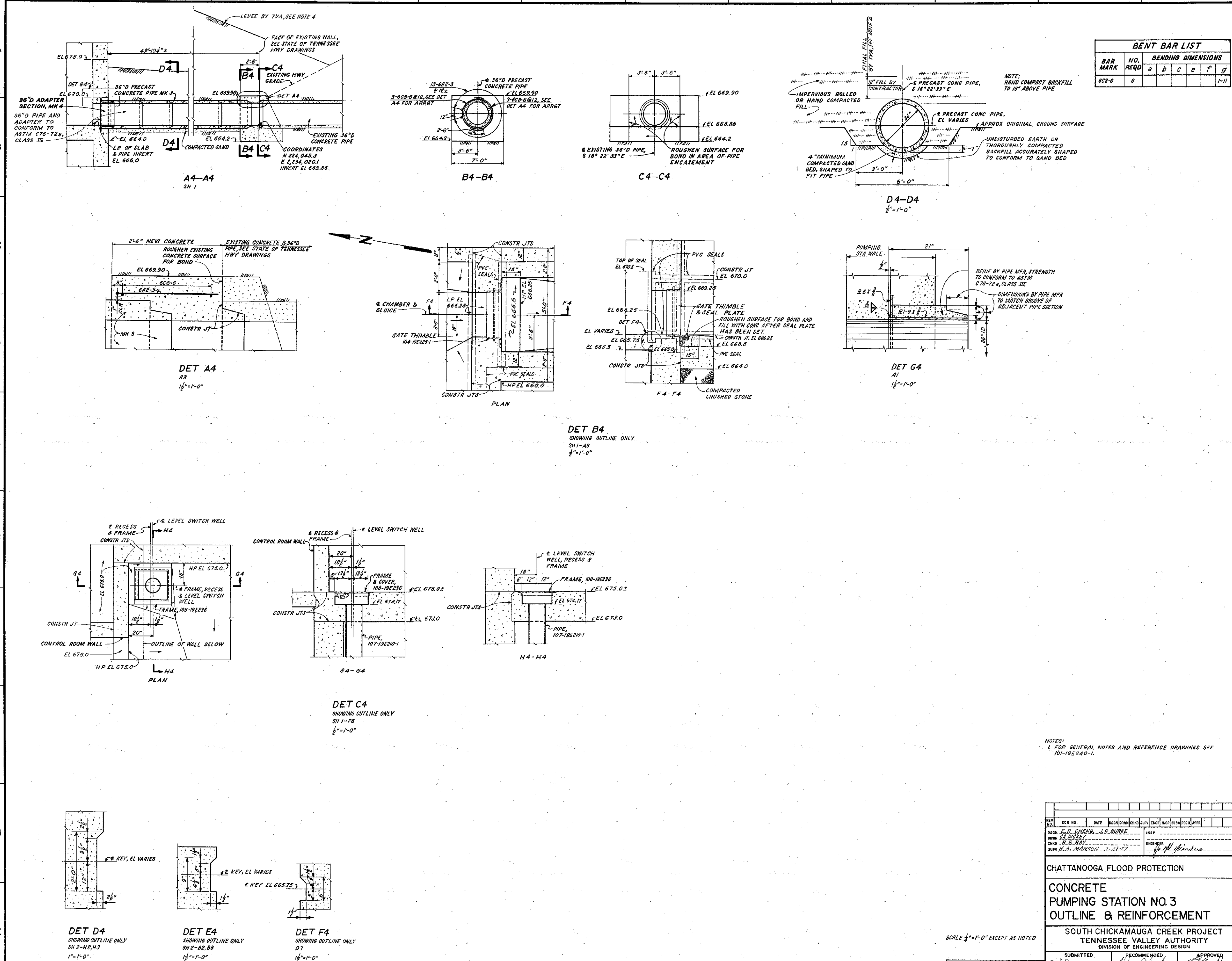
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

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

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



BENT BAR LIST								
BAR MARK	NO. REQD	BENDING DIMENSIONS						
		a	b	c	e	f	g
6C8-6	6						1-11

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

SCALE ½"=1'-0" EXCEPT AS NOTED

CHATTANOOGA FLOOD PROTECTION

CONCRETE
PUMPING STATION NO. 3
OUTLINE & REINFORCEMENT

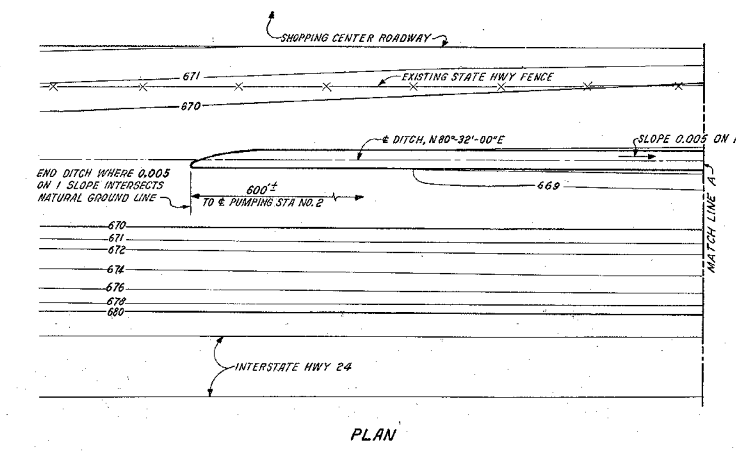
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

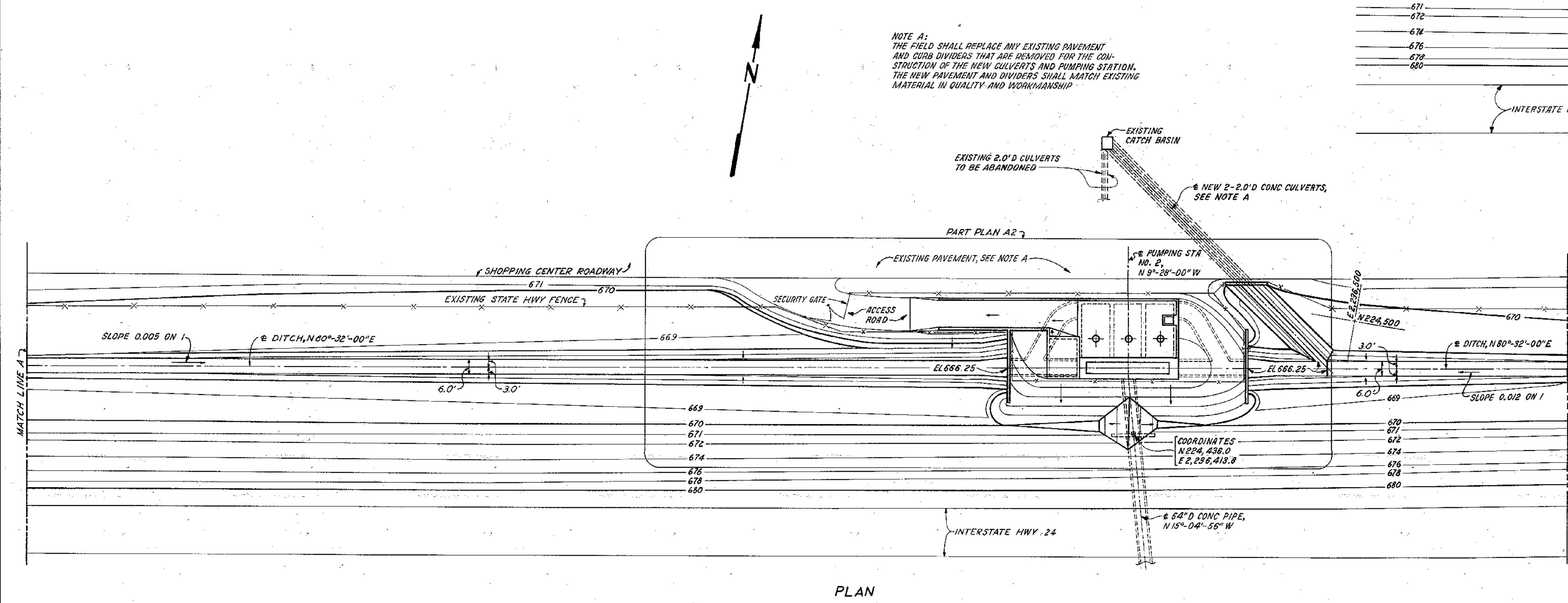
KNOXVILLE 4-19-77 | 81 | C | 101-19E240-4 R0

RECORD DRAWING AS CONSTRUCTED

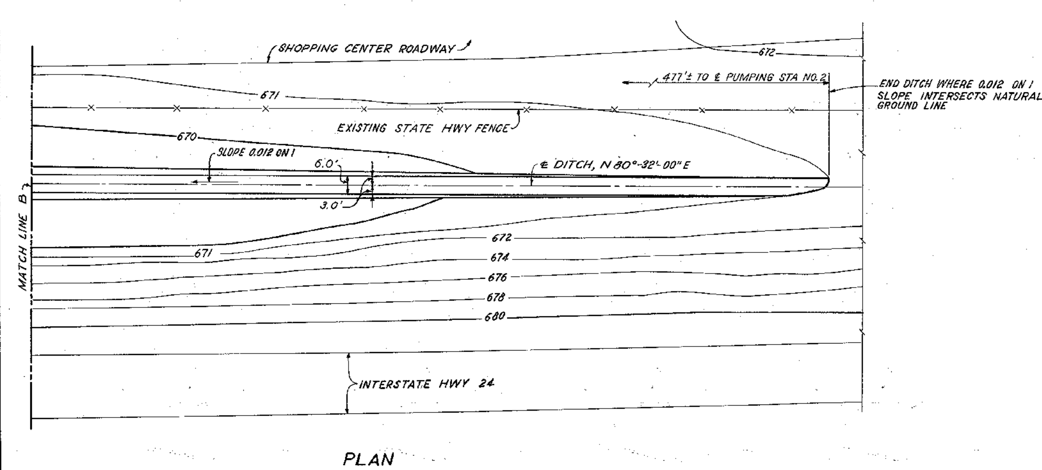


PLAN

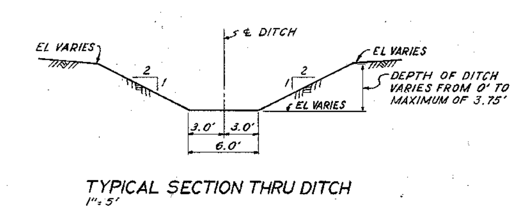
NOTES:
1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-2. CONCRETE SHALL BE CLASS 300.75 AFW.
2. FORMWORK SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION NO. G-8. FORM LINING FOR EXPOSED CONCRETE SURFACES SHALL BE TYPE A OR TYPE D.
3. CHAMFER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



PLAN



PLAN



TYPICAL SECTION THRU DITCH
1" = 5'

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

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

DSGN
DRWN CA DICKEY
CHKD R B RAY
SUPV H.A. MANSON 8-17-77
INSP
ENGINEER

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

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE 3-31-78 | 81 | C | 101-19E245-1 R0

RECORD DRAWING/AS CONSTRUCTED 11/27/81 R0

PRINT H 10 3
SIZE F 3
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 0

STRAIGHT REINFORCEMENT BAR LIST

(FOR FIELD INFORMATION ONLY)

MADE J.L. MAXEY

CHKD: HAM
3-17-78

DATE 10-31-77

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

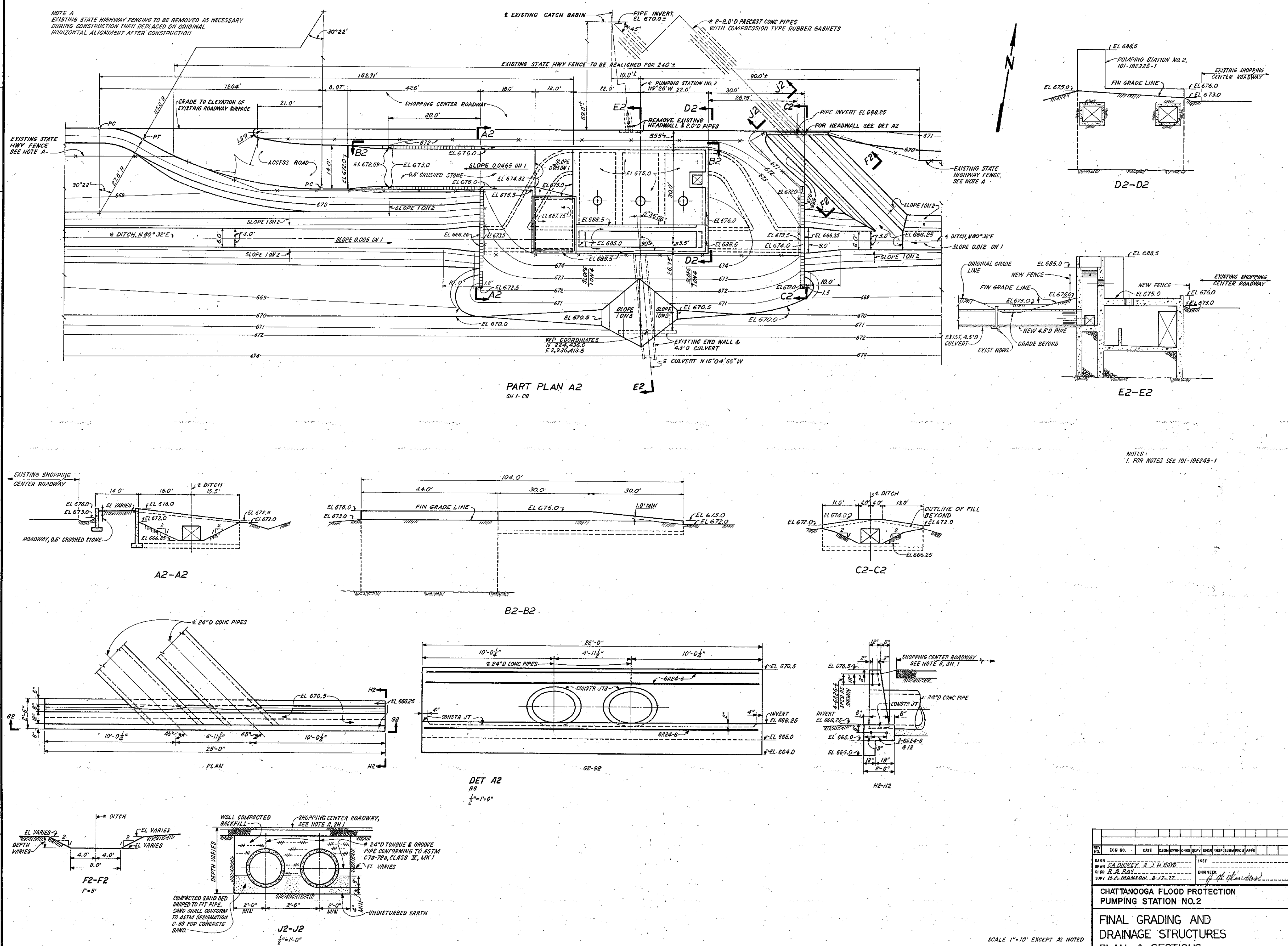
SHEET NO 1 OF 1

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)



SCALE 1"=10' EXCEPT AS NOTED

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

DSGN
DRWN CA DICKEY & J H BOYD
CHKD R B RAY
SUPV H.A. MANSON 8-17-77
INSP
ENGINEER

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

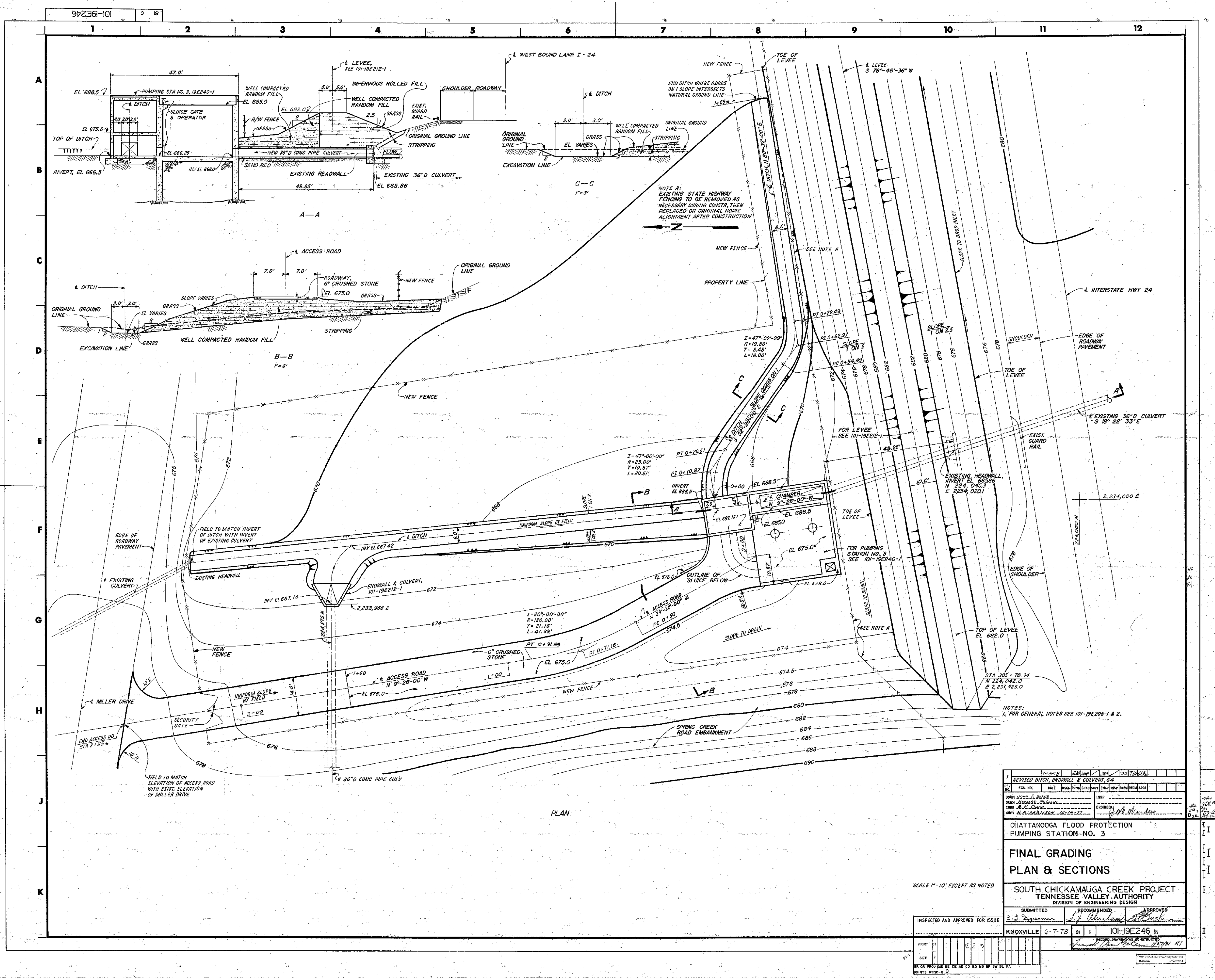
SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

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

RECORD DRAWING AS CONSTRUCTED 1/27/81 RO

PRINT H 10 3
SIZE F 3
BR OR PROJ ME EE CE AD CD ED MD BF SW SL PA
PRINTS REQD-R 0



1 | 7-25-78 | REVISED DITCH, ENDWALL & CULVERT, G4

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

KNOXVILLE 6-7-78 | 81 | C | 101-19E246 R1

INSPECTED AND APPROVED FOR ISSUE

81 HR 101-19H250

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.

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.	225	302	308	308b	346
LOCATION	STAB CR STONE BASE 10" TONS	BIT PRIME COAT TONS	CR STONE BIT CONC. BASE-2" TONS	TACK COAT TONS	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

INDEX TO DRAWINGS

TITLE	SHEET NO.
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PROFILE AND GRADING PLAN	253
FINISHED PAVEMENT PROFILES	254-1 - 254-2
DRAINAGE PROFILES & TURNING RADIUS PROFILES	255
STANDARD CATCH BASIN *	256-1
CATCH BASIN & GRATE	256-2
CONC. ENDWALLS & INLETS FOR PIPE CULVERTS	256-3
TRAFFIC CONTROL DEVICES, PAVEMENT STRIPING, AND DROP CURB DETAILS	257
CROSS SECTIONS	258-1 - 258-5

* CITY OF CHATTANOOGA

GRADING

ITEM NO.	120	123
STATION TO STATION	UNCLASS EXCAV. CU YDS	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

DRAINAGE STRUCTURES

ITEM NO.		602							129
LOCATION	TYPE STR	PIPE LIN. FT. 12"	15"	18"	CONC CU YDS	REINF STEEL LBS	CAST IRON LBS	CITY STD CATCH BASIN-EA	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

REMOVAL OF STRUCTURES & PAVEMENT

ITEM NO.		110	134
LOCATION	DESCRIPTION	REMOVAL OF STR	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'	

GRASSING

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

TRAFFIC SIGNS

LOCATION	DESCRIPTION	UNIT	QUANTITY
4+40 R BONNIEWAY	STOP SIGN (R1-1) *	EACH	1
4+45 R MARIA	STOP SIGN (R1-1) *	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

DROP CURB ENTRANCE

ITEM NO.		395
LOCATION	PVT DRIVE WIDTH, FT	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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		10-3-79	HLP	VRL		EBL	JRF				

REVISED SURFACING, GRATES, ADDED JUNCTION BOX

DSGN H. L. PETTY
DRWN J.R.L.
CHKD WMmartin
SUPV wmmartin
INSP JRFox
ENGINEER E. B. Logan

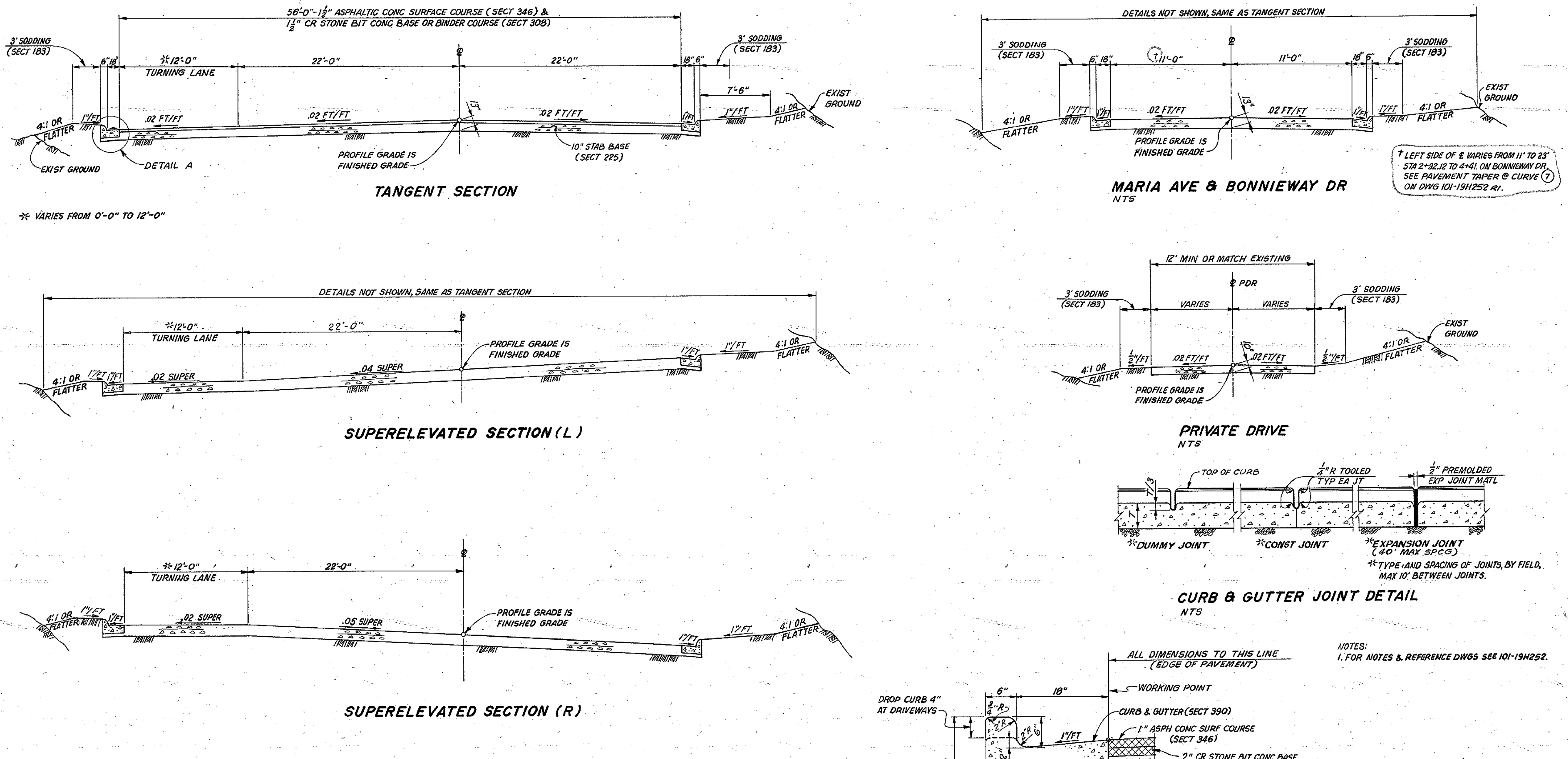
NORTH MOORE ROAD RELOCATION

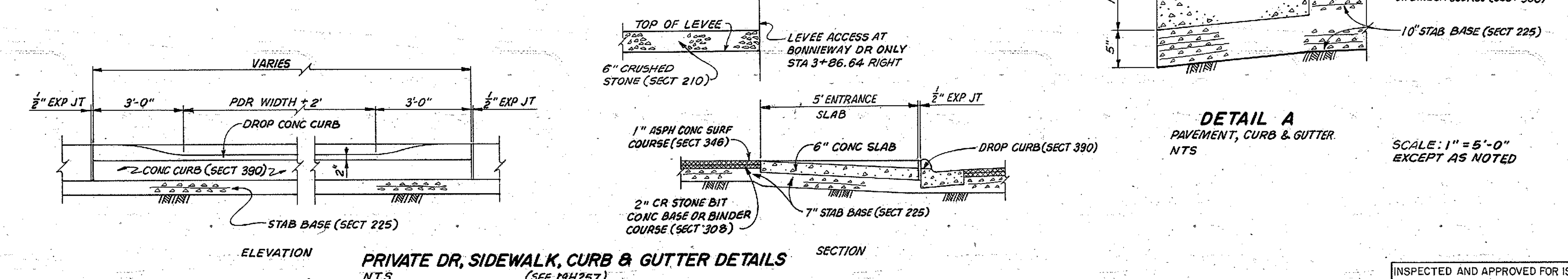
SUMMARY OF QUANTITIES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

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

KNOXVILLE 12-4-78 81 HR 101-19H250 R1





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

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		10-3-79									

REVISED BONNIEWAY DR; ADDED LEFT TURN LANE

DSGN H. L. PETTY
DRWN V. B. LEE
CHKD
SUPV
INSP.
ENGINEER E. B. Logan

NORTH MOORE ROAD RELOCATION

GRADING & PAVING-TYPICAL SECTIONS & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

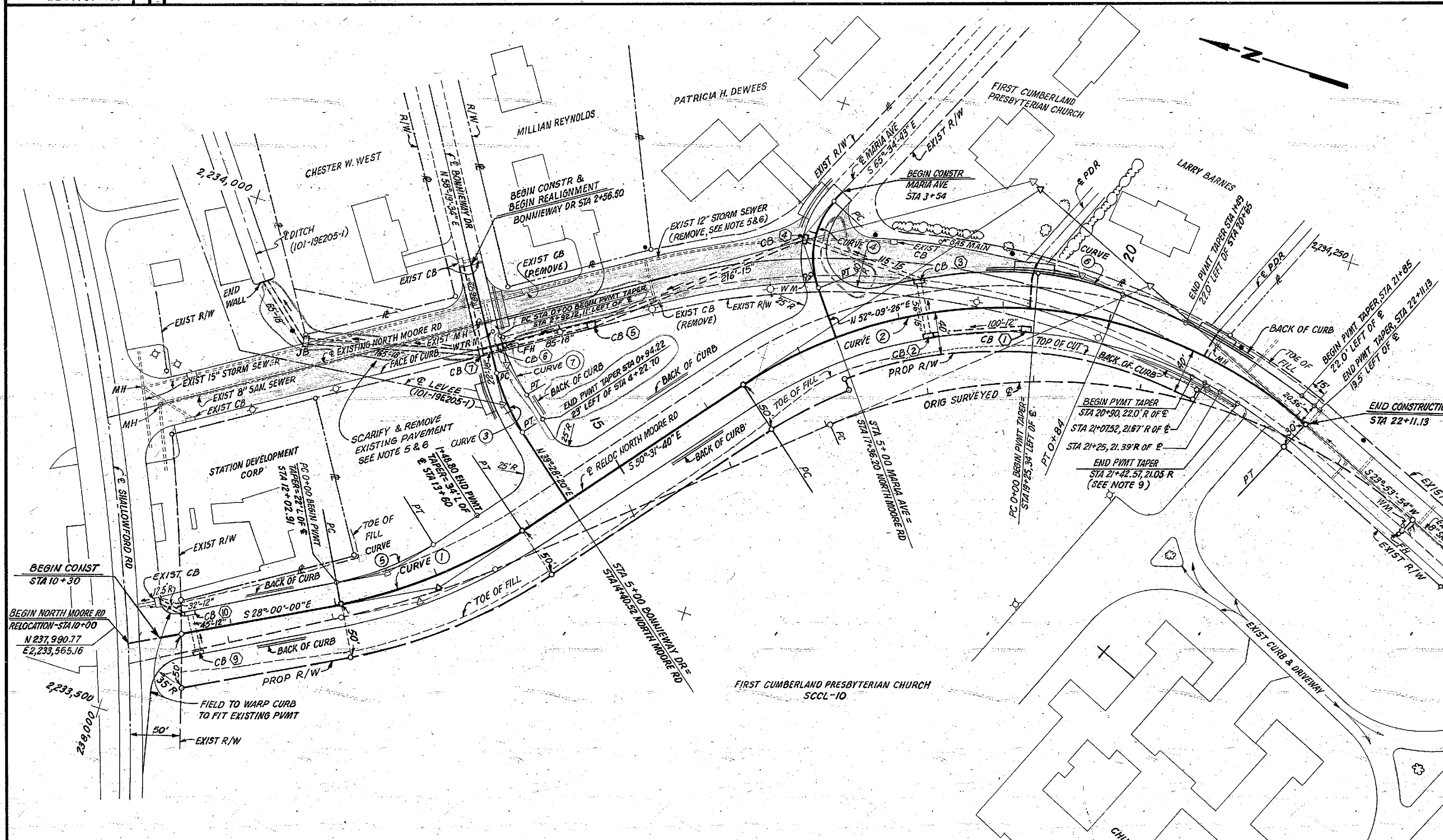
SUBMITTED Robert J Bowman | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE

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

RECORD DRAWING AS CONSTRUCTED

① ② ③ ④ ⑤ ⑥



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+61.87	PC=3+61.82	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'

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		10-3-79	HLP	VRL	WMM	WMM	EBL	JRF	KJB	FDS	GB
REVISED BONNIE WAY DR & MARIA AVE.											

DSGN H.L. PETTY
DRWN V.R. LEE
CHKD WMMartin
SUPV WMMartin
INSP JRFox
ENGINEER E. B. Logan III

NORTH MOORE ROAD RELOCATION

PLAN

SOUTH CHICKAMAUGA CR PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

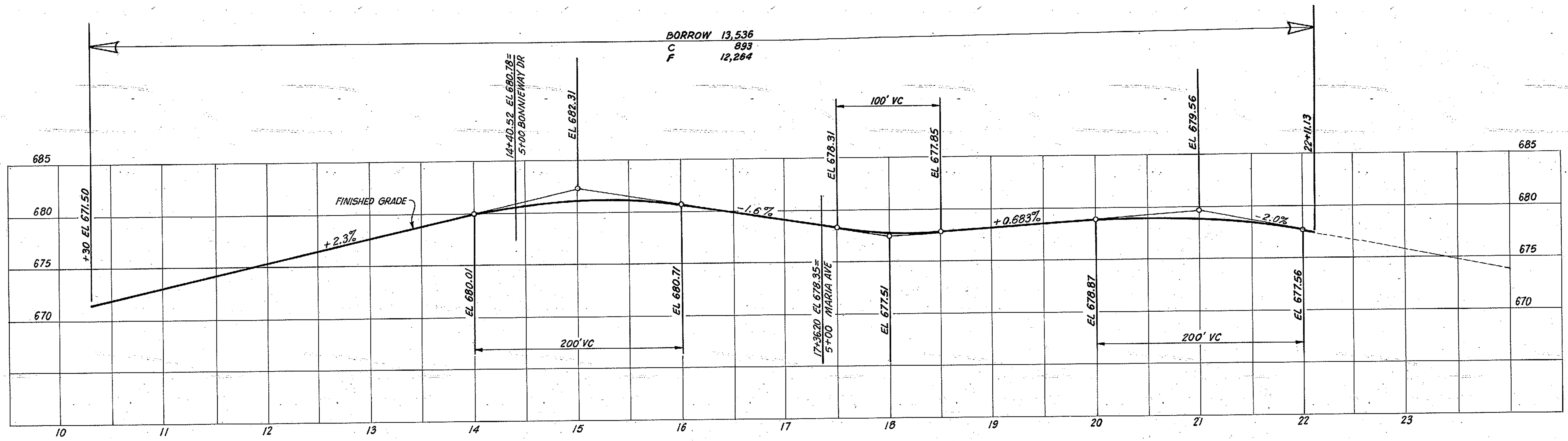
SUBMITTED Robert J. Bowman — RECOMMENDED [signature] — APPROVED [signature]

INSPECTED AND APPROVED FOR ISSUE

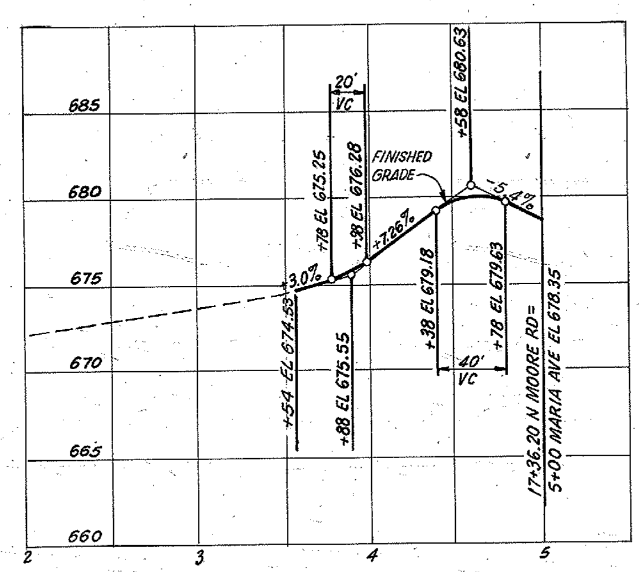
KNOXVILLE 12-4-78 81 HR 101-19H252 R1

RECORD DRAWING AS CONSTRUCTED

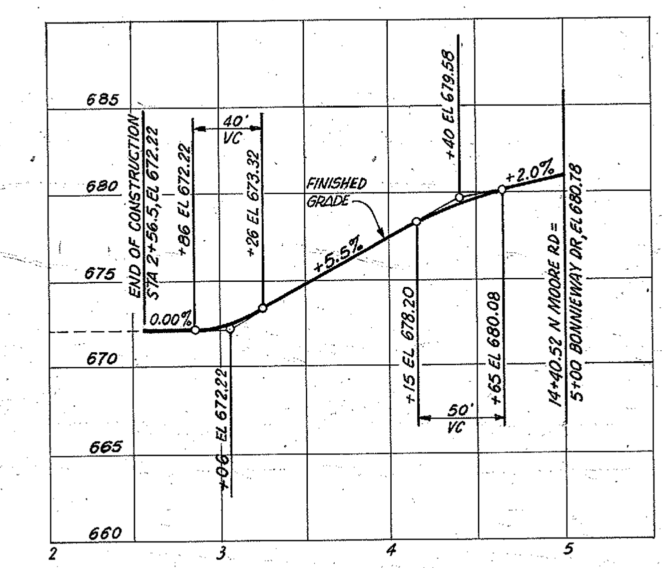
①	②	③	④	⑤	⑥



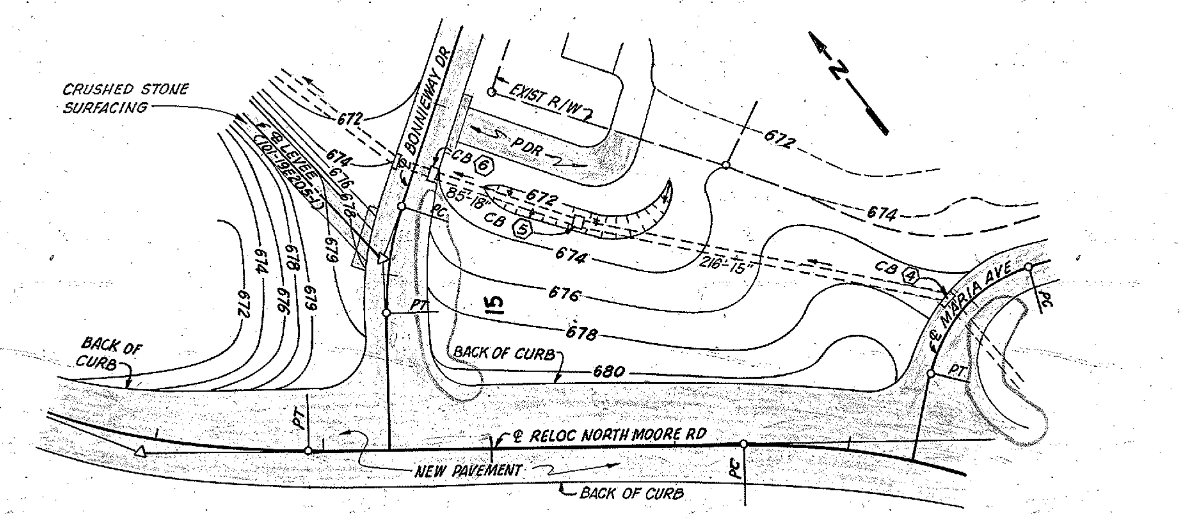
PROFILE-NORTH MOORE RD



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

1 | 10-3-79 | REVISED INTERSECTIONS AT BONNIEWAY AND MARIA

DSGN H.L. PETTY
DRWN V.R. LEE
ENGINEER E. B. Logan

NORTH MOORE ROAD RELOCATION

PROFILES & GRADING PLAN

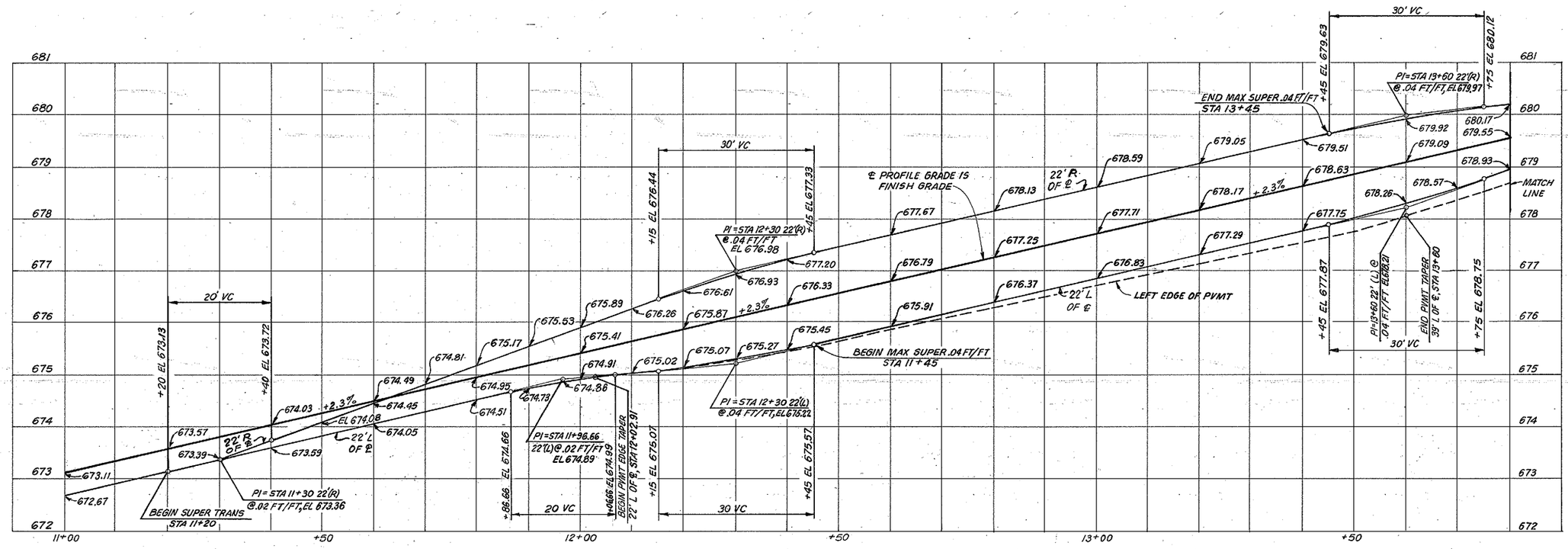
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

