

FOWL RIVER MARSH RESTORATION & SHORELINE STABILIZATION PROJECT

PREPARED FOR:
DAUPHIN ISLAND SEA LAB - MOBILE BAY NATIONAL ESTUARY PROGRAM

ESA PROJECT NUMBER D190585.00
THOMPSON PROJECT NUMBER 19-1101-0252

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NOTES:

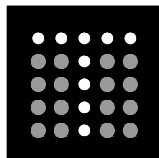
1.) Type of Survey: Topographic / Bathymetric Survey. The bathymetric soundings were collected by Rowe Engineering and Surveying Consulting Engineers dated December 19, 2019 Rowe Job 50975. The contours represented are referenced to those soundings. Shoreline information collected using RTK GPS dial to ALDOT continuous operating reference station at tunnel. No improvement located except those shown.

2.) Bearing Basis: All coordinates and positions are reference Alabama State Plane, West Zone. All elevations are referenced to NAVD 1988 datum. All was established using RTK GPS dialed to ALDOT continuous operating reference station using geoid 2012B.

3.) Field Dates: December 12 and 19, 2019, January 28 and 30, 2020.

4.) Imagery shown hereon is for visual representation purposes only and was taken January 22, 2020 with unmanned aircraft.

5.) No attempt was made by the Surveyor to locate underground improvements or environmentally sensitive conditions.




thompson
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BARRY VITTOR & ASSOCIATES

8060 COTTAGE HILL RD.
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PRELIMINARY - NOT FOR CONSTRUCTION

GENERAL NOTES

- THE CONTRACTOR SHALL MAKE THEIR OWN DETERMINATION OF THE QUANTITIES OF WORK REQUIRED TO COMPLETE THE CONSTRUCTION SHOWN ON THE PLANS. THE CONTRACTOR SHALL ALSO MAKE THEIR OWN ASSESSMENT OF THE SITE AND THE WORK REQUIRED PRIOR TO BIDDING AND ANY DISCREPANCIES, ERRORS OR OMISSIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE THE BID DUE DATE. THE CONTRACTOR SHALL CHECK PLANS FOR CONFLICTS AND DISCREPANCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD OF ANY CONFLICT BEFORE PERFORMING ANY WORK IN THE AFFECTED AREA.
- ALL PLACEMENT OF MATERIAL WILL BE COMPLETED BY A COMBINATION OF HYDRAULIC & MECHANICAL METHODS.
- ALL CONSTRUCTION ACTIVITY WILL BE CONDUCTED DURING DAYLIGHT HOURS FROM ONE HALF-HOUR AFTER SUNRISE TO ONE HALF-HOUR BEFORE SUNSET.
- ALL WORK WILL BE COMPLETED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- ALL WORK WILL BE COMPLETED WITHIN DESIGNATED AREAS AND TO DESIGNATED ELEVATIONS.
- CONTRACTOR MUST OBSERVE A 3 FOOT BUFFER FROM ANY SUBMERGED AQUATIC VEGETATION (SAV). NO CONSTRUCTION ACTIVITY, MATERIALS, OR TEMPORARY TURBIDITY MEASURES WILL BE ALLOWED WITHIN 3 FEET OF SAV.
- THE CONTRACTOR WILL BE REQUIRED TO CONDUCT THE WORK IN SUCH MANNER AS TO NOT OBSTRUCT SAFE NAVIGATION OF FOWL RIVER. CONTRACTOR SHALL MAKE REASONABLE EFFORTS TO AFFORD A PRACTICABLE AND SAFE PASSAGE. UPON THE COMPLETION OF THE WORK THE CONTRACTOR SHALL PROMPTLY REMOVE THE EQUIPMENT, ETC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE FOR ALL EQUIPMENT INGRESS AND EGRESS TO AND FROM THE PROJECT WORK AREAS. THE CONTRACTOR SHALL MAKE AN INVESTIGATION OF ACCESS ROUTES AND THE ROADS FOR TRANSPORTATION, LOAD LIMITS FOR BRIDGES AND ROADS, AND OTHER ROAD CONDITIONS AFFECTING THE TRANSPORTATION OF MATERIALS AND EQUIPMENT TO THE WORK SITES. THE CONTRACTOR SHALL ALSO INVESTIGATE THE AVAILABILITY OF ANY STAGING, STORAGE, AND STOCK PILING AREAS AND SHALL MAKE ALL ARRANGEMENTS FOR USE OF ANY SUCH AREAS FOR THE DELIVERY OF ANY MATERIALS AND EQUIPMENT TO BE USED IN COMPLETING THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES OR OTHER OBJECTS PRIOR TO COMMENCING WORK AT THE SITE. CONTACT "SUNSHINE" AT 1-800-432-4770.
- ALL AREAS OR ITEMS THAT ARE DAMAGED OR DISTURBED ABOVE OR BELOW GROUND BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION AT NO COST TO THE MOBILE BAY NATIONAL ESTUARY PROGRAM (MBNEP). REPAIR AND REPLACEMENT OF ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION OF EQUAL TO, OR BETTER THAN EXISTING CONDITIONS UNLESS SPECIFICALLY EXEMPTED BY THE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING HORIZONTAL AND VERTICAL ACCURACY DURING EXCAVATION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS OF THE VARIOUS GOVERNMENTAL AGENCIES. ALL WORK PERFORMED SHALL COMPLY WITH THE REGULATIONS AND ORDINANCES OF THE VARIOUS GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.
- CONSTRUCTION TRAFFIC SHALL NOT IMPEDE THE SAFE AND EFFICIENT USE OF SURROUNDING ROADWAYS. CONTRACTOR SHALL FOLLOW FDOT STANDARD INDICES 600 AND 604 FOR MAINTENANCE OF TRAFFIC DURING CONSTRUCTION OF THE TEMPORARY CONSTRUCTION ACCESS CONNECTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY REMOVAL OF ANY FUGITIVE DUST, SAND OR DEBRIS WHICH MAY BE CAUSED BY THEIR ACTIONS FROM THE RIGHT OF WAY.
- RECORD DRAWINGS: SEVEN (7) SETS OF THE FINAL RECORD DRAWING AS-BUILTS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD.
- REPORT SUBMISSION: THE CONTRACTOR SHALL MAINTAIN A LOG DETAILING DAILY CONSTRUCTION ACTIVITY DURING THE CONTRACT PERIOD. THE DATA SHALL BE RECORDED ON FORMS PROVIDED BY THE ENGINEER. ALL DATA IN ORIGINAL FORM SHALL BE FORWARDED DIRECTLY TO THE ENGINEER, WITHIN 10 DAYS OF COLLECTION AND COPIES OF THE DATA SHALL BE SUPPLIED TO THE ENGINEER. FOLLOWING PROJECT COMPLETION, A REPORT SUMMARIZING THE ABOVE INCIDENTS AND SIGHTINGS SHALL BE SUBMITTED TO THE FOLLOWING:

ENVIRONMENTAL SCIENCE ASSOCIATES
5404 CYPRESS CENTER DRIVE, SUITE 125
TAMPA, FL 33609
(813) 207-7216

SURVEY NOTES

- HYDROGRAPHIC AND TOPOGRAPHIC SURVEY PERFORMED BY THOMPSON ENGINEERING, DATED 02/2020.
- VERTICAL DATUM SHOWN IS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). HORIZONTAL DATUM SHOWN IS BASED ON ALABAMA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM 1983 (NAD83). ALL ELEVATIONS ARE REPORTED IN U.S. FEET.
- AERIAL PHOTOGRAPHY PROVIDED BY MAXAR, 2020.
- DRAWINGS REPRESENT CONDITIONS ENCOUNTERED AT TIME OF SURVEY. SITE CONDITIONS ARE DYNAMIC AND SUBJECT TO CHANGE. CONTRACTOR SHALL CONDUCT SURVEY PRIOR TO SITE DISTURBANCE TO VERIFY SITE CONDITIONS PRIOR TO CONSTRUCTION.
- THE MBNEP HAS PERFORMED A FEASIBILITY LEVEL SURVEY THAT IS INCLUDED IN THE CONTRACT DRAWINGS. THIS SURVEY WAS USED TO CALCULATE AN ESTIMATED QUANTITY OF MATERIAL TO BE PLACED. THIS QUANTITY IS CONSIDERED AN ESTIMATE AND IS NOT THE BASIS FOR PAYMENT TO THE CONTRACTOR. THE CONTRACTOR SHALL BE COMPENSATED BASED ON THE VOLUME OF MATERIAL (CUBIC YARDS) PLACED AT THE WORK AREA. CONTRACTOR SHALL MAKE AN ASSESSMENT OF THIS AND ANY OTHER RELEVANT INFORMATION NECESSARY, IN THE JUDGMENT OF THE CONTRACTOR, IN DETERMINING THE EXPECTED VOLUME TO BE REMOVED/ADDED.
- THE ELEVATIONS AND EXTENTS OF THE NEW RIP RAP SILL, TIMDER WAVE SCREENS AND THIN LAYER PLACEMENT EXTENTS SHALL BE PROVIDED BY THE CONTRACTOR IN AN AS-BUILT SURVEY AT THE TIME OF SUBSTANTIAL PROJECT COMPLETION.

ENVIRONMENTAL PROTECTION NOTES

- THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONSTRUCTION CONDITIONS FOR PROTECTION OF MANATEES:

THE CONTRACTOR SHALL INSTRUCT ALL PERSONNEL ASSOCIATED WITH THE PROJECT OF THE POTENTIAL PRESENCE OF THESE SPECIES AND THE NEED TO AVOID COLLISIONS WITH MANATEES. ALL CONSTRUCTION PERSONNEL ARE RESPONSIBLE FOR OBSERVING WATER-RELATED ACTIVITIES FOR THE PRESENCE OF THESE SPECIES.
- THE CONTRACTOR SHALL ADVISE ALL CONSTRUCTION PERSONNEL THAT THERE ARE CIVIL AND CRIMINAL PENALTIES FOR HARMING, HARASSING, OR KILLING MANATEES, WHICH ARE PROTECTED UNDER THE ENDANGERED SPECIES ACT OF 1973.
- SILTATION BARRIERS SHALL BE MADE OF MATERIAL IN WHICH A MANATEE CANNOT BECOME ENTANGLED. SILTATION BARRIERS SHALL BE PROPERLY SECURED AND REGULARLY MONITORED TO AVOID PROTECTED SPECIES ENTRAPMENT. BARRIERS MAY NOT BLOCK MANATEE ENTRY TO OR EXIT FROM DESIGNATED CRITICAL HABITAT WITHOUT PRIOR AGREEMENT FROM THE NATIONAL MARINE FISHERIES SERVICE'S PROTECTED RESOURCES DIVISION, ST. PETERSBURG, FLORIDA.
- SILTATION BARRIERS, STAKES, ROPES AND/OR ANCHORS MUST REMAIN 3 FEET FROM ANY SUBMERGED AQUATIC VEGETATION.
- ALL VESSELS ASSOCIATED WITHIN THE CONSTRUCTION PROJECT SHALL OPERATE AT "NO WAKE/IDLE" SPEEDS AT ALL TIMES WHILE IN THE CONSTRUCTION AREA AND WHILE IN WATER DEPTHS WHERE THE DRAFT OF THE VESSEL PROVIDES LESS THAN A FOUR-FOOT CLEARANCE FROM THE BOTTOM. ALL VESSELS WILL PREFERENTIALLY FOLLOW DEEP-WATER ROUTES (E.G., MARKED CHANNELS) WHENEVER POSSIBLE.
- IF A MANATEE IS SIGHTED WITHIN 100 YARDS OF THE ACTIVE DAILY CONSTRUCTION OPERATION OR VESSEL MOVEMENT, ALL APPROPRIATE PRECAUTIONS SHALL BE IMPLEMENTED BY THE CONTRACTOR TO ENSURE ITS PROTECTION. THESE PRECAUTIONS SHALL INCLUDE CESSATION OF OPERATION OF ANY MOVING EQUIPMENT CLOSER THAN 50 FEET OF A MANATEE. OPERATION OF ANY CONSTRUCTION EQUIPMENT SHALL CEASE IMMEDIATELY IF A MANATEE IS SEEN WITHIN A 50 - FT RADIUS OF THE EQUIPMENT. ACTIVITIES MAY NOT RESUME UNTIL THE PROTECTED SPECIES HAS DEPARTED THE PROJECT AREA OF ITS OWN VOLITION.
- ANY COLLISION WITH AND/OR INJURY TO A MANATEE SHALL BE REPORTED IMMEDIATELY TO THE OWNER/ENGINEER AND TO THE NATIONAL MARINE FISHERIES PROTECTED RESOURCES DIVISION (727-824-5312) AND TO THE LOCAL AUTHORIZED SEA TURTLE STRANDING/RESCUE ORGANIZATION.
- CONTRACTOR SHALL NOT OCCUPY PRIVATE LAND OUTSIDE OF ANY EASEMENTS OR RIGHTS OF WAY.
- MATERIAL REMOVED FROM BEYOND THE CONSTRUCTION LIMITS AS SPECIFIED ON THE CONTRACT DRAWINGS SHALL BE CONSIDERED EXCESSIVE CONSTRUCTION FOR WHICH PAYMENT WILL NOT BE MADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEDERAL, STATE, AND LOCAL REGULATORY PERMITS, IMPLICATIONS, VIOLATIONS AND/OR FEES AS A RESULT OF EXCESSIVE CONSTRUCTION.
- IF ARCHEOLOGICAL OR HISTORIC RESOURCES ARE ENCOUNTERED THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND STOP WORK UNTIL DIRECTED TO RESTART.
- THE CONTRACTOR SHALL STRICTLY ADHERE TO ALL MANATEE REGULATIONS FOR IN WATER WORK.
- TURBIDITY CONTROL MEASURES WILL BE PROPERLY MAINTAINED IN COMPLIANCE WITH FEDERAL AND STATE WATER QUALITY STANDARDS. IF TURBIDITY LEVELS EXCEED WATER QUALITY STANDARDS, DREDGING ACTIVITY WILL CEASE UNTIL LEVELS RETURN TO THE ACCEPTABLE RANGE. WATER QUALITY WILL BE MONITORED BY A DEDICATED CONTRACTOR REPRESENTATIVE. SHOULD TURBIDITY BE MEASURED MORE THAN 29 NTU_s ABOVE BACKGROUND, WORK WILL CEASE UNTIL TURBIDITY HAS FALLEN TO AN ACCEPTABLE BACKGROUND LEVEL.
- BEST MANAGEMENT PRACTICES FOR EROSION AND TURBIDITY CONTROL, INCLUDING BUT NOT LIMITED TO THE USE OF COIR LOGS, STAKED HAY BALES, TURBIDITY BARRIERS, AND SILT SCREENS, SHALL BE USED AND MAINTAINED AS NECESSARY AT ALL TIMES DURING THE PROJECT. TURBIDITY CONTROL DEVICES SHALL BE MAINTAINED AND SHALL REMAIN IN PLACE FOR THE DURATION OF CONSTRUCTION TO ENSURE THAT TURBIDITY LEVELS OUTSIDE THE CONSTRUCTION AREA DO NOT EXCEED BACKGROUND LEVELS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT TURBIDITY CONTROL DEVICES ARE INSPECTED DAILY AND MAINTAINED IN GOOD WORKING ORDER SO THAT THERE ARE NO VIOLATIONS OF STATE WATER QUALITY STANDARDS OUTSIDE OF THE TURBIDITY SCREENS. A DAILY TURBIDITY LOG SHALL BE MAINTAINED BY THE CONTRACTOR WITH ENTRIES PRIOR TO THE START OF EACH DAY'S WORK, EACH HOUR THROUGHOUT THE DAY, AND 30 MINUTES PRIOR TO THE END OF WORK. THE CONTRACTOR WILL EVALUATE THE IMPLEMENTATION, DEPLOYMENT, AND EFFECTIVENESS OF SILTATION/TURBIDITY CONTROL DEVICES.
- ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 7 DAYS AFTER DISTURBANCE.
- THE CONTRACTOR SHALL DISTURB NO MORE GROUND THAN WHAT IS NECESSARY FOR CONSTRUCTION. NO OPEN EXCAVATED TRENCH, OR OTHER UNSAFE CONDITION, WILL BE LEFT OVERNIGHT. ALL WORK SITES WILL BE COMPLETELY RESTORED WITHIN SEVEN (7) CALENDAR DAYS OF SITE COMPLETION. THE INTENT OF THIS PROVISION IS TO "SAFE UP" THE PROJECT SITE AS WORK PROGRESSES, AND SHALL INCLUDE REMOVING FORMS, FILLING HOLES, GRADING, AND REMOVAL OF DEBRIS.
- ALL SIDEWALK, PARKING LOT OR ROADWAY AREAS DAMAGED BY THE CONTRACTOR OR SUBCONTRACTORS SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR, AT THE DIRECTION OF THE ENGINEER.
- AREAS TO BE PLANTED WITH NATIVE VEGETATION PER THE PLANTING PLAN ONCE THIN LAYER PLACEMENT IS COMPLETE.

TIDE DATUM TABLE

- TIDAL DATUM DATA OBTAINED FROM THE EAST FOWL RIVER BRIDGE TIDE STATION, STATION NO. 8735523.

DATUM	ELEVATION (FT NAVD88)
MHHW	+0.82
MHW	+0.77
NAVD88	0
MSL	0.08
MLW	-0.58
MLLW	-0.65

TREE PROTECTION NOTES

- IT IS IMPORTANT TO NOTE THE PROTECTION OF THE TREES TO BE PRESERVED AS IMPORTANT MARSH SHORELINE STABILIZATION MEASURES.
- ROOT SYSTEMS NEED TO BE PROTECTED FROM SOIL COMPACTION OR DISTURBANCE. TRIMMING OF ANY LIMBS AND THE PLAN TO ACCESS AREAS OF FILL NEED TO BE PRE-APPROVED BY AN ENGINEER SUPPORTED ARBORIST.

CONSTRUCTION NOTES

- THIN LAYER PLACEMENT OF SEDIMENT BY WET OR DRY METHODS SHALL BE CONTAINED BY HAY BALES, COIR LOGS OR SIMILAR MEDIA-FILLED, GEOTEXTILE TUBE TO PREVENT SILTATION OF FOWL RIVER ADJACENT TO THE WORK AREA.
- IT IS PREFERRED THAT SEDIIMENT CONTAINMENT METHODS ARE MADE OF BIODEGRADABLE MATERIALS AND WILL LAST 90-180 DAYS AFTER CONSTRUCTION TO PROVIDE PROTECTION TO THE SEDIMENT PLACED.
- IF THE SEDIMENT CONTAINMENT METHODS ARE NOT BIODEGRADABLE, THEY MUST BE REMOVED WITHIN 30 DAYS OF SUBSTANTIAL COMPLETION.
- WORK BARGES AND PUSH BOATS MUST NOT IMPACT SUMBERGED AQUATIC VEGETATION ADJACENT TO THE MARSH RESTORATION AREAS WITH GROUNDING, ANCHORS, SPUDS OR PROP WASH.
- ALL STONE SHALL BE HARD, DURABLE QUALITY STONE SUCH THAT IT WILL NOT DISINTEGRATE UNDER THE ELEMENTS AND IT WILL NOT BREAK UNDER HANDLING. ALL STONE SHALL BE CLEAN AND FREE FROM EARTH, DUST, OR OTHER REFUSE.
- RIP-RAP SHALL PASS A "DROP TEST" AT THE QUARRY WITNESSED BY THE ENGINEER OR ENGINEER'S REPRESENTATIVE PRIOR TO TRANSPORTING THE FIRST TRUCKLOADS OF RIPRAP TO THE PROJECT SITE.
- THE FACES OF INDIVIDUAL PIECES OF STONE SHALL BE ROUGHLY ANGULAR, NOT ROUNDED, IN SHAPE. THE LEAST DIMENSION OF EACH STONE SHALL NOT BE LESS THAN ONE-THIRD (1/3) OF THE GREATEST DIMENSION OF THAT STONE.
- THE STONES SHALL BE PLACED IN SUCH A MANNER THAT THEY WILL BE PROPERLY INTERLOCKED WITH THE UNDERLYING OR ADJACENT STONES TO RESIST DISPLACEMENT BY WAVE ACTION AND FORM A UNIFORM AND COMPACT SECTION. EACH STONE SHALL BE FIRMLY SET AND WELL-SUPPORTED BY UNDERLYING AND ADJACENT STONE WITH A MINIMUM OF 4 POINTS OF CONTACT.
- "RIP-RAP" SHALL BE UP TO 2-FEET IN DIAMETER LIMESTONE (OR AS OTHERWISE APPROVED BY THE ENGINEER) AND BOTH SHALL HAVE A MINIMUM UNIT WEIGHT OF 140 PCF.
- RIP RAP SHALL CONSIST OF SOUND, HARD, DURABLE RUBBLE, FREE OF OPEN OR INCIPIENT CRACKS, SOFT SEAMS, OR OTHER STRUCTURAL DEFECTS, CONSISTING OF BROKEN STONE WITH A BULK SPECIFIC GRAVITY OF AT LEAST 2.30. ENSURE THAT STONES ARE ROUGH AND ANGULAR WITH A MAXIMUM DIAMETER OF 2.0 FEET (UNLESS OTHERWISE SPECIFIED). FOR THIS APPLICATION, USE BROKEN STONE MEETING THE FOLLOWING GRADATION AND THICKNESS REQUIREMENTS:

RIP-RAP

WEIGHT MAXIMUM (POUNDS)	WEIGHT 50% (POUNDS)	WEIGHT MINIMUM (POUNDS)	MINIMUM BLANKET THICKNESS (FEET)
200	100	50	2.0

ENSURE THAT AT LEAST 97% OF THE MATERIAL BY WEIGHT IS SMALLER THAN MAXIMUM POUNDS.
ENSURE THAT AT LEAST 50% OF THE MATERIAL BY WEIGHT IS GREATER THAN WEIGHT 50% POUNDS.
ENSURE THAT AT LEAST 85% OF THE MATERIAL BY WEIGHT IS GREATER THAN WEIGHT MINIMUM POUNDS.

- BEDDING STONE SHALL CONSIST OF SOUND, HARD, DURABLE RUBBLE, FREE OF OPEN OR INCIPIENT CRACKS, SOFT SEAMS, OR OTHER STRUCTURAL DEFECTS, CONSISTING OF BROKEN STONE WITH A BULK SPECIFIC GRAVITY OF AT LEAST 1.9. ENSURE THAT STONES ARE ROUGH AND ANGULAR WITH A MINIMUM DIAMETER OF 2 INCHES AND A MAXIMUM DIAMETER OF 4 INCHES UNLESS OTHERWISE SPECIFIED. BEDDING MATERIAL WILL BE PLACED 6 INCHES THICK.

OFF-SITE DISPOSAL NOTES

- DEBRIS, SUCH AS FLOTSAM, PILINGS, WOOD SYROFOAM, PLASTIC, TRASH, VEGETATION, TARPS, FABRIC, ETC. AND ANY OTHER OBJECTS EXCEPT ARCHEOLOGICAL OR HISTORIC RESOURCES THAT EXIST WITHIN THE PROJECT AREA OR ARE UNEARTHED DURING OPERATIONS, SHALL BE REMOVED, TRANSPORTED, AND DISPOSED OF AT THE COUNTY LANDFILL AND SHOULD BE EXPECTED TO BE ENCOUNTERED DURING THE OPERATIONS AND WILL NOT CONSTITUTE A CHANGE OF CONDITION TO THE CONTRACT/AGREEMENT. REMOVAL AND DISPOSAL OF DEBRIS WILL TO BE SOLE RESPONSIBILITY OF THE CONTRACTOR IN ITS ENTIRETY. REMOVAL AND DISPOSAL OF DEBRIS AND OBSTRUCTIONS SHALL NOT BE PROVIDED FOR SEPARATELY FOR PAYMENT. ALL COSTS ASSOCIATED WITH THE REQUIRED DISPOSAL OF DEBRIS SHALL BE INCLUDED IN THE CONTRACT PRICE. THESE SPECIFICATIONS ARE NOT AN ALL-INCLUSIVE REFERENCE OF DEBRIS TYPES, WHICH MAY BE ENCOUNTERED. IT IS ANTICIPATED THAT DURING CONSTRUCTION ACTIVITY DEBRIS (INCLUDED BUT NOT LIMITED TO VEGETATION, PILINGS, DOCK MATERIALS, STYROFOAM, PLASTIC, FABRIC, CONCRETE, ASPHALT, WOOD, TRASH, GARBAGE, UNUSABLE SOIL, METAL, ETC.) WILL BE ENCOUNTERED. THE CONTRACTOR SHALL BE PREPARED AND RESPONSIBLE FOR PROPER REMOVAL PRIOR TO THIN LAYER PLACEMENT AND PROPER DISPOSAL AT THE COUNTY LANDFILL.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MATERIALS PROPERLY OFFSITE. (I.E. DESIGNATED VEGETATION, FILTER FABRIC, SILT FENCE, TRASH, BRICK, NON-SUITABLE STONE, DEBRIS, ETC.).



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STAMP

PRELIMINARY

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NOT FOR
CONSTRUCTION

CONSULTANT

PROJECT NAME
FOWL RIVER MARSH
RESTORATION &
SHORELINE STABILIZATION
PROJECT
MOBILE COUNTY, ALABAMA

REVISIONS

#	DATE	DESCRIPTION
---	------	-------------

DESIGNED	BDF/CR
DRAWN	CR
CHECKED	BDF
IN CHARGE	BDF 38926-E

PROJECT NUMBER D190585.00

ISSUE DATE 04/12/2022

SCALE IS AS SHOWN WHEN
PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

G-2

SHEET 2 OF 40

FILE: P:\01 CAD\19xxxx\1201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:18:52 PM PLOTTED BY: BRYAN FLYNN



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PLAN OVERVIEW

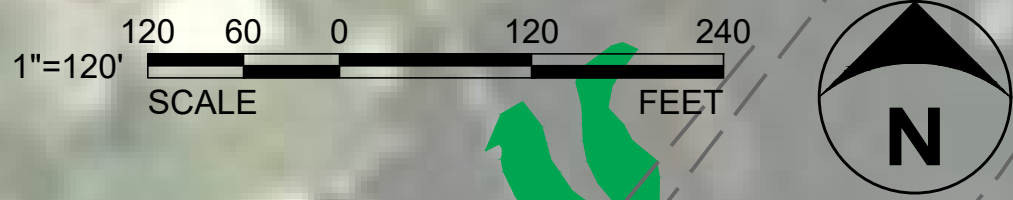
SHEET NUMBER

C-1

SHEET 3 OF 40

FILE: P:\01 CAD\19xxxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:18:58 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
- THIN LAYER PLACEMENT
 - COIR LOGS
 - TIMBER BREAKWATER
 - RIP RAP
 - SUBMERGED AQUATIC VEGETATION (SAV)
 - WETLANDS
 - MHHW = 0.82 FT (NAVD 88)



ESA

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SHEET TITLE







BELLINGRATH
OVERVIEW

SHEET NUMBER

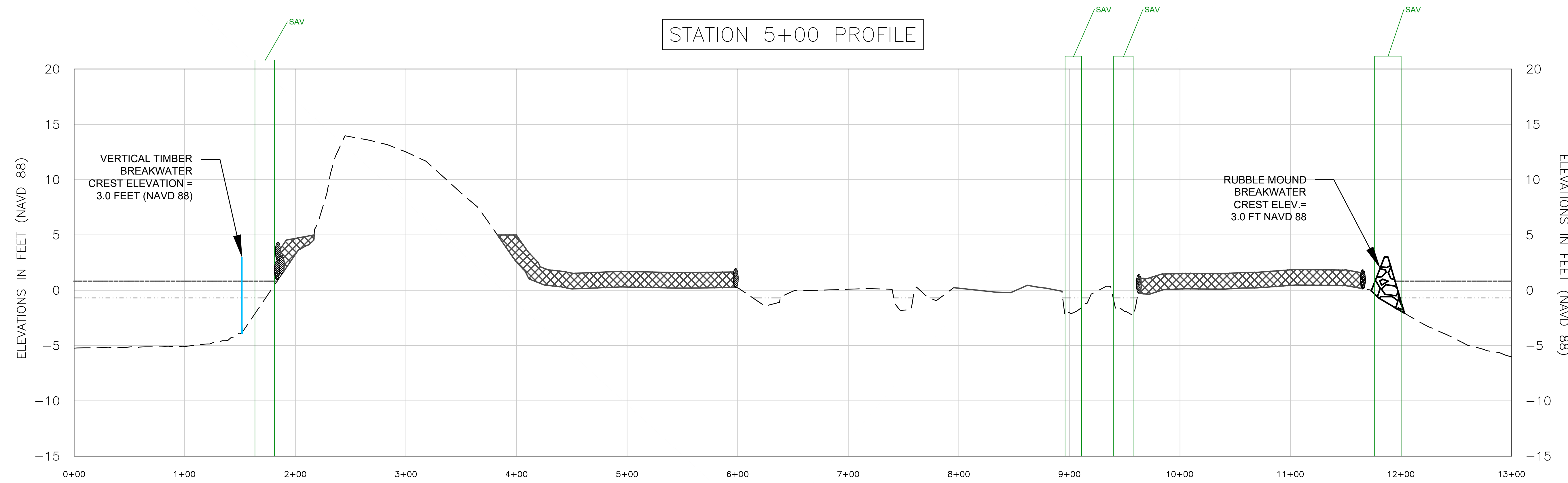
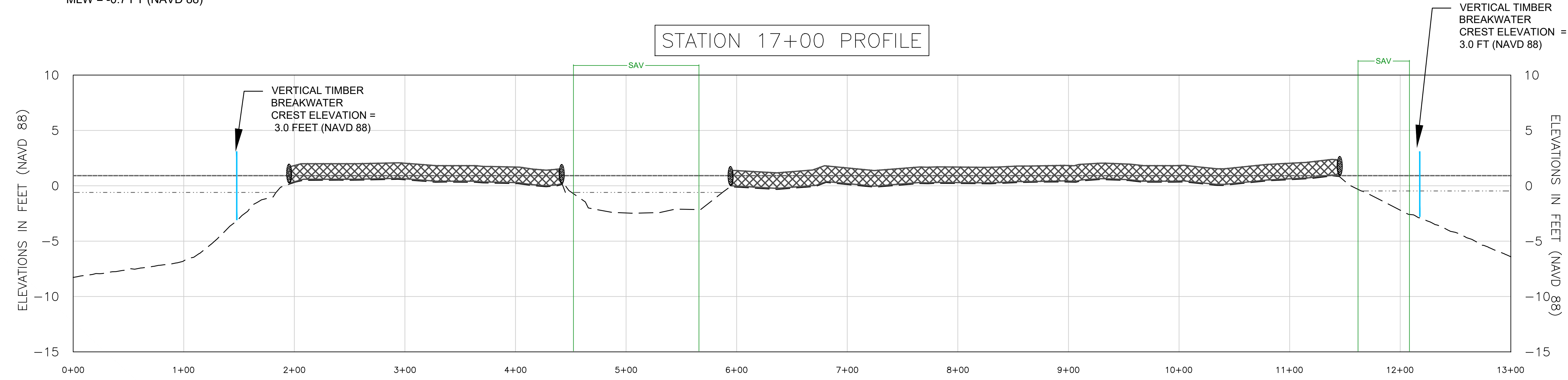
C-2

SHEET 4 OF 40

FILE: P:\01 CAD\19\xxxx\201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:02 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
-  THIN LAYER PLACEMENT - (21.91 AC, 114,627 CY)
 -  COIR LOGS - (22,062 LF)
 -  TIMBER BREAKWATER - (4,300 LF)
 -  RIP RAP - (0.56 AC, 389 CY)
 -  MHHW = 0.82 FT (NAVD 88)
 -  MLW = -0.7 FT (NAVD 88)

VERTICAL SCALE 1"=5'
HORIZONTAL SCALE 1"=50'



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PROJECT NUMBER	D190585.00	
ISSUE DATE	04/12/2022	
SCALE IS AS SHOWN WHEN PLOTTED TO FULL SIZE (22"x34")		

