

PATRICK AIR FORCE BASE FLORIDA

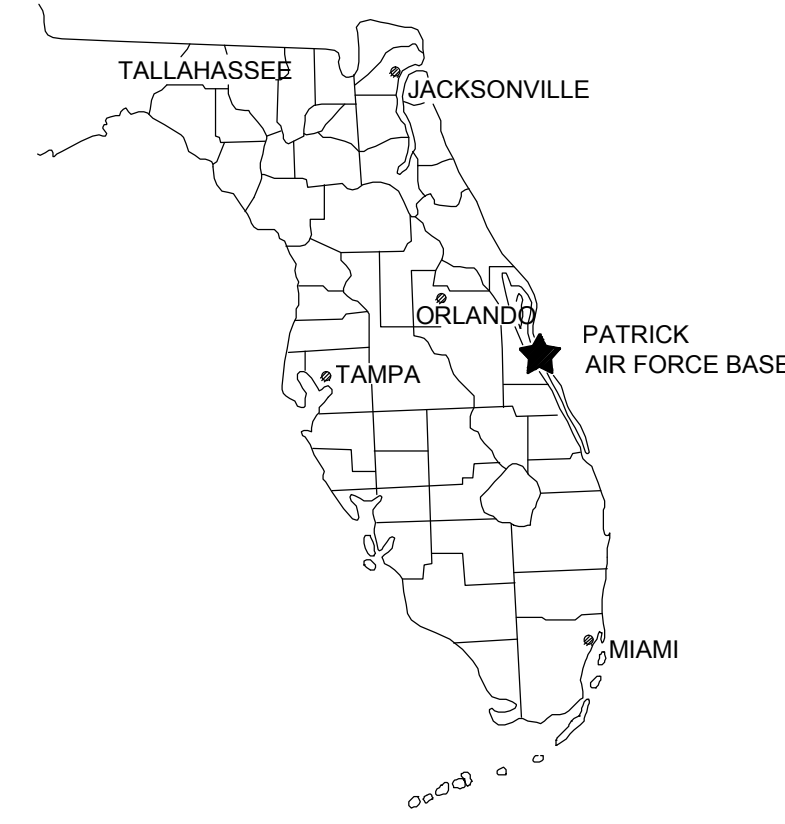
SXHT 15-1005

REPAIR RIVER SHORELINE, RUNWAY 11

USER: _____
 CHIEF, ENGINEERING FLIGHT: _____
 PROJECT MANAGER: _____
 ENVIRONMENTAL: _____
 FIRE: _____
 CE OPERATIONS: _____
 COMMUNICATIONS: _____
 SAFETY: _____
 SECURITY FORCES: _____
 ATO: _____
 OTHER: _____

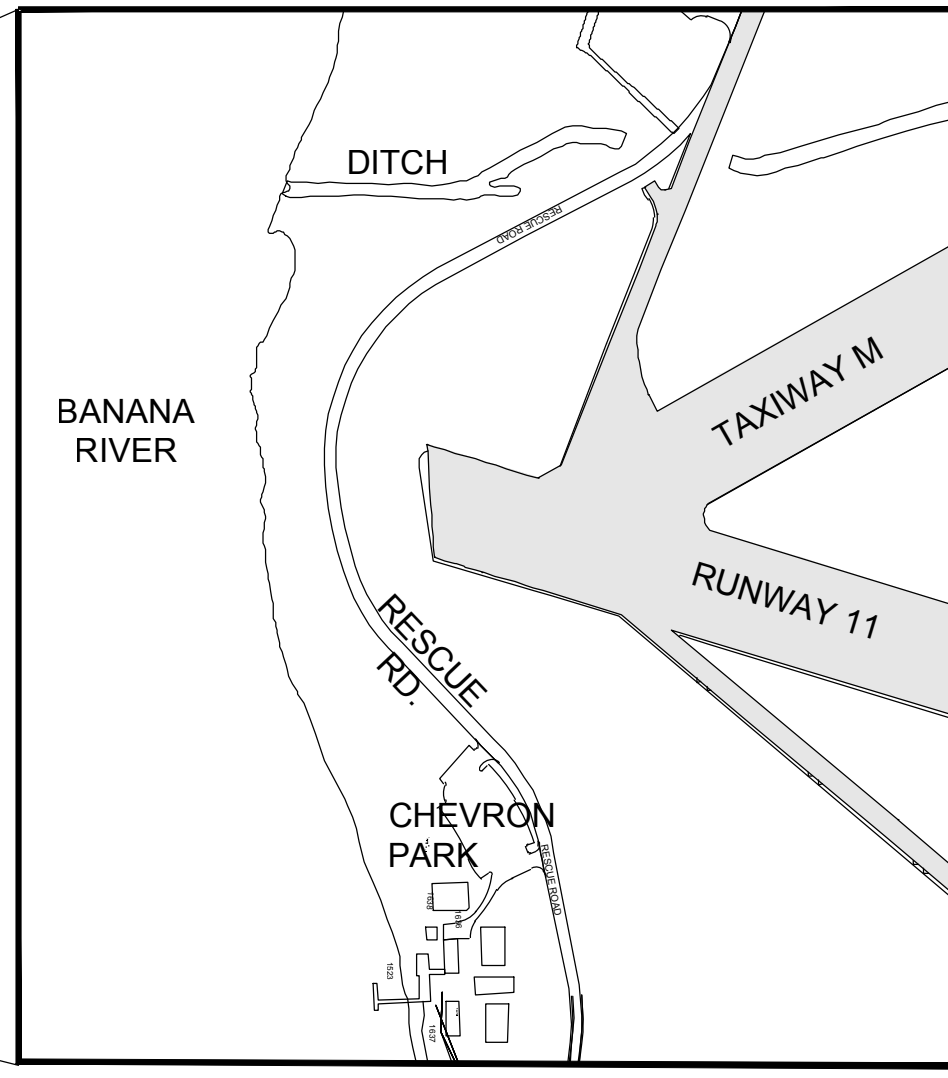
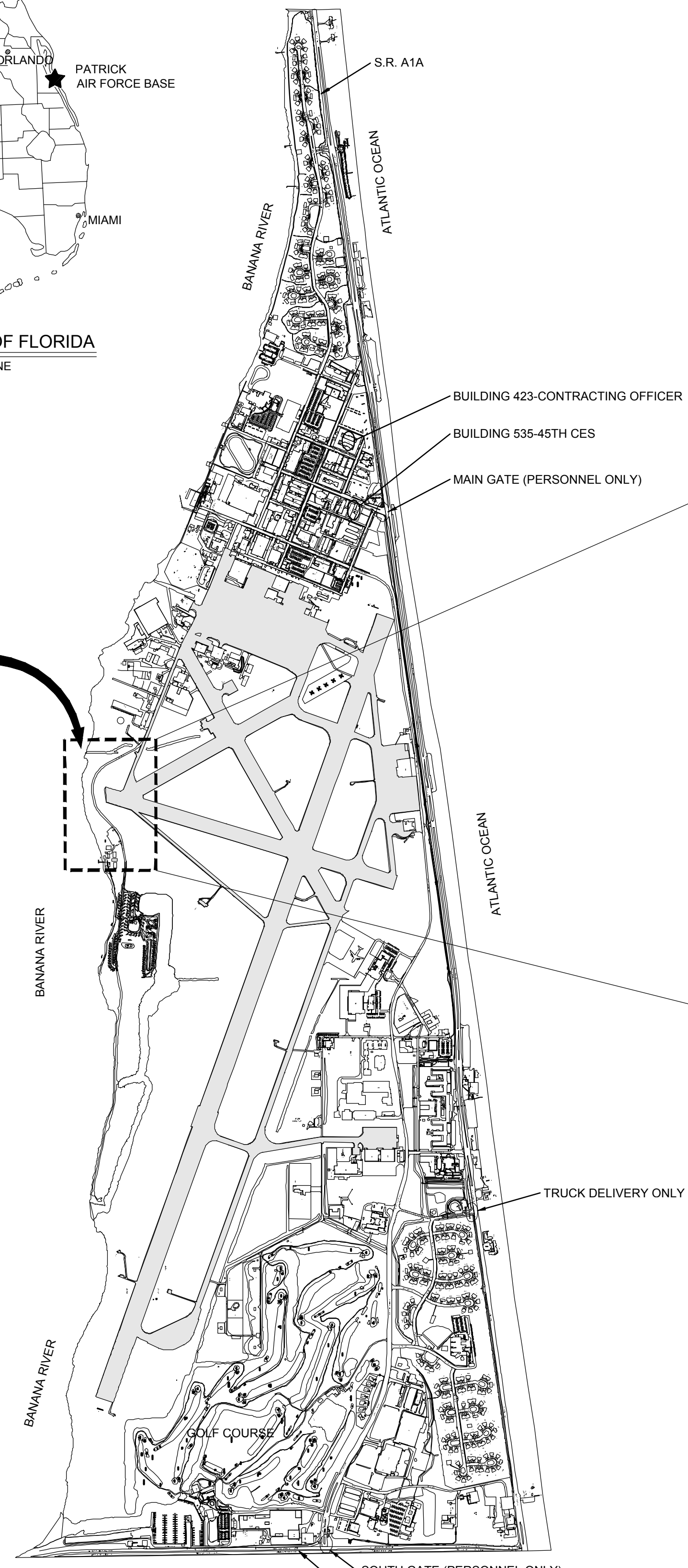


DESIGNED BY: D. LAVENDER	DATE: 01/19/17
DRAWN BY: D. ARTZNER	SAHT 15-1005
REVIEWED BY: J. KELLEY	DELIVERY NO. 0085
SUBMITTED BY: G. BEARD	AS BUILT DATE: ####



STATE OF FLORIDA
SCALE: NONE

PROJECT
LOCATION

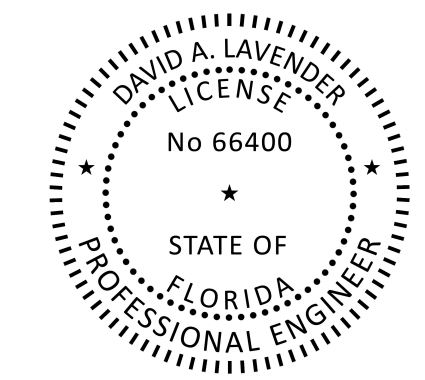


ENLARGED
RUNWAY 11 SHORELINE AREA
SCALE: NONE

DRAWING INDEX	
SHEET ID	DESCRIPTION
GENERAL	
G-001	VICINITY MAP, LOCATION PLAN AND DRAWING INDEX
CIVIL	
C-001	GENERAL NOTES, ABBREVIATIONS, AND LEGEND
C-100	OVERALL SHORELINE PROTECTION PLAN
C-101	NORTH SECTION SHORELINE PROTECTION PLAN
C-102	SOUTH SECTION SHORELINE PROTECTION PLAN
C-301	CROSS SECTIONS
C-501	TYPICAL CROSS SECTION AND BREAKWATER DETAILS
C-502	MISCELLANEOUS DETAILS

USAF 45TH CIVIL ENGINEER SQUADRON PAFB, FL
CONTRACT NO.: FA2521-13-D-0005 - 0095

RAEIS OTIE
 PROFESSIONAL ENGINEER, INSPECTION SERVICES
 GP STRATEGIES
 AMRC
 ALLEN ENGINEERING, INC.



THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY: DAVID A. LAVENDER, P.E. USING A DIGITAL SIGNATURE.
 PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. THE SIGNATURE MUST BE VERIFIED ON THE ELECTRONIC DOCUMENTS.
 11x17 DRAWING SIZE IS HALF SIZE OF NOTED SCALE

ENGINEER OF RECORD: DAVID A. LAVENDER
 LICENSE NUMBER: 66400
 NAME AND ADDRESS OF BUSINESS:
 ALLEN ENGINEERING, INC.
 106 DIXIE LANE (P.O. BOX 321321)
 COCOA BEACH, FLORIDA 32932-1321
 OFFICE: (321) 783-7443 - FAX: (321)783-5902
 E-MAIL: INFO@ALLENENG.NET
 FL C.A. # LB 266
 AEI #: 150005
 RAEIS CONTRACT NO: FA2521-13-D-0005-0095

PERMIT(S)/ENVIRONMENTAL ACTIONS REQUIRED PRIOR TO CONSTRUCTION	
ERP/STORMWATER	NOI/SWPPP
ERP/WETLANDS/DREDGE & FILL	IRP
FDEP/DRINKING WATER	SURVEY/WILDLIFE
FDEP/DOM. WASTE WATER	ARCHEO./HISTORICAL
FDEP/IND. WASTE WATER	OTHER
FDEP/FUEL TANK	NONE

NOTE: IF IT IS SUSPECTED THAT ANY HAZARDOUS MATERIAL NOT IDENTIFIED ON THESE DRAWINGS IS REQUIRED TO BE DISTURBED IN ORDER TO PERFORM THE CONTRACT WORK, LEAVE MATERIAL UNDISTURBED AND IMMEDIATELY INFORM THE CONTRACTING OFFICER.			
HAZARDOUS MATERIALS	YES	NO	NOT VERIFIED
ASBESTOS			✓
HEAVY METALS			✓
LEAD			✓
PCB			✓

SXHT 15-1005
 REPAIR RIVER SHORELINE,
 RUNWAY 11
 VICINITY MAP, LOCATION MAP
 AND DRAWING INDEX

SHEET
 IDENTIFICATION
G-001

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GENERAL CONSTRUCTION NOTES:

- 1. NO UNDERGROUND UTILITY LINES HAVE BEEN LOCATED; ALL SITE FEATURES AND UNDERGROUND UTILITIES SHOWN ARE BASED ON PAFB GIS MAPPING AND SCALED AERIAL MAPS; 45TH SW TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THESE LOCATIONS. EXTREME CAUTION SHALL BE USED TO MAINTAIN EXISTING UTILITIES.
2. CONTRACTOR IS RESPONSIBLE FOR REQUESTING UTILITY LOCATES AND VERIFYING ALL EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION.
3. PRIOR TO CONSTRUCTION AND EXCAVATION, THE CONTRACTOR SHALL PROCESS AN AF FORM 103, WHICH INCLUDES NOTIFICATION OF SUNSHINE ONE CALL (811) UTILITY LOCATE TICKET.
4. ANY DAMAGE CAUSED TO EXISTING SITE FEATURES, ROADS, CURBS, WALKS, DRAINAGE STRUCTURES, ETC., SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE TO EXISTING CONDITIONS OR BETTER. THE CONTRACTOR WILL BE REQUIRED TO MOVE CONSTRUCTION EQUIPMENT OUTSIDE THE RUNWAY CLEAR ZONE (1,000 FEET FROM RWY, CENTERLINE) AT THE END OF EACH WORK DAY FOR STORAGE, COORDINATE WITH CONTRACTING OFFICER FOR ACCEPTABLE LOCATION.
5. DISTURBED AREAS SHALL BE KEPT TO A MINIMUM AND ONLY AS NECESSARY TO ACCOMPLISH THE WORK.
6. ALL SURFACE WATERS WILL BE PROTECTED AS REQUIRED USING TURBIDITY BARRIERS, SILT FENCING OR EQUIVALENT MATERIAL TO PREVENT EROSION AND SLOUGHING OF EXCAVATED MATERIALS INTO ADJACENT WATERS OR STORM INLETS. THE CONTRACTING OFFICER MUST BE NOTIFIED OF ANY IMPACTS TO EXISTING VEGETATION. TREES THAT MUST BE REMOVED DUE TO IMPEDANCES MUST BE IDENTIFIED TO THE CONTRACTING OFFICER AND 45 CES ENVIRONMENTAL (45 CES/CEIE) PRIOR TO REMOVAL.
7. CONSTRUCTION OF BREAKWATERS AND REVETMENT RIP-RAP SHALL COMPLY WITH ALL PROJECT SPECIFICATIONS AND PERMITS.
8. CONSTRUCTION MATERIALS REJECTED BY THE GOVERNMENT SHALL BE REMOVED FROM THE SITE IMMEDIATELY.
9. CONTRACTOR SHALL COMPLETE ALL NECESSARY WORK TO CONSTRUCT/REPAIR A STABLE SHORELINE PROTECTION SYSTEM.
10. IF ANY CONSTRUCTION DEWATERING IS NECESSARY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL OF A DEWATERING PLAN, THROUGH THE CONTRACTING OFFICER, PRIOR TO ANY DEWATERING. NO CONSTRUCTION DEWATERING SHALL BE ALLOWED INTO EXISTING STORMWATER RETENTION AREAS. REFERENCE SPECIFICATIONS SECTION 01 57 19, DEWATERING.
11. IF A STORAGE TANK IS UTILIZED FOR FUELING CONSTRUCTION VEHICLES, THE TANK MUST HAVE ADEQUATE SECONDARY CONTAINMENT AND IF THE TANK IS 55 GALS OR GREATER, MONTHLY INSPECTIONS ARE TO BE PERFORMED AND DOCUMENTED BY THE CONTRACTOR. THE CONTRACTOR'S REFUELING PLAN SHALL BE SUBMITTED TO THE 45 CES/CEIE OFFICE FOR REVIEW.
12. THE EXISTING CONDITIONS SURVEY WAS PERFORMED BY ALLEN ENGINEERING, INC. DATED 4/2/15.
13. CONTRACTOR SHALL REPAIR OR RESTORE DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER. CERTIFIED WEED-FREE BAHIA SOD SHALL BE USED BEHIND REVETMENTS, AND OTHER DISTURBED AREAS.
14. CONTRACTOR SHALL PERFORM WORK ONLY DURING NORMAL DAYTIME HOURS, NO NIGHT WORK IS AUTHORIZED.
15. THE CONTRACTOR SHALL COMPLY WITH, BUT NOT BE LIMITED TO: AFI 32-7086, HAZARDOUS MATERIALS MANAGEMENT, FEBRUARY 2015 AND THE 45TH SW HAZMAT TRACKING PROCEDURES FOR CONSTRUCTION AND SERVICE CONTRACTORS. THE CONTRACTOR SHALL CONTACT THE 45 CES/CEIE HAZARDOUS MATERIALS PROGRAM MANAGER AT 321-494-9268 TO REVIEW HAZARDOUS MATERIALS AUTHORIZATION PROCEDURES PRIOR TO HAZARDOUS MATERIALS BEING BROUGHT ON TO 45 SW FACILITIES. NO HAZARDOUS MATERIALS ARE ALLOWED TO BE BROUGHT ON TO ANY 45 SW INSTALLATION WITHOUT PRIOR APPROVAL.
16. IF ANY HAZARDOUS/CONTROLLED WASTE IS GENERATED OR BROUGHT ONSITE BY THE CONTRACTOR, IT MUST BE MANAGED IN ACCORDANCE WITH 45 SW MANAGEMENT PLAN 19-14.
17. STORMWATER DISCHARGE SHALL BE MONITORED FOR QUALITY DURING THE CONSTRUCTION, AND FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED AROUND WORK AREAS TO PREVENT DISCHARGE OF TURBID WATER TO THE BANANA RIVER PRIOR TO START OF WORK.
18. DURING CONSTRUCTION AIRFIELD WAIVERS WILL BE REQUIRED, EQUIPMENT WILL NEED TO BE FLAGGED WHILE WORKING WITHIN THE AIRFIELD CLEAR ZONE, AND STAGING AREAS APPROX. 1,000 FEET AWAY FROM THE SITE WILL REQUIRE COORDINATION AND APPROVAL FROM THE CONTRACTING OFFICER.
19. FILL SOIL MATERIAL SHALL BE OBTAINED FROM THE PAFB MARINA DREDGE SPOIL AREA OR OTHER LOCAL SITE SO THAT COMPOSITION AND Ph LEVELS ARE SIMILAR TO EXISTING SOILS AND SUPPORT PLANT VIABILITY.

