



1. The specifications and drawings for Invitation No. DACW64-03-B-0019, Dredging, Sabine Pass Outer Bar and Sabine Bank Channels in Jefferson County, Texas and Cameron Parish, Louisiana, advertised 20 May 2003, and for which bids are to be opened on 19 June 2003, are hereby modified as follows:

Specifications.

(1) BIDDING SCHEDULE, Pages 00010-1 Through 00010-4. - The enclosed Bidding Schedule, Pages 00010-1 and 00010-2 supersedes that issued with this Invitation.

(2) Page 01100-6, Paragraph 16, FUEL PRICE ADJUSTMENT (CESWG). - Delete this Paragraph in its entirety.

(3) SECTION 02483 PROTECTION OF SEA TURTLES. - The enclosed new SECTION 02483 entitled PROTECTION OF SEA TURTLES supersedes that issued with this Invitation.

2. This amendment shall be attached to, and become a part of, the specifications.

Encls

1. Bd Sched, Pgs 00010-1 & 00010-2
2. SECTION 02483

File 8390S

INVITATION NO. DACW64-03-B-0019

**SABINE-NECHES WATERWAY, TEXAS,  
SABINE PASS OUTER BAR AND SABINE  
BANK CHANNELS IN JEFFERSON COUNTY,  
TEXAS AND CAMERON PARISH, LOUISIANA,  
DREDGING**

**BIDDING SCHEDULE  
(TO BE ATTACHED TO STANDARD FORM 1442)**

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
<b><u>SCHEDULE NO. 1</u></b>					
0001	Mobilization and Demobilization	1	L.S.	\$ _____	\$ _____
0002	Dredging	3,331,000	C.Y.	\$ _____	\$ _____
0003	Monitor Surveys	1	L.S.	\$ _____	\$ _____
0004	Sea Turtle Protection	1	L.S.	\$ _____	\$ _____
0005	Sea Turtle Trawling and Relocation	30	DAY	\$ _____	\$ _____
<b>TOTAL SCHEDULE NO. 1</b>					\$ _____

00010-1

(To Accompany Amendment No. 0001 to Invitation No. DACW64-03-B-0019)

**BIDDING SCHEDULE (Cont'd)  
(TO BE ATTACHED TO STANDARD FORM 1442)**

**1. ARITHMETIC DISCREPANCIES (JAN 1997)(EFARS 52.214-5000).**

(a) For the purpose of initial evaluation of bids, the following will be utilized in resolving arithmetic discrepancies found on the face of bidding schedule as submitted by the bidder:

- (1) Obviously misplaced decimal points will be corrected;
- (2) Discrepancy between unit price and extended price, the unit price will govern;
- (3) Apparent errors in extension of unit prices will be corrected;
- (4) Apparent errors in addition of lump-sum and extended prices will be corrected.

(b) For the purpose of bid evaluation, the Government will proceed on the assumption that the bidder intends his bid to be evaluated on the basis of the unit prices, the totals arrived at by resolution of arithmetic discrepancies as provided above and the bid will be so reflected on the abstract of bids.

(c) These correction procedures shall not be used to resolve any ambiguity concerning which bid is low.

**2. MODIFICATIONS (CESWG).** If a modification to a bid based on unit prices is submitted, which provides for a lump sum adjustment to the total estimated cost, the application of the lump sum adjustment of each unit price in the bid schedule must be stated. If it is not stated, the bidder agrees that the lump sum adjustment shall be applied on a pro rata basis to every unit price in the bid schedule.

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**SECTION 02483 - PROTECTION OF SEA TURTLES**

**PART 1 - GENERAL**

**1.1 SUBMITTALS.** Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with the SECTION entitled SUBMITTAL PROCEDURES.

1.1.1 SD-01 Data.

1.1.1.1 Trawling and Relocation Permit: FIO. The Contractor shall submit a certified copy of all required permits, including State and National Marine Fishery Service (NMFS) permits for sea turtle trawling and relocation and a statement for the person responsible for implementation of the NMFS permit before commencing trawling.

1.1.1.2 Turtle Excluder Devices: GA. The Contractor shall submit written NMFS approval prior to trawling for sea turtles without TEDs.

1.1.2 SD-04 Drawings.

1.1.2.1 Turtle Deflector Device: GA. If the Contractor proposes to use a hopper dredge for this work, detailed shop drawings shall be submitted showing the proposed device and its attachment to the Contractor's equipment. Shop drawings to be submitted shall include the approach angle for any and all depths to be dredged during this contract. A copy of the approved drawings and calculations shall be available on the vessel during the life of this contract. No dredging work will be allowed to commence until approval of the turtle deflector device.

1.1.3 SD-18 Records.

1.1.3.1 Logs and Final Summary Report: GA. Contractor shall submit, as specified, logs and final summary report of sightings and incidents with endangered species as specified below.

**1.2 MEASUREMENT.** Turtle Deflector Device materials and other execution requirements specified in this Section will not be measured for payment.

**1.3 PAYMENT.**

1.3.1 Turtle Deflector Device. Payment for the fabrication of Turtle Deflector Device and the costs associated with the protection of sea turtles as specified herein shall be included in the contract lump sum price for "Sea Turtle Protection."

1.3.2 Sea Turtle Trawling and Relocation. Payment for sea turtle trawling and relocation and the costs associated with this activity as specified herein shall be included in the contract unit price per day for "Sea Turtle Trawling and Relocation."

