

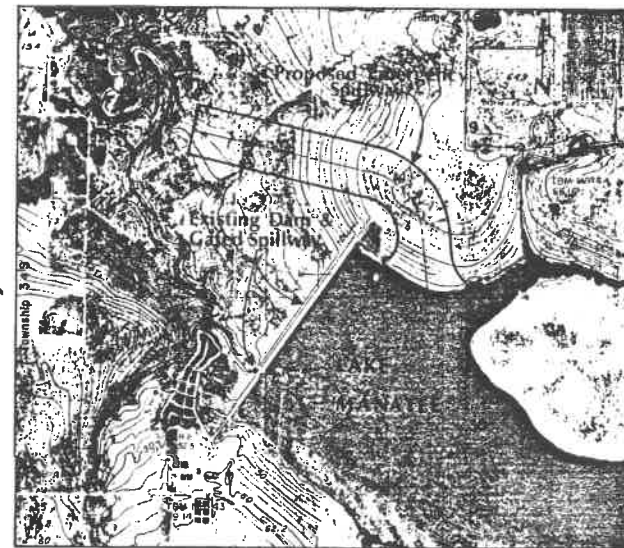
# LAKE MANATEE DAM EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM

*Spillway  
Modifications  
Lake  
Manatee*

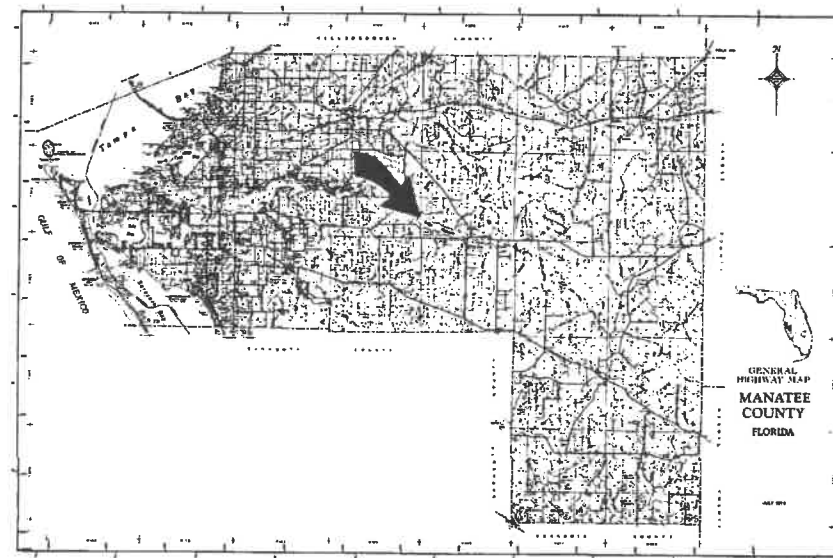


## INDEX OF PLAN SHEETS

SHEET NO.	SHEET DESCRIPTION
1	Cover Sheet & Key Map
2	Summary Of Quantities
3	Typical Sections
4	Spillway Alignment Plan
5	Emergency Spillway Profile
6	Plan & Profile Of Existing Dam And Modifications
7	Boring Location Plan
8	Soil Borings & Profiles
9 & 10	Fuse Plug Dam Details
11	Emergency Spillway Cross Section Layout
12-24	Emergency Spillway Cross Sections
25	Repair Of Downstream Bank Erosion
26	Wetland Area
27	Right Of Way Map
28	Land Taking Map



SITE PLAN



PROJECT LOCATION

## COUNTY COMMISSIONERS

Vernon E. Vickers *Chairman*  
 Edward W. Chance *Vice Chairman*  
 Westwood H. Fletcher, Jr. *Chairman*  
 Patricia M. Glass *Vice Chairman*  
 Claude E. McGavic

Richard A. Wilford, Director  
 Manatee County Utilities Department

MANATEE COUNTY UTILITIES DEPARTMENT

# SUMMARY OF QUANTITIES

## GENERAL NOTES

1. Dimensions Shown On Existing Details Are Taken From Original Design Drawings And Visual Observations Made During The Field Inspection And Are Not Guaranteed. The Contractor Shall Determine And Establish All Dimensions. And Existing Details Necessary For The Completion Of All Work By Field Measurements. The Contractor Shall Be Responsible For The Accuracy Thereof And Shall Not Order Any Material Or Commence Any Fabrication Until He Has Made The Required Measurements On The Actual Structure And The Extent Of The Proposed Work Has Been Approved By The Engineer.
2. The Service Bridge Over The Existing Tainter Gates Is Capable Of Carrying A 35 Ton 4 Axle Truck (Florida D.O.T. Standard S/U-4). The Contractor Is Alerted, However, That The 1" x 8" Welded Steel Galvanized Grating Over The Stop Log Recess Should Not Be Subjected To Vehicle Loading. Vehicle Speed On The Service Bridge Shall Not Exceed 10 MPH. *BY ENG. OR PROJECT ENGR.*
3. Embankment Is Fill In Place With No Shrinkage Applied.
4. Item Nos. 104-1 Through 104-12 Are Estimated Quantities For The Prevention, Control And Abatement Of Erosion And Water Pollution And Are To Be Used At Locations Designated By The Site Development Plan, Contract Drawings, Or As Directed By The Engineer.
5. Excess Material From The Excavation Will Be Disposed Of At The Time Of Construction In The On-Site Spoil Disposal Area, Located South Of The Emergency Spillway As Directed By The Engineer. The Quantity Of Excess Material And The Dimensions Of The Spoil Disposal Area May Vary Due To Actual Field Conditions.
6. Access To The Construction Site For Purposes Of General Mobilization And Movement Of Heavy Equipment Can ~~Be~~ Accomplished By Using The Manatee County Utilities Department Utilities (Water) Easement. The Easement Can Be Entered At The Point Where It Crosses Rye Road. The Easement Is Adequate For Transport Of Heavy Equipment For It's Entire Length With The Exception Of One Low Portion Where It Crosses A Small Tributary Of The Manatee River. Some Improvement May Be Required In That Area.
7. Concrete: Class I (Miscellaneous Locations)  $f'_c = 3000$  psi, Maximum Working Stress  $f_c = 1200$  psi  
Class II (Approach Slab, Fuse Plug Floor Slab, Fuse Plug Division Walls, And Barrier Walls)  $f'_c = 3400$  psi, Maximum Working Stress,  $f_c = 1360$  psi
8. Reinforcing Steel: ASTM A615 Grade 60, Maximum Working Stress,  $f_s = 24,000$  psi
9. All Exposed Concrete Surfaces Shall Receive A Single Coat Of Membrane Curing Compound Which Shall Conform To The Requirements Of AASHTO M-148 (Type I - Clear) Except The Fuse Plug Floor Slab Which Shall Receive A Single Coat Of Membrane Curing Compound Conforming To The Requirements Of AASHTO M-148 (Type II - White Pigmented).
10. Surface Finish: All The Exposed Surfaces Of The Concrete Barrier Walls And Exposed Surfaces Of Division Walls Above Ground Line Shall Receive A "Class 2 Applied Finish Coat."

## SUMMARY OF PAY ITEMS

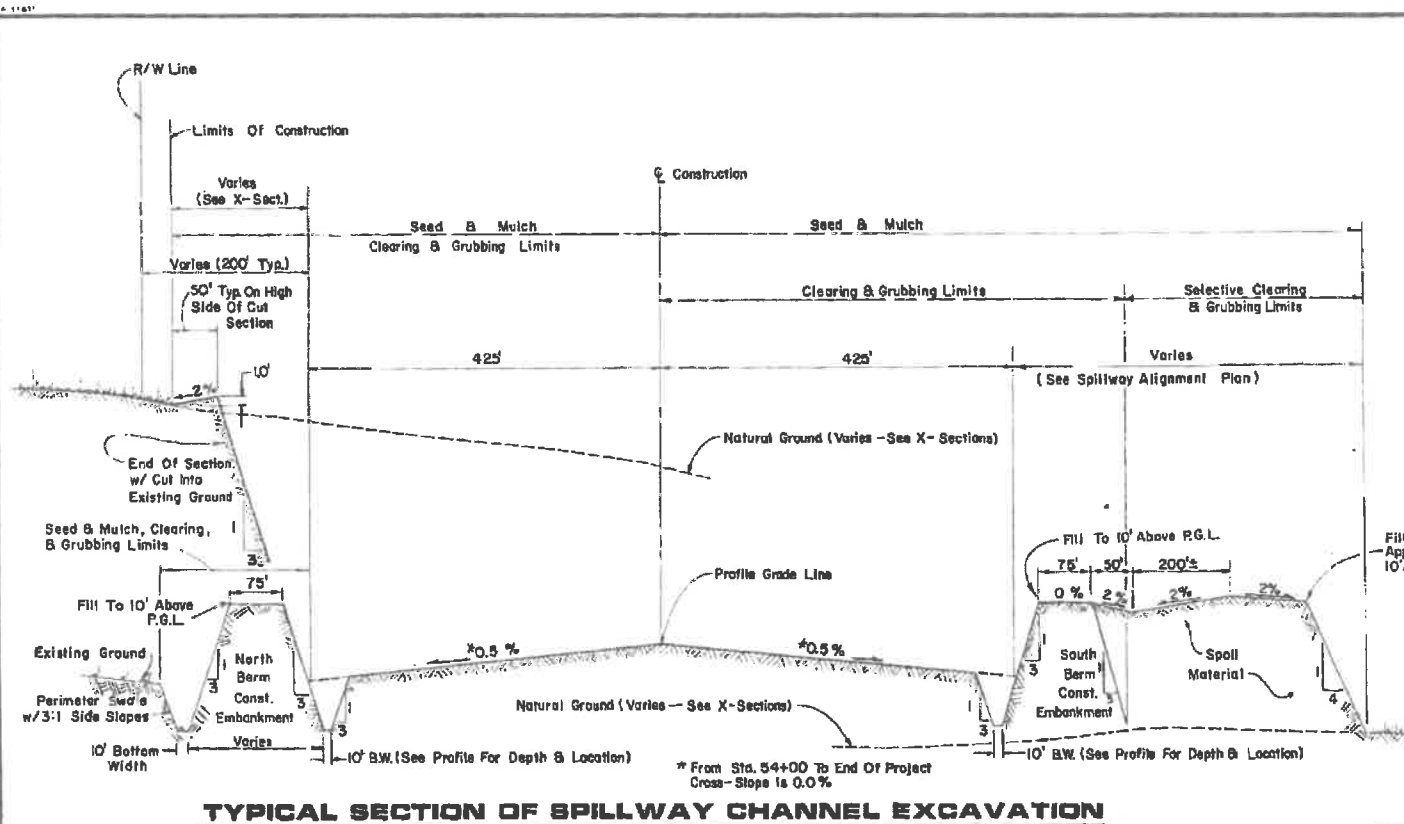
ITEM NUMBER	ITEM	UNIT	QUANTITY TOTAL
101-1	Mobilization	L.S.	1
102-4	Calcium Chloride For Dust Control	TN.	40
104-1	Artificial Coverings	S.Y.	8,400
104-2	Mulching (Temporary)	S.Y.	42,020
104-3	Sodding (Temporary)	S.Y.	42,020
104-4	Mowing	AC.	43.4
104-5	Sandbagging	C.Y.	20
104-10	Baled Hay Or Straw	TN.	20
104-11	Flashing Silt Barrier	L.F.	2,750
110-2	Clearing & Grubbing	A.C.	212
120-1	Regular Excavation	C.Y.	1,912,900
120-6	Embankment	C.Y.	523,000
120-8	Final Dressing (497,000 S.Y.)	L.S.	1
180-4	Type B Stabilization	S.Y.	14,360
182-2	Topsoil	S.Y.	824,800
270-1	Soil Cement Roadway, Base And Slope Protection (12" Thickness)	S.Y.	22,020
300-1-3	Bituminous Material (Tack Coat)	GA.	325
300-1-3	Bituminous Material (Plant Mix - A.C. 20)	GA.	4,975
331-72-10	Type 3 Asphaltic Concrete (1" Thick)	S.Y.	6,505
360-1	Concrete Approach Slab	E.A.	1
400-1-15	Class I Concrete (Misc.)	C.Y.	5
400-2-11	Class II Concrete	C.Y.	3,420
415-1	Reinforcing Steel	LB.	284,691
518-70	Impermeable Fabric (Installed Per Plans) (2850 Sq. Yd.)	L.S.	1
521-1	Concrete Barrier Wall	L.F.	324
530-1	Rip Rap (Sand Cement)	C.Y.	325
530-2	Crushed Stone Slope Protection	C.Y.	619
550-1	Fencing - Type A	L.F.	8,116
550-3-1	Corner Post Assembly	E.A.	8
550-4-1	Pull & End Post Assembly	E.A.	20
550-75-141	Fence Gates (Type A)	E.A.	2
570-2	Seed & Mulch	S.Y.	832,800
570-3	Grass Seed (Permanent)	LB.	17,210
570-4	Mulch Material	TN.	690
570-5	Fertilizer (One Application)	TN.	41
570-7	Delomine Limestone (One Application)	TN.	41
570-9	Water For Grass (M.G. = 1000 G.A.)	M.G.	955
570-10	Grass Seed (Quick Growing Type)	LB.	5,165
575-1	Sodding	S.Y.	760
600-1	Precast Concrete Columns (2 Ft. x 2 Ft.)	L.F.	350
600-2	18" Reinforced Concrete Pipe (18 Ft.)	L.S.	1
104-6	Slope Grains (Temporary)	L.F.	495
104-7	Sediment Basins	E.A.	4
104-8	Sediment Checks	E.A.	2
104-9	Sediment Basin Cleanouts	E.A.	4
104-12	Staked Silt Barrier	L.F.	1,600
110-3	Removal Of Concrete Energy Dissipators	L.S.	1
182-1	Mask Blanket	S.Y.	14,450
170-2	Cement	T.N.	795
455-13	Steel Sheet Piling (P Z 27)	L.B.	42,768
530-4	Enkamat Soil Reinforcement Matting	S.Y.	1,600
530-5	Armorform Slope Protection (Mortar Filled Fabric Mats)	S.Y.	2,400
530-6	Forebay Slope Protection	S.Y.	16,470

## SUMMARY OF EARTHWORK

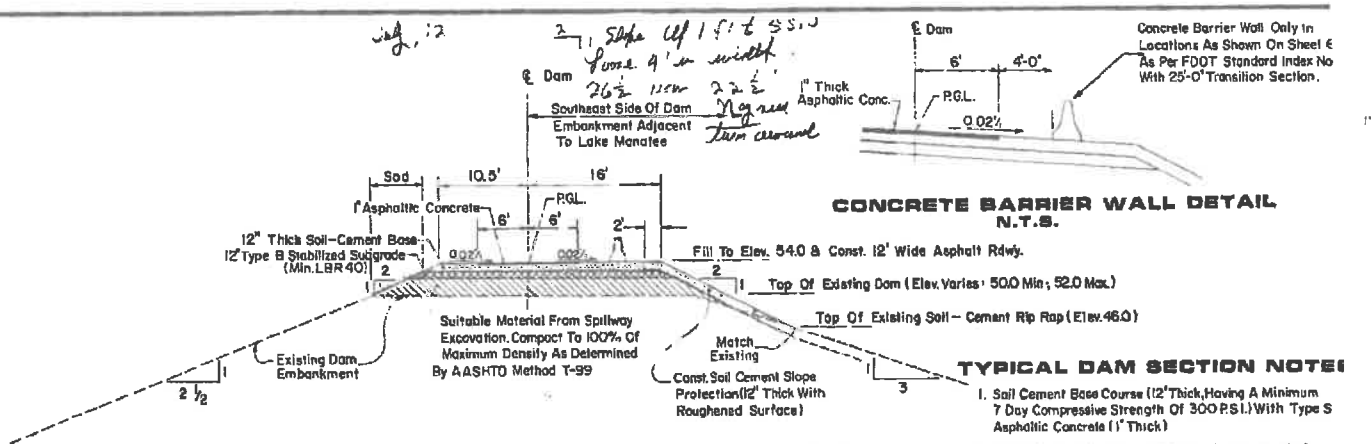
Spillway Embankment	409,854 C.Y.
Fuse Plug Embankment	9,336 C.Y.
North Abutment Embankment	52,902 C.Y.
Existing Dam Embankment	37,077 C.Y.
Downstream Erosion Embankment	14,031 C.Y.
Total Embankment	523,200 C.Y.
Total Excavation	1,912,900 C.Y.

JOB NO.	SHEET NO.	Lake Manatee Dam Emergency Spillway B Modifications To Existing Dam Manatee County, Florida
6625-22-00	2	T267
DATE	3-11-83	Prepared by: <b>HNTB</b> <small>HOMERIG NEELSON TAYLOR &amp; BISHOP/COVOP</small>

30.18

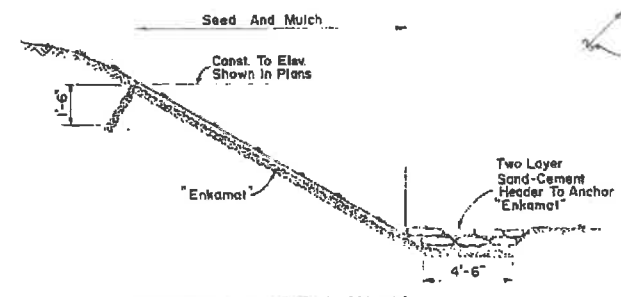


**TYPICAL SECTION OF SPILLWAY CHANNEL EXCAVATION**  
NOT TO SCALE

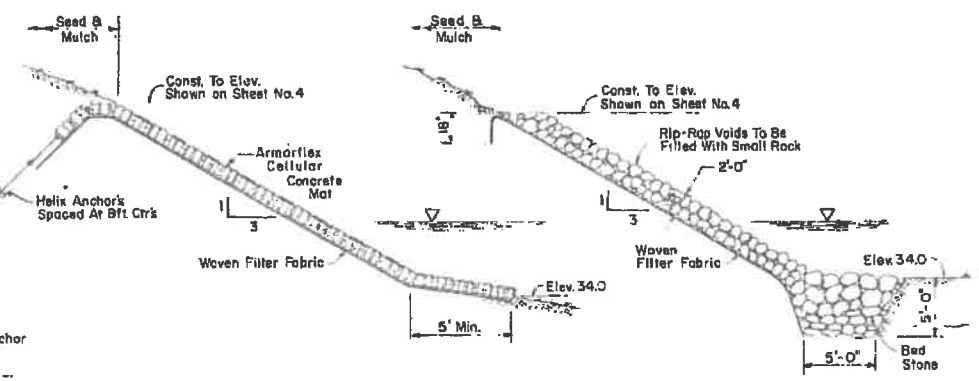


**TYPICAL SECTION OF MODIFICATIONS TO EXISTING DAM EMBANKMENT**  
SCALE: 1"=10'-0"

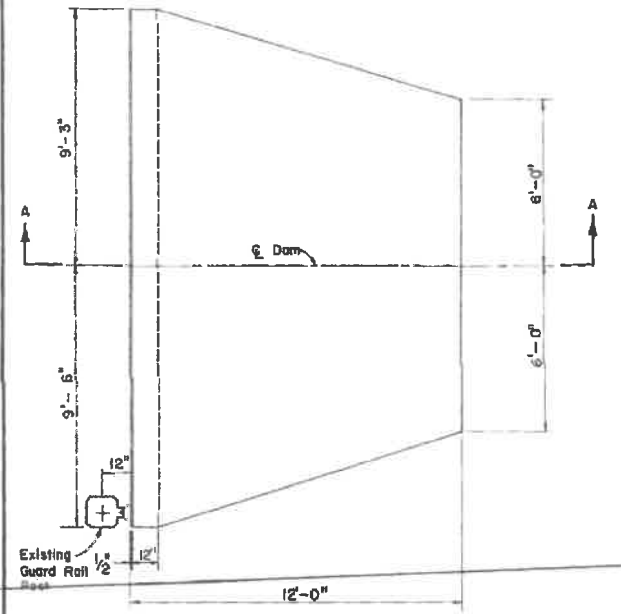
- TYPICAL DAM SECTION NOTES**
1. Soil Cement Base Course (12" Thick, Having A Minimum 7 Day Compressive Strength Of 300 P.S.I.) With Type S Asphaltic Concrete (1" Thick)
  2. 12" Type B Stabilized Subgrade (Minimum LBR 40) Compact To 98% Of Maximum Density As Determined By AASHTO Method T-180.
  3. Type And Placement Of Embankment Material Shall Conform To The Contract Documents, Section 120.



