

SECTION 13990 – FLOAT

All work and materials shall conform to the Drawings, MDOT Standard Specifications and the following:

1. Materials and Workmanship

All work performed on the float shall be in accordance with good commercial marine practice, and all material incorporated in the float shall be new, suitable and of best quality for the service intended. All materials and articles placed aboard the float shall be free from imperfections and defects affecting appearance or serviceability due to exposure, mishandling or other damage. Defects appearing at any stage of the work prior to the delivery of the float shall be cause for rejection, even though the work may have previously been passed as satisfactory.

Welding procedure and practice shall be accordance with the American Welding Society and the American Bureau of Shipping recommendations. Additional detailed welding requirements are given in Note 3.3.

Welding schedules, as approved by Owner, shall be carefully followed in performing the work under the Contract. Structural welding shall be carried out in such sequence as to make allowance to compensate for creep and shrinkage as the work progresses, holding distortion to an acceptable minimum.

2. Access

Arrangements for examination, access and cleaning and painting shall be provided for all compartments in the float by means of permanent ladders, handgrabs and manholes. In general, each void or tank space in the hull shall have two accesses.

3. Structural hull

3.1 General

The hull shall be longitudinally framed and of all welded construction. Basic scantlings shall be as shown on the Contract Plans. Local structure where required shall be developed by the Contractor. Alternate structure to that shown on the Contract Plans may be submitted for approval. Adequate limbers shall be provided for drainage of all bilges and compartments within the hull.

3.2 Workmanship

All workmanship shall be of a standard of quality consistent to insure that the requisite tightness is obtained, exposed surfaces are smooth, proper fit and alignment accomplished, and stress concentrations minimized.

Lifting eyes and staging clips which are welded completely around may be left in place or cut off beyond the weld provided they will not be unsafe, will not interfere with the intended function of the vessel and will not create stress concentrations.

3.3 Welding

All welding on exterior exposed areas shall be continuous. Decks, bulkheads, shell, etc., shall have surfaces reasonably fair, without buckles, kinks, or other surface irregularities.

3.4 Testing and Inspection of Welds

Industrial radiographic inspection, or any other method satisfactory to the Owner, shall be employed at the coverage rate specified in the ABS barge rules. Should the Owner, due to unsatisfactory welding as a whole, deem it necessary to increase the percentage or area of internal examination, it shall be done at the Contractor's expense.

4. Manholes

A minimum of two manholes shall be provided into each tank or void space below the main deck. All manholes in way of the concrete slab shall be provided with 1/2 inch plate coamings and one inch plate bottom-tapped top rings. One cover per compartment shall be fitted with 4 inch IPS Schedule 60 half couplings and flush bronze plugs for sounding and salvage air. Stainless steel bolts and neoprene gaskets shall be fitted to all manholes.

5. Ladders

Vertical ladders shall be provided in way of each manhole leading to tanks or voids below the main deck. Vertical ladders shall be constructed of 3 inch by 1/2 inch stringers with 3/4 inch square bar treads welded to the stringers. Treads shall be at least 16 inches wide with 7 inches of toe room and shall be spaced 12 inches apart. All vertical ladders shall be bolted in place. Handgrabs shall be located on deck at the top end of all vertical ladders.

6. Rails

Railings around the perimeter of the float shall be located as shown on the Plans.

Railings shall be three course, 42 inches above the finished deck and shall be constructed of 1-1/4 inch steel pipe with pipe stanchions and shall be galvanized. Stanchions shall be 1-1/4 inch Schedule 40 steel pipe with suitable handrail fittings. They shall be installed with spacing not to exceed five feet.

7. Mooring Fittings

All fittings are to be steel and bearing surfaces ground smooth. All fittings shall be capable of withstanding a minimum line load of 50,000 pounds without permanent deformation. Mooring fittings shall be located generally as shown on the drawings. Smooth welded steel extra heavy pipe molding or half round bars shall be fitted in way of mooring fittings.

8 Concrete Slab

The main deck shall be covered with a bonded reinforced concrete slab after all fittings, boundaries, curb form plates and other structure are installed and after all watertight testing is completed. Slab thickness shall be of the thickness noted on details. Slab installation shall be scheduled for at least 20 days cure time prior to delivery voyage.

The following materials and procedures shall be used:

8.1 Quality Assurance

Materials and installation procedures shall comply, as a minimum, with the following codes and standards:

- A. Uniform Building Code, 1988
- B. ACI 301 "Specifications for Structural Concrete in Buildings"
- C. ACI 347 "Recommended Practice for Concrete Formwork"
- D. ACI 315 "Manual of standard Practice for Detailing Reinforced Concrete Structures."

