



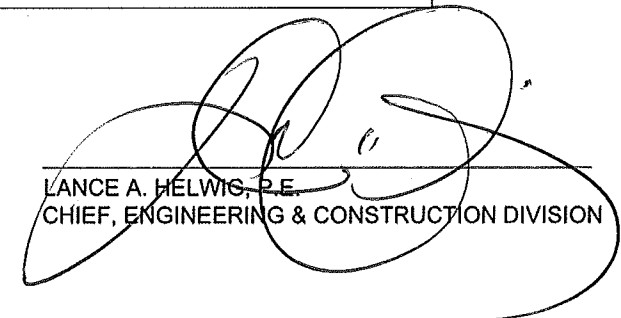
US Army Corps
of Engineers
Portland District

COLUMBIA RIVER MOUTH OF THE COLUMBIA RIVER JETTY A REHABILITATION

THIS PROJECT WAS DESIGNED BY THE PORTLAND DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER 1110-1-8152 AND INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL THE DRAWINGS IN THIS SET.


MARK J. SAWKA, P.E.
CHIEF, DESIGN BRANCH


JOSE L. AGUILAR
COLONEL, CORPS OF ENGINEERS
DISTRICT COMMANDER


LANCE A. HELWIG, P.E.
CHIEF, ENGINEERING & CONSTRUCTION DIVISION

DATE: 7/24/15

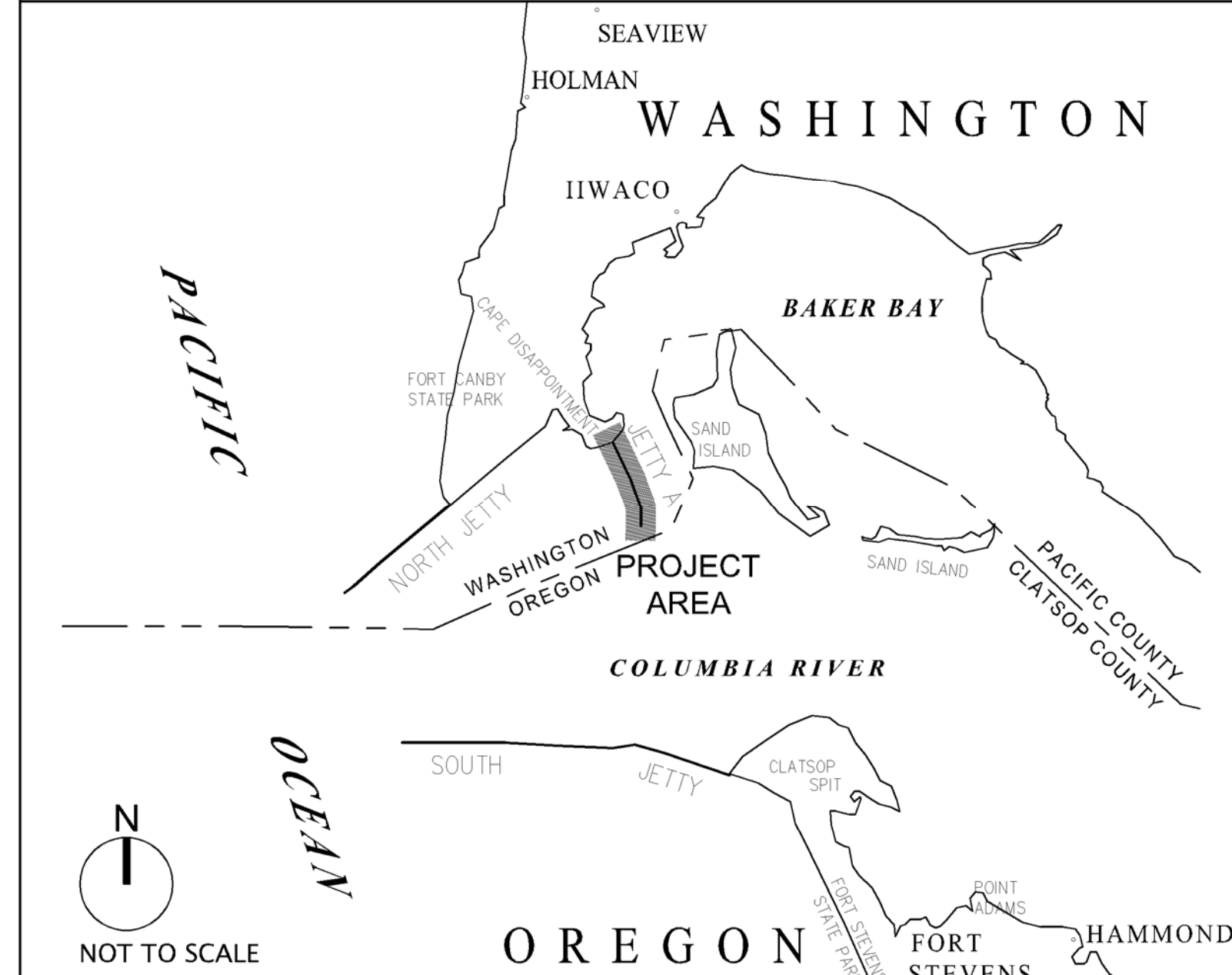
SOLICITATION NUMBER: W9127N-15-R-0003



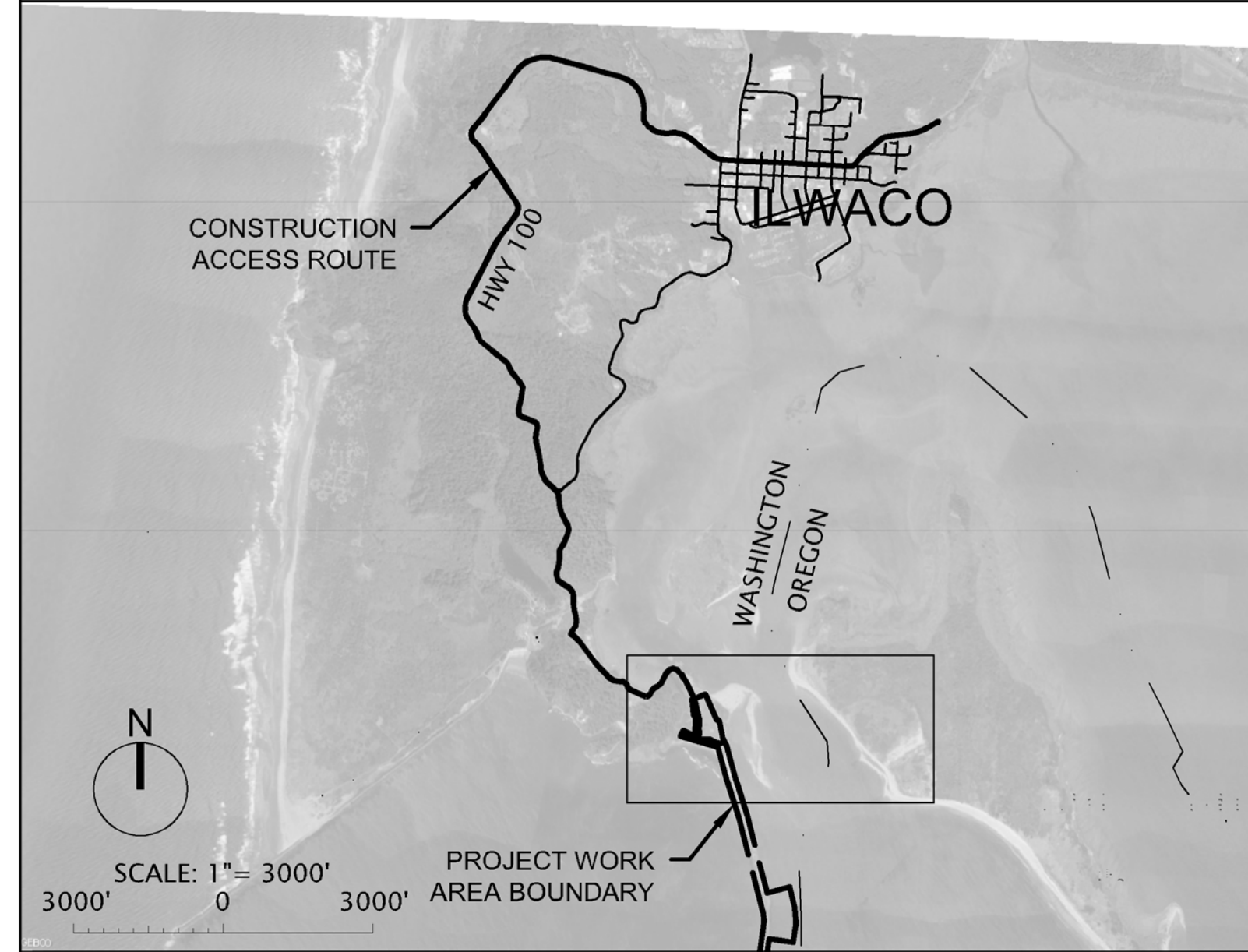
SITE MAP



DISTRICT BOUNDARY MAP



LOCAL VICINITY MAP



SITE ACCESS ROAD PLAN



MARK	DESCRIPTION	DATE	APPRO

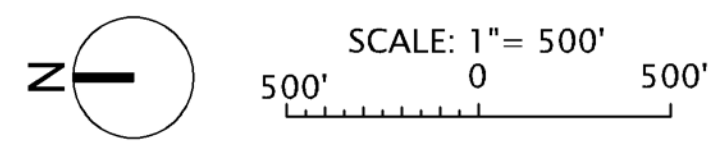
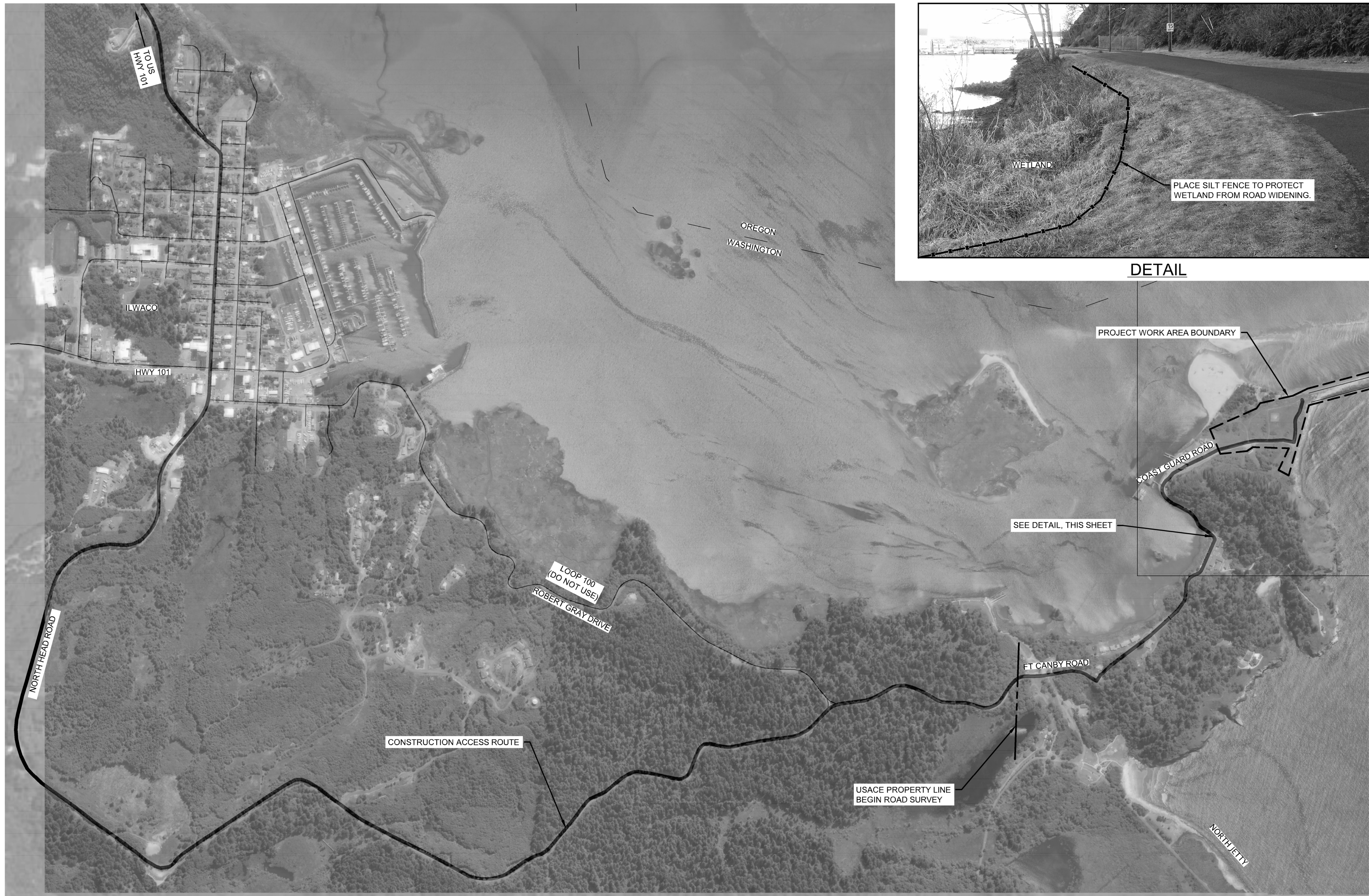
DESIGNED BY: RHODES, P.E.	DATE: 2/2015
DRAWN BY: GREGORY	CHECKED BY: GREGORY
PROJECT NO.: W127N15R-003	CONTRACT NO.:
SUBMITTED BY: MARK W. BROUSSER, P.E.	PROJECT NO.:
PLOT SCALE: 1:1	PLOT DATE:
FILE NAME: CLG1:107-G-001VICI.dwg	DRAWING NUMBER:
ANSI D	SIZE:

U.S. ARMY CORPS OF ENGINEERS
 PORTLAND DISTRICT
 PORTLAND, OREGON

**COLUMBIA RIVER
 MCR JETTY A REHABILITATION**

SITE ACCESS MAPS

SHEET IDENTIFICATION
G-001



TRUCK DELIVERY ROUTE PLAN



MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: RHODES, P.E.	DATE: 12/2015
DRAWN BY: GREGORY, GREGOR	STATION: US 15/27N/15R-003
SUBMITTED BY: MARK W. BROUSSER, P.E.	CONTRACT NO.:
FILE NAME: CLG1:107-G-005TRK.dwg	DRAWING NUMBER:
ANSI D	SIZE: 11

U.S. ARMY CORPS OF ENGINEERS
 PORTLAND DISTRICT
 PORTLAND, OREGON

**COLUMBIA RIVER
 MCR JETTY A REHABILITATION**

TRUCK DELIVERY ROUTE PLAN

SHEET IDENTIFICATION
G-005

DATE	DESCRIPTION	MARK

DESIGNED BY: PHOBES, P.E.	DATE: 7/20/15
DRAWN BY: GREGORY, GREGORY	CHECKED BY: GREGORY, GREGORY
PROJECT: COLUMBIA RIVER MCR JETTY A REHABILITATION	CONTRACT NO.: W127N15R4003
SUBMITTED BY: MARK W. BROUSSER, P.E.	CONTRACT NO.:
PLOT SCALE: 1" = 200'	DRAWING NUMBER:
FILE NAME: C:\GIS\107_C001\PLANING	ANSI D
SIZE: 11"	

COLUMBIA RIVER
MCR JETTY A REHABILITATION
JETTY A SITE PLAN

SHEET IDENTIFICATION
C-001

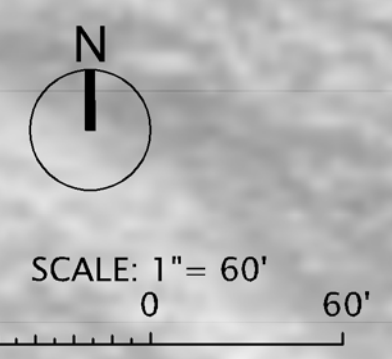
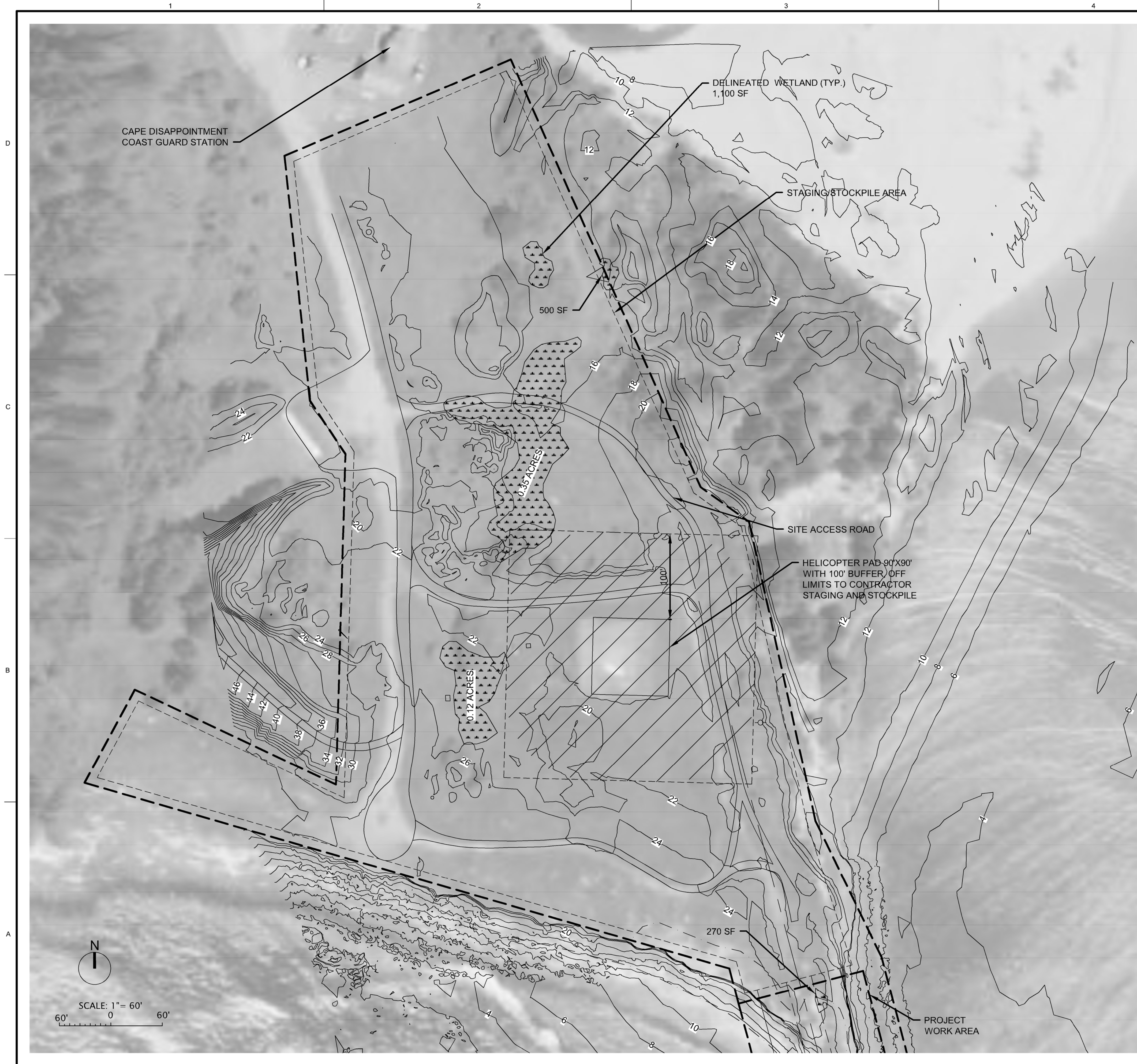


LINE TABLE					
LINE	LENGTH	DIRECTION	STATION	NORTHING	EASTING
L1	1200.00	S14°47'34.26"E	41+00.00	971704.85	7306375.15
			53+00.00	970544.63	7306681.55
L2	800.82	S17°23'23.61"E	61+00.82	969780.41	7306920.89
			80+05.51	967936.16	7307396.87
L3	1904.68	S14°28'17.55"E	83+87.14	967557.60	7307416.86
			96+83.00	966357.82	7307239.13

CURVE TABLE							
CURVE	LENGTH	RADIUS	DIRECTION		STATION	NORTHING	EASTING
				PC	80+05.51	967936.16	7307396.87
C1	381.64	955.00	S3°01'18.61"E	MID	81+96.32	967747.87	7307425.83
				PT	83+87.14	967557.60	7307416.86

SCALE: 1" = 200'
200' 0 200'

SITE PLAN
SCALE: 1" = 200'



- NOTE:
1. STAGING/STOCKPILE AREA IS APPROXIMATELY 7 ACRES.
 2. CONTOURS ARE 2' INTERVALS.
 3. VERTICAL DATUM: IS NAVD88
 4. DELINEATED WETLANDS SHOWN MAY BE FILLED AND MITIGATED.



MARK	DESCRIPTION	DATE	APPR.

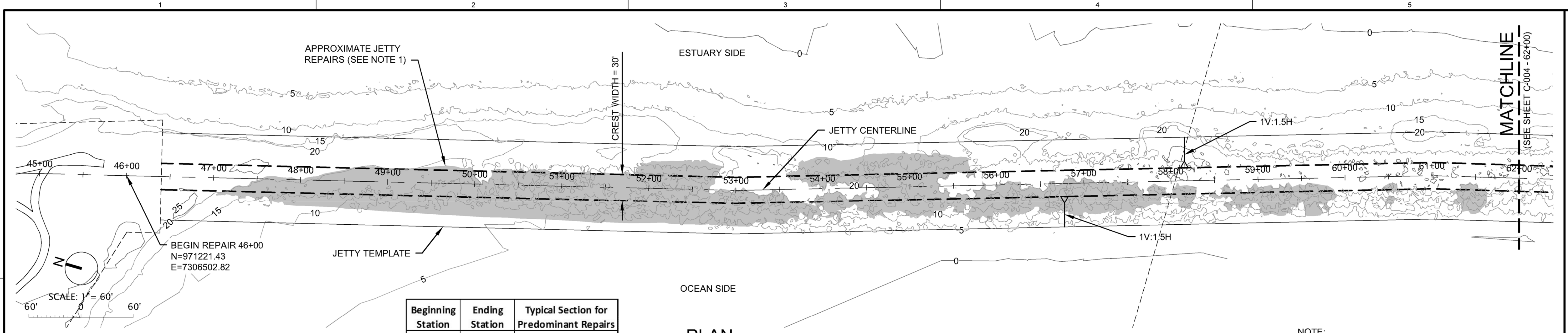
DESIGNED BY: RHODES, P.E.	DATE: 2/2015
DRAWN BY: GREGG, B.	CHECKED BY: GREGG, B.
PROJECT NO.: 15R-003	CONTRACT NO.:
SUBMITTED BY: MARK W. BROUSSER, P.E.	PROJECT NO.:
FILE NAME: C:\G1\107_C-002\TAG.dwg	FILE NAME:
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U.S. ARMY CORPS OF ENGINEERS
 PORTLAND DISTRICT
 PORTLAND, OREGON

COLUMBIA RIVER
 MCR JETTY A REHABILITATION

STAGING AND STOCKPILE AREA PLAN

SHEET IDENTIFICATION
C-002



Beginning Station	Ending Station	Typical Section for Predominant Repairs
46+50	53+50	4
53+50	55+50	1
55+50	60+00	4
60+00	68+00	minimal work or #2
68+00	69+00	1
69+00	70+50	4
70+50	73+50	1
73+50	74+50	4
74+50	76+50	1
76+50	79+50	minimal work or #4
79+50	84+00	minimal work or #2
84+00	85+00	3
85+00	85+50	4
85+50	86+50	3
86+50	87+00	minimal work or #4
87+00	87+50	4
87+50	89+50	head

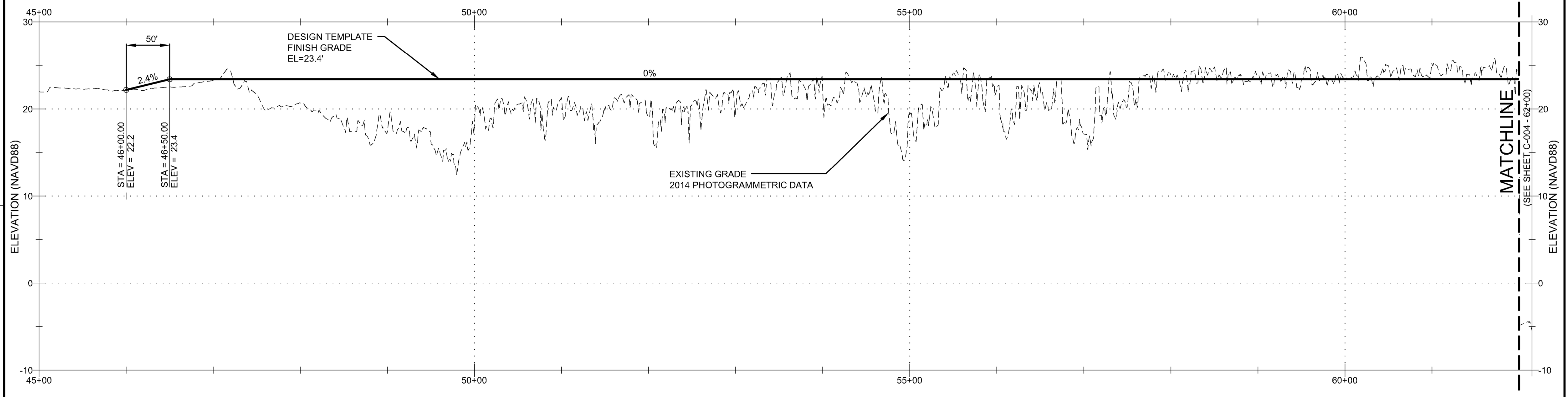
(See Sheets CS001-CS003)

PLAN

LEGEND
 [Shaded Area] APPROXIMATE AREA OF JETTY REPAIRS

NOTE:

1. TOE LINE LOCATION BASED ON IDEALIZED TEMPLATE. ACTUAL TOE OF REPAIR SHALL BE BASED ON THE INTERSECTION OF THE GROUND SURFACE AT THE TIME OF CONSTRUCTION AND THE DESIGN TEMPLATE, AS SHOWN ON SHEETS CS001 THROUGH CS0012.
2. CONTOURS ARE 5' INTERVALS.
3. VERTICAL DATUM: IS NAVD88
4. EXISTING GRADE MAY INCLUDE WOODY DEBRIS. CONTRACTOR TO REMOVE BEFORE ROCK PLACEMENT.
5. SHADED AREAS REPRESENT AREAS WHERE EXISTING GRADE IS 3', OR GREATER, BELOW DESIGN TEMPLATE, AND DO NOT NECESSARILY REPRESENT ALL WORK AREAS.



