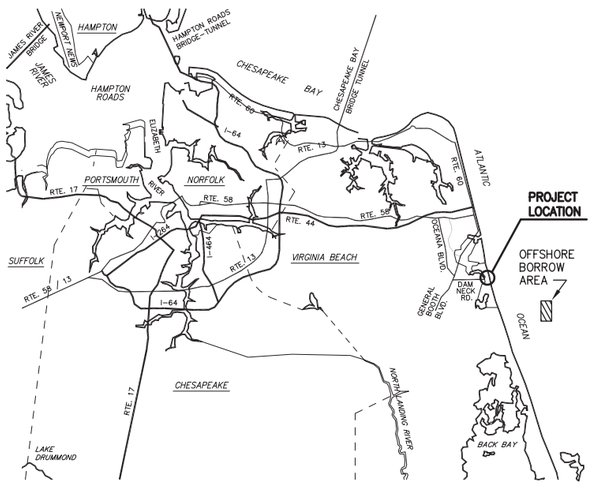
ST 12-0075 REPAIRS TO SHORE PROTECTION SYSTEM

NAS OCEANA, DAM NECK ANNEX, VIRGINIA BEACH, VIRGINIA

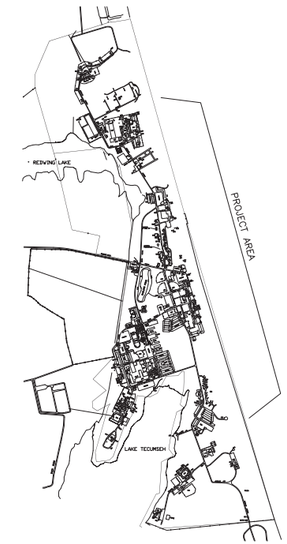


VICINITY MAP

NOT TO SCALE

N

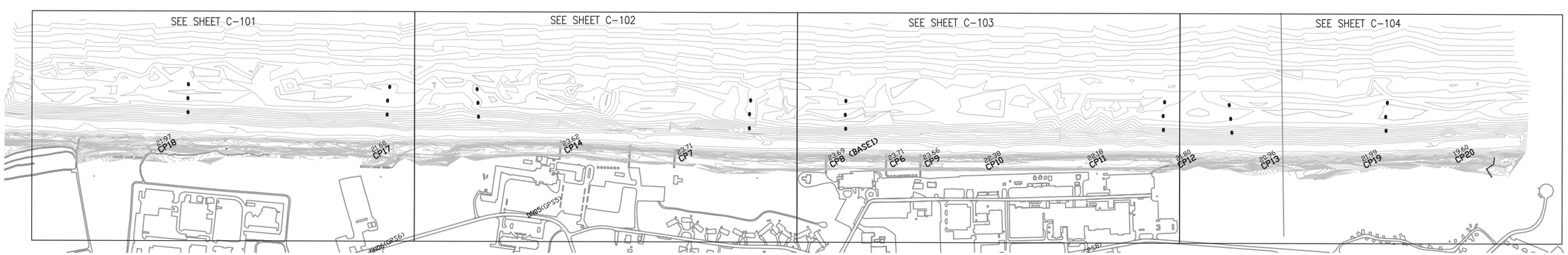
INDEX OF DRAWINGS		
SHEET NUMBER	NAVFAC NUMBER	SHEET LEGEND
G-001	12578422	COVER SHEET
C-001	12578423	PROJECT CONTROL, LEGEND & NOTES
C-101	12578424	BEACH NOURISHMENT SITE PLAN
C-102	12578425	BEACH NOURISHMENT SITE PLAN
C-103	12578426	BEACH NOURISHMENT SITE PLAN
C-104	12578427	BEACH NOURISHMENT SITE PLAN
C-105	12578428	OFFSHORE BORROW AREA SITE PLAN
C-201	12578429	BEACH NOURISHMENT SECTIONS (STA 06+50 – 27+00)
C-202	12578430	BEACH NOURISHMENT SECTIONS (STA 29+00 – 51+00)
C-203	12578431	BEACH NOURISHMENT SECTIONS (STA 53+00 – 75+00)
C-204	12578432	BEACH NOURISHMENT SECTIONS (STA 77+00 – 99+00)
C-205	12578433	BEACH NOURISHMENT SECTIONS (STA 101+00 – 107+00)
C-501	12578433	DETAILS AND SCHEDULES



LOCATION MAP

NOT TO SCALE

N



SYM	DESCRIPTION	DATE	APPR

NAVFAC

APPROVED

FOR COMMANDER NAVFAC DATE 6 AUG 12

APPROVED

R.J. CLARK

ACTIVITY – SATISFACTORY TO DATE 07/30/2012

HRIPT PM K. LIENEMANN, PE

DES GLP DRW GLP CHK JSG/LLP

HRIPT DM LUU LUAN PHU, PE

BRANCH MANAGER JSG James S. Georgis, P.E.

CHIEF ENG/ARCH JOE FORMATO, PE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID ATLANTIC
NAVAL STATION – NORFOLK, VIRGINIA
CAPITAL IMPROVEMENTS CORE
NAS OCEANA, DAM NECK VIRGINIA BEACH VA

REPAIRS TO SHORE PROTECTION SYSTEM

COVER SHEET

CODE ID. NO. 80091 SIZE D

SCALE: AS NOTED

MAXIMO NO. N/A

JOB ORDER NO. N/A

WORK ORDER NO. 1066052

CONSTR. CONTR. NO. N/A

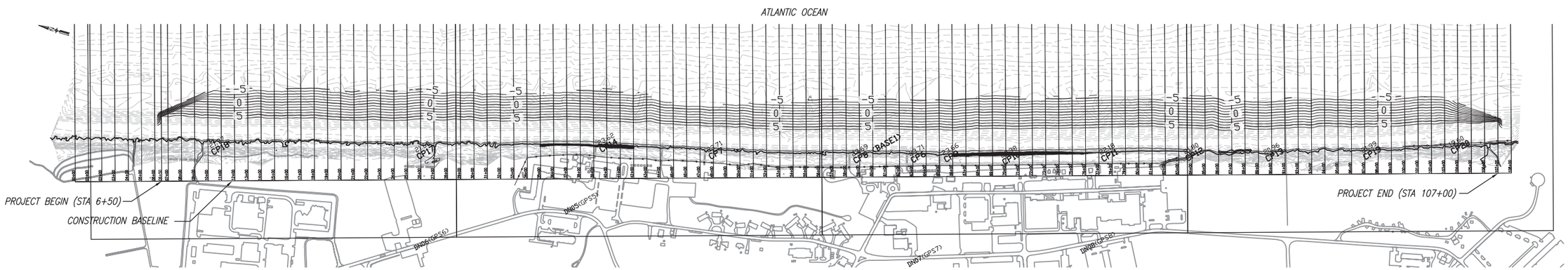
NAVFAC DRAWING NO. 12578422

SHEET 1 OF 13

G-001

DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Dam Neck breakdown\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: G-001 PLOTTED: Monday, August 06, 2012 – 2:11pm USER: granville.pennypacke



SURVEY CONTROL

SCALE: 1" = 400' (SEE SHEETS C–101 THROUGH C–104 FOR SURVEY MONUMENTS AND CONTROL POINT LOCATIONS ON SITE)

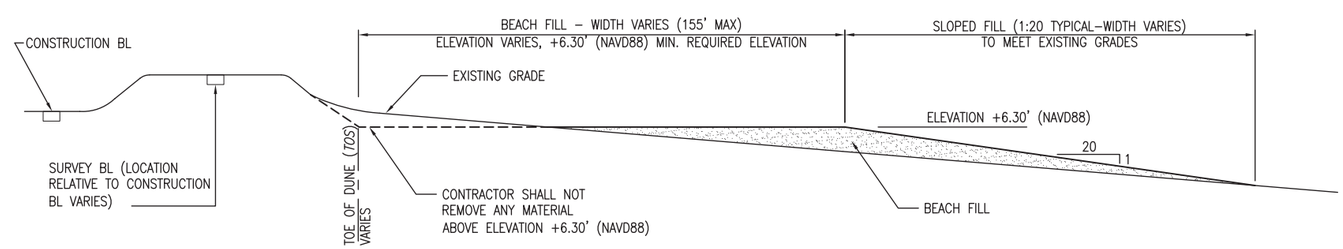
DAM NECK SURVEY BASELINE (2012)						
CONTROL POINT	DISTANCE (FT)	BEARING	NORTHING	EASTING	ELEVATION (FT)	NOTES
CP3			3454497.469	12226947.090	7.15	CENTER OF MANHOLE
CP4			3454169.662	12227280.630	9.98	PK NAIL ASPHALT PARKING LOT
CP18			3459463.267	12226090.433	21.97	WATER SIDE EDGE METAL TUBE
	1545.86'	S 14°47'09.4" E				
CP17			3457968.600	12226484.949	21.60	WATER SIDE EDGE METAL TUBE
	1375.51'	S 18°14'11.2" E				
CP14			3456662.175	12226915.401	23.63	PK NAIL CONCRETE CROSSWALK
	823.65'	S 12°17'36.9" E				
CP7			3455857.413	12227090.773	23.71	PK NAIL CONCRETE CROSSWALK
	1087.89'	S 14°22'59.6" E				
CP8			3454803.625	12227361.011	23.69	PK NAIL CONCRETE CROSSWALK
	431.9'	S 16°30'44.9" E				
CP6			3454389.532	12227483.769	23.71	PK NAIL CONCRETE CROSSWALK
	249.7'	S 17°00'42.9" E				
CP9			3454150.800	12227556.811	23.67	PK NAIL CONCRETE CROSSWALK
	439.7'	S 13°31'27.9" E				
CP10			3453723.306	12227659.636	22.39	WATER SIDE EDGE METAL TUBE
	744.6'	S 17°49'23.8" E				
CP11			3453014.420	12227887.552	22.18	WATER SIDE EDGE METAL TUBE
	634.4'	S 16°25'19.4" E				
CP12			3452405.923	12228066.897	21.80	STEEL REBAR
	600.8'	S 15°35'59.9" E				
CP13			3451827.258	12228228.463	20.96	WOODEN STAKE
	734.9'	S 17°02'16.7" E				
CP19			3451124.660	12228443.778	21.99	PK NAIL WOODEN STAKE
	661.3'	S 19°46'35.1" E				
CP20			3451124.660	12228443.778	21.99	PK NAIL WOODEN STAKE

GENERAL SURVEY NOTES

1. TOPOGRAPHIC SURVEY PREPARED BY NAVFAC MIDLANT, FROM FIELD DATA COLLECTED BETWEEN MAY–JUNE 2012. TOPOGRAPHIC INFORMATION SHOWN REFLECTS THE CONDITIONS AT THE TIME OF SURVEY. TOPOGRAPHY AND CONDITIONS MAY HAVE CHANGED SINCE THE SURVEY WAS CONDUCTED.
2. THIS SURVEY DOES NOT GUARANTEE THE EXISTENCE OR NONEXISTENCE. SIZE. TYPE, DEPTH MATERIAL OR LOCATION OF ANY UNDERGROUND UTILITIES. ALL UTILITIES SHOWN ARE BASED ON ABOVEGROUND UTILITY STRUCTURES, AVAILABLE UTILITY MAPS AND SITE PLANS. THE CONTRACTOR SHALL HAVE ALL EXISTING SITE UTILITIES VERIFIED PRIOR TO ANY EXCAVATION.
3. EXISTING STRUCTURES AND OTHER FEATURES ON THE LANDWARD SIDE OF THE DUNE ARE BASED ON EXISTING AERIAL BASE MAP AND FOR REFERENCE ONLY.
4. CONTROL POINTS ARE AS SHOWN ON PLAN.
5. ELEVATIONS SHOWN HEREON ARE IN FEET AND REFER TO NORTH AMERICAN VERTICAL DATUMN OF 1988 (NAVD 1988).
6. HORIZONTAL COORDINATES SHOWN HEREON ARE IN US SURVEY FEET AND REFER TO THE VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE (ZONE 4502), NAD 1983 1993.
7. HYDROGROGRAPHIC SURVEYING NOTES:
   - A. ELEVATIONS SHOWN HEREON ARE IN FEET AND REFER TO NORTH AMERICAN VERTICAL DATUMN OF 1988 (NAVD 1988).
   - B. THE HYDROGRAPHIC SURVEY WAS CONDUCTED USING CLASS 1 HYDROGRAPHIC SURVEY METHODS & ACCURACIES OUTLINED IN THE CORPS OF ENGINEERS' HYDROGRAPHIC SURVEYING MANUAL (EM 1110–2–1003) BETWEEN MAY–JUNE 2010.
   - C. ALL SOUNDINGS WERE RECORDED USING A RESON 7101 MULTI–BEAM SONAR SYSTEM WITH HORIZONTAL POSITIONS OBTAINED VIA APPLANIX POS/MV GPS W/MRU.
   - D. HORIZONTAL DATUM IS BASED ON THE VIRGINIA SOUTH (LAMBERT) STATE PLANE COORDINATE SYSTEM, ZONE 4502, U.S. SURVEY FEET (NAD 1983 1993).

