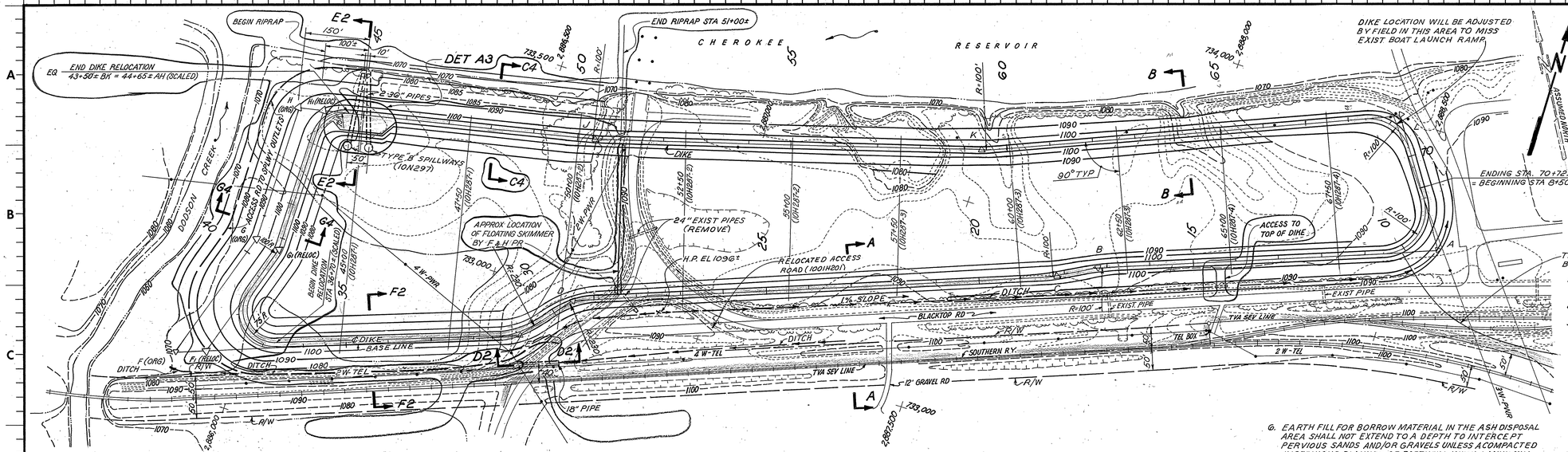
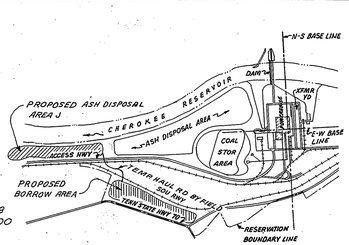
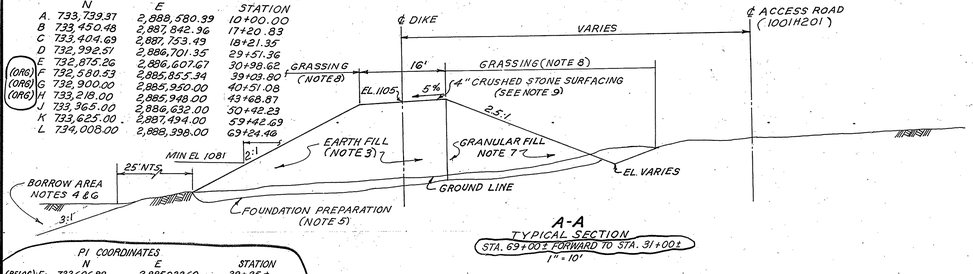




KEY PLAN
NTS

P.I. COORDINATES (℄ DIKE EXCEPT ℄ E TO F)

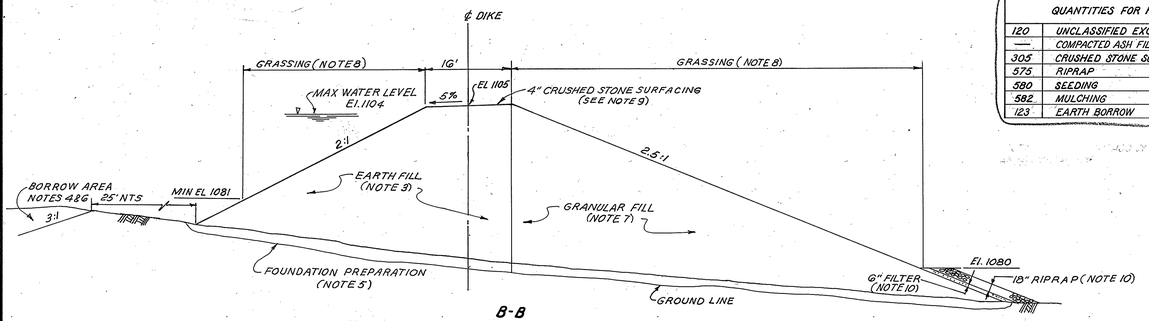
	N	E	STATION
A	733,739.31	2,888,580.39	10+00.00
B	733,430.48	2,887,842.96	17+20.83
C	733,404.69	2,887,753.19	18+21.35
D	732,992.51	2,886,701.35	29+51.36
E	732,875.26	2,886,607.67	30+98.62
(ORIG) F	732,560.53	2,885,855.34	39+03.80
(ORIG) G	732,900.00	2,885,950.00	40+51.08
(ORIG) H	733,218.00	2,885,948.00	43+68.87
J	733,365.00	2,886,632.00	50+42.23
K	733,625.00	2,887,494.00	57+42.69
L	734,008.00	2,888,398.00	69+24.46