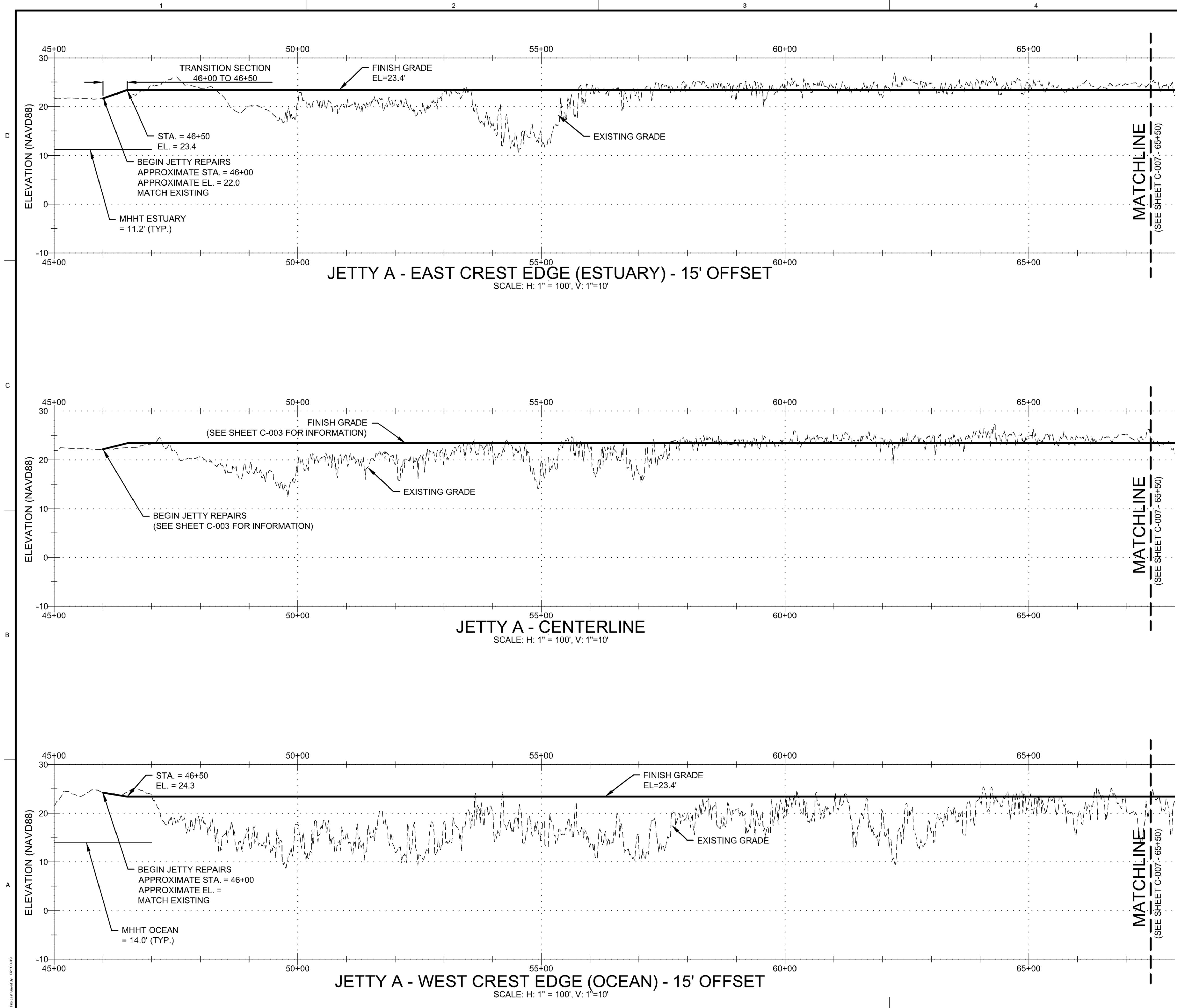
CENTERLINE PROFILE
 SCALE: H: 1" = 60', V: 1" = 6'

DATE	APPR
DESCRIPTION	MARK

DESIGNED BY: P.E. GREGORY	DATE: 2015
DRAWN BY: GREGORY	CHECKED BY: GREGORY
PROJECT: COLUMBIA RIVER MCR JETTY A REHABILITATION	STATION: W12715-0003
CONTRACT NO.: 11-11	CONTRACT NO.: 11-11
FILE NAME: C:\GIS\107_C003PP-1.dwg	FILE NAME: C:\GIS\107_C003PP-1.dwg

COLUMBIA RIVER
 MCR JETTY A REHABILITATION
 REPAIR AREA PLAN AND PROFILE 1

SHEET IDENTIFICATION
C-003



- NOTES:**
1. CONTOURS AND ELEVATIONS SHOWN ARE FROM PHOTOGRAMMETRIC SURVEY PERFORMED IN AUGUST 2014 BY USACE AND REPRESENT CONDITIONS AT THE TIME OF DATA COLLECTION, AND MAY NOT REPRESENT CONDITIONS AT TIME OF CONSTRUCTION.
 2. EXISTING JETTY STONE ABOVE ELEVATION 23.4' MUST REMAIN IN PLACE UNLESS ROCK NEEDS TO BE MOVED TO PROVIDE CONSTRUCTION EQUIPMENT ACCESS OR APPROPRIATE INSTALLATION OF NEW JETTY STONE. EXISTING JETTY STONE GREATER THAN 4 TONS THAT IS MOVED MAY BE USED TO FILL DESIGN TEMPLATE.
 3. ROCK PLACEMENT SHALL NOT EXTEND BEYOND STATION 89+00 OTHER THAN TO CONSTRUCT 1V:2H END SLOPE AND END RADIUS.
 4. REWORKING OF EXISTING JETTY STONE WILL BE REQUIRED TO PLACE, INTERLOCK, AND SEAT NEW JETTY STONE.
 5. VERTICAL DATUM: IS NAVD88
 6. EXISTING GRADE MAY INCLUDE WOODY DEBRIS. CONTRACTOR TO REMOVE BEFORE ROCK PLACEMENT.



DATE	DESCRIPTION	APPROVED

DESIGNED BY: P.E. GREGORY B. GREGORY	CHECKED BY: GREGORY B. GREGORY	DATE: 2015 08/27/15
DESIGNED BY: P.E. MARK W. BROUSSER	CHECKED BY: MARK W. BROUSSER	DATE: 2015 08/27/15
SUBMITTED BY: P.E. MARK W. BROUSSER		CONTRACT NO.: W127N15R4003
PLOT SCALE: 1:1		DRAWING NUMBER:
FILE NAME: CLG1107_C00RPRFT.dwg	ANSI D	

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

**COLUMBIA RIVER
MCR JETTY A REHABILITATION**

CENTERLINE AND OFFSET PROFILES 1
46+00 TO 70+00

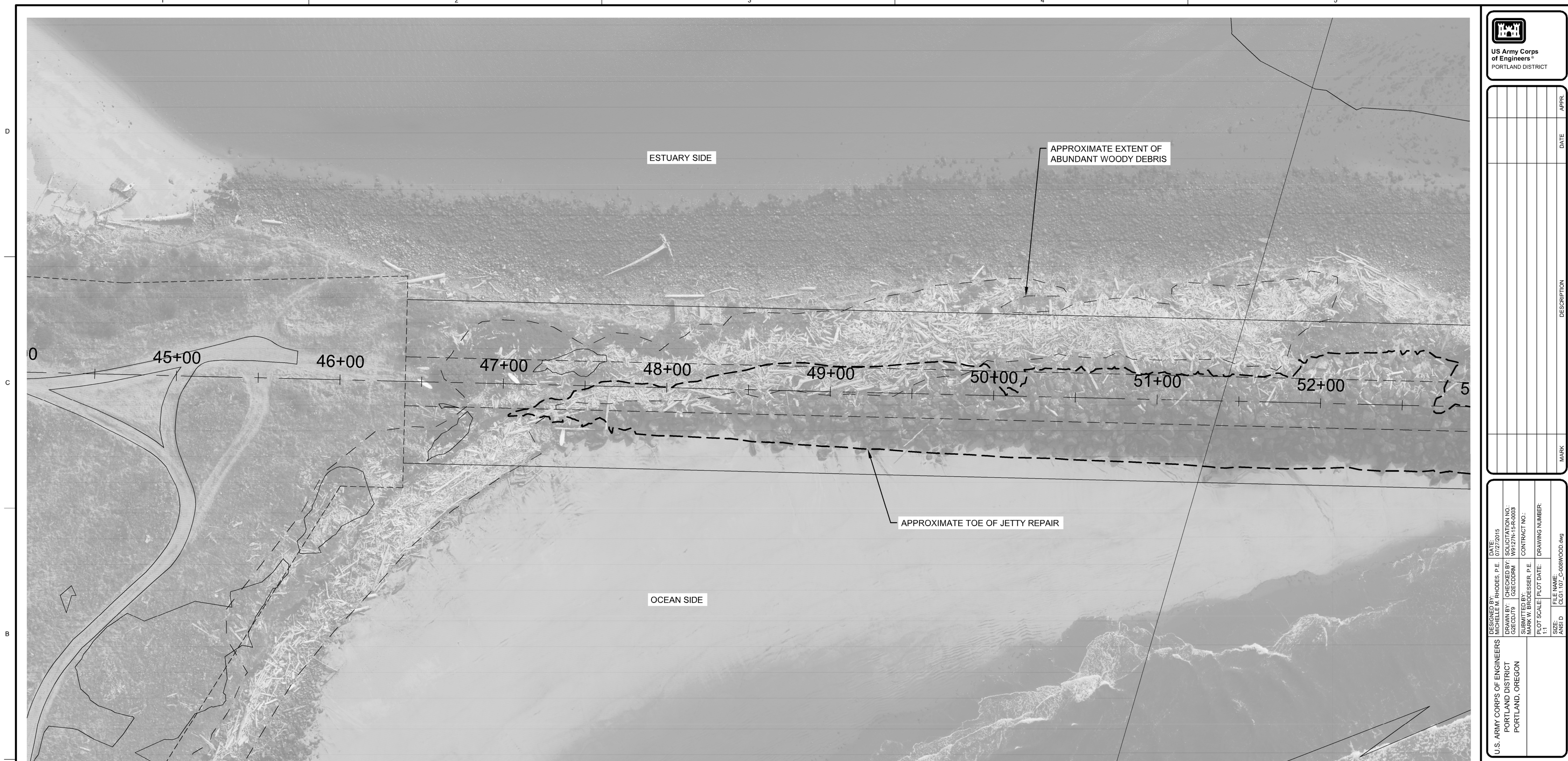
**SHEET IDENTIFICATION
C-006**

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS PORTLAND DISTRICT PORTLAND, OREGON	DESIGNED BY: RHODES, P.E. DRAWN BY: GREGORY	DATE: 2/2015 STATION: US-15R-003
	CHECKED BY: GREGORY SUBMITTED BY: MARK W. BROUSSER, P.E.	CONTRACT NO.: DRAWING NUMBER:
PLOT SCALE: 1" = 30' FILE NAME: CLG1.107_C00RWOOD.dwg		ANSI D

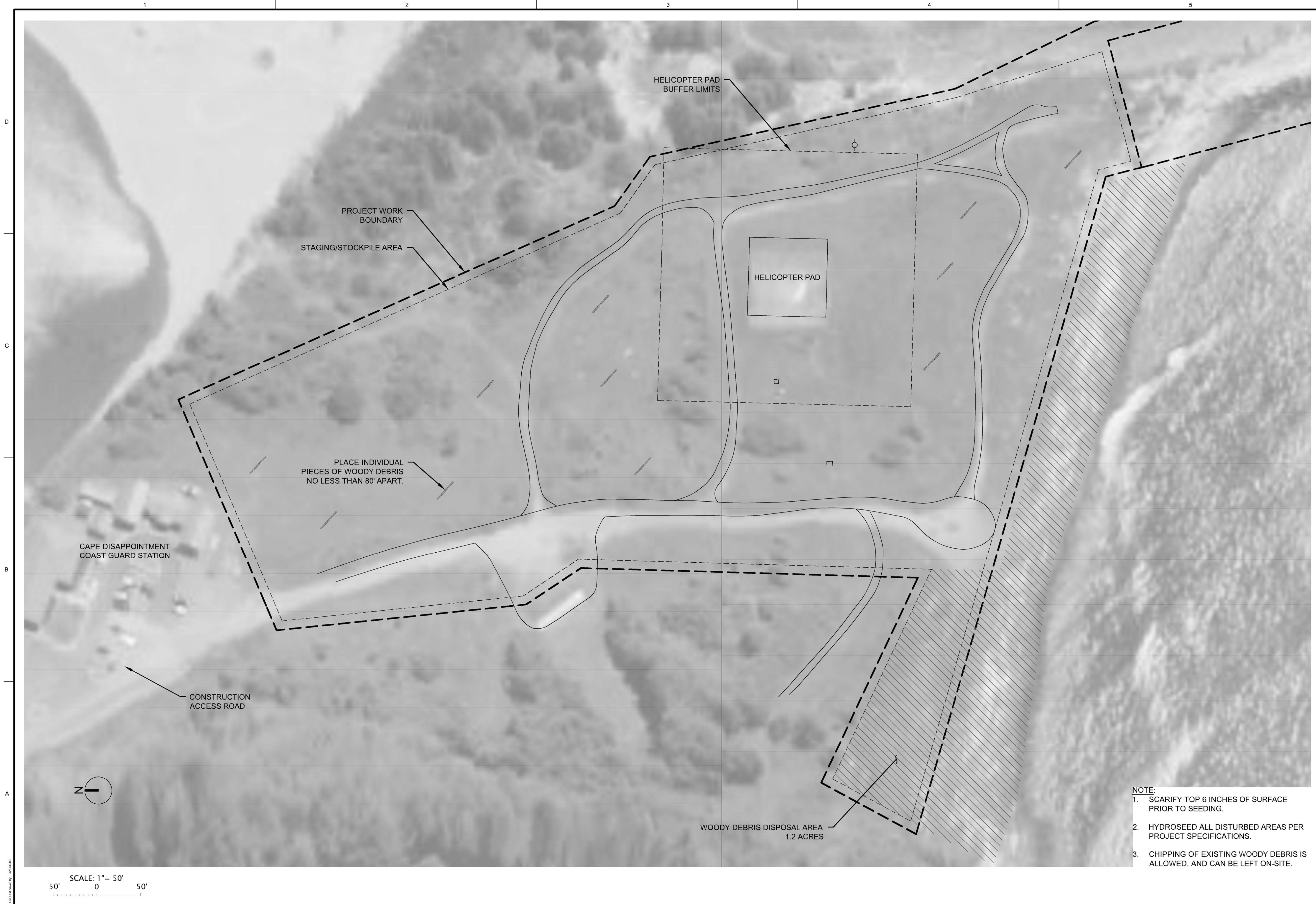
COLUMBIA RIVER
MCR JETTY A REHABILITATION
WOODY DEBRIS LOCATION PLAN

SHEET IDENTIFICATION
C-008



PLAN

- NOTE:
- REMOVE WOODY DEBRIS WITHIN FOOTPRINT OF JETTY REPAIR.
 - TOE LINE LOCATION BASED ON INTERPOLATIONS PER SECTIONS. ACTUAL TOE OF REPAIR SHALL BE BASED ON THE INTERSECTION OF THE GROUND SURFACE AT THE TIME OF CONSTRUCTION AND THE DESIGN TEMPLATE, AS SHOWN ON SHEETS CS001 THROUGH CS0012.
 - SIZE RANGES FROM TWIGS TO EXCEEDING 12" IN DIAMETER AND OVER 20' LONG. A SMALL PORTION OF MAN-MADE DEBRIS IS ALSO PRESENT.
 - OPTIONAL PLAN (SEE SHEET C-502) FOR DEBRIS IS FOR USE IN MATERIAL DELIVERY ROUTE (MDAR) CONSTRUCTION FOR STONE TRANSPORT FROM OPTIONAL OFF-LOAD AREA.
 - PLACE WOODY DEBRIS IN MATERIAL DELIVERY ACCESS ROAD (MDAR), BELOW MHHT, IF MATERIAL OFF-LOADING FACILITY IS USED PER SPECIFICATION 35 52 00.00 25 - MATERIAL OFF-LOAD FACILITY CONSTRUCTION.



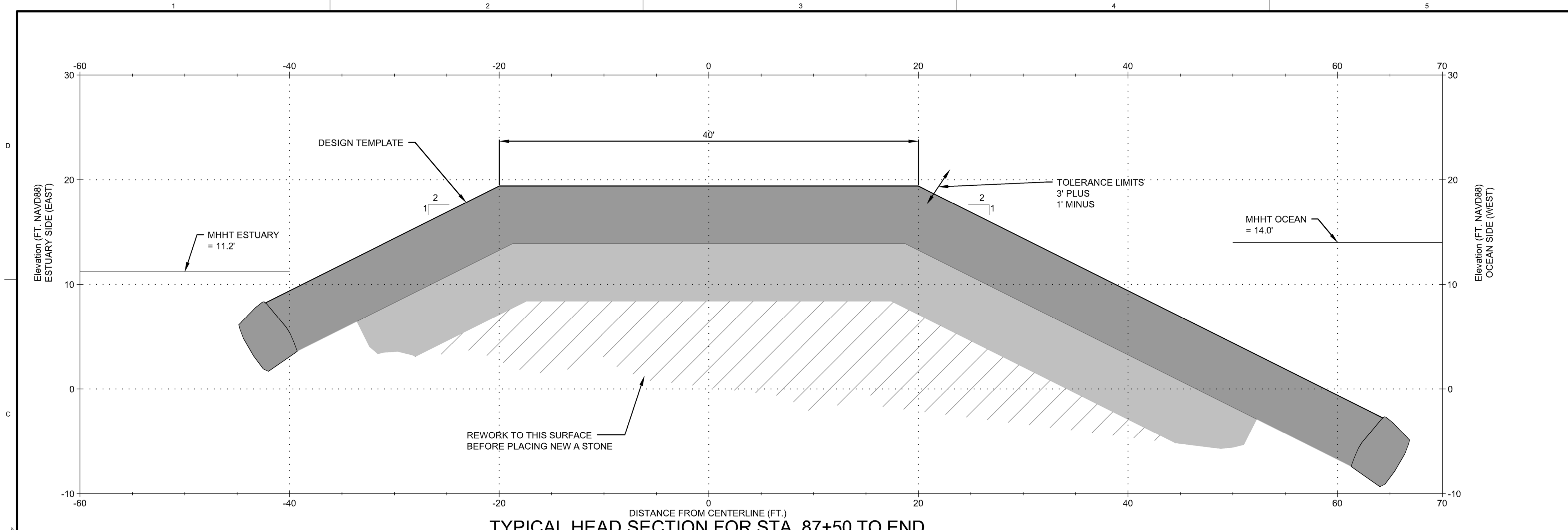
MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: RHODES, P.E.	DATE: 2/2015
DRAWN BY: GREGORY, C. GREGORY	STATION: US 15R-003
SUBMITTED BY: MARK W. BROUSSER, P.E.	CONTRACT NO.:
FILE NAME: CLG1.107_C00REST.dwg	DRAWING NUMBER:
ANSI D	SIZE: 11

U.S. ARMY CORPS OF ENGINEERS
 PORTLAND DISTRICT
 PORTLAND, OREGON
**COLUMBIA RIVER
 MCR JETTY A REHABILITATION**
 SITE RESTORATION PLAN

SHEET
 IDENTIFICATION
C-009

- NOTE:**
1. SCARIFY TOP 6 INCHES OF SURFACE PRIOR TO SEEDING.
 2. HYDROSEED ALL DISTURBED AREAS PER PROJECT SPECIFICATIONS.
 3. CHIPPING OF EXISTING WOODY DEBRIS IS ALLOWED, AND CAN BE LEFT ON-SITE.



TYPICAL HEAD SECTION FOR STA. 87+50 TO END

- LEGEND**
- A-STONE
 - DESIGN TEMPLATE - WORK IS REQUIRED
 - DESIGN TEMPLATE - BELOW EXISTING GRADE
NO WORK IS REQUIRED
 - TOE STONE
 - A-STONE OR RELICT STONE
 - A-SELECT STONE

