



Carolina Power & Light Company

November 6, 1979

Mr. Olan D. Parr, Chief  
Light Water Reactors Branch No. 3  
Division of Project Management  
United States Nuclear Regulatory Commission  
Washington, D.C. 20555

SHEARON HARRIS NUCLEAR POWER PLANT UNIT NOS. 1, 2, 3 AND 4  
DOCKET NOS. 50-401, 50-402, 50-403, 50-404  
SEISMIC CATEGORY I FILL AND BACKFILL IN  
CLASS I PIPING AND DUCT BANK AREAS

Dear Mr. Parr:

On June 12, 1979 Carolina Power & Light Company (CP&L) submitted contour profiles, test procedures, typical backfill descriptions, and engineering analyses and criteria for previously placed material between plant coordinate N230 and Tank Building No. 1. CP&L committed to provide information on the remaining Category I piping and duct bank areas on a future date. Based on changes made by CP&L to paragraph 4.4 of Technical Procedure TP-02 "Soil Control Program - Fill and Backfill for Plant Grade, Plant Building and Reservoir Concrete Structures", your office advised NRC Region II of the acceptability of our program.

Submitted with this letter are the plans and profiles of original ground and fill contours, and locations for all remaining Class I piping and electrical conduit. An abrupt change in the depth of backfill will occur near the foundation walls of Category I structures where the lines leave or enter such structures. To avoid any settlement and restrictions on the construction activities around the structures, Class I piping will be supported by 2000 psi concrete as shown on the enclosed Drawing CAR-2167 G-0488. The ends of electrical conduits are not anchored in the wall and pass through sleeves with elastic boots which permit free movement in any direction.

For areas where Class I piping and duct bank systems will be placed on fill material, the following requirements per paragraph 4.4 of TP-02 will be followed:

1. In-place density testing shall be completed in previously placed fill during excavation at 5 ft. and 7.5 ft. below the surface and at the elevation required for setting pipe or duct bank. This applies to all fill except blasted random rockfill. Note: The 12 inch sandcone, in accordance with ASTM D1556, shall be used for ripped material.
2. The test frequency of tests shall be one for every 75 linear feet of trench approximately along the centerline.

1307 061

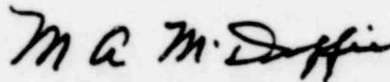
Boo  
SEI

7911090 418

3. A proctor curve in accordance with ASTM D698 (or a "one point proctor" to verify an existing curve) shall be developed for each density test.
4. A nonconformance report shall be issued and the Area Engineer shall be notified if the in-place density is below 95% Standard Proctor.
5. After density testing is completed and prior to placing bedding material, the entire surface area of fill material shall be proof rolled to identify any soft fill material.
6. Proof rolling shall be completed with four passes of a sheepfoot or vibratory roller under 100% monitoring by a qualified soil inspector. The Area Engineer shall be notified if any soft areas are identified prior to removal and replacement with suitable material.

Carolina Power & Light Company believes this information adequately addresses your request for information on all remaining Class I piping and duct bank areas placed in fill. Please formalize your technical concurrence with our criteria so we may continue construction activities in the subject areas. Contact us if you desire any discussion or clarification of this submitted material.

Yours very truly,



M. A. McDuffie  
Senior Vice President  
Engineering & Construction

MAM/jcb

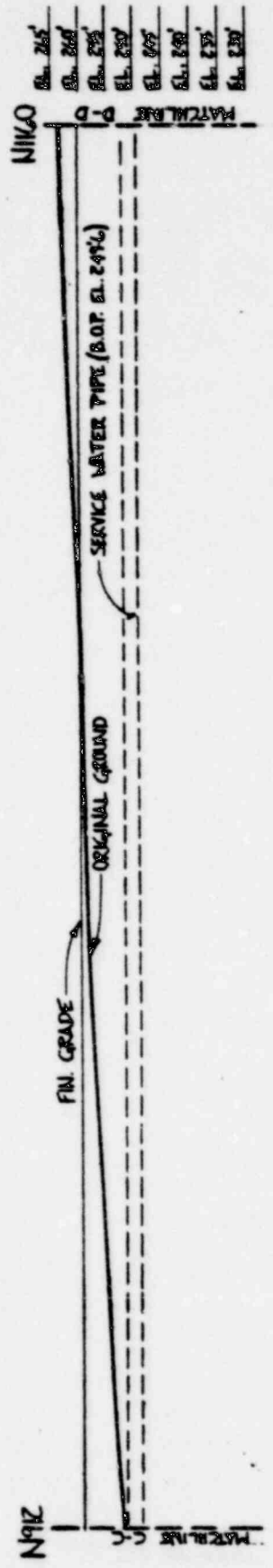
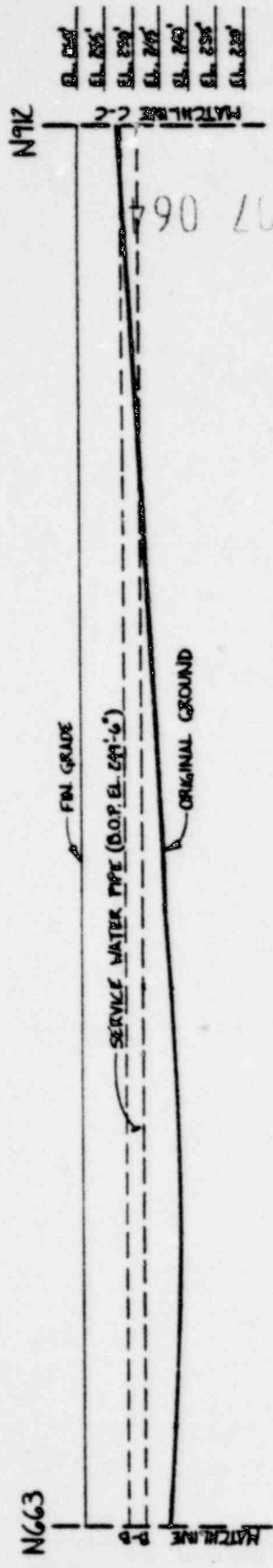
Attachment

cc: Mr. James P. O'Reilly (w/attachment)

1307 062



REVISIONS		
APPROVED	REV.	DATE



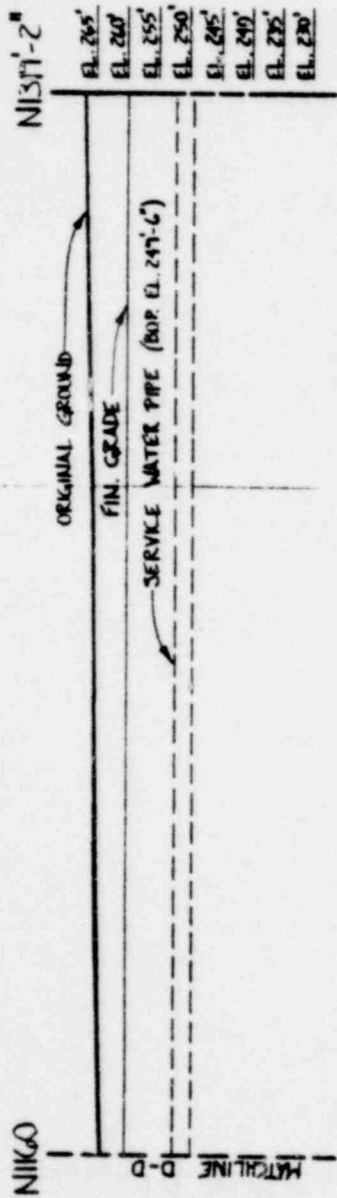
CAROLINA POWER & LIGHT COMPANY  
 BRIDGEMAN POWER PLANT  
 1000 WEST 10TH ST. S. A. AND S.

PROFILE OF SERVICE WATER LINE  
 FROM INTAKE TO TANK #1

DATE: 8-28-77  
 BY: MFB  
 CHECKED BY: MFB  
 APPROVED BY: MFB  
 55/A-B-N75A 2

POOR ORIGINAL

1707 065



POOR ORIGINAL

REVISIONS		
APPROVED	NO.	DATE

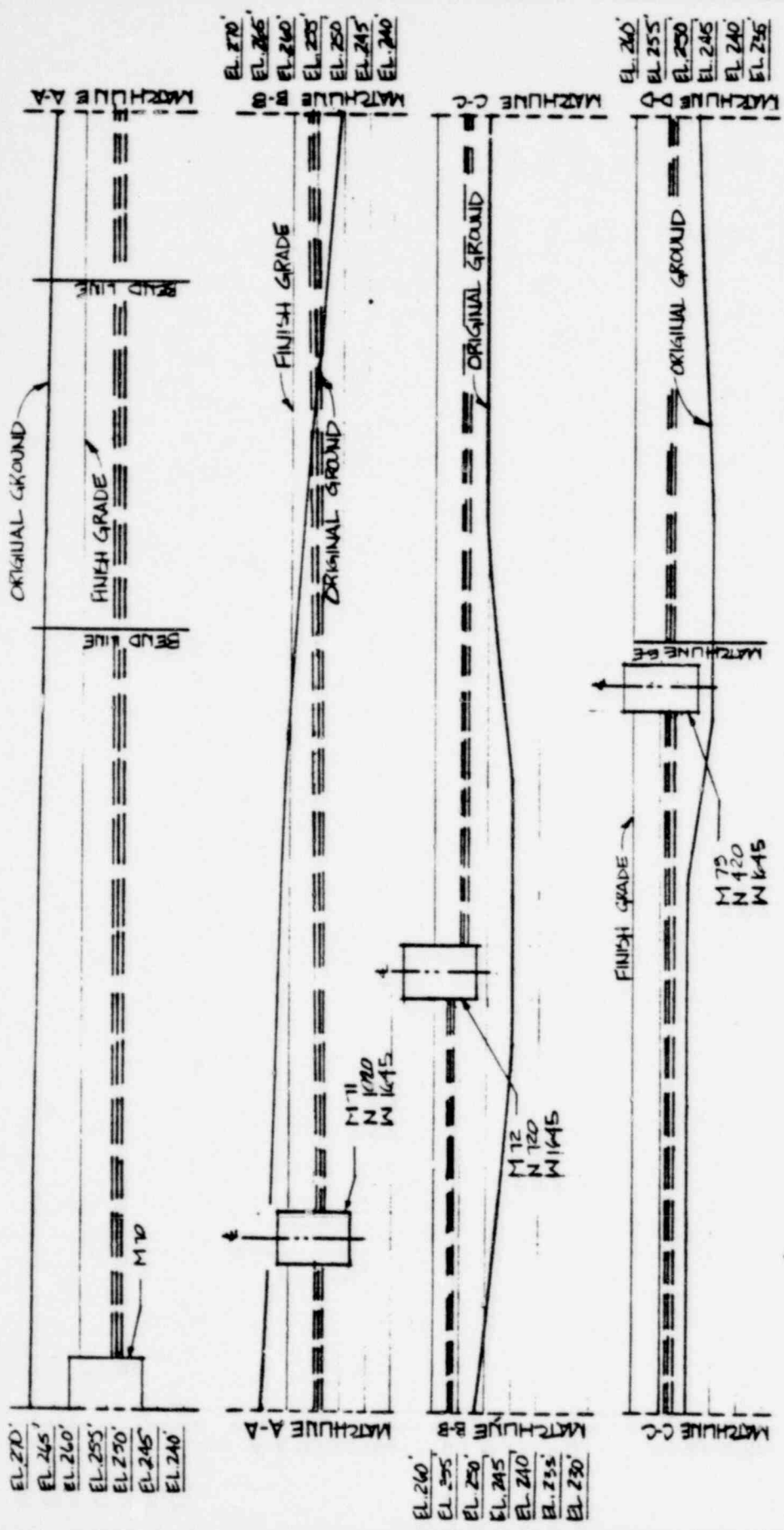
CAROLINA POWER & LIGHT COMPANY  
SHARON HARRIS NUCLEAR POWER PLANT  
BOP NEW UNITS NO. 1, 2, 3, AND 4