## **PART 2 - PRODUCTS (Not Applicable)**

### **PART 3 - EXECUTION**

**3.1 PROTECTION OF SEA TURTLES.** (NOTE: Applies to Hopper Dredges Only). During dredging, placement, or travel between the Channel and Placement Area, the Contractor shall observe the surrounding waters in the vicinity of its operations for the presence of sea turtles. If the Contractor encounters or observes sea turtles during its operations, it shall notify the Contracting Officer by the fastest available means. After investigation by the Contracting Officer, the Contractor will be instructed on further actions necessary.

3.1.1 Endangered Species Protection. The Contractor shall instruct the personnel associated with the project of the potential presence of sea turtles in the area and the need to avoid collisions with these animals. Construction personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing sea turtles which are protected under the Endangered Species Act of 1973. The Contractor shall be held responsible if a sea turtle is harmed, harassed, or killed as a result of construction activities.

**3.2 SEA TURTLE TRAWLING AND RELOCATION.** Trawling shall be conducted for the purpose of removing turtles from the channel to help prevent entrainment by the dredge. Trawling shall be performed concurrently with hopper dredging operations, only within the section currently being dredged. Trawling shall be conducted for a period of 24 hours each day. Costs for this item shall be paid as specified in the Paragraph: PAYMENT above.

3.2.1 Reports. The results of each trawl shall be recorded on Sea Turtle Trawling Report forms developed for this purpose. (Attached as Appendix E at the end of this Section) A Final Report shall be prepared and submitted upon completion of dredging, summarizing the results, with all forms and including total trawling times, number of trawls, and number of captures. Turtles captured during the trawling shall be measured and tagged in accordance with standard biological sampling procedures with sampling data recorded on Sea Turtle Tagging and Relocation Report forms developed for this purpose. (Attached as Appendix F at the end of this Section) Captured sea turtles shall be relocated south of the work area at least 3 miles from the location recorded on the Sea Turtle Tagging and Relocation Report form.

3.2.2 Sea Turtle Trawling Procedures. An approved, sea turtle trawling and relocation supervisor shall provide researchers and nets to capture and relocate sea turtles, and shall conduct any sea turtle trawling. Methods and equipment shall be standardized including data sheets, nets, trawling speed, trawling direction to tide, length of station, length of tow, and number of tows per segment. Trawling shall be

conducted with repetitive 15 to 30 minute (total time) tows in the channel. Data on each tow shall be recorded using Sea Turtle Trawling Report forms. The trawler shall be equipped with two 60-foot nets constructed of 8-inch mesh (stretch) fitted with mud rollers and flats as specified in the Turtle Trawl Nets Specifications. (Attached as Appendix G at the end of this Section. Trawling speed shall be a constant rate and consistent for each tow (approximately 2.5 to 3.9 knots). Trawling shall be conducted with the tidal flow. A minimum of six (6) tows per segment, 2 each in the green, red, and center portion of the channel. The channel shall be divided into segments 3 km in length that will be set for all surveys in that channel. The segments shall include the areas of the channel that will be dredged and a “buffer” segment in the channel on each side of the dredged segments. Each 3 km segment will be trawled for a distance of 2 km. Tow times shall be adjusted from 15 to 30 minutes to achieve the 2 km tow length. Trawling shall be conducted according to a randomized design consistent with NMFS survey protocol as much as possible. Positions at the beginning and end of each tow shall be determined from Global Positioning System positioning equipment. Tow speed shall be recorded at the approximate midpoint of each tow. Refer to Engineering Manual, EM 1110-1-1003, paragraph 5.3 and Table 5-1, for acceptable GPS criteria. This EM 1110-1-1003 can be located at the following website: <http://www.hnd.usace.army.mil/techinfo.htm> or can be purchased directly from the United States Printing Office, Document Warehouse, 8160 Cherry Lane, Laurel, Maryland 20707 or by calling (202) 512-1800 or (301) 951-7974

3.2.3 Water Quality and Physical Measurements. Water temperature measurements shall be taken at the water surface each day using a laboratory thermometer. Weather conditions shall be recorded from visual observations and instruments on the trawler. Weather conditions, air temperature, wind velocity and direction, sea state-wave height, and precipitation shall be recorded on the Sea Turtle Trawling Report appended to the end of this Section. High and low tides shall also be recorded.

3.2.4 Approved Trawling Supervisor. Trawling shall be conducted under the supervision of a Biologist approved by the NMFS. A letter of approval from NMFS shall be submitted prior to commencement of trawling.

3.2.5 Turtle Excluder Devices. Approval for trawling for sea turtles without Turtle Excluder Devices (TEDs) shall be obtained from NMFS. Approvals shall be submitted prior to trawling.

3.2.6 Report Submission. Following completion of the project, a copy of the Contractor’s log recording sea turtles shall be forwarded to Mr. Rob Hauch, Environmental Section, U. S. Army Corps of Engineers within 10 working days.

3.2.7 Sea Turtle Trawling and Relocation Permit. The Contractor shall submit a certified copy of NMFS permit for sea turtle trawling and relocation, as well as, a statement for the person responsible for implementation of the NMFS permit. Additionally, the trawling supervisor shall possess all applicable State permits for handling threatened or endangered species.

**3.3 ENDANGERED SPECIES OBSERVER(S), HOPPER DREDGING.** During hopper dredging operations, observer(s) provided by the Contractor and approved by the NMFS shall be aboard to monitor for the presence of sea turtles. The observer(s) shall be provided quarters and meals aboard the dredge at least equal to that of the dredge crew.