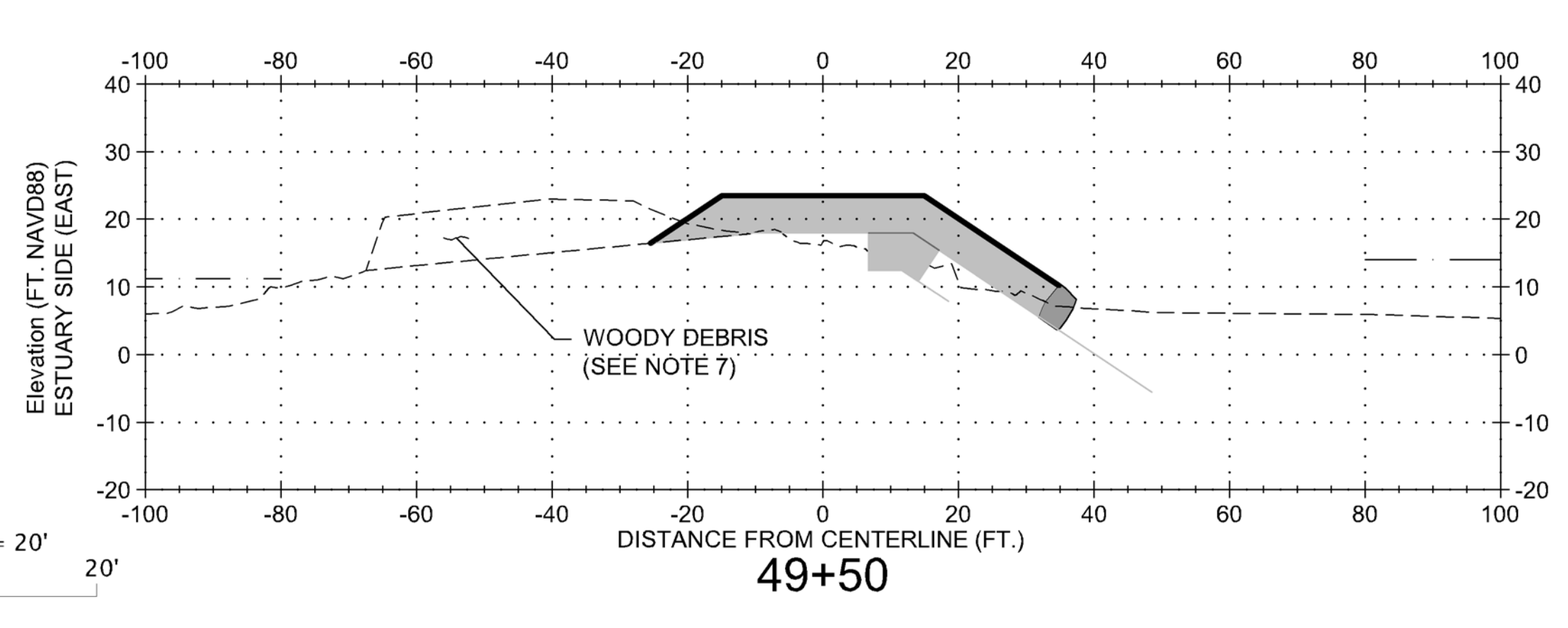
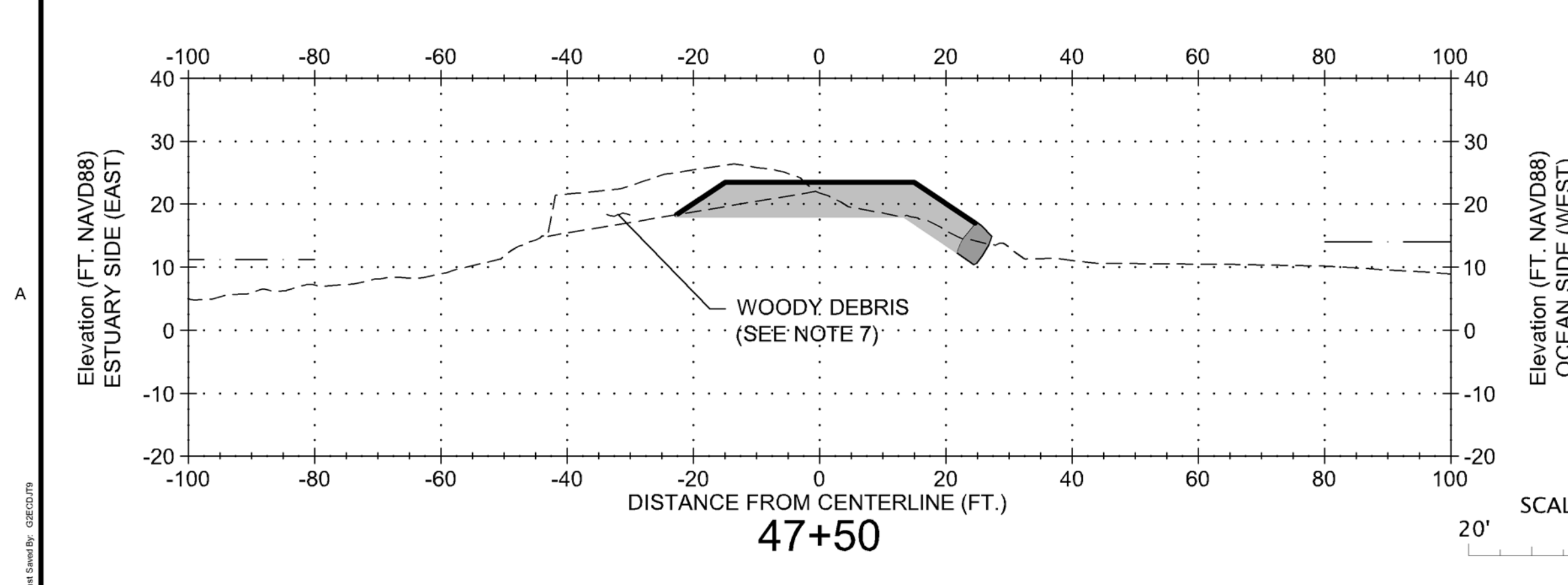
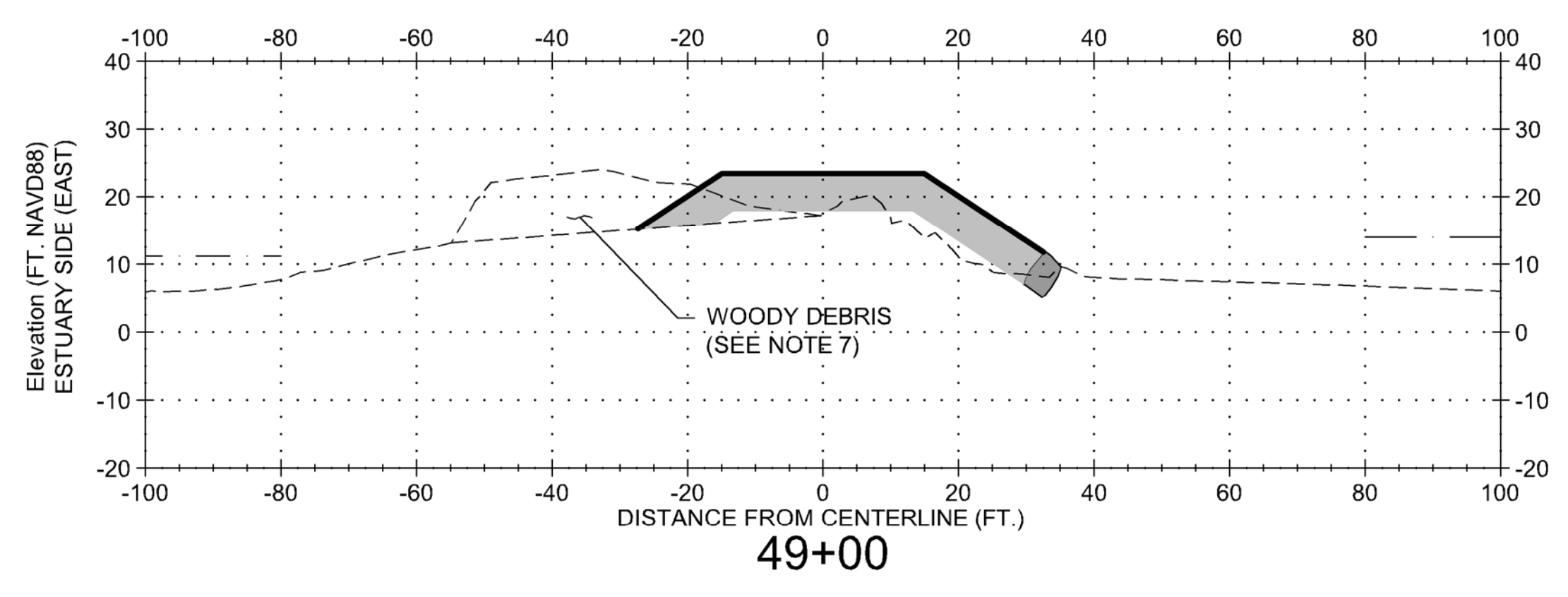
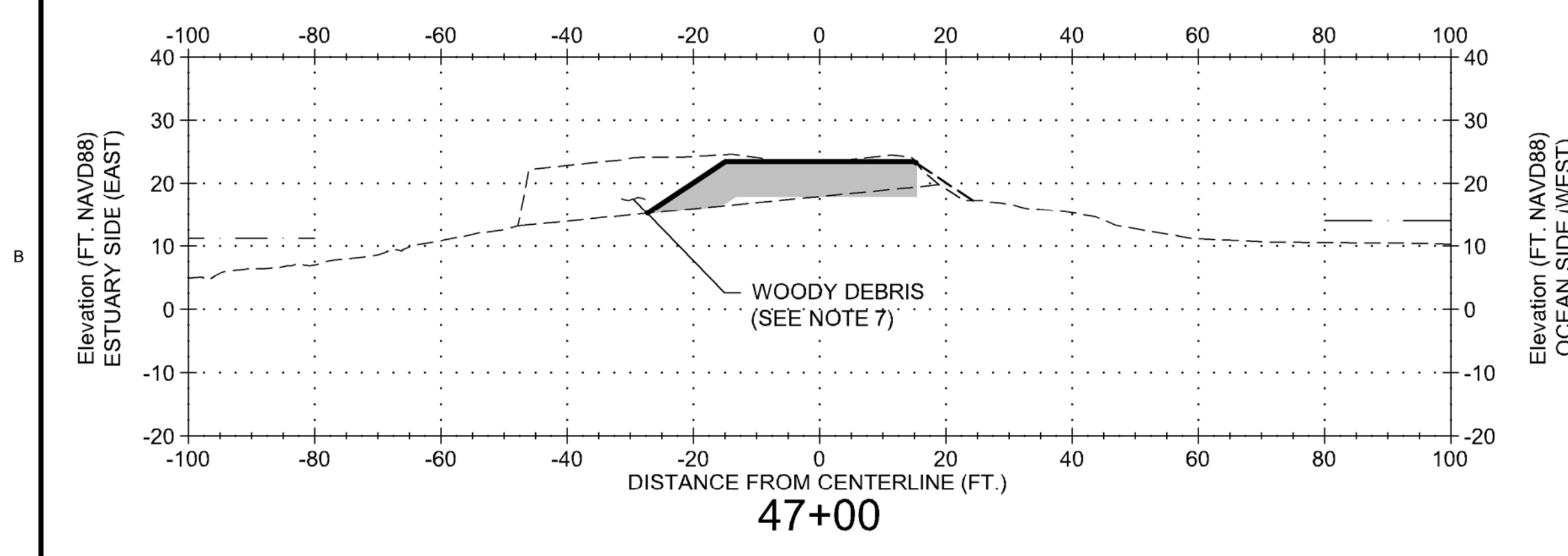
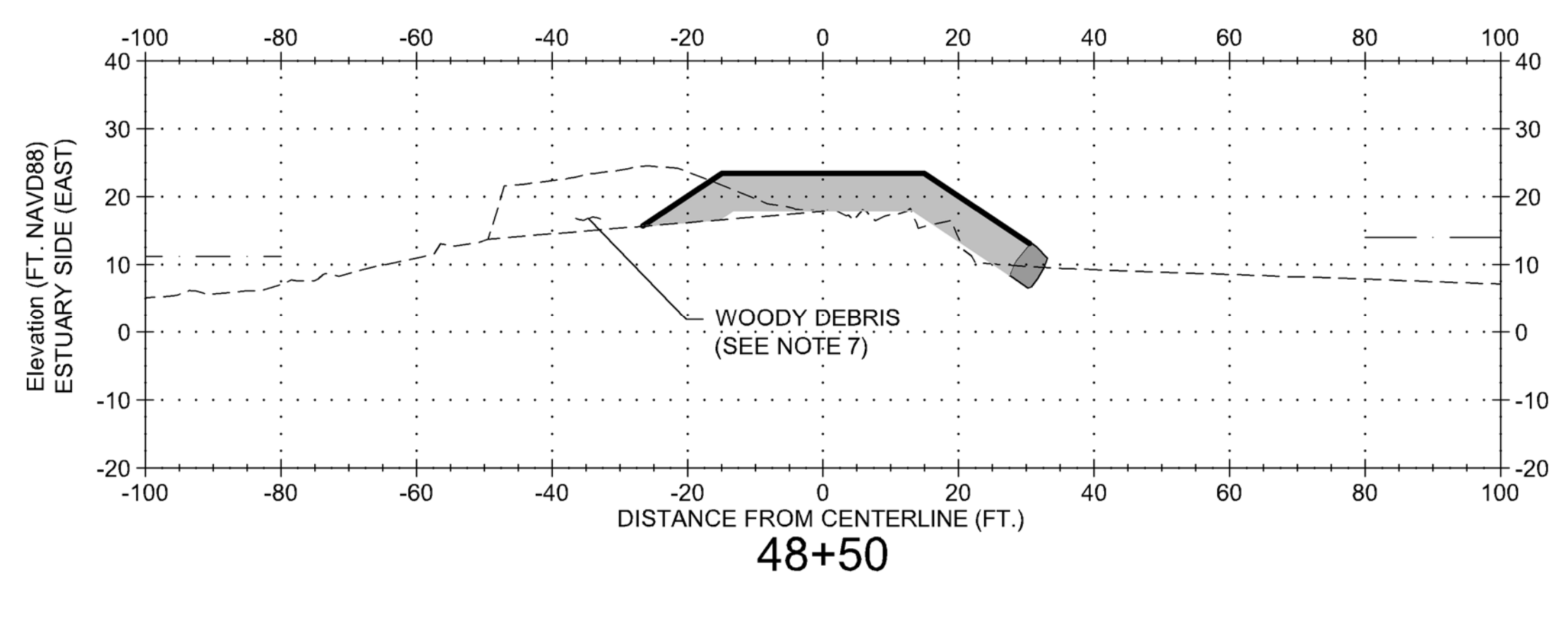
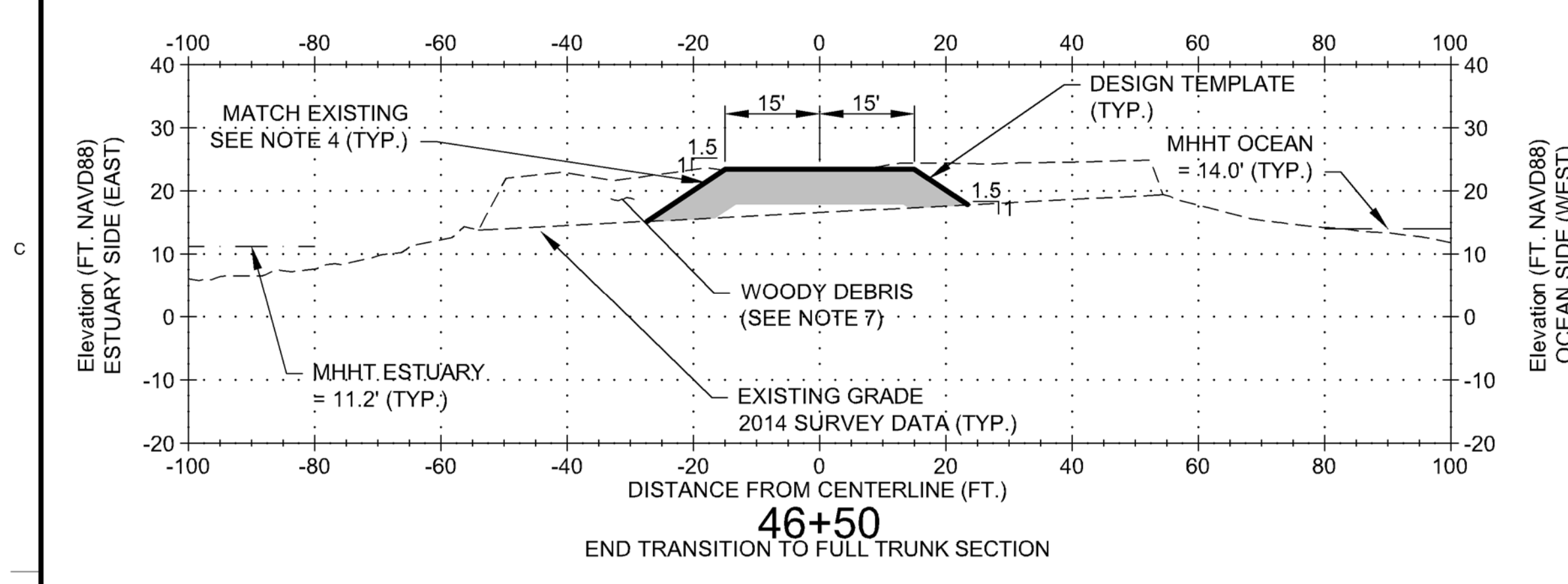
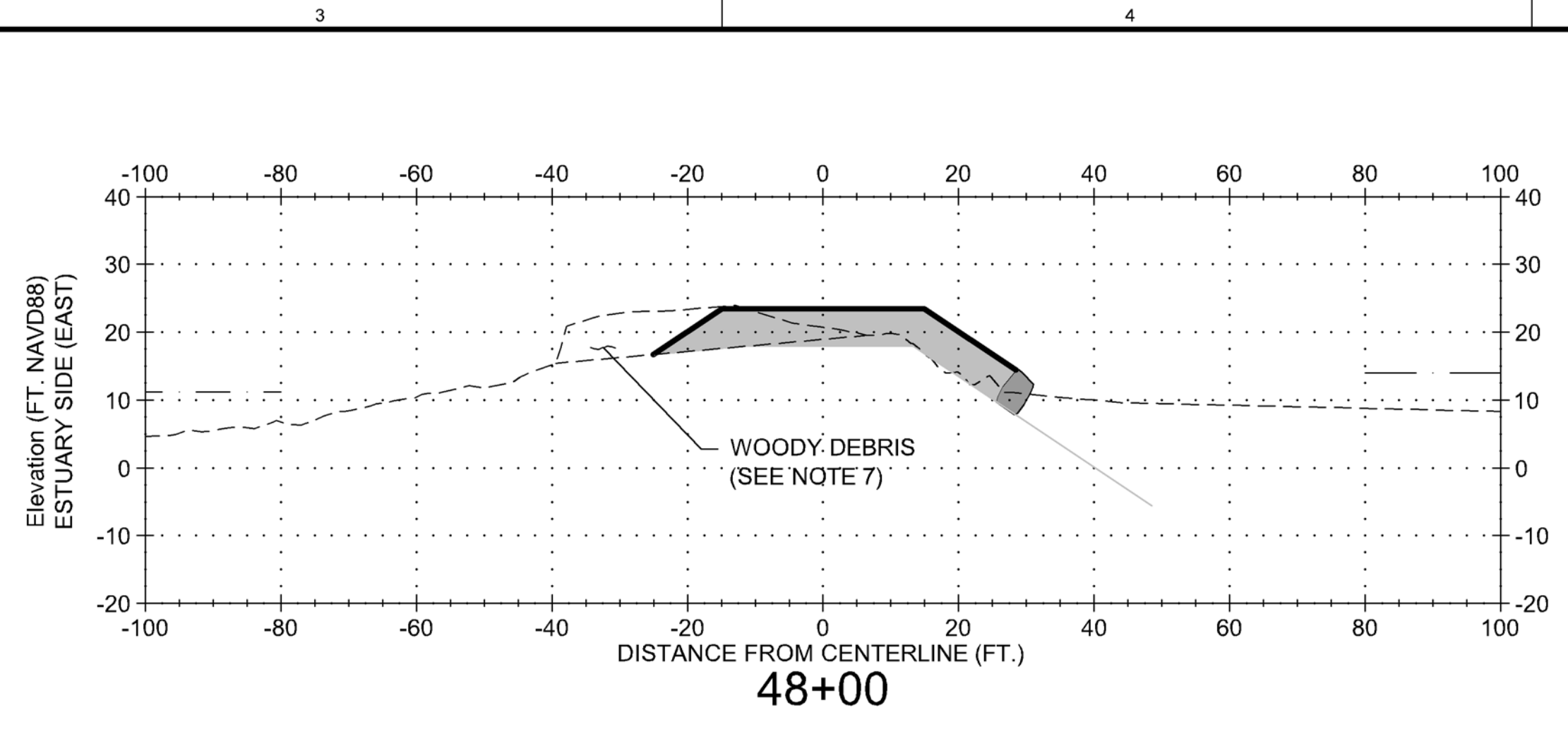
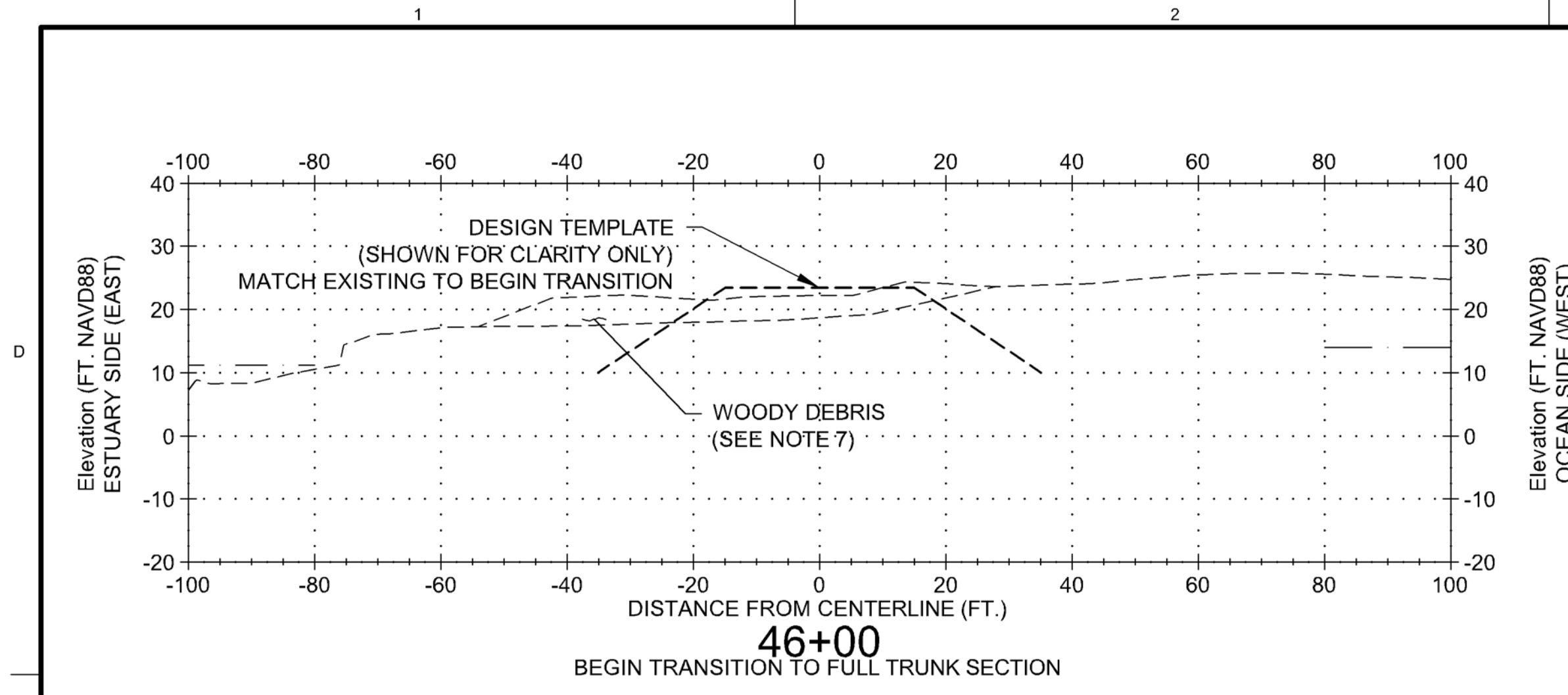


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DESIGNED BY: GREGORY B. BROUSSER, P.E.	DATE: 02/20/2015	SUBMITTAL NO. / STATIONING: W1274154-003
DESIGNED BY: GREGORY B. BROUSSER, P.E.	DESIGNED BY: GREGORY B. BROUSSER, P.E.	CONTRACT NO.:
SUBMITTED BY: MARK W. BROUSSER, P.E.	FILE NAME: CLG-1.107_CS003XS03.DWG.dwg	DRAWING NUMBER:
PLOT SCALE: 1:1	ANSI D	

COLUMBIA RIVER
MCR JETTY A REHABILITATION
TYPICAL CROSS SECTIONS 3

SHEET
IDENTIFICATION
CS003



SCALE: 1" = 20'
0 20'

- NOTES:
1. SHOWN CONDITIONS APPLY TO THE SPECIFIC CROSS SECTION AT THE TIME OF SURVEY: AUGUST 2014, UNLESS WHERE NOTED OTHERWISE.
 2. TOE ELEVATION OF REPAIR TEMPLATE VARIES BASED ON POINT OF INTERSECTION BETWEEN:
1) RELICT ARMOR STONE MASS OF EXISTING CROSS SECTION, AND
2) FALL LINE(GRADE) OF REPAIR TEMPLATE
 3. THE AMOUNT AND LOCATION FOR WHERE EXISTING RELICT STONE WOULD NEED TO BE REPOSITIONED (TO ACCOMMODATE INTERLOCKING WITH NEW ARMOR STONE) IS VARIABLE. THERE MAY BE INSTANCES WHEN EXISTING RELICT STONE NEEDS TO BE MOVED, AND OTHER INSTANCES WHEN IT DOES NOT.
 4. NO REPAIRS ARE REQUIRED FOR AREAS ABOVE THE DESIGN TEMPLATE LIMITS. THE JETTY IS TO BE REPAIRED IF A MINIMUM OF 1 LAYER OF NEW JETTY STONE CAN BE ACCOMMODATED WITHIN THE CROSS-SECTION TEMPLATE AND ITS TOLERANCES. SEE SPECIFICATION 35 31 26.40 25 3.3.1 e. DASHED LINE SHOWN REPRESENTS AREAS WHERE DESIGN TEMPLATE IS BELOW EXISTING GRADE.
 5. TOE STONE FOR OUTER-MOST ARMOR LAYER TO BE FIRMLY KEYED-IN WITH EXISTING AND NEW ARMOR STONE. TOE STONE IS REQUIRED TO BE EMBEDDED HALF STONE DIMENSION BELOW EXISTING JETTY SURFACE BASED ON EXPECTED REWORKING NEEDED TO SET NEW TOE STONE INTO EXISTING JETTY SURFACE.
 6. NOMINAL THICKNESS OF 1 LAYER OF NEW A-STONE IS 5.5 FT., BASED ON 171 PCF. STONE DENSITY OF EXISTING ARMOR STONE.
 7. WOODY DEBRIS NOTE - AREA SHOWN IS KNOWN TO HAVE WOODY DEBRIS, WHICH WHEN REMOVED MAY EXPOSE DEFICIENT JETTY SECTIONS WHICH SHALL BE REPAIRED, AS NEEDED TO PROVIDE FULL CROSS-SECTION TEMPLATE ACCORDING TO CONTRACT PLAN NEAT LINE.
 8. LIMIT REWORKING OF THE EXISTING JETTY GRADE SUCH THAT NO EXCAVATION IS GREATER THAN 8 FEET OR EXTENDS BELOW +10 FEET NAVD88.
 9. THE DEPTH OF STONE PLACEMENT BETWEEN STATION 46+50 TO 86+50 MAY EXTEND TO APPROXIMATELY -5 FEET NAVD88.
 10. VERTICAL DATUM: NAVD88
 11. TOE STONE IS REQUIRED FOR REPAIR AREAS WHERE SIDE SLOPES EXTEND BELOW CREST 1 OR MORE STONE DIMENSIONS.

LEGEND

- A-STONE
- DESIGN TEMPLATE - WORK IS REQUIRED
- DESIGN TEMPLATE - BELOW EXISTING GRADE NO WORK IS REQUIRED
- TOE STONE
- A-STONE OR RELICT STONE



