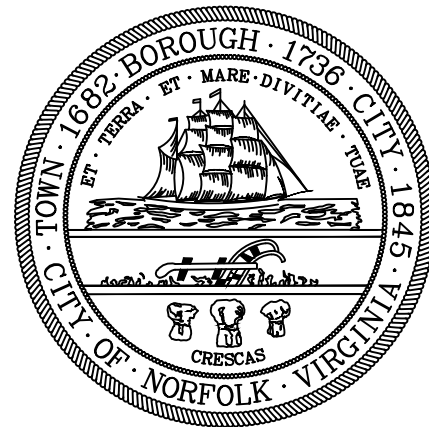
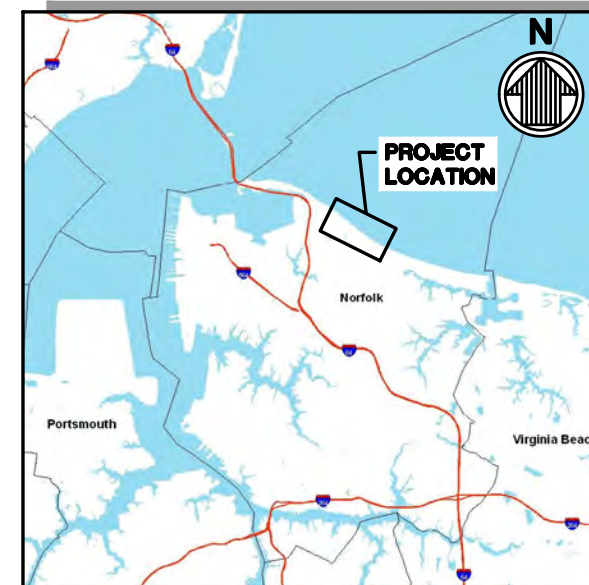


**LOCATION MAP**  
NTS



# City of Norfolk

Department of Public Works



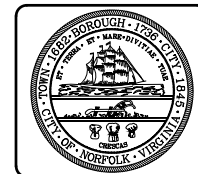
**VICINITY MAP**  
NTS

## WEST OCEAN VIEW SHORELINE IMPROVEMENTS

CITY OF NORFOLK, VIRGINIA

INDEX OF DRAWINGS		
NO.	SHEET NO.	SHEET TITLE
1	G-001	TITLE SHEET & INDEX OF DRAWINGS
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3	C-101	OVERVIEW PLAN - SHORELINE IMPROVEMENTS
4	C-102	SITE PLAN - SHEET 1 OF 4
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6	C-104	SITE PLAN - SHEET 3 OF 4
7	C-105	SITE PLAN - SHEET 4 OF 4
8	C-301	BEACH RENOURISHMENT CROSS SECTIONS - SHEET 1 OF 3
9	C-302	BEACH RENOURISHMENT CROSS SECTIONS - SHEET 2 OF 3
10	C-303	BEACH RENOURISHMENT CROSS SECTIONS - SHEET 3 OF 3
11	C-501	TYPICAL SECTIONS
12	C-502	TIMBER GROIN DEMOLITION DETAILS

BEFORE YOU DIG,  
CALL  
"MISS UTILITY"  
OF VIRGINIA  
1-800-552-7001  
(TOLL FREE)



<b>PRELIMINARY</b> NOT TO BE USED FOR CONSTRUCTION	Mark	Date

**WEST OCEAN VIEW  
SHORELINE IMPROVEMENTS**

TITLE SHEET & INDEX OF DRAWINGS

Designed by: MB	Drawn by: DK	Reviewed by:	Submitted by: MOFFATT & NICHOL
Date: DEC 2012	M&N Project No. 6998-19	Drawing code:	Drawing Scale: Plot scale: 1:1 (D SHEET)

800 WORLD TRADE CENTER  
NORFOLK, VA 23510  
757-628-8222

**moffatt & nichol**

PREPARED FOR:  
CITY OF NORFOLK DEPARTMENT  
OF PUBLIC WORKS

SEAL

Sheet Reference Number:  
**G-001**  
SHEET 1 OF 12

**GENERAL NOTES:**

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL PLACE THE PERMIT PLACARDS ON THE JOB SITE AND SHALL COMPLY WITH ALL TERMS OF THE PERMITS PERTAINING TO THE PERFORMANCE OF THE WORK.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE STARTING WORK AND NOTIFY CONSTRUCTION ENGINEER OF DISCREPANCIES.
- BUILDING AND CADASTRAL INFORMATION PROVIDED BY THE CITY OF NORFOLK.
- ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED: METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIAL ARE THE CONTRACTOR'S RESPONSIBILITY.
- THE CONTRACTOR SHALL, ON A DAILY BASIS, REMOVE FROM THE SITE ANY EXCAVATED MATERIAL OR DEBRIS. DISPOSAL OF THE MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL DEBRIS SHALL BE DISPOSED OF IN A PERMITTED LANDFILL.
- THESE PLANS ARE INCOMPLETE WITHOUT THE PROJECT TECHNICAL SPECIFICATIONS.
- STAGING AREAS SHALL BE AS INDICATED AND FENCED AND MAINTAINED BY THE CONTRACTOR. STAGING AREAS SHALL BE CLEARED OF DEBRIS AND CONTRACTOR INSTALLED AMENITIES AT THE COMPLETION AND ACCEPTANCE OF WORK IN THE AREA. ANY EXISTING SIGNS, FENCES, OR OTHER STRUCTURES WITHIN THE WORK LIMITS SHALL BE PROTECTED AND/OR REMOVED AND LATER REPLACED BY THE CONTRACTOR AS DIRECTED.
- THE CONTRACTOR SHALL COORDINATE ACCESS TO THE WORK, STORAGE, AND STAGING AREA LOCATIONS WITH THE CONSTRUCTION ENGINEER. THE CONTRACTOR SHALL RESTORE THE ACCESS AREAS TO THEIR ORIGINAL CONDITION AFTER WORK IN THE AREA IS COMPLETE. THIS WORK INCLUDES REPLACEMENT OF FENCING, SIGNAGE, AND OTHER MISCELLANEOUS ITEMS.
- UNLESS OTHERWISE APPROVED BY THE CONSTRUCTION ENGINEER, EXCESS EQUIPMENT MAY ONLY BE STORED IN APPROVED STORAGE/STAGING AREAS OR TEMPORARY AREAS IN THE IMMEDIATE VICINITY OF THE STONE PLACEMENT SITE. THE CONSTRUCTION ENGINEER RESERVES THE RIGHT TO LIMIT SUCH AREAS AS DEEMED NECESSARY. OPERATION OF GRADING AND OTHER CONSTRUCTION EQUIPMENT WILL NOT BE PERMITTED OUTSIDE THE WORK AREA LIMITS EXCEPT FOR INGRESS AND EGRESS OF THE SITE AT APPROVED LOCATIONS.

**MATERIALS**

- ALL MATERIALS SHALL BE PRE-APPROVED BY ENGINEER.

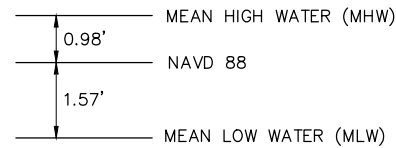
**PERMITS**

- IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONSTRUCTION ENGINEER.
- IT IS THE INTENT OF THESE PLANS AND THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THE ENVIRONMENTAL PERMITS ISSUED FOR THIS PROJECT. THE PERMITS ARE HEREBY MADE PART OF THE CONTRACT DOCUMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE AND GOVERN HIMSELF BY ALL PROVISIONS OF THESE PERMITS.

**SURVEY NOTES**

- THE BATHYMETRY/TOPOGRAPHY PRESENTED ON THE PLANS AND SECTIONS IS BASED ON SURVEYS COMPLETED IN MARCH 2012, BY GEODYNAMICS AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THAT TIME. CONDITIONS MAY VARY FROM THOSE SHOWN HEREIN.
- THE PLANE COORDINATES AND BEARINGS SHOWN FOR THE SURVEYS ARE IN FEET AND BASED ON THE VIRGINIA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 83 WITH THE 1993 HARN ADJUSTMENT - NAD 83 (93) VIRGINIA SOUTH ZONE.
- ALL ELEVATIONS SHOWN ON THE DRAWINGS ARE IN FEET AND REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

- THE MEAN HIGH WATER ELEVATION AND MEAN LOW WATER ELEVATION SHOWN ON THE DRAWINGS AND BELOW WERE BASED ON TIDAL BENCHMARK DATA FOR THE 1983-2001 TIDAL EPOCH AT THE CHESAPEAKE BAY BRIDGE-TUNNEL AND SEWELLS POINT.



- HORIZONTAL AND VERTICAL CONTROL FOR THE SURVEY WERE BASED ON SURVEY MONUMENTS AS FOUND BY GEODYNAMICS AND ARE SHOWN ON SHEET C1.
- CONTOURS ARE SHOWN AT 1 FT INTERVALS.

**PRODUCTS**

- ALL STONE SHALL MEET THE CRITERIA IDENTIFIED IN THE TECHNICAL SPECIFICATIONS.
- NEW ARMOR STONE SHALL RANGE BETWEEN 5500 LBS (2.75 TONS) AND 9200 LBS (4.6 TONS). THE STONE SHALL BE WELL GRADED; AT LEAST 50 % OF THE INDIVIDUAL STONES (BY VOLUME) SHALL WEIGH AT LEAST 7400 LBS (3.7 TONS).
- BEDDING STONE SHALL CONSIST OF GRADED STONE RANGING BETWEEN 4" AND 8". STONE SHALL NOT BE LESS THAN 4", AS MEASURED ALONG THE SHORTEST AXIS.
- GEOTEXTILE SHALL MEET CRITERIA IDENTIFIED IN TECHNICAL SPECIFICATIONS.