A-A
TYPICAL SECTION
STA. 69+00± FORWARD TO STA. 31+00±
1"=10'

P.I. COORDINATES

	N	E	STATION
(RELOC) F	732,606.88	2,885,922.60	38+25±
(RELOC) G	732,891.91	2,886,007.05	39+75±
(RELOC) H	733,230.23	2,886,004.92	43+15±



B-B
TYPICAL SECTION
STA. 50+00± TO STA. 69+00±
1"=10'

SUMMARY OF QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
101	CLEARING & GRUBBING	35	AC.
123	EARTH BORROW	471,000	CY
125	EXCAVATION FOR STRUCTURES	303	CY
905	CRUSHED STONE SURFACING	1855	TON
570	FILTER BLANKET	1500	TON
575	RIPRAP	2650	CY
580	SEEDING	72,000	SY
582	MULCHING	72,000	SY
510	STONE GUTTER	100	LF
	FOUNDATION PREPARATION	55,000	CY
483 491	18" PIPE CULVERT	86	LF.
464	36" CONC PIPE CLASS III "O" RING	340	LF

QUANTITIES FOR REVISION 3

120	UNCLASSIFIED EXCAVATION	17,000	CY
—	COMPACTED ASH FILL	21,200	CY
305	CRUSHED STONE SURFACING	1,500	TON
575	RIPRAP	44,000	TON
580	SEEDING	13,500	SY
582	MULCHING	13,500	SY
123	EARTH BORROW	1,000	CY

STORAGE CAPACITY *

ELEVATION	QUANTITY	ACCUM QUANTITY
1071 & BELOW	10,600 CY	10,600 CY
1076 TO 1071	59,200 CY	69,800 CY
1081 TO 1076	107,600 CY	177,400 CY
1086 TO 1081	127,800 CY	305,200 CY
1091 TO 1086	137,600 CY	442,800 CY
1096 TO 1091	147,400 CY	590,200 CY
1101 TO 1096	157,200 CY	747,000 CY #

* ASSUME ASH LEVEL
# RELOCATION OF THE WEST DIKE REDUCED THE ASH STORAGE CAPACITY BY 27,000 CY±.