**TYPICAL SECTION "ENKAMAT" SOIL REINFORCEMENT MATTING**  
N.T.S.

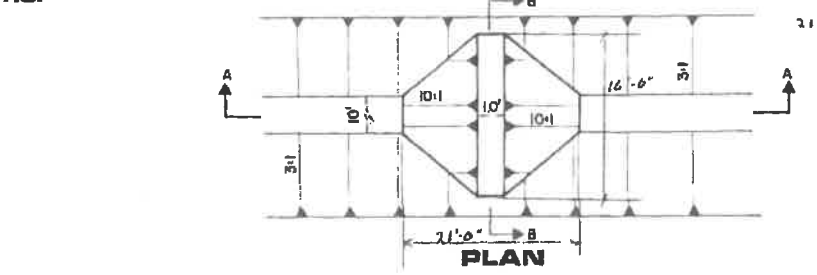


**"ARMORFLEX" SLOPE PROTECTION**      **RUBBLE RIP-RAP**

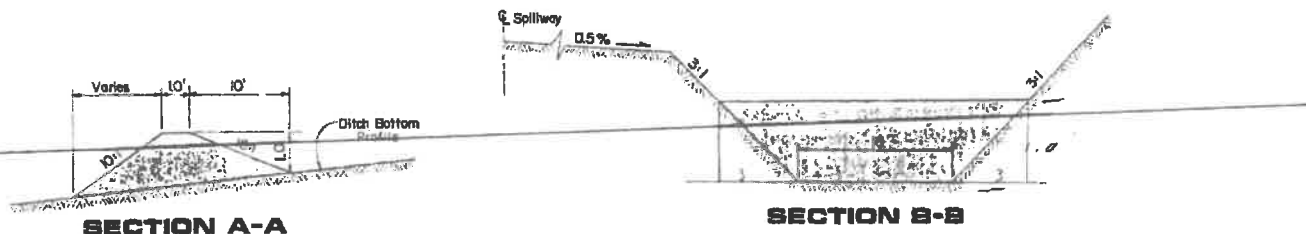


**CONCRETE APPROACH SLAB DETAILS**  
CONSTRUCT ON NORTH SIDE ONLY  
SCALE: 1"=3'-0"

SYMBOL	REVISIONS	BY	DATE	APPROVED



**PLAN**



**SECTION A-A**

**SECTION B-B**

**SPECIAL DITCH BLOCK DETAIL**  
NOT TO SCALE

DESIGNED	A.R.M.
DRAWN	A.R.M.
TRACED	J.A.M.
CHECKED	R.C.M.
CERTIFIED	
BY	DATE

**HNTB**  
HOWARD NEEDLES TAMMEN & BERGENDOFF  
Engineers  
ORLANDO, FLORIDA

JOB NO.	6625-22-00
DATE	30-18

LAKE MANATEE DAM  
MANATEE COUNTY, FLORIDA  
EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
TYPICAL SECTIONS

T268  
SHEET NO.  
3

CURVE DATA									
CURVE NO.	TYPE	P. I. STA.	Δ	D	T	L	R	P.C. STA.	P.T. STA.
1	A	260+85.99	72° 24' 07"	07° 38' 22"	548.94'	947.74'	750.00'	255+37.05	264+84.79
2	A	269+44.94	98° 00' 00"	14° 19' 28"	460.147'	684.17'	400.00'	264+84.79	271+68.96
3	Spillway	58+60.00	72° 24' 07"	04° 52' 35"	860.00'	1484.79'	1175.00'	50+00.00	64+84.79
4	B	256+34.01	72° 24' 07"	03° 34' 52"	1171.06'	2021.84'	1600.00'	244+62.95	264+84.79
5	B	272+50.52	58° 00' 00"	07° 38' 22"	415.73'	759.22'	750.00'	268+34.79	275+94.01

Construct Perimeter Swale On North & West Side Of Spillway To Provide Drainage As Indicated By Arrows. The Perimeter Swale Will Have A 10' Bottom Width, 3:1 Side Slopes, & Will Be Seeded & Mulched After Construction. Set Grade Of Swale Bottom To Elevations Shown. See Sheet 26.

Construction Requires Lowering Of The Existing Gas Line: Do Not Work Within The Easement Until Lowering Of Line Has Been Accomplished. Work Will Be Performed By The Florida Gas Transmission Co. Arrangements For Lowering The Line Will Be Made By The County When Requested By The Contractor.

- Utility Owners:
- Florida Gas Transmission Co. Lakeland, FL Phone (813) 665-0973
  - Manatee County Utilities Dept. Bradenton, FL Phone (813) 792-8881
  - Florida Power & Light Inc.

Note: The Existing Contours & Elevations Shown On This Sheet Were Based On Aerial Photography Provided To Manatee County By The Southwest Florida Water Management District And Were Verified By Bill Roberts, Inc. In A Survey Performed On 4/15/82. Any Discrepancies Were Corrected Only On The Cross-Section & Profile Sheets Contained In This Plan Set.

NOTE: All Bearings Are Based On An Assumed Meridian

SYMBOL	REVISIONS	BY	DATE	APPROVED

DESIGNED	A. R. M.
DRAWN	A. R. M.
TRACED	J. A. M.
CHECKED	R. C. M.
CERTIFIED	
BY	

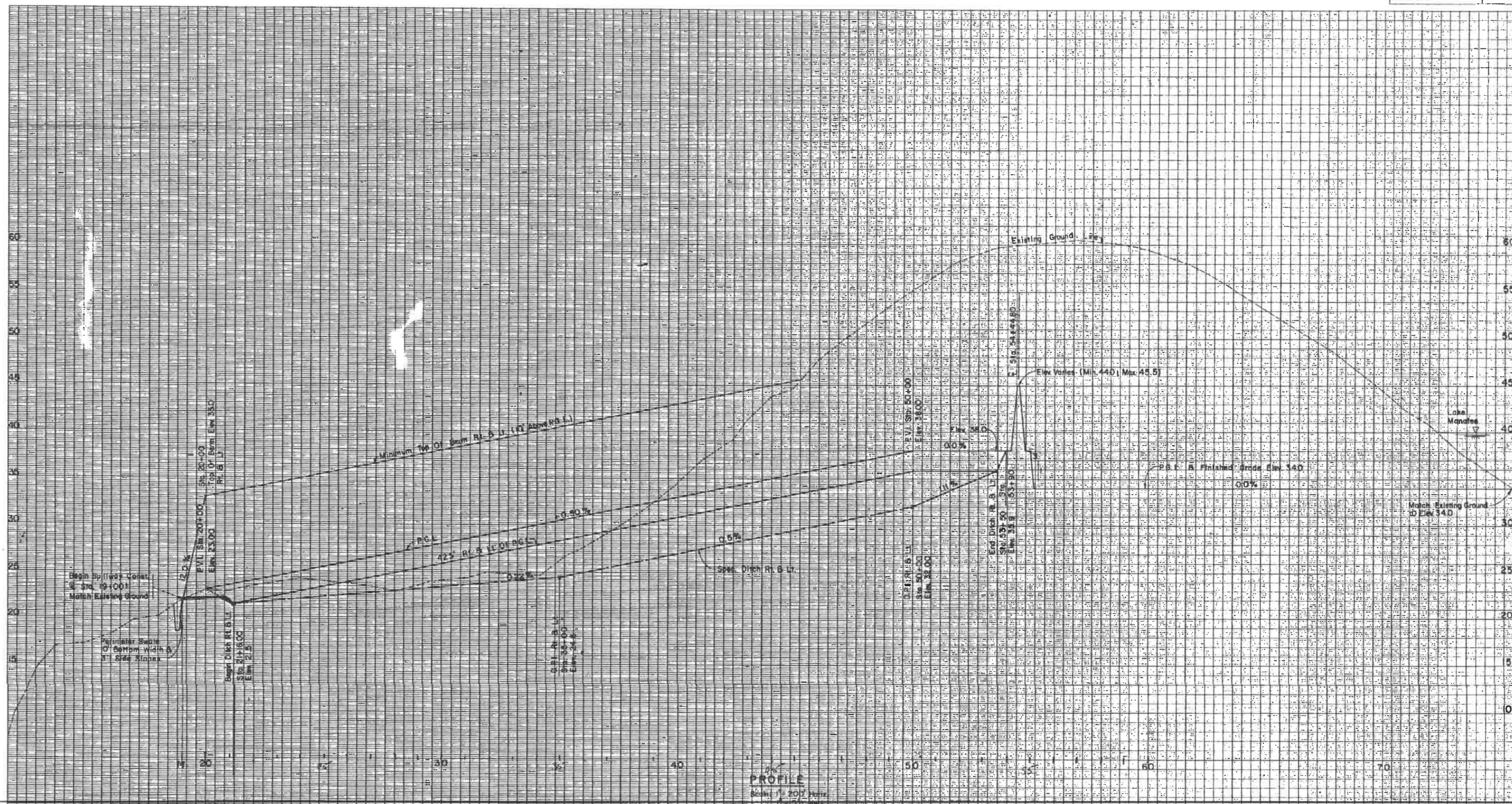
**HNTB**  
**HOWARD NEEDLES TAMMEN & BERGENDOFF**  
 Engineers  
 ORLANDO, FLORIDA

JOB NO.	6625-22-00
DATE	3-11-83

LAKE MANATEE DAM  
 MANATEE COUNTY, FLORIDA  
 EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
 SPILLWAY ALIGNMENT PLAN

T269  
 SHEET NO. 4  
 SCALE 1" = 200'

30-18



PROFILE  
Scale: 1" = 20' Horiz.  
1" = 5' Vert.

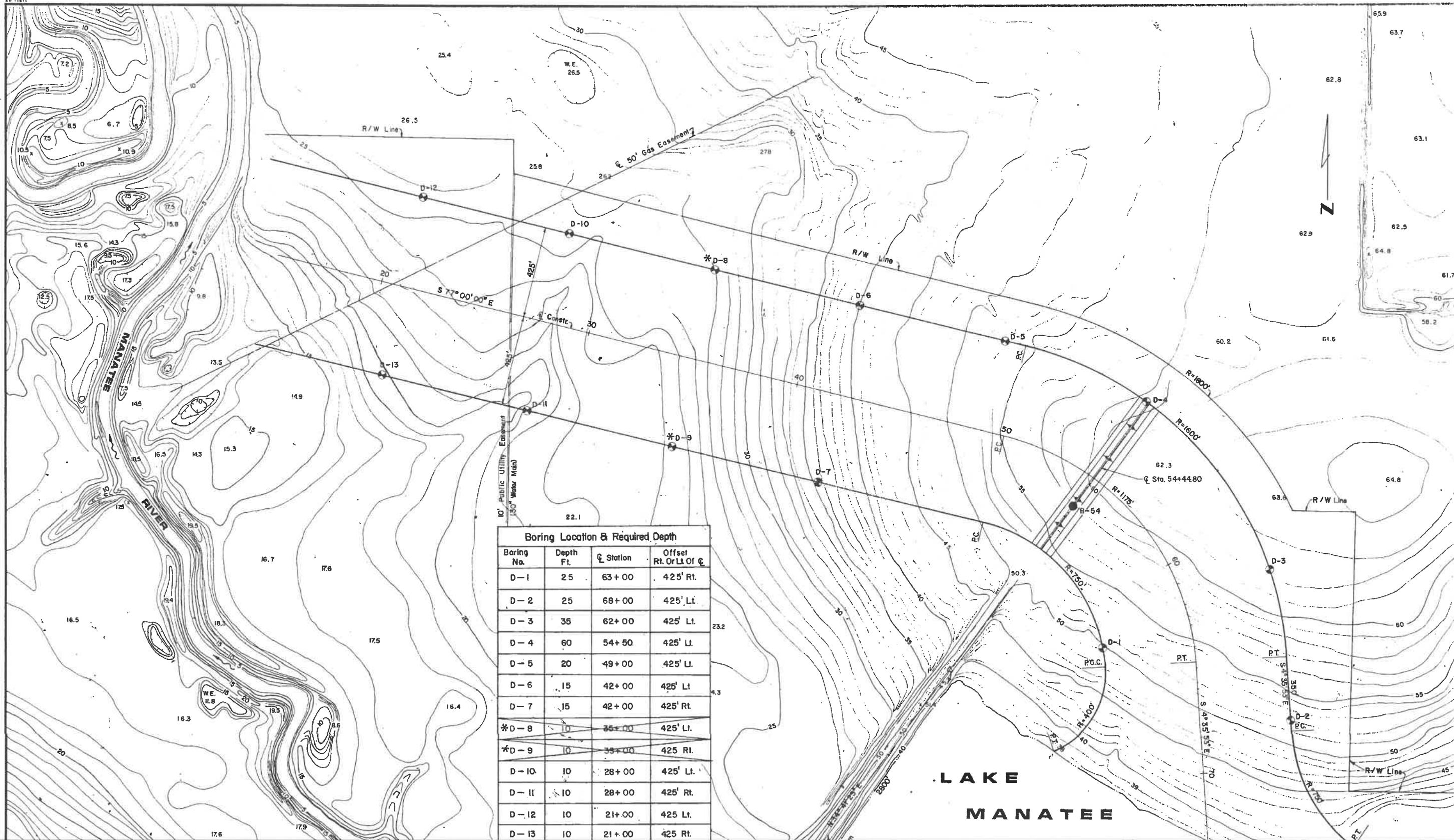
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Book No.	_____
Original Plotted by	_____
Checked by	_____
Template by	_____
Area by	_____
Scale Plotted by	_____
Checked by	_____
Area by	_____
Checked by	_____

14.8. COOSWELL REC 3/87 10/88

JOB NO.	SHEET NO.	Lake Manatee Dam Emergency Spillway B Modifications To Existing Dam Manatee County, Florida
6625-22-00	5	
DATE	3-11-83	Prepared by: <b>HNTB</b> <small>HNTB CONSULTANTS ENGINEERS ARCHITECTS</small>

*Handwritten:* 30-18

*Handwritten:* T270



Boring Location & Required Depth			
Boring No.	Depth Ft.	Station	Offset Rt. Or Lt. Of C.
D-1	25	63+00	425' Rt.
D-2	25	68+00	425' Lt.
D-3	35	62+00	425' Lt.
D-4	60	54+50	425' Lt.
D-5	20	49+00	425' Lt.
D-6	15	42+00	425' Lt.
D-7	15	42+00	425' Rt.
*D-8	10	35+00	425' Lt.
*D-9	10	35+00	425' Rt.
D-10	10	28+00	425' Lt.
D-11	10	28+00	425' Rt.
D-12	10	21+00	425' Lt.
D-13	10	21+00	425' Rt.

\*Borings Were Not Possible At These Locations

**KEY**  
 ● Borings For H.N.T.B.  
 D-#  
 ● Borings For Original R & A Plans  
 B-#

SYMBOL	REVISIONS	BY	DATE	APPROVED

DESIGNED A.A.S.J.  
 DRAWN A.R.M.  
 TRACED J.A.M.  
 CHECKED R.C.M.  
 CERTIFIED  
 BY DATE

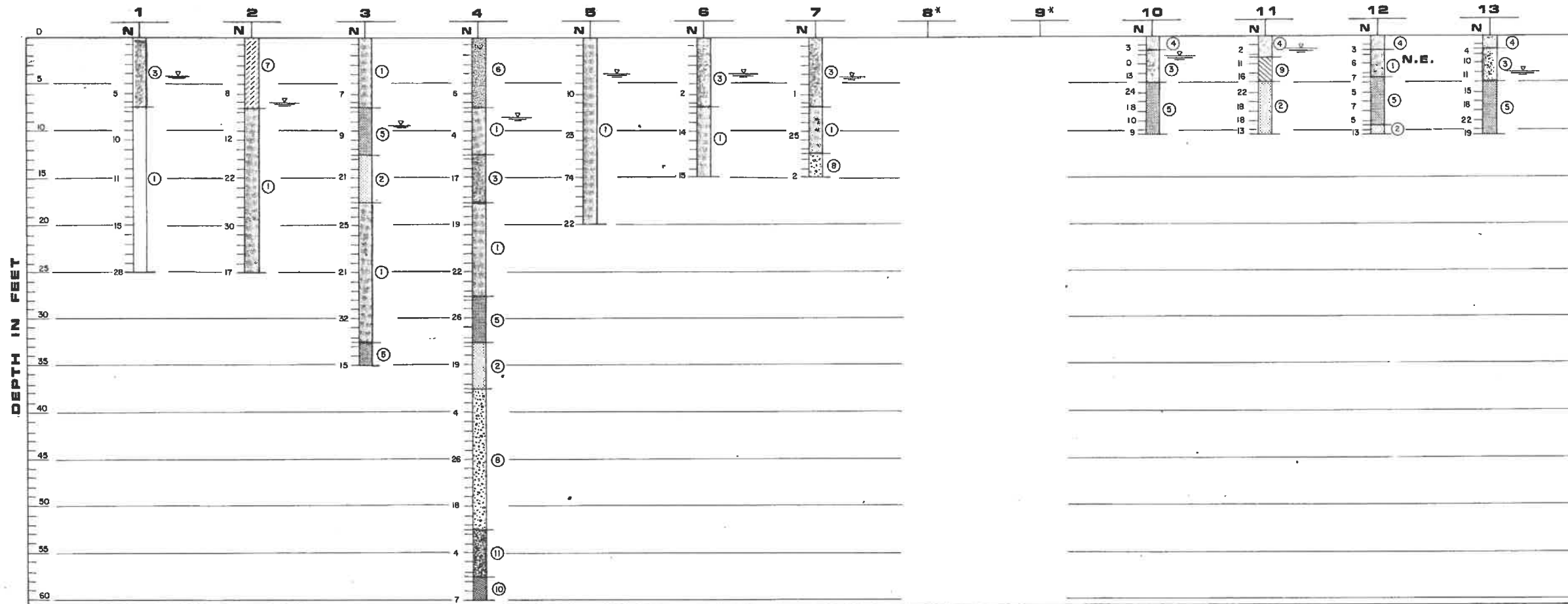
**HNTB**  
 HOWARD NEEDLES TAMMEN & BERGENDOFF  
 Engineers  
 ORLANDO, FLORIDA

JOB NO. 6625-22-00  
 DATE 3-11-83

LAKE MANATEE DAM  
 MANATEE COUNTY, FLORIDA  
 EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
 BORING LOCATION PLAN