**GROIN NOTES**

- THE CONTRACTOR SHALL SUBMIT HIS PROPOSED METHOD OF CONSTRUCTION, TO INCLUDE THE SEQUENCE OF STONE PLACEMENT, METHODS OF PLACEMENT, AND EQUIPMENT TO BE USED DURING EACH CONSTRUCTION PHASE, TO THE CONSTRUCTION ENGINEER FOR APPROVAL. CARE SHALL BE TAKEN TO PLACE THE STONE TO MAKE A COMPACT MASS, AND FORM AS NEARLY AS PRACTICABLE A CROSS SECTION OF UNIFORM HEIGHT, WIDTH, AND SLOPES AS SHOWN ON THE CONTRACT DRAWINGS. STONES SHALL BE CAREFULLY PLACED SO AS TO LEAVE NO LARGE VOIDS BETWEEN THEM. STONE SHALL BE PLACED IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE. THE STONE LAYERS SHALL BE PLACED TO THE FULL SPECIFIED THICKNESS IN ONE OPERATION.
- STONE SHALL BE PLACED IN ACCORDANCE WITH CRITERIA IDENTIFIED IN TECHNICAL SPECIFICATIONS SECTION. DEVIATIONS IN LAYER THICKNESS SHALL BE NO GREATER THAN THE VALUES SET FORTH BELOW.

DESIGNATION	LAYER THICKNESS TOLERANCE (feet)		HORIZONTAL TOLERANCE (feet)		VERTICAL TOLERANCE (feet)	
	(-)	(+)	(-)	(+)	(-)	(+)
ARMOR STONE	0.5	0.5	1.0	1.0	0.5	0.5
BEDDING STONE	0.0	0.25	0.50	0.50	0.0	0.25

- THE GEOTEXTILE SHALL BE LAID FLAT AND SMOOTH SO THAT IT IS IN DIRECT CONTACT WITH THE SUBGRADE. THE GEOTEXTILE SHALL ALSO BE FREE OF TENSILE STRESSES, FOLDS, AND WRINKLES. GEOTEXTILE SHALL BE PLACED AS A CONTINUOUS LENGTH WITH THE LONG DIMENSION PARALLEL TO THE GROIN CENTERLINE. IF REQUIRED, GEOTEXTILE PANELS SHALL BE CONTINUOUSLY OVERLAPPED A MINIMUM OF TEN (10) FEET FOR EACH JOINT, AS APPROVED BY THE CONSTRUCTION ENGINEER. NO FIELD OVERLAPPING SHALL BE PERMITTED ALONG THE MAJOR AXIS OF GROIN STRUCTURE.
- SEE TECHNICAL SPECIFICATIONS FOR ADDITIONAL GEOTEXTILE AND STONE PLACEMENT REQUIREMENTS.
- PRE- AND POST-CONSTRUCTION SURVEYS OF GROIN AREA SHALL BE MADE. TRANSECTS SHALL BE AT 50-FOOT INTERVALS. ADDITIONAL ELEVATIONS SHALL BE TAKEN AS NECESSARY. SEE SPECIFICATIONS FOR ADDITIONAL DETAILS.

**LEGEND**

- GPS# OR NAME SURVEY MONUMENT/BENCHMARK
- WP## WORKING POINT

**ABBREVIATIONS**

- ASTM = AMERICAN SOCIETY FOR TESTING MATERIALS
- ELEV = ELEVATION
- EXIST = EXISTING
- FT = FEET
- MAX = MAXIMUM
- MHW = MEAN HIGH WATER
- MISC = MISCELLANEOUS
- MLW = MEAN LOW WATER
- MSL = MEAN SEA LEVEL
- MLLW = MEAN LOWER LOW WATER
- N = NORTH
- NTS = NOT TO SCALE
- T = TON

**BEACH RENOURISHMENT NOTES**

- EXISTING BEACH SECTIONS SHOWN HEREIN REFLECT THE CONDITION OF THE BEACH AND OFFSHORE ON THE DATE THEY WERE SURVEYED. CONDITIONS MAY VARY FROM THOSE SHOWN HEREIN.
- ALL SAND EXCAVATED FROM THE BORROW AREAS SHALL BE TRANSPORTED TO, AND DEPOSITED ON, THE BEACH BETWEEN THE LINES, GRADES, AND CROSS-SECTIONS SHOWN ON THE DRAWINGS.
- SAND SHALL BE PLACED WITHIN THE LIMITS AND GRADE LINES AS SHOWN IN THE PLANS AS PRACTICALLY AS POSSIBLE. TOLERANCE SHALL BE WITHIN 0.5 FOOT FOR NOURISHMENT HEIGHT AND WIDTH. ANY MATERIAL PLACED ABOVE THE PRESCRIBED TEMPLATE WILL NOT BE INCLUDED IN THE PAY QUANTITIES, UNLESS OTHERWISE DIRECTED BY THE OWNER.
- CONTRACTOR SHALL TAKE CARE TO GRADE THE BEACH SO THAT PONDING LANDWARD OF THE CREST IS MINIMIZED. IF APPROVED BY THE OWNER IN ADVANCE, CONTRACTOR MAY LEVEL THE BACK SLOPE OF THE DUNE TO MEET EXISTING SLOPE OR STRUCTURES.
- EXISTING WALKWAYS SHALL REMAIN AND NOT BE DAMAGED. BEACH FILL SHALL BE PLACED COMPLETELY UNDERNEATH OR AROUND STRUCTURES.
- PRE- AND POST- CONSTRUCTION SURVEYS OF THE BEACH SHALL BE MADE. TRANSECTS SHALL BE AT 100 FOOT INTERVALS. ADDITIONAL ELEVATIONS SHALL BE TAKEN AS NECESSARY TO ADEQUATELY REPRESENT TOPOGRAPHY OF THE CONSTRUCTION AREA.
- THE FOLLOWING ESTIMATE OF SAND REQUIRED FOR THE PROJECT IS 46,800 CY FOR THE BEACH RENOURISHMENT.
- MATERIAL SHALL BE PROVIDED FROM SOURCES AS SPECIFIED BY THE CITY OF NORFOLK AND PLACED AS SHOWN ON THE DRAWINGS.



<b>PRELIMINARY</b> NOT TO BE USED FOR CONSTRUCTION									

**WEST OCEAN VIEW SHORELINE IMPROVEMENTS**

**GENERAL NOTES & ABBREVIATIONS**

Designed by: MB	Date: DEC 2012	Rev: -
Dwn by: DK	M&N Project No. 6998-19	
Reviewed by: -	Drawing code:	
Submitted by: MOFFATT & NICHOL	Drawing Scale:	Plot scale: 1:1 (0 SHEET)

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757-628-8222

**moftatt & nichol**

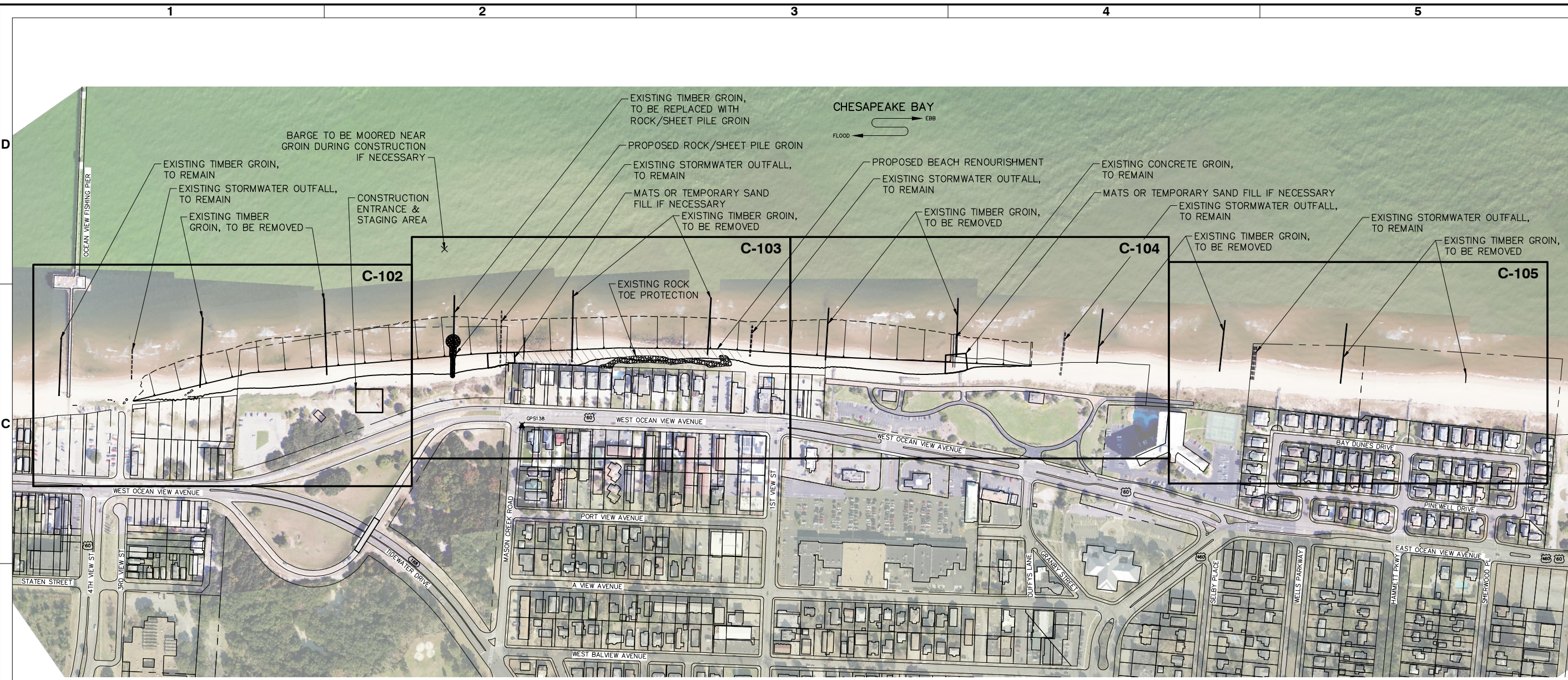
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Sheet Reference Number:  
**G-002**  
SHEET 2 OF 12

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**WEST OCEAN VIEW SHORELINE IMPROVEMENTS**  
**OVERVIEW PLAN - SHORELINE IMPROVEMENTS**

Designed by: MB	Date: DEC 2012	Rev: -
Dwn by: DK	M&N Project No: 6998-19	
Reviewed by: -	Drawing code:	
Submitted by: MOFFATT & NICHOL	Drawing Scale: Plot scale: 1:1 (D SHEET)	

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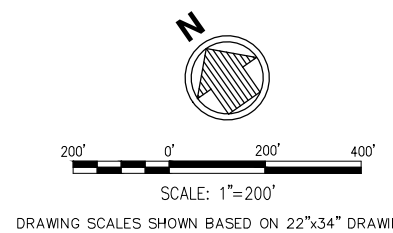
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**C-101**  
SHEET 3 OF 12

**NOTES:**

1. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT EXISTING STRUCTURES (GROINS THAT REMAIN, STORMWATER OUTFALLS, BEACH ACCESS STRUCTURES, ETC.) AND DUNE VEGETATION ALONG ACCESS ROUTES. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE DAMAGED STRUCTURES AND VEGETATION AS REQUIRED BY THE CONSTRUCTION ENGINEER. CONTRACTOR SHALL USE MATS OR TEMPORARY SAND FILL, AS DEEMED NECESSARY, TO PROTECT THE STRUCTURES. AS DIRECTED BY THE CONSTRUCTION ENGINEER, ALL FILL AND MATS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.
2. PROPOSED GROIN LENGTH: 130± FEET.

