CONSTRUCTION DRAWINGS

for

NORTH COOLING POND CONVERSION
FOR LIME SLUDGE DISPOSAL

PINEY POINT PHOSPHATES STACK SYSTEM

Manatee County, Florida

for

Florida
Department of Environmental Protection

and, Louis J. Timchak, Jr. - Receiver

NOVEMBER 2003

Prepared By
Ardaman & Associates, Inc.
Orlando, Florida

ARDAMAN & ASSOCIATES, INC. FILE NO.
02-099A

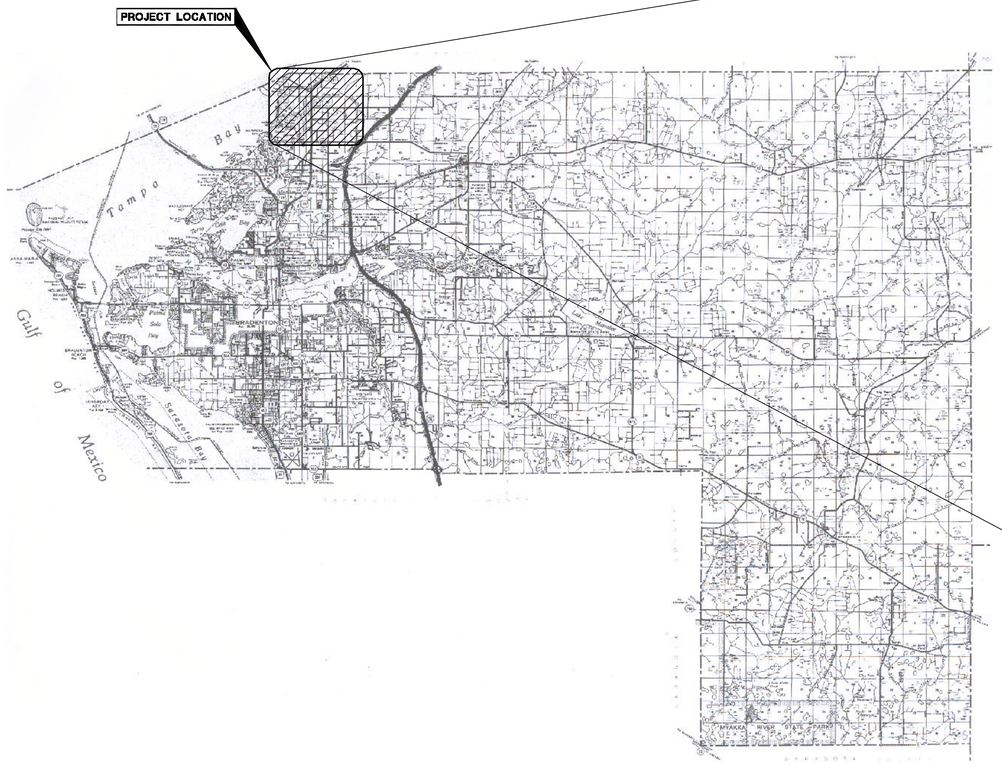
NADIM F. FULEIHAN, Sc.D., P.E.
FLORIDA REGISTRATION NO. 31953

ISSUED FOR CONSTRUCTION

DRAWING NO. G-1

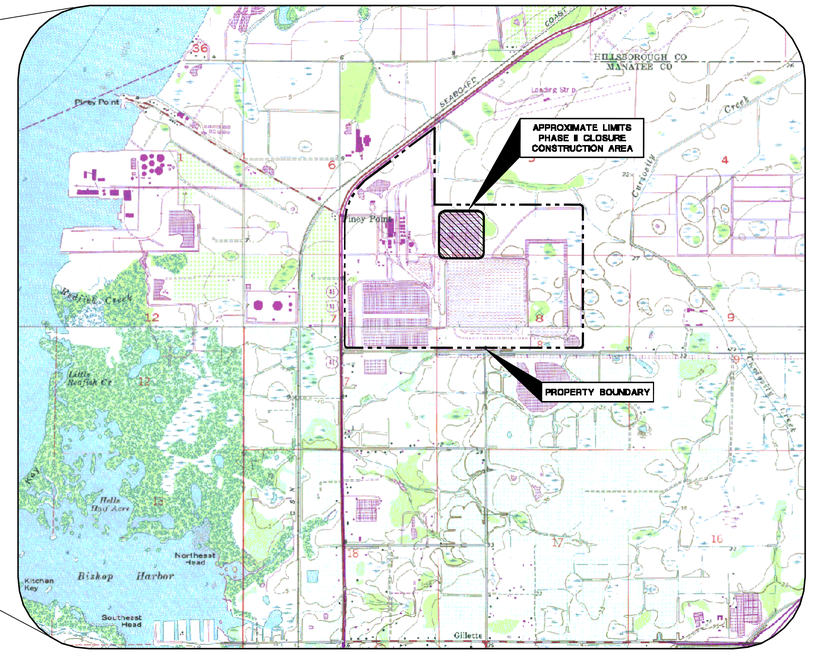
FLORIDA STATE MAP

NOT TO SCALE



MANATEE COUNTY MAP

SCALE: 1" = 20000'



TOWNSHIP 33 SOUTH
RANGE 18 EAST

OBTAINED FROM U.S.G.S. QUAD MAPS:
COCKROACH BAY, FLORIDA (PHOTOREVISED 1981)
PALMETTO, FLORIDA (PHOTOREVISED 1987)

SITE VICINITY MAP

SCALE: 1" = 2000'

INDEX OF DRAWINGS

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REVISION	DATE	DESCRIPTION	APPR'D
0	11/26/03	ISSUED FOR CONSTRUCTION	
P2	10/10/03	ISSUED FOR BID	RJW
P1	10/03/03	ISSUED FOR REVIEW	RJW

	NAME	DATE		NAME	DATE
DESIGNED BY	RJW	09/15/03	CHECKED BY	RJW	09/26/03
DRAWN BY	BTW	09/17/03	CHECKED BY	RD	09/29/03
FILE NO.: 02-099A			SCALE: AS SHOWN		
APPROVED BY:					

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Florida
Department of Environmental Protection
and, Louis J. Timchak, Jr. - Receiver

NORTH COOLING POND CONVERSION
FOR LIME SLUDGE DISPOSAL
PINEY POINT FACILITY
MANATEE COUNTY, FLORIDA

INDEX OF DRAWINGS AND PROJECT LOCATION MAPS

DRAWING NO.
G-2

ABBREVIATIONS

A

A	ANCHOR
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADAPT	ADAPTER
AR'D	AROUND
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS

B

BOTT	BOTTOM
BF.V.	BUTTERFLY VALVE
B.F.	BLIND FLANGE
B.V.	BALL VALVE

C

℄	CENTERLINE
CLR	CLEAR
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUATION OR CONTINUOUS
COR	CORNER
CORR	CORRUGATED
CR	COUNTY ROAD

D

DIA	DIAMETER
DISCH	DISCHARGE
DWG	DRAWING
△	CURVE ANGLE

E

E	EAST
EA	EACH
ECC	ECCENTRIC
EL	ELEVATION (feet, NGVD)
ELL	ELBOW
EW	EACH WAY
EX	EXISTING
EXP	EXPANSION
EXT	EXTENSION

F

FAB	FABRICATED
FG	FINISH GRADE
FIN	FINISH
FLG	FLANGE
FLG'D	FLANGED
FT	FOOT

G

GALV	GALVANIZED
GR	GRADE

H

H	HIGH
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
HP	HIGH POINT
HWY	HIGHWAY

I

ID	INSIDE DIAMETER
INV	INVERT

L

L	LENGTH OF ARC
LBS	POUNDS
LF	LINEAR FOOT
LG	LENGTH OR LONG
LLV	LONG LEG VERTICAL
LR	LONG RADIUS
LT	LEFT

M

MAT'L	MATERIAL
MAX	MAXIMUM
MB	MECHANICAL BOLT
MEG	MEET EXISTING GRADE
MIN	MINIMUM

N

N	NORTH
NGS-N	NEW GYPSUM STACK - NORTH COMPARTMENT
NGVD	NATIONAL GEODETIC VERTICAL DATUM OF 1929
NO.	NUMBER
NTS	NOT TO SCALE