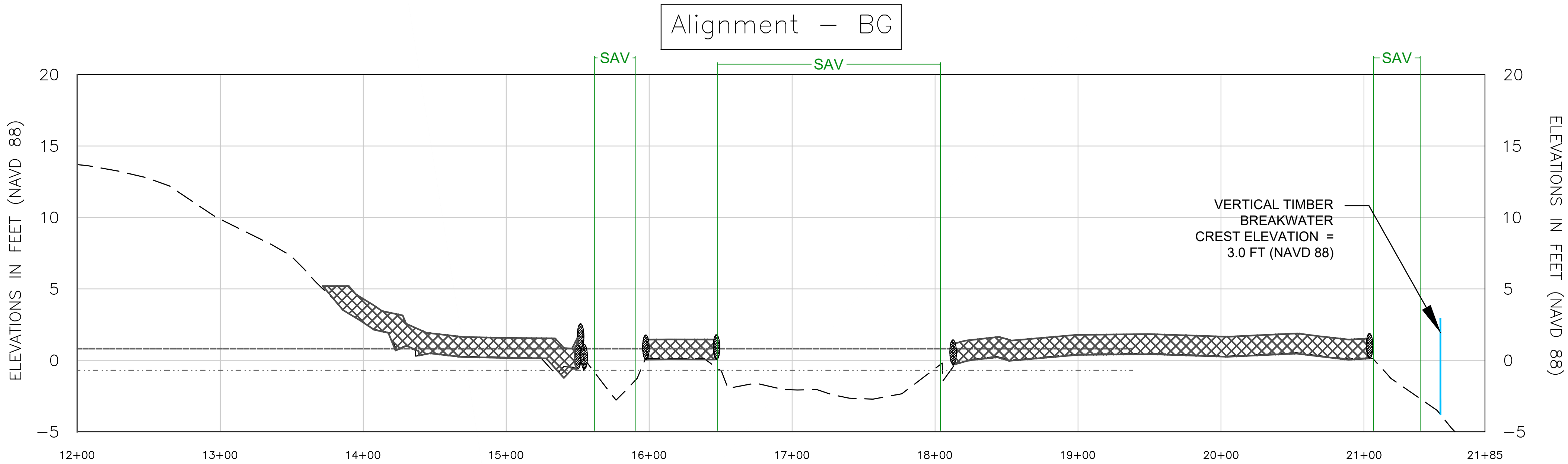
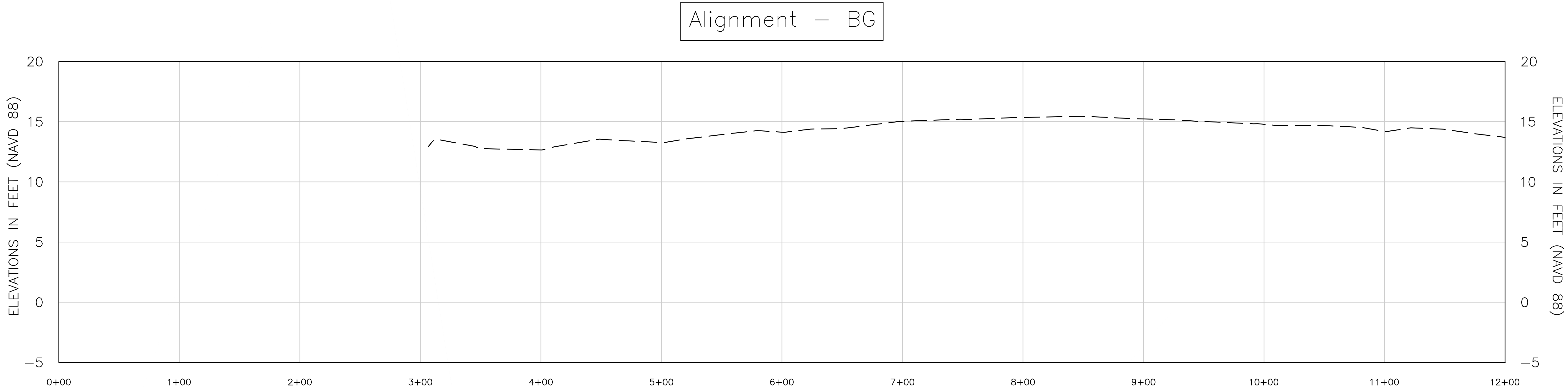
PHASE
**60% CONSTRUCTION
PLANS**
SHEET TITLE

**BELLINGRATH
TYPICAL SECTION**

SHEET NUMBER
C-3
SHEET 5 OF 40

FILE: P:\01 CAD\19\xxxx\D201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:06 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
- THIN LAYER PLACEMENT - (21.91 AC, 114,627 CY)
 - COIR LOGS - (22,062 LF)
 - TIMBER BREAKWATER - (4,300 LF)
 - RIP RAP - (0.56 AC, 389 CY)
 - MHHW = 0.82 FT (NAVD 88)
 - MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=5'
HORIZONTAL SCALE 1"=50'



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CONSULTANT

PROJECT NAME
FOWL RIVER MARSH
RESTORATION &
SHORELINE STABILIZATION
PROJECT
MOBILE COUNTY, ALABAMA

REVISIONS

#	DATE	DESCRIPTION

DESIGNED	BDF/CR
DRAWN	CR
CHECKED	BDF
IN CHARGE	BDF 38926

PROJECT NUMBER D190585.00

ISSUE DATE 04/12/2022

SCALE IS AS SHOWN WHEN
PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

BELLINGRATH
PROFILE

SHEET NUMBER

C-4

SHEET 6 OF 40

FILE: P:\01 CAD\19\xxxx\2021\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:13 PM PLOTTED BY: BRYAN FLYNN



LEGEND:

- THIN LAYER PLACEMENT - (21.91 AC, 114,627 CY)
- COIR LOGS - (53,050 LF)
- TIMBER BREAKWATER (4,300 LF)
- RIP RAP - (0.56 AC, 2,225 CY)
- SUBMERGED AQUATIC VEGETATION (SAV)
- WETLANDS
- MHHW = 0.82 FT (NAVD 88)

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PROJECT**

MOBILE COUNTY, ALABAMA

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ISSUE DATE 04/12/2022

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PHASE

**60% CONSTRUCTION
PLANS**

SHEET TITLE

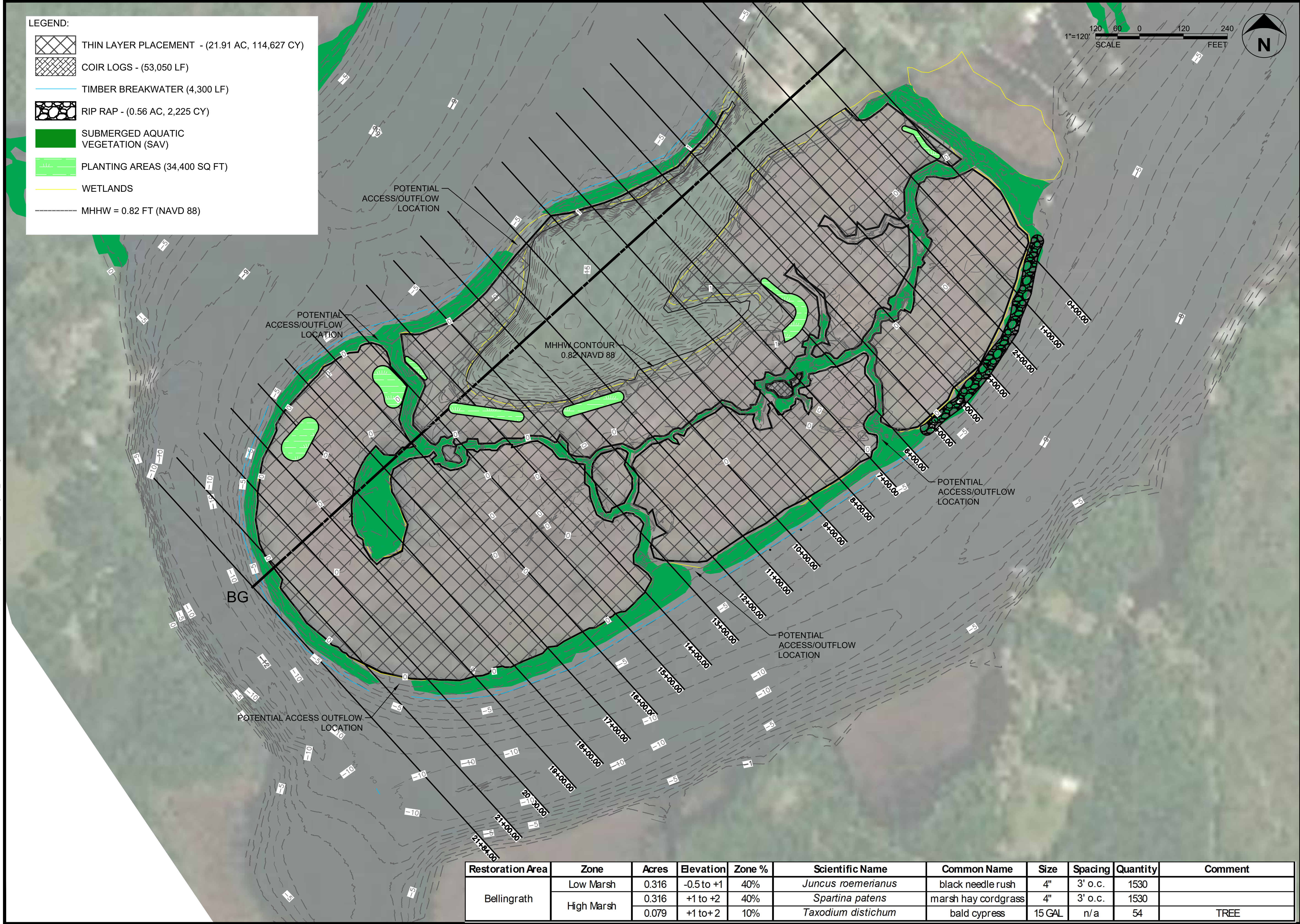
**BELLINGRATH
BARGE**

SHEET NUMBER

C-5

SHEET 7 OF 40

FILE: P:\01 CAD\19\xxxx\1201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:18 PM PLOTTED BY: BRYAN FLYNN



LEGEND:

- THIN LAYER PLACEMENT - (21.91 AC, 114,627 CY)
- COIR LOGS - (53,050 LF)
- TIMBER BREAKWATER (4,300 LF)
- RIP RAP - (0.56 AC, 2,225 CY)
- SUBMERGED AQUATIC VEGETATION (SAV)
- PLANTING AREAS (34,400 SQ FT)
- WETLANDS
- MHHW = 0.82 FT (NAVD 88)

ESA

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PROJECT**

MOBILE COUNTY, ALABAMA

REVISIONS		
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PROJECT NUMBER	D190585.00	
ISSUE DATE	04/12/2022	
SCALE IS AS SHOWN WHEN PLOTTED TO FULL SIZE (22"x34")		

PHASE

**60% CONSTRUCTION
PLANS**

SHEET TITLE

**BELLINGRATH
PLANTING PLAN**

SHEET NUMBER

C-6

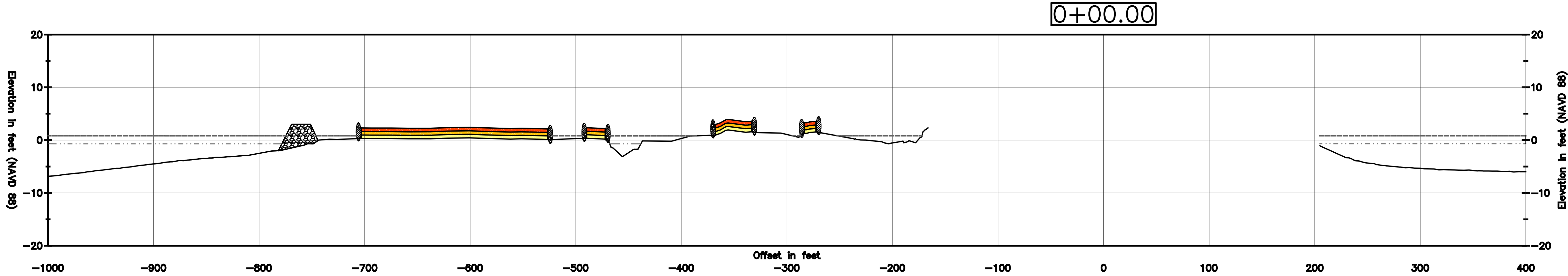
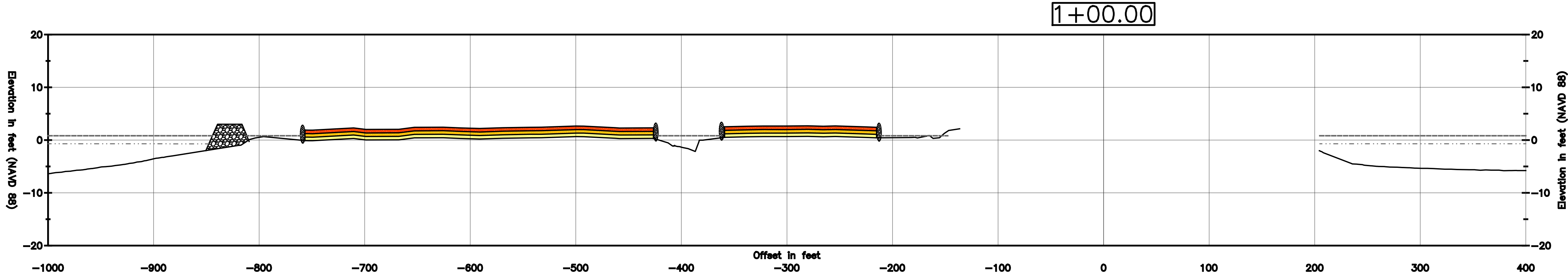
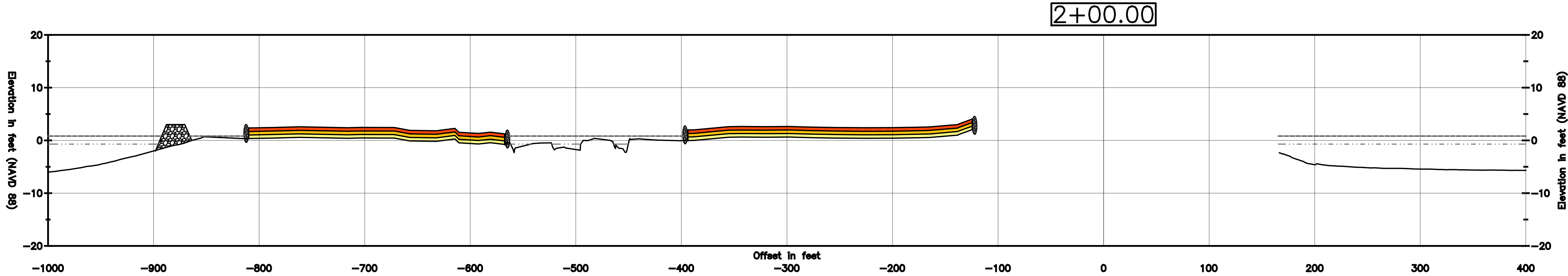
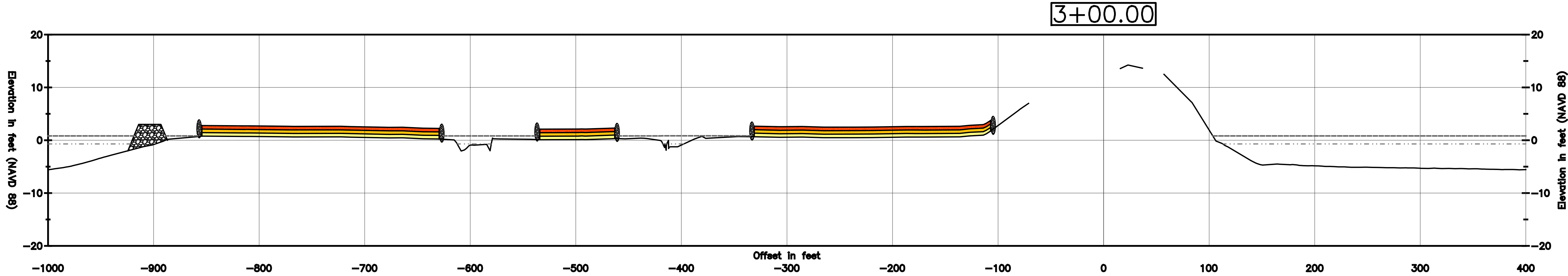
SHEET 8 OF 40

Restoration Area	Zone	Acres	Elevation	Zone %	Scientific Name	Common Name	Size	Spacing	Quantity	Comment
Bellingrath	Low Marsh	0.316	-0.5 to +1	40%	<i>Juncus roemerianus</i>	black needle rush	4"	3' o.c.	1530	
	High Marsh	0.316	+1 to +2	40%	<i>Spartina patens</i>	marsh hay cordgrass	4"	3' o.c.	1530	
		0.079	+1 to +2	10%	<i>Taxodium distichum</i>	bald cypress	15 GAL	n/a	54	TREE

FILE: P:\01 CAD\19xxxx\1201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:23 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

- 8 INCH SPOIL AREA
- 16 INCH SPOIL AREA
- 24 INCH SPOIL AREA



VERTICAL SCALE 1"=12'
HORIZONTAL SCALE 1"=60'

----- MHHW = 0.82 FT (NAVD 88)
..... MLW = -0.7 FT (NAVD 88)



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PROJECT
MOBILE COUNTY, ALABAMA

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PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

BELLINGRATH
CROSS SECTION (1)

SHEET NUMBER

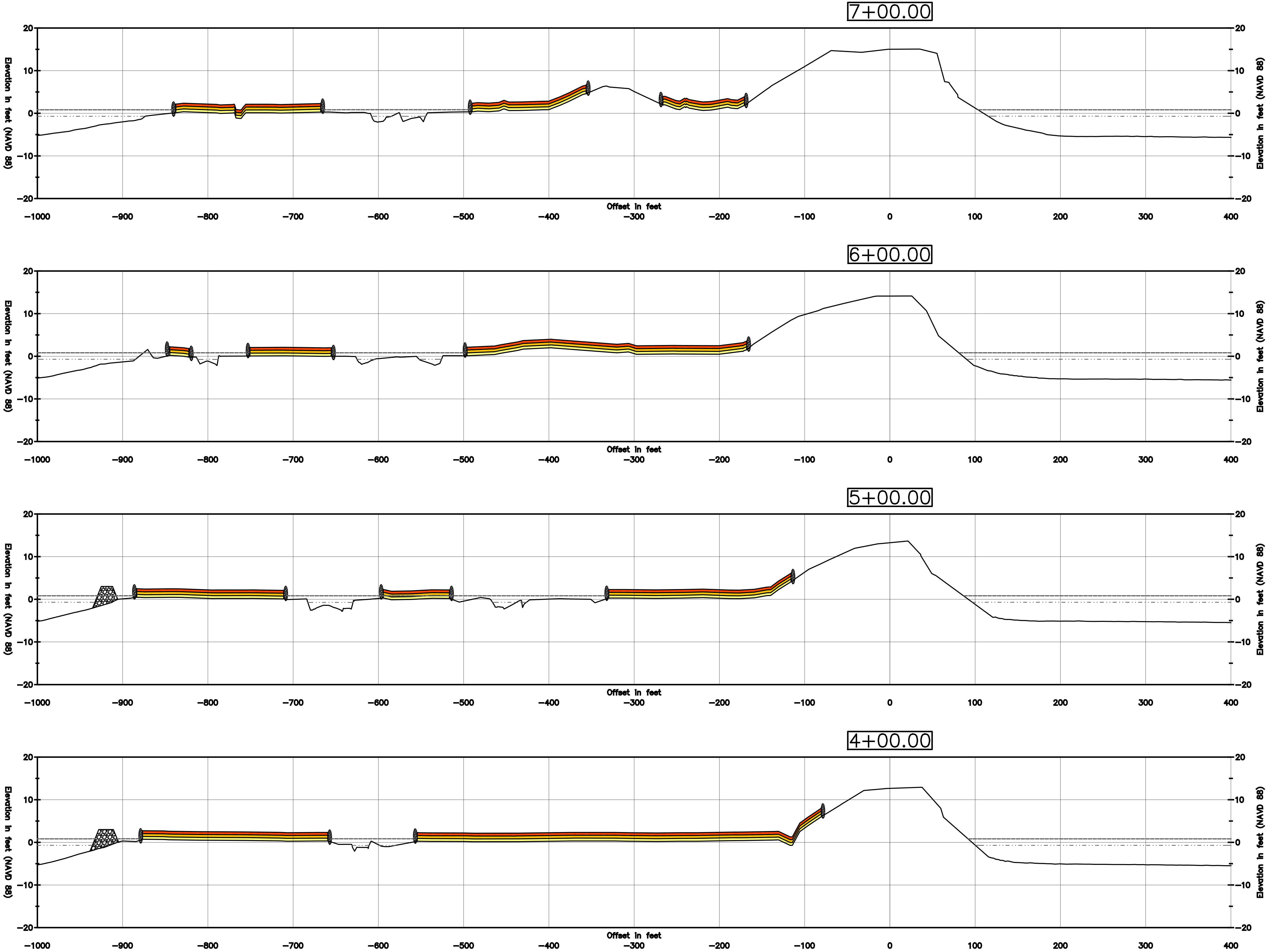
C-7

SHEET 9 OF 40

FILE: P:\01 CAD\19xxxx\1201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:28 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

- 8 INCH SPOIL AREA
- 16 INCH SPOIL AREA
- 24 INCH SPOIL AREA



VERTICAL SCALE 1"=12'
HORIZONTAL SCALE 1"=60'

- MHHW = 0.82 FT (NAVD 88)
- MLW = -0.7 FT (NAVD 88)



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CHECKED	BDF
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PROJECT NUMBER D190585.00

ISSUE DATE 04/12/2022

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PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

BELLINGRATH
CROSS SECTION (2)

SHEET NUMBER

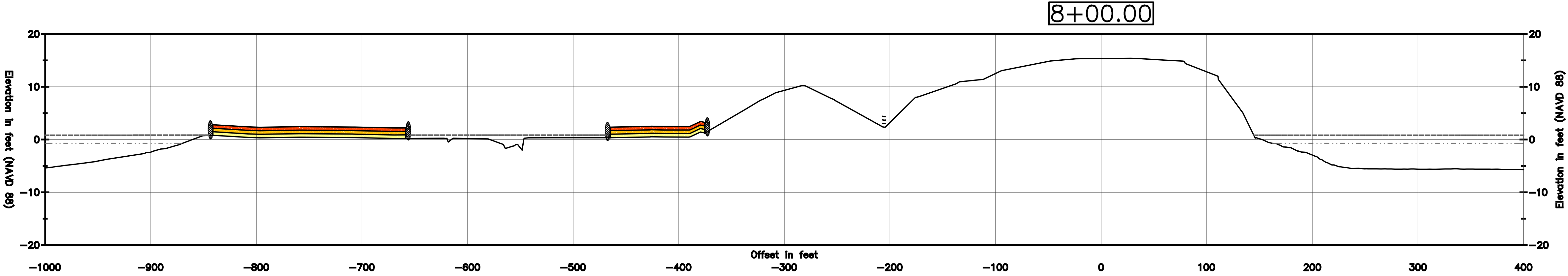
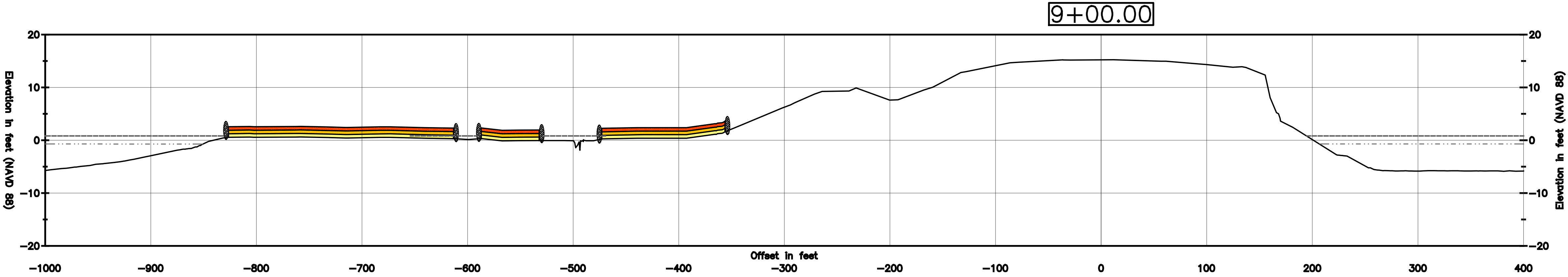
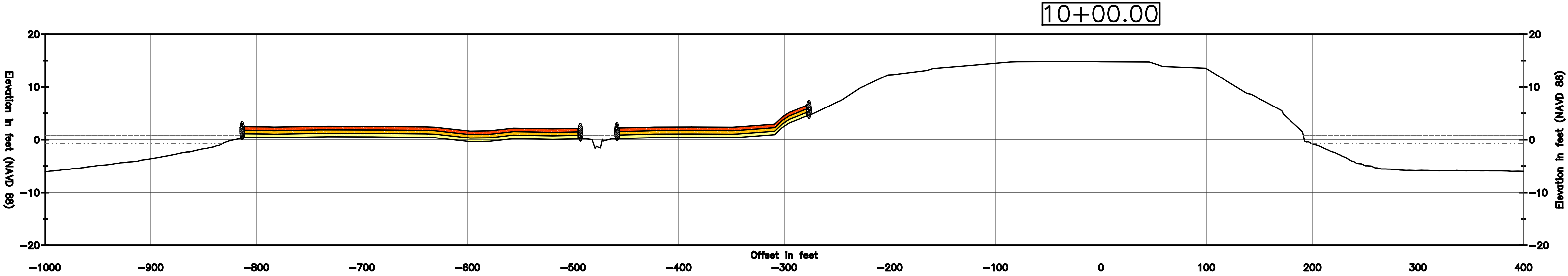
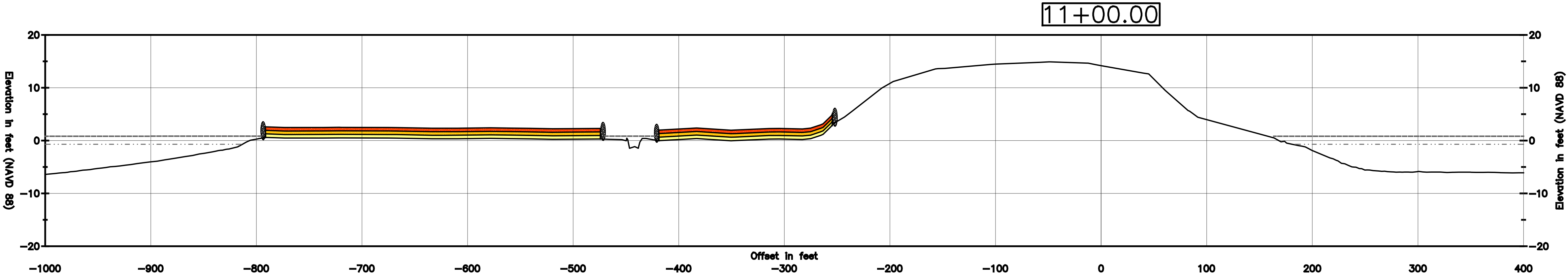
C-8

SHEET 10 OF 40

FILE: P:\01 CAD\19\xxxx\12011900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:32 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

- 8 INCH SPOIL AREA
- 16 INCH SPOIL AREA
- 24 INCH SPOIL AREA



VERTICAL SCALE 1"=12'
HORIZONTAL SCALE 1"=60'

----- MHHW = 0.82 FT (NAVD 88)
..... MLW = -0.7 FT (NAVD 88)



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ISSUE DATE 04/12/2022

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PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

BELLINGRATH
CROSS SECTION (3)

SHEET NUMBER

C-9

SHEET 11 OF 40

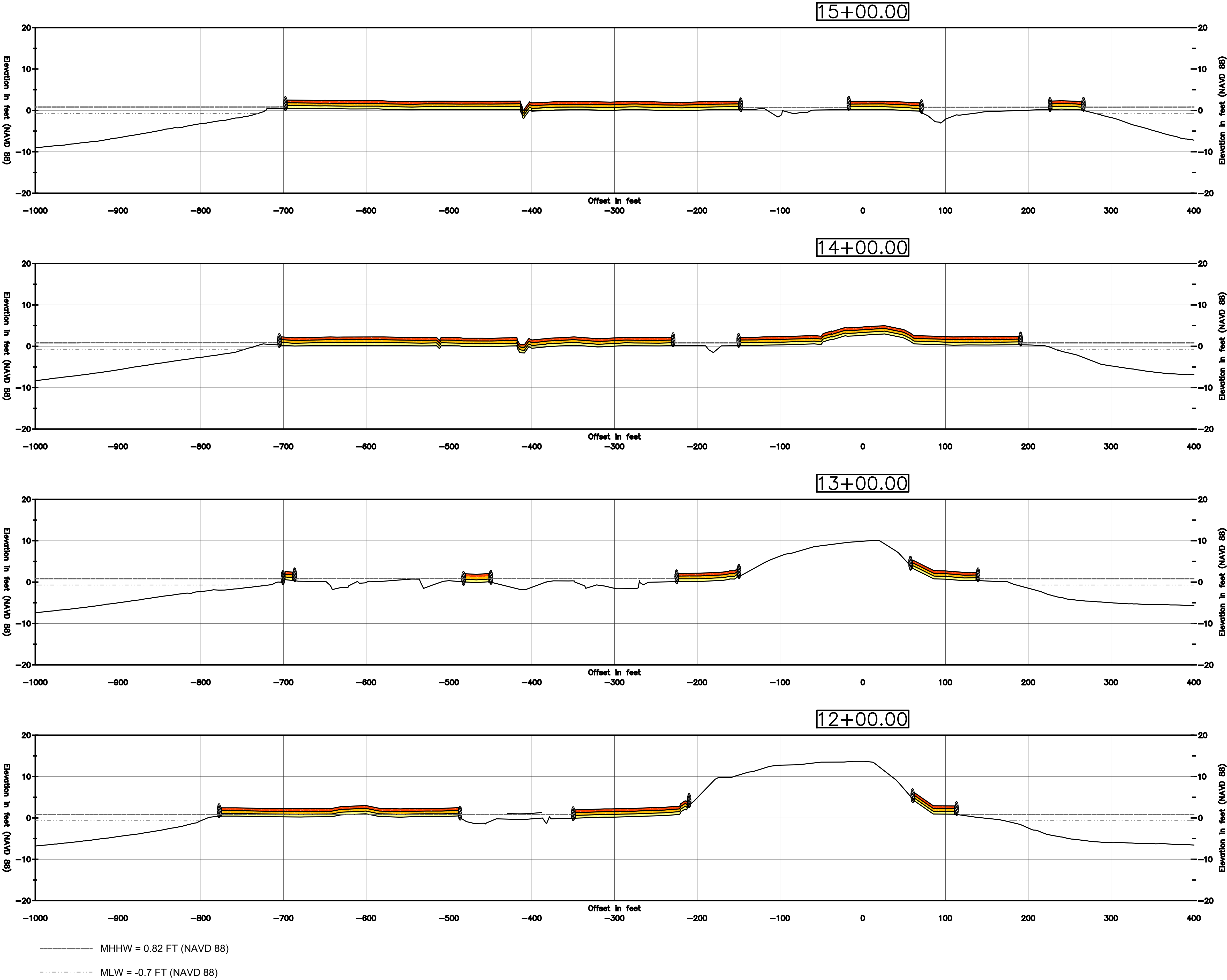
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LEGEND:

8 INCH SPOIL AREA

16 INCH SPOIL AREA

24 INCH SPOIL AREA



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PHASE

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PLANS

SHEET TITLE

BELLINGRATH
CROSS SECTION (4)

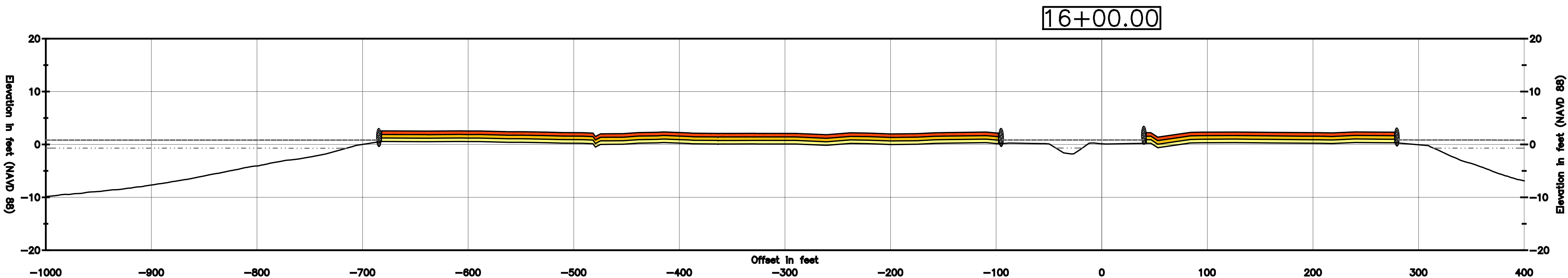
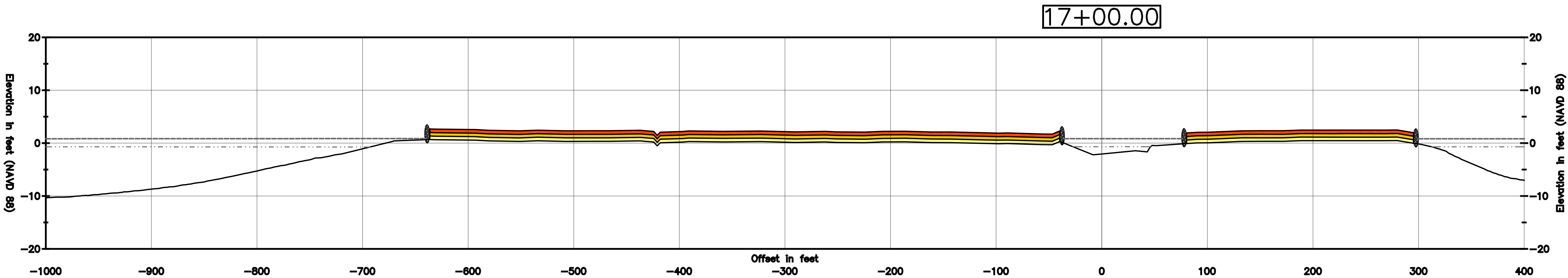
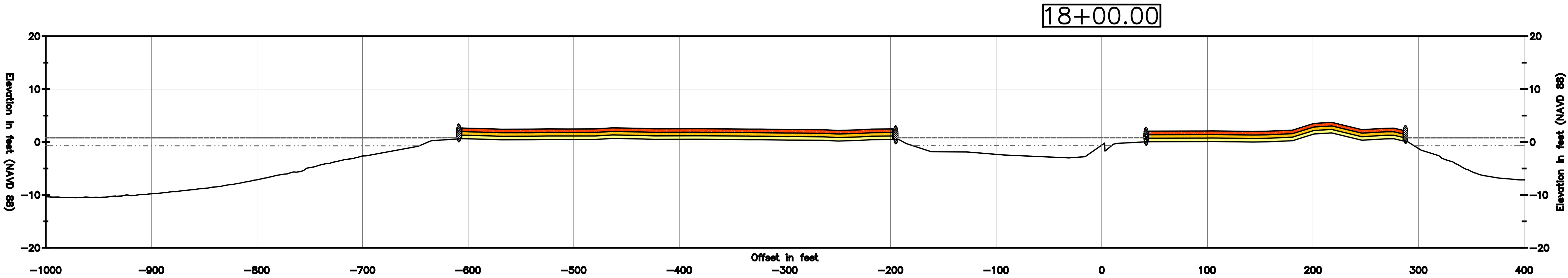
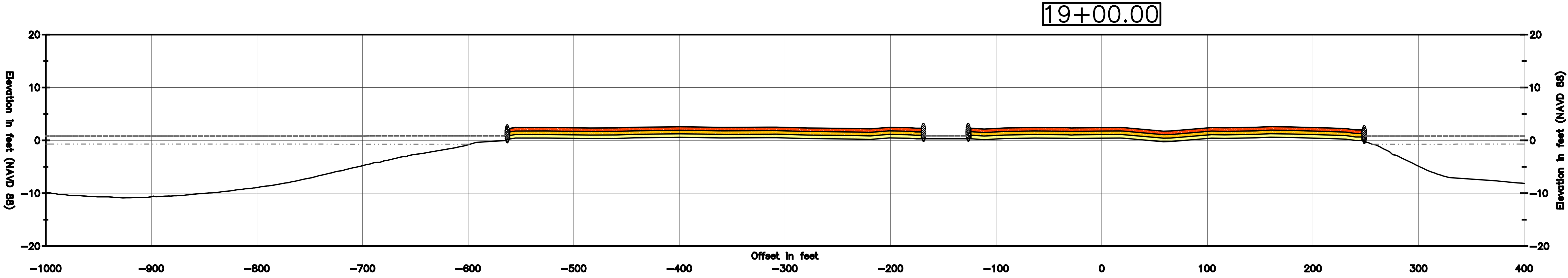
SHEET NUMBER