BENCH MARK MONUMENT COORDINATE AND ELEVATION DATA

DESIGNATION	NORTHING	EASTING	ELEVATION (NAVD 88)
GPS138	3515946	12138452	11.2

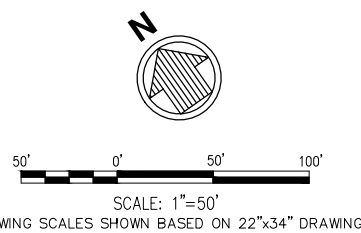






BEACH RENOURISHMENT WORK POINT TABLE		
WP#	NORTHING	EASTING
R1	3516860.9	12137310.9
R2	3516694.2	12137731.6

**LEGEND:**  
 WP# WORK POINT



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Mark	Description	Date	Appr.

**WEST OCEAN VIEW SHORELINE IMPROVEMENTS**  
 SITE PLAN - SHEET 1 OF 4

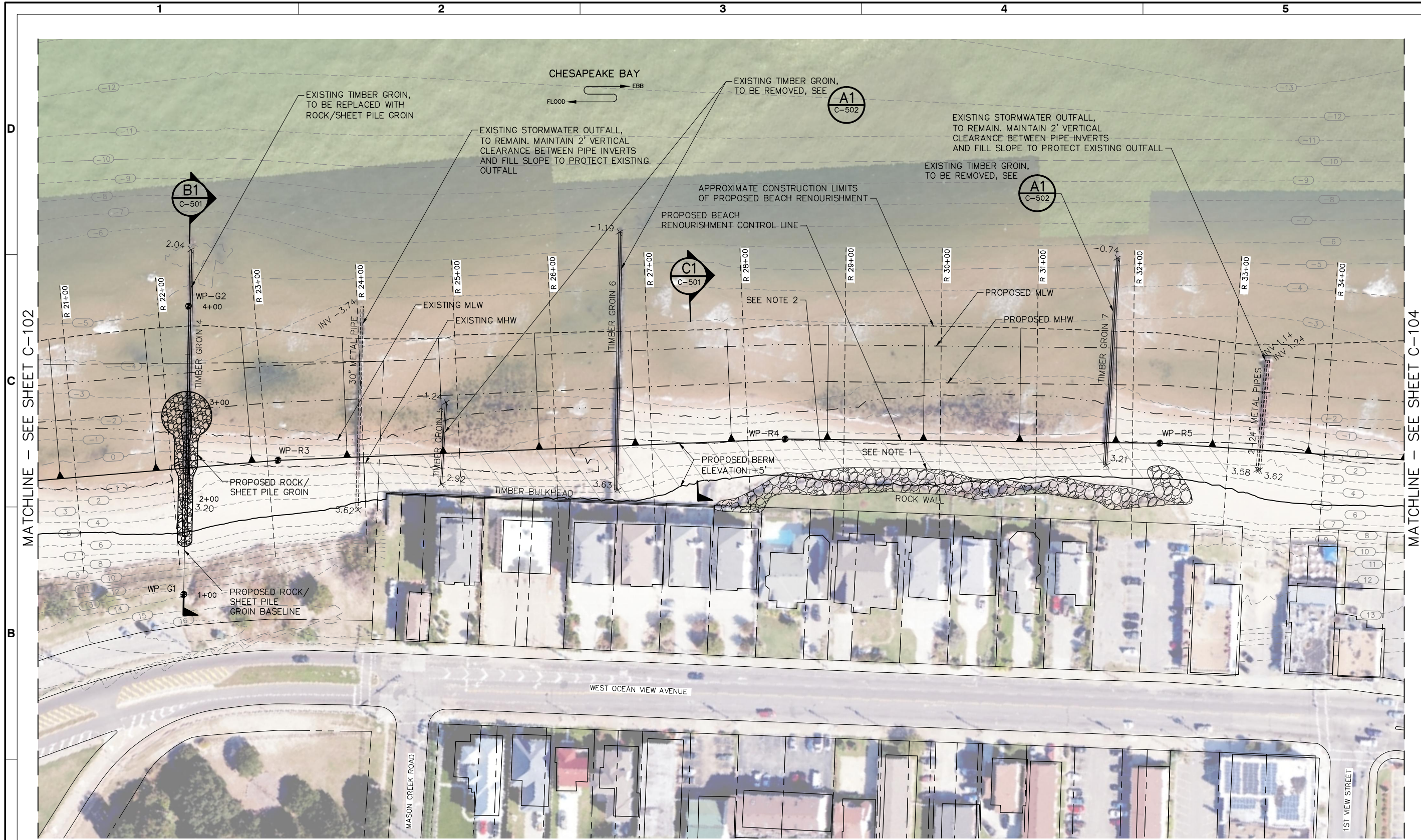
800 WORLD TRADE CENTER NORFOLK, VA 23510 757-628-8222 	Date: DEC 2012 M&N Project No.: 6998-19 Drawing code:	Rev. - Date:
	Designed by: MB Drawn by: DK Reviewed by:	Submitted by: MOFFATT & NICHOL CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS

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Sheet Reference Number:  
**C-102**  
 SHEET 4 OF 12

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MATCHLINE - SEE SHEET C-102

MATCHLINE - SEE SHEET C-104

**NOTES:**

- CONTRACTOR SHALL REPACK LOOSE STONES THAT HAVE SHIFTED SEAWARD IN EXISTING REVEMENT PRIOR TO PLACEMENT OF BEACH RENOURISHMENT SAND.
- CONTRACTOR SHALL REMOVE CONCRETE DEBRIS FROM APPROXIMATELY STATION R 24+00 TO R 33+00 PRIOR TO PLACEMENT OF BEACH RENOURISHMENT SAND.

ROCK GROIN BASELINE WORK POINT TABLE

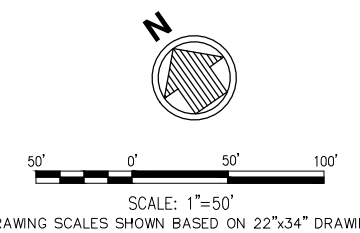
WP#	NORTHING	EASTING
G1	3516204.4	12138313.4
G2	3516447.3	12138489.5

BEACH RENOURISHMENT WORK POINT TABLE

WP#	NORTHING	EASTING
R3	3516262.6	12138473.6
R4	3515978.4	12138918.3
R5	3515751.7	12139235.0

**LEGEND:**

● WP# WORK POINT



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**WEST OCEAN VIEW SHORELINE IMPROVEMENTS**

SITE PLAN - SHEET 2 OF 4

Designed by: MB	Date: DEC 2012	Rev: -
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Submitted by: MOFFATT & NICHOL	Drawing Scale:	
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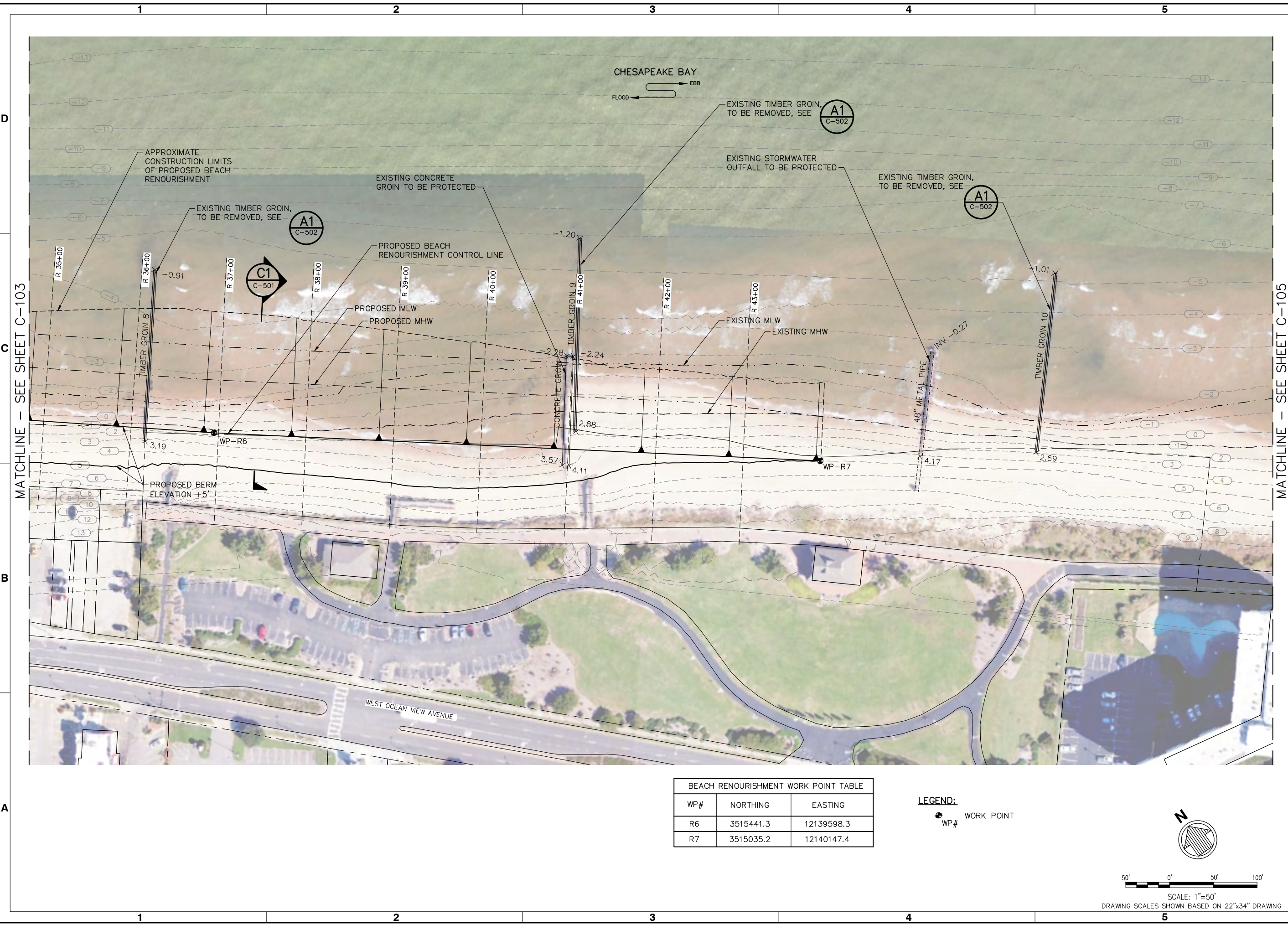
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Sheet Reference Number:  
**C-103**  
SHEET 5 OF 12