O

OC	ON CENTERS
O/E	OR EQUAL
OZ	OUNCE

P

PC	POINT OF CURVATURE
PE	PLAIN END
PERF	PERFORATED
PI	POINT OF INTERSECTION
PL	PLATE
PP	POWER POLE
PPL	POLYPROPYLENE
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECTION
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
P.V.	PLUG VALVE
PVC	POLYVINYL CHLORIDE

R

R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RR	RAILROAD
RT	RIGHT

S

S	SLOPE OR SOUTH
SCH	SCHEDULE
SCR'D	SCREWED
SDR	STANDARD DIMENSION RATIO
SPEC	SPECIFICATIONS
SS	STAINLESS STEEL
STA	STATION
STL.	CARBON STEEL
STL RL	RUBBER-LINED CARBON STEEL
S.W.	STORMWATER

T

T	TANGENT
TEMP	TEMPORARY
TEXT	TEXTURED
THK	THICK
THR'D	THREADED
TOC	TOP OF CONCRETE
TOL	TOP OF LINER
TOS	TOE OF SLOPE
TYP	TYPICAL

U

UON	UNLESS OTHERWISE NOTED
UNREINF'D	UNREINFORCED

V

VAR	VARIES
VER	VERIFY
VERT	VERTICAL

W

W	WEST OR WIDE
W/	WITH
W.S.	WATER STOP
W/S	WATER SURFACE

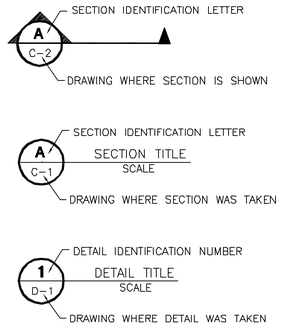
Y

YD^2	SQUARE YARD

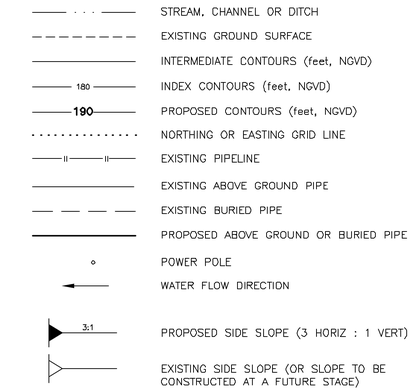
GENERAL NOTES

1. Prior to bid submittal, the Contractor shall carefully examine and inspect the site to familiarize himself with the current conditions and to allow him to independently estimate cut and fill quantities.
2. Existing elevations shown on all Drawings are based on information from a topographic survey (2-foot contour map) of the site performed by I.F. Rooks & Associates on Sept. 16, 2002, and a depth sounding survey of ponded areas performed by I.F. Rooks & Associates, Inc. in August 2001 and Pickett & Associates, Inc. in February 2003.

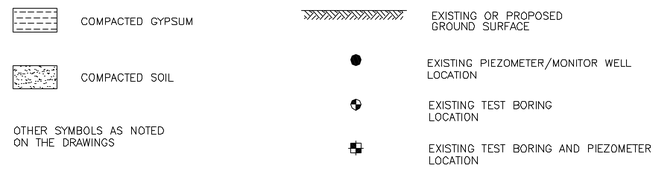
DRAWING SYMBOLS



LEGEND



MATERIAL SYMBOLS



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FILE NO: 02-099A SCALE: AS SHOWN

APPROVED BY:

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PINEY POINT FACILITY
MANATEE COUNTY, FLORIDA

GENERAL NOTES, ABBREVIATIONS AND SYMBOLS

DRAWING NO. G-3

N

0 300 600

SCALE: 1"=300'

AERIAL POTOGRAPHY BY
I.F. ROOKS & ASSOCIATES, INC.,
SEPTEMBER 18, 2002.

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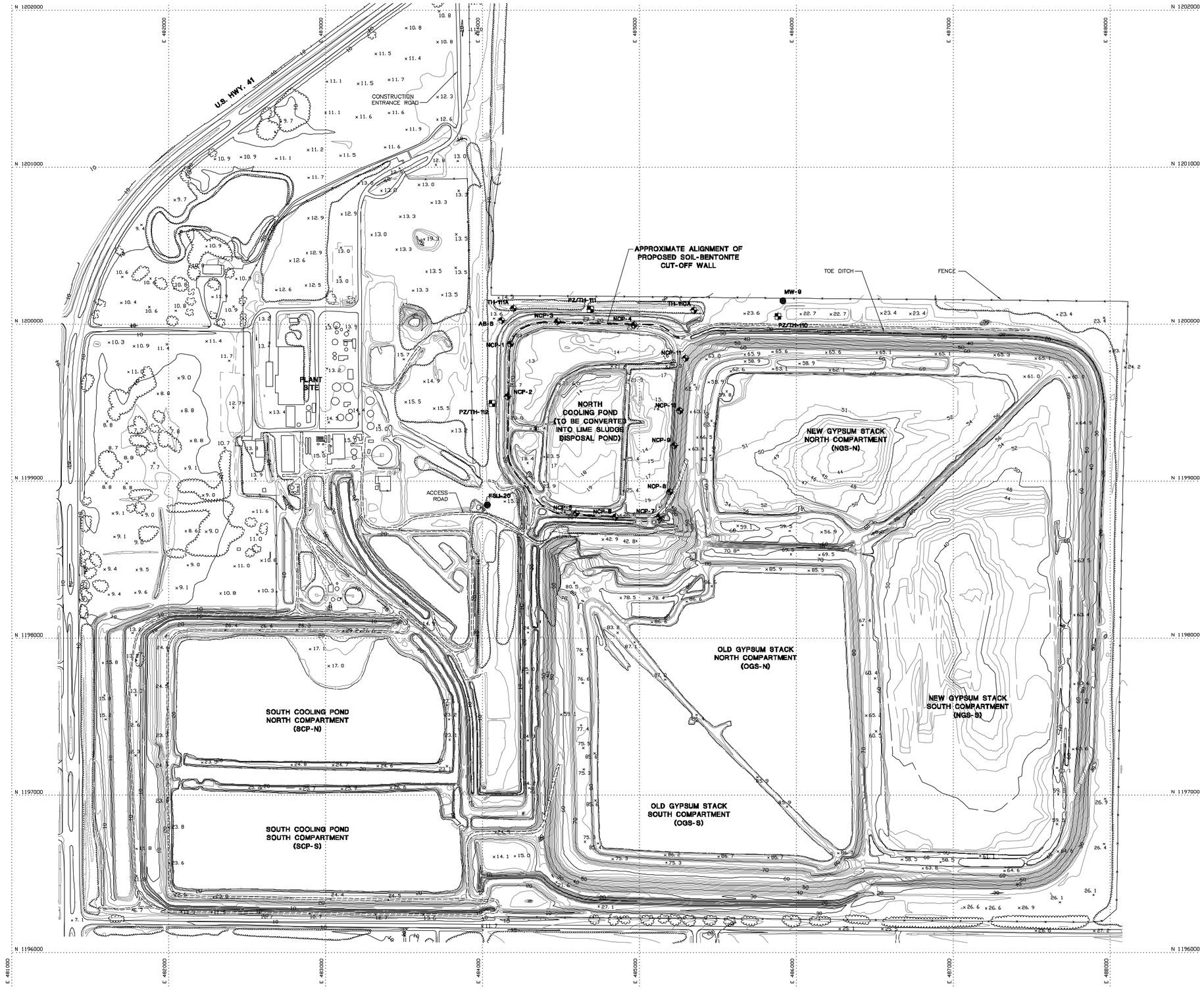
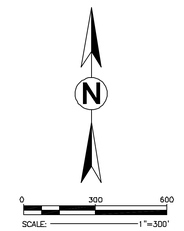
NORTH COOLING POND CONVERSION FOR LIME SLUDGE DISPOSAL
PINEY POINT FACILITY
MANATEE COUNTY, FLORIDA

AERIAL PHOTOGRAPH OF SITE

DRAWING NO.
G-4





TOPOGRAPHIC CONTOURS (2 FOOT INTERVAL)
FROM SEPTEMBER 16, 2002 SURVEY
BY I.F. ROOKS & ASSOCIATES, INC.