T271  
 SHEET NO. 7  
 SCALE 1" = 200'

30-18



\*Borings Were Not Possible At These Locations

**SOIL LEGEND**

- ① Brown Fine Sand
  - ② Gray Fine Sand
  - ③ Brown Fine Sand W/Roots
  - ④ Gray Fine Sand W/Roots
  - ⑤ Gray To Brown Fine Sand
  - ⑥ Gray To Brown Fine Sand W/ Roots
  - ⑦ Gray To Brown Fine Sand W/ Trace Of Clay
  - ⑧ Gray Slightly Silty Fine Sand
  - ⑨ Gray Clay Fine Sand W/ Roots
  - ⑩ Gray To Green Clay
  - ⑪ Gray To Green Sandy Clay
- Rotary Washed
  - Ground Water Level On April 26, 1982
  - N Standard Penetration Resistance Blows Per Foot
  - N.E. Ground Water Level Not Encountered

**ENGINEERING CLASSIFICATION**

Cohesionless Soils		
Description	Blow Count 'N'	
Very Loose	0 To 4	
Loose	4 To 10	
Medium Dense	10 To 30	
Dense	30 To 50	
Very Dense	Above 50	

Cohesive Soils		
Description	Unconfined Compressive	
	Strength, TSF	Blow Count 'N'
Very Soft	Below .25	0 To 2
Soft	.25 To .50	2 To 4
Medium Stiff	.50 To 1.0	4 To 8
Stiff	1 To 2	8 To 15
Very Hard	2 To 4	15 To 30
Hard	Above 4	Above 30

NOTE: The Boring Logs & Related Information Represent Our Interpretation Of The Subsurface Conditions At The Designated Boring Location Only & On The Particular Date Drilled.  
Ardaman & Associates

The Information On This Sheet Was Provided To The Manatee County Utilities Department By Ardaman & Associates, Inc. Sarasota, Florida. Phone: (813) 922 - 3526

SYMBOL	REVISIONS	BY	DATE	APPROVED

DESIGNED	
DRAWN	
TRACED	J.A.M.
CHECKED	R.C.M.
CERTIFIED	
BY	

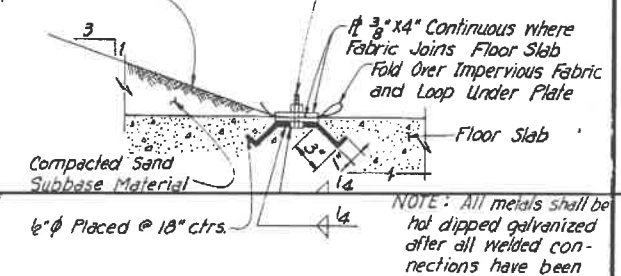
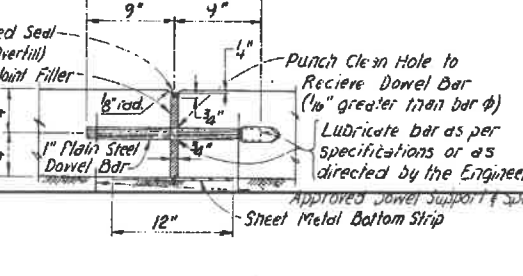
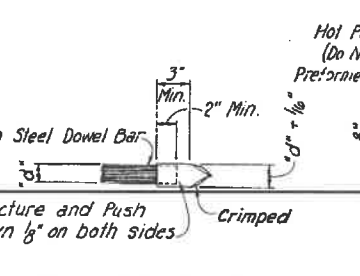
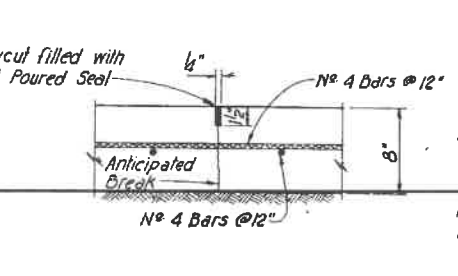
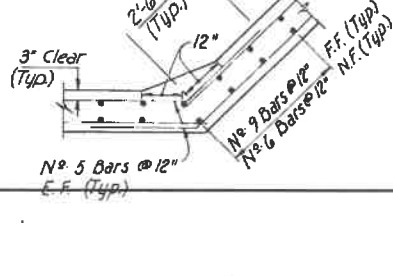
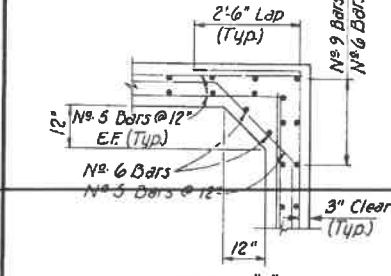
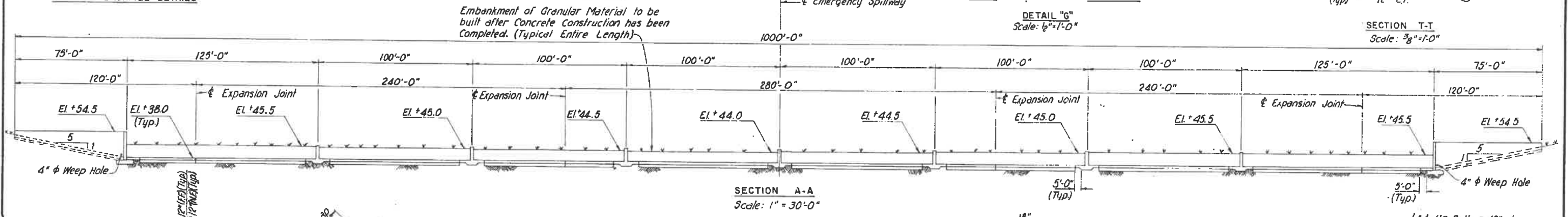
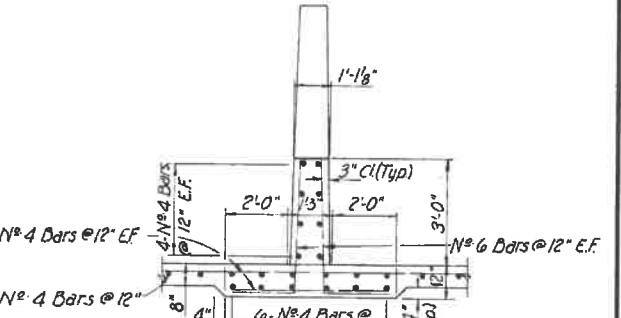
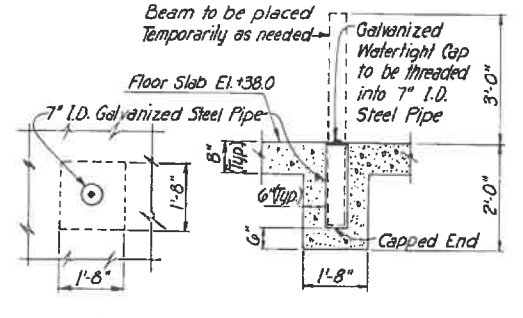
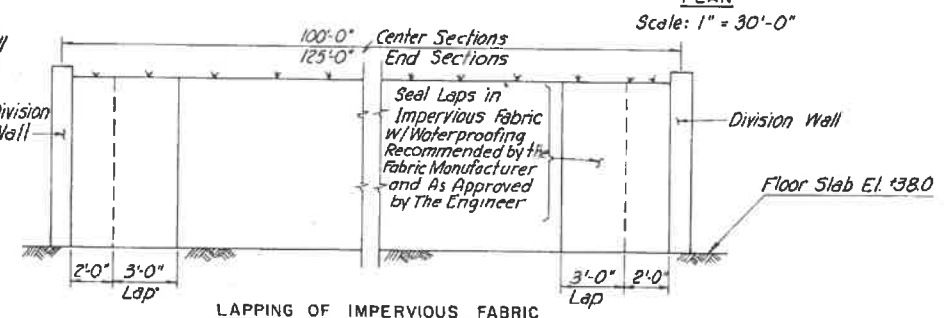
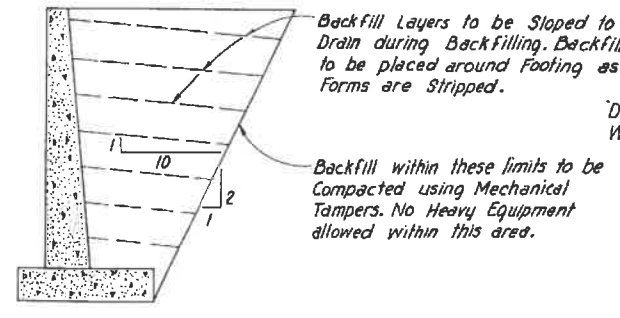
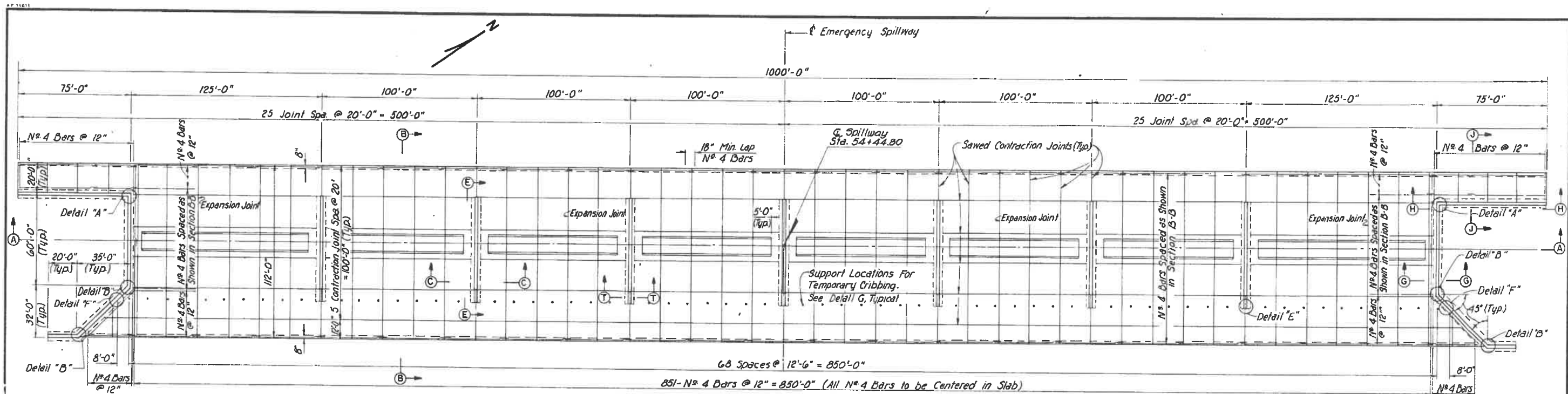
**HNTB**  
HOWARD NEEDLES TAMMEN & BERGENDOFF  
Engineers  
ORLANDO, FLORIDA

JOB NO.	6625-22-00
DATE	3-11-83

LAKE MANATEE DAM  
MANATEE COUNTY, FLORIDA  
EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
SOIL BORINGS & PROFILES

SHEET NO.	8
SCALE	AS SHOWN

30-18



Note: Reinforcing Steel For All Poured In Place Concrete Shall Be Grade 60, Maximum Working Stress = 24,000 p.s.i.

SYMBOL	REVISIONS	BY	DATE	APPROVED

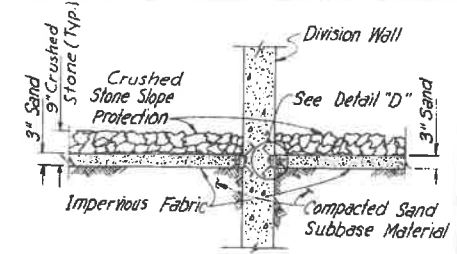
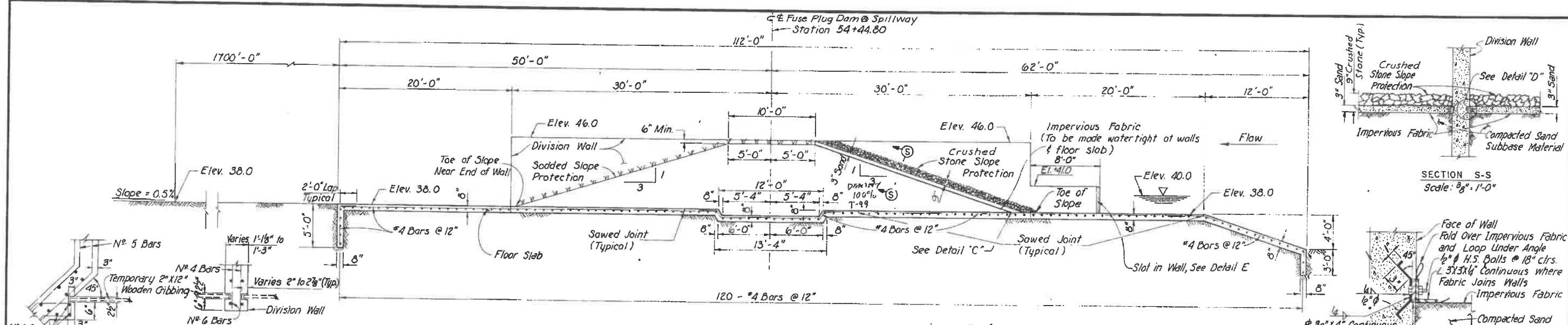
DESIGNED	BAM
DRAWN	BAM
TRACED	TTW
CHECKED	TTW/TWS
CERTIFIED	
BY	DATE

**HNTB**  
**HOWARD NEEDLES TAMMEN & BERGENDOFF**  
 Engineers  
 ORLANDO, FLORIDA

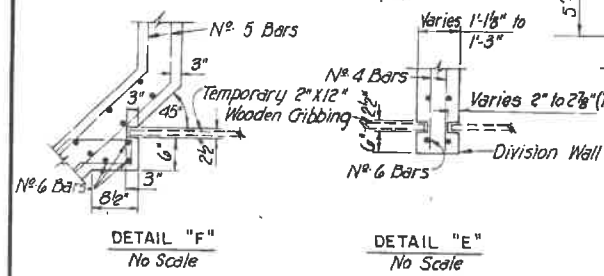
JOB NO.	6625-22-00	DATE	3-11-83
LAKE MANATEE DAM MANATEE COUNTY, FLORIDA		EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM	
FUSE PLUG DAM DETAILS		1 OF 2	

7273  
 SHEET NO. 9  
 SCALE As Shown

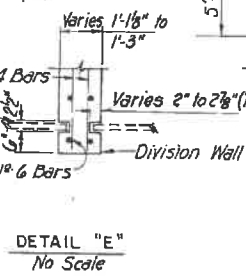




SECTION S-S  
Scale: 3/8" = 1'-0"



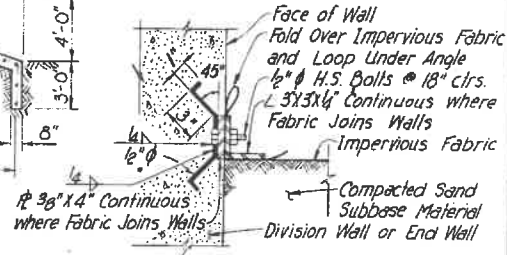
DETAIL "F"  
No Scale



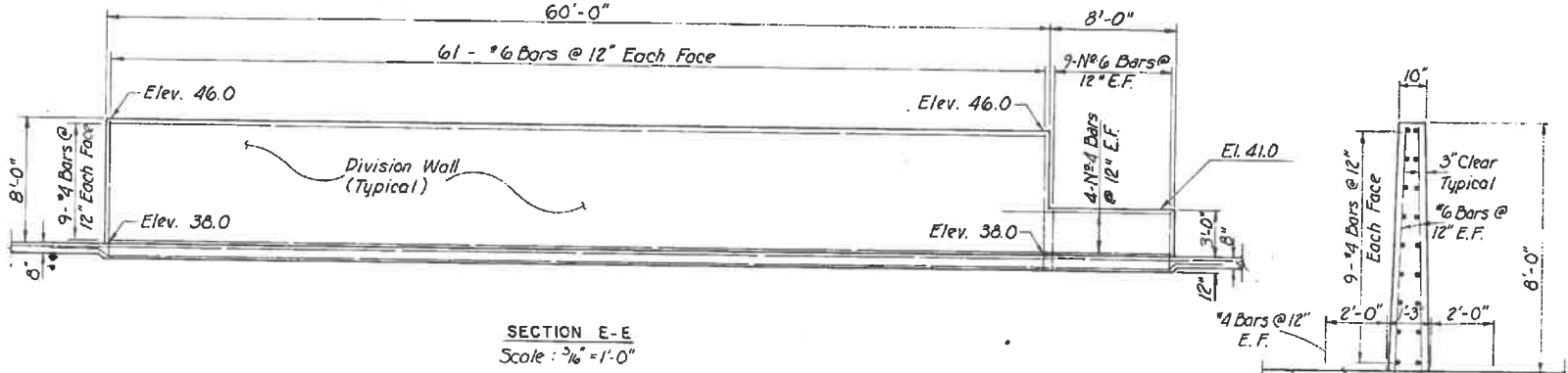
DETAIL "E"  
No Scale

SECTION B-B  
Scale: 3/16" = 1'-0"

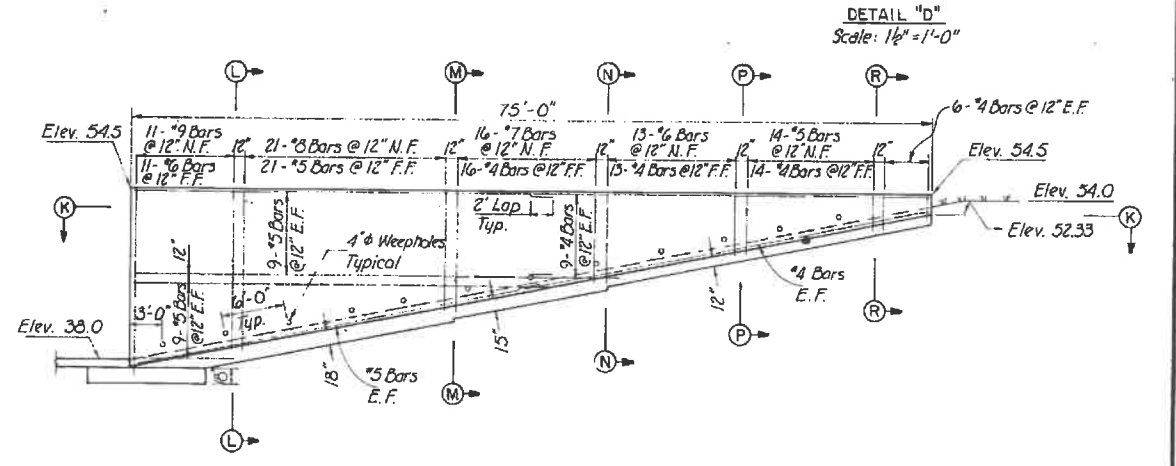
SEE ADD 1 28' CONCRETE ALL SUB GRAD UNDER CONCRETE



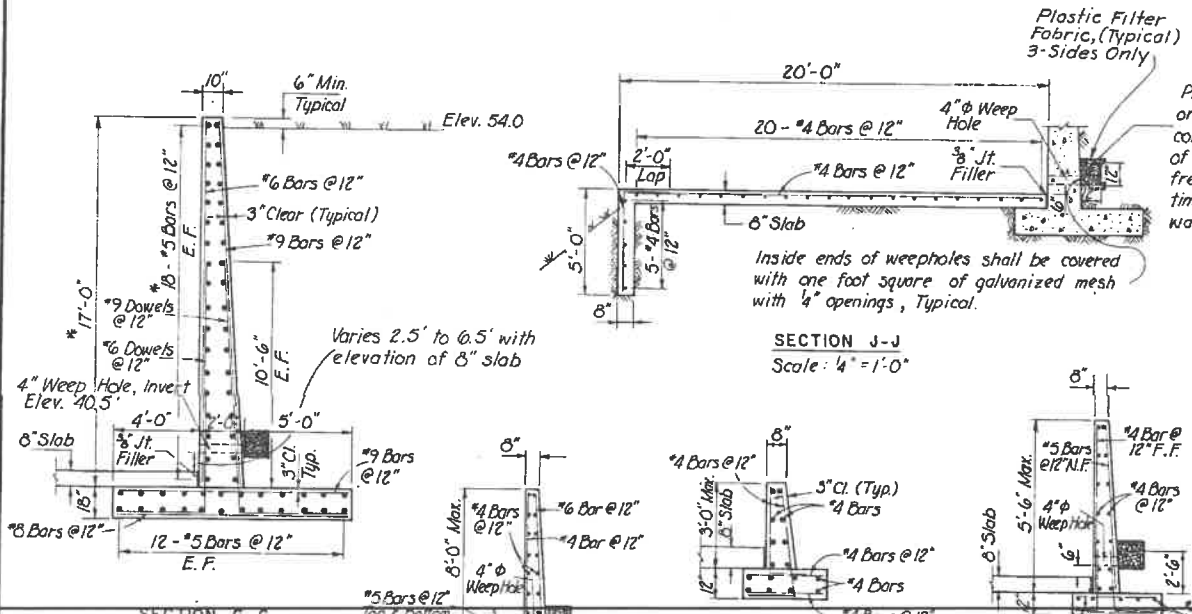
NOTE: All metal shall be hot dipped galvanized after all welded connections have been made.