C-10

SHEET 12 OF 40

FILE: P:\01 CAD\19\xxxx\D201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:43 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
- 8 INCH SPOIL AREA
 - 16 INCH SPOIL AREA
 - 24 INCH SPOIL AREA



VERTICAL SCALE 1"=12'
HORIZONTAL SCALE 1"=60'

----- MHHW = 0.82 FT (NAVD 88)
..... MLW = -0.7 FT (NAVD 88)



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DRAWN	CR	
CHECKED	BDF	
IN CHARGE	BDF 38926	
PROJECT NUMBER	D190585.00	
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SCALE IS AS SHOWN WHEN PLOTTED TO FULL SIZE (22"x34")		

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

BELLINGRATH
CROSS SECTION (5)

SHEET NUMBER

C-11

SHEET 13 OF 40

FILE: P:\01 CAD\19\xxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Bellingrath_BDF.dwg PLOT DATE: 4/12/2022 7:19:47 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

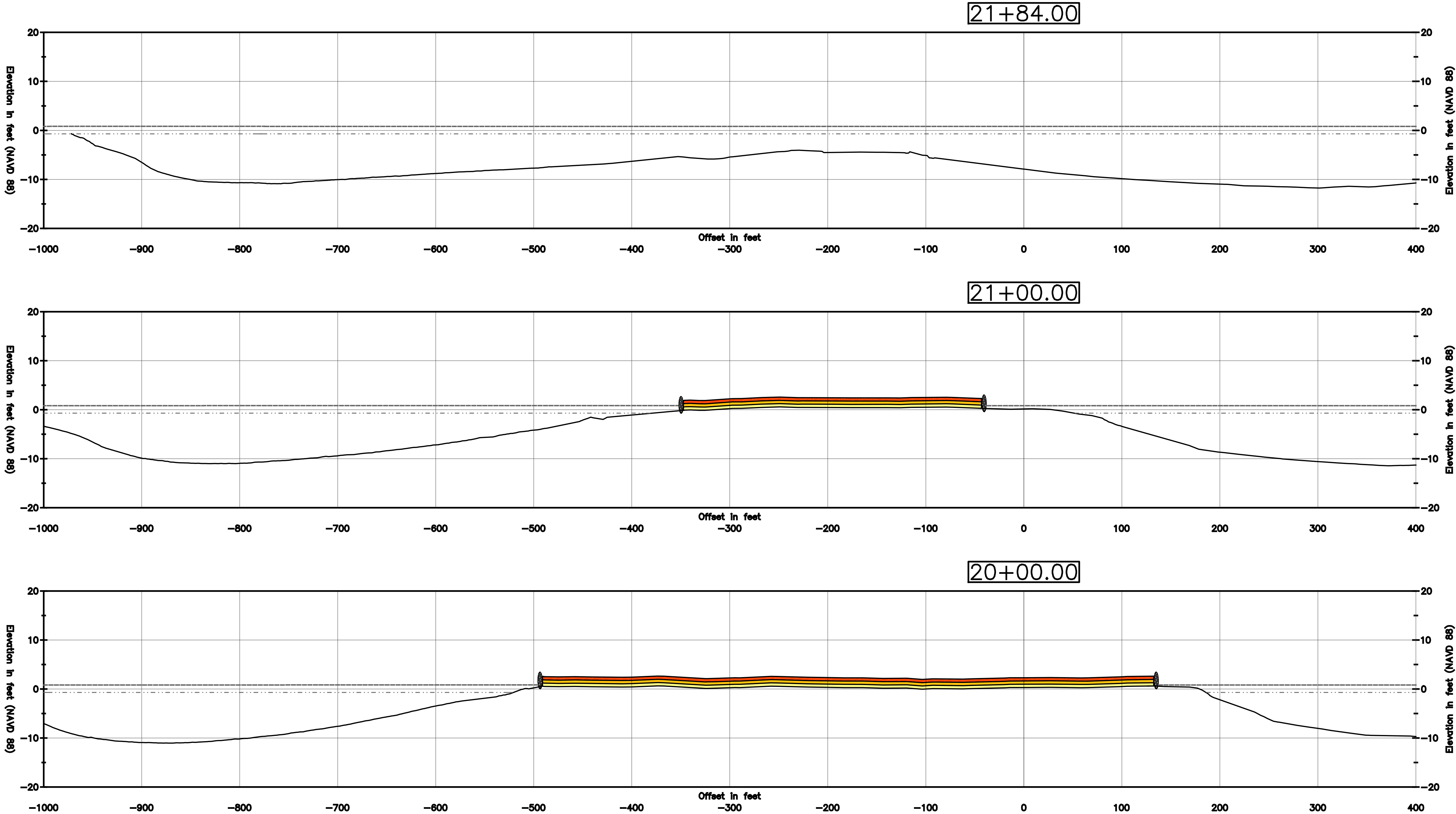
8 INCH SPOIL AREA

16 INCH SPOIL AREA

24 INCH SPOIL AREA

MHHW = 0.82 FT (NAVD 88)

MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=12'
HORIZONTAL SCALE 1"=60'

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PROJECT

MOBILE COUNTY, ALABAMA

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PHASE

60% CONSTRUCTION
PLANS

SHEET TITLE

BELLINGRATH
CROSS SECTION (6)

SHEET NUMBER

C-12

SHEET 14 OF 40

FILE: P:\01 CAD\19\xxxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Tapia_BDF.dwg PLOT DATE: 4/12/2022 7:20:01 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

THIN LAYER PLACEMENT

COIR LOGS

TIMBER BREAKWATER

SUBMERGED AQUATIC VEGETATION (SAV)

WETLANDS

MHHW = 0.82 FT (NAVD 88)



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PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE






TAPIA OVERVIEW

SHEET NUMBER

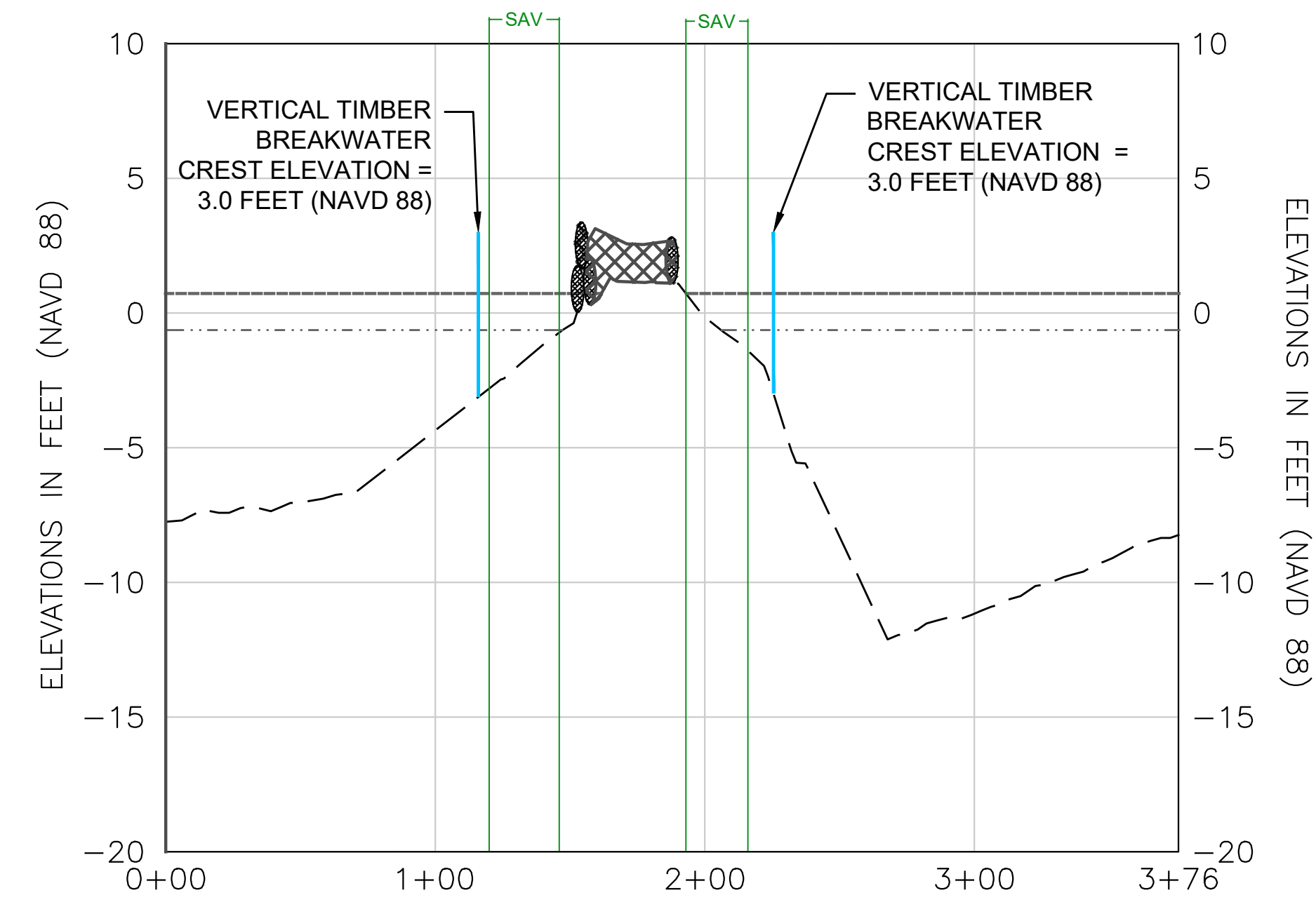
C-13

SHEET 15 OF 40

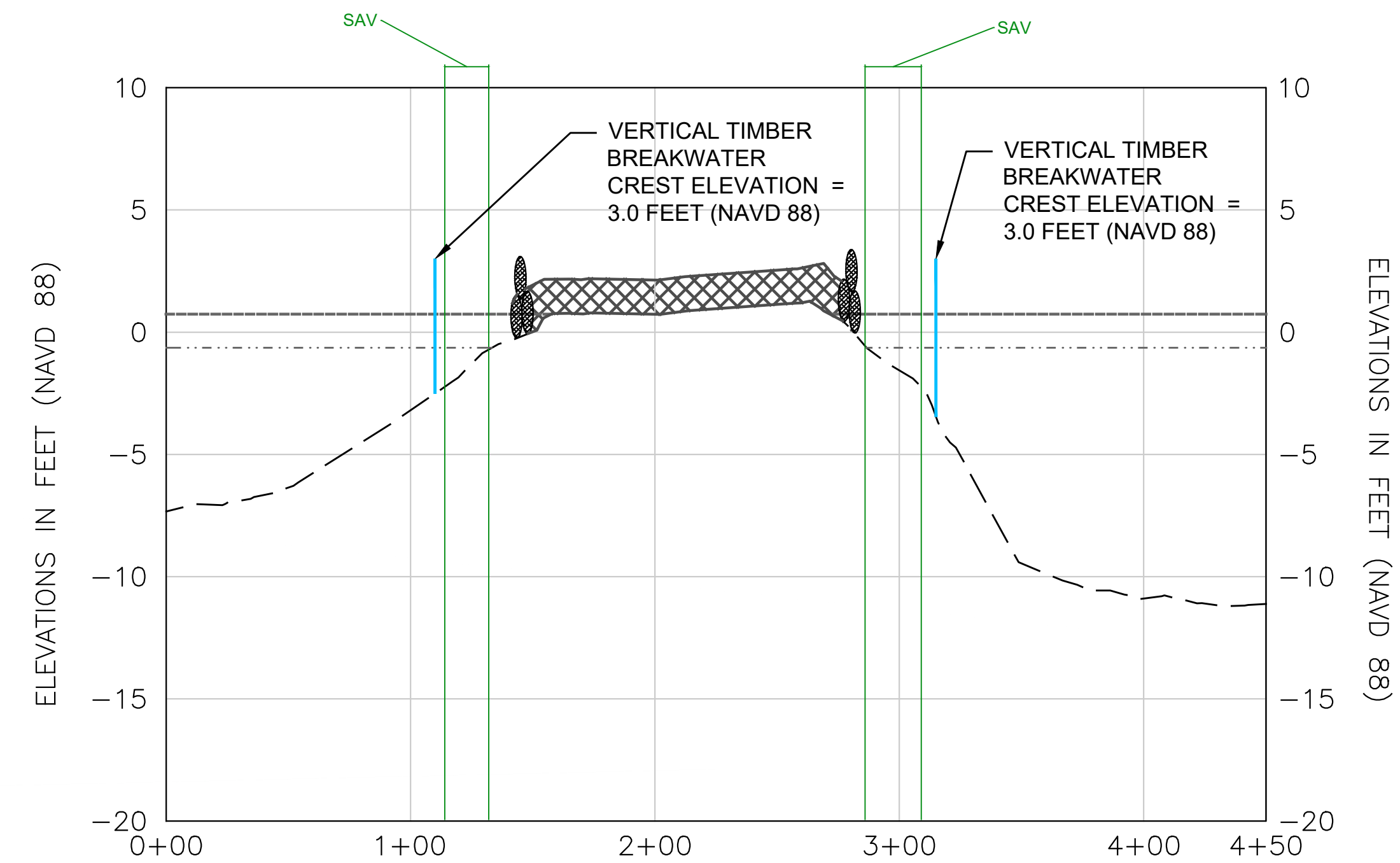
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- LEGEND:
-  THIN LAYER PLACEMENT - (2.82 AC, 9,551 CY)
 -  COIR LOGS - (9,960 LF)
 -  TIMBER BREAKWATER - (2,000 LF)
 -  MHHW = 0.82 FT (NAVD 88)
 -  MLW = -0.7 FT (NAVD 88)

STATION 5+35 PROFILE



STATION 9+00 PROFILE



VERTICAL SCALE 1"=5'
HORIZONTAL SCALE 1"=50'



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PLANS

SHEET TITLE






TAPIA TYPICAL
SECTION

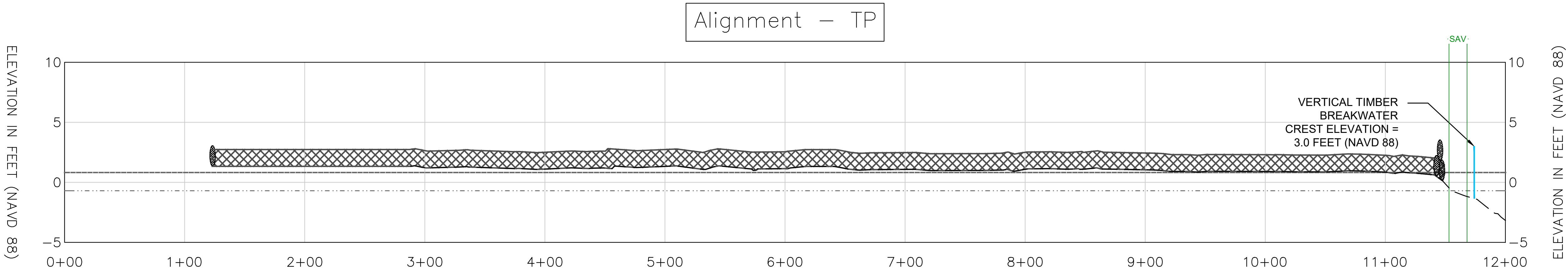
SHEET NUMBER

C-14

SHEET 16 OF 40

FILE: P:\01 CAD\19\xxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Tapia_BDF.dwg PLOT DATE: 4/12/2022 7:20:11 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
-  THIN LAYER PLACEMENT - (2.82 AC, 9,551 CY)
 -  COIR LOGS - (9,960 LF)
 -  TIMBER BREAKWATER - (2,000 LF)
 -  MHHW = 0.82 FT (NAVD 88)
 -  MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=5'
HORIZONTAL SCALE 1"=50'



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PHASE
**60% CONSTRUCTION
PLANS**

SHEET TITLE

TAPIA PROFILE

SHEET NUMBER
C-15

SHEET 17 OF 40

FILE: P:\01 CAD\19\xxxx\1201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Tapia_BDF.dwg PLOT DATE: 4/12/2022 7:20:16 PM PLOTTED BY: BRYAN FLYNN



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60% CONSTRUCTION
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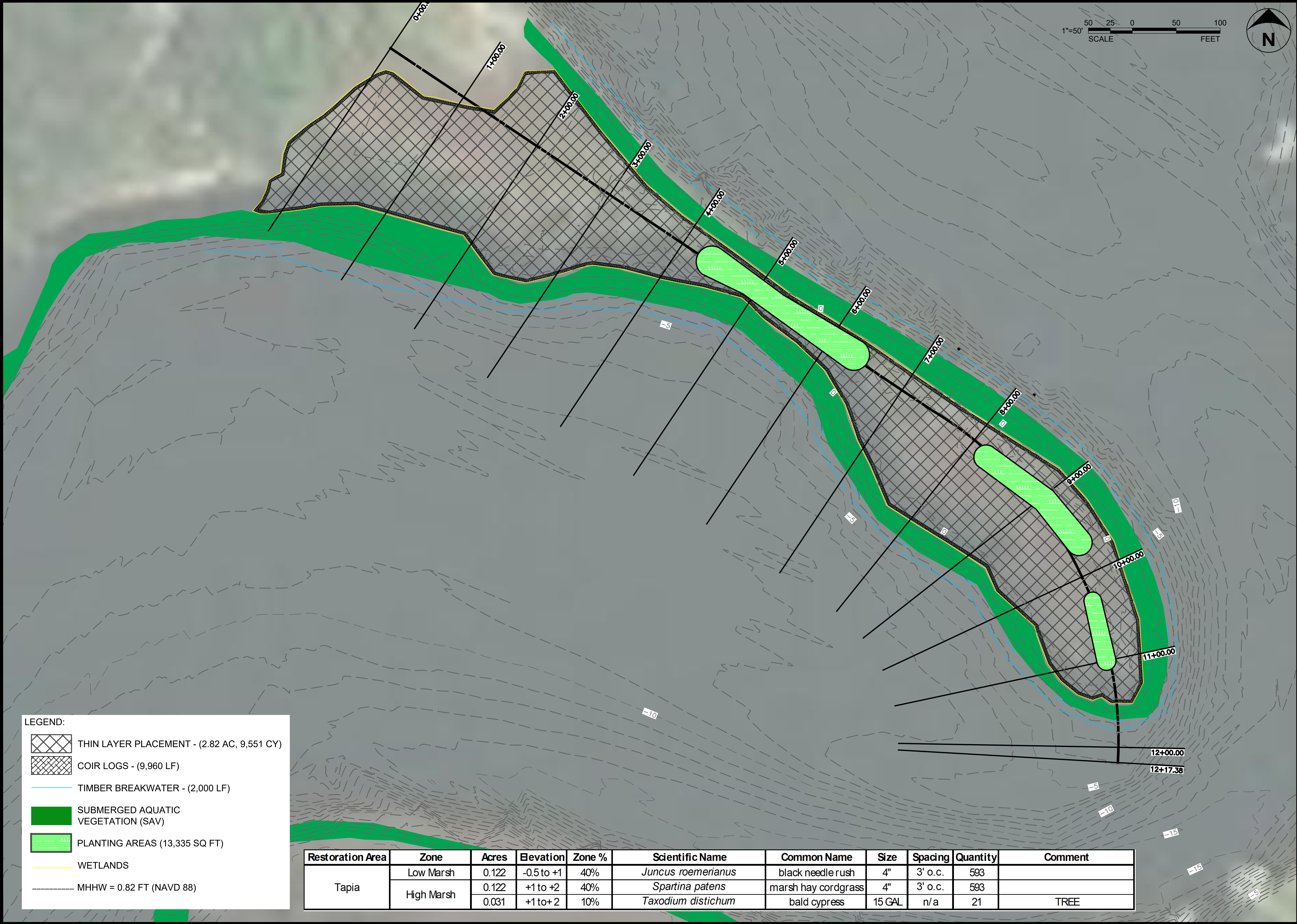
SHEET TITLE

TAPIA BARGE

SHEET NUMBER
C-16

SHEET 18 OF 40

FILE: P:\01 CAD\19\xxxx\201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Tapia_BDF.dwg PLOT DATE: 4/12/2022 7:20:21 PM PLOTTED BY: BRYAN FLYNN



LEGEND:

- THIN LAYER PLACEMENT - (2.82 AC, 9,551 CY)
- COIR LOGS - (9,960 LF)
- TIMBER BREAKWATER - (2,000 LF)
- SUBMERGED AQUATIC VEGETATION (SAV)
- PLANTING AREAS (13,335 SQ FT)
- WETLANDS
- MHHW = 0.82 FT (NAVD 88)

Restoration Area	Zone	Acres	Elevation	Zone %	Scientific Name	Common Name	Size	Spacing	Quantity	Comment
Tapia	Low Marsh	0.122	-0.5 to +1	40%	<i>Juncus roemerianus</i>	black needle rush	4"	3' o.c.	593	
	High Marsh	0.122	+1 to +2	40%	<i>Spartina patens</i>	marsh hay cordgrass	4"	3' o.c.	593	
		0.031	+1 to +2	10%	<i>Taxodium distichum</i>	bald cypress	15 GAL	n/a	21	TREE