3.3.1 Monitoring. The observer(s) shall continuously monitor the hopper sampling screens or baskets and dragheads for turtles or turtle parts after each load cycle, 24 hours a day during the dredging mode. Observer(s) shall remove debris from the screens with the assistance of the ship's crew.

3.3.2 Recording. The results of the monitoring shall be recorded on the appropriate observation sheet. An observation sheet shall be completed for each day describing that day's monitoring. Furthermore, a log shall be kept, describing each load whether or not sea turtle or sea turtle parts are present. Sample observation sheets are appended to the end of this Section.

3.3.3 National Marine Fisheries Service-approved Firms shall provide and manage the endangered species observer(s) for hopper dredging. Observer(s) shall possess the appropriate State and Federal approvals and permits for handling endangered or threatened species. Evidence of such approval shall be provided. A list of acceptable firms can be obtained by contacting NMFS, Protected Resources Division in St. Petersburg, Florida at (727) 570-5312. A partial list is appended to the end of this Section.

3.3.4 Responsibilities. The observer(s) shall also be responsible for assuring that:

- (1) Temperatures in the waterway are taken, in degrees Celsius, at the surface and at the mid-depth from the surface to the water bottom. The readings shall be made each 8 hours for the duration of the dredging assignment. The waterway mileage and latitude/longitude shall be recorded, corresponding to each temperature reading.
- (2) During transit of the dredge to or from the Placement site, after dredging has ceased, the screen observer(s) shall assure that the hopper screens are cleaned of debris and correctly re-installed on the dredge for return to dredging mode. The observer(s) shall report damage to screens to the Contracting Officer immediately upon detection of such damage.
- (3) Complete turtle data reporting is made as required in Paragraph: REPORTING below.

**3.4 DISPOSITION OF TURTLES OR TURTLE PARTS.** Positively identified turtle parts shall be disposed at the dredged material Placement site. Turtle parts which cannot be positively identified on board the dredge shall be preserved by the observer(s),

or color photographed using instant developing film. The photos shall be attached to respective reports for documentation and later identification. Observer(s) shall measure, weigh, tag, and release uninjured turtles incidentally taken by the dredge. Turtle handling and tagging methods shall be performed in accordance with NMFS-approved procedures. Observer(s), or their authorized representative(s), shall transport, as soon as possible, injured turtles to a rehabilitation facility. NMFS-approved turtle transporters shall be used for this purpose.

**3.5 NOTIFICATION.** The observer(s) shall notify the Contracting Officer as soon as possible, but no later than 24 hours after, of collisions, taking of injured or uninjured, or killing of sea turtles. The observer(s) or Contractor shall also transmit a FAX of this information, within 24 hours, to the NMFS Southeast Regional Office, (727) 570-5517; and Galveston District, ATTN: Mr. Rob Hauch, (409) 766-3064.

**3.6 REPORTING.** The Contractor shall maintain a log detailing all incidents, including sightings, collisions with, injuring, or killing of sea turtles occurring during the contract period. The monitoring data shall be recorded on copies of the observation sheets attached to the end of this Section. An observation sheet shall be completed for each day's operation whether or not turtle parts are detected on the screens. Within 10 calendar days of data collection, completed data reports shall be forwarded directly to:

USAED - Galveston  
CESWG-PE-PR  
ATTN: Mr. Rob Hauch  
P. O. Box 1229  
Galveston, Texas 77553-1229  
(409) 766-3913  
(409) 766-3064 (FAX)

Copies of the data shall also be submitted to the Contracting Officer.

**3.6.1 Report.** Following completion of dredging, a report summarizing the above incidents and sightings shall be submitted to: 1) Contracting Officer; 2) Mr. Rob Hauch; and 3) NMFS at the address given below. The report shall be submitted not later than thirty (30) calendar days after completion of dredging.

National Marine Fisheries Service  
Protected Resources Division  
Southeast Region  
9721 Executive Center Drive, N.  
St. Petersburg, Florida 33702.

**3.7 HOPPER DREDGE EQUIPMENT.** Hopper dredge dragheads shall be equipped with rigid sea turtle deflectors which are rigidly attached. No dredging shall be performed by a hopper dredge without a turtle deflector device that has been approved. A conceptual design detail of a turtle deflector is appended at the end of this Section.

### 3.7.1 Deflector Design.

3.7.1.1 The leading vee-shaped portion of the deflector shall have an included angle of less than 90 degrees. Internal reinforcement shall be installed in the deflector to prevent structural failure of the device. The leading edge of the deflector shall be designed to have a plowing effect of at least 6-inch depth when the draghead is being operated. Appropriate instrumentation or indicators shall be used and kept in proper calibration to ensure the critical “approach angle.”

**NOTE:** The design “approach angle” or the angle of lower draghead pipe relative to the average sediment plane is very important to the proper operation of a deflector. If the lower draghead pipe angle in actual dredging conditions varies tremendously from the design angle of approach used in the development of the deflector, the 6-inch plowing effect does not occur. Therefore, every effort should be made to insure this design “approach angle” is maintained with the lower drag pipe.

3.7.2 Depth Deflectors. If adjustable depth deflectors are installed, they shall be rigidly attached to the draghead using either a hinged aft attachment point or an aft trunnion attachment point in association with an adjustable pin front attachment point or cable front attachment point with a stop set to obtain the 6-inch plowing effect. This arrangement allows fine-tuning the 6-inch plowing effect for varying depths. After the deflector is properly adjusted there shall be NO openings between the deflector and the draghead that are more than 4-inch by 4-inch.