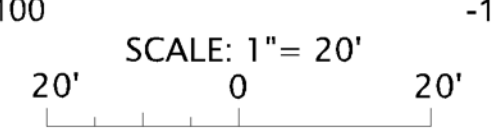
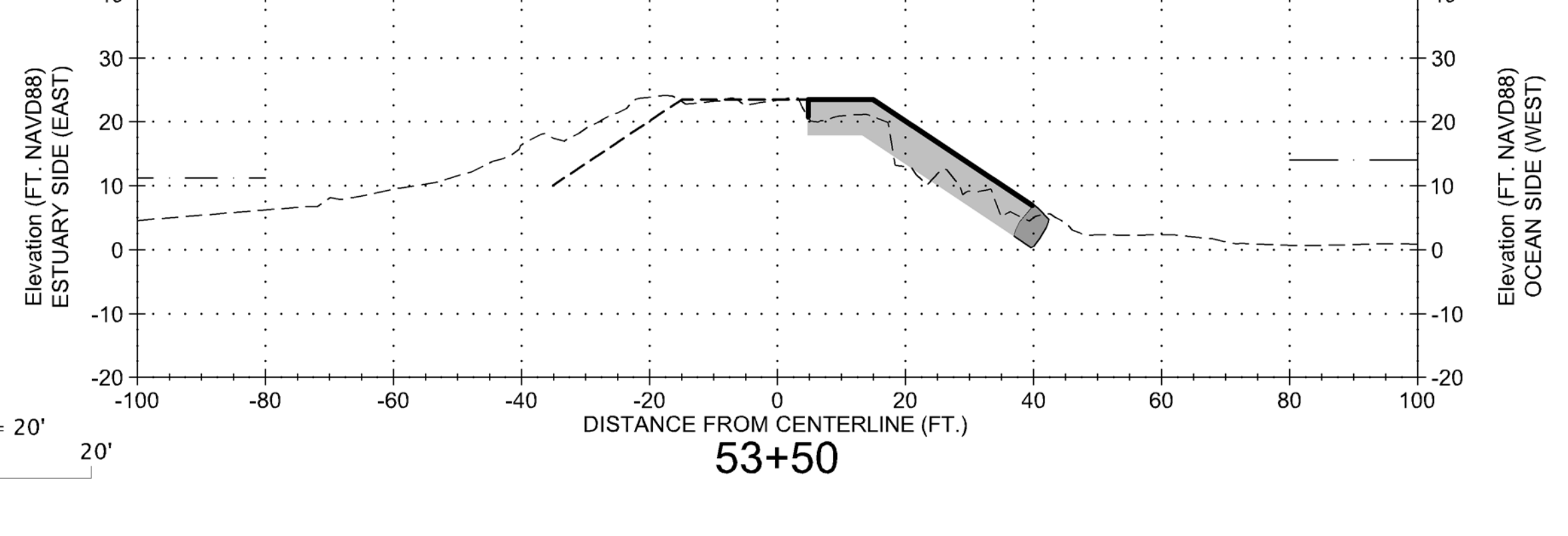
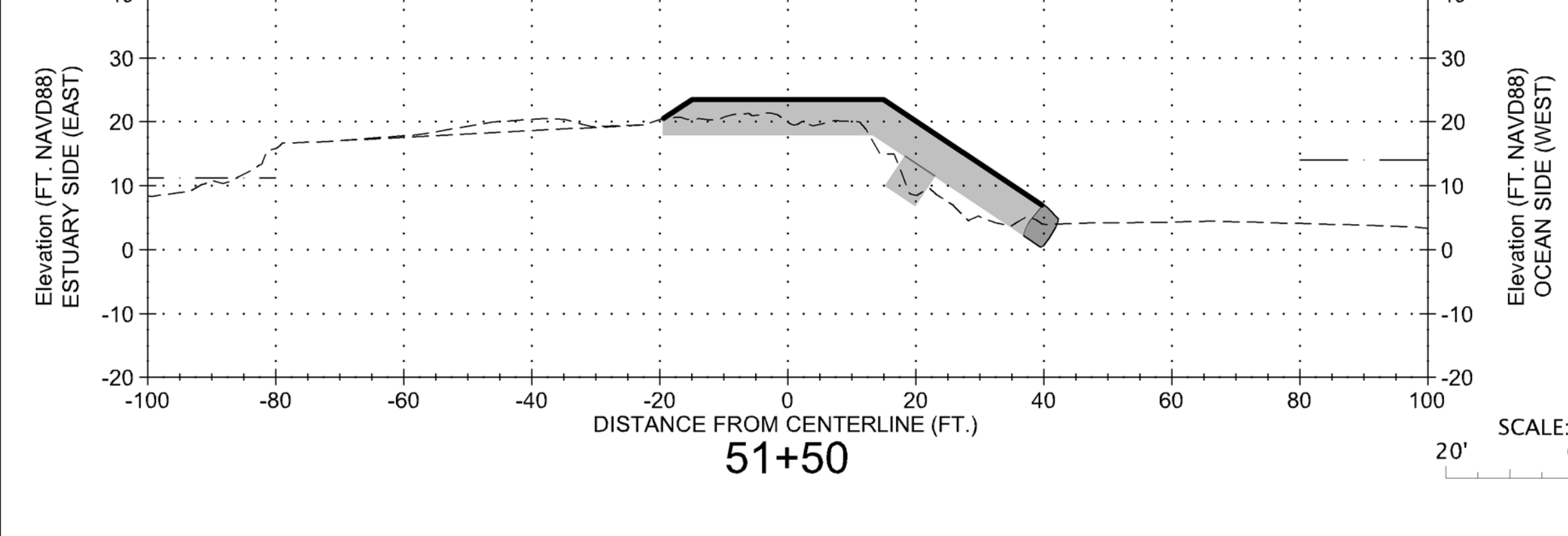
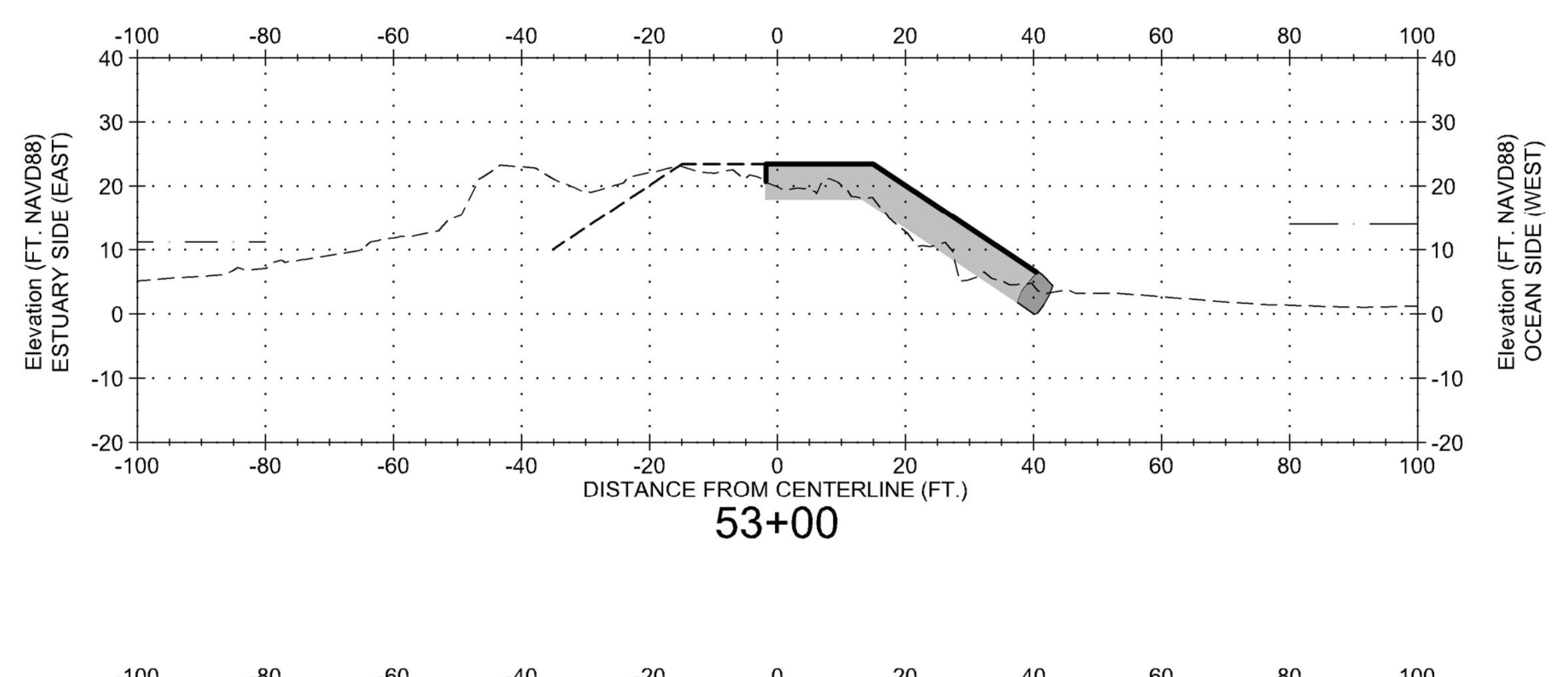
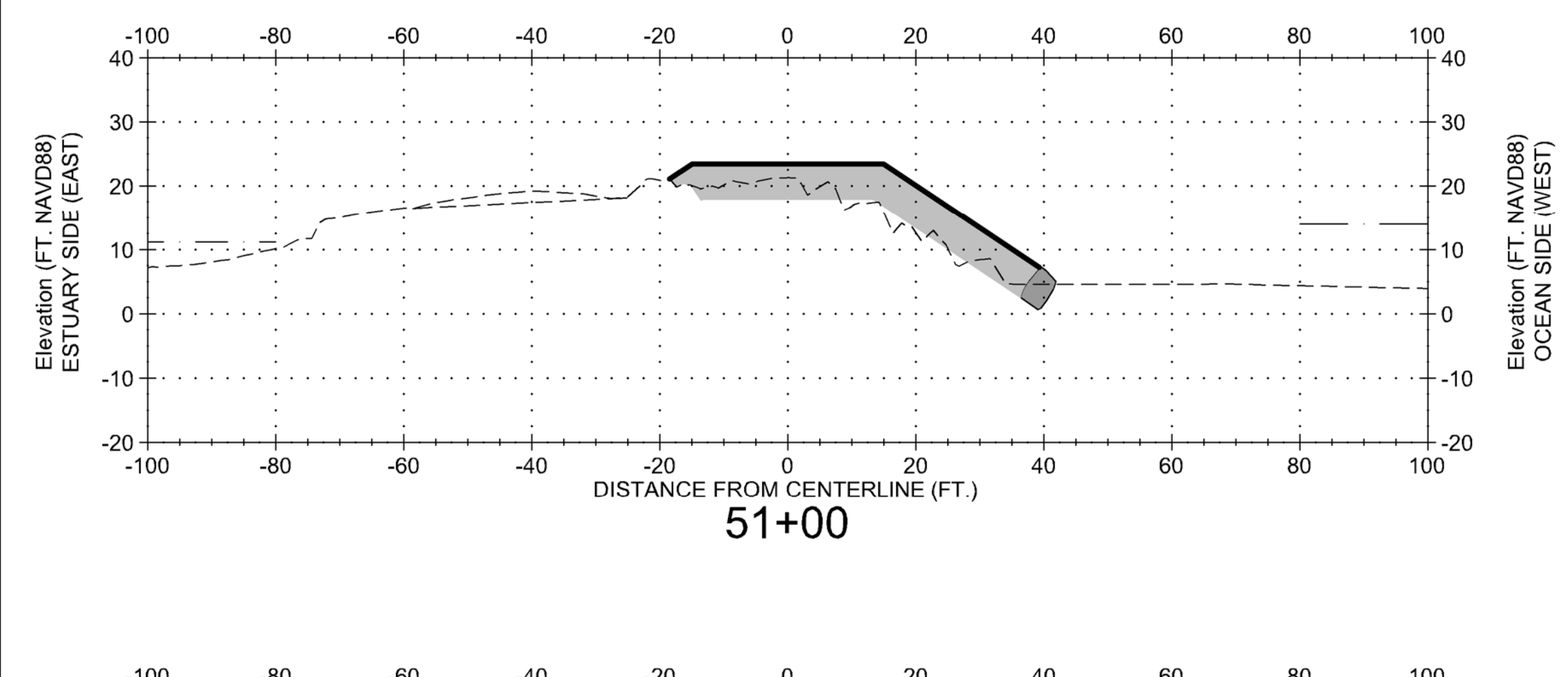
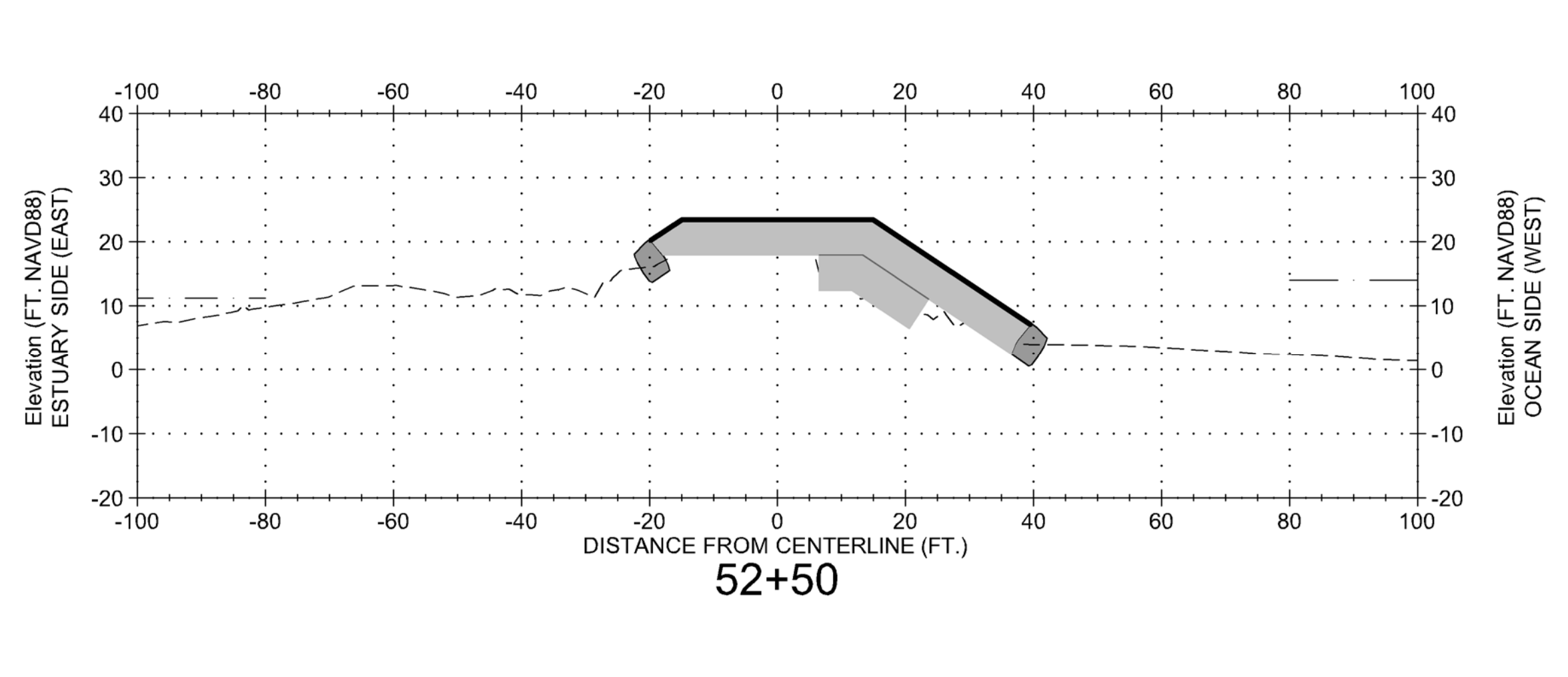
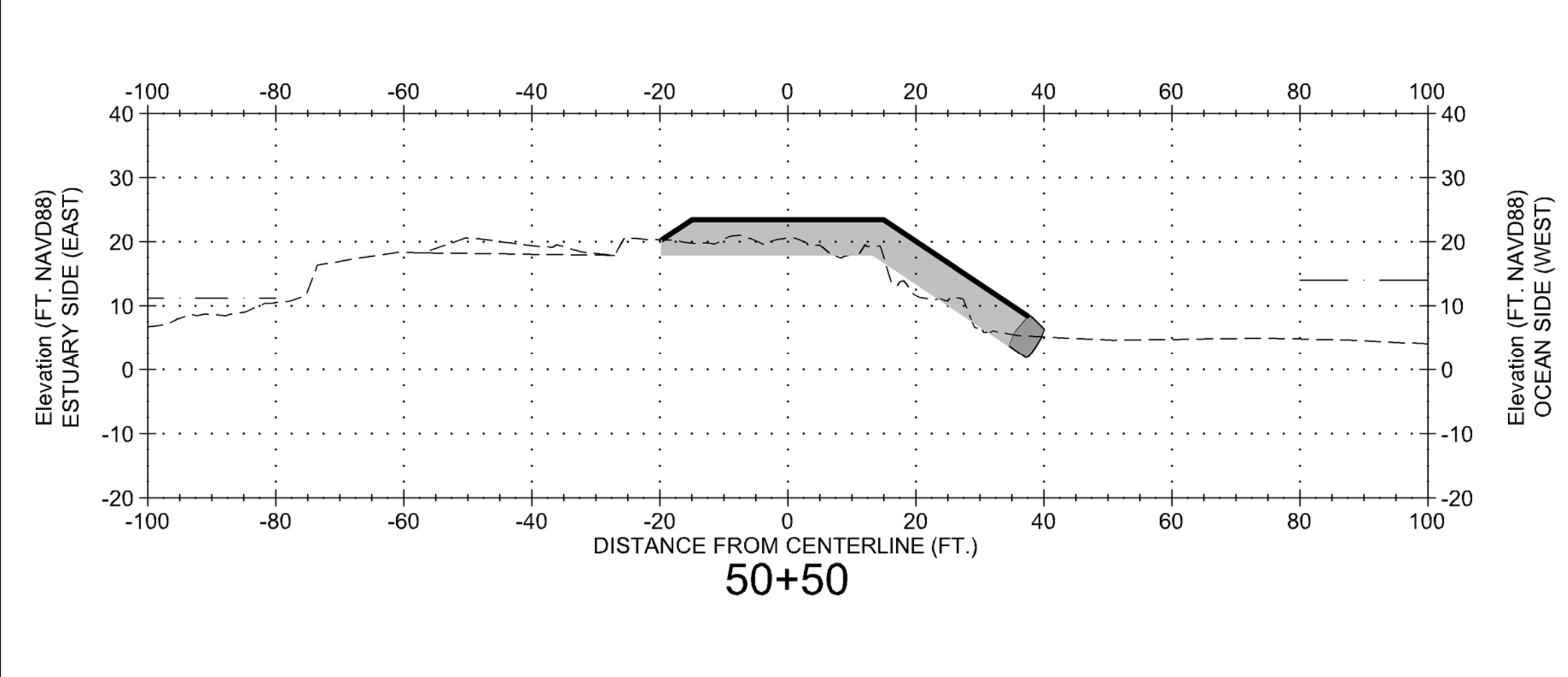
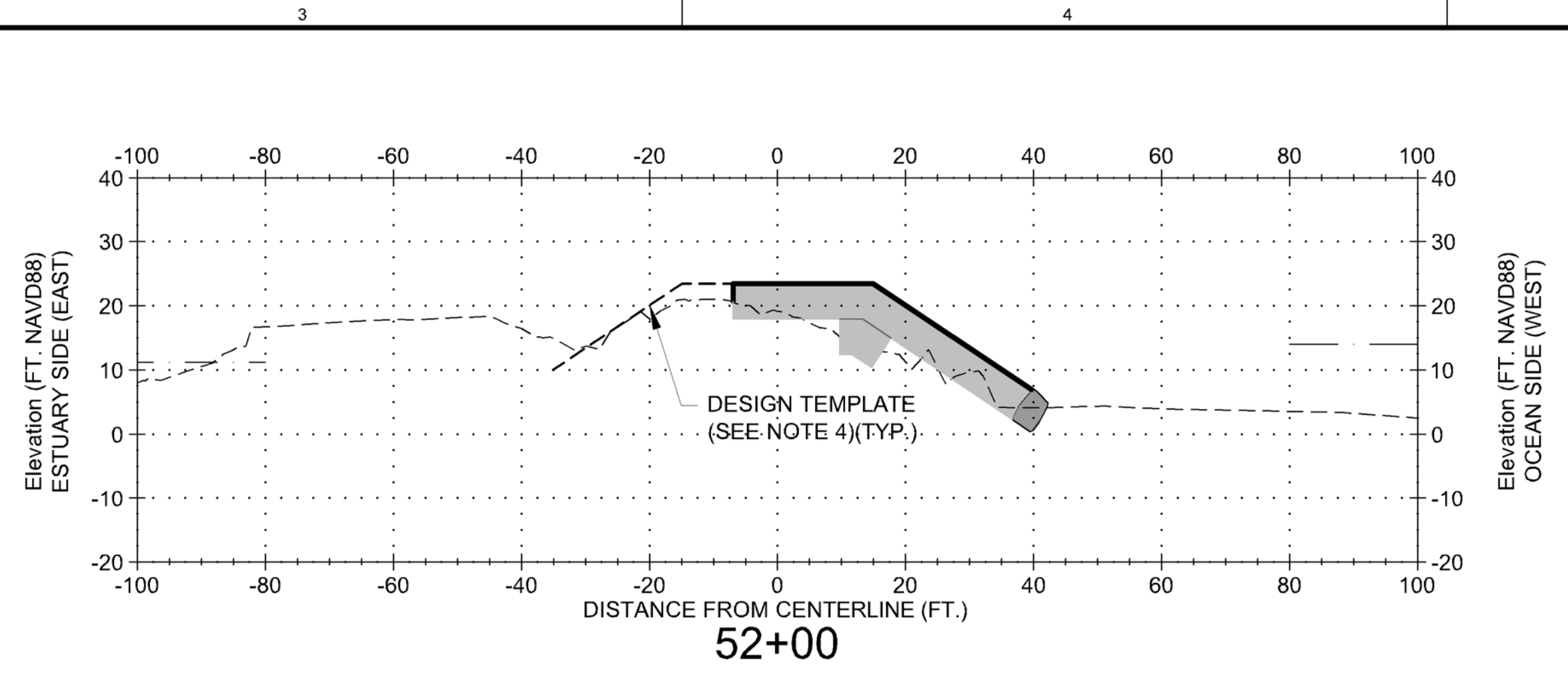
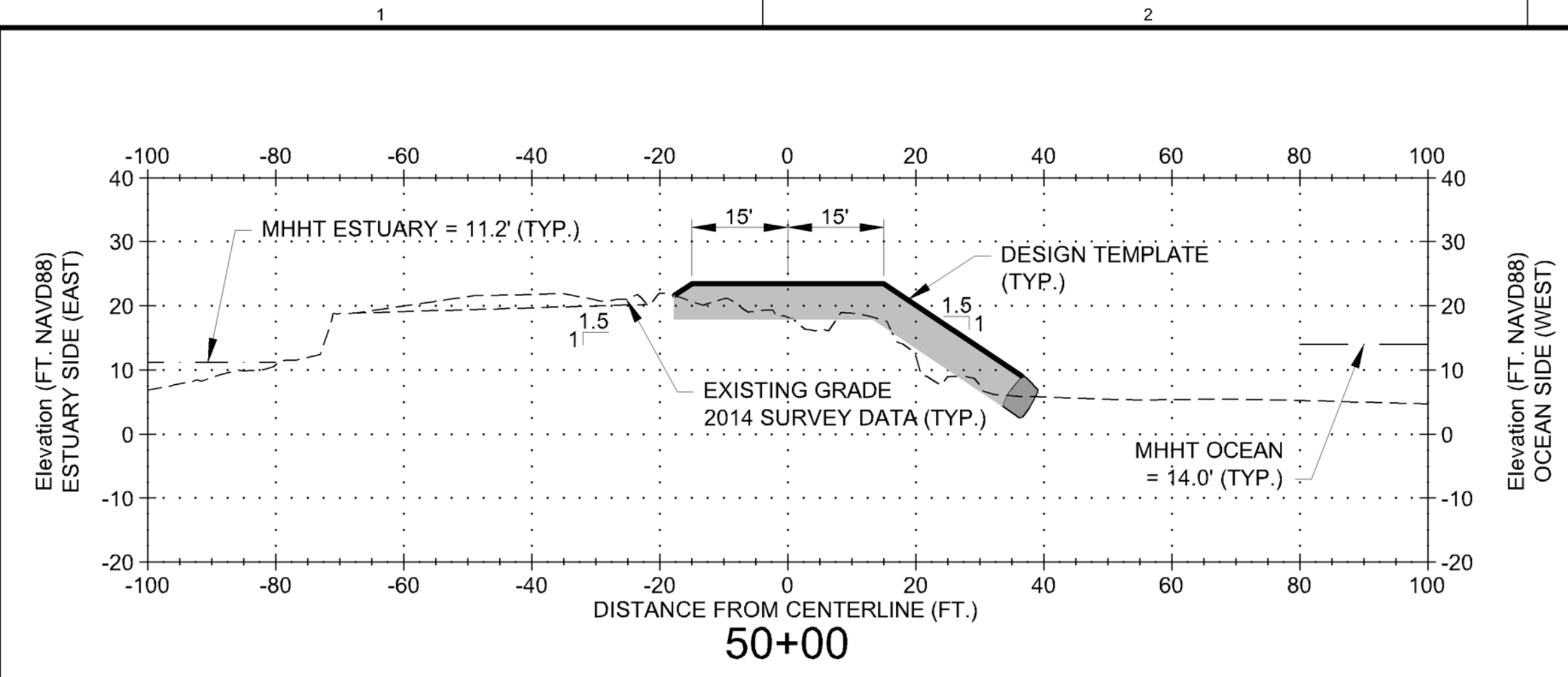
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ESTATION: [REDACTED]	CONTRACT NO.: [REDACTED]
PROJECT: [REDACTED]	DRAWING NUMBER: [REDACTED]
DATE: 7/17/2015	FILE NAME: [REDACTED]
SIZE: 1:1	ANSI D: [REDACTED]

COLUMBIA RIVER
MCR JETTY A REHABILITATION
CROSS SECTIONS
46+00 TO 49+50

SHEET IDENTIFICATION
CS004

Plot Scale: 1" = 20'



- NOTES:
1. SHOWN CONDITIONS APPLY TO THE SPECIFIC CROSS SECTION AT THE TIME OF SURVEY: AUGUST 2014, UNLESS WHERE NOTED OTHERWISE.
 2. TOE ELEVATION OF REPAIR TEMPLATE VARIES BASED ON POINT OF INTERSECTION BETWEEN:
 - 1) RELICT ARMOR STONE MASS OF EXISTING CROSS SECTION, AND
 - 2) FALL LINE (GRADE) OF REPAIR TEMPLATE
 3. THE AMOUNT AND LOCATION FOR WHERE EXISTING RELICT STONE WOULD NEED TO BE REPOSITIONED (TO ACCOMMODATE INTERLOCKING WITH NEW ARMOR STONE) IS VARIABLE. THERE MAY BE INSTANCES WHEN EXISTING RELICT STONE NEEDS TO BE MOVED, AND OTHER INSTANCES WHEN IT DOES NOT.
 4. NO REPAIRS ARE REQUIRED FOR AREAS ABOVE THE DESIGN TEMPLATE LIMITS. THE JETTY IS TO BE REPAIRED IF A MINIMUM OF 1 LAYER OF NEW JETTY STONE CAN BE ACCOMMODATED WITHIN THE CROSS-SECTION TEMPLATE AND ITS TOLERANCES. SEE SPECIFICATION 35 31 26.40 25 3.3.1 e. DASHED LINE SHOWN REPRESENTS AREAS WHERE DESIGN TEMPLATE IS BELOW EXISTING GRADE.
 5. TOE STONE FOR OUTER-MOST ARMOR LAYER TO BE FIRMLY KEYED-IN WITH EXISTING AND NEW ARMOR STONE. TOE STONE IS REQUIRED TO BE EMBEDDED HALF STONE DIMENSION BELOW EXISTING JETTY SURFACE BASED ON EXPECTED REWORKING NEEDED TO SET NEW TOE STONE INTO EXISTING JETTY SURFACE.
 6. NOMINAL THICKNESS OF 1 LAYER OF NEW A-STONE IS 5.5 FT., BASED ON 171 PCF. STONE DENSITY OF EXISTING ARMOR STONE.
 7. WOODY DEBRIS NOTE - AREA SHOWN IS KNOWN TO HAVE WOODY DEBRIS, WHICH WHEN REMOVED MAY EXPOSE DEFICIENT JETTY SECTIONS WHICH SHALL BE REPAIRED, AS NEEDED TO PROVIDE FULL CROSS-SECTION TEMPLATE ACCORDING TO CONTRACT PLAN NEAT LINE.
 8. LIMIT REWORKING OF THE EXISTING JETTY GRADE SUCH THAT NO EXCAVATION IS GREATER THAN 8 FEET OR EXTENDS BELOW +10 FEET NAVD88.
 9. THE DEPTH OF STONE PLACEMENT BETWEEN STATION 46+50 TO 86+50 MAY EXTEND TO APPROXIMATELY -5 FEET NAVD88.
 10. VERTICAL DATUM: NAVD88
 11. TOE STONE IS REQUIRED FOR REPAIR AREAS WHERE SIDE SLOPES EXTEND BELOW CREST 1 OR MORE STONE DIMENSIONS.