LEGEND

	EXISTING	NEW
BUILDING / STRUCTURE	143	
MAJOR CONTOUR		10.0
MINOR CONTOUR		
TOE OF DUNE	TOE OF DUNE	
SPOT ELEVATION	x 10.00	
SURVEY BASELINE		
CONSTRUCTION BASELINE		
MEAN HIGH WATER (MHW)		
MEAN LOW WATER (MLW)		
BENCHMARK (BM)		
CONTROL POINT (CP)		



TYPICAL RENOURISHMENT SECTION - STATION 6+50 TO STATION 107+00

NOT TO SCALE

SYM	DESCRIPTION	DATE	APPR

APPROVED
FOR COMMANDER NAVFAC DATE

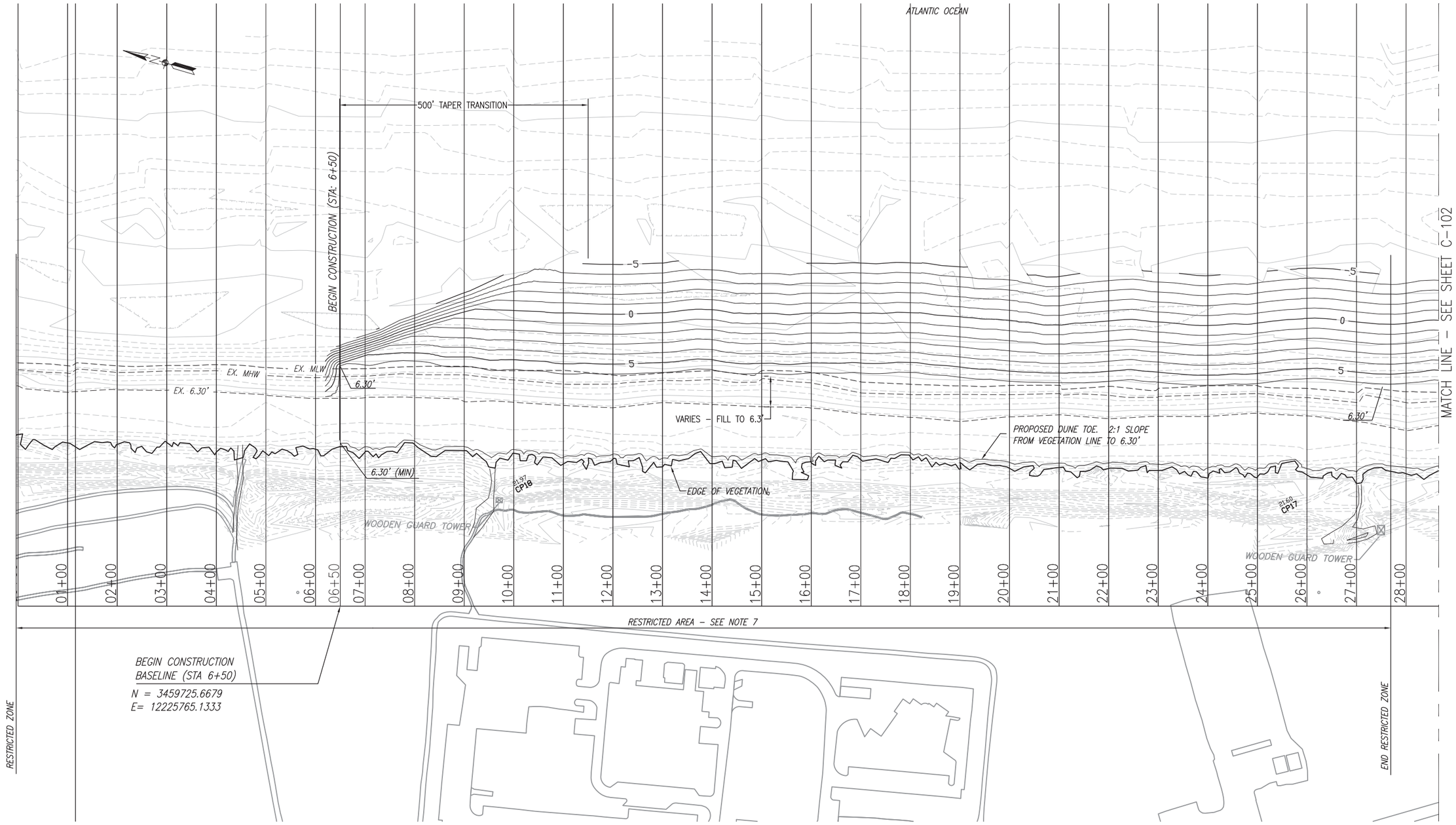
APPROVED
R.J. CLARK
ACTIVITY – SATISFACTORY TO DATE 07/30/2012
HRIPT PM K. LIENEMANN, PE
DES GLP DRW GLP CHK JSG/LLP
HRIPT DM LUU LUAN PHU, PE
BRANCH MANAGER JSG
CHIEF ENG/ARCH JOE FORMATO, PE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND ~ MID ATLANTIC
NAVAL STATION – NORFOLK, VIRGINIA
CAPITAL IMPROVEMENTS CORE
NAS OCEANA, DAM NECK
VIRGINIA BEACH VA
REPAIRS TO SHORE PROTECTION SYSTEM
PROJECT CONTROL, LEGEND & NOTES

CODE ID. NO. 80091 SIZE D
SCALE: AS NOTED
MAXIMO NO. N/A
JOB ORDER NO. N/A
WORK ORDER NO. 1066052
CONSTR. CONTR. NO. N/A
NAVFAC DRAWING NO. 12578423
SHEET 2 OF 13
C-001

DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Dam Neck breakdown\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-001 PLOTTED: Monday, August 06, 2012 - 2:10pm USER: granville.pennypacke



SHEET NOTES:

1. SEE SHEET C-001 FOR CONTROL DATA
2. CONTRACTOR SHALL CONFINE THE WORK TO THE LIMIT OF CONTRACT AREA AVAILABLE (OCEANWARD OF THE CONSTRUCTION BASE LINE BETWEEN NORTH/SOUTH LIMITS OF THE CONTRACT). BEACH ACCESS SHALL BE VIA EXISTING RAMP BETWEEN STA 82+00 AND 84+00.
3. THE CONTRACTOR SHALL COORDINATE ACCESS TO THE WORK AREA LOCATIONS WITH THE CONTRACTING OFFICER. THE CONTRACTOR SHALL RESTORE THE ACCESS AREA TO THEIR ORIGINAL CONDITION AFTER WORK IN THE AREA COMPLETED. THIS WORK INCLUDES REPLACEMENT OF SIGNAGE AND OTHER MISCELLANEOUS ITEMS THAT MIGHT BE REMOVED.
4. FOR BIDDING PURPOSES REMOVE APPROXIMATELY 9200 LF OF EXISTING SAND FENCE ALONG OCEANWARD OF EXISTING TOE. PROVIDE AND INSTALL APPROXIMATELY 9300 LF OF SAND FENCE LONG THE OCEANWARD TOE OF DUNE AND AT LOCATION DIRECTED BY THE CONTRACTOR OFFICER.
5. FOR BEACH FILL CROSS-SECTION SEE SHEET C-201 TO C-204. PROVIDE BEACH FILL IN THE LOW SPOTS AND BRING THE GRADES TO MINIMUM ELEVATION OF + 6.30'
6. SEE SHEET C-501 FOR TYPICAL BEACH FILL AND DUNE REPAIR SECTION.
7. WORK CONDUCTED IN RESTRICTED AREAS MUST BE COORDINATED WITH THE OCCUPYING TENANT COMMAND.

SURVEY DATES	GRAPHIC SCALE
TOPO: MAY / JUNE 2012 BATHYMETRY: MAY / JUNE 2010	1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

APPROVED
FOR COMMANDER NAVFAC DATE
APPROVED
R.J. CLARK
ACTIVITY – SATISFACTORY TO DATE 07/30/2012

HRIPT PM K. LIENEMANN, PE
DES GLP DRW GLP CHK JSG/LLP
HRIPT DM LUU LUAN PHU, PE
BRANCH MANAGER JSG
CHIEF ENG/ARCH JOE FORMATO, PE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
NAVAL FACILITIES ENGINEERING COMMAND – MID ATLANTIC
NAVAL STATION – NORFOLK, VIRGINIA
CAPITAL IMPROVEMENTS CORE
NAS OCEANA, DAM NECK
VIRGINIA BEACH VA

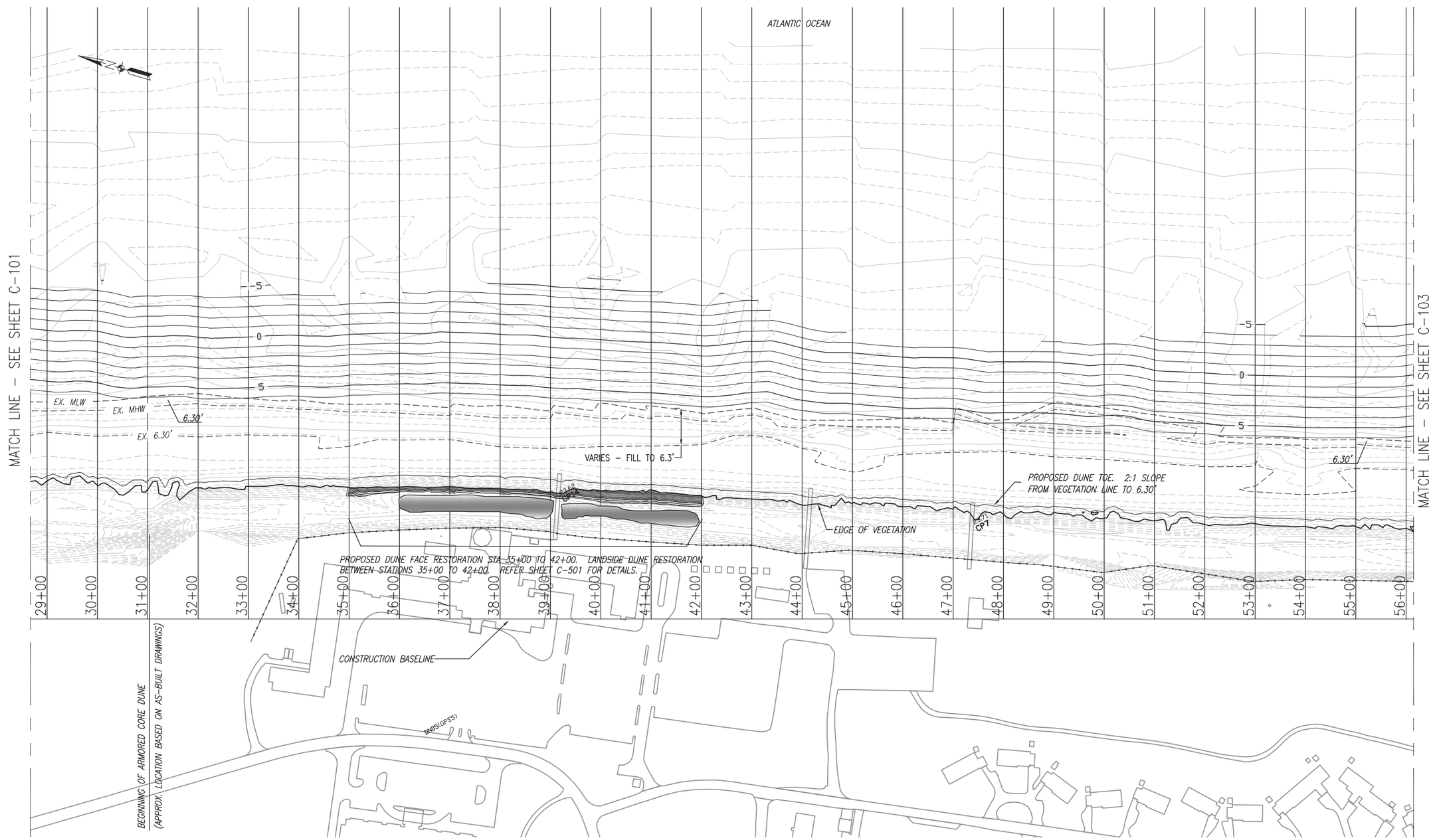
REPAIRS TO SHORE PROTECTION SYSTEM

BEACH NOURSHMENT SITE PLAN

CODE ID. NO. 80091 SIZE D
SCALE: AS NOTED
MAXIMO NO. N/A
JOB ORDER NO. N/A
WORK ORDER NO. 1066052
CONSTR. CONTR. NO. N/A
NAVFAC DRAWING NO. 12578424
SHEET 3 OF 13
C-101

DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Dam Neck breakdown\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-101 PLOTTED: Monday, August 06, 2012 - 2:10pm USER: granville.pennypocke



SHEET NOTES:

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3. THE CONTRACTOR SHALL COORDINATE ACCESS TO THE WORK AREA LOCATIONS WITH THE CONTRACTING OFFICER. THE CONTRACTOR SHALL RESTORE THE ACCESS AREA TO THEIR ORIGINAL CONDITION AFTER WORK IN THE AREA COMPLETED. THIS WORK INCLUDES REPLACEMENT OF SIGNAGE AND OTHER MISCELLANEOUS ITEMS THAT MIGHT BE REMOVED.
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5. FOR BEACH FILL CROSS-SECTION SEE SHEET C-201 TO C-204. PROVIDE BEACH FILL IN THE LOW SPOTS AND BRING THE GRADES TO MINIMUM ELEVATION OF + 6.3'
6. SEE SHEET C-501 FOR TYPICAL BEACH FILL AND DUNE REPAIR SECTION.

SURVEY DATES	GRAPHIC SCALE
TOPO: MAY / JUNE 2012 BATHYMETRY: MAY / JUNE 2010	1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

APPROVED
FOR COMMANDER NAVFAC DATE

APPROVED
R.J. CLARK
ACTIVITY - SATISFACTORY TO DATE 07/30/2012

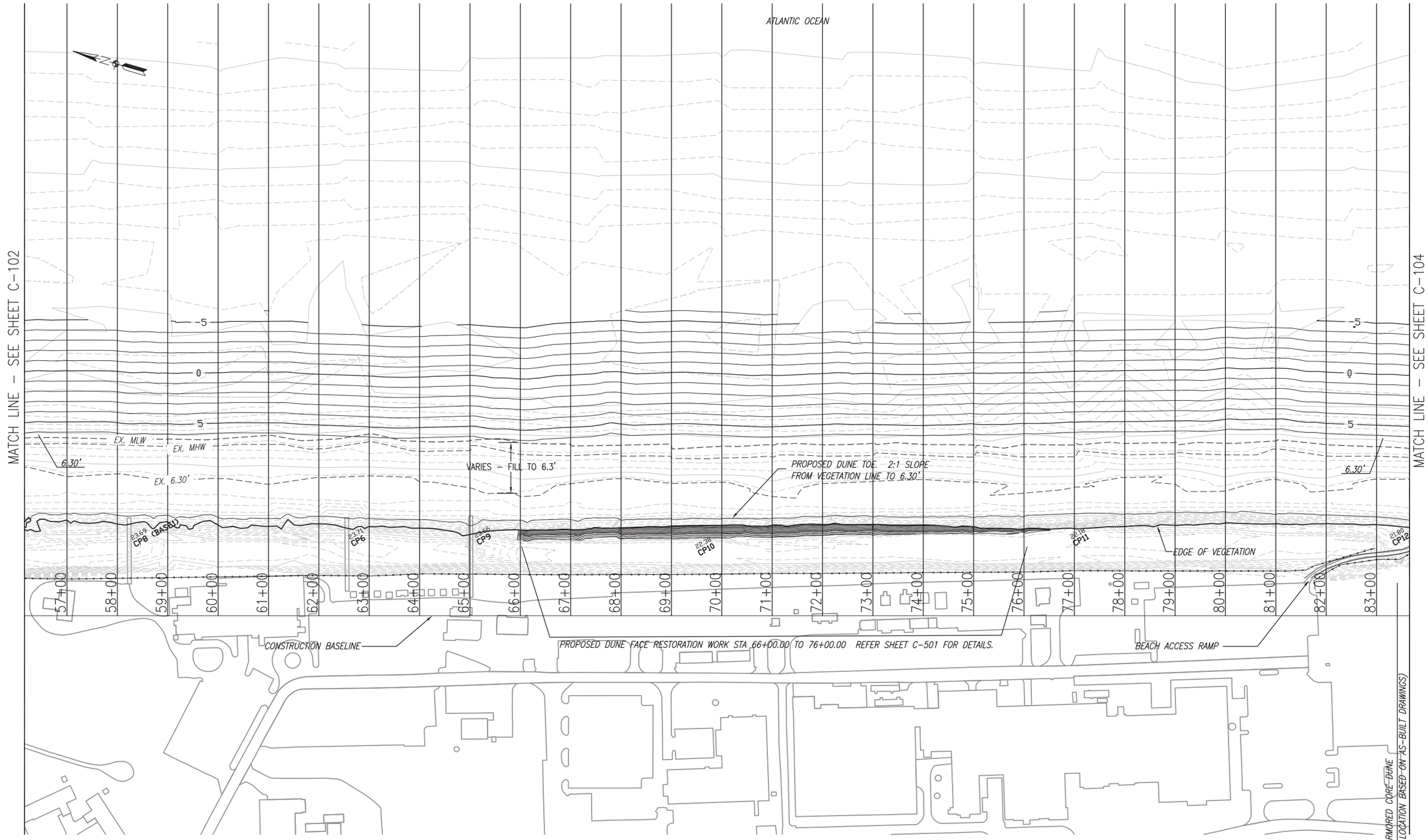
HRIPT PM K. LIENEMANN, PE
DES GLP DRW GLP CHK JSG/LLP
HRIPT DM LUU LUAN PHU, PE
BRANCH MANAGER JSG
CHIEF ENG/ARCH JOE FORMATO, PE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE
NAVAL FACILITIES ENGINEERING COMMAND ~ MID ATLANTIC
NAVAL STATION - NORFOLK, VIRGINIA
NAS OCEANA, DAM NECK
VIRGINIA BEACH VA
REPAIRS TO SHORE PROTECTION SYSTEM
BEACH NOURSHMENT SITE PLAN

CODE ID. NO. 80091 SIZE D
SCALE: AS NOTED
MAXIMO NO. N/A
JOB ORDER NO. N/A
WORK ORDER NO. 1066052
CONSTR. CONTR. NO. N/A
NAVFAC DRAWING NO. 12578425
SHEET 4 OF 13
C-102

DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Dam Neck breakdown\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-102 PLOTTED: Monday, August 06, 2012 - 2:09pm USER: granville.pennypacke



SHEET NOTES:

1. SEE SHEET C-001 FOR CONTROL DATA
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6. SEE SHEET C-501 FOR TYPICAL BEACH FILL AND DUNE REPAIR SECTION.

SURVEY DATES	GRAPHIC SCALE
TOPO: MAY / JUNE 2012 BATHYMETRY: MAY / JUNE 2010	1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

APPROVED
FOR COMMANDER NAVFAC DATE
APPROVED
R.J. CLARK
ACTIVITY - SATISFACTORY TO DATE 07/30/2012
HRIPT PM K. LIENEMANN, PE
DES GLP DRW GLP CHK JSG/LLP
HRIPT DM LUU LUAN PHU, PE
BRANCH MANAGER JSG
CHIEF ENG/ARCH JOE FORMATO, PE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE
NAVAL FACILITIES ENGINEERING COMMAND – MID ATLANTIC
NAVAL STATION - NORFOLK, VIRGINIA
NAS OCEANA, DAM NECK VIRGINIA BEACH VA

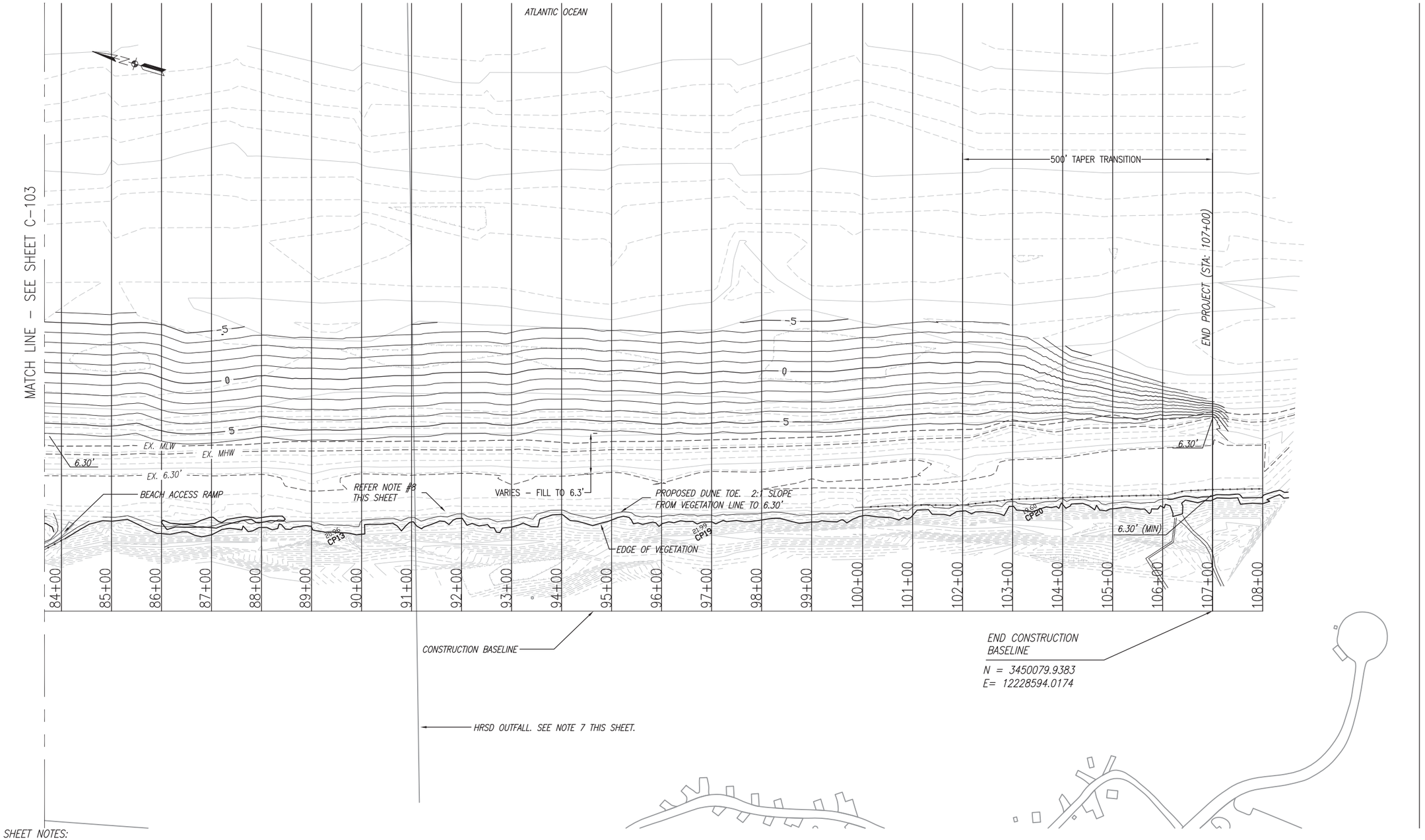
REPAIRS TO SHORE PROTECTION SYSTEM

BEACH NOURISHMENT SITE PLAN

CODE ID. NO. 80091 SIZE D
SCALE: AS NOTED
MAXIMO NO. N/A
JOB ORDER NO. N/A
WORK ORDER NO. 1066052
CONSTR. CONTR. NO. N/A
NAVFAC DRAWING NO. 12578426
SHEET 5 OF 13
C-103

DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Dam Neck breakdown\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-103 PLOTTED: Monday, August 06, 2012 - 2:06pm USER: granville.pennypacke



SHEET NOTES:

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5. FOR BEACH FILL CROSS–SECTION SEE SHEET C–201 TO C–204. PROVIDE BEACH FILL IN THE LOW SPOTS AND BRING THE GRADES TO MINIMUM ELEVATION OF + 6.3'
6. SEE SHEET C–501 FOR TYPICAL BEACH FILL AND DUNE REPAIR SECTION.
7. APPROXIMATE LOCATION OF 66" HAMPTON ROADS SANITATION DISTRICT (HRSD) OUTFALL. APPROXIMATE DEPTH OF PIPE BELOW GRADE IS 10 TO 15 FEET. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PROTECT THE OUTFALL DURING CONSTRUCTION PROJECT. PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR SHALL LOCATE AND MARK THE OUTFALL WITHIN THE LIMITS OF PROJECT AREA.
8. SEA TURTLE EGG NEST NOT TO BE DISTURBED.