SHORELINE PROTECTION NOTES:

- 1. EXISTING ADJACENT AND OFF-SITE DRAINAGE PATTERNS SHALL BE MAINTAINED DURING CONSTRUCTION.
2. ALL UNDERGROUND UTILITIES MUST BE LOCATED AND PROTECTED DURING CONSTRUCTION.
3. THE CONTRACTOR SHALL PROVIDE THE CONTRACTING OFFICER AND ENGINEER WITH FINAL IMPROVEMENT AS-BUILT INFORMATION FROM A REGISTERED SURVEYOR MEETING REGULATORY PERMIT CONDITIONS AS WELL AS THE FOLLOWING:
LOCATION, MATERIAL, BOTTOM AND CREST ELEVATIONS, LENGTHS AND WIDTHS OF BREAKWATER STRUCTURES.
LOCATION, ELEVATIONS OF FILL SLOPES, REVETMENT TOE AND TOP.
COMPLETE TOPOGRAPHIC AND BATHYMETRIC SURVEY OF ALTERED PROJECT AREA .
4. TYPE II FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED IN THE WATER AROUND WORK AREAS TO PREVENT SEDIMENT TRANSPORT OUTSIDE OF WORK AREA.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH THE CONDITIONS OF THE ENVIRONMENTAL RESOURCE PERMIT FOR WORK IN THE WATERS OF THE STATE.
6. GEOTEXTILE FOR USE IN THE WATER UNDER THE BREAKWATER ROCKS SHALL BE MIRAFI HP370 WOVEN POLYPROPYLENE FABRIC OR APPROVED EQUAL.
7. GEOTEXTILE FOR USE IN THE SHORELINE REVETMENT RIP-RAP SHALL BE MIRAFI S1600 NON-WOVEN POLYPROPYLENE FABRIC OR APPROVED EQUAL.
8. COQUINA ROCK BOULDERS SHALL BE USED FOR THE BREAKWATER AND SHALL BE 18 INCHES MINIMUM SIZE WITH AN AVERAGE WEIGHT BETWEEN 175 - 250 POUNDS.
9. CONCRETE RUBBLE RIP-RAP SHALL BE USED FOR THE SHORELINE REVETMENT AND SHALL VARY BETWEEN 6 INCH TO 3 FEET IN SIZE, A MINIMUM WEIGHT OF 25 POUNDS, AND AVERAGE WEIGHT OF 100 POUNDS. CONCRETE RUBBLE SHALL BE FREE OF REBAR, OTHER METALS, OR DEBRIS.

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING PROTECTED SPECIES CONSTRUCTION CONDITIONS:

- A. THE CONTRACTOR SHALL INSTRUCT ALL PERSONNEL ASSOCIATED WITH THE PROJECT OF THE POTENTIAL PRESENCE OF THESE SPECIES AND THE NEED TO AVOID COLLISIONS WITH SEA TURTLES AND SMALLTOOTH SAWFISH. ALL CONSTRUCTION PERSONNEL ARE RESPONSIBLE FOR OBSERVING WATER-RELATED ACTIVITIES FOR THE PRESENCE OF THESE SPECIES.
B. THE CONTRACTOR SHALL ADVISE ALL CONSTRUCTION PERSONNEL THAT THERE ARE CIVIL AND CRIMINAL PENALTIES FOR HARMING, HARASSING, OR KILLING SEA TURTLES OR SMALLTOOTH SAWFISH, WHICH ARE PROTECTED UNDER THE ENDANGERED SPECIES ACT OF 1973.
C. SILTATION BARRIERS SHALL BE MADE OF MATERIAL IN WHICH A SEA TURTLE OR SMALLTOOTH SAWFISH CANNOT BECOME ENTANGLED, BE PROPERLY SECURED, AND BE REGULARLY MONITORED TO AVOID PROTECTED SPECIES ENTRAPMENT. BARRIERS MAY NOT BLOCK SEA TURTLE OR SMALLTOOTH SAWFISH ENTRY TO OR EXIT FROM DESIGNATED CRITICAL HABITAT WITHOUT PRIOR AGREEMENT FROM THE NATIONAL MARINE FISHERIES SERVICE'S PROTECTED RESOURCES DIVISION, ST. PETERSBURG, FLORIDA.
D. ALL VESSELS ASSOCIATED WITH 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.
E. IF A SEA TURTLE OR SMALLTOOTH SAWFISH IS SEEN WITHIN 100 YARDS OF THE ACTIVE DAILY CONSTRUCTION/DREDGING OPERATION OR VESSEL MOVEMENT, ALL APPROPRIATE PRECAUTIONS SHALL BE IMPLEMENTED TO ENSURE ITS PROTECTION. THESE PRECAUTIONS SHALL INCLUDE CESSATION OF OPERATION OF ANY MOVING EQUIPMENT CLOSER THAN 50 FEET OF A SEA TURTLE OR SMALLTOOTH SAWFISH. OPERATION OF ANY MECHANICAL CONSTRUCTION EQUIPMENT SHALL CEASE IMMEDIATELY IF A SEA TURTLE OR SMALLTOOTH SAWFISH 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.
F. ANY COLLISION WITH AND/OR INJURY TO A SEA TURTLE OR SMALLTOOTH SAWFISH SHALL BE REPORTED IMMEDIATELY TO THE NATIONAL MARINE FISHERIES SERVICE'S PROTECTED RESOURCES DIVISION (727-824-5312) AND THE LOCAL AUTHORIZED SEA TURTLE STRANDING/RESCUE ORGANIZATION.

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CONDITIONS INTENDED TO PROTECT MANATEES FROM DIRECT PROJECT EFFECTS:

- A. ALL PERSONNEL ASSOCIATED WITH THE PROJECT SHALL BE INSTRUCTED ABOUT THE PRESENCE OF MANATEES AND MANATEE SPEED ZONES, AND THE NEED TO AVOID COLLISIONS WITH AND INJURY TO MANATEES. 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 MARINE MAMMAL PROTECTION ACT, THE ENDANGERED SPECIES ACT, AND THE FLORIDA MANATEE SANCTUARY ACT.
B. ALL VESSELS ASSOCIATED WITH THE CONSTRUCTION PROJECT SHALL OPERATE AT "IDLE SPEED/NO WAKE" AT ALL TIMES WHILE IN THE IMMEDIATE AREA AND WHILE IN WATER WHERE THE DRAFT OF THE VESSEL PROVIDES LESS THAN A FOUR-FOOT CLEARANCE FROM THE BOTTOM. ALL VESSELS WILL FOLLOW ROUTES OF DEEP WATER WHENEVER POSSIBLE.
C. SILTATION OR TURBIDITY BARRIERS SHALL BE MADE OF MATERIAL IN WHICH MANATEES CANNOT BECOME ENTANGLED, SHALL BE PROPERLY SECURED, AND SHALL BE REGULARLY MONITORED TO AVOID MANATEE ENTANGLEMENT OR ENTRAPMENT. BARRIERS MUST NOT IMPEDE MANATEE MOVEMENT.
D. ALL ON-SITE PROJECT PERSONNEL ARE RESPONSIBLE FOR OBSERVING WATER-RELATED ACTIVITIES FOR THE PRESENCE OF MANATEE(S). ALL IN-WATER OPERATIONS, INCLUDING VESSELS, MUST BE SHUTDOWN IF A MANATEE(S) COMES WITHIN 50 FEET OF THE OPERATION. ACTIVITIES WILL NOT RESUME UNTIL THE MANATEE(S) HAS MOVED BEYOND THE 50-FOOT RADIUS OF THE PROJECT OPERATION, OR UNTIL 30 MINUTES ELAPSES IF THE MANATEE(S) HAS NOT REAPPEARED WITHIN 50 FEET OF THE OPERATION. ANIMALS MUST NOT BE HERDED AWAY OR HARASSED INTO LEAVING.
E. ANY COLLISION WITH OR INJURY TO A MANATEE SHALL BE REPORTED IMMEDIATELY TO THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (FWC) HOTLINE AT 1-888-404-3922. COLLISION AND/OR INJURY SHOULD ALSO BE REPORTED TO THE U.S. FISH AND WILDLIFE SERVICE IN JACKSONVILLE (1-904-731-3336) FOR NORTH FLORIDA OR IN VERO BEACH (1-772-562-3909) FOR SOUTH FLORIDA, AND EMAILED TO FWC AT IMPERILEDSPECIES@MYFWC.COM.
F. TEMPORARY SIGNS CONCERNING MANATEES SHALL BE POSTED PRIOR TO AND DURING ALL IN-WATER PROJECT ACTIVITIES. ALL SIGNS ARE TO BE REMOVED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. TEMPORARY SIGNS THAT HAVE ALREADY BEEN APPROVED FOR THIS USE BY THE FWC MUST BE USED. ONE SIGN WHICH READS CAUTION: BOATERS MUST BE POSTED. A SECOND SIGN MEASURING AT LEAST 8 1/2 " BY 11" EXPLAINING THE REQUIREMENTS FOR "IDLE SPEED/NO WAKE" AND THE SHUT DOWN OF IN-WATER OPERATIONS MUST BE POSTED IN A LOCATION PROMINENTLY VISIBLE TO ALL PERSONNEL ENGAGED IN WATER-RELATED ACTIVITIES. THESE SIGNS CAN BE VIEWED AT HTTP://WWW.MYFWC.COM/WILDLIFEHABITATS/MANATEE_SIGN_VENDORS.HTM. QUESTIONS CONCERNING THESE SIGNS CAN BE FORWARDED TO THE EMAIL ADDRESS LISTED ABOVE.

LEGEND:

- - - - - BANANA RIVER MHWL OF 2001
- - - - - BANANA RIVER MHWL OF 2007
- - - - - BANANA RIVER MHWL OF 2009
- - - - - EXISTING RIVER WATER EDGE LINE (4/2/15)
- - - - - SAFE UPLAND LINE (OHWL)
- - - - - EXISTING TOP OF BANK
FM EXISTING SANITARY FORCE MAIN
RW EXISTING RECLAIMED WATER MAIN
FB PROPOSED FLOATING TURBIDITY BARRIER
SF PROPOSED SILT FENCE
- - - - - EXISTING CONTOUR LINE
x 2.50 EXISTING GRADE SPOT ELEVATION
x 2.50 PROPOSED FINISHED GRADE SPOT ELEVATION

ABBREVIATIONS:

- BOT. BOTTOM
CONC. CONCRETE
E EASTING
EL. ELEVATION
LB LAND SURVEYING BUSINESS
MHWL MEAN HIGH WATER LEVEL
N NORTHING
NAVD NORTH AMERICAN VERTICAL DATUM
NGVD NATIONAL GEODETIC VERTICAL DATUM
TYP. TYPICAL

SURVEYOR'S NOTES:

- 1. THIS IS NOT A BOUNDARY SURVEY.
2. THE COORDINATE VALUES AND BEARINGS SHOWN HEREON ARE BASED ON NORTH AMERICAN DATUM (NAD) OF 1983, FLORIDA EAST AND WERE ESTABLISHED FROM GPS OBSERVATIONS USING PUBLISHED VALUES FOR UNITED STATES COASTAL & GEODETIC SURVEY (USC&GS) MONUMENT "TECH."
3. THE ELEVATIONS SHOWN HEREON ARE BASED ON USC&GS MONUMENT "TECH," ELEVATION= 6.80 FEET. ALL ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.
4. ONLY ABOVE GROUND INDICATIONS OF UTILITIES WERE LOCATED BY THIS SURVEY.

CONSTRUCTION EQUIPMENT NOTES:

- 1. THE CONTRACTOR SHALL UTILIZE A LONG-REACH EXCAVATOR OR BACKHOE TO ACCOMPLISH THE IN-WATER WORK IF POSSIBLE. IF THE PLACEMENT OF THE BREAKWATER OR FILL SOILS CANNOT BE ACCOMPLISHED WITH LONG-REACH EQUIPMENT FROM THE LAND, THEN THE ALTERNATE METHODS SHALL BE EITHER A SHALLOW BARGE OR WATER-BASED PLATFORM WITH MOUNTED EQUIPMENT OR BY THE USE OF AMPHIBIOUS EQUIPMENT.
2. THE BARGE OR PLATFORM SHALL BE LOCATED WITHIN THE LIMITS OF THE FLOATING TURBIDITY BARRIERS AND SHALL BE MOVED OUTSIDE THE RUNWAY CLEAR ZONE DURING NON-OPERATING HOURS. THE MAXIMUM DRAFT OF THE VESSEL IS 2.0 FEET.
3. AMPHIBIOUS EQUIPMENT SHALL BE LOCATED WITHIN THE LIMITS OF THE FLOATING TURBIDITY BARRIERS AND SHALL BE MOVED OUTSIDE THE RUNWAY CLEAR ZONE DURING NON-OPERATING HOURS. THE ENTRY/EXIT POINT FROM LAND INTO THE WATER SHALL BE LOCATED WITHIN THE PERMITTED LIMITS OF CONSTRUCTION IMPACTS AND SHALL BE RESTORED TO MATCH THE PROPOSED DESIGN SECTION CONDITIONS.

11x17 DRAWING SIZE IS HALF SIZE OF NOTED SCALE

ENGINEER OF RECORD: DAVID A. LAVENDER
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FL C.A. # LB 266
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RAEIS CONTRACT NO: FA2521-13-D-0005-0095



Table with 4 columns: DATE (01/16/17), SAFT (15-1005), DELIVERY NO. (FA2521-13-D-0005), AS BUILT DATE: (###)

USAF 45TH CIVIL ENGINEER SQUADRON PAFB, FL
CONTRACT NO.: FA2521-13-D-0005 - 0095
RAEIS OTIE
AMRC
GP STRATEGIES
AMRC AE engineering, inc.

