

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

2. AMENDMENT/MODIFICATION NO. 0003		3. EFFECTIVE DATE 8 AUGUST 2001	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. <i>(If applicable)</i>
6. ISSUED BY US ARMY ENGINEER DISTRICT, PHILADELPHIA WANAMAKER BUILDING 100 PENN SQUARE EAST PHILADELPHIA, PA 19107-3390		CODE	7. ADMINISTERED BY <i>(If other than Item 6)</i> US ARMY ENGINEER DISTRICT, PHILADELPHIA POC: JOSEPH BUJNOWSKI WANAMAKER BUILDING 100 PENN SQUARE EAST PHILADELPHIA, PA 19107-3390	
			CODE	

8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>	(✓)	9A. AMENDMENT OF SOLICITATION NO. DACW61-01-B-0014
	X	9B. DATED <i>(SEE ITEM 11)</i> 26 JUN 2001
		10A. MODIFICATION OF CONTRACTS/ORDER NO.
		10B. DATED <i>(SEE ITEM 13)</i>
CODE	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
BREAKWATER INSTALLATION SECTION 227 DEMONSTRATION PROJECT, CAPE MAY POINT, CAPE MAY, NJ

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

THIS AMENDMENT DOES NOT EXTEND THE BID OPENING DATE OF 21 AUGUST 2001 AT 11:00 A.M.

(CONTINUED)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>		16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i>	
15B. CONTRACTOR/OFFEROR <i>(Signature of person authorized to sign)</i>	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY <i>(Signature of Contracting Officer)</i>	16C. DATE SIGNED

SF 30 CONTINUATION SHEET

14. DESCRIPTION OF AMENDMENT:

a. SOLICITATION, OFFER, AND AWARD (SF1442):

1. Page 00010-1 - Paragraph 11: Please change the contract duration from "120" calendar days to "105" calendar days.

2. Please delete page 00010-3 in its entirety and replace it with the page of the same page number, annotated Amendment No. 0003, attached hereto.

b. Section 00700 CONTRACT CLAUSES:

1. Please delete contract clause DFAR 52.236-7007 entitled "Additive or Deductive Items (DEC 1991)" in its entirety.

2. Please insert contract clause FAR 52.217-5 entitled "Evaluation of Options," annotated Amendment No. 0003, attached hereto.

3. Please insert contract clause FAR 52.245-2 entitled "Government Property (Fixed Price Contracts)," annotated Amendment No. 0003, attached hereto.

4. Please insert contract clause FAR 52.245-3 entitled "Identification of Government-Furnished Property," annotated Amendment No. 0003, attached hereto.

c. SPECIAL CONTRACT REQUIREMENTS: Section 00800 SPECIAL CLAUSES - Please delete Special Clause SC-1 entitled "COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984) in its entirety and replace it with the following:

"SC-1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (1) commence work under this contract, on the Base Bid work, within 10 calendar days after the Contractor receives the notice to proceed for the Base Bid work, (2) prosecute the work diligently, and (3) complete the Base Bid work ready for use not later than 105 calendar days after the Contractor receives the notice to proceed for the Base Bid work. The time stated for completion shall include final cleanup of the premises. The Contracting Officer has the right to award Option No. 1 up to 30 days after the Contractor receives the notice to proceed for the base contract. The Contracting Officer has the right to award Option No. 2 up to 75 days after the Contractor receives the notice to proceed for the base contract. The Contract will be extended 120 days if Option 1 is awarded. The Contract will be extended 90 days if Option 2 is awarded. (CENAP)"

d. TECHNICAL SPECIFICATIONS:

1. Section 01010 SUMMARY OF WORK: Please delete this section in its entirety and replace it with the section of the same title and section number, annotated Amendment No. 0003, attached hereto.

2. Section 01300 SUBMITTAL PROCEDURES: Please delete pages 11 and 12, in their entirety, and replace them with the revised pages of the same page numbers, annotated Amendment No. 0003, attached hereto.

3. Section 02215 GEOTEXTILE SCOUR APRON: Paragraph 3.4, entitled MEASUREMENT AND PAYMENT - Please change the 2nd sentence to read:

"Payment for this work will be made at the contract unit price for Base Bid Item No. 2, "Cell 5: Provide and Place Geotextile Scour Apron with Integral Toe Tube"."

4. Section 03480 BREAKWATER INSTALLATIONS: Please delete this section in its entirety and replace it with the amended section of the same title and section number, annotated Amendment No. 0003, attached hereto.

e. Please indicate receipt of this amendment on Standard Form 1442 (SOLICITATION, OFFER, AND AWARD) as Amendment No. 0003. Failure to acknowledge all amendments may be cause for rejection of the bid.

THIS PAGE HAS BEEN LEFT INTENTIONALLY BLANK

BID SCHEDULE
 (To be attached to SF 1442)

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<u>BASE BID:</u>					
1.	Cell 5: Mobilization/Demobilization for Placement of Beachsaver Reef Units	1	JOB	LS	\$
2.	Cell 5: Provide and Place Geotextile Scour Apron with Integral Toe Tube	4100	SY	\$	\$
3.	Cell 5: Transport and Place Government-Provided Concrete Beachsaver Reef Units	63	EA	\$	\$
4.	Cell 5: Provide and Place Capstone And Graded Riprap	29	TON	\$	\$
TOTAL ESTIMATED BASE BID AMOUNT:					\$ _____
<u>OPTION 1:</u>					
5.	Purchase and Deliver Concrete Double-Tee Spans	630	LF	\$	\$
TOTAL ESTIMATED OPTION 1 AMOUNT:					\$ _____
<u>OPTION 2:</u>					
6.	Cell 6: Mobilization/Demobilization for Placement of Concrete Double- Tee Spans	1	JOB	LS	\$
7.	Cell 6: Transport and Place Concrete Double-Tee Spans	630	LF	\$	\$
8.	Cell 6: Provide and Place Capstone And Graded Riprap	20	TON	\$	\$
TOTAL ESTIMATED OPTION 2 AMOUNT:					\$ _____
TOTAL ESTIMATED BASE BID AND OPTIONS 1 AND 2 AMOUNT:					\$ _____

THIS PAGE HAS BEEN LEFT INTENTIONALLY BLANK

52.217-5 -- Evaluation of Options.

Evaluation of Options (Jul 1990)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

52.245-2 -- Government Property (Fixed-Price Contracts).

Government Property (Fixed-Price Contracts) (Dec 1989)

(a) Government-furnished property.

(1) The Government shall deliver to the Contractor, for use in connection with and under the terms of this contract, the Government-furnished property described in the Schedule or specifications together with any related data and information that the Contractor may request and is reasonably required for the intended use of the property (hereinafter referred to as "Government-furnished property").

(2) The delivery or performance dates for this contract are based upon the expectation that Government-furnished property suitable for use (except for property furnished "as is") will be delivered to the Contractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the Contractor to meet the contract's delivery or performance dates.

(3) If Government-furnished property is received by the Contractor in a condition not suitable for the intended use, the Contractor shall, upon receipt of it, notify the Contracting Officer, detailing the facts, and, as directed by the Contracting Officer and at Government expense, either repair, modify, return, or otherwise dispose of the property. After completing the directed action and upon written request of the Contractor, the Contracting Officer shall make an equitable adjustment as provided in paragraph (h) of this clause.