SURVEY DATES	GRAPHIC SCALE
TOPO: MAY / JUNE 2012 BATHYMETRY: MAY / JUNE 2010	1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

APPROVED
FOR COMMANDER NAVFAC DATE

APPROVED
R.J. CLARK
ACTIVITY – SATISFACTORY TO DATE 07/30/2012
HRIPT PM K. LIENEMANN, PE
DES GLP DRW GLP CHK JSG/LLP
HRIPT DM LUU LUAN PHU, PE
BRANCH MANAGER JSG
CHIEF ENG/ARCH JOE FORMATO, PE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE
NAVAL FACILITIES ENGINEERING COMMAND – MID ATLANTIC
NAVAL STATION – NORFOLK, VIRGINIA
NAS OCEANA, DAM NECK VIRGINIA BEACH VA
REPAIRS TO SHORE PROTECTION SYSTEM
BEACH NOURISHMENT SITE PLAN

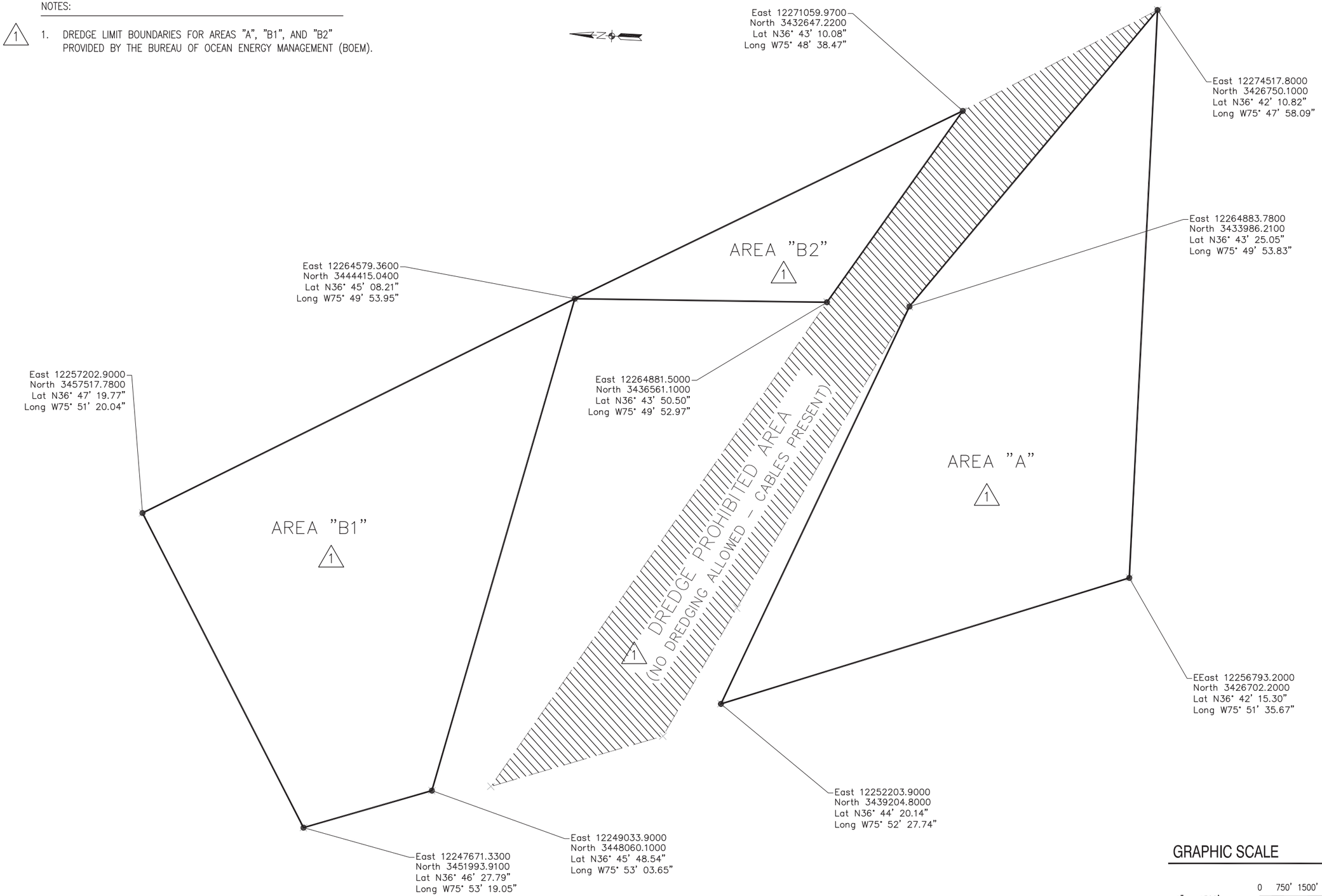
CODE ID. NO. 80091 SIZE D
SCALE: AS NOTED
MAXIMO NO. N/A
JOB ORDER NO. N/A
WORK ORDER NO. 1066052
CONSTR. CONTR. NO. N/A
NAVFAC DRAWING NO. 12578427
SHEET 6 OF 13
C-104

DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Dam Neck breakdown\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-104 PLOTTED: Monday, August 06, 2012 - 2:06pm USER: gramville.pennypacke

NOTES:

1. DREDGE LIMIT BOUNDARIES FOR AREAS "A", "B1", AND "B2" PROVIDED BY THE BUREAU OF OCEAN ENERGY MANAGEMENT (BOEM).



SYM	DESCRIPTION	DATE	APPR
1.	BORROW AREAS BOUNDARIES CHANGED PER B.O.E.M	9/10/12	J.S.G.

APPROVED
FOR COMMANDER NAVFAC DATE

APPROVED
R.J. CLARK
ACTIVITY - SATISFACTORY TO DATE 07/30/2012

HRIPT PM K. LIENEMANN, PE
DES GLP DRW GLP CHK JSG/LLP
HRIPT DM LUU LUAN PHU, PE
BRANCH MANAGER JSG
CHIEF ENG/ARCH JOE FORMATO, PE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE
NAVAL FACILITIES ENGINEERING COMMAND ~ MID ATLANTIC
NAVAL STATION - NORFOLK, VIRGINIA
NAS OCEANA, DAM NECK
VIRGINIA BEACH VA

REPAIRS TO SHORE PROTECTION SYSTEM

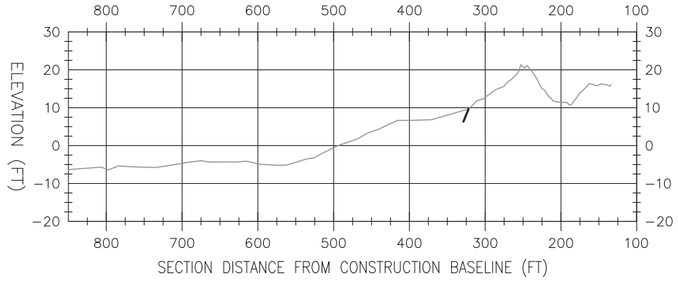
OFFSHORE BORROW AREA SITE PLAN

CODE ID. NO. 80091 SIZE D
SCALE: AS NOTED
MAXIMO NO. N/A
JOB ORDER NO. N/A
WORK ORDER NO. 1066052
CONSTR. CONTR. NO. N/A
NAVFAC DRAWING NO. 12578428
SHEET 7 OF 13
C-105

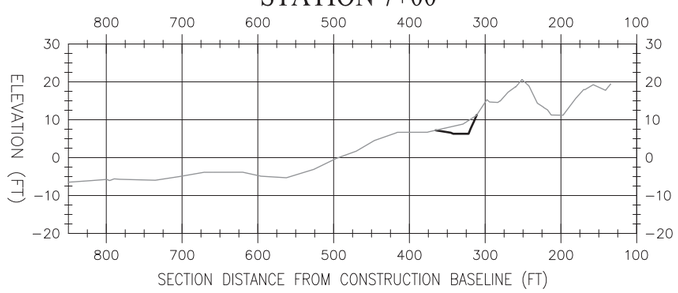
DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Dam Neck Shoreline restoration 2012\Drawings\May-June 2012\FINAL_August 2012\Borrow site update Sept 2012\W0@1066052_Dam Neck_FY12 Shore Protection_Offshore Borrow update_Sept2012.dwg LAYOUT NAME: C-105_(2012) PLOTTED: Monday, September 10, 2012 - 1:40pm USER: granville.pennypacke