TEMPORARY HAUL ROAD FROM BORROW AREA BY FIELD

NOTES:
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE T-I SPECIFICATIONS, UNLESS OTHERWISE NOTED.
2. THE SOLID CONTOURS REPRESENT FINISHED GRADE; DASHED CONTOURS INDICATE EXISTING GROUND.
3. THE RESULTS OF THE SOIL INVESTIGATION FOR THE ASH DISPOSAL AREA DIKES ARE REPORTED IN A MEMO FROM FRANK VANMETER TO G.L. BUCHANAN DATED JULY 22, 1981 (CSB 810724 301). JOHN SEVIER STEAM PLANT, ASH DISPOSAL AREA, SOIL EXPLORATION AND TESTING, EN DES SOIL SCHEDULE NO. 6.2. ALL ROLLED EARTH FILL SHALL BE IN ACCORDANCE WITH CONSTRUCTION SPECIFICATION G-9, ROLLED EARTH FILL FOR DAMS AND POWER PLANTS. ROLLED EARTHFILL SHALL CONSIST OF SOIL PLACED IN LAYERS NOT EXCEEDING 6" AFTER COMPACTION AND SHALL BE UNIFORMLY COMPACTED TO AT LEAST 95% OF STANDARD MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 PROCEDURES. MOISTURE CONTENT OF EARTHFILL SHALL BE WITHIN ±2% OF OPTIMUM MOISTURE CONTENT.
4. BORROW MATERIAL AS MUCH AS PRACTICAL FOR THE DIKE SHALL BE OBTAINED FROM INSIDE THE DISPOSAL AREA. CUT SLOPES ADJACENT TO EMBANKMENTS SHALL NOT BE EXCAVATED STEEPER THAN 3:1 AND TOP OF CUT SHALL BE A MINIMUM OF 25 FEET FROM TOE OF EMBANKMENT. REMAINING BORROW MATERIAL SHALL BE OBTAINED FROM DESIGNATED BORROW AREA LOCATED S E OF DIKE AND BETWEEN SOUTHERN RAILWAY AND TENNESSEE HIGHWAY 70.
5. FOUNDATION PREPARATION FOR EARTH EMBANKMENTS SHALL CONSIST OF CLEARING AND REMOVING ALL ROOTS, VEGETATION, AND ORGANIC TOPSOIL. FOUNDATION AREA SHALL BE COMPACTED BY USING SHEEP'S FOOT ROLLER FOLLOWED BY A FLAT WHEELED ROLLER UNTIL DISTURBED AREA WILL SUPPORT HEAVY EQUIPMENT WITHOUT RUTTING INTO THE GROUND SO AS TO REDUCE ITS STABILITY. PRIOR TO PLACING FILL THE FOUNDATION MUST BE SCARIFIED SO THERE WILL BE GOOD BOND BETWEEN FOUNDATION AND FILL. THE SOIL INVESTIGATION PROGRAM INDICATED THE PRESENCE OF SOFT SOILS DIRECTLY BENEATH THE TOPSOIL AT STATION 9+50± AND STATION 34+00± IN THE DIKE FOUNDATION. SUCH SOFT AND SHALLOW SOILS DETECTED DURING THE FOUNDATION PREPARATION AT THESE LOCATIONS OR ANY OTHER LOCATION IN THE DIKE AREA SHALL BE REMOVED AND REPLACED BY IMPERVIOUS EARTH FILL COMPACTED IN LAYERS.
6. EARTH FILL FOR BORROW MATERIAL IN THE ASH DISPOSAL AREA SHALL NOT EXTEND TO A DEPTH TO INTERCEPT PERVIOUS SANDS AND/OR GRAVELS UNLESS A COMPACTED IMPERVIOUS BLANKET OF EARTHFILL WITH A MINIMUM THICKNESS OF 3FT. IS PLACED OVER EXPOSED SANDS AND/OR GRAVELS. IF THIN LAYERS OR POCKETS OF SAND AND/OR GRAVEL, ENCOUNTERED WITHIN FINE-GRAINED BORROW SOILS, ARE EXPOSED ON THE EXCAVATED SLOPE, THEY SHOULD BE BLANKETED WITH COMPACTED IMPERVIOUS EARTHFILL WITH A MINIMUM WIDTH OF 3FT.
7. IN VIEW OF A POTENTIAL FOR BORROW SHORTAGE, SAND AND GRAVEL MATERIALS, IF ENCOUNTERED DURING BORROW EXCAVATION OR DIKE FOUNDATION PREPARATION, SHALL NOT BE WASTED. IF SHORTAGE OF FINE-GRAINED BORROW SOIL OCCURS, SANDS AND GRAVELS MAY BE USED BENEATH THE OUTER SLOPE OF THE DIKE. GRANULAR FILL WITH LESS THAN 20% FINES SHALL BE COMPACTED TO AN AVERAGE RELATIVE DENSITY OF 85% OR GREATER WITH A MINIMUM RELATIVE DENSITY OF 80% AS DETERMINED BY ASTM D2049 PROCEDURES. GRANULAR MATERIAL WITH MORE THAN 20% FINES SHALL BE COMPACTED TO AT LEAST 95% OF STANDARD MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 (METHOD D) PROCEDURES.
8. DIKE SLOPES SHALL BE SEEDED WITH TYPE G MIXTURE 5 SEEDED AREAS ARE TO BE FERTILIZED AND MULCHED IN CONFORMANCE WITH SECTIONS 580 AND 582.
9. CRUSHED STONE SURFACING, 4 INCHES THICK, SHALL BE APPLIED FOR THE FULL WIDTH OF THE TOP OF THE DIKE IN ACCORDANCE WITH SECTION 905.
10. RIPRAP SHALL BE SOUND, DURABLE STONE, 18 INCHES THICK, WITH A MINIMUM OF 50% BY WEIGHT CONSISTING OF STONES AT LEAST 100 LBS. EACH. RIPRAP SHALL CONFORM TO SECTION 575. FILTER BLANKET, 6 INCHES THICK, SHALL CONFORM TO SECTION 570.
11. THE ASH DISPOSAL AREA SHALL BE CLEARED IN ACCORDANCE WITH SECTION 101. NO GRUBBING IS REQUIRED EXCEPT FOR AREAS OF DIKE FOUNDATIONS.
12. (STONE) GUTTER SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION (510).
13. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 PLAIN FINISH AND SHALL HAVE A MINIMUM LAP DISTANCE OF 8 INCHES.
14. FAMILY OF COMPACTION CURVES DEVELOPED FOR BORROW AREAS A AND B BY SME AS PER EN DES SOIL SCHEDULE NO. 6.2 (CSB 810724 301) SHALL BE USED TO CONTROL THE EARTHFILL COMPACTION. IN-PLACE DENSITY TESTS USING THE SAND CONE (ASTM D1556) OR RUBBER BALLOON (ASTM D2167) TEST METHODS SHALL BE MADE AT A RATE OF AT LEAST 1 TEST FOR EACH 2000 CUBIC YARDS OF EARTHFILL PLACED (IN-PLACE VOLUME), OR A MINIMUM OF 1 PER DAY.
15. COMPACTED ASH FILL SHALL BE CONSTRUCTED THE SAME WAY THE EARTHFILL IS CONSTRUCTED. THE FAMILY OF COMPACT CURVES DEVELOPED FOR THE ASH FILL BY SME PER EN DES SOIL SCHEDULE NO. 6.4 (SME 841127 002) SHALL BE USED TO CONTROL THE COMPACTED ASH FILL. COMPACTION OF ASH FILL SHALL BE DONE WITH SMOOTH SURFACE STEEL WHEEL VIBRATORY ROLLERS.