(4) If Government-furnished property is not delivered to the Contractor by the required time, the Contracting Officer shall,

upon the Contractor's timely written request, make a determination of the delay, if any, caused the Contractor and shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(b) Changes in Government-furnished property.

(1) The Contracting Officer may, by written notice,

(i) decrease the Government-furnished property provided or to be provided under this contract, or

(ii) substitute other Government-furnished property for the property to be provided by the Government, or to be acquired by the Contractor for the Government, under this contract.

The Contractor shall promptly take such action as the Contracting Officer may direct regarding the removal, shipment, or disposal of the property covered by such notice.

(2) Upon the Contractor's written request, the Contracting Officer shall make an equitable adjustment to the contract in accordance with paragraph (h) of this clause, if the Government has agreed in the Schedule to make the property available for performing this contract and there is any --

(i) Decrease or substitution in this property pursuant to subparagraph (b)(1) of this clause; or

(ii) Withdrawal of authority to use this property, if provided under any other contract or lease.

(c) Title in Government property.

(1) The Government shall retain title to all Government-furnished property.

(2) All Government-furnished property and all property acquired by the Contractor, title to which vests in the Government under this paragraph (collectively referred to as "Government property"), are subject to the provisions of this clause. However, special tooling accountable to this contract is subject to the provisions of the Special Tooling clause and is not subject to the provisions of this clause. Title to Government property shall not be affected by its

incorporation into or attachment to any property not owned by the Government, nor shall Government property become a fixture or lose its identity as personal property by being attached to any real property.

(3) Title to each item of facilities and special test equipment acquired by the Contractor for the Government under this contract shall pass to and vest in the Government when its use in performing this contract commences or when the Government has paid for it, whichever is earlier, whether or not title previously vested in the Government.

(4) If this contract contains a provision directing the Contractor to purchase material for which the Government will reimburse the Contractor as a direct item of cost under this contract --

(i) Title to material purchased from a vendor shall pass to and vest in the Government upon the vendor's delivery of such material; and

(ii) Title to all other material shall pass to and vest in the Government upon --

(A) Issuance of the material for use in contract performance;

(B) Commencement of processing of the material or its use in contract performance; or

(C) Reimbursement of the cost of the material by the Government, whichever occurs first.

(d) *Use of Government property.* The Government property shall be used only for performing this contract, unless otherwise provided in this contract or approved by the Contracting Officer.

(e) *Property administration.*

(1) The Contractor shall be responsible and accountable for all Government property provided under this contract and shall comply with Federal Acquisition Regulation (FAR) Subpart 45.5, as in effect on the date of this contract.

(2) The Contractor shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of

Government property in accordance with sound industrial practice and the applicable provisions of Subpart 45.5 of the FAR.

(3) If damage occurs to Government property, the risk of which has been assumed by the Government under this contract, the Government shall replace the items or the Contractor shall make such repairs as the Government directs. However, if the Contractor cannot effect such repairs within the time required, the Contractor shall dispose of the property as directed by the Contracting Officer. When any property for which the Government is responsible is replaced or repaired, the Contracting Officer shall make an equitable adjustment in accordance with paragraph (h) of this clause.

(4) The Contractor represents that the contract price does not include any amount for repairs or replacement for which the Government is responsible. Repair or replacement of property for which the Contractor is responsible shall be accomplished by the Contractor at its own expense.

(f) *Access.* The Government and all its designees shall have access at all reasonable times to the premises in which any Government property is located for the purpose of inspecting the Government property.

(g) *Risk of loss.* Unless otherwise provided in this contract, the Contractor assumes the risk of, and shall be responsible for, any loss or destruction of, or damage to, Government property upon its delivery to the Contractor or upon passage of title to the Government under paragraph (c) of this clause. However, the Contractor is not responsible for reasonable wear and tear to Government property or for Government property properly consumed in performing this contract.

(h) *Equitable adjustment.* When this clause specifies an equitable adjustment, it shall be made to any affected contract provision in accordance with the procedures of the Changes clause. When appropriate, the Contracting Officer may initiate an equitable adjustment in favor of the Government. The right to an equitable adjustment shall be the Contractor's exclusive remedy. The Government shall not be liable to suit for breach of contract for --

(1) Any delay in delivery of Government-furnished property;

(2) Delivery of Government-furnished property in a condition not suitable for its intended use;

(3) A decrease in or substitution of Government-furnished property; or

(4) Failure to repair or replace Government property for which the Government is responsible.

(i) *Final accounting and disposition of Government property.* Upon completing this contract, or at such earlier dates as may be fixed by the Contracting Officer, the Contractor shall submit, in a form acceptable to the Contracting Officer, inventory schedules covering all items of Government property (including any resulting scrap) not consumed in performing this contract or delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as the Contracting Officer directs.

(j) *Abandonment and restoration of Contractor's premises.* Unless otherwise provided herein, the Government --

(1) May abandon any Government property in place, at which time all obligations of the Government regarding such abandoned property shall cease; and

(2) Has no obligation to restore or rehabilitate the Contractor's premises under any circumstances (e.g., abandonment, disposition upon completion of need, or upon contract completion). However, if the Government-furnished property (listed in the Schedule or specifications) is withdrawn or is unsuitable for the intended use, or if other Government property is substituted, then the equitable adjustment under paragraph (h) of this clause may properly include restoration or rehabilitation costs.

(k) *Communications.* All communications under this clause shall be in writing.

(l) *Overseas contracts.* If this contract is to be performed outside of the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

(End of Clause)

52.245-3 -- Identification of Government-Furnished Property.

Identification of Government-Furnished Property (Apr 1984)

(a) The Government will furnish to the Contractor the property identified in the Schedule to be incorporated or installed into the work or used in performing the contract. The listed property will be furnished f.o.b. railroad cars at the place specified in the contract Schedule or f.o.b. truck at the project site. The Contractor is required to accept delivery, pay any demurrage or detention charges, and unload and transport the property to the job site at its own expense. When the property is delivered, the Contractor shall verify its quantity and condition and acknowledge receipt in writing to the Contracting Officer. The Contractor shall also report in writing to the Contracting Officer within 24 hours of delivery any damage to or shortage of the property as received. All such property shall be installed or incorporated into the work at the expense of the Contractor, unless otherwise indicated in this contract.

(b) Each item of property to be furnished under this clause shall be identified in the Schedule by quantity, item, and description.

(End of Clause)

SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.1 SCOPE

The contract work consists of placing two types of concrete breakwaters in two adjacent areas between two sets of jetties in Cape May Point, Cape May County, New Jersey.

1.2 DESCRIPTION OF BASE BID WORK

The base bid work includes, but is not limited to, the Contractor placing Government-provided, concrete Beachsaver Reef units, in Cell 5, at the approximate elevation of -9.0 ft NAVD88. The base bid work also includes placing these units on a geotextile scour apron consisting of a geotextile apron with integral toe tube. Diving and pre- and post-construction surveying services shall be required to determine and maintain the alignment of the Beachsaver Reef units, to confirm their proper placement, and to confirm proper placement of the geotextile scour apron. Capstone and riprap shall be placed at the ends of the units at the juncture with the existing jetties.