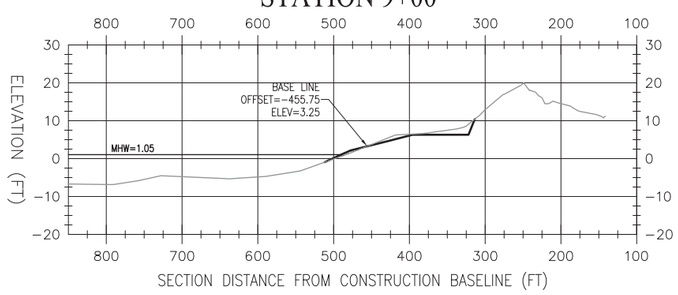
STATION 6+50



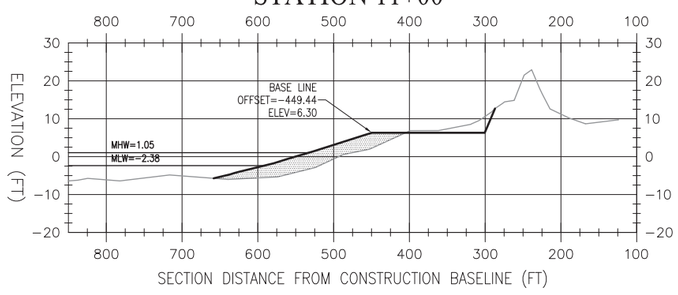
STATION 7+00



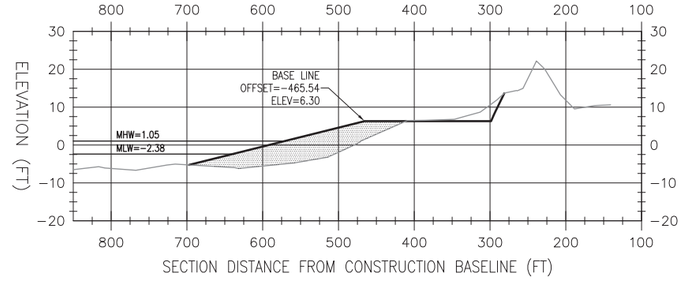
STATION 9+00



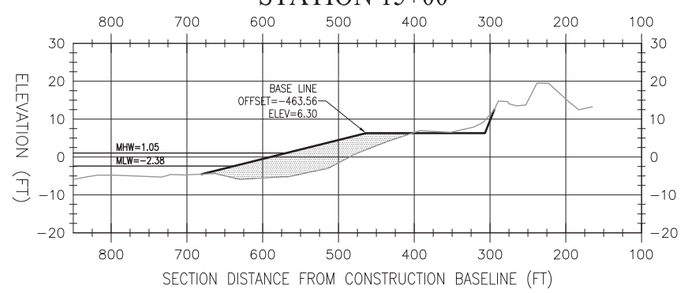
STATION 11+00



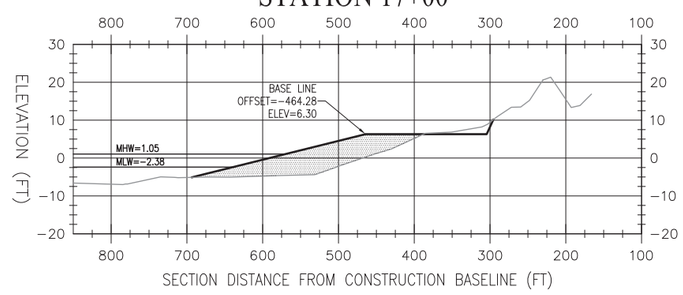
STATION 13+00



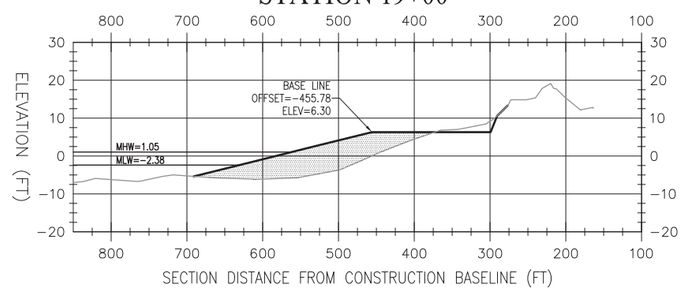
STATION 15+00



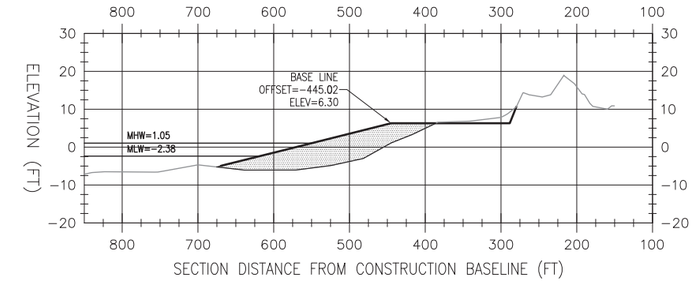
STATION 17+00



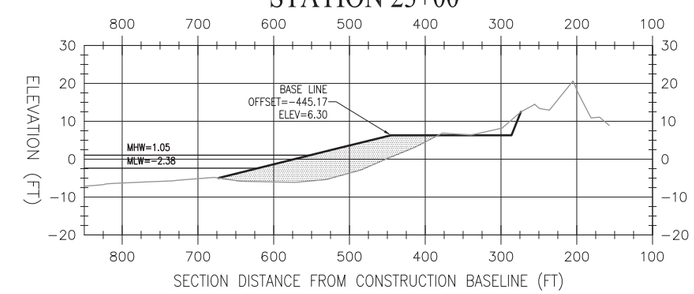
STATION 19+00



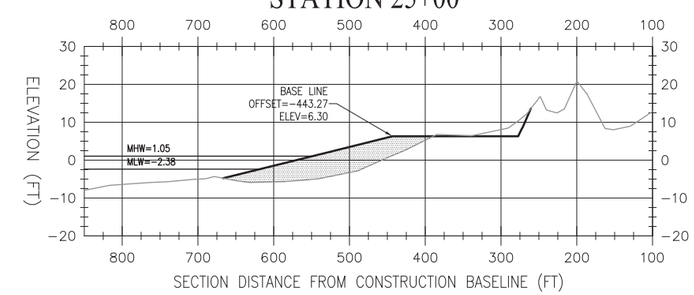
STATION 21+00



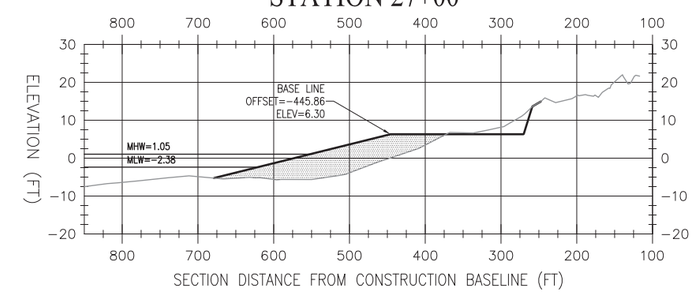
STATION 23+00



STATION 25+00



STATION 27+00



GRAPHIC SCALE

VERT. 1" = 20' 0 10' 20' 40'

HORIZ. 1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

APPROVED

FOR COMMANDER NAVFAC DATE

APPROVED

ACTIVITY – SATISFACTORY TO DATE

Dam Neck PM

DES LLP DRW GLP CHK JSG/LLP

FIRE PROTECTION N/A

BRANCH MANAGER

CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE
NAS OCEANA, DAM NECK

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL STATION – NORFOLK, VIRGINIA
MID ATLANTIC
VIRGINIA BEACH VA

REPAIRS TO SHORE PROTECTION SYSTEM

BEACH NOURISHMENT SECTIONS (06+50 - 27+00)

CODE ID. NO. 80091 SIZE D

SCALE: AS NOTED

MAXIMO NO. N/A

JOB ORDER NO. N/A

WORK ORDER NO. 1066052

CONSTR. CONTR. NO. N/A

NAVFAC DRAWING NO. 12578429

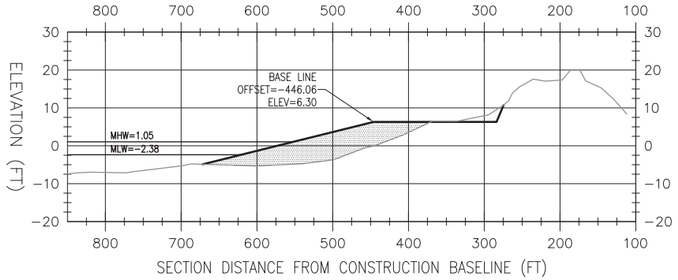
SHEET 8 OF 13

C-201

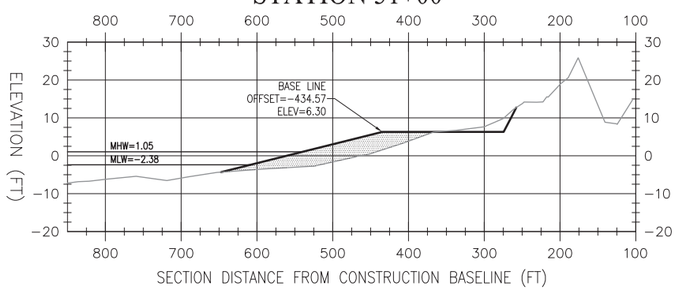
DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Drawings\Dam Neck\May–June 2012\Lee's BU\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-201 PLOTTED: Thursday, August 02, 2012 – 5:56pm USER: granville.pennypacke