POND BOTTOM CONTOURS FROM POND SOUNDINGS
PERFORMED BY I.F. ROOKS & ASSOCIATES, INC. (AUG. 2001)
AND PICKETT & ASSOCIATES, INC. (FEB. 2003).

LEGEND

- ● EXISTING PIEZOMETER/MONITOR WELL LOCATION (TO BE PROTECTED DURING CONSTRUCTION)
- ◈ EXISTING TEST BORING LOCATION
- ◈ EXISTING TEST BORING AND PIEZOMETER LOCATION (TO BE PROTECTED DURING CONSTRUCTION)

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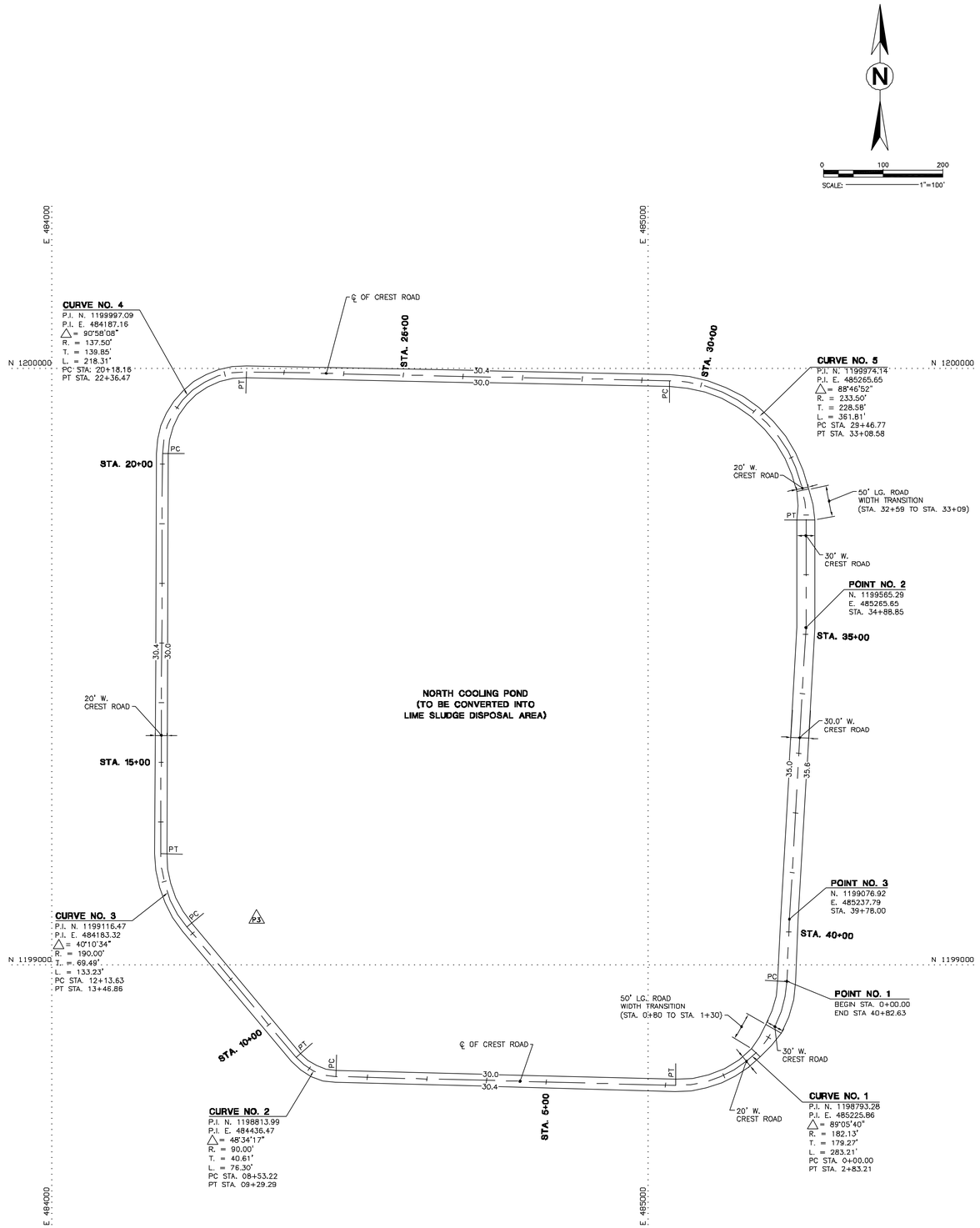
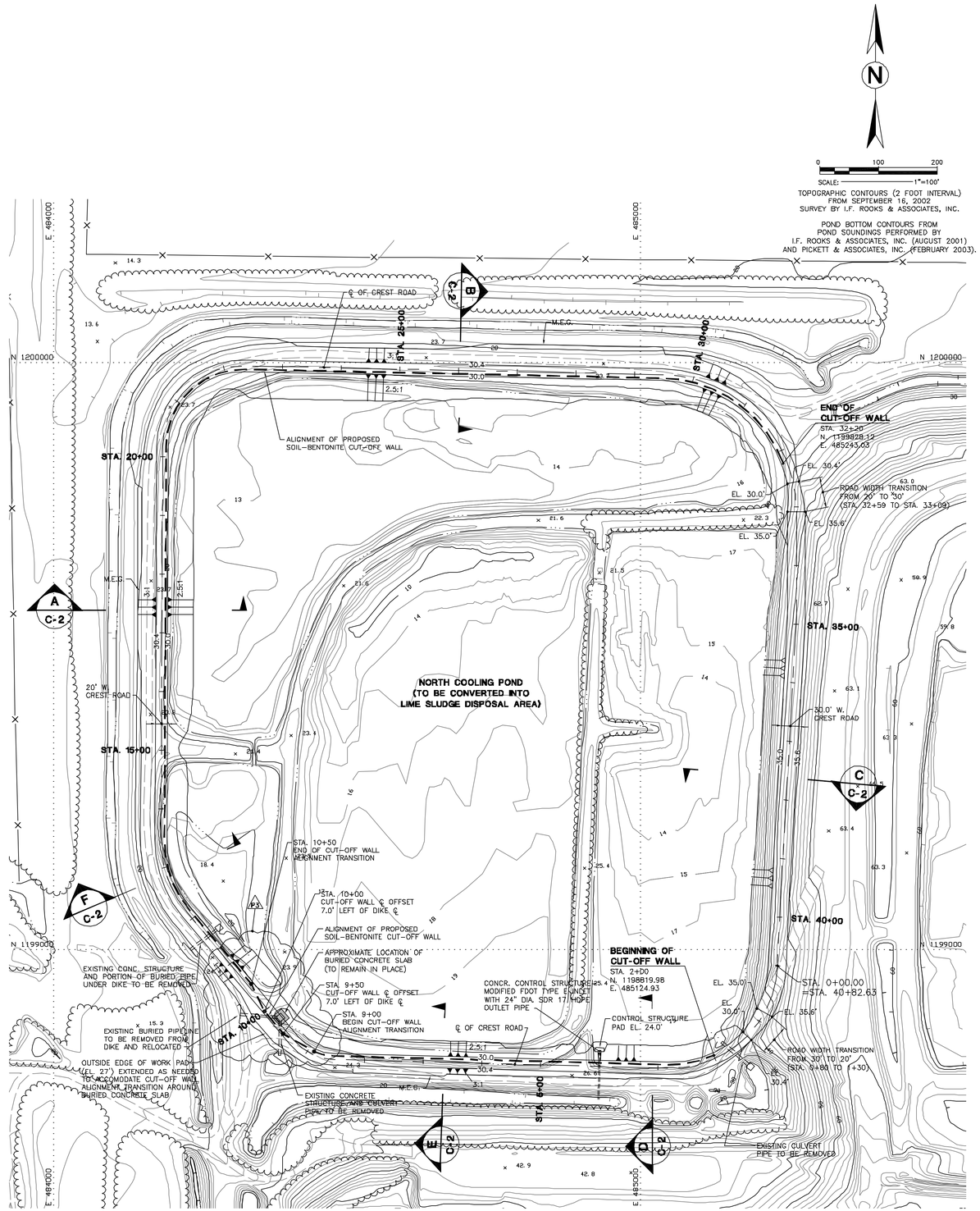
PINEY POINT FACILITY
MANATEE COUNTY, FLORIDA