SAHT 15-1005
REPAIR RIVER SHORELINE, RUNWAY 11
GENERAL NOTES, ABBREVIATIONS, AND LEGEND

SHEET IDENTIFICATION
C-001

PROPOSED ACTION: CUT UPLAND "PENINSULA" TO CREATE WATERS OF THE BANANA RIVER FROM ELEV. -1.8 TO TOE OF REVETMENT PROTECTION LINE. WORK WITHIN EXISTING WATERS = 0.020 ACRES (850 SF) AREA OF WATER CREATED = 0.029 ACRES (1253 SF)

PROPOSED ACTION: FILL WITHIN WATERS OF THE BANANA RIVER FROM ELEV. -0.32 SAFE UPLAND LINE OUT TO ROCK BREAKWATER TOE PROTECTION LINE = 0.599 ACRES (26,106 SF)

WETLAND #1 (7-8-16)
3,360 SF = 0.077 AC
WL-1 IMPACT = 3,360 SF = 0.077 AC

SAFE UPLAND LINE (OHWL)
ELEVATION= 1.10' (1929 NGVD)
ELEVATION= -0.32' (1988 NAVD)

EMERGENCY REPAIR APPROX. 213 LF RIP-RAP PREVIOUSLY INSTALLED EARLY 2015 TO PROTECT EXISTING UTILITIES THAT HAD BECOME EXPOSED = 0.096 ACRES

WETLAND #2 (7-8-16)
7,352 SF = 0.169 AC
WL-2 IMPACT = 1,431 SF = 0.033 AC

DO NOT DISTURB THIS PORTION OF WETLAND #2 EXISTING VEGETATION NOT DISTURBED = 5,291 SF = 0.136 AC

WATER LEVEL LINE (4-02-15)
ELEVATION= 0.68± (1929 NGVD)
ELEVATION= -0.74± (1988 NAVD)

OVERALL SHORELINE PROTECTION PLAN
SCALE: 1" = 40'

CONSTRUCTION FLAG NOTES:

- INSTALL AND MAINTAIN THROUGHOUT CONSTRUCTION TYPE II FLOATING TURBIDITY BARRIER. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERMIT CONDITIONS OF WORK IN WATERS OF THE STATE. REMOVE UPON PROJECT STABILIZATION COMPLETION.
- COQUINA ROCK BREAK WATER PLACED ON TOP OF WOVEN GEOTEXTILE FABRIC AS DETAILED ON SHEET C-501.
- CLEAN FILL OBTAINED FROM PAFB MARINA DREDGE SPOIL, PLACE FROM ELEVATION 2.5' OF TOP OF ROCK DOWN TO EXISTING TOP OF BANK ELEVATION VARIES FROM 1.9' TO 2.5'. SOD DISTURBED AREAS BEHIND RIP-RAP.
- CONCRETE RIP-RAP REVETMENT OVER FILTER FABRIC, SEE DETAIL ON SHEET C-501.
- CLEAN SAND FILL OBTAINED FROM PAFB MARINA DREDGE SPOIL, PLACE FROM COQUINA BREAKWATER EASTERN TOE AT 14:1 FILL SLOPE TO MEET RIP-RAP REVETMENT. PLANT SALT MARSH VEGETATION AS DETAILED ON SHEET C-501.
- TURN RIP-RAP REVETMENT BACK IN TOWARD SHORE TO ANCHOR.
- EXISTING RIP-RAP REVETMENT TO REMAIN, REMOVE 5' OF ROCK FROM EITHER END TO EXPOSE EXISTING FILTER FABRIC AND LAP SPLICE EXTENSION OF FILTER FABRIC TO CONTINUE RIP-RAP IN BOTH DIRECTIONS, REPLACE ROCK.
- EXISTING MANGROVE/VEGETATION TO REMAIN, ADJUST COQUINA BREAKWATER AS NEEDED, SEE DETAIL 'C' ON SHEET C-501.
- SMALL VEGETATION CLUSTERS WITHIN LIMITS OF PROPOSED REVETMENT ARE TO BE REMOVED. COORDINATE WITH CONTRACTING OFFICER PRIOR TO ANY VEGETATION REMOVAL.

CURVE TABLE

ID	RADIUS	DELTA ANGLE	LENGTH	CHORD	CHORD BEARING
C1	21'	110° 57' 02"	40.67'	34.60'	S 38° 55' 17" W
C2	132'	24° 30' 03"	56.45'	56.02'	S 28° 48' 15" E
C3	200'	59° 57' 50"	209.31'	199.89'	S 11° 04' 22" E
C4	200'	16° 11' 22"	56.51'	56.32'	S 10° 48' 52" W
C5	450'	21° 14' 47"	166.87'	165.91'	S 07° 54' 13" E

LINE TABLE

ID	BEARING	LENGTH
L1	S18°54'33"W	169.31'
L2	S02°43'11"W	6.39'
L3	S18°31'36"E	29.67'
L4	S19°23'11"E	24.35'
L5	S66°27'56"E	20.47'

LEGEND:

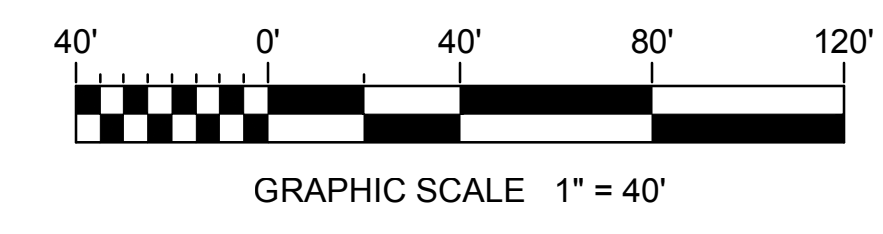
- AREA OF SOFT ARMOR FILL WITH SALT MARSH VEGETATION PLANTINGS
0.582 AC (25,360 SF)
- AREA OF HARD ARMOR ROCK REVETMENT
0.139 AC (6,076 SF); 490 LINEAR FEET
- COQUINA ROCK BREAKWATERS
780 LINEAR FEET
- EXISTING WETLAND AREAS; 0.246 AC (10,712 SF)
- FB TYPE II FLOATING TURBIDITY BARRIER
- SF TYPE III SILT FENCE

SURFACE WATER IMPACTS:

- LENGTH OF WORK IN EXISTING SURFACE WATERS = 805 LF
- LENGTH OF NEW RIP-RAP ALONG SHORELINE = 490 LF
- SQUARE FEET OF WORK IN EXISTING SURFACE WATERS = 26,956 SF (0.619 AC)

WETLAND IMPACTS:

- WETLAND #1 (W1) IMPACTS = 3,360 SF (0.077 AC)
- WETLAND #2 (W2) IMPACTS = 1,431 SF (0.033 AC)
- TOTAL WETLAND IMPACTS = 4,791 SF (0.110 AC)



11x17 DRAWING SIZE IS HALF SIZE OF NOTED SCALE

ENGINEER OF RECORD: DAVID A. LAVENDER
LICENSE NUMBER: 66400
NAME AND ADDRESS OF BUSINESS:
ALLEN ENGINEERING, INC.
106 DIXIE LANE (P.O. BOX 321321)
COCOA BEACH, FLORIDA 32932-1321
OFFICE: (321) 783-7443 - FAX: (321) 783-5902
E-MAIL: INFO@ALLENENG.NET
FL C.A. # LB 266
AEI #: 150005
RAEIS CONTRACT NO: FA2521-13-D-0005-0095

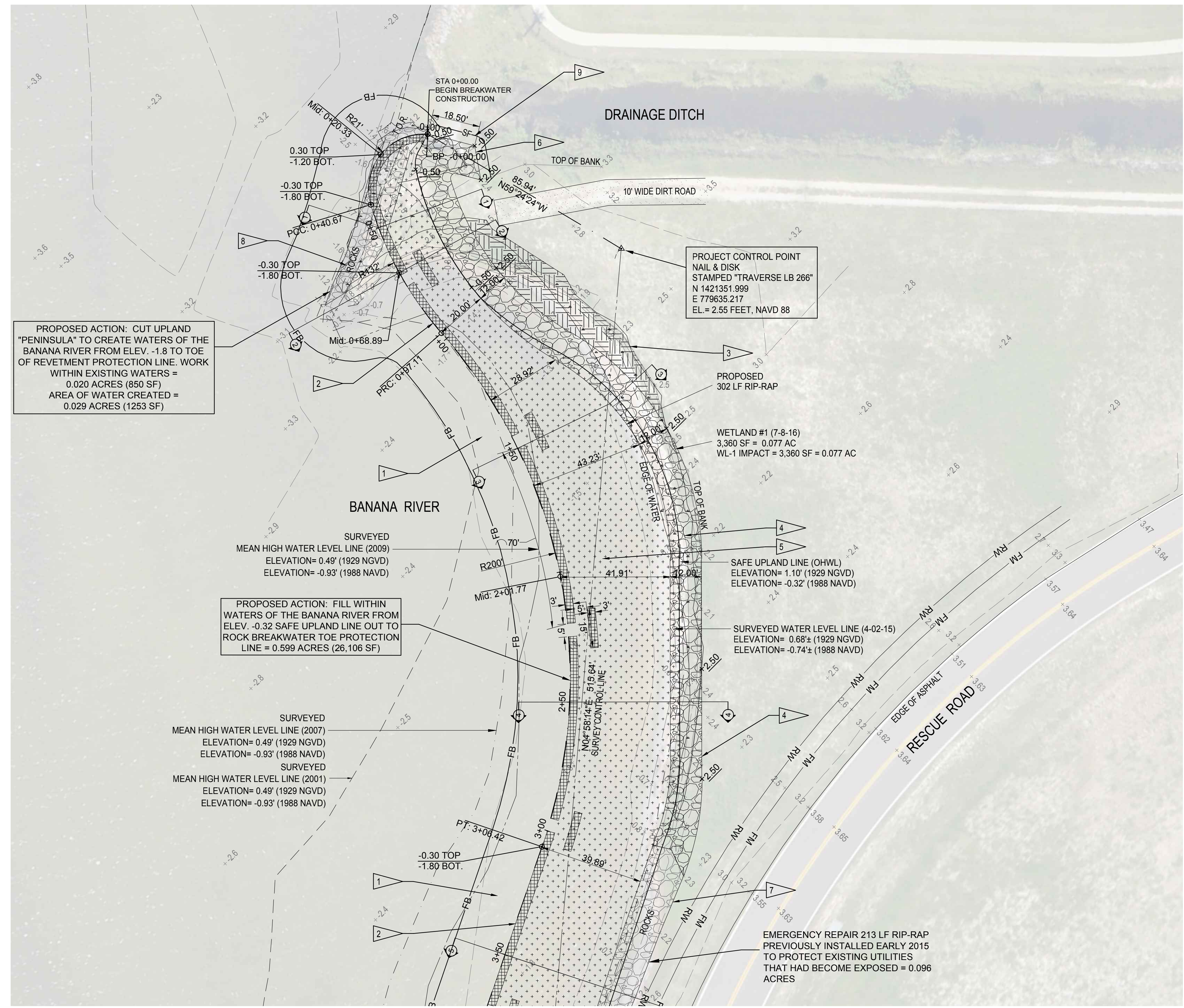


DATE:	01/19/17
DESIGNED BY:	D. LAVENDER
DRAWN BY:	D. LAVENDER
REVIEWED BY:	J. KELLEY
SUBMITTED BY:	G. BEARD
SAHT 15-1005	
DELIVERY NO. 0085	
AS BUILT DATE:	####

USAF 45TH CIVIL ENGINEER SQUADRON PAFB, FL
CONTRACT NO.: FA2521-13-D-0005 - 0095
RAEIS OTIE
GP STRATEGIES
AMRC
ALLEN ENGINEERING, INC.

SHXHT 15-1005
REPAIR RIVER SHORELINE, RUNWAY 11
OVERALL SHORELINE PROTECTION PLAN

SHEET IDENTIFICATION
C-100



PROPOSED ACTION: CUT UPLAND "PENINSULA" TO CREATE WATERS OF THE BANANA RIVER FROM ELEV. -1.8 TO TOE OF REVETMENT PROTECTION LINE. WORK WITHIN EXISTING WATERS = 0.020 ACRES (850 SF) AREA OF WATER CREATED = 0.029 ACRES (1253 SF)

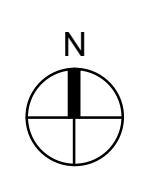
PROPOSED ACTION: FILL WITHIN WATERS OF THE BANANA RIVER FROM ELEV. -0.32 SAFE UPLAND LINE OUT TO ROCK BREAKWATER TOE PROTECTION LINE = 0.599 ACRES (26,106 SF)

SURVEYED MEAN HIGH WATER LEVEL LINE (2007) ELEVATION= 0.49' (1929 NGVD) ELEVATION= -0.93' (1988 NAVD)
 SURVEYED MEAN HIGH WATER LEVEL LINE (2001) ELEVATION= 0.49' (1929 NGVD) ELEVATION= -0.93' (1988 NAVD)

PROJECT CONTROL POINT NAIL & DISK STAMPED "TRAVERSE LB 266" N 1421351.999 E 779635.217 EL. = 2.55 FEET, NAVD 88

EMERGENCY REPAIR 213 LF RIP-RAP PREVIOUSLY INSTALLED EARLY 2015 TO PROTECT EXISTING UTILITIES THAT HAD BECOME EXPOSED = 0.096 ACRES

SEE SHEET C-102



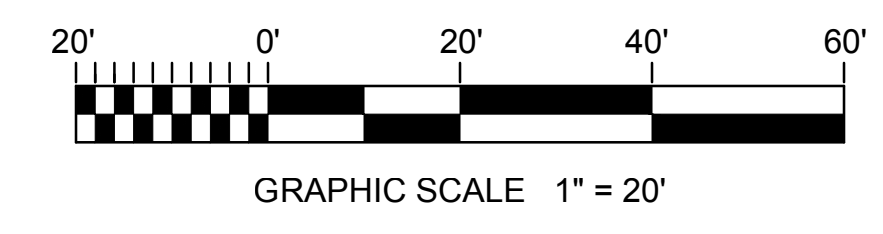
NORTH SECTION SHORELINE PROTECTION PLAN
 SCALE: 1" = 20'

CONSTRUCTION FLAG NOTES:

1. INSTALL AND MAINTAIN THROUGHOUT CONSTRUCTION TYPE II FLOATING TURBIDITY BARRIER. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERMIT CONDITIONS OF WORK IN WATERS OF THE STATE. REMOVE UPON PROJECT STABILIZATION COMPLETION.
2. 3' WIDE COQUINA ROCK BREAK WATER PLACED ON TOP OF WOVEN GEOTEXTILE FABRIC AS DETAILED ON SHEET C-501.
3. PLACE CLEAN FILL OBTAINED FROM PAFB MARINA DREDGE SPOIL FROM ELEVATION 2.5' OF TOP OF ROCK DOWN TO EXISTING TOP OF BANK ELEVATION VARIES FROM 1.9' TO 2.5'. SOD ALL DISTURBED AREAS BEHIND RIP-RAP.
4. CONCRETE RIP-RAP REVETMENT OVER FILTER FABRIC, SEE DETAIL ON SHEET C-501.
5. PLACE CLEAN SAND FILL OBTAINED FROM PAFB MARINA DREDGE SPOIL FROM COQUINA BREAKWATER EASTERN TOE AT 14:1 FILL SLOPE TO MEET RIP-RAP REVETMENT. PLANT SALT MARSH VEGETATION AS DETAILED ON SHEET C-501.
6. TURN RIP-RAP REVETMENT BACK IN TOWARD SHORE TO ANCHOR.
7. EXISTING RIP-RAP REVETMENT TO REMAIN, REMOVE 5' OF ROCK FROM EITHER END TO EXPOSE EXISTING FILTER FABRIC AND LAP SPlice EXTENSION OF FILTER FABRIC TO CONTINUE RIP-RAP IN BOTH DIRECTIONS, REPLACE ROCK.
8. REMOVE EXISTING RUBBLE REVETMENT PENINSULA SOUTH OF DRAINAGE DITCH. EXCAVATE GRADE TO ELEVATION -1.2 UP TO PROPOSED LOCATION OF BREAKWATER.
9. INSTALL SILT FENCE PRIOR TO START OF WORK.