FIRST ISSUE FOR W.O. 544-30-31401-J0084

COMPANION DWG.: 10N297, 298
10W286-2, 3, (4)

REV NO	PA NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD	DPM
3	WO # 20636	12/24/84	RDM	RDM	JLG	WMM		WMM	JEM	JLG		DFT
	RELOC WEST DIKE, ADD NOTES, FLOAT SKIM, AND ACCESS RD & RAMP.											
2		12/6/83	CRG	JPH	JLG	WMM		WMM	JEM	JLG		DFT
	ADDED SECTIONS & STORAGE CAPACITY — WO 544-30-31401-J0084											
1		7/29/83	CRG	RDM	JLG	WMM		WMM	JEM	JLG		DFT
	ADD DET A3 & REV SUMMARY OF QUANTITIES - WO 544-30-31401-J0084											

DSGN R. D. MARONEY
DRWN V.R. LEE; B.J. SPEBBER
CHKD J. L. GLOVER
SUPV J. L. GLOVER
INSP J.R. Fox
ENGINEER K. W. Burnett

SCALE 1" = 100' EXCEPT AS NOTED

MAIN PLANT

FLY ASH DISPOSAL AREA "J"
SHEET 1

JOHN SEVIER STEAM PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert J. Bowman		K. W. Burnett

INSPECTED AND APPROVED FOR ISSUE
J.R. Fox

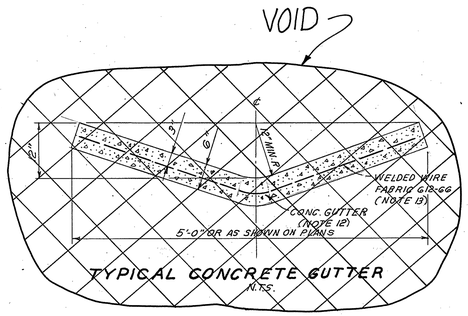
KNOXVILLE 7-28-82 | 41 | C | 10W286-1 | R3

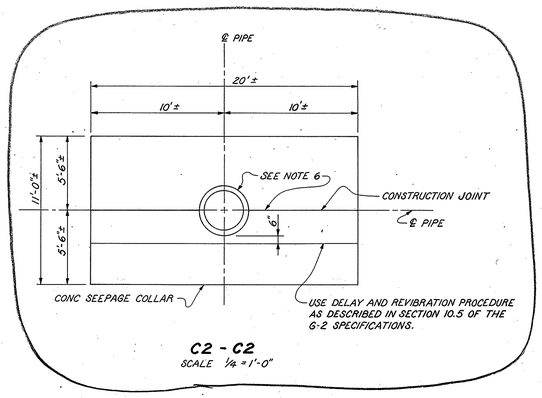
RECORD DRAWING AS CONSTRUCTED

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

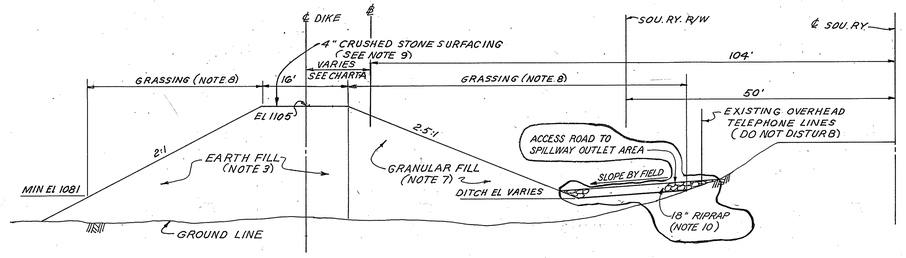
PCI

35380 R2





C2 - C2
SCALE 1/4 = 1'-0"



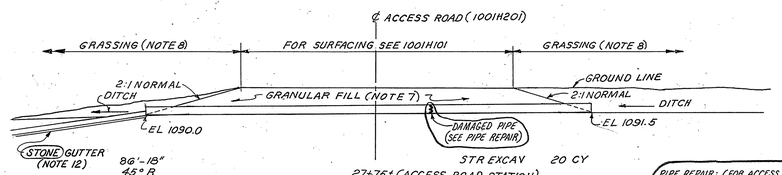
F2-F2
TYPICAL SECTION
STA 31+00± TO STA 37+00±
SH 1

CHART A

℄ DIKE OFFSET FROM ℄ E-F	
STATION	DISTANCE
32+00	14'
33+00	14'
34+00	BY FIELD
35+00	BY FIELD
36+00	21'
37+00	BY FIELD

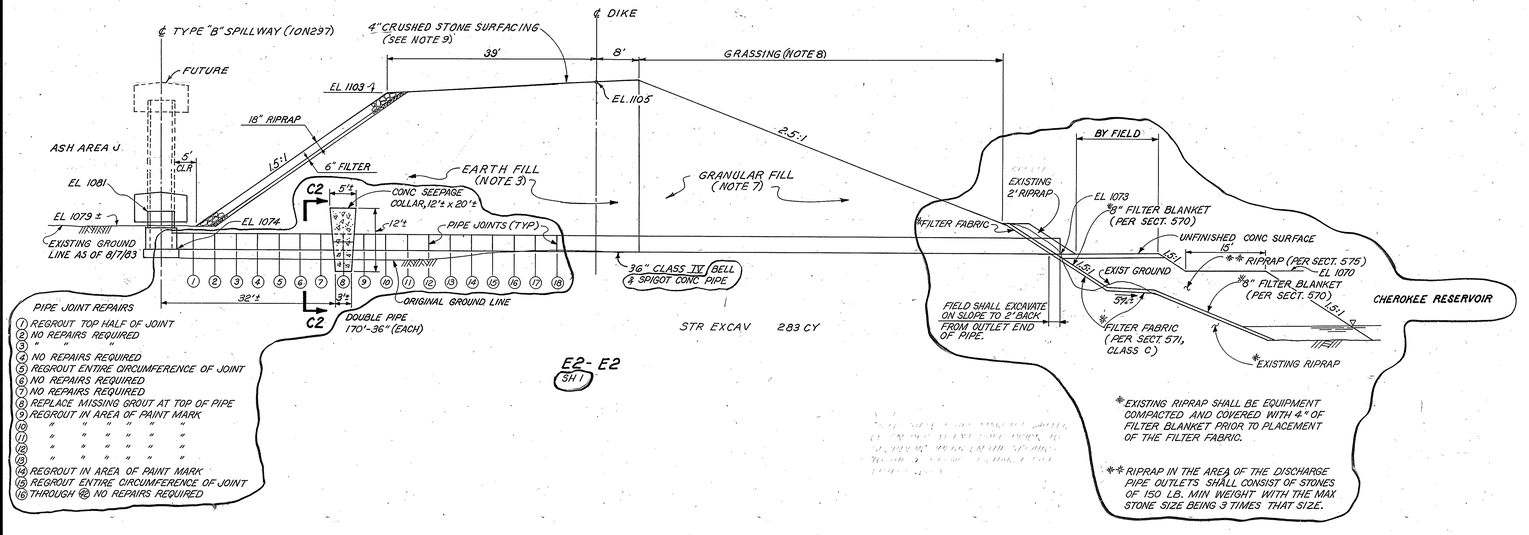
NOTES:
1. FOR GENERAL NOTES SEE DWG 10W286-1.