LEGEND

- A-STONE
- DESIGN TEMPLATE - WORK IS REQUIRED
- DESIGN TEMPLATE - BELOW EXISTING GRADE NO WORK IS REQUIRED
- TOE STONE
- A-STONE OR RELICT STONE

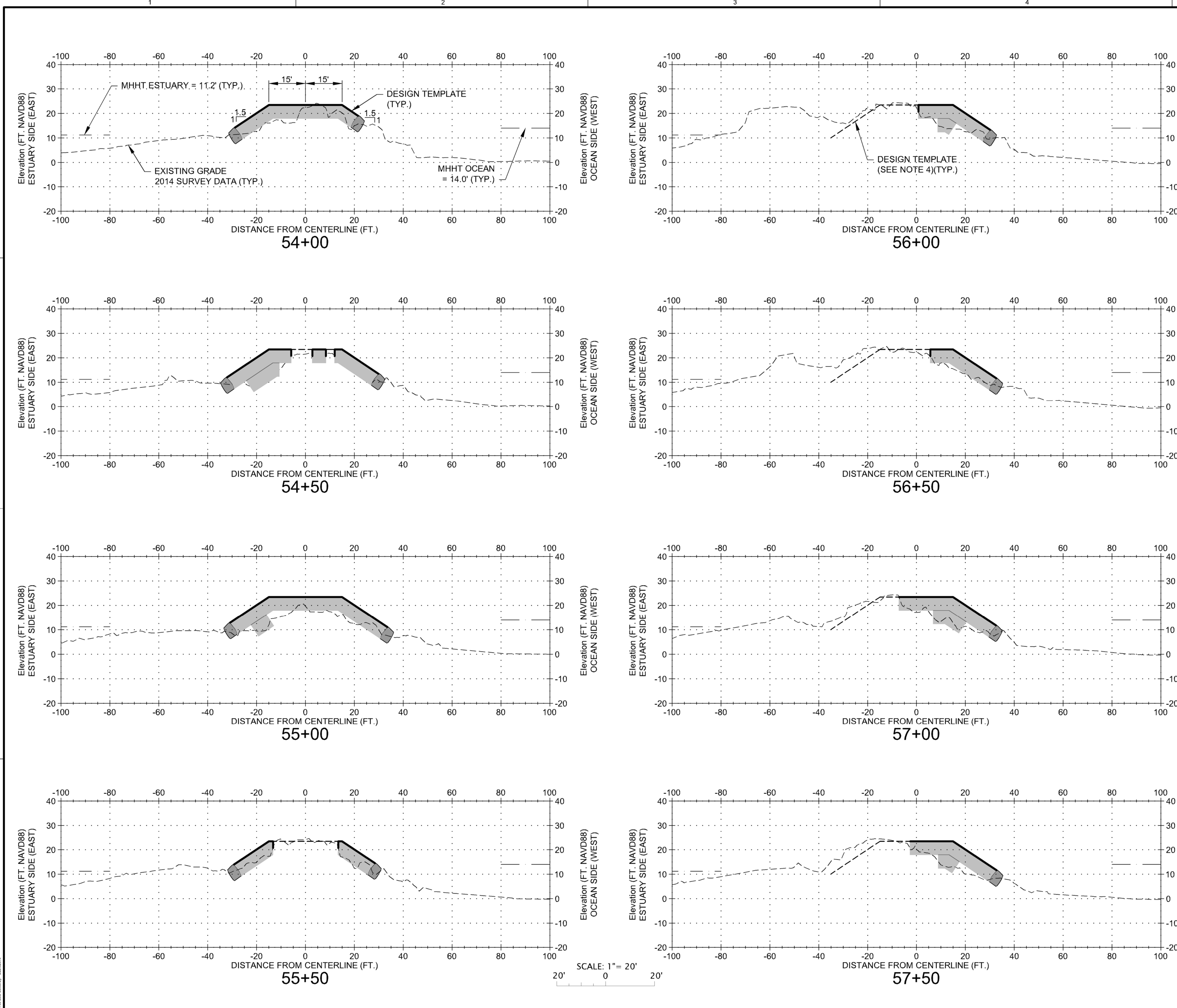
U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

DESIGNED BY: GREGORIO	CHECKED BY: GREGORIO	DATE: 7/17/2015	SUBMITTED BY: MARK W. BROUSSER, P.E.	CONTRACT NO.:	DRAWING NUMBER:
ESTATION (US): W127N15R0403			FILE NAME: CLG-1.107_CS005X505.DWG		
MARK					
DESCRIPTION					
DATE					
APPR					

**COLUMBIA RIVER
MCR JETTY A REHABILITATION**

CROSS SECTIONS
50+00 - 53+50

SHEET
IDENTIFICATION
CS005



SCALE: 1" = 20'
 0 20'

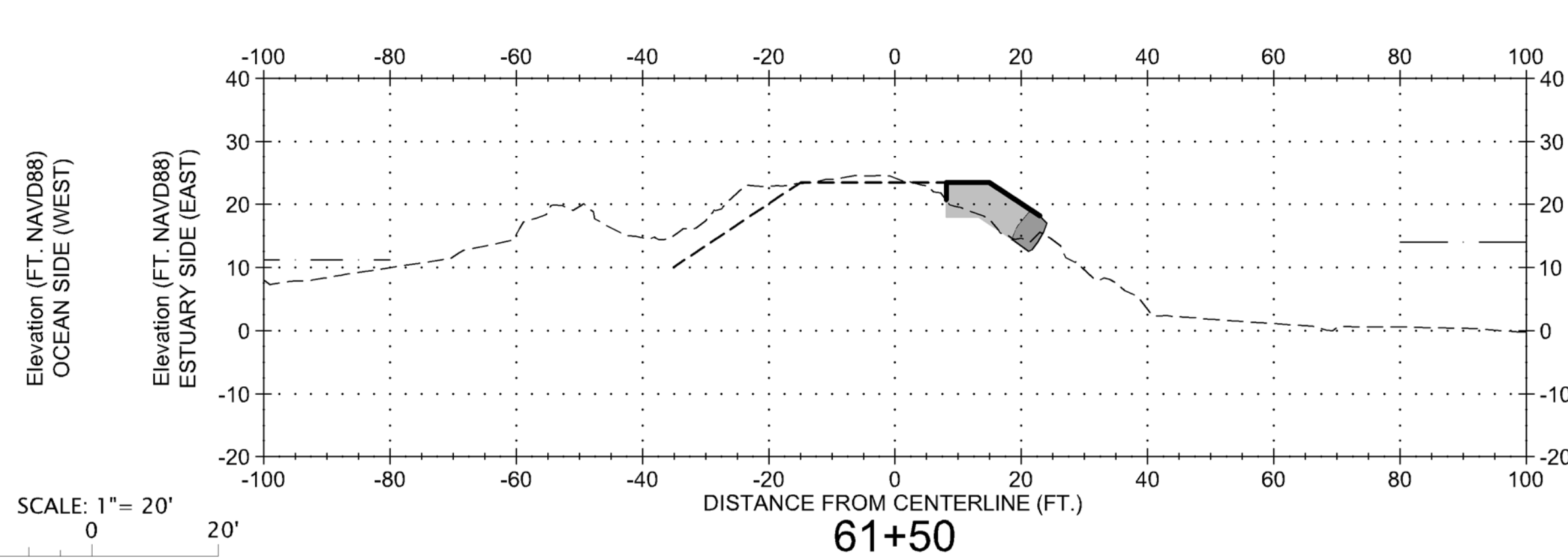
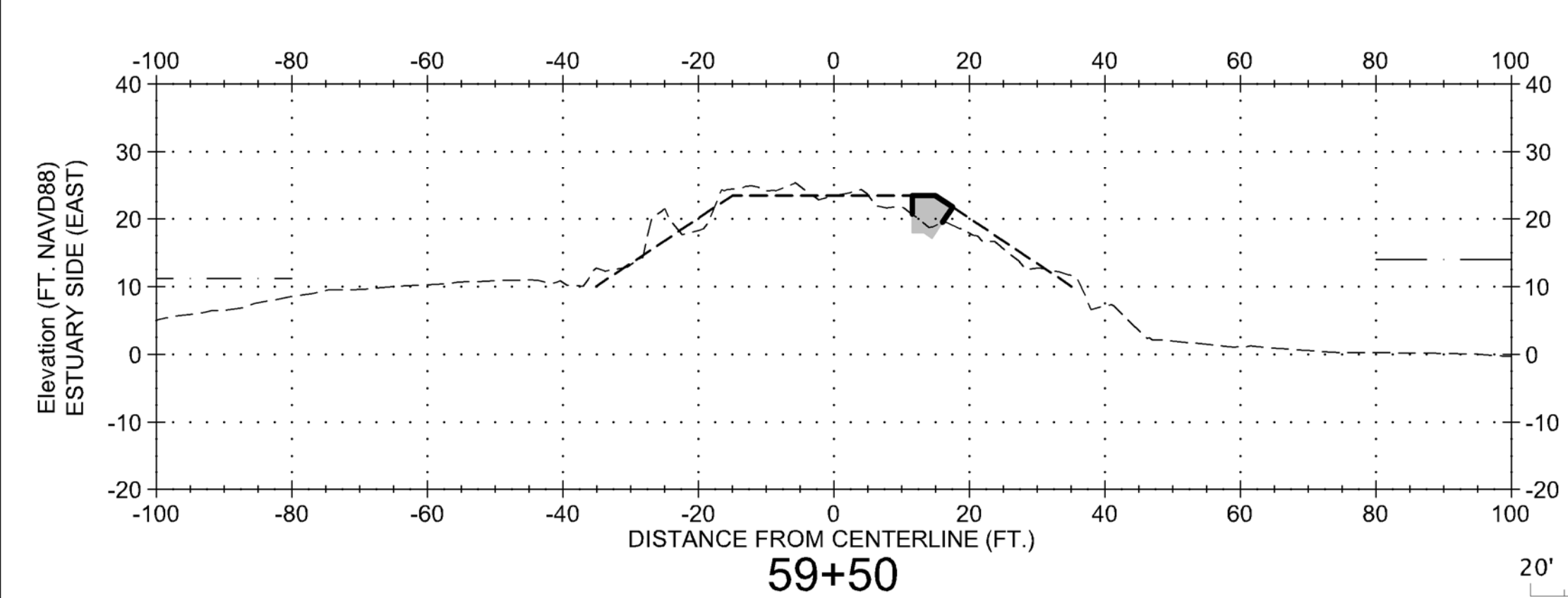
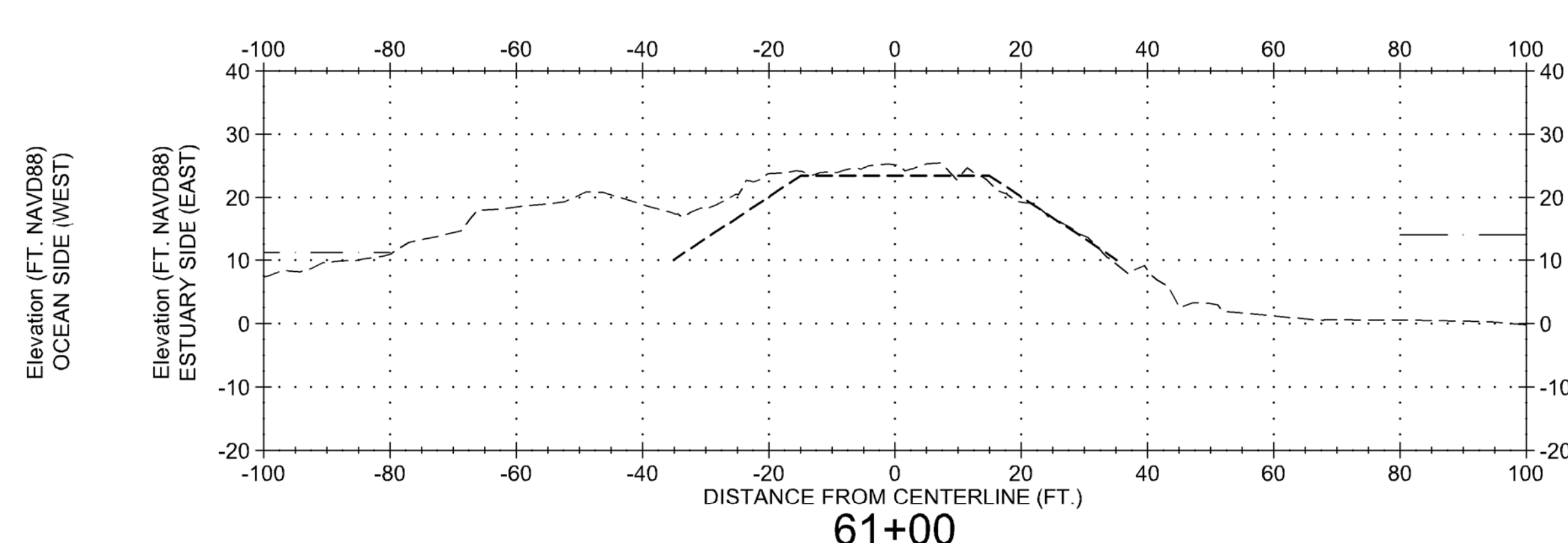
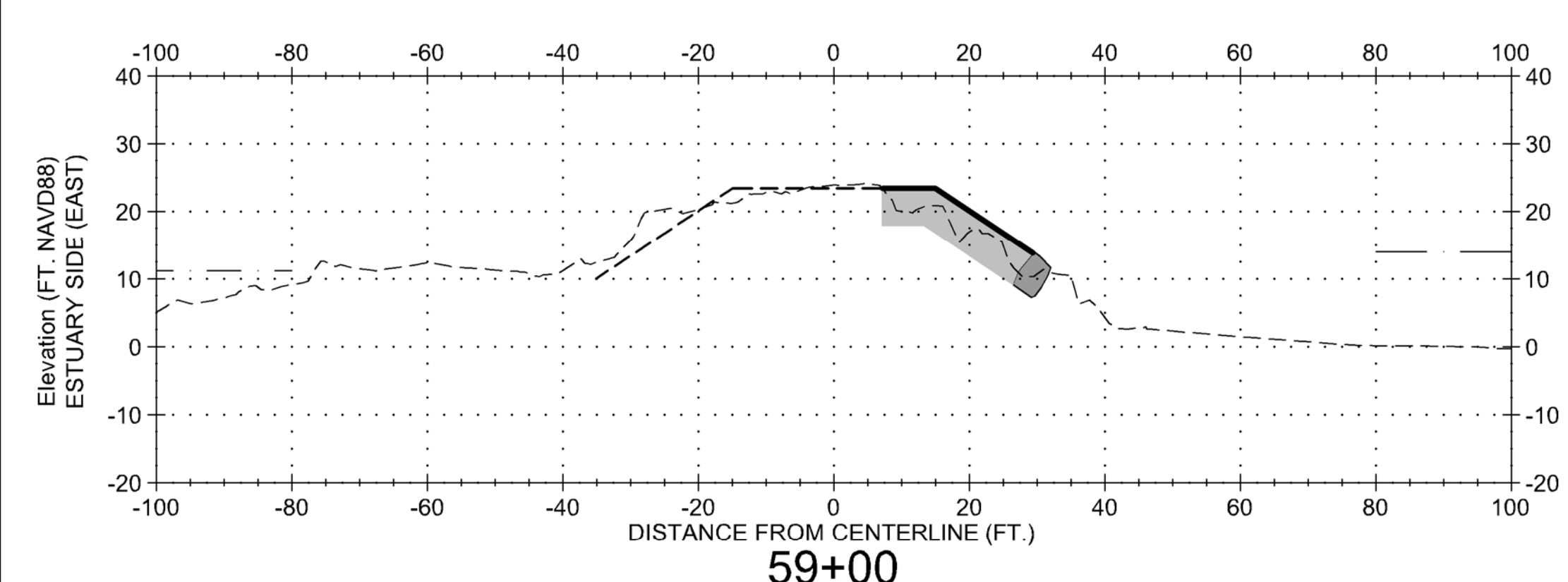
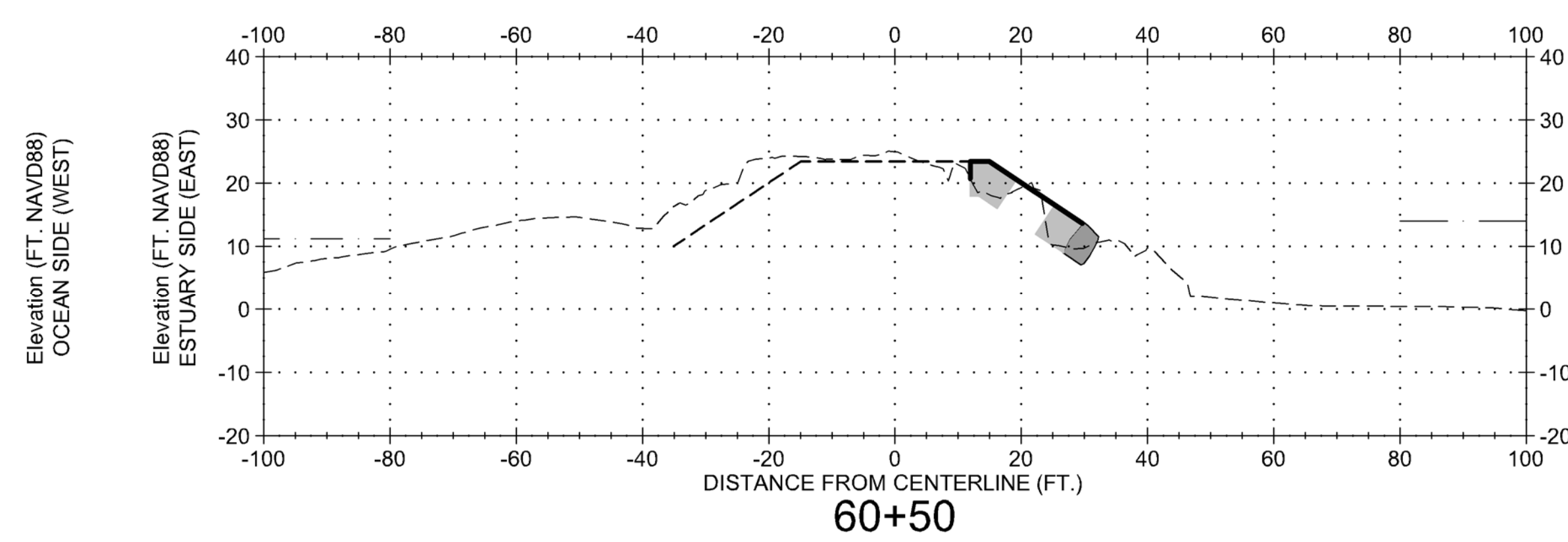
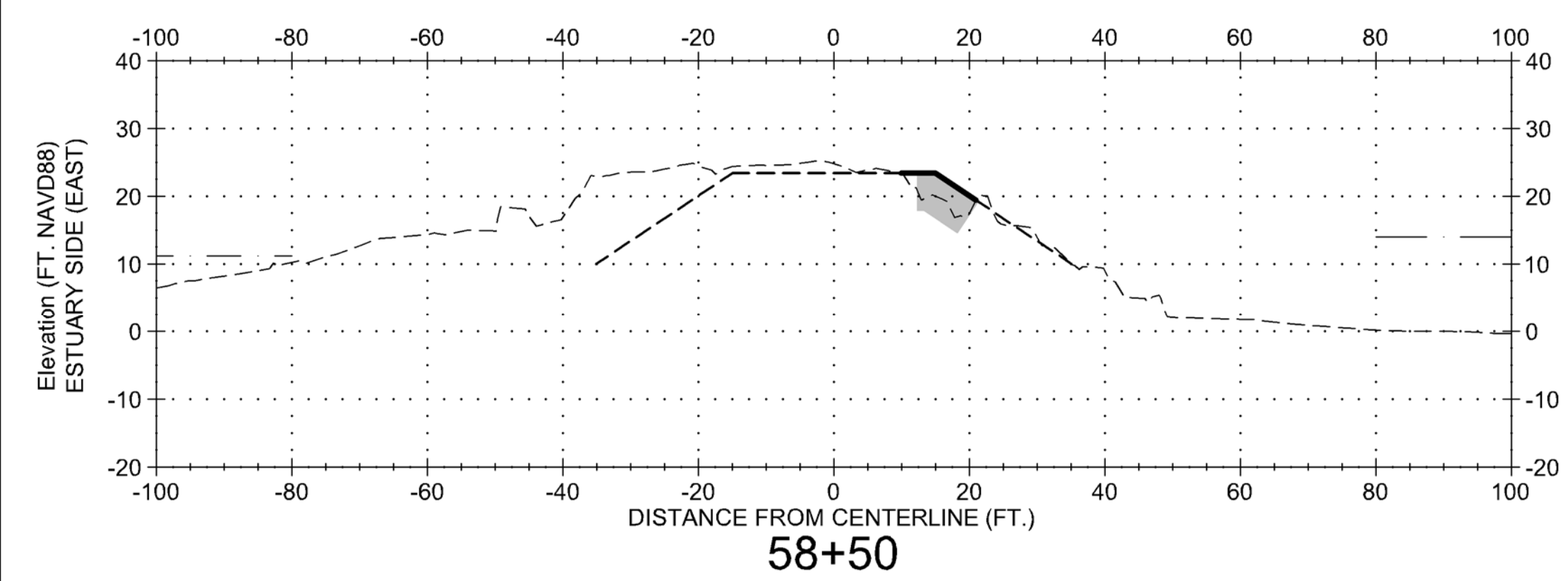
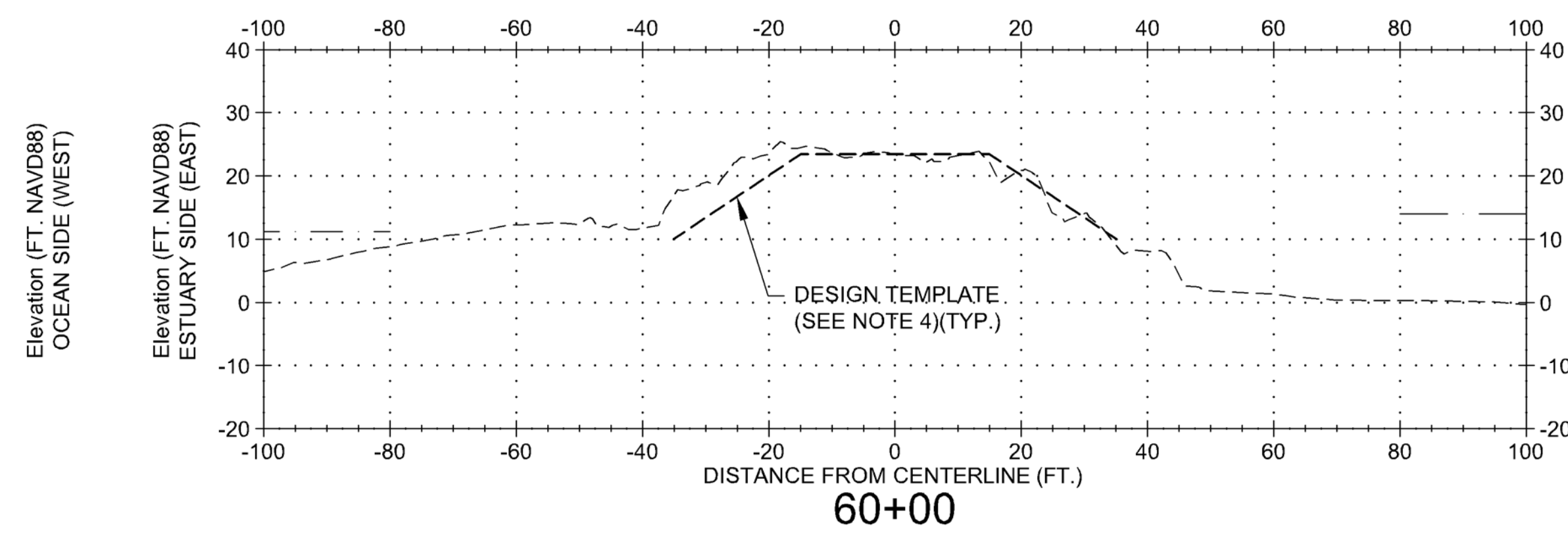
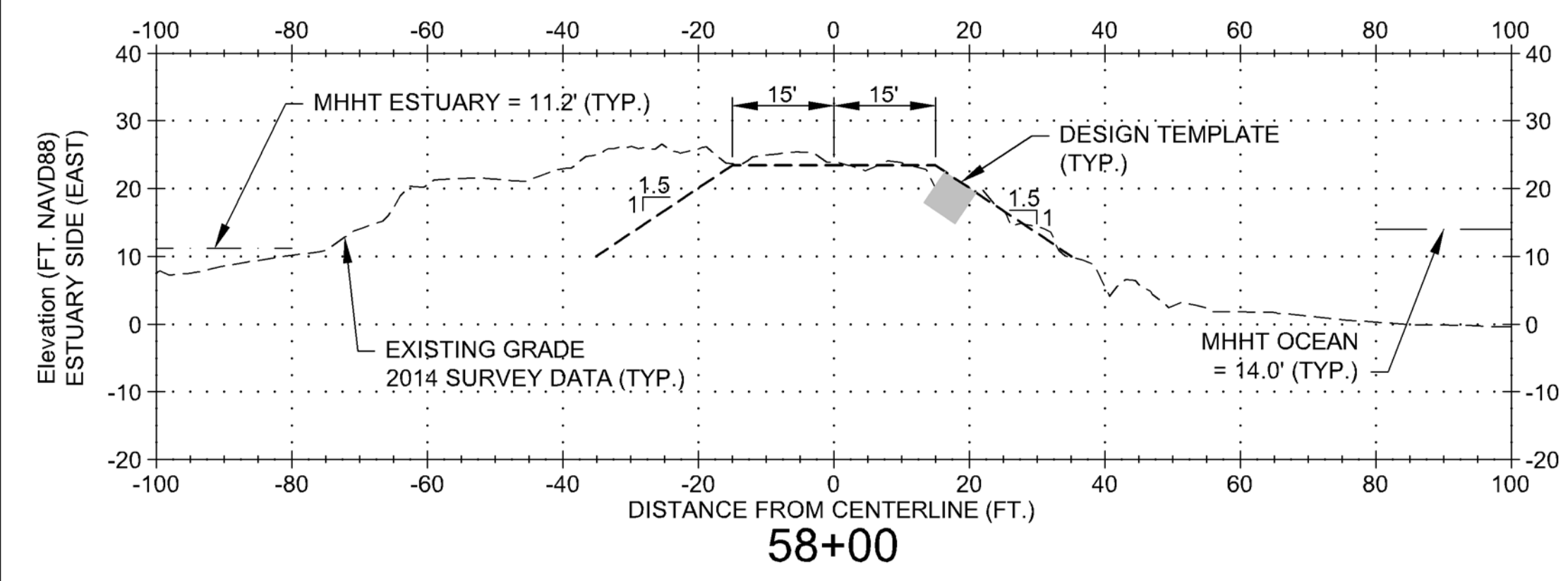
- NOTES:**
1. SHOWN CONDITIONS APPLY TO THE SPECIFIC CROSS SECTION AT THE TIME OF SURVEY: AUGUST 2014, UNLESS WHERE NOTED OTHERWISE.
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LEGEND

- A-STONE
- DESIGN TEMPLATE - WORK IS REQUIRED
- DESIGN TEMPLATE - BELOW EXISTING GRADE NO WORK IS REQUIRED
- TOE STONE
- A-STONE OR RELICT STONE

 U.S. Army Corps of Engineers PORTLAND DISTRICT	
DESIGNED BY: GREGORIO, P.E. DRAWN BY: GREGORIO, P.E. CHECKED BY: GREGORIO, P.E. SUBMITTED BY: MARK W. BROUSSER, P.E. DATE: 7/17/2015 FILE NAME: C:\G-1.107_CS006\CS06.DWG	DATE: 2015 ESTATION (US): W127N15R4003 CONTRACT NO.: DRAWING NUMBER: PLOT SCALE: 1" = 20' PLOT DATE: 7/17/2015 ANSI ID:
COLUMBIA RIVER MCR JETTY A REHABILITATION CROSS SECTIONS 54+00 - 57+50	
SHEET IDENTIFICATION CS006	

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2
3
4
5
D
C
B
A
 Plot Date: 7/17/2015
 File Name: C:\G-1.107_CS007XS07.DWG.dwg



SCALE: 1" = 20'
0 20'

- NOTES:
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 - TOE STONE
 - A-STONE OR RELICT STONE



U.S. Army Corps of Engineers PORTLAND DISTRICT	DATE: 7/17/2015	DESIGNER: GREG DUB	CHECKED BY: GREG DUB	ESTATION: 58+00	CONTRACT NO.: W127415R-003	APPR.
						DATE
						DESCRIPTION
						MARK

U.S. ARMY CORPS OF ENGINEERS
 PORTLAND DISTRICT
 PORTLAND, OREGON
 DESIGNED BY: GREG DUB
 CHECKED BY: GREG DUB
 ESTATION: 58+00
 CONTRACT NO.: W127415R-003
 SUBMITTED BY: MARK W. BROUSSER, P.E.
 PLOT DATE: 7/17/2015
 PLOT SCALE: 1" = 20'
 FILE NAME: C:\G-1.107_CS007XS07.DWG.dwg
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COLUMBIA RIVER
 MCR JETTY A REHABILITATION
 CROSS SECTIONS
 58+00 - 61+50