- E. ACI 318 "Building Code Requirements for Reinforced Concrete
- F. Concrete Reinforcing Steel Institute, "Manual of Standard Practice."

Contractor shall employ the services of an approved testing laboratory to perform materials evaluation tests. Free access shall be allowed to material stockpiles and facilities. One slump test per pour shall be made to verify consistency and conformity with specifications. Three compression test cylinders shall be taken for each 50 yards or each day's pour, whichever is greater, in accordance with ASTM C31. Compression tests shall be performed in accordance with ASTM C39 and ASI-318, one at seven days and two at twenty-eight days.

Manufacturers' product data shall be submitted to the Owner's Representative, together with application and installation instructions, for all proprietary products including reinforcement and forming accessories, admixtures and curing and patching compounds.

The Contractor shall submit for approval shop drawings showing arrangement of concrete reinforcement, including bar schedules, diagrams of bent bars, stirrup spacing and chair arrangement, in accordance with ACI 315.

8.2 Tolerances

Slab thickness tolerance shall be maintained to minus 1/4 inch and to plus 1/2 inch except in way of indentations or distortions in existing plating.

8.3 Project Conditions

Adjacent finishes shall be protected against splatter during placement. In case of freezing weather, completed work shall be covered to prevent freezing.

8.4 Reinforcing Materials

All reinforcing bar and fabric shall be epoxy coated in accordance with ASTM A-775. Reinforcing bar shall be ANSI/ASTM A615, Grade 60. Welded wire fabric (WWF) shall be ANSI/ASTM A185. Steel tie wire shall be plain, cold drawn ANSI/ASTM A82.

Slab shall be reinforced with 12" x 12" x #4 WWF supported by chairs to 1-1/2 inch clear cover. Alternative patterns of weld wire fabric may be used, consisting of closer spacing and smaller bar size, provided that a equivalent area of reinforcing is provided.

8.5 Concrete Materials

Portland cement shall comply with ANSI/ASTM C150, Type II. The same brand and type shall be used throughout the project, except as approved by the Owner's Representative.

Aggregates shall be normal weight, conforming to ANSI/ASTM C33 and paragraph 403 of ACI Building Code. Each type of aggregate used shall be from a single source throughout the project. Maximum aggregate size shall be 3/4 inch.

Calcium chloride thiocyanates or admixtures containing more than 0.1 percent chloride ions are not permitted.

Water used shall be clean potable water.

Air-entraining admixtures conforming to ANSI/ASTM C260 (3% to 6%) shall be used.

Pozzoloth 300 series shall be used in all mixes at the rate of 4 oz. per 100 lbs. cement.

Two pounds per yard of Fibermesh polypropylene fiber shall be added to mix.

8.6 Proportioning and Design of Mixes

Design mixes shall be prepared by either the laboratory trial batch method or the field experience method as defined in ACI 301. If the trial batch method is used, an approved independent testing laboratory shall be employed for

preparing and reporting mix designs. Written reports for each proposed mix shall be submitted at least 15 days prior to the start of work, and concrete production shall not commence prior to approval.

Trial batches should be evaluated for 6 sack, 6-1/2 sack and 7 sack of cement per cubic yard. The concrete strength, workability and curing characteristics should be determined. The advisability of using a water-reducing admixture to aid in placing the concrete should also be determined.

The Contractor shall prepare and submit with the above trial batch evaluations his proposed procedures for hot weather concreting. These procedures should be in accordance with ACI Standard 305R, Recommended Practice for Hot Weather Concreting. Very early morning placement of all concrete is recommended. The procedure submittal should address the following minimum topics:

- A. Temperature of concrete
- B. Use of Admixtures to control water and set
- C. Production and Delivery
- D. Placement and Protection
- E. Concrete Testing

Mixes shall be designed to provide normal weight concrete with the following properties:

- A. $f'_c = 4000$ psi
- B. W/C less than 0.4
- C. Six sack minimum cement content
- D. Concrete slump at point of placement, not less than 3 inches nor more than 5 inches
- E. Comply with ANSI/ASTM C94, except delete references to allowing additional water to be added to batch for material with insufficient slump. Addition of water will not be permitted. During hot weather, a shorter mixing time than specified in C94 will be required. When air temperature is between 85°F and 90°F, reduce mixing and delivery time from 90 minutes to 75 minutes. Above 90°F, reduce to 60 minutes.