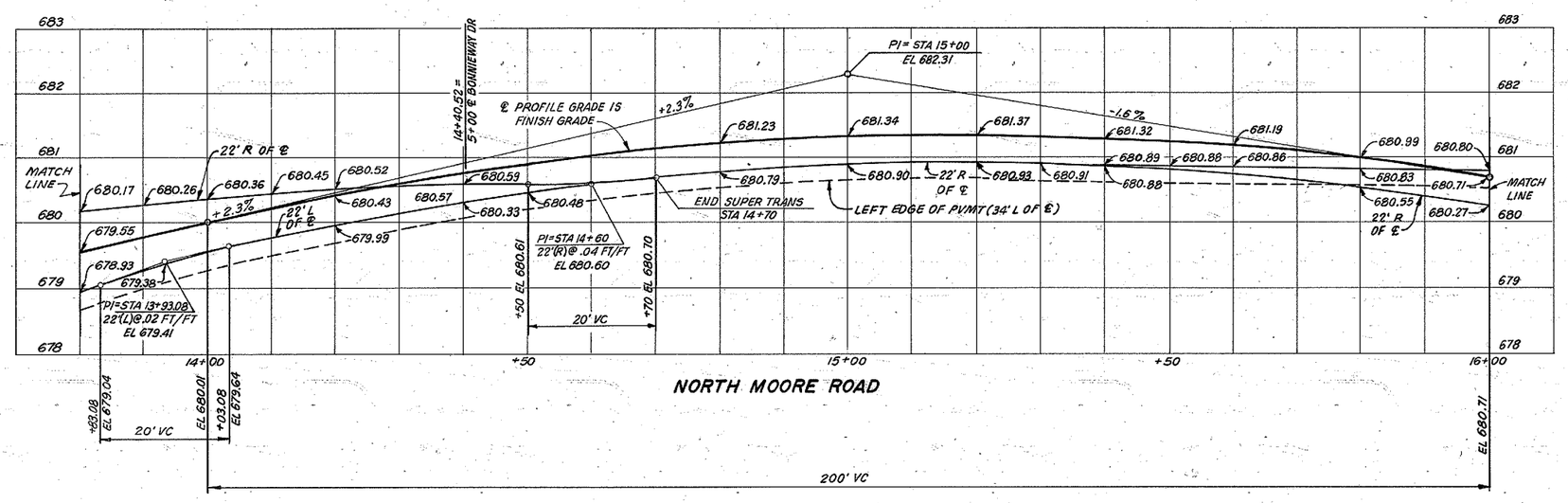
INSPECTED AND APPROVED FOR ISSUE

SUBMITTED | RECOMMENDED | APPROVED

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

RECORD DRAWING AS CONSTRUCTED





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

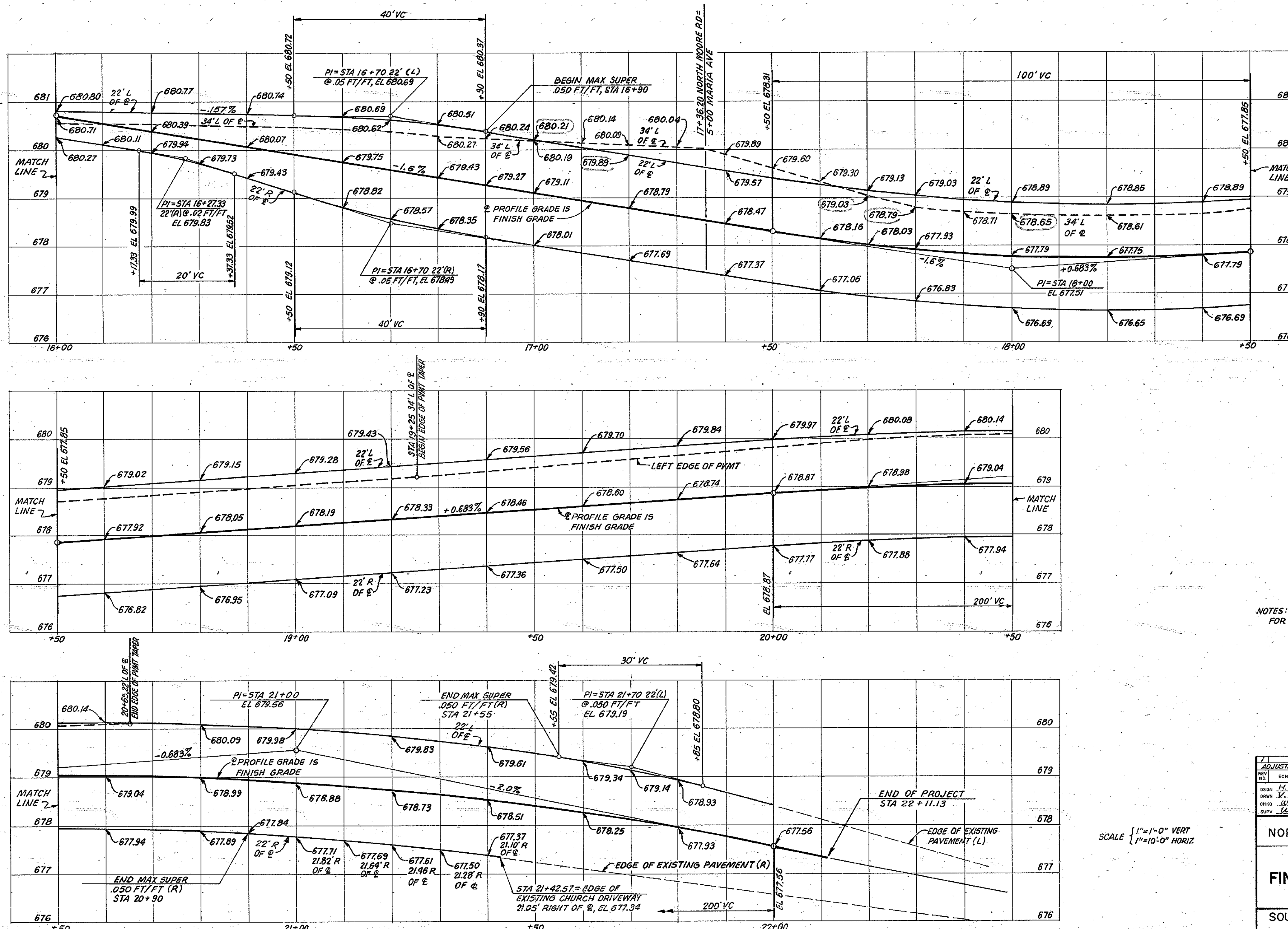
SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman	[illegible]	[illegible]

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

RECORD DRAWING AS CONSTRUCTED

PRINTS RECD-R

101-19H254-2 | 81 | HR



NORTH MOORE ROAD

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

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

REV NO.	ECN NO.	DATE								
1		10-3-79								

ADJUSTED ELEVATIONS

DSGN H.L. PETTY
DRWN V.A. LEE
CHKD W.M. Martin
SUPV W.M. Martin
INSP
ENGINEER E.B. Logan

NORTH MOORE ROAD RELOCATION

FINISHED PAVEMENT PROFILE

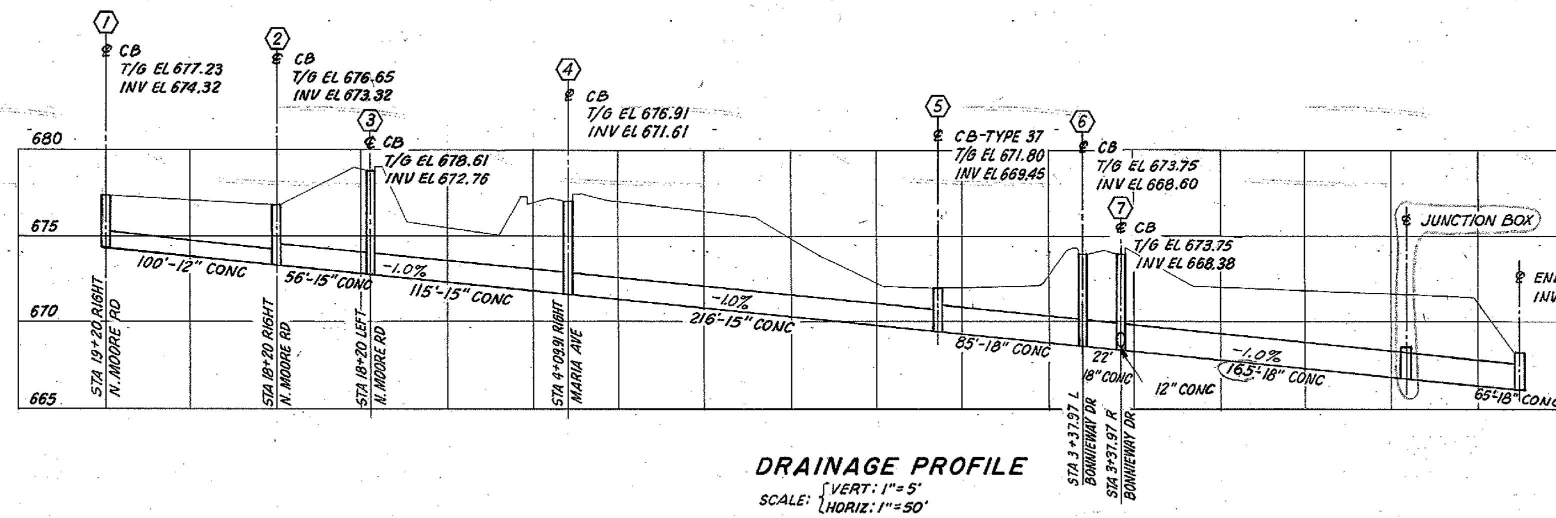
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

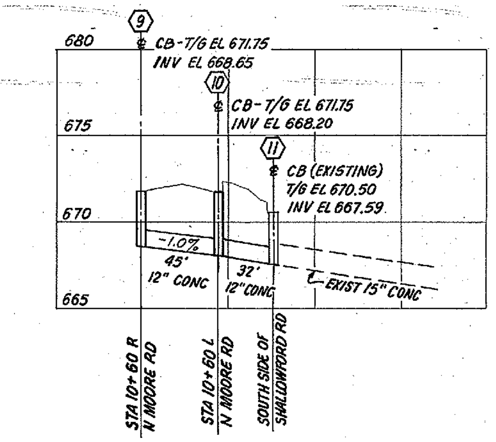
INSPECTED AND APPROVED FOR ISSUE

SUBMITTED | RECOMMENDED | APPROVED

KNOXVILLE 12-4-78 81 HR 101-19H254-2 R1

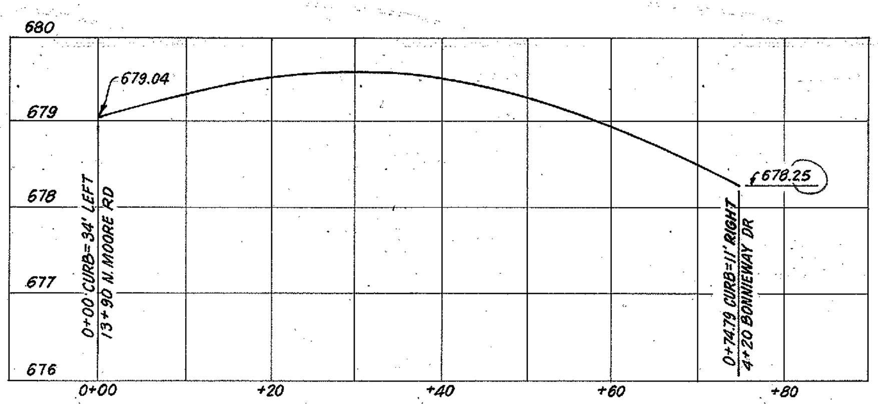
RECORD DRAWING AS CONSTRUCTED

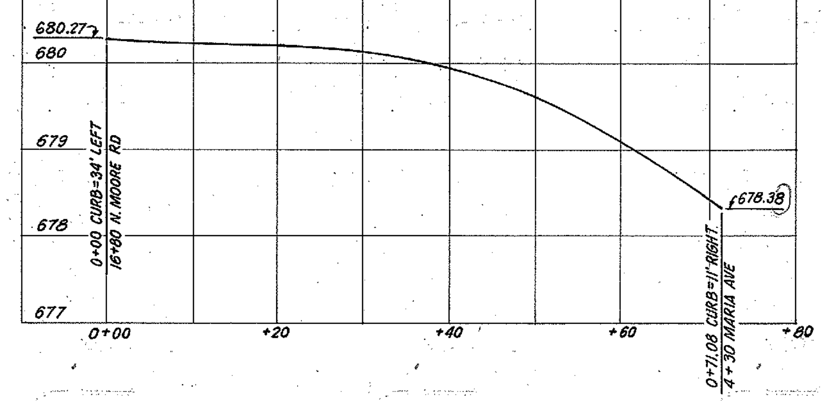


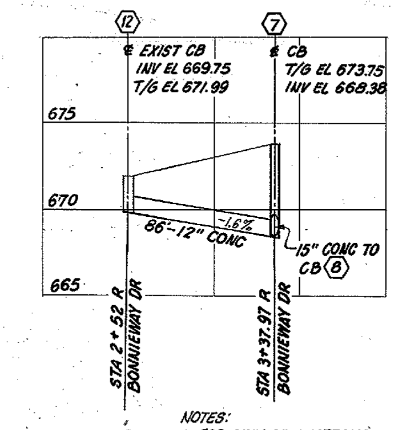


DRAINAGE PROFILE

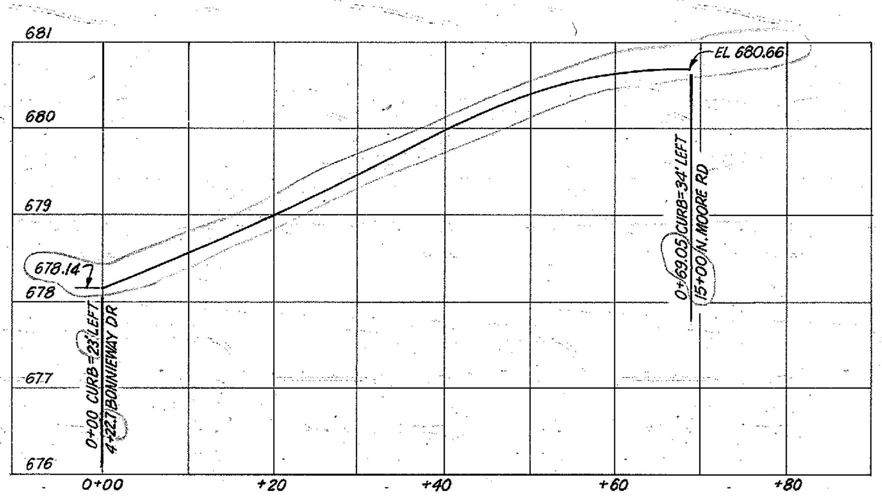
SCALE: VERT: 1"=5' HORIZ: 1"=50'



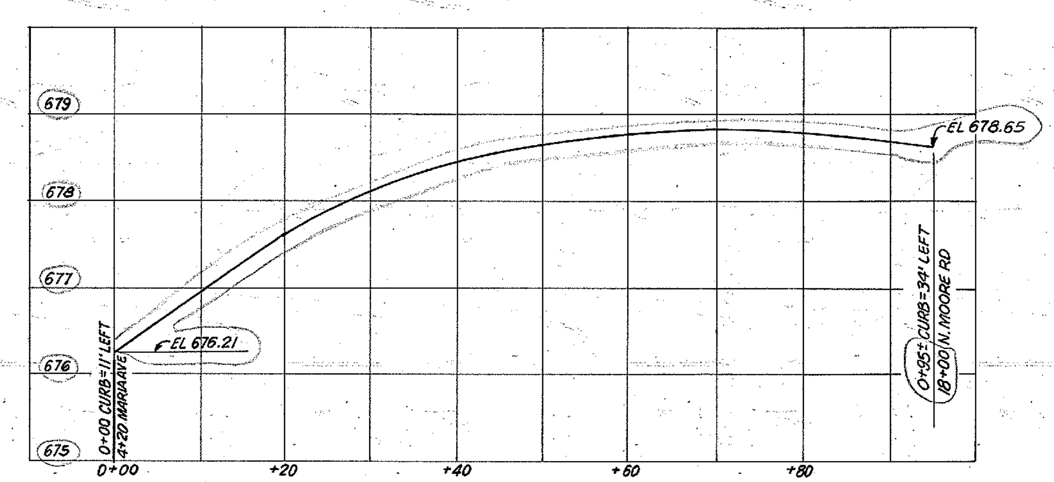




NOTES:
1. FOR CITY OF CHATTANOOGA STANDARD CATCH BASIN DETAILS SEE 101-19H256-1.
2. FOR TVA-TYPE 37 CATCH BASIN DETAILS SEE 101-19H256-2.
3. FOR TVA-TYPE 4 ENDWALL DETAILS SEE 101-19H256-3.
4. FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS SEE 101-19H252.
5. ALL CATCH BASINS SHOWN ARE CITY OF CHATTANOOGA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



BONNIEWAY DR INTERSECTION



MARIA AVE INTERSECTION

TURNING RADIUS PROFILES FOR CURBS

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

SCALE AS NOTED

REV NO	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		10-3-79	HLP	VRL							

REVISED TURNING RADIUS PROFILES FOR CURBS, DRAINAGE PROFILE

DSGN H.L. PETTY
DRWN V.R. LEE
INSP J.R. Fox
ENGINEER E. B. Logan

NORTH MOORE ROAD RELOCATION

DRAINAGE PROFILES AND TURNING RADIUS PROFILES

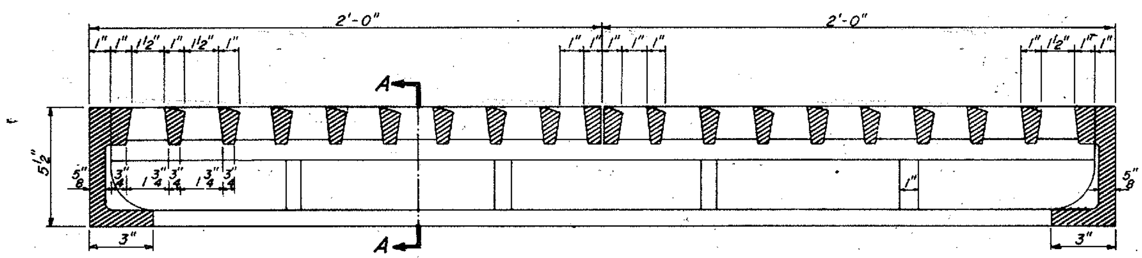
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

INSPECTED AND APPROVED FOR ISSUE

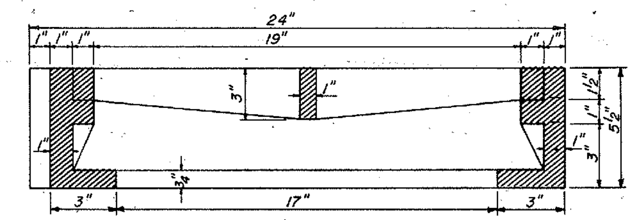
SUBMITTED Robert J. Bowman — RECOMMENDED — APPROVED

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

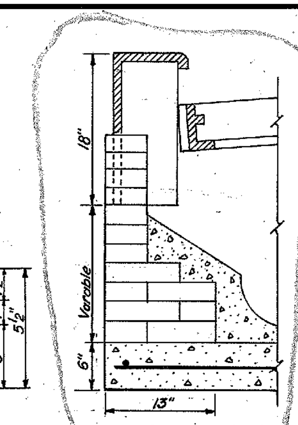
RECORD DRAWING AS CONSTRUCTED



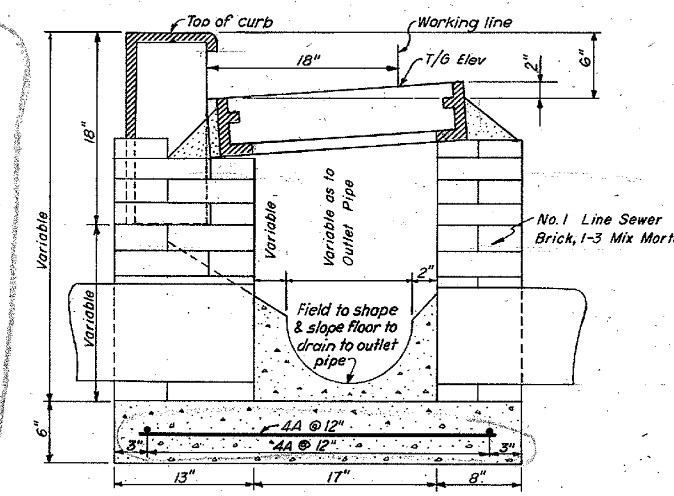
Section B-B



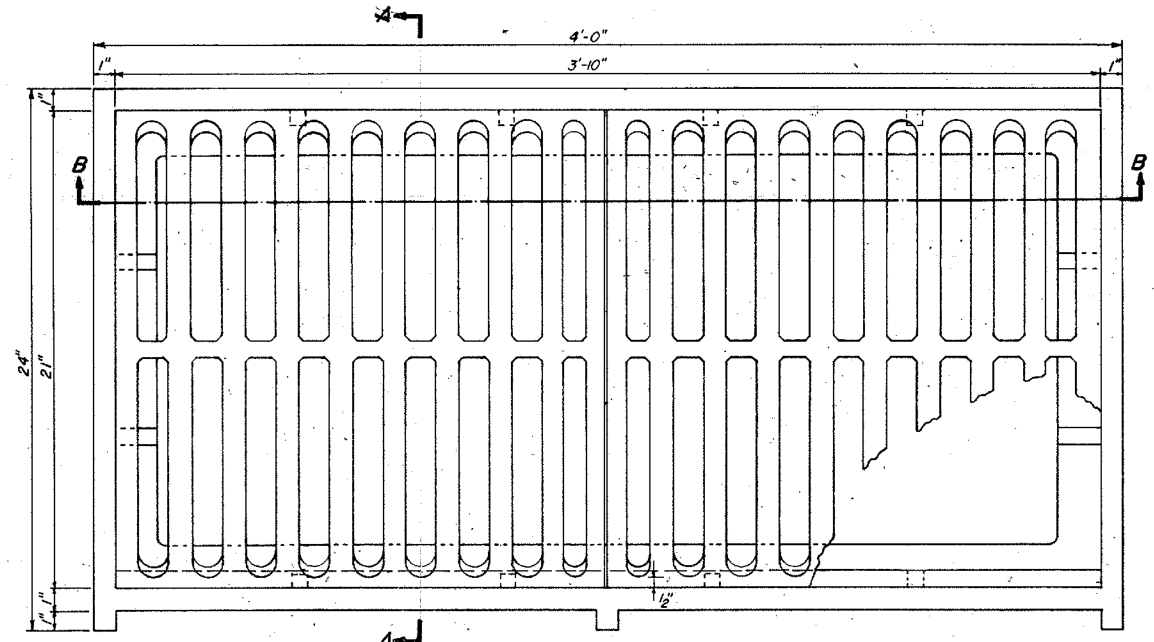
Section A-A



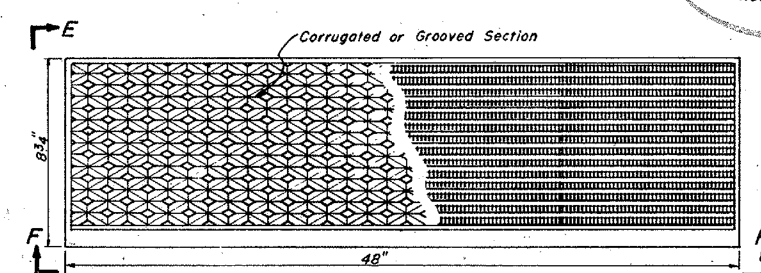
Section D-D
Not to Scale



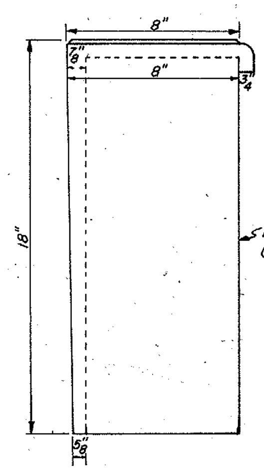
Section C-C
Scale: 1½"=1'-0"



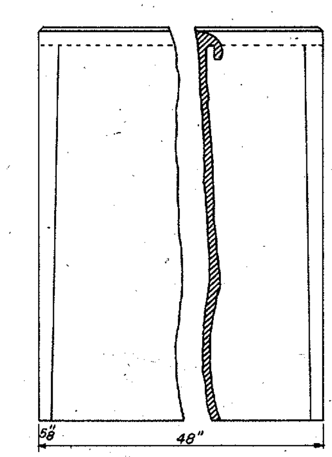
Plan
Frame & Grate
Scale: 3"=1'-0"



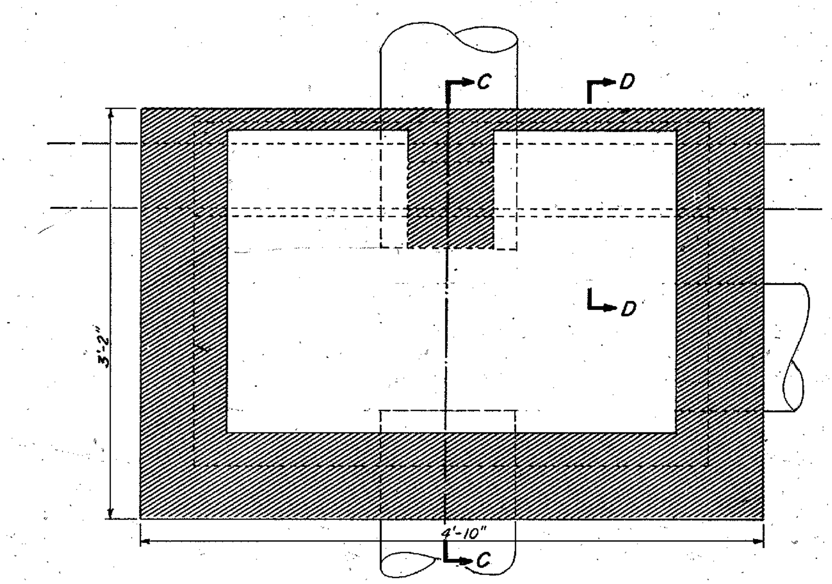
Plan of Curb Frame



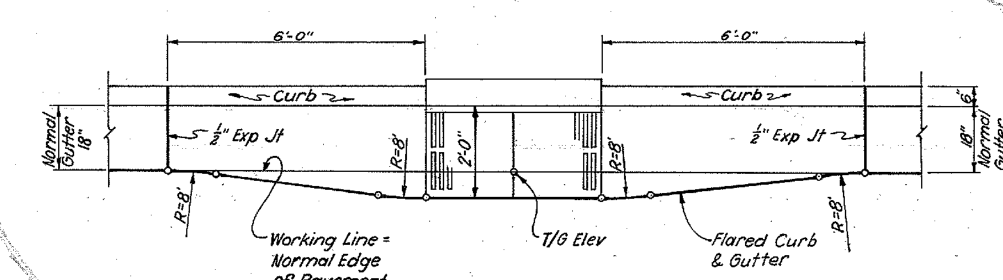
E-E



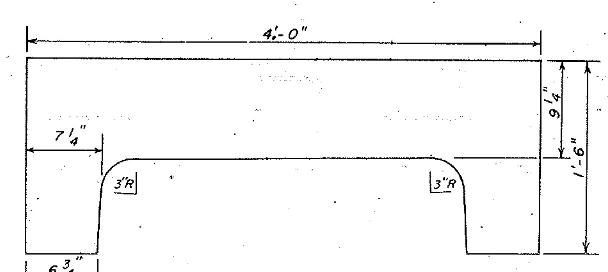
F-F



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	DESCRIPTION
1		6-25-79	ADD. CURB & GUTTER FLARE, SECTION D-D, MINOR REVISIONS

DSGN H. L. PETTY
DRWN V. R. LEE
CHKD [signature]
SUPV [signature]
INSP [signature]
ENGINEER E. B. Logan

NORTH MOORE ROAD RELOCATION

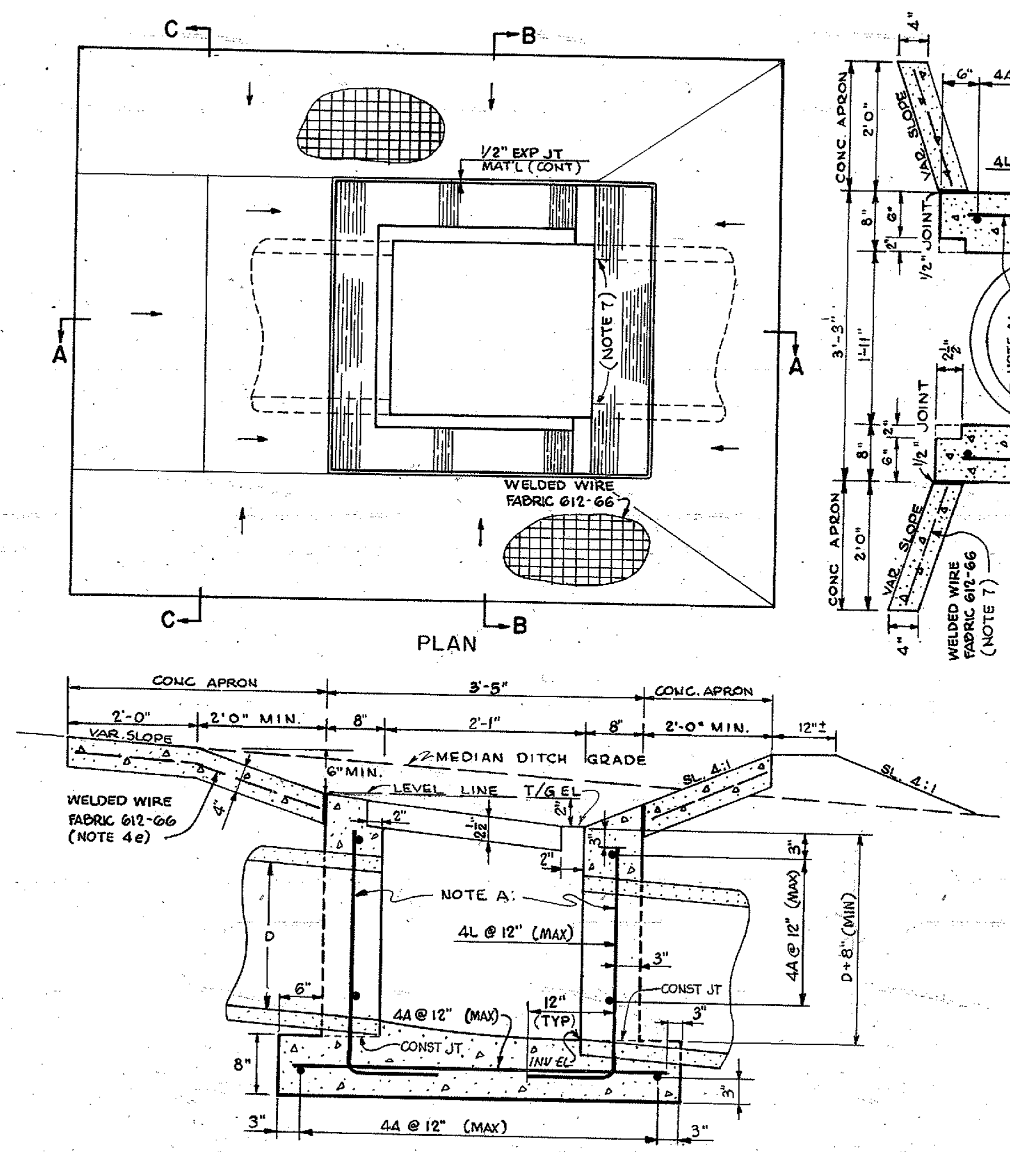
STANDARD CATCH BASIN
CITY OF CHATTANOOGA

SOUTH CHICKAMAUGA CR PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED Robert J. Bowman — RECOMMENDED [signature] — APPROVED [signature]

KNOXVILLE 12-4-78 | 81 | HR | 101-19H256-1 R1

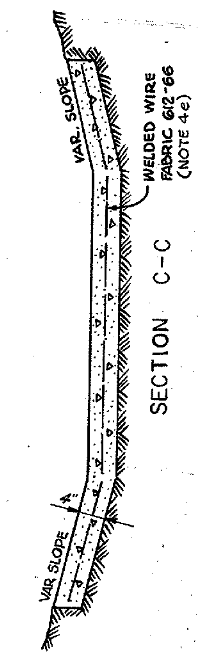
RECORD DRAWING AS CONSTRUCTED

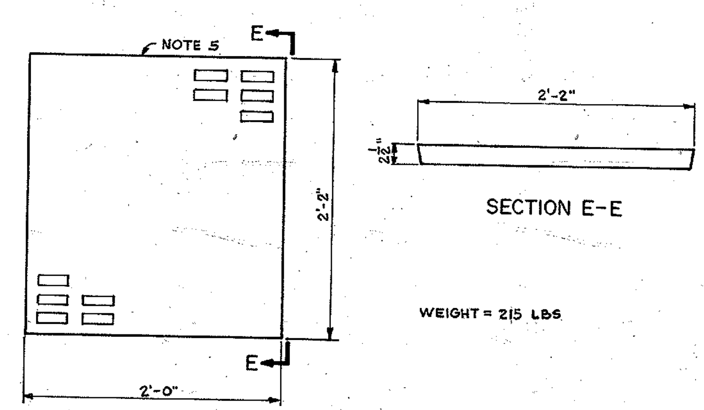


SECTION A-A

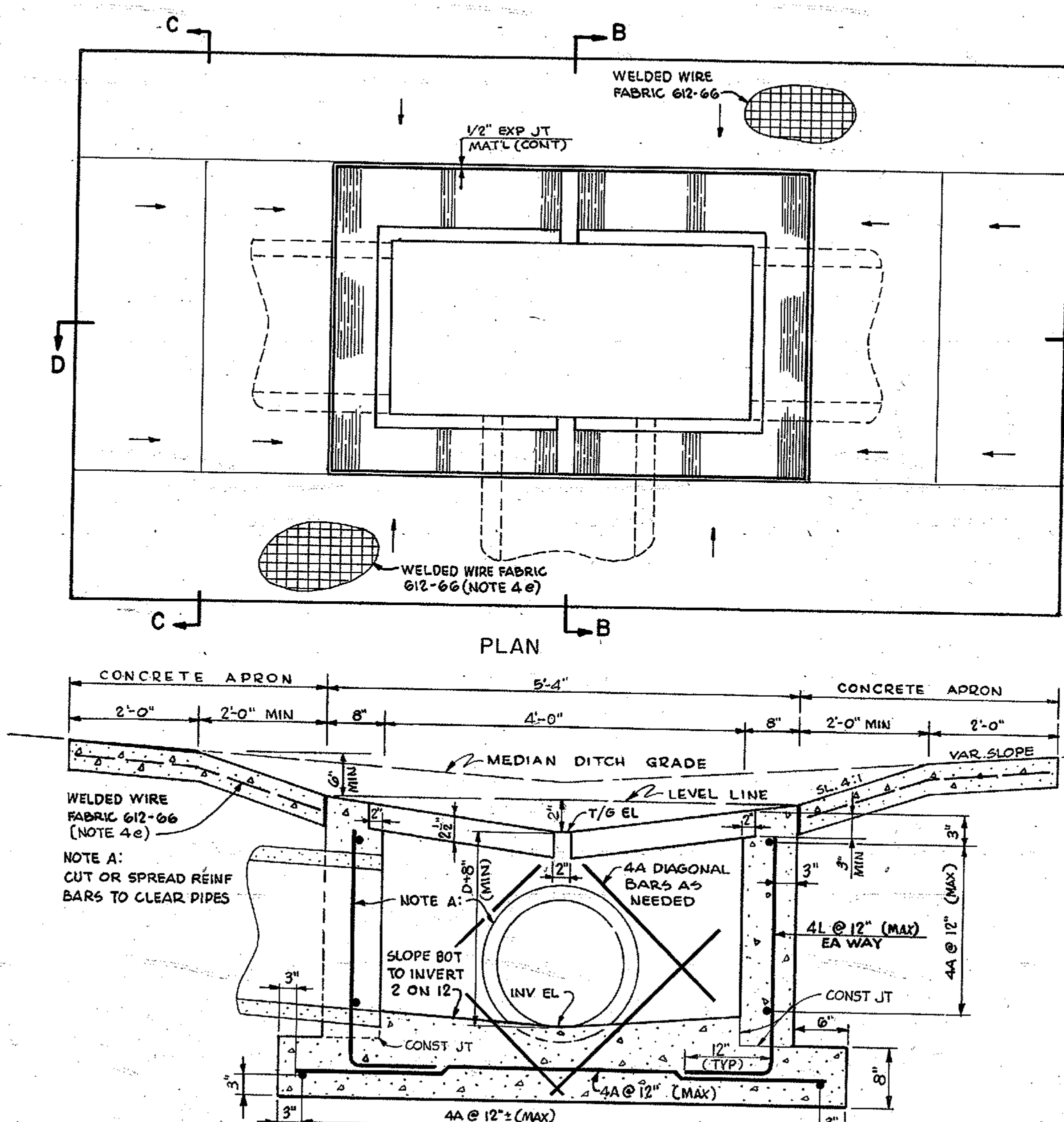
No. 36 CATCH BASIN

For Median Drain on Straight Grade





CASTING DETAIL



SECTION D-D

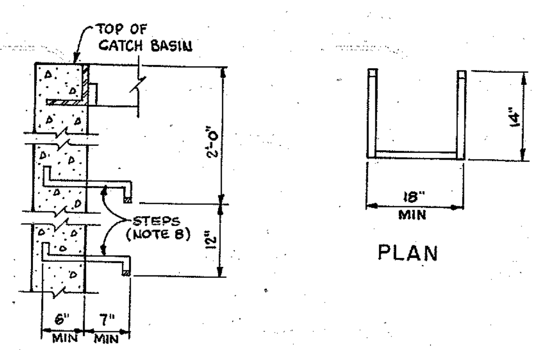
No. 37 CATCH BASIN

For Median Drain At Sag Point

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



DETAIL-BASIN AND INLET STEPS

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

NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH HIGHWAY SPECIFICATION NO T1, 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 REQURED.
   - (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-1982J 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	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		6-25-79	HLP	VRL	WMM	WMM	EBL	RJB	RJB		

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

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

NORTH MOORE ROAD RELOCATION

CATCH BASINS AND GRATE

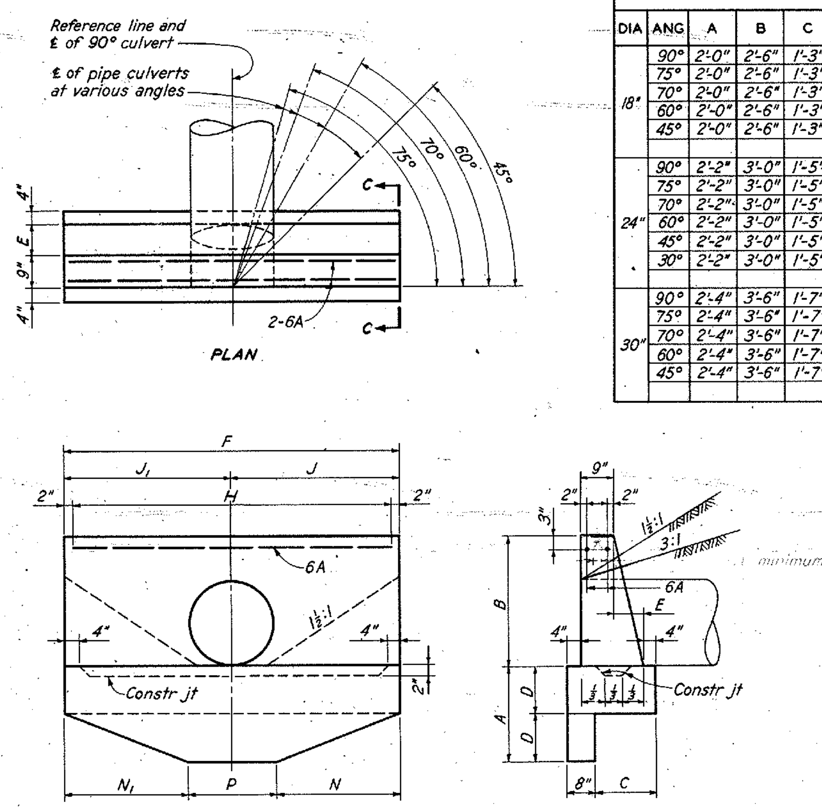
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED Robert J. Bowman — RECOMMENDED [signature] — APPROVED [signature] Buchanan

KNOXVILLE | 12-4-78 | 81 | HR | 101-19H256-2 R1

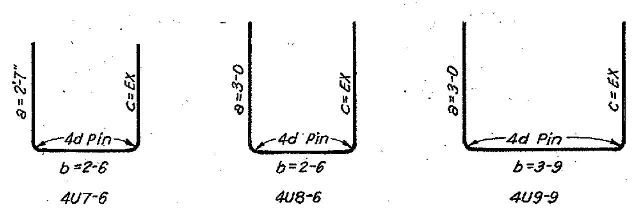
MF RO R1

TJA, ELS, JWW, HAM

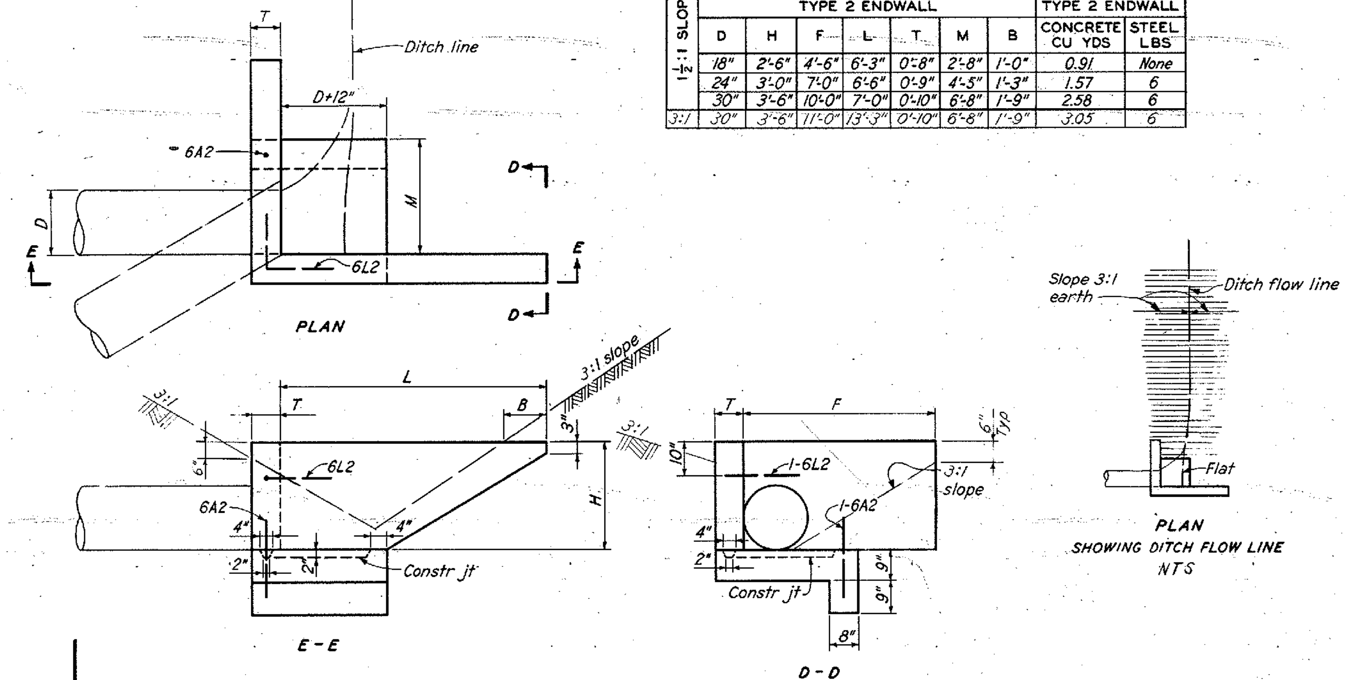


TYPE 1 ENDWALL

DIA	ANG	A	B	C	D	E	F	H	J	J_1	N	N_1	P	CONCRETE CU YDS	STEEL LBS
		DIMENSIONS FOR TYPE 1 ENDWALL												QUANTITIES FOR ONE TYPE 1 ENDWALL	
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

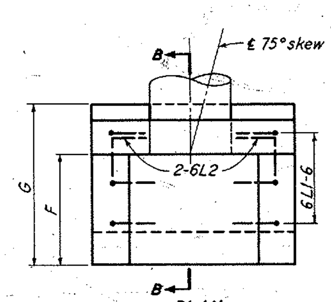


JUNCTION BOX
BAR BENDING DETAILS
NTS

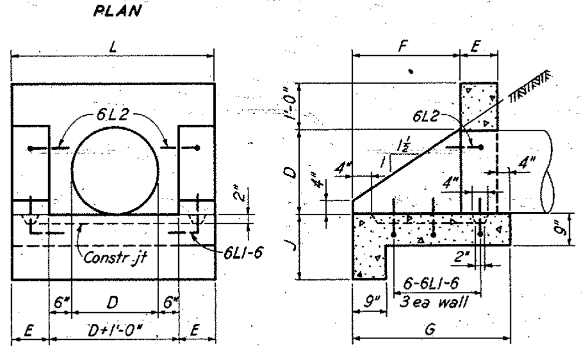


$1\frac{1}{2}:1$ SLOPE	D	H	F	L	T	M	B	CONCRETE CU YDS	STEEL LBS
	DIMENSIONS FOR TYPE 2 ENDWALL							QUANTITIES FOR ONE TYPE 2 ENDWALL	
	18"	2'-6"	4'-6"	6'-3"	0'-8"	2'-8"	1'-0"	0.91	None
	24"	3'-0"	7'-0"	6'-6"	0'-9"	4'-5"	1'-3"	1.57	6
	30"	3'-6"	10'-0"	7'-0"	0'-10"	6'-8"	1'-9"	2.58	6
3:1	30"	3'-6"	11'-0"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