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CONSTRUCTION

CONSULTANT

PROJECT NAME

FOWL RIVER MARSH
RESTORATION &
SHORELINE STABILIZATION
PROJECT
MOBILE COUNTY, ALABAMA

REVISIONS

#	DATE	DESCRIPTION

DESIGNED	BDF/CR
DRAWN	CR
CHECKED	BDF
IN CHARGE	BDF 38926

PROJECT NUMBER D190585.00

ISSUE DATE 04/12/2022

SCALE IS AS SHOWN WHEN PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

TAPIA PLANTING
PLAN

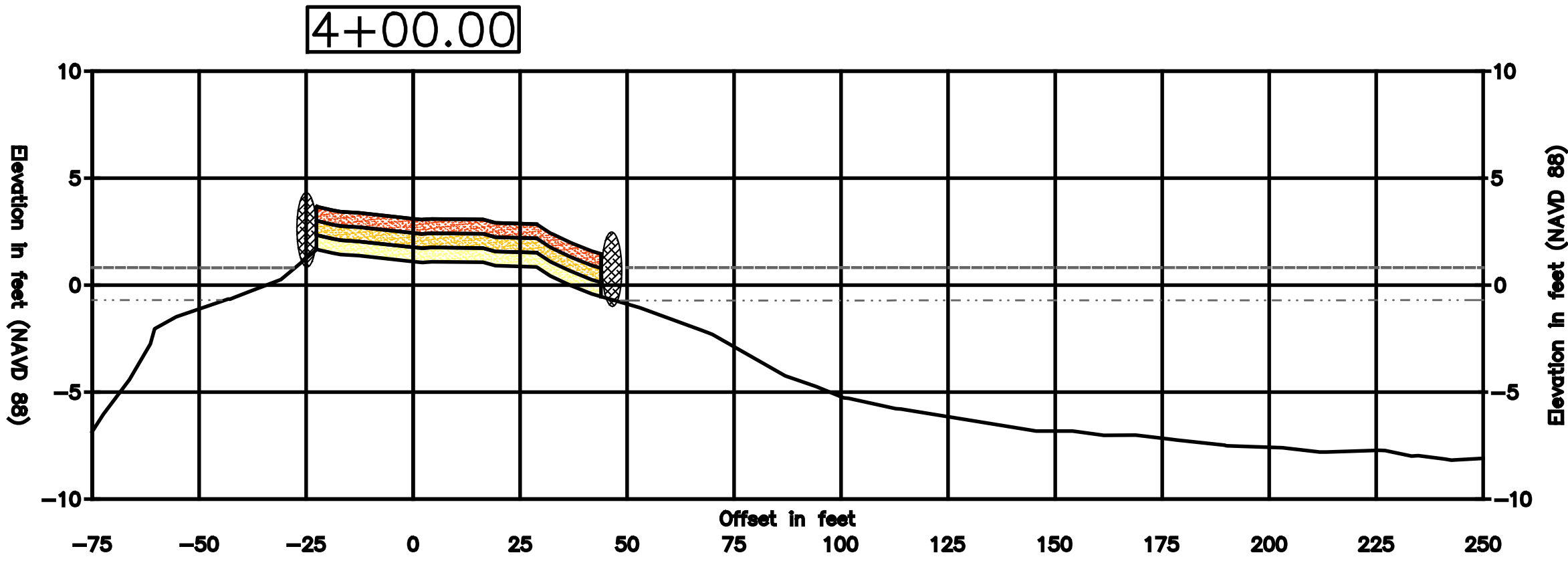
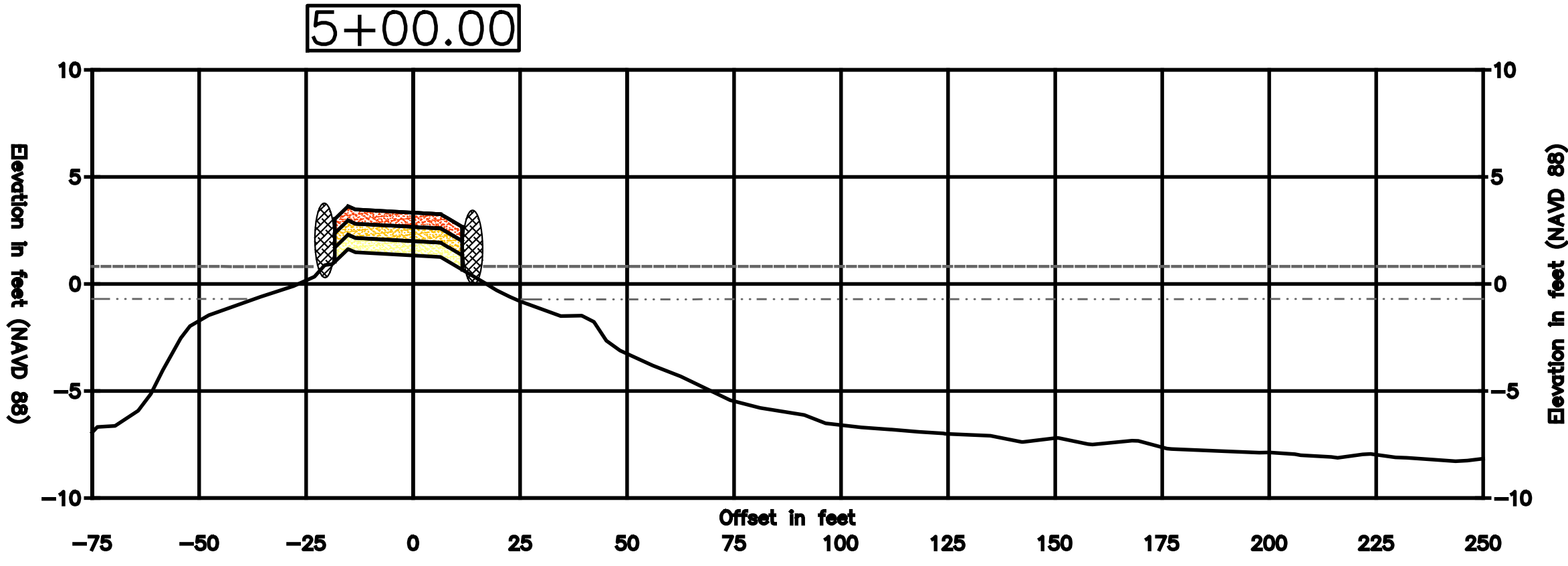
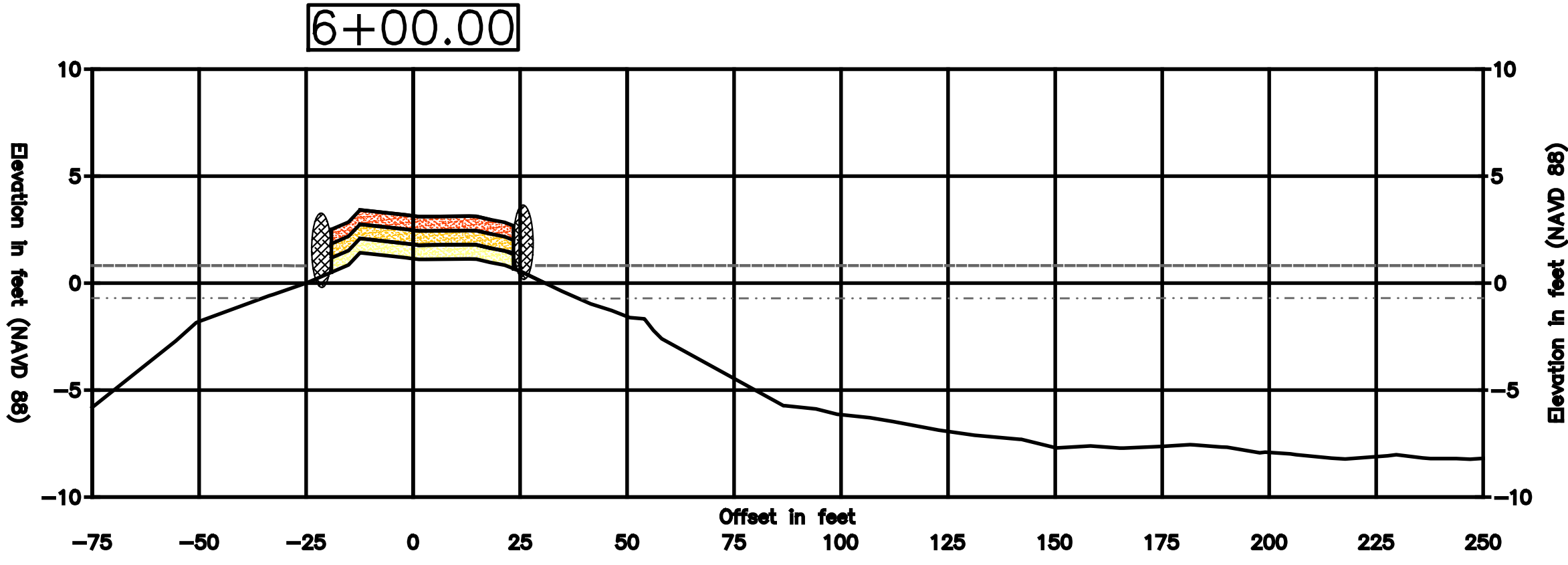
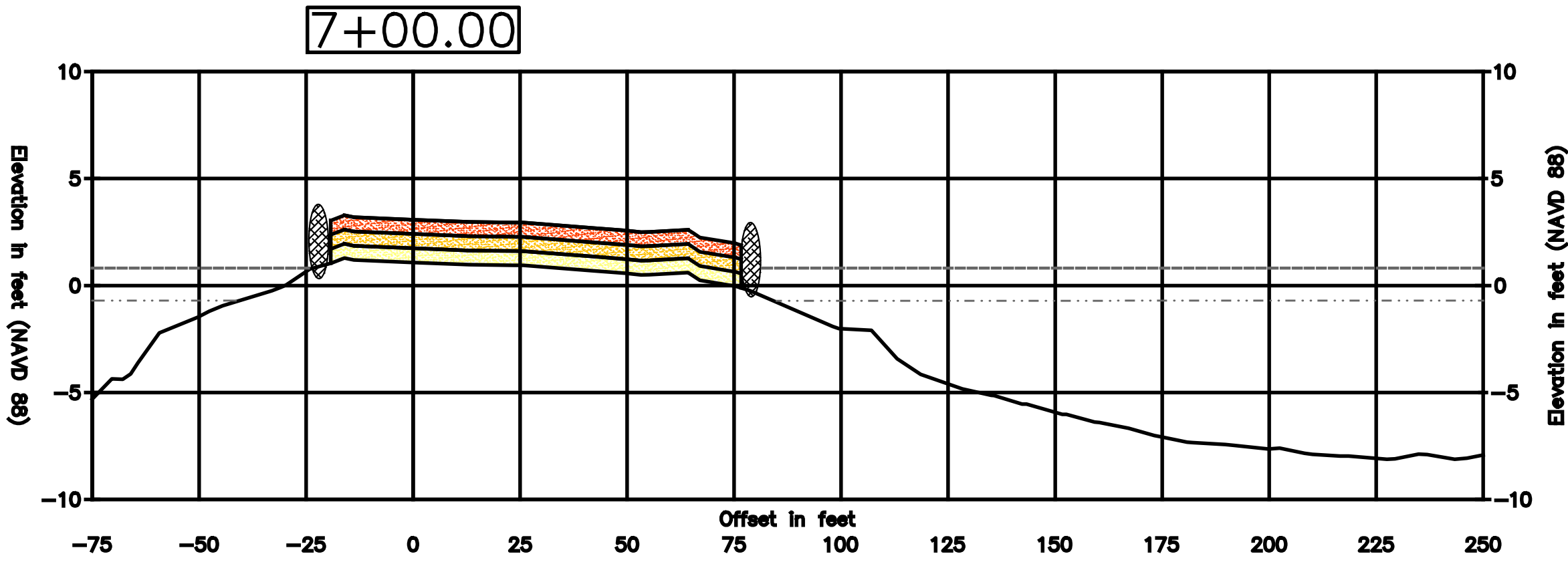
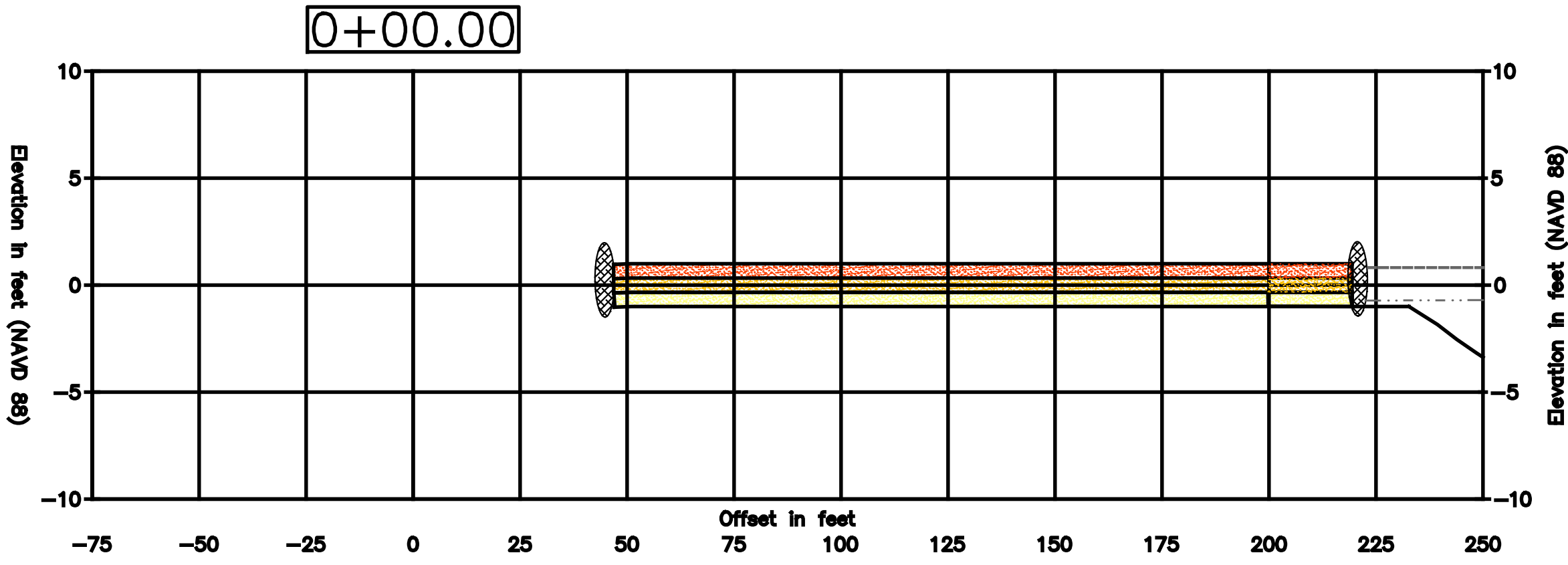
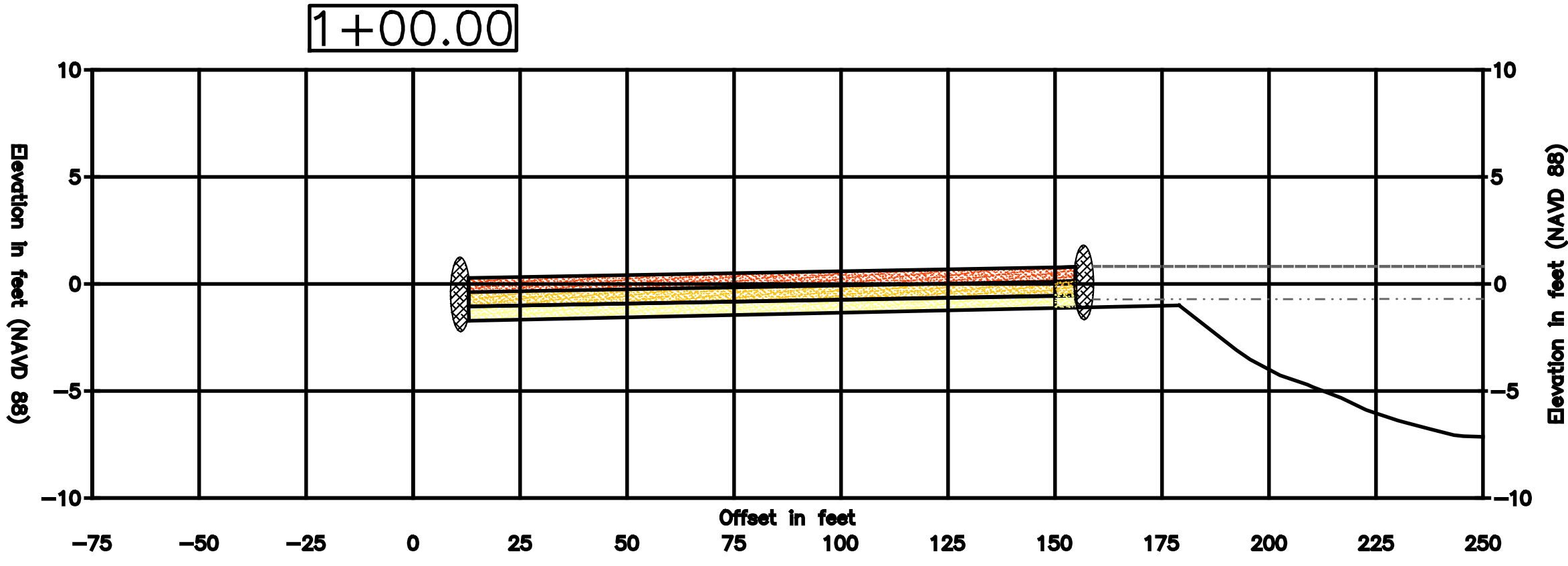
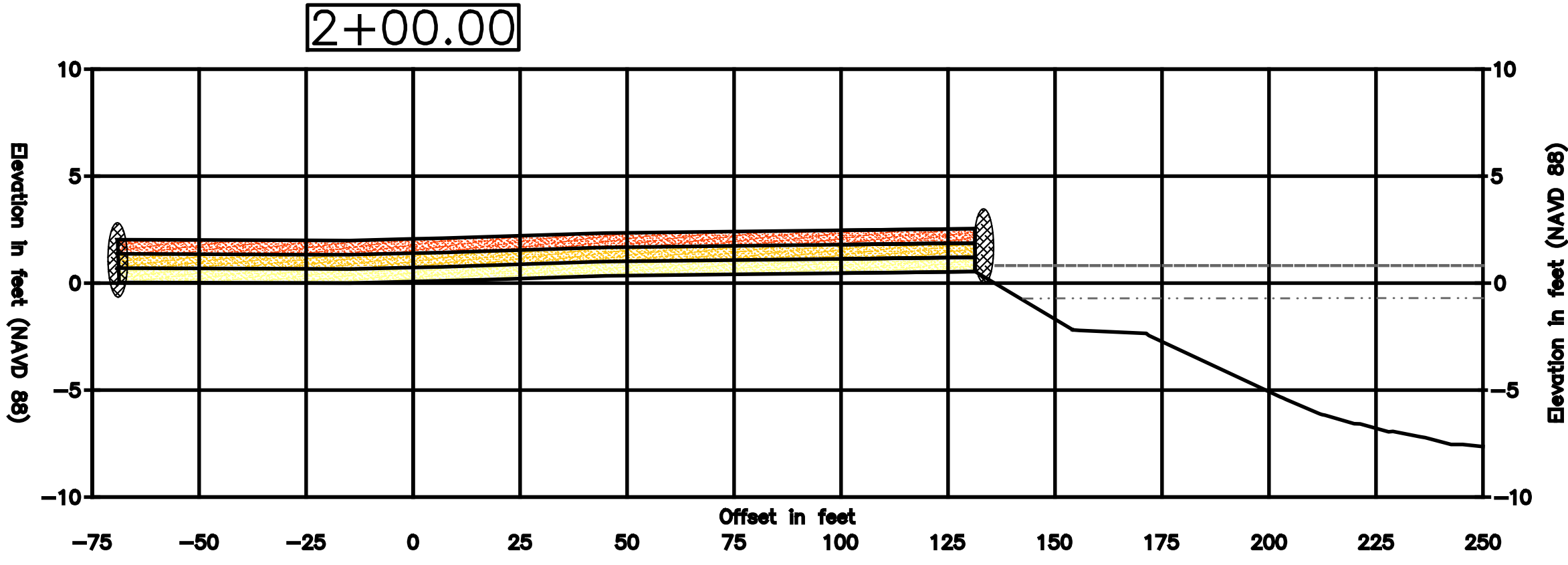
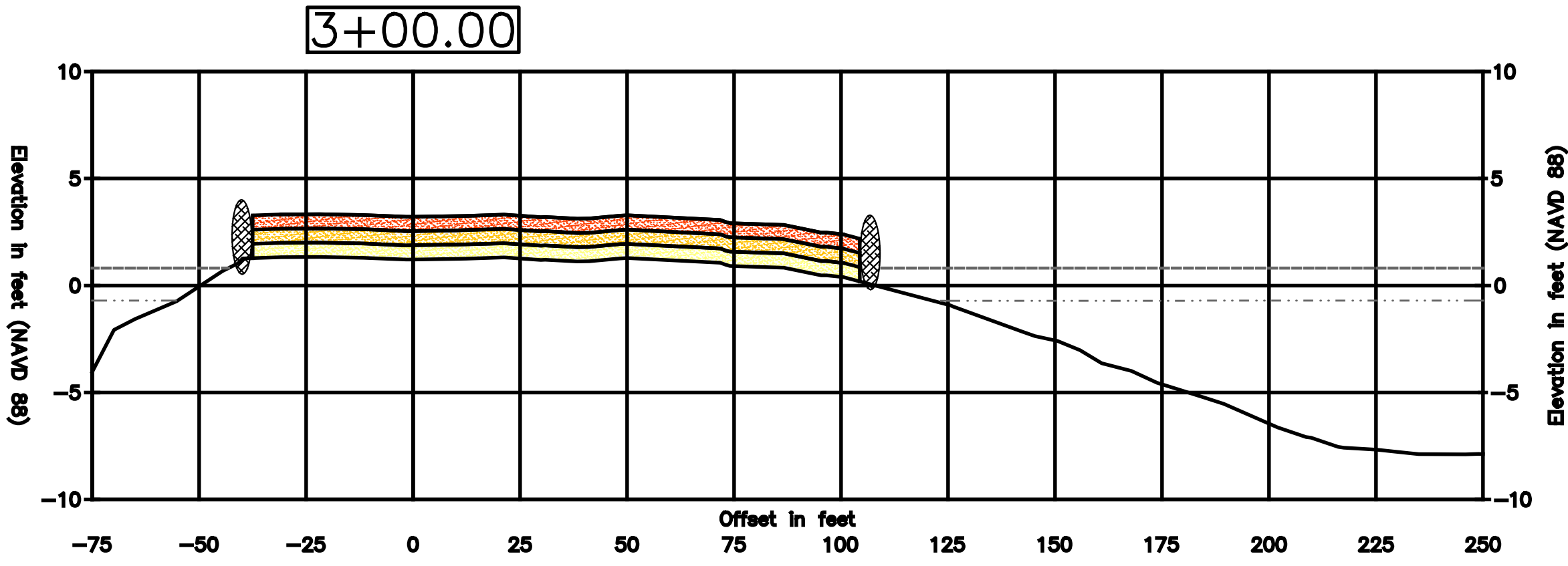
SHEET NUMBER

C-17

SHEET 19 OF 40

FILE: P:\01 CAD\19\xxxx\D201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Tapia_BDF.dwg PLOT DATE: 4/12/2022 7:20:26 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
- 8 INCH SPOIL AREA
 - 16 INCH SPOIL AREA
 - 24 INCH SPOIL AREA



VERTICAL SCALE 1"=6'
HORIZONTAL SCALE 1"=30'

----- MHHW = 0.82 FT (NAVD 88)
----- MLW = -0.7 FT (NAVD 88)



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MOBILE COUNTY, ALABAMA

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DATE DESCRIPTION

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IN CHARGE BDF
38926

PROJECT NUMBER D190585.00

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PLANS

SHEET TITLE

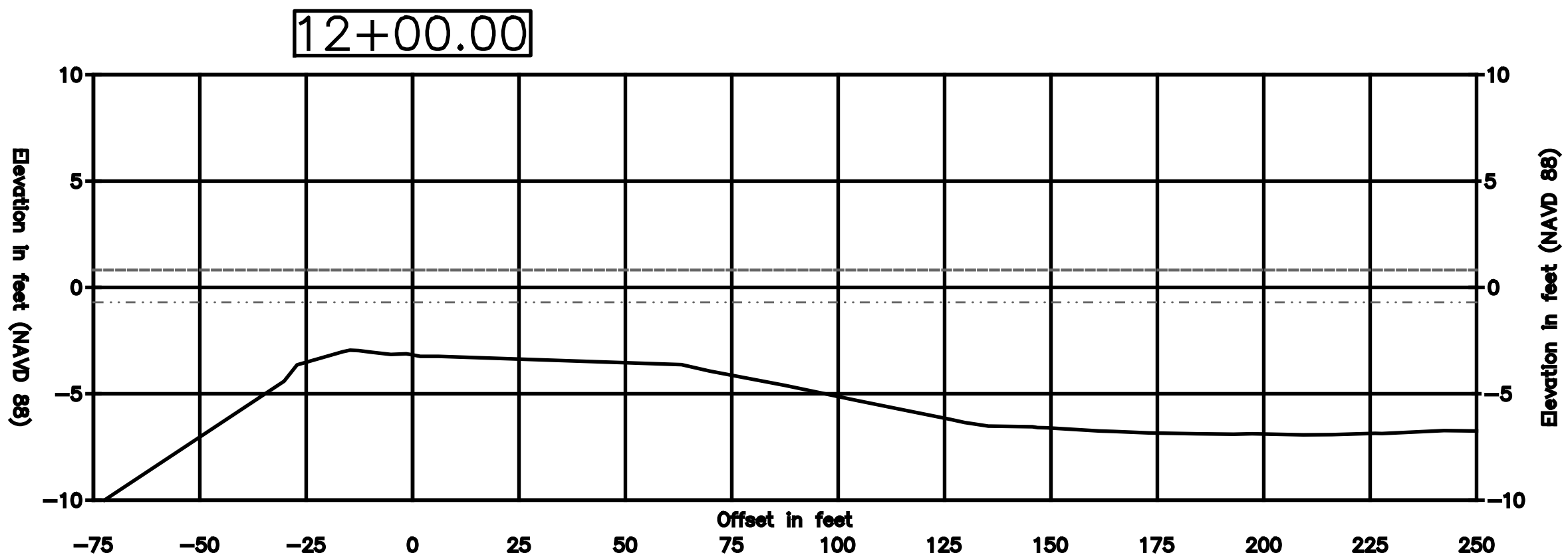
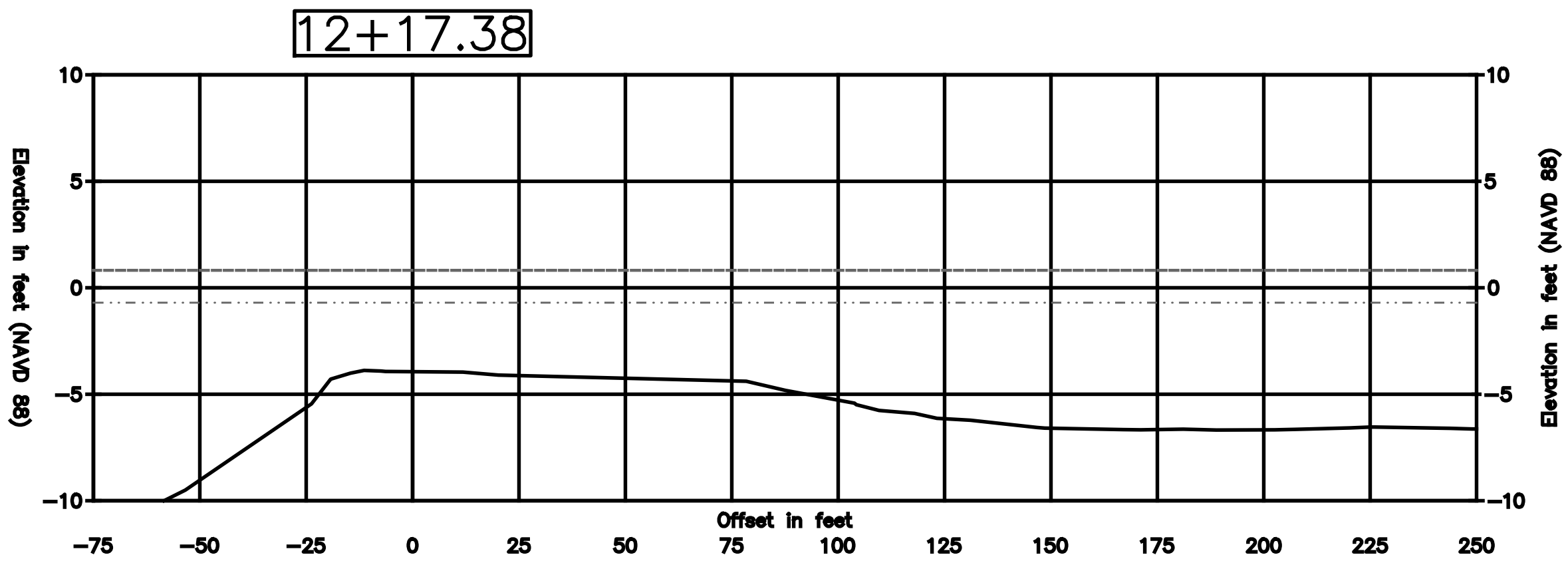
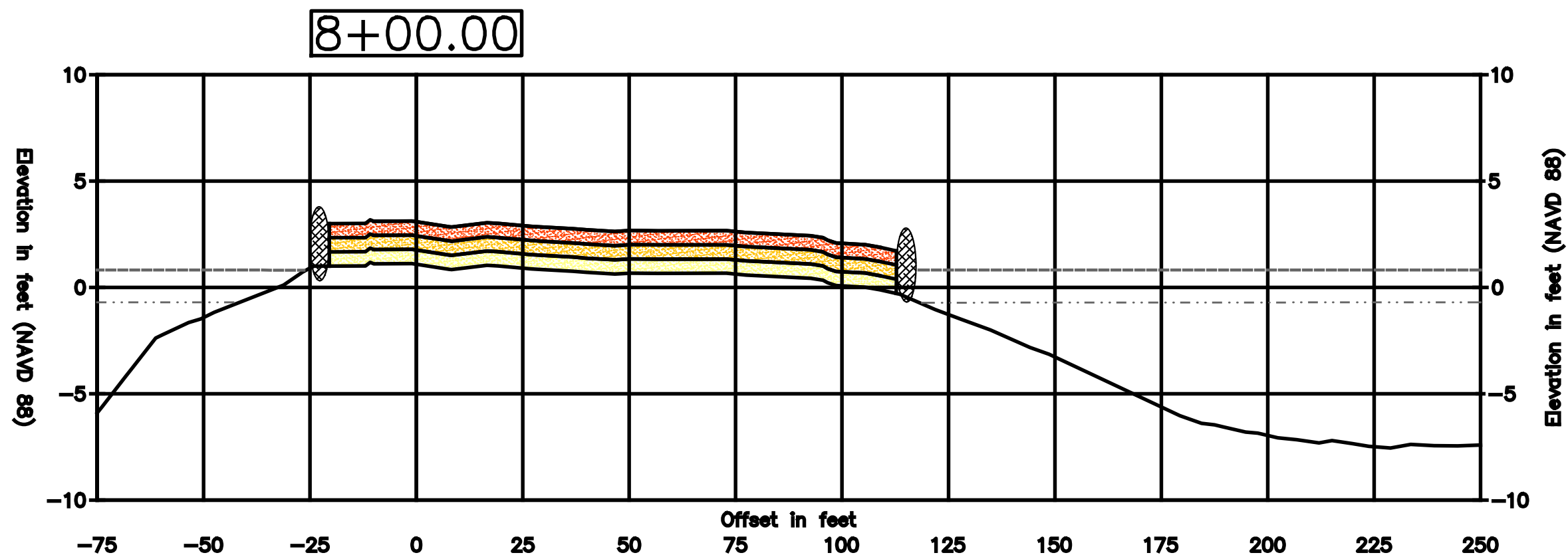
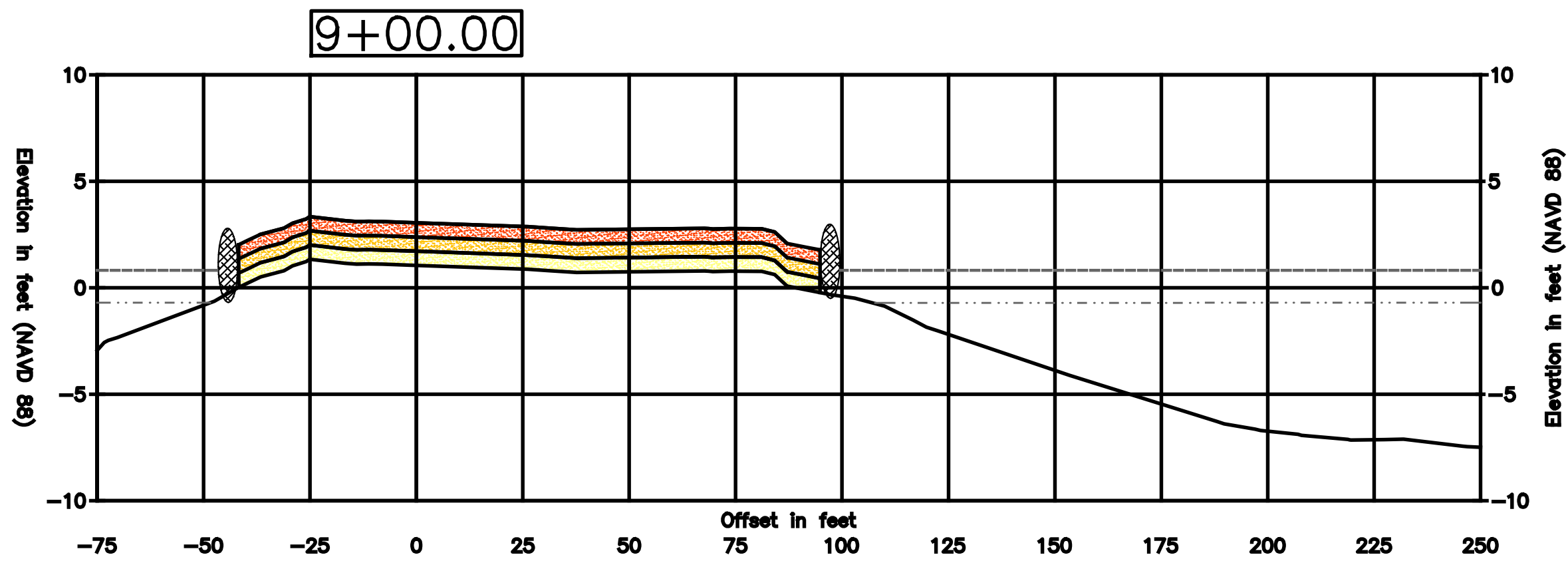
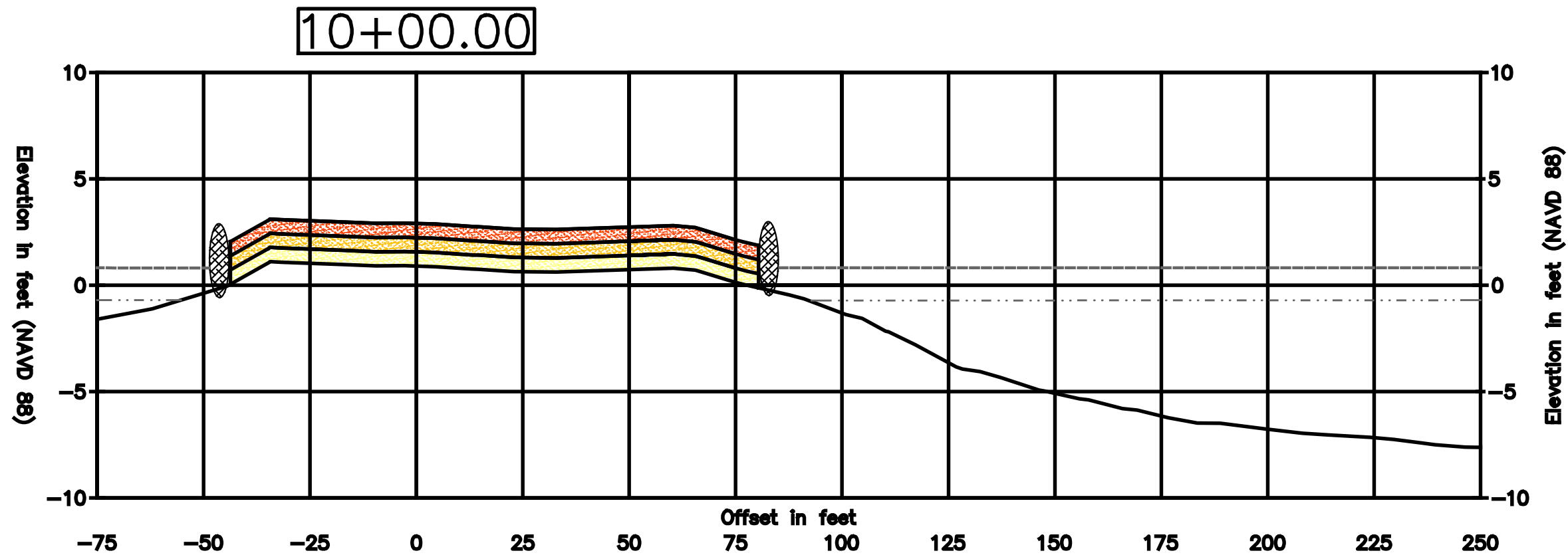
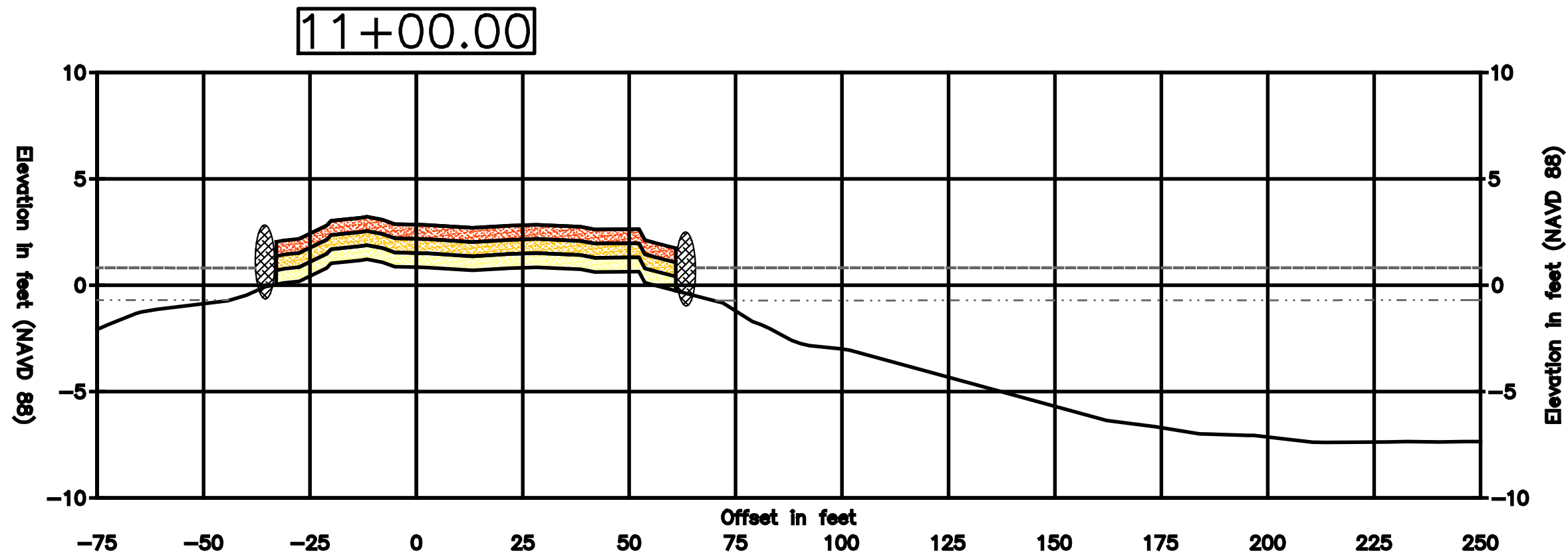
TAPIA CROSS
SECTION (1)

SHEET NUMBER

C-18

SHEET 20 OF 40

FILE: P:\01 CAD\19xxxx\12011900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Tapia_BDF.dwg PLOT DATE: 4/12/2022 7:20:31 PM PLOTTED BY: BRYAN FLYNN



LEGEND:

- 8 INCH SPOIL AREA
- 16 INCH SPOIL AREA
- 24 INCH SPOIL AREA

MHHW = 0.82 FT (NAVD 88)

MLW = -0.7 FT (NAVD 88)

VERTICAL SCALE 1"=6'
HORIZONTAL SCALE 1"=30'



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MOBILE COUNTY, ALABAMA

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IN CHARGE	BDF 38926

PROJECT NUMBER D190585.00

ISSUE DATE 04/12/2022

SCALE IS AS SHOWN WHEN
PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

TAPIA CROSS
SECTION (2)

SHEET NUMBER

C-19

SHEET 21 OF 40

FILE: P:\01 CAD\19xxxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Lightcap_BDF.dwg PLOT DATE: 4/12/2022 7:20:48 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

THIN LAYER PLACEMENT

COIR LOGS

TIMBER BREAKWATER

SUBMERGED AQUATIC VEGETATION (SAV)

WETLANDS

MHHW = 0.82 FT (NAVD 88)



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MOBILE COUNTY, ALABAMA

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PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