8.7 Surface Preparation

After completion of all surrounding steel installation and welding, deck surface shall be blasted to remove all loose rust, scale, mill scale, slag, flux deposits or preconstruction primer. The time between blasting and concrete placement shall be kept to a minimum by carefully scheduling the installation of reinforcing, screeds and construction joint forms. However, no primer or other protective treatments shall be applied to steel unless approved by the bonding agent manufacturer.

8.8 Placing Reinforcement

Reinforcement shall be accurately placed, and secured against displacement during placing operations, by means of metal chairs, runners, bolsters, spacers or hangers as required. Minimum concrete cover shown in reinforcing details shall be maintained. Wire ties shall be set so that ends are directed into concrete, not towards exposed surfaces.

Welded wire fabric shall be installed in as long lengths as practical and adjoining pieces lapped at least one full mesh. End laps in adjacent widths shall be offset to prevent continuous laps in either direction.

8.9 Joints

Construction joints shall be placed to avoid unjointed slab dimensions in excess of twenty feet. Keyways at least 1-1/2 inches deep shall be provided in construction joints. Reinforcement shall be continuous across joints except as

otherwise detailed. Alternatively, joints may be sawed in continuously poured slab sections at twenty foot intervals, and caulked after cure.

8.10 Installation of Imbedded Items

Anchorage devices, foundations and other imbedded items shall be completed prior to placement of concrete. Edge forms and intermediate screed strips shall be set to obtain required elevations and contours, and shall be sufficiently strong to support the strike-off templates or compacting type screeds used.

8.11 Bonding Compound

Steel deck and all embedded steel surfaces and steel boundaries shall be treated with Coneresive LPL-1001 fresh concrete epoxy bonding agent, manufactured by Master Builder Technology, (formerly Adhesive Engineering Company). The deck surface shall be clean and free of standing water. Air and deck temperatures shall be between 50°F and 100°F at the time of application. Epoxy shall be applied by spray or roller immediately before fresh concrete is placed as follows: within one hour if temperature is between 50°F and 72°F, or within twenty minutes if temperature is between 77°F and 100°F. Application shall be performed by an applicator licensed by the manufacturer.

8.12 Concrete Placement

All formwork, reinforcing steel and embedded items shall be inspected and approved prior to placement. Placement shall comply with ACI 304 and with these specifications. Concrete shall be deposited continuously so that it is not deposited in contact with concrete that has hardened sufficiently to cause the formation of seams or planes of weakness, and shall be deposited as nearly as practicable to its final location to avoid segregation. Do not use vibrators to transport concrete. Concrete shall be consolidated during placement to ensure that it is thoroughly worked around reinforcement and embedded items and into corners.

Slab surfaces shall be brought to correct level with straightedge and strike-off, then smoothed with darbies or bull floats to a smooth surface. Slab surfaces shall then be left undisturbed until finishing.

8.13 Finishing

After surface water has disappeared and concrete is sufficiently stiff, surface shall be consolidated with floats. Surface shall be checked and leveled to a tolerance of 1/8 inch in ten feet when tested with a 10 foot straightedge. High spots shall be cut down and low spots filled, and the surface refloated to a uniform smooth granular surface. After floating, surface shall be roughened with a coarse fiber bristle broom in the fore and aft direction. All edges in contact with vertical steel surfaces and all construction joints shall be cove troweled for subsequent application of caulking.

8.14 Curing and Protection

Apply an approved curing and sealing compound to all exposed surfaces within two hours of completion of finishing operations. Apply uniformly in a continuous operation by spray or roller in accordance with manufacturer's recommendations. Areas subjected to heavy rainfall within three hours of initial application shall be recoated as required.

8.15 Caulking

An approved caulking compound, Sikadur 51 flexible epoxy control joint sealant and adhesive or equal, shall be applied to all joints and boundaries after slab is completely cured and finish coatings are applied to adjoining steel surfaces.

8.16 Repairs

At the direction of the Owners Representative, any loose topping, slabs which show excessive shrinkage cracks or do not draw properly, or otherwise do not meet specification requirements shall be removed and replaced.

Isolated random cracks and single holes not larger than 1 inch diameter may be repaired by the dry pack method. Cracks shall be grooved out and holes cut to sound concrete, then patched with dry pack mortar and an approved bonding compound. Larger defects shall be repaired by removing to sound concrete with clean, square cuts perpendicular to surface, exposing reinforcing steel to at least 3/4 inch all around, and replacing with patching concrete and approved bonding compound.