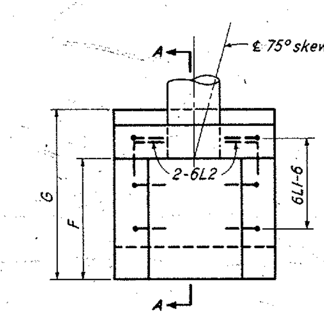
TYPE 2 ENDWALL
Not to Scale



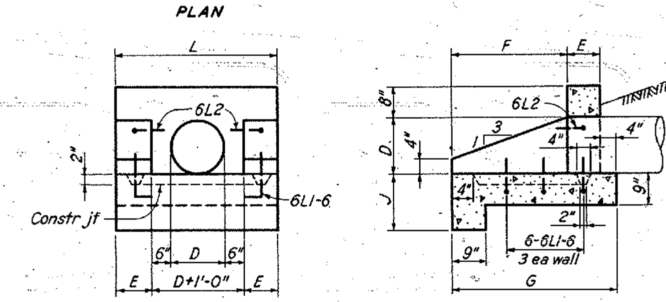
D	AREA	L	E	F	J	G	CONCRETE CU YDS	STEEL LBS
DIMENSIONS FOR TYPE 3 ENDWALL							QUANTITIES FOR ONE TYPE 3 ENDWALL	
PIPE SIZE		WALL			FOOTING			
12"	0.79	3'-6"	9"	1'-0"	1'-3"	2'-1"	0.46	20
15"	1.23	3'-9"	9"	1'-5"	1'-3"	2'-6"	0.58	"
18"	1.77	4'-0"	9"	1'-9"	1'-3"	2'-10"	0.69	"
24"	3.14	4'-8"	10"	2'-6"	1'-6"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



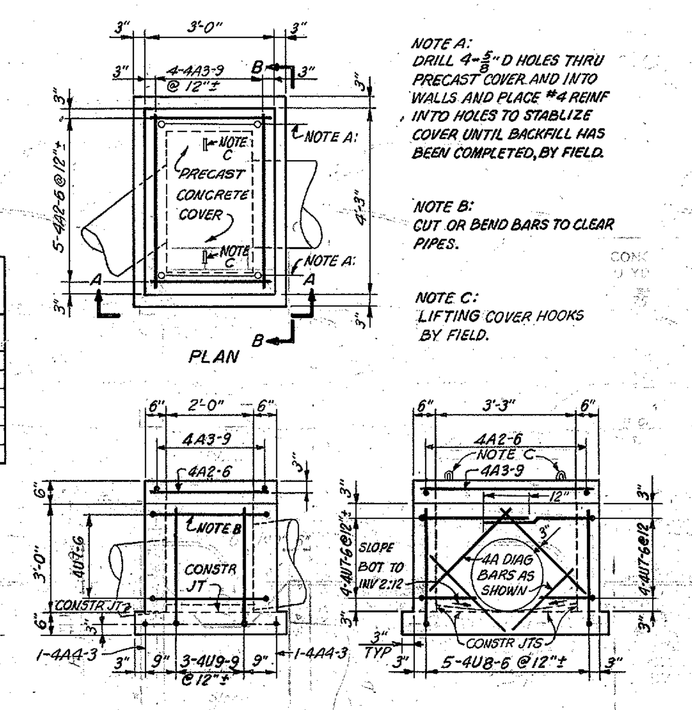
TYPE 3 ENDWALL



D	AREA	L	E	F	J	G	CONCRETE CU YDS	STEEL LBS
DIMENSIONS FOR TYPE 4 ENDWALL							QUANTITIES FOR ONE TYPE 4 ENDWALL	
PIPE SIZE		WALL			FOOTING			
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	"



TYPE 4 ENDWALL



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 $\frac{3}{4}$".
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 $\frac{1}{2}$" = 1'-0"
Except as noted

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		10-3-79	HLP	VRL	WMM	EBL	JRF	AIB	AIB	AIB	GIB
REMOVED SURVEY MARKER, ADDED JUNCTION BOX, BAR BEND DETAILS											

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

NORTH MOORE ROAD RELOCATION

CONCRETE ENDWALLS AND INLETS FOR PIPE CULVERTS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

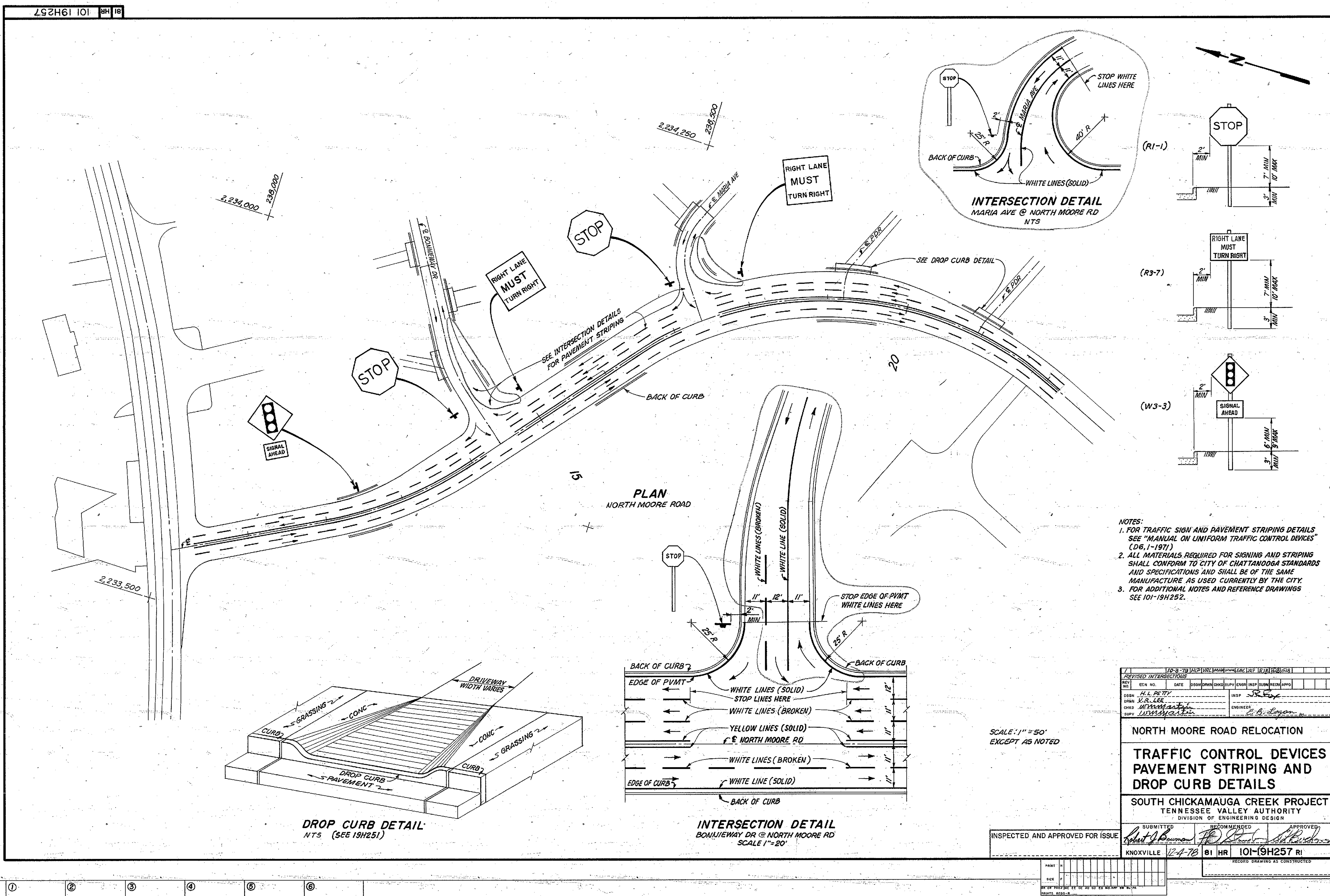
SUBMITTED Robert J. Bowman | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE

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

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

101-19H256-3 | HR | 81



NOTES:

1. FOR TRAFFIC SIGN AND PAVEMENT STRIPING DETAILS SEE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (D6.1-1971)
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.

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		10-3-79	HLP	VRL	WMM	WMM	EBL	JCF	RJB	FDS	GIS
REVISED INTERSECTIONS											

DSGN H. L. PETTY
DRWN V. R. LEE
CHKD W M Martin
SUPV W M Martin
INSP [signature]
ENGINEER E. B. Logan

NORTH MOORE ROAD RELOCATION

TRAFFIC CONTROL DEVICES PAVEMENT STRIPING AND DROP CURB DETAILS

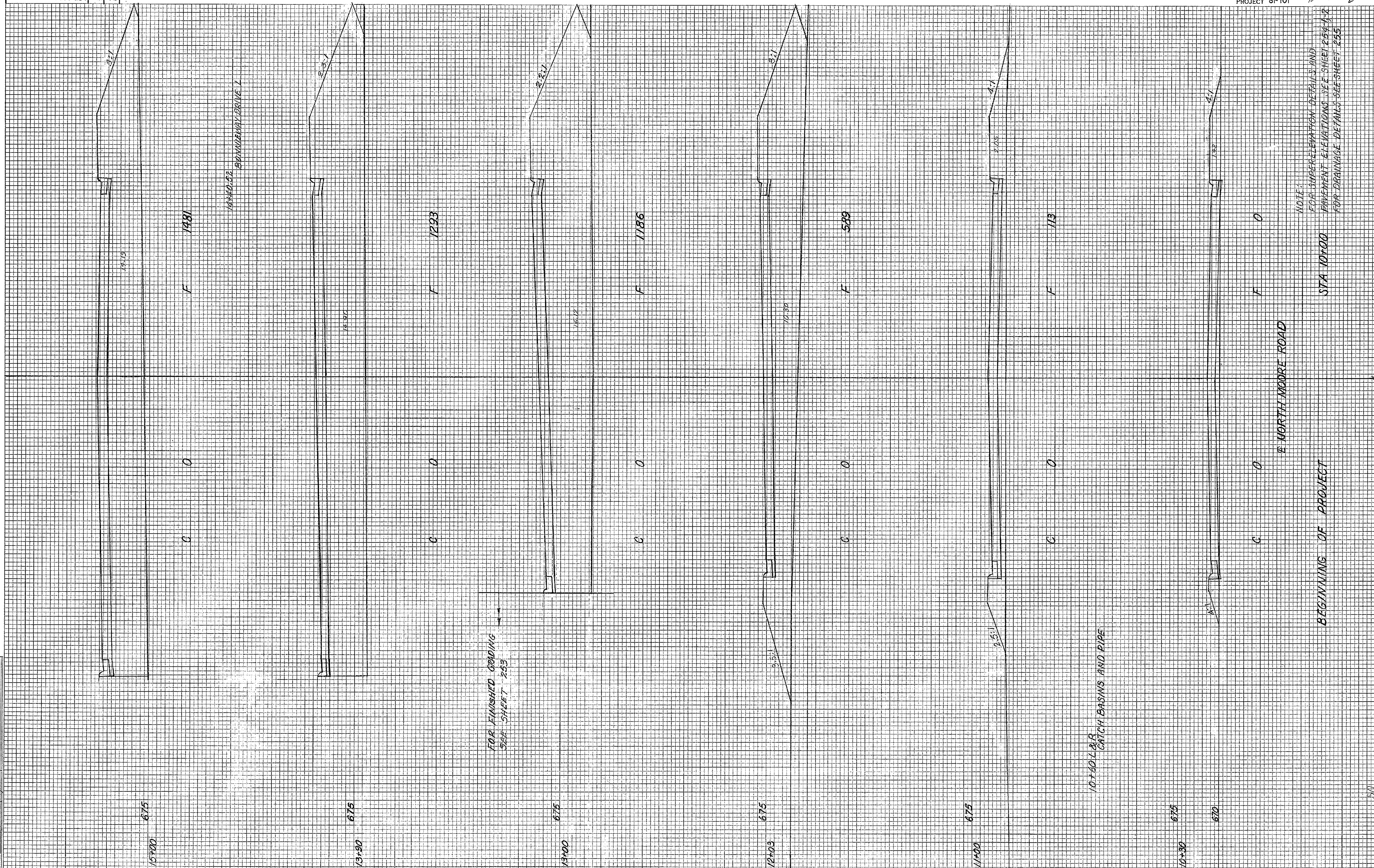
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED Robert J Bowman | RECOMMENDED [signature] | APPROVED [signature]

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

RECORD DRAWING AS CONSTRUCTED

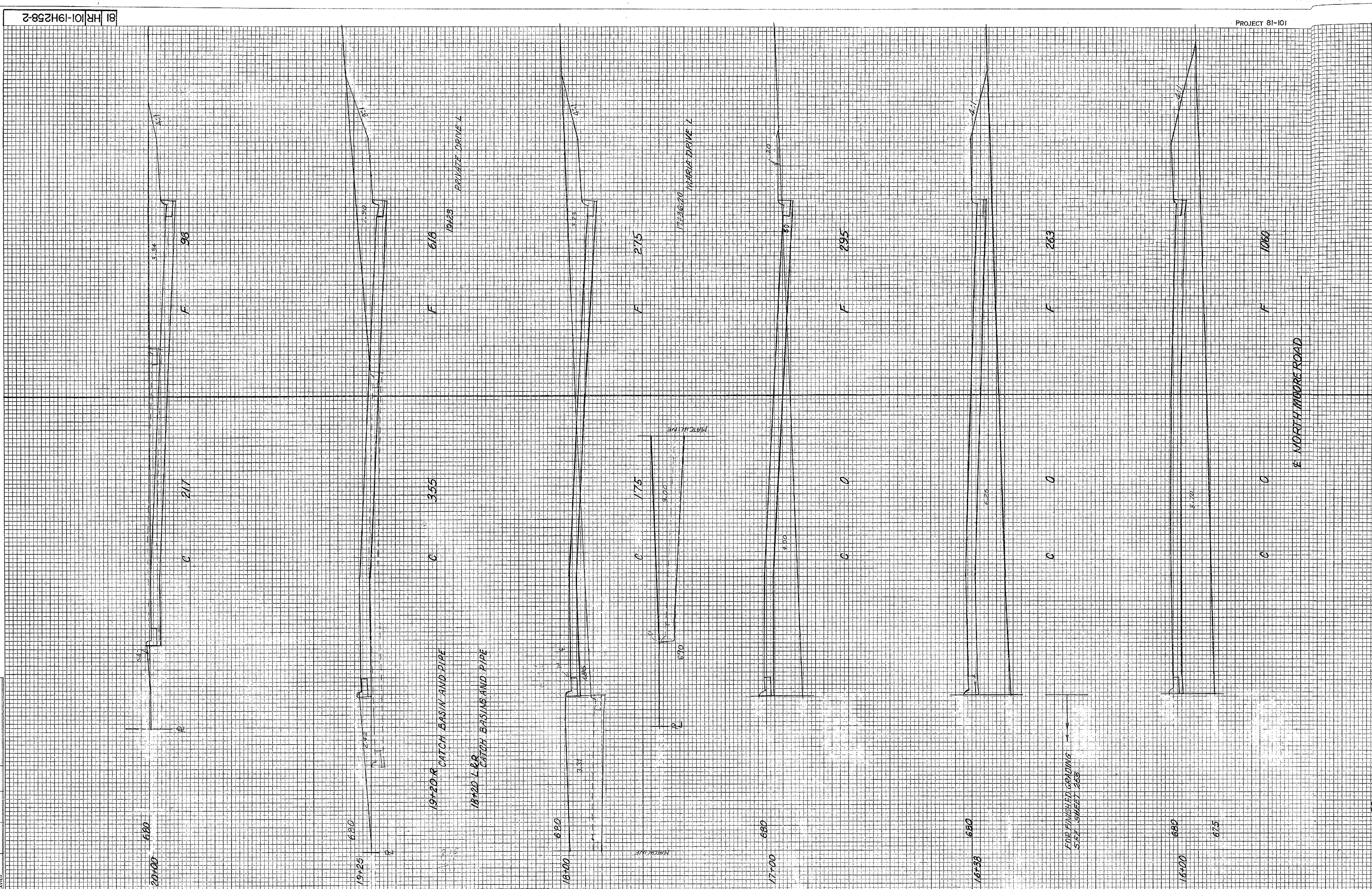
PROJECT 81-101 Sheets 2



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

K&E 353 3009

PROJECT 81-101



PLOTTED J.R.LOY
TEMPLATE J.R.LOY
AREAS J.R.LOY
VOLUMES J.R.LOY
COMPARED
HEAVIED

K&E 353 3009

KNOXVILLE 12-4-76 | 81 | HR | 101-19H258-2 RO

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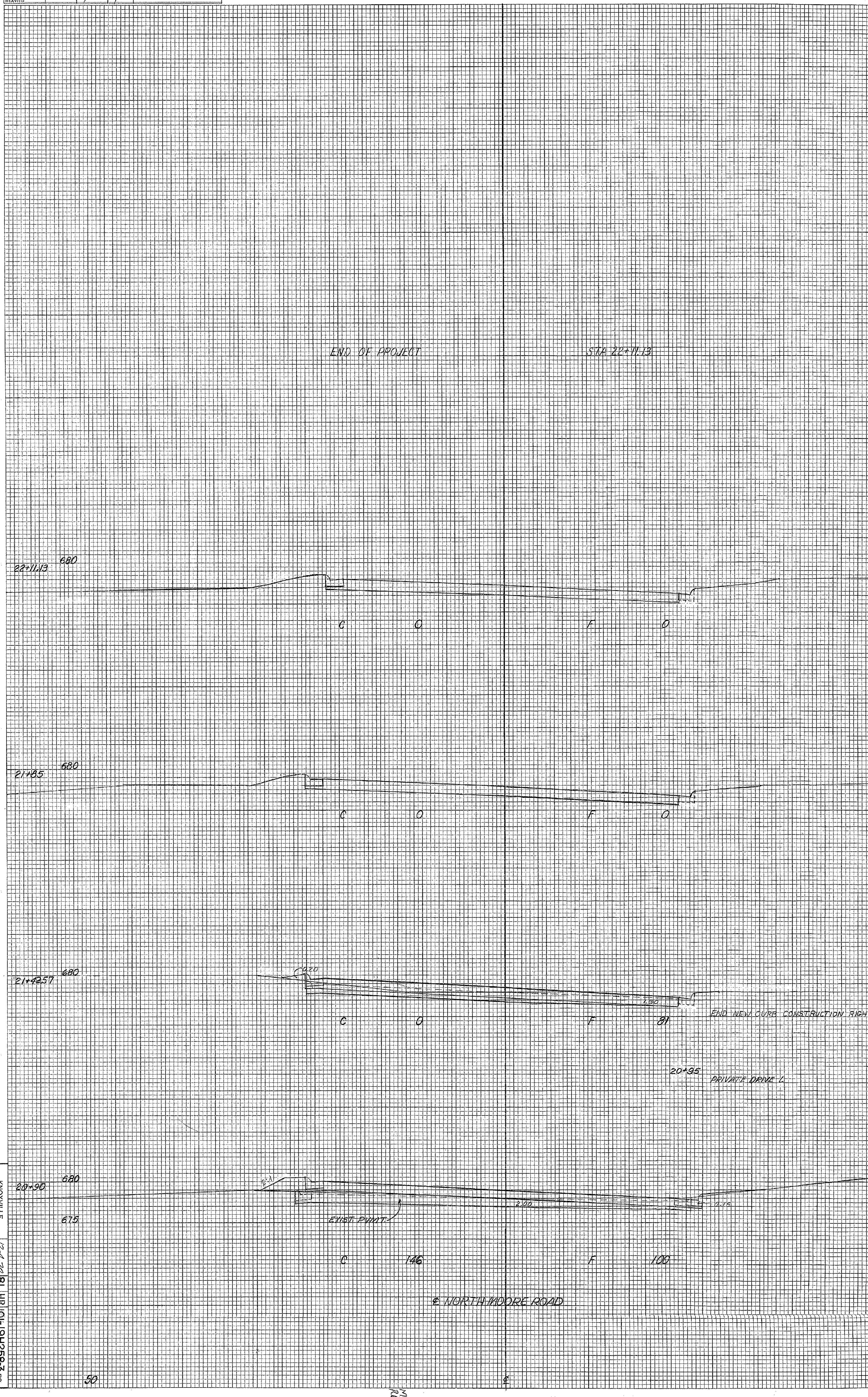
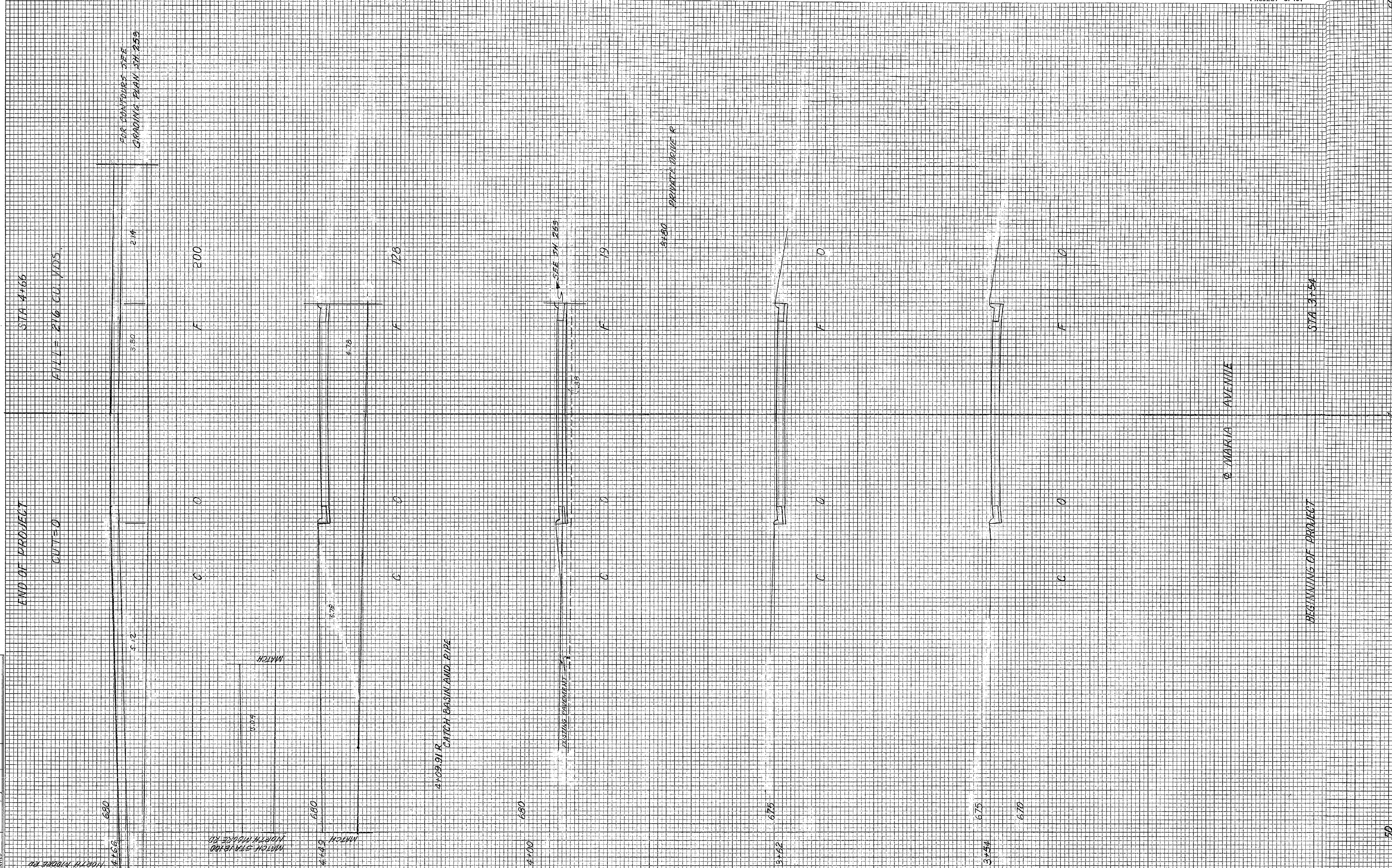
TEMPLATE	J.R. LOY		
AREAS	J.R. LOY		
VOLUMES	J.R. LOY		
COMPARED			
HEAVIED			



MF RO

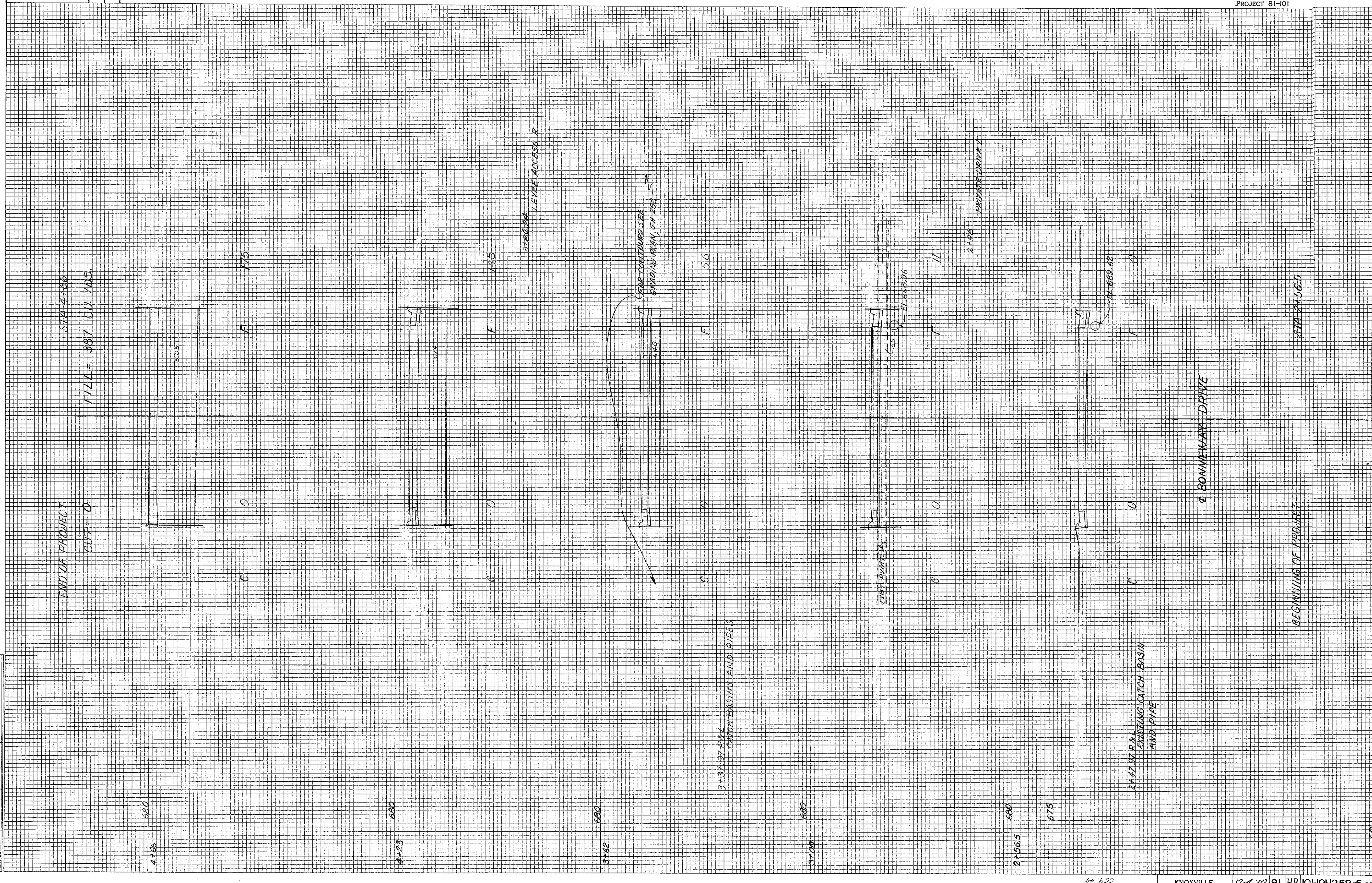
PROJECT 81-101



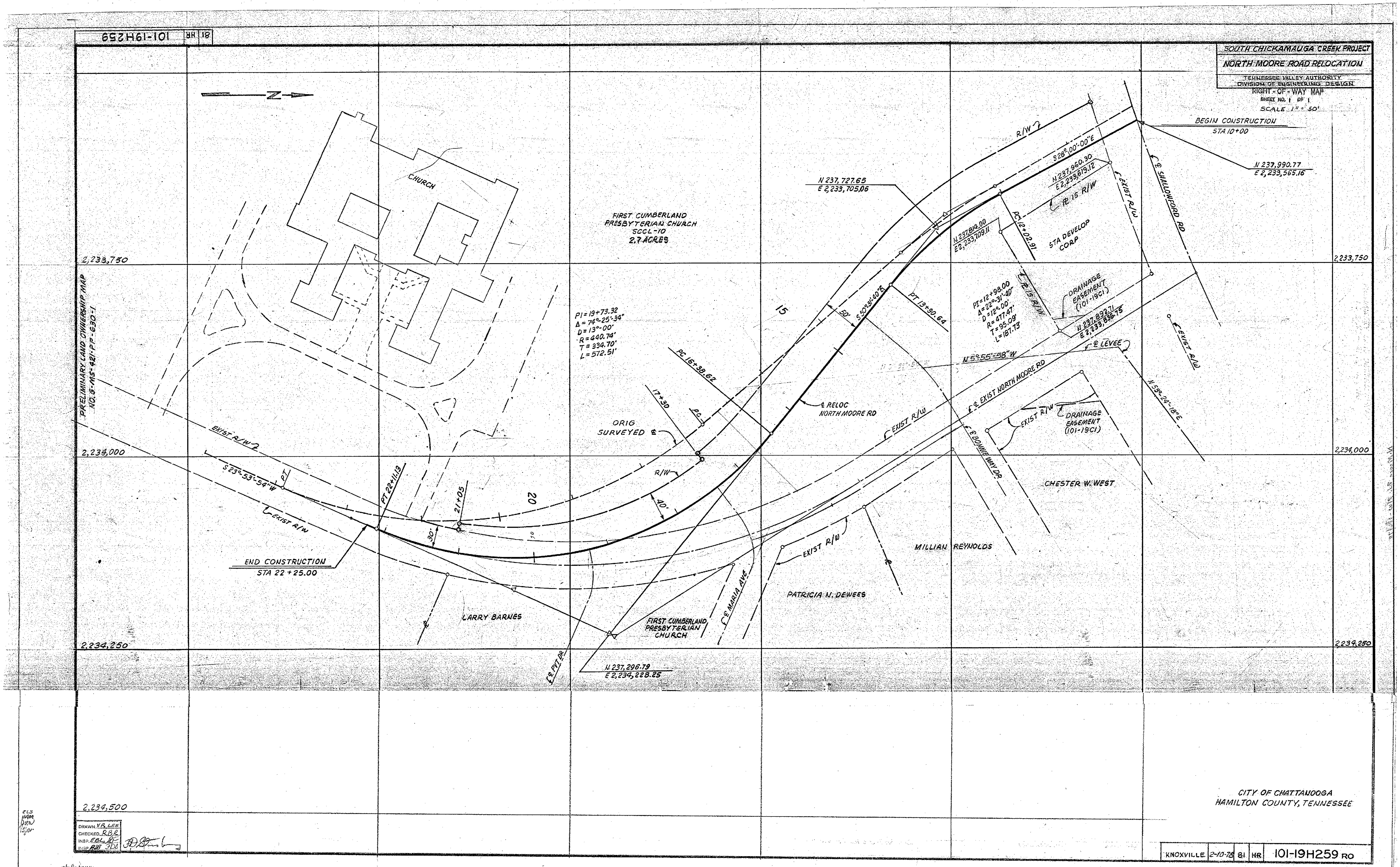
	BY	CHECKED	DATE
PLOTTED	J.R. LOY	[illegible]	10/4/78
TEMPLATE	J.R. LOY		
AREAS	J.R. LOY		
VOLUMES	J.R. LOY		
COMPARED			
HEAVIED			

K&E 353 3009

PROJECT 81-101



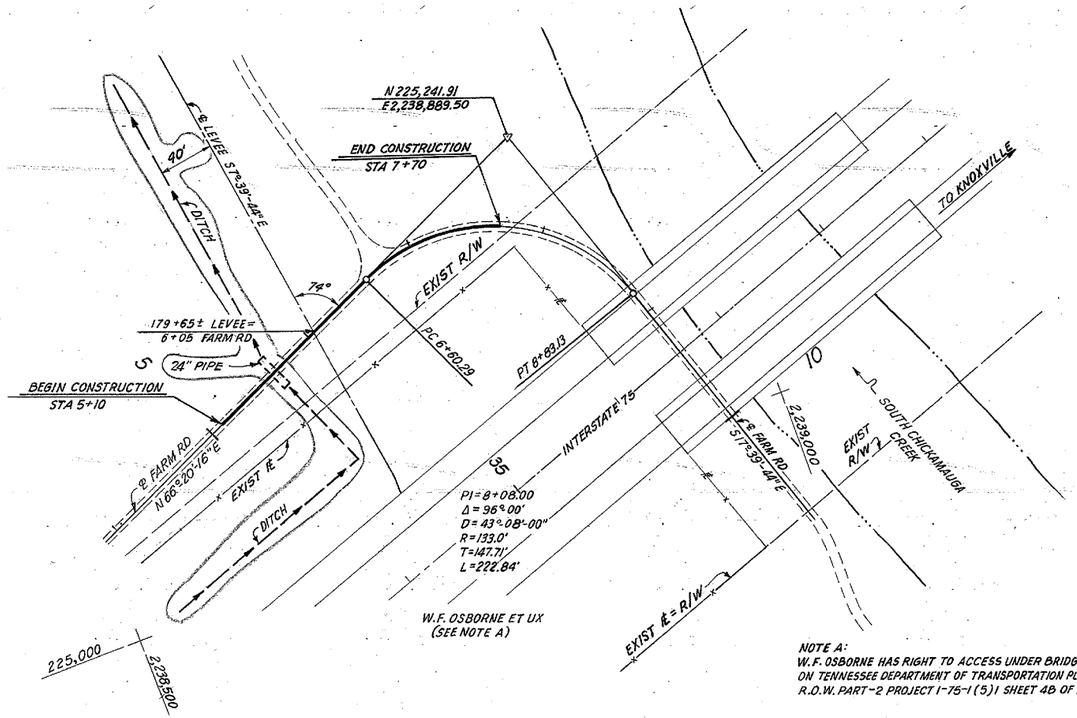
PLOTTED	TEMPLATE	MEAS.	VOLUMES	COMPUTED	CHECKED
BY	J.R. LOY	J.R. LOY	J.R. LOY	J.R. LOY	



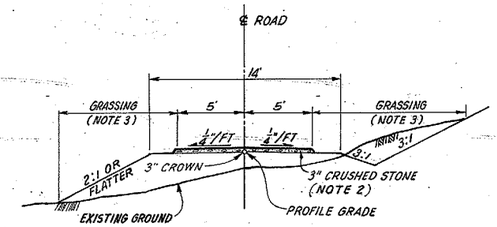
101-19H259
SOUTH CHICKAMAUGA CREEK PROJECT
NORTH MOORE ROAD RELOCATION
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN
RIGHT-OF-WAY MAP
SHEET NO. 1 OF 1
SCALE 1" = 50'
BEGIN CONSTRUCTION
STA 10+00
N 237,990.77
E 2,233,565.16
N 237,727.65
E 2,233,705.06
N 237,960.30
E 2,233,619.12
S 28°-00'-00" E
R/W
EXIST R/W
℄ SHALLOWFORD RD
PC 12+02.91
STA DEVELOP CORP
N 237,814.00
E 2,233,709.11
PT 13+90.64
PI = 12+98.00
Δ = 22°-31'-40"
D = 12°-00'
R = 477.47'
T = 95.09'
L = 187.73'
DRAINAGE EASEMENT (101-19C1)
N 237,892.71
E 2,233,836.75
N 5°-55'-58" W
℄ LEVEE
N 59°-24'-18" E
CHURCH
FIRST CUMBERLAND PRESBYTERIAN CHURCH
SCCL-10
2.7 ACRES
PI = 19+73.32
Δ = 74°-25'-34"
D = 13°-00'
R = 440.74'
T = 334.70'
L = 572.51'
S 50°-31'-40" E
50'
15
PC 16+38.62
17+30
ORIG SURVEYED ℄
℄ RELOC NORTH MOORE RD
℄ EXIST NORTH MOORE RD
℄ BONNIE WAY DR
CHESTER W. WEST
MILLIAN REYNOLDS
PATRICIA N. DEWEES
℄ MARIA AVE
FIRST CUMBERLAND PRESBYTERIAN CHURCH
LARRY BARNES
N 237,296.79
E 2,234,228.25
℄ PYT DR
S 23°-53'-54" W
PT
PT 22+11.13
21+05
20
40'
30'
END CONSTRUCTION
STA 22+25.00
PRELIMINARY LAND OWNERSHIP MAP
NO. 6-MS-421-PP-630-1
2,233,750
2,234,000
2,234,250
2,234,500
CITY OF CHATTANOOGA
HAMILTON COUNTY, TENNESSEE
DRAWN VR LEE
CHECKED RBR
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.