### 3.7.3 Inflow Basket Design and Draghead Teeth.

3.7.3.1 The Contractor shall install baskets or screening over the hopper inflow(s) with no greater than 4-inch by 4-inch openings. The method of screening selected shall depend on the construction of the dredge used and shall be approved prior to commencement of dredging. The screening shall provide 100 percent sampling of the hopper inflow(s). The screens and baskets shall remain in place for the duration of performance of the work.

3.7.3.2 The Contractor shall install and maintain floodlights suitable for illumination of the baskets or screening to allow the observer to safely monitor the hopper basket(s) during non-daylight hours or other periods of poor visibility. Safe access shall be provided to the inflow baskets or screens to allow the observer to inspect for turtles, turtle parts, or damage.

3.7.3.3 The turtle deflector device inflow and inflow screens shall be maintained in operational condition for the entire dredging operation.

### 3.7.4 Hopper Dredge Operations.

3.7.4.1 The Contractor shall operate the hopper dredge to minimize the possibility of taking sea turtles and to comply with the requirements stated in the Incidental Take Statement provided by the NMFS in their Biological Opinion.

3.7.4.2. When initiating dredging, suction through the dragheads shall be allowed just long enough to prime the pumps, then the dragheads shall be placed firmly on the bottom. When lifting the dragheads from the bottom, suction through the dragheads shall be allowed just long enough to clear the lines, and then shall cease. Pumping water through the dragheads shall cease while maneuvering or during travel to or from the Placement Area.

**NOTE:** Optimal suction pipe densities and velocities occur when the deflector is operated properly. If the required dredging section includes compacted fine sands or stiff clays, a properly configured arrangement of teeth may enhance dredge efficiency which reduces total dredging hours and “turtle takes.” The operation of a draghead with teeth shall be monitored for each dredged section to ensure that excessive material is not forced into the suction line. When excess high-density material enters the suction line, suction velocities drop to extremely low levels causing conditions for plugging of the suction pipe. Dredge operators shall configure and operate their equipment to eliminate low level suction velocities. Pipe plugging in the past was easily corrected by raising the draghead off the bottom when low suction velocities occurred. This practice places sea turtles at risk and is not recommended. Arrangements of teeth or the reconfiguration of teeth shall be made during the dredging process to optimize the suction velocities. Raising the draghead off the bottom to increase suction velocities is not acceptable. The primary adjustment for providing additional mixing water to the suction line shall be through water ports. To ensure the suction velocities do not drop below appropriate levels, the Contractor shall monitor production meters throughout the job and adjust primarily the number and opening sizes of water ports. Water port openings on top of the draghead or on raised stand pipes above the draghead shall be screened before they are utilized on the dredging project. If a dredge section includes sandy shoals on one (1) end of a tract line and mud sediments on the other end of the tract line, the Contractor shall adjust the equipment to eliminate draghead pick-ups to clear the suction line.

3.7.4.3 Near the completion of each payment section, the Contractor shall perform sufficient surveys to accurately depict those portions of the acceptance section requiring clean-up. The Contractor shall keep the draghead buried a minimum of 6 inches in the sediment at all times. Although the overdepth prism is not the required dredging prism, the Contractor shall achieve the required prism by removing the material from the allowable overdepth prism.

3.7.4.4 During turning operations the pumps shall either be shut off or reduced in speed to the point where no suction velocity or vacuum exists.

3.7.4.5 These operational procedures are intended to stress the importance of balancing the suction pipe densities and velocities in order to avoid taking sea turtles. The Contractor shall develop a written operation plan to minimize turtle takes and submit it as part of the Environmental Protection Plan.

3.7.4.6 The Contractor shall comply with the requirements of this Section and the Contractor's accepted Environmental Protection Plan. The contents of this Section and the Contractor's Environmental Protection Plan shall be shared with applicable crew members of the hopper dredge.

3.7.5 Recording Charts for Hopper Dredges. Hopper dredges shall be equipped with recording devices for each draghead that capture real time, draghead elevation, slurry density, and at least two of the following: pump(s) slurry velocity measured at the output side, pump(s) vacuum and pump(s) RPM. The Contractor shall record continuous real time positioning of the dredge, by plot or electronic means, during the entire dredging cycle including dredging area and Placement Area. Dredge location accuracy shall meet the requirements of the U.S. Army Corps of Engineers Engineering Manual (EM) 1110-2-1003, dated 28 February 1991, "Hydrographic Surveying." A copy of the EM will be available for review by prospective bidders during the bid period. The recording system shall be capable of capturing data at variable intervals but with a frequency of not less than every 60 seconds. Data shall be time correlated to a 24-hour clock and the recording system shall include a method of daily evaluation of the data collected. Data shall be submitted for each day's operation on a daily basis. A written plan of the method the Contractor intends to use to satisfy these requirements shall be included with the Contractor's Quality Control Plan.

3.7.6 Placement of Excavated Material. The Contractor shall be required to furnish an electronic surveillance feature of the movement and placement of the excavated material. The surveillance feature shall monitor the placement vessel by means of an automated (computer) system that will continuously track the horizontal location and draft condition of the placement vessel for the entire dredging cycle including dredging area and Placement Area. The required data shall be as follows:

- (1) Date.
- (2) Trip Identification.
- (3) Vessel name and name of vessel's captain.
- (4) Location and draft of placement vessel every 5 minutes, at least, during loading cycle and during travel to Placement Area and at least every minute or every 200 feet of travel, whichever is smaller, while in the vicinity (within 1,000 feet) of the Placement Area.
- (5) Horizontal location shall have an accuracy equal to or better than a standard Differential Global Positioning System, equal to or better than +/- 10 feet (horizontal repeatability). Vertical data (draft) shall have an

accuracy of +/- 0.5 foot. Horizontal and vertical location data shall be collected in sets and each data set shall be referenced to local date and time, to the nearest minute, and shall be referenced to the same geographic reference system used for the survey(s) shown.