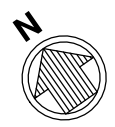




BEACH RENOURISHMENT WORK POINT TABLE

WP#	NORTHING	EASTING
R6	3515441.3	12139598.3
R7	3515035.2	12140147.4

**LEGEND:**  
 WP# WORK POINT



SCALE: 1"=50'  
 DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



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**WEST OCEAN VIEW  
 SHORELINE IMPROVEMENTS**

SITE PLAN - SHEET 3 OF 4

800 WORLD TRADE CENTER NORFOLK, VA 23510 757-628-8222 	Date: DEC 2012 M&N Project No.: 6998-19 Drawing code:	Rev: - M&N Project No.: 6998-19 Drawing code:
	Designed by: MB Drawn by: DK Reviewed by:	Submitted by: MOFFATT & NICHOL CITY OF NORFOLK DEPARTMENT OF PUBLIC WORKS

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Sheet Reference Number:  
**C-104**  
 SHEET 6 OF 12





MATCHLINE - SEE SHEET C-104

D

C

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A

1

2

3

4

5



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Description	

**WEST OCEAN VIEW SHORELINE IMPROVEMENTS**

SITE PLAN - SHEET 4 OF 4

Designed by: MB	Date: DEC 2012	Rev: -
Dwn by: DK	M&N Project No: 6998-19	
Reviewed by: -	Drawing code:	

Submitted by: MOFFATT & NICHOL	Drawing Scale: Plot scale: 1:1 (D SHEET)
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NORFOLK, VA 23510  
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Sheet Reference Number:  
**C-105**  
SHEET 7 OF 12

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**WEST OCEAN VIEW  
SHORELINE IMPROVEMENTS**

BEACH RENOURISHMENT  
CROSS SECTIONS  
SHEET 1 OF 3

Designed by: MB	Date: DEC 2012	Rev: -
Dwn by: DK	M&N Project No.: 6998-19	
Reviewed by: -	Drawing code:	
Submitted by: MOFFATT & NICHOL	Drawing Scale:	Plot scale: 1:1 (D SHEET)

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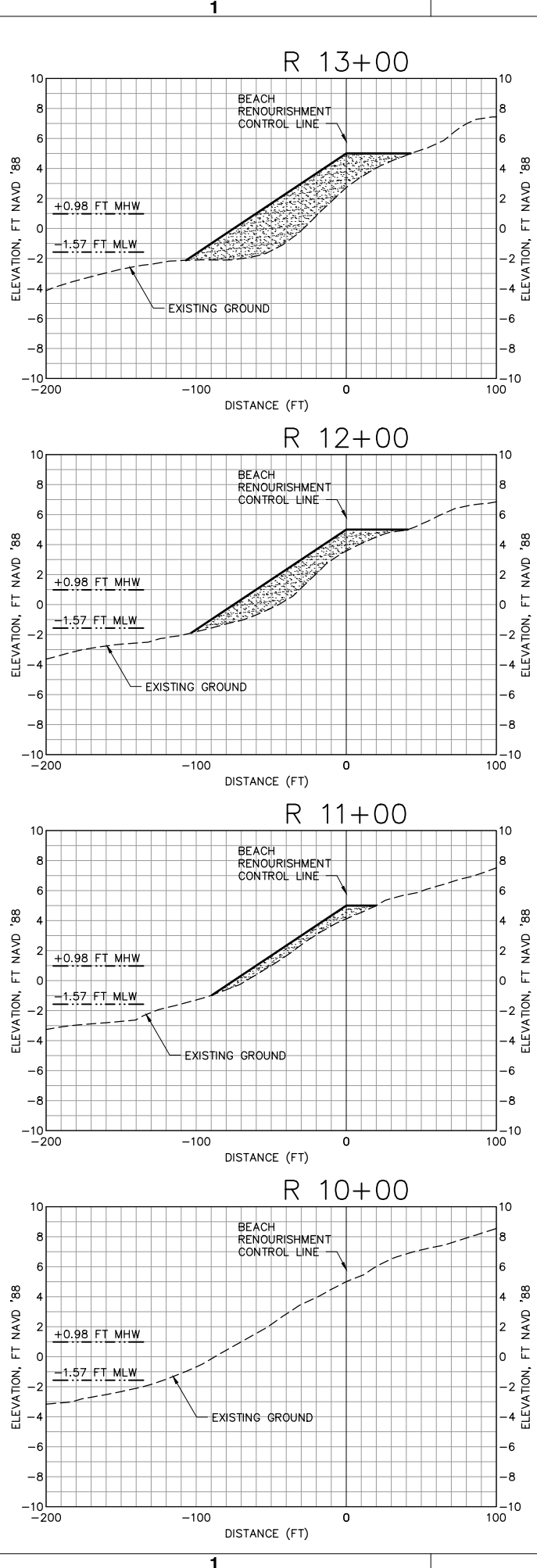
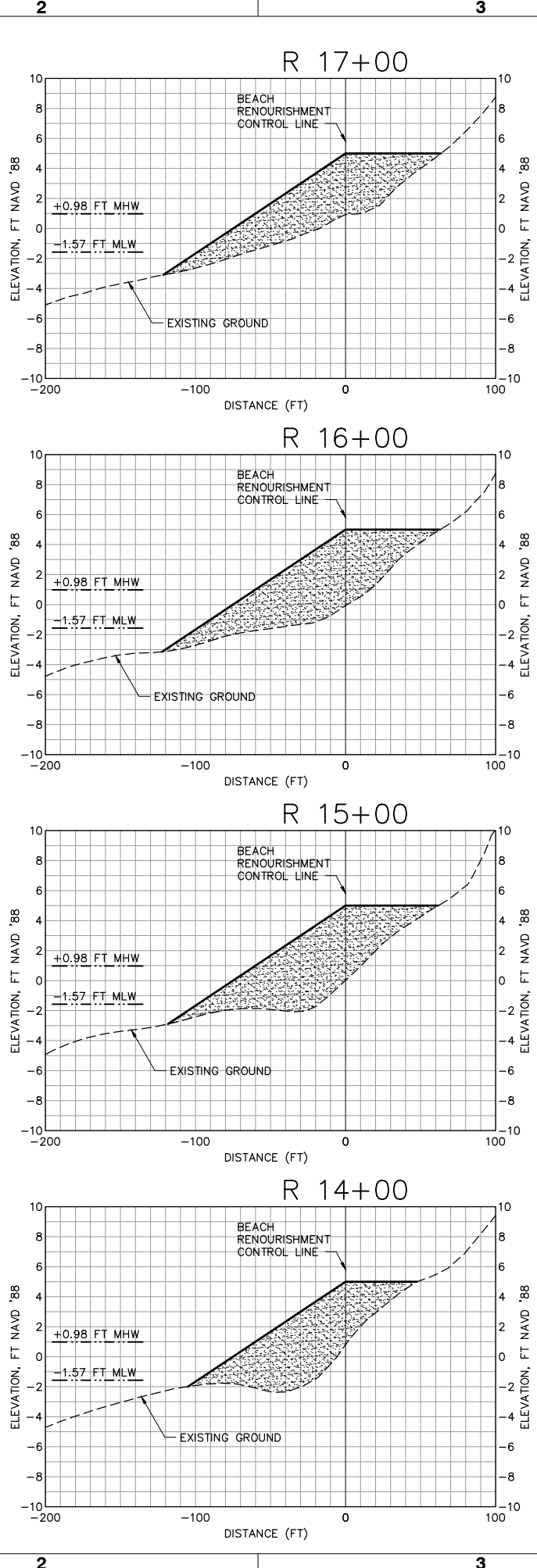
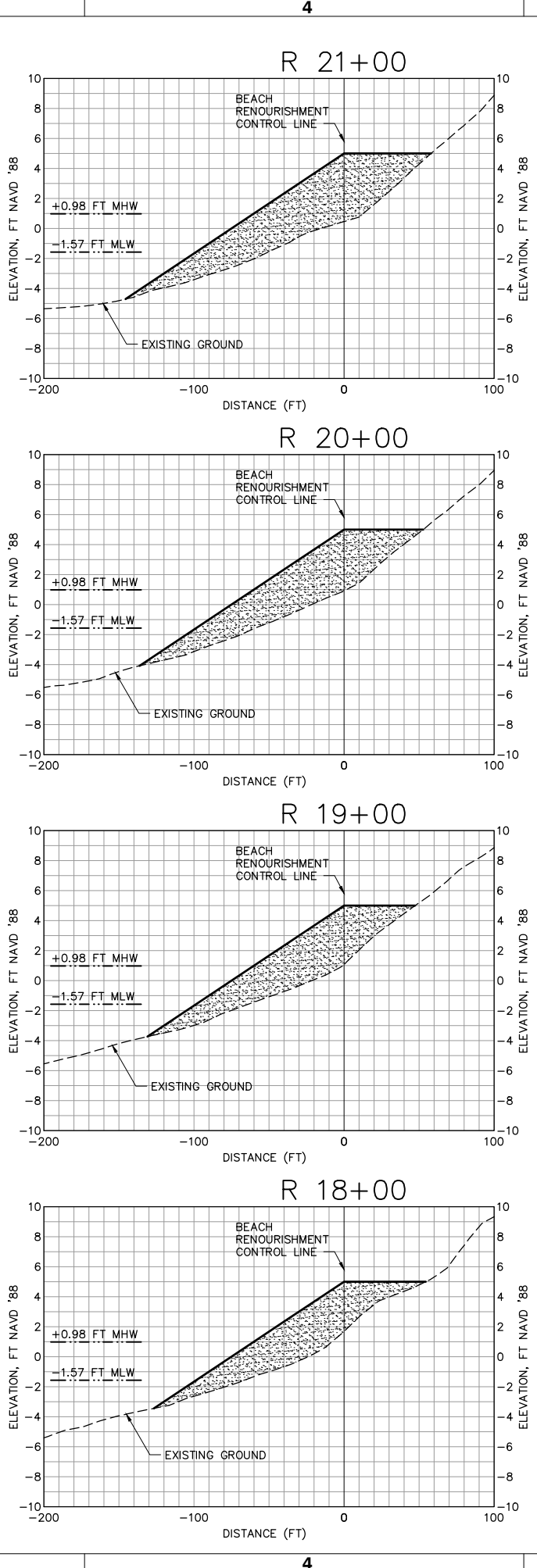
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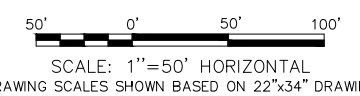
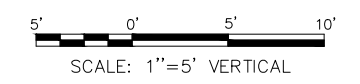
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Sheet Reference Number:  
**C-301**  
SHEET 8 OF 12