PROFILE OF SERVICE WATER LINE  
FROM INTAKE TO TANK #1

DRAWN BY: VfV	DATE: 8-28-79	CHECK BY: JTB	APPROV. BY: [Signature]	DRAWING NO.: SS/A-B-1754.3
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990 1021

REVISIONS		
APPROVED	NO.	DATE



CAROLINA POWER & LIGHT COMPANY  
SHEARON HARRIS NUCLEAR POWER PLANT  
900 MW UNITS NO. 1, 2, 3, AND 4

PROFILE OF DUCT BANKS FROM  
TANK #1 TO INTAKE

DRAWN BY: W/VAV

DATE: 8-28-77

CHECK BY: B

APPROVED BY: [Signature]

DRAWING NO.: 990-A-8-HB-1

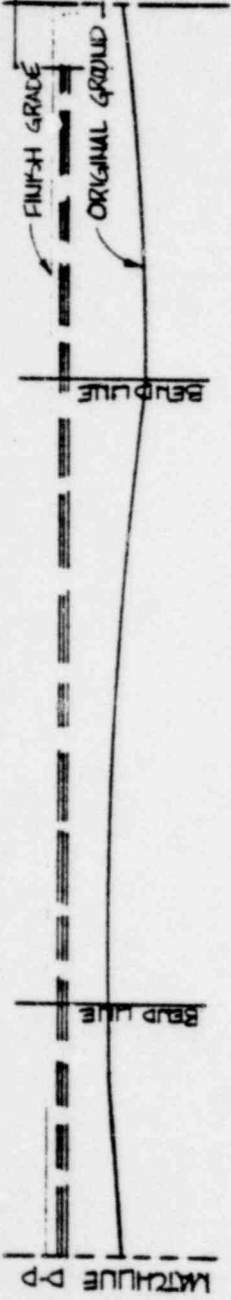
POOR ORIGINAL



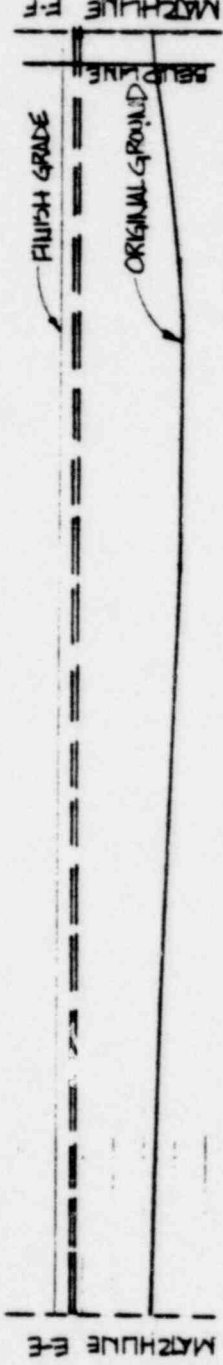
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REVISIONS		
APPROVED NO.	DATE	DESCRIPTION

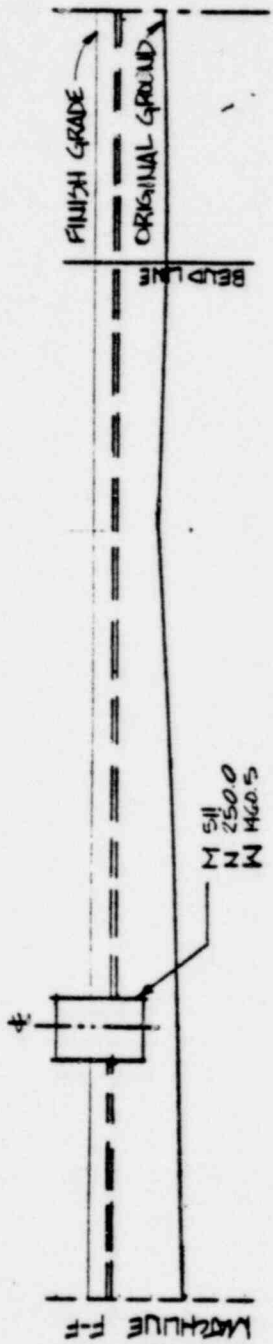
EL. 265  
EL. 260  
EL. 255  
EL. 250  
EL. 245  
EL. 240  
EL. 235



EL. 265  
EL. 260  
EL. 255  
EL. 250  
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EL. 240  
EL. 235



EL. 265  
EL. 260  
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EL. 250  
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EL. 240  
EL. 235