Any crazing cracks in excess of 0.005 inch width or which may penetrate to reinforcing steel or structural steel shall be repaired by one of the above methods or by an approved proprietary repair method.

9 Cathodic Protections

A total of twelve hull zincs shall be installed along the length of the bilges. Each zinc shall weigh approximately 22 pounds and be tapered. Zincs shall be mounted on flat bar stand-offs using bronze bolts, and are not to be painted. Location of zincs shall be as directed by Owner.

10 Portable Fire Extinguishers

Owner furnished portable 15 lb. CO₂ fire extinguishers shall be installed as directed, in accordance with the facility fire protection plan.

11 Painting

11.1 General

All coating materials shall be applied in strict conformity to the manufacturer's instructions, including those with regard to surface preparation.

Where not otherwise specified, all parts or spaces such as exposed piping, wiring, ladders, etc., which are normally painted, shall be cleaned and painted to conform to the surroundings or to comparable parts or spaces. All fixtures, label plates, etc., which are not to be painted shall be protected during coating operations and, upon completion of the work, all paint and masking shall be removed. All surfaces, including items of machinery and equipment which become damaged, soiled or covered with overspray shall be cleaned, touched up or repaired prior to delivery.

The paints employed in a given coating system shall be from the same manufacturer, International Paint Company or equal unless otherwise specified herein, or otherwise approved by the manufacturers concerned, and Owner. Each coat of paint shall be compatible with the coat of paint which it will cover, including preconstruction primers that are to be retained as part of the final coating system.

The term "DFT" as used herein shall mean the minimum dry film thickness.

Prior to final coatings selection, each coating being considered shall be fully identified by means of a Paint and Coating Data Sheet. Information given on the Data Sheet shall be a basis for ensuring proper storage, application and other aspects of each coating.

A pre-construction conference shall be held between the Owner and Contractor for the purpose of establishing criteria and agreements pertaining to coatings application. Subjects of discussion shall include, but not be limited to, the following: role of the coatings representative, method of measuring coating thickness, procedure for inspecting each surface prior to its being coated, procedure for informing Owner when coatings are to be applied and other aspects of this subject leading to maximum assurance that coatings will be applied successfully and in accordance with the specification.

All paints and coatings used which make pesticidal claims, such as in the case of anti-fouling paints, shall be registered with the U.S. Environmental Protection Agency.

Local jurisdiction solvent regulations shall be complied with by the use, when required, of complying substitute solvents, demonstrated as being suitable in coating performance and shelf life stability.

Unless otherwise specified, or approved in writing by the manufacturer, paint and other coating material shall not be thinned with solvent, nor altered in any manner by Contractor.

Successive coating applications shall be of noticeably different colors in order to aid the inspection process. Finish colors shall be to Owner's choice.

American National Standards Institute safety colors, ANSI Z53.1-1971, shall be used to distinguish hatch openings, machinery, moving parts and fittings that present a hazard.

Walking and working areas, including but not limited to staircases and platforms, shall be coated with "non-slip" type coatings, or shall be finished by other means which will result in a substantially higher coefficient of friction for those surfaces as compared with adjacent surfaces not so treated.

Ferrous piping required to be galvanized shall be galvanized after fabrication. Where this is not practicable, galvanized surfaces destroyed by fabrication shall be repaired by the "metal spray" method, or, as in the case of welds made aboard ship, cleaned by wire brushing with a steel or stainless steel brush followed by a fresh water wash and coated with suitable anti-corrosive cold galvanizing paint such as MIL-P-21035, "Galvacon" or "Galvex." Screwed connections may be made after galvanizing.

These specifications shall specifically identify all areas that are not to be painted. Where not otherwise stated, all structural and non-structural parts and spaces, doors, fittings, vendor supplied items, etc., which are normally painted shall, after proper surface preparation, be painted to conform to the surroundings or to comparable parts or spaces.

Exterior applications of inorganic zinc silicate to decks shall be carefully inspected, cleaned to remove oxidized products and touched up where required prior to the application of succeeding coats.

After application of coatings to any interior space is completed, the space shall be properly ventilated so that coatings are properly cured and the compartment is gas-free.

11.2 Surface Preparation

All new and disturbed areas of structure, piping or fittings shall be wheelabrated or gritblasted to near white metal (SSPC-SP10-63T) and coated in accordance with the following procedures.