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NOTE: SEE BEACH RENOURISHMENT  
TYPICAL SECTION ON SHEET C-501  
FOR ADDITIONAL INFORMATION.



DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





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**WEST OCEAN VIEW  
SHORELINE IMPROVEMENTS**

BEACH RENOURISHMENT  
CROSS SECTIONS  
SHEET 2 OF 3

Designed by: MB	Date: DEC 2012	Rev: -
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Submitted by: MOFFATT & NICHOL	Drawing Scale:	Plot scale: 1:1 (D SHEET)

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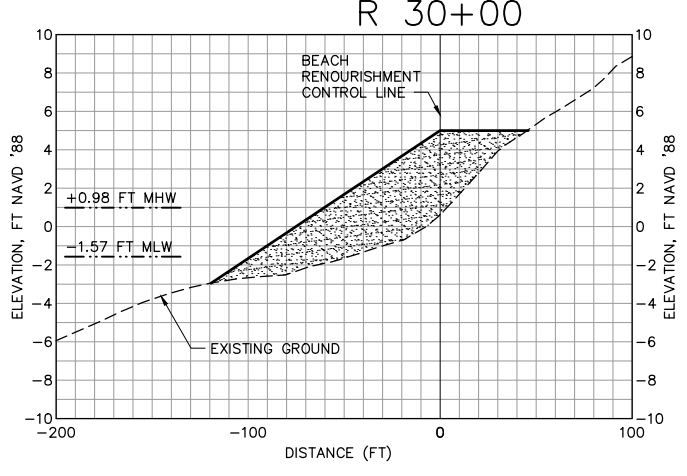
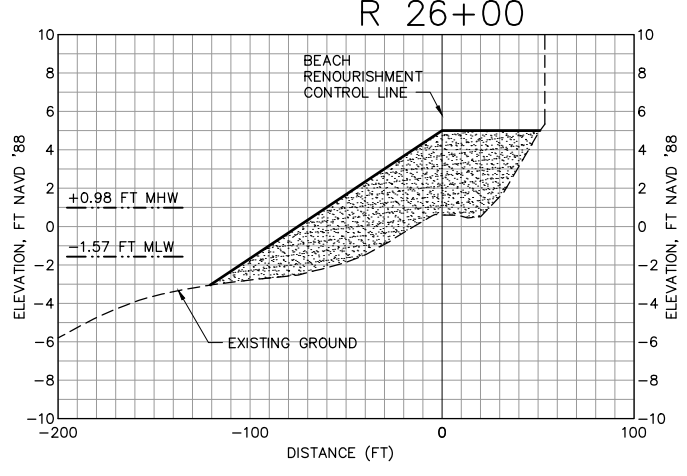
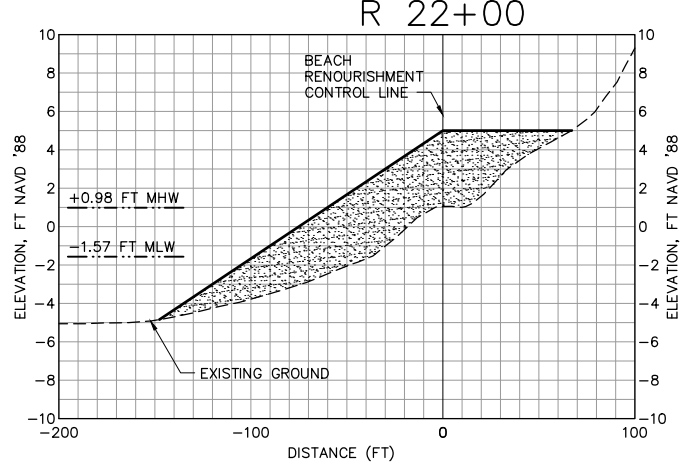
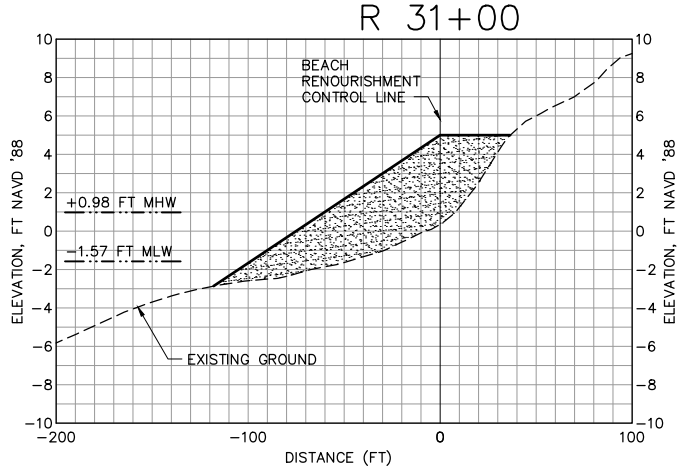
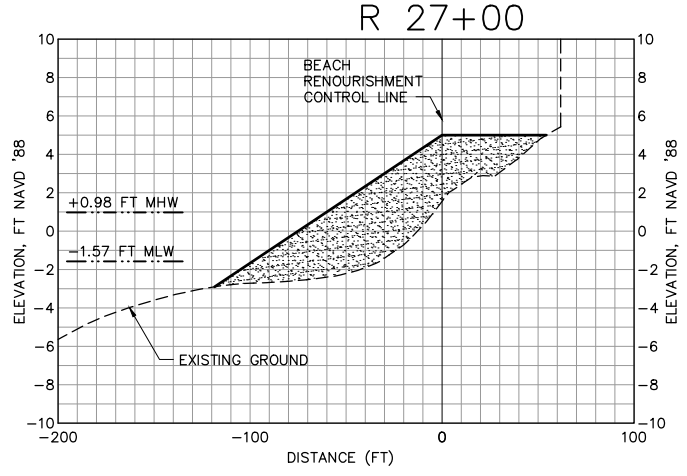
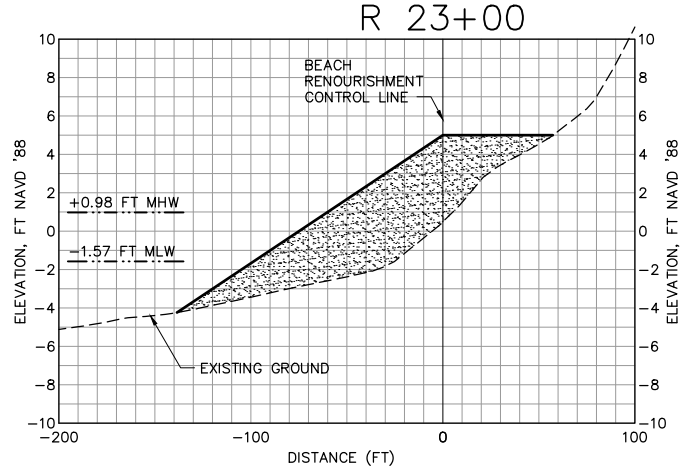
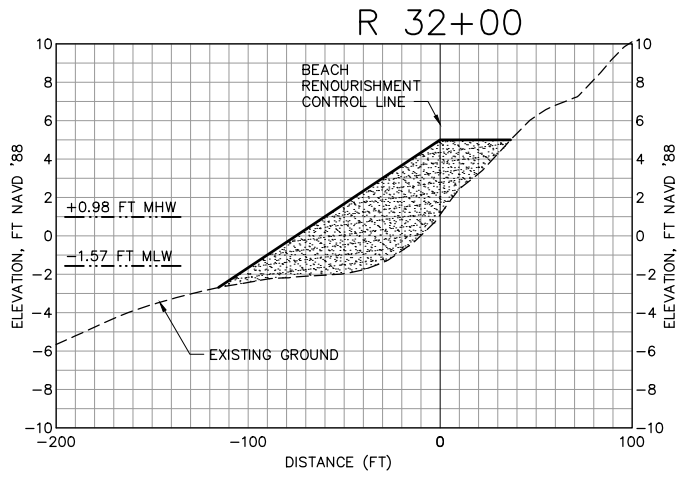
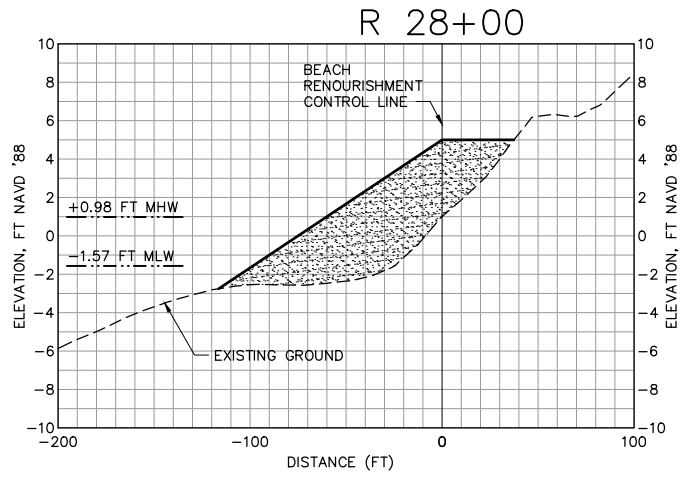
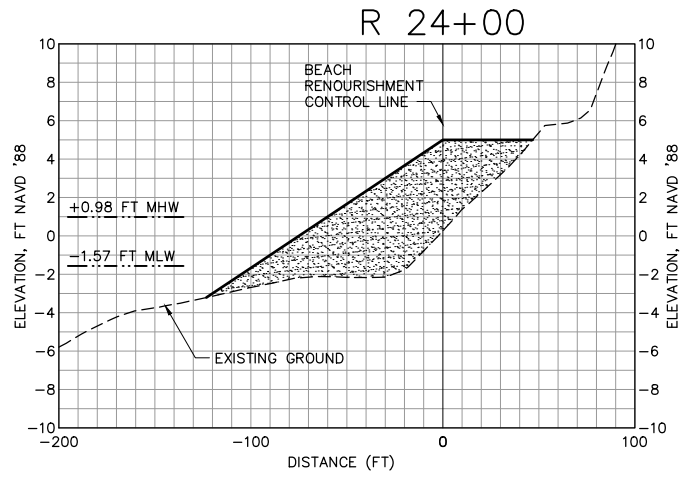
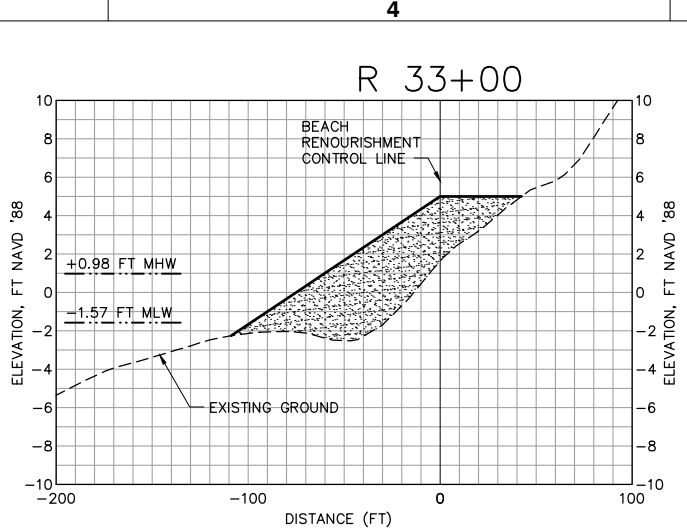
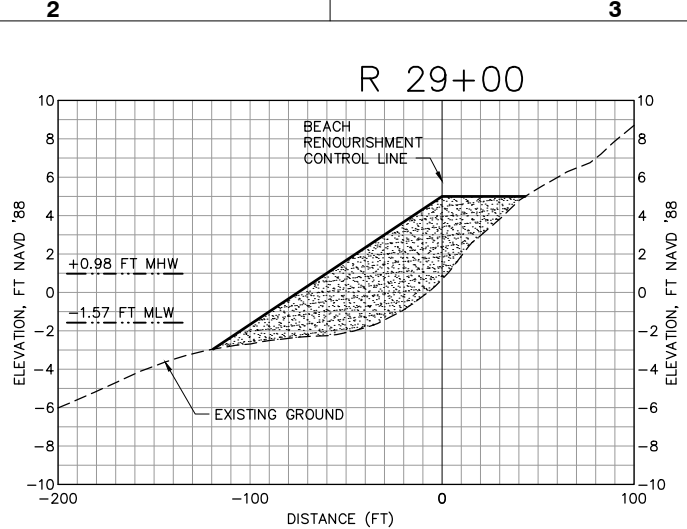
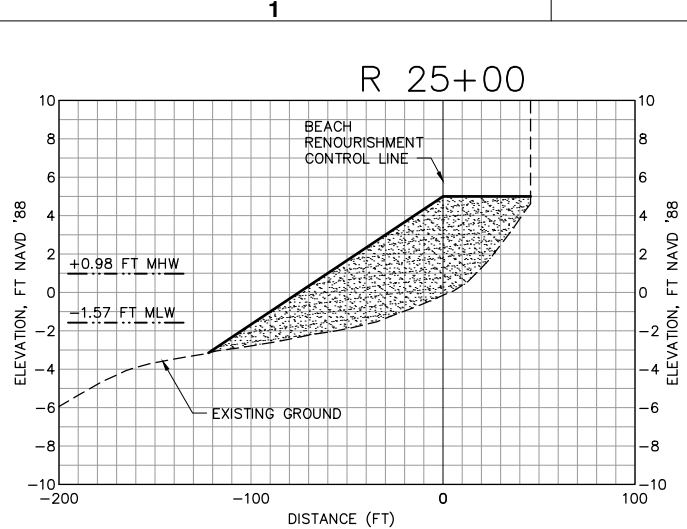