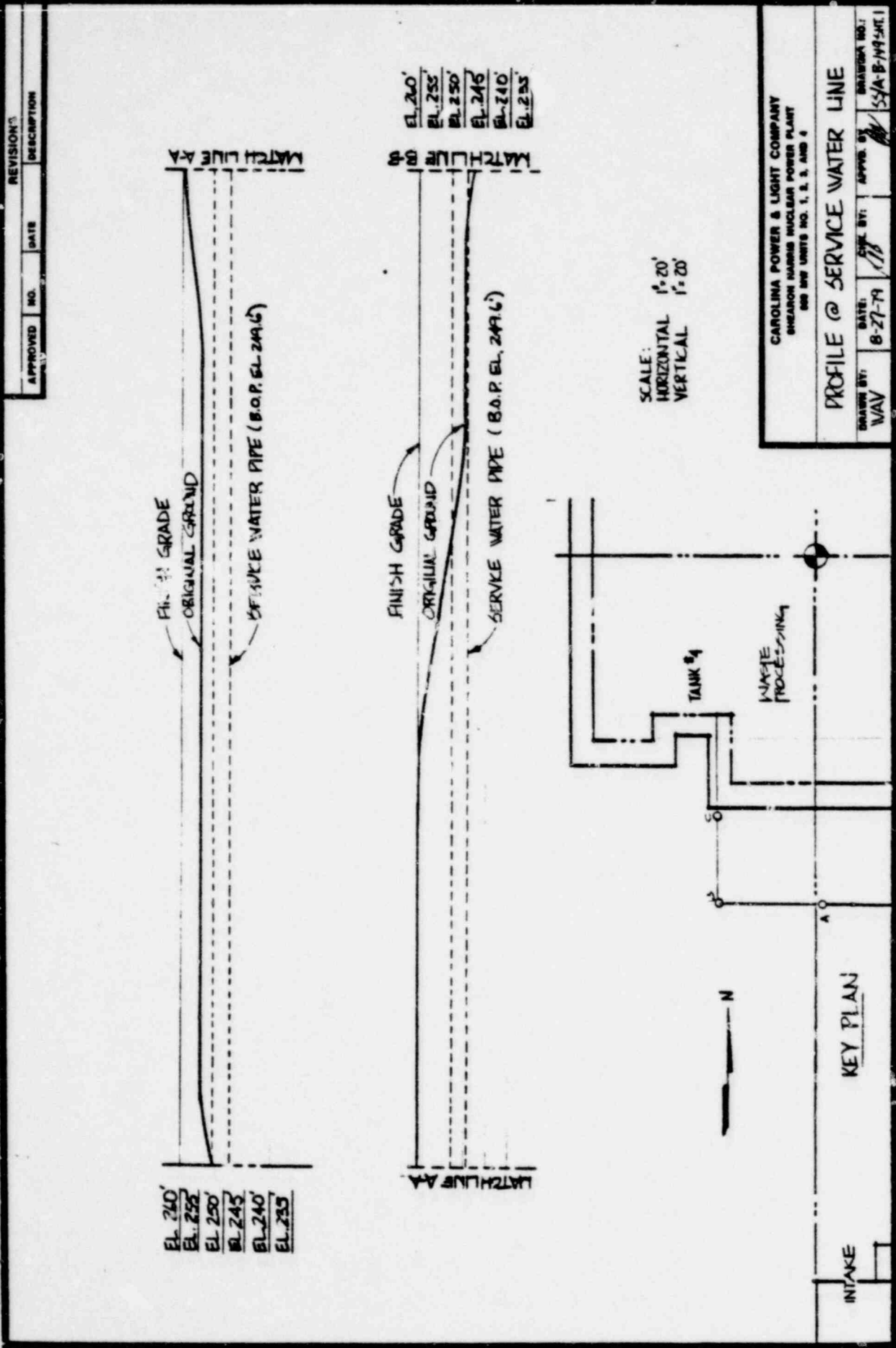


CAROLINA POWER & LIGHT COMPANY  
SHEARON HARRIS NUCLEAR POWER PLANT  
800 MW UNITS NO. 1, 2, 3, AND 4

PROFILE OF DUCT BANKS FROM  
TANK #1 TO INTAKE

DATE: 8-30-79	BY: JLB	APPROVED: [Signature]	DRAWING NO.: 5/A-B/142-111.2
WAV			

POOR ORIGINAL



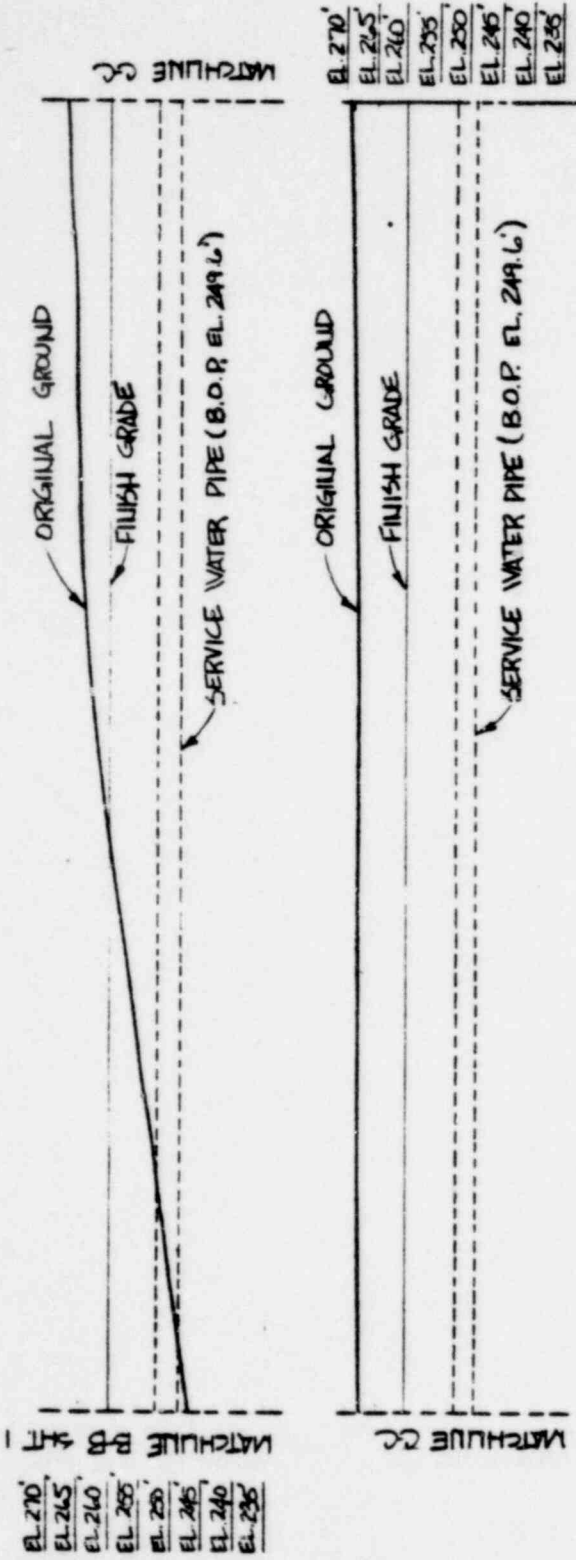
POOR ORIGINAL



690 2021

REVISIONS

APPROVED	NO.	DATE	DESCRIPTION
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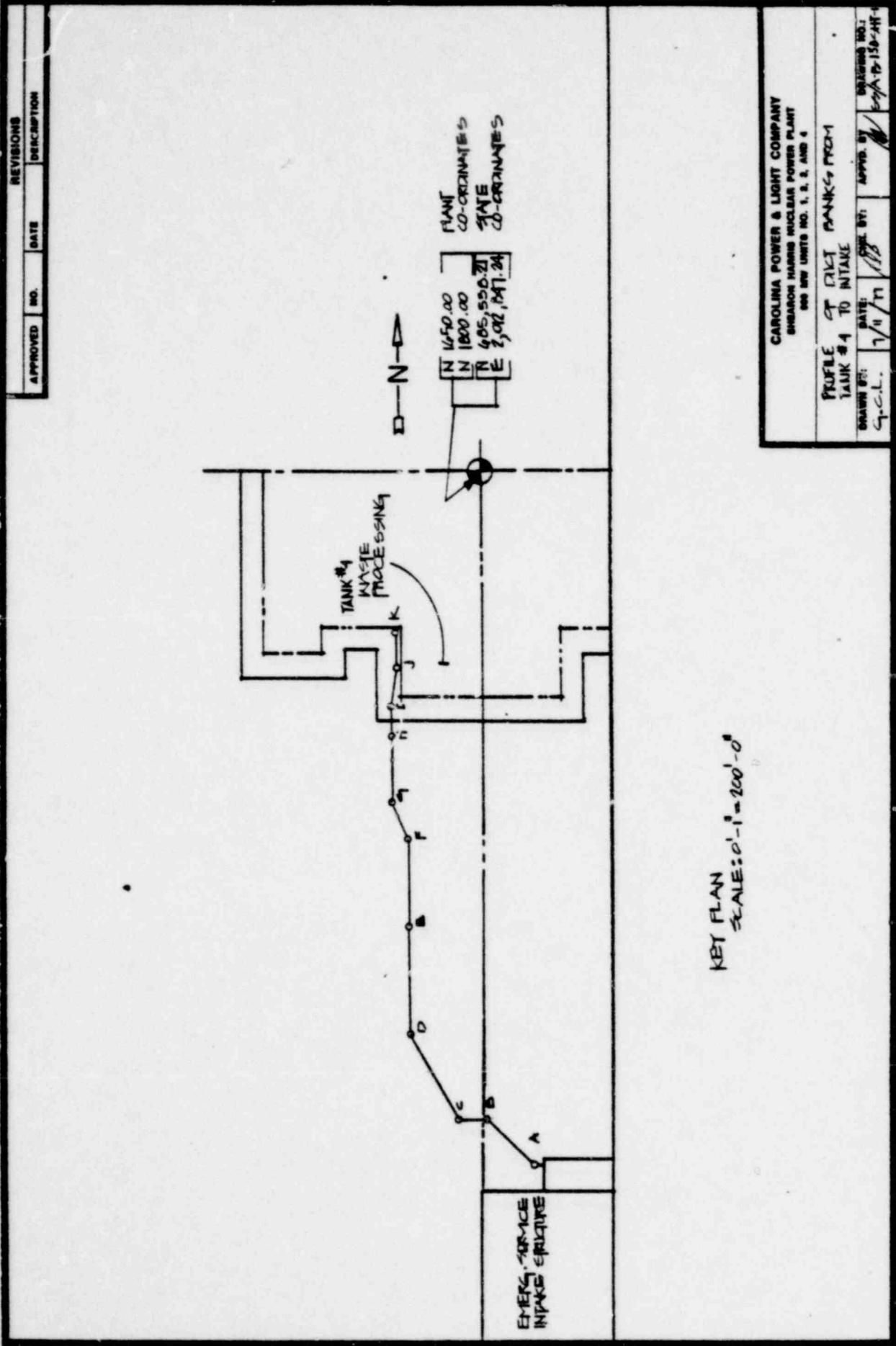
CAROLINA POWER & LIGHT COMPANY  
SHEARON HARRIS NUCLEAR POWER PLANT  
800 MW UNITS NO. 1, 2, 3, AND 4

PROFILE @ SERVICE WATER LINE

DRAWN BY: WAV	DATE: 8-28-74	CHK. BY: J.P.	APPROV. BY: [Signature]	DRAWING NO.: 44A B-149 3.2
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POOR ORIGINAL

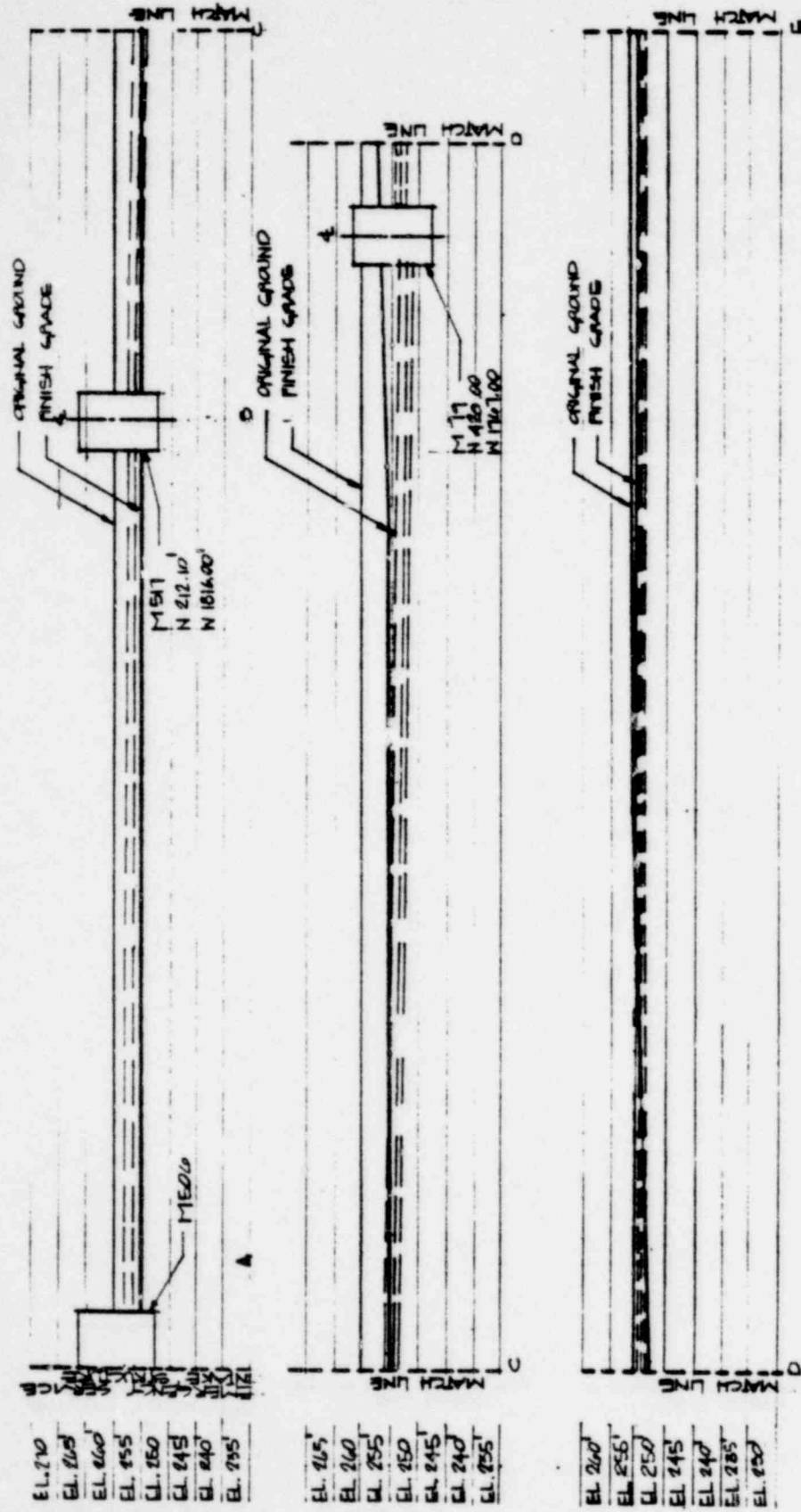
1297 070



POOR ORIGINAL

120 2021

APPROVED	NO.	DATE	DESCRIPTION



SCALE: VERTICAL 1" = 10'-0" HORIZONTAL 1" = 100'-0"