SHEET IDENTIFICATION
CS007



U.S. Army Corps
of Engineers
PORTLAND DISTRICT

DATE	APPRO

DESCRIPTION	MARK

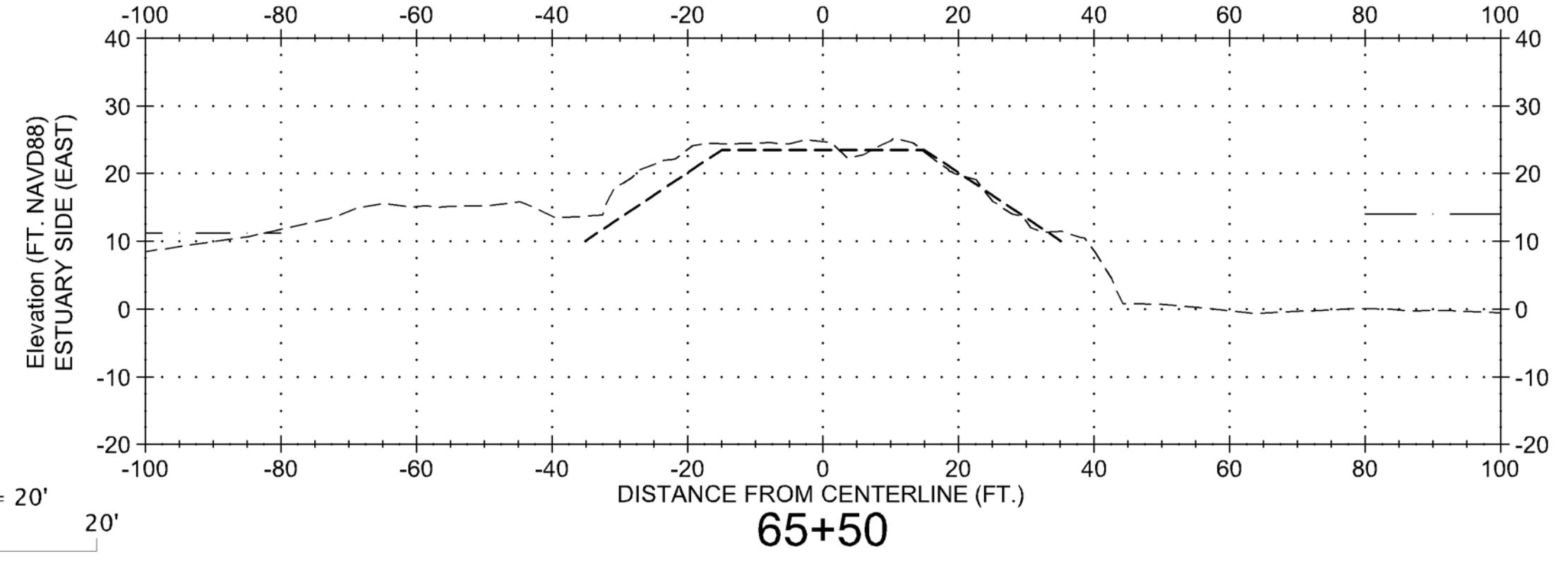
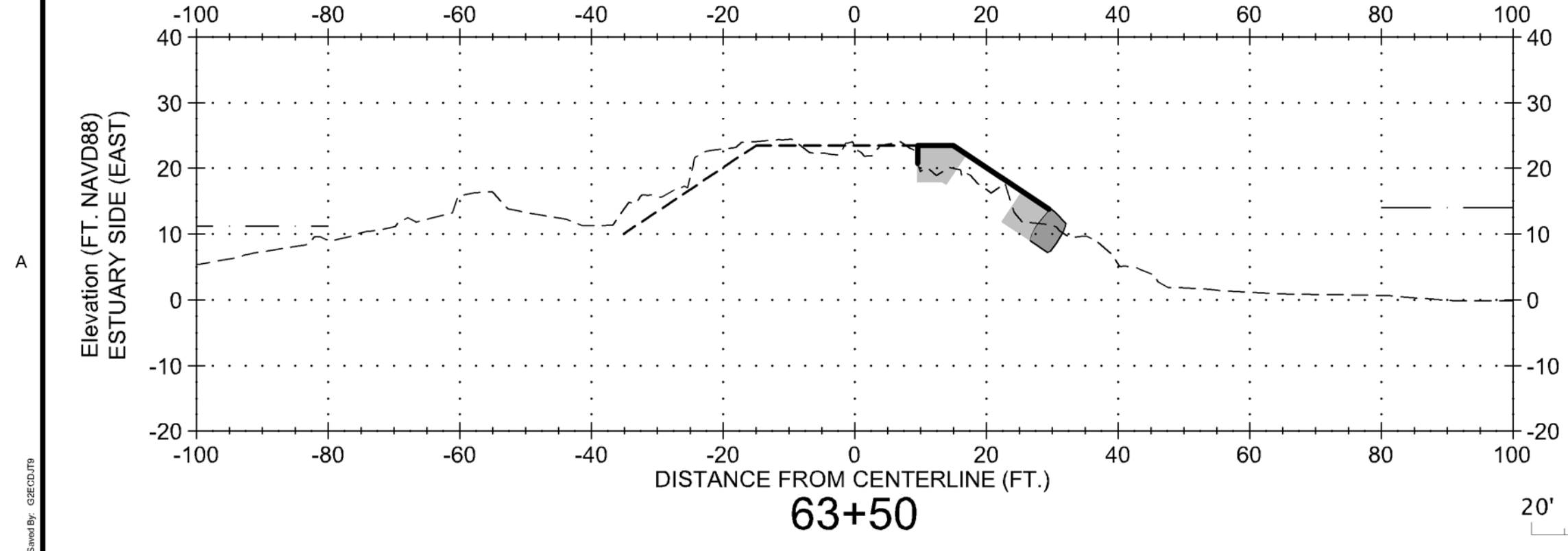
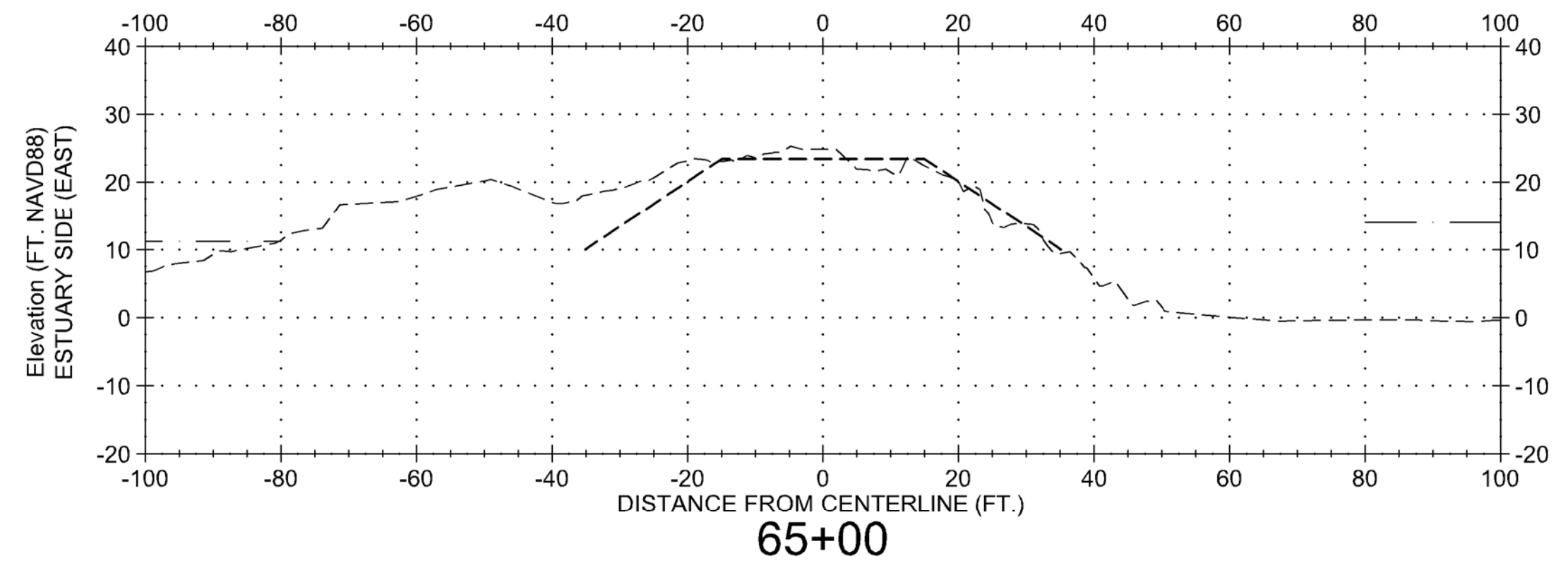
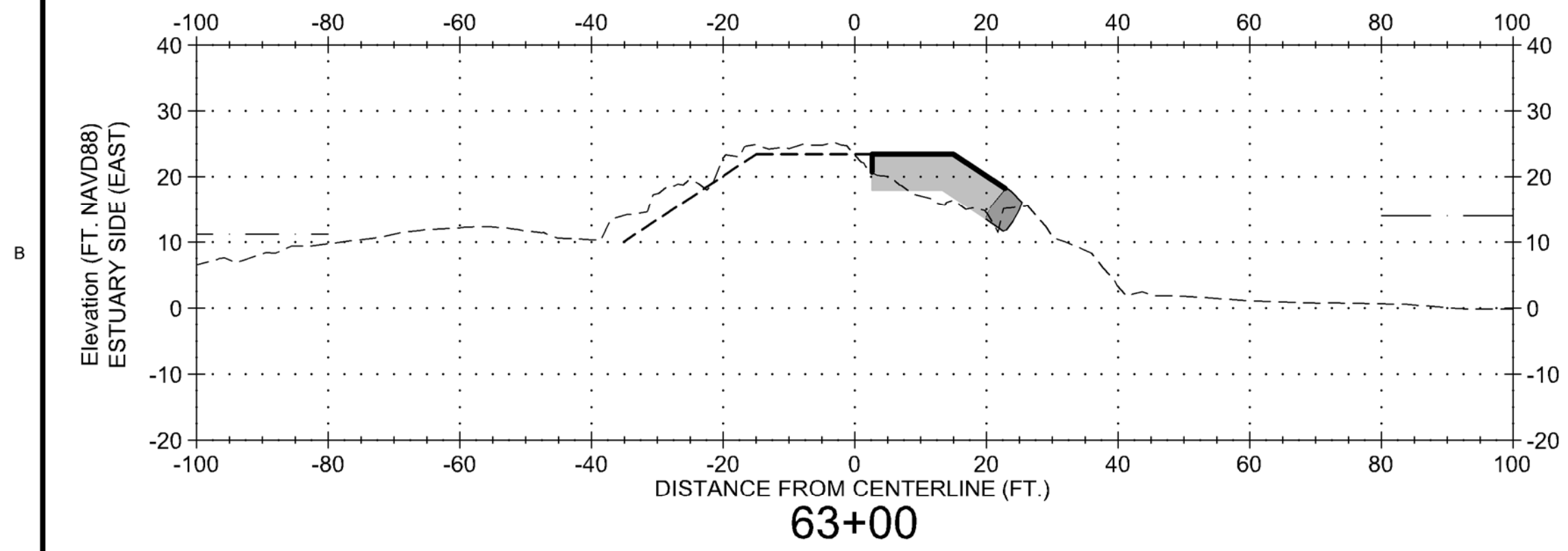
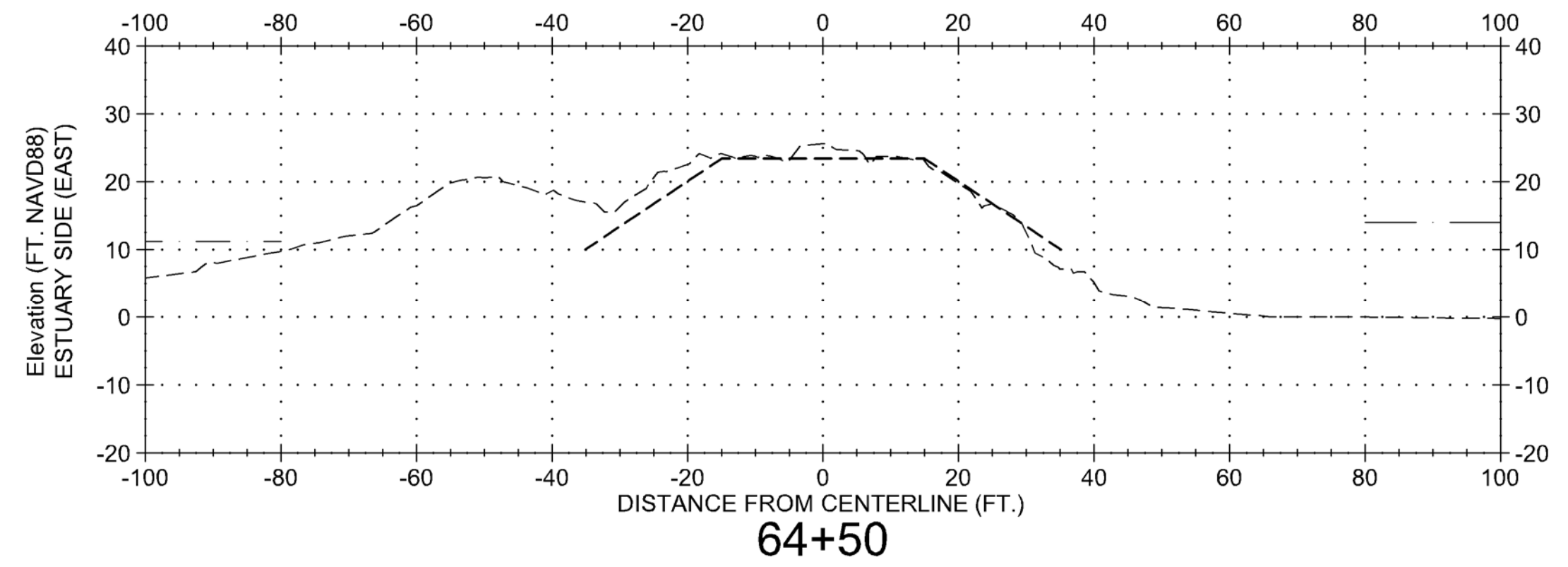
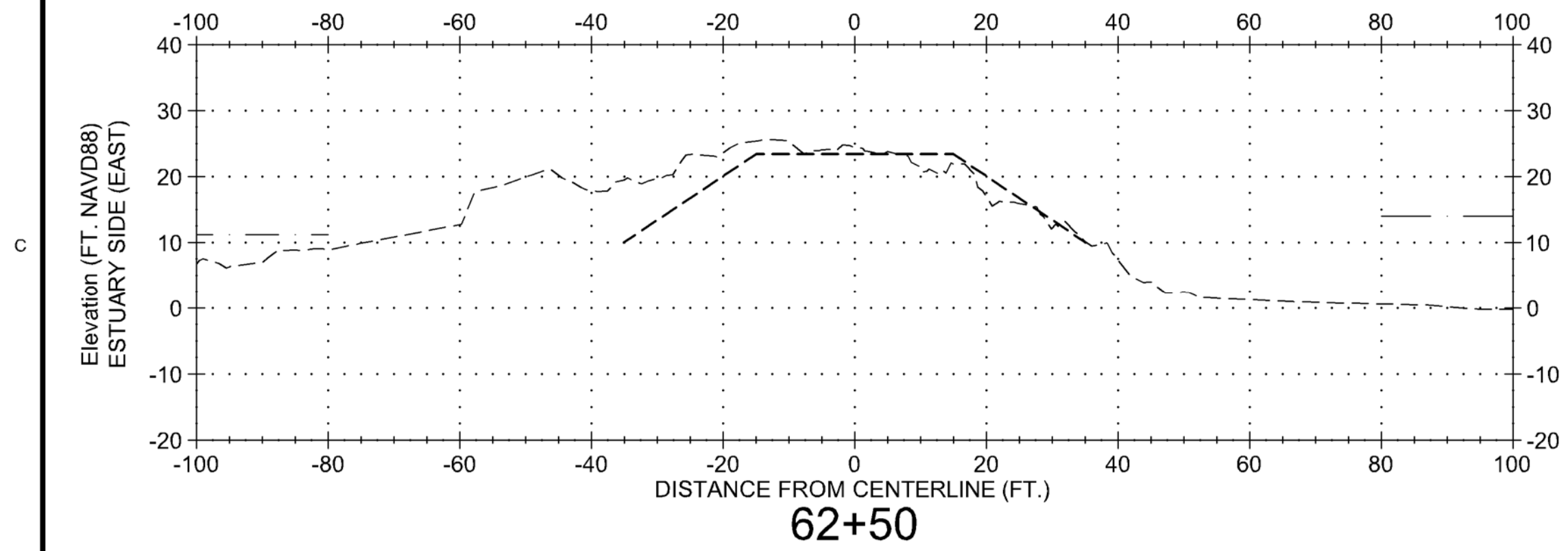
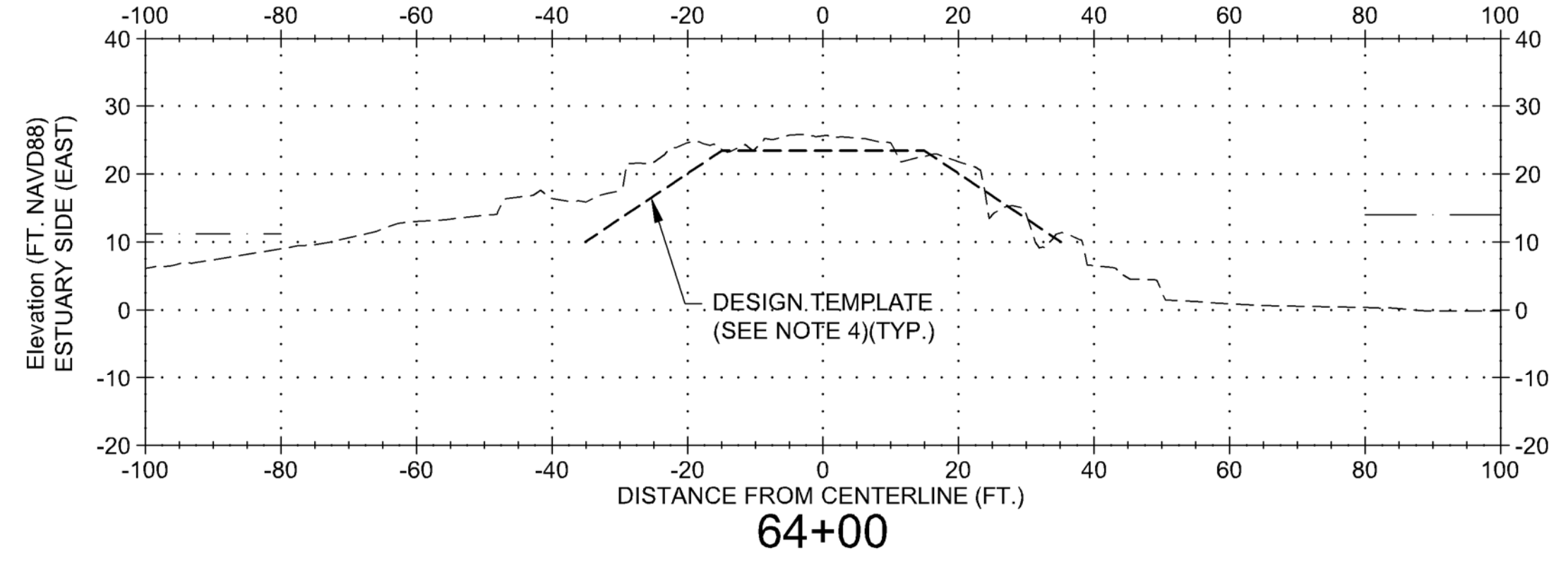
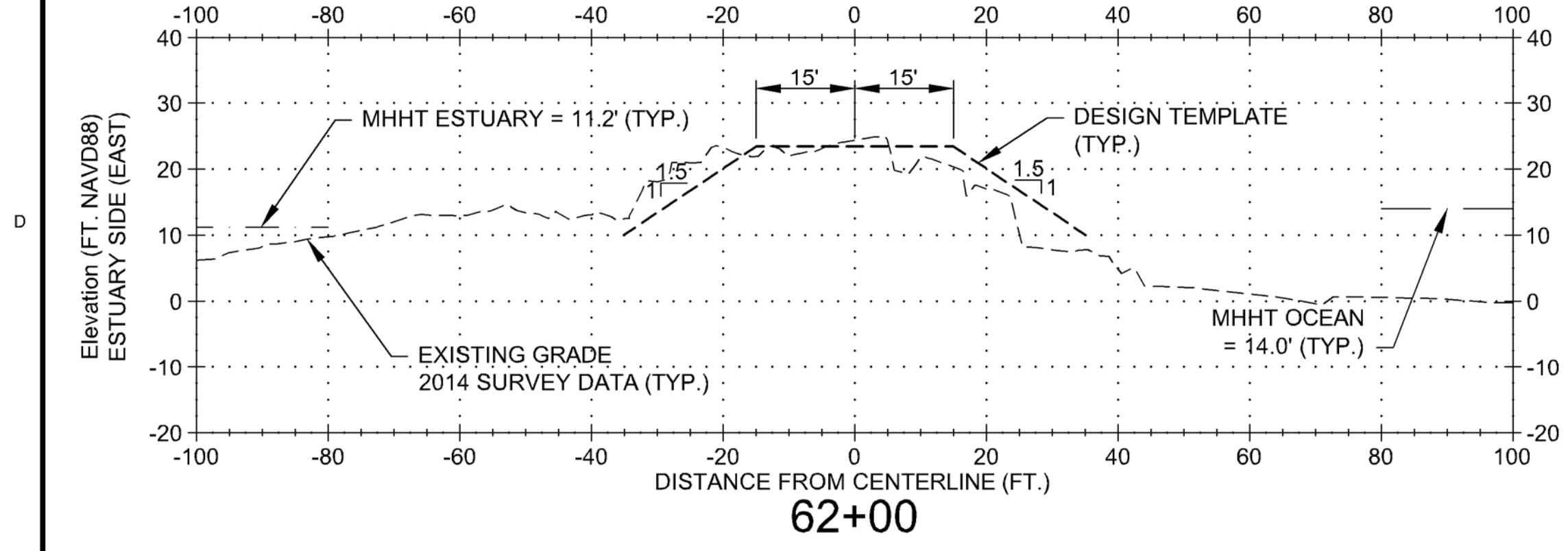
DATE	CONTRACT NO.
7/17/2015	

DESIGNED BY: GREGG STREIBER, P.E.	CHECKED BY: GREGG STREIBER, P.E.
DRAWN BY: GREGG STREIBER	CONTRACT NO.: W127N15R0403
SUBMITTED BY: MARK W. BROUSSER, P.E.	DATE: 7/17/2015
PLOT SCALE: 1" = 20'	DRAWING NUMBER: CS008
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U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

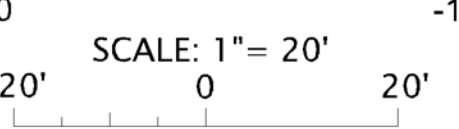
COLUMBIA RIVER
MCR JETTY A REHABILITATION
CROSS SECTIONS
62+00 - 65+50

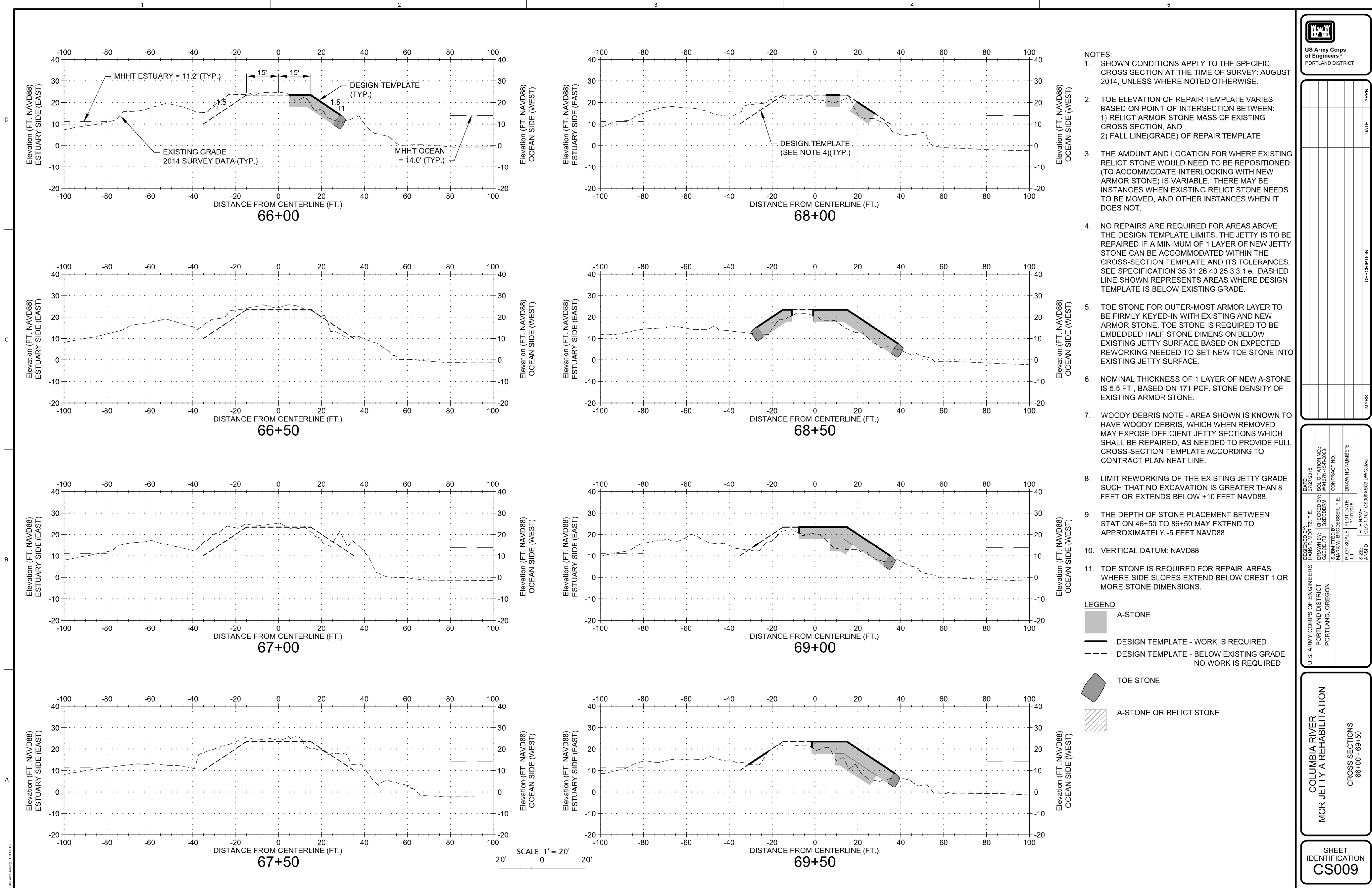
SHEET
IDENTIFICATION
CS008



- NOTES:
1. SHOWN CONDITIONS APPLY TO THE SPECIFIC CROSS SECTION AT THE TIME OF SURVEY: AUGUST 2014, UNLESS WHERE NOTED OTHERWISE.
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US Army Corps of Engineers
PORTLAND DISTRICT

	DATE: _____ APPR: _____
	DATE: _____ APPR: _____
	DATE: _____ APPR: _____
	DATE: _____ APPR: _____
	DATE: _____ APPR: _____

DESCRIPTION

MARK

DESIGNED BY: GREGORY	CHECKED BY: GREGORY	DATE: 7/17/2015	SUBMITTED BY: MARK W. BROUSSER, P.E.
DESIGNED BY: GREGORY		DATE: 7/17/2015	CONTRACT NO.:
DESIGNED BY: GREGORY		DATE: 7/17/2015	CONTRACT NO.:
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DESIGNED BY: GREGORY		DATE: 7/17/2015	CONTRACT NO.:

DRAWING NUMBER:
CS009

FILE NAME:
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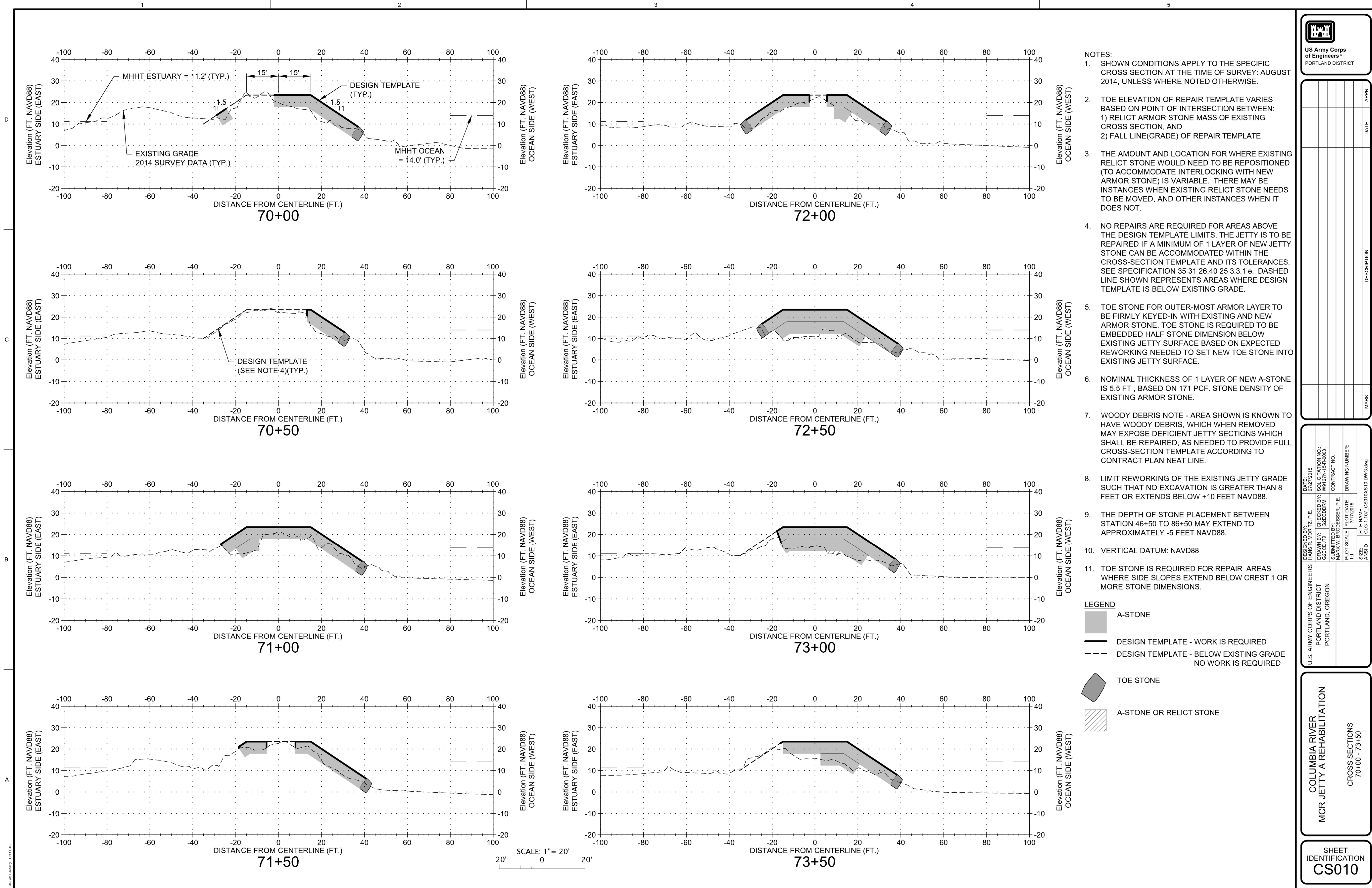
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U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

COLUMBIA RIVER
MCR JETTY A REHABILITATION



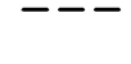


CROSS SECTIONS
66+00 - 69+50

SHEET
IDENTIFICATION
CS009



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DATE	DESCRIPTION	APPR.