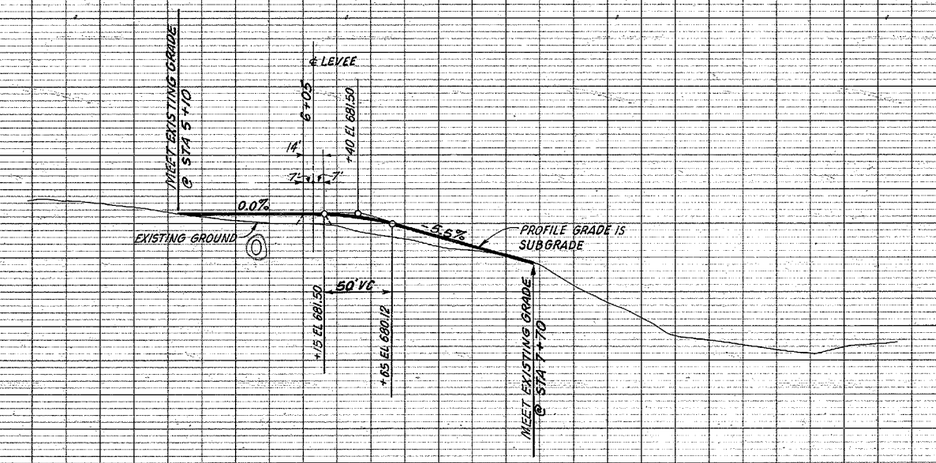
INDEX TO SHEETS	
TITLE	SHEET NO
PLAN AND PROFILE	101-19H260

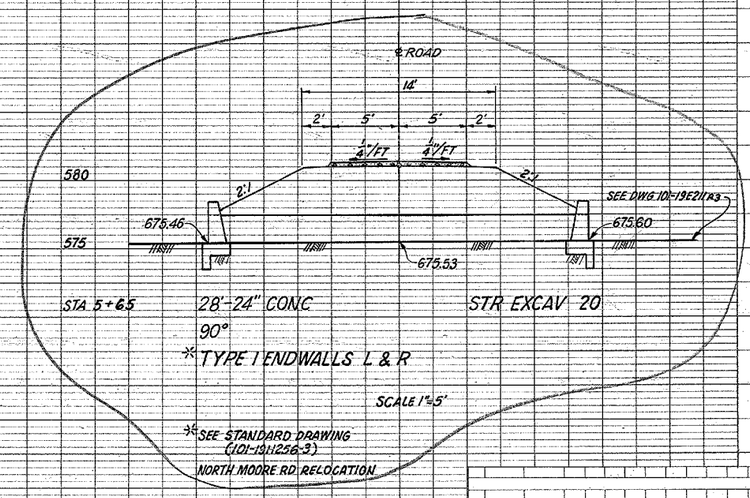
NOTES:
1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE HIGHWAY T-1 SPECIFICATIONS UNLESS OTHERWISE NOTED
2. SURFACING SHALL BE 3" OF CRUSHED STONE PLACED IN ACCORDANCE WITH SECTION 210.
3. GRASSING: ALL CUT AND FILL SLOPES AND DISTURBED AREAS SHALL BE SEEDED, TYPE 7 MIXTURE, SHOULDERS AND DITCH SLOPES 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'

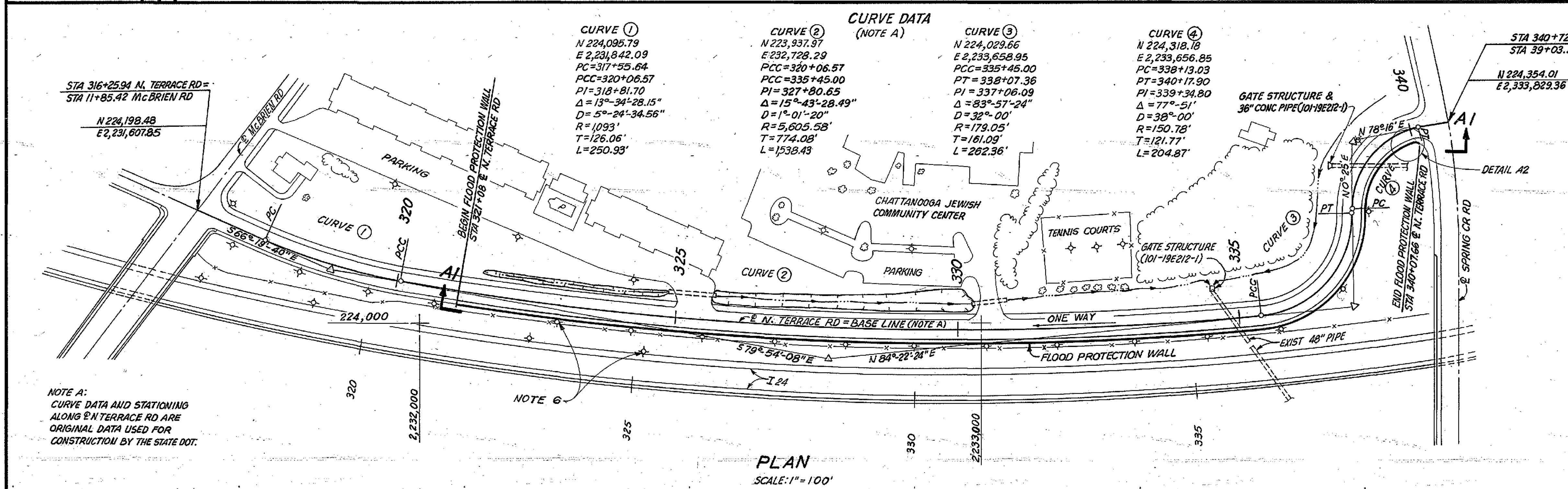




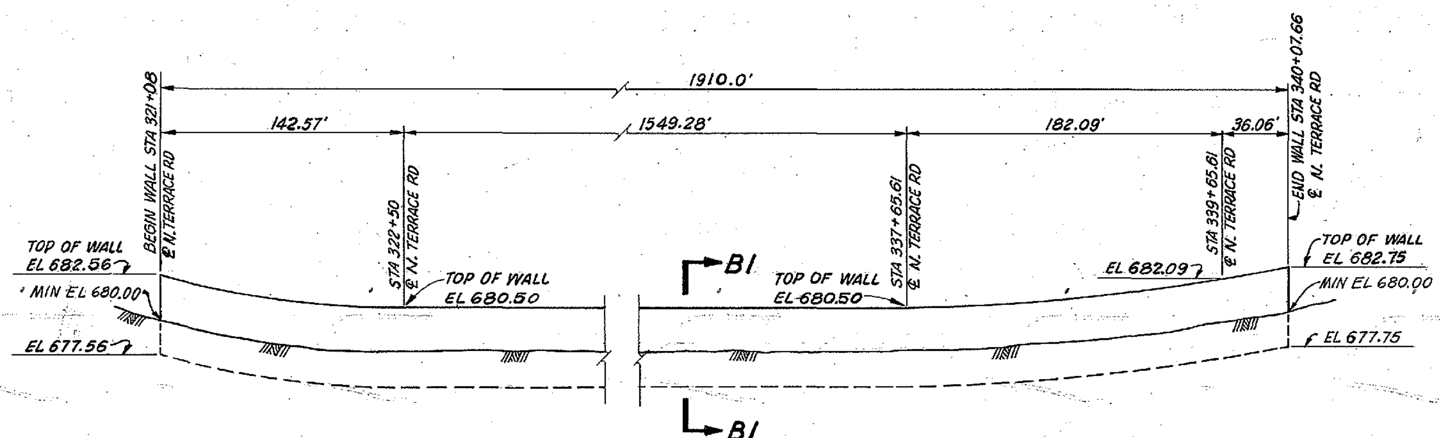
REV NO.	ECN NO.	DATE	DSGN	DRWD	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		11-28-78	HLP	VRL							
ADDED PIPE SECTION											

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



PLAN
SCALE: 1" = 100'



SUMMARY OF QUANTITIES

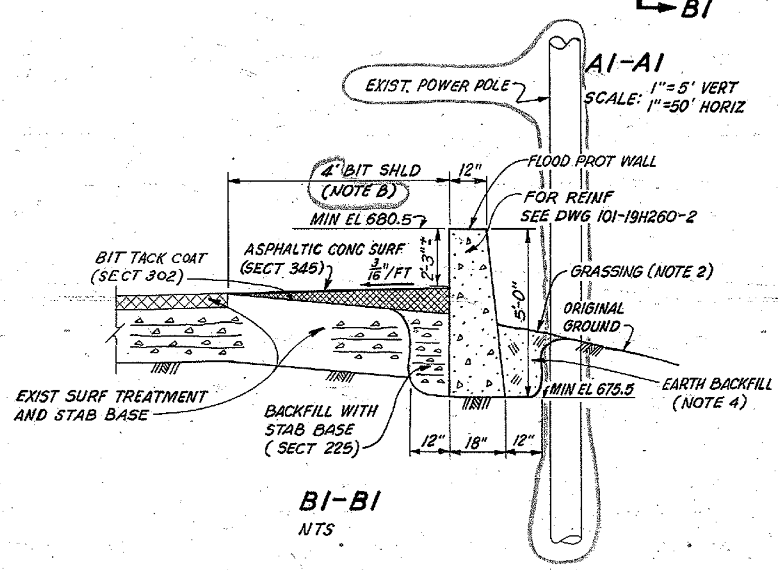
ITEM NO	DESCRIPTION	QUANTITY
129	EXCAVATION FOR STRUCTURE	560 C.Y.
180 & 182	SEEDING & MULCHING	1,060 S.Y.
225	STABILIZED BASE	250 TONS
302	BITUMINOUS TACK COAT	.75 TON
345	ASPHALTIC CONC SURF COURSE	190 TONS
	*CLASS 300.75 AFW CONC-WALL	450 C.Y.
418	REINFORCEMENT STEEL	12,300 LBS
	TYPE I - PVC SEAL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

* PER GEN CONSTR SPEC NO. G-2

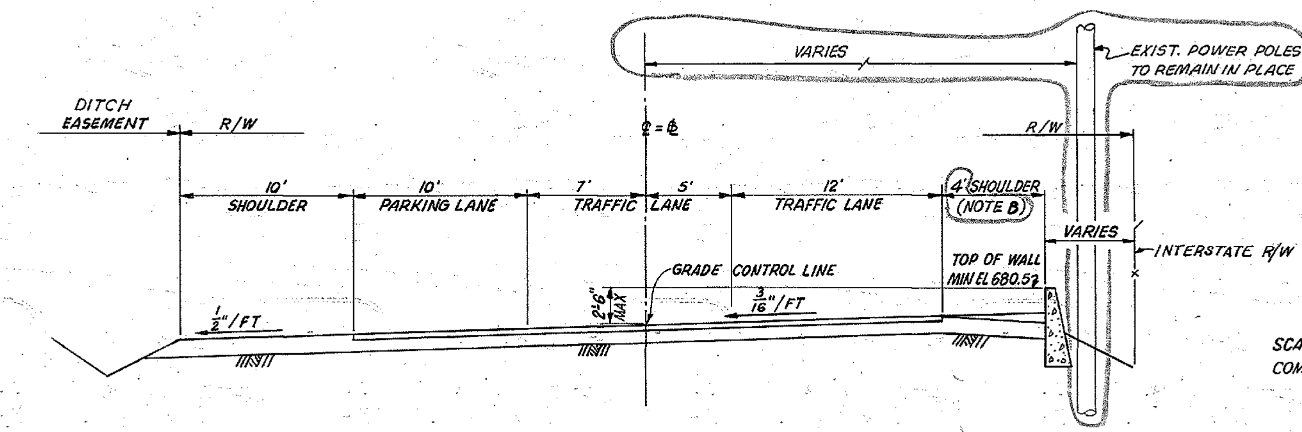
NOTES:

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: IF CONSTRUCTION ELECTS TO USE AN AUTOMATIC CURBING MACHINE WITH CONTINUOUS CURB PLACEMENT IN CONSTRUCTING THE FLOOD PROT WALL, THE REINFORCEMENT STEEL AND KEYED JOINTS MAY BE ELIMINATED.~~ MF RO R1
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.

A1-A1
SCALE: 1" = 5' VERT, 1" = 50' HORIZ



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

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		4-12-79	WMM	VRL	HLP	WMM	EBL	✓	RJB	JDG	GJB

REVISED WALL LOCATION

DSGN T.H. Rogers, Jr.
DRWN V.R. LEE
CHKD T.Y.M. - W.M. Martin
SUPV W.M. Martin
INSP J.R. Fox
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 R.J. Bowman | RECOMMENDED [signature] | APPROVED [signature]

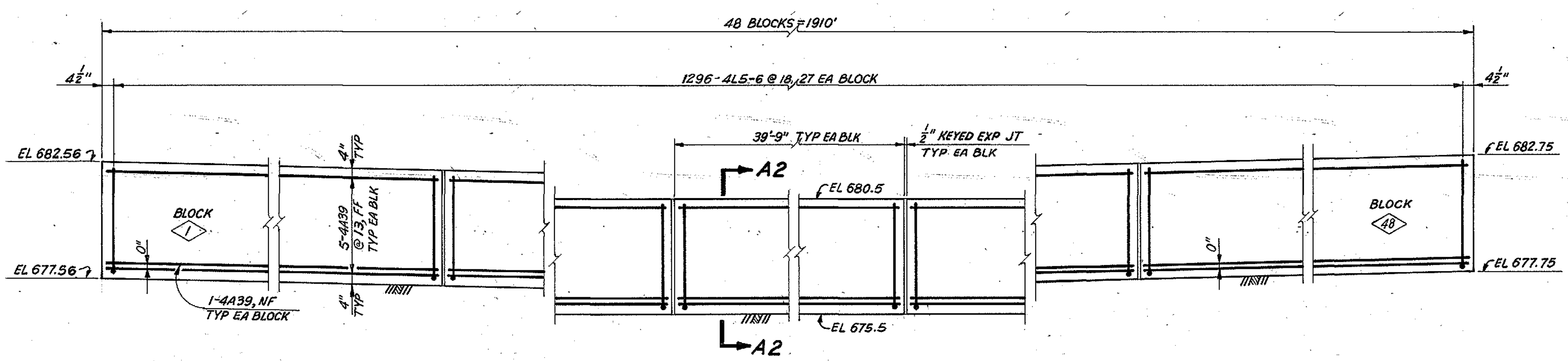
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 8-10-78 81 HR 101-19H260-1R1

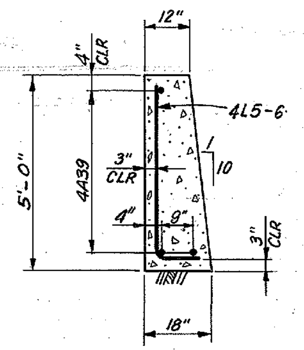
RECORD DRAWING AS CONSTRUCTED

PRINT H 10
SIZE F 3
BR OR PROJ ME EE CE AD CO EQ MD HPP SW BL PA
PRINTS REQD-R 0

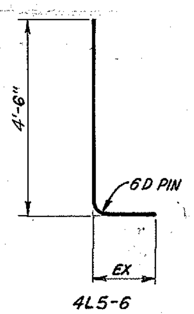
①	②	③	④	⑤	⑥



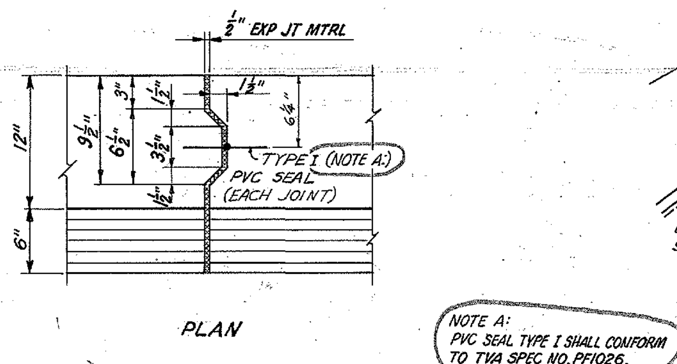
ELEVATION
NTS



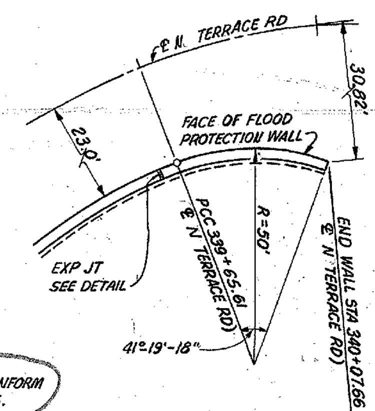
A2 - A2
NTS



BAR BEND DETAIL
NTS



KEYED EXP JT DETAIL
SCALE: 1½" = 1'-0"



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.

SCALE AS NOTED
COMPANION DWG 101-19H260-1

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1		4-12-79	WMM	VRL	HLP	WMM	EBL		RJB		GLB
REVISED KEYED EXP JT DETAIL											

DSGN T.H. ROGERS, JR. — INSP JR Fox
DRWN V.R. LEE
CHKD TXM - WMMartin — ENGINEER EB Logan
SUPV WMMartin

NORTH TERRACE ROAD
FLOOD PROTECTION WALL

OUTLINE, REINFORCEMENT AND MISCELLANEOUS DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED — RECOMMENDED — APPROVED

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE | 8-10-78 | 81 | HR | 101-19H260-2 R1

RECORD DRAWING AS CONSTRUCTED

PRINT H 10
SIZE F 3
PRINTS REQD-R 0

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. 15+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	
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70	Roads & Bridges	
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72	Utility Relocation (City of Chattanooga)	
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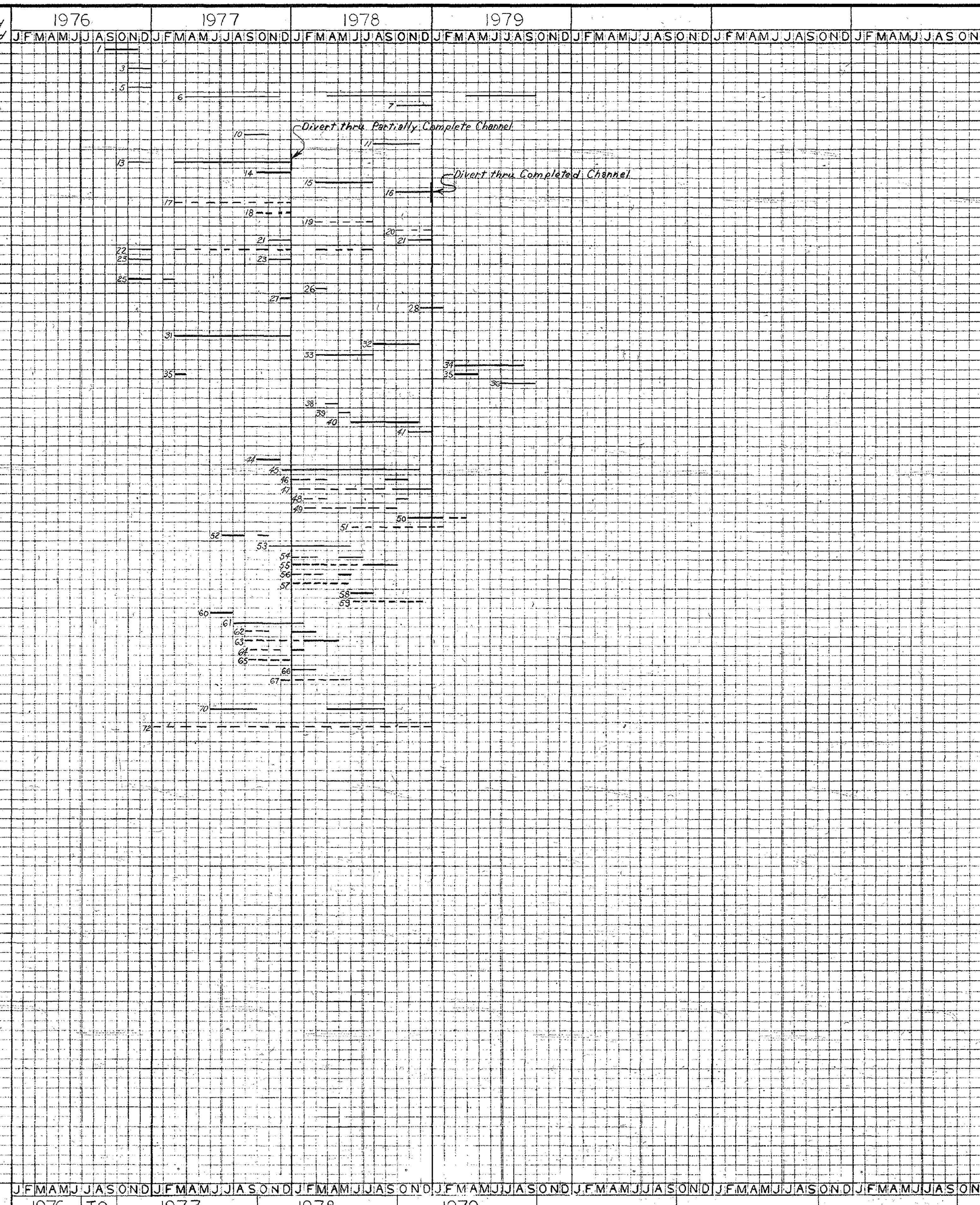


REV NO.	DATE	MADE	CHKD	SUPV	INSP	SUBM	RECM
3	5-25-76	HCH	WAC	WAC			TAB
Revised per GLB memo dated 5/24/76							
2	3-15-76	WAC					TAB
Minor Revision							
1	2-2-76	HCH	STN	WAC		JoH	
Changed Quantities, Add 22 & 35							

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

Frank Van Meter
CONSTRUCTION SUPERINTENDENT

GENERAL

CONSTRUCTION SCHEDULE SOUTH CHICKAMAUGA CREEK

CHATTANOOGA FLOOD PROTECTION
TENNESSEE VALLEY AUTHORITY
DIVISION OF CONSTRUCTION

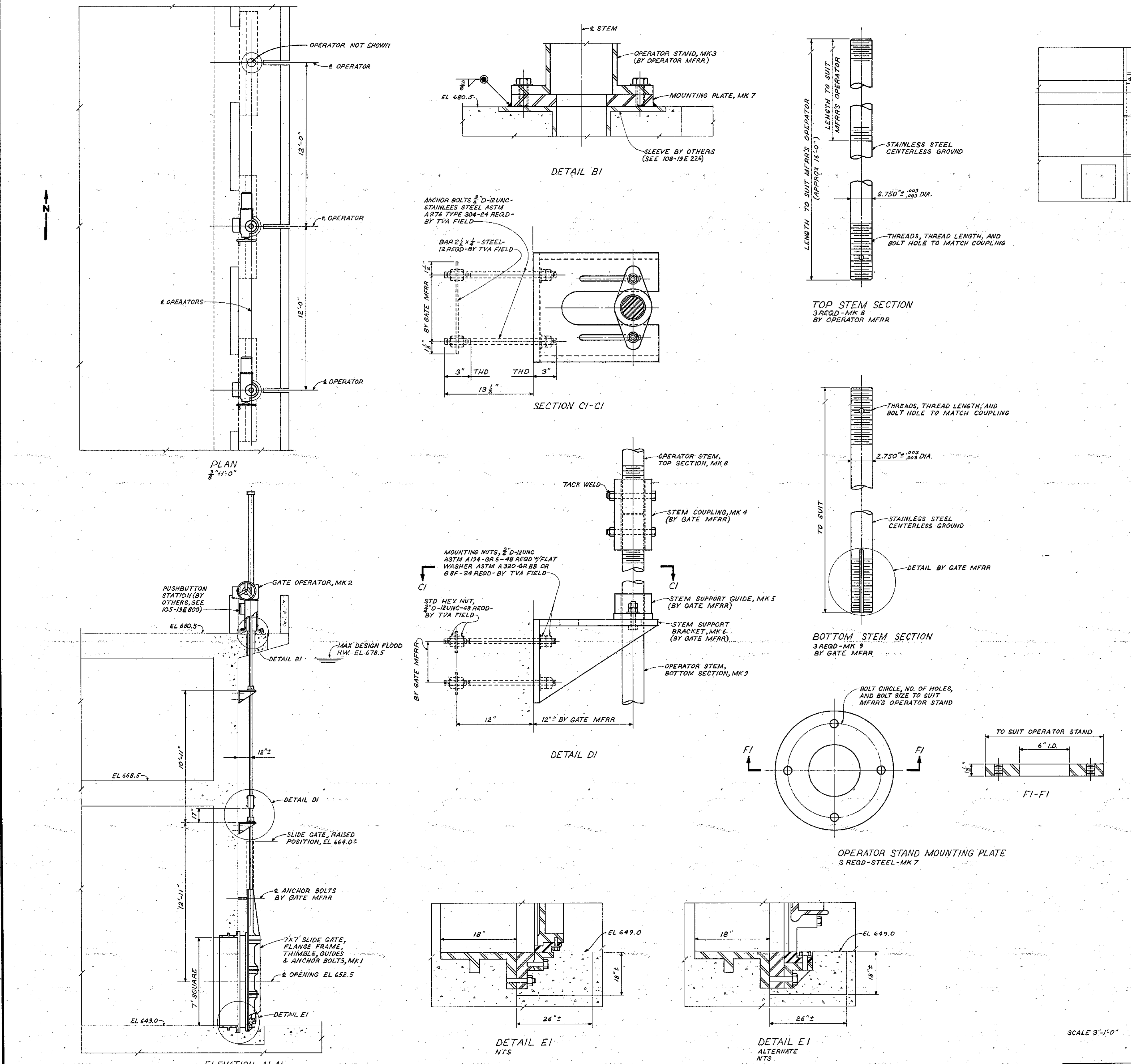
SUBMITTED	RECOMMENDED	APPROVED
J. O. Henson	T. A. Bowles	[illegible]

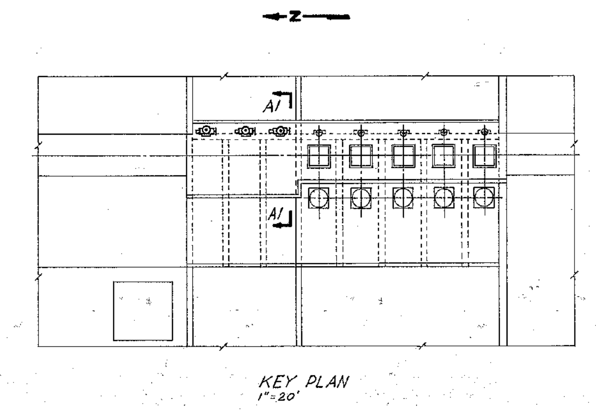
KNOXVILLE	1-30-76	81	CS	3	102K1	R3

RECORD DRAWING AS CONSTRUCTED

MC 23200

CHARLES BRUNING CO. NO. 40-155





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 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:

MARK 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.

SCALE 3"=1'-0"

DSGN T. M. SUAREZ
DRWN T. M. SUAREZ 5-3-76
CHKD W. T. CORNWELL 8-76
SUPV N. R. COWELL
ENGINEER J. H. Wilbanks

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION I

7'X7' SLIDE GATE ARRANGEMENT & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

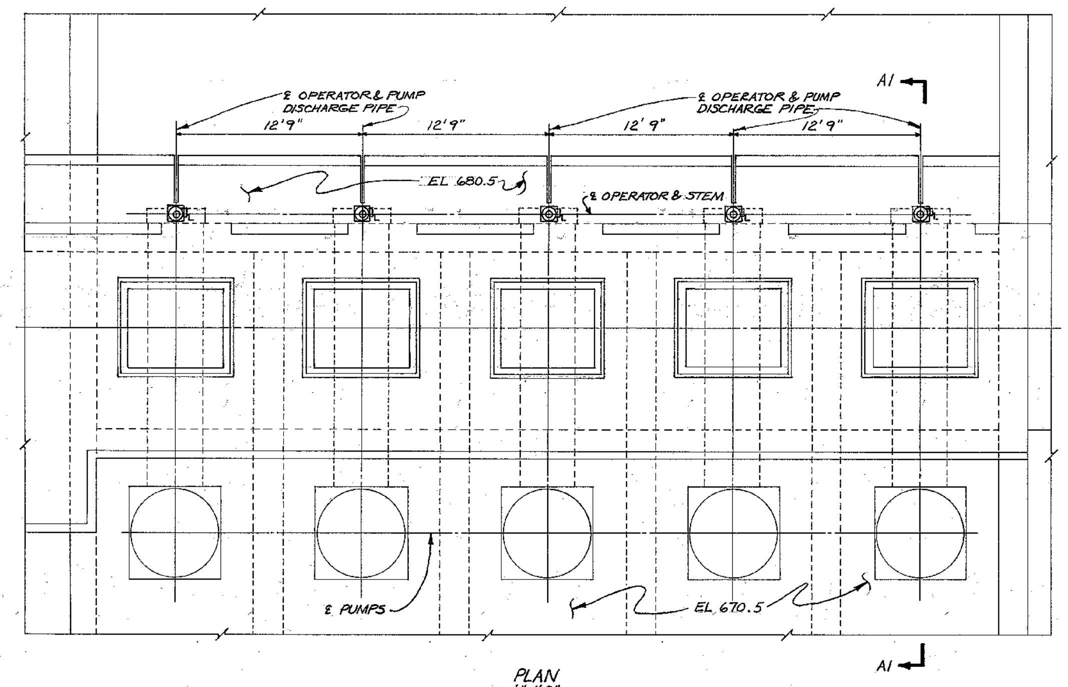
SUBMITTED	RECOMMENDED	APPROVED
T. S. Daugherty	J. B. Andrews, Jr.	S. Kesler

INSPECTED AND APPROVED FOR ISSUE

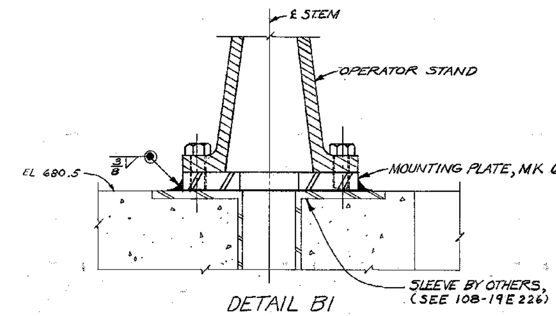
KNOXVILLE 9-16-76 81 H 104-19E200-1 R0

RECORD DRAWING AS CONSTRUCTED

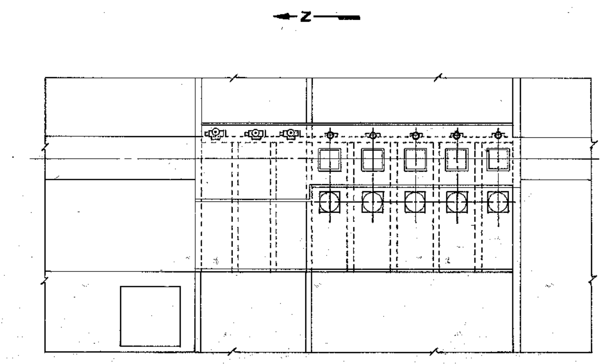
PRINT H 3 6
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R.O.



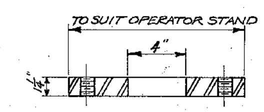
PLAN
3/16"=1'-0"



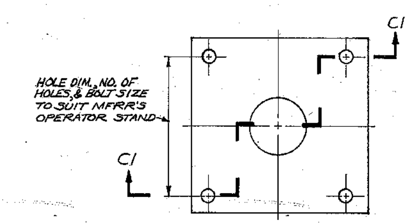
DETAIL B1



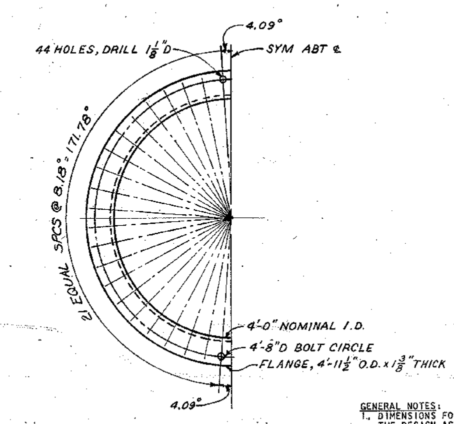
KEY PLAN
1"=20'



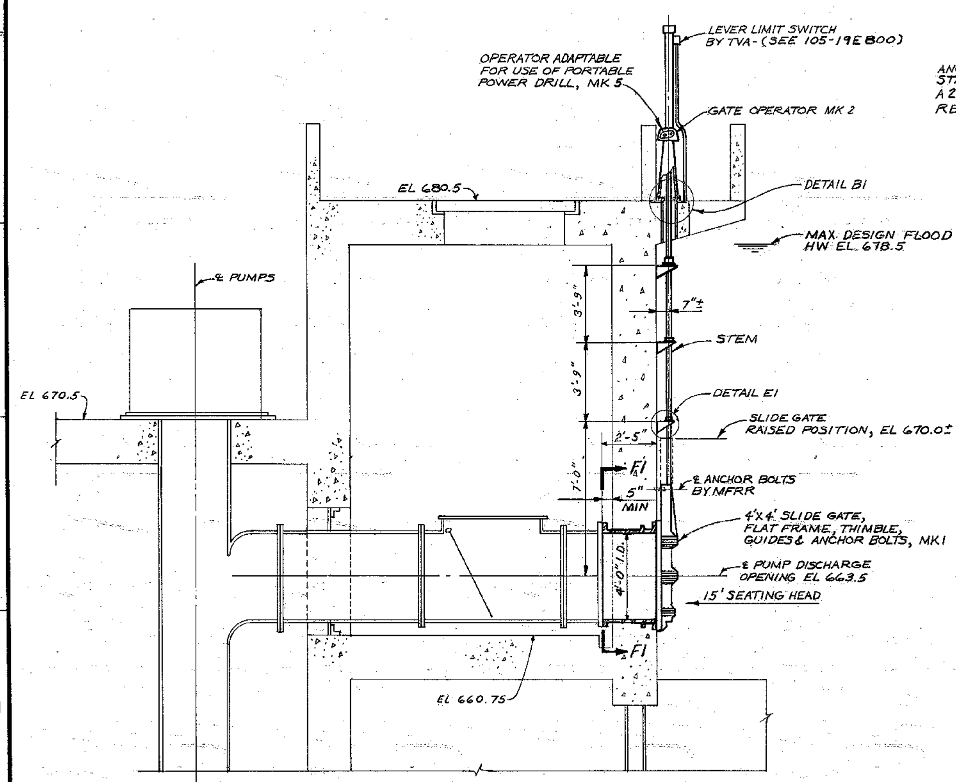
C1-C1



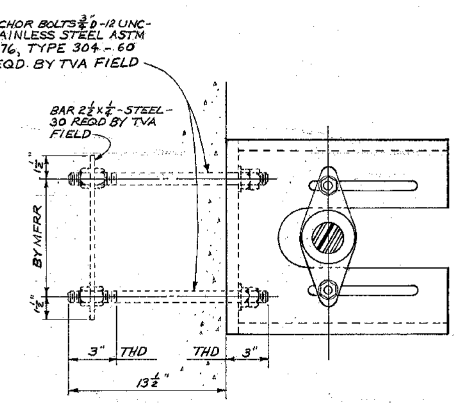
OPERATOR STAND MOUNTING PLATE
5 REQD STEEL-MK 6



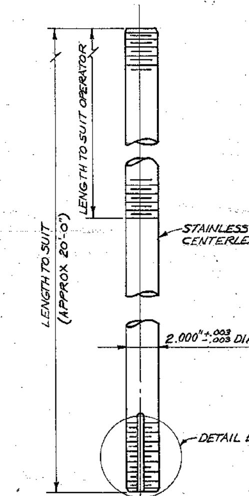
F1-F1
THIMBLE FLANGE
1"=1'-0"



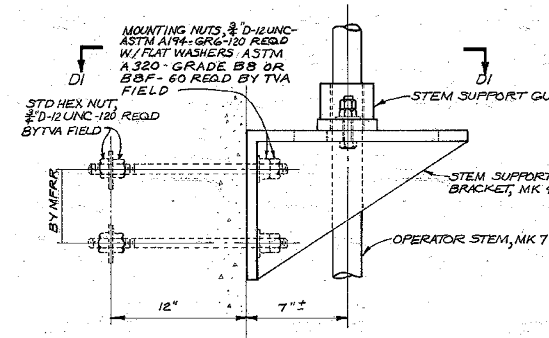
SECTION A1-A1
TYPICAL ALL GATES
3/8"=1'-0"



D1-D1



OPERATOR STEM
5 REQD-MK 7



DETAIL E1

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 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 "E" TYPE WITH A STANDARD ANSI PIPE FLANGE AS SHOWN IN SECTION A1-A1 AND F1-F1.

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.

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

DSGN T.M. SUAREZ
DRWN R.W. COATES III 6-10-76
CHKD W.T. CARNWELL
SUPV [signature]
INSP
ENGINEER [signature]

CHATTANOOGA FLOOD PROTECTION PUMPING STATION 1

4'X4' SLIDE GATE ARRANGEMENT & DETAILS

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

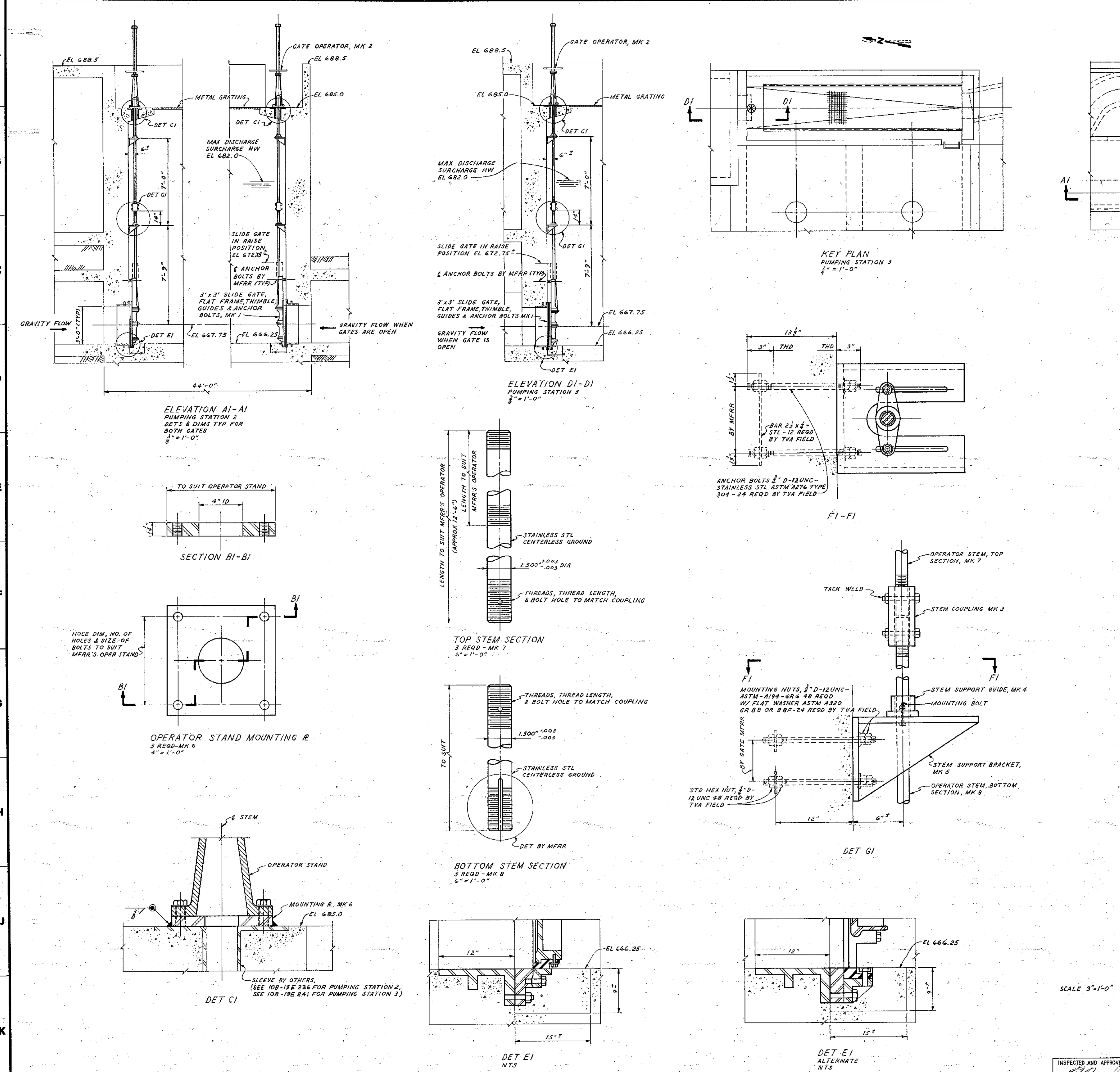
SUBMITTED	RECOMMENDED	APPROVED
J.S. Daugherty	T.B. Andrews Jr.	S. Kesler

INSPECTED AND APPROVED FOR ISSUE [signature]

KNOXVILLE 9-22-76 | 81 | H | 104-19E205-1 R0

RECORD DRAWING AS CONSTRUCTED

PRINT H 1 2 6
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 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.

DSGN T.M. SUAREZ
DRWN G.L. SHIPE 6-22-76
CHKD W. T. CORNWELL
SUPV R.R. Cornell
INSP
ENGINEER J.L. Willbanks

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.S. Daugherty	J. B. Andrews, Jr.	S. Kesler

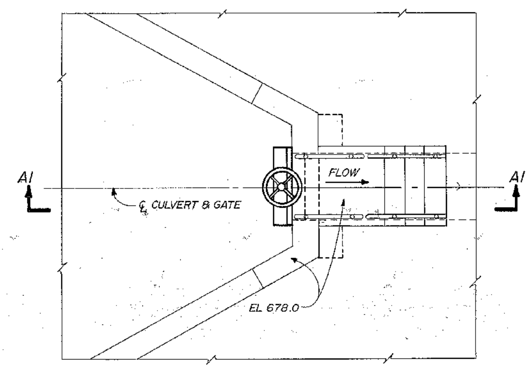
INSPECTED AND APPROVED FOR ISSUE

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

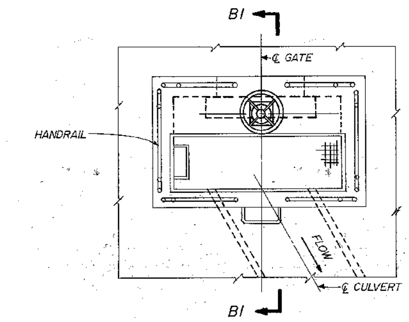
RECORD DRAWING AS CONSTRUCTED

PRINT H 1 2 6
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 0

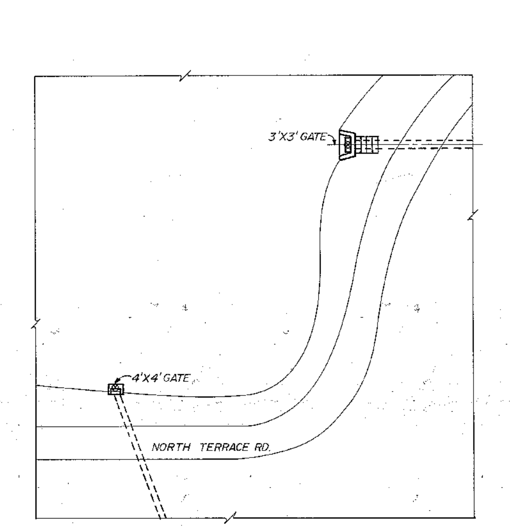
81 H 104-19E225-1



PLAN
3'X3' SLIDE GATE



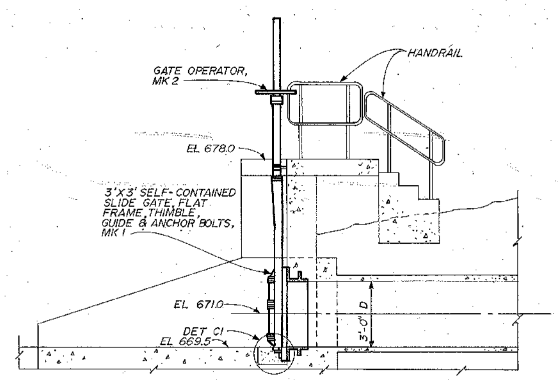
PLAN
4'X4' SLIDE GATE



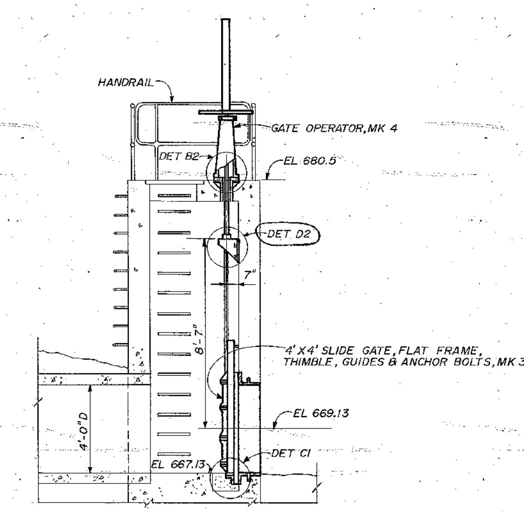
KEY PLAN
FOR LOCATION SEE DWG 101-19E212-1
1" = 40'

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.



A1-A1



B1-B1

PARTS:

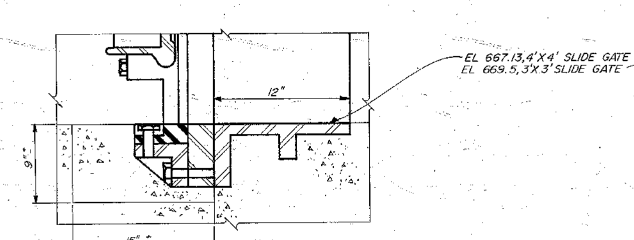
MARK NUMBERS ON THIS DRAWING HAVE THE PREFIX 104-19E265.

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

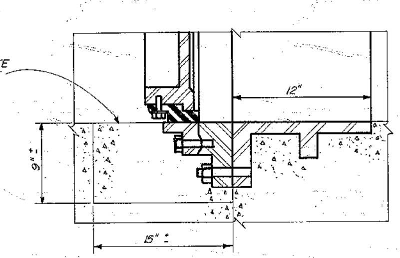
MK 7 THROUGH MK 9 DETAILED ON SHEET 2 OF THIS DRAWING

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.