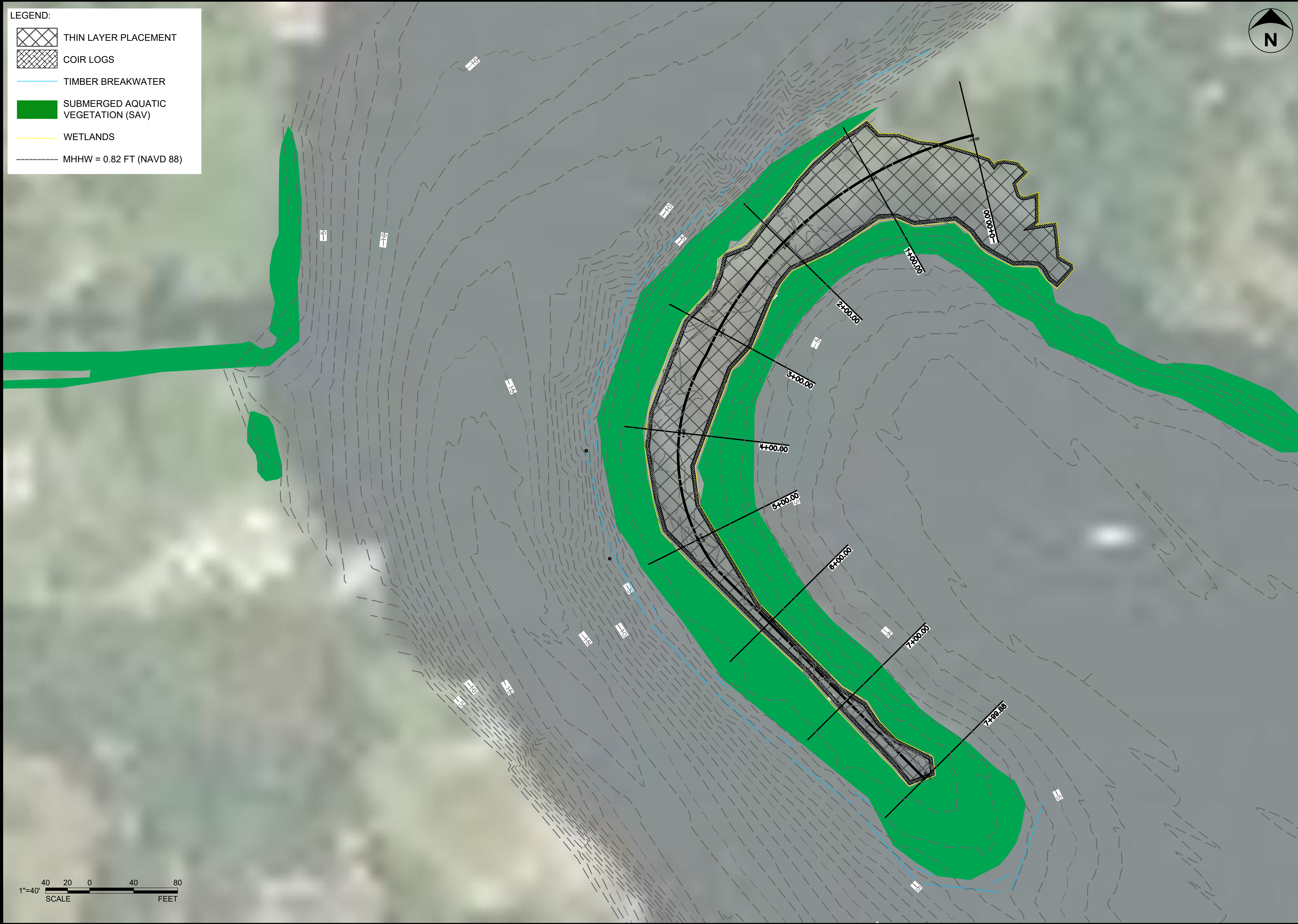
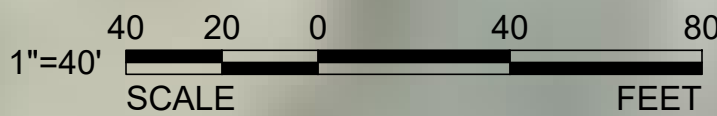
SHEET TITLE

LIGHTCAP
OVERVIEW


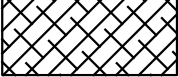



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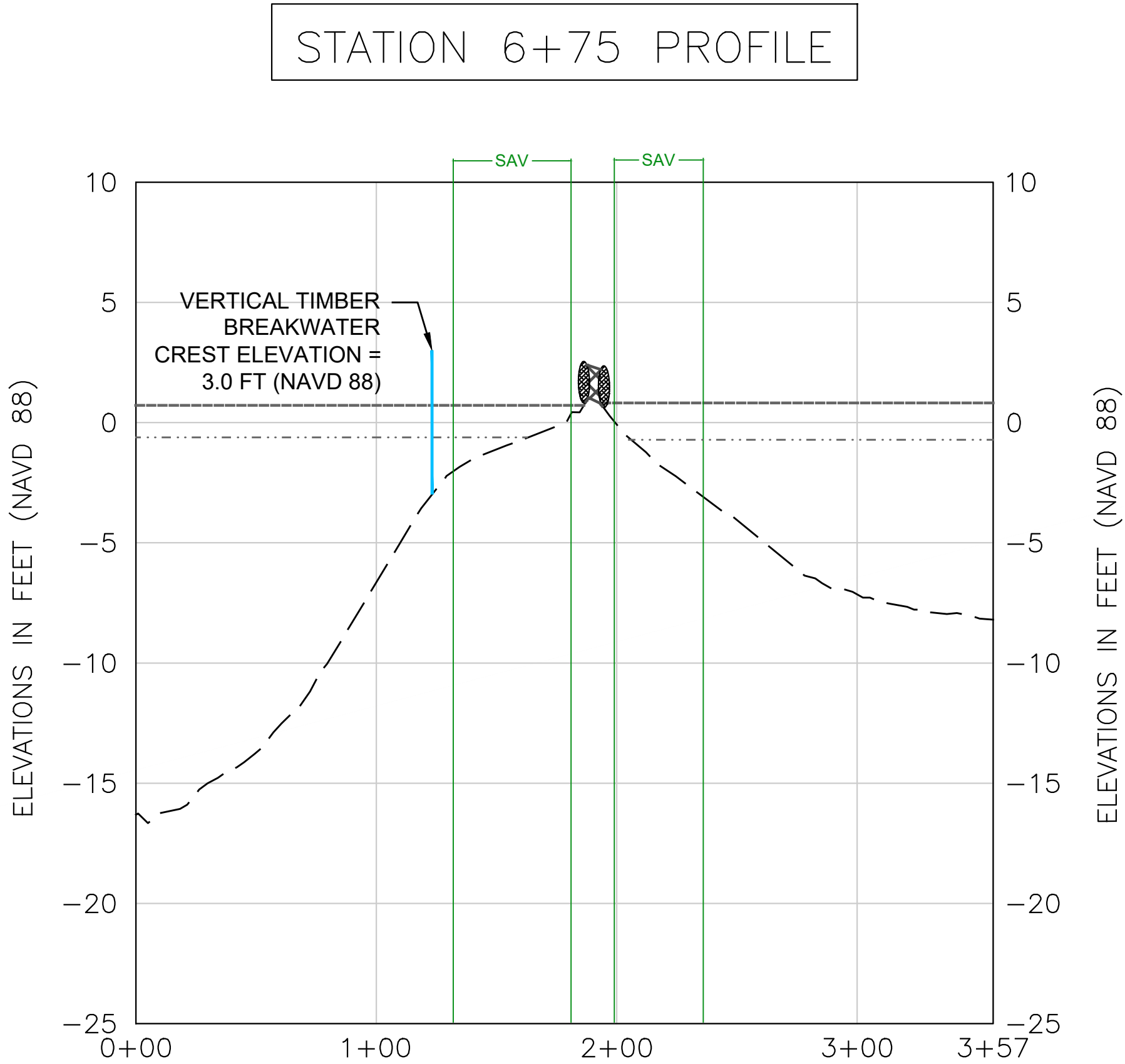
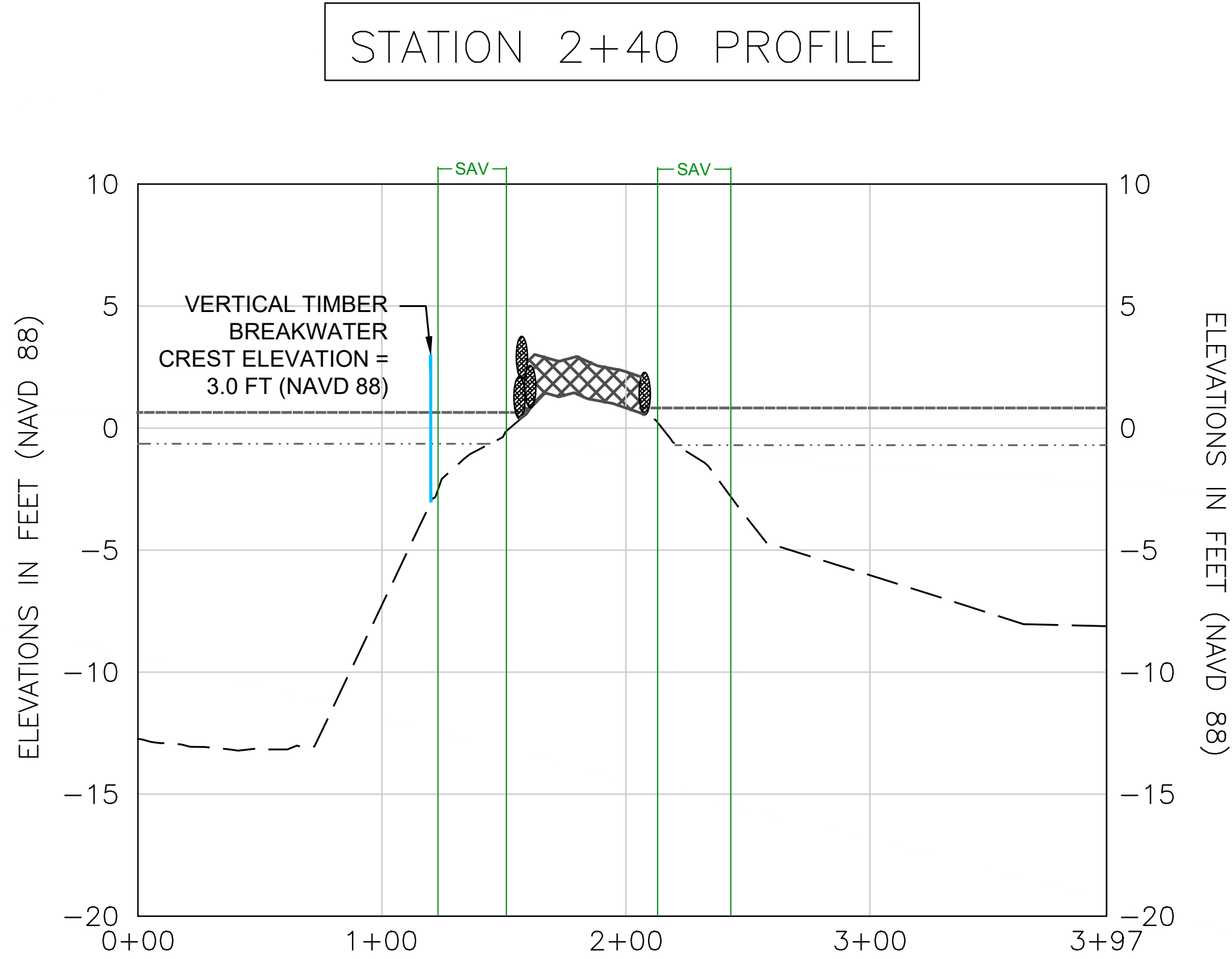
C-20

SHEET 22 OF 40



FILE: P:\01 CAD\19\xxx\1201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Lightcap_BDF.dwg PLOT DATE: 4/12/2022 7:20:51 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
-  THIN LAYER PLACEMENT - (0.69 AC, 2,348 CY)
 -  COIR LOGS - (9,000 LF)
 -  TIMBER BREAKWATER - (1,100 LF)
 -  MHHW = 0.82 FT (NAVD 88)
 -  MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=5'
HORIZONTAL SCALE 1"=50'



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SCALE IS AS SHOWN WHEN
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PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE






LIGHTCAP TYPICAL
SECTION

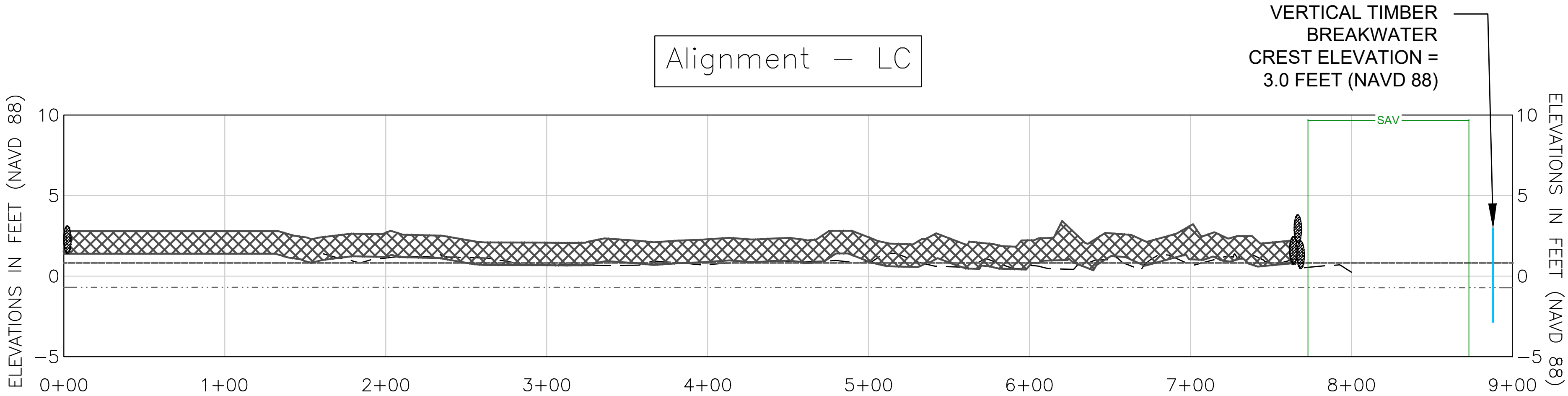
SHEET NUMBER

C-21

SHEET 23 OF 40

FILE: P:\01 CAD\19\xxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Lightcap_BDF.dwg PLOT DATE: 4/12/2022 7:20:58 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
-  THIN LAYER PLACEMENT - (0.69 AC, 2,348 CY)
 -  COIR LOGS - (9,000 LF)
 -  TIMBER BREAKWATER - (1,100 LF)
 -  MHHW = 0.82 FT (NAVD 88)
 -  MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=5'
HORIZONTAL SCALE 1"=50'



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PROJECT NUMBER	D190585.00	
ISSUE DATE	04/12/2022	
SCALE IS AS SHOWN WHEN PLOTTED TO FULL SIZE (22"x34")		

PHASE

60% CONSTRUCTION
PLANS

SHEET TITLE

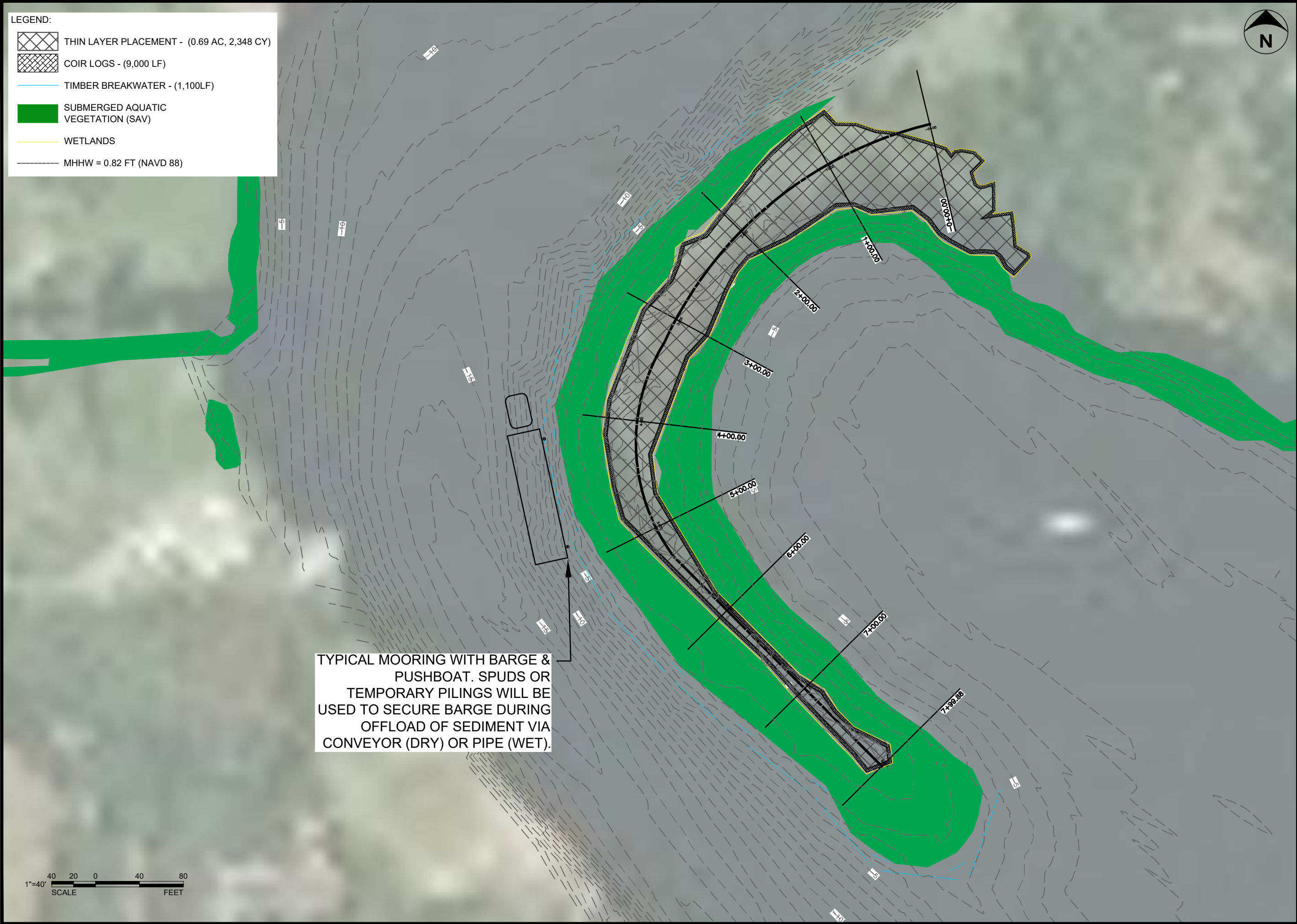
LIGHTCAP PROFILE

SHEET NUMBER

C-22

SHEET 24 OF 40

FILE: P:\01 CAD\19\xxxx\201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permitt_Lightcap_BDF.dwg PLOT DATE: 4/12/2022 7:21:02 PM PLOTTED BY: BRYAN FLYNN



LEGEND:

- THIN LAYER PLACEMENT - (0.69 AC, 2,348 CY)
- COIR LOGS - (9,000 LF)
- TIMBER BREAKWATER - (1,100LF)
- SUBMERGED AQUATIC VEGETATION (SAV)
- WETLANDS
- MHHW = 0.82 FT (NAVD 88)



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SCALE IS AS SHOWN WHEN
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PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

LIGHTCAP BARGE

SHEET NUMBER

C-23

SHEET 25 OF 40

FILE: P:\01 CAD\19xxxx\2021\190585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permitt_Lightcap_BDF.dwg PLOT DATE: 4/12/2022 7:21:07 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

THIN LAYER PLACEMENT - (0.69 AC, 2,348 CY)

COIR LOGS - (9,000 LF)

TIMBER BREAKWATER - (1,100LF)

SUBMERGED AQUATIC VEGETATION (SAV)

PLANTING AREAS (2,993 SQ FT)

WETLANDS

MHHW = 0.82 FT (NAVD 88)

Restoration Area	Zone	Acres	Elevation	Zone %	Scientific Name	Common Name	Size	Spacing	Quantity	Comment
Lightcap	Low Marsh	0.027	-0.5 to +1	40%	<i>Juncus roemerianus</i>	black needle rush	4"	3' o.c.	133	
	High Marsh	0.027	+1 to +2	40%	<i>Spartina patens</i>	marsh hay cordgrass	4"	3' o.c.	133	
		0.007	+1 to +2	10%	<i>Taxodium distichum</i>	bald cypress	15 GAL	n/a	5	TREE



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PHASE
60% CONSTRUCTION
PLANS

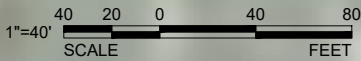
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LIGHTCAP PLANTING
PLAN