TOPOGRAPHIC MAP OF SITE

DRAWING NO.
G-5



ALIGNMENT PLAN



SITE GRADING AND CUT-OFF WALL PLAN

REVISION	DATE	DESCRIPTION	APPR'D
P3	11/26/03	REVISED WALL ALIGNMENT	
P2	10/10/03	ISSUED FOR BID	RJW
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APPROVED BY:					

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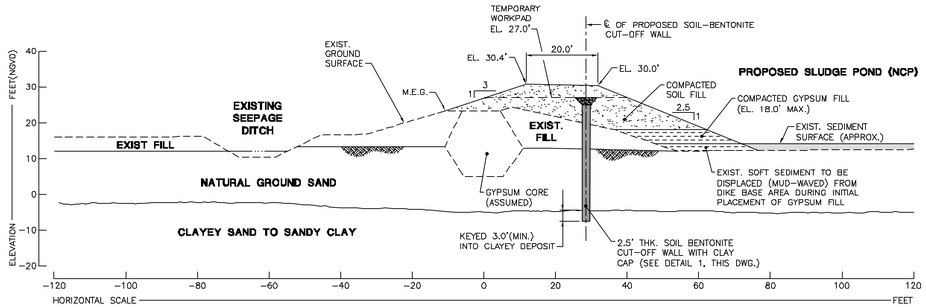
MANATEE COUNTY, FLORIDA

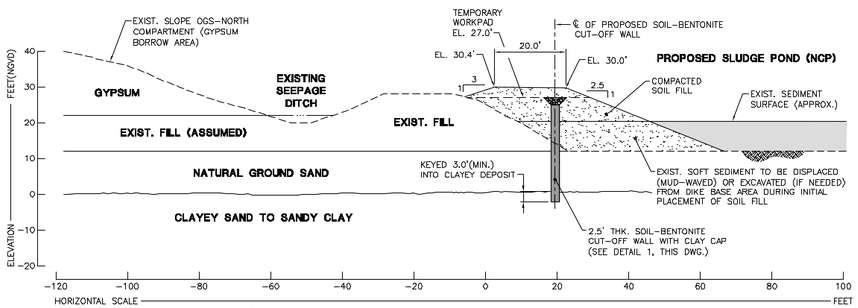
SITE GRADING AND CUT-OFF WALL ALIGNMENT PLANS

DRAWING NO. C-1



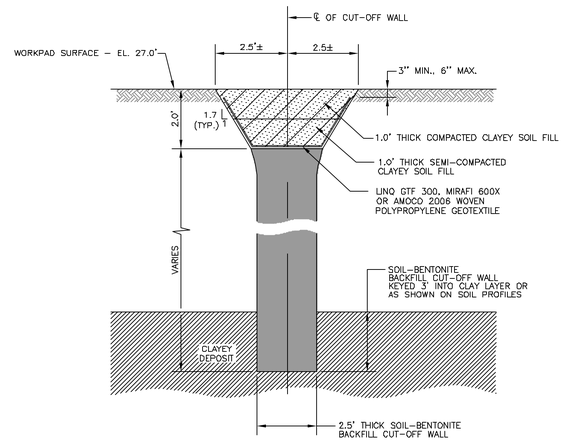
A / C-1 **CROSS SECTION - WEST DIKE OF NCP (STA. 17+40)**

SCALE: 1" = 20'



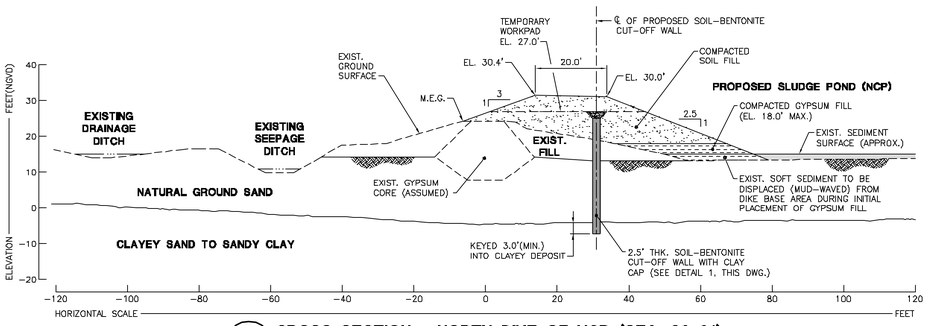
D / C-1 **CROSS SECTION - SOUTH DIKE OF NCP (STA. 3+10)**

SCALE: 1" = 20'



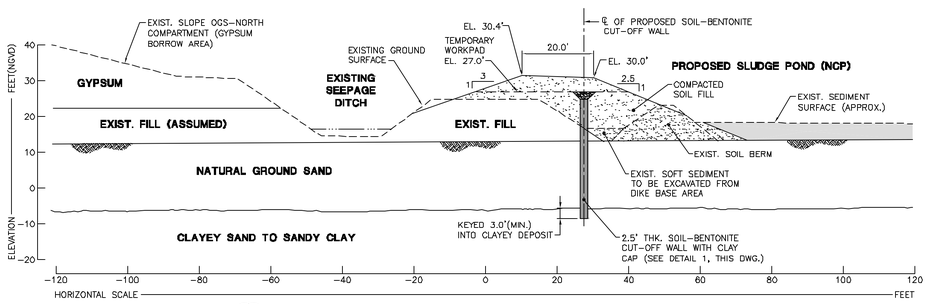
1 / - **TYPICAL SOIL-BENTONITE CUT-OFF WALL DETAIL**

NOT TO SCALE



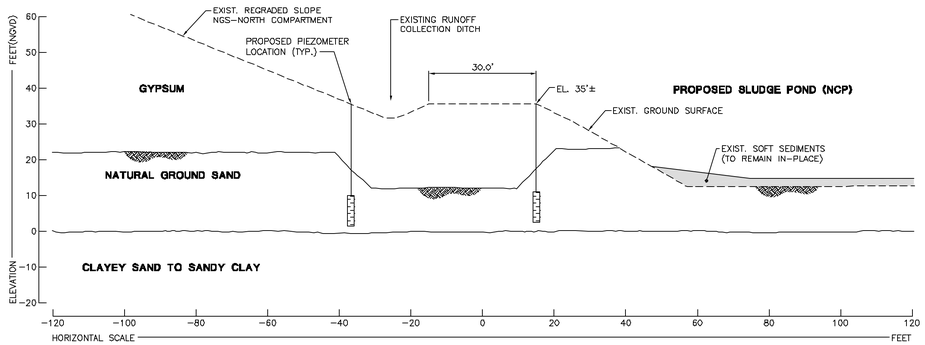
B / C-1 **CROSS SECTION - NORTH DIKE OF NCP (STA. 26+01)**

SCALE: 1" = 20'



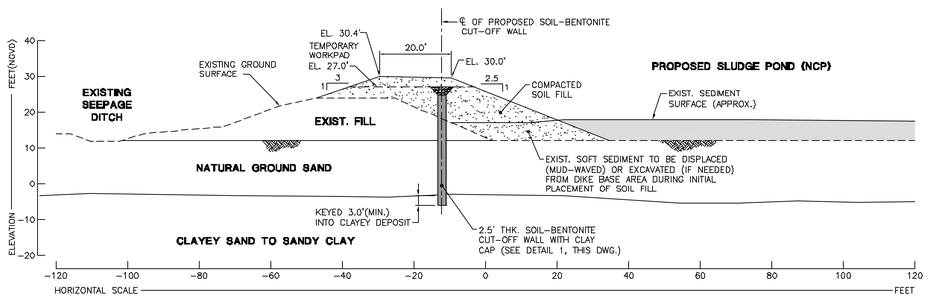
E / C-1 **CROSS SECTION - SOUTH DIKE OF NCP (STA. 6+65)**

SCALE: 1" = 20'