1.3 DESCRIPTION OF OPTION WORK

1.3.1 Option 1

Option 1 work includes the purchase of concrete double-tee spans and their delivery to a location in Cape May Point, Cape May County, New Jersey.

1.3.2 Option 2

Option 2 work includes, but is not limited to, the Contractor placing concrete double-tee spans, in Cell 6, so to be aligned with the Reef units in Cell 5 (approximately -11.0 ft NAVD88). Diving and pre- and post-construction surveying services shall be required to determine and maintain the alignment of the double-tee spans and to confirm their proper placement. Capstone and riprap shall be placed at the ends of the spans at the juncture with the existing jetties.

1.4 GOVERNMENT-PROVIDED MATERIALS

The Government will provide concrete Beachsaver Reefs units. These units are currently located at a site on Sunset Boulevard in Cape May Point. The Contractor shall transport these units from that storage location to the work site for installation.

1.5 WORK RESTRICTIONS

The placement of the concrete Beachsaver Reefs and double-tees shall be done from the water only.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

THIS PAGE HAS BEEN LEFT INTENTIONALLY BLANK

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION		CONTRACTOR																
Breakwater Installations, Demonstration Project, Section 227		CONTRACTOR SCHEDULE DATES		CONTRACTOR ACTION		DATE FWD TO APPR AUTH/		DATE FWD TO OTHER REVIEWER		DATE FWD TO APPR AUTH		DATE FWD TO OTHER REVIEWER		DATE FWD TO APPR AUTH				
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	G O V T CLASSIFICATION	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE FWD FROM OTH REVIEWER	DATE OF ACTION	DATE FWD FROM APPR AUTH	DATE FWD TO OTHER REVIEWER	DATE FWD FROM APPR AUTH	REMARKS
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	
	01400		SD-01 Preconstruction Submittals															
			Quality Control Plan		G COR													
			Qualifications		G COR													
			SD-06 Test Reports															
			Daily CQC Report		G COR													
			Preparatory, Initial, and Final Phase Meeting Minutes		G COR													
			SD-07 Certificates															
			Changes to Quality Control Plan		G COR													
	01430		SD-07 Certificates															
			Environmental Protection Plan		G COR													
	01500		SD-01 Preconstruction Submittals															
			Traffic Control Plan		G COR													
	01700		SD-02 Shop Drawings															
			As-Built Prints		G CO													
	02215		SD-01 Preconstruction Submittals															
			Work Plan for Placement of Geotextile Scour Apron		G DO													
			SD-05 Design Data															
			Concrete		G COR													
			SD-07 Certificates															
			Geotextile		G DO													
			SD-04 Samples															
			Geotextile		G DO													
	03480		SD-02 Shop Drawings															
			Double-TEE Spans		G DO													

SECTION 03480

BREAKWATER INSTALLATIONS

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all labor, materials, plant and equipment and performing all operations required for placing two types of concrete breakwaters - Beachsaver Reef units and double-tee spans - in two adjacent areas, between two sets of jetties, in Cape May Point, New Jersey.

1.2 APPLICABLE PUBLICATION

The following publications form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 185	(1997) Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
ASTM A 416/A 416M	(1996) Steel Strand, Uncoated Seven-Wire for Prestressed Concrete
ASTM A 615/A 615M	(1996a) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM C 33	(1999a ^{el}) Concrete Aggregates
ASTM C 127	(1988) Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate
ASTM C 131	(1989) Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion in the Los Angeles Machine
ASTM C 150	(1999) Portland Cement
ASTM C 295	(1990) Standard Guide for Petrographic Examination of Aggregate for Concrete
CRD-C-144	(1992) Standard Test Method for Resistance of Rock to Freezing and Thawing

CORPS OF ENGINEERS (COE)

EM 385-1-1	(Sep 1996) Safety and Health Requirements Manual
------------	--

1.3 SITE CONDITIONS

Bidders are expected to examine the site of the work in accordance with

Contract Clause: SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK to determine the conditions affecting their operations. The conditions at the work site require that a lifesaving skiff be manned and immediately available when working on water. All safety equipment shall be in accordance with the requirements of EM 385-1-1.

1.4 ACCESS BY WATER

The concrete breakwaters shall be placed from the water only. There shall be no utilization of the beach area except for support services, i.e. surveys.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals having no designation are for information only. The following shall be submitted in accordance with Section 01300 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Double-Tee Spans; G, DO.

Drawings of precast concrete double-tee spans including reinforcement and lifting inserts and devices. Shop drawings shall be signed and sealed by a licensed, Professional Engineer.

SD-05 Design Data

Design Calculations; G, DO.

Precast concrete double-tee spans design calculations. Design calculations shall be signed and sealed by a licensed, Professional Engineer.

SD-07 Certificates

Work Plan; G, DO.

The Contractor shall submit to the Contracting Officer for approval prior to the start of work his plan for placing the concrete breakwaters in the approximate locations indicated on the contract drawings. The plan shall include the handling, transportation, and storage of the Breakwater Reefs, the double-tees, the **capstone and** riprap, and the geotextile scour apron to the project site. The Contractor shall include in this plan the details of the work methods, the personnel, and the equipment to be utilized in placing the Beachsaver Reef units, the double-tee spans, and **capstone and** riprap. The Contractor shall include in his workplan, the personnel, equipment, and methods for placing the geotextile scour apron and for filling the integral toe tube. Also included, shall be plans for diving to confirm the proper placement of the scour apron; the placement and interlocking of the units; and, the placement of the **capstone and** riprap.

Diving Report; G, DO.

The Contractor shall submit a diving report indicating the proper or improper placement of the Beachsaver Reef units and double-tee

spans, the riprap, and the geotextile scour apron. The report shall describe the connections between each of the Beachsaver Reef units and the distance between each of the double-tee spans. The report shall also indicate the distance between the ends of the Beachsaver Reef units and the double-tee spans, and, the toe stone of the existing jetties. The report shall refer to each breakwater unit and double-tee span by their assigned number.

Concrete Double-Tees; G, DO.

Statement signed by an official authorized to certify on behalf of the supplier of the concrete double-tees, attesting that they meet the specified requirements. The statement must be dated after the award of the contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements which are being certified.

Sources for **Capstone and Riprap**; G, DO. Gradation Curves; G, DO.

The Contractor shall submit to the Contracting Officer for approval, prior to delivery, his proposed source for the **capstone and riprap**. The test data specified herein for those sources shall be submitted. In the event such data is unavailable, the Contractor shall procure the services of an industry- recognized testing laboratory to perform the required acceptance tests. The results of all acceptance tests shall be furnished to the Contracting Officer at least 30 days prior to the delivery of the stone to the work site. All testing shall be entirely at the Contractor's expense.

The Contractor shall submit gradation curves to verify that the riprap meets the requirements specified herein.

Surveyor Qualifications; G,COR.

Provide qualifications of licensed surveyor for land and hydrographic surveying.

Pre-Construction Condition Surveys; G,DO.

Onshore-offshore survey cross sections within 30 days after the Notice to Proceed.

Surveys of Breakwater Units; G,COR.

Post-construction, as-built, plan of Beachsaver Reef units and double-tee spans, indicating the units by number, their location, and their elevation.

Surveying Procedures and Equipment; G,DO.