SECTION E-E  
Scale: 3/16" = 1'-0"

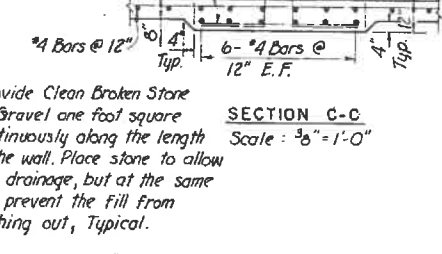


SECTION H-H  
Scale: 1/8" = 1'-0"

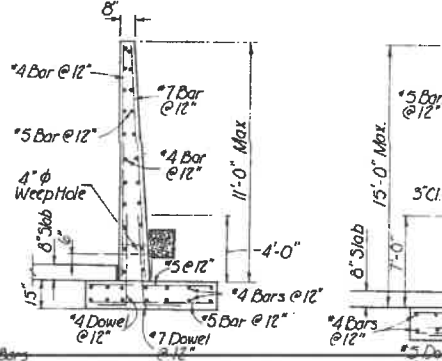


SECTION G-G  
Scale: 1/4" = 1'-0"

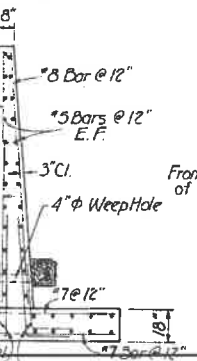
SECTION J-J  
Scale: 1/4" = 1'-0"



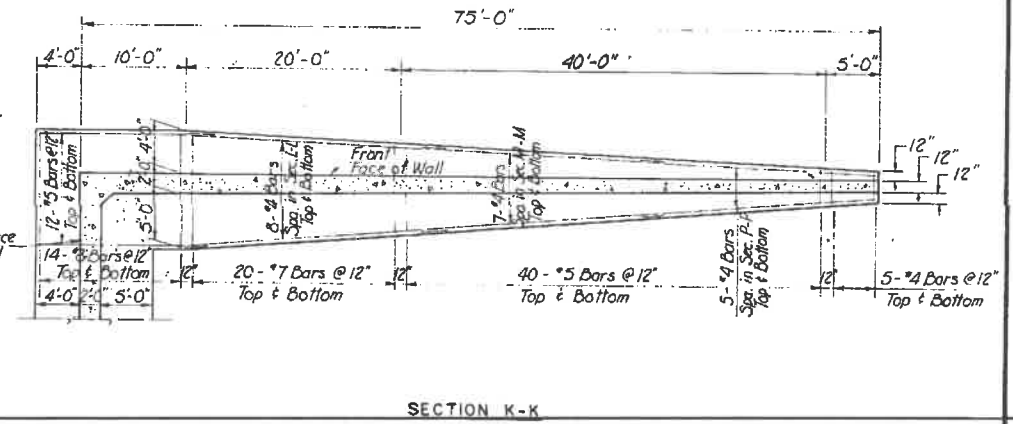
SECTION C-C  
Scale: 3/8" = 1'-0"



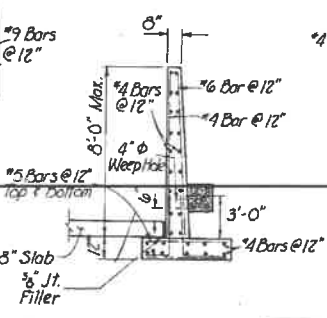
SECTION M-M  
Scale: 1/4" = 1'-0"



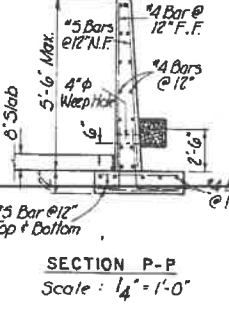
SECTION L-L  
Scale: 1/4" = 1'-0"



SECTION K-K  
Scale: 1/8" = 1'-0"



SECTION R-R  
Scale: 3/8" = 1'-0"



SECTION P-P  
Scale: 1/4" = 1'-0"

Note: Reinforcing Steel For All Paired In Place Concrete Shall Be Grade 60, Maximum Working Stress = 24,000 p.s.i.

\* Height of Wall and Number of #5 Bars Increase as the Elevation of the 8" Concrete Slab drops near SE end.

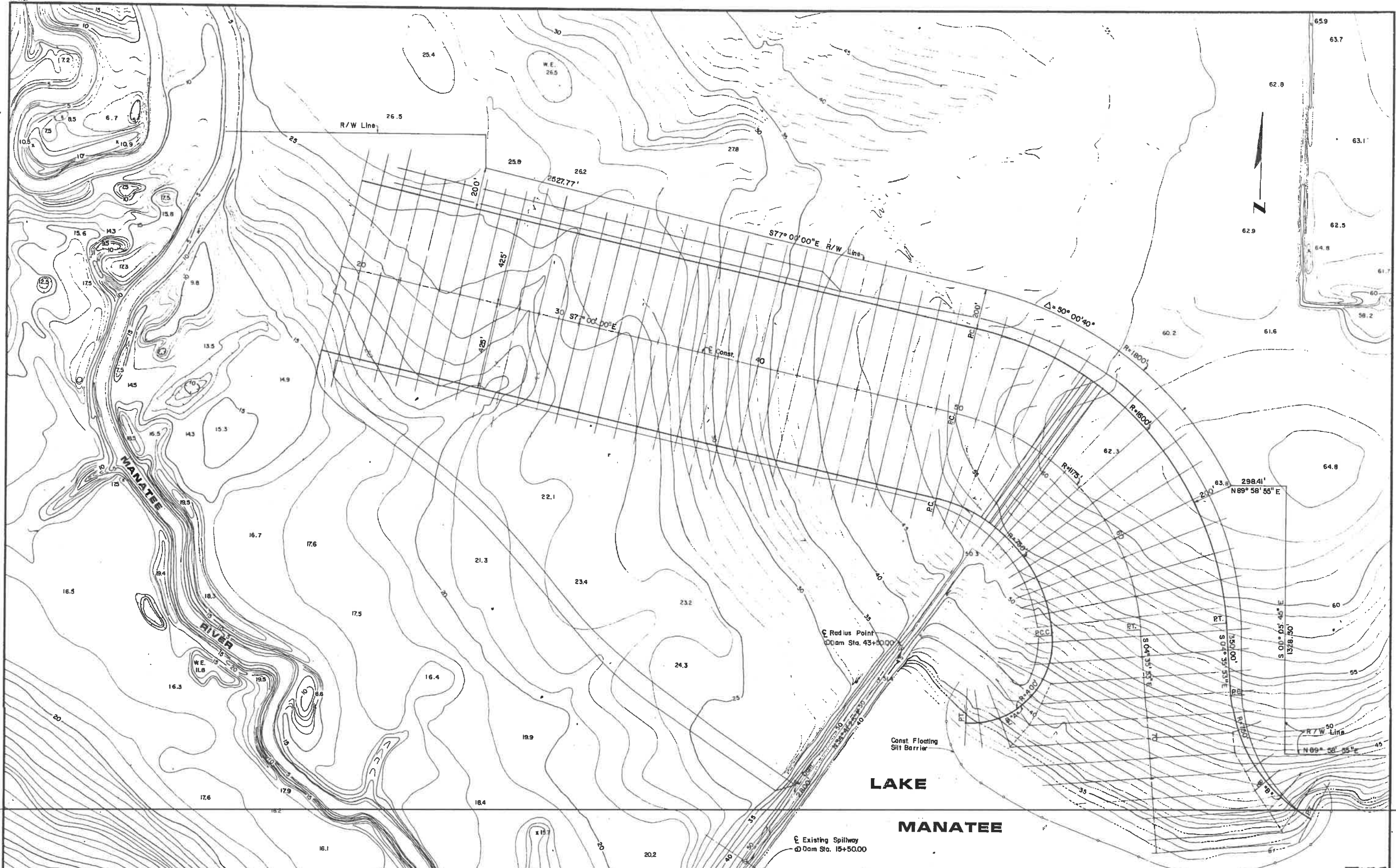
SECTION N-N  
Scale: 1/4" = 1'-0"

SYMBOL	REVISIONS	BY	DATE	APPROVED

DESIGNED	DAM
DRAWN	BAM
TRACED	DMW
CHECKED	TJW/TAS
CERTIFIED	
BY	DATE

**HNTB**  
HOWARD NEEDLES TAMMEN & BERGENDOFF  
Engineers  
ORLANDO, FLORIDA

JOB NO.	LAKE MANATEE DAM MANATEE COUNTY, FLORIDA	SHEET NO.
6625-22-00	EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM	10
DATE	FUSE PLUG DAM DETAILS	SCALE
3-11-83	2 OF 2	As Shown



SYMBOL	REVISIONS	BY	DATE	APPROVED

DESIGNED	A.R.M.
DRAWN	J.A.M.
TRACED	
CHECKED	R.C.M.
CERTIFIED	
BY	

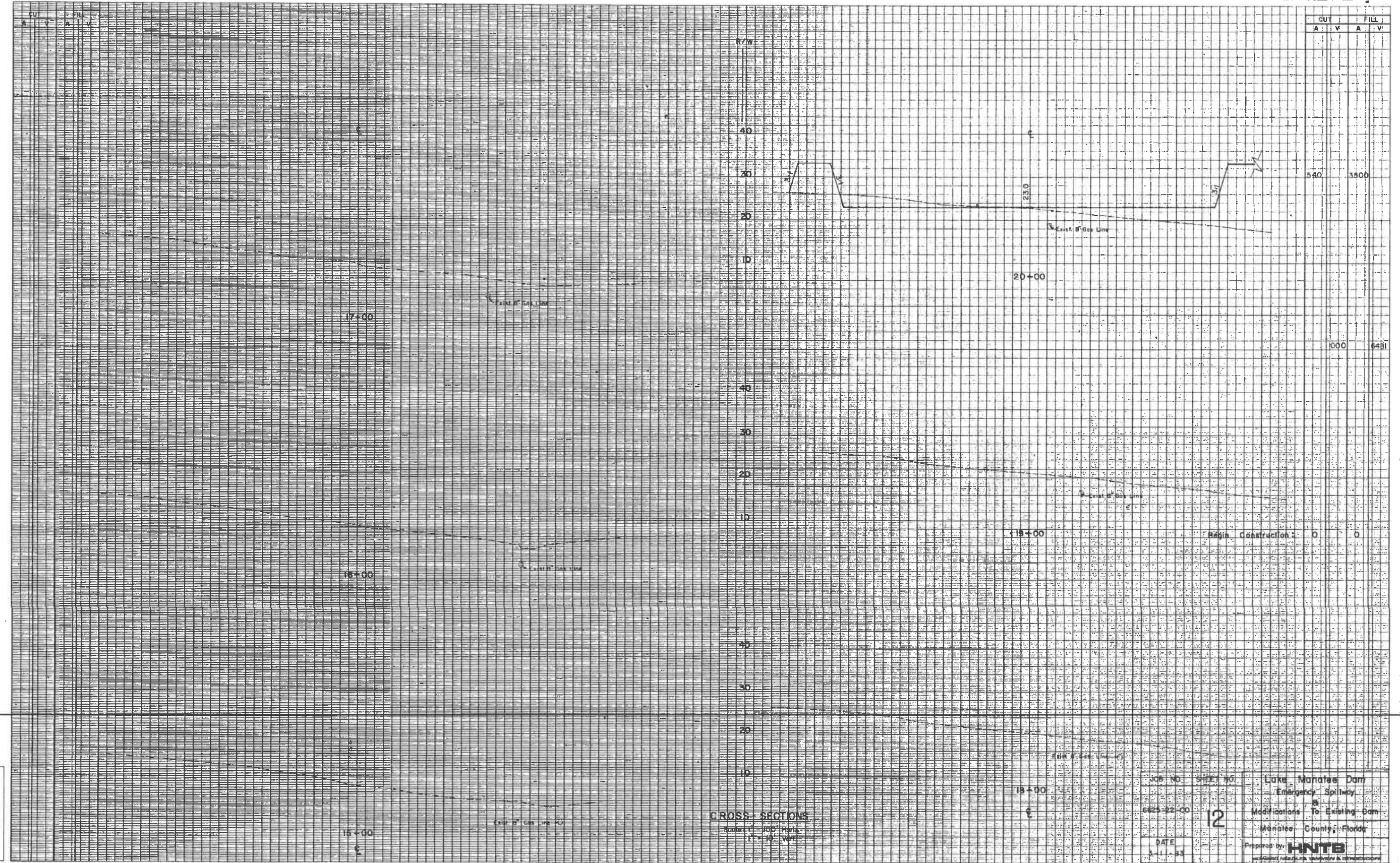
**HNTB**  
 HOWARD NEEDLES TAMMEN & BERGENDOFF  
 Engineers  
 ORLANDO, FLORIDA

JOB NO.	6625-22-00
DATE	3-11-83

**LAKE MANATEE DAM**  
 MANATEE COUNTY, FLORIDA  
 EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
**CROSS SECTION LAYOUT**

T&T5	SHEET NO.
11	SCALE 1" = 200'

30-18



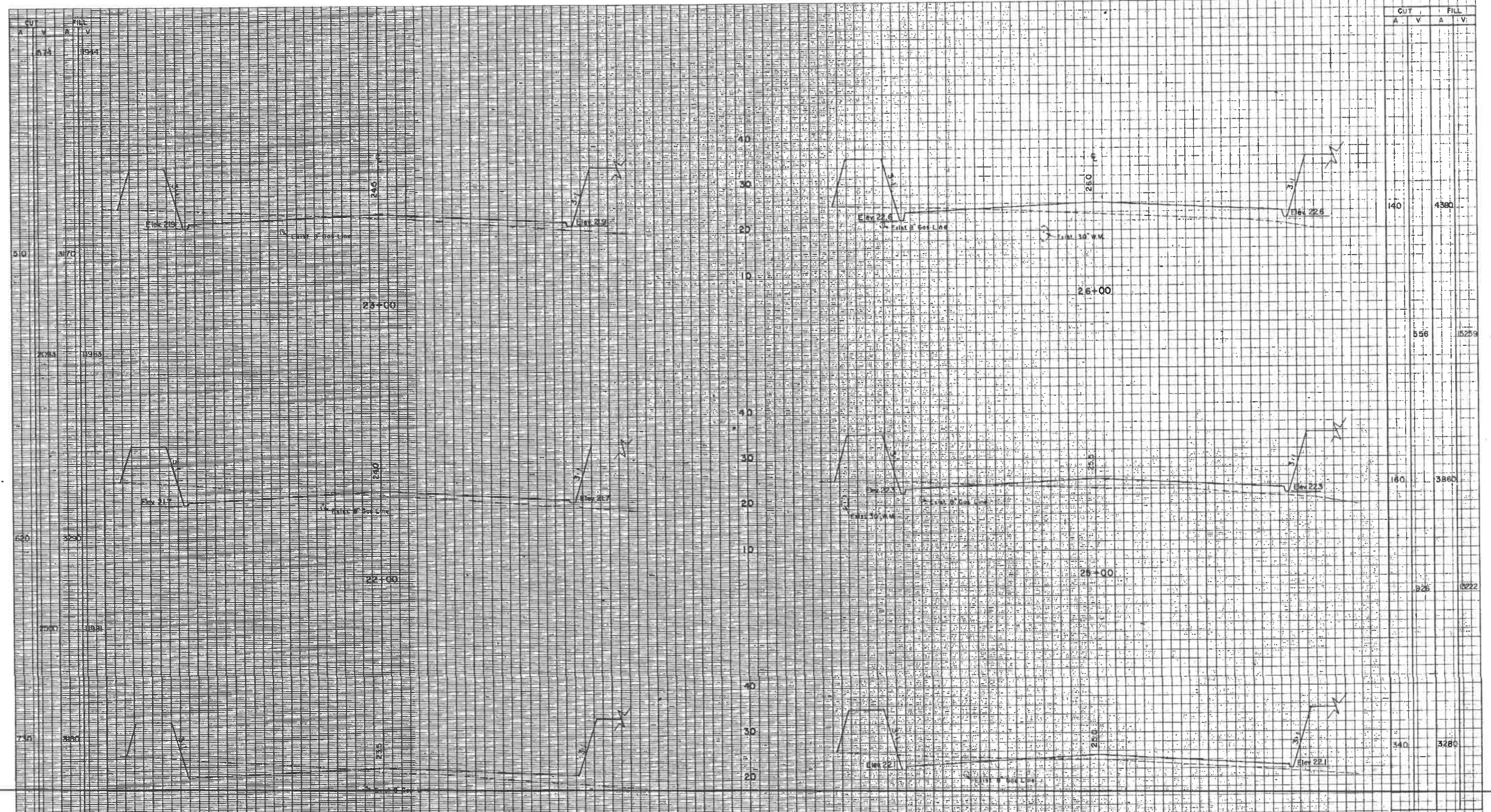
CROSS SECTIONS  
 Scale: 1" = 10' VERT  
 1" = 100' HORIZ

JOB NO.	SHEET NO.	Lake Manatee Dam
6625-22-00	12	Emergency Spillway
		Modifications To Existing Dam
		Manatee County, Florida
DATE	Prepared by:	HNTB
3-1-33		