NOTES FOR CONCRETE SEEPAGE COLLAR:
1. ALL WORK SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATIONS T-1.
2. EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 125.
3. CONCRETE FOR THE SEEPAGE COLLAR SHALL BE "CLASS B" PER SECTION 400.
4. THE CONCRETE FOR THE SEEPAGE COLLAR SHALL BE POURED IN 2 LIFTS WITH A MINIMUM WAIT OF 24 HOURS BETWEEN LIFTS. THE FIRST LIFT SHALL BE POURED TO THE ELEVATION OF THE CENTERLINE OF THE PIPE.
5. BACKFILL SHALL BE COMPACTED TO 95 % OF STANDARD MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698 PROCEDURES. MOISTURE CONTENT SHALL BE WITHIN +3 % OF OPTIMUM. SEE EM DCS SOIL SCHEDULE NO. 6.2 FOR SOILS INVESTIGATION RESULTS. HAND HELD COMPACTORS SHALL BE USED WHERE NECESSARY TO OBTAIN THE REQUIRED COMPACTION.
6. SURFACES OF THE CONCRETE PIPE AND CONSTRUCTION JOINT SHALL BE CLEANED AND ROUGHENED BY APPROPRIATE METHODS. IMMEDIATELY PRIOR TO PLACING THE CONCRETE THE CLEANED AND ROUGHENED SURFACES SHALL BE COATED WITH AN EPOXY BONDING COMPOUND.
7. THE SEEPAGE COLLAR SHALL BE FORMED BY POURING THE CONCRETE DIRECTLY AGAINST THE SIDES AND BOTTOM OF THE EARTH EXCAVATION. NO WOOD OR METAL FORMS SHALL BE USED.



D2-D2
SH 1

PIPE REPAIR: (FOR ACCESS RD STA 27+75±)
1) ALL WORK SHALL BE IN ACCORDANCE WITH GENERAL CONSTRUCTION SPECIFICATION T-1.
2) REMOVE MATERIAL (EARTHFILL AND PAVING) FROM DAMAGED AREA OF 18" PICM PIPE FOR REPAIRS; PER SECTION 125.3, PART-1.
3) REPAIR OR REPLACE DAMAGED PIPE AS DETERMINED BY FIELD.
4) PREPARE PIPE BEDDING PER SECTION 125.3, PART-2.
5) BACKFILL WITH THOROUGHLY COMPACTED EARTH; PER SECTION 125.3, PART-3.
6) REPAIR ROAD SURFACING IN ACCORDANCE WITH NOTE 3 ON DRAWING 1001H101.



E2-E2
SH 1

PIPE JOINT REPAIRS
1. REGROUT TOP HALF OF JOINT
2. NO REPAIRS REQUIRED
3. " " "
4. NO REPAIRS REQUIRED
5. REGROUT ENTIRE CIRCUMFERENCE OF JOINT
6. NO REPAIRS REQUIRED
7. NO REPAIRS REQUIRED
8. REPLACE MISSING GROUT AT TOP OF PIPE
9. REGROUT IN AREA OF PAINT MARK
10. " " " " "
11. " " " " "
12. " " " " "
13. " " " " "
14. REGROUT IN AREA OF PAINT MARK
15. REGROUT ENTIRE CIRCUMFERENCE OF JOINT
16. THROUGH 18. NO REPAIRS REQUIRED

* EXISTING RIPRAP SHALL BE EQUIPMENT COMPACTED AND COVERED WITH 4" OF FILTER BLANKET PRIOR TO PLACEMENT OF THE FILTER FABRIC.

** RIPRAP IN THE AREA OF THE DISCHARGE PIPE OUTLETS SHALL CONSIST OF STONES OF 150 LB. MIN. WEIGHT WITH THE MAX STONE SIZE BEING 3 TIMES THAT SIZE.