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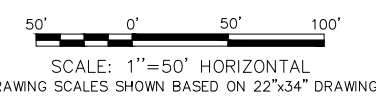
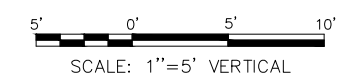
SEAL

Sheet Reference Number:  
**C-302**  
SHEET 9 OF 12

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NOTE: SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-501 FOR ADDITIONAL INFORMATION.







**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

Mark	Description	Date

**WEST OCEAN VIEW  
SHORELINE IMPROVEMENTS**

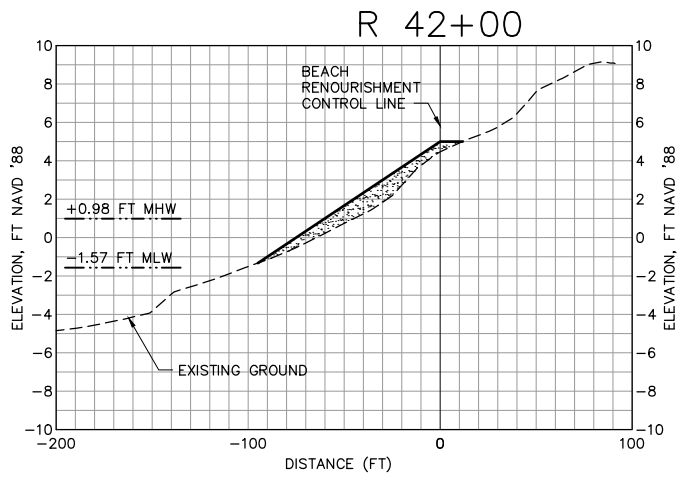
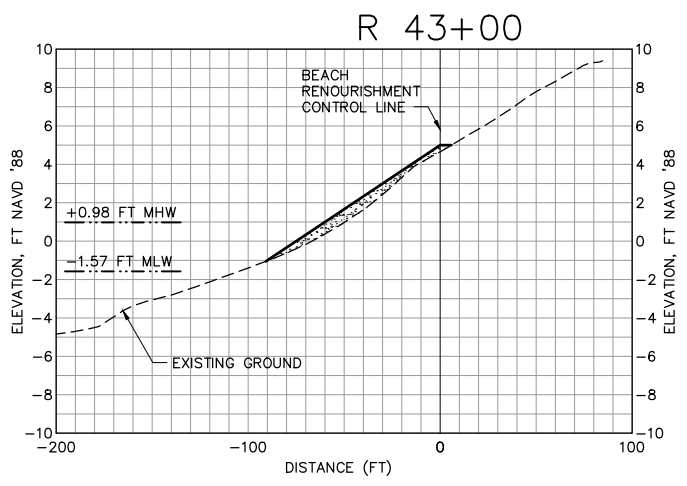
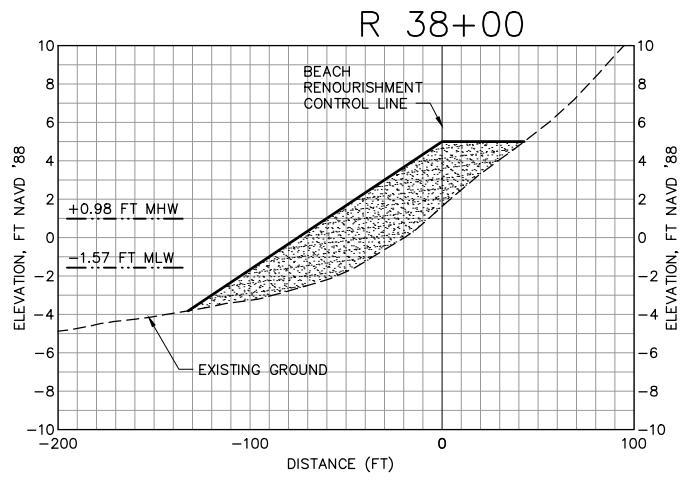
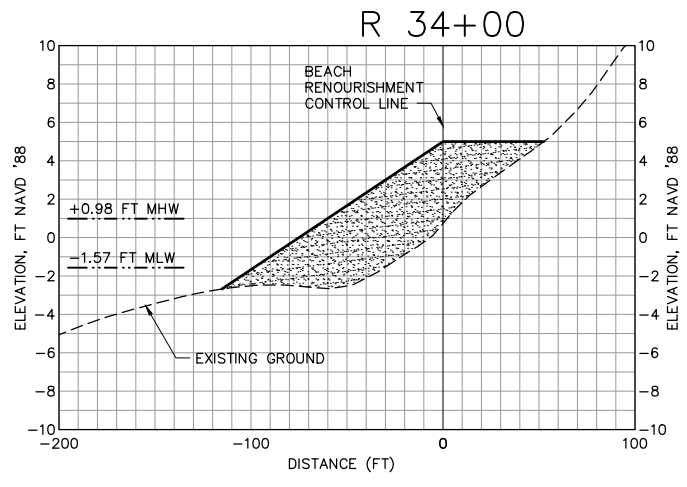
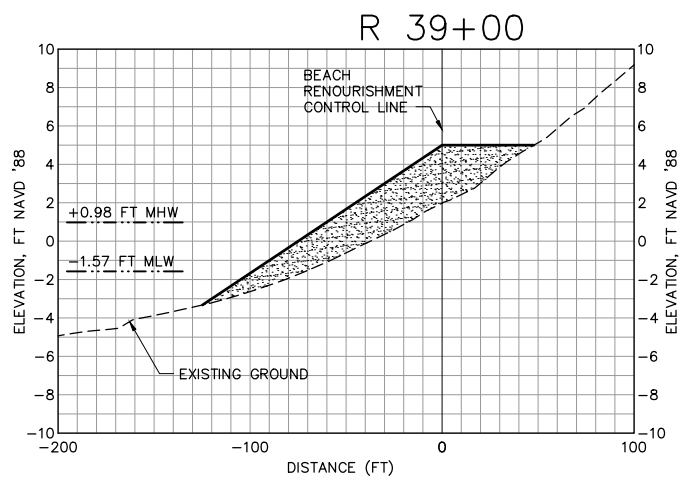
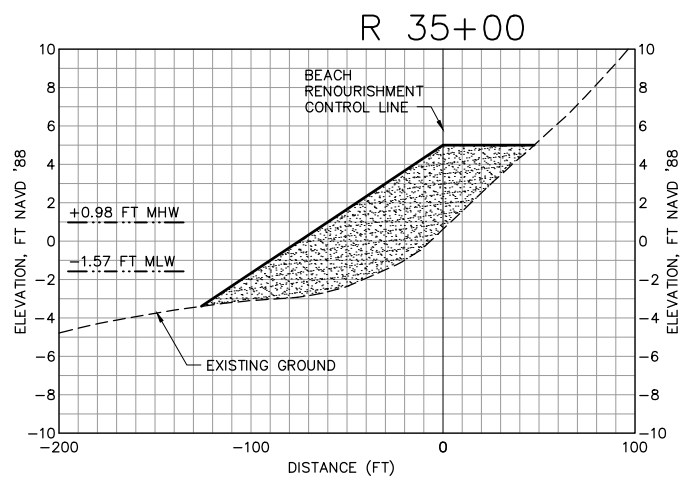
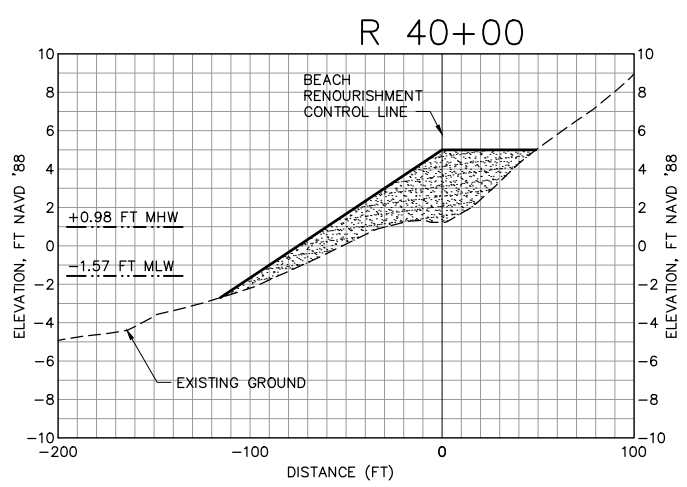
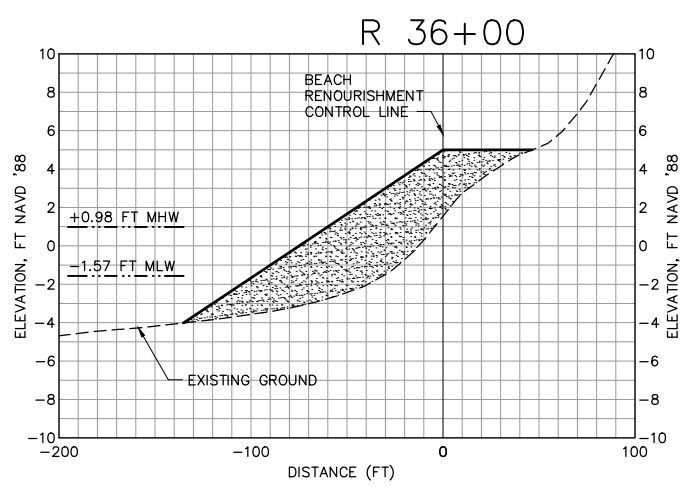
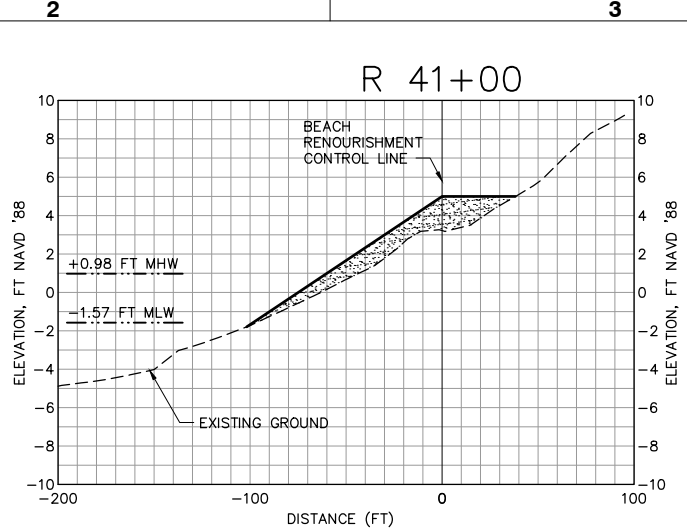
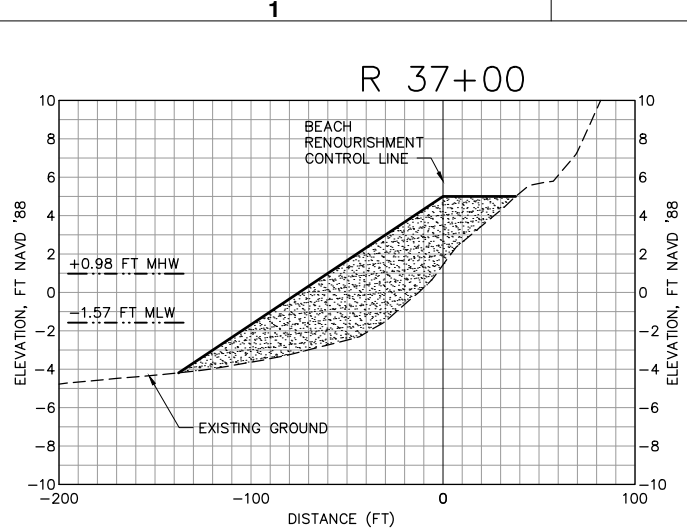
BEACH RENOURISHMENT  
CROSS SECTIONS  
SHEET 3 OF 3

Designed by: MB	Drawn by: DK	Reviewed by: -	Date: DEC 2012	Rev: -