Application No. \_\_\_\_\_  
 Route No. \_\_\_\_\_  
 Original Planned by \_\_\_\_\_  
 " Checked by \_\_\_\_\_  
 Template No. \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Plank Printed by \_\_\_\_\_  
 " Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 " Checked by \_\_\_\_\_

30-18

T276



CUT		FILL	
A	V	A	V
140		4380	
	556		15259
160		3860	
	326		8222
540		3280	

Application by \_\_\_\_\_  
 Route # \_\_\_\_\_  
 Original Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Triangulation by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Plots Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

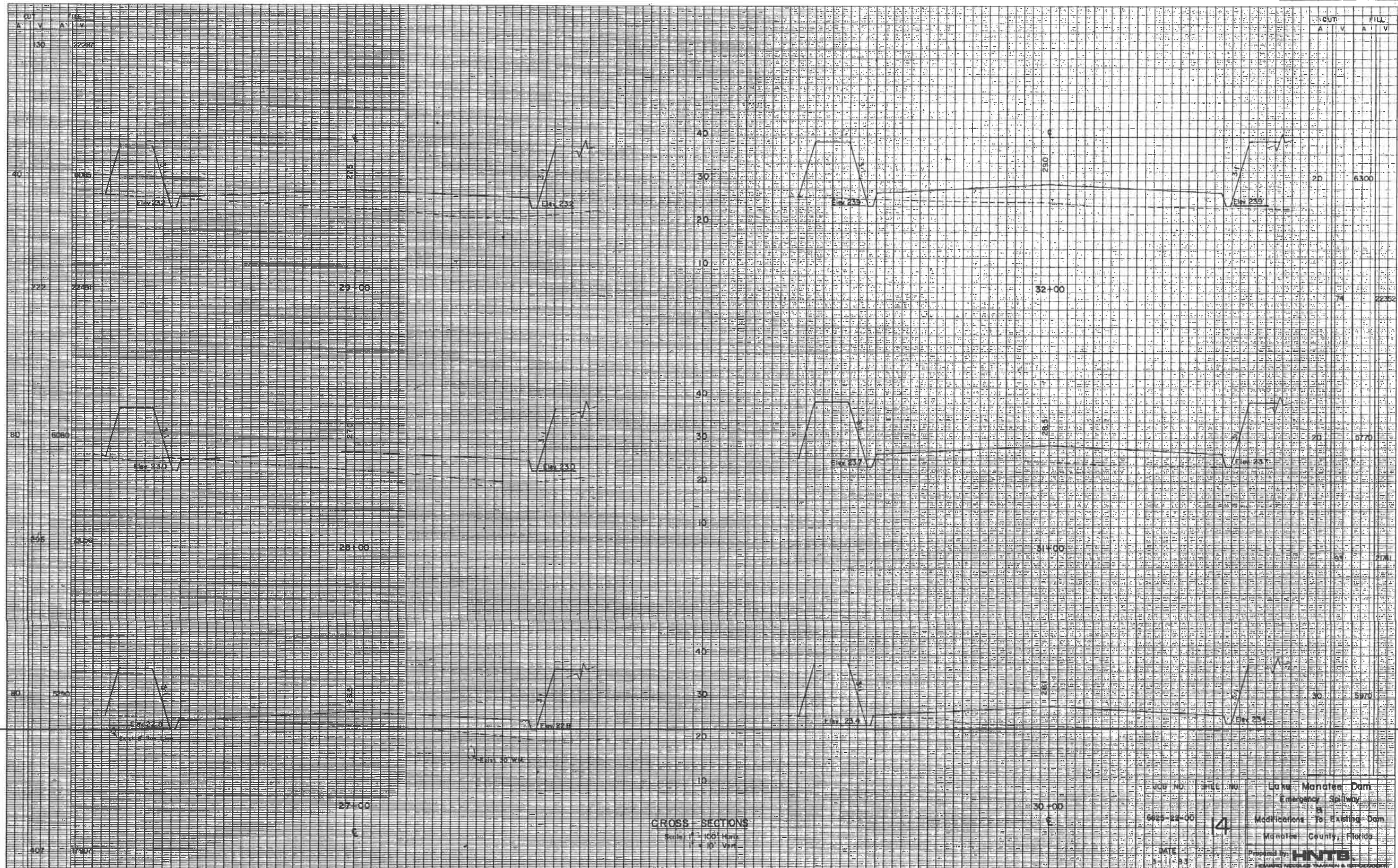
CROSS SECTIONS  
 Scale: 1" = 100' Horiz.  
 1" = 10' Vert.

JOB NO. 6625-22-00  
 SHEET NO. 13  
 DATE 3-1-83  
 Lake Manatee Dam  
 Emergency Spillway  
 Modifications to Existing Dam  
 Manatee County, Florida  
 Prepared by: HNTB

14, F. COSSWELL AND ASSOCIATES

30-18

T277



Approves by \_\_\_\_\_  
 Route by \_\_\_\_\_  
 Original Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Template by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Plink Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

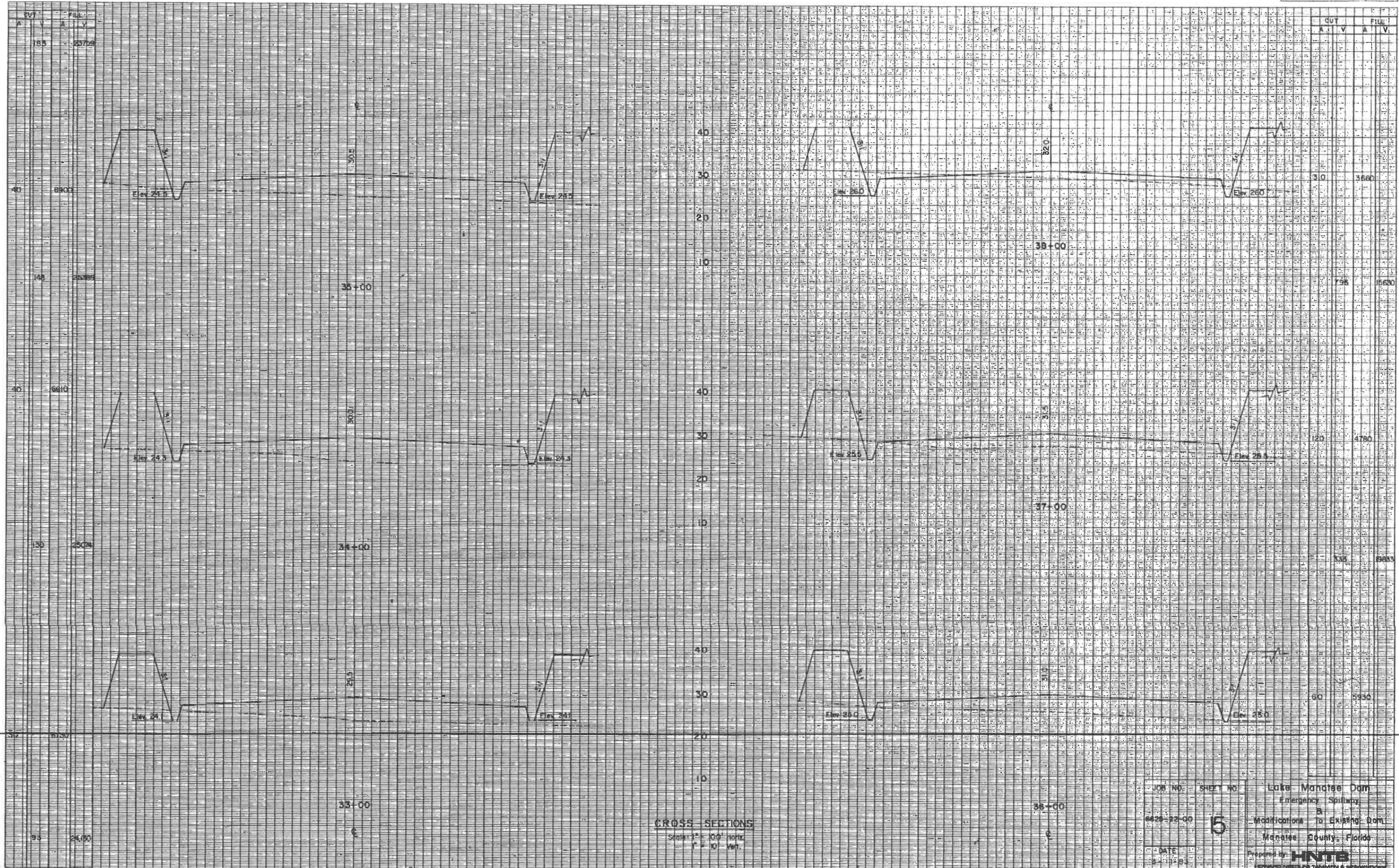
**CROSS SECTIONS**  
 Scale: 1" = 100' Horiz.  
 1" = 10' Vert.

PROJECT NO. 6625-22-00  
 SHEET NO. 14  
 DATE 3/3  
 Late Manatee Dam  
 Emergency Spillway  
 Modifications to Existing Dam  
 Manatee County, Florida  
 Prepared by: **HNTB**  
 HARRIS ENGINEERING, PLANNING & DESIGN, INC.

(S. S. COGSWELL REC 391)

30-18

1278



Application No. \_\_\_\_\_  
 Route No. \_\_\_\_\_  
 Original Planned by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Template by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Plans Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

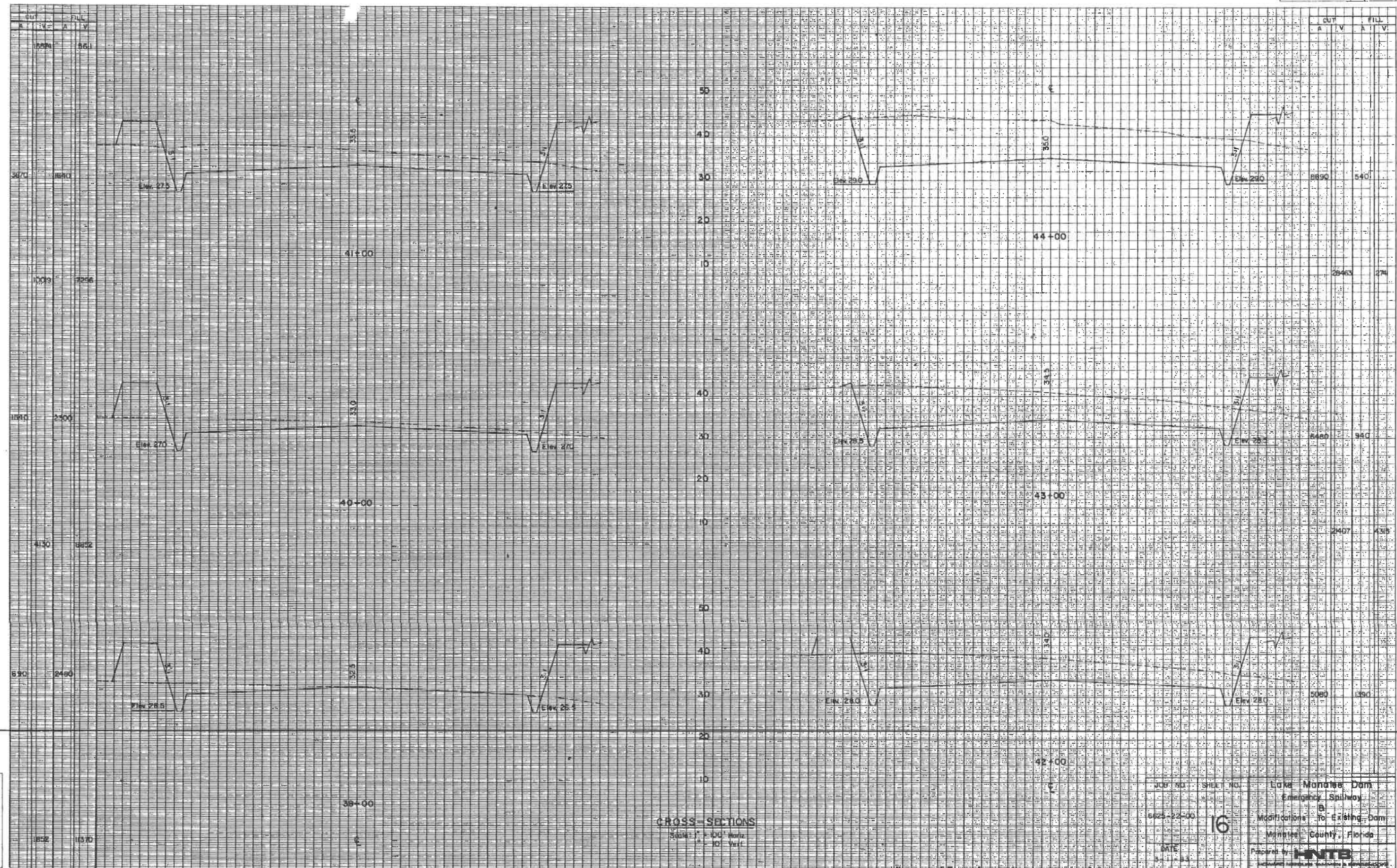
**CROSS SECTIONS**  
 Scale: 1" = 100' horiz.  
 1" = 10' vert.

JOB NO. 6426-32-00  
 SHEET NO. 5  
 DATE 3-17-83  
 Lake Manatee Dam  
 Emergency Spillway  
 Modifications to Existing Dam  
 Manatee County, Florida  
 Prepared by HNTB  
(CORPORATION OF TEXAS ENGINEERS & ARCHITECTS)

14.1-C005WELL A1C 3/83

30-18

T279

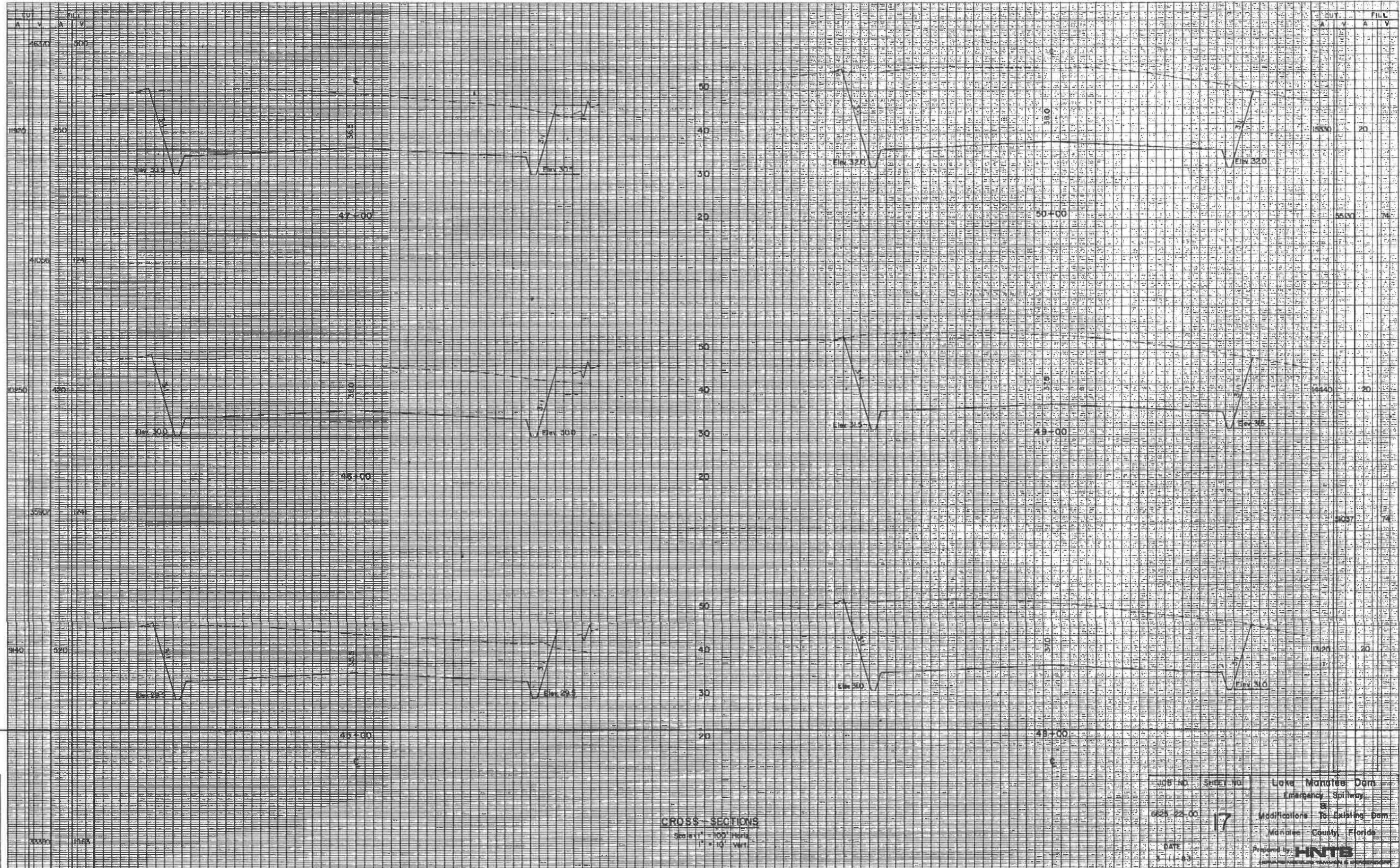


Application No. \_\_\_\_\_  
 Date \_\_\_\_\_  
 Original Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Tolerances \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Plots Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

JOB NO.	SHEET NO.	Lake Mondawmin Dam Emergency Spillway B Modifications to Existing Dam Montgomery County, Florida
6625-22-00	16	
M.A.T.E.	Prepared by	HNTB

