

SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS
 OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30

1. REQUISITION NUMBER: MA-PR615-20110070
 PAGE OF: 1 | 2

2. CONTRACT NO. | 3. AWARD/EFFECTIVE DATE | 4. ORDER NUMBER: DTMA-92-P-2011-0010 | 5. SOLICITATION NUMBER | 6. SOLICITATION ISSUE DATE

7. FOR SOLICITATION INFORMATION CALL: Monique Leake | 8. TELEPHONE NUMBER: 757.322.5820 | 8. OFFER DUE DATE/LOCAL TIME: ET

9. ISSUED BY: U.S. DOT/ Maritime Administration, Atlantic Div. Acquisition Office, MAR-380-2, 7737 Hampton Blvd, Building 19 Suite 300, NORFOLK VA 23505-1204
 CODE: 00092

10. THIS ACQUISITION IS:
 UNRESTRICTED SET ASIDE % FOR
 SMALL BUSINESS
 HUBZONE SMALL BUSINESS 8(A)
 NAICS: 336611
 SIZE STANDARD: 1,000

11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED: SEE SCHEDULE
 13a. THIS CONTRACT IS A RATED ORDER: UNDER OPAS (15 CFR 700)
 13b. RATING
 14. METHOD OF SOLICITATION: RFP IFB RFP

15. DELIVER TO: TS KENNEDY, Massachusetts Maritime Academy, 101 Academy Drive, Buzzards Bay MA 02532
 CODE: 00092-TS KENNEDY

16. ADMINISTERED BY: U. S. DOT Maritime Administration, Atlantic Div. Acquisition Office, MAR-380.2, 7737 Hampton Blvd, Building 19 Suite 300, Norfolk VA 23505-1204
 CODE: 00092

17a. CONTRACTOR/OFFEROR: LIGHTSHIP GROUP, LLC, THE (dba: ASK Services), 606 TEN ROD RD UNIT 6, NORTH KINGSTOWN RI 02852-4222
 CODE: 043640643

18a. PAYMENT WILL BE MADE BY: MARAD A/P INVOICES, P.O. BOX 25710, OKLAHOMA CITY OK 73125
 CODE: AMZ-160 (US. MAI)

(Duns #043640643)
 TELEPHONE NO.

17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER
 18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a. UNLESS BLOCK BELOW IS CHECKED. SEE ADDENDUM

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	Issued for the sea water cooling pumps replacement and piping modifications onboard the T.S. KENNEDY. Delivery: 12/15/2010 Mark For: TS KENNEDY Massachusetts Maritime Academy 101 Academy Drive Buzzards Bay MA 02532 Period of Performance: 11/30/2010 to 12/15/2010 Continued ... (Use Reverse and/or Attach Additional Sheets as Necessary)				

25. ACCOUNTING AND APPROPRIATION DATA: 70X1750SMR.2011.120SMP1070.0000160000.25711.61006600
 26. TOTAL AWARD AMOUNT (For Govt. Use Only): \$188,150.00

27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4, FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA A ARE ARE NOT ATTACHED.
 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA ARE ARE NOT ATTACHED.

28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN.

29. AWARD OF CONTRACT REF. YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS.

30a. SIGNATURE OF OFFEROR/CONTRACTOR: Peter Starr VP
 31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER): Monique P. Leake
 30b. NAME AND TITLE OF SIGNER (Type or Print): Peter Starr VP
 30c. DATE SIGNED: 30 NOV 10
 31b. NAME OF CONTRACTING OFFICER (Type or print): Monique Leake
 31c. DATE SIGNED: 11/30/2010

19. ITEM NO.	20. SCHEDULE OF SUPPLIES/SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
0001	Replace AMR Sea Water Pumps In Accordance With Attached SOW				73,650.00
0002	Modify Air Conditioning Sea Water Piping In Accordance With Attached SOW.				72,200.00
0003	Modify NIREX Sea Water Piping In Accordance With Attached SOW.				25,600.00
0004	Provide Supplemental Labor If Requested In Accordance With Attached SOW.	100	HR	87.00	8,700.00
0005	Provide Supplemental Material If Requested In Accordance With Attached SOW. In order for an invoice to be processed for payment, it must include your Federal ID Number, Purchase Order Number, and Invoice Number. Without these numbers, your invoice will be returned and payment will be delayed. The total amount of award: \$188,150.00. The obligation for this award is shown in box 26.				8,000.00

32a. QUANTITY IN COLUMN 21 HAS BEEN

RECEIVED INSPECTED

ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: _____

32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32c. DATE	32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE
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32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE
	32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE

33. SHIP NUMBER <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	34. VOUCHER NUMBER	35. AMOUNT VERIFIED CORRECT FOR	36. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	37. CHECK NUMBER
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38. S/R ACCOUNT NUMBER	39. S/R VOUCHER NUMBER	40. PAID BY
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41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT	42a. RECEIVED BY (Print)		
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER	41c. DATE	42b. RECEIVED AT (Location)	
		42c. DATE REC'D (YY/MM/DD)	42d. TOTAL CONTAINERS

STATEMENT OF WORK

TITLE: TS KENNEDY – SEA WATER COOLING PUMPS REPLACEMENT AND PIPING MODIFICATIONS

ABSTRACT AND INTENT: The TS Kennedy is a U.S. Government owned “Public Nautical School Ship” provided to the Massachusetts Maritime Academy for the purpose of training young men and women for a career in the U.S. Maritime Industry. It is the intent of this Statement of Work (SOW) for the Contractor to provide all labor, materials, and services (except where noted as being government furnished) to accomplish the following in accordance with all applicable U.S. Coast Guard (USCG) Regulations and American Bureau of Shipping (ABS) Rules:

Auxiliary Machinery Room (AMR) Sea Water Cooling Pumps: Replace two sea water cooling pumps and motors in the AMR with two new government furnished (GFM) pumps and motors. The new pumps and motors are of a different manufacturer and model and, therefore, have different dimensions and a different footprint than the original pumps and motors. This SOW defines the removals and modifications required for the associated electrical, piping and structural systems in order to accomplish the installation of these new pumps and motors.

Air Conditioning (A/C) Sea Water Piping Modifications: The existing A/C sea water cooling systems employ two temperature actuated control valves which divert full pump flow to the inlet of the condensers or to overboard creating a lot of turbulence and wasted energy at the pumps. This SOW defines the piping modifications necessary to accomplish installation of two new control valves and by-pass piping at the outlet of the condensers.

Nirex Sea Water Piping Modifications: The existing sea water piping and valve arrangement associated with the Nirex water maker does not permit full water production in that there is too much back pressure and flow restriction at the sea water outlet piping. This SOW defines the piping and valve modifications required to reduce that back pressure in order to increase water production.

LOCATION AND PERIOD OF PERFORMANCE: All work shall be performed aboard the TS Kennedy which is moored at her pier located at the Massachusetts Maritime Academy, 101 Academy Drive, Buzzards Bay, MA 02532. Work shall begin as soon as possible after award and shall be completed prior to December 15, 2010. Work hours shall be from 0700 to 1700 hrs. Monday through Saturday with the exception of Federal and Massachusetts State holidays. Hot work shall not be permitted after 1630 hrs.

GENERAL REQUIREMENTS: The Contractor shall provide **ALL** labor, materials and services (except where noted as "Government Furnished" or "GFM") in order to accomplish the "Intent" of this SOW and all work described herein. This SOW also includes, by reference, all work defined within the "Notes" sections of the referenced drawings to include General Notes, Removal Notes, Test Notes, Special Notes, etc.

Coordination and Communications: All work performed by the Contractor shall be coordinated through the U.S. Maritime Administration (MARAD) Contracting Officer (CO) or the Contracting Officer's Technical Representative (COTR). Prior to the start and at the end of each work day, the Contractor's Supervisor shall meet with the COTR to discuss the work planned and/or accomplished. This meeting should not take longer than 5 minutes.

Applicability of Rules and Regulations: All work shall be performed in accordance with all applicable U.S. Coast Guard (USCG) Regulations and American Bureau of Shipping (ABS) Rules to include the requirements of the attending USCG Inspector and ABS Surveyor.

Regulatory Call Outs: The Contractor shall advise the COTR not less than 24 hours in advance of the date and time when they shall be ready for USCG or ABS attendance. Requests for their attendance shall be made by the COTR. Charges for the ABS Surveyor's attendance shall be to the Government's (Owner's) account. As a Public Nautical Schoolship, there will not be any charges for the USCG Inspector.

Material Requirements: All piping, take down joints, bolting, fittings and valves shall comply with that specified in the referenced drawings. Where a drawing is not specific with regard to the materials required, those materials and any additional materials needed to perform this SOW shall comply with ASTM F1155-98 (2004) for the particular service employed. If additional materials (beyond those estimated in the drawing material lists) are required to accomplish this SOW, it shall be the Contractor's responsibility to procure those materials and install them at their expense.

Welding Requirements: All piping and structural welding shall be performed by welders possessing ABS certification for the welds they perform. The Contractor shall provide the COTR with copies of each welder's certification prior to the start of the work. In addition, a copy of the Contractor's approved welding procedures (which will be used in the execution of this SOW) shall be provided to the COTR prior to the start of the work.

Electrical Requirements: All electrical work shall be supervised by a licensed commercial electrician or an individual with extensive marine electrical installation experience. The Contractor shall provide the COTR with documentation of either prior to the start of the work.

Services: 115 volt outlets and lighting shall be powered up and available to the Contractor where possible and where outlets and lights are currently installed

throughout the ship. A fresh water faucet shall be made available for the filling of portable fire extinguishers. All other services must be provided by the Contractor.

Damaged and/or Disturbed Areas: Items damaged during removals and/or re-installations shall be replaced at the Contractor's expense. All disturbed areas resulting from this SOW shall be returned to a condition equal to or better than originally found. Welding blankets shall be employed in the vicinity of hot work in order to protect the surrounding surfaces. Herculite or similar floor coverings shall be used in areas experiencing high traffic in order to protect the decking materials.

Trash Disposal and Cleanliness: All fluids, dirt, debris or other materials drained, deposited or generated as a result of the execution of this SOW shall be removed and properly disposed of and the affected surfaces thoroughly cleaned (to include the surfaces of machinery and equipment, bilges, bulkheads, decks, overheads, ventilation ducts, etc.)

Penetrations and Compensations: All new penetrations and compensations (resulting from the routing of new piping and/or wiring through bulkheads, beams, and decks) created in the execution of this SOW shall be performed in accordance with the requirements of the National Shipbuilding Research Program guidelines. These guidelines shall be provided upon request to interested bidders. If piping and/or electrical penetrations need to be re-routed slightly from the routes indicated in the drawings in order to comply with these guidelines, it shall be accomplished via a no-cost change order and at the Contractor's expense.

Cable Transit Penetrations: All new cable transit penetrations shall meet the structural fire protection requirements of the bulkhead or deck through which they penetrate. All re-worked or disturbed cable transit penetrations shall be made complete and left in a condition which meets all applicable structural fire protection requirements. It is the Contractor's prerogative as to whether or not they wish to create a new penetration rather than re-work an existing one to ensure that it meets regulations.

Coating of New or Disturbed Steel: All new or disturbed steel (to include all piping, foundations, brackets, etc.) shall be prepared and coated in accordance with the MARAD Standard Coatings Guidelines. Final top coat colors shall match the surrounding areas. These guidelines shall be provided upon request to the interested bidders.

Hydrostatic and Operational Testing: Upon completion of all piping installations and in the presence of the USCG Inspector, ABS Surveyor and the COTR, perform a hydrostatic test of all newly assembled piping in accordance with the requirements of 46CFR 56.97-30 (which is a test pressure equal to 1.5 x Maximum Allowable Working Pressure (MAWP) for a period of at least 10 minutes, not to exceed 90% of the yield strength of the material). The 1.5 x MAWP hydrostatic test supersedes the Test Notes listed in some of the referenced drawings which calls for a 135% of design pressure hydrostatic test. During the hydrostatic testing, all new piping shall be isolated from all

existing piping with blanks and/or pancakes. Following the testing, all blanks/pancakes shall be removed, new gaskets installed and an operational test shall be performed by the ship's crew to determine the quality of the Contractor's workmanship and/or materials provided.

Correcting Deficiencies: The Contractor shall be required to correct any deficiencies in their work or the materials they supplied as soon as practical after discovering the deficiency. Deficiencies in existing or supplied GFM material shall NOT be the responsibility of the Contractor.

Scrap: Unless specified otherwise by the COTR, all scrap material resulting from this SOW shall be disposed of by the Contractor. The Contractor's bid price shall include a credit for the value of all scrap generated as a result of this SOW. A copy of the scrap receipt and credit provided shall be provided to the COTR at the completion of this SOW.

SAFETY AND SECURITY: The Contractor shall adhere to all safety procedures employed aboard the ship by the Massachusetts Maritime Academy to include the following:

PPE: All persons working aboard the ship shall employ the proper personnel protective equipment (PPE) for the work being accomplished. At a minimum, hard hats, safety glasses and work shoes are required.

Hot Work: All areas requiring hot work shall first be certified "safe for hot work" by a certified Marine Chemist. These areas shall be maintained as such during the period of this contract by a certified Competent Person employed by the Contractor. In addition, all hot work shall require a signed TS KENNEDY hot work permit from one of the ship's officers in order for the ship's crew to be cognizant of where and when hot work is taking place. A proper fire watch shall be employed on each side of a surface where hot work is taking place unless, of course, the other side of the surface has been inerted. Use of the ship's portable extinguishers is not permitted except in an emergency. The Contractor's portable extinguishers shall be maintained fully charged at the beginning of each work day. There shall always be not less than one fully charged extinguisher at each location where hot work is being performed.

Tripping Hazards: All Contractor's equipment, including hoses and cables, shall be positioned in a manner not to cause a tripping hazard or obstruct passageways. Cables and hoses shall not be lead through doorways or down ladder ways whenever possible. If it is required that a cable or hose be run through a doorway or watertight door, they shall be protected by running them through a short section of heavy walled pipe. All hoses, cables and the short section of piping shall be removed from all doors (including watertight doors) at the end of each work day.

Oxy-Acetylene: All oxygen and acetylene bottles shall be kept on the pier and secured along the dock. The Contractor shall be aware that the ship can shift with the changing tides and currents and that sufficient excess hose must be supplied. All oxygen and acetylene hoses shall be disconnected at their bottles at the end of each work day and coiled up such that no hoses or sections of piping are left passing through any doors. All hoses shall be in good condition without signs of any visible damage.

Welding and/or Electrical Cables: The Contractor shall be aware that the ship can shift with the changing tides and currents and that sufficient excess cable must be supplied. During the work day, any welding cables or electrical cables shall be run through short sections of heavy wall steel piping where they pass through any water tight doors. These cables shall be disconnected at the end of each work day and coiled up such that no cables or sections of piping are left passing through any doors. All cables shall be in good condition without splices, damaged insulation or exposed conductors.

Lock out/Tag Out: All work involving any stored energy (electricity, fluids under pressure, etc.) shall require that the device be locked out/tagged out in accordance with the T. S. KENNEDY's lock out/tag out procedures. The Contractor shall receive written permission from the Chief Engineer prior to energizing or de-energizing these devices. This permission shall be accomplished by way of an entry in the ship's lock out/tag out record book by one of the engineering officers. Requests for lock out/tag out shall be made not less than 2 hours before requiring them. The Contractor shall provide their own locks and tags. A minimum of two valve protection (or a valve and blind flange) shall be employed at all times on any sea water piping during the execution of this SOW.

Working Aloft: All persons needing to work aloft shall do so in accordance with the ship's going aloft procedures. Permission to work aloft shall be obtained by the Chief Mate by way of a signed working aloft permit. The Contractor shall provide their own safety harnesses and gear.

Confined Space Entry: No person may enter a confined space without a safe for entry (safe for workers) permit issued by a Marine Chemist. These areas shall be maintained as such during the period of this contract by a certified competent person employed by the Contractor.

Smoking: Smoking is not permitted aboard the ship.