800 WORLD TRADE CENTER NORFOLK, VA 23510 757-628-8222	Submitted by: MOFFATT & NICHOL	City of NORFOLK DEPARTMENT OF PUBLIC WORKS	M&N Project No. 6998-19	Drawing Scale: Plot scale: 1:1 (D SHEET)

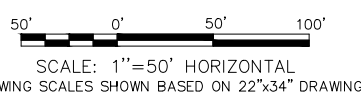
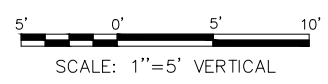
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Sheet Reference Number:  
**C-303**  
SHEET 10 OF 12

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NOTE: SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-501 FOR ADDITIONAL INFORMATION.







**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

Mark	Description	Date	Appr.

**WEST OCEAN VIEW SHORELINE IMPROVEMENTS**

TYPICAL SECTIONS

Designed by: MB	Date: DEC 2012	Rev: -
Dwn by: DK	M&N Project No: 6998-19	
Reviewed by: -	Drawing code: -	
Submitted by: MOFFATT & NICHOL	Drawing Scale: -	
	Plot scale: 1:1 (D SHEET)	

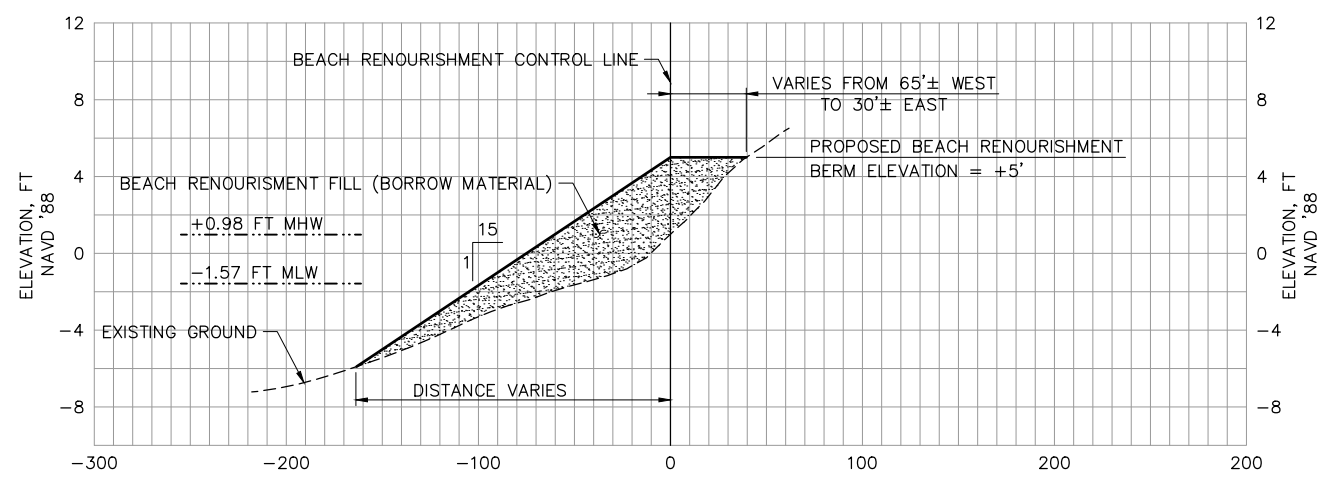
800 WORLD TRADE CENTER  
NORFOLK, VA 23510  
757-628-8222