14.8. COGEMILL AEC 1987 HMMH

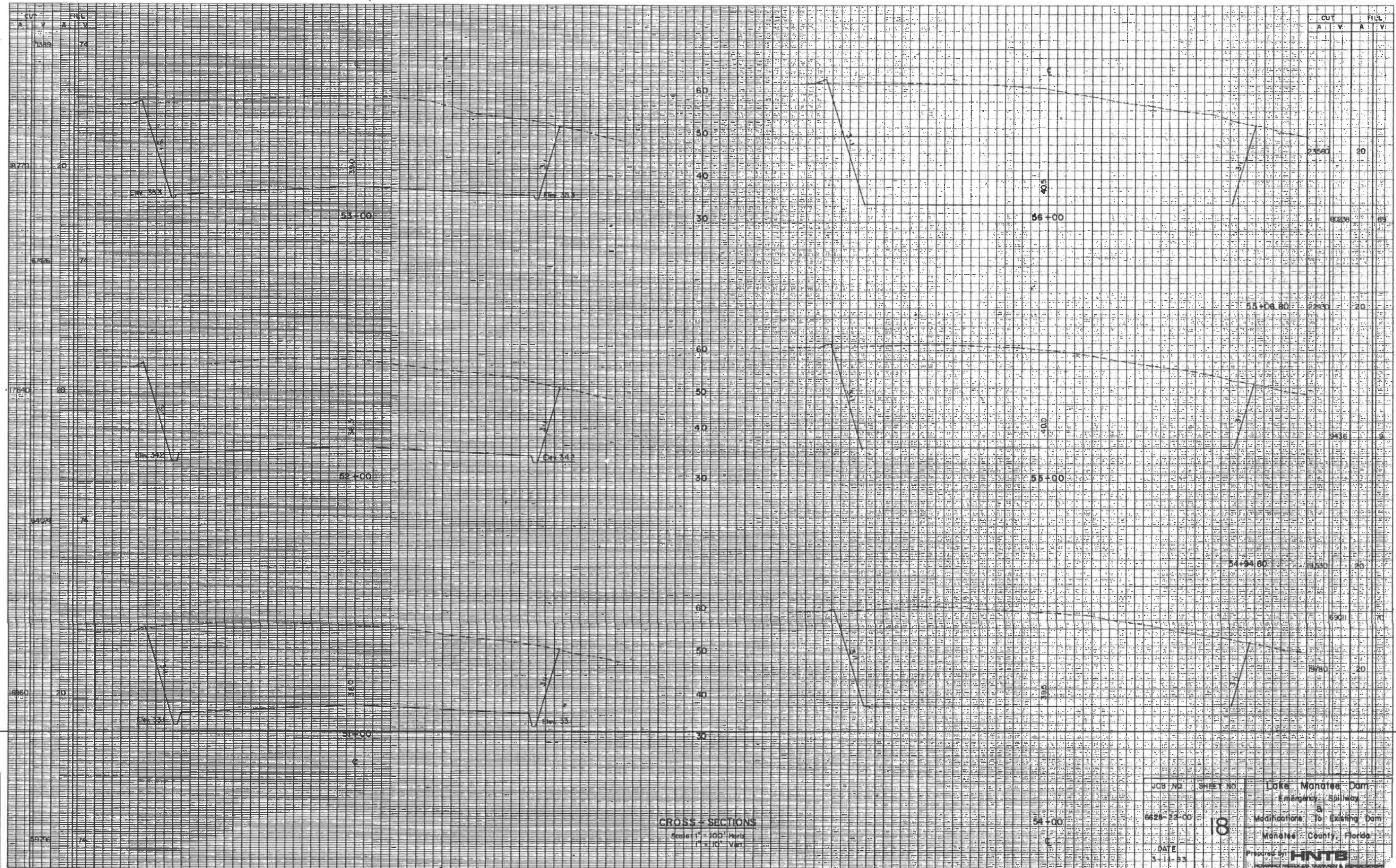
30-18 T280



30-18

T281





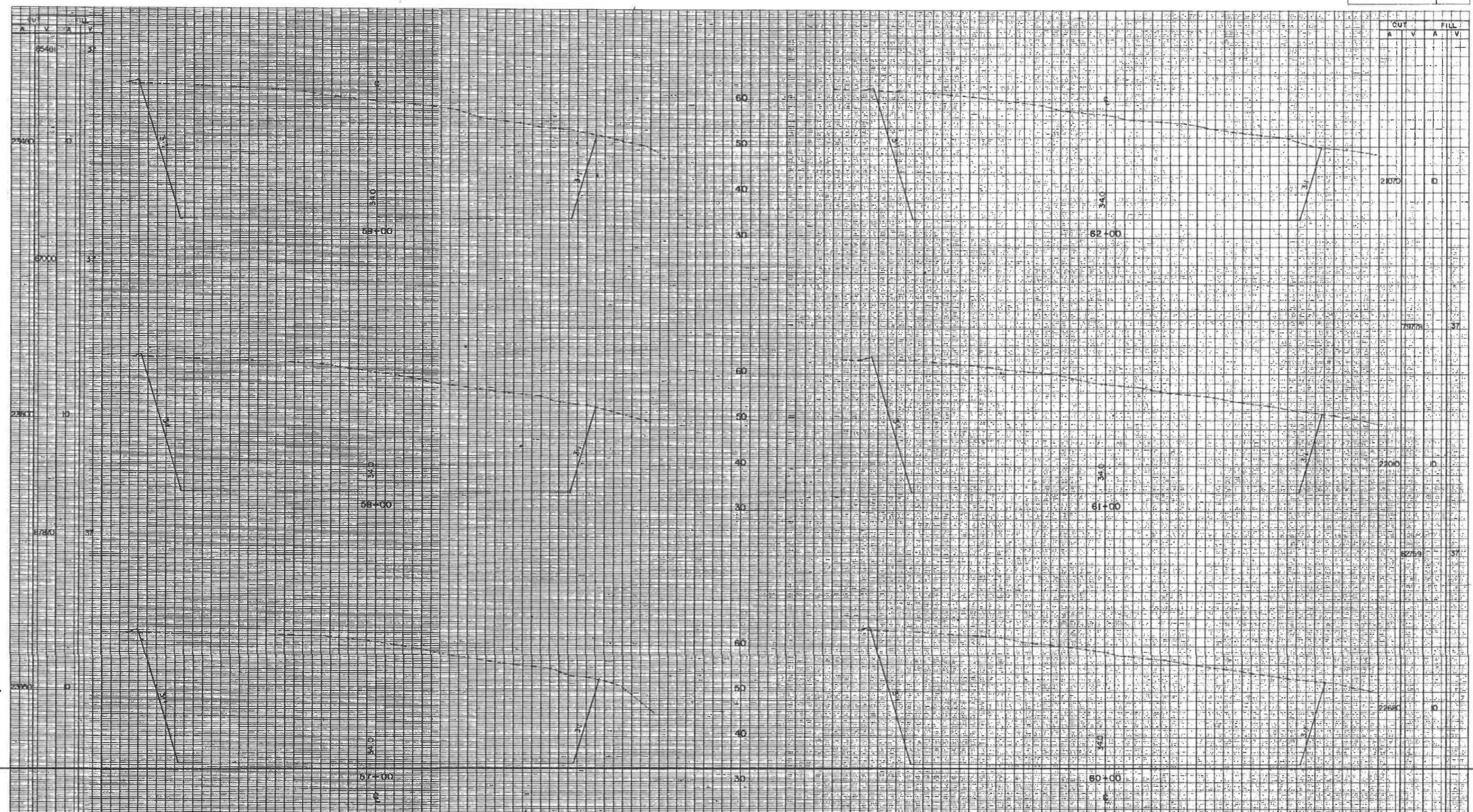
Application No. \_\_\_\_\_  
 Route No. \_\_\_\_\_  
 Original Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Template by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Plots Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

**CROSS SECTIONS**  
 Scale: 1" = 100' Horiz  
 1" = 10' Vert

JOB NO.	SHEET NO.	Lake Manatee Dam Emergency Spillway B Modifications To Existing Dam Manatee County, Florida
6628-22-00	8	
DATE		Prepared by: <b>HNTB</b> Hatch, Mott MacDonald, Inc. / HNTB
3-11-03		

30-18

T282

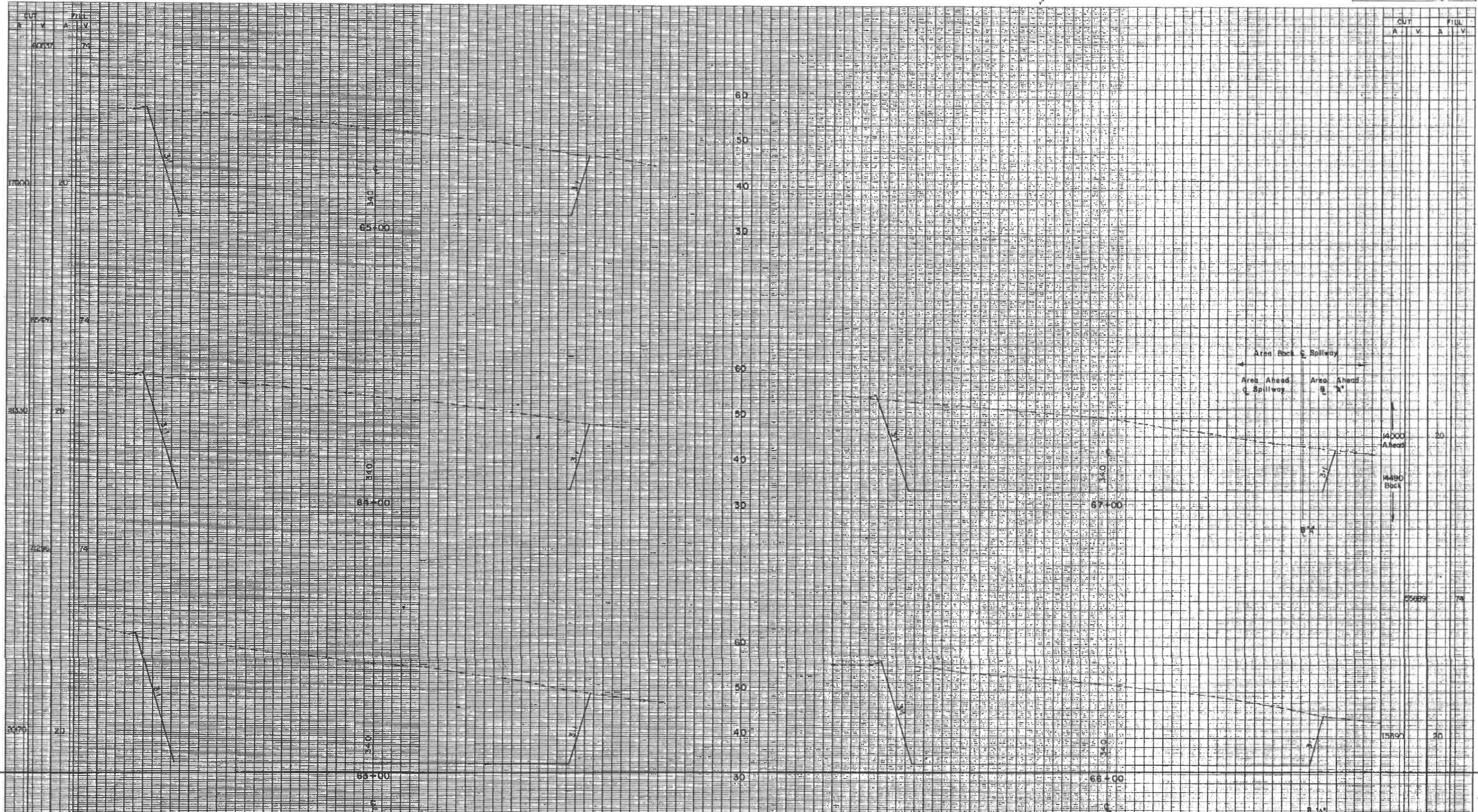


Application No. \_\_\_\_\_  
 Route No. \_\_\_\_\_  
 Original Planned by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Template by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Plans Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

**CROSS SECTIONS**  
 HORIZ. SCALE 1" = 100' HORIZ.  
 VERT. SCALE 1" = 10' VERT.

JOB NO.	SHEET NO.	Lake Manatee Dam
6625-22-00	19	Emergency Spillway
		or
		Modifications to Existing Dam
		Manatee County, Florida
DATE		Prepared by <b>HNTB</b>
5-1-83		HOWARD NEEDLES TAMMEN & BERENSON

30-18 T283



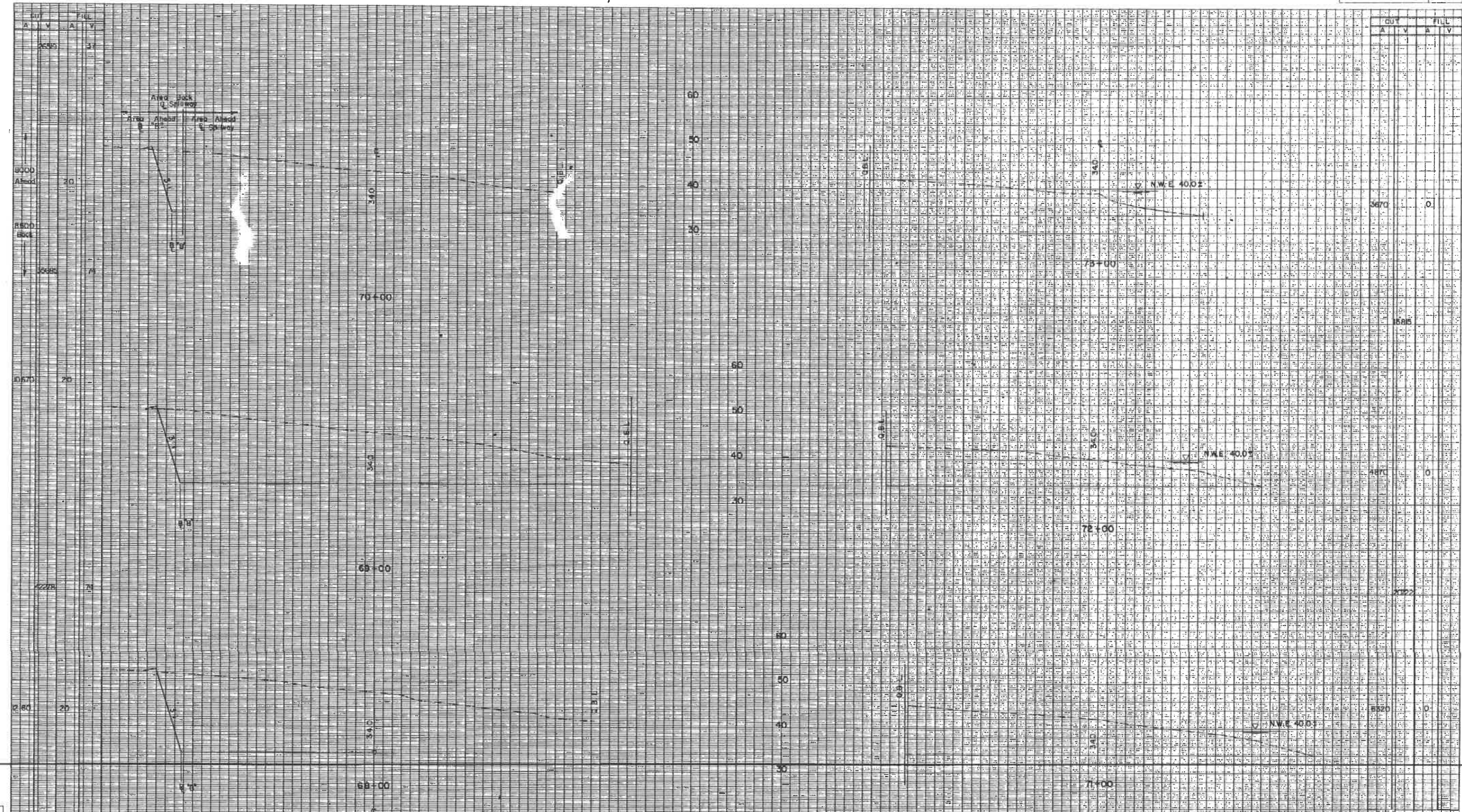
Application No. \_\_\_\_\_  
 Route No. \_\_\_\_\_  
 Original Planned by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Turned in by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Plans Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

GROSS SECTIONS  
 Scale: 1" = 100' Horiz.  
 1" = 10' Vert.

JOB NO.	SHEET NO.	Lake Manatee Dam Emergency Spillway
6625-22-00	20	Modifications To Existing Dam Manatee County, Florida
DATE		Prepared by: <b>HNTB</b>
3-11-55		

30-18

T284



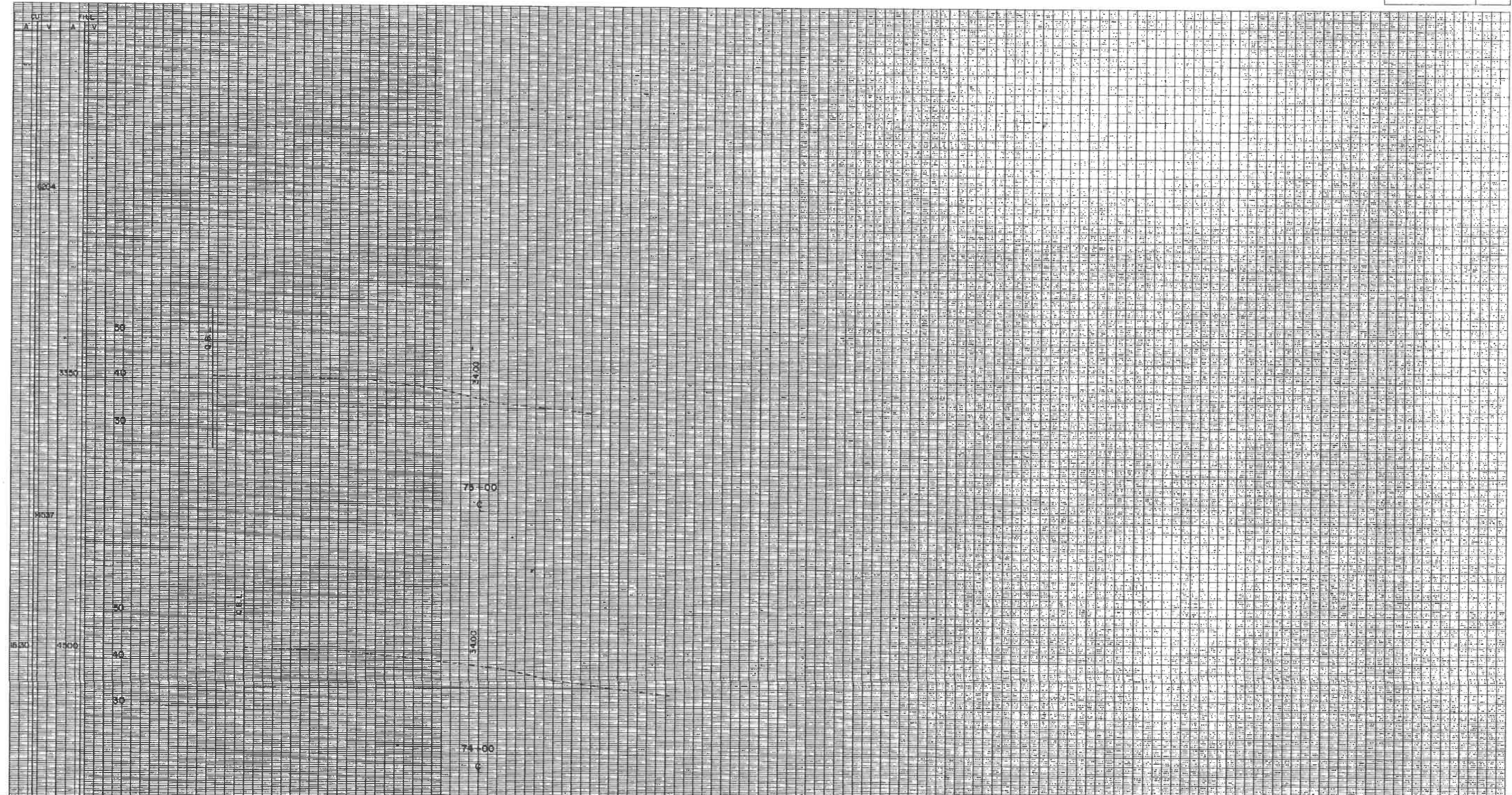
Application No.	
Route No.	
Original Planned by	
Checked by	
Temporarily	
Area by	
Checked by	
Area by	
Checked by	

CROSS-SECTIONS  
 Scale: 1" = 100' Horiz  
 1" = 10' Vert

JOB NO.	SHEET NO.	Lake Manatee Dam Emergency Spillway
6625-25-00	21	Modifications to Existing Dam
DATE		Manatee County, Florida
3-1-53		Prepared by: HNTB