FIRST ISSUE FOR WO 544-30-31401-J0084

COMPANION DWG: 10N297, 298, 10W286-1, -3, -4

INSPECTED AND APPROVED FOR ISSUE

REV. NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD	CDPH
2	WO # 20656	1/25/84	WC		MAM		MBH	DEK	DLB			OFF
1	REV E2-E2. ADD PIPE, PIPE JT & RD REPAIRS. ADD C2-C2 AND NOTES. MINOR REV.	12/5/83	LEC	MAM	JPB	JPB	MBH		MJH	RLH	OFF	
	REV E2-E2.											

DSGN R.D. MARONEY — INSP J.R. Fox
DRWN A.H. SPERBER
CHKD J.L. GLOVER — ENGINEER
SUPV J.L. GLOVER — K.W. Burnett

SCALE: 1" = 10' — EXCEPT AS NOTED

MAIN PLANT

FLY ASH DISPOSAL AREA "J" SHEET 2

JOHN SEVIER STEAM PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
Robert G. Bauman	R.D. Marney	A.R. Burchfiel
KNOXVILLE	7-28-82	41 C 10W286-2 R2

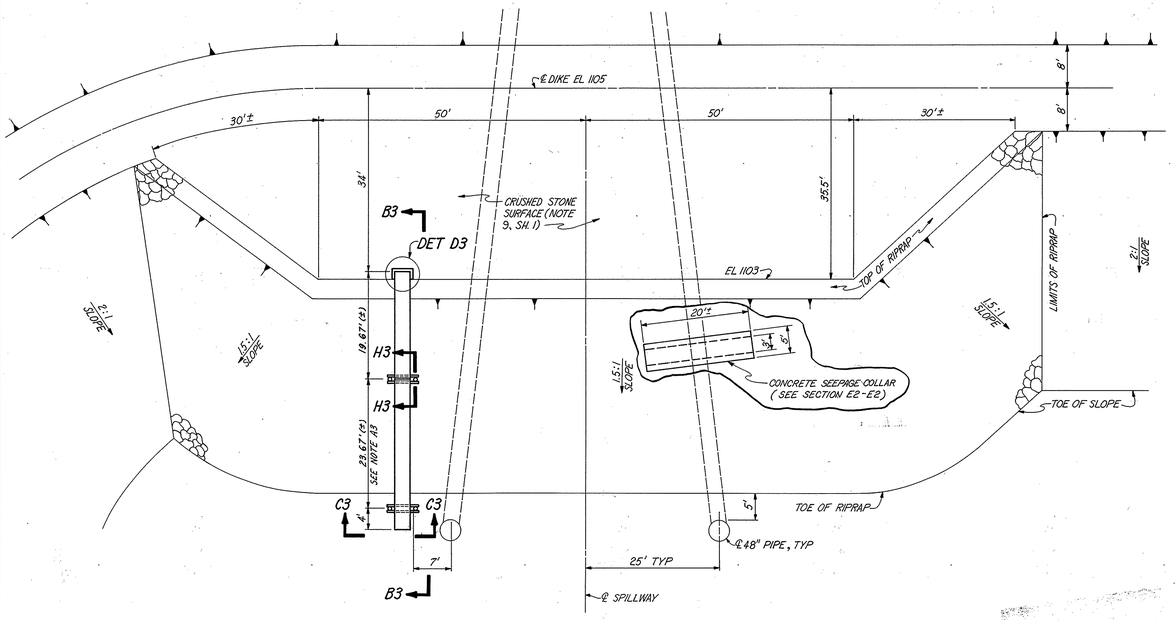
RECORD DRAWING AS CONSTRUCTED

PRINT H 3 / SIZE F

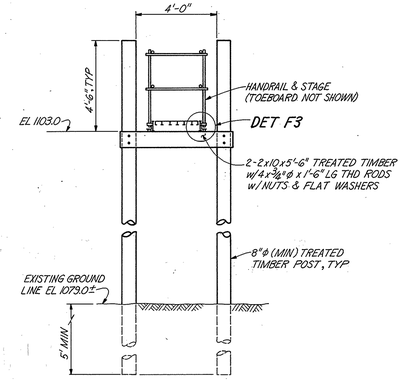
BR OR PROJ | ME EE CE AD CD ED MD TP EP SW BL HP YC
PRINTS REQD—R 0

BRUNING 44-132-53563

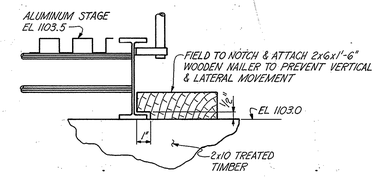
18773 RO
33380 21



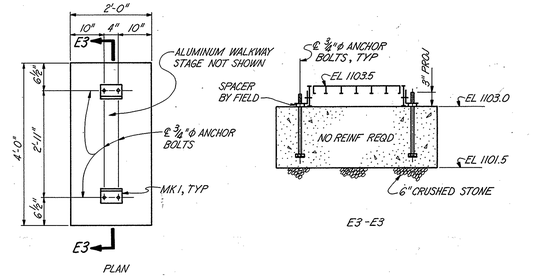
DETAIL A3
10W286-1
1"=10'



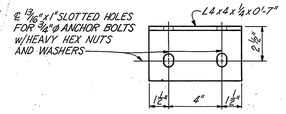
C3-C3
3/8"=1'-0"