SHEET NUMBER

C-24

SHEET 26 OF 40



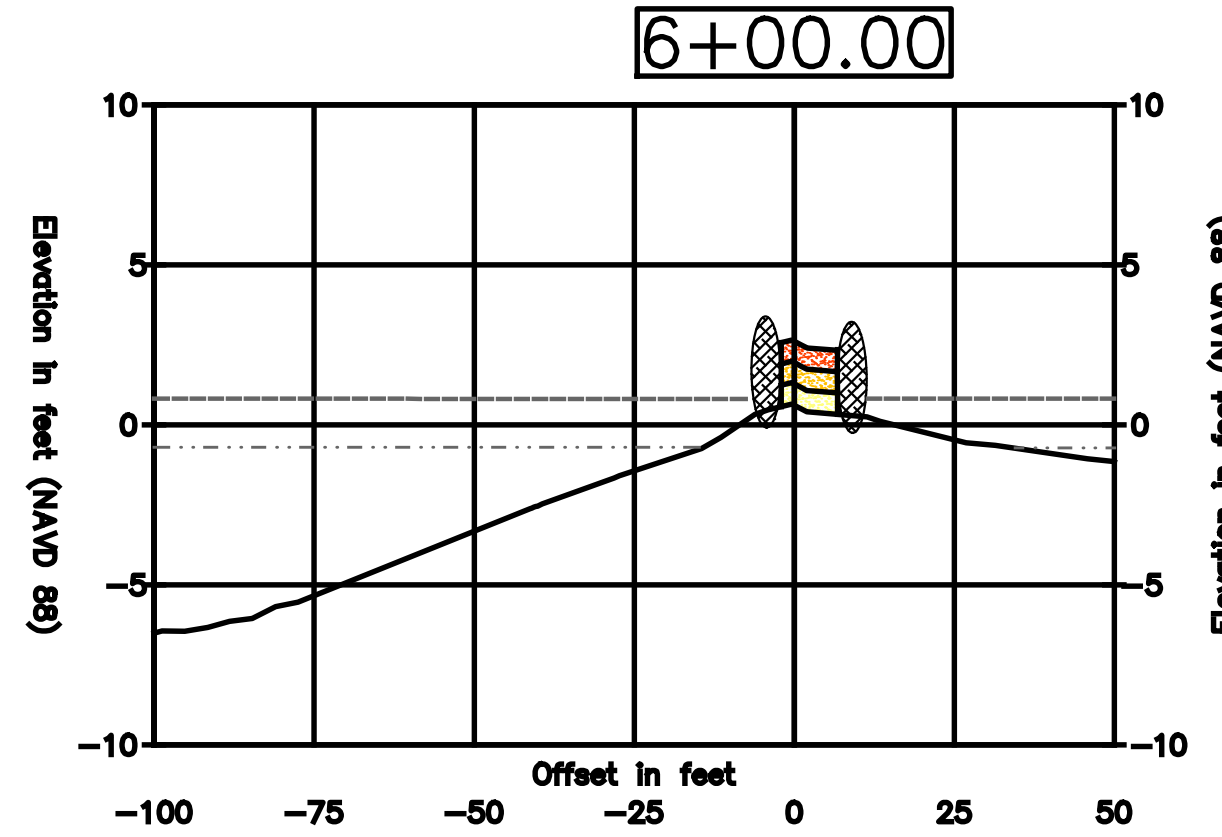
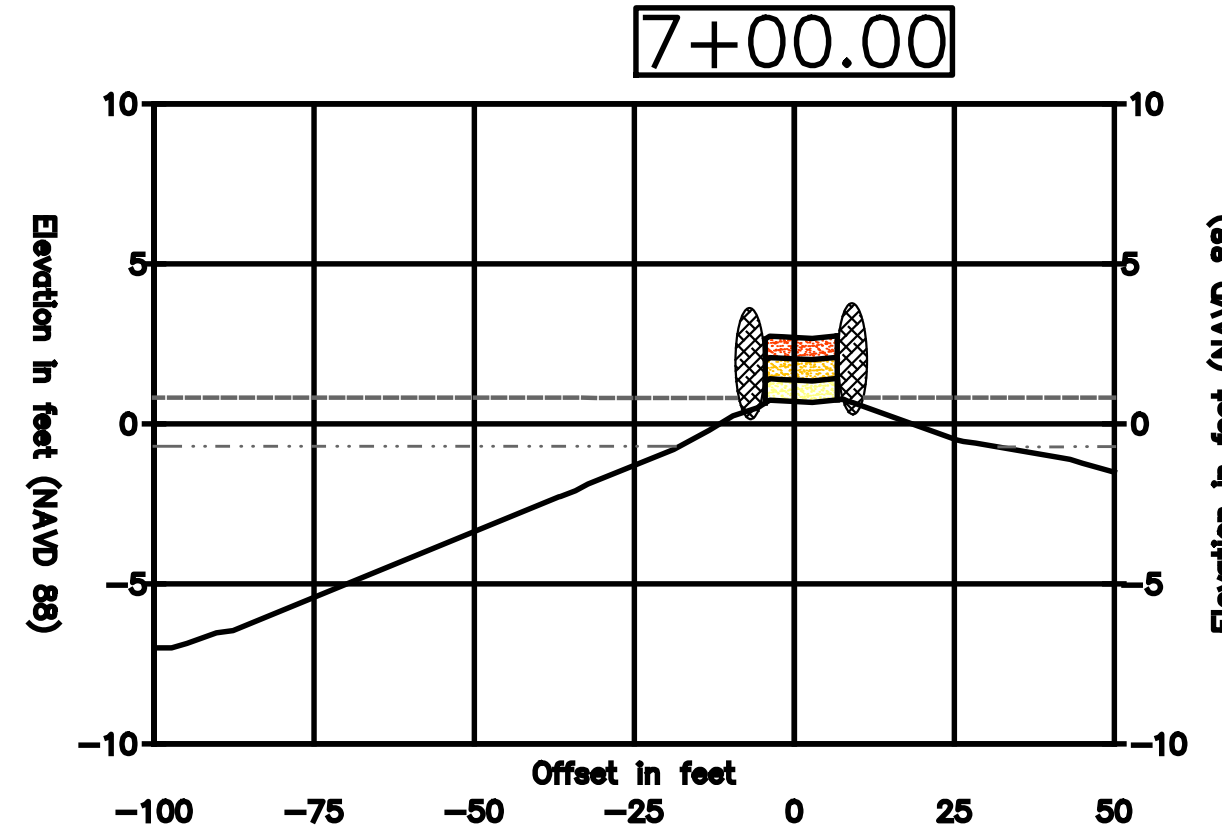
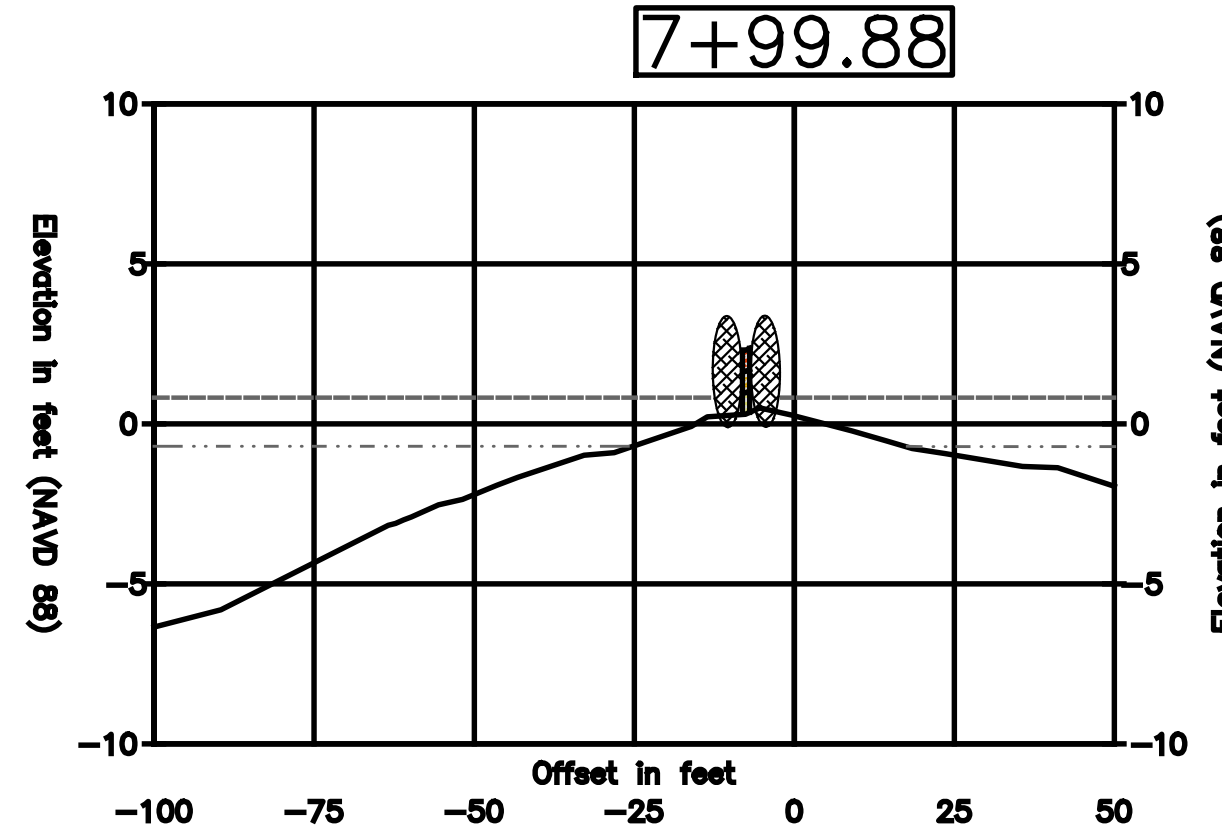
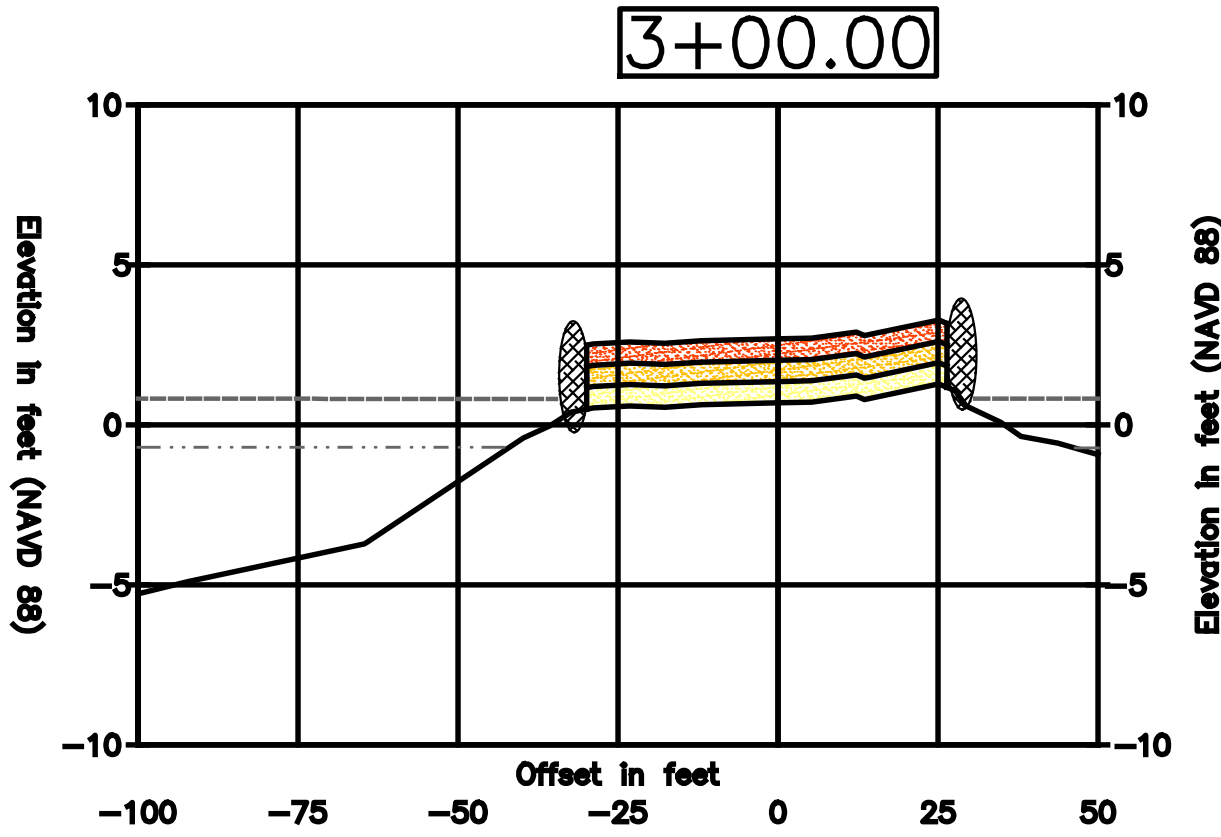
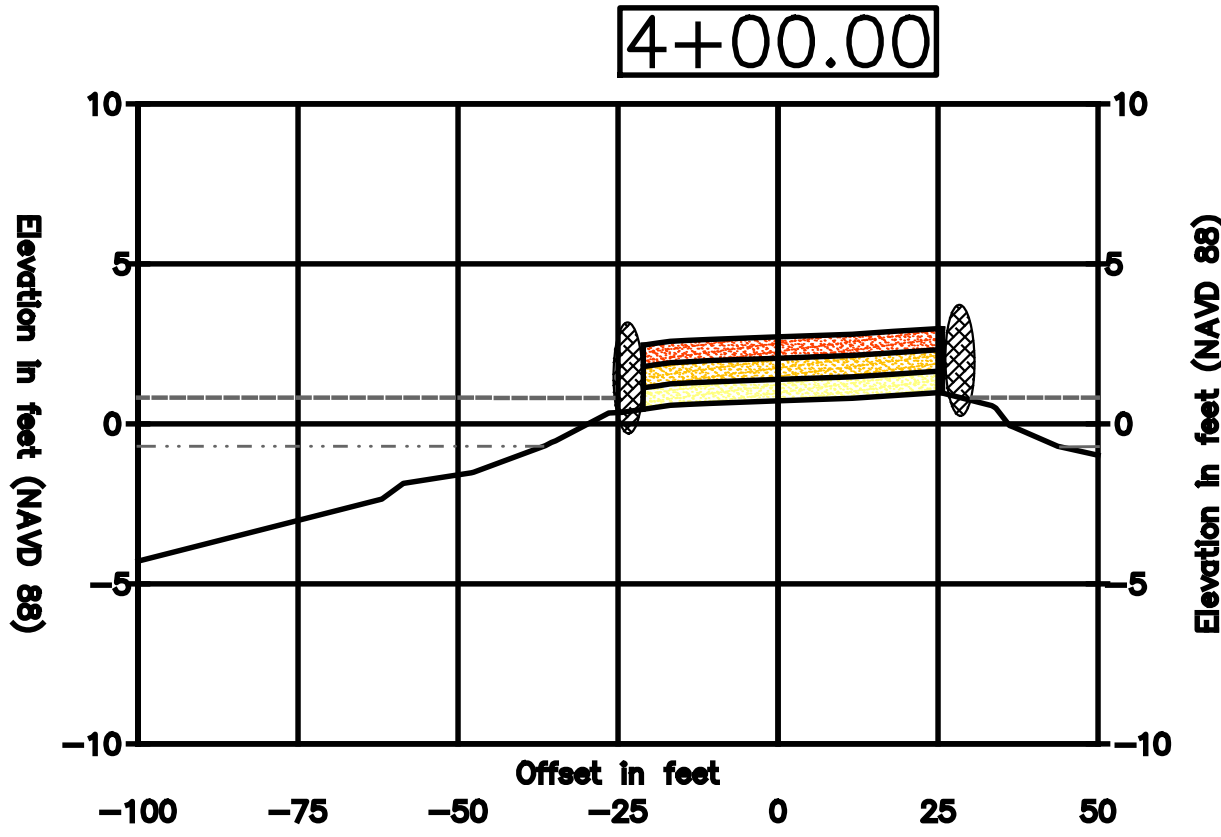
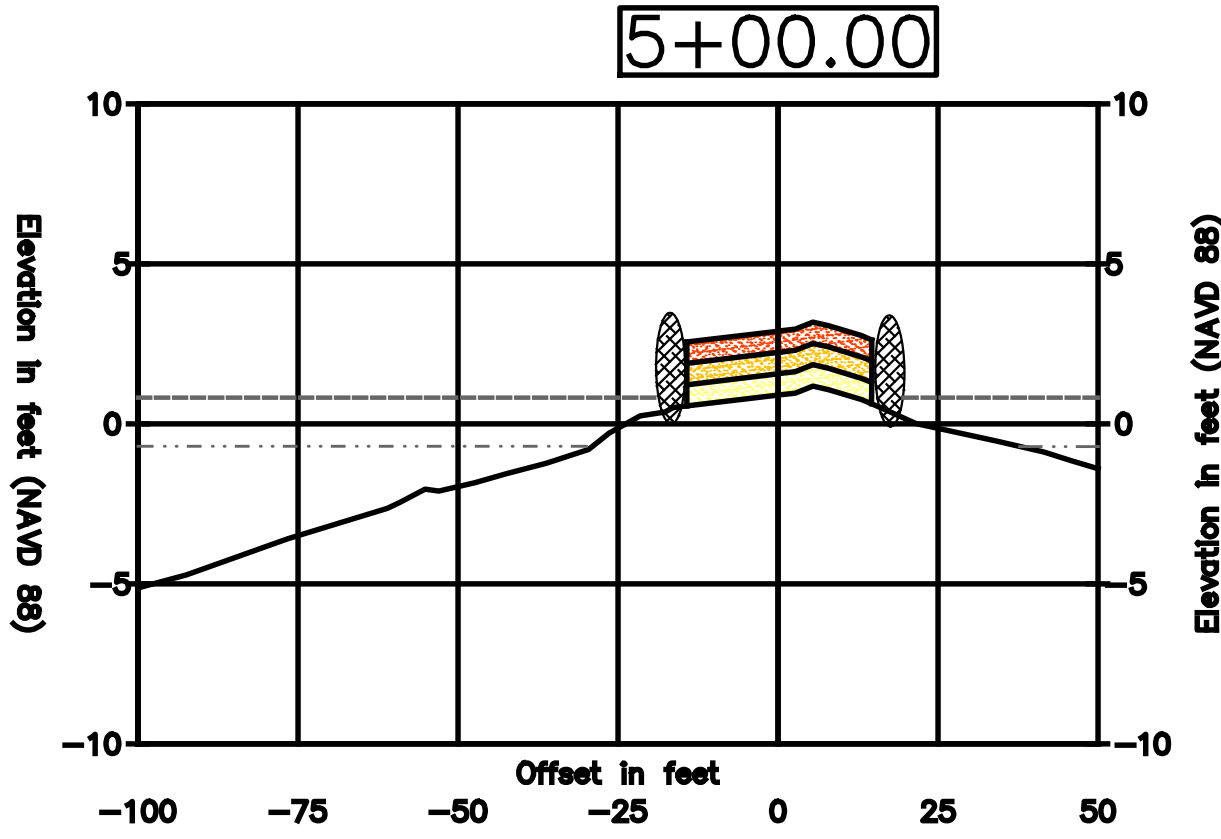
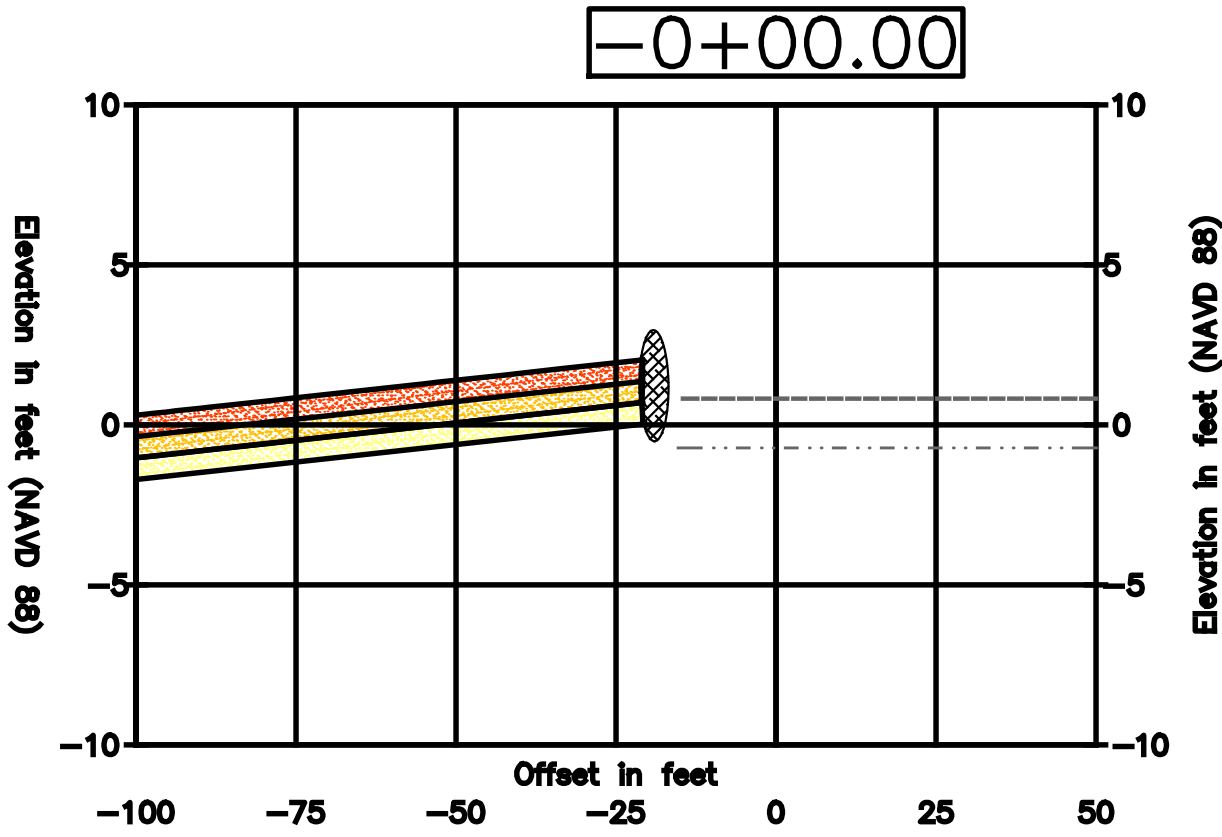
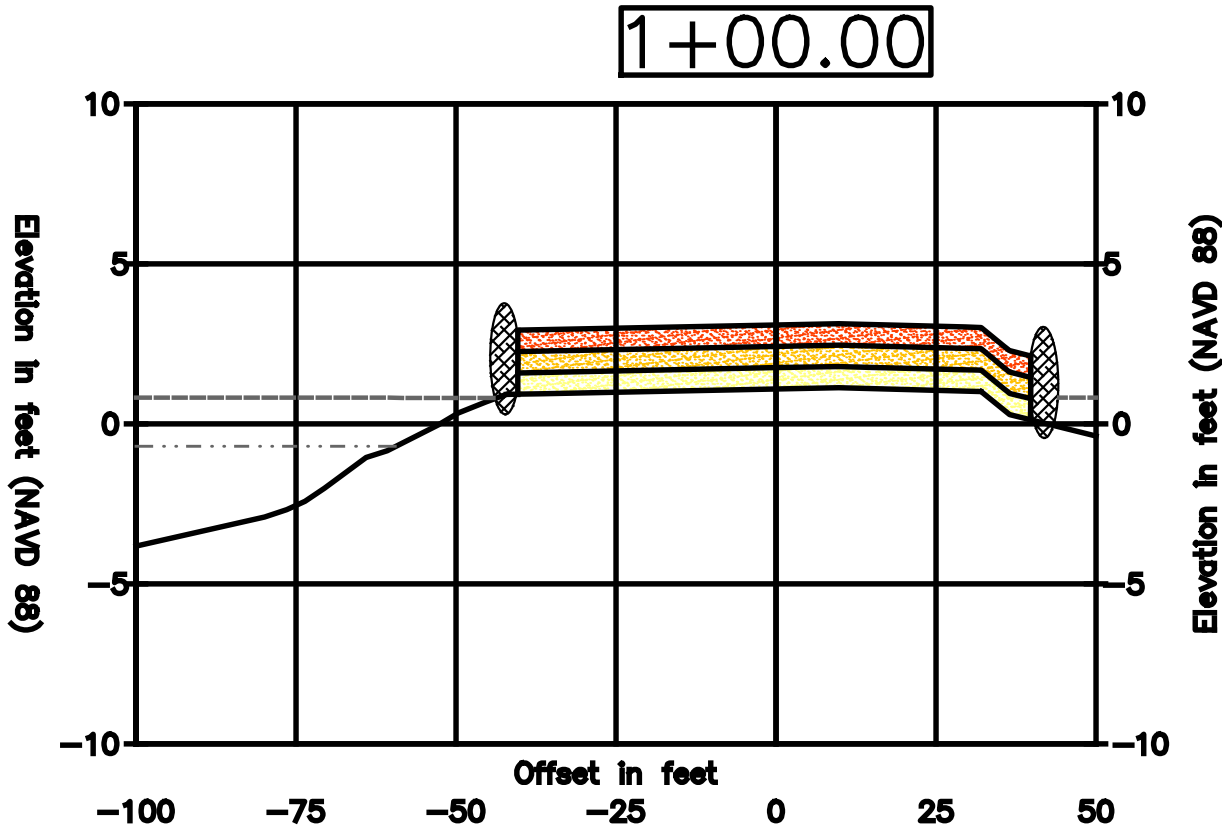
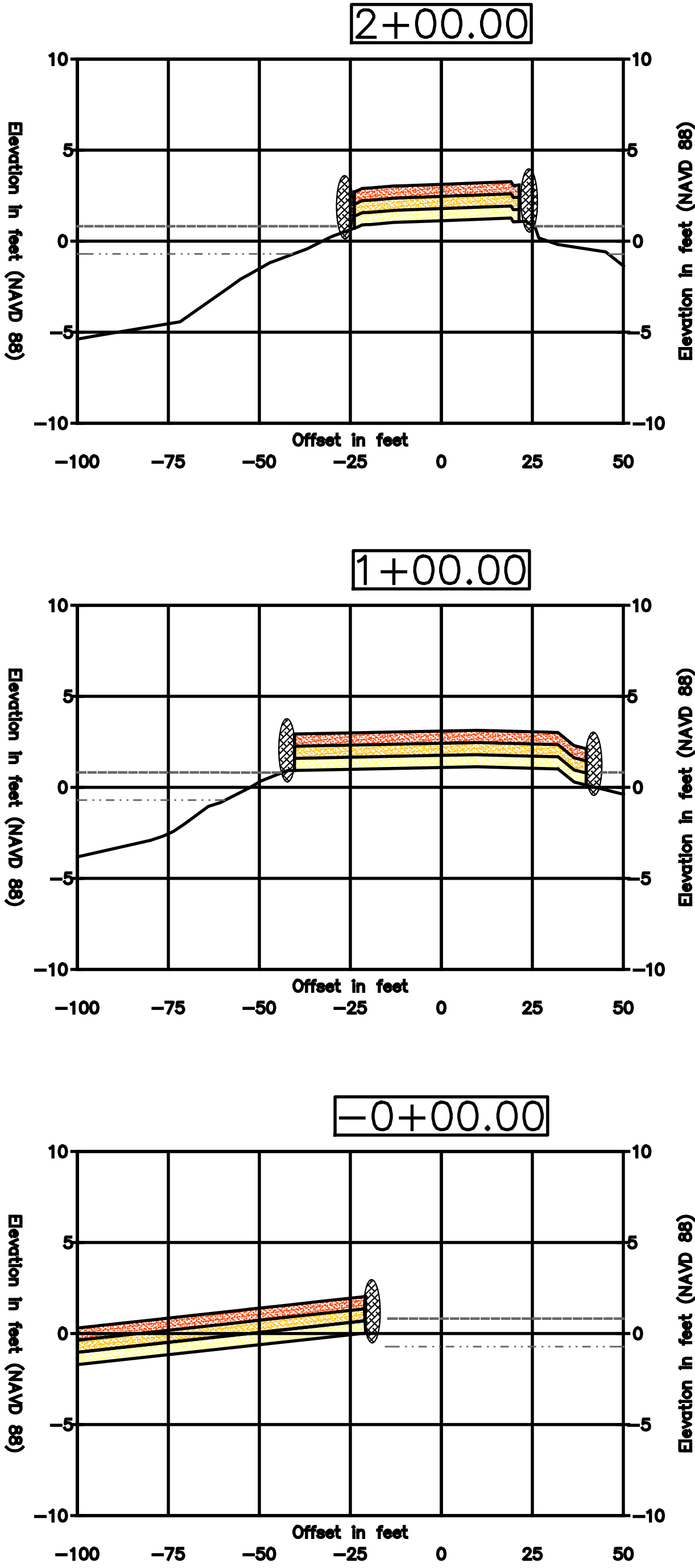
FILE: P:\01 CAD\19\xxxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permitt_Lightcap_BDF.dwg PLOT DATE: 4/12/2022 7:21:11 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

8 INCH SPOIL AREA

16 INCH SPOIL AREA

24 INCH SPOIL AREA



VERTICAL SCALE 1"=6'
HORIZONTAL SCALE 1"=30'

----- MHHW = 0.82 FT (NAVD 88)
----- MLW = -0.7 FT (NAVD 88)



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PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

LIGHTCAP CROSS
SECTION

SHEET NUMBER

C-25

SHEET 27 OF 40

FILE: P:\01 CAD\19\xxxx\2021\900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_PerezPoint_BDF.dwg PLOT DATE: 4/12/2022 7:21:26 PM PLOTTED BY: BRYAN FLYNN



LEGEND:

- THIN LAYER PLACEMENT
- COIR LOGS
- TIMBER BREAKWATER
- SUBMERGED AQUATIC VEGETATION (SAV)
- WETLANDS
- MHHW = 0.82 FT (NAVD 88)



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PHASE
**60% CONSTRUCTION
PLANS**

SHEET TITLE






**PEREZ POINT
OVERVIEW**

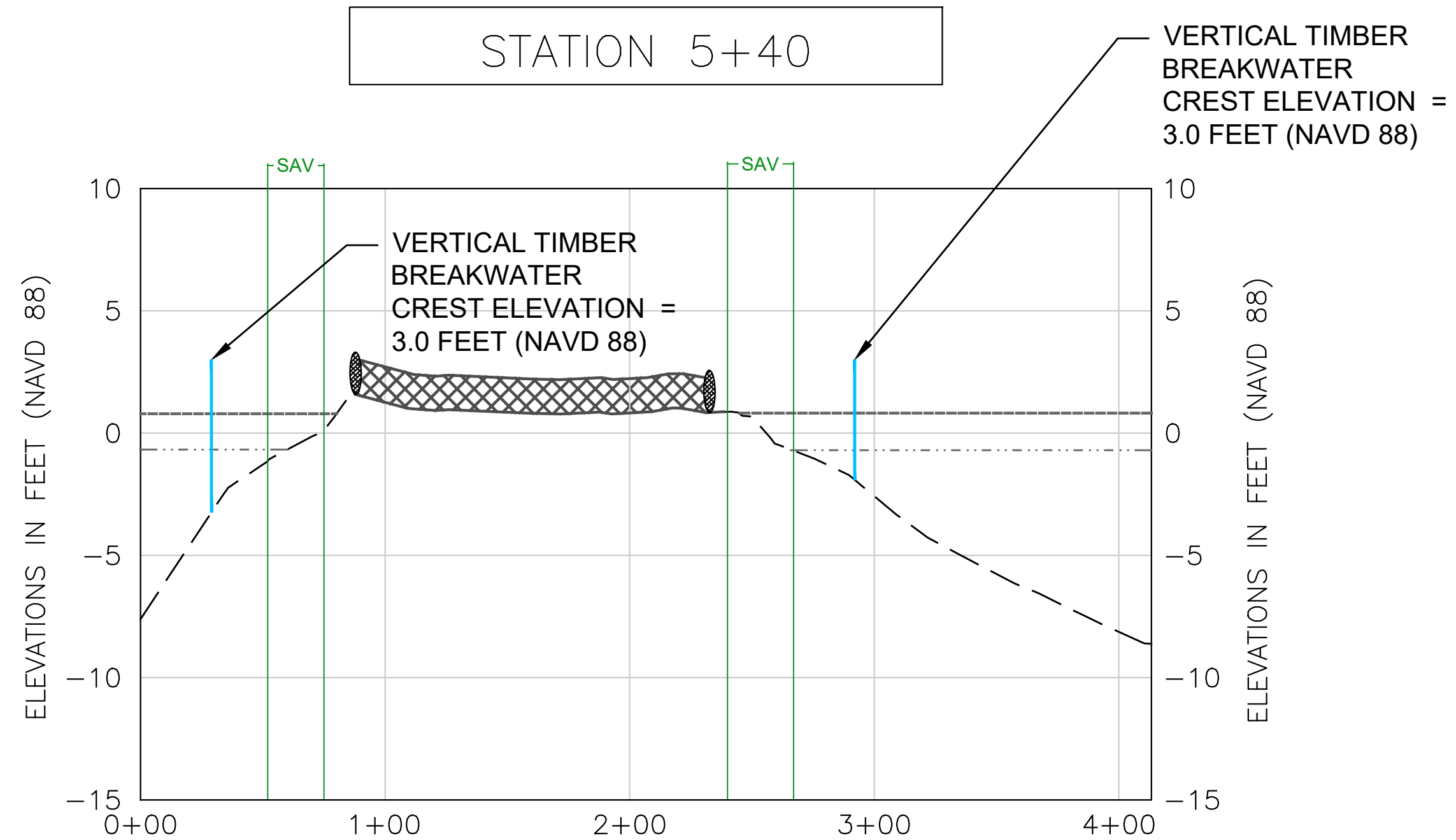
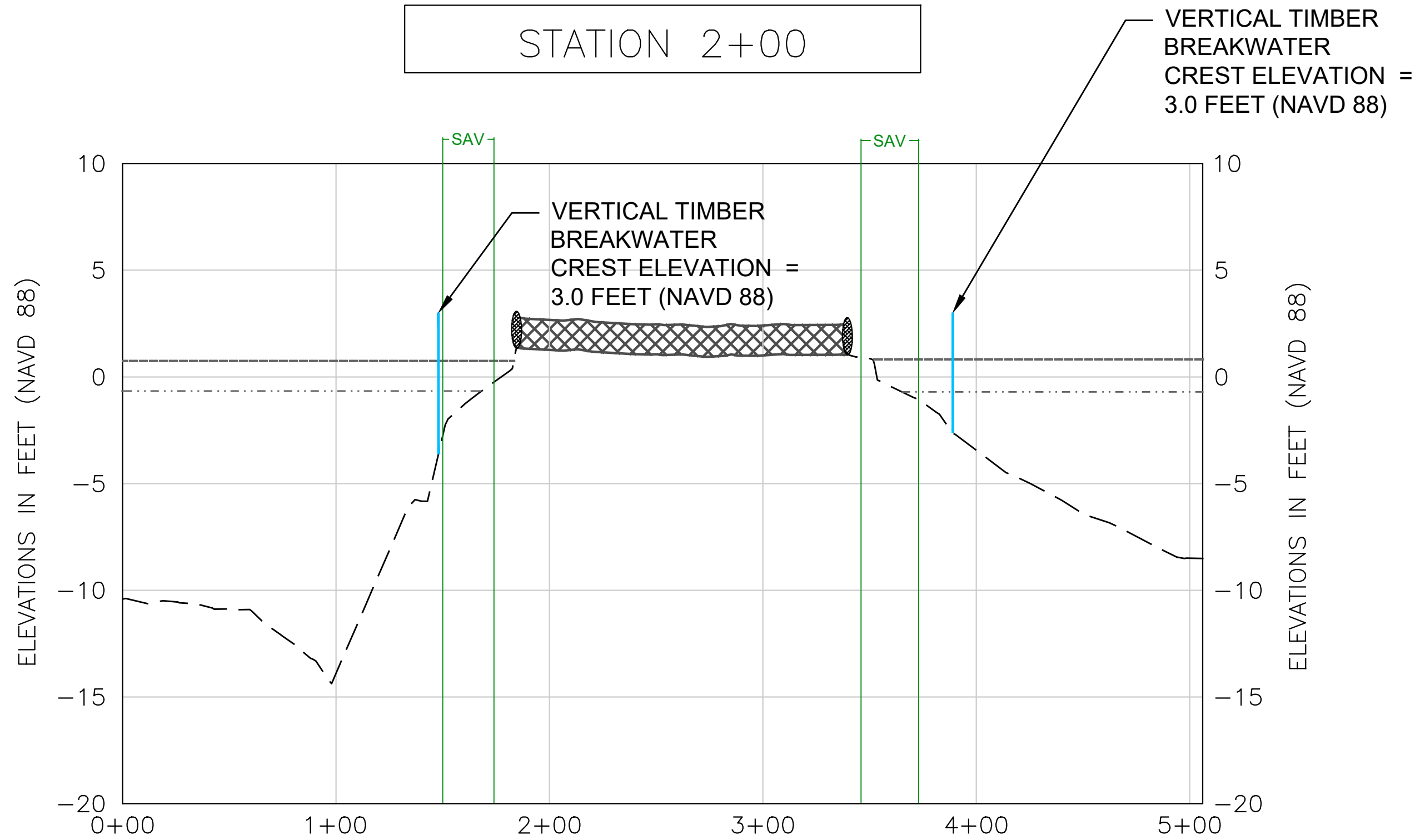
SHEET NUMBER

C-26

SHEET 28 OF 40

FILE: P:\01 CAD\19\xxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_PerezPoint_BDF.dwg PLOT DATE: 4/12/2022 7:21:31 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
-  THIN LAYER PLACEMENT - (2.27 AC, 7,690 CY)
 -  COIR LOGS - (8,460 LF)
 -  TIMBER BREAKWATER - (1,400 LF)
 -  MHHW = 0.82 FT (NAVD 88)
 -  MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=5'
HORIZONTAL SCALE 1"=50'



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PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

PEREZ POINT
TYPICAL SECTION

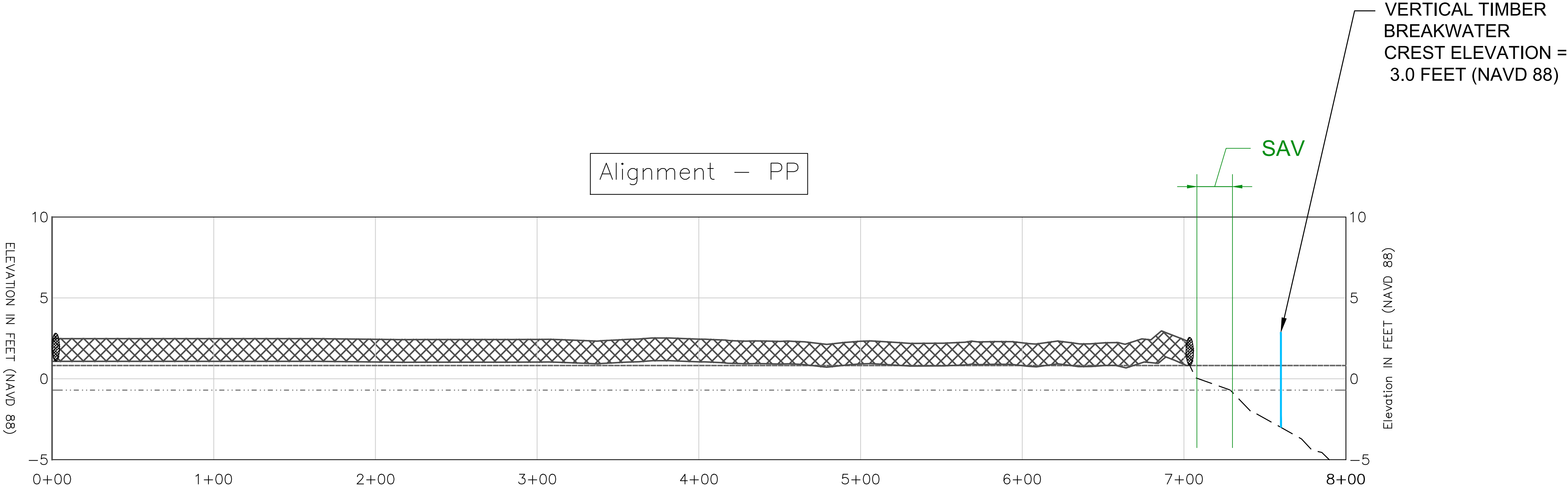
SHEET NUMBER

C-27

SHEET 29 OF 40

FILE: P:\01 CAD\19\xxx\1201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_PerezPoint_BDF.dwg PLOT DATE: 4/12/2022 7:21:36 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
- THIN LAYER PLACEMENT - (2.27 AC, 7,690 CY)
 - COIR LOGS - (8,460 LF)
 - TIMBER BREAKWATER - (1,400 LF)
 - MHHW = 0.82 FT (NAVD 88)
 - MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=4'
HORIZONTAL SCALE 1"=40'



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FOWL RIVER MARSH
RESTORATION &
SHORELINE STABILIZATION
PROJECT
MOBILE COUNTY, ALABAMA

REVISIONS

#	DATE	DESCRIPTION

DESIGNED	BDF/CR
DRAWN	CR
CHECKED	BDF
IN CHARGE	BDF 38926

PROJECT NUMBER D190585.00

ISSUE DATE 04/12/2022

SCALE IS AS SHOWN WHEN
PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

PEREZ POINT
PROFILE

SHEET NUMBER

C-28

SHEET 30 OF 40

FILE: P:\01 CAD\19\xxxx\D201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_PerezPoint_BDF.dwg PLOT DATE: 4/12/2022 7:21:42 PM PLOTTED BY: BRYAN FLYNN



LEGEND:

- THIN LAYER PLACEMENT (2.27 AC, 7,690 CY)
- COIR LOGS - (8,460 LF)
- TIMBER BREAKWATER - (1,400 LF)
- SUBMERGED AQUATIC VEGETATION (SAV)
- WETLANDS
- MHHW = 0.82 FT (NAVD 88)

TYPICAL MOORING WITH BARGE & PUSHBOAT. SPUDS OR TEMPORARY PILINGS WILL BE USED TO SECURE BARGE DURING OFFLOAD OF SEDIMENT VIA CONVEYOR (DRY) OR PIPE (WET).



5404 CYPRESS CENTER DRIVE,
SUITE 125
TAMPA, FL 33609
OFFICE - 813.207.7200
WWW.ESASSOC.COM

STAMP

PRELIMINARY

NOT FOR
CONSTRUCTION

CONSULTANT

PROJECT NAME
FOWL RIVER MARSH
RESTORATION &
SHORELINE STABILIZATION
PROJECT
MOBILE COUNTY, ALABAMA

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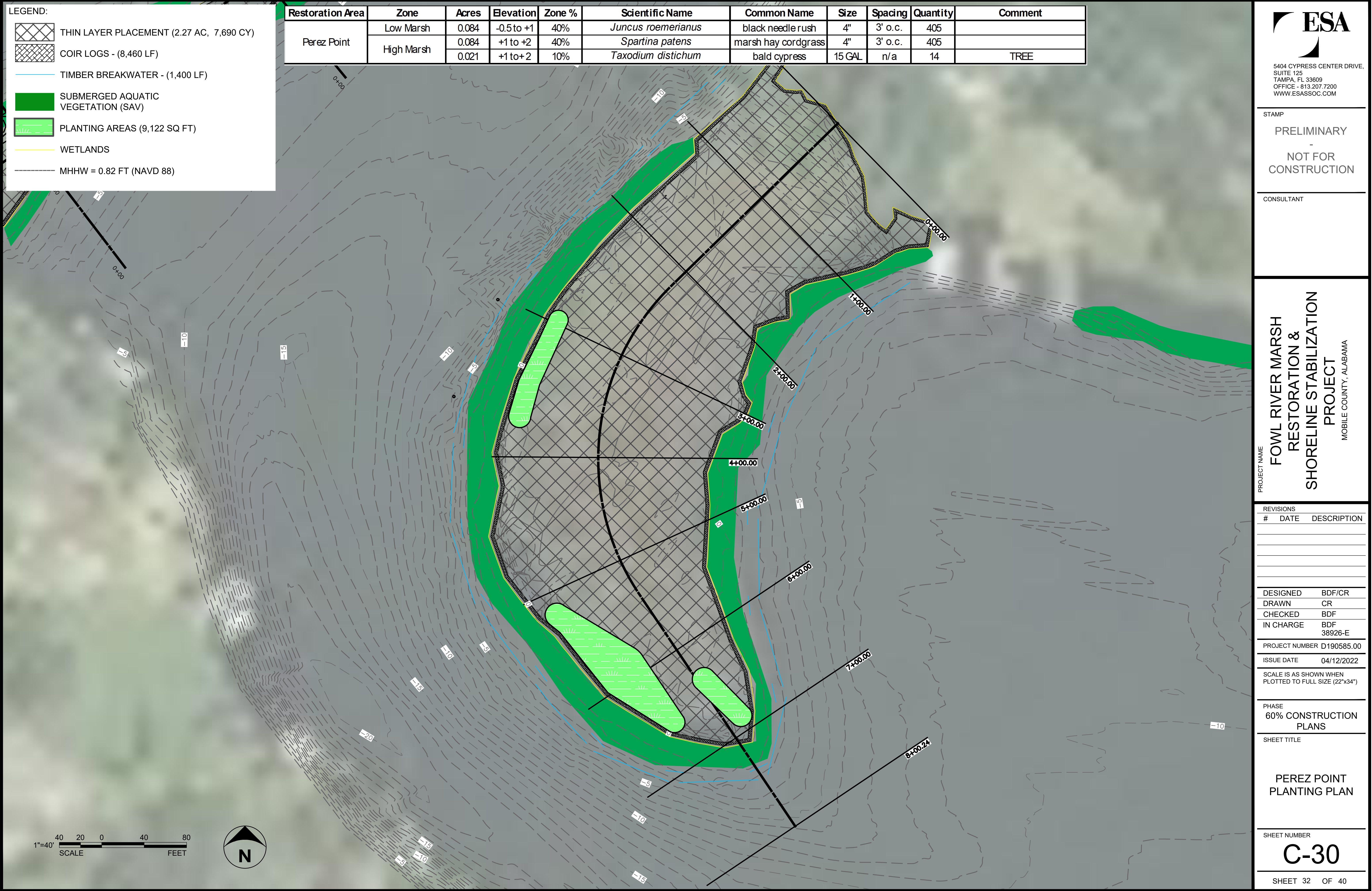
SHEET TITLE