All surveying procedures, methods and equipment for landward beach surveys, hydrographic surveys, and tidal monitoring, shall be reviewed and approved by the Government Survey Point of Contact prior to the conduct of any type of surveying work. Also, the Contractor shall submit for approval his proposed method for establishing and maintaining the required alignment of the units during placement.

1.6 GOVERNMENT-PROVIDED BEACHSAVER REEF UNITS

Plan and cross-sectional views of the Beachsaver Reef units are as shown in the attached sketch. The government-provided Beachsaver Reef units are stored in the "Old Magnesite Plant" site located on Sunset Boulevard in Cape May Point. The Contractor shall contact, and coordinate with, Mr. Dwight Pakan, Civil Works Project Manager, at 215-656-6785 for access to this site. The Contractor shall contact Mr. Pakan a minimum of 48 hours prior to required access to this site. **The Contractor shall transport the Beachsaver Reef units from their current storage location to the work site for installation.** Each Beachsaver Reef unit has the approximate dimensions indicated on the attached sketch and weighs approximately 21 tons.

PART 2 PRODUCTS

2.1 GEOTEXTILE SCOUR APRON

The geotextile scour apron shall be as specified in Section 02215 GEOTEXTILE SCOUR APRON.

2.2 CONCRETE DOUBLE-TEES

The concrete double tees shall be as shown on the attached sketch. The spans shall be a minimum of 30 feet long. The concrete shall have a unit weight of 150 pounds per cubic foot and its compressive strength shall be 6000 pounds per square inch. The cement shall be in accordance with ASTM C 150. The aggregate shall be in accordance with ASTM C 33. The reinforcing steel shall be in accordance with ASTM A 615/A 615M. The welded wire fabric shall be in accordance with ASTM A 185.

2.3 STONE

2.3.1 Quality

Graded riprap shall be crushed stone. Graded riprap and capstone shall be sound and durable. Stone shall be free from cracks, seams, and other defects that would tend to increase its deterioration. The stone shall be blocky and angular quarried material, with the least dimension not less than one-third the greatest dimension. Flat slabs, boulders, and parts of boulders will not be acceptable. The stone dry density shall not be less than 165 pounds per cubic foot.

2.3.2 Testing

The following tests will be used by the Government to determine the acceptability of the stone sources selected by the Contractor.

PROPERTY	TEST METHOD	ACCEPTABLE TEST RESULTS
Petrographic	ASTM C 295	Fresh, interlocking, crystalline, with few vugs, no clay minerals and no soluble minerals.
Specific Gravity and Absorption	ASTM C 127	Minimum Unit Weight (dry) of 165 pounds per cubic foot. Absorption less

PROPERTY	TEST METHOD	ACCEPTABLE TEST RESULTS
Abrasion Resistance	ASTM C 131	than 1%. Less than 20% loss for 500 revolutions.
Freezing/ Thawing	CRD-C-144	Less than 10% loss for 12 cycles.

Additional testing shall be required if results from the tests, specified above, are close to the limits of acceptability. In the event test reports are not available, as in the case of newly operated sources, the Contractor shall perform such tests as are necessary to determine the acceptability of the stone for use in the work. Approval of a source of stone is not to be construed as approval of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable for use as determined by the Contracting Officer. Individual stones or loads or parts of loads may be rejected if material does not meet the specifications.

2.3.3 Capstone

Capstone shall weigh between 4 to 6 tons.

2.3.4 Gradation of Graded Riprap

The minimum weight of riprap shall be 250 pounds and the maximum weight shall be 5500 pounds. The specific gravity shall be a minimum of 2.65, surface-dry basis. At all locations, the riprap shall be well graded. (This gradation is similar to a PennDOT R-8.)

PART 3 EXECUTION

3.1 REQUIRED ORDER OF WORK

Pre-construction surveys shall be completed and submitted. The Government will determine the required alignment of the Beachsaver Reef units and double-tee spans from the pre-construction survey data. The Beachsaver Reef units shall be placed in Cell 5 and accepted prior to placement of concrete double-tee spans in Cell 6.

3.2 IDENTIFICATION OF UNITS AND SPANS

The Contractor shall utilize paint or other means for placing identifying numbers on each Beachsaver Reef unit and each concrete double-tee span. The numbers shall act as a reference system during confirmation of their proper placement by the divers and when documenting their elevation by surveys.

3.3 PRE-CONSTRUCTION SURVEYS

3.3.1 General

The Contractor shall complete survey cross sections and submit the survey data to the Government within 30 days after the Notice to Proceed. Cross section survey lines shall be taken every 25 feet and at the interface between the toe of the existing jetties and the sand. Soundings shall be recorded every 5 feet along each survey line from -20.0 ft NAVD88 to -3.0 ft NAVD88. The surveys shall be conducted as specified in this paragraph

and subparagraph entitled GENERAL SURVEY REQUIREMENTS, herein.

3.3.2 Hydrographic Surveys

Hydrographic surveys will be conducted to meet requirements for Class 1, Contract Payment Surveys, as outlined in U.S. Army Corps of Engineers Hydrographic Surveying Manual (DRAFT)(EM-1110-2-1003, dated 1 Jan 2001). Surveys will be performed by single transducer sounding techniques, multi-beam sweep type surveys or both. Bottom soundings will be obtained by the single beam survey fathometer operating at a frequency ranging from 194 to 206 Khz. When utilizing multi-beam technology, the operating frequency will range from 180 to 250 Khz. All fathometers will be calibrated following procedures outlined in the aforementioned EM and EC.

3.3.3 Topographic Surveys

All topographic surveys shall be performed by a New Jersey licensed surveyor with a minimum of 10 years current experience. All surveys shall be third-order accuracy. All elevations shall be taken to the nearest 0.1 feet.

3.3.4 Pre-Construction Survey Data Submittal

Upon completion of the survey, all field books, computations, sounding records and survey data on electronic disks shall be furnished to the Contracting Officer and will become the property of the U.S. Government. The data shall be entered in the DOS operating system in a digital ASCII format compatible with AutoCAD Release 14 or better, on CD. Data format for hydrographic surveys shall include time, positioning in New Jersey State Plane Coordinate System (NAD83), and depths in NAVD88.

All pre-placement hydrographic survey data shall be submitted directly to the Philadelphia District Office at the following address:

U.S. Army Corps of Engineers
Philadelphia District
ATTN: CENAP-EC-DC (ATTN: Clapp)
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107

3.4 LOCATING AND PLACING THE BEACHSAVER REEF UNITS IN CELL 5

3.4.1 Determining the Alignment

3.4.1.1 General

The location for placement of the Beachsaver Reef units in Cell 5, as shown on the contract drawings, is approximate and for bid purposes only. The exact alignment of the units will be determined and directed by the Government after pre-construction surveys have been submitted and reviewed.

3.4.1.2 Horizontal Alignment

The directed placement location of the units will be either at the end of the jetties or landward of the end of the jetties. The units shall not be placed oceanward of the end of the jetties. The Government-directed alignment will strive to have the Beachsaver Reef units in the longest distance of straight segments possible i.e. the number of "turns" in the

alignment will be minimized.

3.4.1.3 Vertical Alignment

The objective of the project is to place the Beachsaver Reef units at the approximate elevation of -9.0 ft NAVD88. It may not be practical, however, to place the units along the -9.0 ft NAVD88 contour. For bid purposes, the Contractor shall assume that the Beachsaver Reefs shall be placed at an elevation within plus or minus 2.0 feet of -9.0 ft NAVD88.