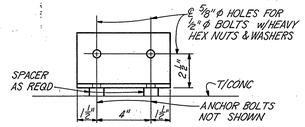


DET F3
2 PLACES



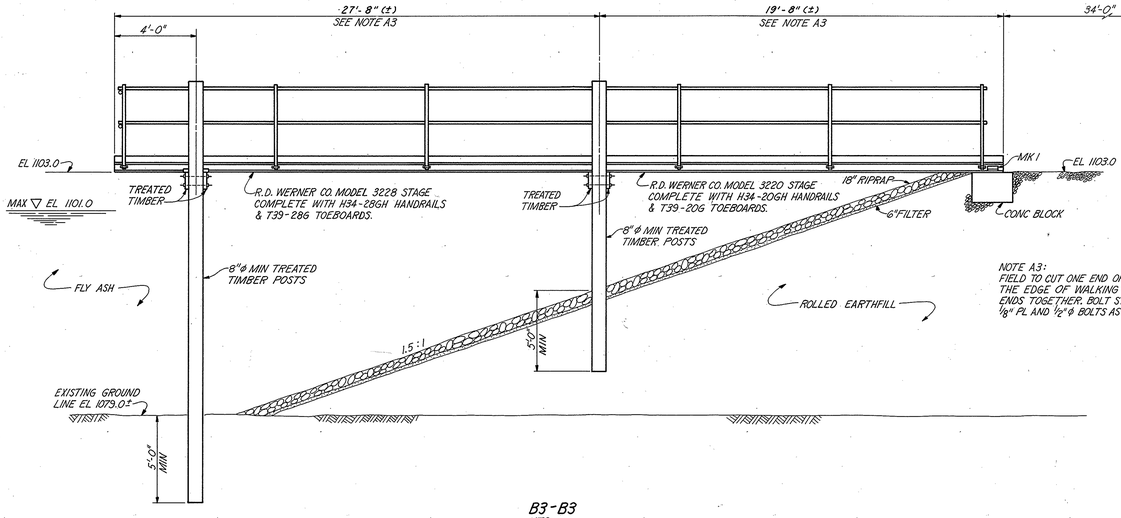
DET D3
¾"=1'-0"





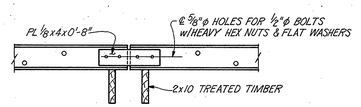
MK 1
2 REQD

NOTES:
1. ALL MATERIAL TO BE BY FIELD.
2. THREADED RODS AND L 4 x 4 ANGLES SHALL BE ASTM A36.
3. ALL BOLTS AND NUTS SHALL BE ASTM A307.
4. FOR ADDITIONAL NOTES SEE 10W286-1.



B3-B3
NTS

NOTE A3:
FIELD TO CUT ONE END OF EACH STAGE AT THE EDGE OF WALKING SURFACE AND BUTT ENDS TOGETHER. BOLT STAGES TOGETHER WITH ⅛" PL AND ½"φ BOLTS AS SHOWN IN SECT H3-H3.



H3-H3
NTS

SUMMARY OF QUANTITIES

DESCRIPTION	QUANTITY	UNITS
ALUMINUM WALKWAY STAGES COMPLETE W/HANDRAILS AND TOEBOARDS.	2	
2"x10" TREATED TIMBER PLANKING	22	LF
8"φ (MIN) TREATED TIMBER POSTS.	115	LF
¾"φ x 1'-6" THREADED RODS W/HEAVY HEX HEAD NUTS AND FLAT WASHERS.	8	EA
2"x6" WOODEN NAILER W/NAILS AS REQD.	3	LF
L 4 x 4 x ¼ x 0'-7"	2	EA
¾"φ x 1'-4" ANCHOR BOLT W/3" PROJ.	4	EA
½"φ x 0'-3" BOLTS W/HEAVY HEX HEAD NUTS AND WASHERS.	12	EA
3000 PSI CONCRETE.	12	CF
⅛ x 4 x 0'-8" STEEL PL.	2	EA

FIRST ISSUE FOR W.O. 544-30-31401-10084

COMPANION DWGS: 10W286-1, 2, 3, 4, 10N297, 298

INSPECTED AND APPROVED FOR ISSUE

PRINT H
SIZE F
BR OR PROJ ME EE CE AD CD ED MD TP EP SW BL HP YC
PRINTS REQD-R 0

WO # 20636 | 12/24/84 | 1000 | PROJ | MAIN | MAIN | EE/A | LOB | | | CONT

ADDED CONC SEEPAGE COLLAR

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

DSGN Orell Holloway
DRWN Sherry Cash
CHKD M.H. Miller
SUPV W. Allen Stevens

INSP
ENGINEER M.H. Miller

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

MAIN PLANT

FLY ASH DISPOSAL AREA "J" SHEET 3

JOHN SEVIER STEAM PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
M.H. Miller	R.E. Harris	Q.P. Shortes