DET C1
NTS



DET C1
ALTERNATE
NTS

COMPANION DRAWING:
104-19E265-2

1		5-31-79	TMS	TMG	MRC	MRC	DND		JCL	APJ	SKo			GLB
REVISED & REDRAWN														
REV NO.	ECN NO	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD			

DSGN TM SUAREZ
DRWN RW COATES III 6-22-76
CHKD WT CORNWELL
SUPV W.R. Cornwell
INSP
ENGINEER J. L. Wilbanks

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

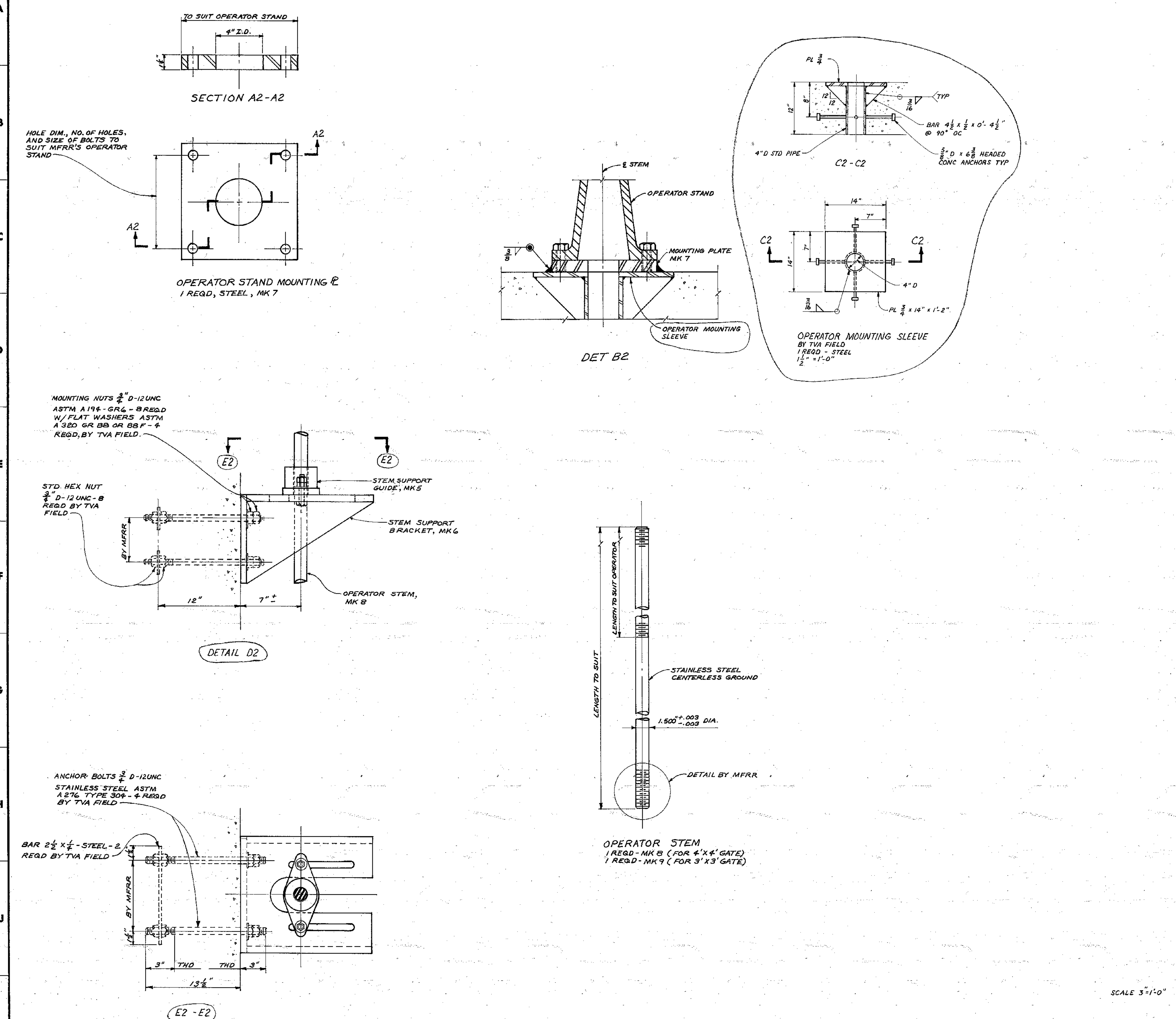
SUBMITTED	RECOMMENDED	APPROVED
T.S. Dougherty	V.P. Horton	S. Kesler

INSPECTED AND APPROVED FOR ISSUE
S.L. Buchanan

KNOXVILLE | 9-22-76 | 81 | H | 104-19E265-1 R1

RECORD DRAWING AS CONSTRUCTED

PRINT H 1 5
SIZE F 0
BR OR PROJ ME EE CE AD CO ED MD HPP SW BL PA
PRINTS REQD-R 1



REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		5-31-79		CAT			DHD				

REVISED DET B2 AND ADDED MOUNTING SLEEVE DETAIL

DSGN T.M. SUAREZ
DRWN R.W. COATES III 8-4-76
CHKD W.T. CORNWELL
SUPV N.B. Cornell
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION LEVEE INSTALLATIONS

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

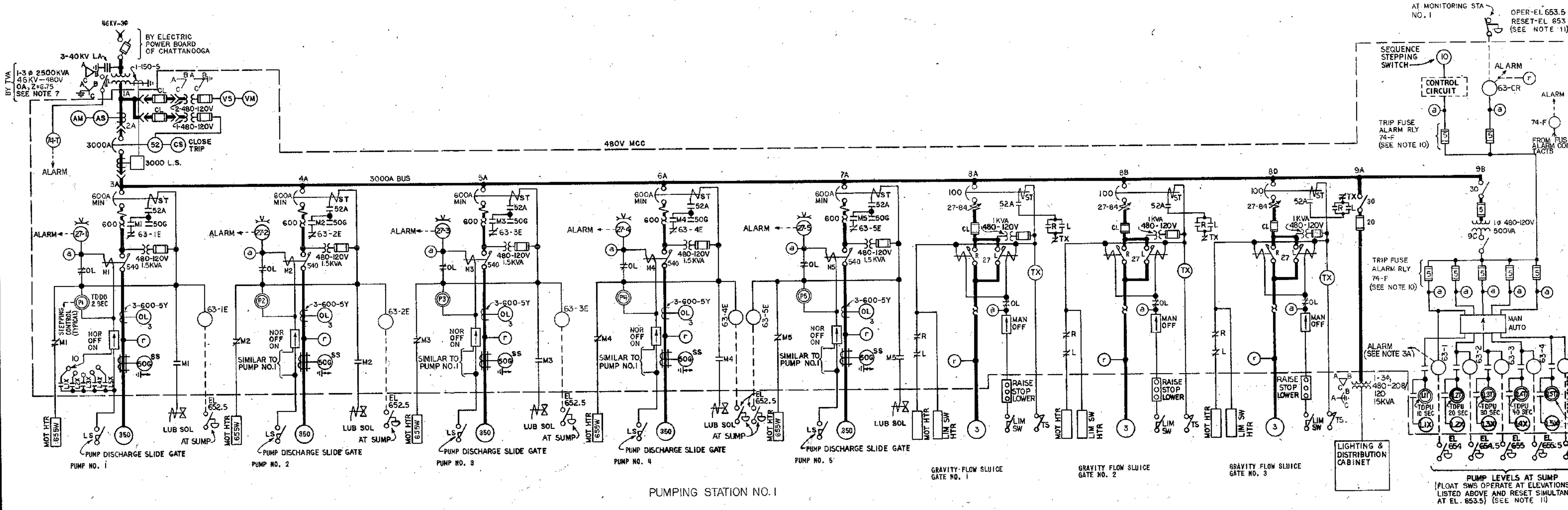
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

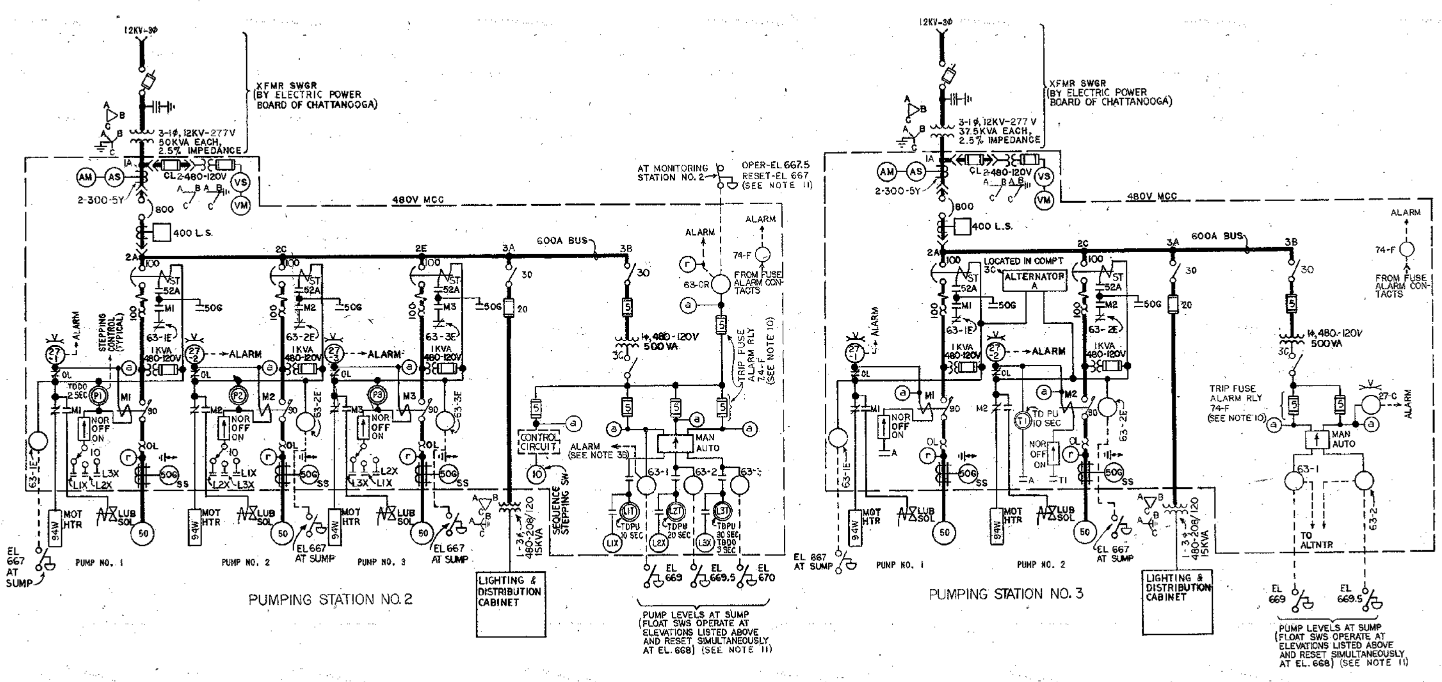
SUBMITTED	RECOMMENDED	APPROVED
J.S. Daugherty	J.B. Andrews Jr.	S. Kesler

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 9-22-76 81 H 104-19E265-2 R1

RECORD DRAWING AS CONSTRUCTED





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 8B SLUICE GATE 2 8D SLUICE GATE 3 8E FUTURE	9A LIGHTING FEED 9B COMMON CONTROL XFMR 9C PUMP SEQUENCING AND ALARM RELAYS

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

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

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

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

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

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 PRECEEDING 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 SLIDE 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 NO.1 OR NO.2 SENSE CREEK LEVEL ABOVE EL 653.5 OR EL 667.5 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 EL 653.5 BY SENSORS AT MONITORING STATION NO.1 OR SUMP LEVEL AT PUMPING STATION NO. 1 ABOVE EL 654 WITH THE COMMON PUMP CONTROL SWITCH IN MANUAL POSITION.
   B. CREEK LEVEL ABOVE EL 667.5 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 3839 OR EQUAL.
11. FLOAT SWITCHES SHOWN ARE SYMBOLIC OF THE FUNCTION BEING PERFORMED AND DO NOT NECESSARILY REPRESENT EQUIPMENT INSTALLED.

REFERENCE DWGS:

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
2	—	7-10-79	TJL	JT		TJL					
MINOR REVISION											
1	—	1-31-77	TJL	WSS							
RELOCATED MONITORING STATION NO.2, ADDED BACKUP ALARMS TO BOTH MONITORING STATIONS, MANUFACTURERS AND MINOR CHANGES. CHANGED TO "E" SIZE DRAWING.											

DSGN T. J. LIPTAK
DRWN W. S. SHARPE
CHKD T. J. LIPTAK
SUPV B.L. BOGGS
INSP
ENGINEER [signature]

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. Hewitt	R. H. Herndon	John E. Holladay

INSPECTED AND APPROVED FOR ISSUE [signature]

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

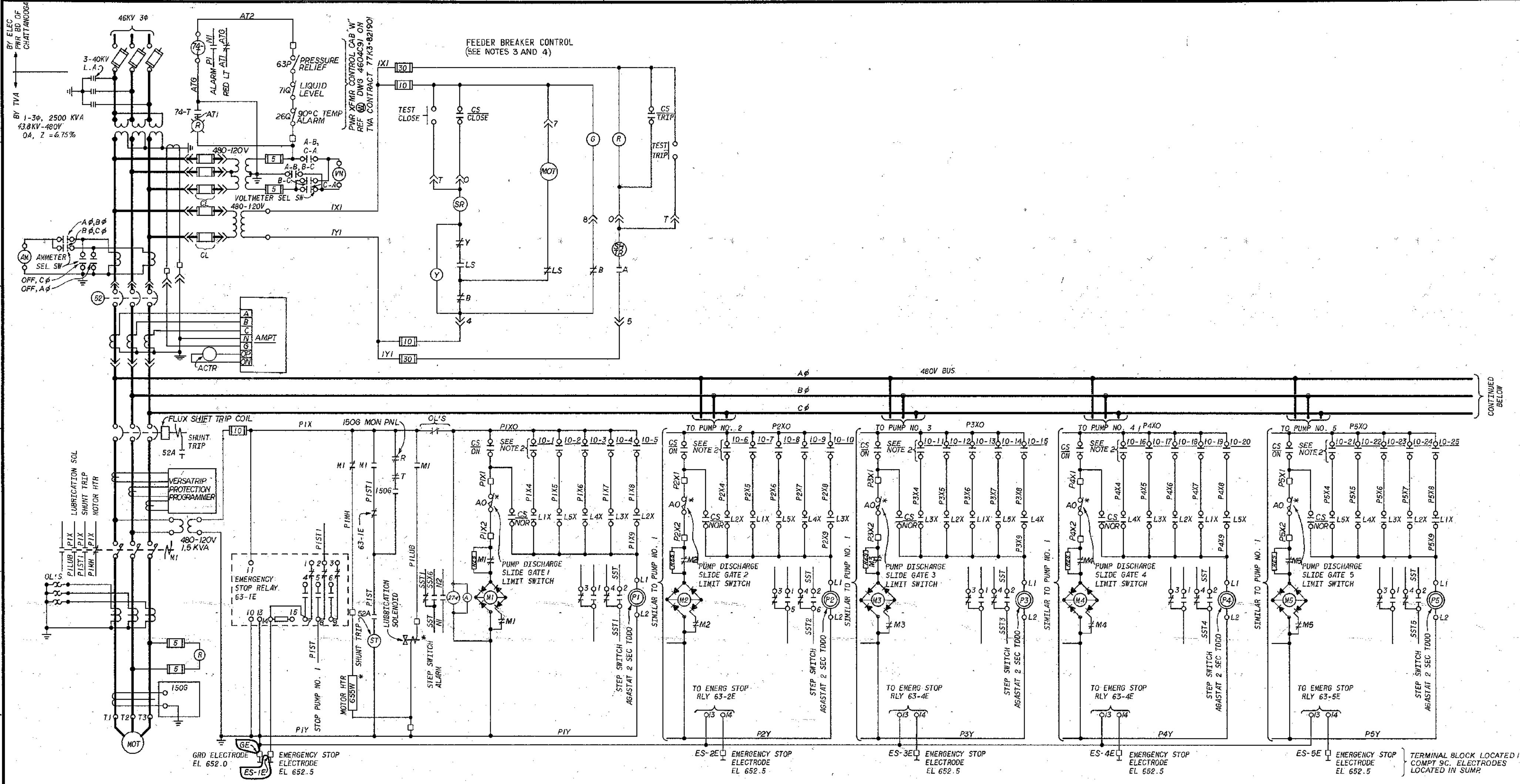
RECORD DRAWING AS CONSTRUCTED Frank Van Meter 2/7/83 R2

PRINT	H		3			2	3
SIZE	F						

BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 2

REPROGRAPHIC SERVICES INDEXED KNOXVILLE

105-19E511-1 | E | 81



PUMP NO. 1
(PUMPS 2 THRU 5 ARE SIMILAR EXCEPT WIRE PREFIX)

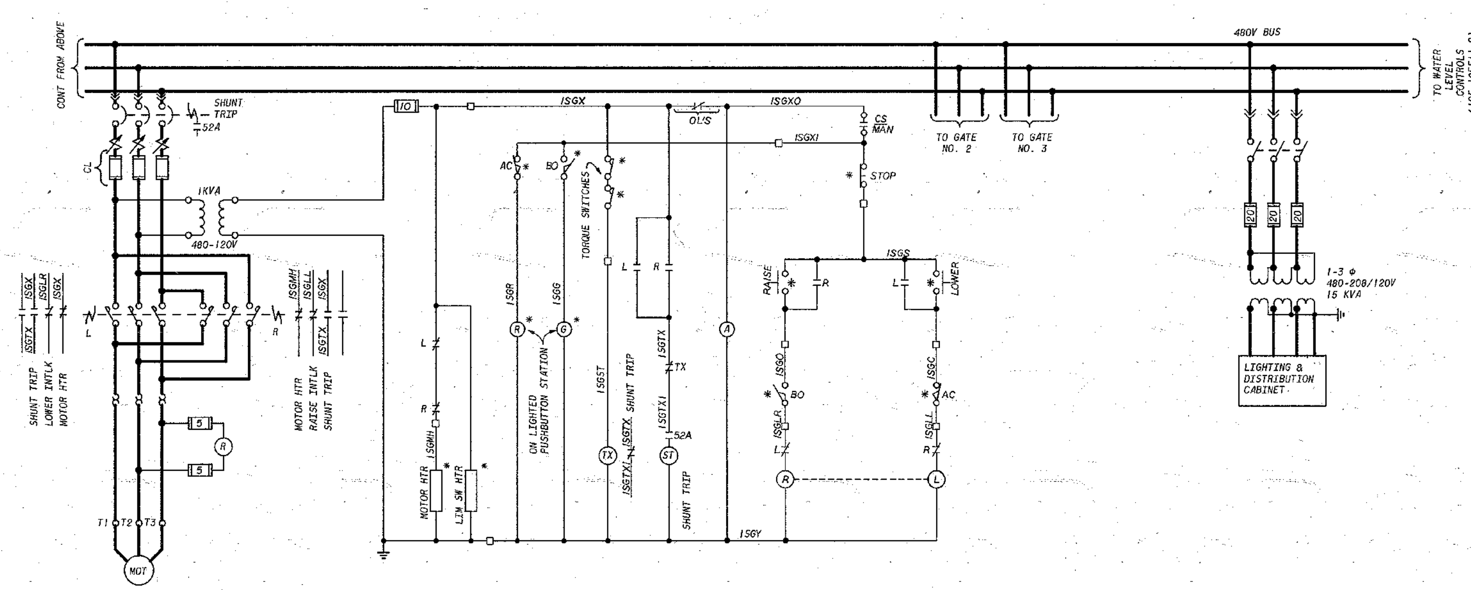
PUMP NO. 2

PUMP NO. 3

PUMP NO. 4

PUMP NO. 5

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 77K3-82190l.



GRAVITY FLOW SLUICE GATE NO. 1
(GATES NO. 2 AND 3 SIMILAR EXCEPT WIRE PREFIX)

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		7-10-79	TJL	JT	CB	TJL	RWS		RFH	RAB	JEH

MINOR CHANGES

DSGN D.R. TABLER
DRWN T.P.E./T.L. BINGHAM
CHKD T.J. LIPTAK
SUPV B.L. BOGGS
INSP
ENGINEER [signature]

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 Robert F. Hewit — RECOMMENDED R.H. Herndon — APPROVED John E. Holladay

INSPECTED AND APPROVED FOR ISSUE
G. L. Buchanan

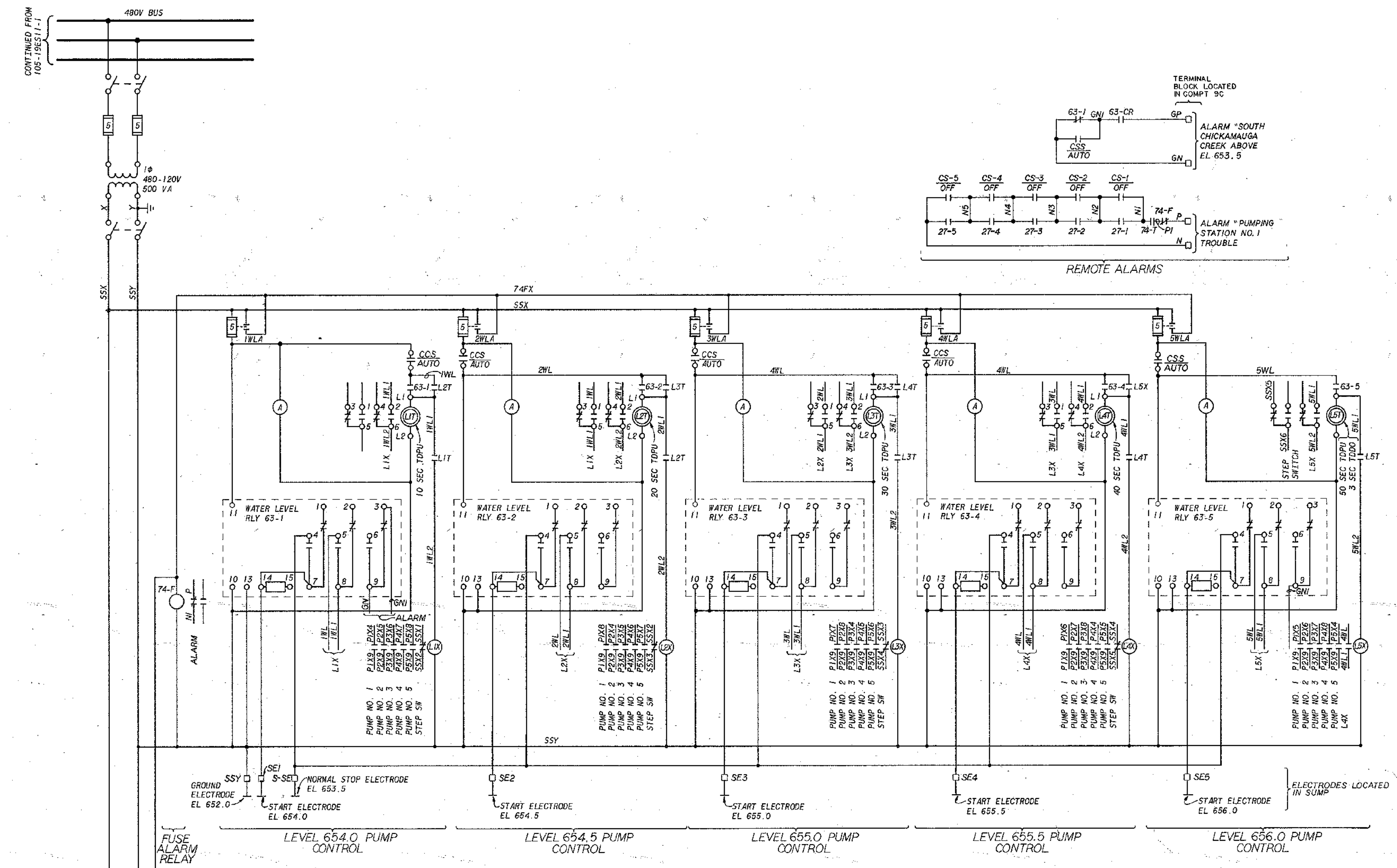
KNOXVILLE 1-31-77 | 81 | E | 105-19E511-1 R1

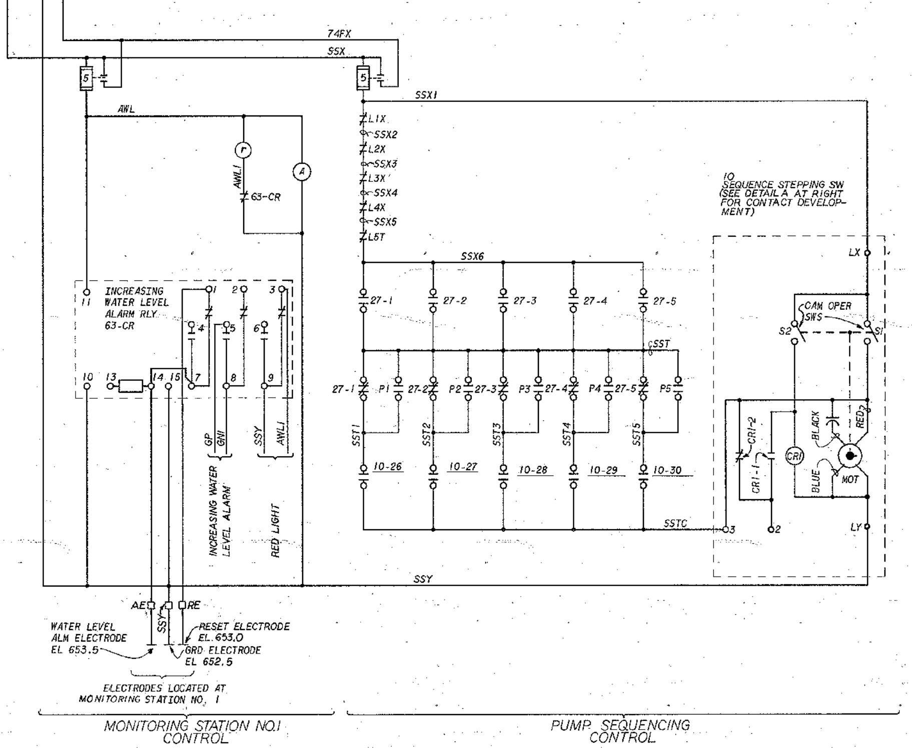
RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 2/7/83 R1

PRINT	H	3			1
SIZE	F				

BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1

NOTES:
1. FOR GENERAL NOTES SEE DWG 105-19E511-1
2. FOR FURTHER DETAILS AND AS PURCHASED STATUS, SEE CONTROL POWER SYSTEMS INC. DRAWING R-41600, TVA CONTRACT 77K3-821901.





STEP NO.	LOAD SWITCHES																													
	PUMP NO. 1					PUMP NO. 2					PUMP NO. 3					PUMP NO. 4					PUMP NO. 5					AUX				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1	X					X					X					X					X					X				
2		X					X					X					X					X					X			
3			X					X					X					X					X					X		
4				X					X					X					X					X					X	
5					X					X					X					X					X					X
6	X					X					X					X					X					X				
7		X					X					X					X					X					X			
8			X					X					X					X					X					X		
9				X					X					X					X					X					X	
10					X					X					X					X					X					X
11	X					X					X					X					X					X				
12		X					X					X					X					X					X			
13			X					X					X					X					X					X		
14				X					X					X					X					X					X	
15					X					X					X					X					X					X
16	X					X					X					X					X					X				
17		X					X					X					X					X					X			
18			X					X					X					X					X					X		
19				X					X					X					X					X					X	
20					X					X					X					X					X					X
21	X					X					X					X					X					X				
22	X					X					X					X					X					X				
23	X					X					X					X					X					X				
24	X					X					X					X					X					X				

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

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

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	——	7-10-79	TJL	JT	CB	TJL					

MINOR CHANGES

DSGN D.R. TABLER
DRWN J.B. WISE, W.S. SHARPE/T.I. BINGHAM
CHKD T.J. LIETAL
SUPV B.L. BOGGS
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

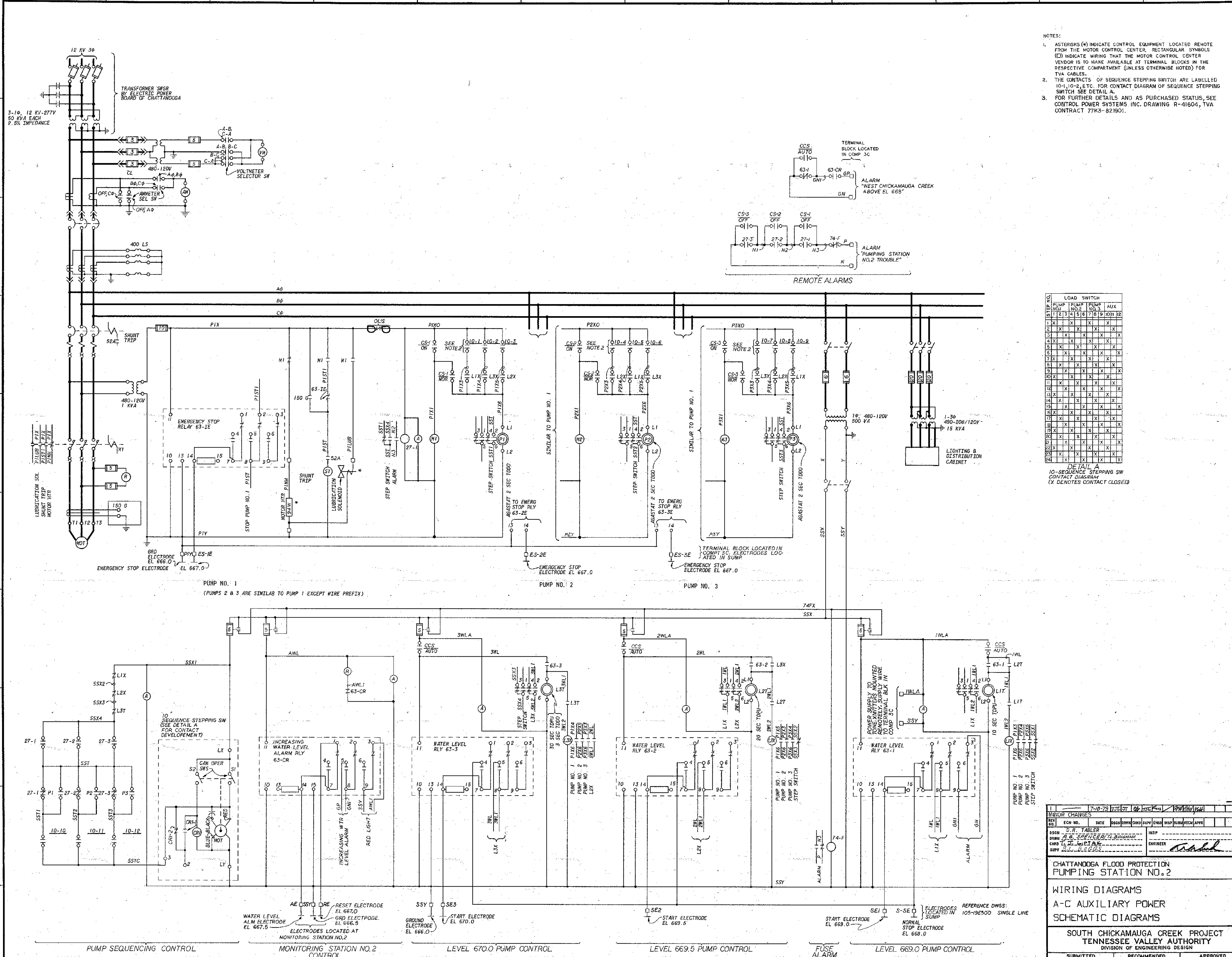
SUBMITTED Robert F. Hewit — RECOMMENDED R.H. Herndon — APPROVED John E. Holladay

INSPECTED AND APPROVED FOR ISSUE G.L. Buchanan

KNOXVILLE 1-31-77 | 81 | E | 105-19E511-2 R1

RECORD DRAWING AS CONSTRUCTED Frank Van Mater 2/10/83 R1

PRINT H 3 1
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1



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 77K3-821901.

REFERENCE DWGS: 105-19E500 SINGLE LINE

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	MINOR CHANGES	7-10-79	TJL	JT	[illegible]	TJL	[illegible]	/	[illegible]	[illegible]	[illegible]

DSGN D.R. TABLER
DRWN R.G. SPENCER/T.L. BINGHAM
CHKD T.J. LIPTAK
SUPV B.L. BOGGS
INSP
ENGINEER [signature]

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

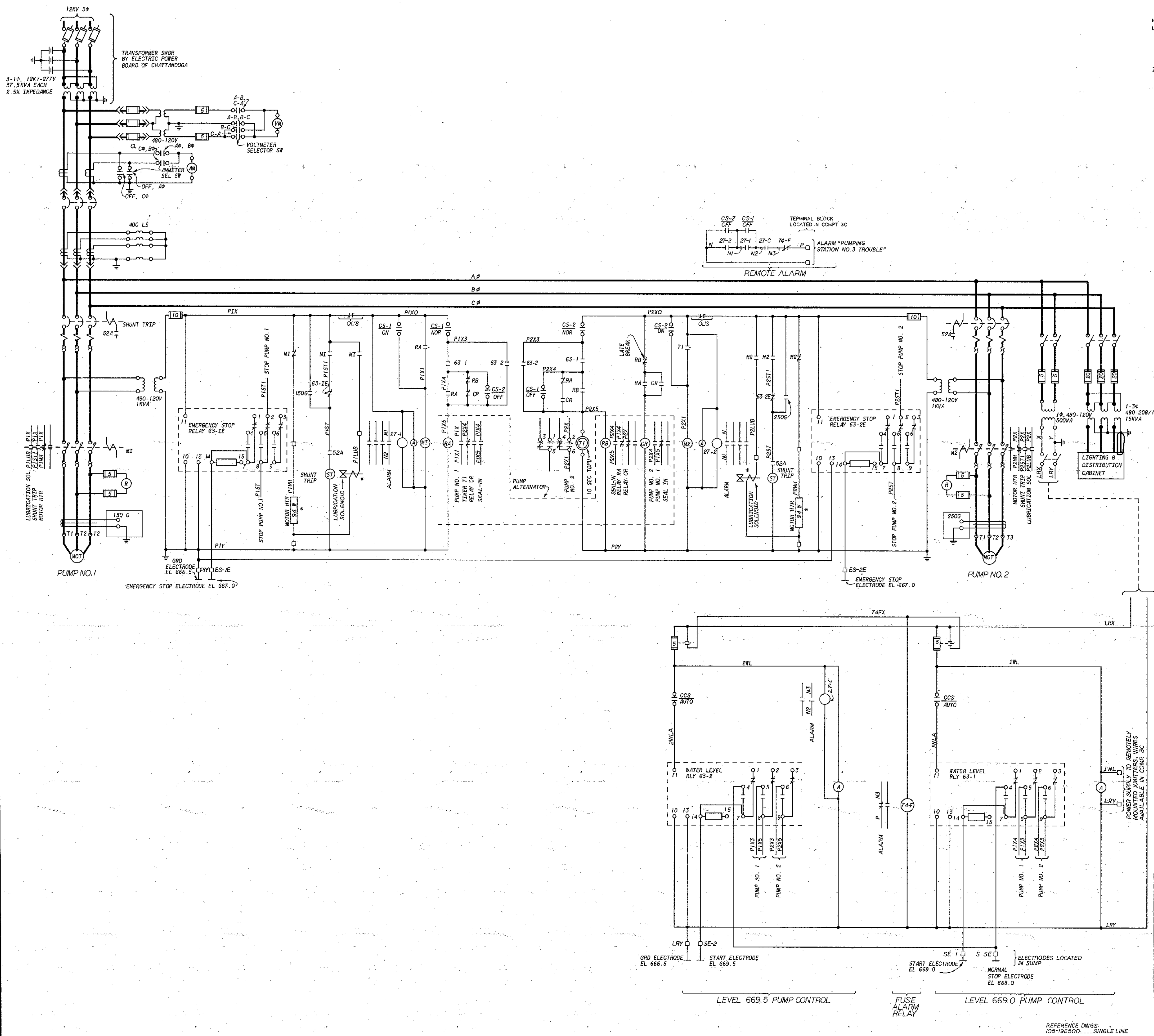
SUBMITTED Robert F. Hewitt — RECOMMENDED R.H. Herndon — APPROVED John E. Holladay

INSPECTED AND APPROVED FOR ISSUE G.L. Buchanan

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

RECORD DRAWING AS CONSTRUCTED Frank Van Meter 2/3/83 R1

PRINT H 3 1
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1



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.

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1	—	7-10-79	TJL	JL		TJL			RFH		

MINOR REVISIONS

DSGN D. R. TABLER
DRWN H.V.HAUN / T.L. BINGHAM
CHKD T. J. LIPTAK
SUPV B.L. BOGGS
INSP
ENGINEER

CHATTANOOGA FLOOD PROTECTION PUMPING STATION NO. 3

WIRING DIAGRAMS A-C AUXILIARY POWER SCHEMATIC DIAGRAMS

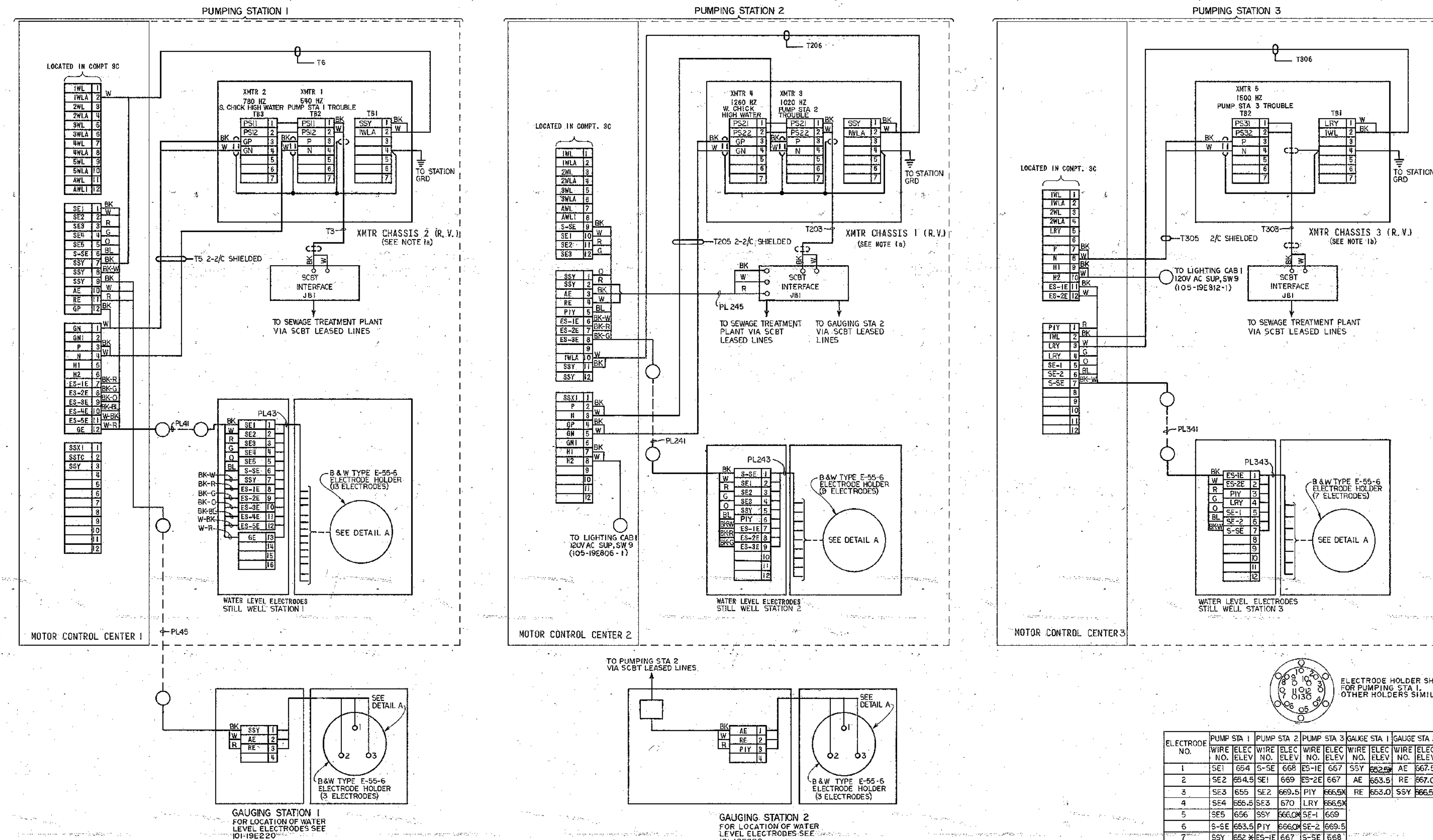
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert F. Hewitt	R.H. Herndon	John E. Holladay

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE | 1-31-77 | 81 | E | 105-19E513 | R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 2/7/83 R1



ELECTRODE HOLDER SHOWN FOR PUMPING STA 1. OTHER HOLDERS SIMILAR

ELECTRODE NO.	PUMP STA 1		PUMP STA 2		PUMP STA 3		GAUGE STA 1		GAUGE STA 2	
	WIRE NO.	ELEC ELEV	WIRE NO.	ELEC ELEV	WIRE NO.	ELEC ELEV	WIRE NO.	ELEC ELEV	WIRE NO.	ELEC ELEV
1	SE1	654	S-SE	668	ES-1E	667	SSY	652.5✱	AE	667.5
2	SE2	654.5	SE1	669	ES-2E	667	AE	653.5	RE	667.0
3	SE3	655	SE2	669.5	PIY	666.5✱	RE	653.0	SSY	666.5✱
4	SE4	655.5	SE3	670	LRY	666.5✱				
5	SE5	656	SSY	666.0✱	SE-1	669				
6	S-SE	653.5	PIY	666.0✱	SE-2	669.5				
7	SSY	652 ✱	ES-1E	667	S-SE	668				
8	ES-1E	652.5	ES-2E	667						
9	ES-2E	652.5	ES-3E	667						
10	ES-3E	652.5								
11	ES-4E	652.5								
12	ES-5E	652.5								
13	GE	652 ✱								

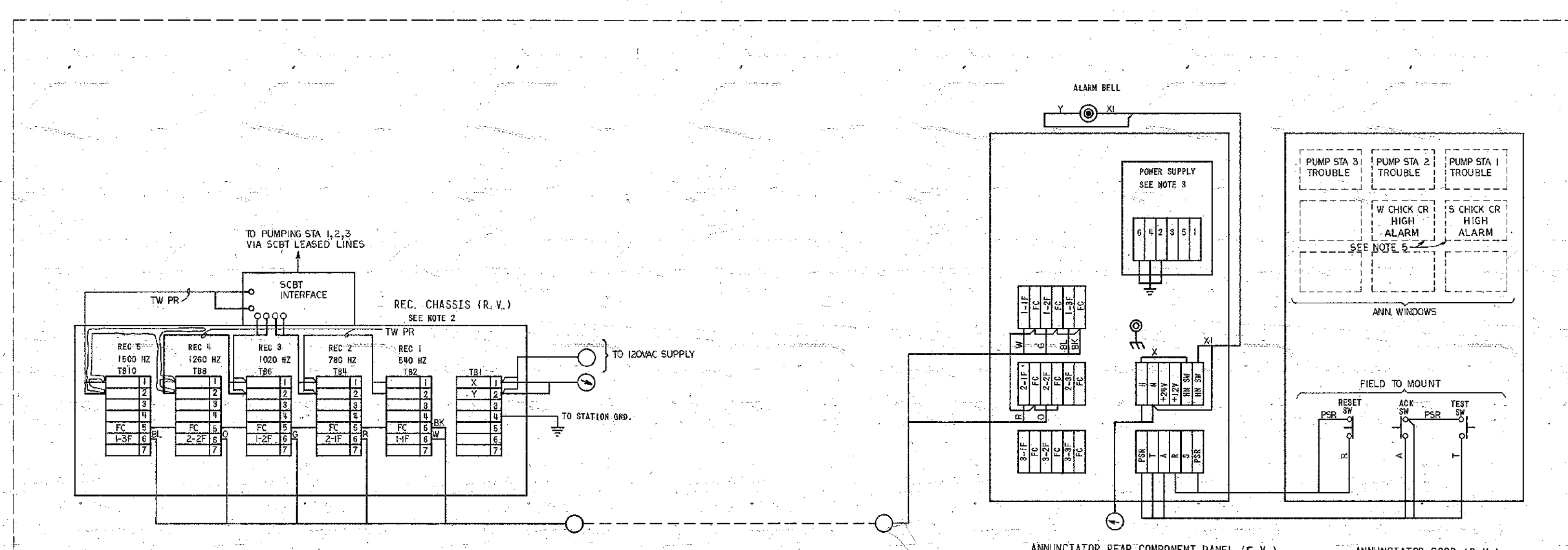
✱ GROUND ELECTRODE

DETAIL A

NOTES:

1. FOR XMTR AND PWR SUPPLY INTERNALS SEE TVA CONTRACT NO. 77K15-822428-1.
   a) DWG NO. CB-21423-1
   b) DWG NO. CB-21424-1
2. FOR REC. AND PWR SUPPLY INTERNALS SEE TVA CONTRACT NO. 77K15-822428-1, 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 1,2 & 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



LOCATED AT SEWAGE TREATMENT PLANT (SEE NOTE 3)

COMPANION DWGS: 105-19E520-2

REV NO.	ECN NO	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
2	—	9-25-81	CED	JT	GB	TJL			RFH	RHH	JEH
FLD CHG PER MEMO WHM TO JEH 4-3-81, TECHNICAL REPORT CA-1259.											
1	—	7-10-79	TJL	JT		TJL			RFH	RHH	JEH
MINOR REVISION											