LEGEND:

- AREA OF SOFT ARMOR FILL WITH SALT MARSH VEGETATION PLANTINGS 0.582 AC (25,360 SF)
- AREA OF HARD ARMOR ROCK REVETMENT 0.139 AC (6,076 SF); 490 LINEAR FEET
- COQUINA ROCK BREAKWATERS 780 LINEAR FEET
- EXISTING WETLAND AREA
- FB TYPE II FLOATING TURBIDITY BARRIER
- SF TYPE III SILT FENCE



11x17 DRAWING SIZE IS HALF SIZE OF NOTED SCALE

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 106 DIXIE LANE (P.O. BOX 321321)
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 E-MAIL: INFO@ALLENENG.NET
 FL C.A. # LB 266
 AEI #: 150005
 RAEIS CONTRACT NO: FA2521-13-D-0005-0095



DATE:	01/19/17
DESIGNED BY:	D. LAVENDER
DRAWN BY:	D. LAVENDER
REVIEWED BY:	J. KELLEY
SUBMITTED BY:	G. BEARD
SAHT 15-1005	
DELIVERY NO. 0085	
AS BUILT DATE: ####	

USAF 45TH CIVIL ENGINEER SQUADRON PAFB, FL
 CONTRACT NO.: FA2521-13-D-0005 - 0095

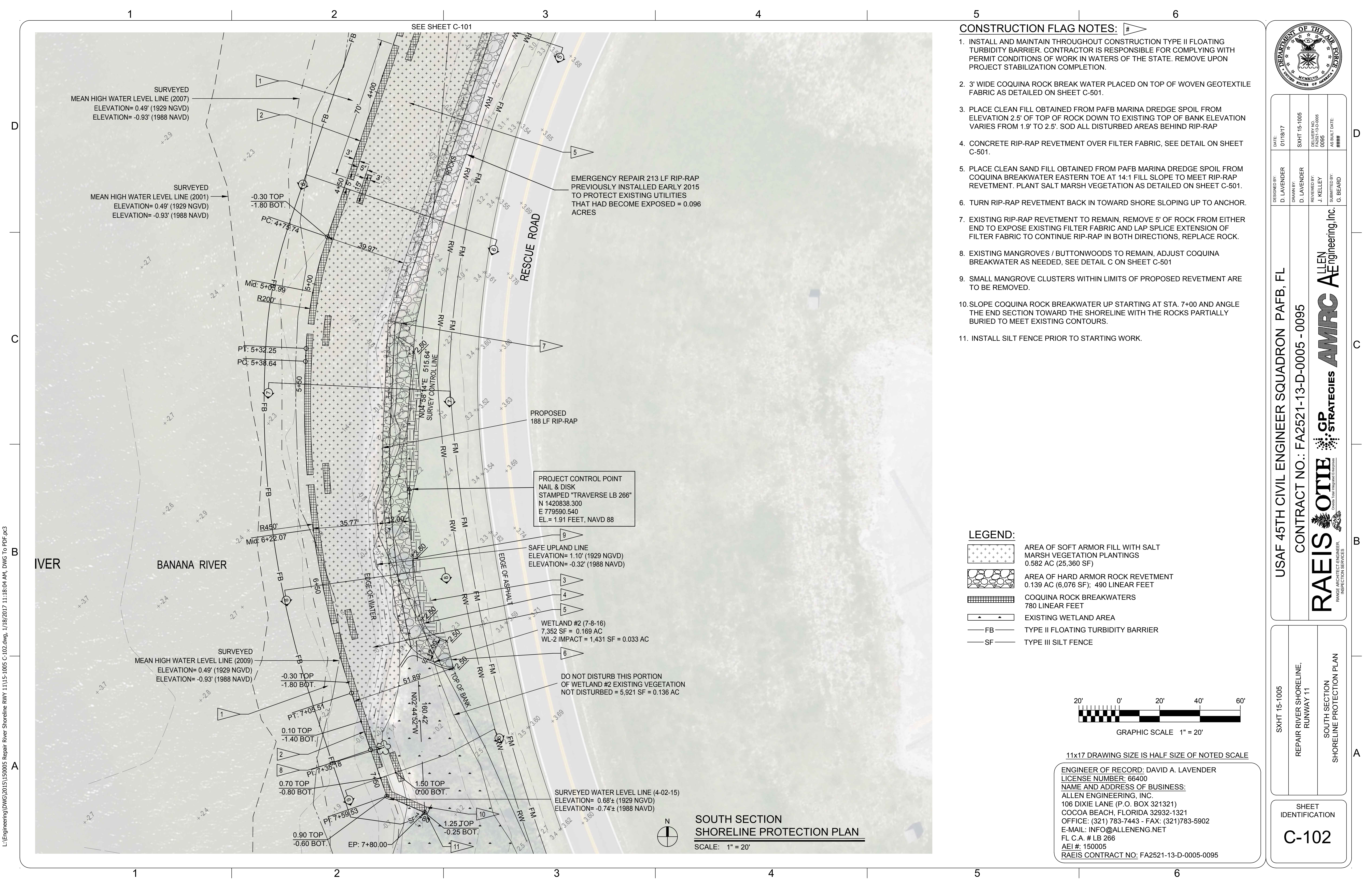
RAEIS OTIE
 RAEIS CONTRACT NO. FA2521-13-D-0005-0095

STRATEGIES AMRC
 ALLEN ENGINEERING, INC.

SHHT 15-1005
 REPAIR RIVER SHORELINE, RUNWAY 11
 NORTH SECTION SHORELINE PROTECTION PLAN

SHEET IDENTIFICATION
C-101

L:\Engineering\DWG\2015\150005 Repair River Shoreline Rwy 11\15-1005 C-101.dwg, 1/18/2017 11:10:46 AM, DWG To PDF.pc3



SEE SHEET C-101

SURVEYED
MEAN HIGH WATER LEVEL LINE (2007)
ELEVATION= 0.49' (1929 NGVD)
ELEVATION= -0.93' (1988 NAVD)

SURVEYED
MEAN HIGH WATER LEVEL LINE (2001)
ELEVATION= 0.49' (1929 NGVD)
ELEVATION= -0.93' (1988 NAVD)

SURVEYED
MEAN HIGH WATER LEVEL LINE (2009)
ELEVATION= 0.49' (1929 NGVD)
ELEVATION= -0.93' (1988 NAVD)

EMERGENCY REPAIR 213 LF RIP-RAP
PREVIOUSLY INSTALLED EARLY 2015
TO PROTECT EXISTING UTILITIES
THAT HAD BECOME EXPOSED = 0.096
ACRES

PROPOSED
188 LF RIP-RAP

PROJECT CONTROL POINT
NAIL & DISK
STAMPED "TRAVERSE LB 266"
N 1420838.300
E 779590.540
EL= 1.91 FEET, NAVD 88

SAFE UPLAND LINE
ELEVATION= 1.10' (1929 NGVD)
ELEVATION= -0.32' (1988 NAVD)

WETLAND #2 (7-8-16)
7,352 SF = 0.169 AC
WL-2 IMPACT = 1,431 SF = 0.033 AC

DO NOT DISTURB THIS PORTION
OF WETLAND #2 EXISTING VEGETATION
NOT DISTURBED = 5,921 SF = 0.136 AC

SURVEYED WATER LEVEL LINE (4-02-15)
ELEVATION= 0.68± (1929 NGVD)
ELEVATION= -0.74± (1988 NAVD)

**SOUTH SECTION
SHORELINE PROTECTION PLAN**

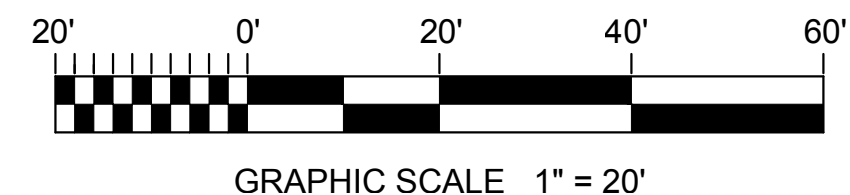
SCALE: 1" = 20'

CONSTRUCTION FLAG NOTES:

1. INSTALL AND MAINTAIN THROUGHOUT CONSTRUCTION TYPE II FLOATING TURBIDITY BARRIER. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERMIT CONDITIONS OF WORK IN WATERS OF THE STATE. REMOVE UPON PROJECT STABILIZATION COMPLETION.
2. 3' WIDE COQUINA ROCK BREAK WATER PLACED ON TOP OF WOVEN GEOTEXTILE FABRIC AS DETAILED ON SHEET C-501.
3. PLACE CLEAN FILL OBTAINED FROM PAFB MARINA DREDGE SPOIL FROM ELEVATION 2.5' OF TOP OF ROCK DOWN TO EXISTING TOP OF BANK ELEVATION VARIES FROM 1.9' TO 2.5'. SOD ALL DISTURBED AREAS BEHIND RIP-RAP
4. CONCRETE RIP-RAP REVETMENT OVER FILTER FABRIC, SEE DETAIL ON SHEET C-501.
5. PLACE CLEAN SAND FILL OBTAINED FROM PAFB MARINA DREDGE SPOIL FROM COQUINA BREAKWATER EASTERN TOE AT 14:1 FILL SLOPE TO MEET RIP-RAP REVETMENT. PLANT SALT MARSH VEGETATION AS DETAILED ON SHEET C-501.
6. TURN RIP-RAP REVETMENT BACK IN TOWARD SHORE SLOPING UP TO ANCHOR.
7. EXISTING RIP-RAP REVETMENT TO REMAIN, REMOVE 5' OF ROCK FROM EITHER END TO EXPOSE EXISTING FILTER FABRIC AND LAP SPLICE EXTENSION OF FILTER FABRIC TO CONTINUE RIP-RAP IN BOTH DIRECTIONS, REPLACE ROCK.
8. EXISTING MANGROVES / BUTTONWOODS TO REMAIN, ADJUST COQUINA BREAKWATER AS NEEDED, SEE DETAIL C ON SHEET C-501
9. SMALL MANGROVE CLUSTERS WITHIN LIMITS OF PROPOSED REVETMENT ARE TO BE REMOVED.
10. SLOPE COQUINA ROCK BREAKWATER UP STARTING AT STA. 7+00 AND ANGLE THE END SECTION TOWARD THE SHORELINE WITH THE ROCKS PARTIALLY BURIED TO MEET EXISTING CONTOURS.
11. INSTALL SILT FENCE PRIOR TO STARTING WORK.

LEGEND:

- AREA OF SOFT ARMOR FILL WITH SALT MARSH VEGETATION PLANTINGS
0.582 AC (25,360 SF)
- AREA OF HARD ARMOR ROCK REVETMENT
0.139 AC (6,076 SF); 490 LINEAR FEET
- COQUINA ROCK BREAKWATERS
780 LINEAR FEET
- EXISTING WETLAND AREA
- FB TYPE II FLOATING TURBIDITY BARRIER
- SF TYPE III SILT FENCE



11x17 DRAWING SIZE IS HALF SIZE OF NOTED SCALE

ENGINEER OF RECORD: DAVID A. LAVENDER
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E-MAIL: INFO@ALLENENG.NET
FL C.A. # LB 266
AEI #: 150005
RAEIS CONTRACT NO.: FA2521-13-D-0005-0095



DATE:	01/18/17
DESIGNED BY:	D. LAVENDER
DRAWN BY:	D. LAVENDER
REVIEWED BY:	J. KELLEY
SUBMITTED BY:	G. BEARD
SXHT 15-1005	
DELIVERY NO.	0095
PAGE#	13-D-0005
AS BUILT DATE:	###