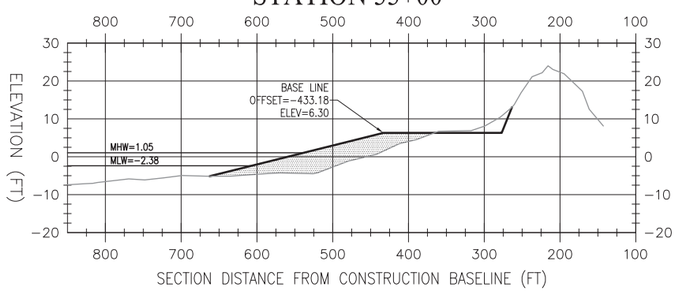
STATION 29+00



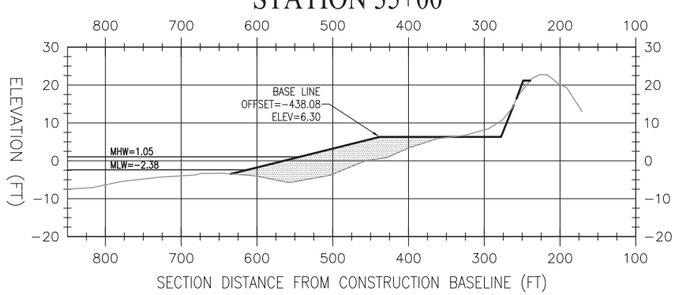
STATION 31+00



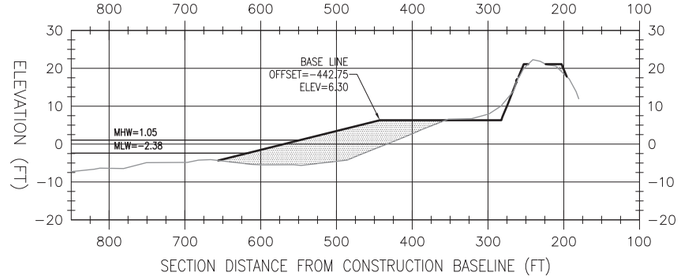
STATION 33+00



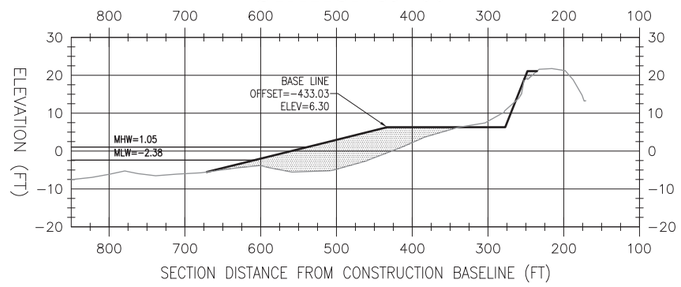
STATION 35+00



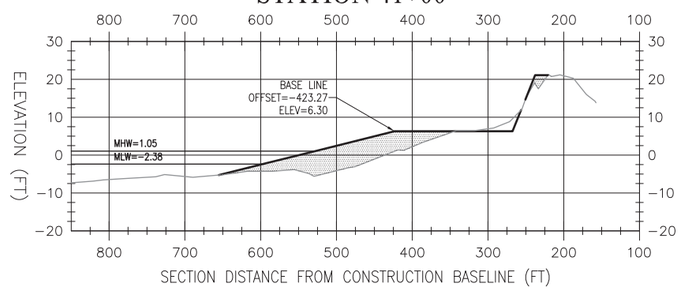
STATION 37+00



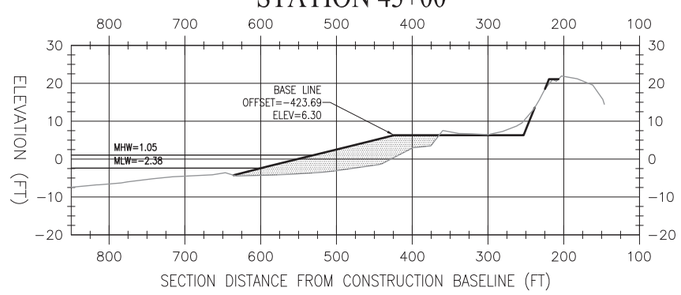
STATION 39+00



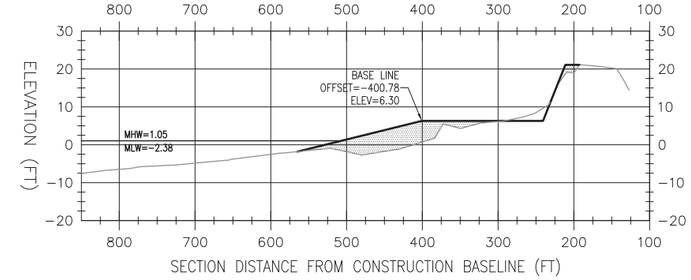
STATION 41+00



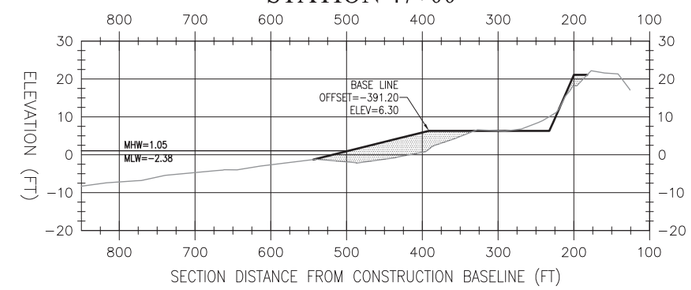
STATION 43+00



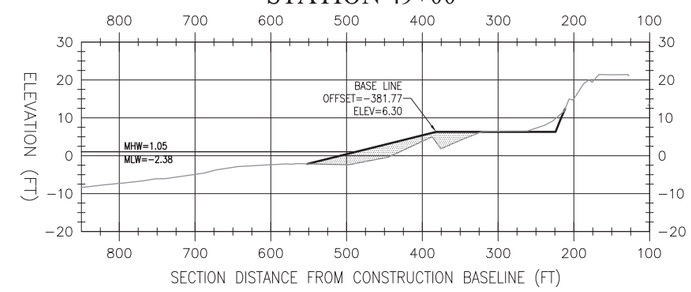
STATION 45+00



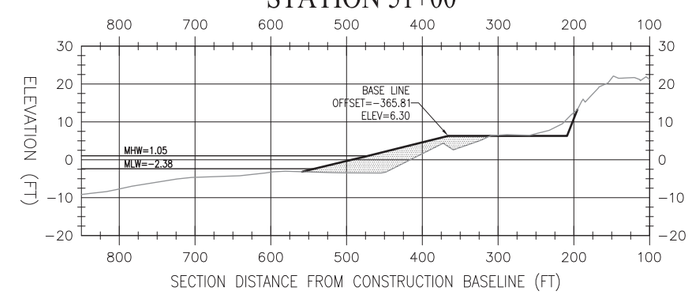
STATION 47+00



STATION 49+00



STATION 51+00



GRAPHIC SCALE

VERT. 1" = 20' 0 10' 20' 40'

HORIZ. 1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

APPROVED

FOR COMMANDER NAVFAC DATE

APPROVED

ACTIVITY – SATISFACTORY TO DATE

Dam Neck PM

DES LLP DRW GLP CHK JSG/LLP

FIRE PROTECTION N/A

BRANCH MANAGER

CHIEF ENG./ARCH

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE
NAS OCEANA, DAM NECK

NAVAL FACILITIES ENGINEERING COMMAND
NAVAL STATION - NORFOLK, VIRGINIA
MID ATLANTIC
VIRGINIA BEACH VA

REPAIRS TO SHORE PROTECTION SYSTEM

BEACH NOURISHMENT SECTIONS (29+00 - 51+00)

CODE ID. NO. 80091 SIZE D

SCALE: AS NOTED

MAXIMO NO. N/A

JOB ORDER NO. N/A

WORK ORDER NO. 1066052

CONSTR. CONTR. NO. N/A

NAVFAC DRAWING NO. 12578430

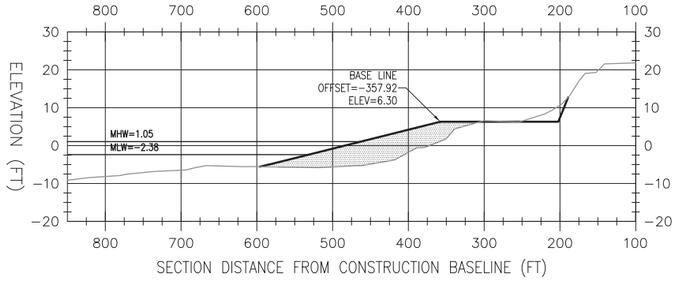
SHEET 9 OF 13

C-202

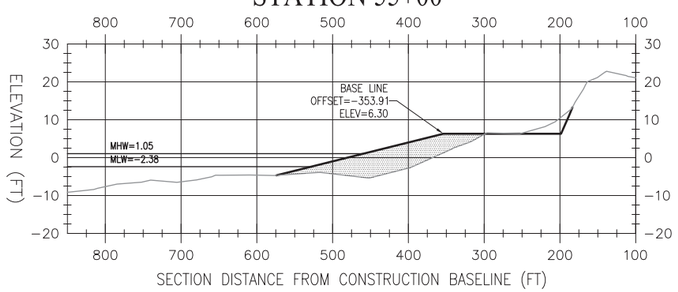
DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Drawings\Dam Neck\May-June 2012\Lee's BU\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-202 PLOTTED: Friday, August 03, 2012 - 12:50pm USER: granville.pennypacke

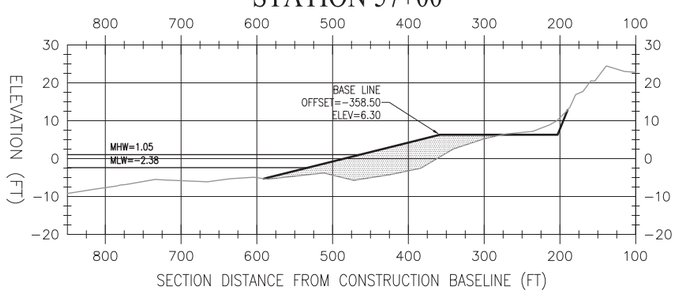
STATION 53+00



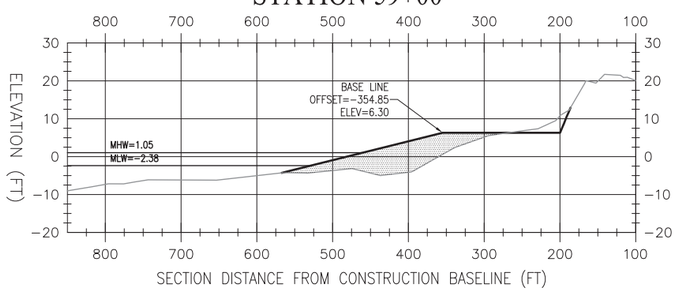
STATION 55+00



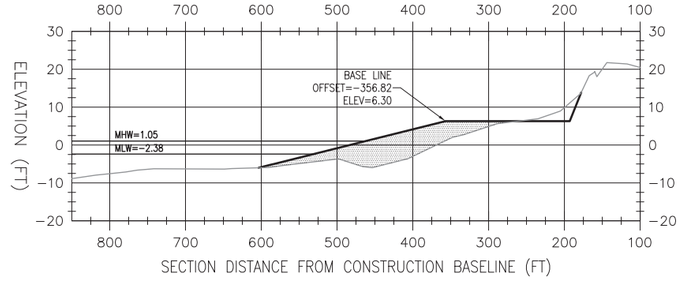
STATION 57+00



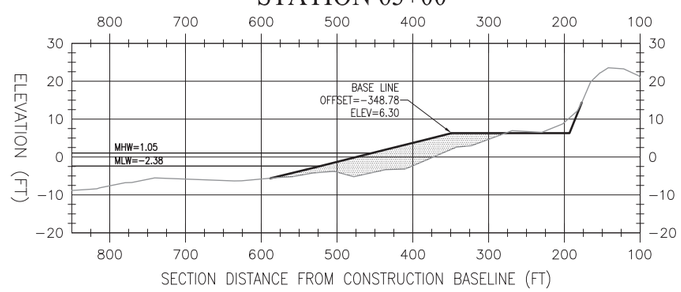
STATION 59+00



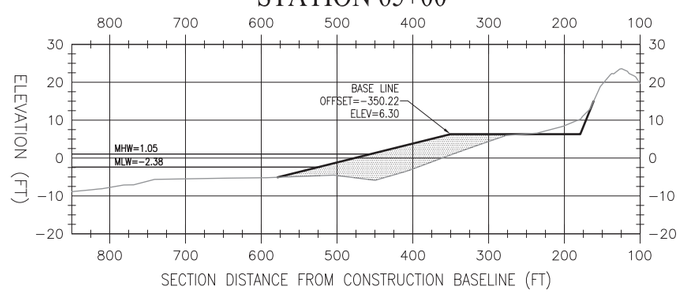
STATION 61+00



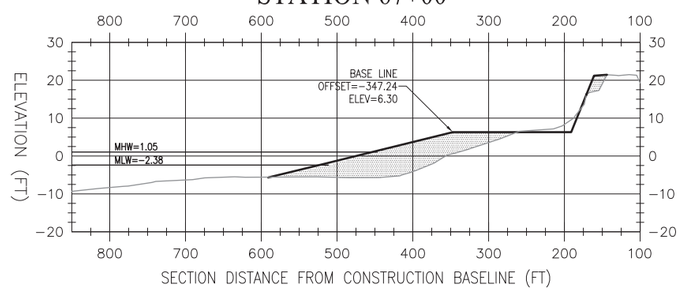
STATION 63+00



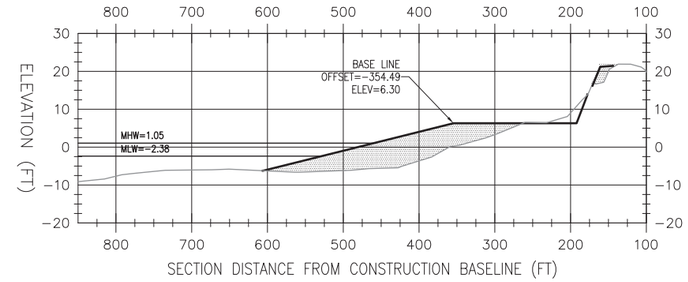
STATION 65+00



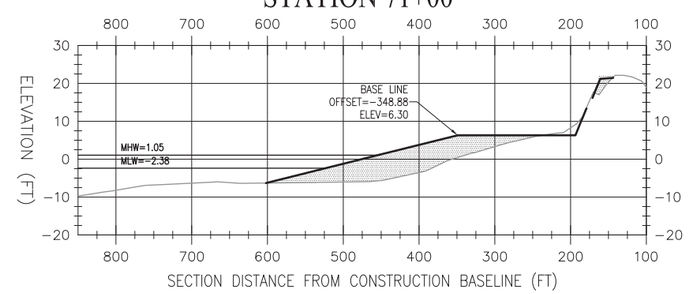
STATION 67+00



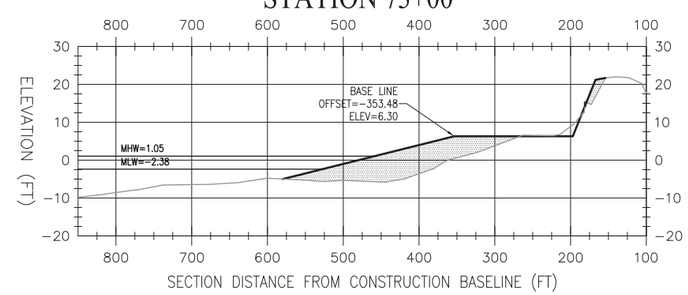
STATION 69+00



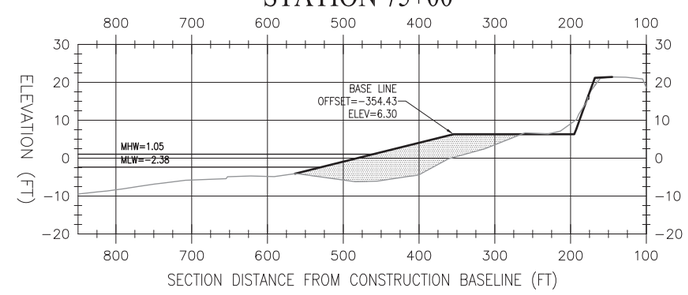
STATION 71+00



STATION 73+00



STATION 75+00



GRAPHIC SCALE

VERT. 1" = 20' 0 10' 20' 40'