PEREZ POINT
BARGE

SHEET NUMBER

C-29

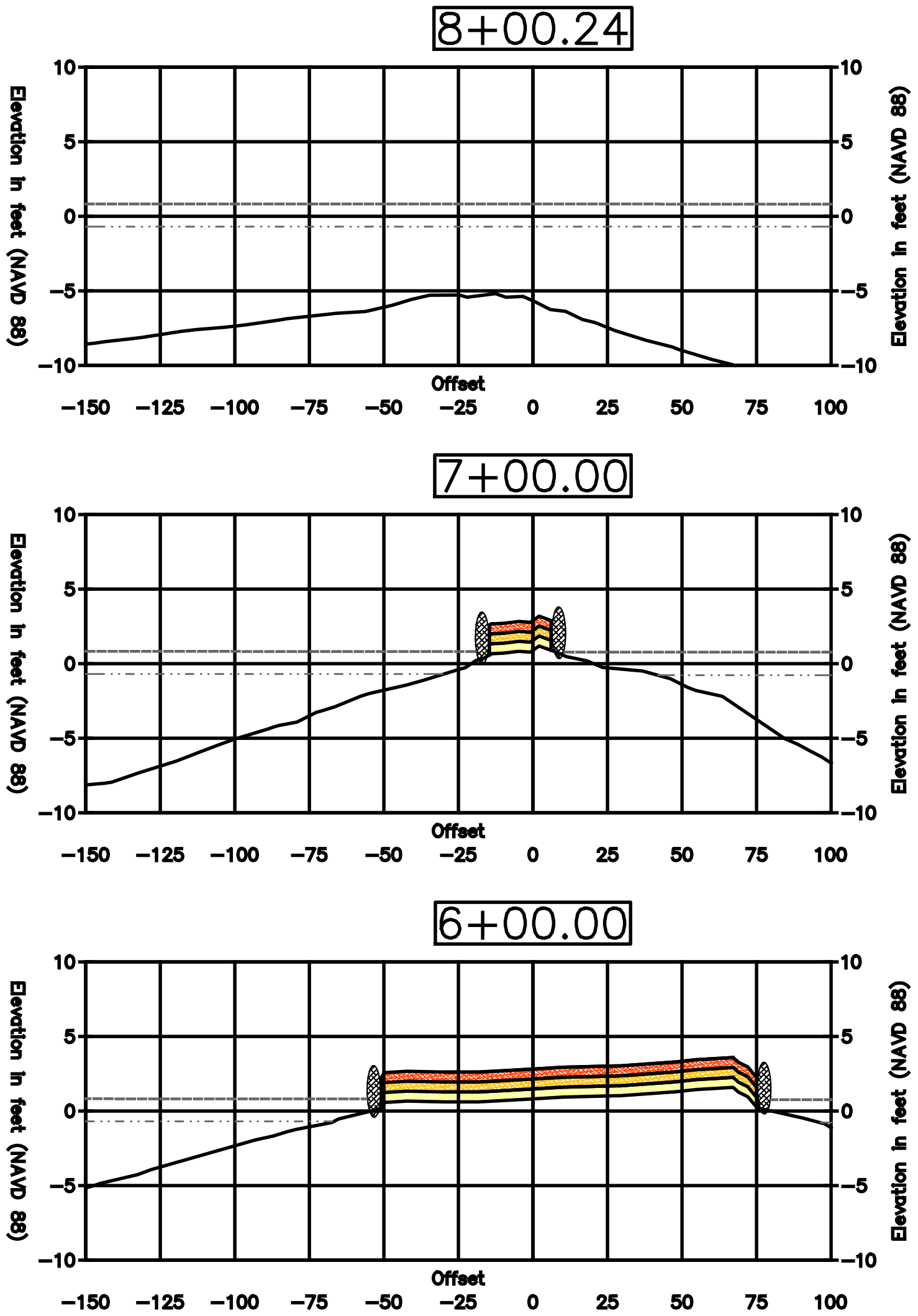
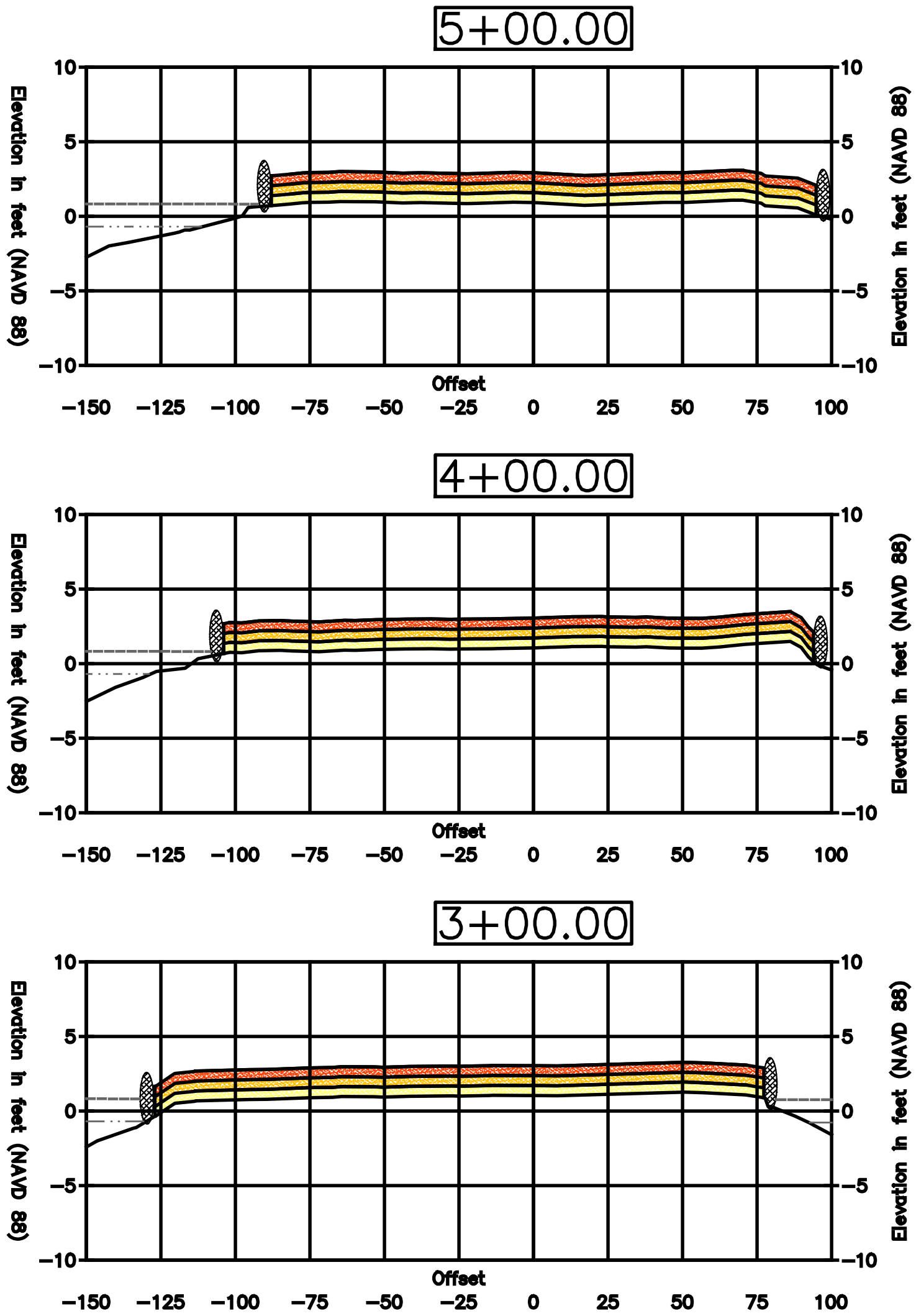
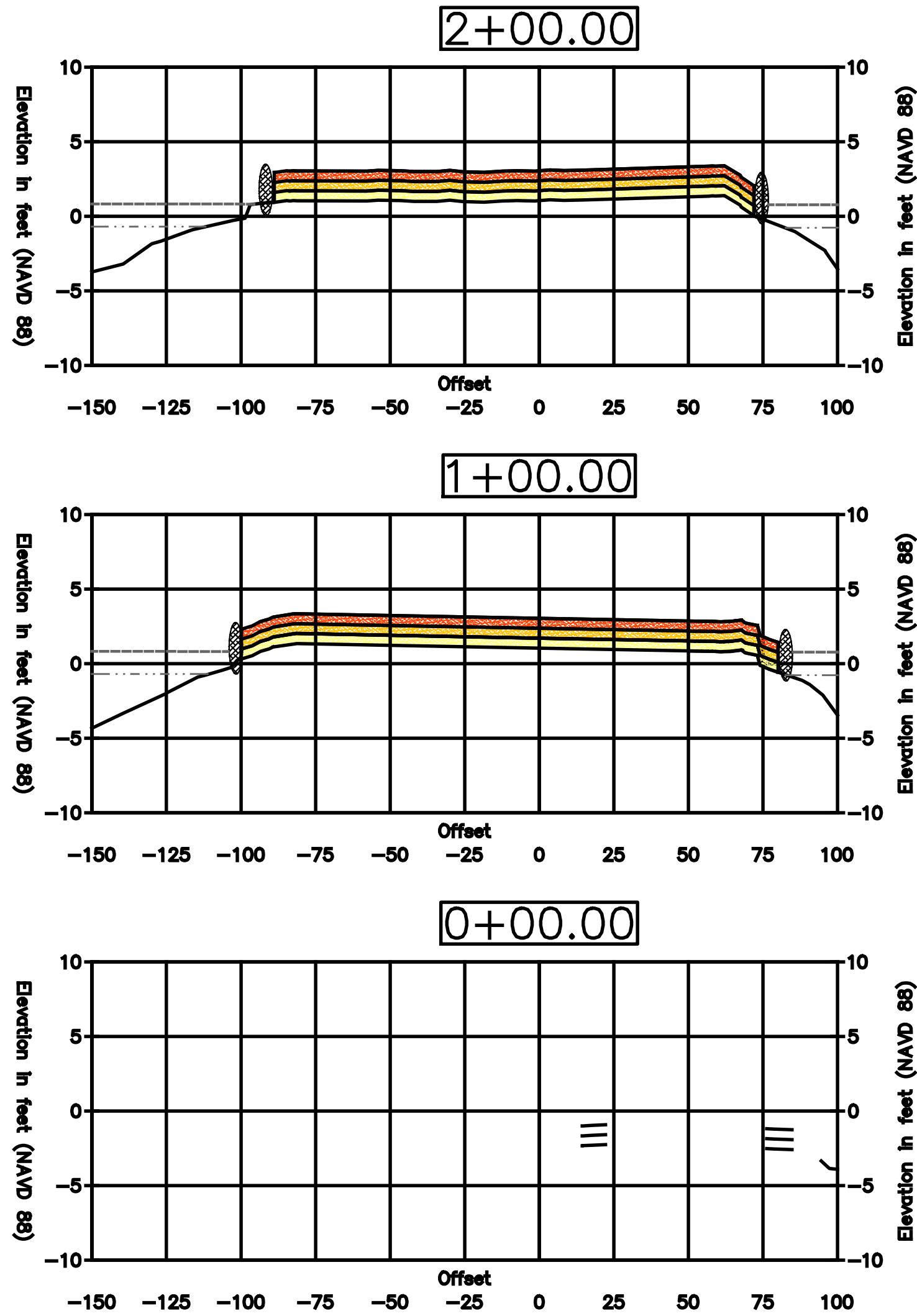
SHEET 31 OF 40



FILE: P:\01 CAD\19\xxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_PerezPoint_BDF.dwg PLOT DATE: 4/12/2022 7:21:52 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

- 8 INCH SPOIL AREA
- 16 INCH SPOIL AREA
- 24 INCH SPOIL AREA



VERTICAL SCALE 1"=8'
HORIZONTAL SCALE 1"=40'

----- MHHW = 0.82 FT (NAVD 88)
----- MLW = -0.7 FT (NAVD 88)



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SHORELINE STABILIZATION
PROJECT
MOBILE COUNTY, ALABAMA

REVISIONS

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CHECKED	BDF
IN CHARGE	BDF 38926-E

PROJECT NUMBER D190585.00

ISSUE DATE 04/12/2022

SCALE IS AS SHOWN WHEN
PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

PEREZ POINT
CROSS SECTION

SHEET NUMBER

C-31

SHEET 33 OF 40

FILE: P:\01 CAD\19xxxx\201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_ShrouL_BDF.dwg PLOT DATE: 4/12/2022 7:22:07 PM PLOTTED BY: BRYAN FLYNN

LEGEND:

THIN LAYER PLACEMENT

COIR LOGS

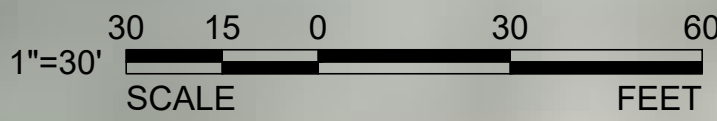
TIMBER BREAKWATER

RIP RAP

SUBMERGED AQUATIC VEGETATION (SAV)

WETLANDS

MHHW = 0.82 FT (NAVD 88)



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PROJECT NAME
FOWL RIVER MARSH
RESTORATION &
SHORELINE STABILIZATION
PROJECT
MOBILE COUNTY, ALABAMA

REVISIONS

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DESIGNED	BDF/CR
DRAWN	CR
CHECKED	BDF
IN CHARGE	BDF 38926-E

PROJECT NUMBER	D190585.00
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ISSUE DATE	04/12/2022
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SCALE IS AS SHOWN WHEN
PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

SHROUT OVERVIEW

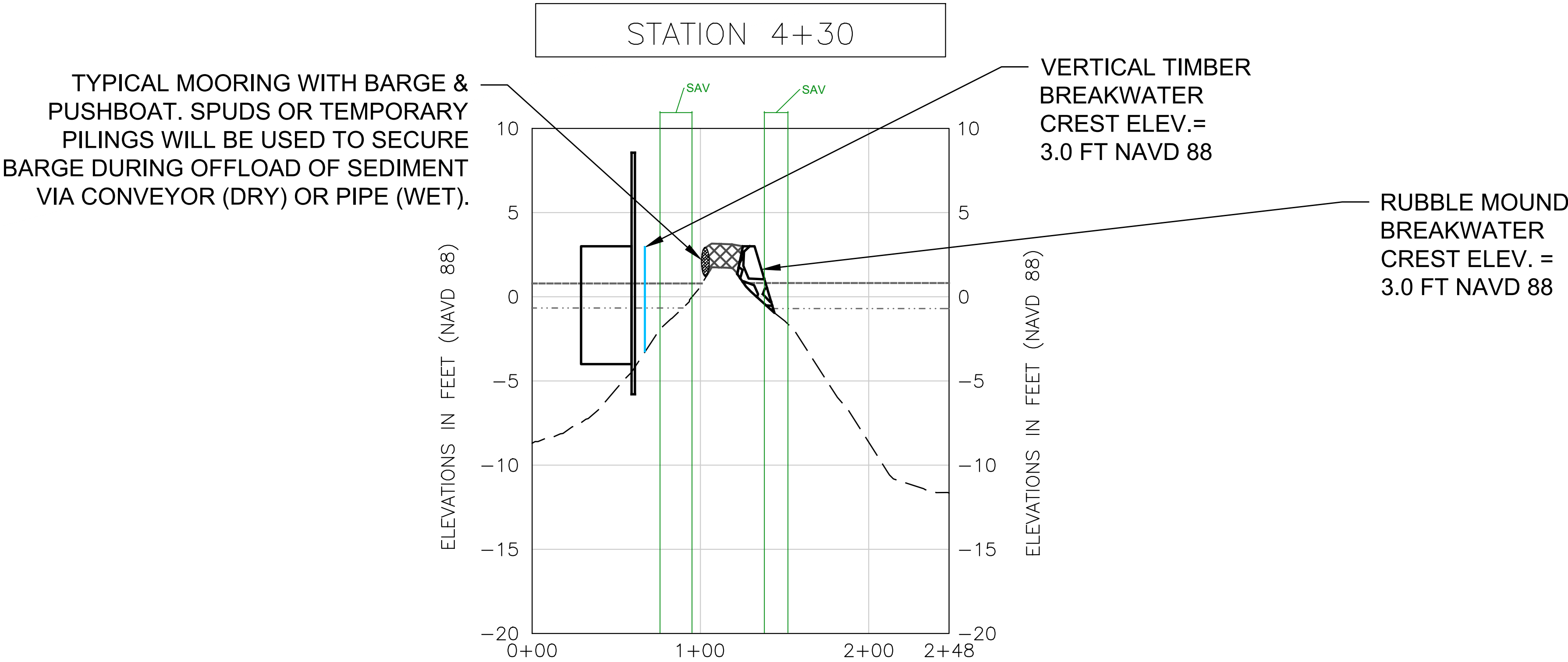
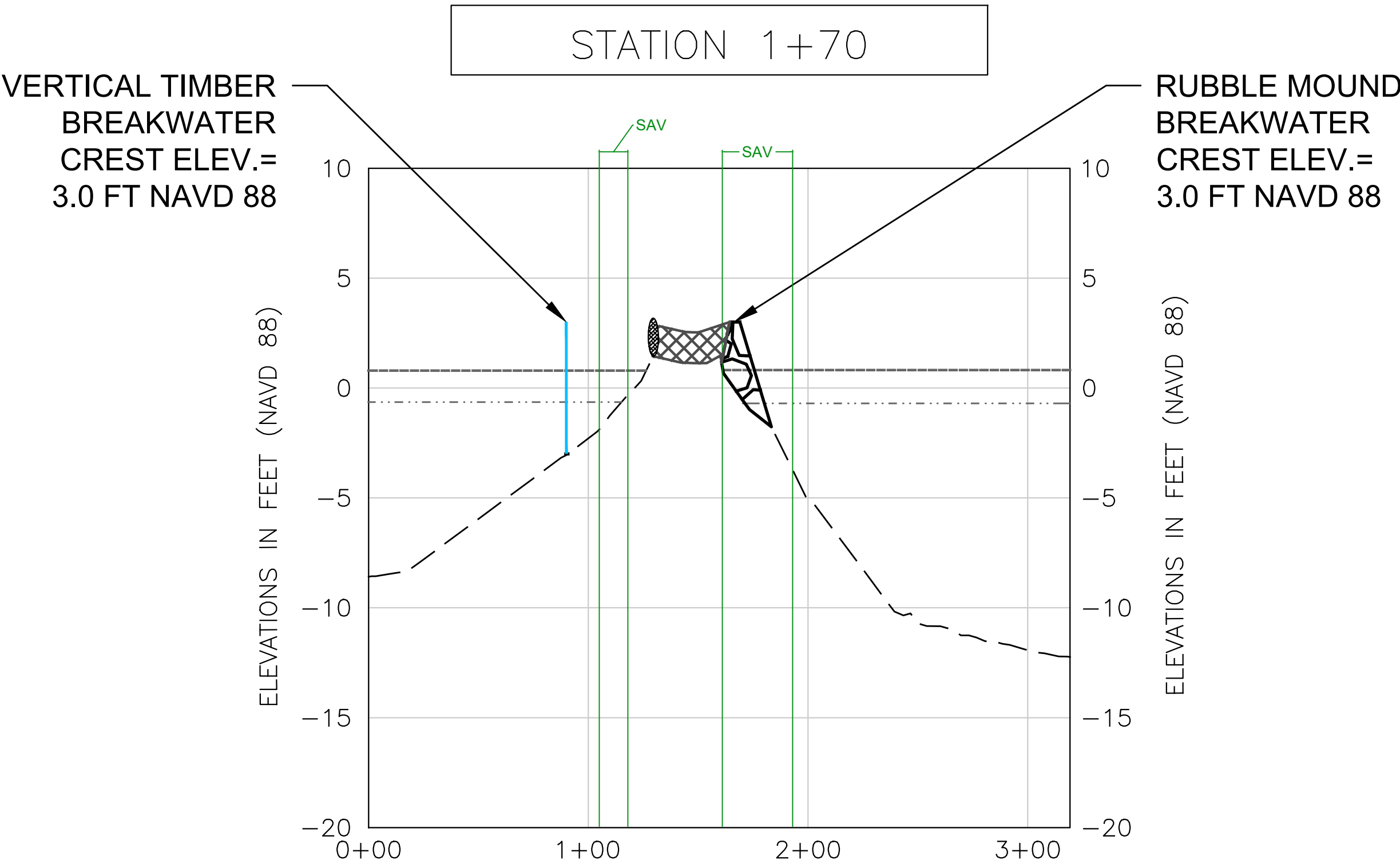
SHEET NUMBER

C-32

SHEET 34 OF 40

FILE: P:\01 CAD\19\xxxx\2021\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Shrout_BDF.dwg PLOT DATE: 4/12/2022 7:22:11 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
- THIN LAYER PLACEMENT - (0.54 AC, 1,823 CY)
 - COIR LOGS - (7,056 LF)
 - TIMBER BREAKWATER - (1,200 LF)
 - RIP RAP - (0.21 AC, 402 CY)
 - MHHW = 0.82 FT (NAVD 88)
 - MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=5'
HORIZONTAL SCALE 1"=50'



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SHORELINE STABILIZATION
PROJECT
MOBILE COUNTY, ALABAMA

REVISIONS		
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DRAWN	CR	
CHECKED	BDF	
IN CHARGE	BDF 38926-E	
PROJECT NUMBER	D190585.00	
ISSUE DATE	04/12/2022	
SCALE IS AS SHOWN WHEN PLOTTED TO FULL SIZE (22"x34")		

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE

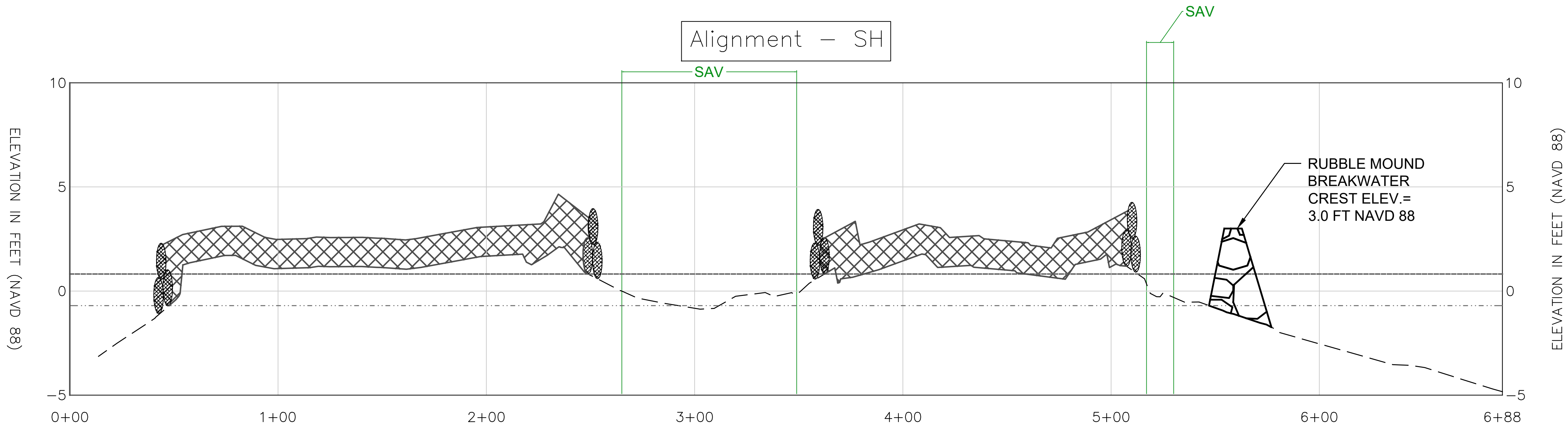
SHROUT TYPICAL
SECTION (BARGE)

SHEET NUMBER
C-33

SHEET 35 OF 40

FILE: P:\01 CAD\19\xxx\1900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Shrout_BDF.dwg PLOT DATE: 4/12/2022 7:22:16 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
- THIN LAYER PLACEMENT - (0.54 AC, 1,823 CY)
 - COIR LOGS - (7,056 LF)
 - TIMBER BREAKWATER - (1,200 LF)
 - RIP RAP - (0.21 AC, 402 CY)
 - MHHW = 0.82 FT (NAVD 88)
 - MLW = -0.7 FT (NAVD 88)



VERTICAL SCALE 1"=3'
HORIZONTAL SCALE 1"=30'



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PROJECT
MOBILE COUNTY, ALABAMA

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PROJECT NUMBER D190585.00

ISSUE DATE 04/12/2022

SCALE IS AS SHOWN WHEN
PLOTTED TO FULL SIZE (22"x34")

PHASE
60% CONSTRUCTION
PLANS

SHEET TITLE








SHROUT PROFILE

SHEET NUMBER

C-34

SHEET 36 OF 40

FILE: P:\01 CAD\19\xxxx\2021\900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Shrout_BDF.dwg PLOT DATE: 4/12/2022 7:22:22 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
-  THIN LAYER PLACEMENT - (0.54 AC, 1,823 CY)
 -  COIR LOGS - (7,056 LF)
 -  TIMBER BREAKWATER - (1,200 CY)
 -  RIP RAP - (0.21 AC, 850 CY)
 -  SUBMERGED AQUATIC VEGETATION (SAV)
 -  WETLANDS
 -  MHHW = 0.82 FT (NAVD 88)

TYPICAL MOORING WITH BARGE & PUSHBOAT. SPUDS OR TEMPORARY PILINGS WILL BE USED TO SECURE BARGE DURING OFFLOAD OF SEDIMENT VIA CONVEYOR (DRY) OR PIPE (WET).



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PROJECT
MOBILE COUNTY, ALABAMA

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DESIGNED	BDF/CR
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DRAWN	CR
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CHECKED	BDF
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IN CHARGE	BDF 38926-E
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PROJECT NUMBER	D190585.00
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ISSUE DATE	04/12/2022
------------	------------

SCALE IS AS SHOWN WHEN
PLOTTED TO FULL SIZE (22"x34")

PHASE

60% CONSTRUCTION
PLANS

SHEET TITLE

SHROUT BARGE

SHEET NUMBER

C-35

SHEET 37 OF 40

1"=30'
SCALE
30 15 0 30 60
FEET

FILE: P:\01 CAD\19xxxx\201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_Shrout_BDF.dwg PLOT DATE: 4/12/2022 7:22:27 PM PLOTTED BY: BRYAN FLYNN

- LEGEND:
- THIN LAYER PLACEMENT - (0.54 AC, 1,823 CY)
 - COIR LOGS - (7,056 LF)
 - PLANTING AREAS (1,082 SQ FT)
 - TIMBER BREAKWATER - (1,200 CY)
 - RIP RAP - (0.21 AC, 850 CY)
 - SUBMERGED AQUATIC VEGETATION (SAV)
 - WETLANDS
 - MHHW = 0.82 FT (NAVD 88)

Restoration Area	Zone	Acres	Elevation	Zone %	Scientific Name	Common Name	Size	Spacing	Quantity	Comment
Shrout	Low Marsh	0.010	-0.5 to +1	40%	<i>Juncus roemerianus</i>	black needle rush	4"	3' o.c.	48	
	High Marsh	0.010	+1 to +2	40%	<i>Spartina patens</i>	marsh hay cordgrass	4"	3' o.c.	48	
		0.002	+1 to +2	10%	<i>Taxodium distichum</i>	bald cypress	15 GAL	n/a	2	TREE