3.4.2 Placement of Geotextile Scour Apron in Cell 5

The geotextile scour apron shall be placed and the toe tube shall be filled as specified in Section 02215 GEOTEXTILE SCOUR APRON.

3.4.3 Placing the Beachsaver Reef Units

The number of Beachsaver Reef units that require placement, as shown on the drawings, is approximate. More, or less, units shall be placed as required or directed by the COR. The placement of the Beachsaver Reef units shall begin by placing the first unit at the existing toe of Jetty 5 (or 6). The Contractor shall utilize divers to confirm the proper placement of each unit and to confirm that the units are properly keyed together. All diving shall be in accordance with Section 01100 DIVING SERVICES. **NOTE: Divers shall not be in the water during placement of the units. The divers shall not enter the water until each unit is placed on the ocean floor.** The divers shall submit a report as specified in paragraph "SUBMITTALS," herein. Upon placement of one-half of all of the units to be placed, and, after confirmation of proper placement of those units by the divers, the Contractor shall immediately survey the crest of each placed unit to determine each unit's location and elevation. The Contractor shall submit a listing of each unit, by its number, indicating each unit's location and elevation. After approval of that survey information by the Government, the Contractor shall proceed and continue to place the remaining units. The Contractor shall place the final unit at the toe of the other jetty, Jetty 6 (or 5). The Contractor shall survey the crest of ALL placed units and submit a listing of each unit, by its number, indicating each unit's location and elevation.

3.5 LOCATING AND PLACING THE CONCRETE DOUBLE-TEE SPANS IN CELL 6

3.5.1 Determining the Alignment

3.5.1.1 General

The location for placement of the concrete double-tee spans in Cell 6, as shown on the contract drawings, is approximate and for bid purposes only. The exact alignment of the units will be determined and directed by the Government after pre-construction surveys have been submitted and reviewed.

3.5.1.2 Horizontal Alignment

The placement location of the concrete double-tees in Cell 6 will be directed by the COR and will be dictated by the placement location of the Beachsaver Reef units in Cell 5. The double-tee spans shall be placed to be aligned with the Beachsaver Reefs in Cell 5. The double-tees shall not be placed oceanward of the end of the jetties. The Government-directed alignment will strive to have the double-tee spans in the longest distance of straight segments possible i.e. the number of "turns" in the alignment

will be minimized.

3.5.1.3 Vertical Alignment

The objective of the project is align the double-tee spans with the Beachsaver Reef units in Cell 5. For bid purposes, the Contractor shall assume that the double-tee spans shall be placed at an elevation within plus or minus 2.0 feet of -11.0 ft NAVD88.

3.5.2 Placing the Double-Tee Spans

The number and linear footage of double-tee spans that require placement, as shown on the drawings, is approximate and is based upon 30-foot spans. The placement of the spans shall begin by placing the first span at the toe of Jetty 6 (or 7). The Contractor shall utilize divers to confirm the proper placement of each span and to confirm that the spans abut one another. All diving shall be in accordance with Section 01100 DIVING SERVICES. **NOTE: Divers shall not be in the water during placement of the spans. The divers shall not enter the water until each span is placed on the ocean floor.** The divers shall submit a report as specified in paragraph "SUBMITTALS," herein. Upon placement of approximately one-half of the linear footage of spans to be placed, and, after confirmation of proper placement of those spans by the divers, the Contractor shall immediately survey each end of each placed span to determine each span's starting and ending location and elevation. The Contractor shall submit a listing of each span, by its number, indicating each span's starting and ending location and elevation. After approval of that survey information by the Government, the Contractor shall proceed and continue to place the remaining spans. The Contractor shall place the final span to abut the toe of the jetty, Jetty 7 (or 6). **NOTE: The Contractor shall place a unique span length, as necessary to abut the jetty, Jetty 7 (or 6).** The Contractor shall survey the beginning and ending locations of ALL placed spans and submit a listing of each span, by its number, indicating each span's beginning and ending location and elevation.

3.6 GENERAL SURVEY REQUIREMENTS

All land surveys shall be performed under the direction and supervision of a Professional Licensed Surveyor. All hydrographic surveys shall be conducted under the direction and supervision of a Surveyor certified by the American Congress on surveying and Mapping (ACSM) as an In-Shore Hydrographer, or by a Professional Licensed Surveyor with a minimum of 5 years documented experience in a hydrographic surveying environment similar in nature to the surveys required under this Contract.

3.6.1 Control

Survey control will be established from the existing survey control description data provided in Section 00840 of these specifications. The Contractor shall utilize NAVD 1988 as the vertical datum for elevation and depth references for all cross sections, and shall be responsible for obtaining necessary ocean tide height measurements during the survey periods to assure that accurate adjustments are made to the observed depths to account for tidal variations in water level. The Contractor shall utilize New Jersey State Plane Coordinate System NAD 1983 as the horizontal reference datum.

3.6.2 Tolerances

The landward portion of the profile lines shall be surveyed utilizing surveying procedures and methodology that meet or exceed accuracy tolerances of +/- 0.10 feet in the vertical and +/- 0.50 in the horizontal with a 95% confidence level.

Hydrographic surveys will be conducted to meet requirements for Class 1, Contract Payment Surveys, as outlined in U.S. Army Corps of Engineers Hydrographic Surveying Manual (DRAFT) EM-1110-2-1003, dated 1 Jan 2001. Surveys will be performed by single transducer sounding techniques, multi-beam sweep type surveys or both. Bottom soundings will be obtained by the single beam survey fathometer operating at a frequency ranging from 194 to 206 Khz. When utilizing multi-beam technology, the operating frequency will range from 180 to 250 Khz. All fathometers will be calibrated following procedures outlined in the aforementioned EM and EC.

All surveying procedures, methods and equipment for landward beach surveys, hydrographic surveys and tidal monitoring(if applicable), shall be reviewed and approved by the Government Survey Point of Contact prior to the conduct of any type of surveying work. This review process shall also include the review and acceptance of the Surveyor's Qualifications.

3.7 PLACEMENT OF GRADED RIPRAP AND CAPSTONE

Graded riprap and capstone shall be placed to fill the opening between the ends of the Beachsaver Reef units and the double-tee spans and the existing jetties as shown on the attached sketch. The capstone shall be placed in one stone thickness and, upon placement, the top of the capstone shall be at, or above, the crest of the Beachsaver Reef units and the double-tee spans. Capstone shall be placed between the units/spans and the side slope of the jetty. Graded riprap shall be placed under the capstone, as necessary, to achieve this top elevation of the capstone. Stone shall not be dropped at a distance greater than 2 feet. Diving services shall be utilized to confirm the proper placement of the stones and the proper closure of the gap between the end of the breakwaters and the jetties.

3.8 EXCESS BEACHSAVER REEF UNITS

Excess Beachsaver Reef units shall remain at, or be transported to the "Old Magnesite Plant" site, located on Sunset Boulevard in Cape May Point, for storage and use on other Government projects.

3.9 MEASUREMENT AND PAYMENT

3.9.1 BASE BID:

3.9.1.1 Mobilization and Demobilization

All costs connected with the mobilization and demobilization of the Contractor's plant and equipment required for placement of breakwaters will be paid for at the contract lump sum prices for these items as listed in the Bidding Schedule. Sixty percent (60%) of the lump sum price will be paid to the Contractor upon completion of his mobilization at the work site. The remaining forty percent (40%) will be included in the final payment for work under this contract.