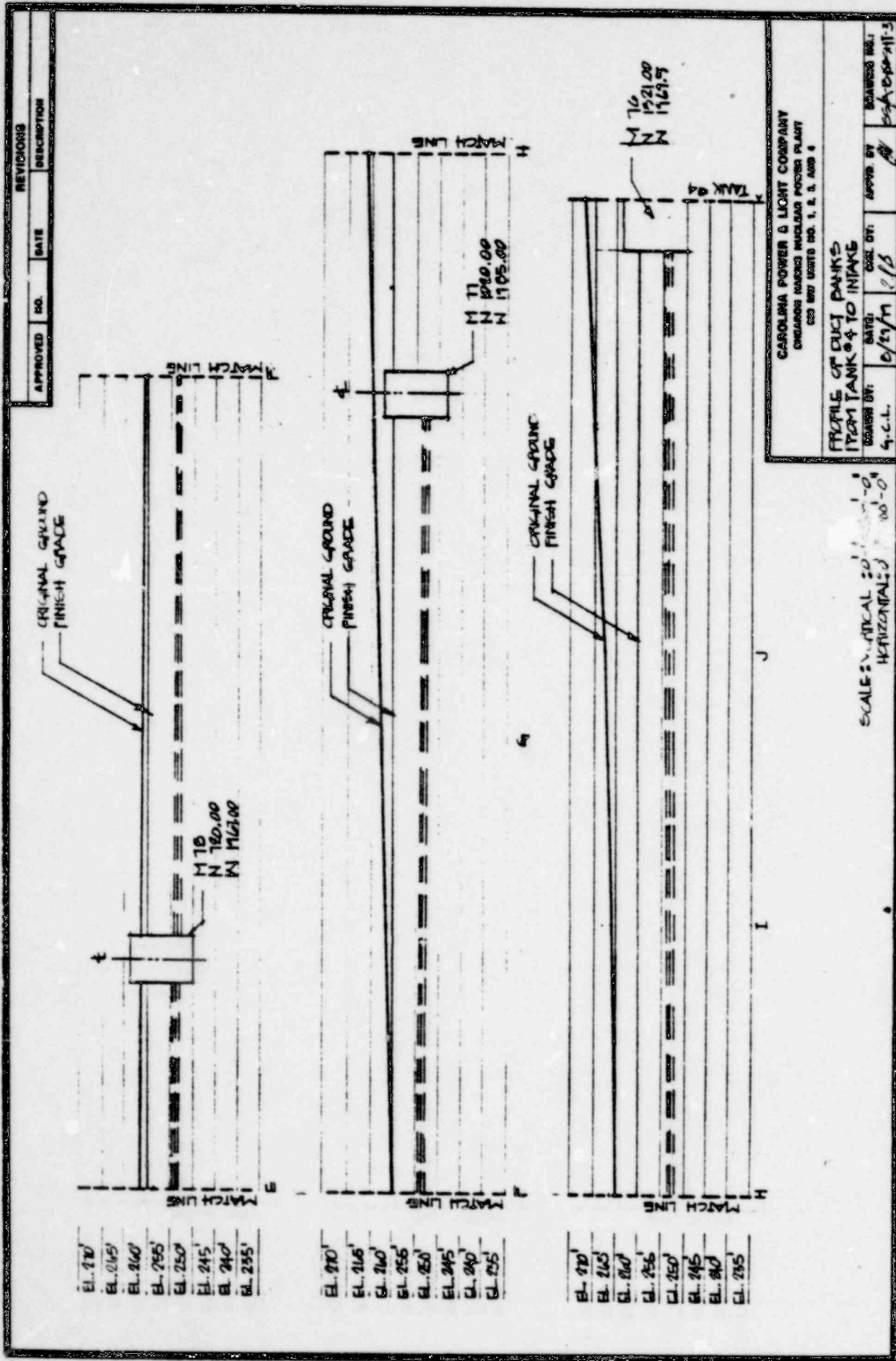
CAROLINA POWER & LIGHT COMPANY  
SHEARON HARRIS NUCLEAR POWER PLANT  
SHEET NO. 1, 2, 3, AND 4

PROFILE OF DUCT BANKS  
FROM TANK #4 TO INTAKE

DESIGNED BY:	DATE:	CHECK BY:	APPROVED BY:	DRAWING NO.:
G.C.L.	0/30/77	NLB		10-150-77-2

POOR ORIGINAL

1727 072

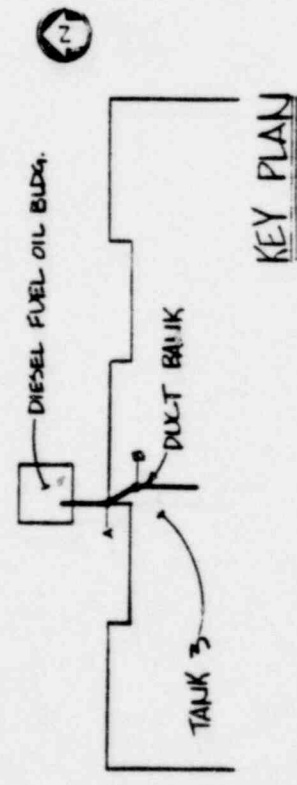


POOR ORIGINAL

POOR ORIGINAL

1297 073

REVISIONS		
APPROVED NO.	DATE	DESCRIPTION



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

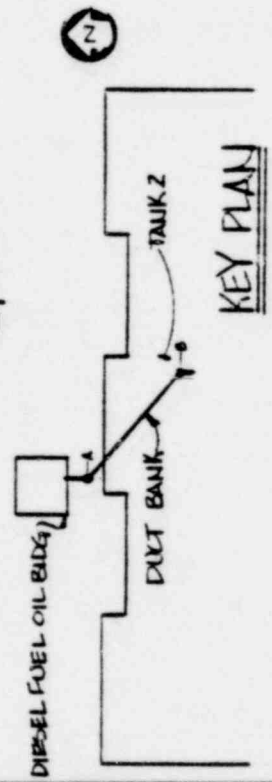
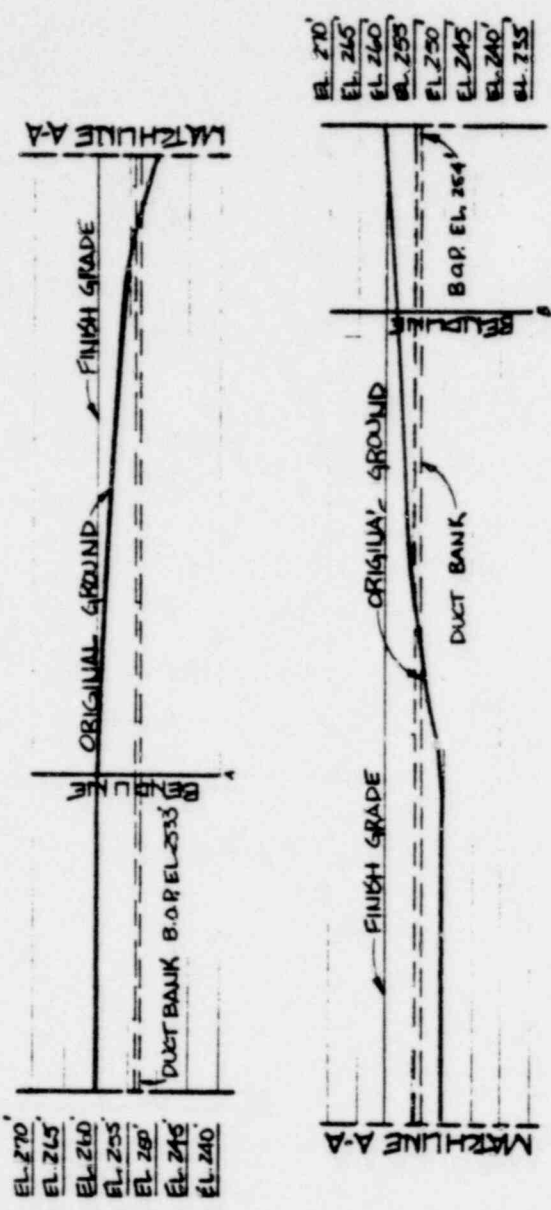
KEY PLAN

CAROLINA POWER & LIGHT COMPANY SHEPSON NARRIS NUCLEAR POWER PLANT DESIGN UNITS NO. 1, 2, 3, AND 4	
DUCT BANK FROM DIESEL FUEL OIL BLDG. TO TANK BLDG. 3	DRAWING NO. 54AB-151
DRAWN BY: WVN	CHECKED BY: 118
DATE: 9-14-74	DATE: 9-14-74