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PLANS

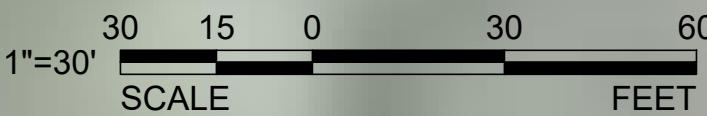
SHEET TITLE

SHROUT PLANTING
PLAN

SHEET NUMBER

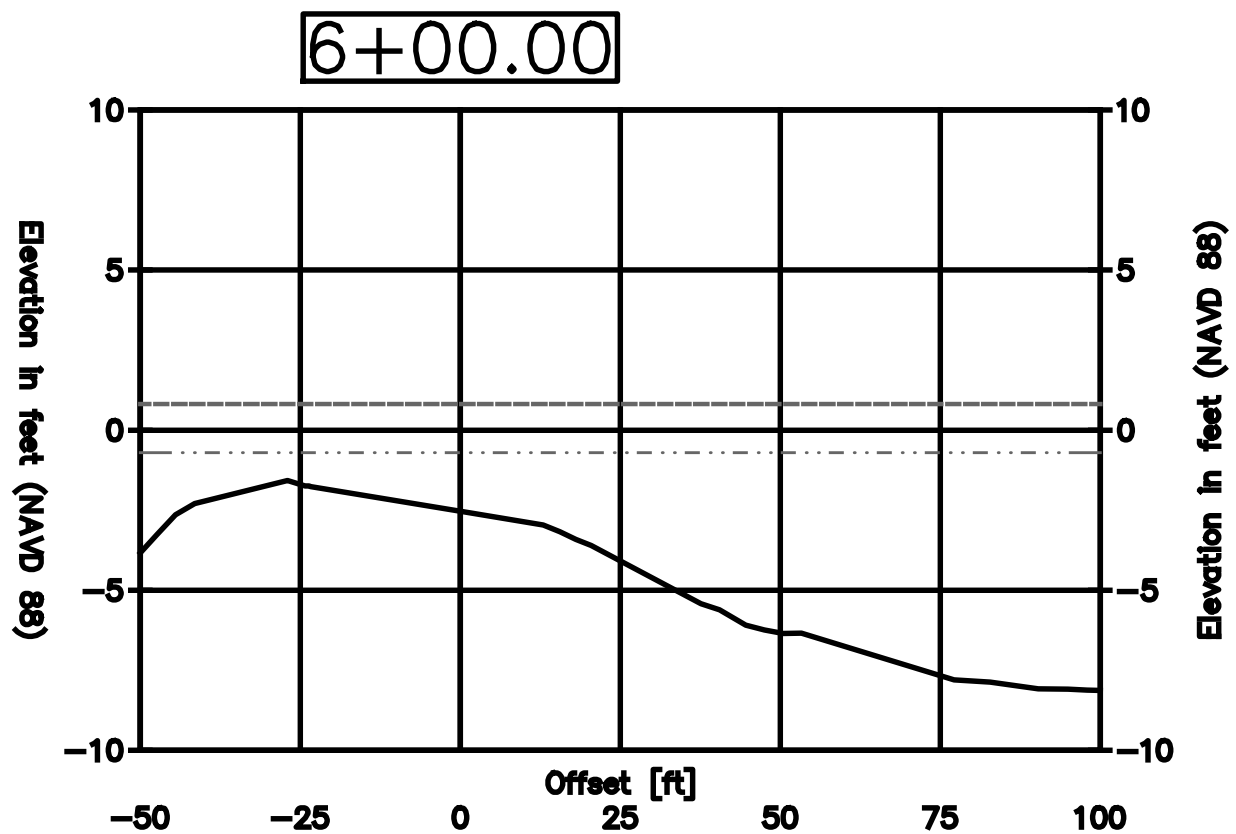
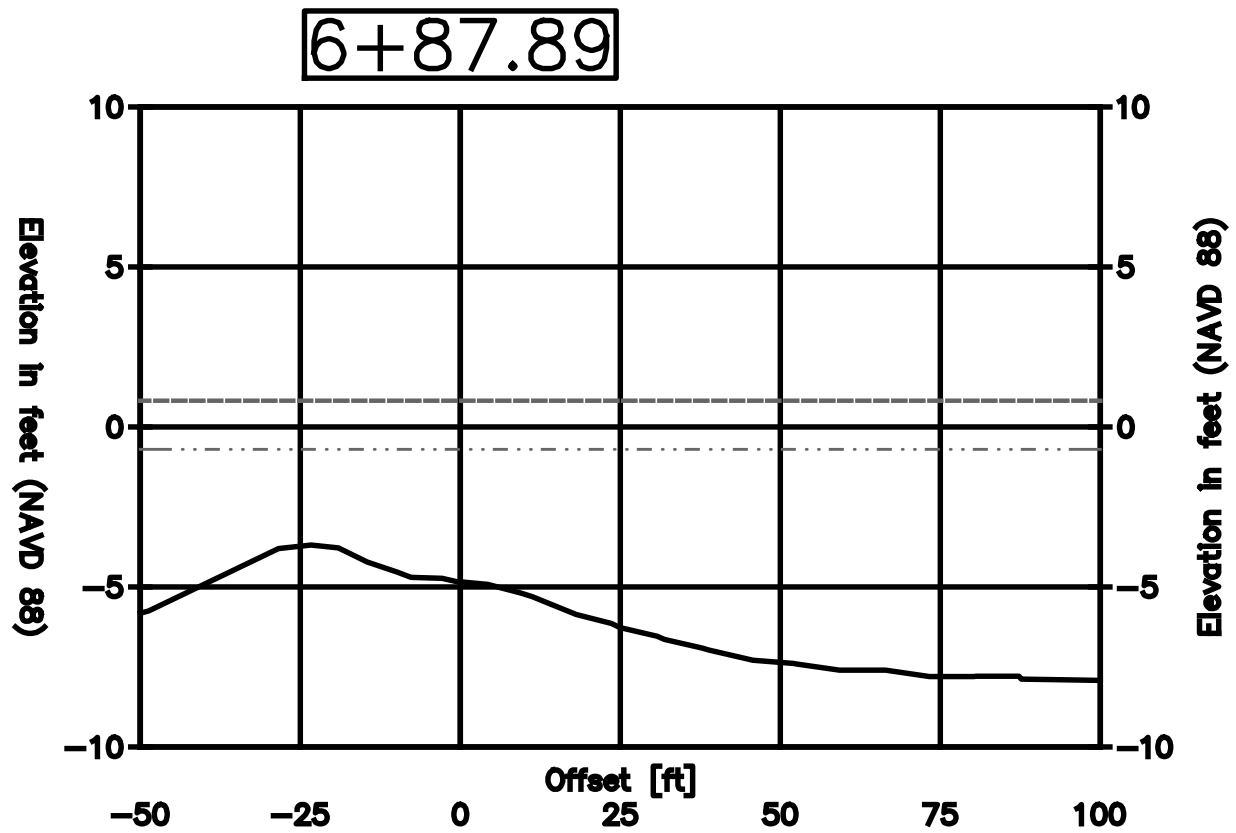
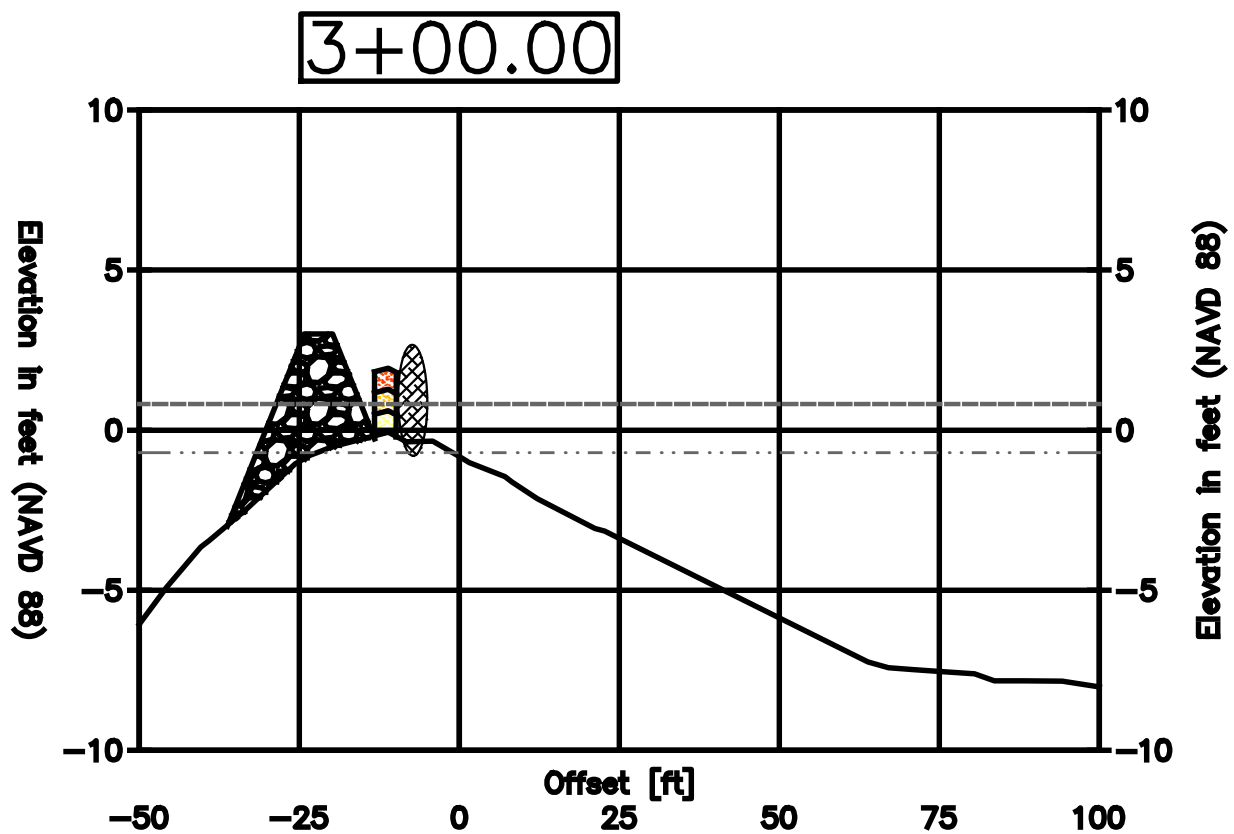
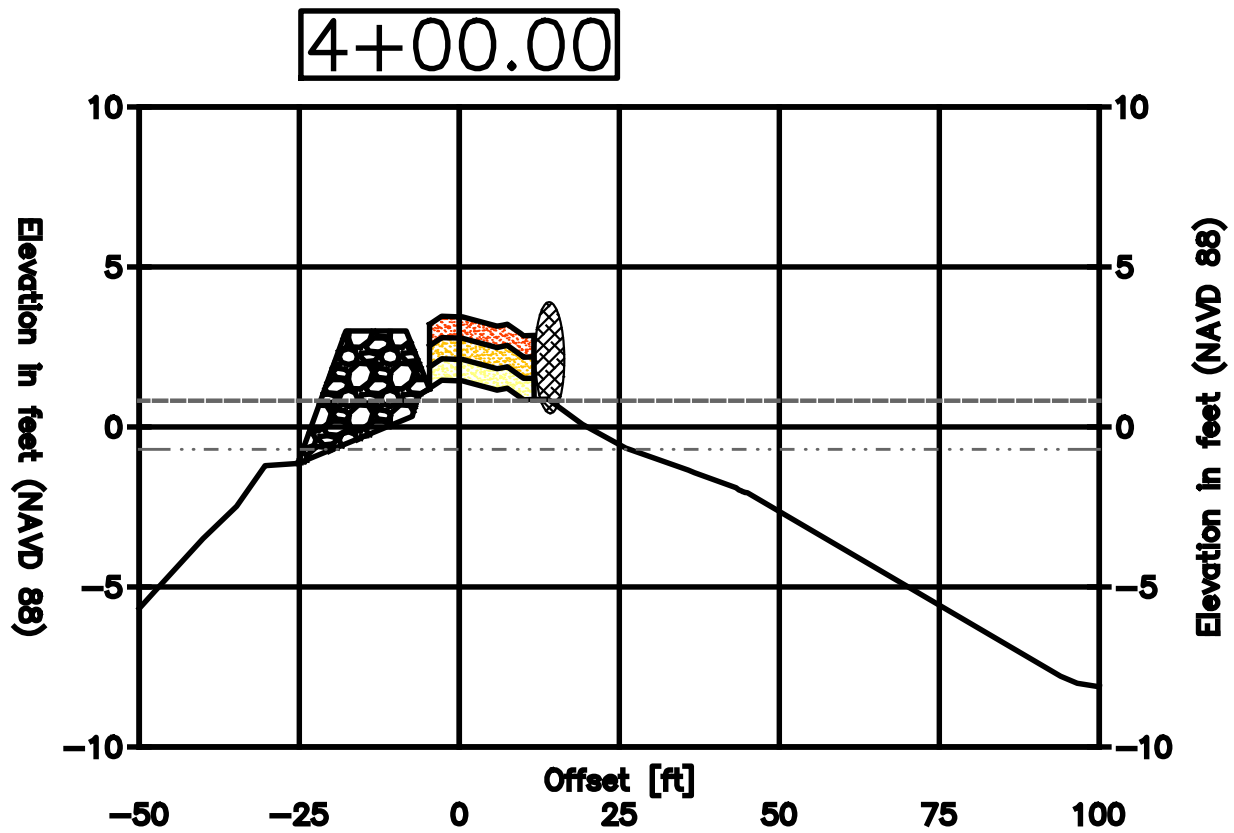
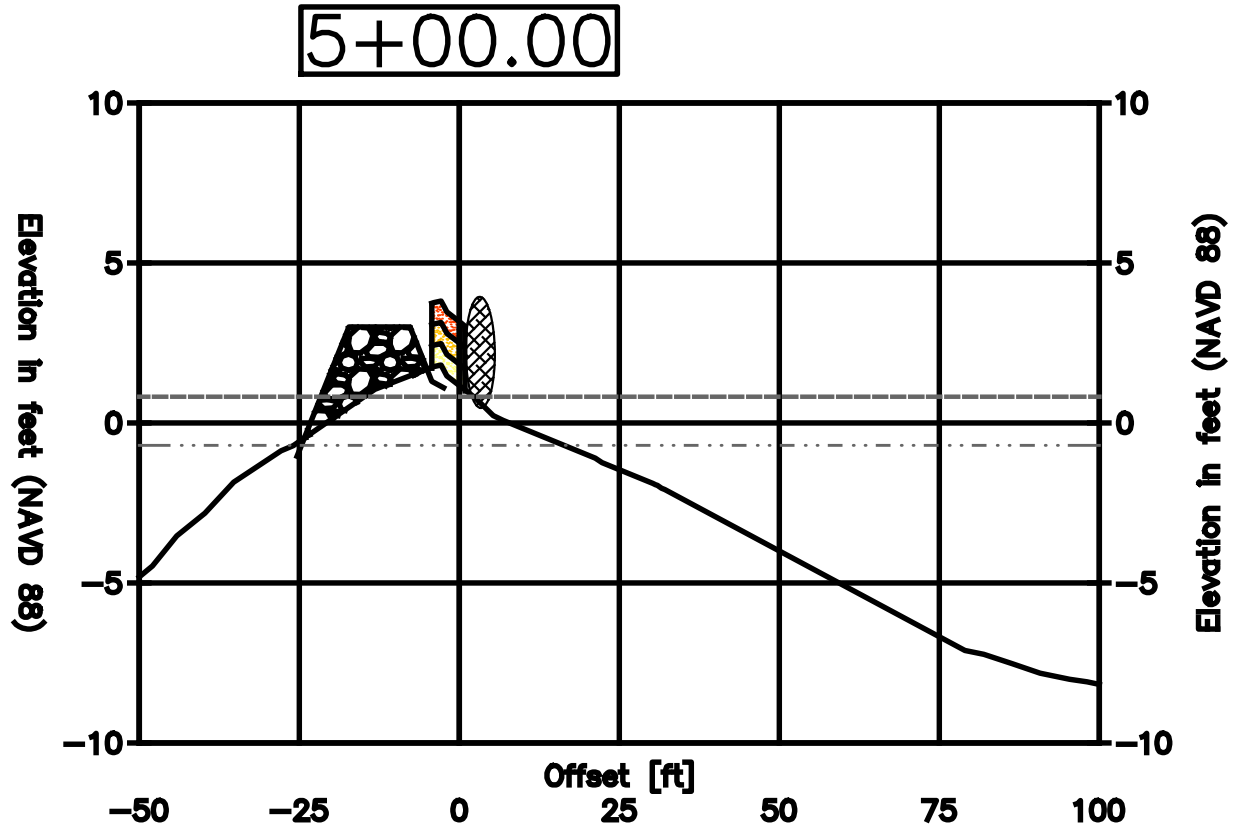
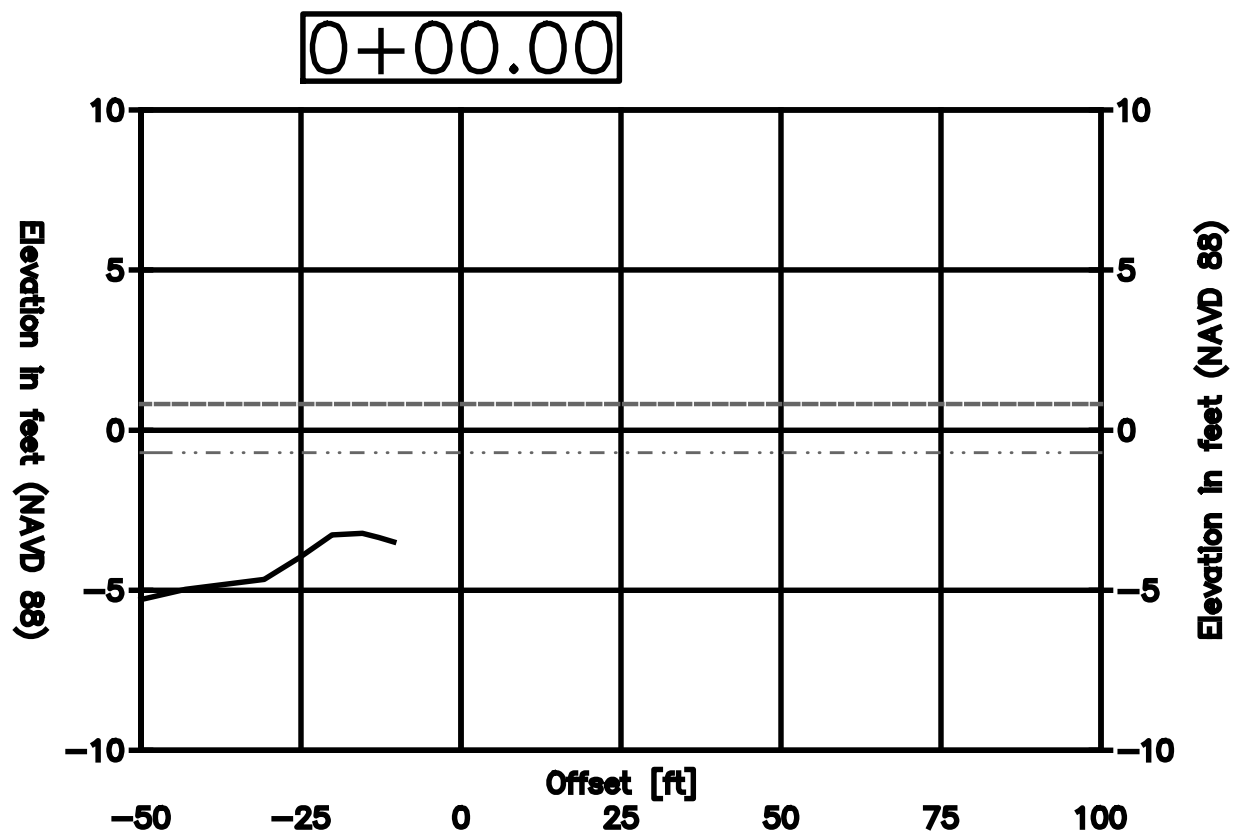
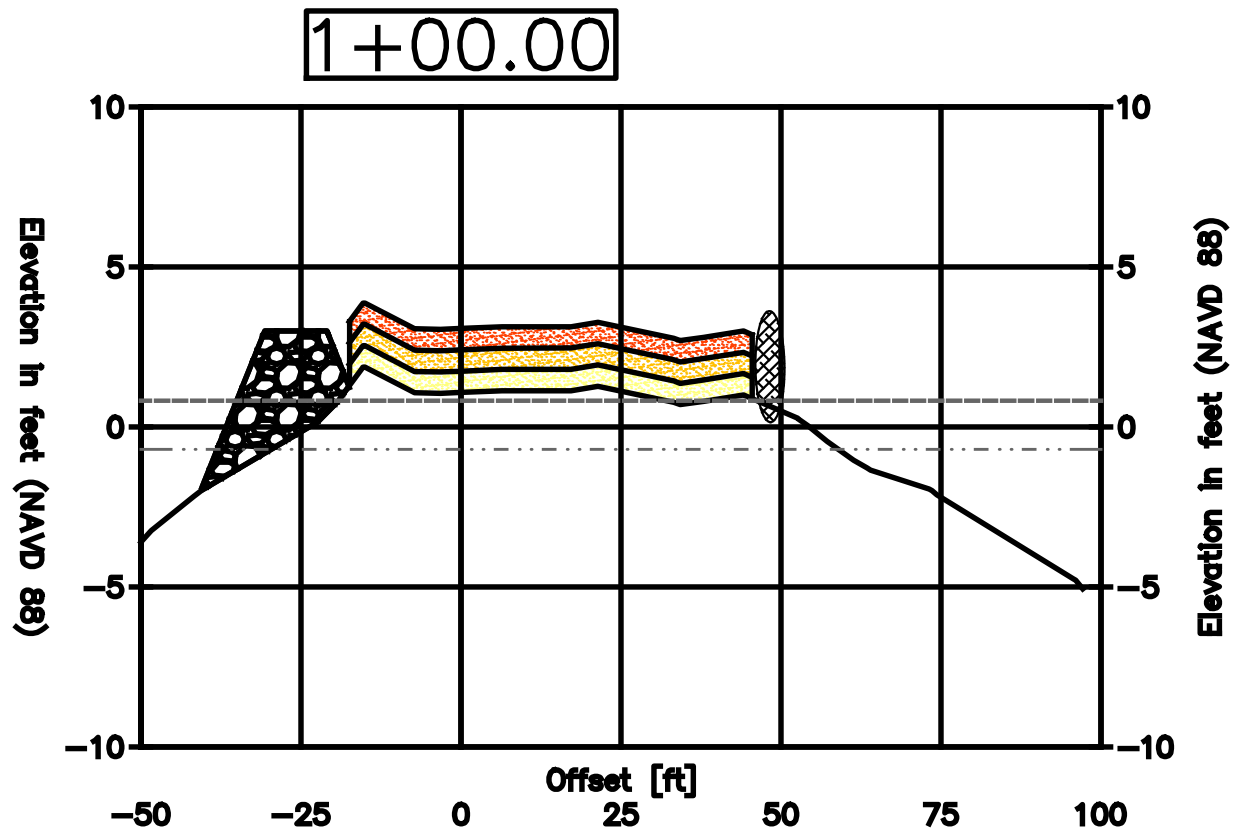
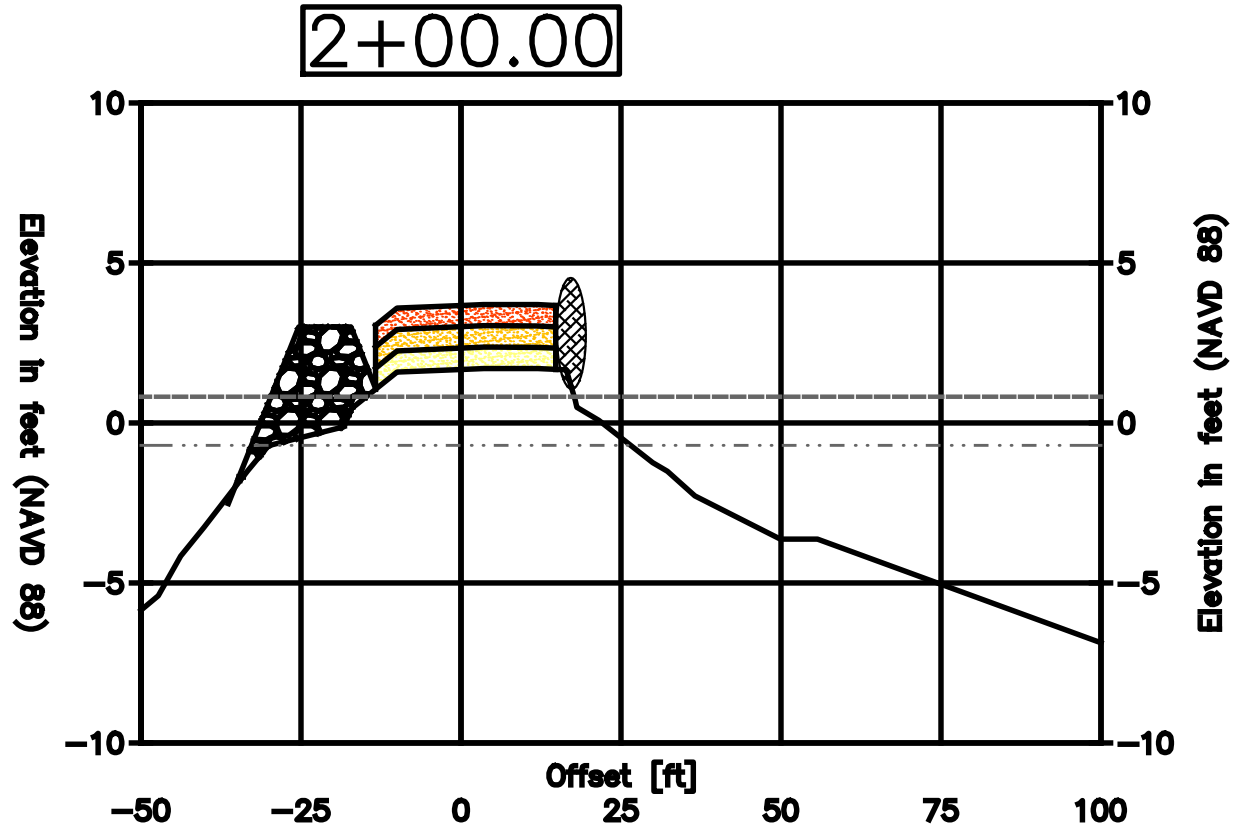
C-36

SHEET 38 OF 40



FILE: P:\01 CAD\19\xxxx\201900585.00 Fowl River Marsh and Shoreline Stabilization and Restoration - Phase I\DWG\WORKING\Workmap_Permit_ShrouL_BDF.dwg PLOT DATE: 4/12/2022 7:22:31 PM PLOTTED BY: BRYAN FLYNN

VERTICAL SCALE 1"=6'
HORIZONTAL SCALE 1"=30'



LEGEND:

8 INCH THIN LAYER

16 INCH THIN LAYER

24 INCH THIN LAYER

MHHW = 0.82 FT (NAVD 88)

MLW = -0.7 FT (NAVD 88)

ESA

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PROJECT
MOBILE COUNTY, ALABAMA

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BDF
38926-E

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04/12/2022

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PHASE

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PLANS

SHEET TITLE

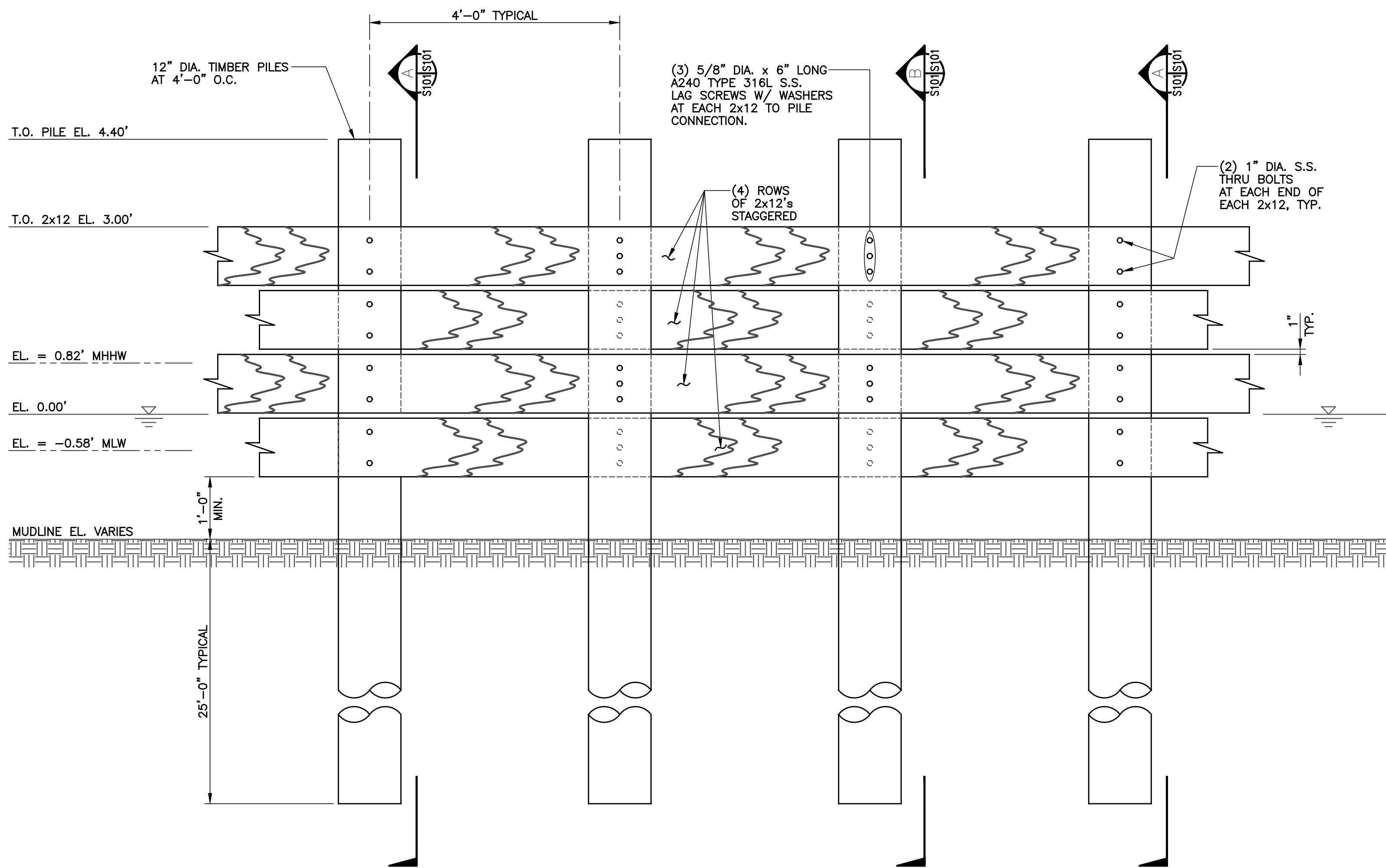
SHROUT CROSS
SECTION

SHEET NUMBER

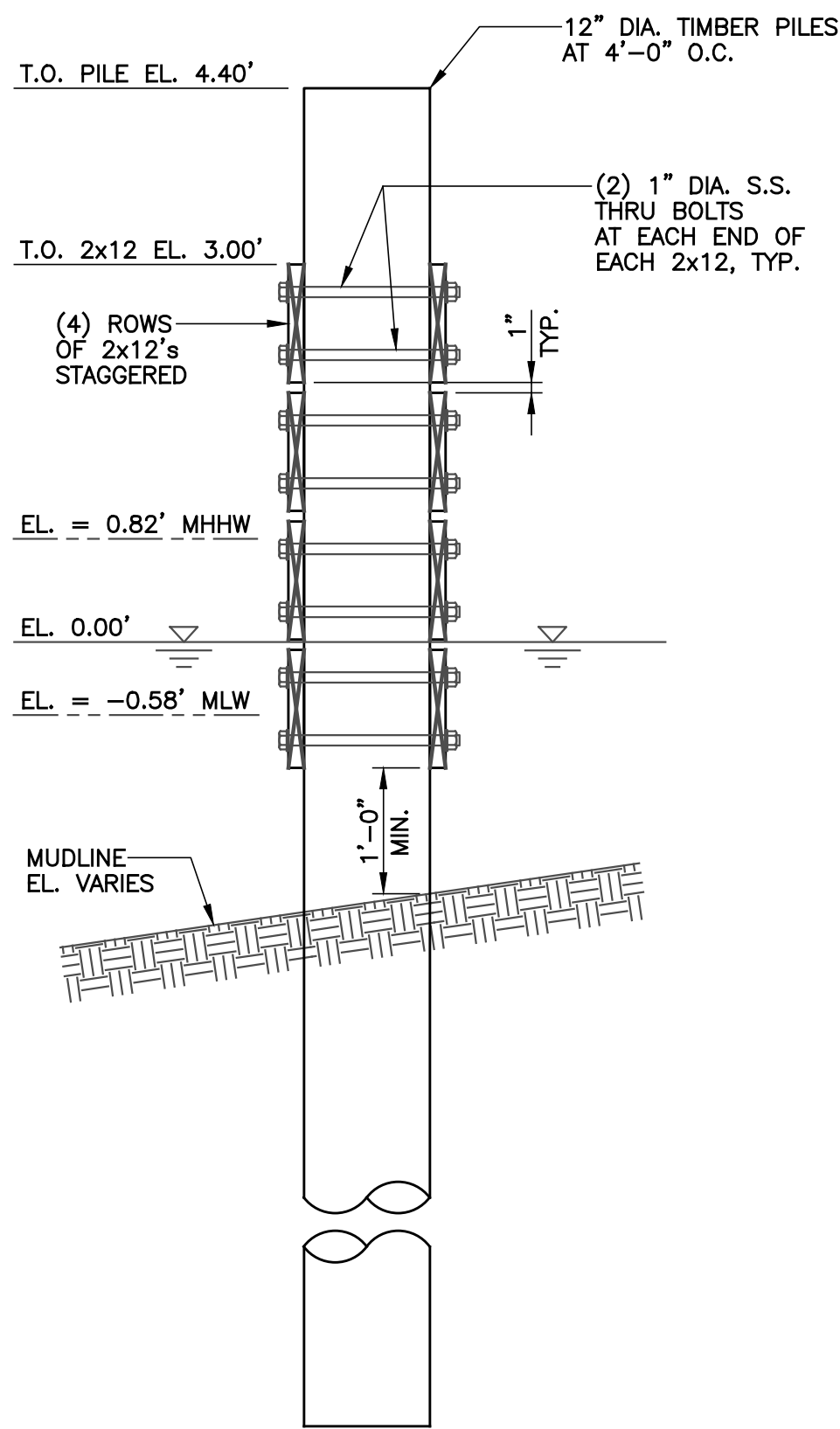
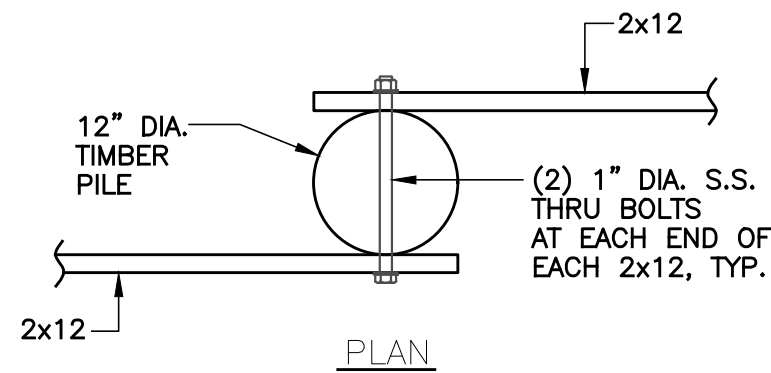
C-37

SHEET 39

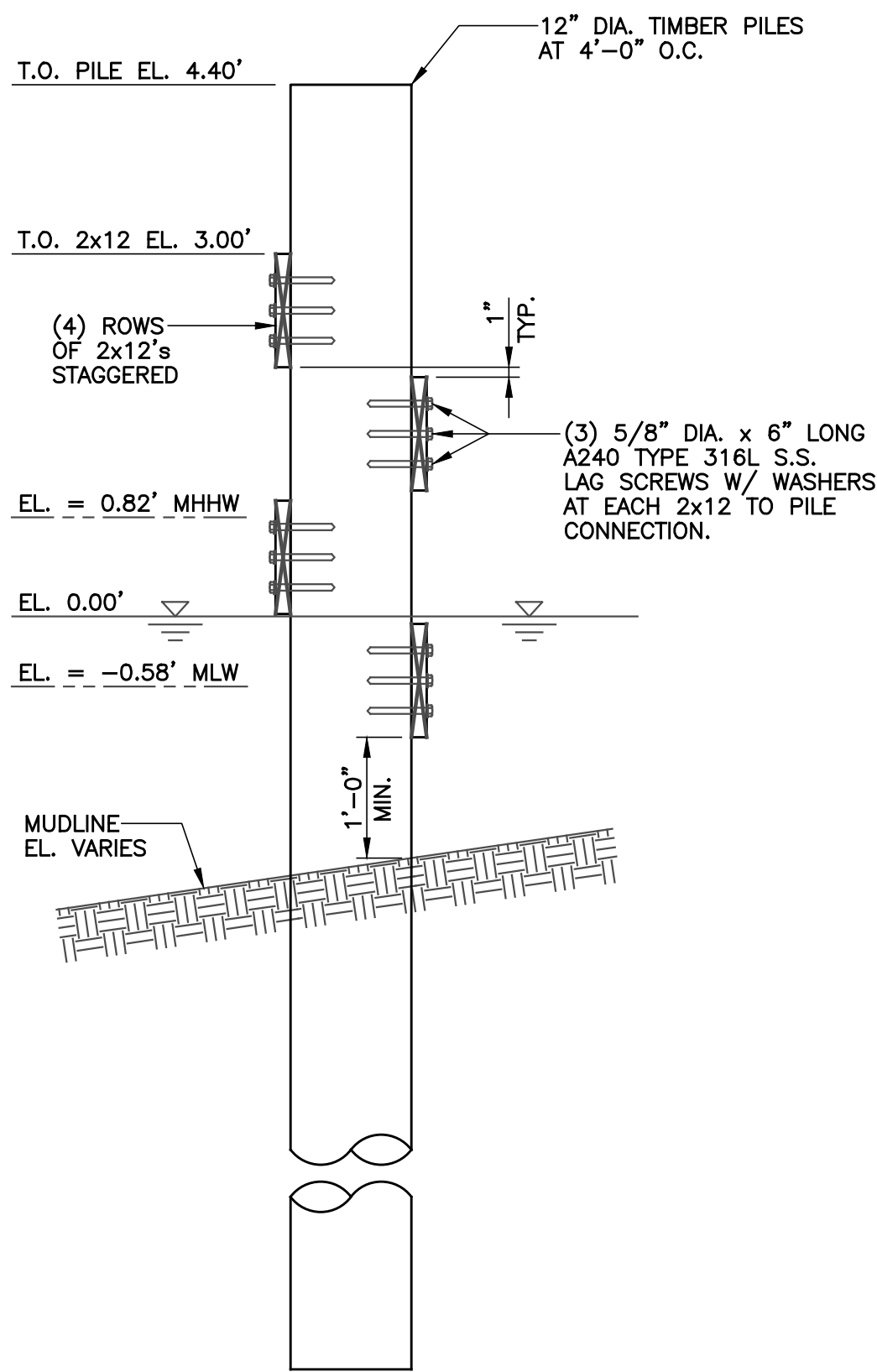
OF 40



TYPICAL TIMBER BREAKWATER ELEVATION
SCALE: 3/4" = 1'-0"



SECTION A
SCALE: 3/4" = 1'-0"



SECTION B
SCALE: 3/4" = 1'-0"

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REVISION NO.	DESCRIPTION	DATE	BY:
REVISION NO.	DESCRIPTION	DATE	BY:
REVISION NO.	DESCRIPTION	DATE	BY:
REVISION NO.	DESCRIPTION	DATE	BY:
0	ISSUED FOR REVIEW	4/6/22	RAH

FOWL RIVER ALABAMA

2970 COTTAGE HILL RD., STE. 190
MOBILE, ALABAMA 36606
SCALE: NOTED
PLOT SCALE: 1:1
DRAWN BY: RWA
CHECKED BY: GMC
APPROVED BY: RAH
TEL: (251) 666-2443
FAX: (251) 666-6422

SHORELINE PROTECTION

TIMBER BREAKWATER
DETAILS

DATE : APRIL 2022
JOB NO. : 19-1101-0252
DRAWING NO. : S101
REVISION NO. : 0