DSGN D. HELMS
DRWN T.L. BINGHAM
CHKD Cecil A. Baldwin
SUPV R.H. WRIGHT
INSP
ENGINEER

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 Robert F. Hewitt | RECOMMENDED R.H. Herndon | APPROVED John E. Holladay

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 1-25-79 81 E 105-19E520-1 R2

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 2/7/83 R2

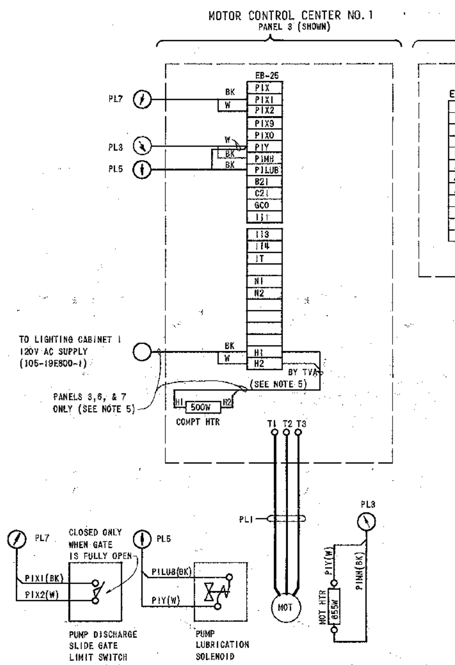
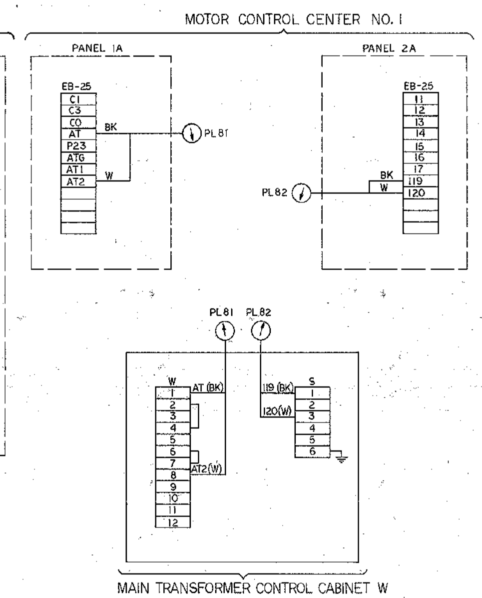


TABLE 1A

PUMP NO.	MCC PANEL 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

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



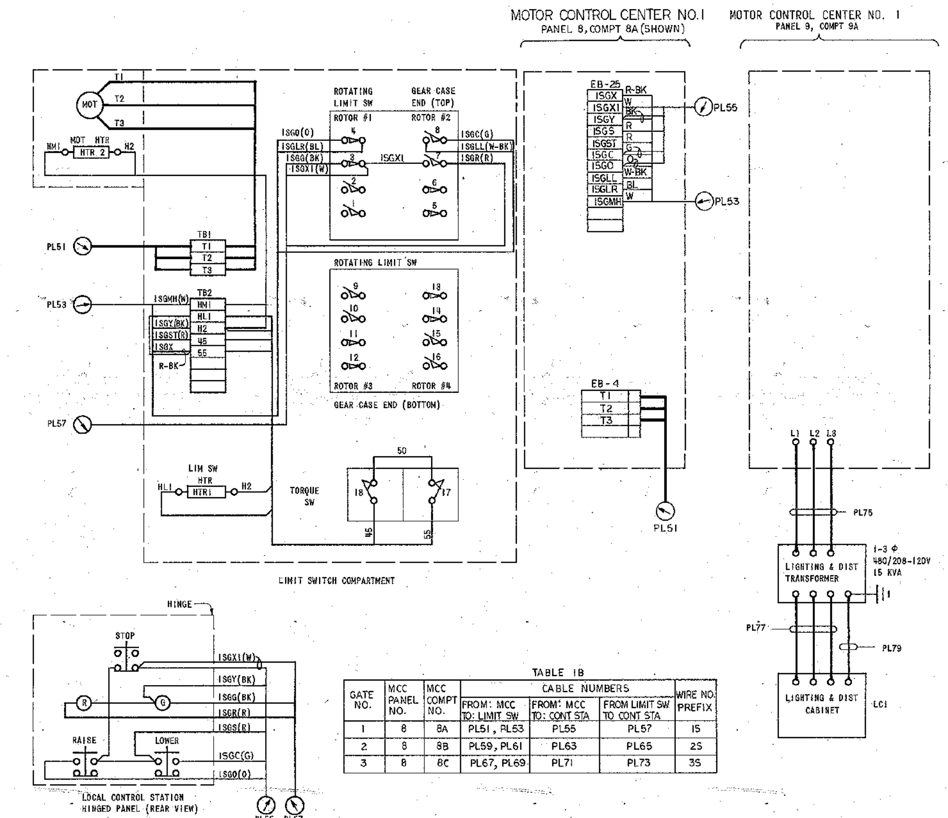
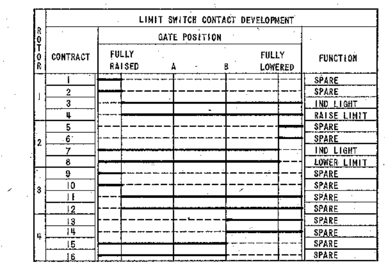


TABLE 1B

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	1S
2	8	8B	PL59, PL61	PL63	PL65	2S
3	8	8C	PL67, PL69	PL71	PL73	3S

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

LIGHTING & DISTRIBUTION



SWITCH DEVELOPMENT

PUMPING STATION NO. 1

NOTES:

1. FOR MANUFACTURER DETAILS OF MOTOR CONTROL CENTERS SEE DRAWINGS ON TVA CONTRACT 77K3-821901.
2. FOR MANUFACTURER DETAILS OF THE SLUICE GATE LIMIT SWITCH COMPARTMENT SEE TVA CONTRACT 77K73-821499, LIMITORQUE CORP. DRAWING 15-477-6542-3.
3. FOR MANUFACTURER DETAILS OF LIGHTING TRANSFORMERS & DISTRIBUTION CABINETS SEE DRAWINGS ON TVA CONTRACT 77K11-821910.
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

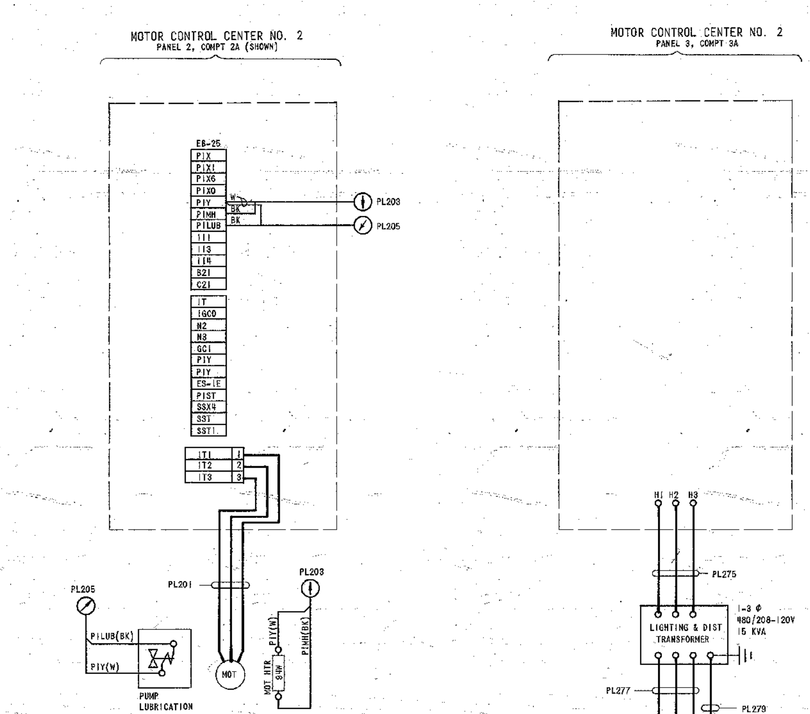


TABLE 2

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

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

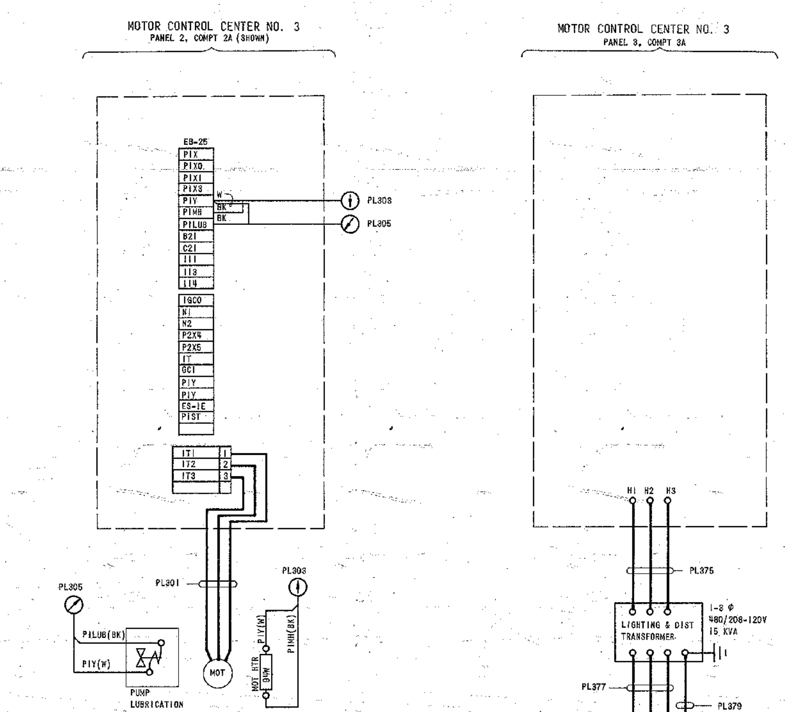


TABLE 3

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

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1	—	7-10-79	TJL	JT	CB	TJL			RFH	RHH	JEH

MINOR REVISION

DSGN D. HELMS
DRWN
CHKD D. T. DENNIS
SUPV R. H. WRIGHT
INSP
ENGINEER

SCALE EXCEPT AS NOTED

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

WIRING DIAGRAMS
A-C AUXILARY POWER
CONNECTION DIAGRAM

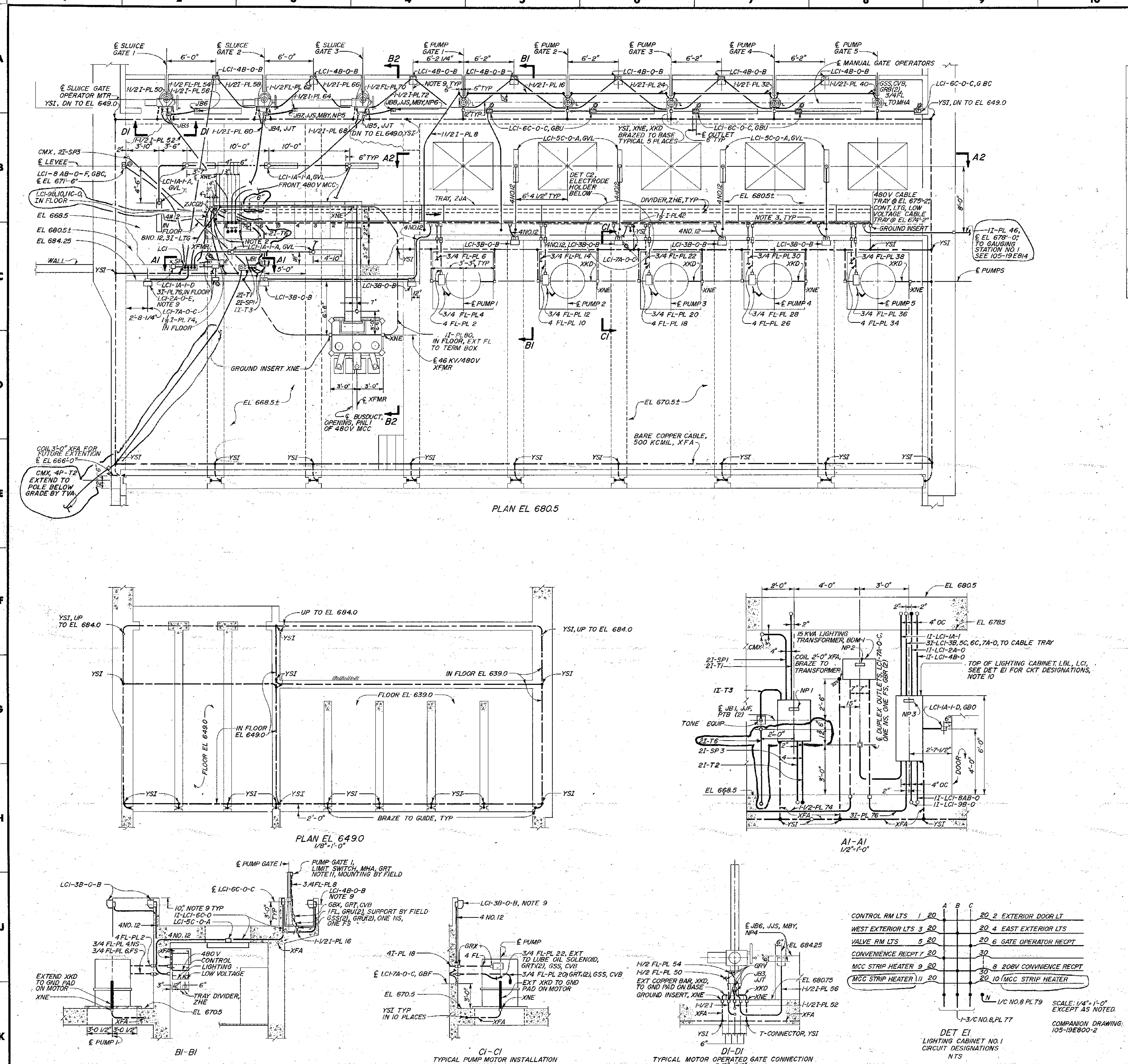
SOUTH CHICAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

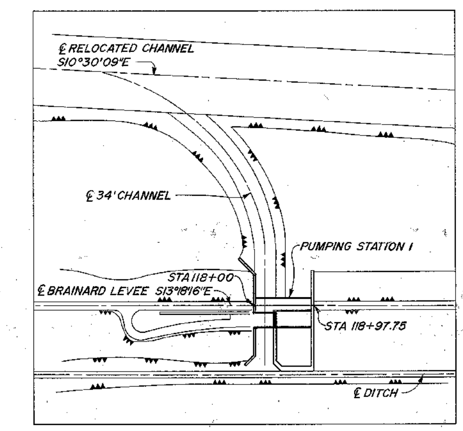
SUBMITTED Robert F. Hewitt — RECOMMENDED R. H. Herndon — APPROVED John E. Holladay

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 1-25-79 81 E 105-19E520-2 R1

RECORD DRAWING AS CONSTRUCTED Frank Van Meter 2/2/83 R1





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 1" 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 BUSSED 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 1/2" DIA THREADED RODS AND SPRING NUTS CONSTRUCTED IN A "TRAPEZE" OR "H" PATTERN, CINCH-ANCHORED TO THE CEILING WITH MIN 1/2" DIA CINCH-ANCHORS AND A MAXIMUM OF 8'-0" BETWEEN SUPPORTS. USE HOLDDOWN CLAMP, ZHK.
9. MOUNT OUTLET BOX, GVL, FOR ALL EXTERIOR LIGHTS ℄ 10" BELOW TOP OF WALL.
10. THE CIRCUIT INDEX CARD LOCATED ON LC1 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 B1-B1. 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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
3		9-5-78		JK	RTK	SRT	RWS		WHD	GD	JEH
MINOR REVISION											
2		11-3-77		D.C	EJW	FJW	RWS		WHD	GD	JEH
MINOR REVISION											
1		6-14-77		BCA	RTK	FJW	RWS		WHD	GD	JEH
MINOR REVISION											

DSGN R.T. KING
DRWN WILLIAM C. ALLEN
CHKD R.T. KING
SUPV E.J. WYATT
INSP
ENGINEER R.W. Stevenson

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 1

CONDUIT & GROUNDING & LIGHTING GENERAL ARRANGEMENT PLAN & DETAILS

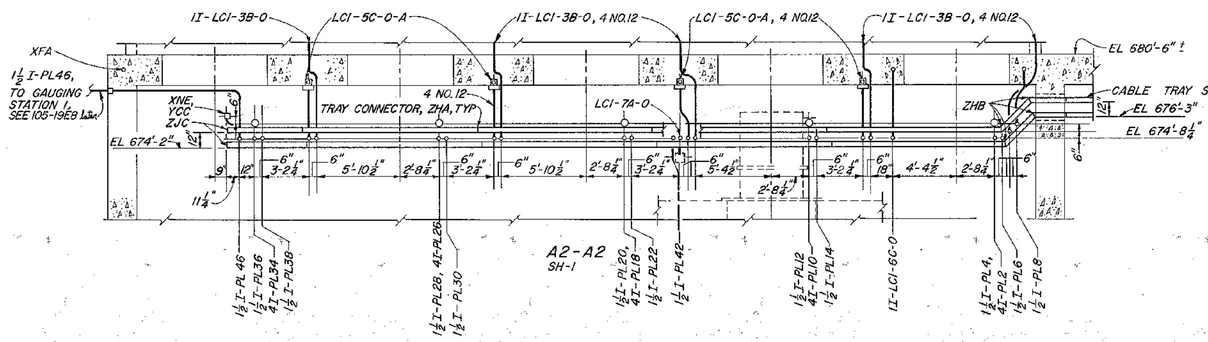
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
W.H. Dainwood	George Doubleday	John E. Holladay

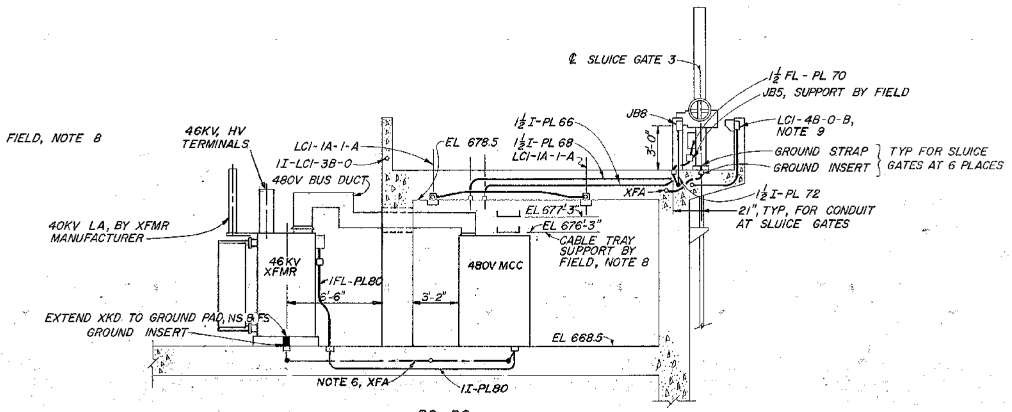
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 1-25-77 81 E 105-19E800-1 R3

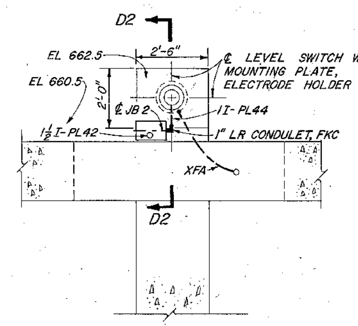
RECORD DRAWING AS CONSTRUCTED 7 Feb 83
FRANK VAN METER R3



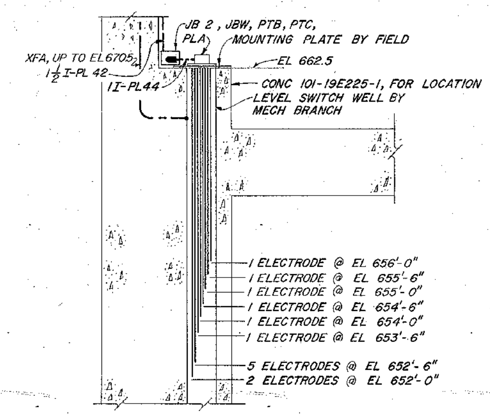
A2-A2
SH-1



B2-B2
SH-1, B4



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



D2-D2
½" = 1'-0"

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

NAME PLATE INDEX

NP NO.	TYPE*	NO. REQD	FIRST LINE	SECOND LINE	THIRD LINE
1	A	1	TEL TERM CAB.	——	JB1
2	A	1	——	480V/120-208V LTG XFMR	——
3	A	1	LIGHTING CABINET	LC1	3Ø-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 680.5	PULL BOX	—
5	JJT	6	6	6	PLAN EL 680.5	PULL BOX	—
6	JJS	6	6	6	SECT D1-D1	LOCAL CONT STA, SLUICE GATE 1	4
7	JJS	6	6	6	PLAN EL 680.5	LOCAL CONT STA, SLUICE GATE 2	5
8	JJS	6	6	6	PLAN EL 680.5	LOCAL CONT STA, SLUICE GATE 3	6

LIGHTING FIXTURE SCHEDULE

DESCRIPTION	MK LTR	A	B	C	D	E	F	MK LTR TOTALS
FIXTURE TYPES		A	B	C	D	E	F	
FIXTURE TOTALS		8	13	8	1	1	1	
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, 20A, 3W GROUNDING, HUBBELL 5362, FOR 120V USE	LRB7			1				8
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-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				8

SCALE: ¼" = 1' 0"
EXCEPT AS NOTED

COMPANION DRAWING:
105-19E800-1

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
2		11-3-77	DC	FJW	FJW	RWS	/	VHB	HD	JEH	MSB
MINOR REVISION											
1		6-14-77	BCA	RTK	FJW	RWS	/	WHD	HD	JEH	GLB
MINOR REVISION.											

DSGN R.T. KING
DRWN L.R. SPIVA
CHKD R.T. KING
SUPV F.J. WYATT
INSP
ENGINEER R.W. Stevenson

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. Daimwood	George Doubleday	John E. Holladay

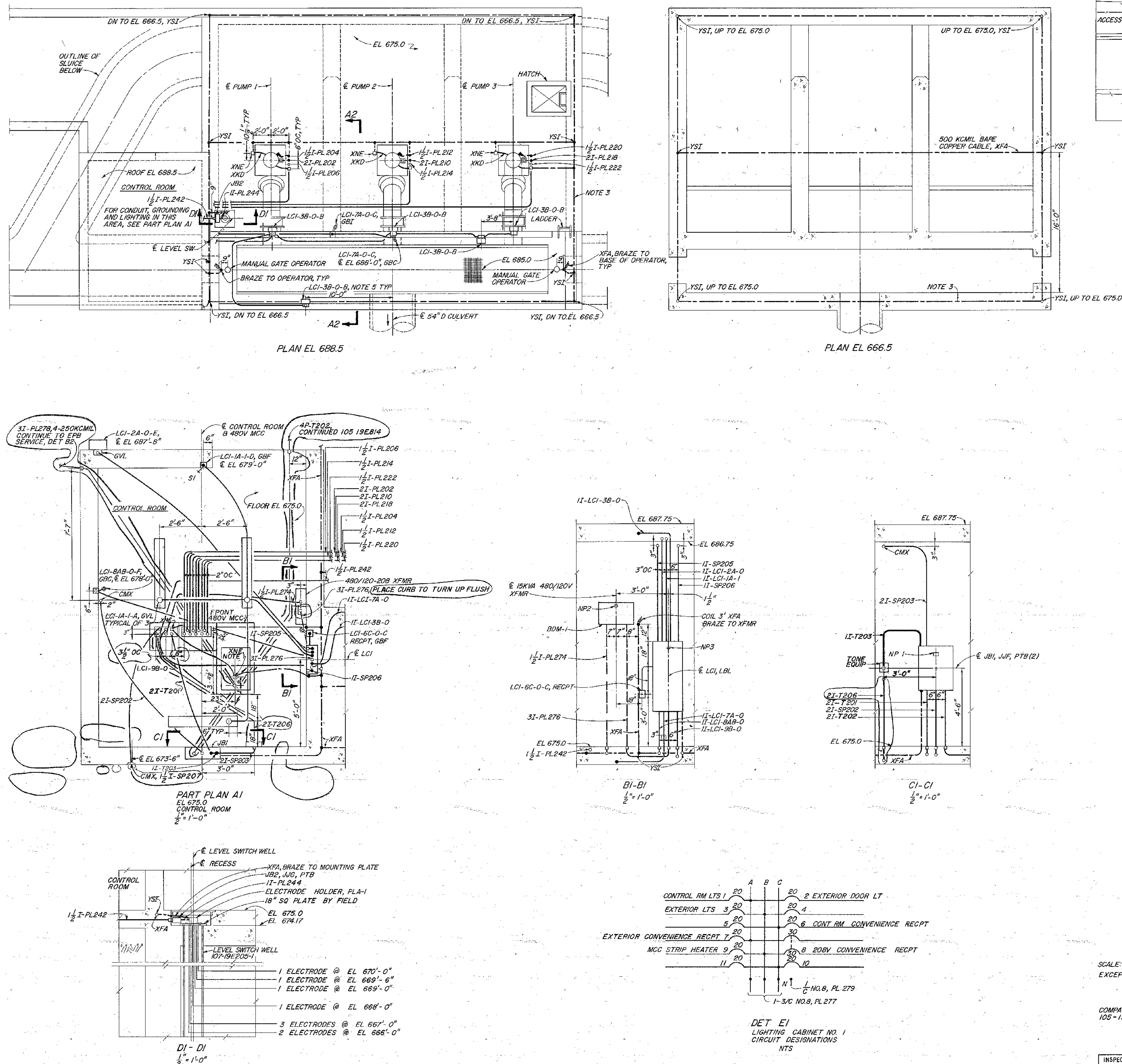
INSPECTED AND APPROVED FOR ISSUE

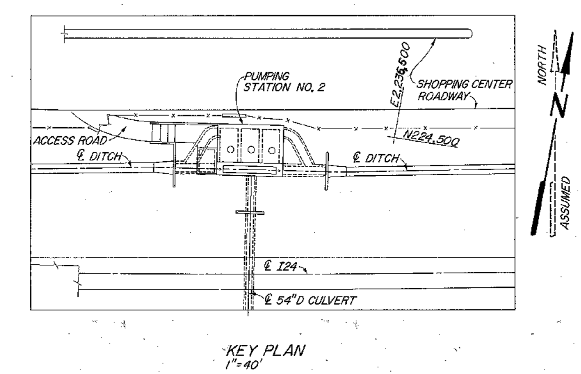
KNOXVILLE 1-25-77 81 E 105-19E800-2 R2

RECORD DRAWING AS CONSTRUCTED 7 Feb 83
FRANK VAN METER R2

PRINT	H	4	2
SIZE	F		

BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1





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 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 LC1 SHALL BE LABELED PER DETAIL E1.
7. FIELD TO GROUND ALL STRUCTURAL STEEL, EQUIPMENT FRAMES, AND MISC. STEEL.

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

SYMBOLS:

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

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

COMPANION DRAWING:
105-19E806-2

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
3		9-5-78	JK	RTK	SRT	RWS	/	WHD	AD	JEH
MINOR REVISION											
2		11-3-77	D.C.	FUB	FUB	RWS	/	WHD	AD	JEH
MINOR REVISION											
1		6-14-77	BCA	RTK	RW	RWS	/	WHD	AD	JEH
MINOR REVISION											

DSGN R. T. KING
DRWN L. R. SPIVA
CHKD R. T. KING
SUPV F.J. WYATT
INSP
ENGINEER R.W. Stevenson

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. Dainwood	George Doolittle	John E. Holladay

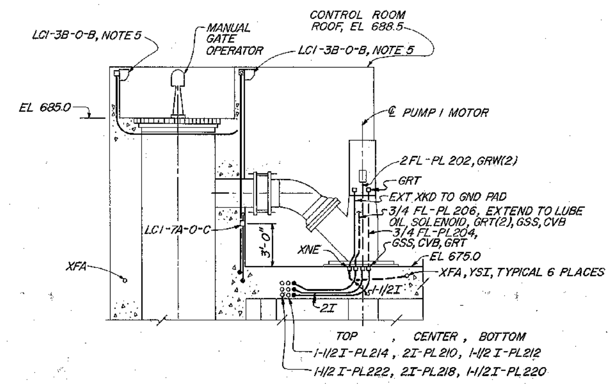
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 1-25-77 81 E 105-19E806-1 R3

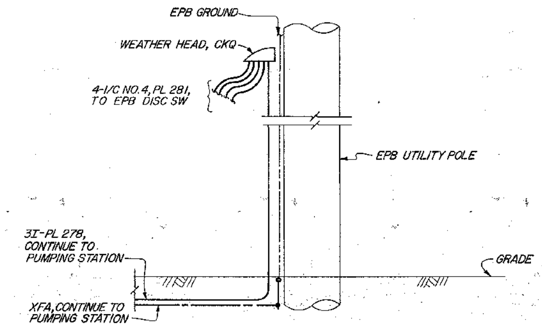
RECORD DRAWING AS CONSTRUCTED 7 Feb 83
FRANK VAN METER R3

PRINT H 7 2
SIZE F 3
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1

105 - 19E806-2 | E | 81



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	—	JB1
2	A	1	—	480/120-208V XFMR	—
3	A	1	—	LC1	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, PL241, PL243	—

LIGHTING FIXTURE SCHEDULE

DESCRIPTION	FIXTURE TYPES	A	B	C	D	E	F	MK LTR TOTALS
	FIXTURE TOTALS (MK LTR)	3	5	3	1	1	1	
WALL LIGHT 100W, HIGH PRESS. SODIUM, HOLOPHANE, 486-120.	LCK-1		1					5
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						3
LAMP, 40 W COOL WHITE, RAPID START, GE F40 CW.	LPA-1	2						6
LAMP 100 W, HIGH PRESS. SODIUM, MOGUL BASE, 120 V, GE LU100/BU	LPP-1		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 LR B-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
RECEPTALE COVER, CAST ALUMINUM SPRING DOORS WITH GASKET, FOR USE WITH LRB-7, HUBBELL 5206.	LVQ			1				3

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

COMPANION DRAWING:
105-19E806-1

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		6-14-77	BCA	RTK	FJW	RWS	/	WHD	BB	JEH

MINOR REVISION.

DSGN R. T. KING
DRWN R.S. WILLIAMS
CHKD R.T. KING
SUPV F.J. WYATT
INSP
ENGINEER R.W. Stevenson

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. Dainwood	George Doubleday	John E. Holladay

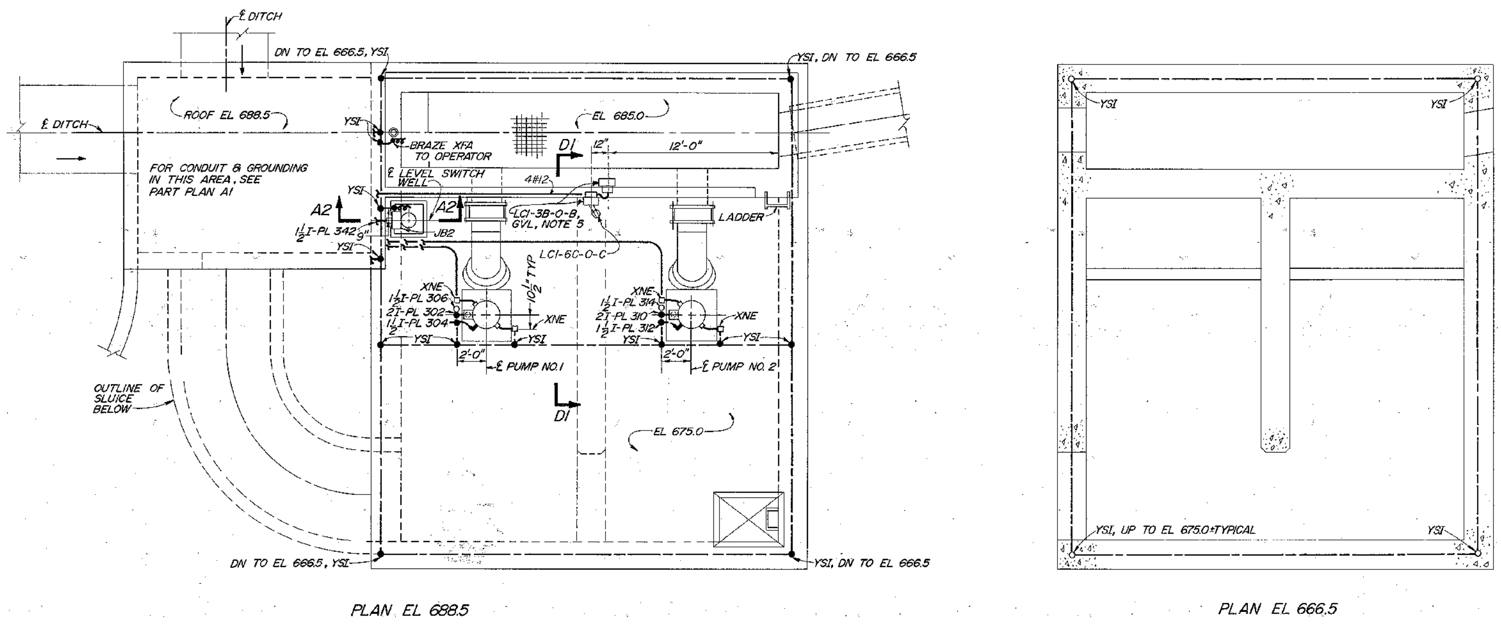
INSPECTED AND APPROVED FOR ISSUE: [signature]

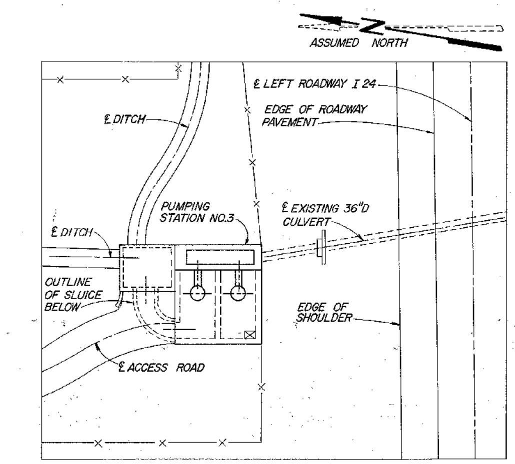
KNOXVILLE | 1-25-77 | 81 | E | 105-19E806-2 | R1

RECORD DRAWING AS CONSTRUCTED 7 Feb 83
FRANK VAN METER R1

PRINT	H				4	2
SIZE	F					

BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1





KEY PLAN
1" = 20'-0"

NOTES:

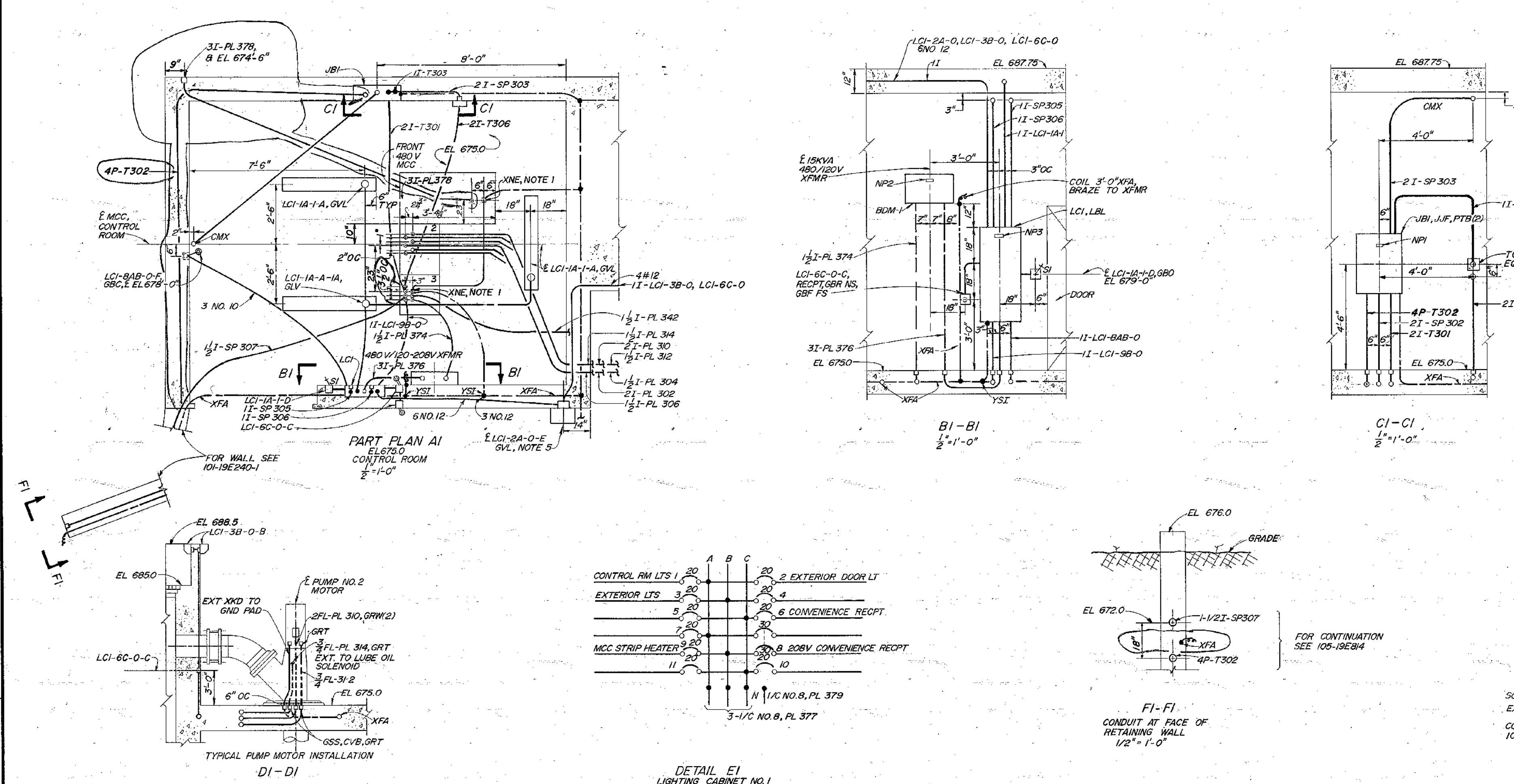
1. USE XFA, YCC TO CONNECT TO GROUND BUS IN BOARD.
2. ALL LIGHTING CIRCUITS ARE 1" IRON CONDUIT WITH 2C NO.12 AWG CABLE UNLESS OTHERWISE NOTED.
3. ALL GROUND CABLE IS 500KCMIL, XFA, UNLESS OTHERWISE NOTED.
4. LIGHTING BRANCH CIRCUIT CONDUCTORS ARE COLOR CODED; BLACK-PHASE A, RED-PHASE B, BLUE-PHASE C. 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

SYMBOLS:

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



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

COMPANION DRAWING: 105-19E812-2

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPY	ENGR	INSP	SUBM	RECM	APPR
4		9-5-78	RTK	JK	RTK	SRT	RWS		WHD		
RELOCATED PL 378, T302											
3		8-1-78	RTK	JK	SRT	SRT	RWS		WHD		
MINOR REVISION											
2		11-3-77		D.C.	FJW	FJW	RWS		WHD		
MINOR REVISION											
1		6-14-77		BCA	RTK	FJW	RWS		WHD		
MINOR REVISION.											

DSGN R.T. KING
DRWN C.L. YOUNG
CHKD R.T. KING
SUPV F.J. WYATT
INSP
ENGINEER R.W. Stevenson

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION NO. 3

CONDUIT & GROUNDING & LIGHTING GENERAL ARRANGEMENT PLAN & DETAILS

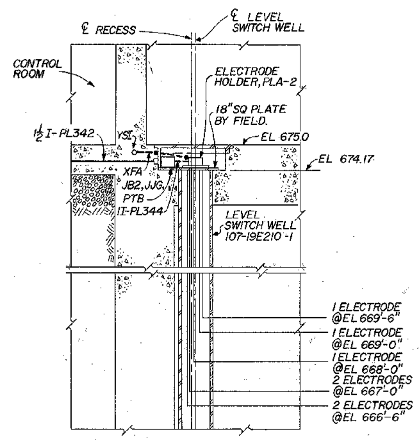
SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
W.H. Daimwood	George Doubleday	John E. Holloway

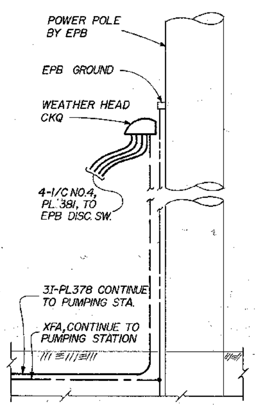
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 1-25-77 | 81 | E | 105-19E812-1 | R 4

RECORD DRAWING AS CONSTRUCTED 7 Feb 83 FRANK VAN METER R4



A2 - A2
SH 1, B3
$\frac{1}{2}"$ = 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	———	LC1	3φ 4W, 120-208V.

*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, PL341, PL343	—

LIGHTING FIXTURE SCHEDULE

DESCRIPTION	MARK LTR	A	B	C	D	E	F	MARK LTR TOTALS
FIXTURE TOTALS		3	2	2	1	1	1	
WALL LIGHT, 100W, HIGH PRESS. SODIUM, HOLOPHANE, 486-120	LCK-1		1					2
WALL LIGHT, 100W, HIGH PRESS. SODIUM, WITH PHOTO CONTROL, HOLOPHANE, 487-120	LCK-2					1		1
FLORESCENT UNIT 2-40W, SURFACE MOUNTED, DAY BRITE, 48240-4.	LHD	1						3
LAMP, 40W COOL WHITE, RAPID START, GE F40 CW.	LPA-1	2						6
LAMP, 100W, HIGH PRESS. SODIUM, MOGUL BASE, 120V, GE LU100/BU	LPP-1		1			1		3
DUPLEX RECEPTACLE, 2P, 20A, 3W GROUNDING HUBBELL 5362, FOR 120 V USE.	LRB-7			1				2
RECEPTACLE, 2P-3W GROUNDING, HUBBELL 9330, FOR 208V USE.	LRB-8						1	1
COVER PLATE WITH SPRING DOOR COVER, FOR USE WITH LRB-8, CAST ALUMINUM, CROUSE-HINDS DS-1030G.	LRB-9						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: $\frac{1}{4}"$ = 1'-0"
EXCEPT AS NOTED

COMPANION DRAWING:
105-19E812-1

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		6-14-77	BCA	RTK	JJW	RWS	/	WHD	GD	JEH	
MINOR REVISION.											