C / C-1 **CROSS SECTION - EAST DIKE OF NCP (STA. 37+61)**

SCALE: 1" = 20'



F / C-1 **CROSS SECTION - SOUTHWEST DIKE OF NCP (STA. 12+88)**

SCALE: 1" = 20'

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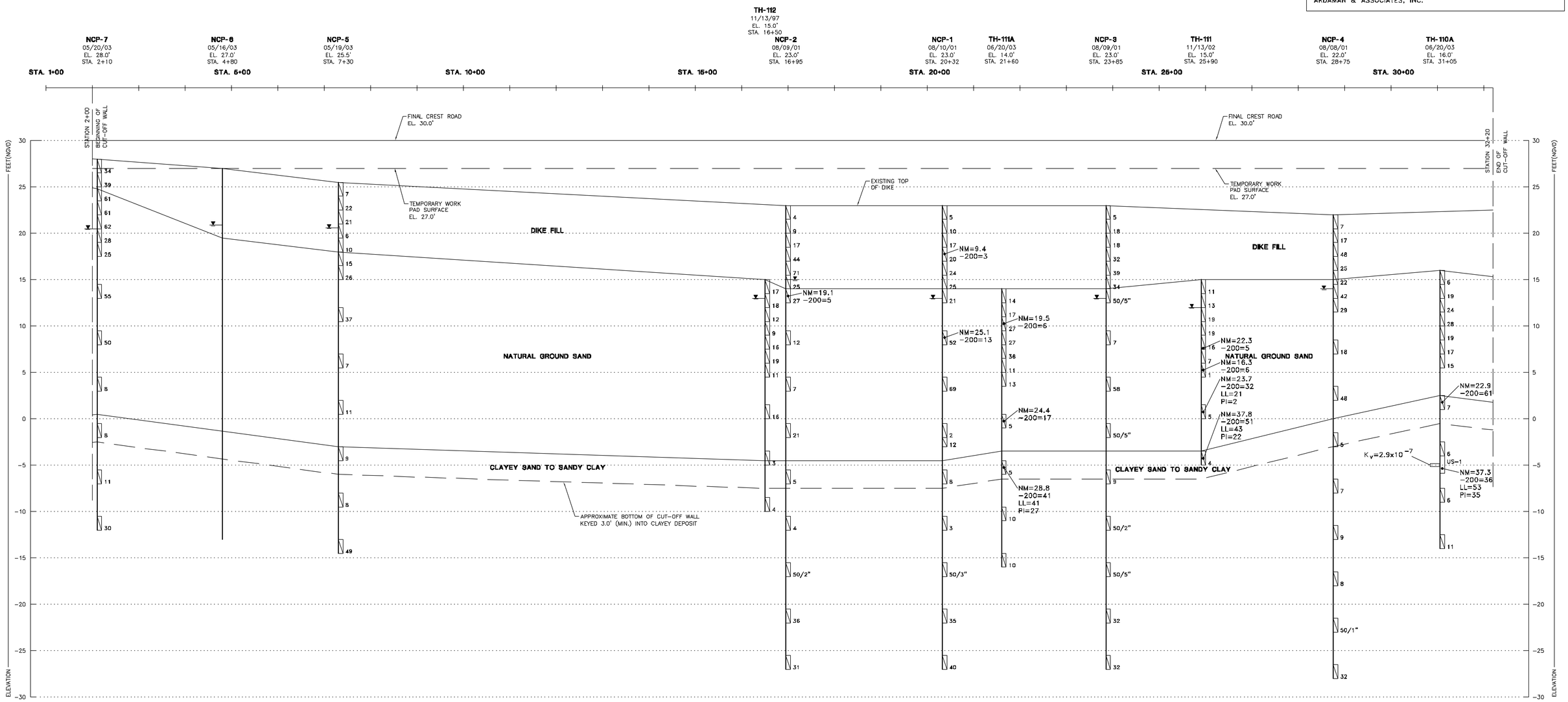
NORTH COOLING POND CONVERSION FOR LIME SLUDGE DISPOSAL
PINEY POINT FACILITY
MANATEE COUNTY, FLORIDA

CROSS SECTIONS AND TYPICAL DETAIL

DRAWING NO. C-2

THE SOIL DESCRIPTION AND STRATA DELINEATIONS HAVE BEEN SIMPLIFIED, GENERALIZED AND INTERPOLATED/EXTRAPOLATED BETWEEN/BEYOND THE BORINGS FOR THE PURPOSE OF PREPARING THE PROFILE. VARIATIONS OF THE SUBSURFACE CONDITIONS, NATURALLY CHARACTERISTIC OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE TEST BORINGS WERE PERFORMED BY ARDAMAN & ASSOCIATES, INC.



LEGEND

NM	NATURAL MOISTURE CONTENT IN PERCENT
-200	PERCENT PASSING NO. 200 SIEVE (PERCENT FINES)
16	LOCATION OF SPLIT-SPOON SOIL SAMPLE AND STANDARD PENETRATION TEST RESISTANCE IN BLOWS/FOOT
▼	WATER LEVEL MEASURED IN SPT BORE HOLE ON DATE DRILLED
k_v	VERTICAL COEFFICIENT OF PERMEABILITY IN cm/sec
LL	LIQUID LIMIT IN PERCENT
PI	PLASTICITY INDEX IN PERCENT
50/5"	50 SPT HAMMER BLOWS RESULTED IN A PENETRATION OF 5 INCHES

CLASSIFICATION	GENERAL DESCRIPTION
DIKE FILL	MOSTLY LOOSE TO DENSE GYPSUM TO GYPSUM MIXED WITH SAND AND SILTY SAND
NATURAL GROUND SAND	MOSTLY LOOSE TO DENSE, VARIABLE SILTY AND/OR CLAYEY, MEDIUM TO FINE SAND
CLAYEY SAND TO SANDY CLAY	MEDIUM TO VERY HARD, PHOSPHATIC, SLIGHTLY SILTY TO SILTY, CLAYEY SAND TO SANDY CLAY

0 60' 100' 200'
HORIZ. SCALE: 1"=100'
VERT. SCALE: 1"=5'

NOTES

1. WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS, CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION, ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL AND ROCK TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.
2. GROUNDWATER LEVELS SHOWN ON THE BORING PROFILE REPRESENTS GROUNDWATER SURFACES ENCOUNTERED DURING DRILLING. FLUCTUATIONS IN WATER TABLE AND POTENTIOMETRIC WATER LEVELS SHOULD BE ANTICIPATED THROUGHTOUT THE YEAR.
3. STANDARD PENETRATION RESISTANCE "N" VALUES SHOWN ON THE BORING LOGS REPRESENT THE NUMBER OF BLOWS REQUIRED TO PENETRATE THE SECOND AND THIRD 6-INCH INTERVALS OF THE SPLIT-BARREL SAMPLER.
4. DESCRIPTIONS OF THE RELATIVE DENSITY OF COHESIONLESS SOILS ARE BASED UPON THE FOLLOWING CORRELATION WITH STANDARD PENETRATION RESISTANCE (TERZAGHI AND PECK, 1967):

"N" VALUE (BLOWS/FOOT)	DESCRIPTION
0 TO 4	VERY LOOSE
4 TO 10	LOOSE
10 TO 30	MEDIUM DENSE
30 TO 50	DENSE
>50	VERY DENSE

5. DESCRIPTIONS OF THE CONSISTENCY OF COHESIVE SOILS ARE BASED UPON THE FOLLOWING CORRELATION WITH STANDARD PENETRATION RESISTANCE (TERZAGHI AND PECK, 1967)

"N" VALUE (BLOWS/FOOT)	DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, TONS/FT^2
0 TO 2	VERY SOFT	<1/4
2 TO 4	SOFT	1/4 TO 1/2
4 TO 8	MEDIUM STIFF	1/2 TO 1
8 TO 15	STIFF	1 TO 2
15 TO 30	VERY STIFF	2 TO 4
>30	HARD	>4

6. THE ELEVATIONS USED IN THIS PROFILE WERE ESTIMATED FROM THE SEPTEMBER 16, 2002 TOPOGRAPHIC SURVEY PROVIDED BY I.F. ROOKS & ASSOCIATES, INC.