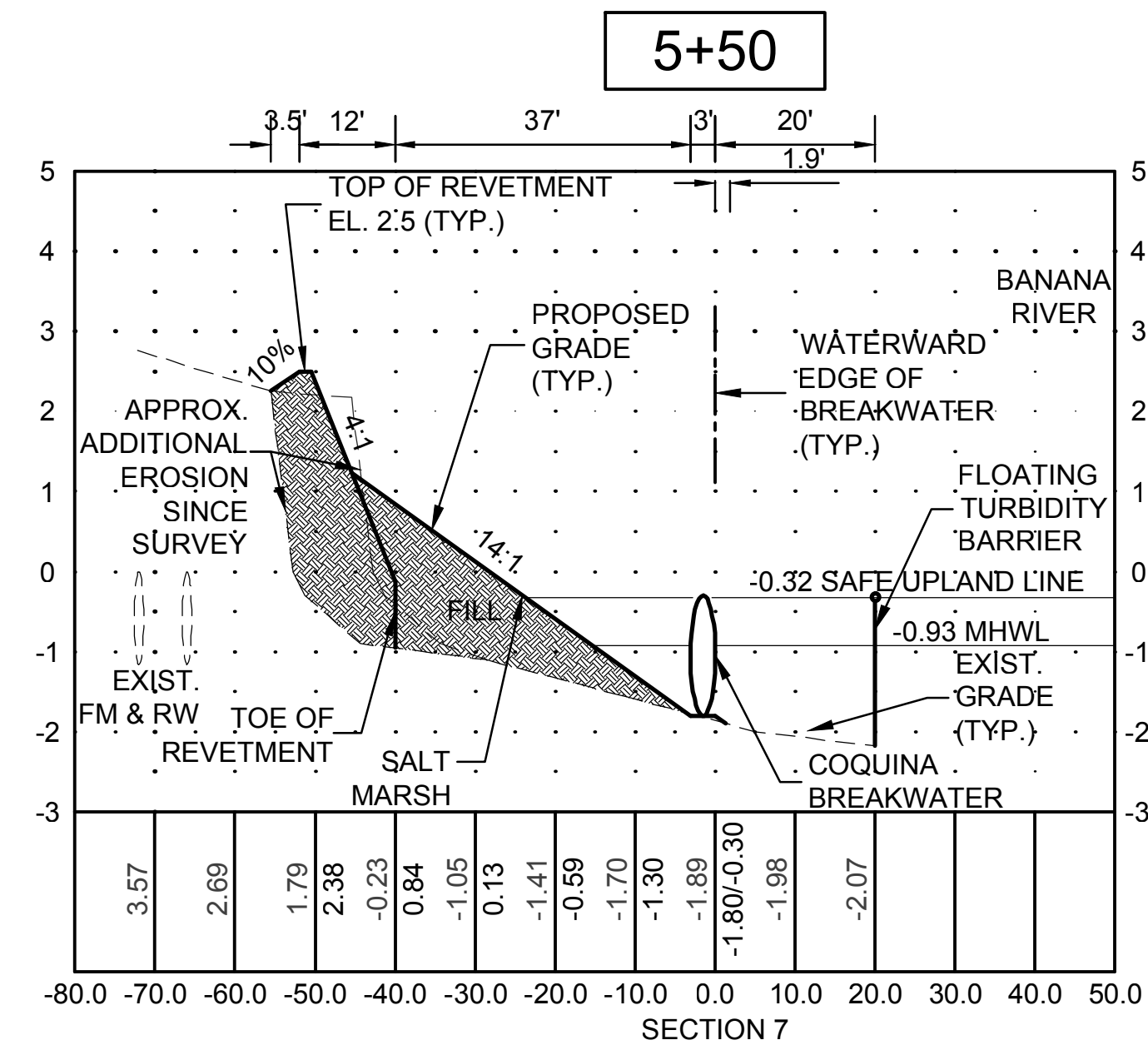
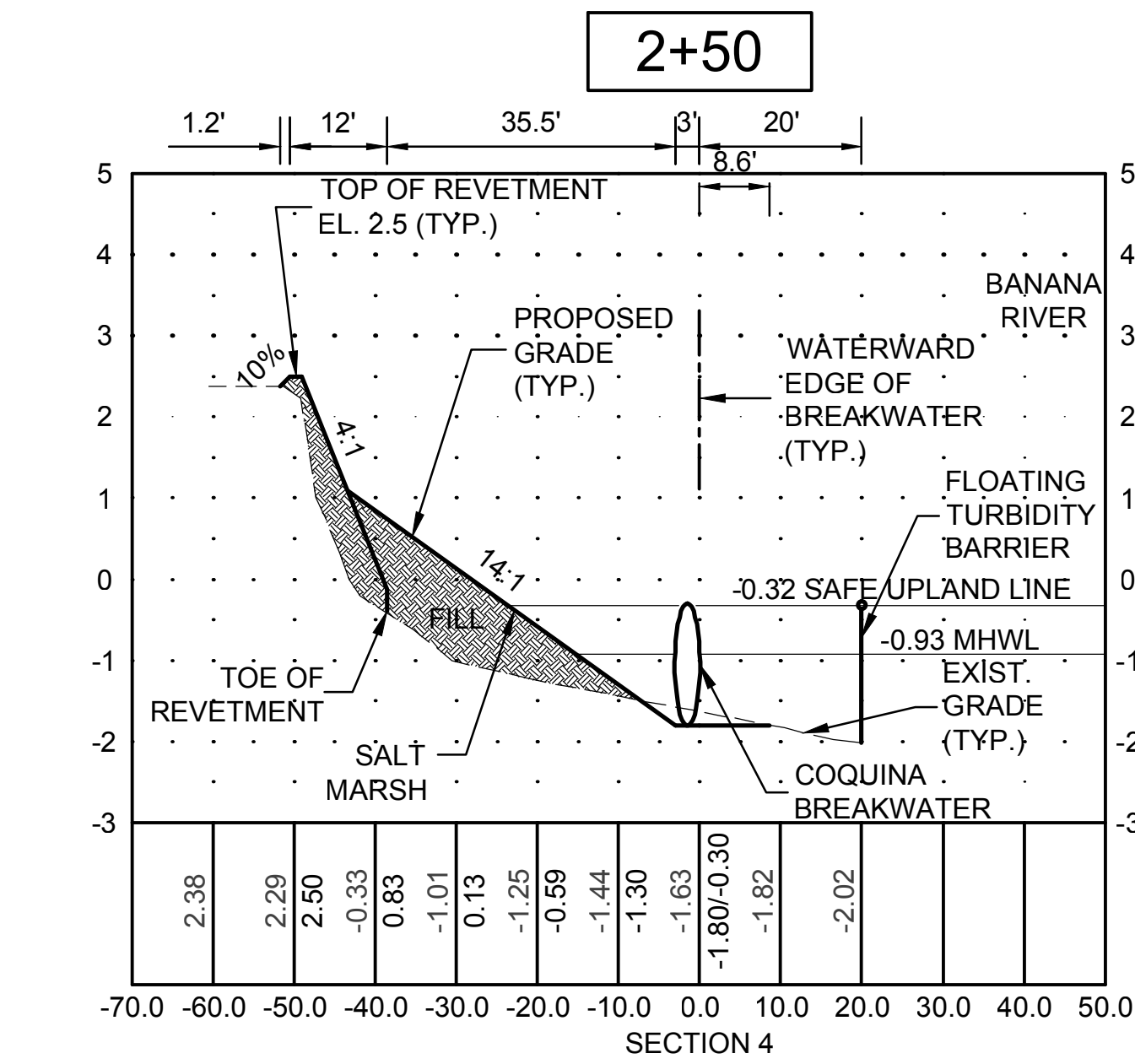
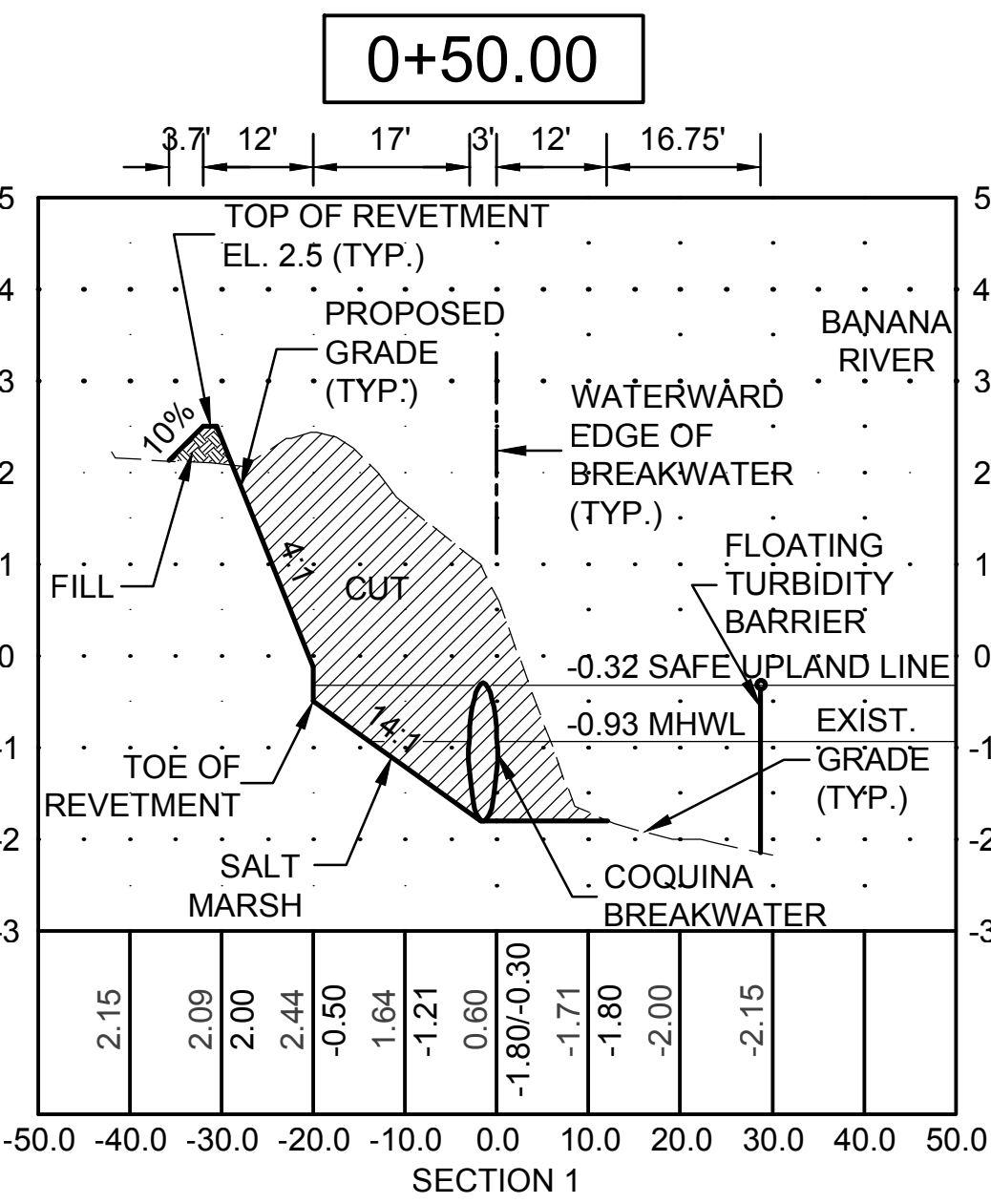
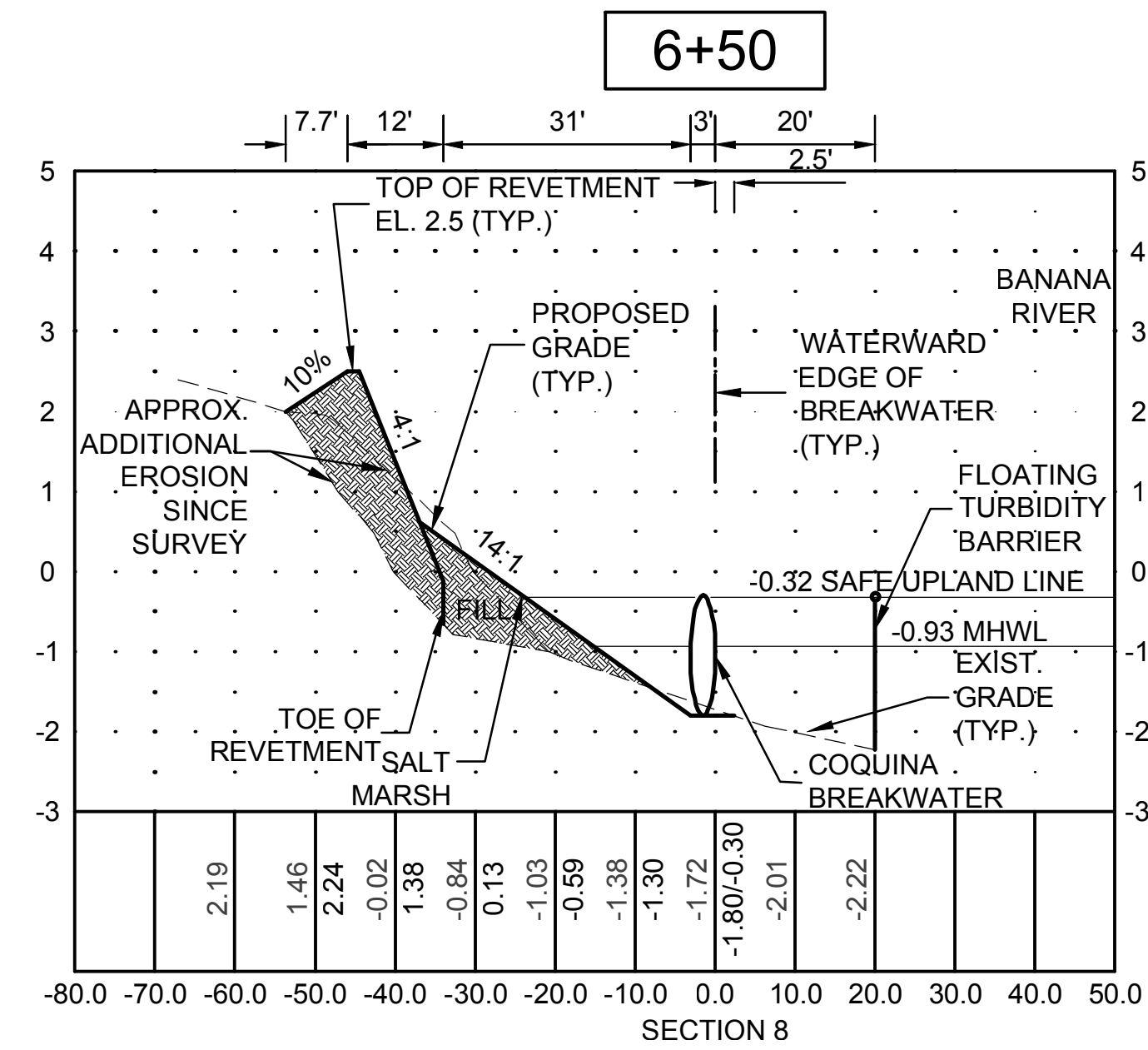
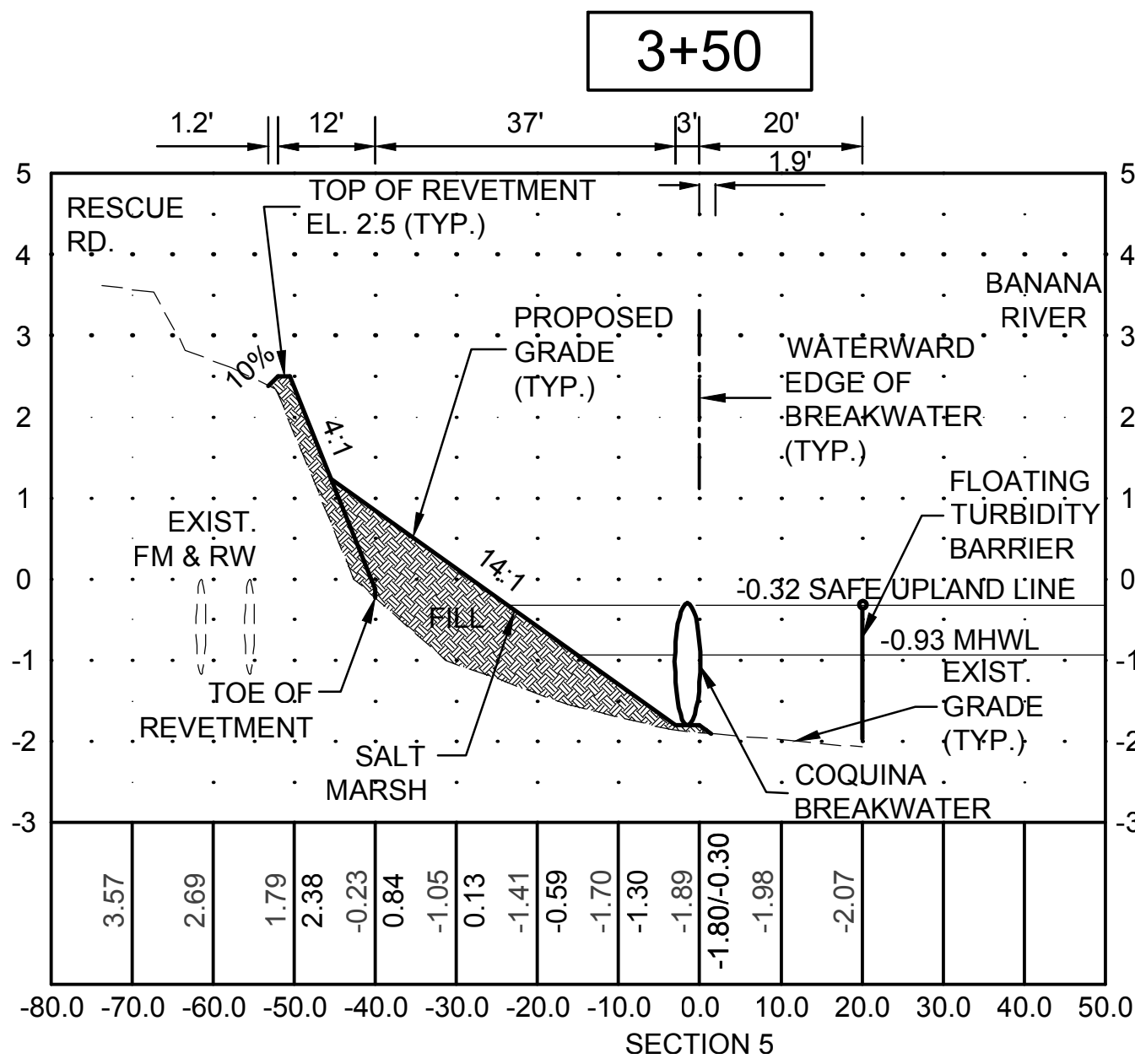
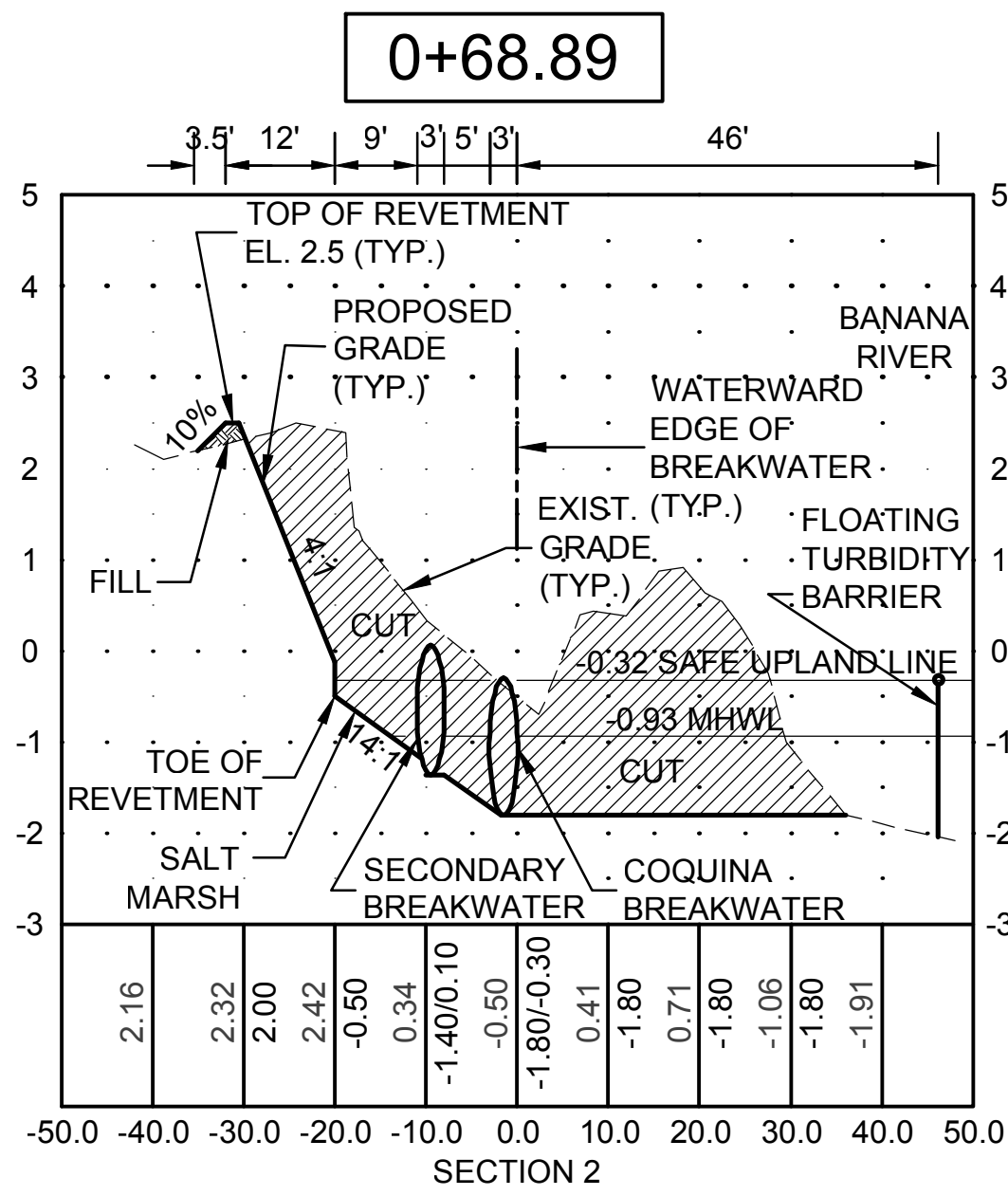
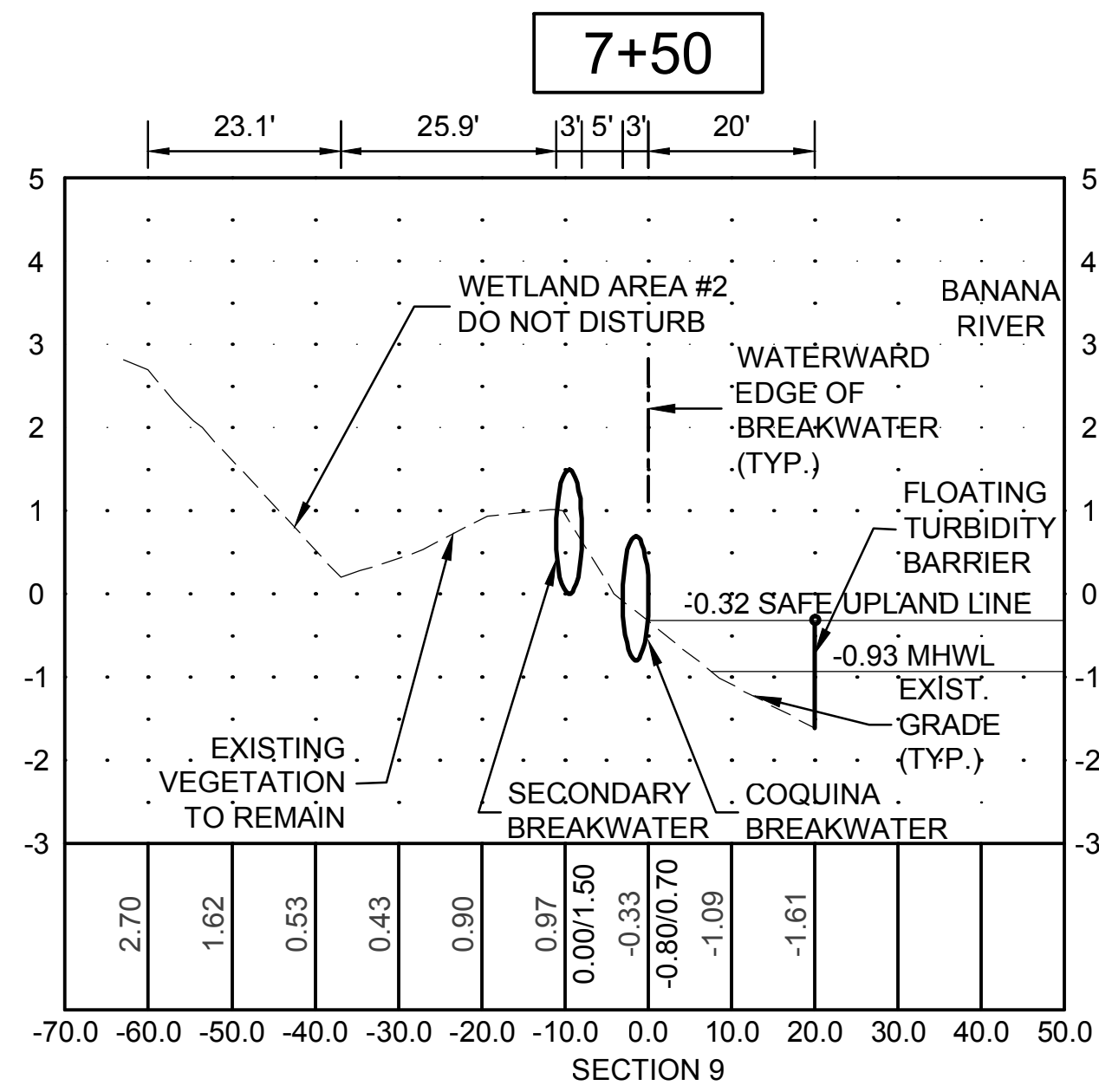
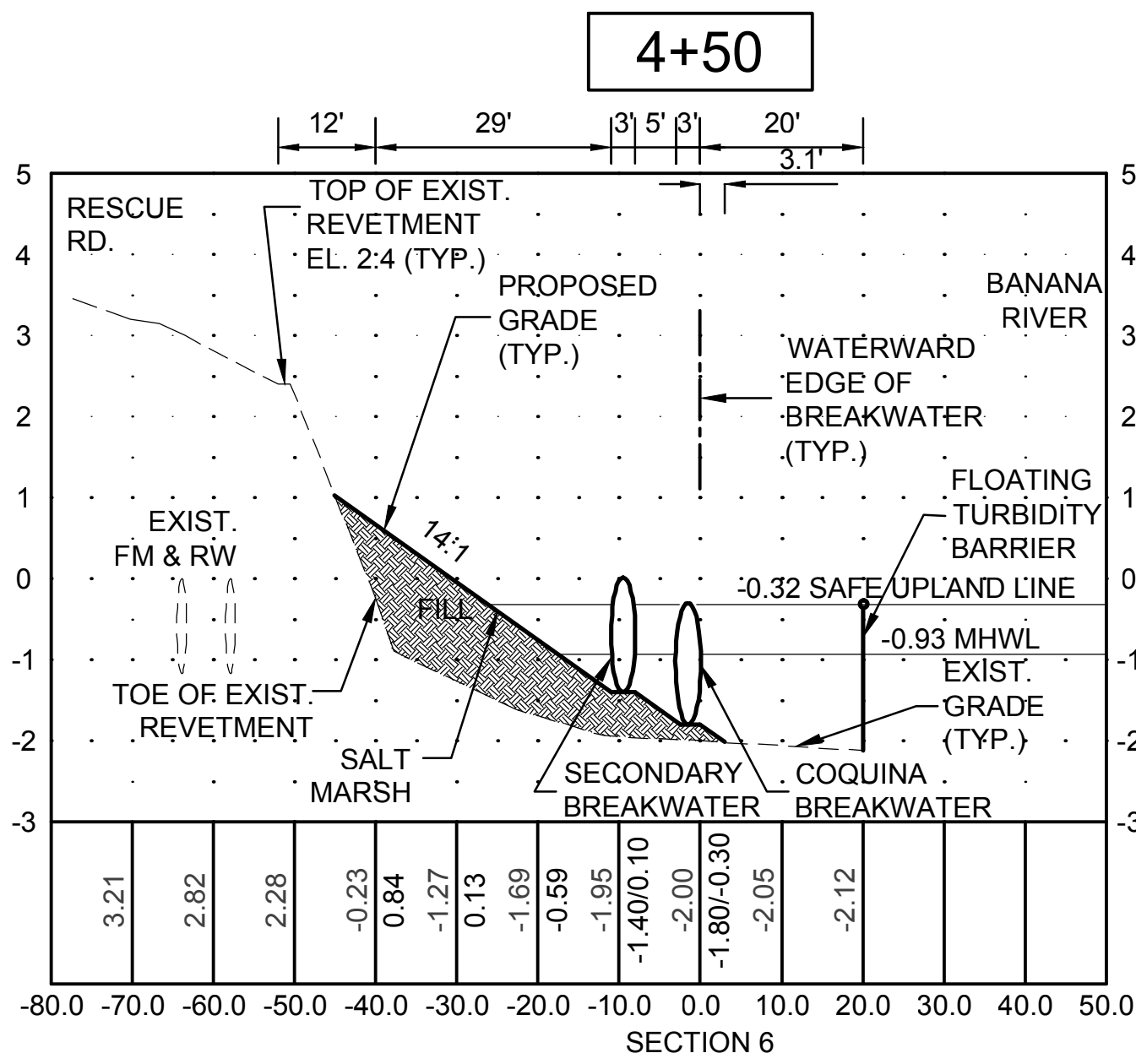
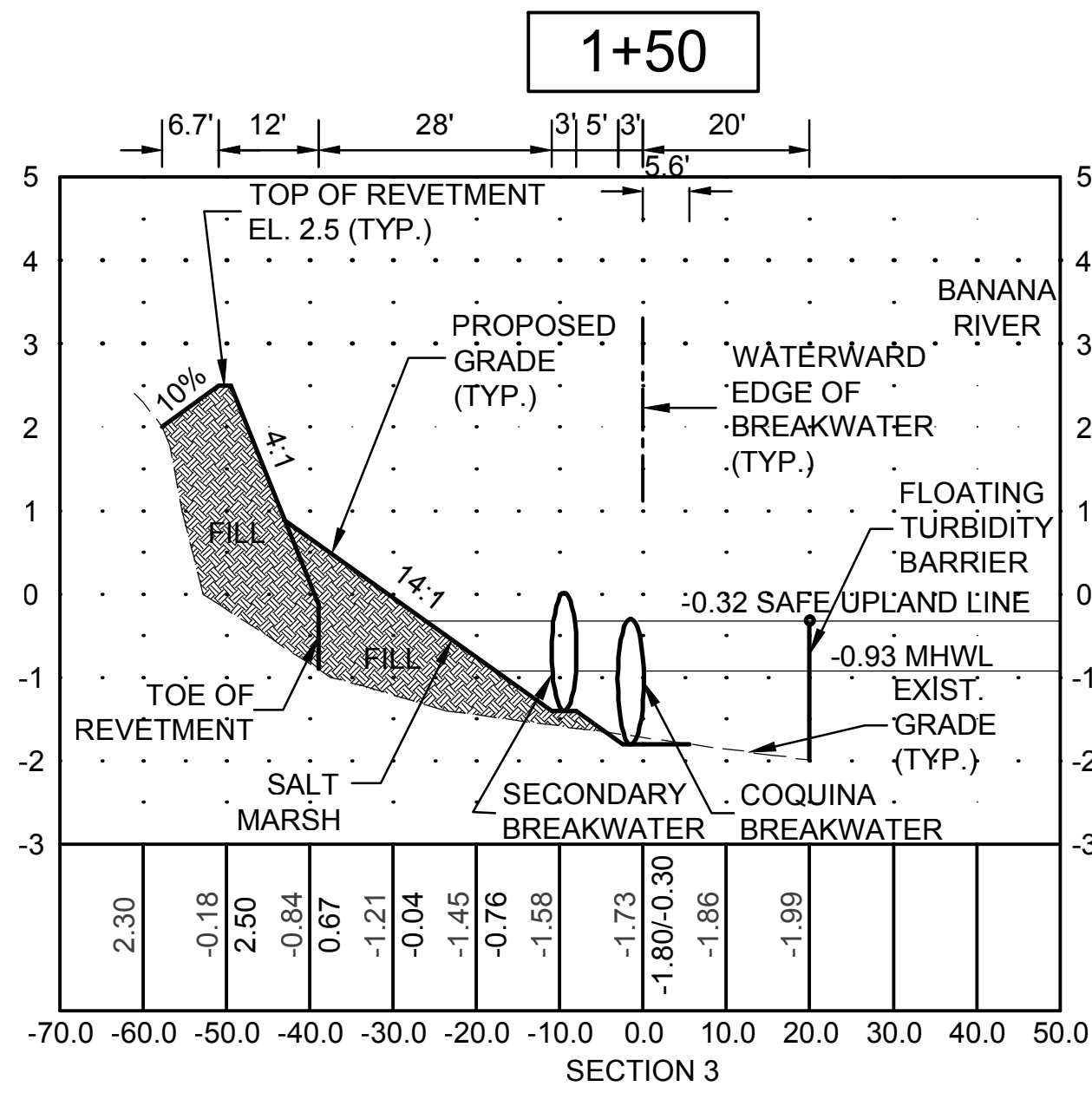
USAF 45TH CIVIL ENGINEER SQUADRON PAFB, FL
CONTRACT NO.: FA2521-13-D-0005 - 0095