3.8.1.1.1 Contractor Furnished Cost Data

In the event the Contracting Officer considers that the amount in these items (sixty percent) which represents mobilization, does not bear a

reasonable relation to the cost of the work in this contract, the Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid price. Failure to justify such price to the satisfaction of the Contracting Officer will result in the payment of actual mobilization costs, as determined by the Contracting Officer, at the completion of mobilization. The payment of the remainder of these items will be included in the final payment under the contract. The determination of the Contracting Officer in these circumstances is not subject to appeal.

3.8.1.1.2 Mobilization and Demobilization Costs for Base Bid

All costs in connection with the mobilization and demobilization of the Contractor's plant and equipment as defined below shall be included in the contract lump sum price for Base Bid Item No. 1, "Cell 5: Mobilization/ Demobilization for Placement of Beachsaver Reef Units" as listed in the Bidding Schedule.

a. Mobilization shall include all costs for operations accomplished prior to commencement of actual placement of Beachsaver reef units; that is transfer of all plant and equipment to the work site and all other incidentals in advance of placement operations.

b. Demobilization shall include general preparation for transfer of the plant and equipment to the Contractor's home or standby base and cleanup.

3.9.1.2 Geotextile Scour Apron

The geotextile scour apron shall be measured for payment as specified in Section 02215 GEOTEXTILE SCOUR APRON.

3.9.1.3 Beachsaver Reef Units

The work specified in this section for the placement of the Beachsaver Reef units will be measured for payment by the number of units satisfactorily placed and accepted. Payment will be made at the contract unit price per unit for **Base Bid Item No. 3** "Cell 5: **Transport and Place** Government-Provided Concrete Beachsaver Reef Units," which shall constitute full compensation to the Contractor for transporting the units from their storage location **to the work site**, placement of the reef units, associated pre-construction and during-construction surveys and diving services.

3.9.1.4 Capstone and Graded Riprap

The work specified in this section for the placement of capstone and graded riprap, at the ends of the Beachsaver Reef units, will be measured for payment by the ton of stone satisfactorily placed and accepted. Payment will be made at the contract unit price per ton for **Base Bid Item No. 4** " **Cell 5: Provide and Place Capstone and Graded Riprap,**" which shall constitute full compensation to the Contractor for providing and placing the capstone and graded riprap.

3.9.2 OPTION 1:

3.9.2.1 Purchase and Deliver Concrete Double-Tee Spans

The Contractor shall purchase and deliver, to the "Old Magnesite Plant" site located on Sunset Boulevard in Cape May Point, the required concrete double-tee spans. The Contractor shall contact, and coordinate with, Mr. Dwight Pagan, Civil Works Project Manager, at 215-656-6785 for access to

this site. The Contractor shall contact Mr. Pakan a minimum of 48 hours prior to required access to this site. The purchase and delivery of the concrete double-tee spans will be measured for payment by the linear footage of concrete double-tee spans delivered. Payment will be made at the contract unit price per linear foot for Option 1 Bid Item No. 5 "Purchase and Deliver Concrete Double-Tee Spans."

3.9.3 Option 2:

3.9.3.1 Mobilization and Demobilization

All costs connected with the mobilization and demobilization of the Contractor's plant and equipment required for placement of breakwaters will be paid for at the contract lump sum prices for these items as listed in the Bidding Schedule. Sixty percent (60%) of the lump sum price will be paid to the Contractor upon completion of his mobilization at the work site. The remaining forty percent (40%) will be included in the final payment for work under this contract.

3.8.3.1.1 Contractor Furnished Cost Data

In the event the Contracting Officer considers that the amount in these items (sixty percent) which represents mobilization, does not bear a reasonable relation to the cost of the work in this contract, the Contracting Officer may require the Contractor to furnish cost data to justify this portion of the bid price. Failure to justify such price to the satisfaction of the Contracting Officer will result in the payment of actual mobilization costs, as determined by the Contracting Officer, at the completion of mobilization. The payment of the remainder of these items will be included in the final payment under the contract. The determination of the Contracting Officer in these circumstances is not subject to appeal.

3.8.3.1.2 Mobilization and Demobilization Costs for Option 2

All costs in connection with the mobilization and demobilization of the Contractor's plant and equipment as defined below shall be included in the contract lump sum price for Option 2 Bid Item No. 6, "Cell 6: Mobilization/Demobilization for Placement of Concrete Double-Tee Spans" as listed in the Bidding Schedule.

a. Mobilization shall include all costs for operations accomplished prior to commencement of actual placement of the concrete double-tee spans; that is transfer of all plant and equipment to the work site and all other incidentals in advance of concrete double-tee spans placement operations, and any additional equipment required to perform the work under Option 2.

b. Demobilization shall include general preparation for transfer of the plant and equipment to the Contractor's home or standby base, which is in addition to the demobilization required upon completion of the contract work under the Base Bid, and cleanup.

3.9.3.2 Concrete Double-Tee Spans

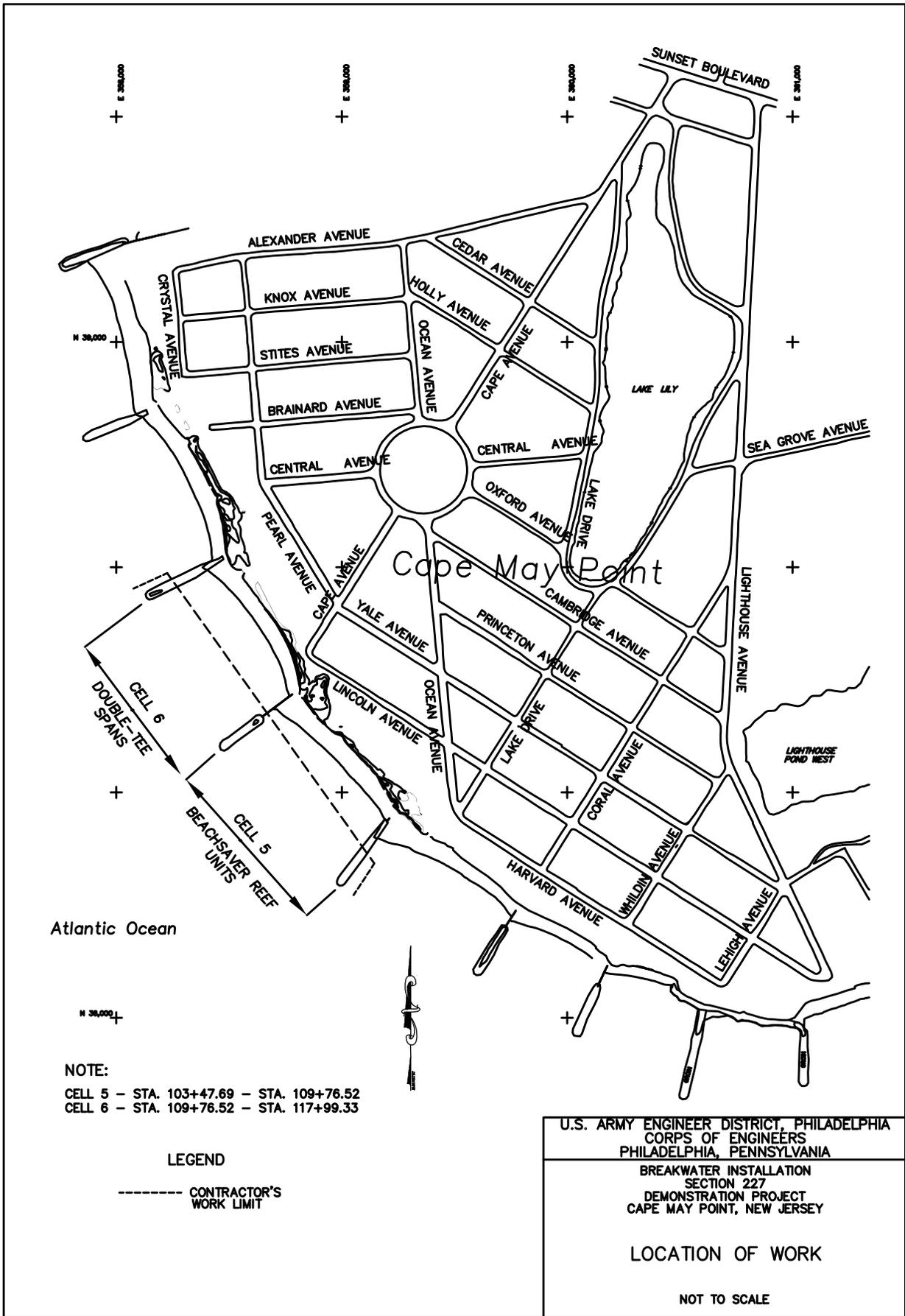
The work specified in this section for the placement of the concrete double-tee spans will be measured for payment by the linear footage of concrete double-tee spans satisfactorily placed and accepted. Payment will be made at the contract unit price per linear foot for Option 2 Bid Item No. 7 "Cell 6: Transport and Place Concrete Double-Tee Spans," which shall constitute full compensation to the Contractor for transporting the spans