1707 074

POOR ORIGINAL

REVISIONS		
APPROVED	NO.	DATE



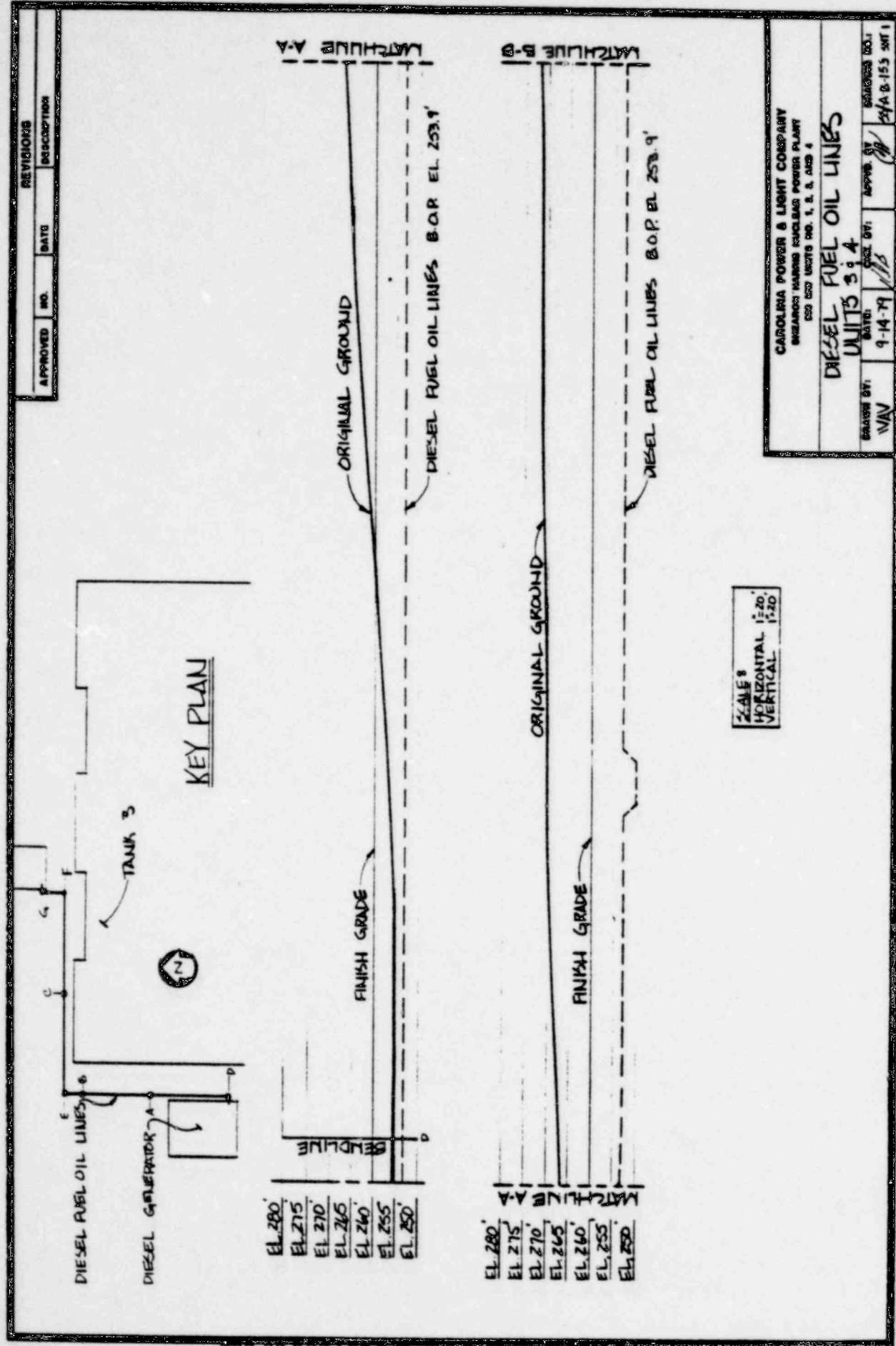
SCALE  
HORIZONTAL - 1"=20'  
VERTICAL - 1"=20'

CAROLINA POWER & LIGHT COMPANY SHEARON HARRIS NUCLEAR POWER PLANT SHEARON HARRIS NO. 1, 2, 3, AND 4	
DUCT BANK FROM DIESEL FUEL OIL BLDG. TO TANK 2	DRAWING NO. 1
DRAWN BY: WAW	CHECKED BY: JLB
DATE: 1-14-79	APPROVED BY: JLB
	SSA-B-152



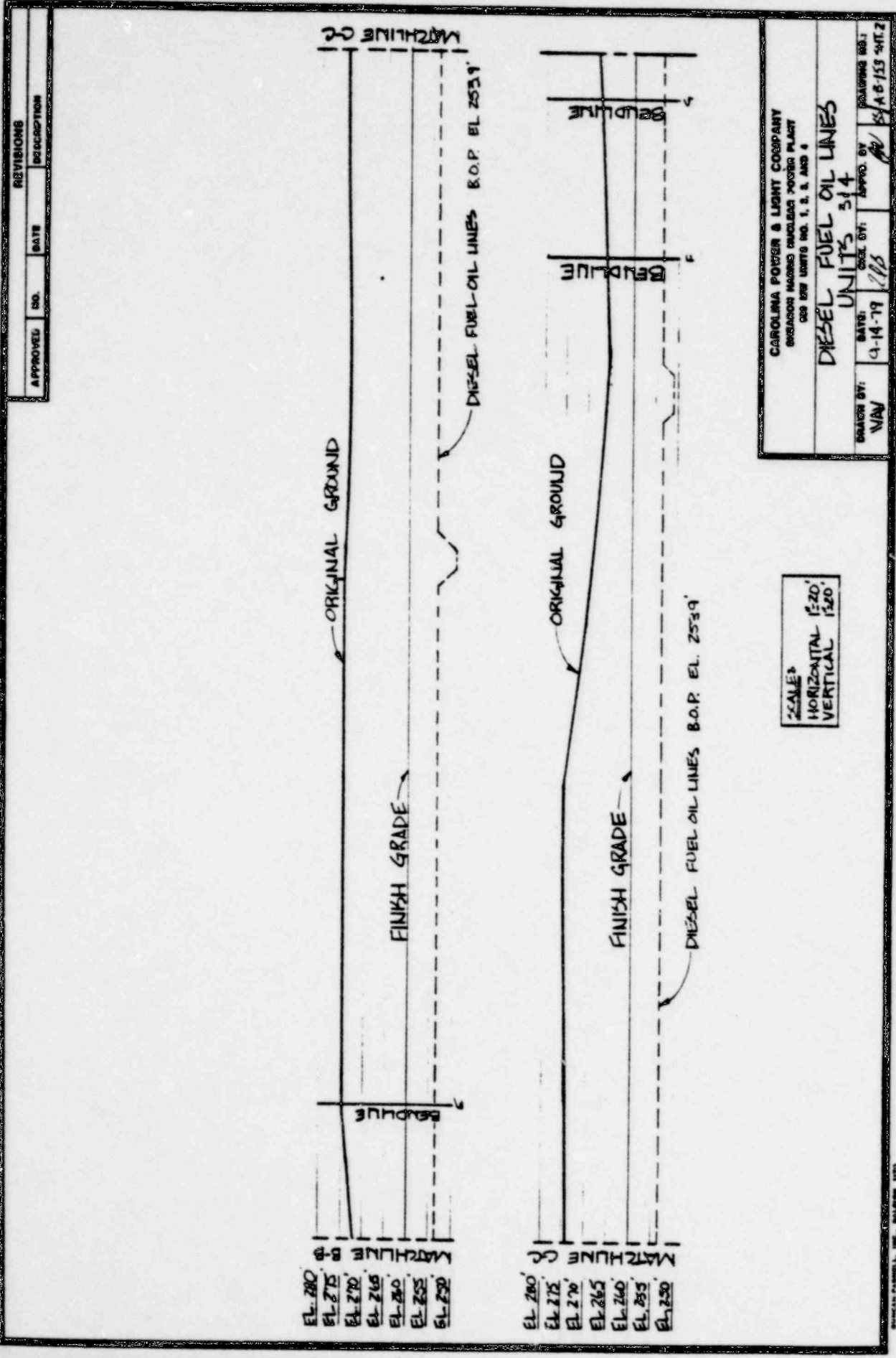
POOR ORIGINAL

1707 075



1707 076

POOR ORIGINAL



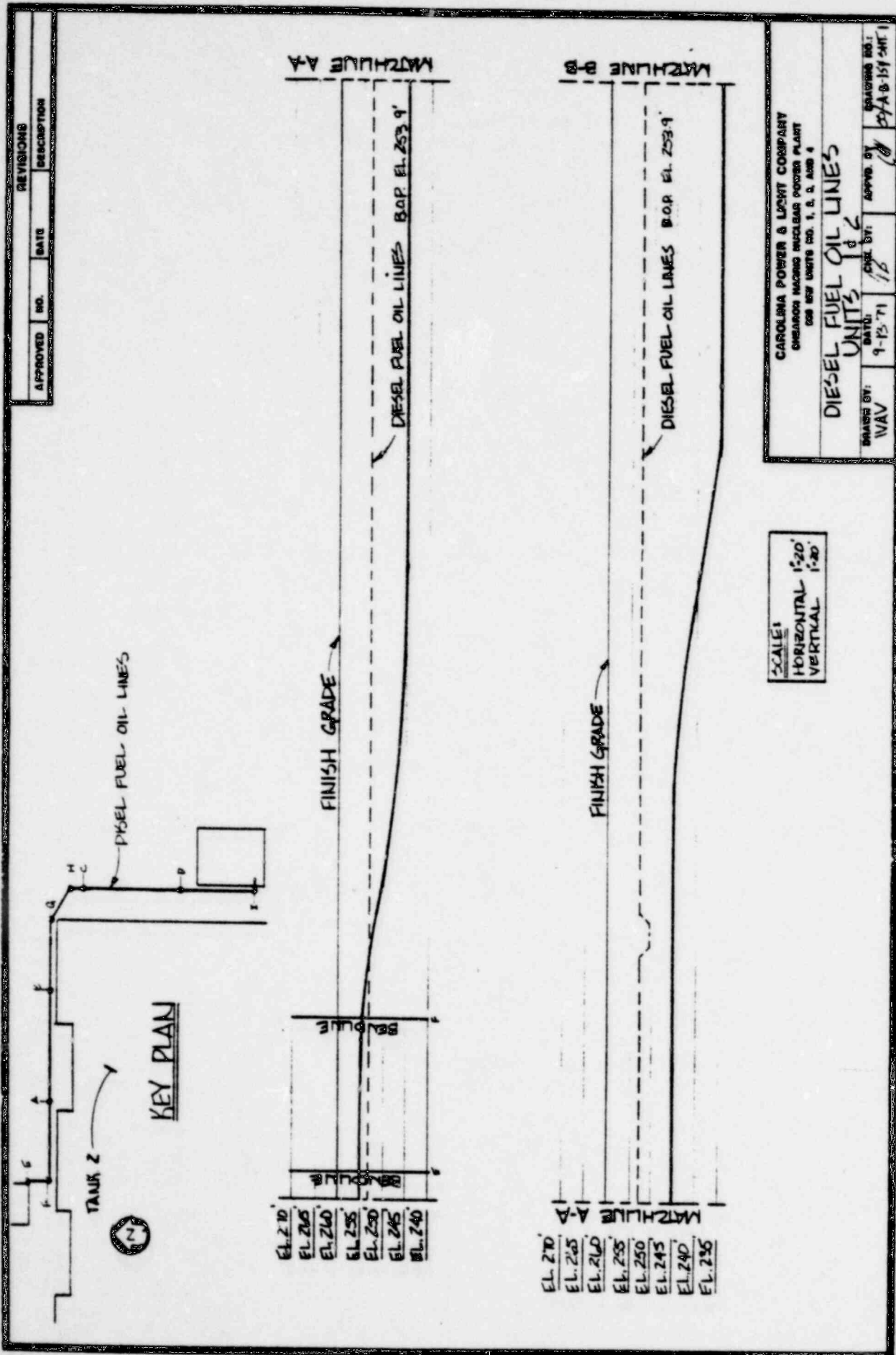
CAROLINA POWER & LIGHT COMPANY BREASON MARSH NUCLEAR POWER PLANT COS 250 UNITS NO. 1, 2, 3, AND 4	
DIESEL FUEL OIL LINES	
UNITS 314	
DRAWN BY: WAV	CHECK BY: RPS
DATE: 4-14-79	APPROVED BY: [Signature]
DRAWING NO.: SSA-6-153-417.2	