TWIC: All persons working aboard the ship shall be in possession of a Transportation Worker's Identification Credential (TWIC). All persons with a TWIC shall be provided a temporary access card which will require scanning at each boarding and disembarking of the ship. Quick trips to the pier for tools or the like shall not require scanning in/out providing the cadet watch is informed and the Contractor's employee remains within sight of the watch. A list of all employees working this SOW shall be provided by the Contractor to the Chief Mate before the start of the work and whenever any personnel changes are made.

Work Days/Hours: Work days/hours shall be Monday thru Saturday, 0700 to 1700 hrs not including Federal and/or Massachusetts State holidays.

Loading of Tools and/or Equipment: Contractors shall be permitted to load/unload tools and materials at the Academy pier alongside the ship. The ship's crew shall make every effort to operate the ship's cranes when needed for small items such as "gang" boxes and light materials (less than 1,000 lbs). Request for this service shall be made at least one day prior to needing the crane. Availability of the ship's cranes is not guaranteed. Loading of heavy and/or bulky materials shall be the responsibility of the Contractor.

Fueled Equipment: Any equipment or machinery containing fuel or oil must be operated on the pier and placed in a containment capable of holding all fuel or oil in that equipment.

Parking: Vehicle parking is limited. If parking becomes overcrowded, it may be necessary for the Contractor to shuttle workers to and from the ship from a remote parking area approximately ¼ mile away. Parking permits shall be required for any vehicles parked along the pier. These permits may be obtained from the Chief Mate for a limited number of vehicles based on the Academy's other activities during the execution of this SOW.

Contractor Trailers: If the Contractor desires to leave a work trailer on the pier or Academy grounds, it shall be in a location agreed to by the Chief Mate and the Massachusetts Maritime Academy Police Department. Work trailers and other vehicles must never obstruct emergency (fire and ambulance) vehicle access to the ship.

Toilet Facilities: The Contractor shall be required to provide portable toilet facilities for their crew. The Chief Mate shall designate a space on the dock for them to be placed. The Contractor shall maintain them clean and shall empty them as required.

WORK DESCRIPTION

CLIN 001: AMR Sea Water Cooling Pumps

References: Drawing #3190-005-09 A/C Seawater Pump Fdn Mods, Drawing #3190-005-10 Pwr Sys Mods A/C Pump Repl., Drawing #3190-005-11 A/C Seawater Pump Replacement Piping Mods.

Government Furnished Materials: Two (2) pumps, Pump size & type: 2K4x3US-82RV M3US, Pump speed / Stages: 3550 rpm / 1, Flow / Head: 492 USgpm / 100 ft Two (2) Motors, Frame: 25 hp / 18.6 kW / 284TS, Volts / Phase / Hz: 230/460 / 3 / 60 Approximate sizes mounted on base with couplings and guard: 58Lx21Wx24.5H Weight: 974 lbs each.

Location: Auxiliary Machinery Room (AMR)

Description: Make all removals, modifications and installations as depicted in the above referenced drawings. The Contractor shall be aware that this work includes:

1. Installation of two new GFM sea water cooling pumps and motors to include modification of their existing foundations.
2. Replacement of existing valves.
3. Re-routing of existing electrical cabling.
4. Re-location of existing interferences to include motorized valves.
5. Inerting of the tank beneath the new pumps and motors in order to perform the hot work associated with the removals and modifications of their foundations. This tank has a total volume of 1,222 barrels (6,862 cu-ft) and currently contains 1,152 barrels (6,469 cu-ft) of IFO 180 fuel.
6. Pump piping installation without piping strain. This shall be demonstrated to the COTR prior to assembling the pump suction and discharge flanges.
7. Alignment of the pump to motor shaft. This alignment shall be demonstrated to the COTR using the reverse dial method (or using lasers based on the reverse dial principle). An angular misalignment exceeding 2 mils per inch or an offset misalignment exceeding 3 mils shall require realignment by movement of the motor. Only stainless steel pre cut shims shall be used for shimming of the motor.
8. All removals, modifications and/or installations required by ABS as identified in the drawings by red line or text.

CLIN 002: Air Conditioning Sea Water Piping Modifications

References: Drawing No. 3190-005-12 A/C Plant Seawater Piping Mods

Government Furnished Materials: Three 8 inch bronze flanges.

Location: Auxiliary Machinery Room (AMR)

Description: Make all removals, modifications and installations as depicted in the above referenced drawings. The Contractor shall be aware that this work includes:

1. Replacement of selected valves.
2. Installation of two new temperature controlled regulating valves and by-pass piping at the sea water outlet of both A/C Plant condensers.
3. Replacement of the 3 victaulic couplings (1 at the sea water inlet to the outboard condenser, 1 at the inlet of the inboard condenser and 1 at the outlet of the inboard condenser) with 8 inch flanges (bronze on one side, steel on the other).
4. All removals, modifications and/or installations required by ABS as identified in the drawings by red line or text.

CLIN 003: Nirex Sea Water Piping Modifications

References: Drawing No. 3190-005-13 NIREX Seawater Piping Mods

Government Furnished Materials: None

Location: Auxiliary Machinery Room (AMR)

Description: Make all removals, modifications and installations as depicted in the above referenced drawings. The Contractor shall be aware that this work includes:

1. Replacement of selected valves.
2. All removals, modifications and/or installations required by ABS as identified in the drawings by red line or text.

CLIN 0004: Supplemental Labor

Description: Additional work is not expected beyond the scope of this SOW, however it is requested that a stabilized labor rate be provided applicable to any emergent work that may evolve. For pricing purposes, the bidder shall provide a stabilized rate, with extended pricing, for a total of 100 man-hours of supplemental labor. This funding, if required, shall be issued by the COTR via a Change Order.

CLIN 005: Supplemental Material

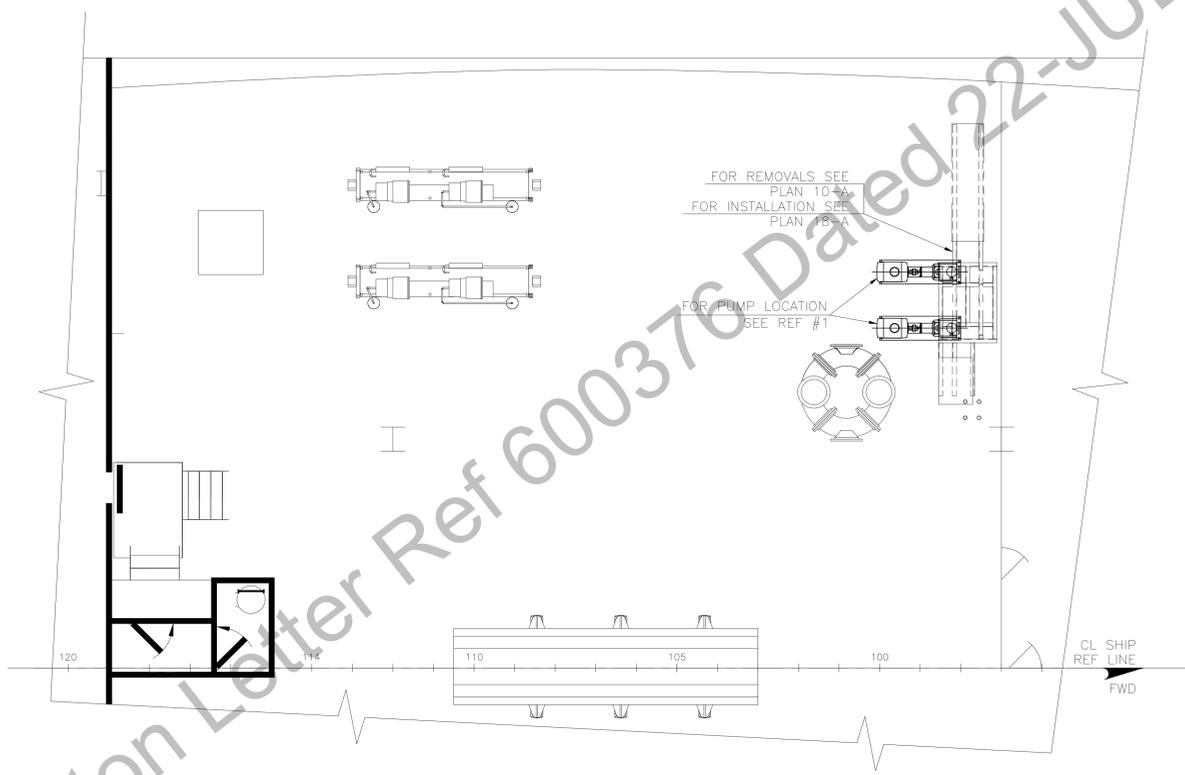
Description: Additional materials are not expected beyond the scope of this SOW, however it is requested that the bidder make allowance for up to \$8,000 in supplemental material charges. This funding, if required, shall be issued by the COTR via a Change Order. Invoices for these materials shall be provided to the COTR upon request.

GENERAL NOTES

1. THIS DRAWING WAS DEVELOPED TO INSTALL FOUNDATIONS FOR TWO NEW COOLING WATER PUMPS AND AN EXISTING OILY WATER SEPARATOR ON BOARD THE T/S KENNEDY.
2. THIS DRAWING IS BASED UPON THE REQUIREMENTS OF AMERICAN BUREAU OF SHIPPING RULES FOR BUILDING & CLASSING STEEL SHIPS-2010 WHOSE PROVISIONS SHALL PREVAIL IN AREAS WHERE THIS DRAWING IS SILENT **2010**
3. THE PURPOSE OF THIS DRAWING IS TO PROVIDE FOUNDATIONS FOR TWO (N) COOLING WATER PUMPS AND AN EXISTING OILY WATER SEPARATOR.
4. EQUIPMENT AND/OR STRUCTURE DENOTED BY (N) IS NEW, BY (R) IS RELOCATED, BY (E) IS EXISTING, AND BY (M) IS MODIFIED. REMOVAL OF EXISTING MATERIAL IS DENOTED ///////////////.
5. THE ORIGIN OF A VIEW IS INDICATED BY A ZONE NUMBER AND LETTER IN PARENTHESIS BELOW THAT VIEW.
6. FRAME SPACING IS 30" THROUGHOUT.
7. ALL FABRICATION, WELDING, MECHANICAL FASTENING AND INSPECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH AMERICAN BUREAU OF SHIPPING RULES FOR BUILDING AND CLASSING STEEL SHIPS FOR OFFSHORE SERVICE.
8. ALL BURRS AND SHARP OR RAGGED EDGES OF EXPOSED STRUCTURE, WHERE LIKELY TO INJURE PERSONNEL OR DAMAGE EQUIPMENT, SHALL BE GROUND SMOOTH.
9. TEMPLATE ALL WORK FROM SHIP AND EQUIPMENT
10. ALL SNIPES SHALL BE 1/2 INCH BY 1/2 INCH UNLESS OTHERWISE NOTED.
11. MATERIAL AMOUNTS AND WEIGHT TOTALS SHOWN IN THE L/M OF THIS DRAWING INCLUDE WASTE WHICH IS NOT INCLUDED IN THE WEIGHT AND MOMENT TOTALS.
12. ALL FABRICATION, WELDING, MECHANICAL FASTENING AND INSPECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF AMERICAN BUREAU OF SHIPPING RULES FOR BUILDING & CLASSING STEEL SHIPS-2010 **2010**
13. WELDED JOINT DESIGNS AND WELD FILLET SIZES SHOWN ON THIS DRAWING ARE BASED ON THE USE OF 70XX FILLER METAL AS PER AWS 5.1 FOR OSS TO OSS.
14. THE TANK TOP IN THE AMR HAS NO CAMBER AND NO SHEER.
15. ALL EQUIPMENT AND FOUNDATIONS SHALL BE INSTALLED PARALLEL TO AND/OR PERPENDICULAR TO THE HORIZONTAL BASE PLANE OF THE CRAFT.
16. ALL DAMAGE CAUSED BY REMOVAL OF EXISTING MATERIAL SHALL BE REPAIRED WITH MATERIAL IDENTICAL TO THE ADJACENT STRUCTURE.
17. MOUNTING HARDWARE NOT ORDERED ON THIS DRAWING SHALL BE SUPPLIED BY THE INSTALLING ACTIVITY AND SHALL INCLUDE COMMERCIAL SAE GRADE 5 BOLTS COMMERCIAL FLAT WASHERS AND SELF-LOCKING NUTS. HOLES DRILLED FOR EQUIPMENT MOUNTING SHALL BE 1/32" LARGER THAN THE NOMINAL BOLT DIAMETER FOR SIZES UP TO AND INCLUDING 3/4", AND 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER FOR SIZES OVER 3/4". ALL FASTENER ASSEMBLIES SHALL BE DRY TORQUED TO ACHIEVE 75% OF THEIR PROOF STRENGTH.
18. PAINT ALL NEW STRUCTURE AND SUPPORTS, AND REPAINT ALL SURFACES DAMAGED BY WELDING AND REMOVAL OF EQUIPMENT.
19. BOLT HOLE LOCATIONS SHALL BE TEMPLATED FROM UNITS. MOUNTING HARDWARE SHALL BE SUPPLIED BY THE INSTALLING ACTIVITY.
20. ALL WELDS TO BE 3/16" DOUBLE FILLET WELDS UNLESS NOTED.
21. MODIFY EXISTING GRATING WHICH INTERFERES WITH NEW MODIFICATIONS.

LIST OF MATERIAL (QUANTITY FOR ONE CRAFT)										
ITEM NO.	QTY	DESCRIPTION	LAST NO USED	MTL SPEC	MTL RED	NSN OR MFGR PT NO.	SCE	APL NO.	UNIT WT	REMARKS
1	60 L/F	3 1/2x6x3/8" L	3	ASTM A36	OSS			IAF	11.7#/LF	-
2	35 L/F	3x3x3/8" L	6	ASTM A36	OSS			IAF	7.2#/LF	-
3	4 S/F	15.3# PL	2	ASTM A36	OSS			IAF	15.3#/SF	-

STEEL IS TO BE ABS GR. A OR EQUIVALENT TO SURVEYOR'S SATISFACTION.