- (6) Data shall be collected and stored on 3-1/2-inch floppy disks in ASCII format. The data collected while the placement vessel is in the vicinity of the Placement Area shall be plotted in chart form, in 200-foot intervals, and use the Texas State Plane South Central Zone NAD 27 coordinate system to show the track and draft of the vessel approaching, within, and leaving the Placement Area. More than one (1) Placement Area trip may be stored on a single floppy disk as long as the data for each trip is indexed and clearly identifiable. The original floppy disks, when full or complete, shall be submitted within 24 hours. The plotted charts shall be organized and maintained at a central work location for inspection on a daily basis by the Contracting Officer. At the end of each week of operations the Contractor shall collate and bind the plotted charts and submit them for a permanent file record.

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PROJECT: \_\_\_\_\_

HOPPER DREDGE REPORTING LOG  
TURTLE OBSERVER NOTES

LOAD NUMBER: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

PORT BASKET CONTENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

STARBOARD BASKET CONTENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TURTLE OR TURTLE PARTS PRESENT: YES \_\_\_\_\_ NO \_\_\_\_\_

COMMENTS AND OTHER OBSERVATIONS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

BRIDGE WATCH: TIME: \_\_\_\_\_ LOCATION: \_\_\_\_\_

NUMBER OF TURTLES SIGHTED: \_\_\_\_\_

\_\_\_\_\_  
OBSERVER'S NAME

PROJECT: \_\_\_\_\_

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INCIDENT REPORT OF SEA TURTLE MORTALITY AND DREDGING ACTIVITIES

Species: \_\_\_\_\_

Date: \_\_\_\_\_

Time: 24-hour clock: \_\_\_\_\_

Geographic Site: \_\_\_\_\_

Location: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Vessel Name: \_\_\_\_\_

Type of Dredging Activity: \_\_\_\_\_

Load #: \_\_\_\_\_

Sampling Method: \_\_\_\_\_

Location Specimen Recovered: \_\_\_\_\_

Draghead Deflector? YES \_\_\_\_\_ NO \_\_\_\_\_

Condition of Deflector: \_\_\_\_\_

Weather Conditions: \_\_\_\_\_

Water temp: Surface: \_\_\_\_\_ Column \_\_\_\_\_

Head Width: \_\_\_\_\_

Plastron Length: \_\_\_\_\_

Carapace S.L. Length: \_\_\_\_\_

Carapace S.L. Width: \_\_\_\_\_

Carapace O.C. Length: \_\_\_\_\_

Carapace O.C. Width: \_\_\_\_\_

Condition of Specimen: \_\_\_\_\_

Turtle Tagged? YES \_\_\_\_\_ NO \_\_\_\_\_

Tag #: \_\_\_\_\_ Tag date: \_\_\_\_\_

Comments/Other: \_\_\_\_\_

Observer's Name: \_\_\_\_\_

## ENDANGERED SPECIES OBSERVER CONSULTANTS

A.I.S., Inc.  
(P.O.C. Arv Poshkus)  
19 Camden Street  
P. O. Box 421  
Stoughton, MA 02072-0421  
Telephone: 1-800-230-8032  
FAX: (781) 297-7669  
[ARVIDASI@juno.com](mailto:ARVIDASI@juno.com)

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Tiny's Marine Environmental  
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Randolph, MA 02368  
Cellular: (321) 431-6502  
[tintsvc@aol.com](mailto:tintsvc@aol.com)