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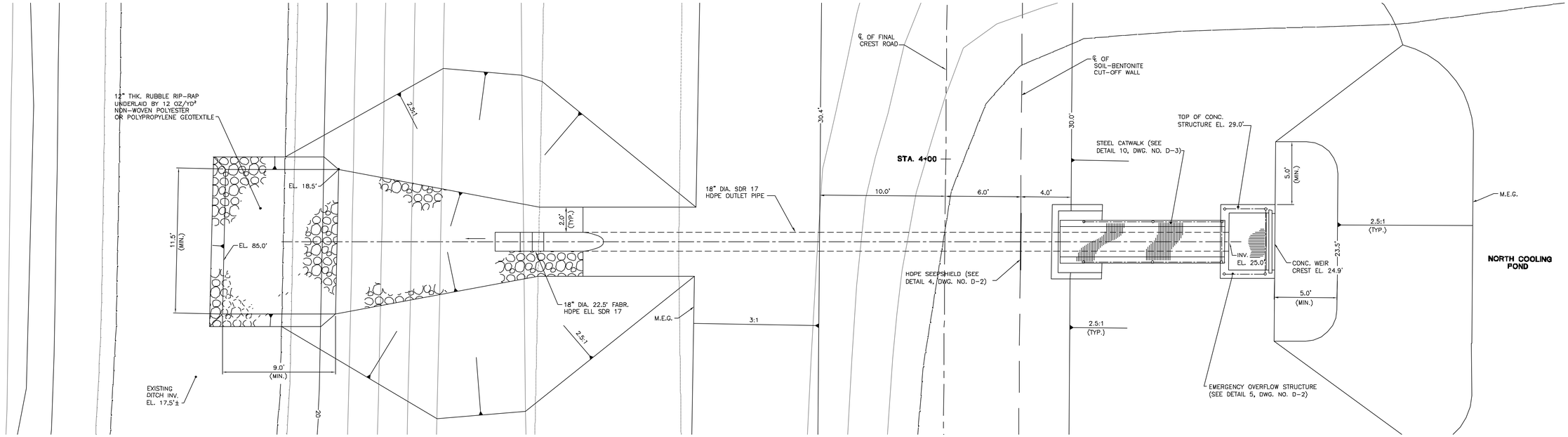
PINEY POINT FACILITY
MANATEE COUNTY, FLORIDA

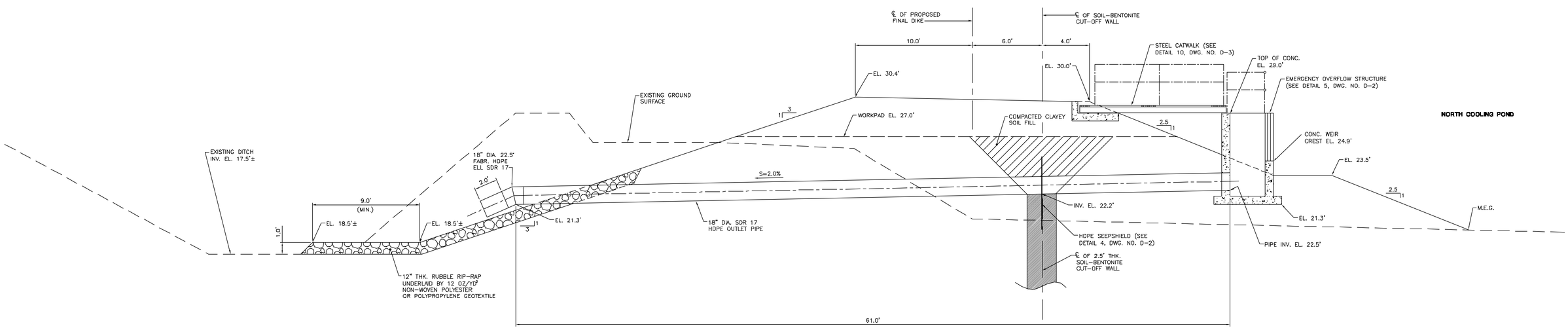
CUT-OFF WALL PROFILE

DRAWING NO. C-3



2 OUTLET PIPE LAYOUT
C-1

SCALE: 1" = 4'



3 OUTLET PIPE PROFILE
-

SCALE: 1" = 4'

REVISION	DATE	DESCRIPTION	APPR'D
P1	12/18/03	ISSUED FOR REVIEW	

	NAME	DATE		NAME	DATE
DESIGNED BY	RD	12/17/03	CHECKED BY	RJW	09/26/03
DRAWN BY	BTW	12/18/03	CHECKED BY	–	–
FILE NO: 02-099A			SCALE: AS SHOWN		
APPROVED BY:					

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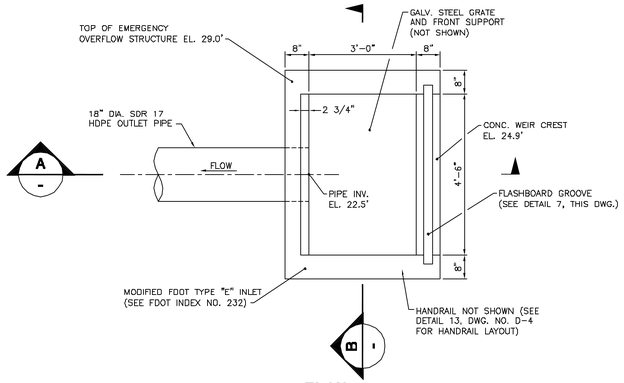
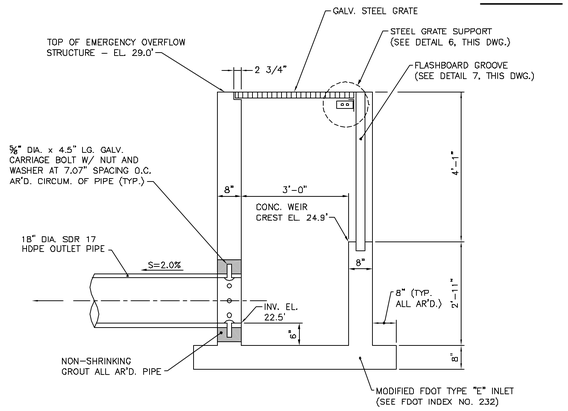
Florida Department of Environmental Protection
and, Louis J. Timchak, Jr. - Receiver

NORTH COOLING POND CONVERSION FOR LIME SLUDGE DISPOSAL
PINEY POINT FACILITY
MANATEE COUNTY, FLORIDA

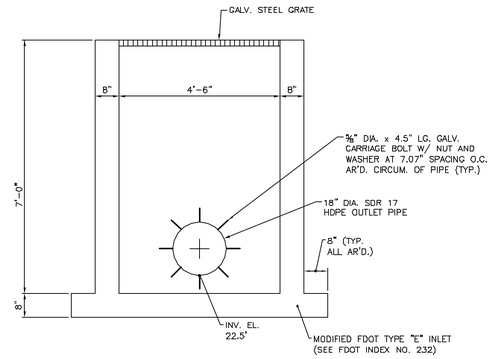
EMERGENCY OVERFLOW STRUCTURE DETAILS

DRAWING NO.
D-1



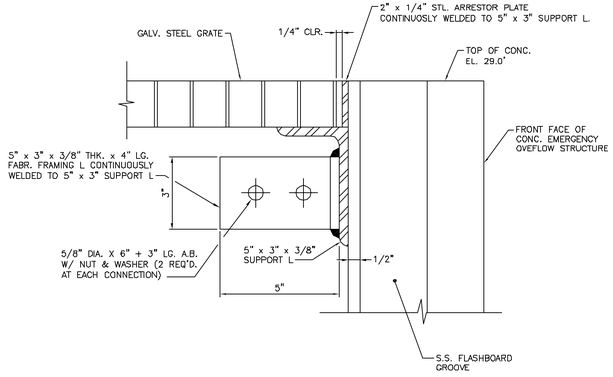


A SECTION A

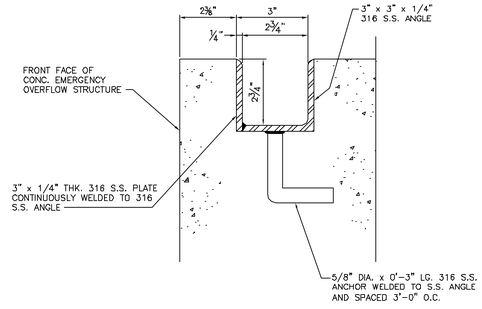


B SECTION B

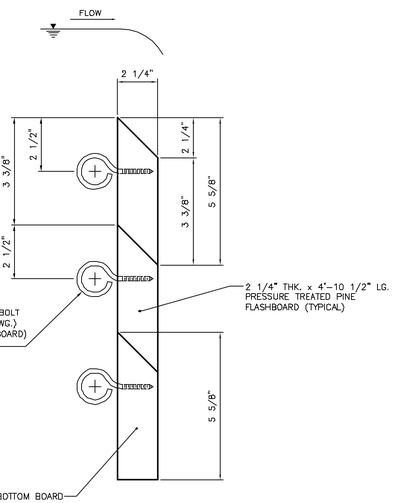
5 D-1 EMERGENCY OVERFLOW STRUCTURE DETAIL
SCALE: 1" = 2'