KEY PLAN 4-B
AUX MCHRY RM
SCALE: 1/4"=1'-0"



LITTON AVONDALE INDUSTRIES HULL 1069
ABS ID 6704200
PROJECT 2384534, TASK 600376

NO.	HULL	TITLE	IDENT
1	TS KEN	A/C SEAWATER PUMP REPLACEMENT PIPING MODS	3190-005-11

PREPARED: TRN CHECKED: HA ENGINEER: J.E.S. APPROVED: J. STEVENS	DATE: 3/10 DATE: 3/10 DATE: 3/10 DATE: 3/10	U.S. Department of Transportation Maritime Administration Washington, DC	DRAWING TITLE: AC SEAWATER PUMP FOUNDATIONS
MARINE SYSTEMS CORPORATION 70 FARGO ST. BOSTON, MA 02210 TELE: (617) 542-3345 FAX: (617) 542-2461	DRAWN BY: DATE: _____ CHECKED BY: DATE: _____ APPROVED BY: DATE: _____ HULL NO.: _____ CONTRACT NO.: _____	SUBMITAL STATUS: <input type="checkbox"/> ABS NOT REQ'D <input type="checkbox"/> ABS SUBMITAL PENDING <input type="checkbox"/> ABS APPROVAL PENDING <input type="checkbox"/> ABS APPROVED <input type="checkbox"/> USCG NOT REQ'D <input type="checkbox"/> USCG SUBMITAL PENDING <input type="checkbox"/> USCG APPROVAL PENDING <input type="checkbox"/> USCG APPROVED	DESIGNED: U.S. DEPARTMENT OF TRANSPORTATION MARITIME ADMINISTRATION T/S KENNEDY FILE NAME: 3190-005-09.dwg SCALE: NONE SHE. NO.: 1-OF-3 DRAWING NO.: 3190-005-09

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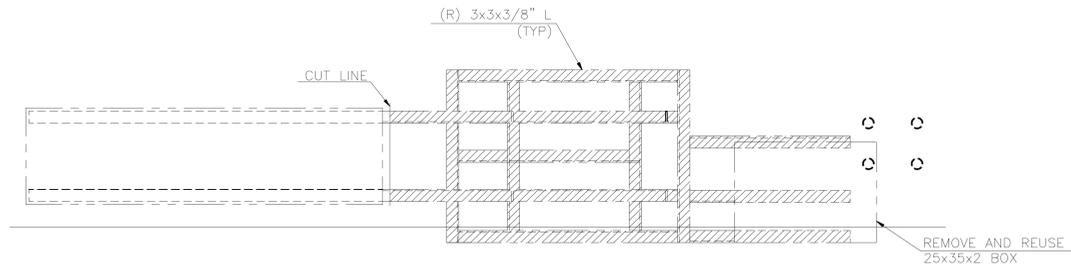
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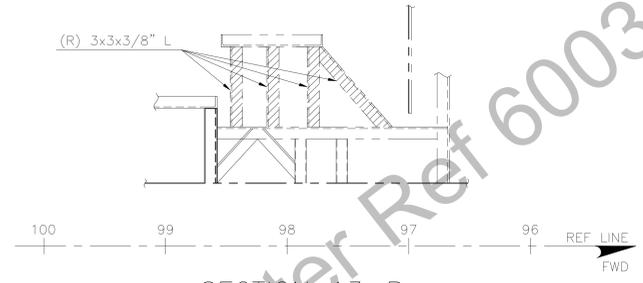
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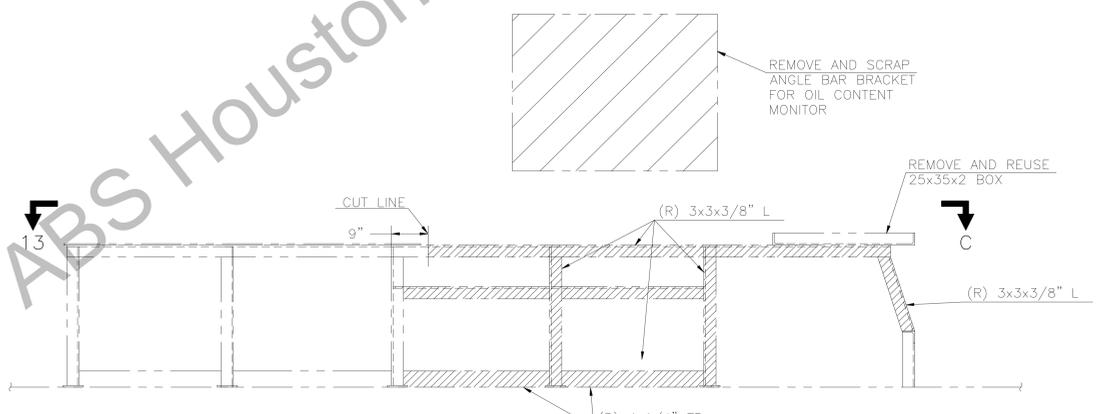
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



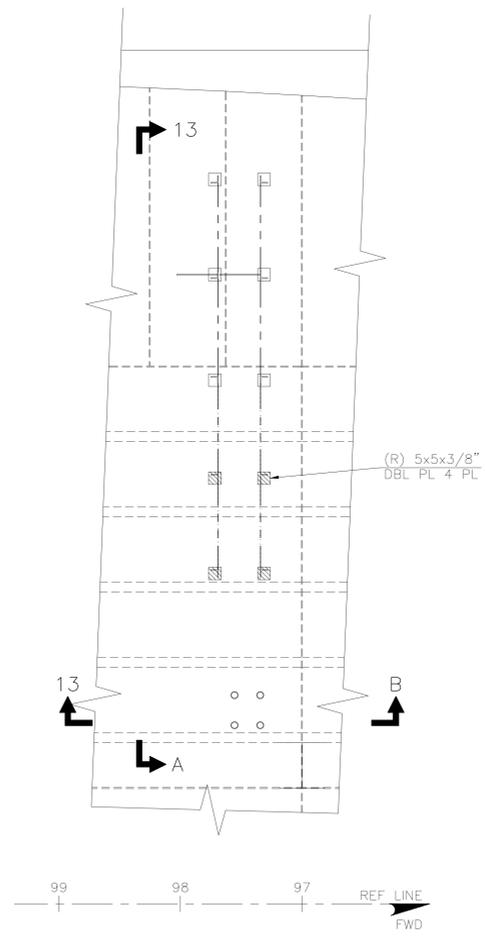
ELEV 13-C
AUX MACHRY RM
REMOVAL OF (E) FDN
SCALE: 3/4"=1'-0"
(10-A)



SECTION 13-B
AUX MACHRY RM
REMOVAL OF (E) FDN
SCALE: 3/4"=1'-0"
(10-A)



SECTION 13-A
AUX MACHRY RM
REMOVAL OF (E) FDN
SCALE: 3/4"=1'-0"
(10-A)



PLAN 10-A
AUX MACHRY RM
REMOVAL OF (E) FDN
SCALE: 3/4"=1'-0"
(4-B)

FILE NAME	3190-005-09.dwg	SHT. NO.	2-OF-3	SIZE	DRAWING NO.	3190-005-09	REV.	-
SCALE	AS SHOWN							

See ABS Houston Letter Ref 600376 Dated 22-JUL-2010

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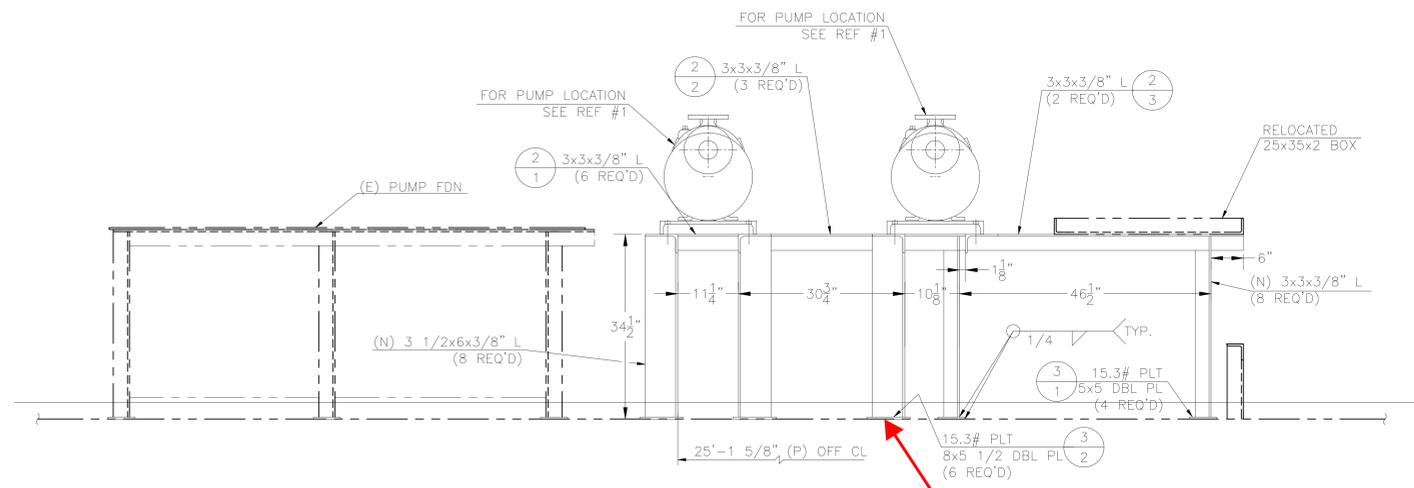
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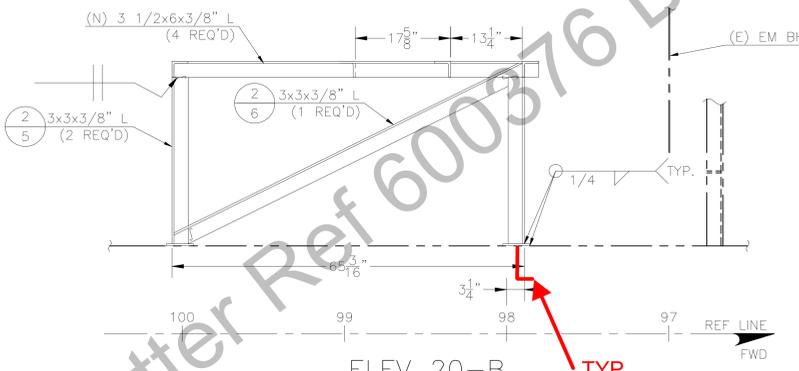
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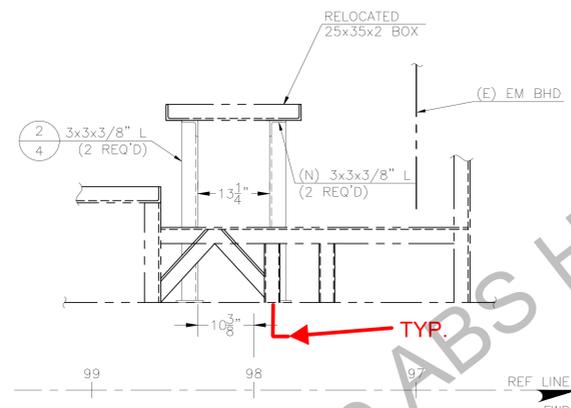
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



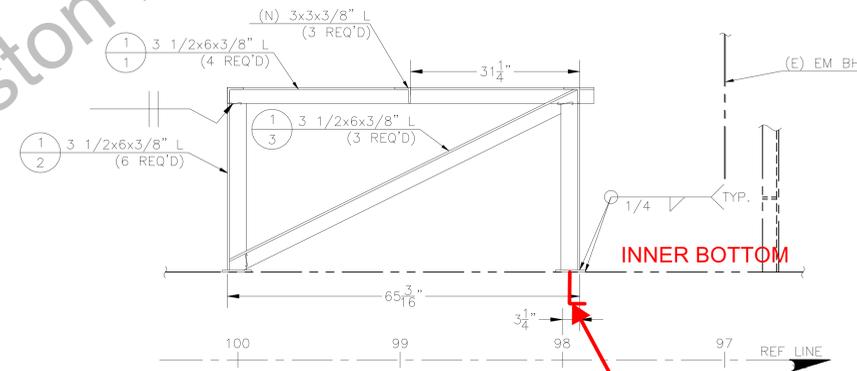
ELEV 22-C
(N) PUMP FDN
LKG FWD
SCALE: 1"=1'-0"
(18-A)



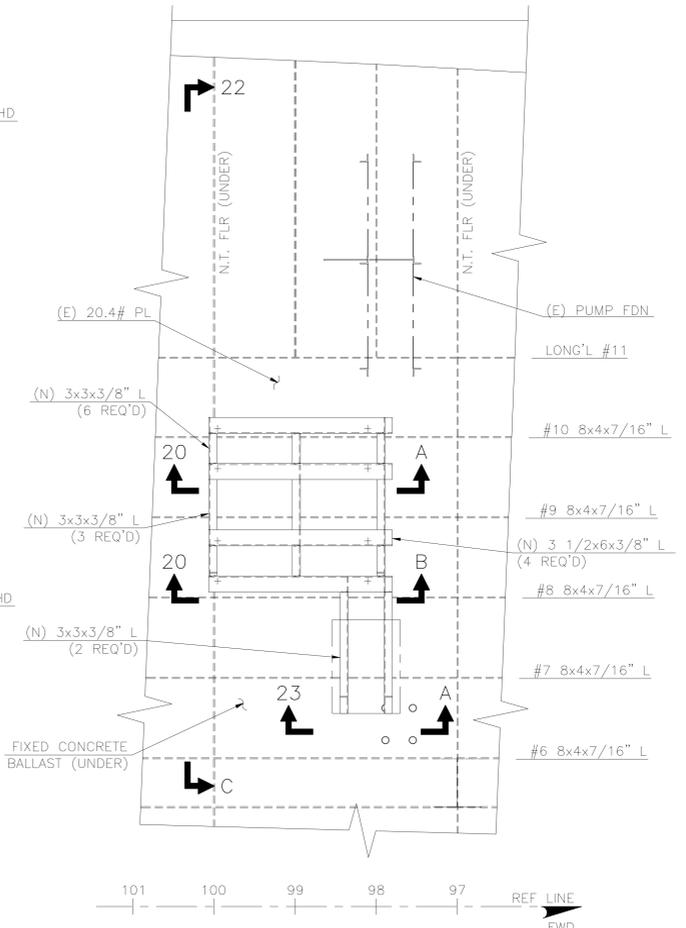
ELEV 20-B
(N) PUMP FDN
LKG OUTBD
SCALE: 1"=1'-0"
(18-A)



ELEV 23-A
(N) PUMP FDN
LKG OUTBD
SCALE: 1"=1'-0"
(18-A)



ELEV 20-A
(N) PUMP FDN
LKG OUTBD
SCALE: 1"=1'-0"
(18-A)



PLAN 18-A
INSTALL (N) PUMP FDN
AUX MCHRY RM
SCALE: 1/2"=1'-0"
(4-B)

DESCRIPTION	WT/LBS
(1) RELOCATED OILY WATER SEPARATOR	560#
(2) NEW COOLING WATER PUMPS	974# EACH

FILE NAME 3190-005-09.dwg	SHT. NO. 3-OF-3	SIZE D	DRAWING NO. 3190-005-09	REV. -
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GENERAL NOTES

- THIS DRAWING WAS DEVELOPED FOR POWER REWIRING TO CHILLER CIRC PUMPS, BASED UPON A SHIPCHECK OF T/S KENNEDY. AN APPLICABILITY PRIOR TO ITS USE ON OTHER SHIPS.
- ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH 46 CFR SUBCHAPTER J, ABS RULES FOR BUILDING AND CLASSING STEEL VESSELS AND RECOMMENDATIONS OF IEEE-45.
- ALL CABLES SHALL BE EITHER U.S. NAVY TYPE MIL-DLT-24643 OR IEEE-45 SHIPBOARD CABLE.
- NYLON OR BRASS STUFFING TUBES SHALL BE USED WHEN PENETRATING ELECTRICAL ENCLOSURES OR JUNCTION BOXES. STEEL KICKPIPES WITH BRASS STUFFING TUBES OR MULTICABLE TRANSITS SHALL BE USED WHEN PENETRATING WATERTIGHT DECKS AND BULKHEADS.
- THE PURPOSE OF THIS DRAWING IS TO REROUTE CABLING THE NEW CHILLER CIRC & BILGE PUMPS NO. 1 AND NO. 2 AND (4) RELOCATED CHILLER CIRC & BILGE PUMPS MOTOR OPERATED VALVES IN AMR.
- ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH IEEE-518.
- CABLES SHALL BE LABELED WITH ALUMINUM EMBOSSED CABLE TAGS AT THE ENTRANCE TO EACH ENCLOSURE AND ON EACH SIDE OF DECK OR BULKHEAD PENETRATIONS.
- ABBREVIATIONS FOR THIS DRAWING ARE AS FOLLOWS:
(EXIT): EXISTING
(N): NEW
- RESEARCH TOOL & DIE WORKS, INC.
17124 SOUTH KEEGAN AVE.,
CARSON, CALIFORNIA 90746
TEL 310-639-5722. (www.RTND.com)

LIST OF MATERIAL (QUANTITY FOR ONE SHIP)							
ITEM NO.	QTY RQD	DESCRIPTION	MTL SPEC	MTL REQ	NSN OR MFGR PT NO.	UNIT WT	REMARKS
1	5	CHANNEL BAR, STEEL, 8" LENGTH		STEEL	3CDS-08	2.0	RT & D, INC., SEE NOTE 9
2	5	CROSSTIER BAR, 6" LENGTH		STEEL	9MAX06	2.0	RT & D, INC., SEE NOTE 9

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



See ABS Houston Letter Ref 603915 Dated 23-JUL-2010

NO.	HULL	TITLE	IDENT
3	TS KENNEDY	AC SEAWATER PUMP REPL	3190-005-11
2	TS KENNEDY	PWR SYS MODS HVAC MODS BAT LKR	3190-005-07
1	TS KENNEDY	SHIP SERVICE & EMERGENCY POWER ONE-LINE	540TV-001-321-01