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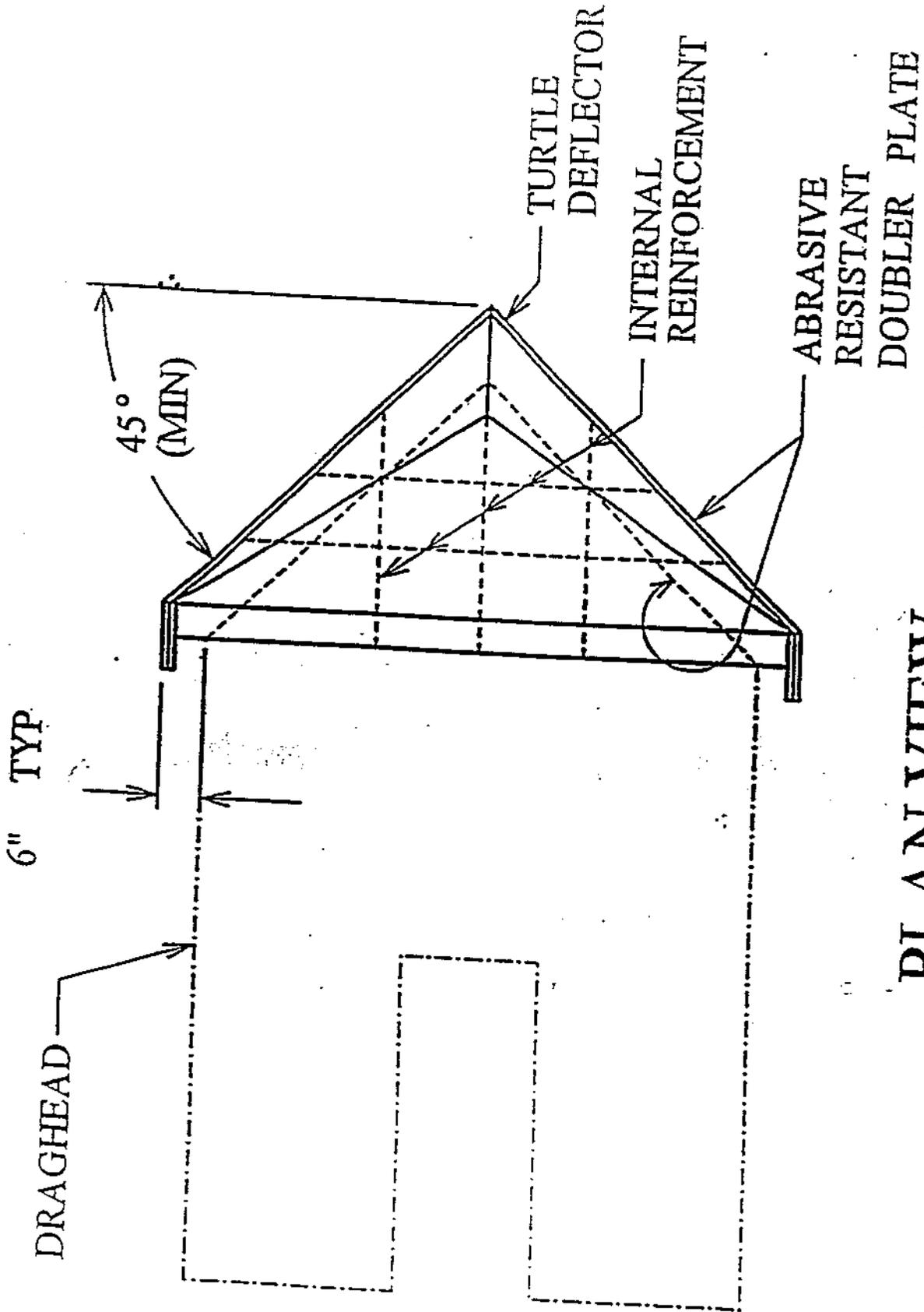
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