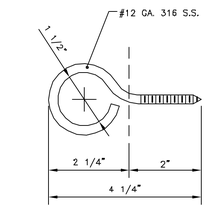
6 STEEL GRATING SUPPORT DETAIL
SCALE: 4"=1'-0"



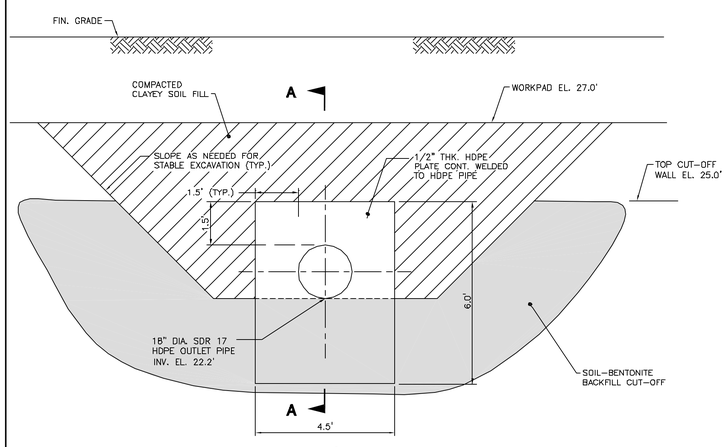
7 FLASHBOARD GROOVE DETAIL
SCALE: 4"=1'-0"



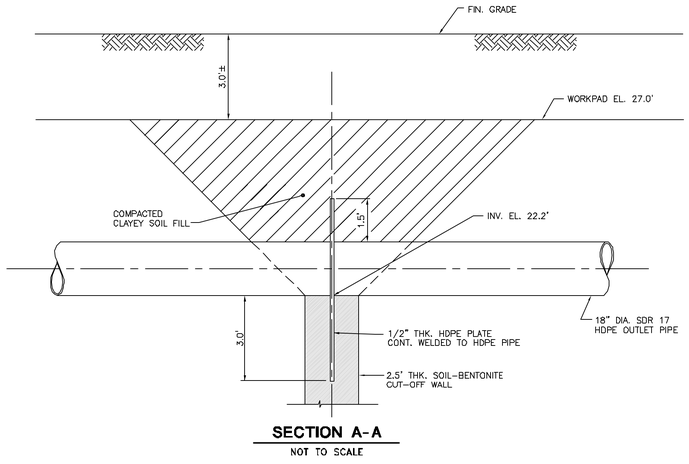
8 FLASHBOARD DETAIL
N.T.S.



9 EYE BOLT DETAIL
N.T.S.



ELEVATION



SECTION A-A
NOT TO SCALE

4 HDPE SEEPSHIELD DETAIL
NOT TO SCALE

REVISION	DATE	DESCRIPTION	APPR'D	REVISION	DATE	DESCRIPTION	APPR'D
				P1	12/18/03	ISSUED FOR REVIEW	

	NAME	DATE		NAME	DATE
DESIGNED BY	RD	12/17/03	CHECKED BY	RJW	12/19/03
DRAWN BY	BTW	12/17/03	CHECKED BY	RD	12/22/03
FILE NO.: 02-099A			SCALE: AS SHOWN		
APPROVED BY:					

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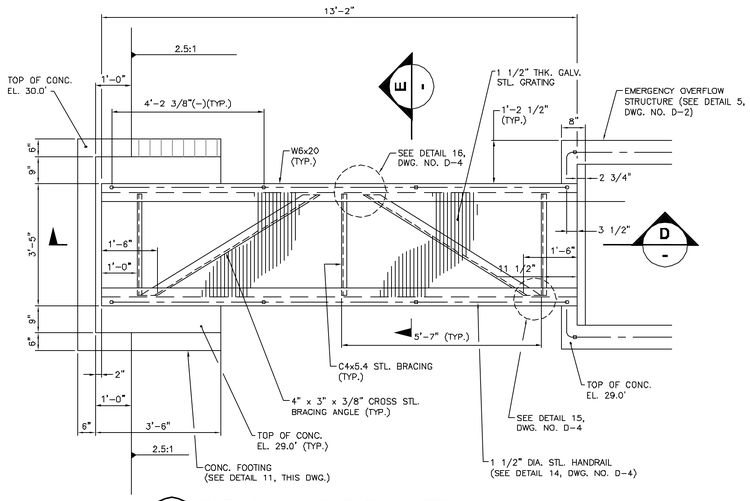
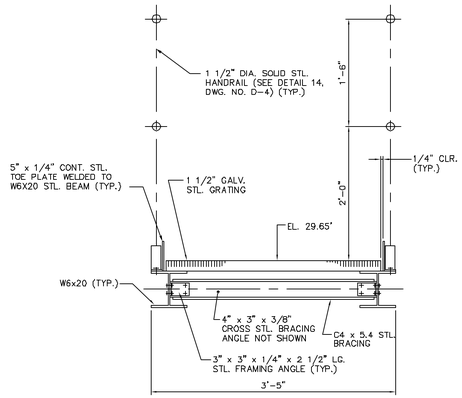
EMERGENCY OVERFLOW STRUCTURE DETAILS

DRAWING NO. D-2



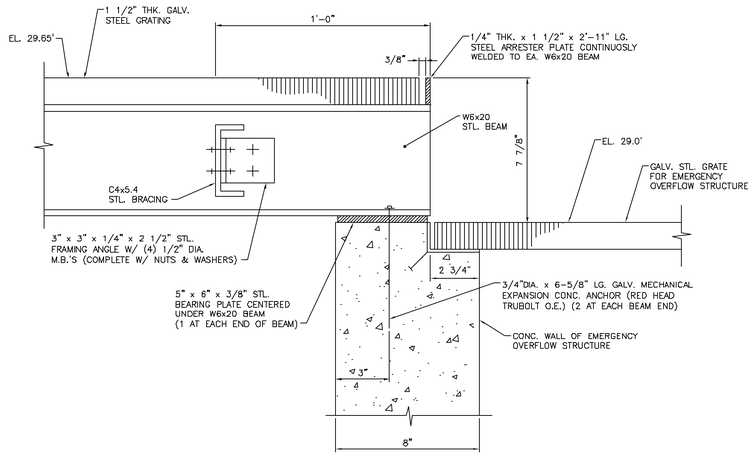
10 / D-1 CATWALK LAYOUT PLAN VIEW

SCALE: 1" = 2'-0"