DATE	HULL NO.	DRAWING TITLE:	PWR SYS MODS AMR SEAWATER PUMPS REPLACE
PREPARED: VN	DATE: 3/23/10	CUSTOMER:	U.S. DEPARTMENT OF TRANSPORTATION MARITIME ADMINISTRATION
CHECKED: MS	DATE: 3/23/10	SHIP:	T/S KENNEDY
ENGINEER: M. SHORTSLEEVES	DATE: 3/23/10	FILE NAME:	3190-005-10.dwg
APPROVED: -		SCALE:	NONE
		SHEET NO.:	1-OF-5
		SEE DRAWING NO.:	D 3190-005-10
		REV.:	-

REFERENCES

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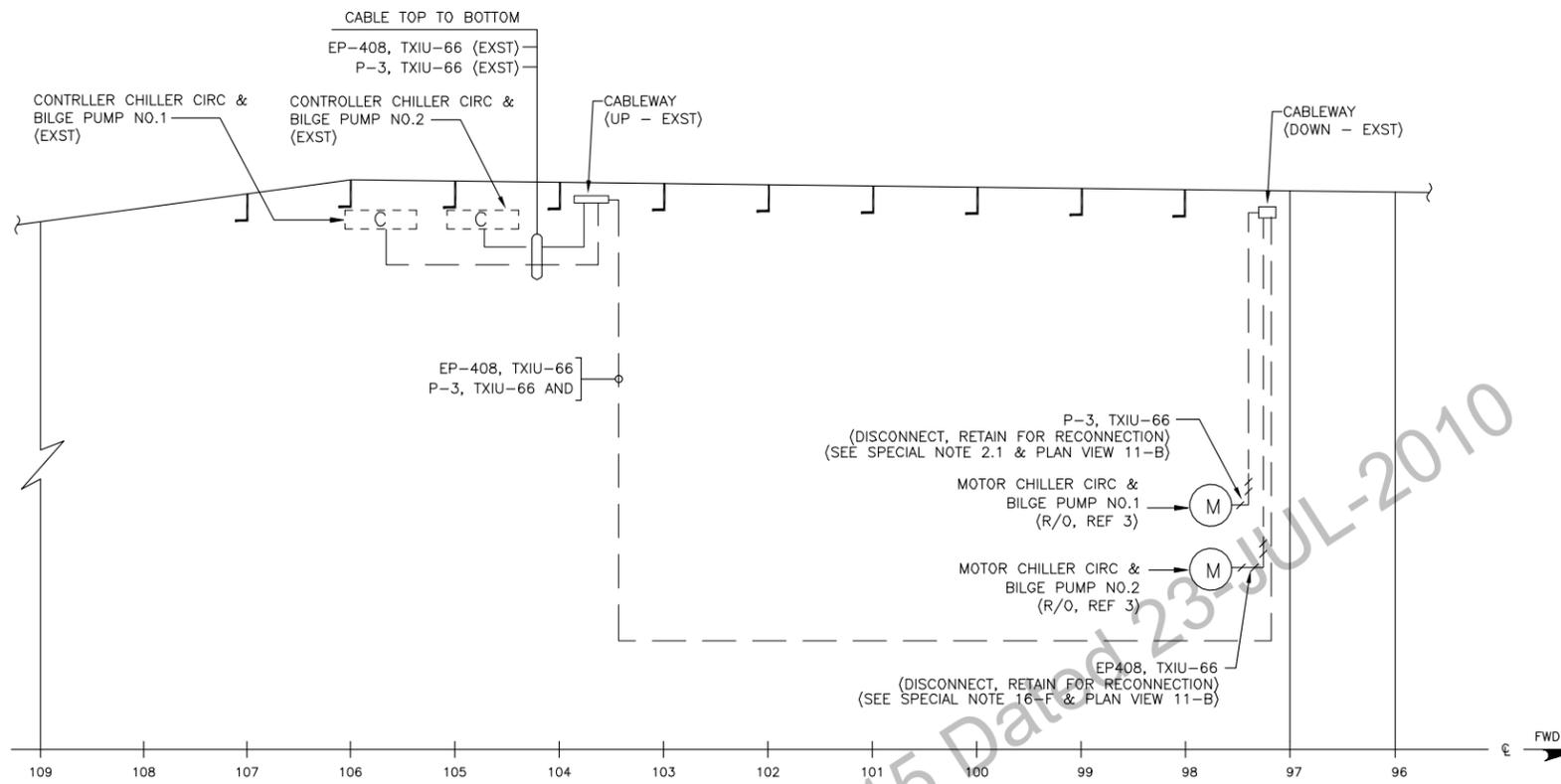
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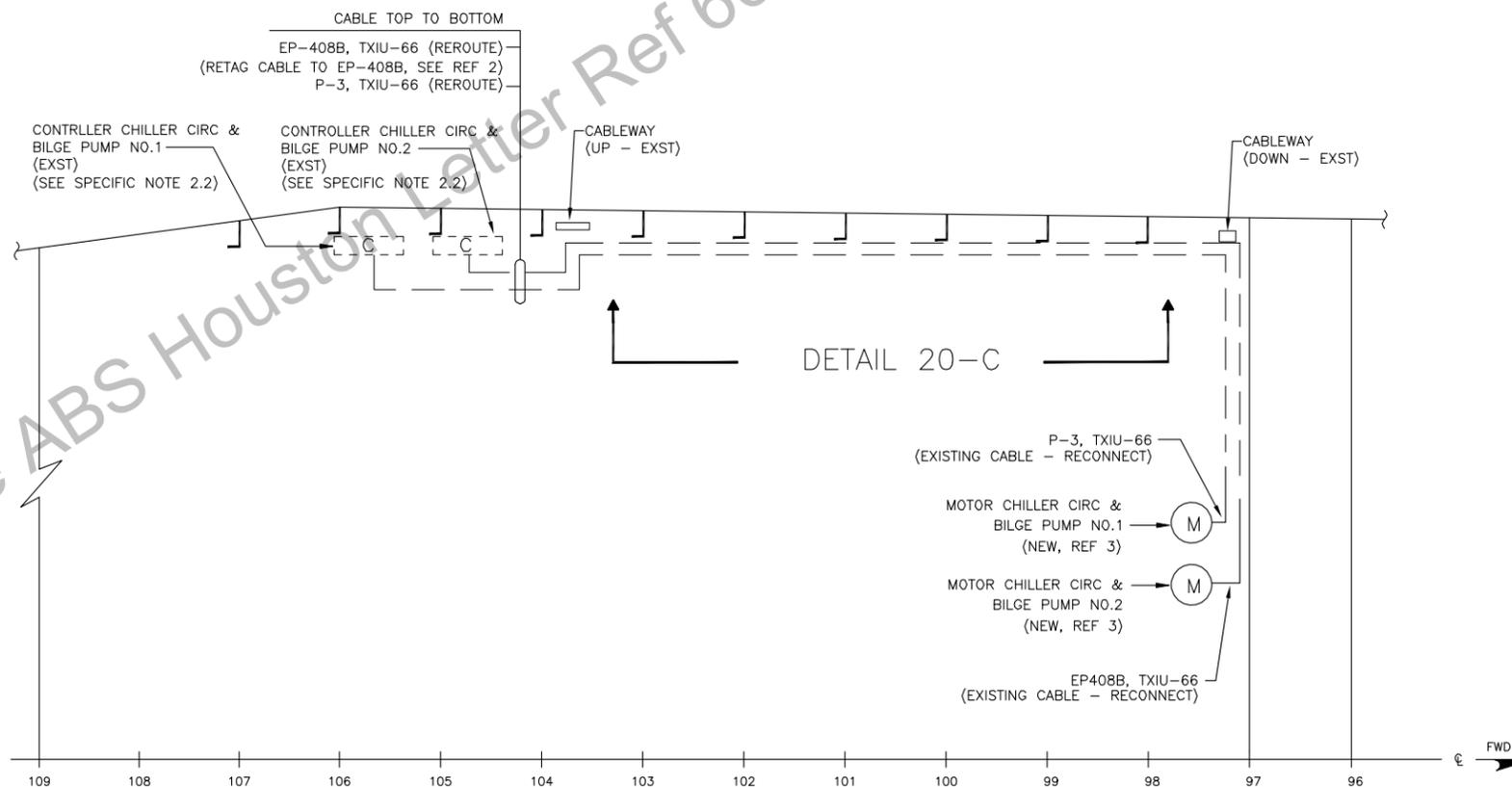
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SPECIFIC NOTES:

- 2.1. DURING DISCONNECT, OBTAIN CAREFUL DOCUMENTATION OF ELECTRICAL CONNECTIONS (USING PULL SHEETS) TO ENSURE ACCURATE RECONNECTION ON PLAN VIEW 11-B.
- 2.2. EXISTING NAMEPLATES FOR CHILLER CIRC & BILGE PUMP NO. 1 & NO. 2 SHALL BE SWAPPED TO SHOW CORRECT SHIP'S CONFIGURATION.



PLAN VIEW
AUXILIARY MACHINERY ROOM (AMR) - RELOCATION/REMOVAL



PLAN VIEW "11-B"
AUXILIARY MACHINERY ROOM (AMR) - RE-ROUTE CABLES

See ABS Houston Letter Ref 603915 Dated 23 JUL-2010

FILE NAME	3190-005-10.dwg	SIZE	DRAWING NO.	REV.
SCALE	NONE	SHW. NO.	2-OF-5	D
			3190-005-10	-

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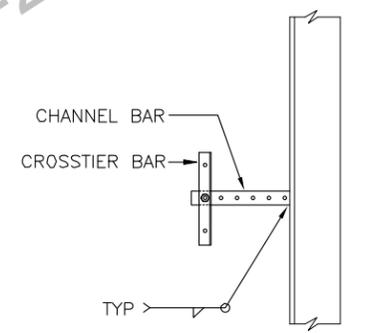
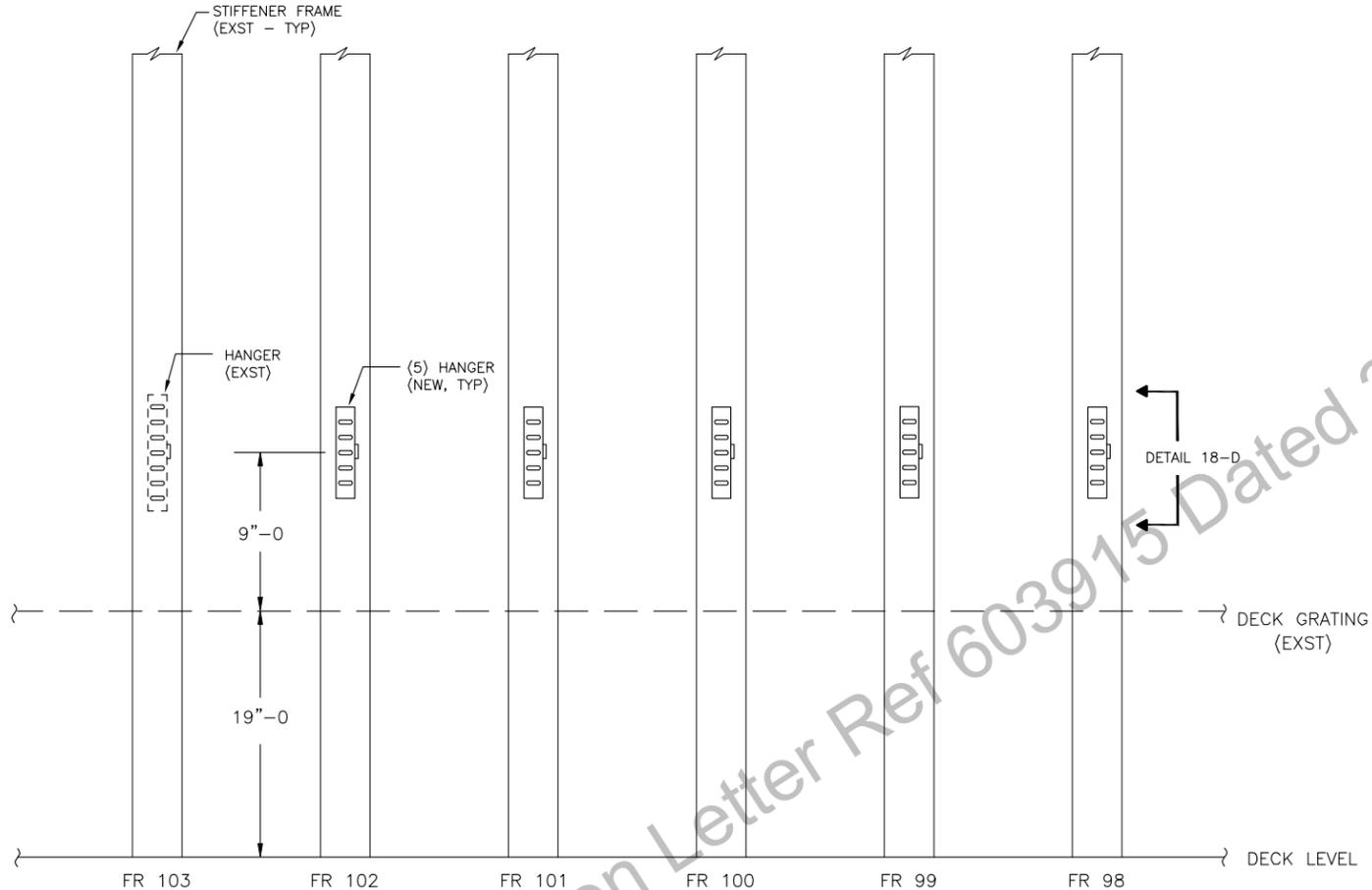
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REVIEWED
as indicated in
ABS letter

DETAIL 18-D
(ELEV LKG AFT)

DETAIL 20-C
(ELEV PORT BHD LKG OUTBOARD IN AMR)