The use of wheelabrated preprimed steel plates and shapes in the erection of structure is encouraged. If wheelabrated and primed steel is used, Contractor shall obtain approval from Owner's Representative of the wheelabrating and priming system and of all materials and methods for subsequent surface preparation. The Contractor shall obtain a certificate of weldability of the preconstruction priming system.

When blasting is performed, Contractor shall prevent damage to neighboring equipment, intact coatings, etc., by abrasive grains or dross. Blast abrasives shall be of such a configuration as to create a surface profile in accordance with the coating manufacturer's recommendations. Abrasives shall be clean, dry and free of any material likely to stimulate corrosion of the steel to be blasted.

Where wirebrushing is specified, the use of a power wirebrush or equivalent power tool is intended. Where gritblasting is required, it shall be in conformity with the specifications of the Steel Structures Painting Council as indicated.

Where blasting is performed, the Contractor shall seal off machinery, equipment and all openings to prevent damage from grit. The blasted surface shall be coated with the first coat of specified coatings the same day blasting is performed and before sundown of that day.

Control of the quality of surface preparation shall be maintained by a system of inspection by the coating manufacturer's representative. The inspection schedule and procedure shall be approved by the Owner's Representative before work is begun.

Where solvent cleaning, power tool cleaning or pickling is specified herein, it shall be as follows:

SP-1	Solvent Cleaning
SP-3	Power Tool Cleaning
SP-8	Pickling

Prior to the application of coating materials, all surfaces shall be free of foreign matter such as crayon marks, dirt, grease, oil, residual abrasive from blasting, rust, salt deposits, welding slag, etc. Galvanized metal not thoroughly weathered shall be degreased and shall receive an application of metal pretreatment of the vinyl butyral/acid type. For the following surfaces required to be painted, or where painting is applied in order to avoid masking, the following shall apply:

<u>Surface</u>	<u>Cleaning Agent</u>
Aluminum (1)	Alodine, Alumiprep, or equal
Brass, Bronze	Thoroughly clean with copper solvent
Galvanized Metal (1)	Galvaprep, Lithoform, or equal

Where the item or surface to be cleaned contains crevices which could retain harmful acids or salts, solvent cleaning, followed by the application of Pre-treatment (Wash) Primer, shall be employed.

Weather exposed steel surfaces shall be abrasive blasted to "near white". Where wheelabrated and primed material has been used, all weld lines and damaged areas shall be spot blasted prior to application of first overcoat. Note that the term "weather exposed steel," as employed in this section, means all steel from keel to the topmost area (except: galvanized and stainless steel; and surfaces oiled or greased), which, after erection or installation, is exposed directly or indirectly to the weather. Surface preparation of main deck areas to be covered by concrete is described in Section 8.

Interior steel not required to be overcoated with inorganic zinc silicate, except as noted below, shall receive commercial blast, SSPC-SP-6. Where surfaces have been cleaned and primed prior to erection, all welded joints resulting from erection shall be blasted. Any areas to receive inorganic zinc silicate coatings, and entire hull exterior from keel to deck edge shall have a near white blast, SSPC-SP-10.

11.3 Main Deck

Main deck, fittings and structure to be covered or in contact with concrete deck slab shall be blasted in accordance with Section 8, and left unprimed prior to application of Concrete epoxy bonding compound. Remainder of decks, deck fittings, bitts, chocks and curbs that are to be exposed shall have welds and damaged preconstruction primer blasted to SSPC-SP-10, and be coated as follows:

- A. Apply one (1) full coat Interzinc Primer Green, No. QHA028/QHA027 at 3.0 mils dry film thickness. Interval before overcoating shall be a minimum of 24 hours.
- B. Apply one (1) full coat Intertuf HB Epoxy Gray No. KHA302/KHA062 at 4.0 mils dry film thickness. Interval before overcoating shall be a minimum of 6 hours and a maximum of one month.
- C. To horizontal deck surfaces only, apply one (1) full coat Intergard Nonskid Dark Gray No. EKG312A/EBQ029A.

11.4 Void Compartments

All void spaces below main deck shall have welds and damaged preconstruction primer blasted to SSPC-SP-10 and be coated as follows:

- A. Apply one (1) full coat zinc rich epoxy, Interzinc No. EPA075/EPA075 at 3.0 mils dry film thickness.