RAEIS OTIE
RANGE FACILITY ENGINEER, INSPECTION SERVICES

GP STRATEGIES
AMRC
ALLEN ENGINEERING, Inc.

SXHT 15-1005
REPAIR RIVER SHORELINE,
RUNWAY 11
SOUTH SECTION
SHORELINE PROTECTION PLAN

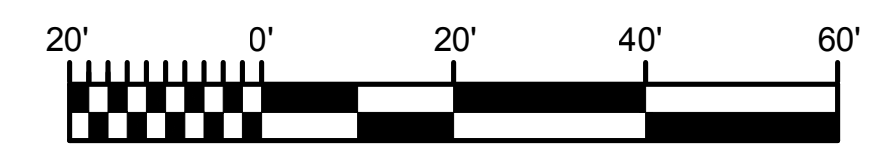
SHEET
IDENTIFICATION
C-102



LEGEND:
 --- EXISTING GRADE
 — PROPOSED GRADE

EXIST. GRADE 1.42
 PROP. GRADE 2.50
 20.0

DATUM: ELEVATIONS SHOWN BASED ON NAVD '88
 (NAVD '88 + 1.42' = NGVD '29)



GRAPHIC SCALE 1" = 20'

SCALE:
 VERTICAL: 1" = 2'
 HORIZONTAL: 1" = 20'

11x17 DRAWING SIZE IS HALF SIZE OF NOTED SCALE

ENGINEER OF RECORD: DAVID A. LAVENDER
 LICENSE NUMBER: 66400
 NAME AND ADDRESS OF BUSINESS:
 ALLEN ENGINEERING, INC.
 106 DIXIE LANE (P.O. BOX 321321)
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 OFFICE: (321) 783-7443 - FAX: (321) 783-5902
 E-MAIL: INFO@ALLENENG.NET
 FL C.A. # LB 266
 AEI #: 150005
 RAEIS CONTRACT NO.: FA2521-13-D-0005-0095

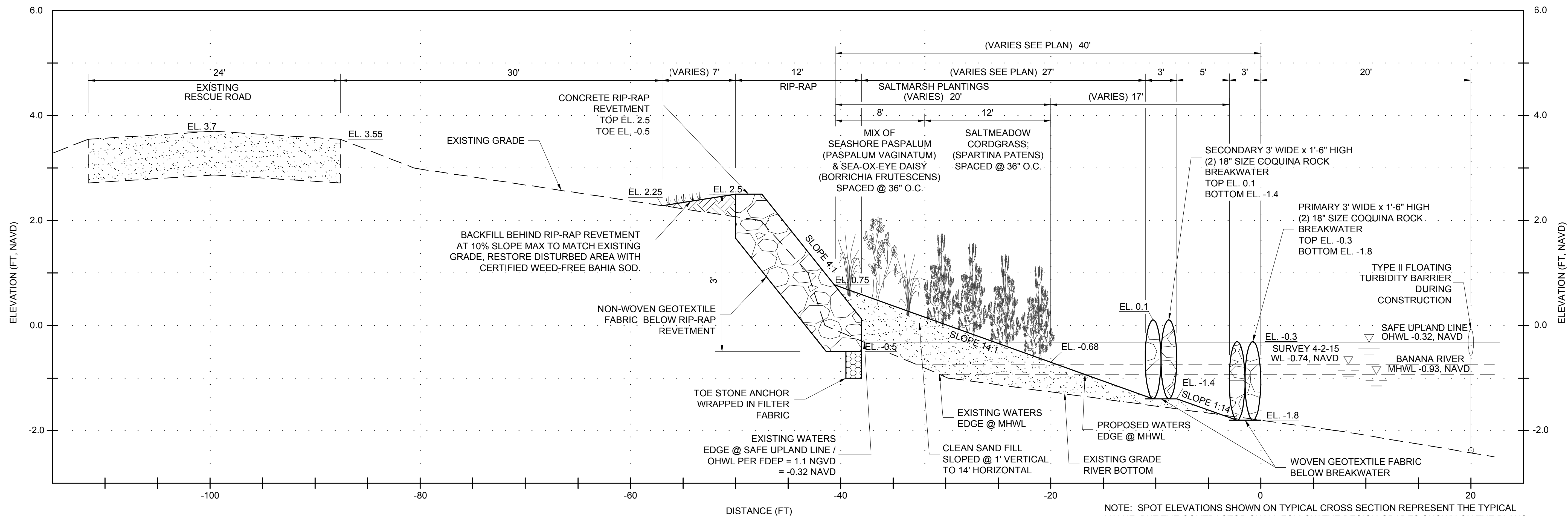


DATE:	01/19/17
DESIGNED BY:	D. LAVENDER
DRAWN BY:	D. ARTZNER
REVIEWED BY:	J. KELLEY
SUBMITTED BY:	G. BEARD
SAHT 15-1005	
DELIVERY NO. 0085	
AS BUILT DATE:	
###	