HORIZ. 1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

NAVFAC

APPROVED

FOR COMMANDER NAVFAC DATE

APPROVED

ACTIVITY - SATISFACTORY TO DATE

Dam Neck PM

DES LLP DRW GLP CHK JSG/LLP

FIRE PROTECTION N/A

BRANCH MANAGER

CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE

NAVAL FACILITIES ENGINEERING COMMAND ~ MID ATLANTIC
NAVAL STATION - NORFOLK, VIRGINIA

NAS OCEANA, DAM NECK
VIRGINIA BEACH VA

REPAIRS TO SHORE PROTECTION SYSTEM

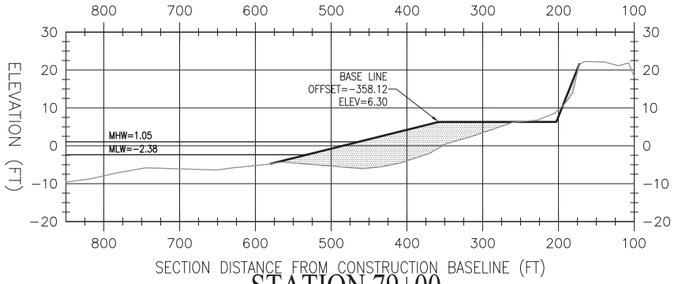
BEACH NOURISHMENT SECTIONS (53+00 - 75+00)

CODE ID. NO. 80091	SIZE D
SCALE:	AS NOTED
MAXIMO NO.	N/A
JOB ORDER NO.	N/A
WORK ORDER NO.	1066052
CONSTR. CONTR. NO.	N/A
NAVFAC DRAWING NO.	12578431
SHEET 10 OF 13	C-203

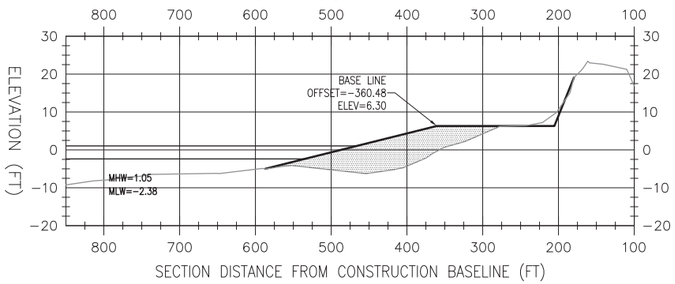
DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Drawings\Dam Neck\May-June 2012\Lee's BU\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-203 PLOTTED: Thursday, August 02, 2012 - 6:08pm USER: granville.pennypacke

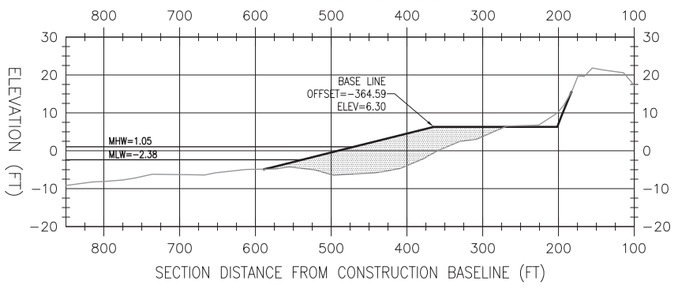
STATION 77+00



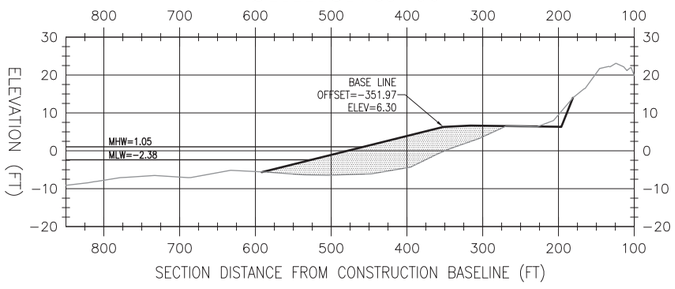
STATION 79+00



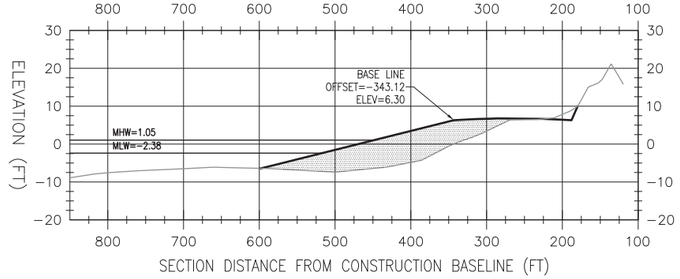
STATION 81+00



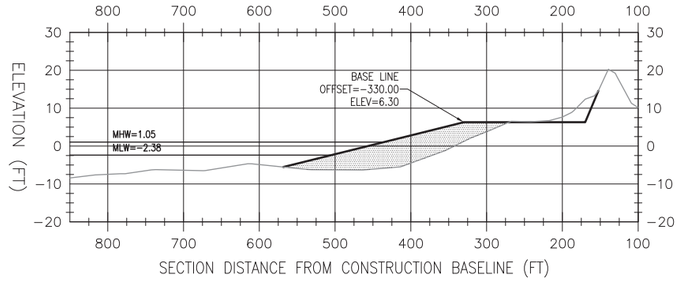
STATION 83+00



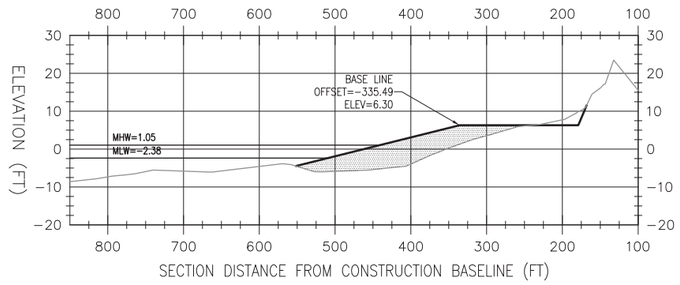
STATION 85+00



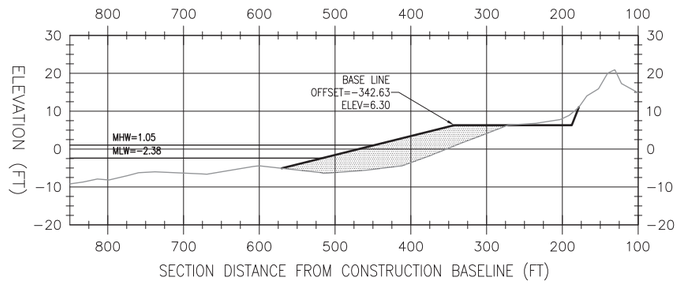
STATION 87+00



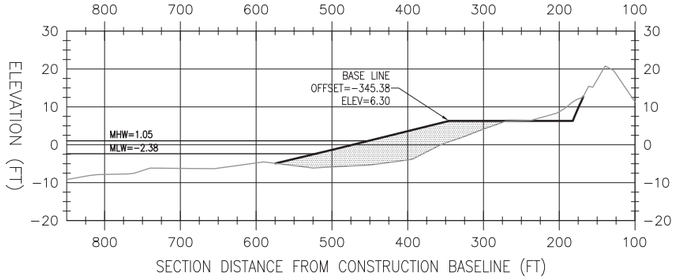
STATION 89+00



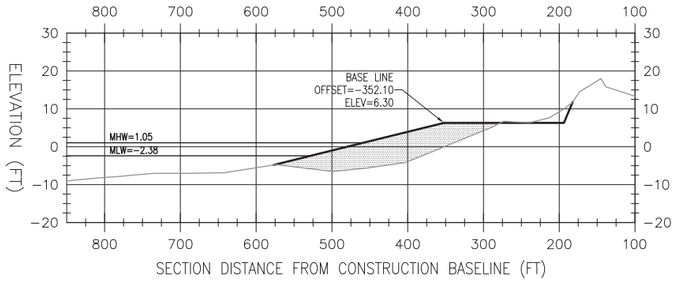
STATION 91+00



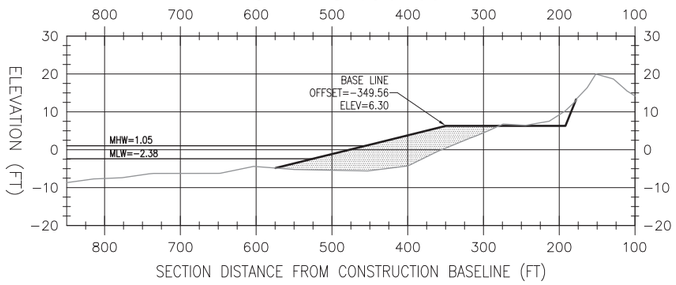
STATION 93+00



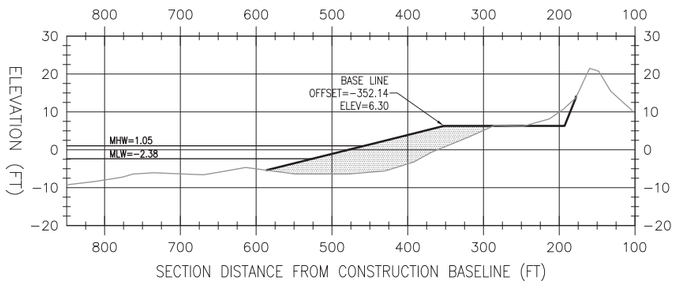
STATION 95+00



STATION 97+00



STATION 99+00



GRAPHIC SCALE

VERT. 1" = 20' 0 10' 20' 40'

HORIZ. 1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

NAVFAC

APPROVED

FOR COMMANDER NAVFAC DATE

APPROVED

ACTIVITY - SATISFACTORY TO DATE

Dam Neck PM

DES LLP DRW GLP CHK JSG/LLP

FIRE PROTECTION N/A

BRANCH MANAGER

CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE

NAVAL FACILITIES ENGINEERING COMMAND ~ MID ATLANTIC
NAVAL STATION - NORFOLK, VIRGINIA

NAS OCEANA, DAM NECK
VIRGINIA BEACH VA

REPAIRS TO SHORE PROTECTION SYSTEM

BEACH NOURISHMENT SECTIONS (77+00 - 99+00)

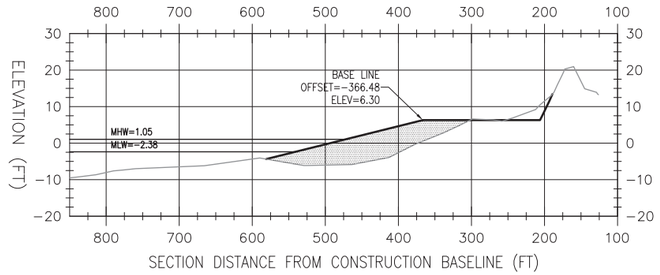
CODE ID. NO. 80091	SIZE D
SCALE:	AS NOTED
MAXIMO NO.	N/A
JOB ORDER NO.	N/A
WORK ORDER NO.	1066052
CONSTR. CONTR. NO.	N/A
NAVFAC DRAWING NO.	12578432
SHEET 11 OF 13	

C-204

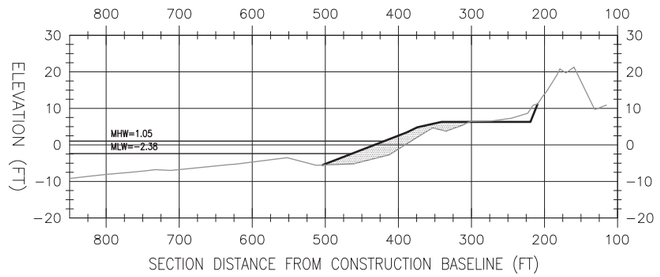
DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Drawings\Dam Neck\May-June 2012\Lee's BU\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-204 PLOTTED: Thursday, August 02, 2012 - 6:09pm USER: granville.pennypacke