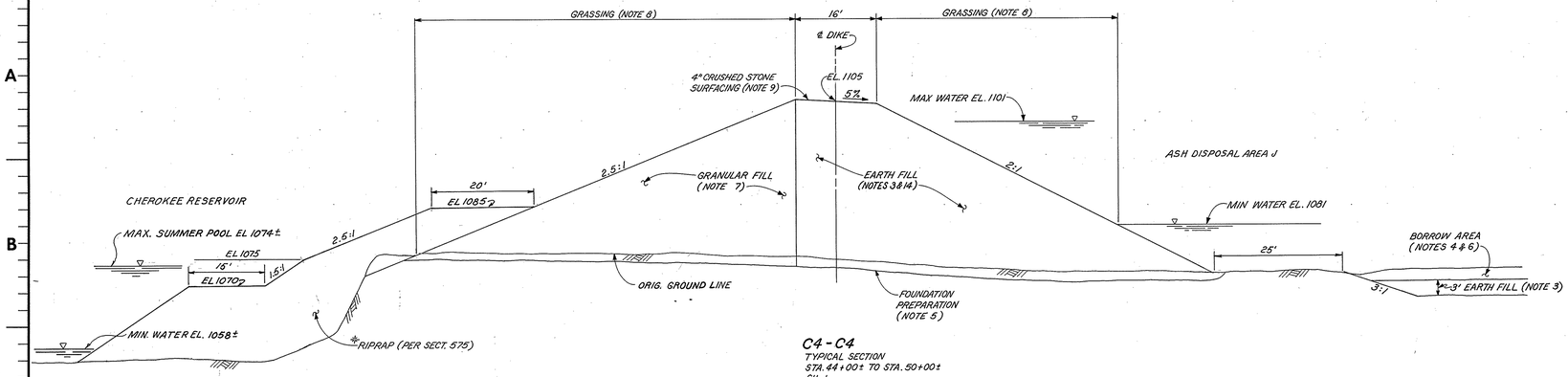
KNOXVILLE | 9/28/83 | 41 | C | 10W286-3 | R1

RECORD DRAWING AS CONSTRUCTED

PREPARED FROM DIGITAL DATA

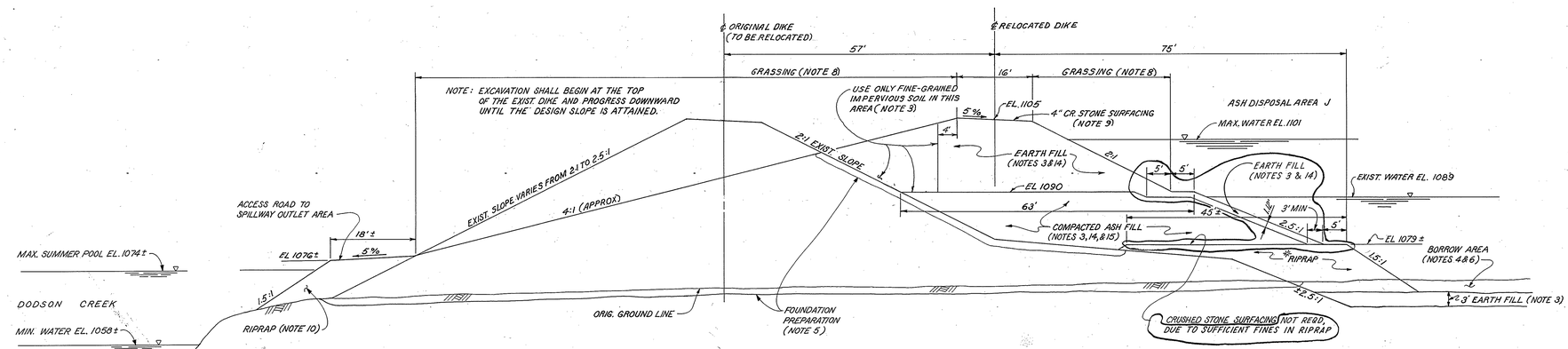
33331

35 320 RO



C4 - C4
TYPICAL SECTION
STA. 44+00± TO STA. 50+00±
SH. 1

*RIPRAP SHALL BE SOUND, DURABLE STONE, WITH A MINIMUM OF 75% BY WEIGHT CONSISTING OF STONES OF 150 LB. MIN. WEIGHT WITH THE MAX STONE SIZE BEING 3 TIMES THAT SIZE.



G4 - G4
TYPICAL SECTION
STA. 37+00± TO STA 44+00±
SH. 1

NOTES:
1. FOR GENERAL NOTES SEE DWG. 10W286-1.

FIRST ISSUE FOR
WO 544-30-31401-J0084

COMPANION DRAWINGS:
10N297, 298
10W286-1, -2, & -3

REV NO.	ECN NO.	DATE	DSGN	DRWN	CHKD	SUPV	ENGR	INSP	SUBM	RECM	APPD
1	WO# 20556	7/10/85	FOA	TWH	WHP	WHP	MWH	MWH	REDRAWN		
	REV G4-G4 TO ADD EARTH COVER ON FACE OF ASH FILL										

DSGN Fred D. Arnold
DRWN T.W. Hamilton
CHKD W.H. Pennington
SUPV W.H. Pennington
INSP
ENGINEER M.H. Miller

SCALE: 1" = 10' EXCEPT AS NOTED

MAIN PLANT

FLY ASH DISPOSAL AREA "J" SHEET 4

JOHN SEVIER STEAM PLANT
TENNESSEE VALLEY AUTHORITY
DIVISION OF ENGINEERING DESIGN

SUBMITTED	RECOMMENDED	APPROVED
M.H. Miller	R.E. Harris	R.O. Barnett

INSPECTED AND APPROVED FOR ISSUE O.P. Thornton

KNOXVILLE 12/24/84 | 41 | C | 10W286-4 R1

RECORD DRAWING AS CONSTRUCTED

PRINT H
SIZE F
BR OR PROJ IAS CE EE ME NE FD HD SD BL SW WB PW
PRINTS REQD - R___

TECHNICAL INFORMATION SYSTEM MICROFILMED

MF RD RI

551-48