USAF 45TH CIVIL ENGINEER SQUADRON PAFB, FL
 CONTRACT NO.: FA2521-13-D-0005 - 0095
 RAEIS OTIE GP STRATEGIES AMRC ALLEN AE engineering, inc.
 PROFESSIONAL ENGINEER, INSPECTION SERVICES

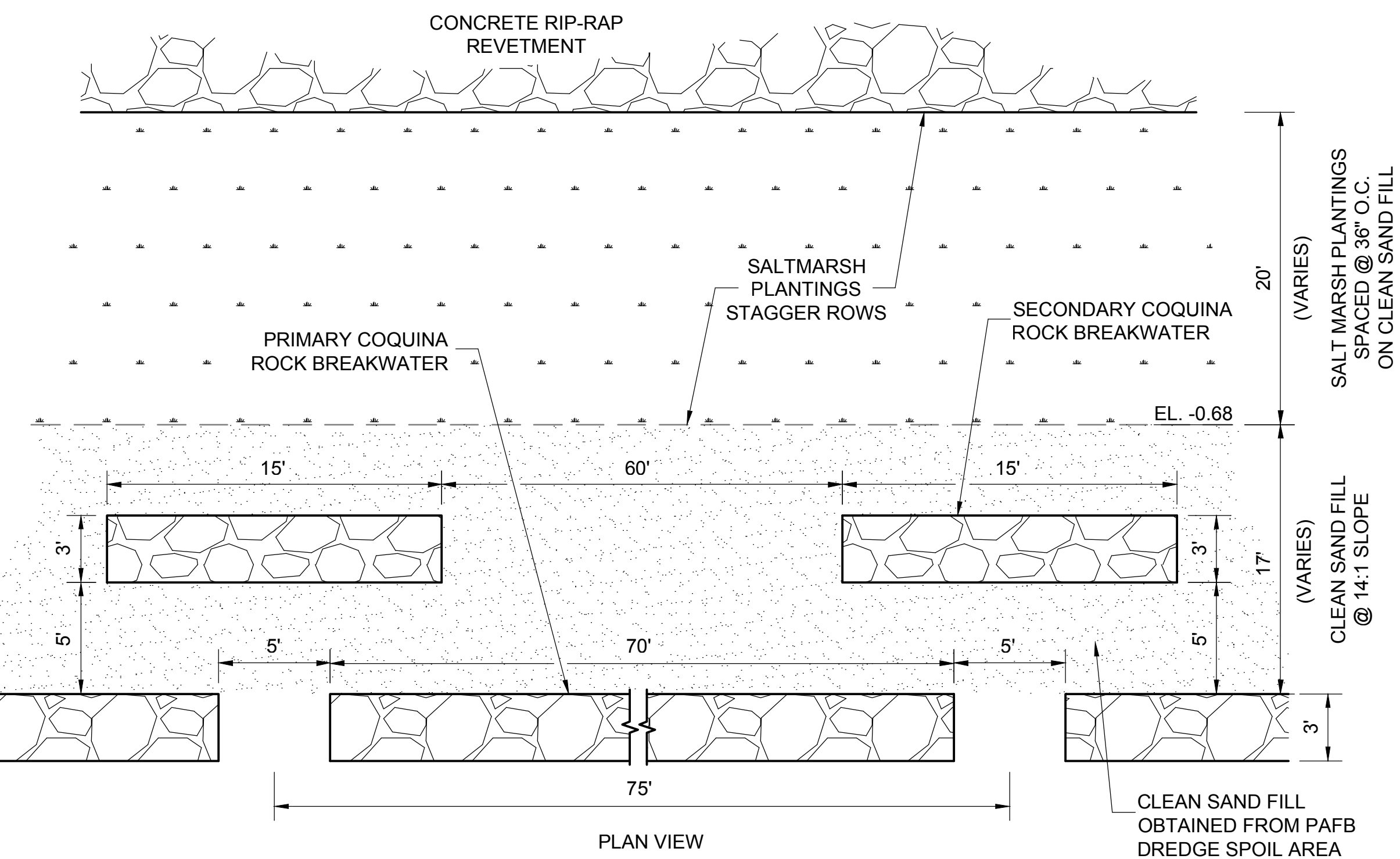
SAHT 15-1005
 REPAIR RIVER SHORELINE,
 RUNWAY 11
 CROSS SECTIONS

SHEET IDENTIFICATION
C-301

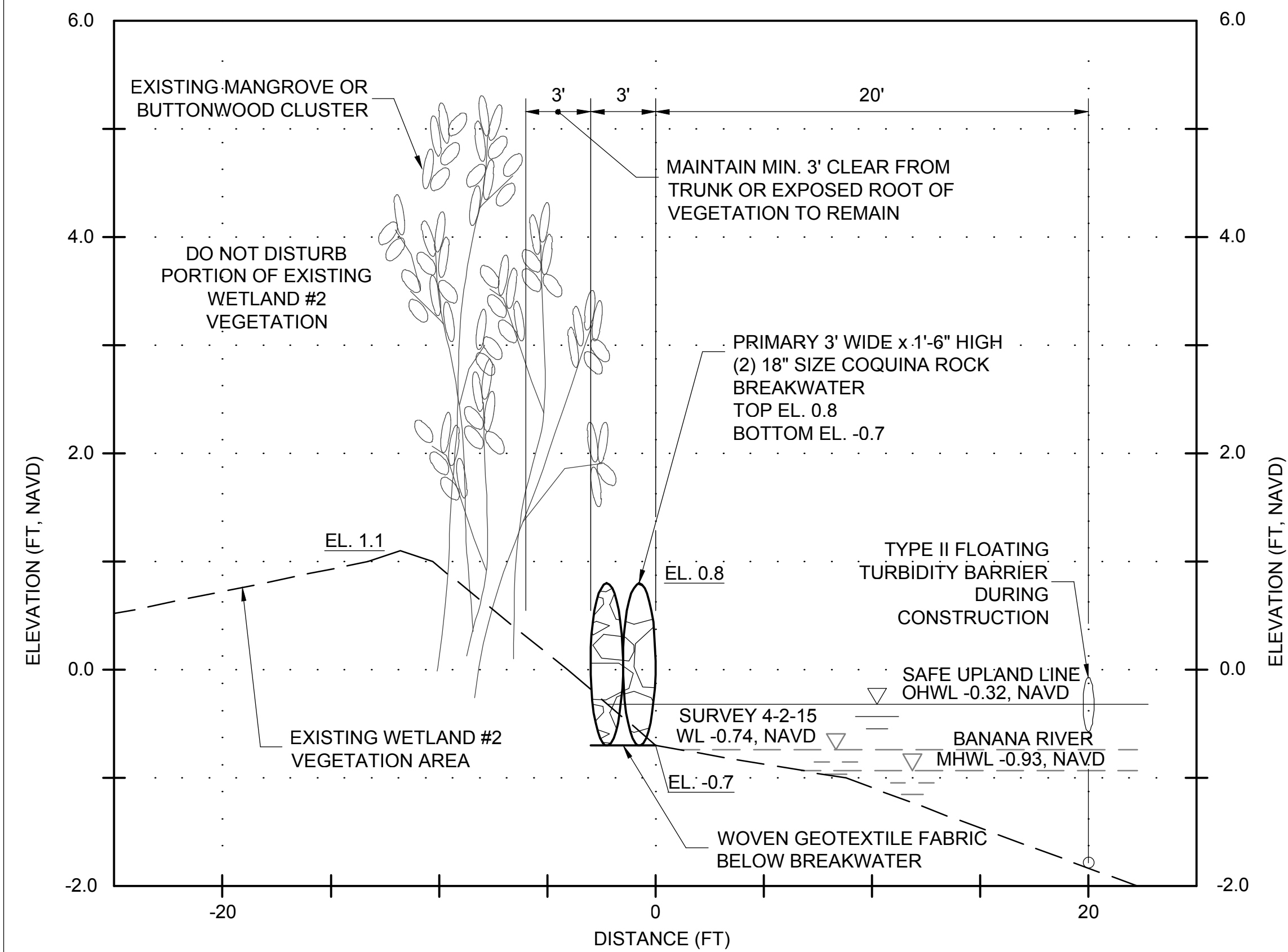


TYPICAL CROSS SECTION DETAIL A
 SCALE: HORIZ.: 1" = 5'; VERT.: 1" = 1'

NOTE: SPOT ELEVATIONS SHOWN ON TYPICAL CROSS SECTION REPRESENT THE TYPICAL VALUE, BUT THE CONTRACTOR SHALL FOLLOW THE DESIGN GRADES SHOWN ON THE PLANS AND SPECIFIC CROSS SECTIONS WHICH HAVE SOME VARYING ELEVATIONS ALONG THE COURSE OF THE SHORELINE WORK AREA.



TYPICAL BREAKWATER & PLANTING LAYOUT DETAIL B
 SCALE: N.T.S.



TYPICAL SECTION AT MANGROVE / BUTTONWOOD C
 SCALE: HORIZ.: 1" = 5'; VERT.: 1" = 1'

- LEGEND:**
- AREA OF SOFT ARMOR FILL WITH SALT MARSH VEGETATION PLANTINGS
 - HARD ARMOR RIP-RAP REVETMENT OR COQUINA ROCK BREAKWATERS
 - CLEAN SAND FILL, 14:1 SLOPE
 - TOE ANCHOR STONE WITH GEOTEXTILE FABRIC
 - AREA OF SUITABLE BACKFILL WITH BAHIA SOD

11x17 DRAWING SIZE IS HALF SIZE OF NOTED SCALE

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USAF 45TH CIVIL ENGINEER SQUADRON PAFB, FL
 CONTRACT NO.: FA2521-13-D-0005 - 0095

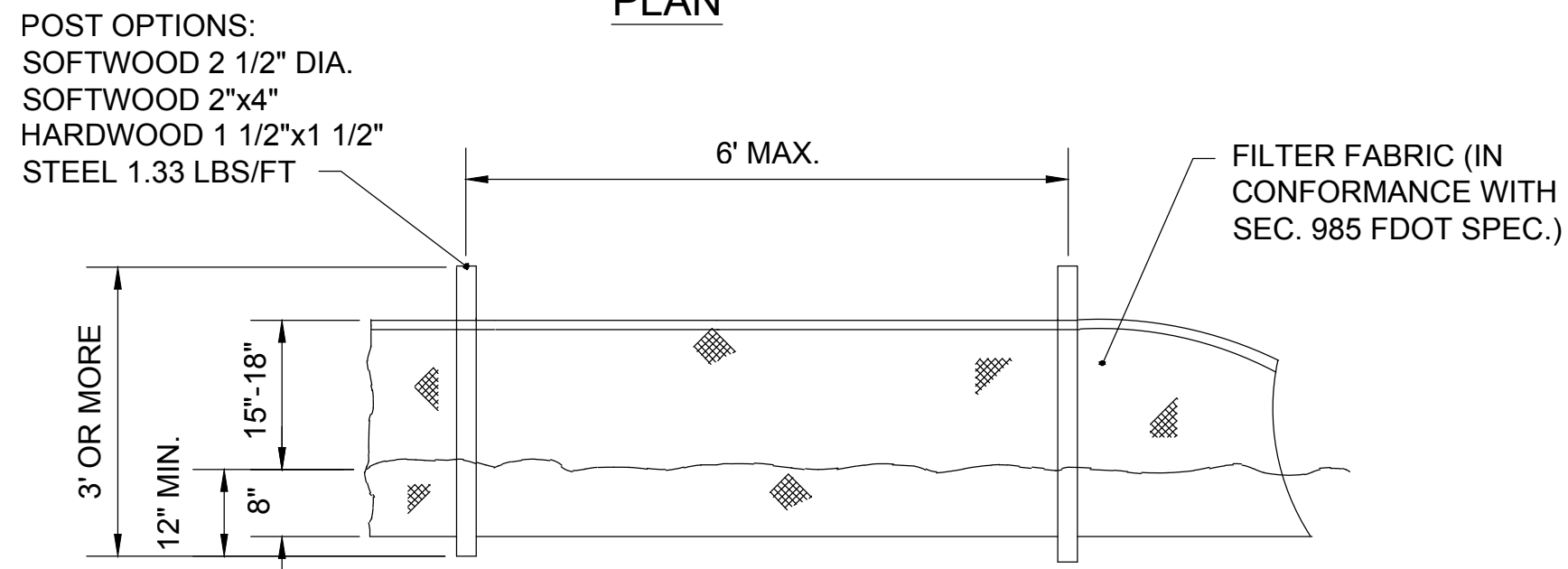
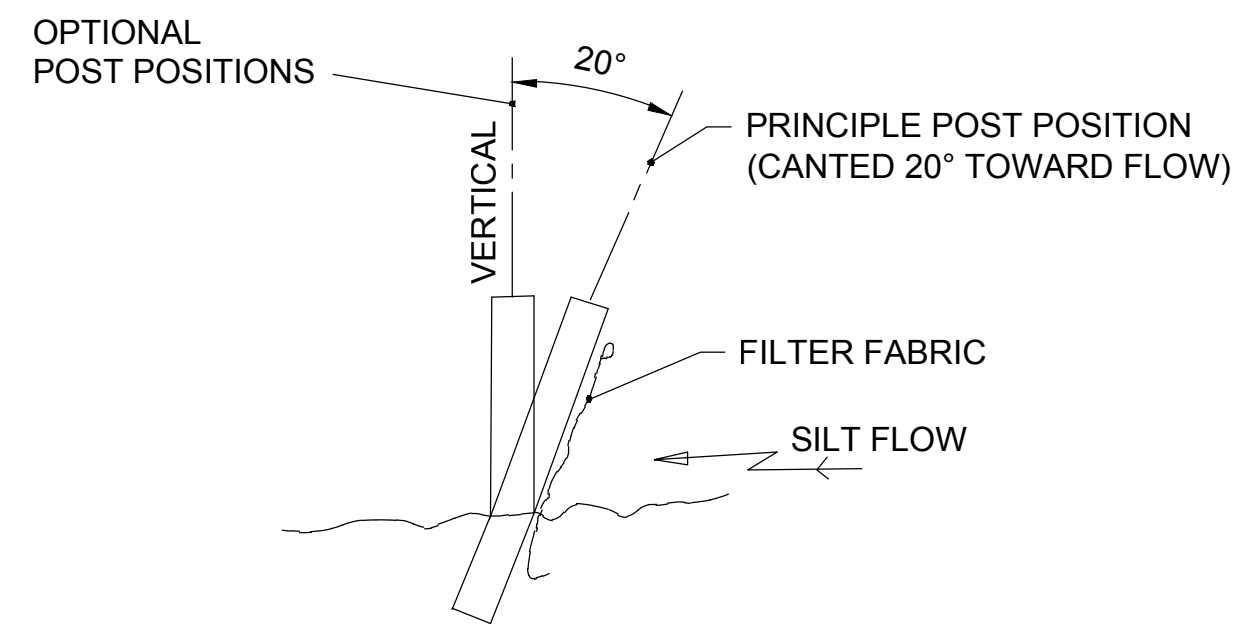
RAEIS OTIE
 RAEIS OTIE ENGINEERING, INC.
 PROFESSIONAL ENGINEER
 INSPECTION SERVICES

AMRC
 ALLEN ENGINEERING, INC.