DSGN R.T. KING
DRWN J.A. WINTER
CHKD R.T. KING
SUPV F.J. WYATT
INSP
ENGINEER R.W. Stevenson

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

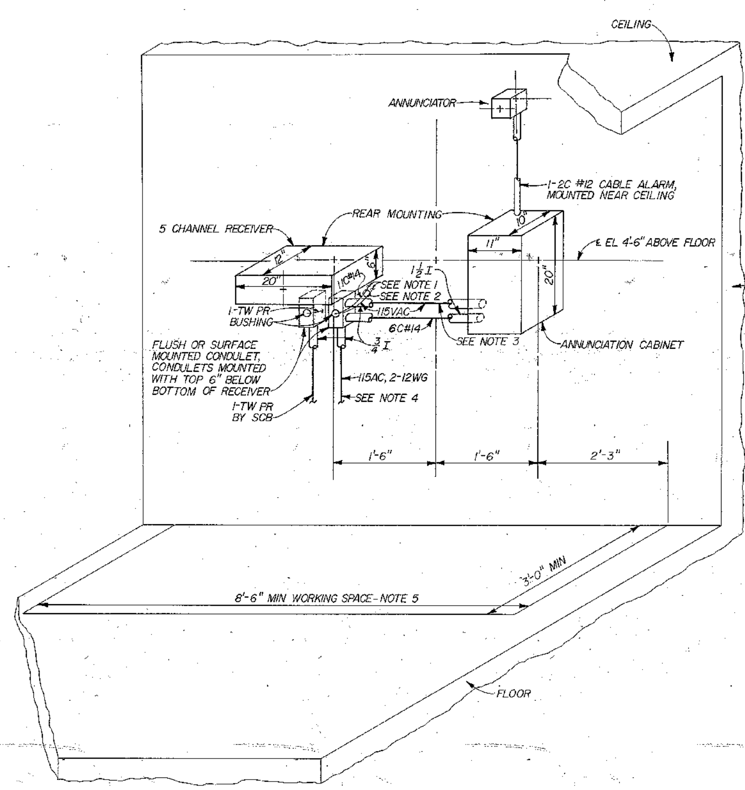
SUBMITTED	RECOMMENDED	APPROVED
W.H. Dainwood	George D. Dudley	John E. Holladay

INSPECTED AND APPROVED FOR ISSUE

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

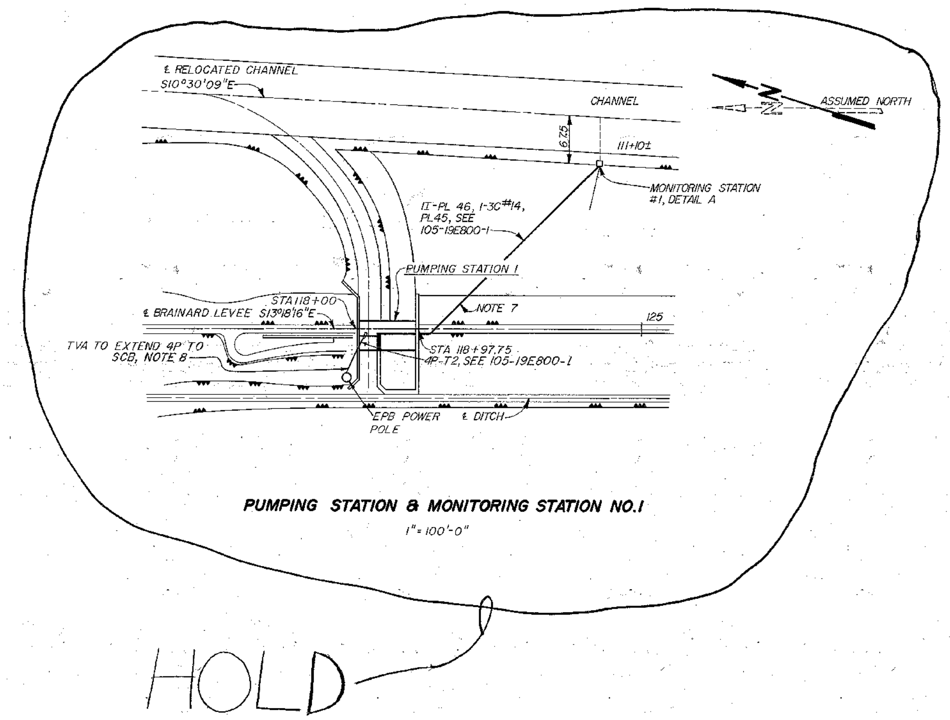
RECORD DRAWING AS CONSTRUCTED 7-7-83
FRANK VAN METER R1

PRINT H 4 2
SIZE F
BR. OR PROJ ME EE CE AD CD ED ND BF SW BL PA
PRINTS REQD-R 1



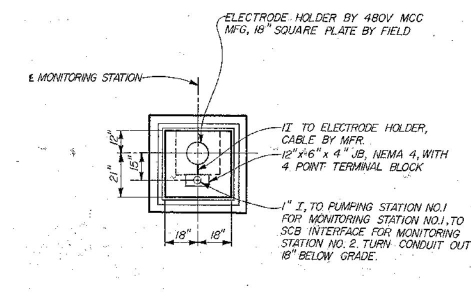
CENTRAL CONTROL CENTER

WORKING SPACE REQUIREMENTS
1"=1'-0"



PUMPING STATION & MONITORING STATION NO.1

1"=100'-0"



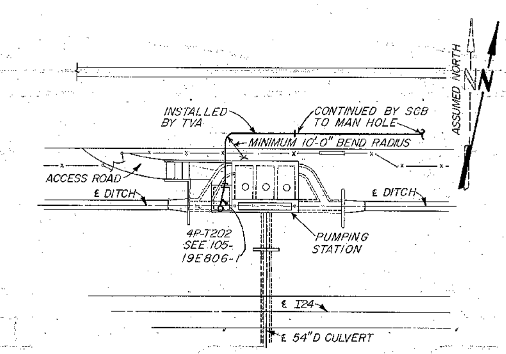
DETAIL A

MONITORING STATIONS 1 & 2, NOTE 6
$\frac{3}{8}$"=1'-0"

NOTES:

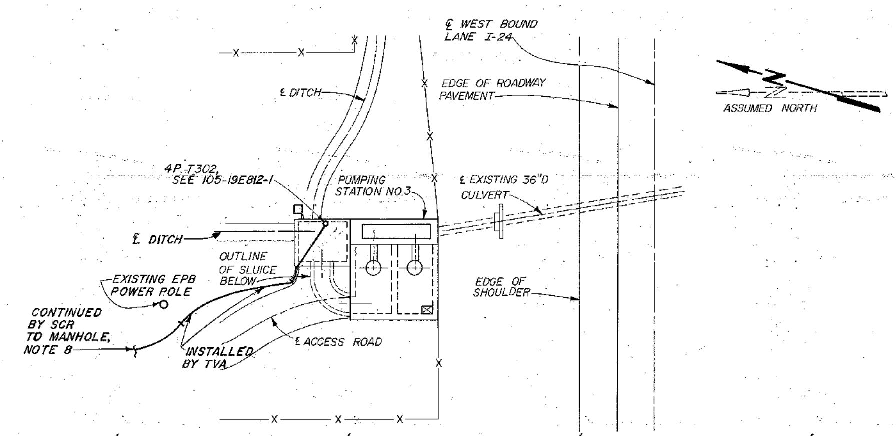
1. RUN EXPOSED TO RECEIVER
2. 115V AC AND TEL (1-TW-PR) 1-11C CABLE, STA GND CONDUCTOR TO ANN. CABINET.
3. 1-11 COND CABLE, 115V AC (2-# 12AWG) SPLICED TO FEEDER IN JB, STA GND CONDUCTOR.
4. 115V AC, 60 HZ FEEDER FUSED FOR 15A, STA GND CONDUCTOR.
5. WORKING SPACE MAY BE OCCUPIED BY REMOVABLE EQUIPMENT.
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
105-19E520 ___ 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	ENGR	INSP	SUBM	RECM	APPD

DSGN R. KING
DRWN D.E. MELLON
CHKD B.J. KING
SUPV S.R. THOMAS
INSP
ENGINEER 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. Dunwoody	George Doubleday	John E. Holladay

INSPECTED AND APPROVED FOR ISSUE: G.L. Buchanan A.

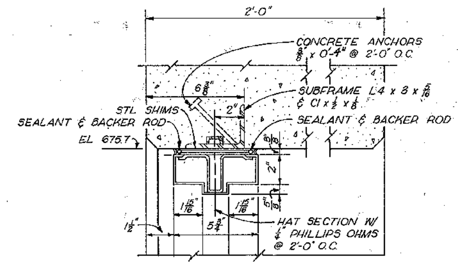
KNOXVILLE | 9-5-78 | 81 | E | 105-19E814 | R0

RECORD DRAWING AS CONSTRUCTED 7-7-83 FRANK VAN METER R0

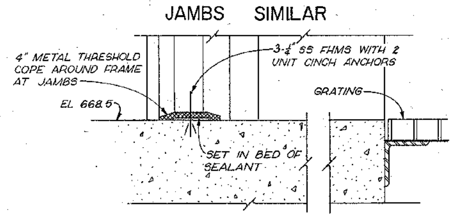
PRINT H 7
SIZE F 3
BR OR PROJ ME EE CE AD CD ED MD HPP SW BL PA
PRINTS REQD-R

DOOR AND HARDWARE SCHEDULE

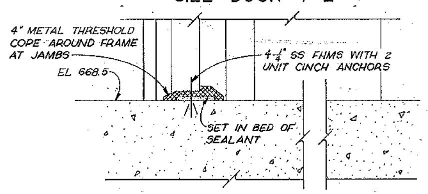
OPN'G NO.	DRAWING NO.	DOOR TYPE	NO. DOOR IN OPNG	MATERIAL DR FR	MATERIAL DOOR	DOOR OPENING WIDTH	DOOR OPENING HEIGHT	DOOR THKNS	FRAME DET NO.	SIDE FROM WHICH SECURITY IS DESIRED	HAND OF DOOR	LOCK	OPERATION	KEY	SADDLE TYPE	DOOR STOPS	HINGES	DOOR CHECKS	FLUSH BOLTS	FIRE LABEL	W STRIP	ELEC STRIKE	DEFEAT SWITCH	CARD READER	ALARM	REMARKS	OPN'G NO.
1-1	101-19E225-2	A	2	HM	HM	5'-0"	7'-0"	1 3/4"	A1	OUTSIDE	RHRB	540 5/8"	KNOB EA SIDE, OUTSIDE KNOB BY KEY	1	115-S	—	3 PR FBB 199-4 1/2 x 4 1/2	1-P2596H (ACT LEAF) 1-T7522 (INACT LEAF)	2-298, 12"	—	—	—	—	—	—	—	1-1
1-2	101-19E225-2	A	1	HM	HM	3'-0"	7'-0"	1 3/4"	A1	OUTSIDE	RH	540 5/8"	KNOB EA SIDE, OUTSIDE KNOB BY KEY	1	115	—	1 1/2 PR FBB 199-4 1/2 x 4 1/2	P2596H	—	—	—	—	—	—	—	—	1-2
2-1	101-19E235-1	A	2	HM	HM	5'-0"	7'-0"	1 3/4"	B1	OUTSIDE	RHRB	540 5/8"	KNOB EA SIDE, OUTSIDE KNOB BY KEY	1	115-S	—	3 PR FBB 199-4 1/2 x 4 1/2	1-P2596H (ACT LEAF) 1-T7522 (INACT LEAF)	2-298, 12"	—	—	—	—	—	—	—	2-1
3-1	101-19E240-1	A	2	HM	HM	5'-0"	7'-0"	1 3/4"	B1	OUTSIDE	RHRB	540 5/8"	KNOB EA SIDE, OUTSIDE KNOB BY KEY	1	115-S	—	3 PR FBB 199-4 1/2 x 4 1/2	1-P2596H (ACT LEAF) 1-T7522 (INACT LEAF)	2-298, 12"	—	—	—	—	—	—	—	3-1



HEAD
JAMBS SIMILAR

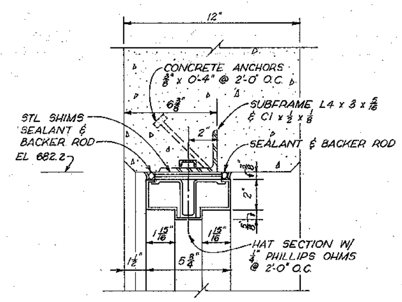


SILL DOOR 1-2

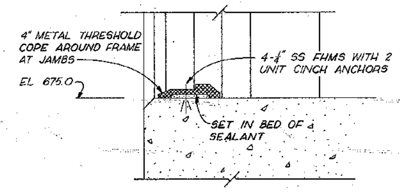


SILL DOOR 1-1

DETAIL A1
3"=1'-0"

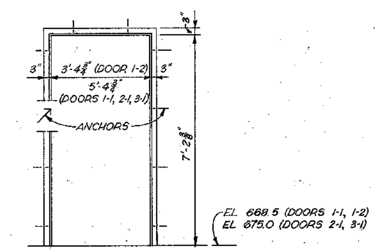


HEAD
JAMBS SIMILAR

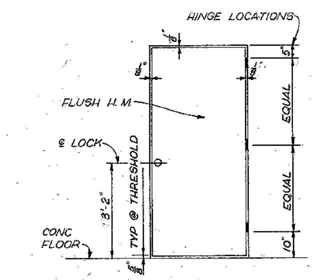


SILL

DETAIL B1
3"=1'-0"



SUBFRAMES
1/2"=1'-0"



DOOR CLEARANCES
DOOR-TYPE A SHOWN
1/2"=1'-0"

SCALE AS NOTED

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

DSGN
DRWN J. M. MUSICK
CHKD J. C. LONGMIRE
SUPV J. C. LONGMIRE
INSP
ARCHITECT A. Maston Jones

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 A. Maston Jones
RECOMMENDED L. V. Gibney
APPROVED

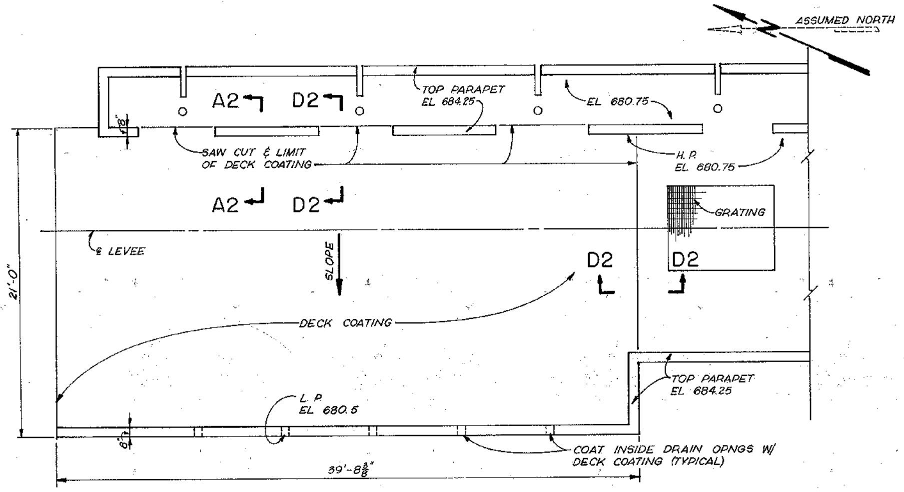
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 3-22-77 81 A 106-19E200-1 R0

RECORD DRAWING AS CONSTRUCTED

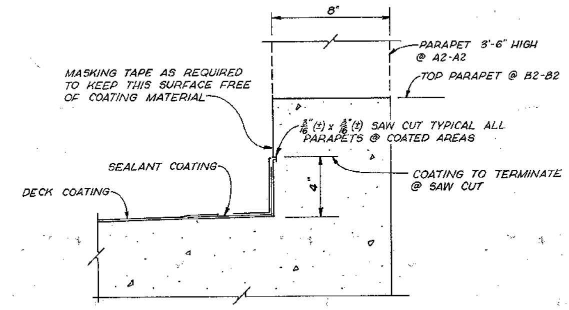
PRINT H 2 4 2 2
SIZE F 1 1
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R0

81 | A | 106-19E200-2



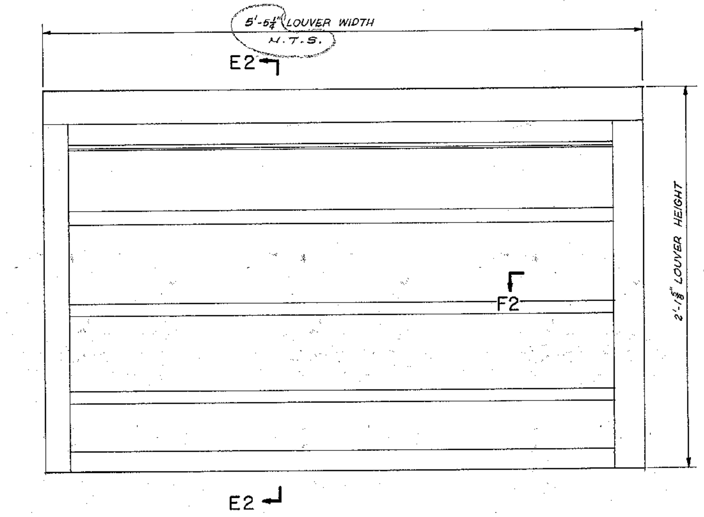
PART PLAN - EL 684.25

PUMPING STATION NO. 1

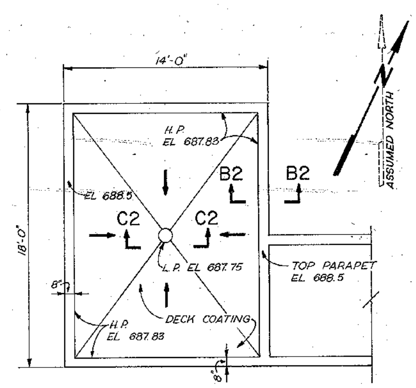


SECTION A2-A2 & B2-B2

3" = 1'-0"

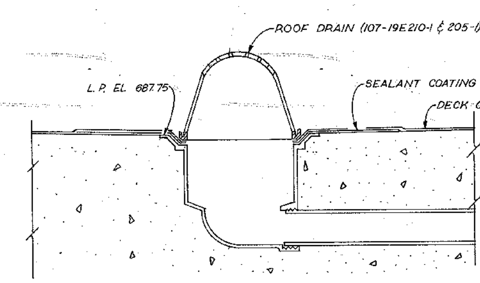


ELEVATION LOUVER - TYPE A



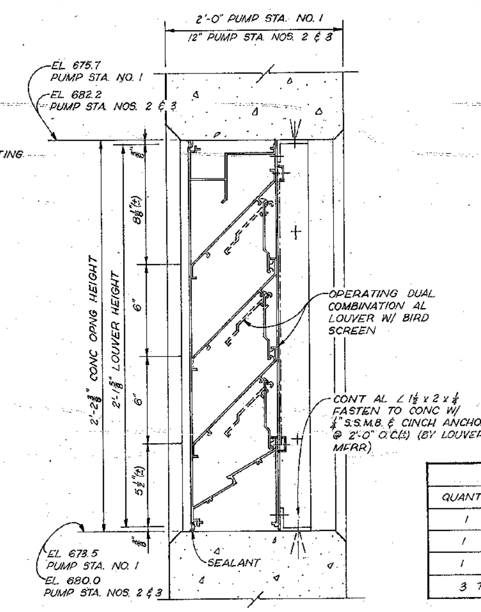
PART PLAN - EL 688.5

PUMPING STATION NO. 2

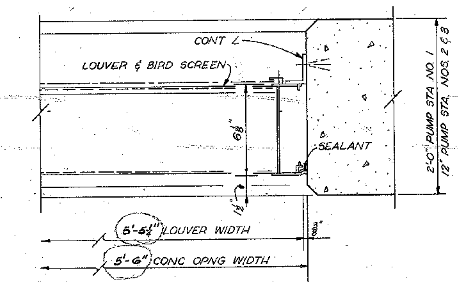


C2-C2

3" = 1'-0"

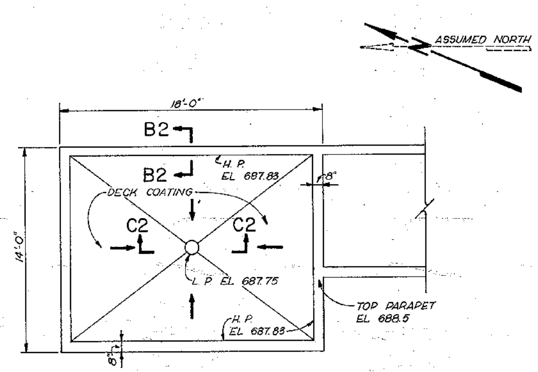


E2-E2



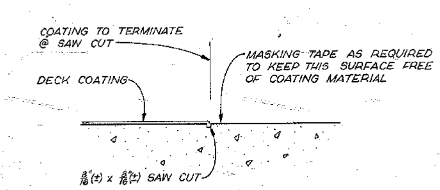
F2 - F2

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

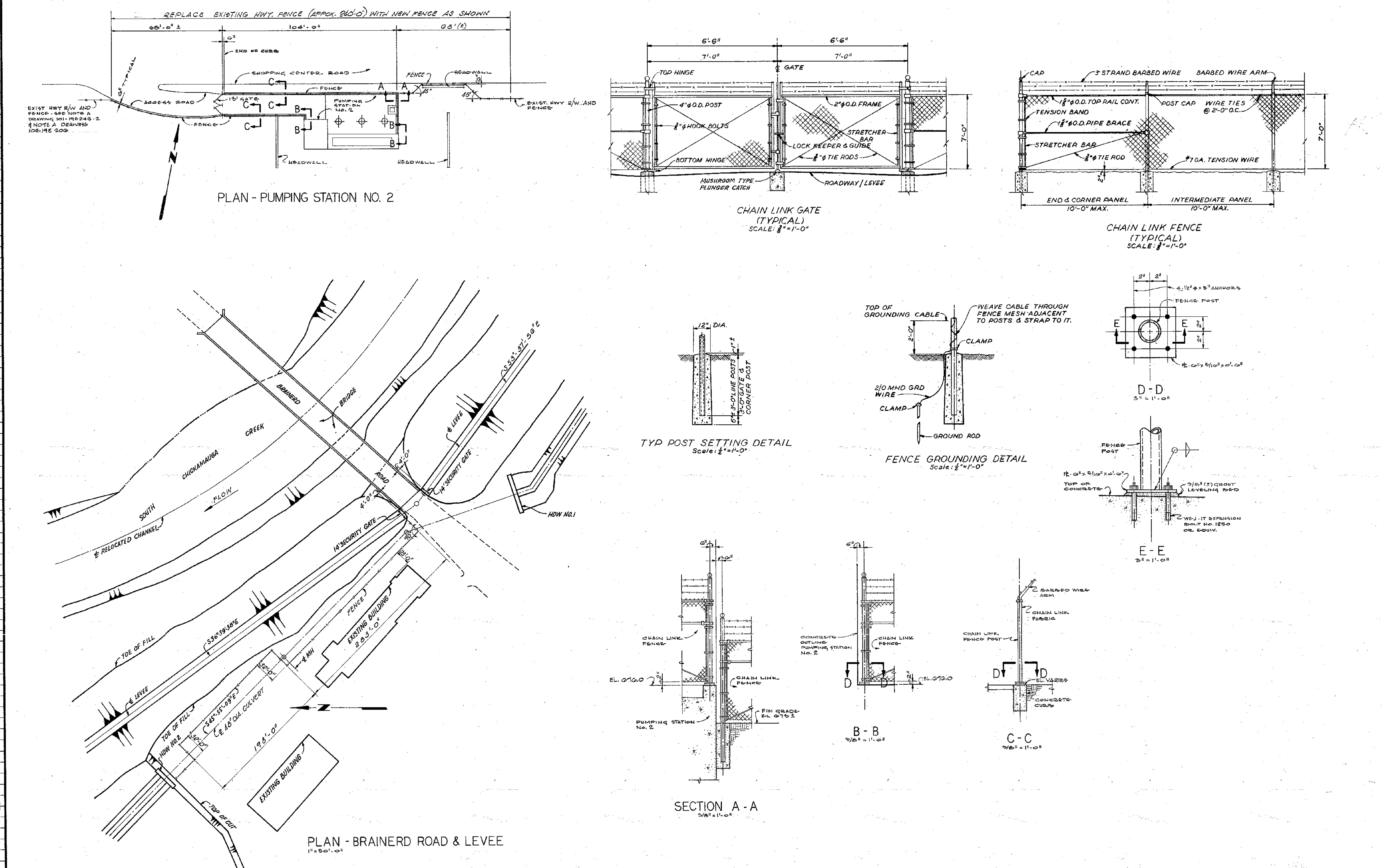
SUBMITTED A. Maston Jones | RECOMMENDED L. V. Gebney | APPROVED

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



COMPANION DRAWING:
106-19E206

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

DSGN H. FRINCKE
DRWN H. FRINCKE
CHKD J. C. LONGMIRE
SUPV J. C. LONGMIRE
INSP
ARCHITECT

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

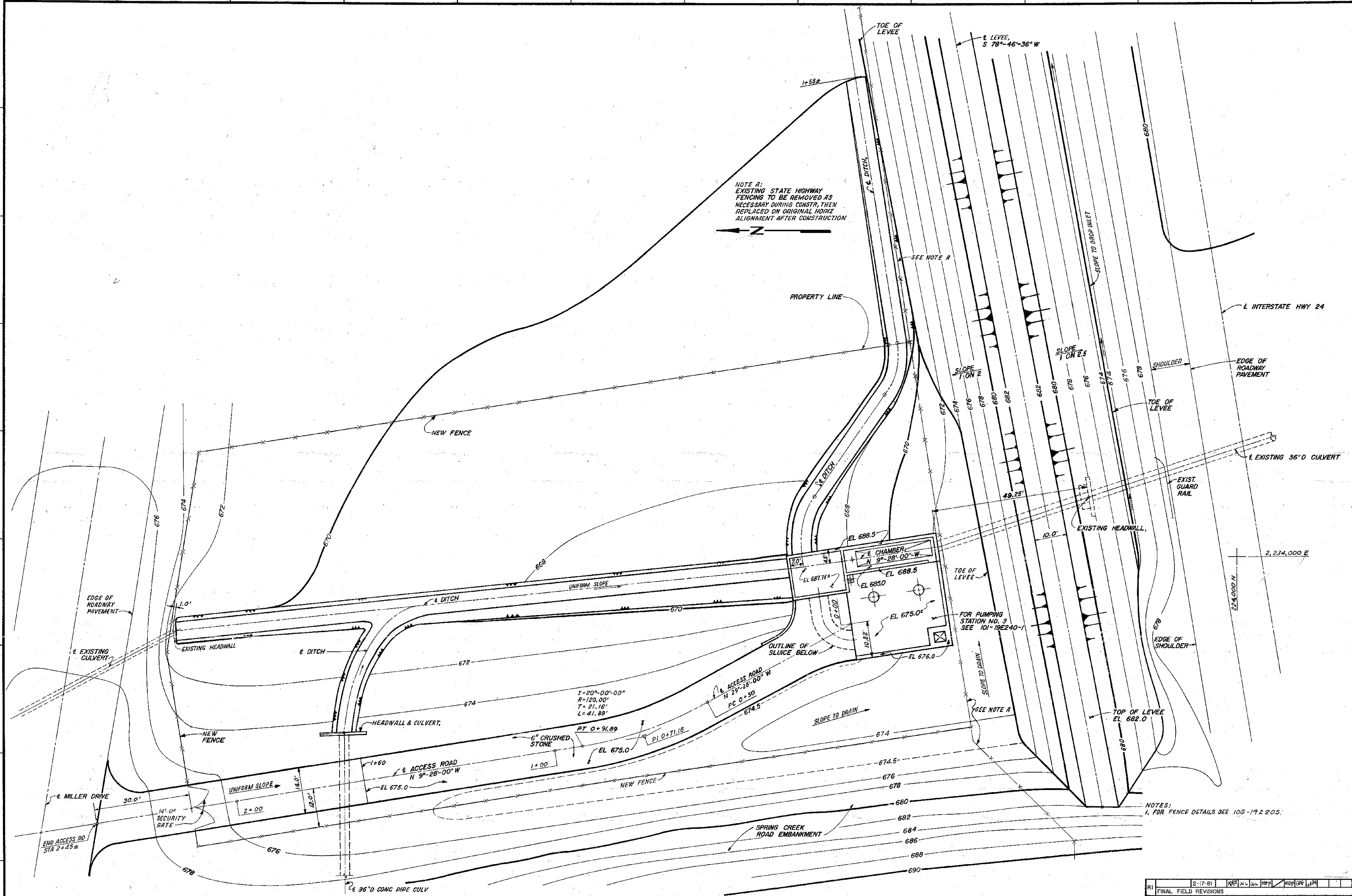
SUBMITTED | RECOMMENDED | APPROVED

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 6-9-78 81 A 106-19E205 R0

RECORD DRAWING AS CONSTRUCTED

PRINT H 2 4 2
SIZE F 3
BR OR PROJ ME EE CE AD CD ED MD HPP SW BL PA
PRINTS REQD-R 0



PLAN

SCALE 1"=10' EXCEPT AS NOTED

COMPANION DRAWING: 106-19E205

R1		2-17-81													
	FINAL FIELD REVISIONS														
REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR				DPM

DSGN H. FRINCKE
DRWN H. FRINCKE
CHKD J.C. LONGMIRE
SUPV J.C. LONGMIRE
INSP
ARCHITECT A. Marton Jones

CHATTANOOGA FLOOD PROTECTION
CHAIN LINK FENCE

ARCHITECTURAL
PLAN-PUMPING STATION NO. 3

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED A. Marton Jones | RECOMMENDED | APPROVED

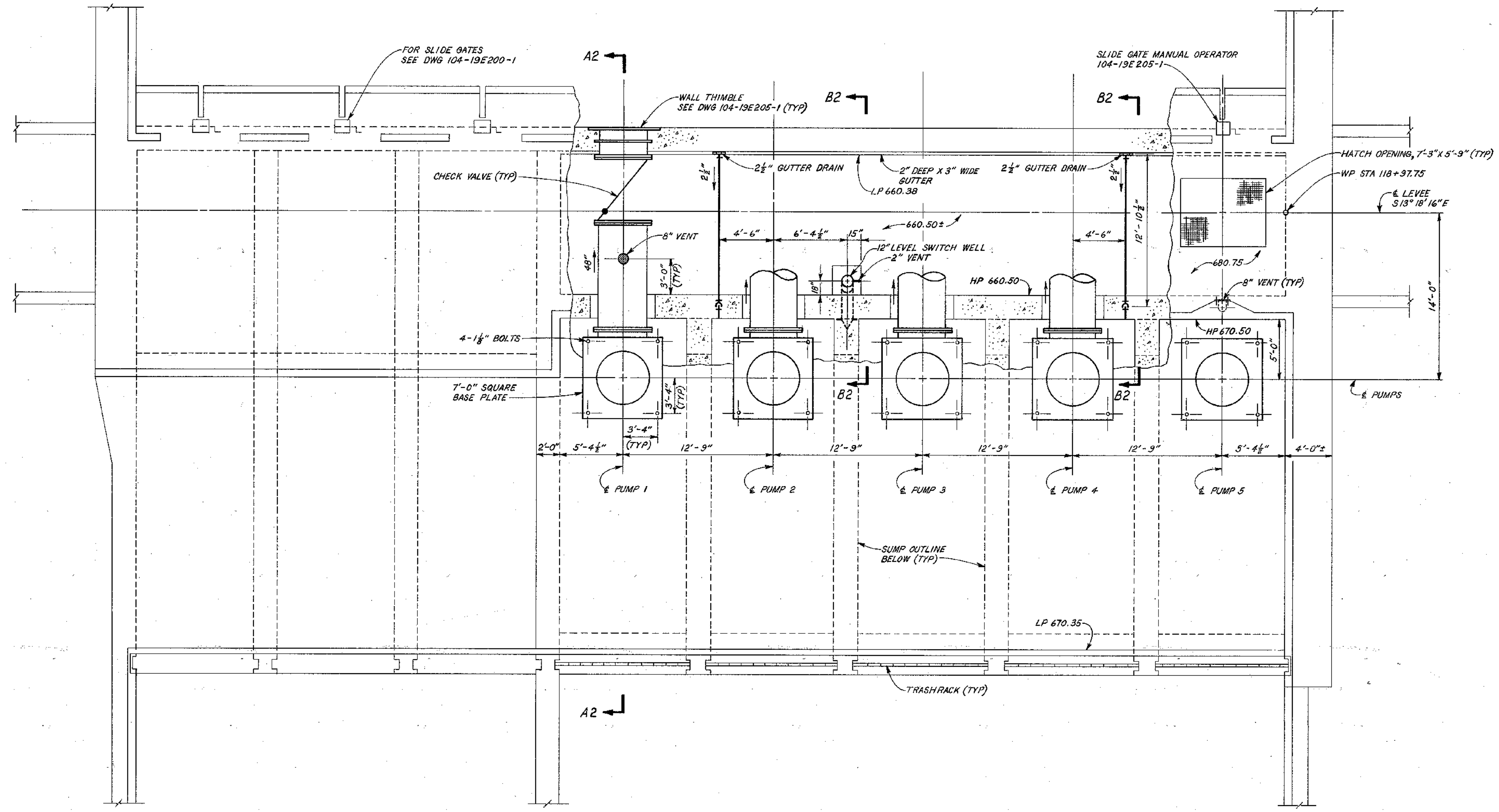
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 6-9-78 | 81 | A | 106-19E206 R1

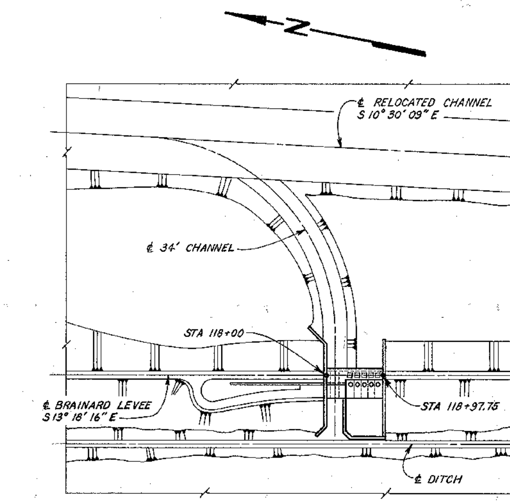
RECORD DRAWING AS CONSTRUCTED
Frank Van Meter R1 JAN 27, 1981

PRINT	#		-			4	2
SIZE	F					3	

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

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

DSGN R. C. PLETZ–M. L. SUTPHIN
DRWN C. L. YATES
CHKD N. M. COWAN
SUPV R. C. PLETZ
INSP
ENGINEER H. A. Mouger

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

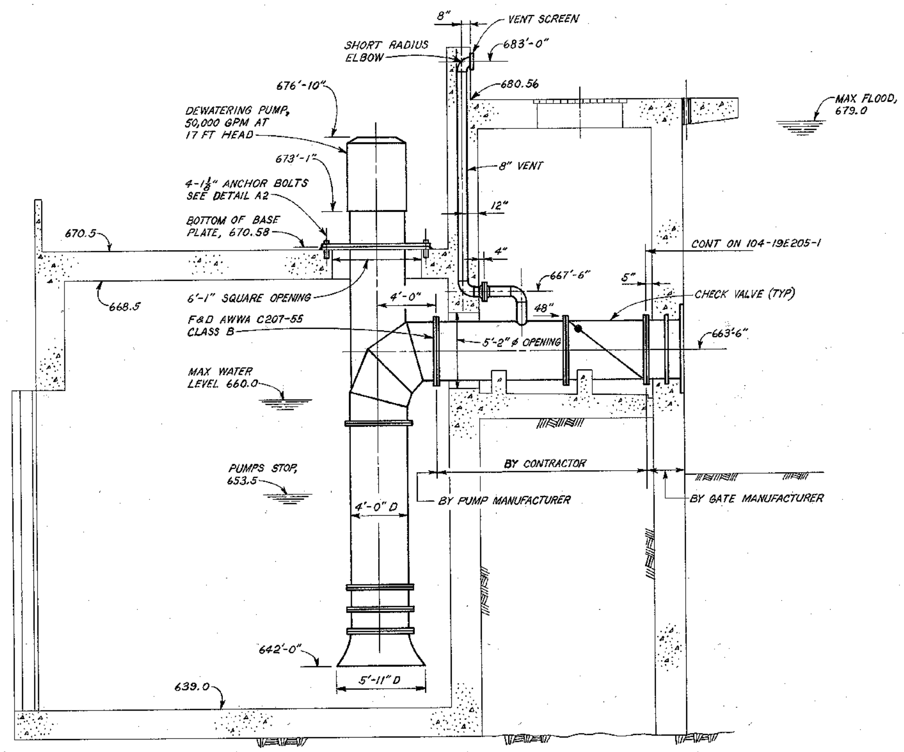
SUBMITTED	RECOMMENDED	APPROVED
J. C. Kirkland	G. L. Ford	S. Kesler

INSPECTED AND APPROVED FOR ISSUE

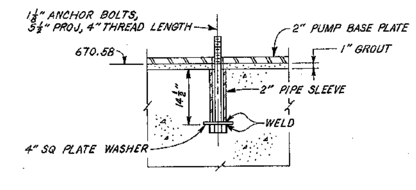
KNOXVILLE 2-24-77 81 M 107-19E200-1 R0

RECORD DRAWING AS CONSTRUCTED

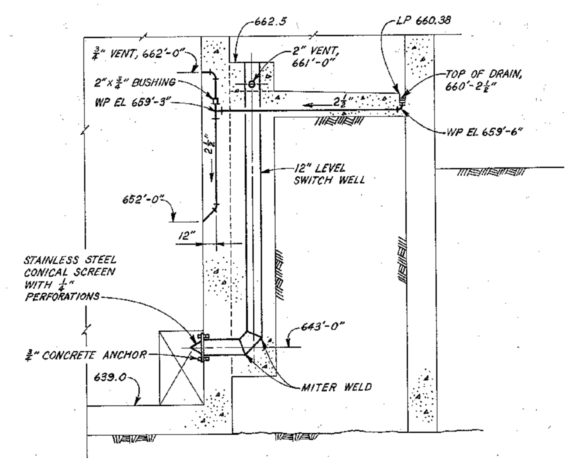
PRINT H 4 2 3
SIZE F
BR OR PROJ ME EE CE AD CD ED MD HPP SW BL PA
PRINTS REQD-R 0
P2-1



SECTION A2-A2



DETAIL A2
NTS



B2-B2

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

DSGN R.C. PLETZ – M.L. SUTPHIN
DRWN C.L. YATES
CHKD N. M. COWAN
SUPV R.C. PLETZ
INSP
ENGINEER H. A. Manger

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

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION I

MECHANICAL
PUMPS AND PIPING
ARRANGEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

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

INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 2-24-77 | 81 | M | 107-19E200-2 RO

RECORD DRAWING AS CONSTRUCTED

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SIZE F
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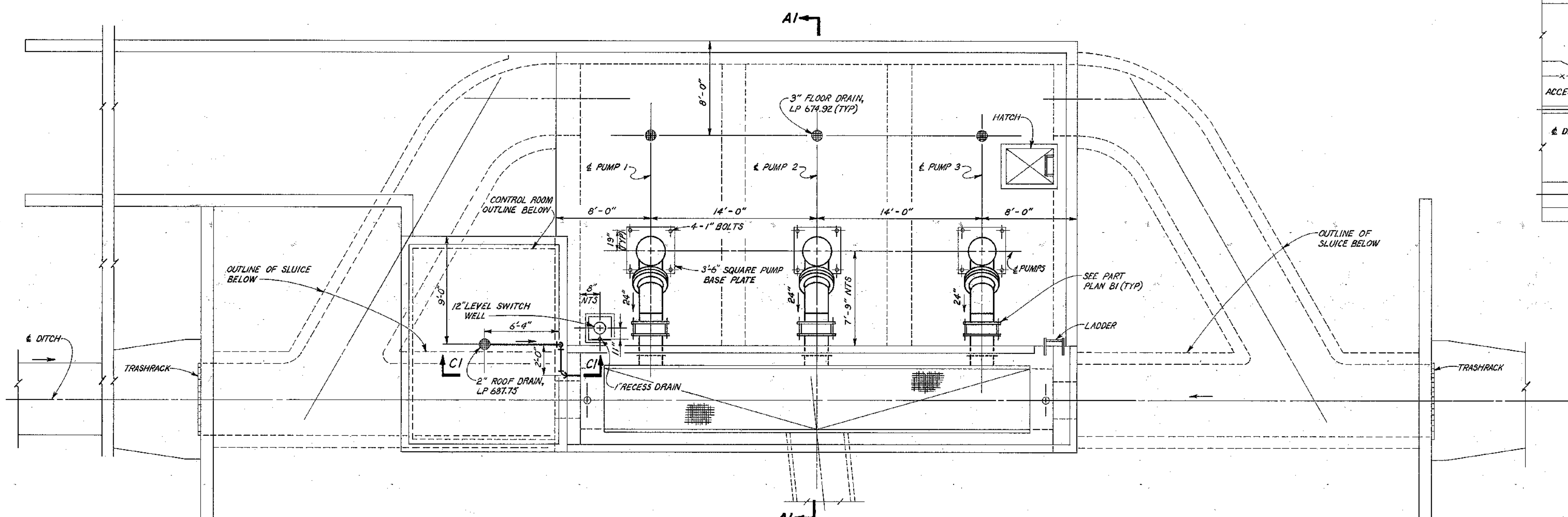
PRINTS REQD-R O

81 M 107-19E200-2



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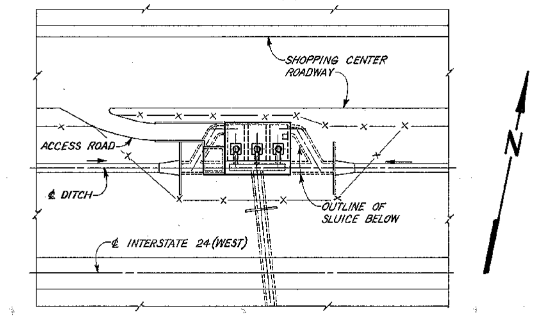
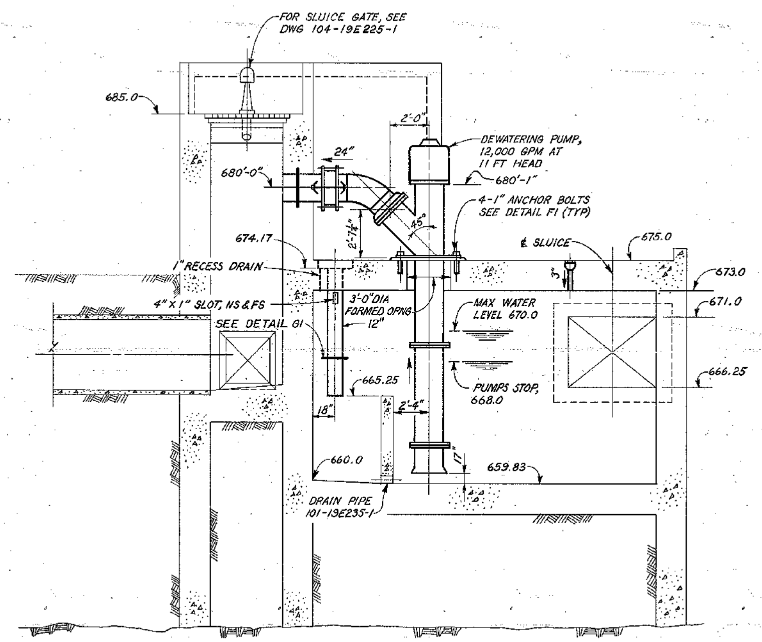


KEY PLAN
NTS



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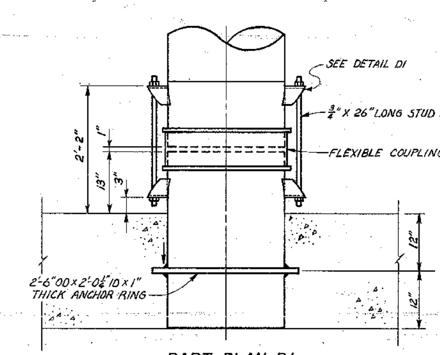

PART PLAN B1
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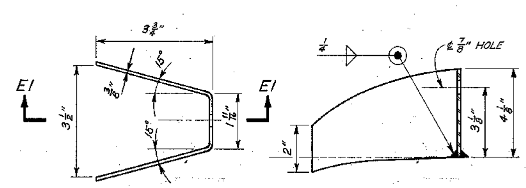
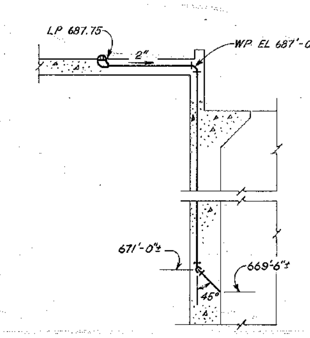


DETAIL D1
NTS

E1-E1



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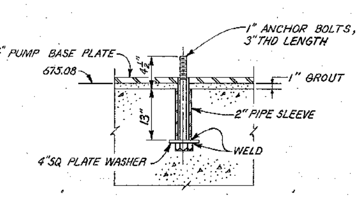
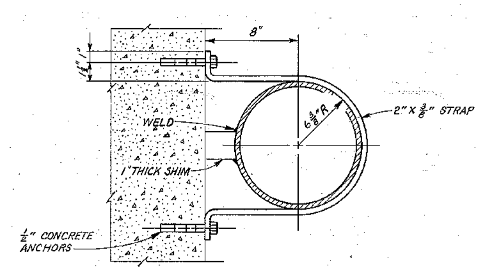


DETAIL F1
NTS

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.