11.5 Exterior Topsides

Topsides above the two foot waterline shall have welds and damaged preconstruction primer blasted to SSPC-SP-10 and be coated as follows:

- A. Apply one (1) full coat Interzinc Primer Green, No. QHA028/QHA027 at 3.0 mils dry film thickness. Interval before overcoating shall be a minimum of 24 hours.
- B. Apply one (1) full coat Intertuf HB Epoxy Gray No. KHA302/KHA062 at 4.0 mils dry film thickness. Interval before overcoating shall be a minimum of 6 hours and a maximum of one month.
- C. Apply one (1) full coat Interthane Finish Black, No. PSY999/PSA154 at 2.0 mils dry film thickness.

11.6 Exterior Bottom

Exterior below two foot waterline shall be abrasive blasted to SSPC-SP-10 throughout, and coated with a self-polishing copolymer (SPC) system as follows. Note that manufacturer's recommendations require that all topside painting must be completed prior to application of SPC coating system. Actual dry times to overcoat indicated below are approximate, and will be determined on-site by the manufacturer's representative.

- A. Apply one (1) full coat Intergard Universal Epoxy Red No. FPL274/FPA327, at 5.0 mils dry film thickness. Interval before overcoating shall be a minimum of four hours and a maximum of one month.
- B. Apply one (1) full coat Intergard Universal Epoxy Gray No. FAJ034/FAA262 at 5.0 mils dry film thickness. Interval before overcoating shall be a minimum of five hours, and a maximum of one month.

- C. Apply one (1) full coat Intersmooth SPC Hisol Plum No. BFA254 4.0 mils dry, 8.0 mils wet film thickness. Interval before overcoating shall be a minimum of eight (8) hours.
- D. Apply one (1) full coat Intersmooth SPC Hisol Pink No. BFA256 4.0 mils dry, 8.0 mils wet film thickness. Interval before overcoating shall be a minimum of twelve (12) hours.
- E. Apply one (1) full coat Intersmooth SPC Hisol Plum No. BFA254 4.0 mils dry, 8.0 mils wet film thickness. Drying time before undocking shall be a minimum of twenty-four hours.

11.7 Guarantee

The coating system shall be guaranteed for the period defined by the Contract. The coating systems shall be considered a failure if 2% or more of the surface area in a given tank, space or surface has developed detachment, blistering and/or cracking. A rust failure resulting in a condition in excess of Rust Grade 6 (1% area breakdown) in accordance with the "Standard Method of Evaluating Degree of Rusting on Painted Steel Surfaces, ASTM D 6109-68 (1974)" shall be corrected to the standard established in the original specification.

12 Ring Life Buoys

Four (4) 30 inch Coast Guard approved ring life buoys each with a 15 fathom line shall be provided. Ring buoys shall be mounted at the deck edge fore and aft on both sides of the float, or as specified on the facility lifesaving plan

13 Nameplates, Notices and Markings

13.1 General

Nameplates and notices shall be plastic, engraved on metal or prepared by the "metal-photo" process, Federal Specification GG-P-455, for hatch and manhole labels, warning lights, etc., and operating and maintenance instruction plates.

Plastic plates shall be machine engraved 1/32 inch deep on black laminated phenolic having a white center.

All label plates shall be attached with stainless steel screws or approved adhesives, only screws or other approved means are to be used in weather locations. Metallic plates shall be insulated to prevent contact with dissimilar materials.

Safety signs, warning signs, and safety line markings required by stevedore's work rules shall be provided.

Lettering shall be clear and concise with a minimum of abbreviations. Where abbreviations are necessary, they shall conform to accepted standards. All labels, signs and notices shall be in English.

13.2 Manhole Markings

All manholes shall have a label plate similar to identification plates specified above. It shall designate the compartment to which access is made, and shall also include a warning similar to the following:

WARNING !

Confined space.

Use only approved entry procedures.

13.3 Shell Plate Markings

Shell plating at the two foot waterline shall be marked by horizontal 2 inch long welded beads, 1/8 inch thick, at intervals of 10 feet for guidance in application of paint.

Location of all main athwartship bulkheads shall be indicated by frame numbers on the outside of the shell plating at the ten foot waterline by small bead markings in arabic numerals, 6 inches high for use in drydocking. "Layup" type waterline marks, a horizontal line at the light floating waterline with a six inch high triangle point down to the line, shall be outlined in weld bead and painted white, near each of the four corners of the float.

14 Outfit

Passenger walkways, ramps, railings, attached electrical and lighting and other appurtenances will be installed by others on the steel deck inserts shown on these plans.

*** END OF SECTION ***