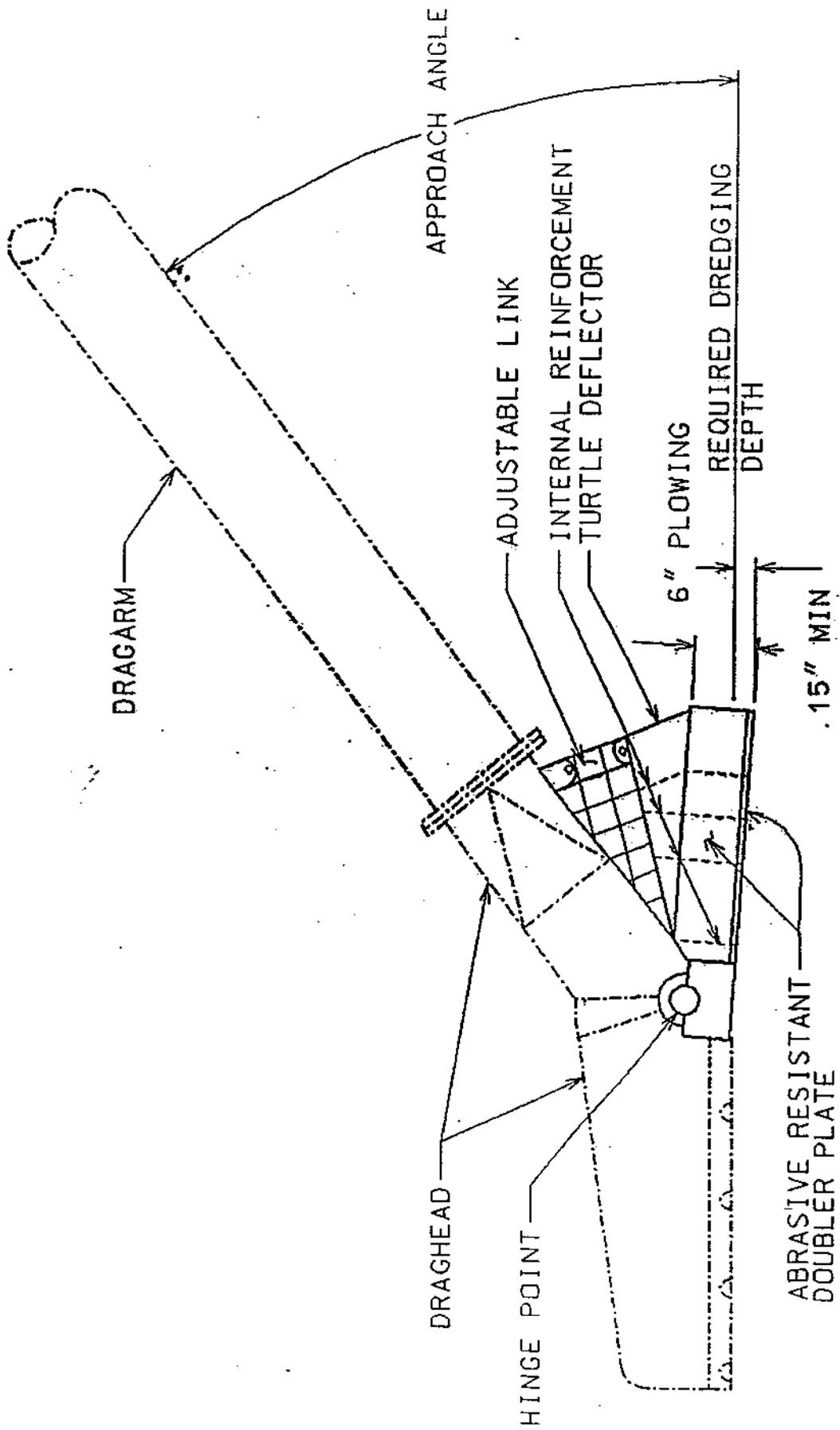
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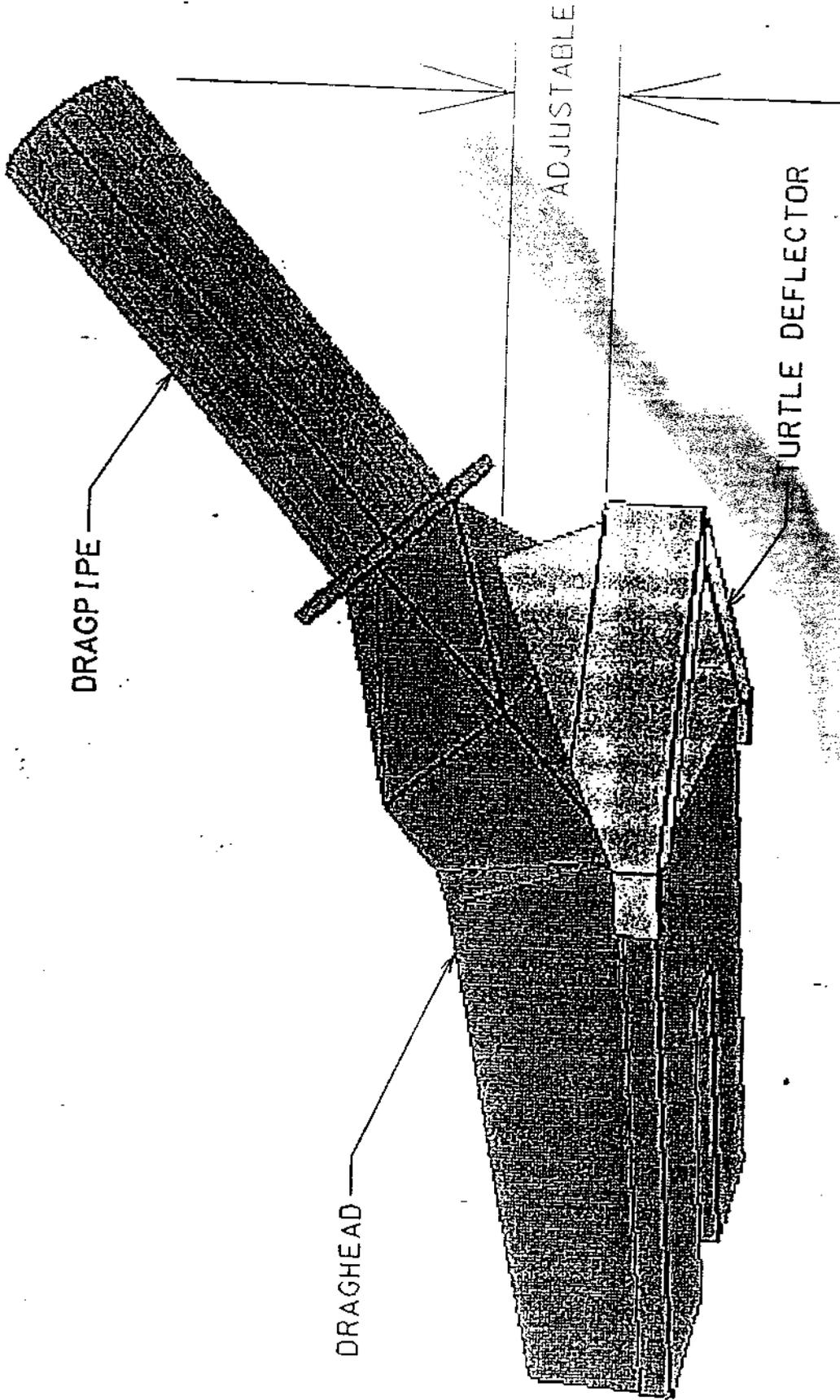
PLAN VIEW