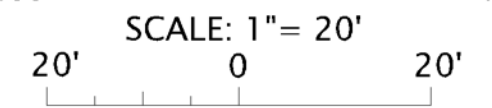
DESIGNED BY: P.E. GREGORY	DATE: 2015
CHECKED BY: GREGORY	ISSUATION: 15-04-03
DESIGNED BY: GREGORY	CONTRACT NO.:
SUBMITTED BY: MARK W. BROUSSER, P.E.	DRAWING NUMBER:
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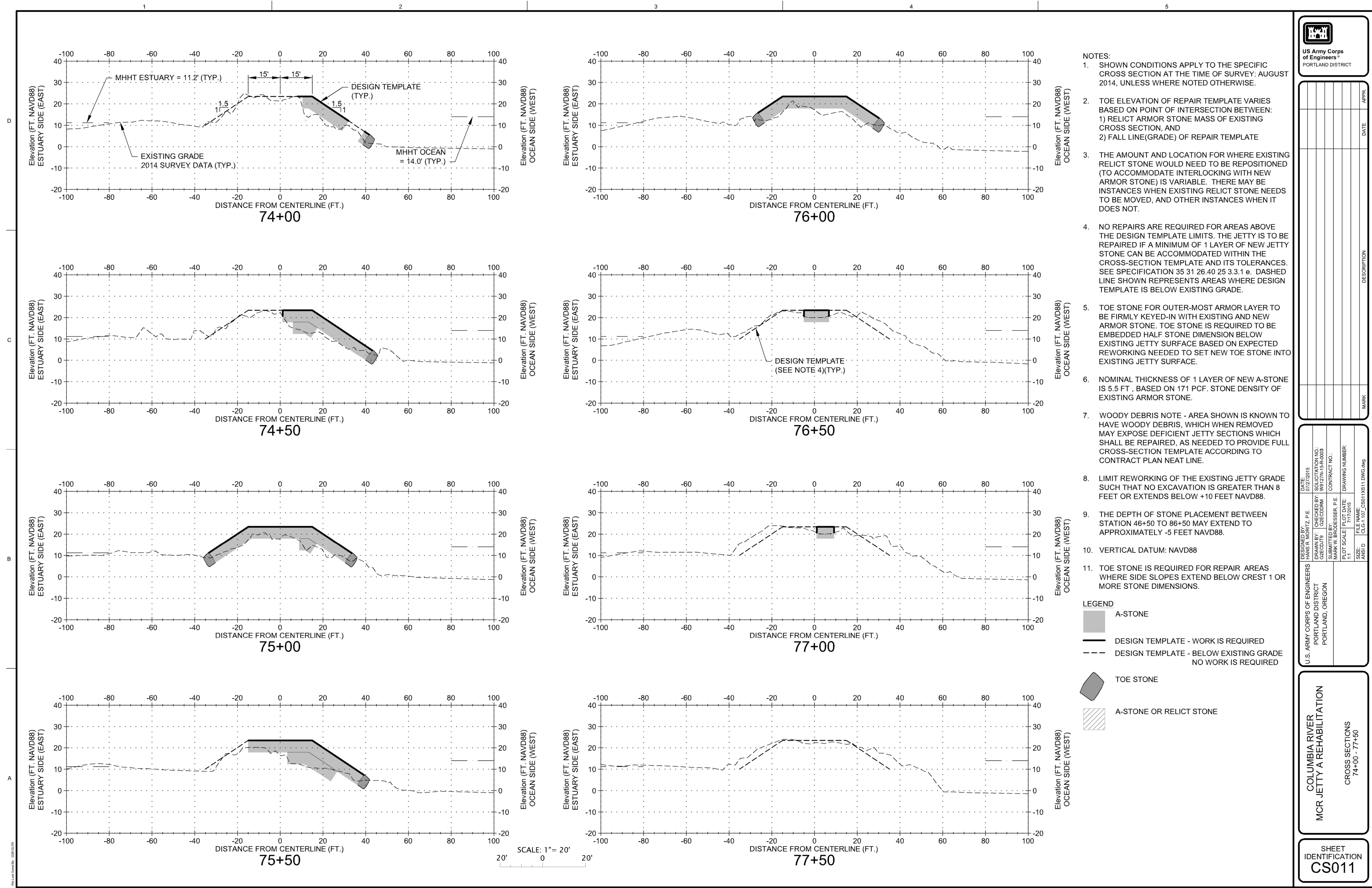
U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

COLUMBIA RIVER
MCR JETTY A REHABILITATION

CROSS SECTIONS
70+00 - 73+50

SHEET IDENTIFICATION
CS010

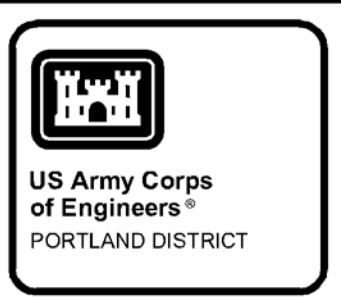




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- TOE STONE
- A-STONE OR RELICT STONE



DATE	DESCRIPTION	APPROV.

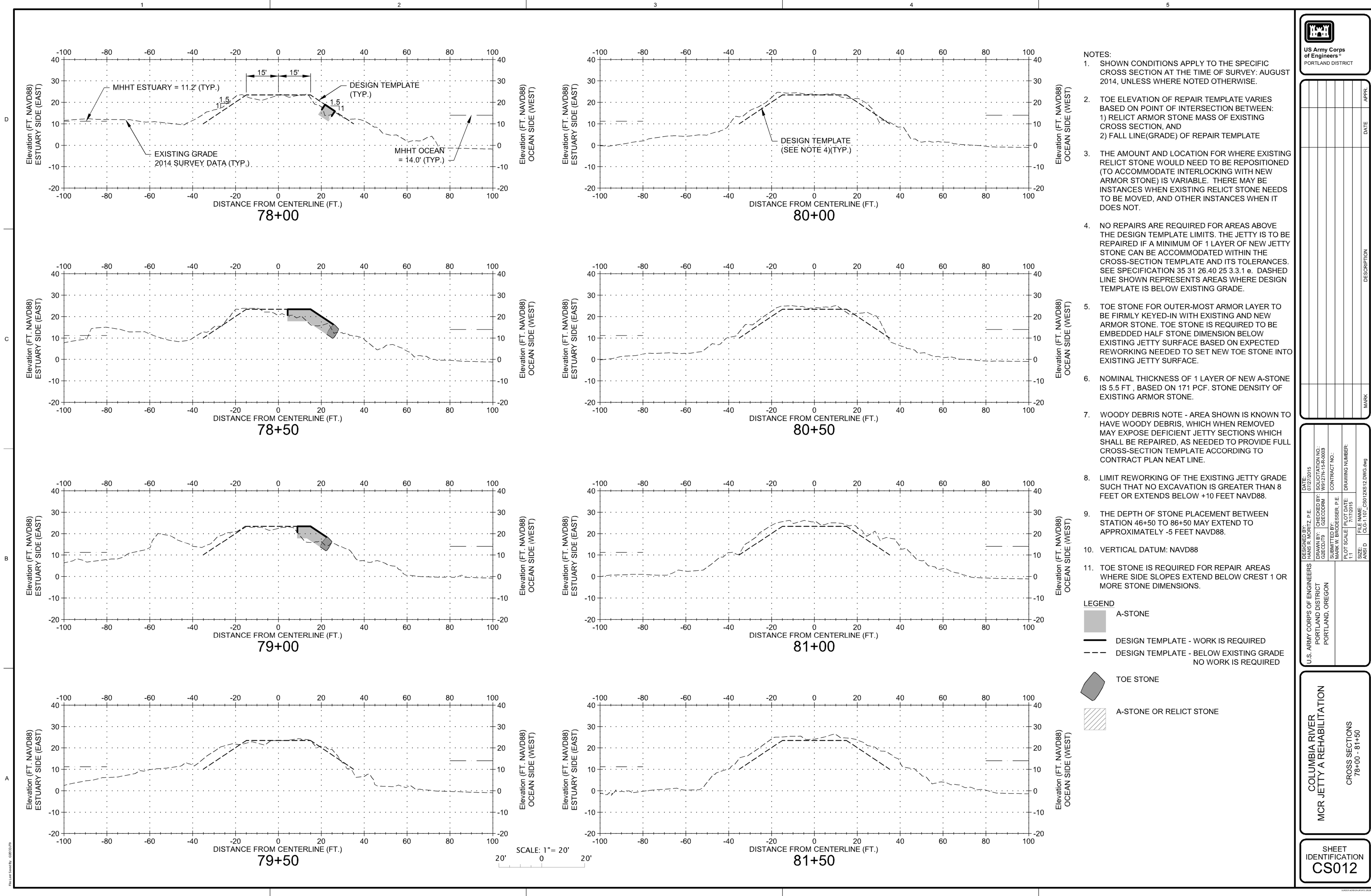
DESIGNED BY: GREGORY P. BROUSSER, P.E.	DATE: 7/17/2015	CONTRACT NO.:
CHECKED BY: GREGORY P. BROUSSER, P.E.	STATIONING (US):	DRAWING NUMBER:
DESIGNED BY: GREGORY P. BROUSSER, P.E.	STATIONING (US):	DRAWING NUMBER:
DESIGNED BY: GREGORY P. BROUSSER, P.E.	STATIONING (US):	DRAWING NUMBER:
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DESIGNED BY: GREGORY P. BROUSSER, P.E.	STATIONING (US):	DRAWING NUMBER:
DESIGNED BY: GREGORY P. BROUSSER, P.E.	STATIONING (US):	DRAWING NUMBER:
DESIGNED BY: GREGORY P. BROUSSER, P.E.	STATIONING (US):	DRAWING NUMBER:

U.S. ARMY CORPS OF ENGINEERS
 PORTLAND DISTRICT
 PORTLAND, OREGON

COLUMBIA RIVER
 MCR JETTY A REHABILITATION

CROSS SECTIONS
 74+00 - 77+50

SHEET IDENTIFICATION
CS011



- NOTES:
1. SHOWN CONDITIONS APPLY TO THE SPECIFIC CROSS SECTION AT THE TIME OF SURVEY: AUGUST 2014, UNLESS WHERE NOTED OTHERWISE.
 2. TOE ELEVATION OF REPAIR TEMPLATE VARIES BASED ON POINT OF INTERSECTION BETWEEN:
1) RELICT ARMOR STONE MASS OF EXISTING CROSS SECTION, AND
2) FALL LINE (GRADE) OF REPAIR TEMPLATE
 3. THE AMOUNT AND LOCATION FOR WHERE EXISTING RELICT STONE WOULD NEED TO BE REPOSITIONED (TO ACCOMMODATE INTERLOCKING WITH NEW ARMOR STONE) IS VARIABLE. THERE MAY BE INSTANCES WHEN EXISTING RELICT STONE NEEDS TO BE MOVED, AND OTHER INSTANCES WHEN IT DOES NOT.
 4. NO REPAIRS ARE REQUIRED FOR AREAS ABOVE THE DESIGN TEMPLATE LIMITS. THE JETTY IS TO BE REPAIRED IF A MINIMUM OF 1 LAYER OF NEW JETTY STONE CAN BE ACCOMMODATED WITHIN THE CROSS-SECTION TEMPLATE AND ITS TOLERANCES. SEE SPECIFICATION 35 31 26.40 25 3.3.1 e. DASHED LINE SHOWN REPRESENTS AREAS WHERE DESIGN TEMPLATE IS BELOW EXISTING GRADE.
 5. TOE STONE FOR OUTER-MOST ARMOR LAYER TO BE FIRMLY KEYED-IN WITH EXISTING AND NEW ARMOR STONE. TOE STONE IS REQUIRED TO BE EMBEDDED HALF STONE DIMENSION BELOW EXISTING JETTY SURFACE BASED ON EXPECTED REWORKING NEEDED TO SET NEW TOE STONE INTO EXISTING JETTY SURFACE.
 6. NOMINAL THICKNESS OF 1 LAYER OF NEW A-STONE IS 5.5 FT., BASED ON 171 PCF. STONE DENSITY OF EXISTING ARMOR STONE.
 7. WOODY DEBRIS NOTE - AREA SHOWN IS KNOWN TO HAVE WOODY DEBRIS, WHICH WHEN REMOVED MAY EXPOSE DEFICIENT JETTY SECTIONS WHICH SHALL BE REPAIRED, AS NEEDED TO PROVIDE FULL CROSS-SECTION TEMPLATE ACCORDING TO CONTRACT PLAN NEAT LINE.
 8. LIMIT REWORKING OF THE EXISTING JETTY GRADE SUCH THAT NO EXCAVATION IS GREATER THAN 8 FEET OR EXTENDS BELOW +10 FEET NAVD88.
 9. THE DEPTH OF STONE PLACEMENT BETWEEN STATION 46+50 TO 86+50 MAY EXTEND TO APPROXIMATELY -5 FEET NAVD88.
 10. VERTICAL DATUM: NAVD88
 11. TOE STONE IS REQUIRED FOR REPAIR AREAS WHERE SIDE SLOPES EXTEND BELOW CREST 1 OR MORE STONE DIMENSIONS.

- LEGEND
- A-STONE
 - DESIGN TEMPLATE - WORK IS REQUIRED
 - DESIGN TEMPLATE - BELOW EXISTING GRADE NO WORK IS REQUIRED
 - TOE STONE
 - A-STONE OR RELICT STONE