SAHT 15-1005
 REPAIR RIVER SHORELINE,
 RUNWAY 11

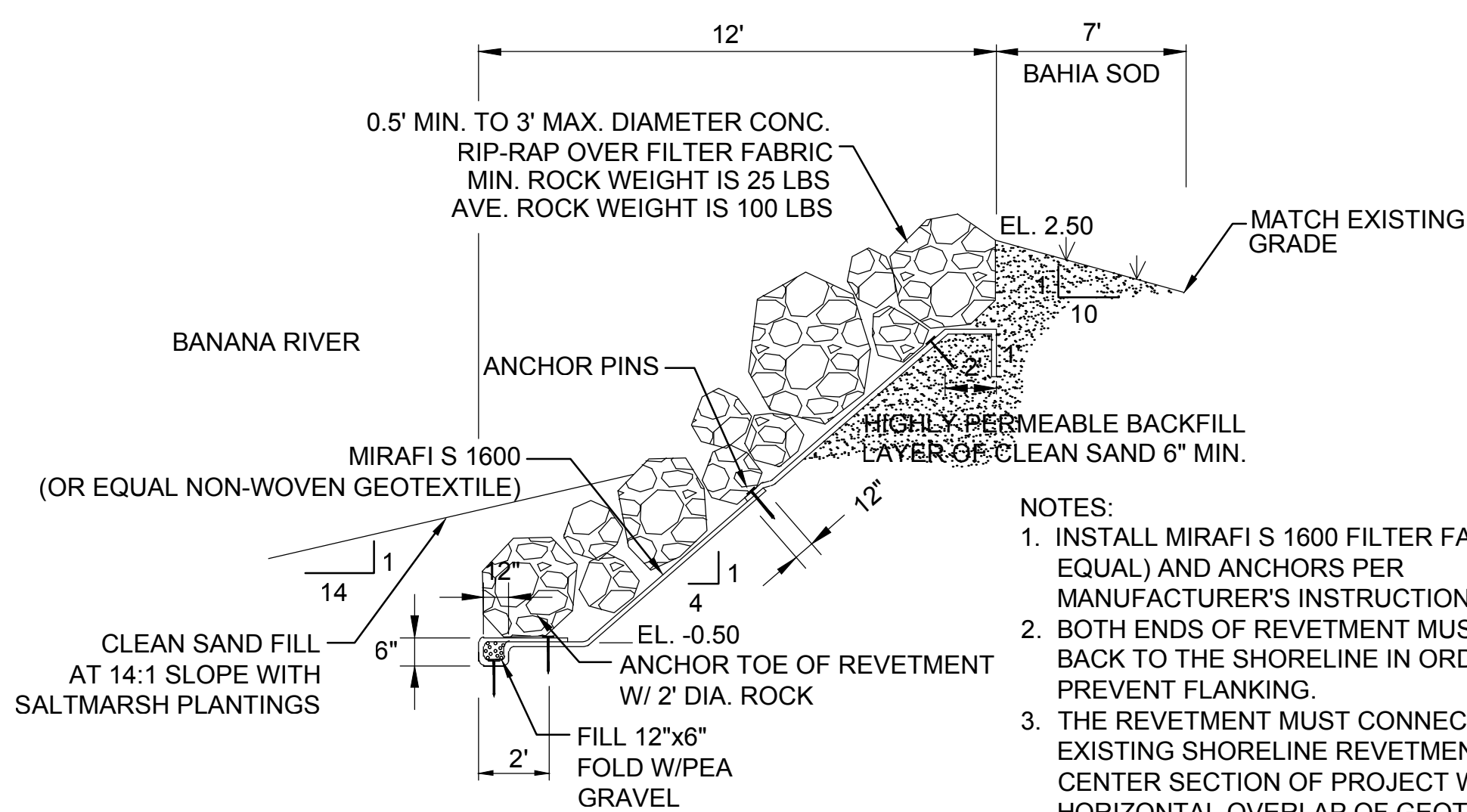
TYPICAL CROSS SECTION
 DETAIL

SHEET
 IDENTIFICATION
C-501



SILT FENCE DETAIL 1

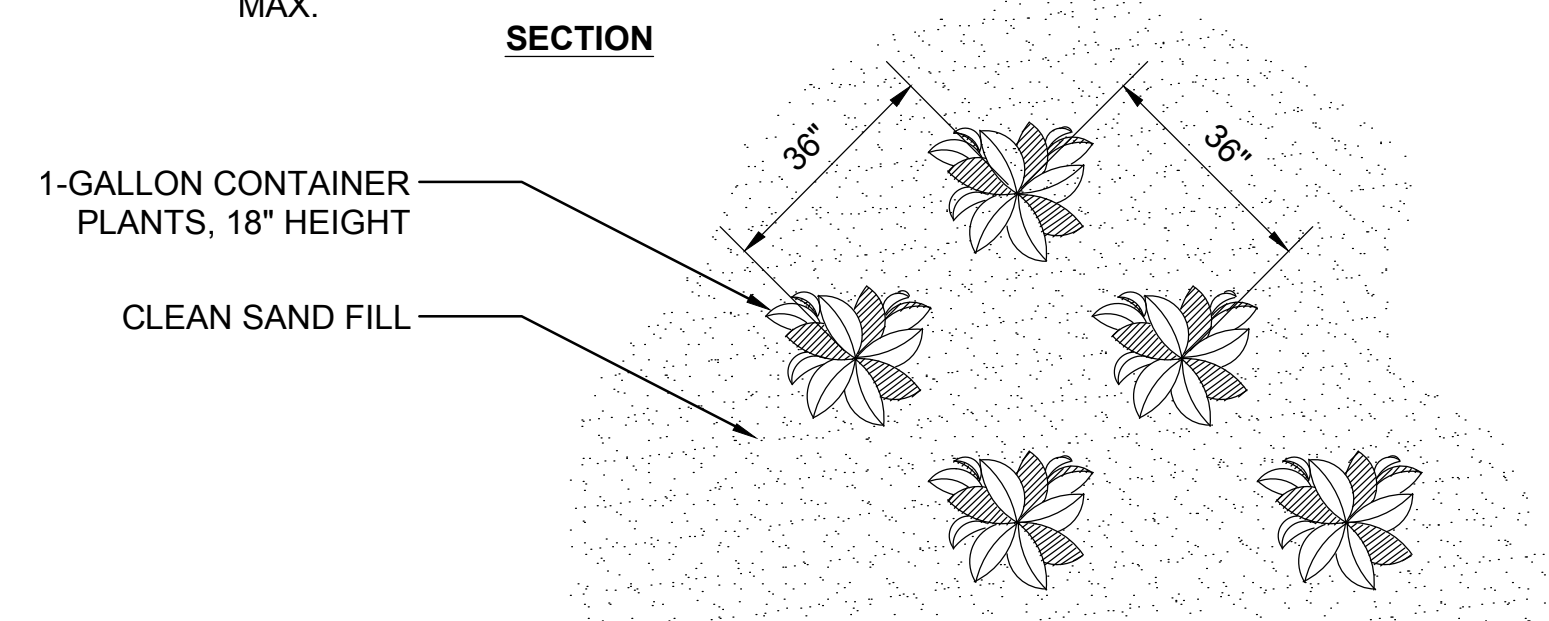
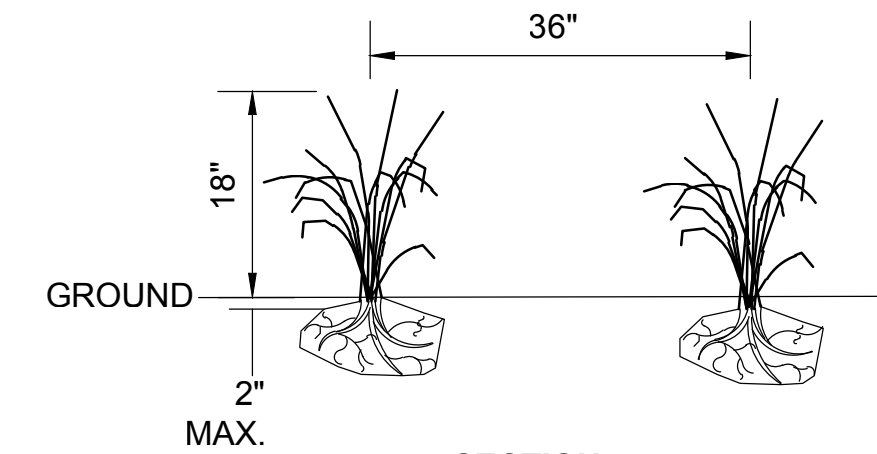
SCALE: NONE
C-502



- NOTES:
1. INSTALL MIRAFI S 1600 FILTER FABRIC (OR EQUAL) AND ANCHORS PER MANUFACTURER'S INSTRUCTIONS.
 2. BOTH ENDS OF REVETMENT MUST TURN BACK TO THE SHORELINE IN ORDER TO PREVENT FLANKING.
 3. THE REVETMENT MUST CONNECT TO THE EXISTING SHORELINE REVETMENT AT CENTER SECTION OF PROJECT WITH 5' HORIZONTAL OVERLAP OF GEOTEXTILE FABRIC.
 4. CONCRETE RIP-RAP SHALL BE FREE OF DEBRIS AND CONTAIN NO METAL OR REBAR.

SHORELINE RIP-RAP REVETMENT DETAIL 2

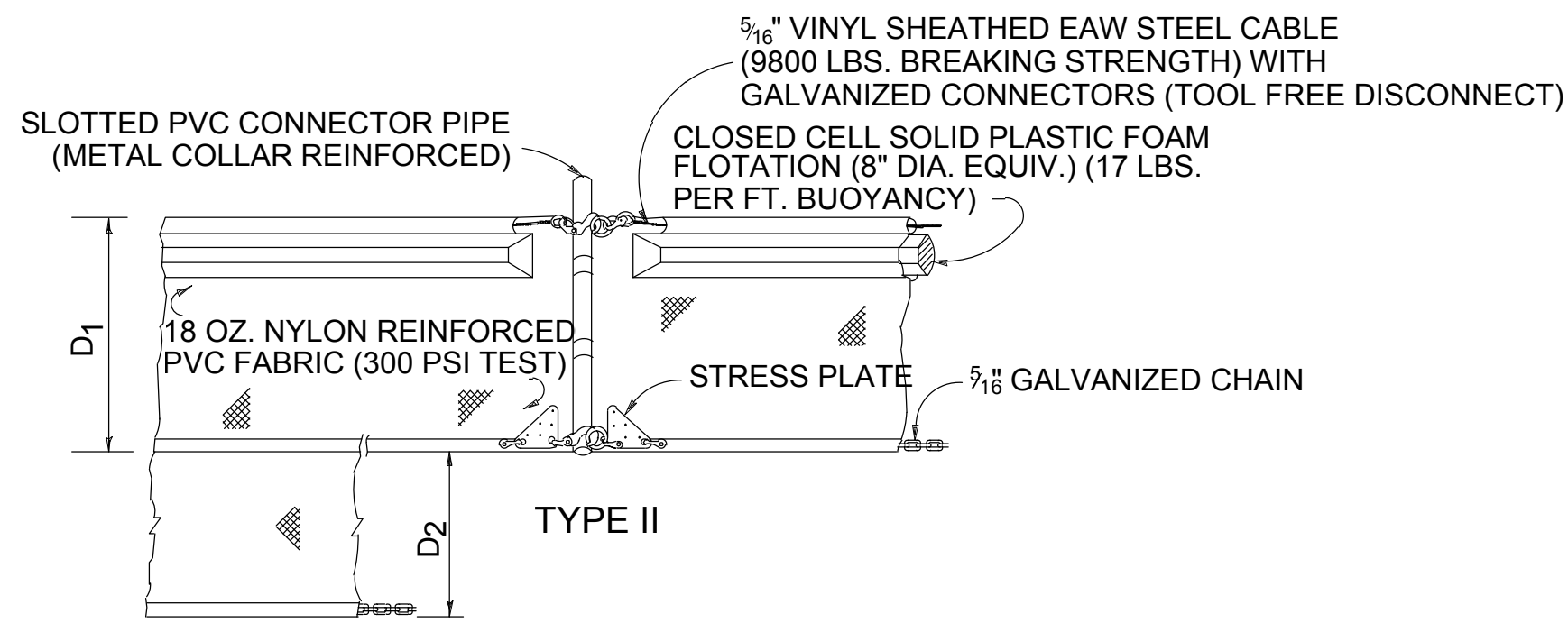
SCALE: NONE
C-502



- NOTES:
1. SEE TYPICAL SECTION FOR PLANT SPECIES AND ZONES FOR SPECIFIC SPECIES.
 2. THE PLANTING HOLE SHALL BE THE SAME SIZE OR ONLY SLIGHTLY LARGER THAN THE ROOTBALL AND DEEP ENOUGH THAT THE TOP OF ROOTBALL IS FLUSH OR SLIGHTLY BELOW GROUND, BUT NOT MORE THAN 2" BELOW GROUND.
 3. SETTLE SOIL TIGHTLY AROUND ROOT BALL OF EACH PLANT TO PREVENT WOBBLING. PLANTS SHALL REMAIN UPRIGHT AFTER PLANTING.

SALTMARSH PLANTING DETAIL 3

SCALE: NONE
C-502

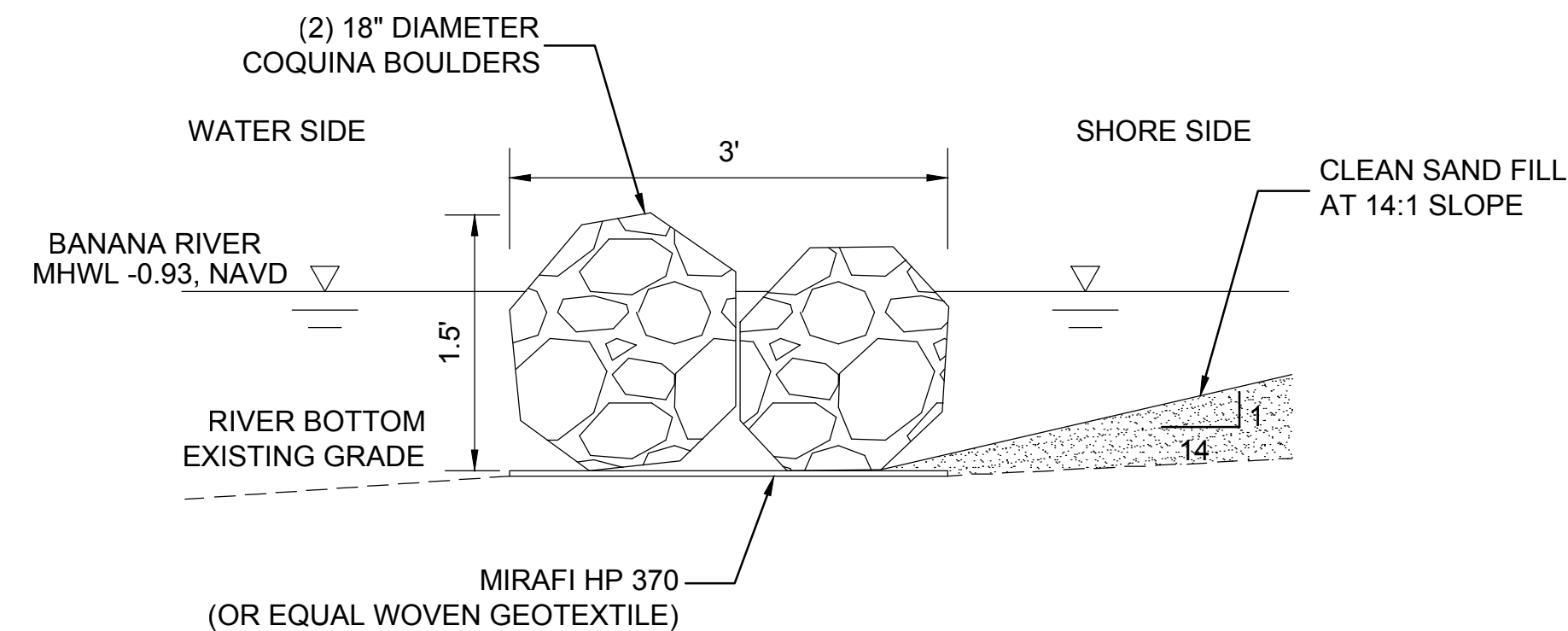


$D_1 = 5'$ STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS).
 $D_2 = 5'$ STD. (ADDITIONAL PANEL FOR DEPTHS $> 5'$).
 CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET.
 TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTE: COMPONENTS OF TYPE II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPE II SHALL BE AS APPROVED BY THE ENGINEER.

FLOATING TURBIDITY BARRIER 4

SCALE: NONE
C-502



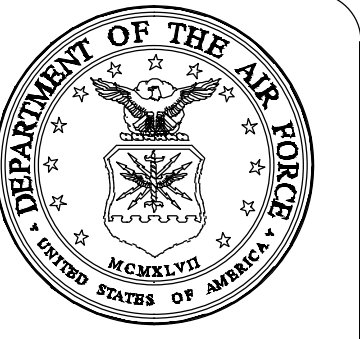
COQUINA ROCK BREAKWATER DETAIL 5

SCALE: NONE
C-502

- NOTES:
1. THE CONTRACTOR SHALL INSPECT THE TURBIDITY BARRIER TO ENSURE PROPER MAINTENANCE AND FUNCTION.
 2. THE ROUTINE INSPECTIONS OF THE BARRIERS SHALL INCLUDE ANY SIGNS OF DISTRESSED WILDLIFE. CEI SHALL BE NOTIFIED IMMEDIATELY TO RESPOND IF ANY DISTRESSED WILDLIFE ARE FOUND.

11x17 DRAWING SIZE IS HALF SIZE OF NOTED SCALE

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SUBMITTED BY: G. BEARD	AS BUILT DATE: ####

USAF 45TH CIVIL ENGINEER SQUADRON PAFB, FL
 CONTRACT NO.: FA2521-13-D-0005 - 0095
RAEIS OTIE
 RAEIS OTIE GROUP STRATEGIES AMRC ALLEN ENGINEERING, INC.
 PROFESSIONAL ENGINEER, INSPECTION SERVICES

SXHT 15-1005
 REPAIR RIVER SHORELINE, RUNWAY 11
 MISCELLANEOUS DETAILS

SHEET IDENTIFICATION
C-502