from the Magnasite Plant site, placing the spans, associated pre-construction and during-construction surveys, and diving services.

3.9.3.3 Capstone and Graded Riprap

The work specified in this section for the placement of capstone and graded riprap, at the ends of the double-tee spans, will be measured for payment by the ton of stone satisfactorily placed and accepted. Payment will be made at the contract unit price per ton for Option 2 Bid Item No. 8 "Cell 6: Provide and Place Capstone and Graded Riprap."

-- End of Section --



Atlantic Ocean

NOTE:

CELL 5 - STA. 103+47.69 - STA. 109+76.52
 CELL 6 - STA. 109+76.52 - STA. 117+99.33

LEGEND

----- CONTRACTOR'S
 WORK LIMIT

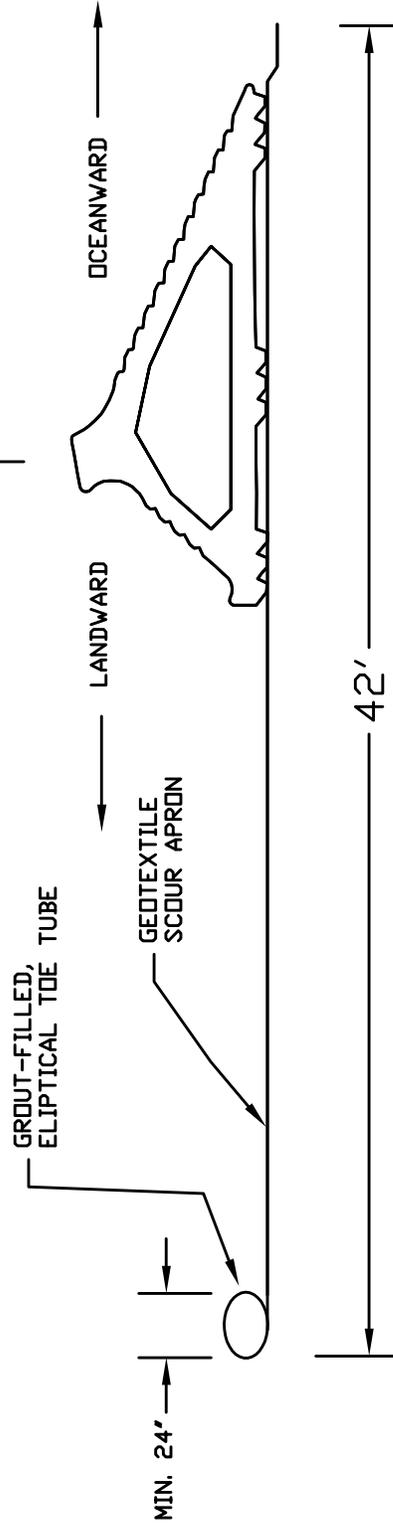
U.S. ARMY ENGINEER DISTRICT, PHILADELPHIA
 CORPS OF ENGINEERS
 PHILADELPHIA, PENNSYLVANIA

BREAKWATER INSTALLATION
 SECTION 227
 DEMONSTRATION PROJECT
 CAPE MAY POINT, NEW JERSEY

LOCATION OF WORK

NOT TO SCALE

FOR LOCATING UNIT ALONG
 C ALIGNMENT. ALIGNMENT TO BE
 AS DETERMINED BY PRE-CONSTRUCTION
 SURVEYS AND AS DIRECTED BY THE COR.



U.S. ARMY ENGINEER DISTRICT, PHILADELPHIA
 CORPS OF ENGINEERS
 PHILADELPHIA, PENNSYLVANIA

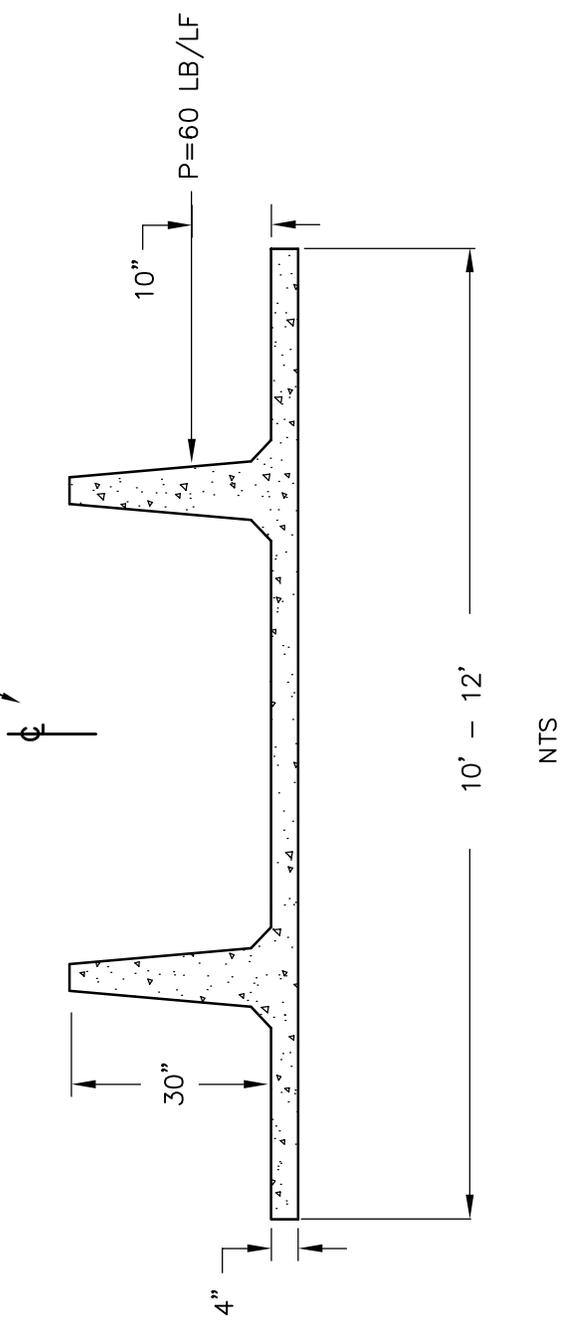
BREAKWATER INSTALLATION
 SECTION 227
 DEMONSTRATION PROJECT
 CAPE MAY POINT, NEW JERSEY