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

BRUNNEN PAPER CO., INC., BALTIMORE 1970

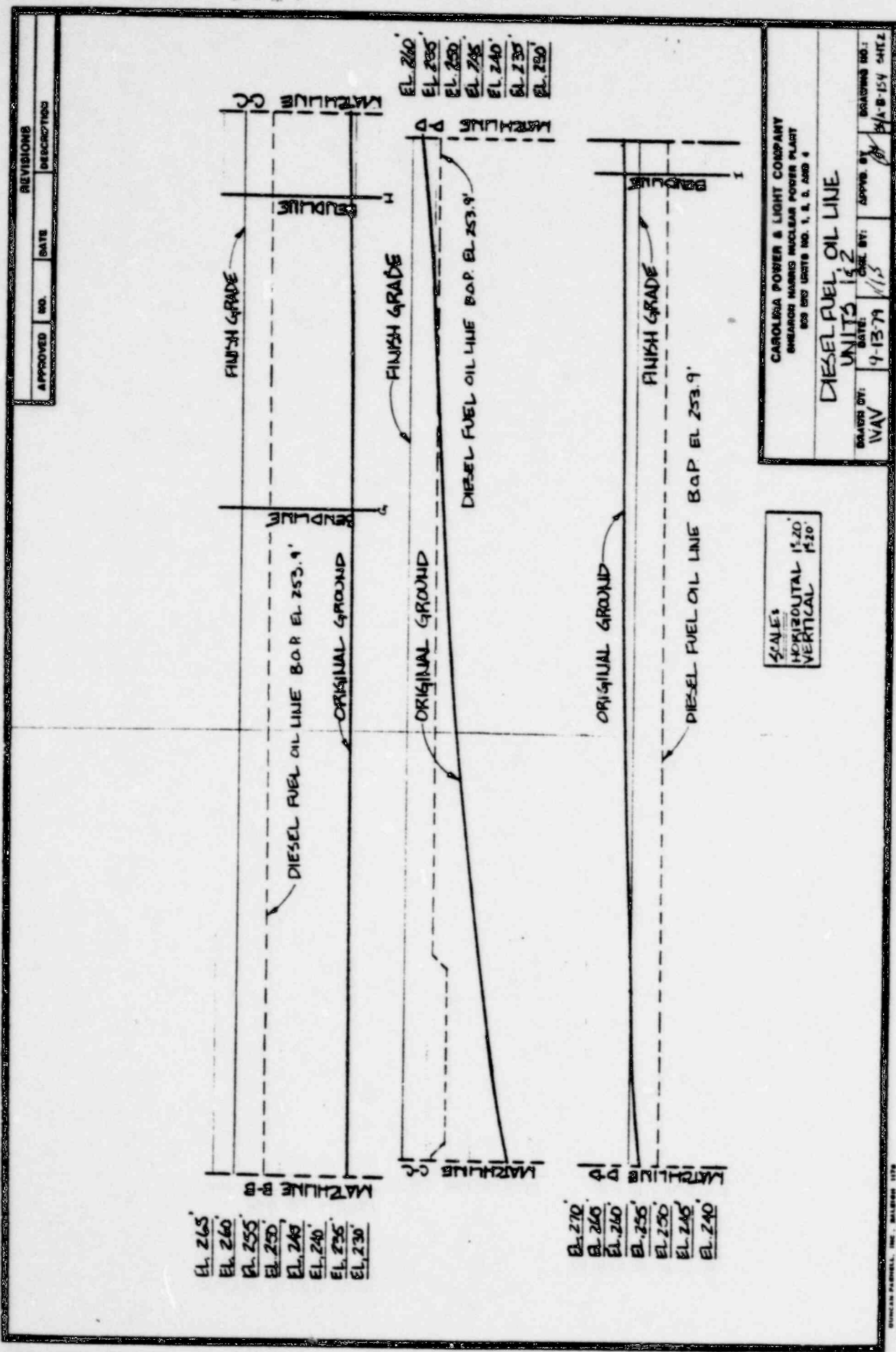
POOR ORIGINAL

1797 077



870 707

POOR ORIGINAL



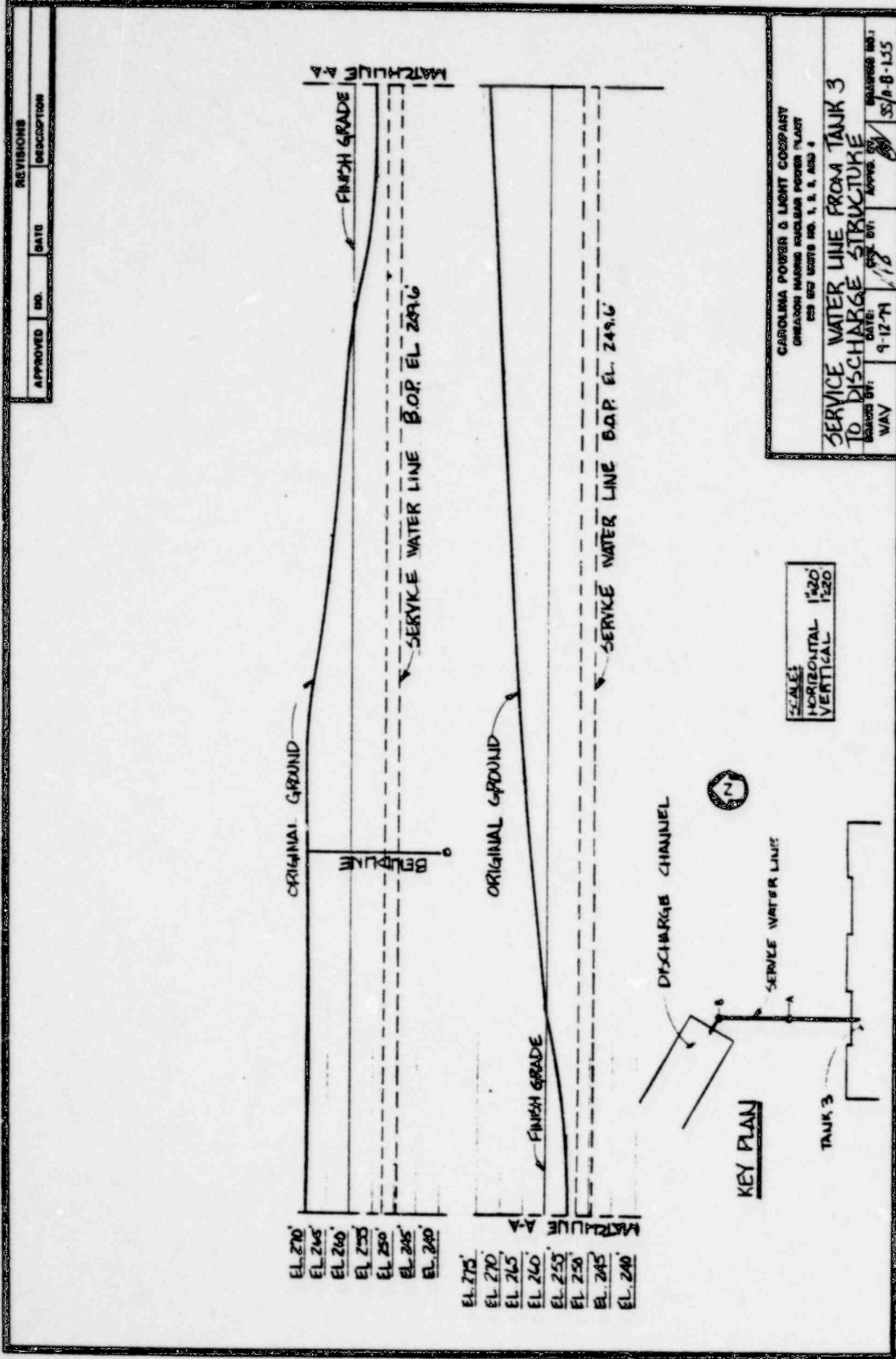
SCALE:  
HORIZONTAL 1"=20'  
VERTICAL 1"=20'

APPROVED		NO.	DATE	REVISIONS	DESCRIPTION
CAROLINA POWER & LIGHT COMPANY SHEARER MARSH NUCLEAR POWER PLANT 803 803 UNITS NO. 1, 2, 3, AND 4					
DIESEL FUEL OIL LINE					
UNITS 1 & 2					
DESIGNED BY:	DATE:	CHECK BY:	DATE:	APPROVED BY:	REVISIONS NO.:
WAV	4-13-79	1/15			8/A-B-154-2412

STANDARD PAPER, INC., BALTIMORE, MD.