See ABS Houston Letter Ref 603915 Dated 23-JUL-2010

FILE NAME	3190-005-10.dwg	SIZE	DRAWING NO.	REV.
SCALE	NONE	SHEET NO.	3-OF-5	D
			3190-005-10	-

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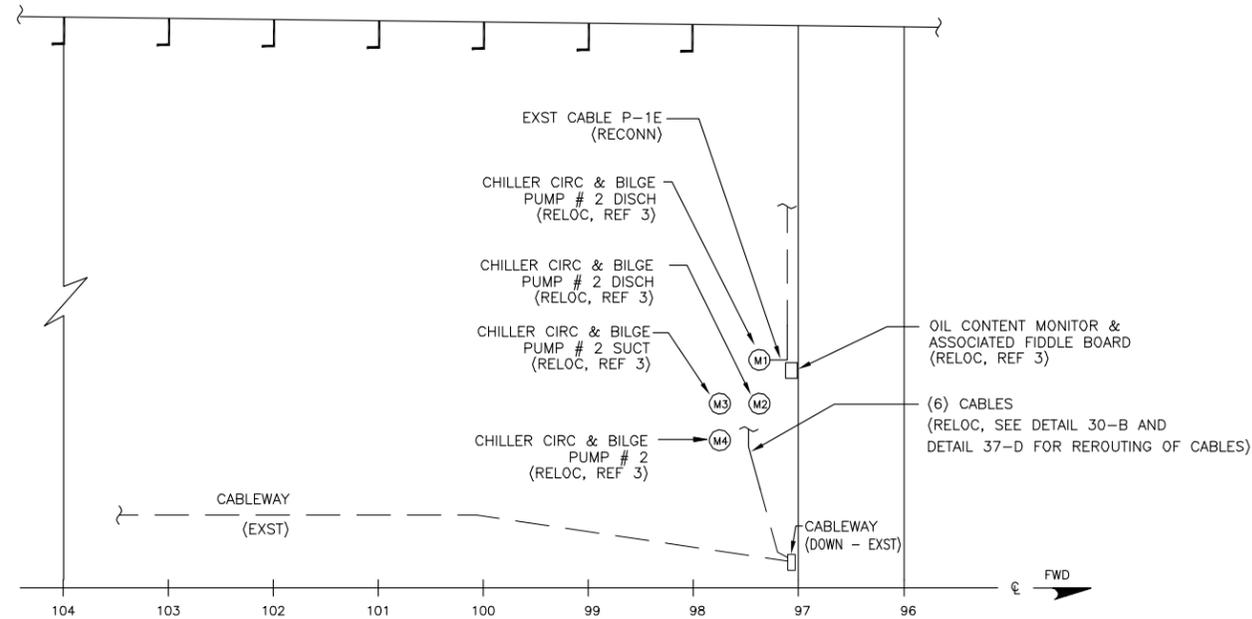
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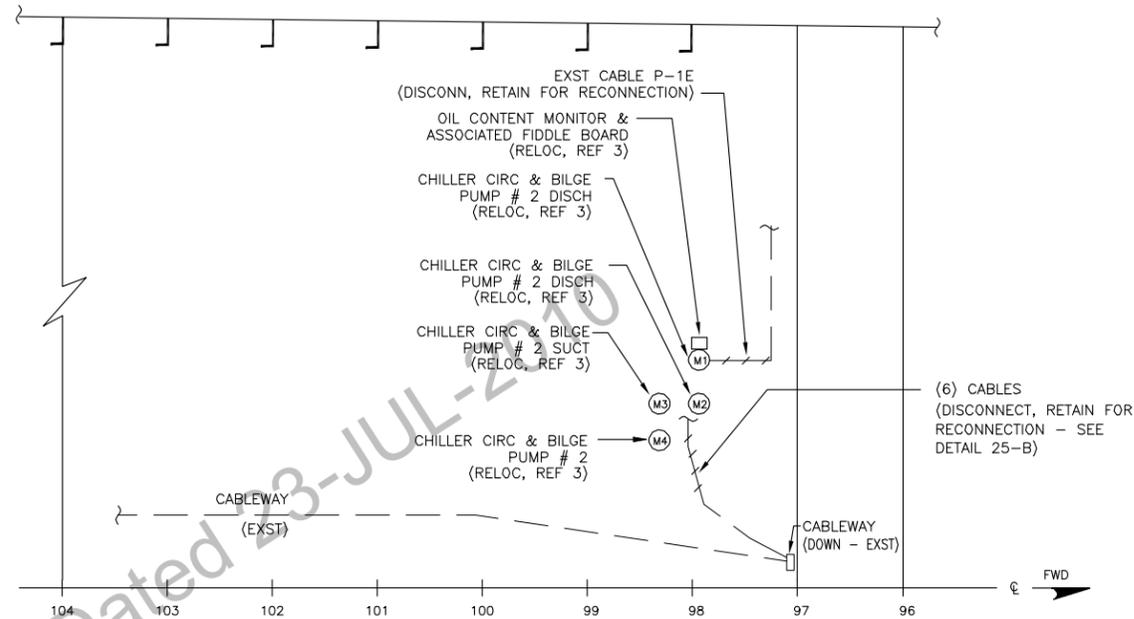
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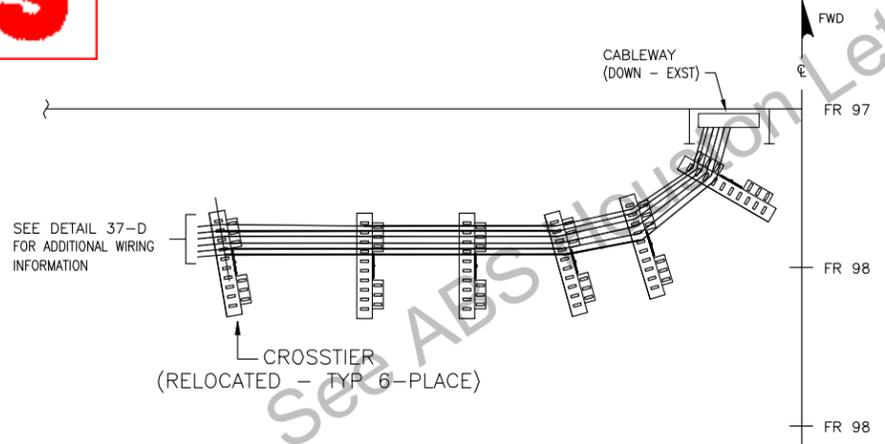
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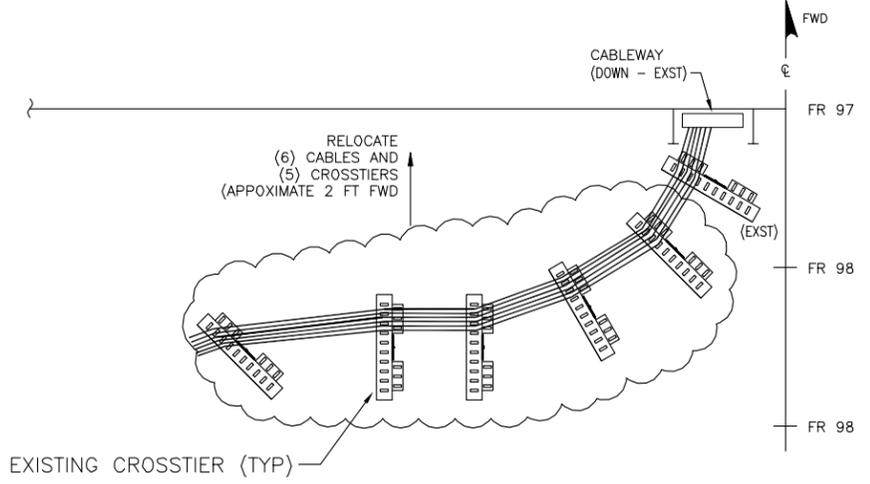
PLAN VIEW
AUXILIARY MACHINERY ROOM (AMR) - INSTALLATION



PLAN VIEW
AUXILIARY MACHINERY ROOM (AMR) - RELOCATION/REMOVAL



PLAN VIEW 30-B
RELOCATED CABLES AND CROSSTIERS



PLAN VIEW 25-B
RELOCATE (6) CABLES AND (5) CROSSTIERS
(SEE DETAIL 36-B)

FILE NAME	3190-005-10.dwg	SIZE (DRAWING NO.)	D	REV.	-
SCALE	NONE	SHEET NO.	4-OF-5		

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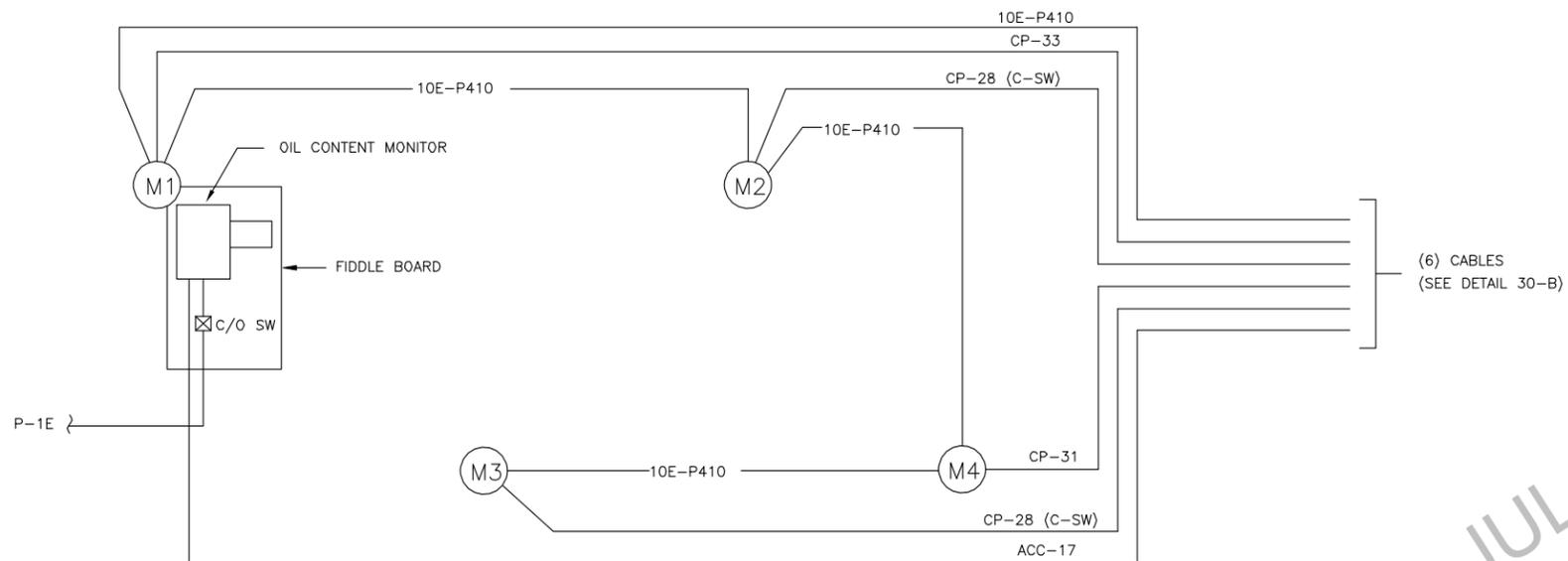
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DETAIL 37-D
 EXISTING WIRING (4) CHILLER CIRC & BILGE PUMP
 MOTOR OPERATOR VALVES

See ABS Houston Letter Ref 603915 Dated 23-JUL-2010

REVIEWED
 as indicated in
 ABS letter

FILE NAME	3190-005-10.dwg	SIZE	DRAWING NO.	REV.
SCALE	NONE	SHR. NO.	5-0F-5	D
			3190-005-10	-

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GENERAL NOTES

- THIS DRAWING WAS DEVELOPED FOR THE MODIFICATION OF A/C PLANT SEAWATER COOLING SYSTEM BASED ON A SHIPCHECK OF T/S KENNEDY. AN APPLICABILITY SHIPCHECK IS REQUIRED PRIOR TO ITS USE ON OTHER SHIPS.
- THE PURPOSE OF THIS DRAWING IS TO INSTALL A NEW SEAWATER COOLING TEMPERATURE ACTUATED VALVE AND BY PASS IN THE A/C PLANT SEAWATER COOLING SYSTEM.
- TEMPLATE WORK FROM SHIP AND EQUIPMENT
- FRAME SPACING IS 30 INCHES IN AREAS EFFECTED BY THIS DRAWING
- ALL FABRICATION, WELDING, MECHANICAL FASTENING AND INSPECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABS RULES
- MOUNTING HARDWARE NOT ORDERED IN THIS DRAWING SHALL BE SUPPLIED BY THE INSTALLING ACTIVITY AND SHALL INCLUDE SELF-LOCKING NUTS. ALL NUTS FOR DISSILIMAR METALS INSTALLATION SHALL BE NYLOCK STYLE.
- ALL EQUIPMENT AND FOUNDATIONS SHALL BE INSTALLED PARALLEL TO AND/OR PERPENDICULAR TO THE HORIZONTAL BASE PLAN OF THE CRAFT.
- EQUIPMENT LOCATIONS SHOWN MAY BE MODIFIED SLIGHTLY IF NECESSARY FOR CLEARANCE
- PIPING SHALL BE SUPPORTED BY HANGERS CONFORMING TO ASTM-F-708. CONTRACTOR TO SUPPLY ALL HANGERS, LINERS AND FASTENERS. MATERIAL SHALL BE APPROVED BY OWNERS REPRESENTATIVE. HANGERS SHALL BE MOUNTED FROM STRUCTURAL STIFFENERS. HANGER SPACING TO BE IN ACCORDANCE WITH ASTM F-708 FOR STEEL PIPING.
- ALL FLANGE GASKETS TO BE SYNTHETIC RUBBER, EXCEPT WHERE NOTED.
- ALL FLANGES BETWEEN DISSILIMAR MATERIALS TO BE INSTALLED WITH FLANGE ISOLATION KITS. CONTRACTOR TO PROVIDE AND INSTALL ISOLATION KITS.
- THE BILL OF MATERIALS IS THE OWNERS PRESENT BEST ESTIMATE OF MATERIALS REQUIRED. THE CONTRACTOR IS REQUIRED TO ESTIMATE MATERIALS FROM THE PROVIDED DRAWING INCLUDING BUT NOT LIMITED TO PIPE, FITTINGS, CONSUMABLES, HANGERS, FOUNDATIONS, GASKETS, AND ISOLATION KITS.
- USE OF SUBSTITUTE MATERIALS MAY ADVERSELY AFFECT SYSTEM PERFORMANCE OR INTEGRITY. SUBSTITUTE MATERIAL SHALL NOT BE USED WITHOUT PRIOR CONCURRENCE FROM THE OWNERS REPRESENTATIVE.
- ABBREVIATIONS FOR THIS DRAWING ARE AS FOLLOWS:
(IAF): INSTALLING ACTIVITY FURNISHED
(E): EXISTING
(N): NEW
- GRIND SMOOTH ALL SHARP CORNERS AND ROUGH EDGES LIABLE TO CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.
- LABEL PLATES SHALL BE MADE FROM ANODIZED ALUMINUM WITH BLACK PHOTO ETCHED LETTERING OF MINIMUM OF 1/8" HIGH. LABEL PLATES SHALL BE MANUFACTURED AND INSTALLED BY THE CONTRACTOR.
- PAINT, DECK COVERING, AND INSULATION DAMAGED BY WORK SHOWN ON THIS DRAWING SHALL BE REPAIRED TO MATCH EXISTING CONDITIONS.
- PIPING SHALL BE INSTALLED AS SHOWN; HOWEVER, MINOR DEVIATIONS MAY BE MADE TO SUIT CONDITIONS ABOARD SHIP.
- ALL EXCESS MATERIAL SHALL BE TURNED OVER TO THE OWNERS PROPERTY ADMINISTRATOR
- PIPING SHALL BE ARRANGED TO PERMIT MAINTENANCE OF SHIPS MACHINERY EQUIPMENT OR OTHER PIPING SYSTEMS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND RELOCATION OF INTERFACES RELATED TO THIS INSTALLATION.
- PIPING, PIPING APPURTENANCES AND APPLICABLE EQUIPMENT SHALL BE CLEANED AFTER FABRICATION AND PRIOR TO INSTALLATION TO REMOVE LOOSE PARTICLES, GREASE, DIRT, AND OIL. AFTER COMPLETE SHIPBOARD INSTALLATION, EACH SYSTEM PIPING SHALL BE CLEANED AND FLUSHED OF FOREIGN MATTER. TEMPORARY STRAINERS SHALL BE INSTALLED DURING THE PROCEDURE.
- PIPING SYSTEMS SHALL BE FLUSHED AND MAINTAINED CLEAN UNTIL CRAFT DELIVERY.
- MARAD WILL PROVIDE 8" BRONZE FLANGES TO BE INSTALLED ON THE 8" INLET AND 8" OUTLET CONNECTIONS ON THE A/C UNITS IN PLACE OF THE VITAUIC FITTINGS. THE OUTBOARD A/C UNIT ALREADY HAS A FLANGE ON THE OUTLET CONNECTION AND IT SHALL BE RETAINED.
- VALVE (V-4) IS A TEMPERATURE REGULATED VALVE MFG BY METREX CORP OF GLENDORA CA. TELE NO. 800-266-4027, MODEL NO. YMT-3145-C-MF-TA/50M261-X, FURNISHED WITH THERMOWELL PART NO.16-414-6C.