(L.S. COGSWELL REC 391) 10666

30-18 T2RS



CROSS SECTIONS  
 Scale: 1" = 100' Horiz  
 1" = 10' Vert

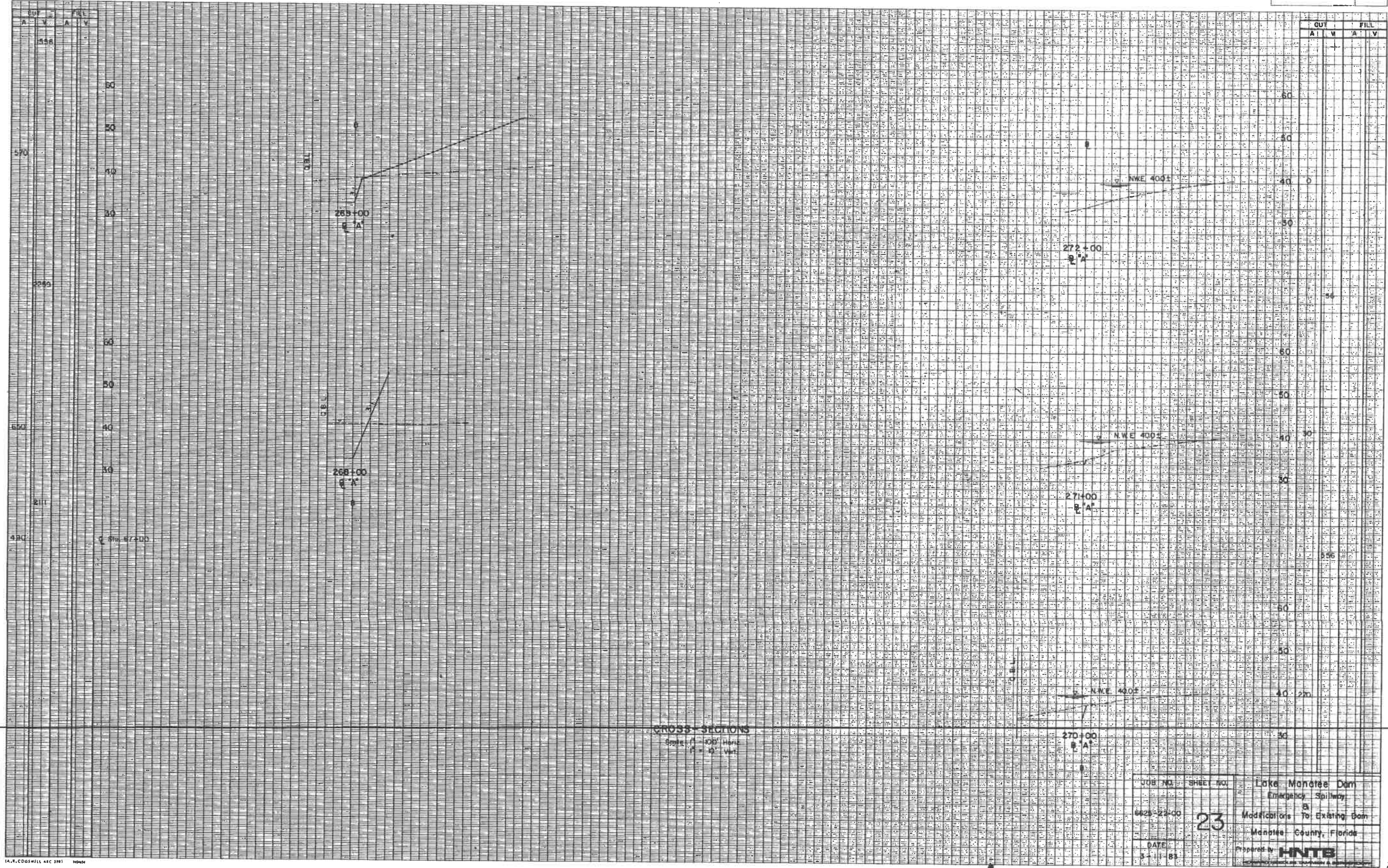
Appointed by \_\_\_\_\_  
 Revisd by \_\_\_\_\_  
 Original Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Template by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Final Plotted by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

(A. L. COSGROVE REC 398) 10/10/10

JOB NO.	SHEET NO.	Lake Manatee Dam Emergency Spillway
6625-22-00	22	Modifications to Existing Dam Manatee County, Florida
DATE	Prepared by: <b>HNTB</b>	
3-11-83		

30-18

T286

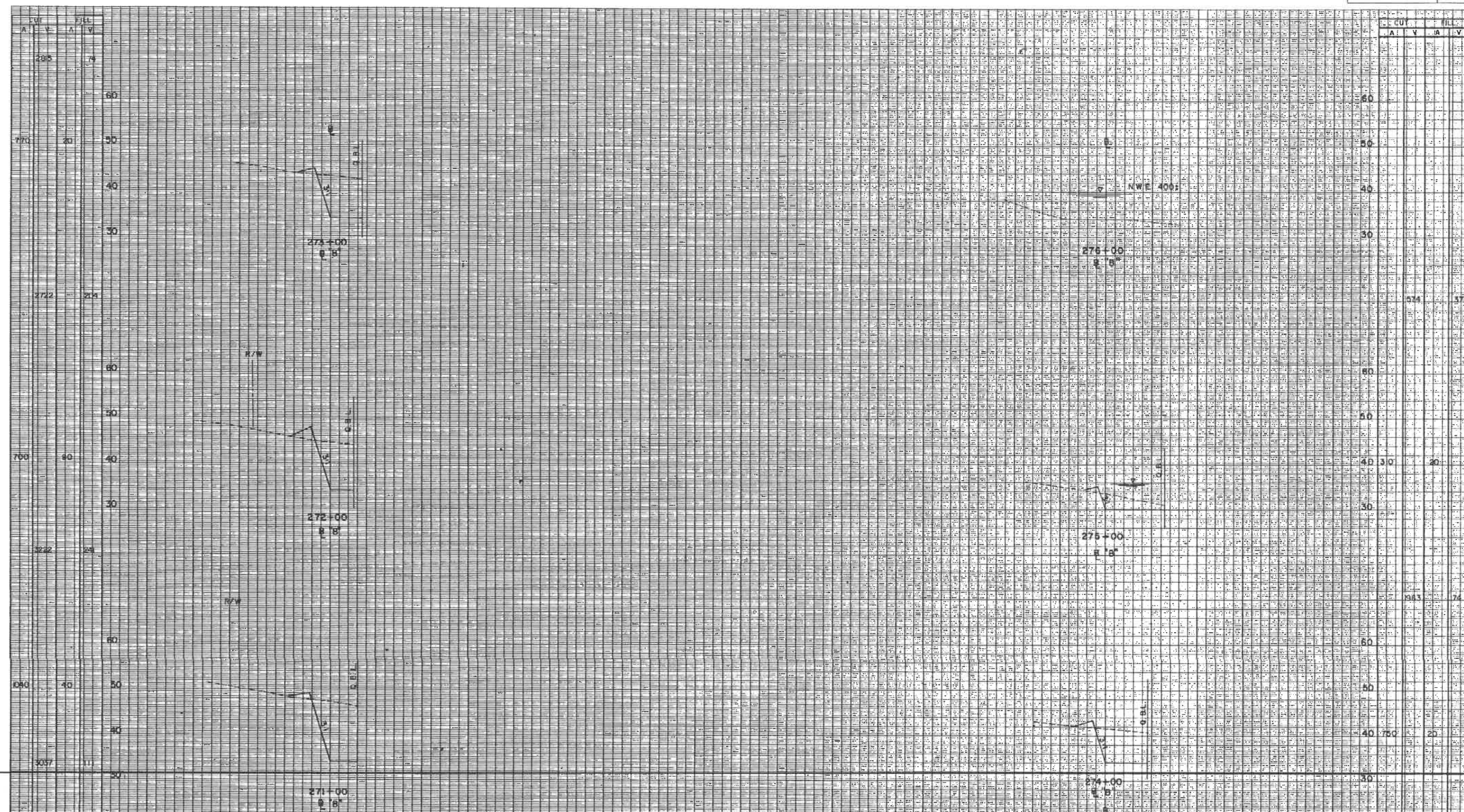


Application No. \_\_\_\_\_  
 Date No. \_\_\_\_\_  
 Original Planned by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Template No. \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Final Planned by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

LA-S-CDD5#ELL REC 3/81 H0000

30-18

T287



Application to \_\_\_\_\_  
 Route No. \_\_\_\_\_  
 Original Planned by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Title/Date by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_  
 Area by \_\_\_\_\_  
 Checked by \_\_\_\_\_

**CROSS SECTIONS**  
 Scale: 1" = 100' Horiz  
 1" = 10' Vert

JOB NO.	SHEET NO.	Lake Manatee Dam
5625-22-00	24	Emergency Spillway
DATE		Modifications to Existing Dam
8/11/85		Manatee County, Florida
		Prepared by: <b>HNTB</b>

(A.S. COGSWELL AEC 278) 10494

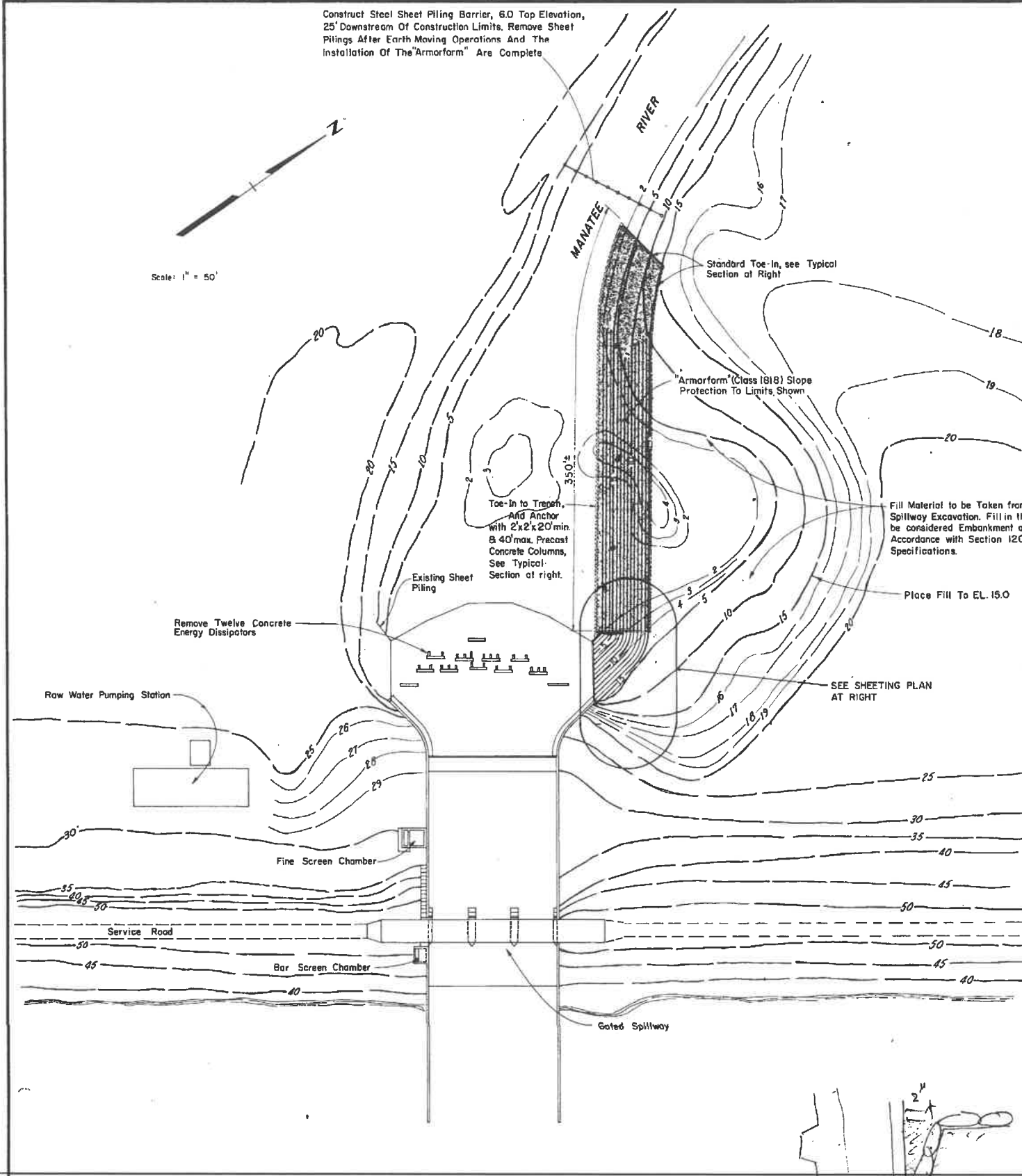


30-18

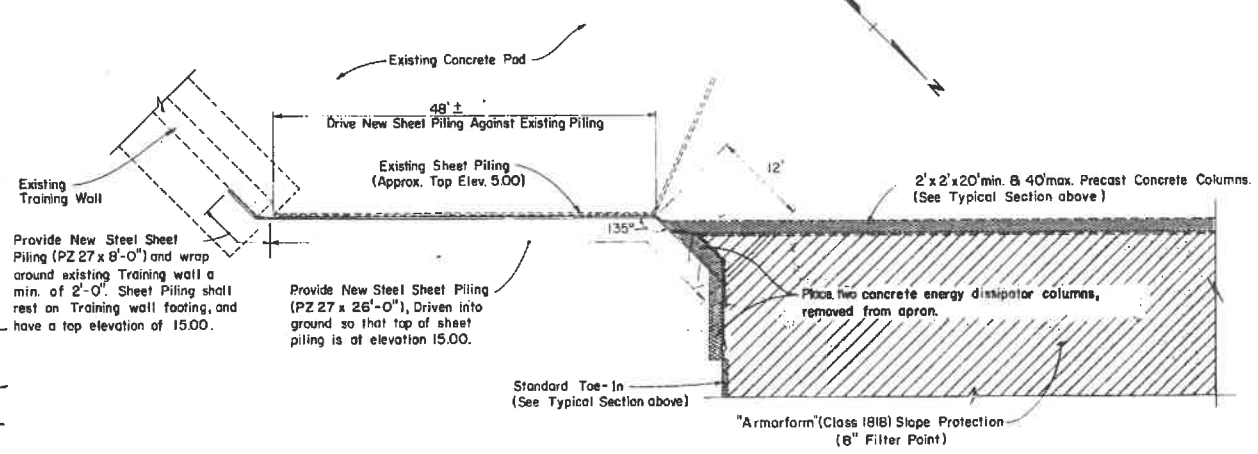
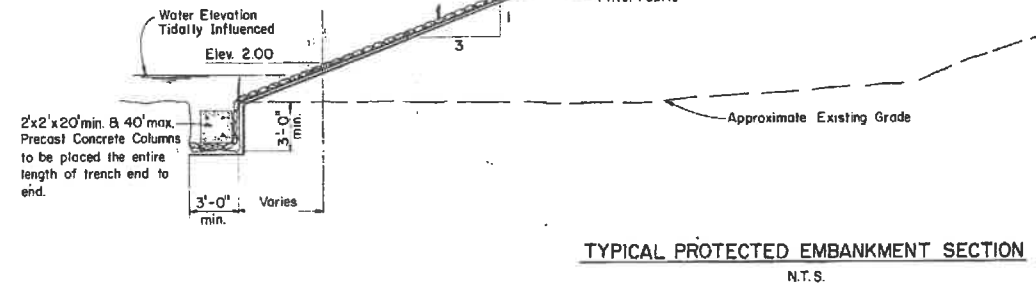
T288

Construct Steel Sheet Piling Barrier, 6.0 Top Elevation, 25' Downstream Of Construction Limits. Remove Sheet Piling After Earth Moving Operations And The Installation Of The "Armorform" Are Complete

Scale: 1" = 50'



**NOTE**  
 "Armorform" material in trench area will have a material shrinkage loss of up to 25% ; an slope area a material Shrinkage loss of up to 20%. "Armorform" material to be filled prior to the placement of the concrete columns; and in sufficient quantity so that the columns lie entirely on the material within the trench.



LAKE MANATEE

SYMBOL	REVISIONS	BY	DATE	APPROVED

DESIGNED	DATE
DRAWN	DATE
TRACED	DATE
CHECKED	DATE
CERTIFIED	DATE
BY	DATE

**HNTB**  
 HOWARD NEEDLES TAMMEN & BERGENDOFF  
 Engineers  
 ORLANDO, FLORIDA

JOB NO.	DATE
6625-22-00	3-11-83

LAKE MANATEE DAM  
 MANATEE COUNTY, FLORIDA  
 EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
 REPAIR OF DOWNSTREAM BANK EROSION