670 2021

POOR ORIGINAL





REVISIONS

APPROVED NO. DATE DESCRIPTION

EL 270'  
EL 265'  
EL 260'  
EL 255'  
EL 250'  
EL 245'  
EL 240'

ORIGINAL GROUND

FINISH GRADE

SERVICE WATER LINE B.O.P. EL 249.6'

MATCHLINE A-A

MATCHLINE A-A

EL 270'  
EL 265'  
EL 260'  
EL 255'  
EL 250'  
EL 245'  
EL 240'

FINISH GRADE

ORIGINAL GROUND

SERVICE WATER LINE B.O.P. EL 249.6'

MATCHLINE K-K

EL 270'  
EL 265'  
EL 260'  
EL 255'  
EL 250'  
EL 245'  
EL 240'

ROADLINE

FINISH GRADE

ORIGINAL GROUND

SERVICE WATER LINE B.O.P. 249.6'

DISCHARGE CHANNEL



SERVICE WATER LINE

KEY PLAN

TANK 2

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

CAROLINA POWER & LIGHT COMPANY  
SHARON HARRIS NUCLEAR POWER PLANT  
SHEET NO. 1, 2, 3, AND 4

SERVICE WATER LINE FROM TANK 2  
TO DISCHARGE STRUCTURE

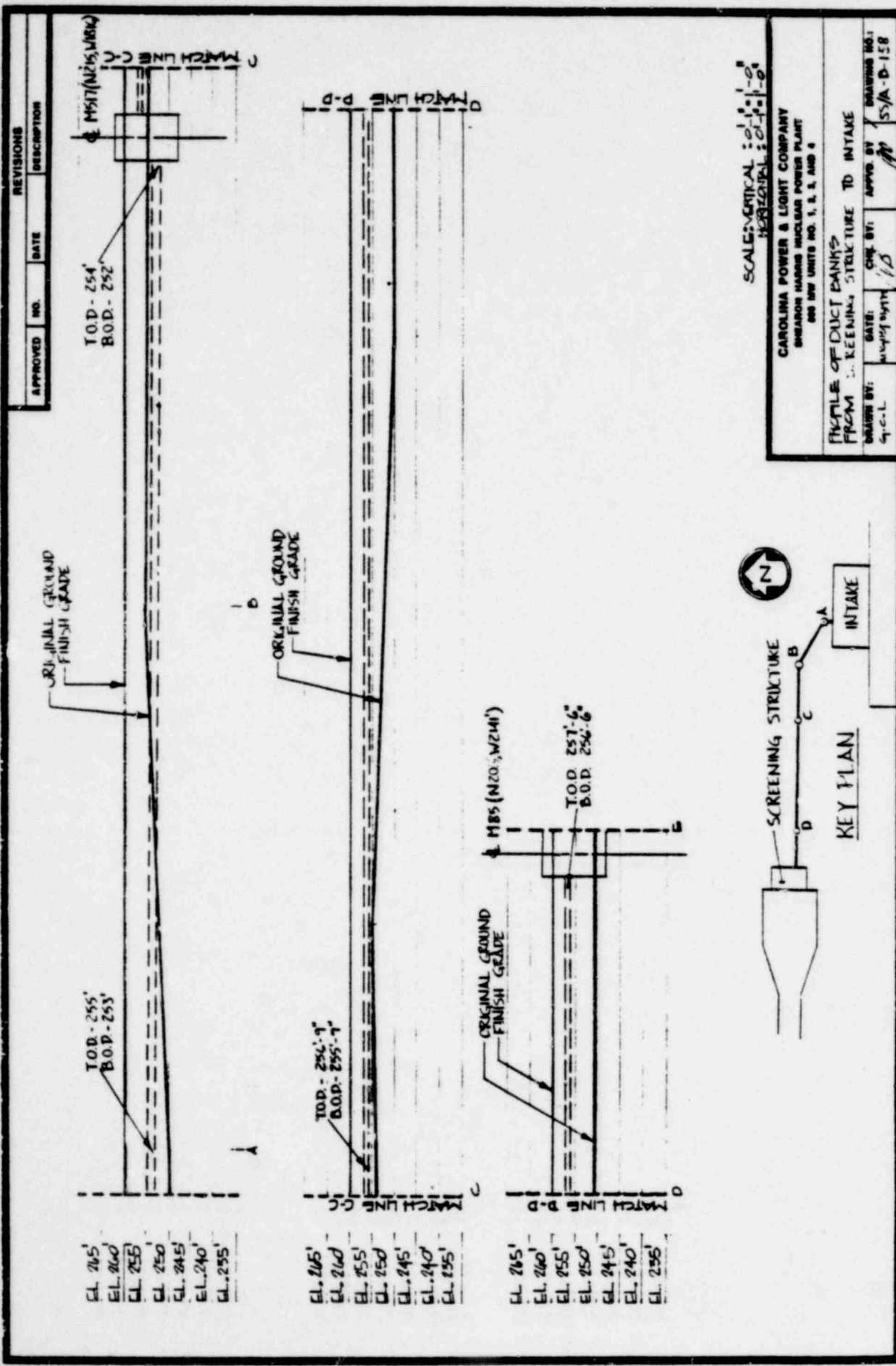
DRAWN BY: WAW  
CHECK BY: 1/18  
DATE: 9-11-79  
APPROVED BY: [Signature]  
SHEET NO.: SS/A-B-156