LIST OF MATERIAL (QUANTITY FOR ONE SHIP)

ITEM NO	QTY REQD	DESCRIPTION	LAST NO USED	PCS REQD	MATERIAL SPEC	MATL REQ	MFR PART NO.	APL/PN/VIEW NO.	SOURCE	WEIGHT		REMARKS
										UNIT	TOTAL	
P-1	4'-0"	8", 8.625"OD X .500" THK	-	-	ASTM A-106	CARBON STEEL	-	-	IAF	43.3/FT	173.2	SCHED 80
P-2	55'-0"	5", 5.563"OD X .375" THK	-	-	ASTM A-106	CARBON STEEL	-	-	IAF	20.7/FT	1138	SCHED 80
P-3	4'-0"	4", 4.500"OD X .337" THK	-	-	ASTM A-106	CARBON STEEL	-	-	IAF	28.5/FT	114	SCHED 80
V-1	2	5", GATE VALVE, 125#, FLANGED F.F.	N/A	N/A	SEE REMARKS	CAST IRON	FIG G-612	-	IAF	126	252	SIM TO STOCKHAM
V-2	2	5", GLOBE VALVE, 125#, FLANGED F.F.	N/A	N/A	SEE REMARKS	CAST IRON	FIG G-512	-	IAF	126	252.0	SIM TO STOCKHAM
V-3	4	4", BALL VALVE, 125# FLANGED F.F.	N/A	N/A	SEE REMARKS	DUCTILE IRON	-	-	IAF	330	1320	SIM TO PBM AN SERIES
V-4	2	4", TEMP REGULATOR VALVE, FLANGED F.F.	N/A	N/A	SEE REMARKS	BRONZE	-	-	IAF	340	680	SEE NOTE 25
F-1	8	4", FLANGE, 150# BTWLD	N/A	N/A	ASTM A-181	CARBON STEEL	-	-	IAF	26.0	208	BORE TO SCH 80
F-2	12	5", ELBOW, 90', LR BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	22	264	SCHED 80, ANSI B16.9
F-3	2	5", ELBOW, 45' BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	10.7	214	SCHED 80, ANSI B16.9
F-4	8	5", FLANGE, 150# WELDNECK BTWLD	N/A	N/A	ASTM A-181	CARBON STEEL	-	-	IAF	21.0	168	BORE TO SCH 80
F-5	24	GASKET, 1/8" THICK	N/A	N/A	HH-P-151	SYNTHETIC RUBBER	-	-	IAF	-	-	CUT TO SUIT
F-6	192	BOLT, 3/4-10 UNC-2A X 3 1/2" LG	N/A	N/A	ASTM-A-307 GR B	STEEL GALV	-	-	IAF	.60	115.2	
F-7	192	NUT, HEX HEAD, 3/4-10 UNC-2B	N/A	N/A	ASTM-A-563 GR A	STEEL GALV	-	-	IAF	.12	23.04	
F-8	4	8" X 5", REDUCER, BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	18.0	72.0	SCHED 80, ANSI B16.9
F-9	4	8", FLANGE, 150# SLIP ON F.F.	N/A	N/A	ASTM A-181	CARBON STEEL	-	-	IAF	28	112	
F-10	4	5", TEE, BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	26	104	SCHED 80, ANSI B16.9
F-11	4	5" X 4", ELBOW, 90', LR BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	30.5	122	SCHED 80, ANSI B16.9
F-12	4	4", FLANGE, 150#, SLIP ON F.F.	N/A	N/A	ASTM A-181	CARBON STEEL	-	-	IAF	17	68	
F-13	2	3/4" BOSS, 3000#, FPT X WELD	N/A	N/A	ASTM A-105	CARBON STEEL	-	-	IAF	1.2	2.4	
F-14	32	BOLT, HEX, HD, 3/4"-10 UNC X 6" LG	N/A	N/A	COML	STEEL	-	-	IAF	1.02	32.6	GALV
F-15	3	8", FLANGE, 150# FLAT FACE SWLDG	N/A	N/A	SEE REMARKS	CNA	-	-	IAF	31.3	93.9	SEE NOTE 24

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED

26. ALL FLANGES MATING TO DUCTILE IRON, CAST IRON AND BRONZE VALVES SHALL BE FLAT FACED, ALL RAISED FACES SHALL BE REMOVED.

TEST NOTES

- THE NEW AND DISTURBED SEAWATER PIPING SHALL BE BLANKED OFF AND HYDROSTATICALLY TESTED AT 135% OF DESIGN PRESSURE FOR 30 MINUTES TO ASSURE THAT THERE ARE NO LEAKS OR WEEPS. CORRECT ANY DEFECTS AND RETEST.
- THE NEW AND DISTURBED SYSTEMS SHALL BE TESTED FOR PROPER OPERATION AND UNOBSTRUCTED FLOW.



LP NO.	FOR ITEM NO.	QTY	TYPE	SYS NO.	DESCRIPTION	CLOS CLASS	DC NO	COMPT	FR -SIDE	SECURE TO	ZONE	REMARKS
L-5	V-1	2	R-1	-	A/C PLANT SW SPLY INLET VALVE	-	-	AUX MCHRY RM	105-P	VALVE	35-B	SEE GENERAL NOTE NO. 16
L-4	V-3	2	R-1	-	A/C PLANT TEMP REG OUTLET VALVE	-	-	AUX MCHRY RM	110-P	VALVE	43-B	SEE GENERAL NOTE NO. 16
L-3	V-3	2	R-1	-	A/C PLANT TEMP REG INLET VALVE	-	-	AUX MCHRY RM	110-P	VALVE	43-A	SEE GENERAL NOTE NO. 16
L-2	V-4	2	R-1	-	A/C PLANT TEMP REG VALVE	-	-	AUX MCHRY RM	110-P	VALVE	43-B	SEE GENERAL NOTE NO. 16
L-1	V-2	2	R-1	-	A/C PLANT OVBDD BYPASS VALVE	-	-	AUX MCHRY RM	110-P	VALVE	43-B	SEE GENERAL NOTE NO. 16

LIST OF LABEL PLATES (QUANTITY FOR ONE CRAFT)

NO.	HULL	TITLE	IDENT
1		AUX MCHRY RM SW SERV SYS DIAGRAM	540TV-001-524-20

REFERENCES

PREPARED: D.BROWN CHECKED: EJ ENGINEER: E. JOHNSON APPROVED: E. JOHNSON APPROVED: J. STEVENS	HULL NO. DATE: 3/10 DATE: 3/10 DATE: 3/10 DATE: 3/10	DRAWING TITLE: A/C PLANT SEAWATER PIPING MODS
MARINE SYSTEMS CORPORATION 70 FARGO ST. BOSTON, MA 02210 TELE: (617) 542-3345 FAX: (617) 542-2461	U.S. Department of Transportation Maritime Administration Washington, DC	US DEPARTMENT OF TRANSPORTATION MARITIME ADMINISTRATION T/S KENNEDY
SHEET NO.: 1-OF-7 DRAWING NO.: 3190-005-12	SCALE: NONE	REV: -

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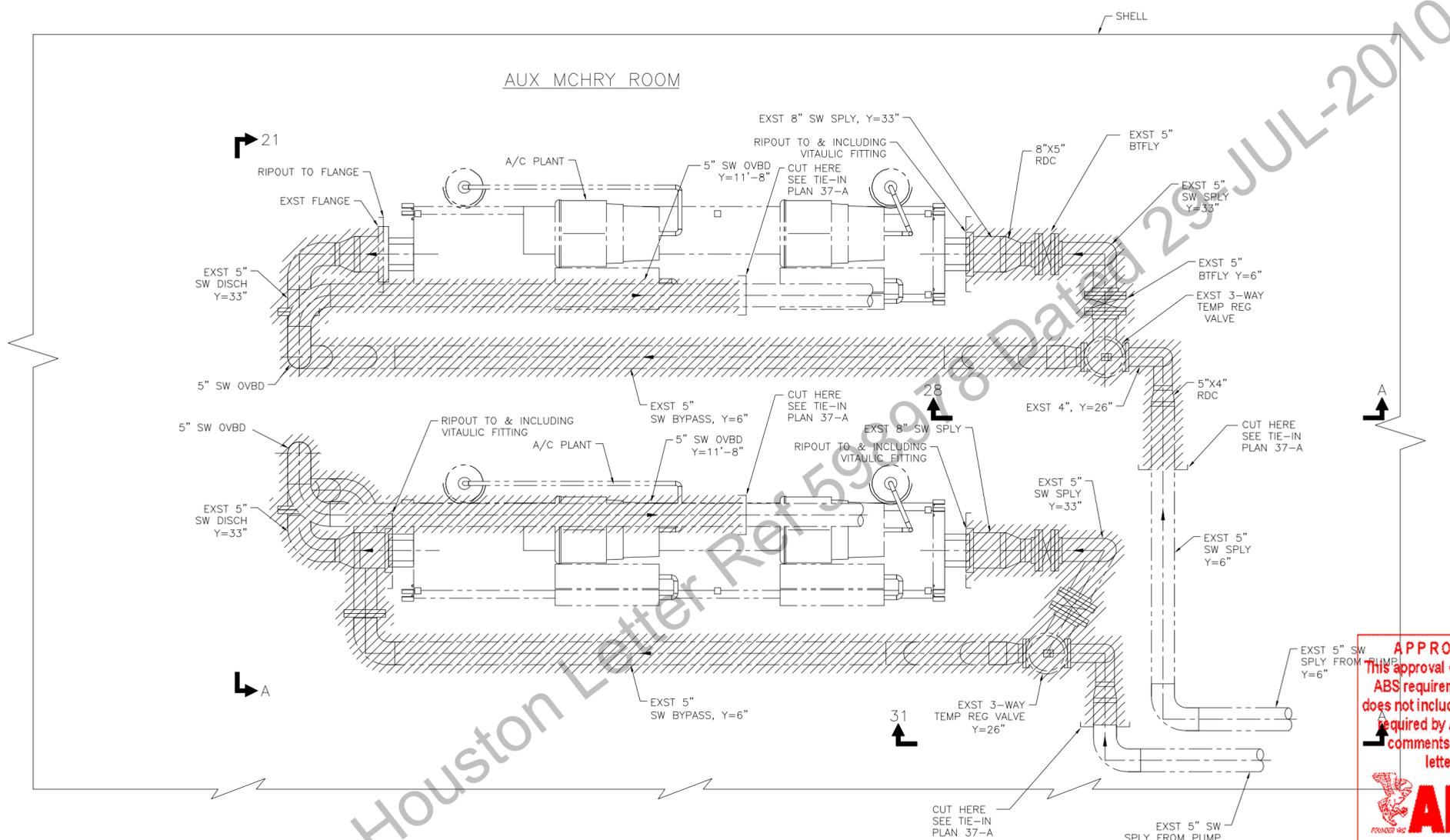
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10

9

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

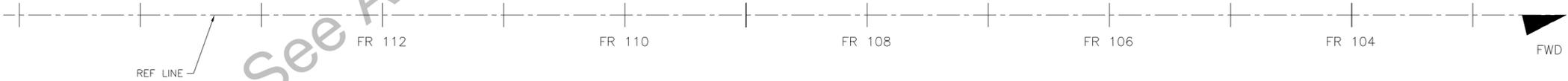
AUX MCHRY ROOM



APPROVED
 This approval covers only
 ABS requirements and
 does not include items not
 required by ABS. See
 comments in ABS
 letter



See ABS Houston Letter Ref 599918 Dated 29 JUL-2010



RIPOUT
 PLAN 13-A
 5'-0" LEVEL

FILE NAME	3190-005-12.dwg
SCALE	1"=1'-0"
SHT. NO.	2-OF-7
SIZE	D
DRAWING NO.	3190-005-12
REV.	-

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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

D

C

B

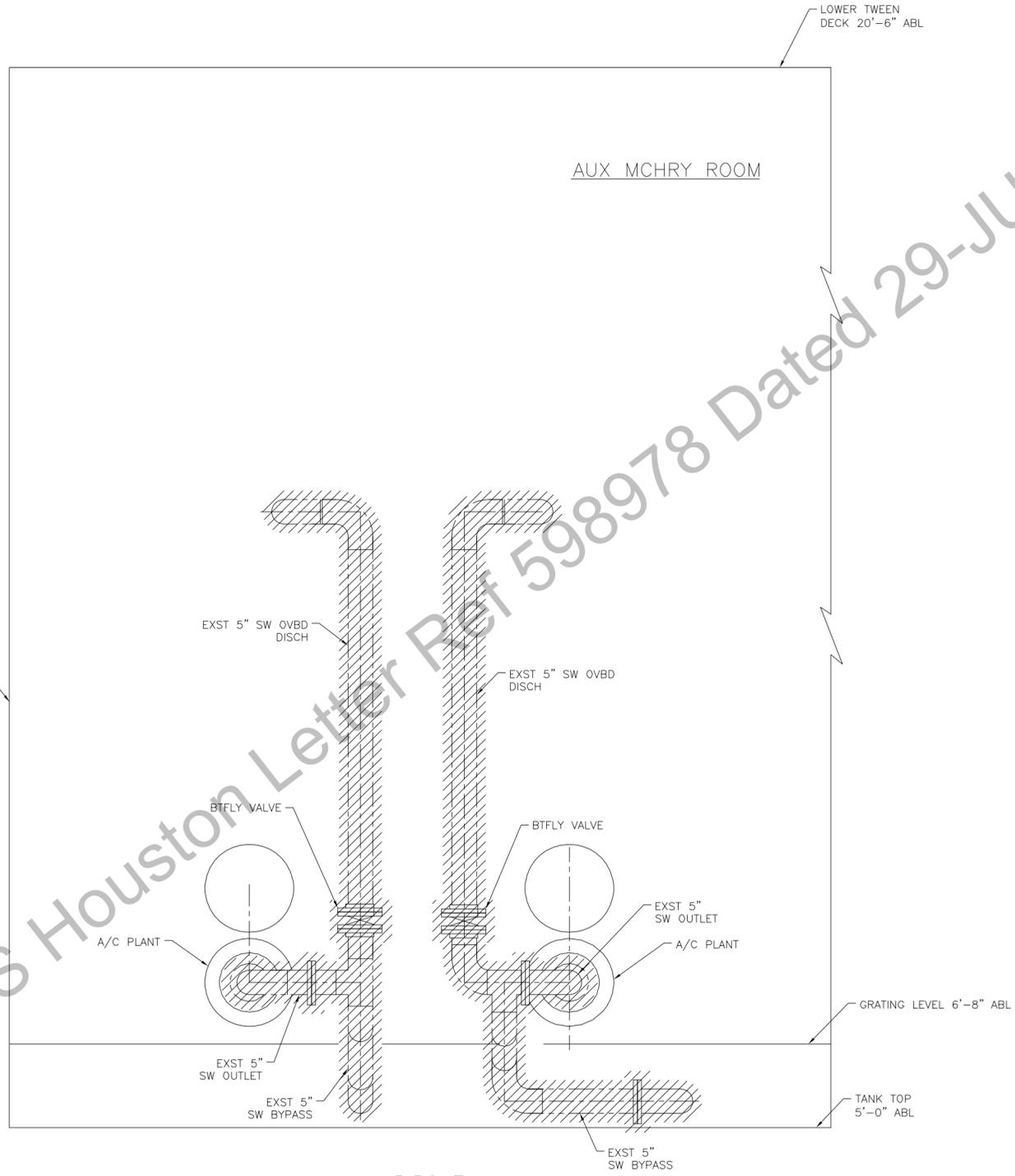
A

D

C

B

A



See ABS Houston Letter Ref 598978 Dated 29-JUL-2010

APPROVED
 This approval covers only
 ABS requirements and
 does not include items not
 required by ABS. See
 comments in ABS
 letter