U.S. Army Corps of Engineers
PORTLAND DISTRICT

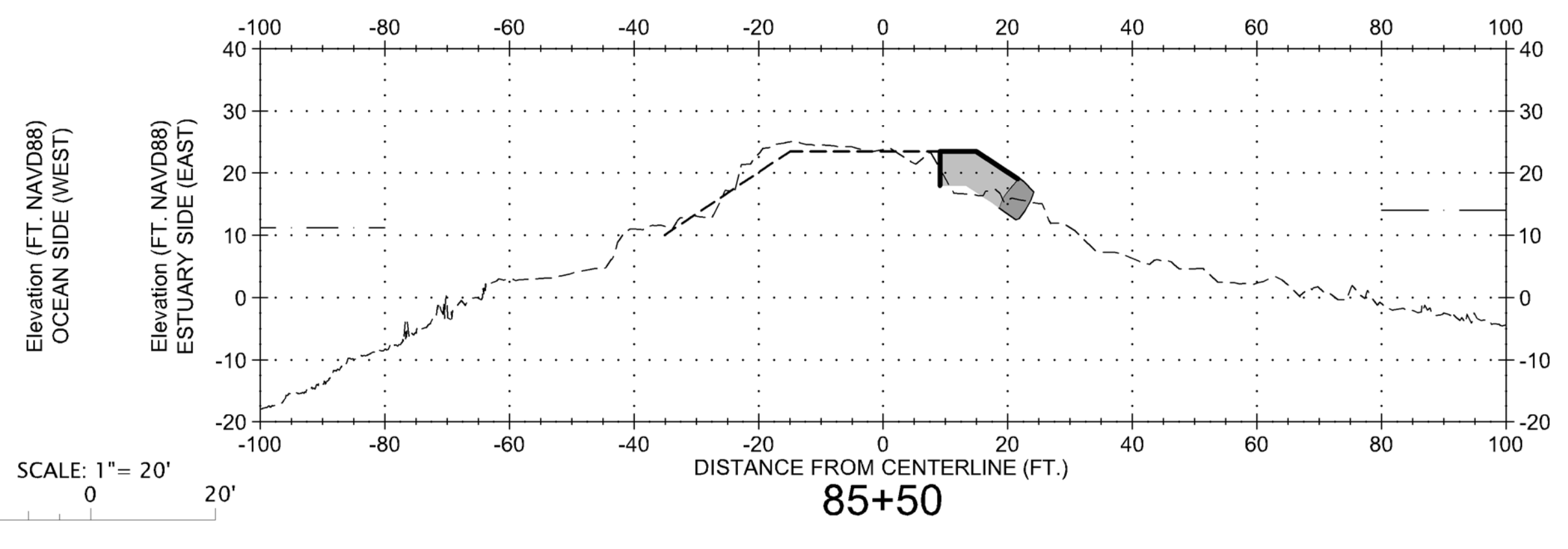
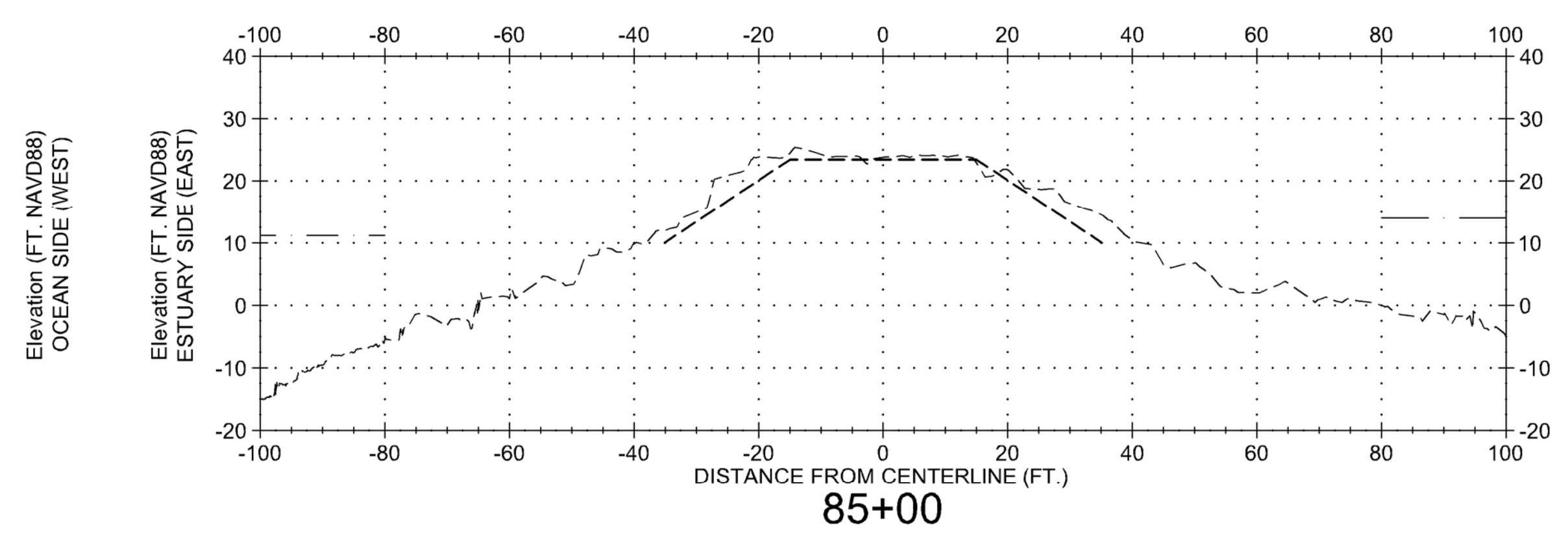
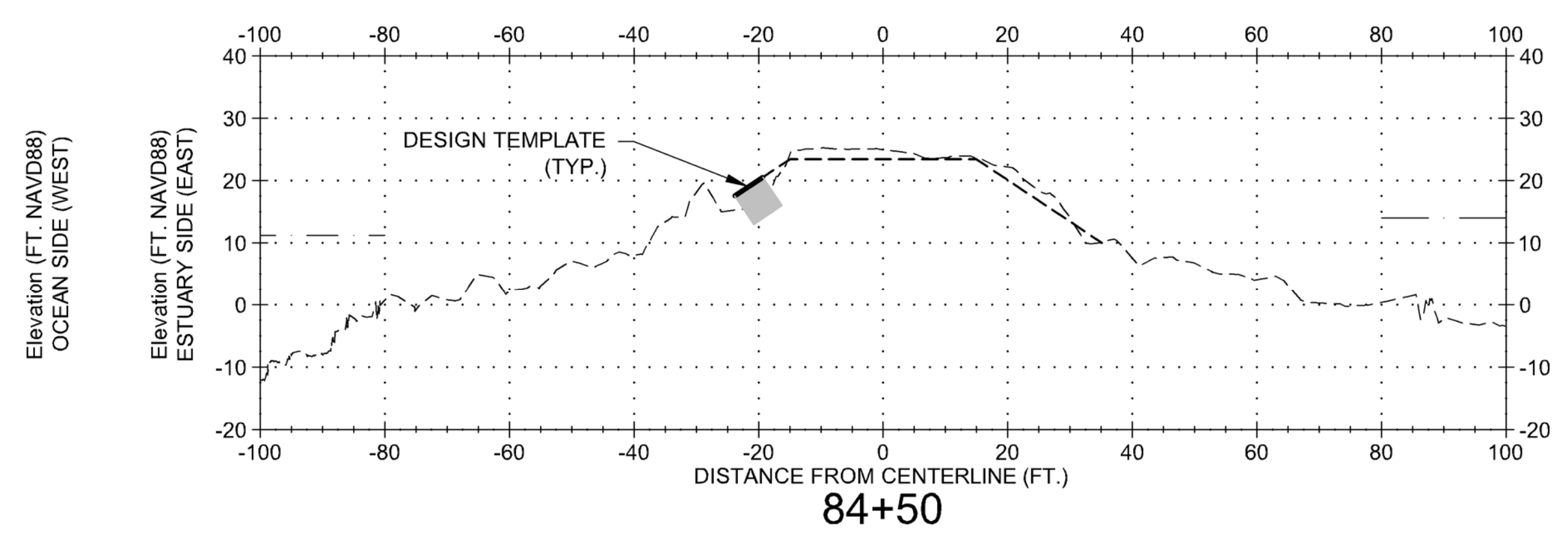
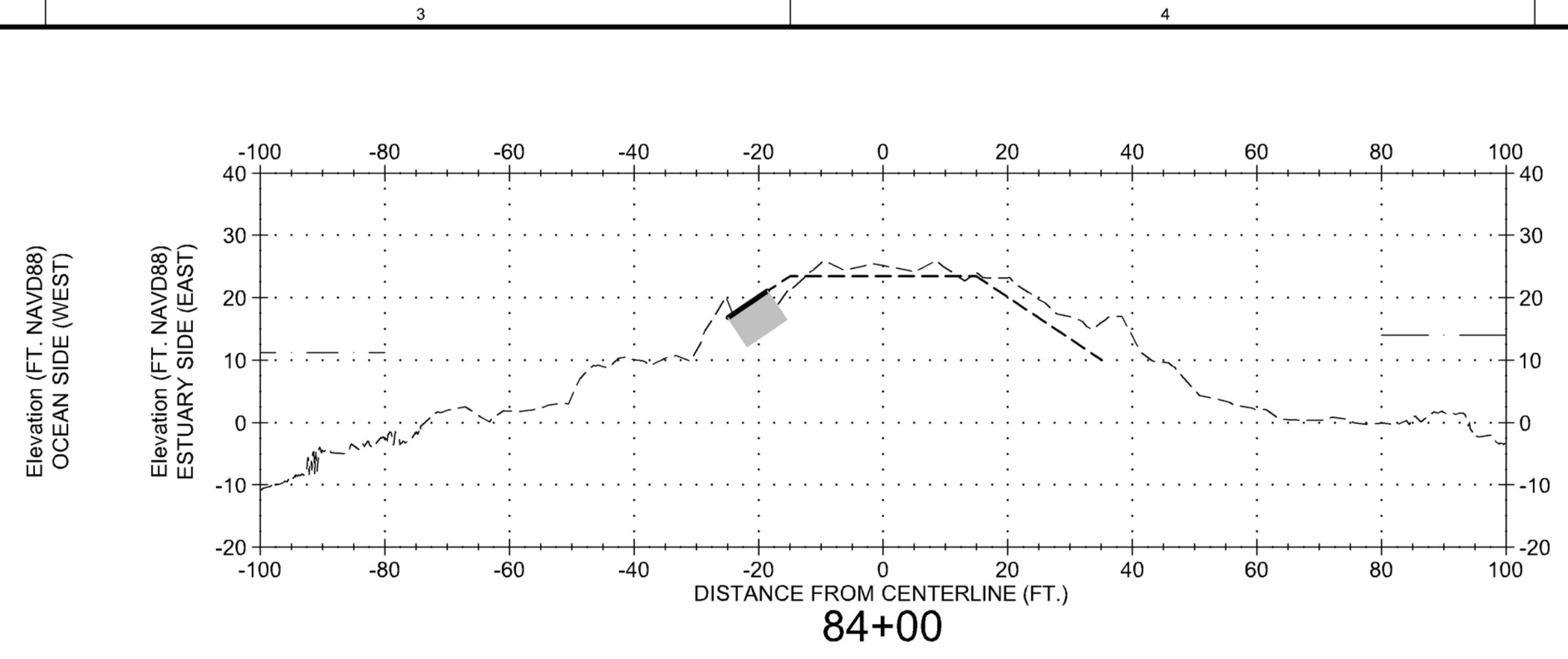
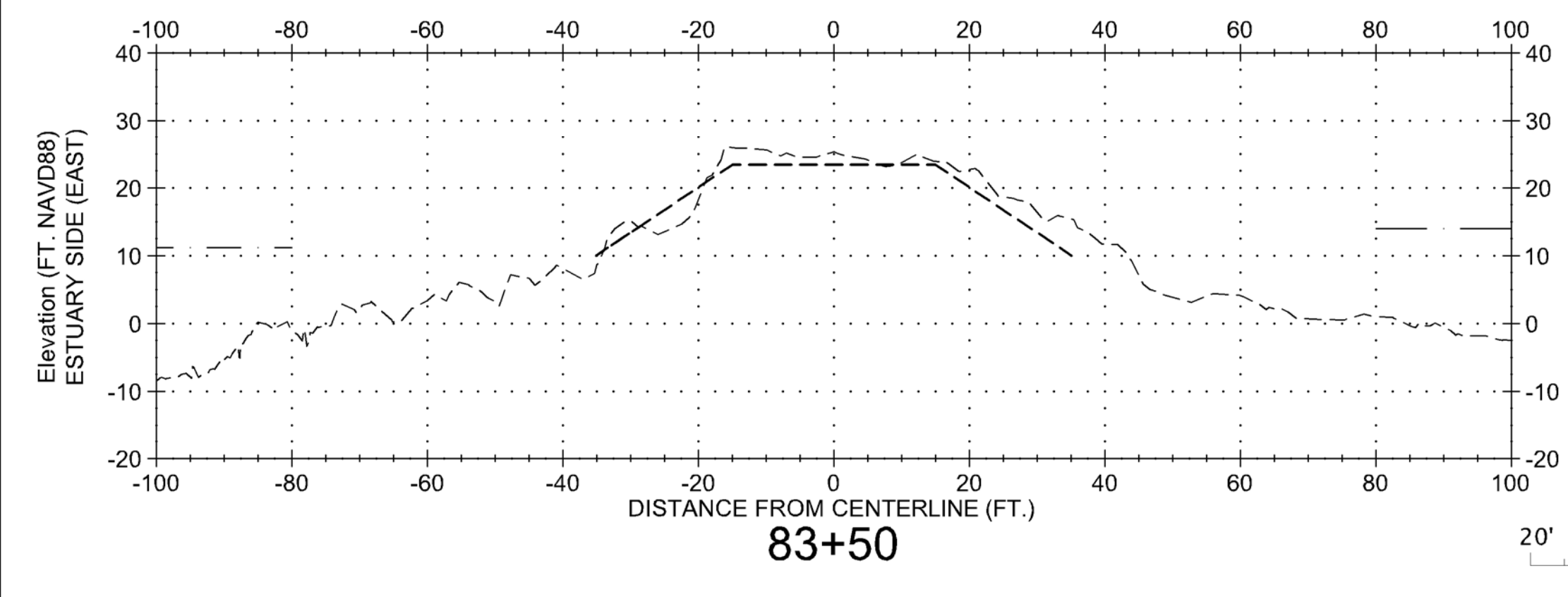
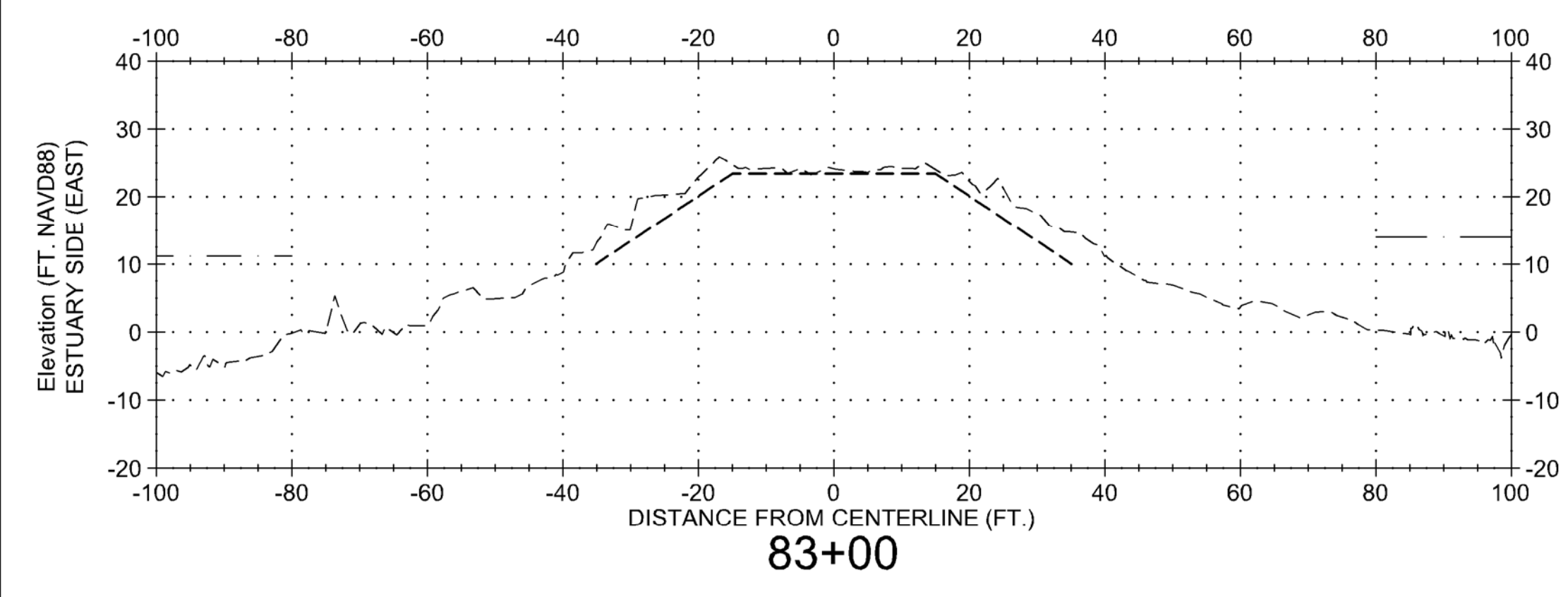
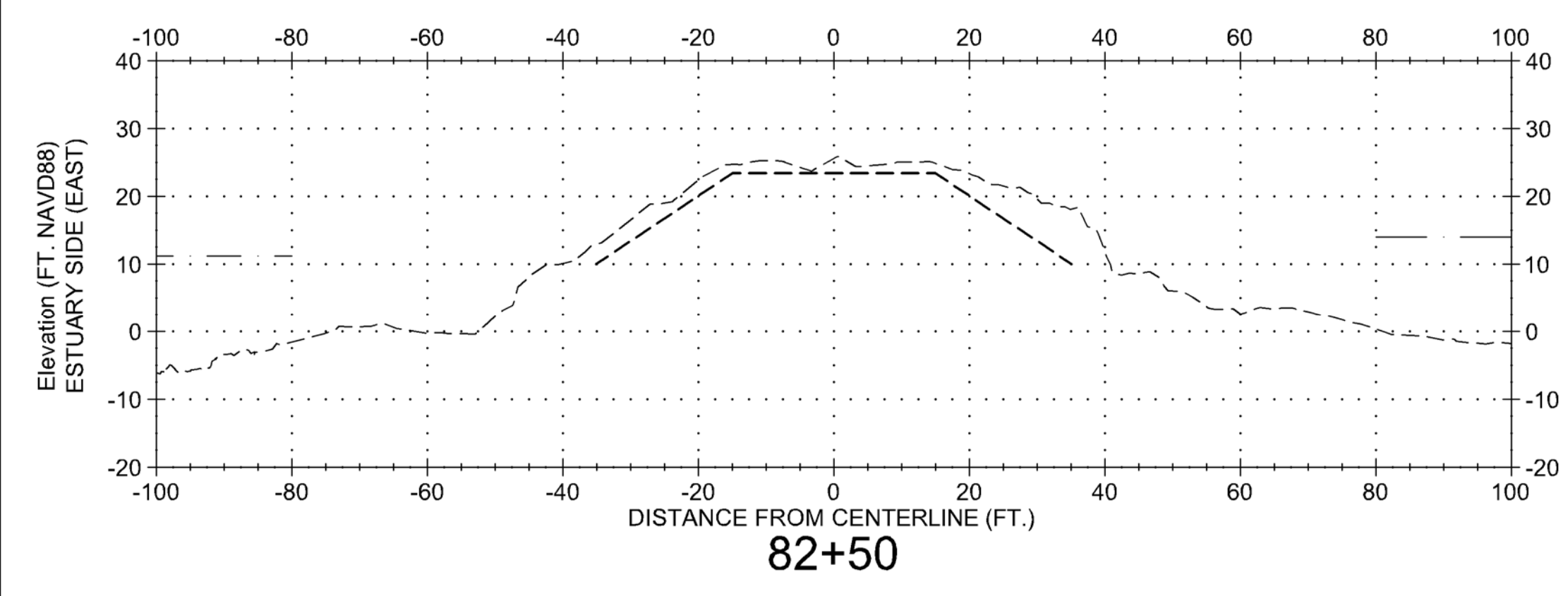
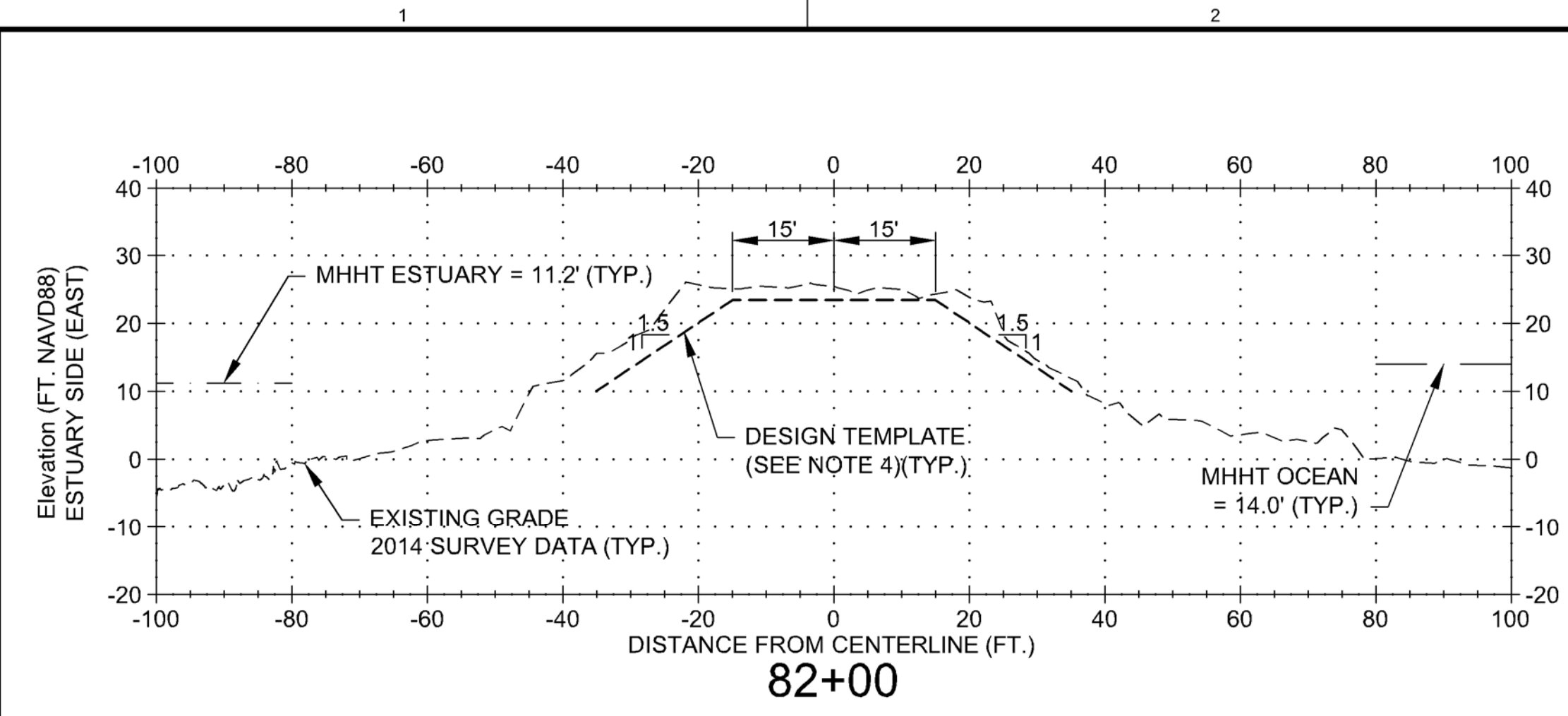
DESIGNED BY: GREGORITZ, P.E.	DATE: 7/17/2015	DRAWING NUMBER: CS012
CHECKED BY: GREGORITZ, P.E.	SUBMITTED BY: GREGORITZ, P.E.	CONTRACT NO.: W127N15R4003
DESIGNED BY: GREGORITZ, P.E.	SUBMITTED BY: GREGORITZ, P.E.	DRAWING NUMBER: W127N15R4003
DESIGNED BY: GREGORITZ, P.E.	SUBMITTED BY: GREGORITZ, P.E.	DRAWING NUMBER: W127N15R4003

COLUMBIA RIVER
MCR JETTY A REHABILITATION

CROSS SECTIONS
78+00 - 81+50

SHEET IDENTIFICATION
CS012

Plot Date: 7/17/2015 08:00:00



SCALE: 1" = 20'

- NOTES:**
1. SHOWN CONDITIONS APPLY TO THE SPECIFIC CROSS SECTION AT THE TIME OF SURVEY: AUGUST 2014, UNLESS WHERE NOTED OTHERWISE.
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LEGEND

- A-STONE
- DESIGN TEMPLATE - WORK IS REQUIRED
- DESIGN TEMPLATE - BELOW EXISTING GRADE NO WORK IS REQUIRED
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US Army Corps of Engineers
PORTLAND DISTRICT

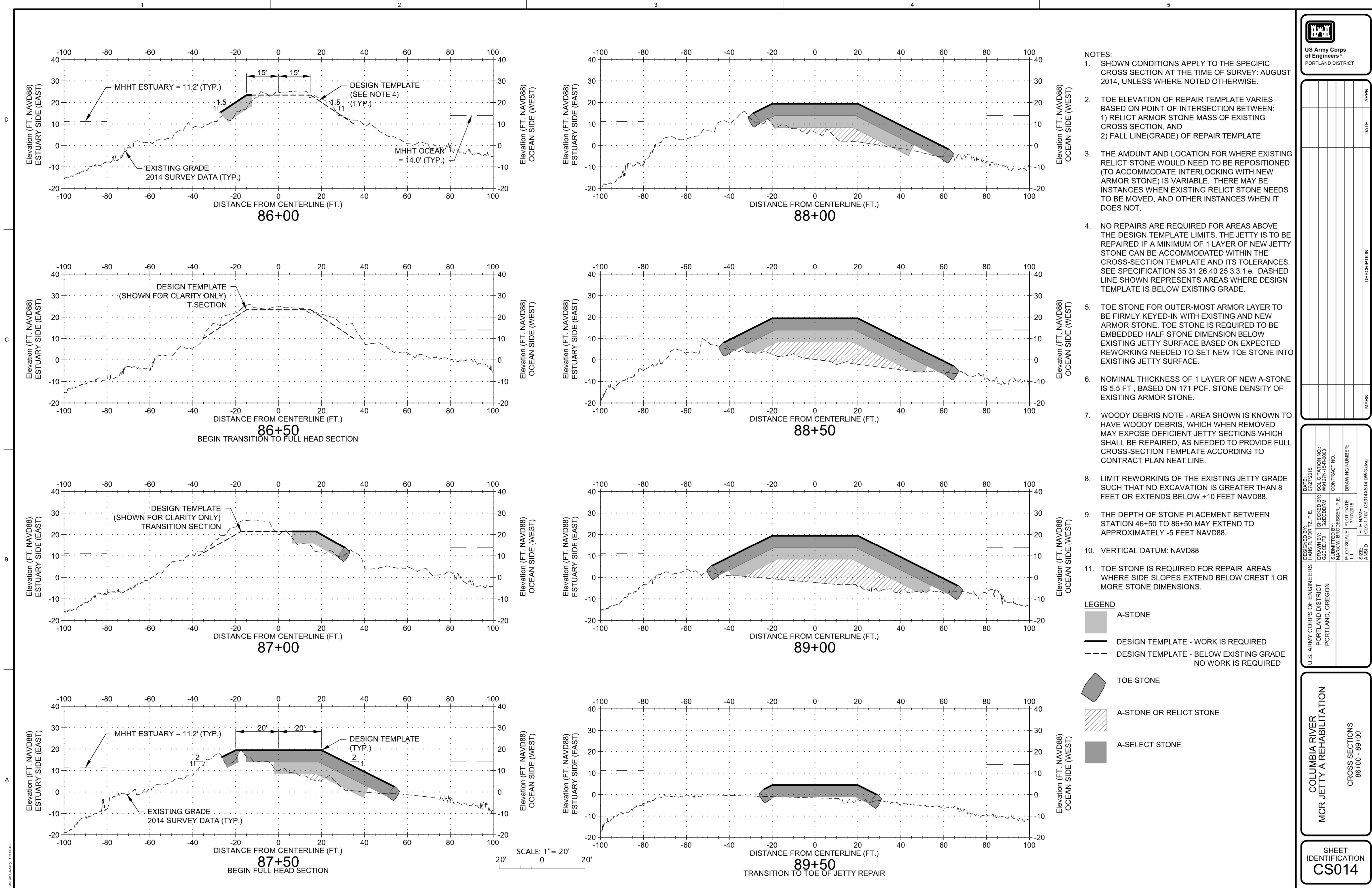
DATE	DESIGNED BY	CHECKED BY	SUBMITTED BY	PLOT SCALE	PLOT DATE	FILE NAME	MARK
APPR	DATE	DESCRIPTION	DATE: 7/17/2015	DESIGNED BY: GREGORY	CHECKED BY: GREGORY	SUBMITTED BY: MARK W. BROUSSER, P.E.	PLOT SCALE: 1" = 20'
DATE	DESCRIPTION	DRAWING NUMBER:	CONTRACT NO.:	ESTATION (US):	CONTRACT NO.:		
DATE	DESCRIPTION	DRAWING NUMBER:	CONTRACT NO.:	ESTATION (US):	CONTRACT NO.:		

COLUMBIA RIVER

MCR JETTY A REHABILITATION

CROSS SECTIONS
82+00 - 85+50

SHEET IDENTIFICATION
CS013



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1. SHOWN CONDITIONS APPLY TO THE SPECIFIC CROSS SECTION AT THE TIME OF SURVEY: AUGUST 2014, UNLESS WHERE NOTED OTHERWISE.
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 - DESIGN TEMPLATE - BELOW EXISTING GRADE NO WORK IS REQUIRED
 - TOE STONE
 - A-STONE OR RELICT STONE
 - A-SELECT STONE



DATE	DESCRIPTION	APPROVED

DESIGNED BY: P.E. GREGORY	DATE: 2015
CHECKED BY: GREGORY	STATION: 86+00
DESIGNED BY: GREGORY	CONTRACT NO.: 15R-003
DATE: 2015	CONTRACT NO.: 15R-003
DATE: 2015	CONTRACT NO.: 15R-003
DATE: 2015	CONTRACT NO.: 15R-003
DATE: 2015	CONTRACT NO.: 15R-003
DATE: 2015	CONTRACT NO.: 15R-003
DATE: 2015	CONTRACT NO.: 15R-003
DATE: 2015	CONTRACT NO.: 15R-003

U.S. ARMY CORPS OF ENGINEERS
 PORTLAND DISTRICT
 PORTLAND, OREGON

COLUMBIA RIVER
 MCR JETTY A REHABILITATION

CROSS SECTIONS
 86+00 - 89+00

SHEET IDENTIFICATION
 CS014



NOTE:

1. CONTRACTOR RESPONSIBLE FOR ANY UTILITY MODIFICATIONS TO ALLOW FOR SITE ACCESS. COORDINATE WITH US COAST GUARD FOR UTILITY MODIFICATIONS.
2. CONTRACTOR TO FIELD VERIFY ALL UTILITY LOCATIONS.
3. UNDERGROUND UTILITIES NOT SHOWN.



MARK	DESCRIPTION	DATE	APPR.

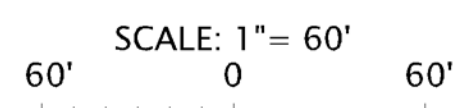
DESIGNED BY: RHODES, P.E.	DATE: 02/2015
DESIGNED BY: GREGORY	DESIGNATION: WS127N15R4003
DESIGNED BY: MARK W. BROUSSER, P.E.	CONTRACT NO.:
DESIGNED BY: GREGORY	DRAWING NUMBER:
DESIGNED BY: MARK W. BROUSSER, P.E.	PLOT DATE:
DESIGNED BY: GREGORY	PLOT SCALE:
DESIGNED BY: MARK W. BROUSSER, P.E.	SIZE:
DESIGNED BY: GREGORY	ANSI D:
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DESIGNED BY: GREGORY	FILE NAME:
DESIGNED BY: MARK W. BROUSSER, P.E.	FILE NAME:

U.S. ARMY CORPS OF ENGINEERS
PORTLAND DISTRICT
PORTLAND, OREGON

COLUMBIA RIVER
MCR JETTY A REHABILITATION

UTILITY PLAN
FOR INFORMATION ONLY

SHEET IDENTIFICATION
C-500



PLAN

PLN 147 Rev. 05/03/09

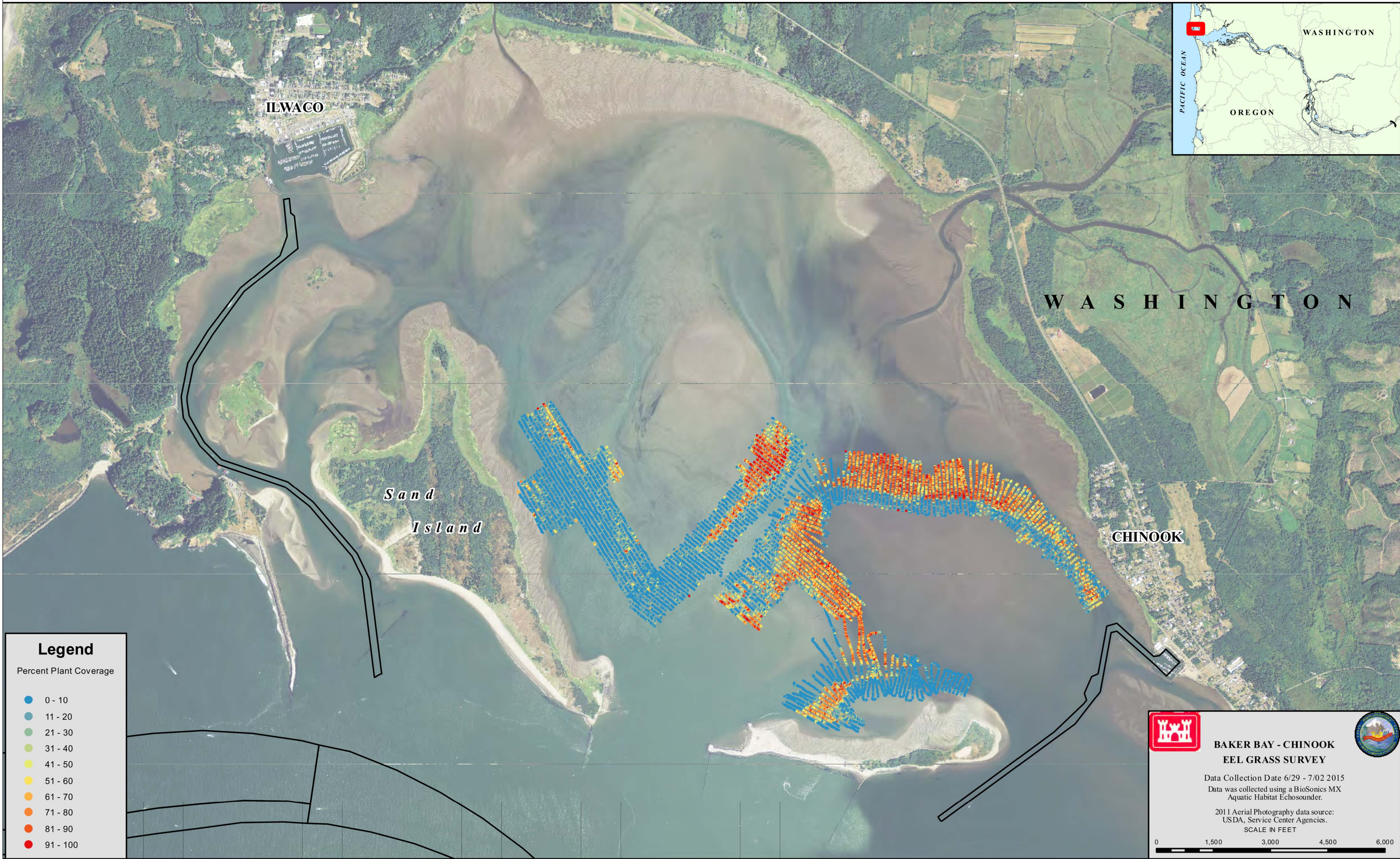


MARK	DESCRIPTION	DATE	APPRO

DESIGNED BY: PHOENIX, P.E.	DATE: 7/20/2015
DRAWN BY: GREGORY B. GREGORY	CHECKED BY: GREGORY B. GREGORY
PROJECT NO.: W127N15R-003	CONTRACT NO.:
SUBMITTED BY: MARK W. BROUSSER, P.E.	CONTRACT NO.:
PLOT SCALE: 1:1	PLOT DATE: 7/20/2015
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COLUMBIA RIVER
MCR JETTY A REHABILITATION
EELGRASS LOCATION MAP
FOR INFORMATION ONLY

SHEET IDENTIFICATION
C-502



Legend

Percent Plant Coverage

- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 50
- 51 - 60
- 61 - 70
- 71 - 80
- 81 - 90
- 91 - 100

**BAKER BAY - CHINOOK
EEL GRASS SURVEY**

Data Collection Date 6/29 - 7/02 2015
Data was collected using a BioSonics MX Aquatic Habitat Echosounder.

2011 Aerial Photography data source:
USDA, Service Center Agencies.
SCALE IN FEET

0 1,500 3,000 4,500 6,000