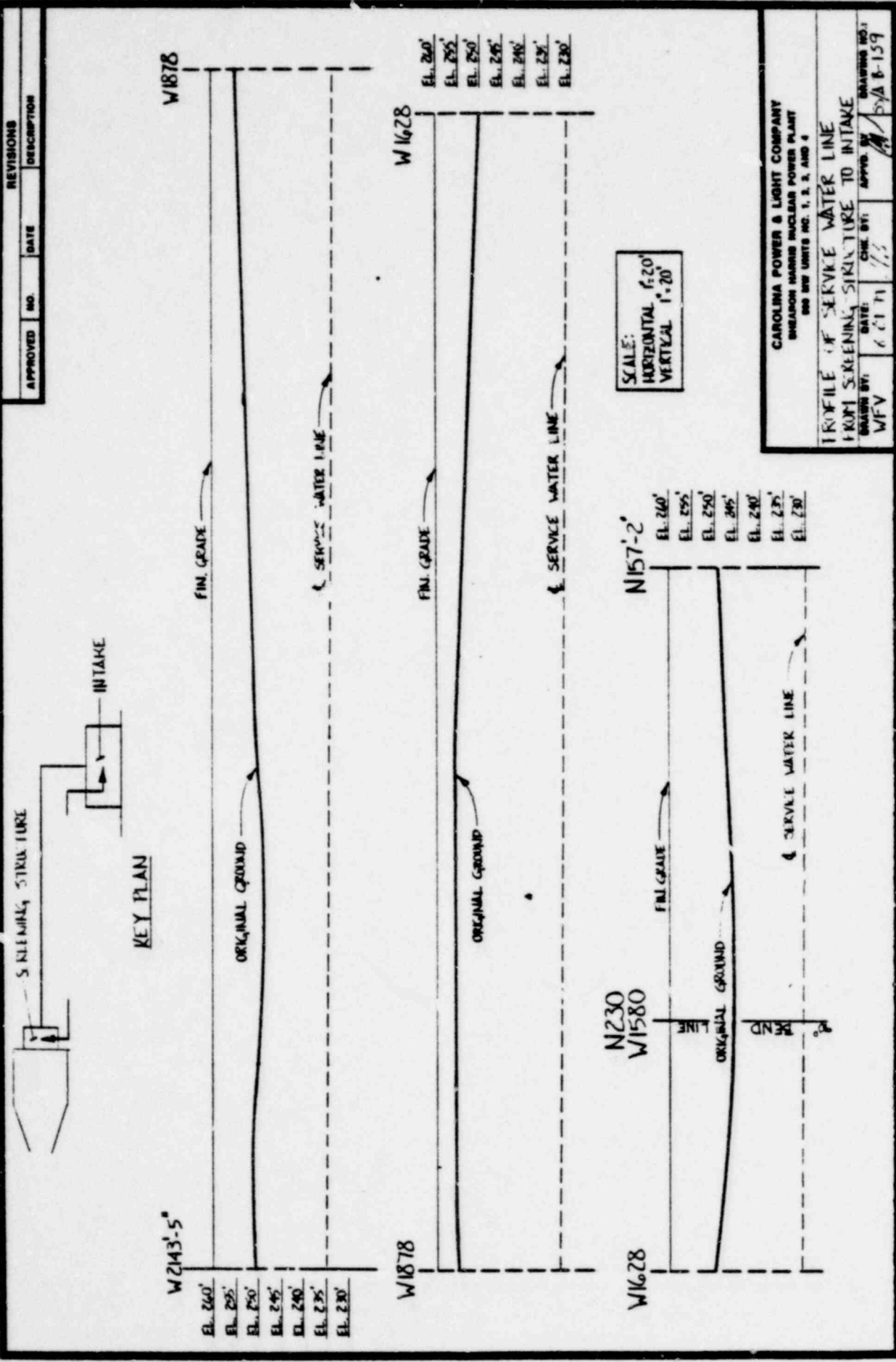
POOR ORIGINAL

1727 082



1297 083

POOR ORIGINAL

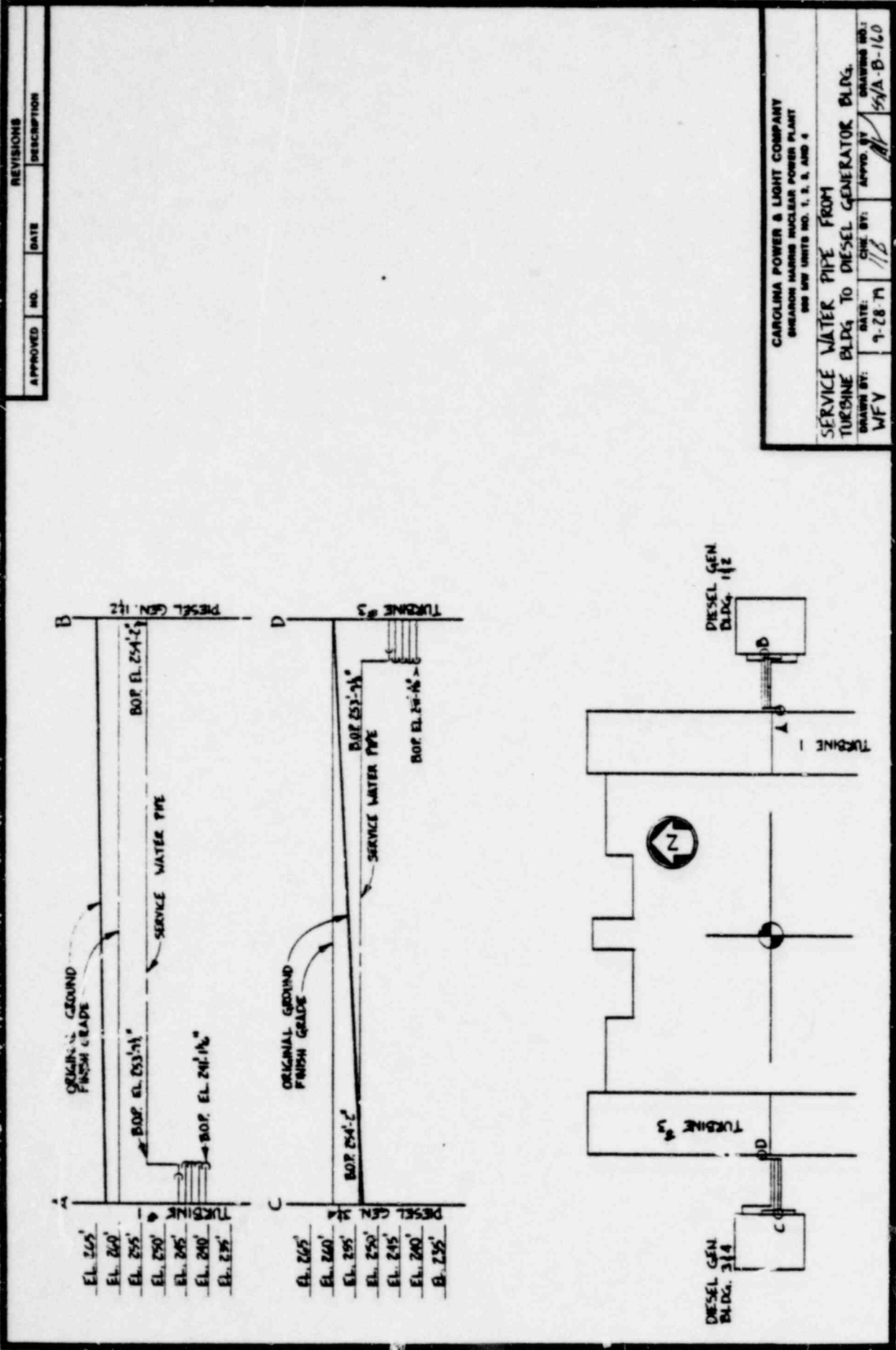


CAROLINA POWER & LIGHT COMPANY  
SHEARON MARSH NUCLEAR POWER PLANT  
SEE NEW UNITS NO. 1, 2, 3, AND 4

PROFILE OF SERVICE WATER LINE  
FROM SCREENING STRUCTURE TO INTAKE

DESIGNED BY:	DATE:	CHECK BY:	APPROVED BY:	DRAWING NO.:
WVF	6/21/71	WVF	WVF	5/A 8-159

POOR ORIGINAL

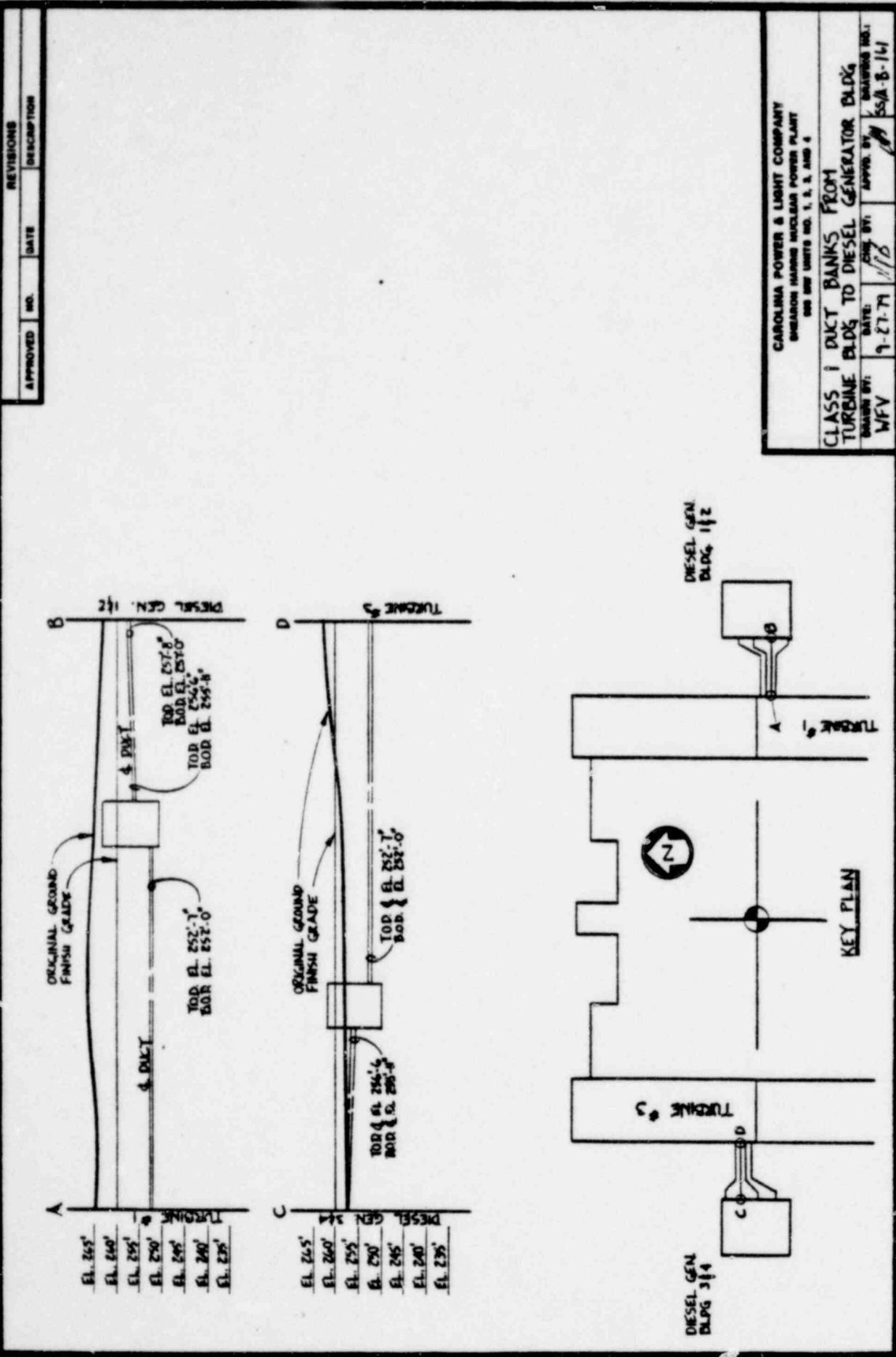


CAROLINA POWER & LIGHT COMPANY  
SHEARON MARINE NUCLEAR POWER PLANT  
SWS SWF UNITS NO. 1, 2, 3, AND 4

SERVICE WATER PIPE FROM  
TURBINE BLDG TO DIESEL GENERATOR BLDG.

DATE:	9-28-77	CHE. BY:	11/3	APPROV. BY:	[Signature]	DRAWING NO.:	56/A-B-160
DRAWN BY:	WFV						

POOR ORIGINAL

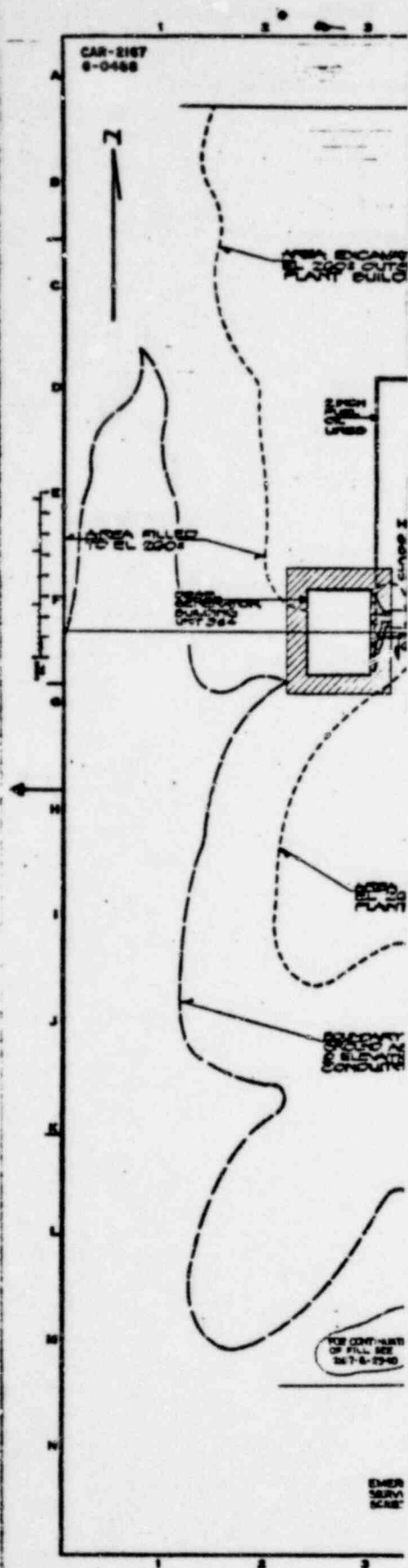


CAROLINA POWER & LIGHT COMPANY  
SHEARAN HARRIS NUCLEAR POWER PLANT  
SHEARAN HARRIS NO. 1, 2, 3, AND 4

CLASS I DUCT BANKS FROM  
TURBINE BLDG TO DIESEL GENERATOR BLDG

DATE: 7-27-79  
BY: WFV  
CHECKED BY: 11/8  
APPROVED BY: 11/8  
DESIGNED BY: 11/8  
DRAWING NO.: 55A-8-141

POOR ORIGINAL



1307 086