RIPOUT
 SECTION 21-A
 LKG FWD FROM FRAME 114

FILE NAME	3190-005-12.dwg
SCALE	1"=1'-0"
SHT. NO.	3-OF-7
SIZE	D
DRAWING NO.	3190-005-12
REV.	-

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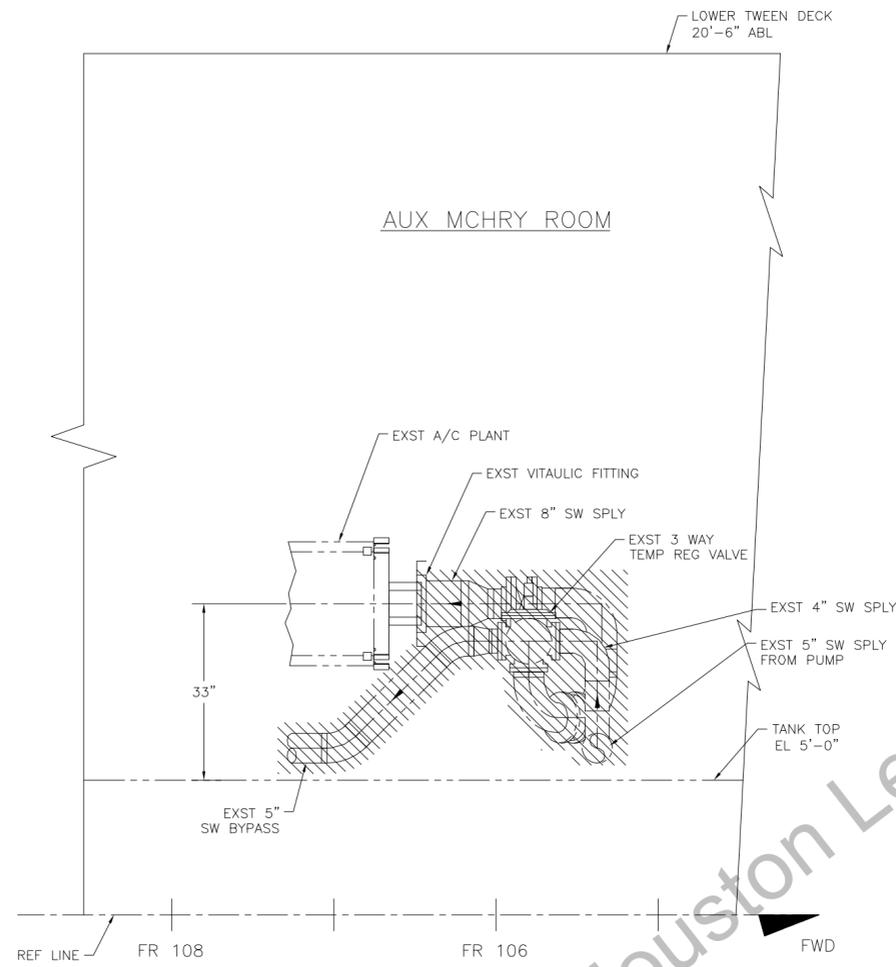
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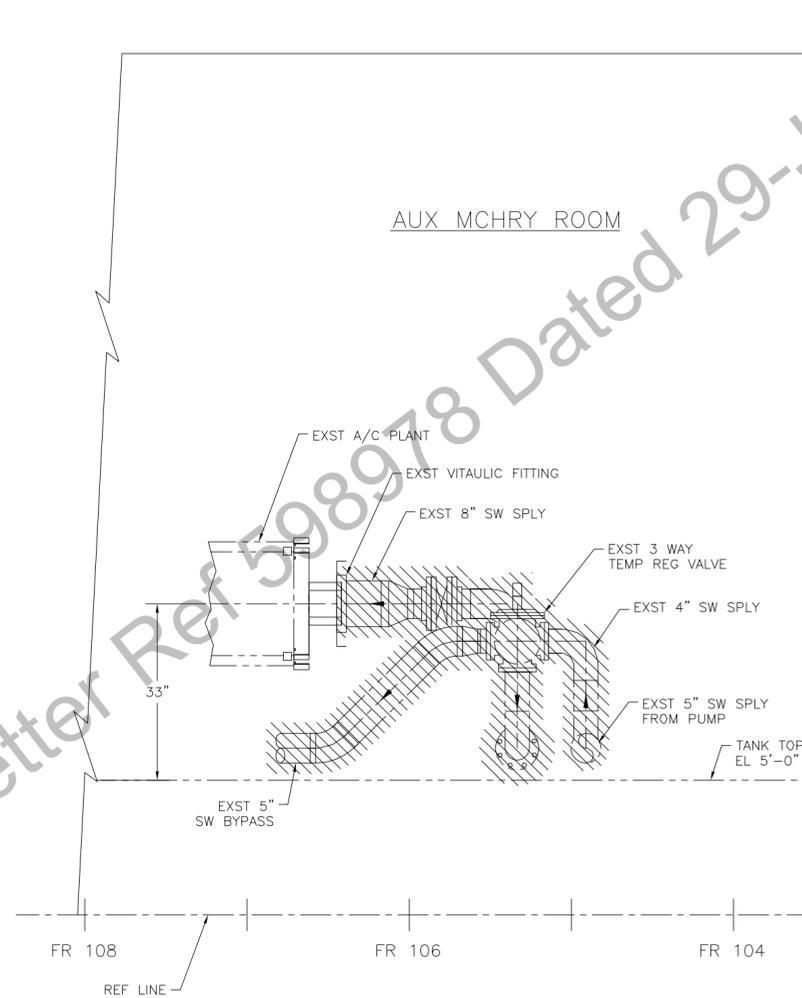
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



RIPOUT
ELEVATION 31-A
PORT LKG OUTBD



RIPOUT
ELEVATION 28-A
PORT LKG OUTBD

APPROVED
This approval covers only
ABS requirements and
does not include items not
required by ABS. See
comments in ABS
letter



See ABS Houston Letter Ref 598978 Dated 29-JUL-2010

FILE NAME	3190-005-12.dwg	SHT. NO.	4-0F-7	SIZE	DRAWING NO.	REV.
SCALE	1"=1'-0"			D	3190-005-12	-

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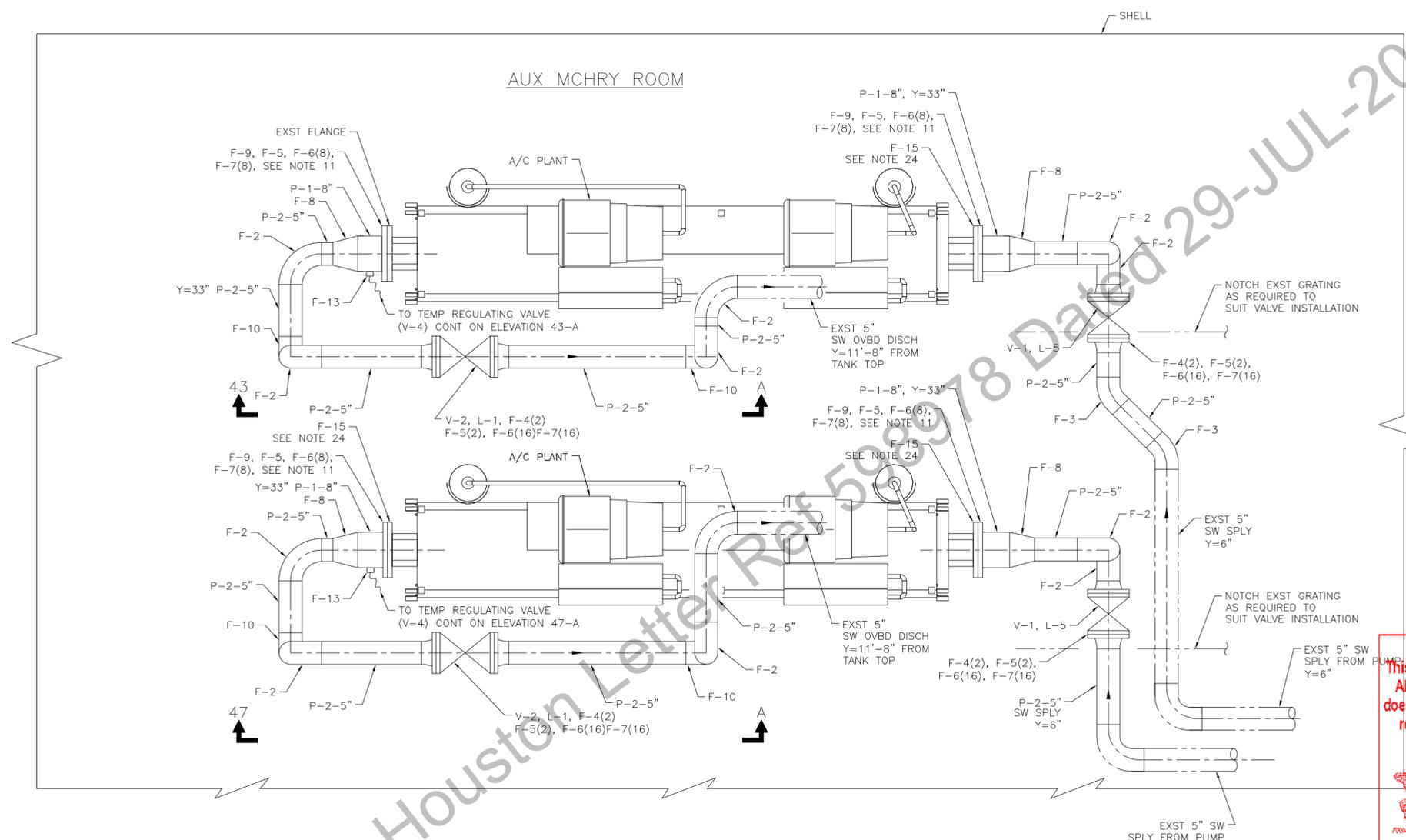
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



INSTALLATION
PLAN VIEW 37-A
5'-0" LEVEL

APPROVED
This approval covers only
ABS requirements and
does not include items not
required by ABS. See
comments in ABS
letter

FILE NAME	3190-005-12.dwg	SHT. NO.	5-0F-7	SIZE	DRAWING NO.	3190-005-12	REV.	-
SCALE	1"=1'-0"							

40

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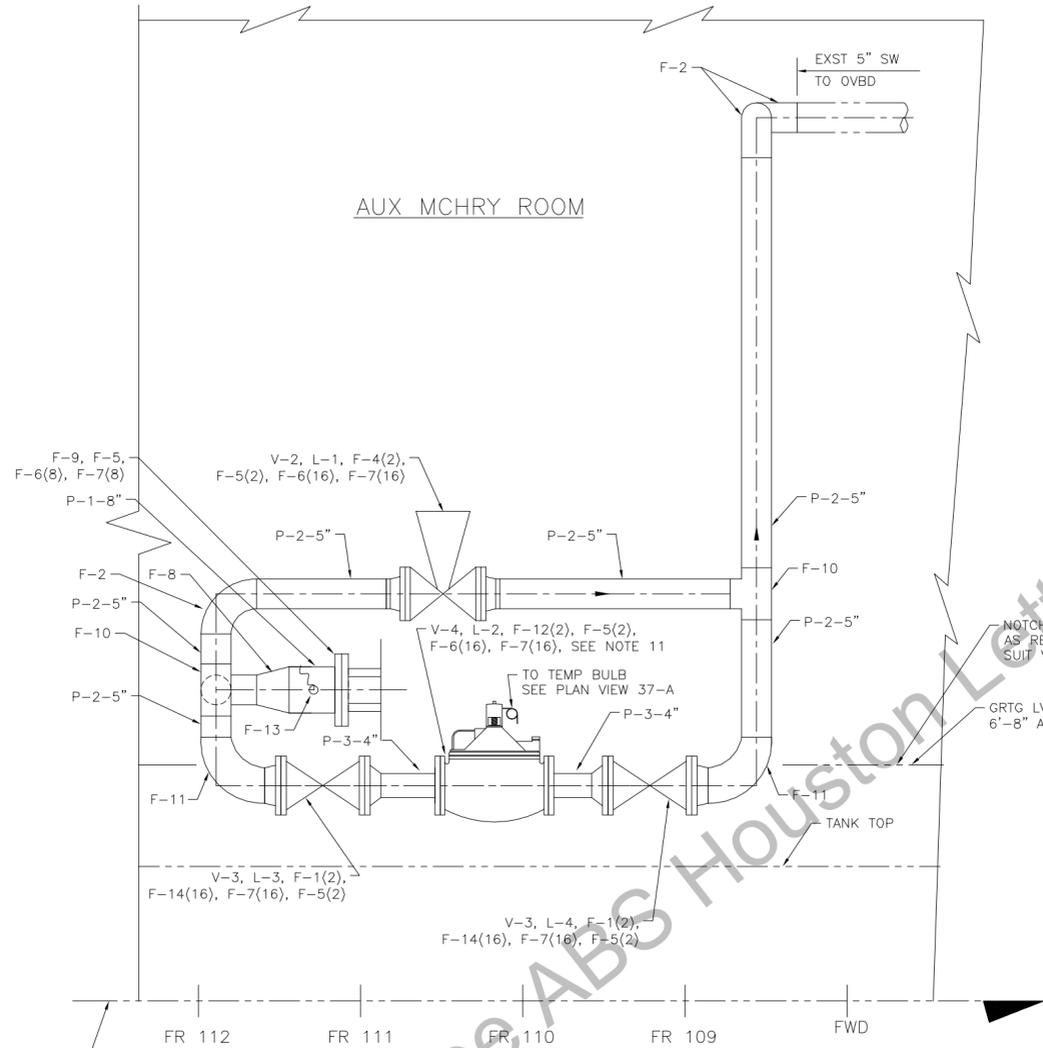
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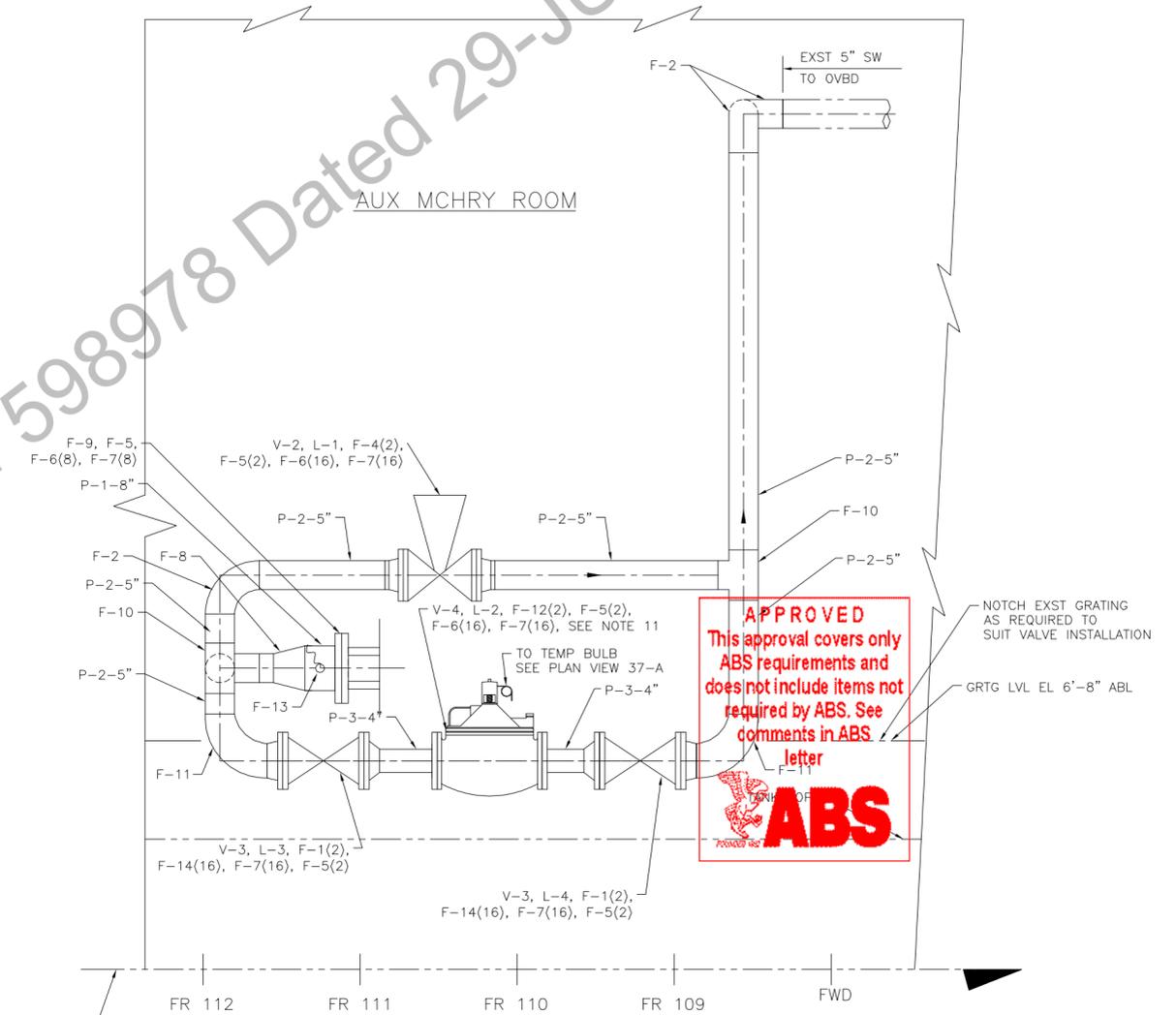
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