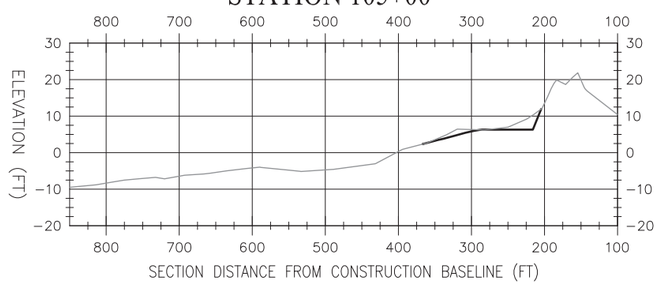
STATION 101+00



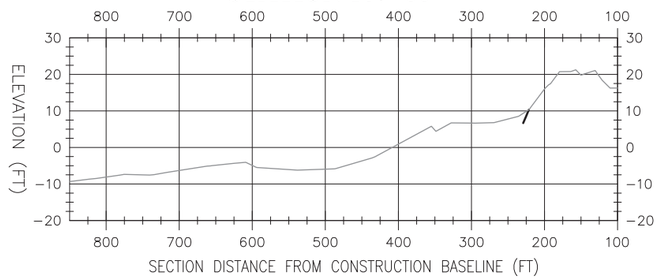
STATION 103+00



STATION 105+00



STATION 107+00



GRAPHIC SCALE

VERT. 1" = 20' 0 10' 20' 40'

HORIZ. 1" = 100' 0 50' 100' 200'

SYM	DESCRIPTION	DATE	APPR

NAVFAC

APPROVED

FOR COMMANDER NAVFAC DATE

APPROVED

ACTIVITY – SATISFACTORY TO DATE

Dam Neck PM

DES LLP | DRW GLP | CHK JSG/LLP

FIRE PROTECTION N/A

BRANCH MANAGER

CHIEF ENG/ARCH

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE

NAVAL FACILITIES ENGINEERING COMMAND – MID ATLANTIC
NAVAL STATION – NORFOLK, VIRGINIA

NAS OCEANA, DAM NECK
VIRGINIA BEACH VA

REPAIRS TO SHORE PROTECTION SYSTEM

BEACH NOURISHMENT SECTIONS (101+00 - 107+00)

CODE ID. NO. 80091 | SIZE D

SCALE: AS NOTED

MAXIMO NO. N/A

JOB ORDER NO. N/A

WORK ORDER NO. 1066052

CONSTR. CONTR. NO. N/A

NAVFAC DRAWING NO. 12578433

SHEET 12 OF 13

C-205

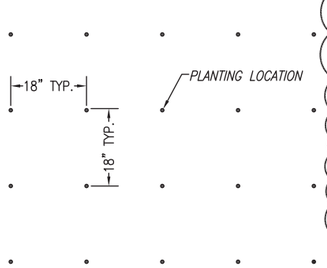
DRAWFORM REVISION: 6 AUG 2007

FILE NAME: D:\Files\Drawings\Dam Neck\May–June 2012\Lee's Bit\WO#1066052_Dam Neck_FY12 Shore Protection_2012_Lee.dwg LAYOUT NAME: C-205 PLOTTED: Thursday, August 02, 2012 – 6:10pm USER: granville.pennypacke

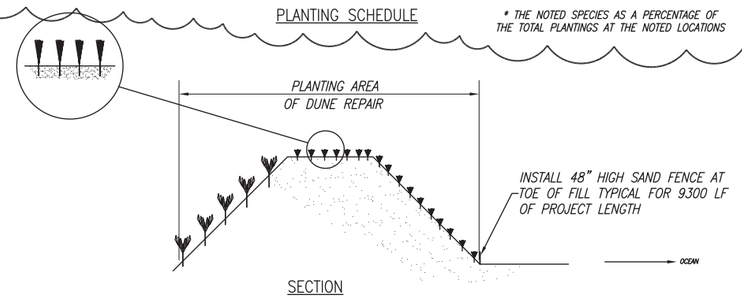
LOCATION ON DUNE	PLANTING PERIOD	BOTANICAL NAME	COMMON NAME		REMARK	PERCENTAGE*
DUNE CREST / OCEAN SIDE SLOPES	OCTOBER–MAY	AMMOPHILIA BREVILIGULATA	AMERICAN BEACHGRASS	18 IN. O.C.	2–3 CLUMPS PER HOLE	60% / 50%
OCEAN SIDE DUNE SLOPES	MARCH–JUNE	PANICUM AMARUM V. AMARULUM	ATLANTIC COASTAL PANICGRASS	18 IN. O.C.	1 PLUG WITH 5 OR MORE STEMS PER HOLE	25%
DUNE CRESTS	MARCH–JUNE	UNIOLA LATIFOLIA	SEA OATS	18 IN. O.C.	1 PLUG PER HOLE	40%
OCEAN SIDE DUNE SLOPES	MARCH–JUNE	PANICUM AMARUM	BITTER PANICGRASS	18 IN. O.C.	2 PLUGS PER HOLE	25%
LAND SIDE DUNE SLOPES	OCTOBER–MAY	SPARTINA PATENS	SALT MEADOW HAY	18 IN. O.C.	1 PLUG PER HOLE	100%

PLANTING SCHEDULE

* THE NOTED SPECIES AS A PERCENTAGE OF THE TOTAL PLANTINGS AT THE NOTED LOCATIONS



PARTIAL PLAN



SECTION

NOTES:

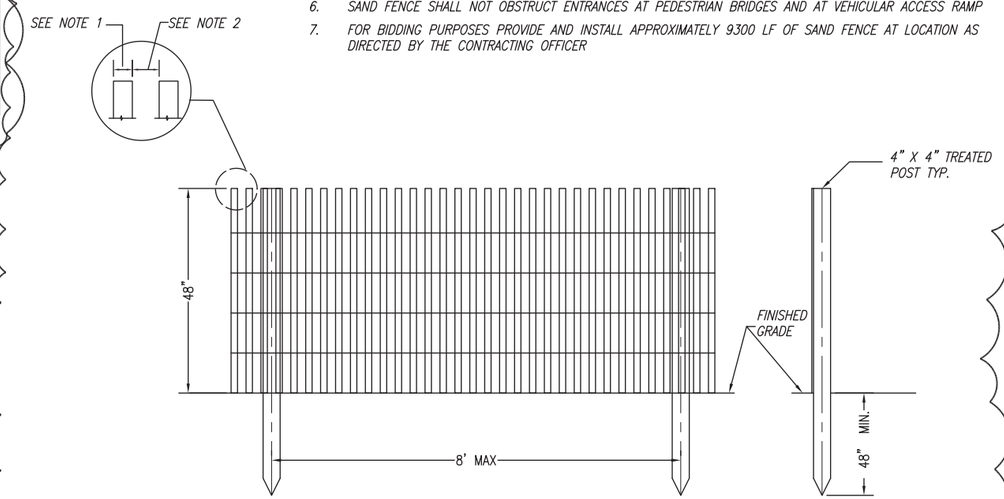
1. FOR PLANTING DETAIL AND SCHEDULE SEE DETAIL C1 IN THIS SHEET.
2. VARIOUS SPECIES SHALL BE PLANTED IN MOSAIC PATTERNS, VERIFY WITH CONTRACTING OFFICER.

C1 DETAIL - DUNE GRASS PLANTING AND PRESERVATION

NOT TO SCALE

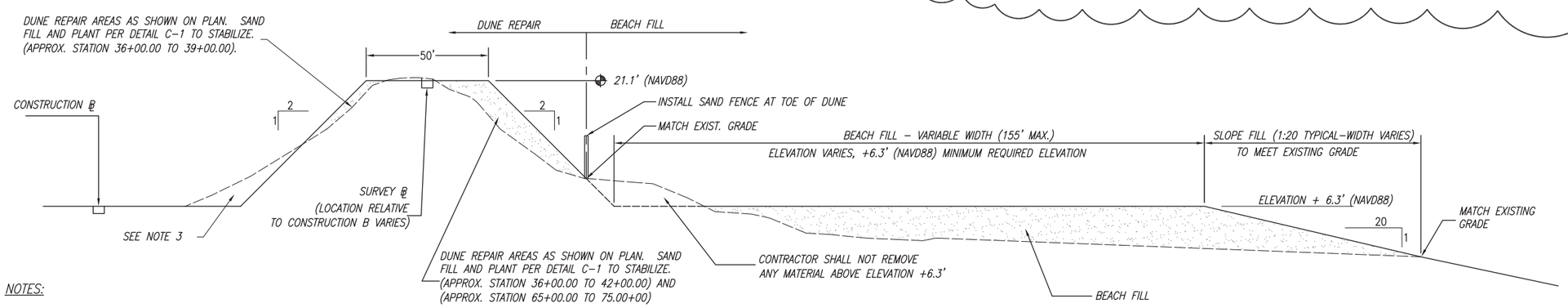
NOTES:

1. SAND FENCE SHALL BE FREE OF DECAY, BROKEN WIRE, AND MISSING OR BROKEN SLATS
2. SLATS SHALL BE MADE OF No. 1 ASPEN OR SPRUCE MEASURING 3/8" THICK, 1 1/2" WIDE AND 48" HIGH.
3. THE SLATS SHALL BE SPACED 2 1/4" APART PLUS OR MINUS 1/4"
4. SAND FENCE SHALL CONSIST OF WOOD SLATS WOVEN TOGETHER WITH FIVE 2–WIRE STANDS OF THIRTEEN (13) GAUGE GALVANIZED WIRE. NOT LESS THAN TWO (2) THREE HUNDRED AND SIXTY (360) DEGREE TWISTS OF WIRE IN THE WEAVE BETWEEN THE SLATS.
5. FOUR (4) WIRE TIES SHALL BE USED TO FASTEN THE FENCE TO THE WOODEN POST. WEAVE THE FENCE BETWEEN THE POSTS SO THAT EVERY OTHER POST WILL HAVE FENCING ON THE OCEAN SIDE OF THE POSTS. TIE SHALL BE NO SMALLER THAN 13–GAUGE GALVANIZED WIRE.
6. SAND FENCE SHALL NOT OBSTRUCT ENTRANCES AT PEDESTRIAN BRIDGES AND AT VEHICULAR ACCESS RAMP
7. FOR BIDDING PURPOSES PROVIDE AND INSTALL APPROXIMATELY 9300 LF OF SAND FENCE AT LOCATION AS DIRECTED BY THE CONTRACTING OFFICER



C4 SAND FENCE DETAIL

NOT TO SCALE



NOTES:

1. SEE PLAN SHEETS FOR AREAS.
2. FOR PLANTING DETAIL AND SCHEDULE SEE DETAIL C1 IN THIS SHEET.
3. CONTRACTOR SHALL NOT CUT EXCESS MATERIAL ON DUNE.
4. INSTALL SAND FENCE AROUND PERIMETER OF NEW VEGETATION PLANTINGS BETWEEN STATIONS 36+00 THROUGH 42+00.

A2 TYPICAL BEACH FILL AND DUNE REPAIR CROSS SECTION

NOT TO SCALE

SYM	DESCRIPTION	DATE	APPR
1	REVISE SAND FENCE DETAIL & PLANTING SCHEDULE	9/5/12	

NAVFAC

APPROVED
FOR COMMANDER NAVFAC DATE

APPROVED
R.J. CLARK
ACTIVITY – SATISFACTORY TO DATE 07/30/2012

HRSPT PM K. LIENEMANN, PE
DES GLP | DRW GLP | CHK JSG/LLP
HRSPT DM LUU LUAN PHU, PE
BRANCH MANAGER JSG
CHIEF ENG/ARCH JOE FORMATO, PE

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
CAPITAL IMPROVEMENTS CORE
NAVAL FACILITIES ENGINEERING COMMAND ~ MID ATLANTIC
NAVAL STATION – NORFOLK, VIRGINIA
NAS OCEANA, DAM NECK
VIRGINIA BEACH VA

REPAIRS TO SHORE PROTECTION SYSTEM

DETAILS AND SCHEDULES

CODE ID. NO. 80091 | SIZE D
SCALE: AS NOTED
MAXIMO NO. N/A
JOB ORDER NO. N/A
WORK ORDER NO. 1066052
CONSTR. CONTR. NO. N/A
NAVFAC DRAWING NO. 12578434
SHEET 13 OF 13

C-501

DRAWFORM REVISION: 6 AUG 2007

FILE NAME: P:\Dam Neck\Waterfront\1066052_TS 12-0075_Repair Shore Protection System\Phase B – Design\Drawings\May–June 2012\FINAL_August 2012\C-501 (Amendment).dwg LAYOUT NAME: C-501 PLOTTED: Thursday, September 06, 2012 – 9:03am USER: luu.phu