RIGID TURTLE DEFLECTOR

SCALE: NONE



**ELEVATION**  
 RIGID ADJUSTABLE TURTLE DEFLECTOR  
 SCALE: NONE



02483-D3

## SEA TURTLE TRAWLING REPORT

Channel: \_\_\_\_\_ Vessel: \_\_\_\_\_ Captain: \_\_\_\_\_  
Crew: \_\_\_\_\_

Date: \_\_\_\_\_  
Time: \_\_\_\_\_  
Shift #: \_\_\_\_\_  
Dredge Location: \_\_\_\_\_  
Total Tow Time: \_\_\_\_\_ min

Survey: \_\_\_\_\_  
Relocation: \_\_\_\_\_  
PreDredge: \_\_\_\_\_

### SUBSTRATE

Mud: \_\_\_\_\_  
Sand: \_\_\_\_\_  
Rocks: \_\_\_\_\_  
Snag: \_\_\_\_\_  
Other: \_\_\_\_\_

Low Tide Time: \_\_\_\_\_  
High Tide Time: \_\_\_\_\_  
Ebb: \_\_\_\_\_ Flood: \_\_\_\_\_  
Slack Ebb: \_\_\_\_\_ Slack Flood: \_\_\_\_\_  
Comments: \_\_\_\_\_

Water Temp. (B: °C)(M: °C)(S: °C)  
Wave Height: \_\_\_\_\_ ft  
Air Temperature: \_\_\_\_\_ °C  
Wind Speed/Direction: \_\_\_\_\_  
Barometric Pressure: \_\_\_\_\_

### BEGIN TOW

Time: \_\_\_\_\_  
Depth: \_\_\_\_\_ ft  
Speed Mid-Tow: \_\_\_\_\_ knots  
Latitude: \_\_\_\_\_  
Longitude: \_\_\_\_\_  
Loran: \_\_\_\_\_  
Station/Buoys: \_\_\_\_\_

### END TOW

Time: \_\_\_\_\_  
Depth: \_\_\_\_\_ ft  
Total Tow Distance: \_\_\_\_\_ ft  
Latitude: \_\_\_\_\_  
Longitude: \_\_\_\_\_  
Loran: \_\_\_\_\_  
Station/Buoys: \_\_\_\_\_

### NUMBER OF TURTLES

Port Net:

Logger: \_\_\_\_\_  
Kemp: \_\_\_\_\_  
Green: \_\_\_\_\_  
Other: \_\_\_\_\_

Starboard Net:

Logger: \_\_\_\_\_  
Kemp: \_\_\_\_\_  
Green: \_\_\_\_\_  
Other: \_\_\_\_\_

BY CATCH/COMMENTS

# SEA TURTLE TAGGING AND RELOCATION REPORT

Channel: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

\_\_\_\_\_ of \_\_\_\_\_

Ship Name: \_\_\_\_\_ Net: \_\_\_\_\_ Port: \_\_\_\_\_ Starboard: \_\_\_\_\_

Flipper Tag	Sex	Weight
Left: _____ Right: _____ Recapture: _____ This Effort: _____ Previous Effort: _____	Male: _____ Female: _____ Unknown: _____	_____ Kg _____ lbs

Carapace S.L. Length	S.L. Width	Tail Length
_____ cm _____ in CCL: _____ cm	_____ cm _____ in CCW: _____ cm	(from plastron to tip) _____ cm

Head Width	Photos Taken	Blood Taken
_____ cm _____ in	Yes: _____ No: _____	Yes: _____ No: _____ Time: _____ No. of Vials: _____

**Telemetry Tag**

Radio: \_\_\_\_\_  
 Sonic: \_\_\_\_\_  
 Satellite: \_\_\_\_\_  
 \_\_\_\_\_ Mhz  
 \_\_\_\_\_ Khz

## GENERAL CONDITIONS OF TURTLE

CPL: \_\_\_\_\_ cm  
 CPW: \_\_\_\_\_ cm  
 PIT Tag #: \_\_\_\_\_

**Turtle Released**

Date: \_\_\_\_\_  
 Time: \_\_\_\_\_

**Release Location**

Latitude: \_\_\_\_\_  
 Longitude: \_\_\_\_\_

## TURTLE TRAWL NETS SPECIFICATIONS

**DESIGN:** 4 seam, 4 legged, 2 bridal trawl net

**WEBBING:** 4 inch bar, 8 inch stretch top - 36 gauge twisted nylon dipped side - 36 gauge twisted nylon dipped bottom - 84 gauge braided nylon dipped

**NET LENGTH:** 60 ft from cork line to cod end

**BODY TAPER:** 2 to 1

**WING END HEIGHT:** 6 ft

**CENTER HEIGHT:** Dependent on depth of trawl 14 to 18 ft

**COD END:** Length 50 meshes x 4" = 16.7 ft Webbing 2 inch bar, 4 inch stretch, 84 gauge braid nylon dipped, 80 meshes around, 40 rigged meshes with 1/4 x 2 inch choker rings, 1 each « x 4 inch at end cod end cover - none chaffing gear - none

**HEAD ROPE:** 60 ft « inch combination rope (braid nylon with stainless cable center)

**FOOT ROPE:** 65 ft « inch combination rope

**LEG LINE:** top - 6 ft, bottom 6 - ft

**FLOATS:** size - tuna floats (football style), diameter - 7 inch length - 9 inch, number - 12 each, spacing - center on top net 2 inches apart

**MUD ROLLERS:** size 5 inch diameter 5.5 inch length, number - 22 each, spacing - 3 ft attached with 3/8 inch polypropelene rope (replaced with snap on rollers when broken)

**TICKLER CHAINS:** NONE (discontinued- but previously used 1/4 inch x 74 ft galvanized chain)

**WEIGHT:** 20 ft of 1/4 inch galvanized chain on each wing, 40 ft per net looped and tied

**DOOR SIZE:** 7 ft x 40 inches (or 8 ft x 40 inches), Shoe - 1 inch x 6 inch, bridles - 3/8 inch high test chain

**CABLE LENGTH (bridle length, total):** 7/16 inch x 240-300 ft varies with bottom conditions

**FLOAT BALL:** none

**LAZY LINES:** 1 inch nylon

**PICKUP LINES:** 3/8 inch polypropelene

**WHIP LINES:** 1 inch nylon