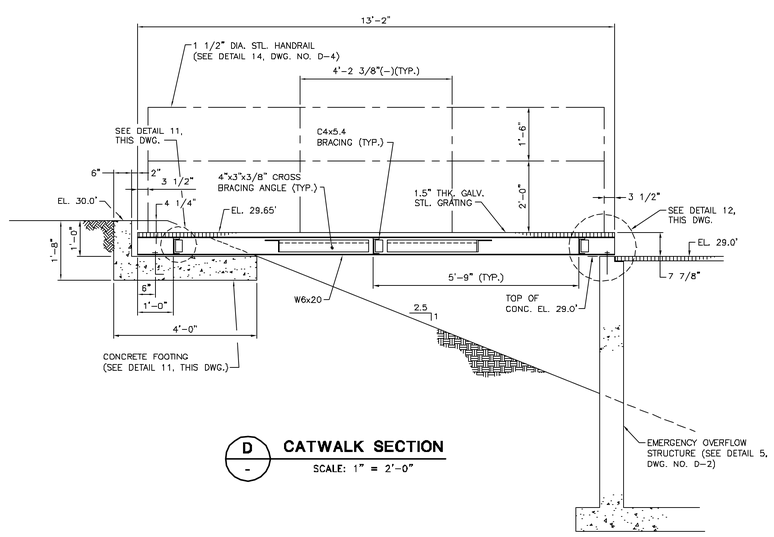
E - CATWALK CROSS SECTION

SCALE: 1" =1'



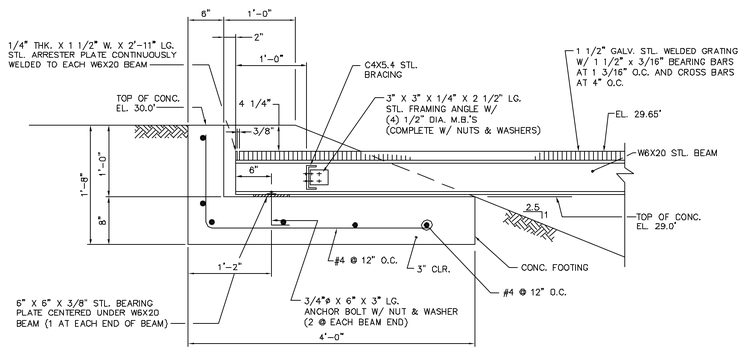
12 - CATWALK ANCHOR DETAIL

SCALE: 3" = 1'-0"



D - CATWALK SECTION

SCALE: 1" = 2'-0"



11 - CONCRETE FOOTING AND CATWALK ANCHOR DETAIL

SCALE: 1" =1'-0"

GENERAL NOTES

1. ALL METAL PARTS OTHER THAN STAINLESS STEEL COMPONENTS SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH SECTION 560 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, FLORIDA DEPARTMENT OF TRANSPORTATION, OR AS APPROVED BY THE ENGINEER.
2. GALVANIZED STEEL GRATING TO INCLUDE BANDS AT BEARING EDGES, AND FASTENERS.
3. ALL ANCHOR BOLTS AND MECHANICAL BOLTS SHALL INCLUDE THE NECESSARY NUTS AND WASHERS.

REVISION	DATE	DESCRIPTION	APPR'D	REVISION	DATE	DESCRIPTION	APPR'D
				0	03/23/04	ISSUED FOR CONSTRUCTION	

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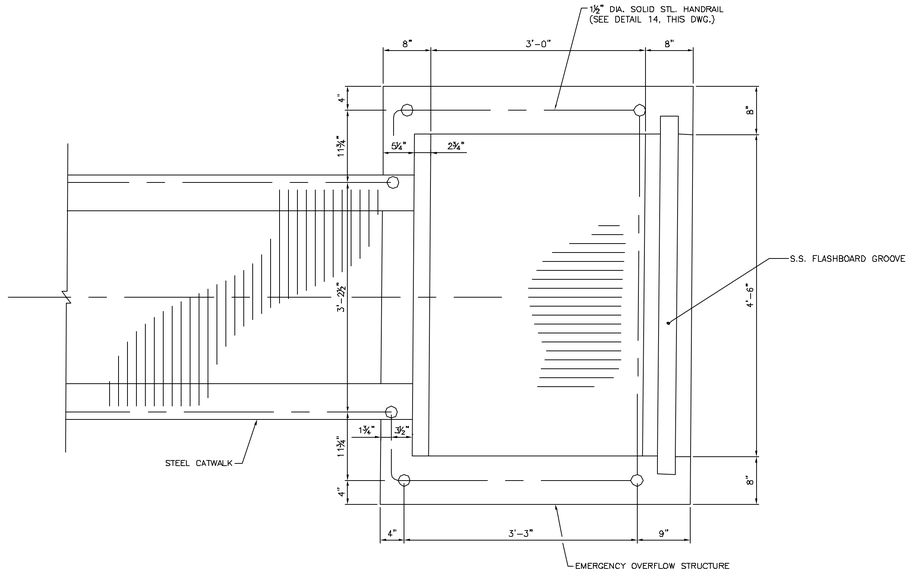
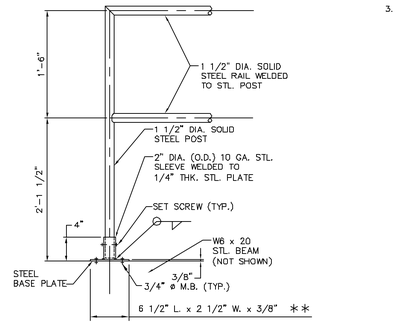
EMERGENCY OVERFLOW STRUCTURE CATWALK DETAILS

DRAWING NO.
D-3



13 / – **OVERFLOW STRUCTURE HANDRAIL LAYOUT**
SCALE: 1" =1'-0"

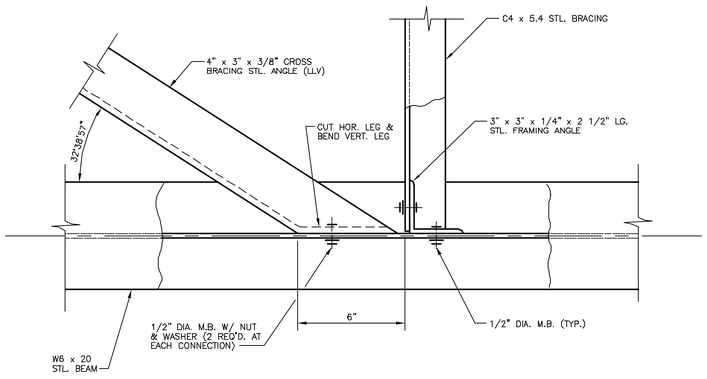


** STL. BASE PLATES @ OVERFLOW STRUCTURE TO BE ANCHORED W/ (2) 3/4" DIA. x 6'-5/8" LG. GALV. MECHANICAL EXPANSION CONC. ANCHORS (RED HEAD TRUBOLT O.E.)

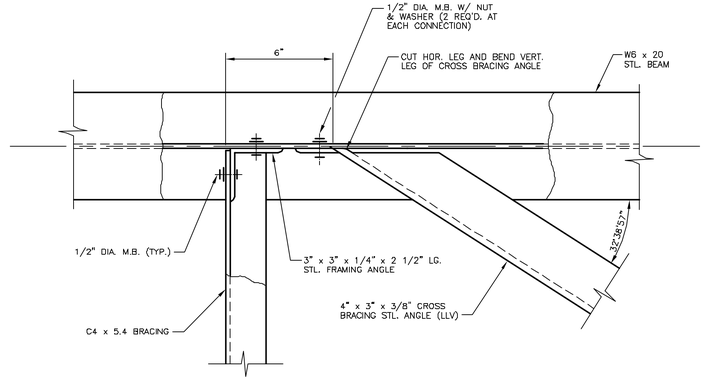
14 / – **HANDRAIL DETAIL**
SCALE: 1" =1'-0"

GENERAL NOTES

1. ALL METAL PARTS OTHER THAN STAINLESS STEEL COMPONENTS SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH SECTION 560 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, FLORIDA DEPARTMENT OF TRANSPORTATION, OR AS APPROVED BY THE ENGINEER.
2. GALVANIZED STEEL GRATING TO INCLUDE BANDS AT BEARING EDGES, AND FASTENERS.
3. ALL ANCHOR BOLTS AND MECHANICAL BOLTS SHALL INCLUDE THE NECESSARY NUTS AND WASHERS.



15 / D-3 **CATWALK FRAMING DETAIL**
SCALE: 3"=1'-0"



16 / D-3 **CATWALK FRAMING DETAIL**
SCALE: 3"=1'-0"

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EMERGENCY OVERFLOW STRUCTURE CATWALK DETAILS

DRAWING NO. D-4