GEOTEXTILE SCOUR APRON AND
 PLACEMENT OF BREAKWATER
 REEF UNITS

NOT TO SCALE

AMENDMENT NO. 0003
 INVITATION FOR BIDS
 DACW61-01-B-0014

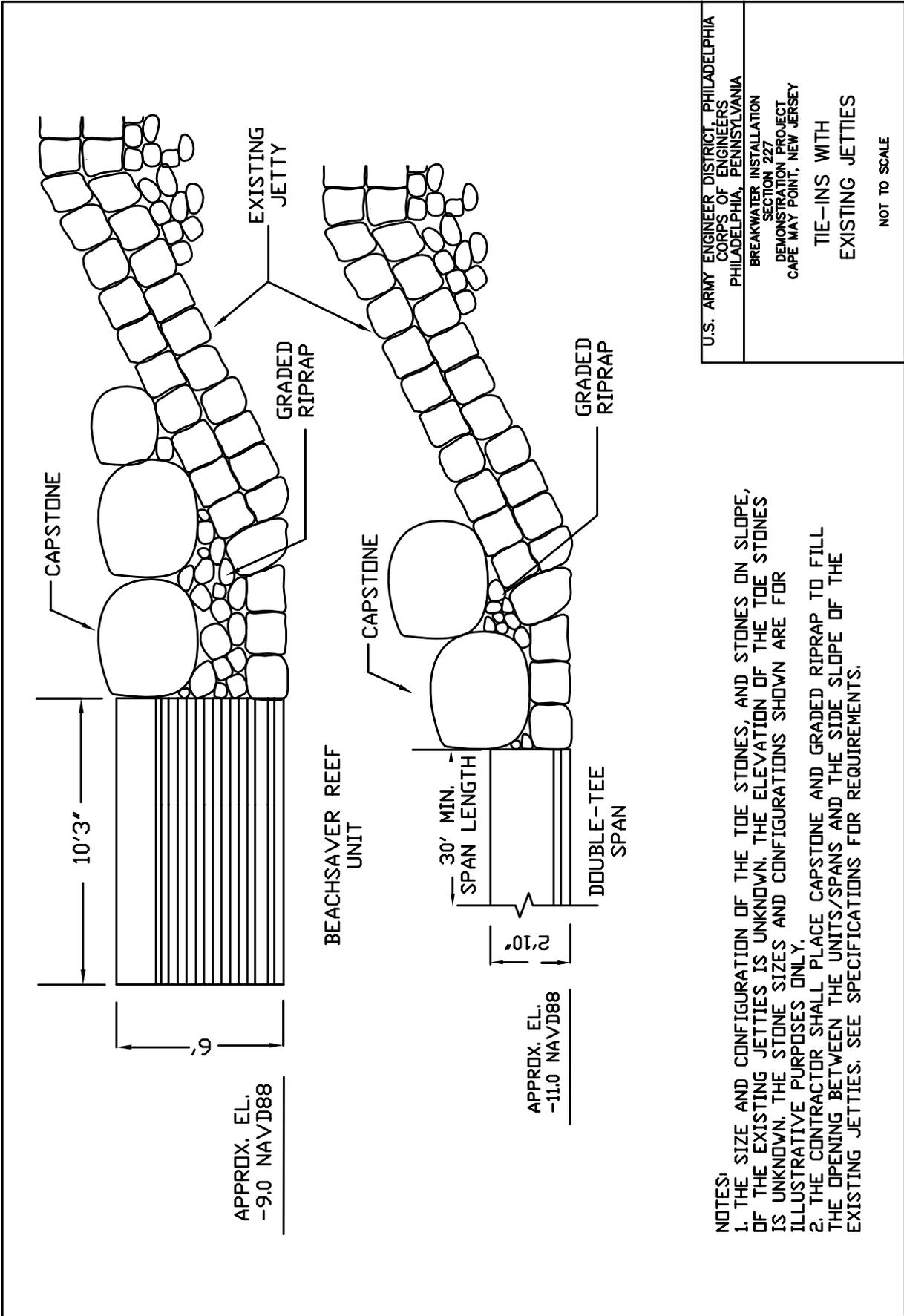
FOR LOCATING UNIT ALONG
 ALIGNMENT. ALIGNMENT TO BE
 AS DETERMINED BY PRE-CONSTRUCTION
 SURVEYS AND AS DIRECTED BY THE COR.



NOTES:

1. CONTRACTOR SHALL PROVIDE 10'-12' CONCRETE DOUBLE TEE SECTIONS DESIGNED WITH REINFORCEMENT FOR DEAD AND LIFTING LOADS AND A LATERAL LOAD, ON THE STEM, OF 60 LBS PER LF.
2. DOUBLE TEE SECTIONS SHALL BE FABRICATED USING TYPE II CEMENT. ALL REINFORCEMENT SHALL BE EPOXY-COATED.

US ARMY ENGINEER DISTRICT, PHILADELPHIA
 CORPS OF ENGINEERS
 PHILADELPHIA, PENNSYLVANIA
 BREAKWATER INSTALLATION
 SECTION 227
 DEMONSTRATION PROJECT
 CAPE MAY POINT, NEW JERSEY
 CONCRETE DOUBLE-TEE SPAN



U.S. ARMY ENGINEER DISTRICT PHILADELPHIA
 CORPS OF ENGINEERS
 PHILADELPHIA, PENNSYLVANIA
 BREAKWATER INSTALLATION
 SECTION 227
 DEMONSTRATION PROJECT
 CAPE MAY POINT, NEW JERSEY
 TIE-INS WITH
 EXISTING JETTIES
 NOT TO SCALE

NOTES:
 1. THE SIZE AND CONFIGURATION OF THE TOE STONES, AND STONES ON SLOPE, OF THE EXISTING JETTIES IS UNKNOWN. THE ELEVATION OF THE TOE STONES IS UNKNOWN. THE STONE SIZES AND CONFIGURATIONS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY.
 2. THE CONTRACTOR SHALL PLACE CAPSTONE AND GRADED RIPRAP TO FILL THE OPENING BETWEEN THE UNITS/SPANS AND THE SIDE SLOPE OF THE EXISTING JETTIES. SEE SPECIFICATIONS FOR REQUIREMENTS.

THIS PAGE HAS BEEN LEFT INTENTIONALLY BLANK