PREPARED FOR:  
CITY OF NORFOLK DEPARTMENT  
OF PUBLIC WORKS

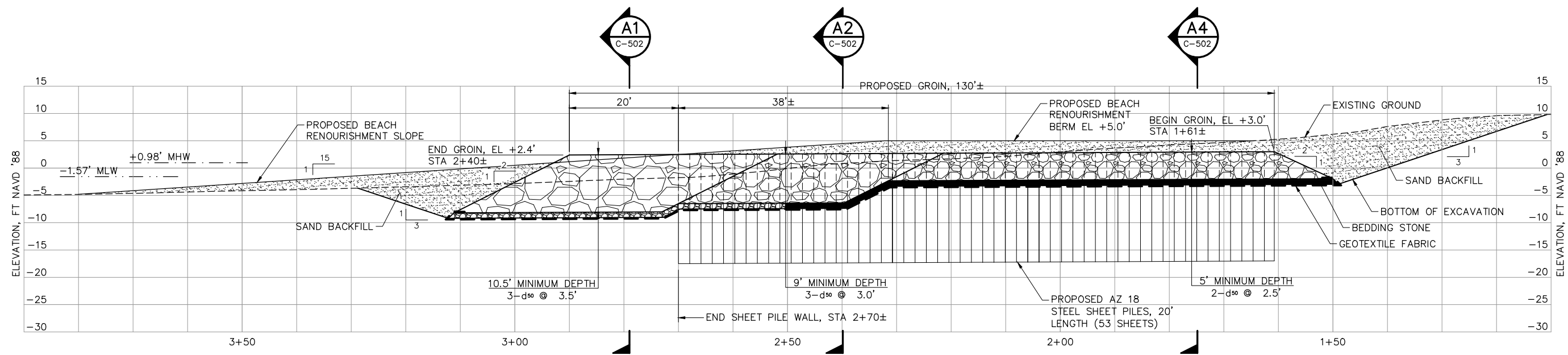
**moftatt & nichol**

SEAL

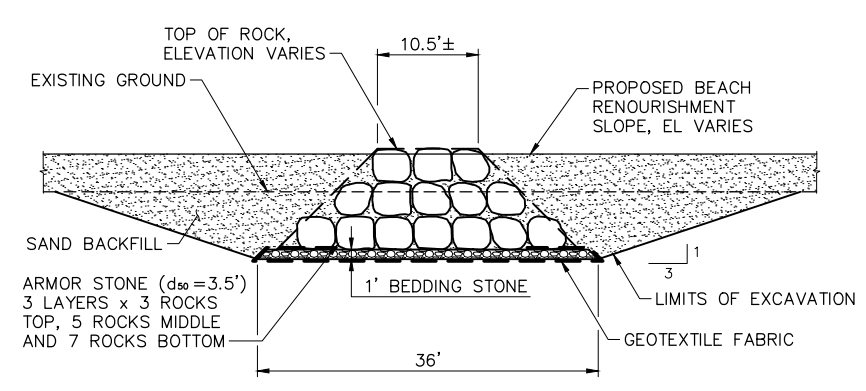
Sheet Reference Number:  
**C-501**  
SHEET 11 OF 12



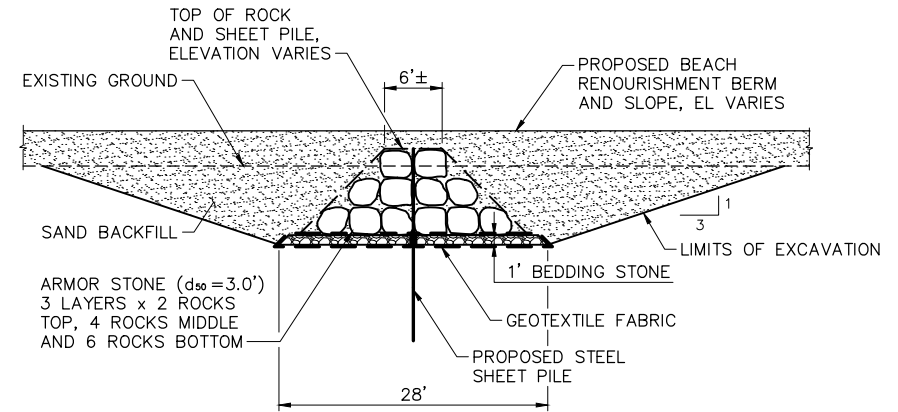
**C1 TYPICAL SECTION - BEACH RENOURISHMENT**  
C-102 SCALE: HORIZONTAL: 1"=50'  
VERTICAL: 1"=5'



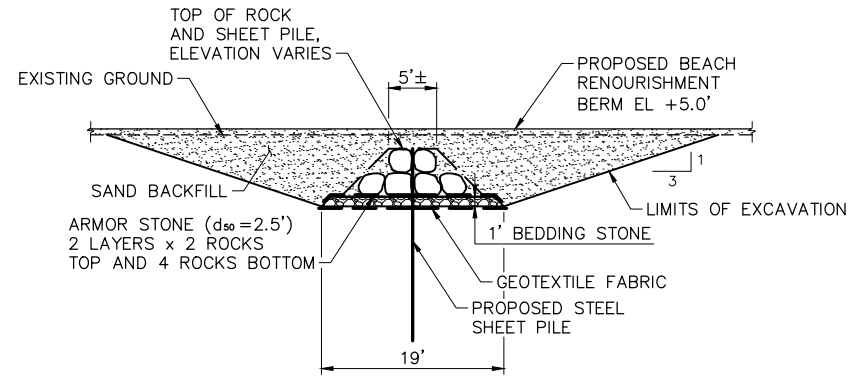
**B1 GROIN PROFILE**  
C-103 SCALE: 1"=10'



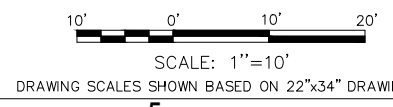
**A1 GROIN SECTION**  
C-502 SCALE: 1"=10'



**A2 GROIN SECTION**  
C-502 SCALE: 1"=10'



**A4 GROIN SECTION**  
C-502 SCALE: 1"=10'



File: P:\6998-19\CADD\ACTIVE\699819-C501.plotted: 12/19/2012 5:50 PM by KOONS, DAVE; Saved: 12/19/2012 5:01 PM by DKOONS





<b>PRELIMINARY</b> NOT TO BE USED FOR CONSTRUCTION		

**WEST OCEAN VIEW  
SHORELINE IMPROVEMENTS**

**TIMBER GROIN DEMOLITION DETAILS**

Designed by: MB	Drawn by: DK	Reviewed by: -	Submitted by: MOFFATT & NICHOL
Date: DEC. 2012	M&N Project No. 6998-19	Drawing code: -	Drawing Scale: Plot scale: 1:1 (D SHEET)

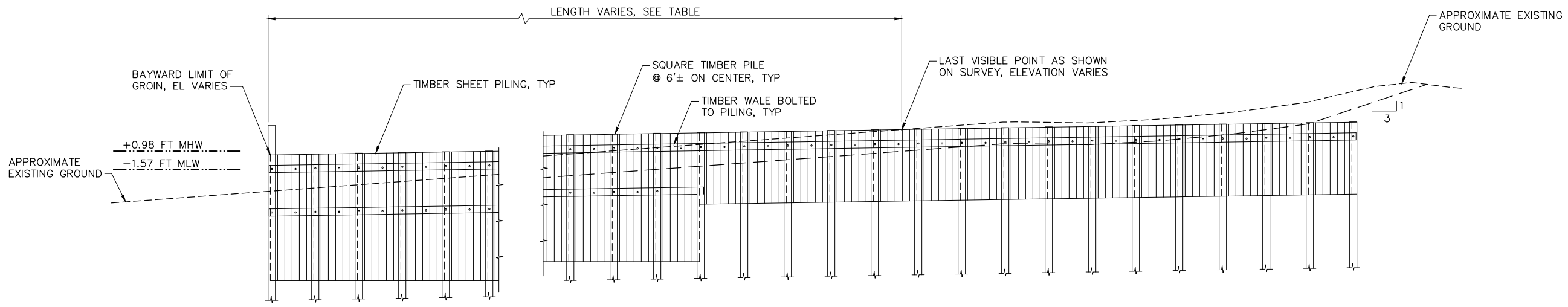
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**moffatt & nichol**

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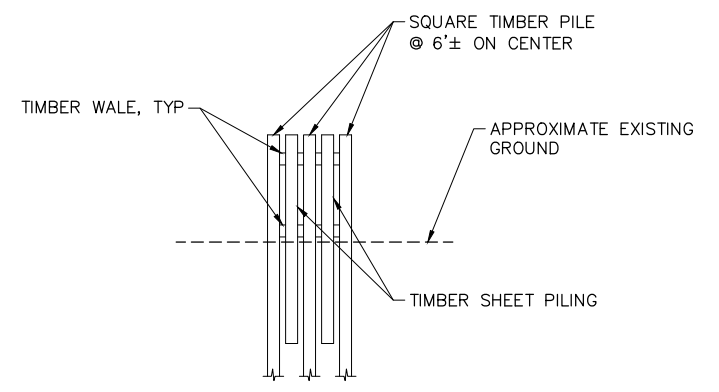
Sheet Reference Number:  
**C-502**  
SHEET 12 OF 12



ELEVATION

TIMBER GROIN #	APPROXIMATE VISIBLE LENGTH	APPROXIMATE LENGTH TO REMOVE
1	TO REMAIN	-
2	262'	275'
3	287'	287'
4	259'	259'
5	85'	275'
6	268'	275'
7	216'	275'
8	196'	275'
9	221'	256'
10	205'	237'
11	192'	206'
12	225'	225'
13	32'	202'

- NOTES:**
1. ALL TIMBER ELEMENTS AND CONNECTING HARDWARE SHALL BE REMOVED AND DISPOSED OF ACCORDING TO THE SPECIFICATIONS.
  2. TIMBER PILES AND SHEET PILES SHALL BE PULLED BY METHODS ACCORDING TO TECHNICAL SPECIFICATIONS.
  3. IF EXCAVATION IS REQUIRED TO REMOVE THE GROIN, EXCAVATED LIMITS SHALL BE BACKFILLED TO MATCH EXISTING SURROUNDING ELEVATIONS AFTER GROIN IS REMOVED.



TYPICAL SECTION

**A1** **TIMBER GROIN DEMOLITION**  
C-102 SCALE: NTS  
C-103, C-104, C-105