DETAIL G1
NTS

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

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

DSGN R. C. PLETZ - M. L. SUTPHIN
DRWN C. L. YATES
CHKD N. M. COWAN
SUPV R. C. PLETZ
INSP
ENGINEER H. A. Mouger

CHATTANOOGA FLOOD PROTECTION
PUMPING STATION 2

MECHANICAL PUMPS AND PIPING ARRANGEMENT

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

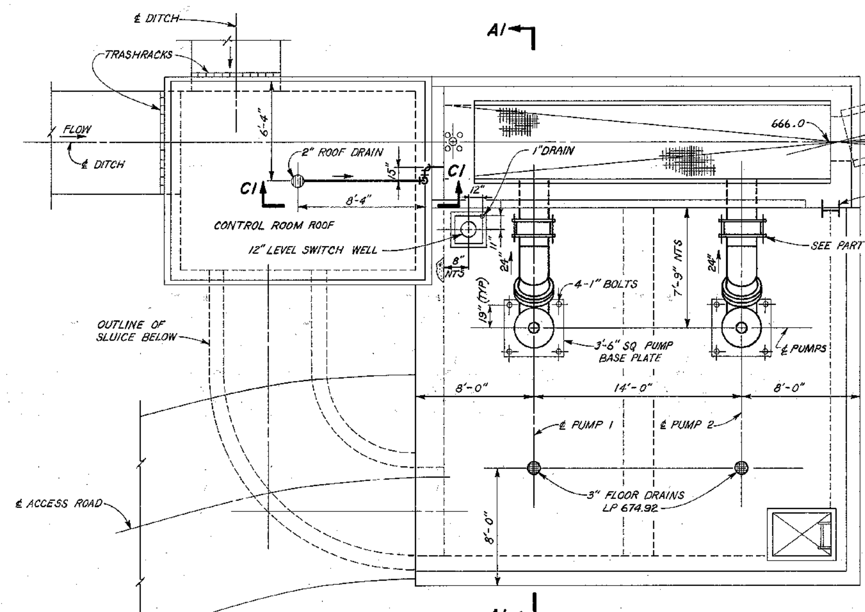
SUBMITTED / RECOMMENDED / APPROVED

INSPECTED AND APPROVED FOR ISSUE

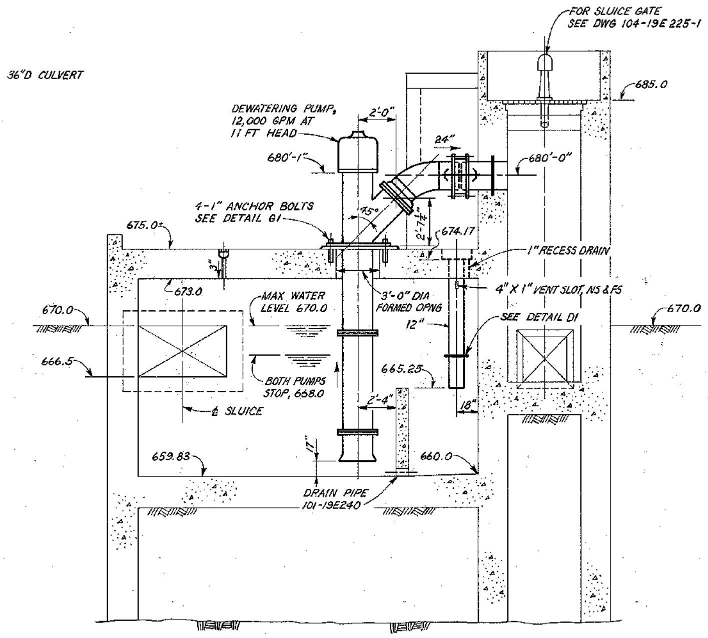
KNOXVILLE 2-24-77 81 M 107-19E205-1 R0

RECORD DRAWING AS CONSTRUCTED

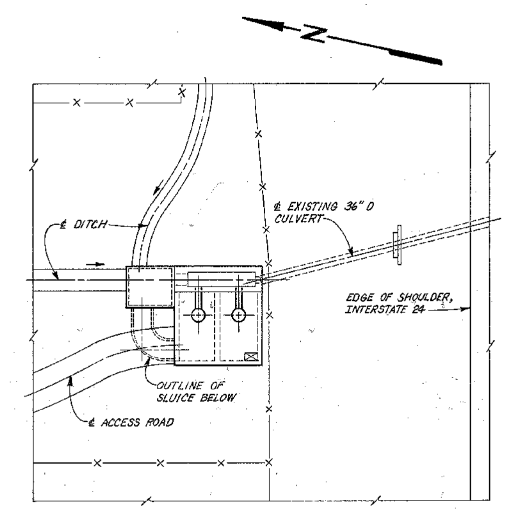
PRINT H 4 2 3
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 0



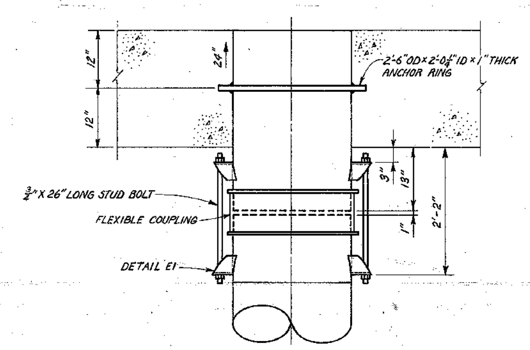
PLAN EL 675.0



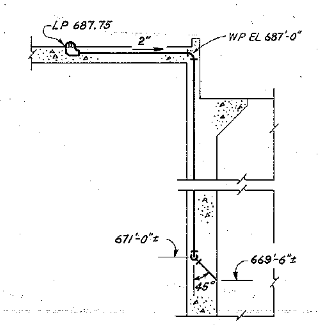
A1-A1



KEY PLAN
NTS



PART PLAN B1
1" = 1'-0"



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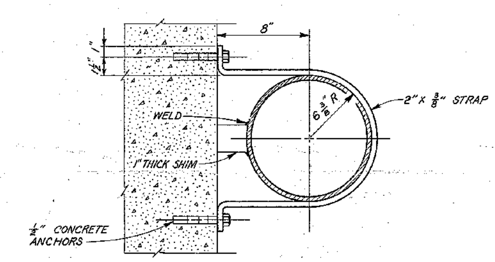
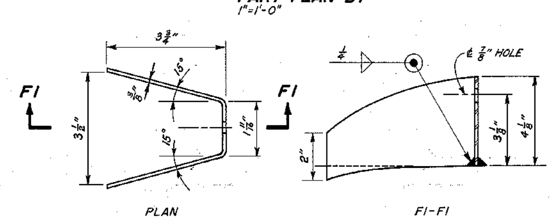


DETAIL D1
NTS



DETAIL E1
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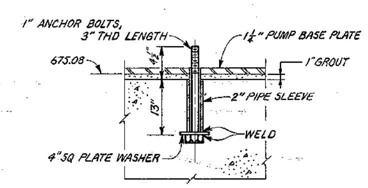


DETAIL G1
NTS

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 76K31-821060.

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

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

DSGN R. C. PLETZ – M. L. SUTPHIN
DRWN C. L. YATES
CHKD N.M. COWAN
SUPV R.C. PLETZ
INSP
ENGINEER H. A. Menger

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
[signature]	[signature]	[signature]

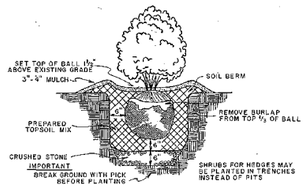
INSPECTED AND APPROVED FOR ISSUE [signature]

KNOXVILLE 2-24-77 | 81 | M | 107-19E210-1 R0

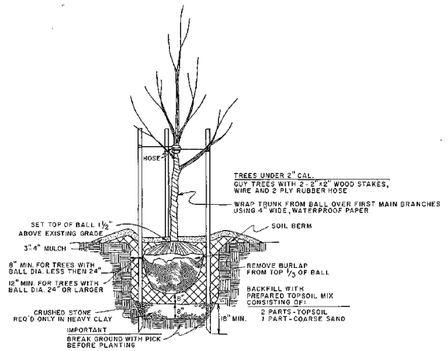
RECORD DRAWING AS CONSTRUCTED

PRINT H 4 2 3
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 0

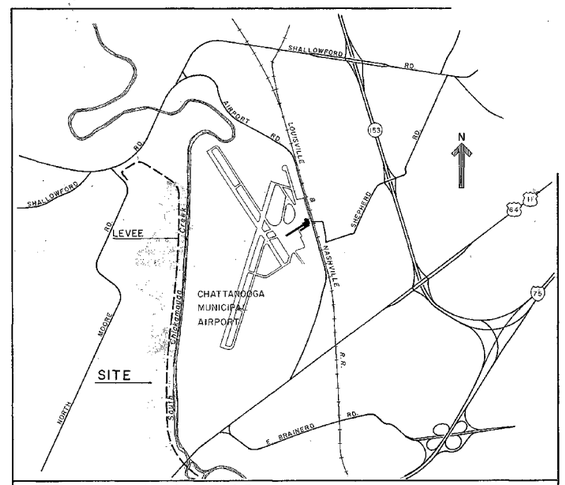
LEGEND	
MATERIAL	SYM.
EXISTING TREES	
PROPOSED TREES	
PROPOSED SHRUBS	



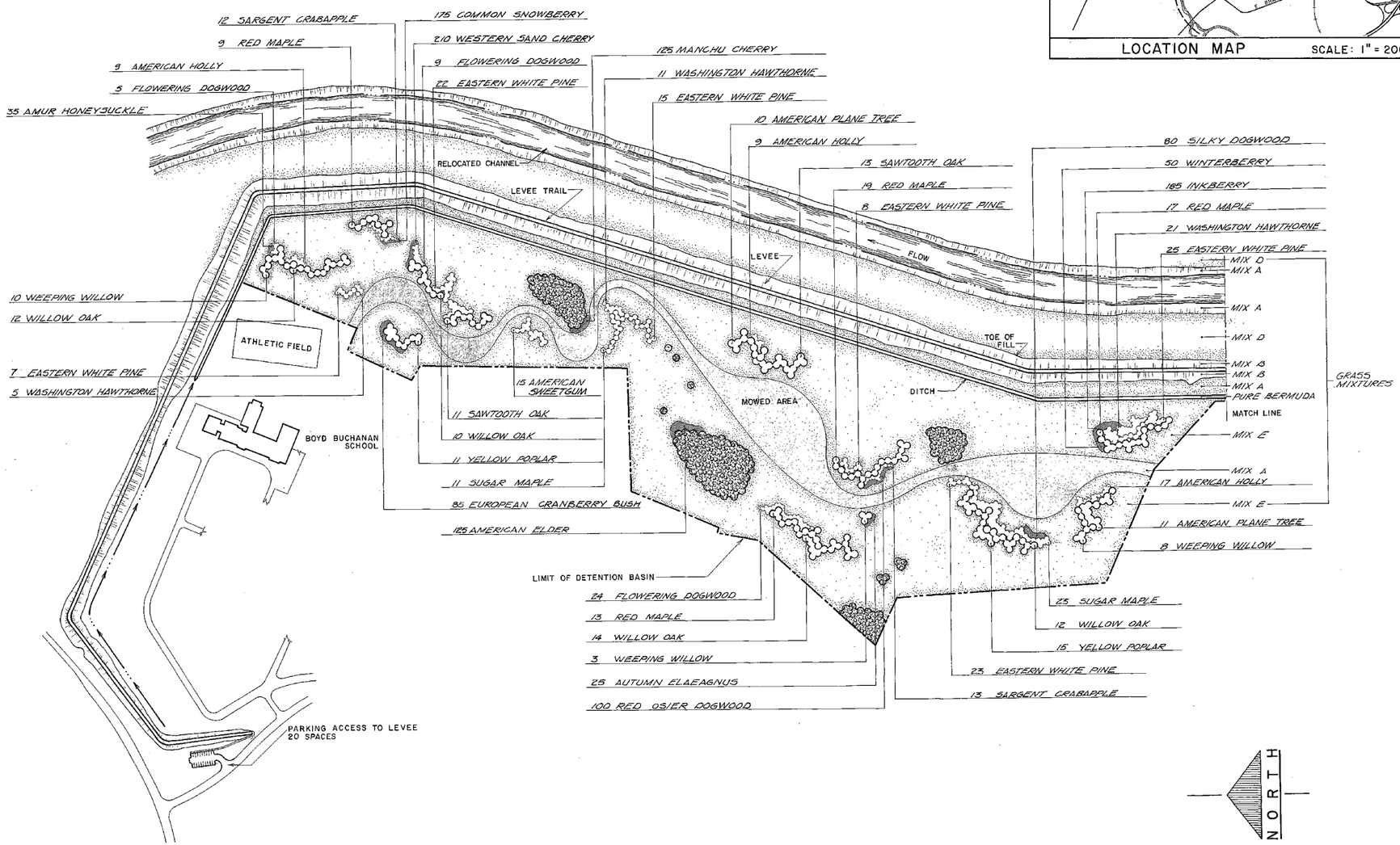
TYPICAL SHRUB – PLANTING DETAIL
NOT TO SCALE



TYPICAL TREE – PLANTING DETAIL
NOT TO SCALE



LOCATION MAP SCALE: 1" = 2000'



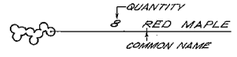
TENNESSEE VALLEY AUTHORITY	DIVISION OF FORESTRY, FISHERIES, AND WILDLIFE DEVELOPMENT RECREATION RESOURCES BRANCH	CHATTANOOGA, TENNESSEE PROPOSED RECREATION - WILDLIFE PLANTING PLAN SOUTH CHICKAMAUGA CREEK PROJECT	REVISED APRIL 1979	DESIGNED KATY CRONE SUBMITTED SAM PERRY	RECOMMENDED APPROVED Robert A. 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



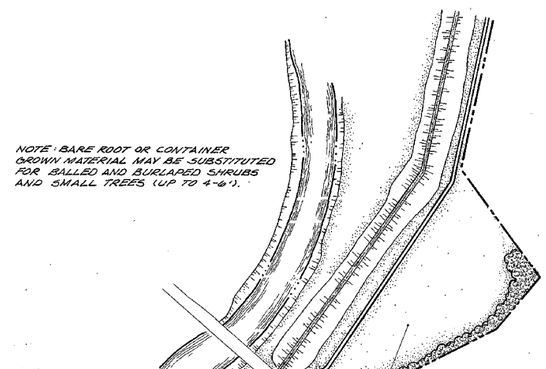
PLANT LIST

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	

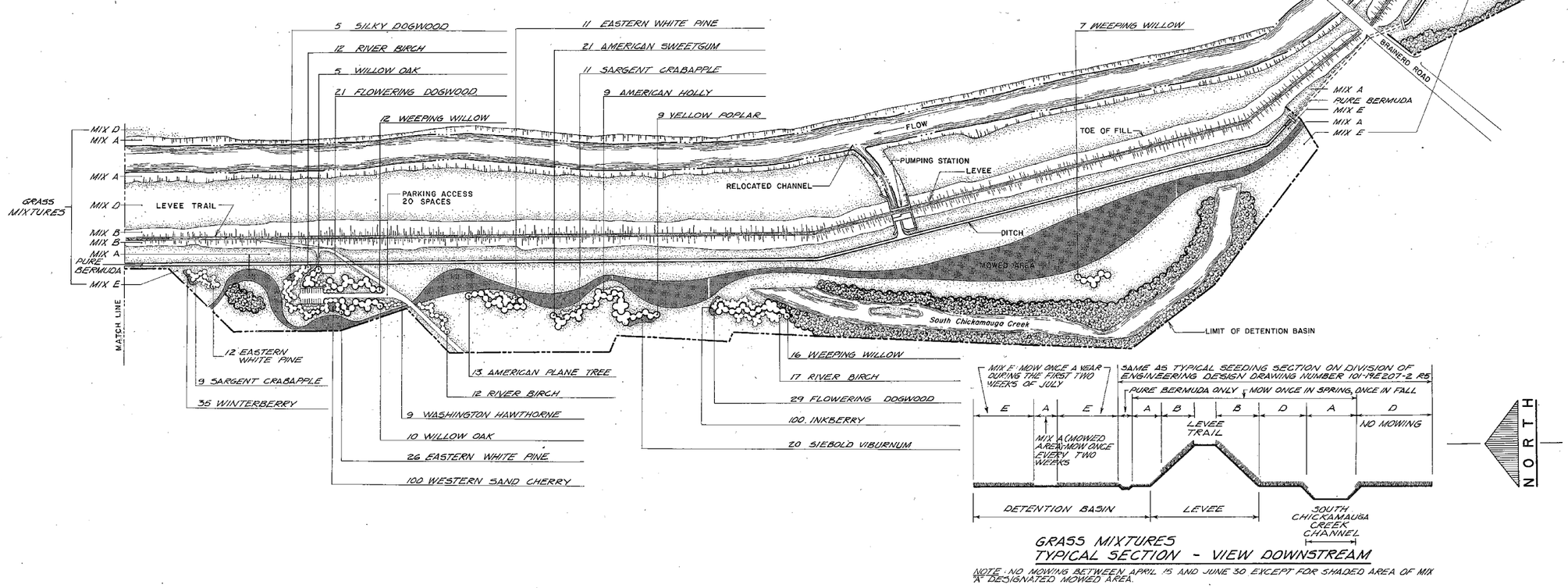
GRASS MIXTURES			SEEDING RATE - POUNDS PER ACRE	PLANTING SEASON
A	CYNODON DACTYLON	BERMUDA GRASS	40 +	MAY 15 - JULY 15
	LESPEDEZA STIPULACEA	KOREAN LESPEDEZA	10 = 50 TOTAL	MAY 15 - JULY 15
B	CORONILLA VARIA	CROWNVETCH	30 +	MARCH 15 - MAY 1
	FESTUCA RUBRA COMMUTATA	CHEWINGS FESCUE	30 = 60 TOTAL	AUG. 15 - 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').



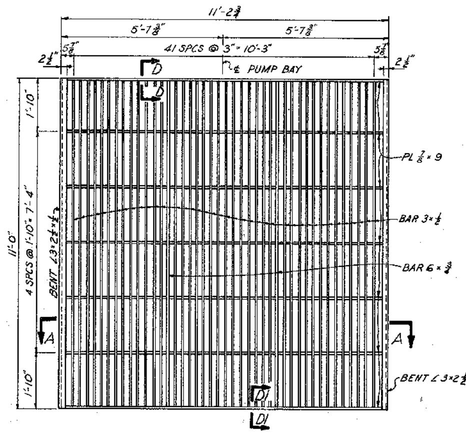
NORTH

GRASS MIXTURES TYPICAL SECTION - VIEW DOWNSTREAM

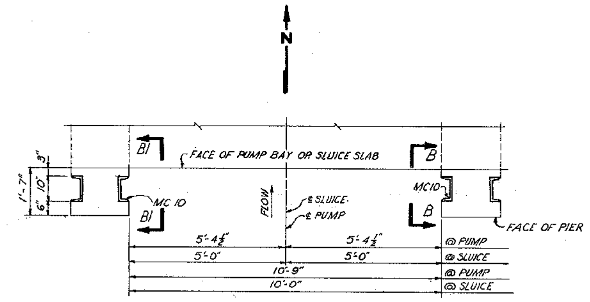
NOTE: NO MOWING BETWEEN APRIL 15 AND JUNE 30 EXCEPT FOR SHADED AREA OF MIX "A" DESIGNATED MOWED AREA.

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

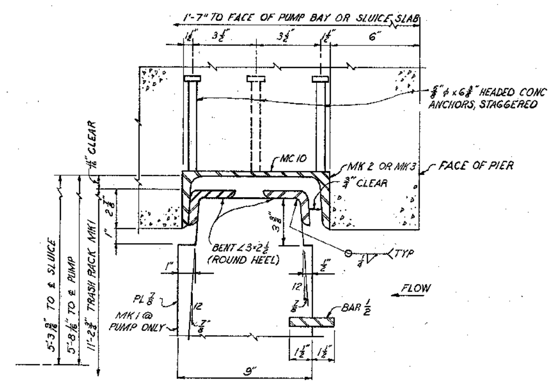
108-15



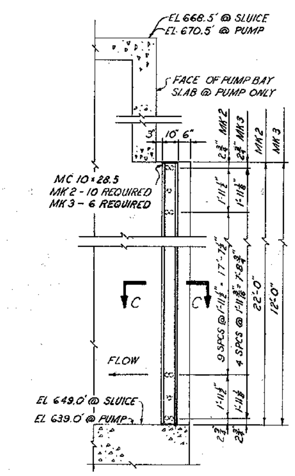
ELEVATION - PUMP TRASH RACK - MK1
10 REQ'D MK 1.



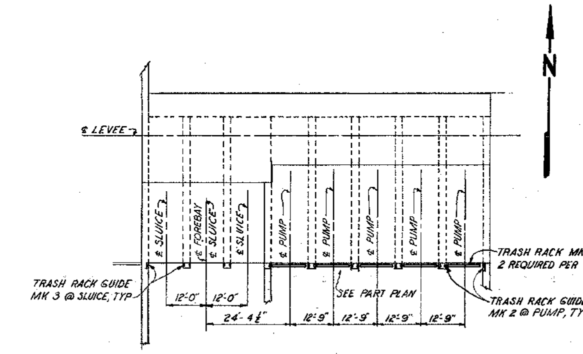
PART PLAN PUMP & SLUICE TRASH RACK GUIDES



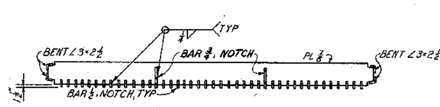
C-C
3"=1'-0"



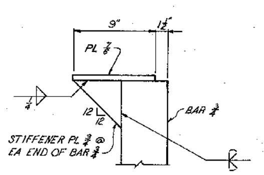
B-B
B1-B1 OPP H
$\frac{3}{4}$"=1'-0"



KEY PLAN
NTS



A-A



D-D
D1-D1 SIMILAR
$1\frac{1}{2}$"=1'-0"

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 108-19E225.
7. FOR MANUFACTURER'S DETAILS REFER TO VENETIAN IRON WORKS, INC. FILE TVA CONTRACT NO. 77K71-822230.

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

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
1		8-8-79	RLA	CTC	RLA	RLA	REA		HSB	REH	GLB
	CHANGED DIMENSIONS PART PLAN & SECTION C-C.										

DSGN M.L. BROWN
DRWN M.L. BROWN
CHKD E.K. PARDUE
SUPV R.L. APPLEBY
INSP
ENGINEER R.E. Abbott Jr.

CHATTANOOGA FLOOD PROTECTION

STRUCTURAL STEEL
PUMPING STATION NO. 1
TRASH RACKS & GUIDES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

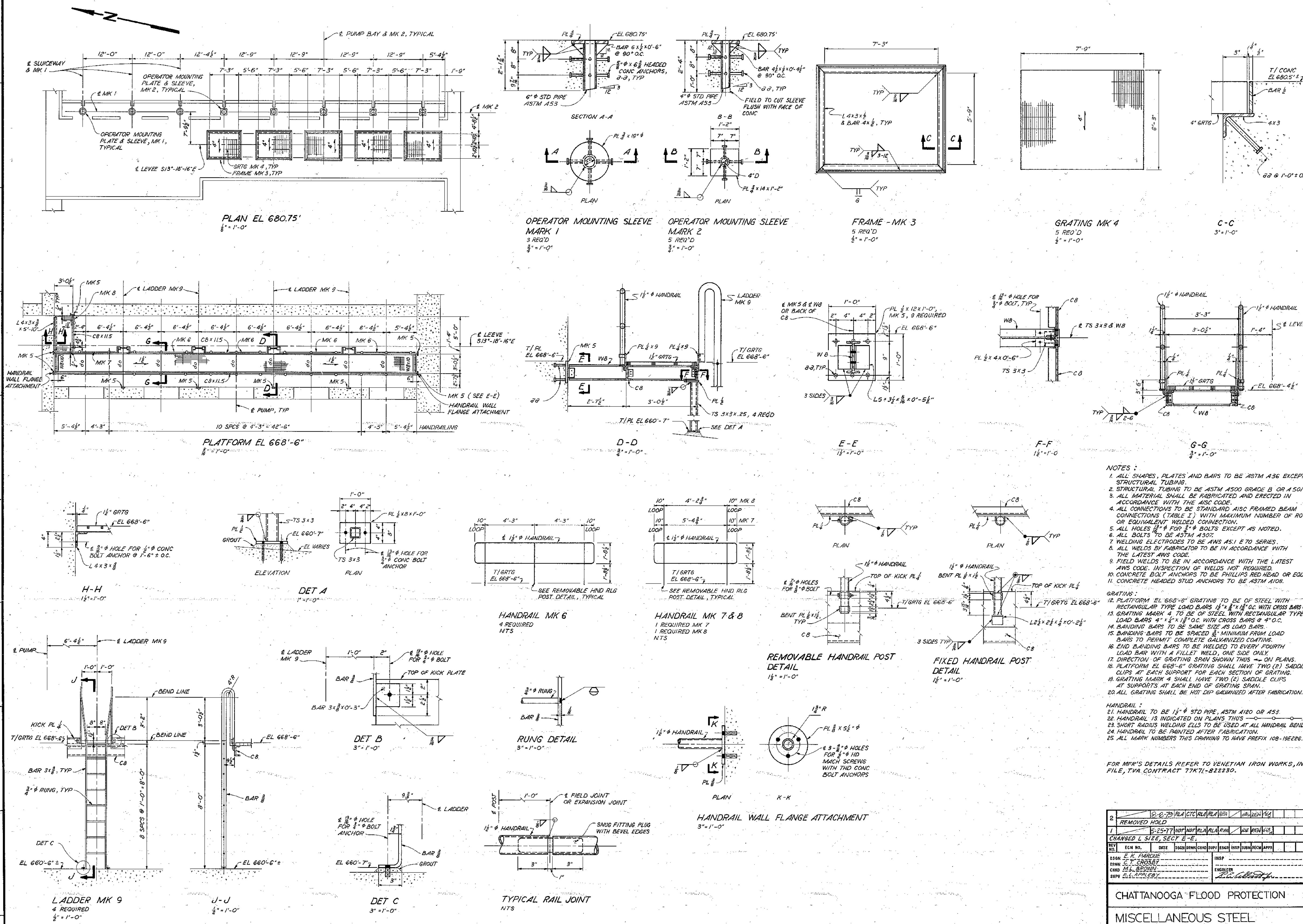
SUBMITTED	RECOMMENDED	APPROVED
Horace S. Beckner	R. E. Harris	G. Buchanan

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE 2-8-77 | 81 | C | 108-19E225 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1-27-81 R1

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



NOTES :

1. ALL SHAPES, PLATES AND BARS TO BE ASTM A36 EXCEPT STRUCTURAL TUBING.
2. STRUCTURAL TUBING TO BE ASTM A500 GRADE B OR A 501.
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 $\frac{13}{16}$" φ FOR $\frac{3}{4}$" φ BOLTS EXCEPT AS NOTED.
6. ALL BOLTS TO BE ASTM A307.
7. WELDING ELECTRODES TO BE AWS A5.1 E70 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 $1\frac{1}{2}$" x $\frac{3}{16}$" x $1\frac{3}{16}$" O.C. WITH CROSS BARS @ 4" O.C.
13. GRATING MARK 4 TO BE OF STEEL WITH RECTANGULAR TYPE LOAD BARS 4" x $\frac{1}{4}$" x $1\frac{3}{8}$" O.C. WITH CROSS BARS @ 4" O.C.
14. BANDING BARS TO BE SAME SIZE AS LOAD BARS.
15. BANDING BARS TO BE SPACED $\frac{3}{32}$" 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 $1\frac{1}{2}$" φ STD PIPE, ASTM A120 OR A53.
22. HANDRAIL IS INDICATED ON PLANS THUS —o—o—o—.
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.

SCALE AS NOTED

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR
2		8-8-79	RLA	CTC	RLA	RLA	REA		HOB	REH	GLB
	REMOVED HOLD										
1		5-25-77	NOT	NOT	RLA	RLA	REA		HOB	REH	GLB
	CHANGED L SIZE, SECT E-E.										

DSGN E. K. PARDUE
DRWN C. T. CROSBY
CHKD M. L. BROWN
SUPV R. L. APPLEBY
INSP
ENGINEER [signature]

CHATTANOOGA FLOOD PROTECTION

MISCELLANEOUS STEEL
PUMPING STATION NO. 1
PLATFORM, FRAMES & GRATING

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

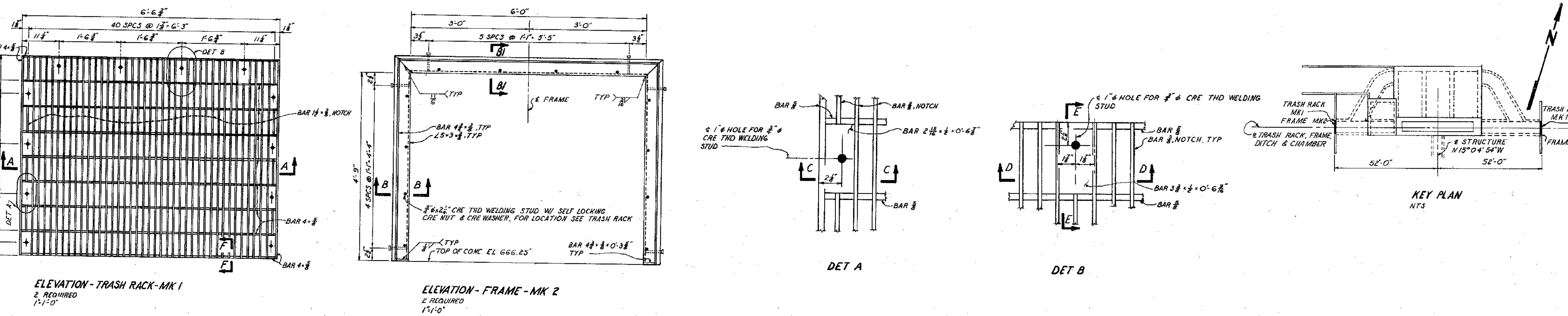
SUBMITTED [signature] | RECOMMENDED [signature] | APPROVED [signature]

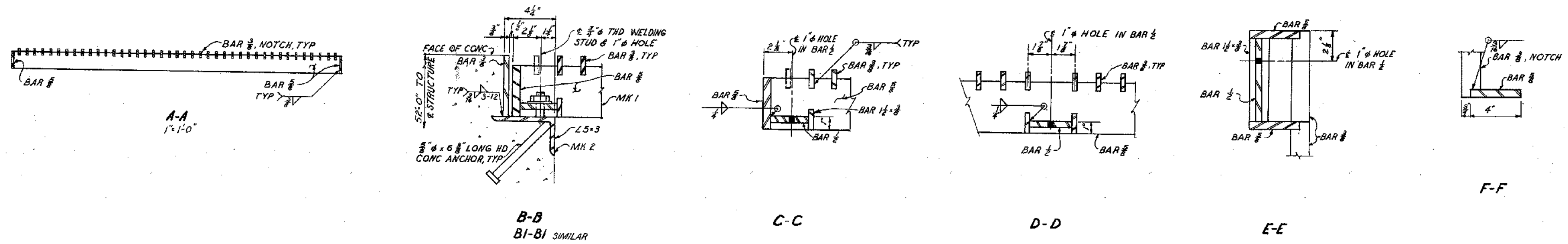
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 2-8-77 | 81 | C | 108-19E226 R2

RECORD DRAWING AS CONSTRUCTED Frank Van Meter 1-27-81 R2

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





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 108-19E235.
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	SUBM	RECM	APPR
1	~	8-8-79	EKP	EKP	RLA	RLA	REA	/	HSB	REH	GLB

CORRECTED DIMENSION MK 1

DSGN M.L. BROWN
DRWN M.L. BROWN
CHKD E.K. PARDUE
SUPV R.L. APPLEBY
INSP
ENGINEER R.C. Allred

CHATTANOOGA FLOOD PROTECTION

STRUCTURAL STEEL
PUMPING STATION NO. 2
TRASH RACKS & FRAMES

SOUTH CHICKAMAUGA CREEK PROJECT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED Horace S. Bartner | RECOMMENDED R.E. Harris | APPROVED

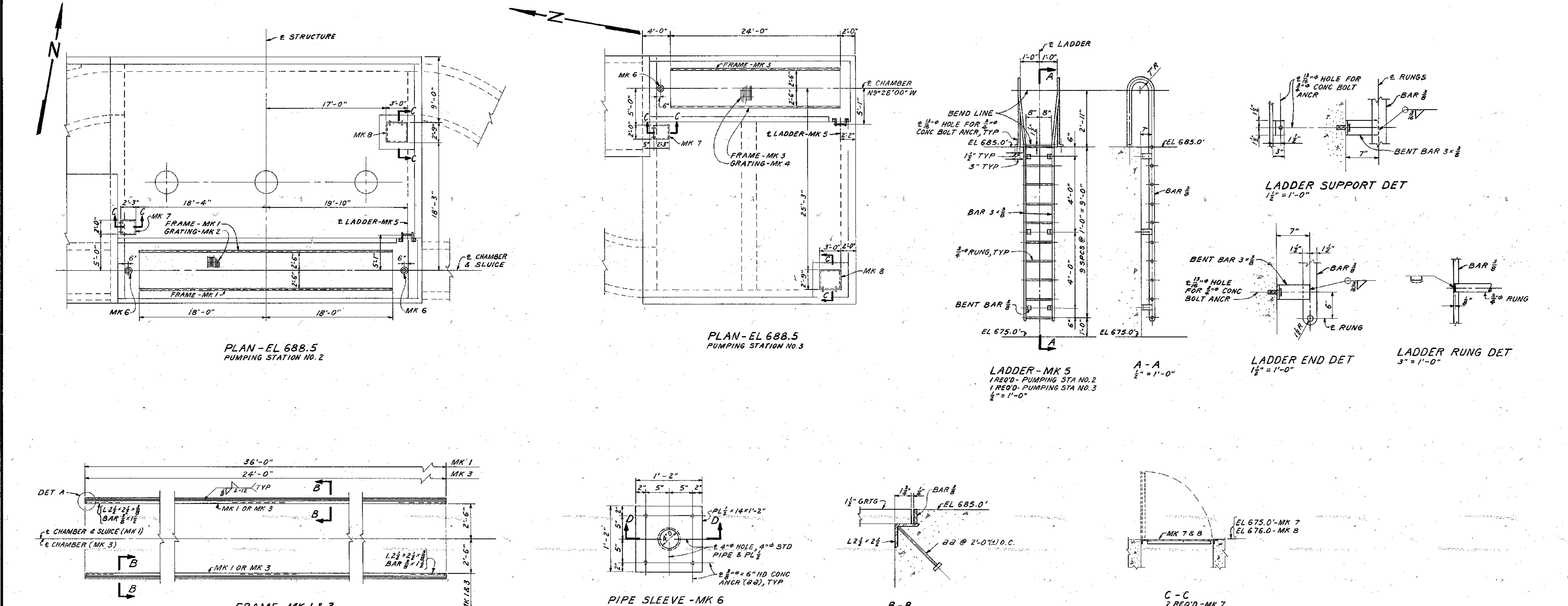
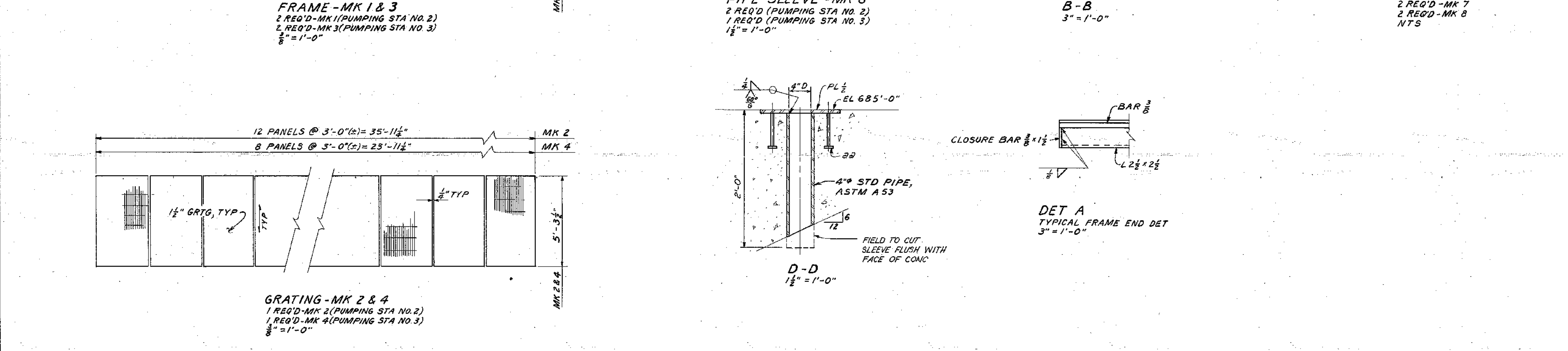
INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE 2-8-77 | 81 | C | 108-19E235 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1-27-81 R1

81 C 108-19E235

108-19E236 | C | 81

NOTES:

1. ALL SHAPES, PLATES & BARS TO BE ASTM A 36.
2. WELDING ELECTRODES TO BE AWS A 5.1 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 A 108.
6. FRAME & COVER MARK 7 SHALL BE TYPE Q1, AND FRAME & COVER MARK 8 SHALL BE TYPE Q3, 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 $1\frac{1}{2}" \times \frac{3}{16}" \times 1\frac{3}{16}"$ O.C. WITH CROSS BARS @ 4" O.C.
7. BANDING BARS TO BE SAME SIZE AS LOAD BARS.
8. BANDING BARS TO BE SPACED $\frac{3}{32}"$ 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 77K71-822230.

SCALE $\frac{3}{16}" = 1'-0"$

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPR	PM
1	REMOVED HOLDS	8-8-79	RLA	CTC	RLA	RLA	REA		HSB	REH	GLB	

DSGN N.D. TERRELL
DRWN N.D. TERRELL
CHKD M.L. BROWN
SUPV R.L. 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

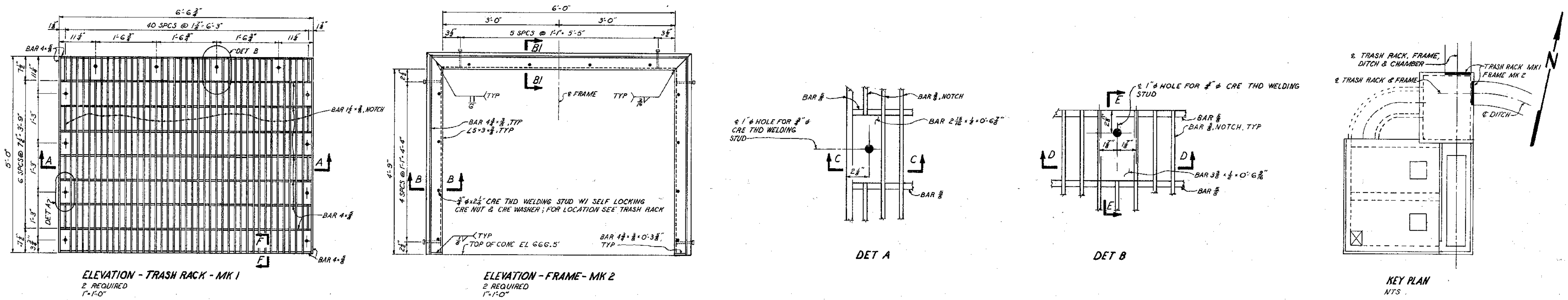
SUBMITTED Horace S. Becker | RECOMMENDED R.E. Davis | APPROVED

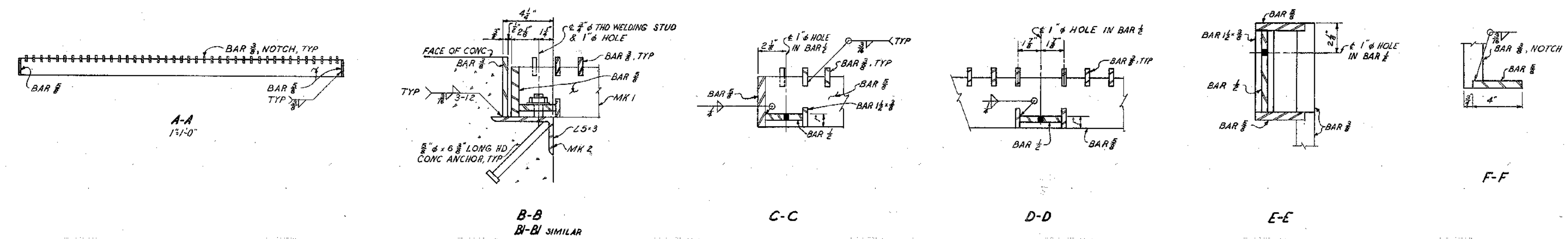
INSPECTED AND APPROVED FOR ISSUE

KNOXVILLE 2-8-77 | 81 | C | 108-19E236 R1

RECORD DRAWING AS CONSTRUCTED Frank Van Meter 1-27-81 R1

PRINT H 0
SIZE F 0
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1





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	SUBM	RECM	APPR
1	~	8-8-79	EKP	EKP	RLA	RLA	REA	/	HSB	REH	GLB

CORRECTED DIMENSION MK 1

DSGN M.L. BROWN
DRWN M.L. BROWN
CHKD E.K. PARDUE
SUPV R.L. APPLEBY
INSP
ENGINEER R.E. Abbott Jr.

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
Horace S. Beckham	R. E. Harris	G. L. Buchanan

INSPECTED AND APPROVED FOR ISSUE
DESIGN PROJECT MANAGER

KNOXVILLE 2-8-77 81 C 108-19E240 R1

RECORD DRAWING AS CONSTRUCTED
Frank Van Meter 1-27-81 R1

PRINT H 5 2
SIZE F
BR OR PROJ ME EE CE AD CD ED MD BF SW BL PA
PRINTS REQD-R 1