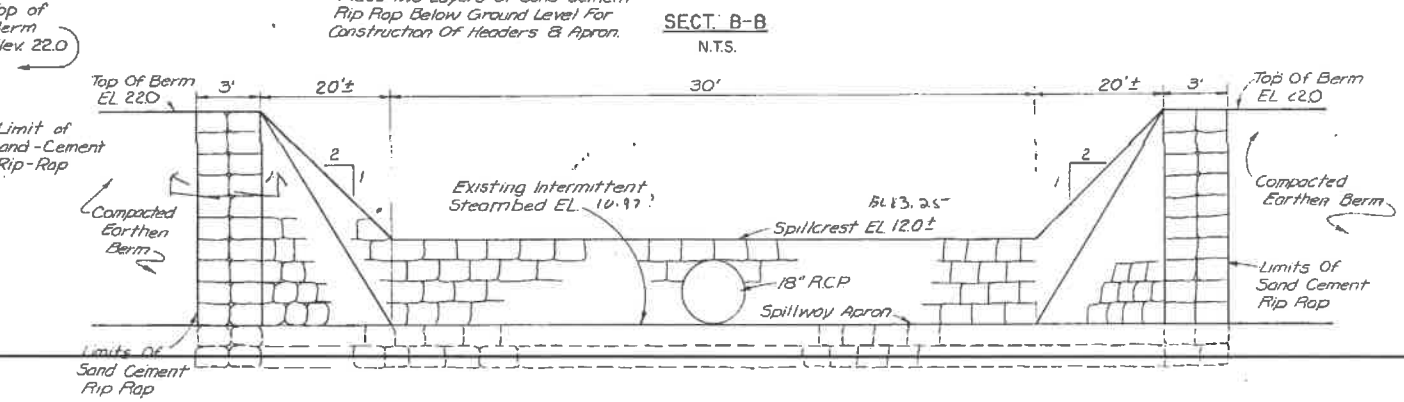
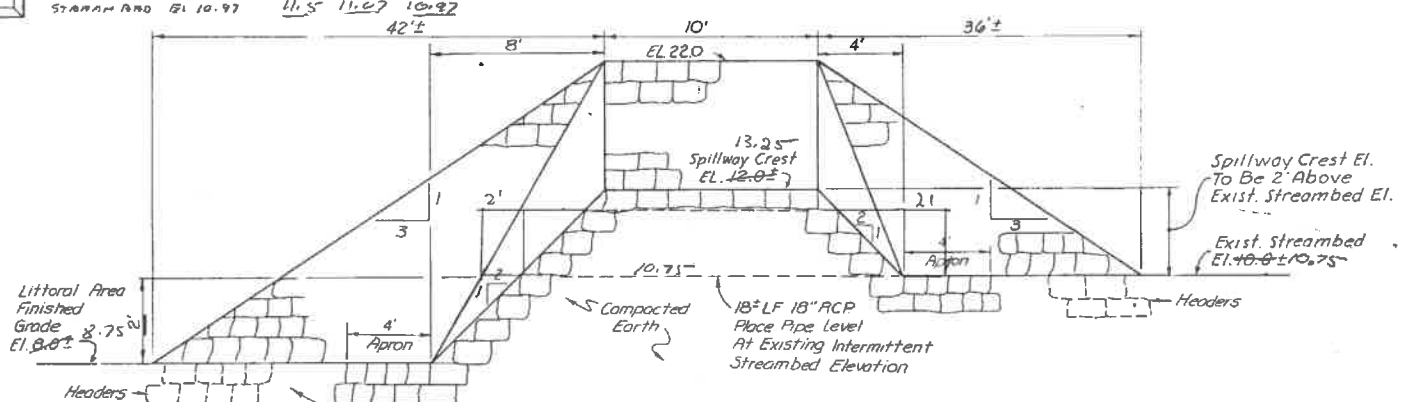
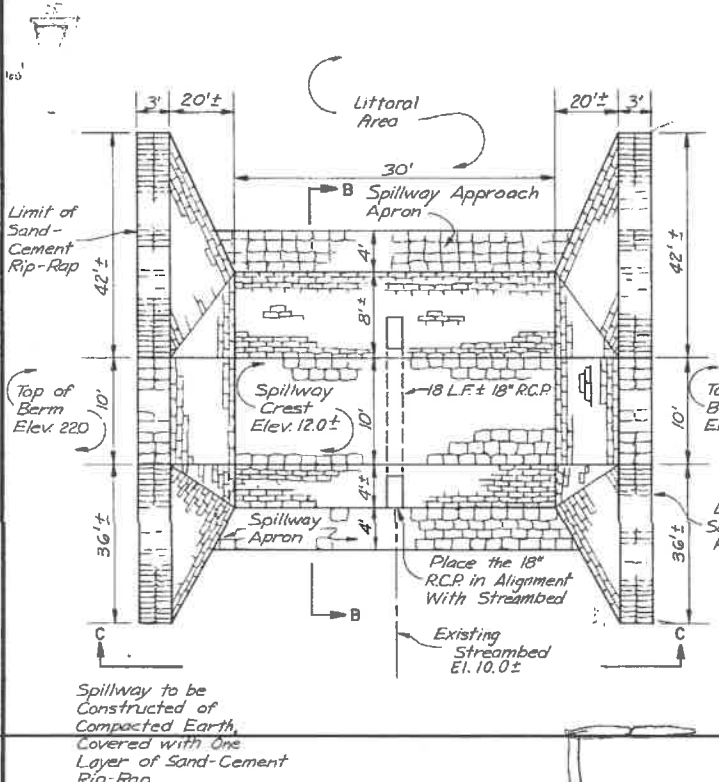
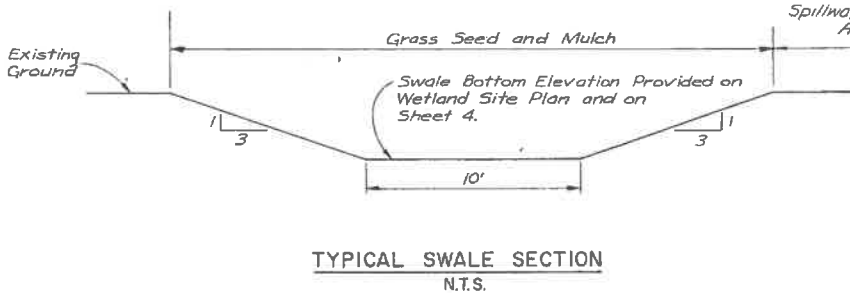
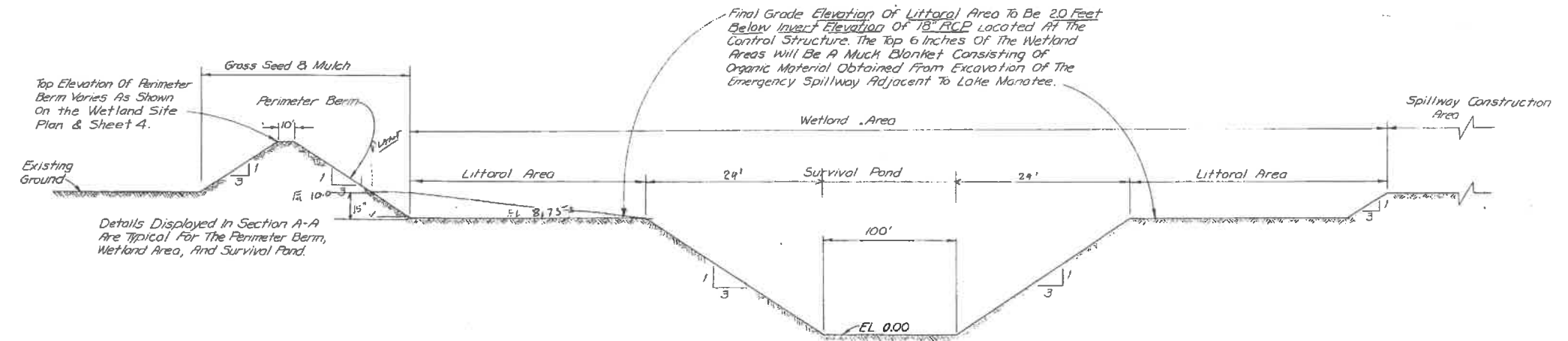
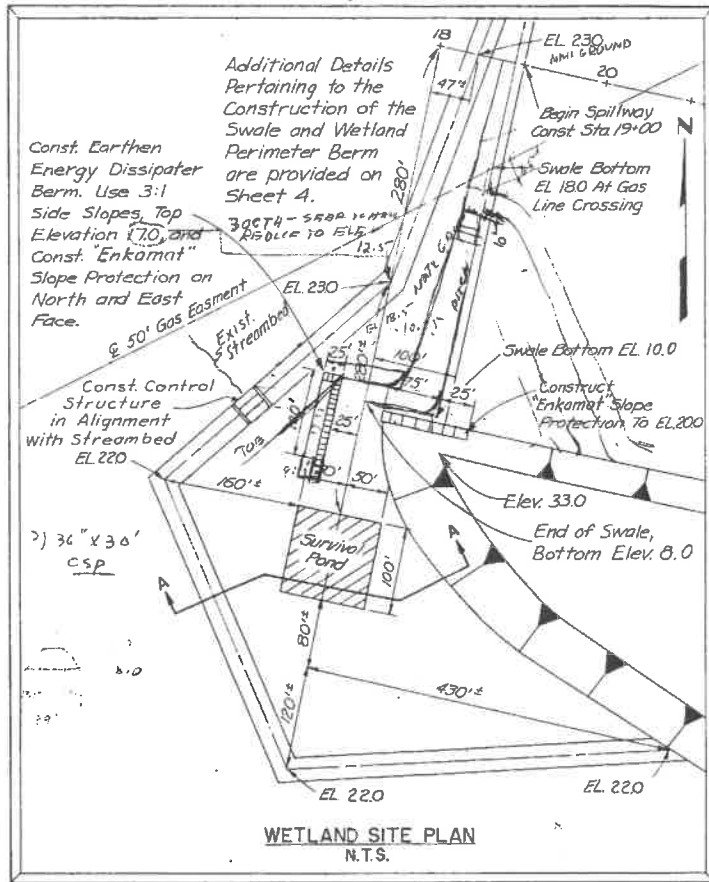
T-289  
 SHEET NO.  
**25**  
 SCALE  
 As Shown

BRUNING 44-132 5467

30-18

Appendix A

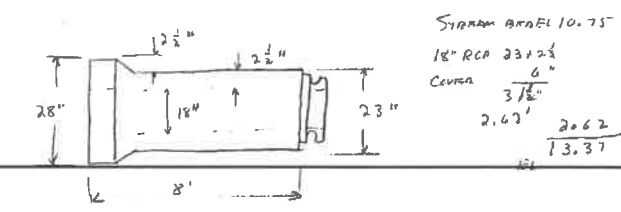




SCIENTIFIC NAME (GENUS/SPECIES)	VEGETATIVE LISTING	COMMON NAME
GROUP I		
SAGITTARIA LANCEIFOLIA		ARROWHEAD
PONTEDERIA LANCEOLATA		PICKEREL WEED
GROUP II		
NYMPHAEA ODORATA		FRAGRANT WATERLILLY
HYPHUR LUTEUM		SPATTERDOCK

- PLANTING GUIDELINES**
- PLANT VEGETATIVE MATERIAL FOR INITIAL SEEDING AND MULCHING USING THE FOLLOWING SPECIES DENSITY AND MIX.
- SPECIES DENSITY:
    - GROUP I - 15 TO 20 FEET CENTERS
    - GROUP II - 10 FEET CENTERS
  - SPECIES MIX:
    - GROUP I - 50 PERCENT OF EACH SPECIES OVER THE LITTORAL AREA
    - GROUP II - 50 PERCENT OF EACH SPECIES OVER THE SURVIVAL POND
- Damodar 11/14/83 THE WETLAND VEGETATION SPECIES ARE PLANTED ONLY ON THE TWO BEARS IN THE NORTH WEST PORTION OF THE WETLAND BARRAGE WHICH SHALL INCLUDE THE SURVIVAL POND AND BEAR ADJACENT TO THE CURVE STRUCTURE.*

**NOTE:**  
 "Enkamot" Soil Reinforcement Matting is An Acceptable Alternate To The Use Of Sand-Cement Rip-Rap For The Construction Of The Wetland Control Structure, If "Enkamot" is Used However, The Spillway Apron Would Still Be Constructed Of Sand-Cement Rip-Rap, And The Headers Would Also Be Present And Constructed Of Sand-Cement Rip-Rap For The Purpose Of Anchoring The "Enkamot" Material.



SYMBOL	REVISIONS	BY	DATE	APPROVED

DESIGNED \_\_\_\_\_  
 DRAWN \_\_\_\_\_  
 TRACED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 CERTIFIED \_\_\_\_\_

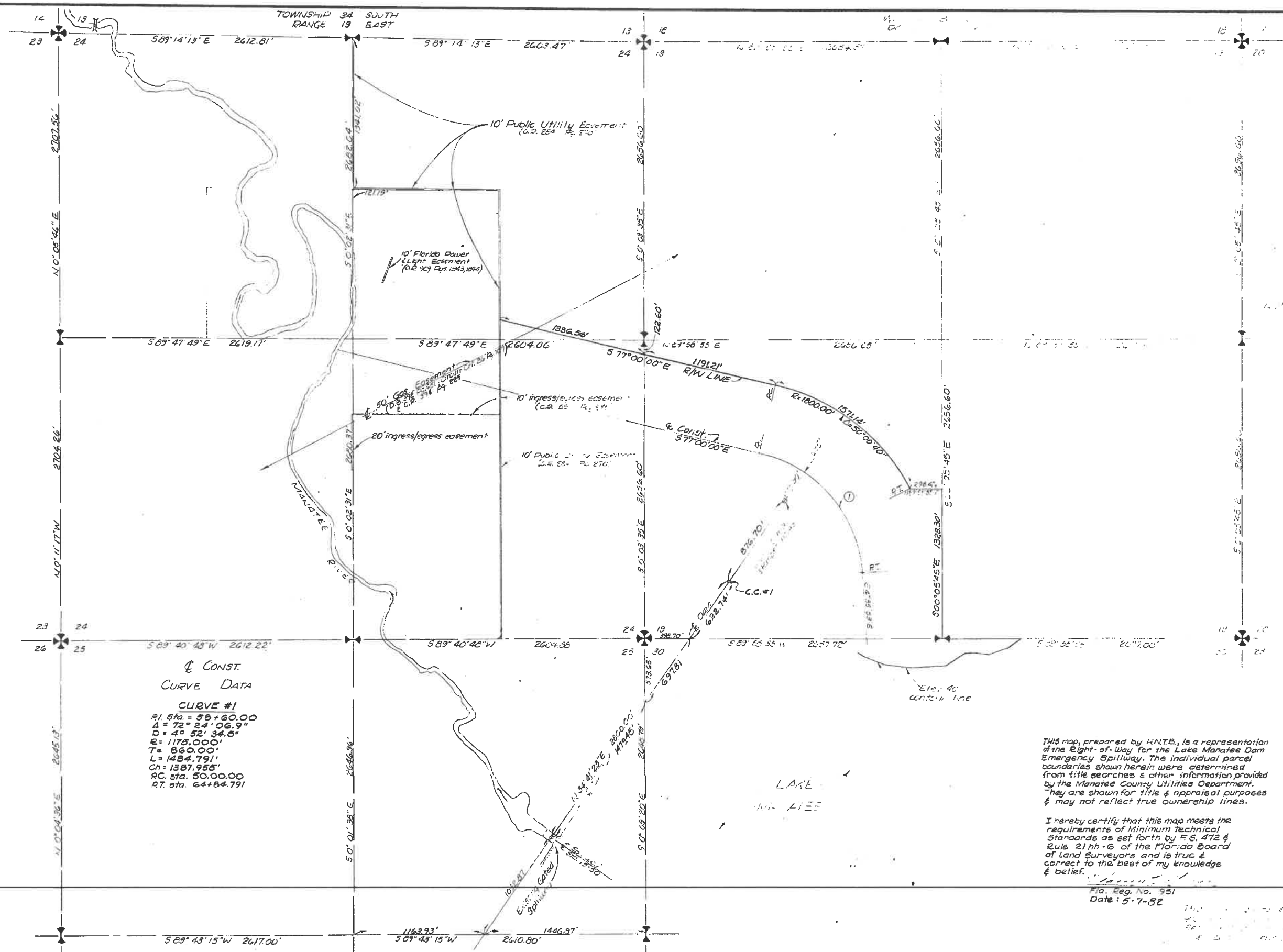
**HNTB**  
 HOWARD NEEDLES TAMMEN & BERGENDOFF  
 Engineers  
 ORLANDO, FLORIDA

JOB NO. 6625  
 22-00

DATE 3-11-83

LAKE MANATEE DAM  
 MANATEE COUNTY, FLORIDA  
 EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
 WETLAND AREA

T290  
 SHEET NO. 21  
 SCALE



1" = 400'

All Bearings are assumed to be true Meridian.

CONST. CURVE DATA

CURVE #1

PI Sta. = 58+60.00

Δ = 72° 24' 06.9"

D = 40' 52' 34.5"

R = 1175.000'

T = 860.00'

L = 1484.791'

Ch = 1387.955'

RC Sta. 50.00.00

RT Sta. 64+84.791

THIS map, prepared by HNTB, is a representation of the Right-of-Way for the Lake Manatee Dam Emergency Spillway. The individual parcel boundaries shown herein were determined from title searches & other information provided by the Manatee County Utilities Department. They are shown for title & appraisal purposes & may not reflect true ownership lines.

I hereby certify that this map meets the requirements of Minimum Technical Standards as set forth by F.S. 472 & Rule 21hh-6 of the Florida Board of Land Surveyors and is true & correct to the best of my knowledge & belief.

Fla. Reg. No. 551  
Date: 5-7-82

SYMBOL	REVISIONS	BY	DATE	APPROVED
	Parcel #101 Removed From Taking	TRS	7/1/82	RCM
	Parcels #103 & 104 removed from taking	ARM	5/7/82	RCM
	Endpt. @ Elev. 40 contour revised - Parcel #111	ARM	5/7/82	RCM
	R/W line changed to fit new Const. Alignment	ARM	1/20/82	RCM

DESIGNED	ARM
DRAWN	ARM
TRACED	
CHECKED	BEB
CERTIFIED	
BY	DATE

**HNTB**  
HOWARD NEEDLES TAMMEN & BERGENDOFF  
Engineers  
ORLANDO, FLORIDA

JOB NO.	6-1-99-04
DATE	3-11-83

LAKE MANATEE DAM  
MANATEE COUNTY, FLORIDA  
EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
RIGHT OF WAY MAP

T291  
SHEET NO. 27  
SCALE 1" = 400'

20-18

TOWNSHIP 34 SOUTH  
RANGE 19 EAST

TOWNSHIP 34 SOUTH  
RANGE 20 EAST

Parcel Sheet No. No.	NAME	Area Taken	Remainders		COMMENTS
			Right	Left	
102-2	Carl E. Lasater & Marjorie J. Lasater & Archie T. & Marjorie J. Lasater	19.99 Ac.	-0-	-0-	
105-2	W.D. Sugg	10.00 Ac.	-0-	-0-	
106-2	John D. Manning & Elizabeth S. Manning	23.51 Ac.	-0-	-0-	
107-2	E. Duane Clyne & Merna C. Clyne	5.0 Ac.	-0-	-0-	
108-2	E. Duane Clyne & Merna C. Clyne	2.4 Ac.	-0-	-0-	Agreement Holder James W. Hyde
109-2	Thomas Thomas, Jr. & Clyde Lawrence Skene	5.1 Ac.	-0-	-0-	
110-2	M. Maurice Goodnight, as Trustee	123.4 Ac.	56.5	159.14 Ac.	
111-2	St. Petersburg Bank & Trust Company, as Trustee	90.4 Ac.	-0-	503.74 Ac.	Remainder for Sect. 19 only
Total Area of Taking		320.19 Ac.			

\* Remainders refer to Right & Left of E

Scale: 1"=400'

NOTE: ALL BEARINGS ARE BASED ON AN ASSUMED MERIDIAN.

Bearings & Distances between points located on elevation 40.0 contour line.

POINT	BEARING	DISTANCE	DESCRIPTION
1			
2	S 53° 58' 28" W	79.12	
3	S 66° 34' 27" W	186.77'	C.M. No. DP 40-822
4	N 80° 52' 49" W	127.88'	C.M. No. DP 40-823
5	S 86° 39' 16.0" W	94.00'	C.M. No. DP 40-824
6	S 52° 47' 20.0" W	193.60'	C.M. No. DP 40-825
7	S 86° 54' 54.0" W	307.00'	C.M. No. DP 40-826
8	N 83° 52' 00.5" W	291.97'	C.M. No. DP 40-827
9	N 67° 55' 16.0" W	208.91'	C.M. No. DP 40-828
10	N 59° 47' 00" W	257.91'	C.M. No. DP 40-829
11	N 59° 47' 00" W	53.07'	
12	N 57° 40' 59" W	417.44'	C.M. No. DP 40-830

THIS map, prepared by HNTB, is a representation of the right-of-way for the Lake Manatee Dam Emergency Spillway. The individual parcel boundaries shown herein were determined from title searches & other information provided by the Manatee County Utilities Department. They are shown for title & appraisal purposes & may not reflect true ownership lines.

I hereby certify that this map meets the requirements of Minimum Technical Standards as set forth by F.S. 472 & Rule 21h-6 of the Florida Board of Land Surveyors and is true & correct to the best of my knowledge & belief.

Fla. Reg. No. 951

SEE SHEET NO. 1 FOR CURVE DATA AND SECTION LINE INFORMATION.

DESIGNED: ARM  
DRAWN: PEM  
TRACED: JBN  
CHECKED: BEB  
CERTIFIED: [Signature]  
BY: [Signature]

**HNTB**  
HOWARD NEEDLES TAMMEN & BERGENDOFF  
Engineers  
ORLANDO, FLORIDA.

JOB NO.  
6625-99-04  
DATE  
3-11-83

LAKE MANATEE DAM  
MANATEE COUNTY, FLORIDA  
EMERGENCY SPILLWAY & MODIFICATIONS TO EXISTING DAM  
LAND TAKING MAP

T292  
SHEET NO.  
28  
SCALE  
1"=400'

20-16