INSTALLATION
ELEVATION 47-A
LKG OUTBD



INSTALLATION
ELEVATION 43-A
LKG OUTBD

FILE NAME	3190-005-12.dwg
SCALE	1"=1'-0"
SHT. NO.	6-0F-7
SIZE	D
DRAWING NO.	3190-005-12
REV.	-

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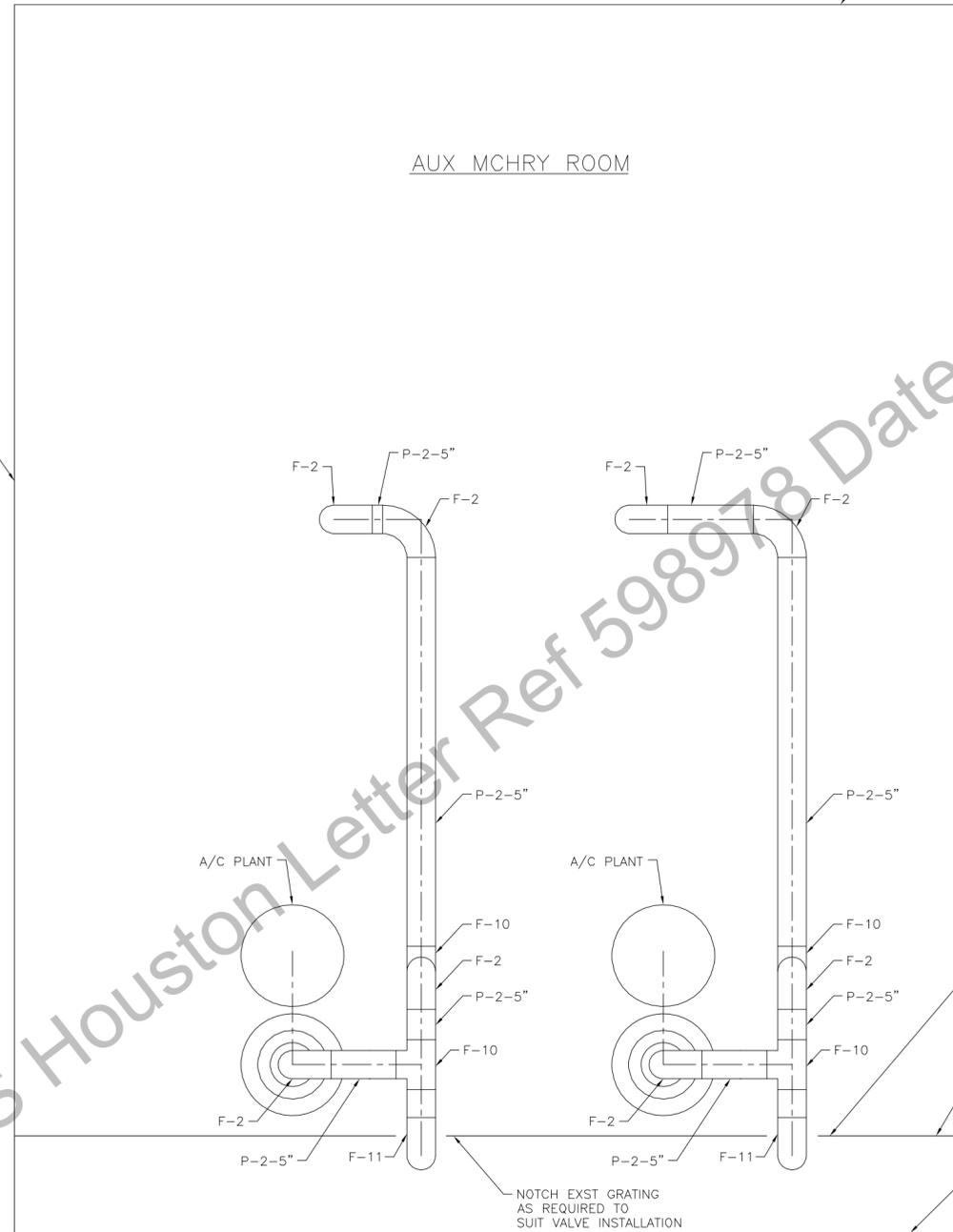
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

LOWER TWEEN DECK
20'-6" ABL

AUX MCHRY ROOM

SHELL

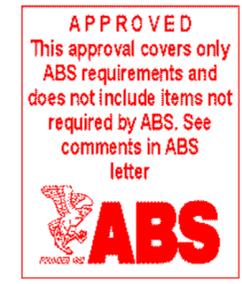


NOTCH EXST GRATING
AS REQUIRED TO
SUIT VALVE INSTALLATION

GRTG LVL

TANK TOP

INSTALLATION
SECTION 53-A
LKG FWD



FILE NAME	3190-005-12.dwg	SHT. NO.	7-0F-7	SIZE	D	DRAWING NO.	3190-005-12	REV.	-
SCALE	1"=1'-0"								

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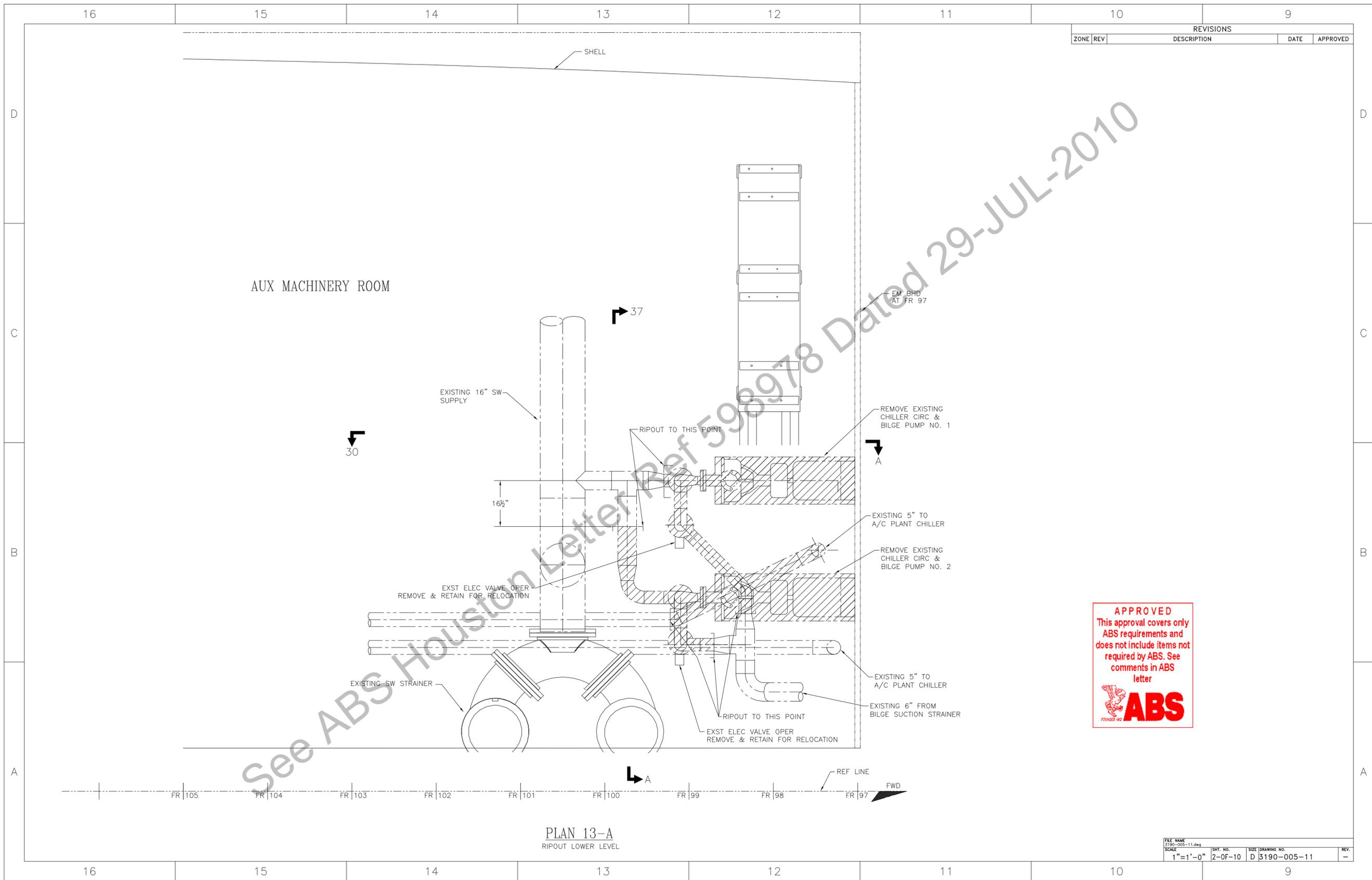
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8	7	6	5	4	3	2	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
GENERAL NOTES 1. THIS DRAWING WAS DEVELOPED FOR THE INSTALLATION OF THE A/C PLANT SEAWATER COOLING SYSTEM STATION BASED ON A SHIPCHECK OF T/S KENNEDY. AN APPLICABILITY SHIPCHECK IS REQUIRED PRIOR TO ITS USE ON OTHER SHIPS. 2. THE PURPOSE OF THIS DRAWING IS TO INSTALL A TWO NEW CHILLER CIRCULATION AND BILGE PUMPS FOR THE A/C PLANT SEAWATER COOLING SYSTEM. 3. TEMPLATE WORK FROM SHIP AND EQUIPMENT. 4. FRAME SPACING IS 30 INCHES IN AREAS EFFECTED BY THIS DRAWING. 5. ALL FABRICATION, WELDING, MECHANICAL FASTENING AND INSPECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABS RULES. 6. MOUNTING HARDWARE NOT ORDERED IN THIS DRAWING SHALL BE SUPPLIED BY THE INSTALLING ACTIVITY AND SHALL INCLUDE SELF-LOCKING NUTS. ALL NUTS FOR DISSILIMAR METALS INSTALLATION SHALL BE NYLOCK STYLE. 7. ALL EQUIPMENT AND FOUNDATIONS SHALL BE INSTALLED PARALLEL TO AND/OR PERPENDICULAR TO THE HORIZONTAL BASE PLAN OF THE CRAFT. 8. EQUIPMENT LOCATIONS SHOWN MAY BE MODIFIED SLIGHTLY IF NECESSARY FOR CLEARANCE. 9. PIPING SHALL BE SUPPORTED BY HANGERS CONFORMING TO ASTM-F-708. CONTRACTOR TO SUPPLY ALL HANGERS, LINERS AND FASTENERS. MATERIAL SHALL BE APPROVED BY OWNERS REPRESENTATIVE. HANGERS SHALL BE MOUNTED FROM STRUCTURAL STIFFENERS. 10. ALL FLANGE GASKETS TO BE SYNTHETIC RUBBER, EXCEPT WHERE NOTED. 11. ALL FLANGES BETWEEN DISSIMILAR MATERIALS TO BE INSTALLED WITH FLANGE ISOLATION KITS. CONTRACTOR TO FURNISH ISOLATION KITS. 12. THE BILL OF MATERIALS IS THE OWNERS PRESENT BEST ESTIMATE OF MATERIALS REQUIRED. THE CONTRACTOR IS REQUIRED TO ESTIMATE MATERIALS FROM THE PROVIDED DRAWING INCLUDING BUT NOT LIMITED TO PIPE, FITTINGS, CONSUMABLES, HANGERS, FOUNDATIONS, GASKETS, AND ISOLATION KITS. 13. USE OF SUBSTITUTE MATERIALS MAY ADVERSELY AFFECT SYSTEM PERFORMANCE OR INTEGRITY. SUBSTITUTE MATERIAL SHALL NOT BE USED WITHOUT PRIOR CONCURRENCE FROM THE OWNERS REPRESENTATIVE. 14. ABBREVIATIONS FOR THIS DRAWING ARE AS FOLLOWS: (IAF): INSTALLING ACTIVITY FURNISHED (E): EXISTING (N): NEW 15. GRIND SMOOTH ALL SHARP CORNERS AND ROUGH EDGES LIABLE TO CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT. 16. LABEL PLATES SHALL BE MADE OF PHENOLIC MATERIAL WITH A MINIMUM OF 1/8" HIGH ETCHED LETTERING AND SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR. 17. PAINT, DECK COVERING, AND INSULATION DAMAGED BY WORK SHOWN ON THIS DRAWING SHALL BE REPAIRED TO MATCH EXISTING CONDITIONS. 18. PIPING SHALL BE INSTALLED AS SHOWN; HOWEVER, MINOR DEVIATIONS MAY BE MADE TO SUIT CONDITIONS ABOARD SHIP. 19. ALL EXCESS MATERIAL SHALL BE TURNED OVER TO THE OWNERS PROPERTY ADMINISTRATOR. 20. PIPING SHALL BE ARRANGED TO PERMIT MAINTENANCE OF SHIPS MACHINERY EQUIPMENT OR OTHER PIPING SYSTEMS. 21. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND RELOCATION OF INTERFACES RELATED TO THIS INSTALLATION. 22. PIPING, PIPING APPURTENANCES AND APPLICABLE EQUIPMENT SHALL BE CLEANED AFTER FABRICATION AND PRIOR TO INSTALLATION TO REMOVE LOOSE PARTICLES, GREASE, DIRT, AND OIL. AFTER COMPLETE SHIPBOARD INSTALLATION, EACH SYSTEM PIPING SHALL BE CLEANED AND FLUSHED OF FOREIGN MATER. TEMPORARY STRAINERS SHALL BE INSTALLED DURING THE PROCEDURE. 23. PIPING SYSTEMS SHALL BE FLUSHED AND MAINTAINED CLEAN UNTIL CRAFT DELIVERY. 24. LEGEND FOR THIS DRAWING IS AS FOLLOWS: NEW PIPING _____ EXISTING PIPING - - - - - PIPING RIPPED OUT //////////////// DENOTES END OF PIPING [LIST OF MATERIAL (QUANTITY FOR ONE SHIP) <table border="1"> <thead> <tr> <th>ITEM NO</th> <th>QTY REQD</th> <th>DESCRIPTION</th> <th>LAST NO. USED</th> <th>PCS REQD</th> <th>MATERIAL SPEC</th> <th>MATL REQ</th> <th>MFR PART NO.</th> <th>APL/PN/VIEW NO.</th> <th>SOURCE</th> <th>WEIGHT UNIT</th> <th>WEIGHT TOTAL</th> <th>REMARKS</th> </tr> </thead> <tbody> <tr> <td>P-1</td> <td>30'-0"</td> <td>PIPE 5.563" OD x .375" THK, SEAMLESS, SCH 80</td> <td>-</td> <td>-</td> <td>ASTM-A53 GRADE B, TYPE S</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>20.78</td> <td>623</td> <td>ANSI-B36.10</td> </tr> <tr> <td>P-2</td> <td>22'-0"</td> <td>PIPE 4.500" OD x .337" THK, SEAMLESS, SCH 80</td> <td>-</td> <td>-</td> <td>ASTM-A53 GRADE B, TYPE S</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>14.98</td> <td>330</td> <td>ANSI-B36.10</td> </tr> <tr> <td>V-1</td> <td>5</td> <td>5" BUTTERFLY VALVE, 150# WAFER SS DISC, BUNA-N SEAT</td> <td>-</td> <td>-</td> <td>ASTM-A-536</td> <td>DUCTILE IRON</td> <td>141 SERIES</td> <td>-</td> <td>IAF</td> <td>15</td> <td>75</td> <td>SIM. TO APOLLO</td> </tr> <tr> <td>V-2</td> <td>4</td> <td>4" BUTTERFLY VALVE, 150# WAFER SS DISC, BUNA-N SEAT</td> <td>-</td> <td>-</td> <td>ASTM-A-536</td> <td>DUCTILE IRON</td> <td>141 SERIES</td> <td>-</td> <td>IAF</td> <td>11</td> <td>44</td> <td>SIM. TO APOLLO</td> </tr> <tr> <td>V-3</td> <td>3</td> <td>5" WAFER CHECK VALVE, 150# CLASS 125, BUNA-N SEAT</td> <td>-</td> <td>-</td> <td>ASTM-A-395</td> <td>CAST IRON</td> <td>FIG# WG-970</td> <td>-</td> <td>IAF</td> <td>22</td> <td>66</td> <td>SIM. TO STOCKHAM</td> </tr> <tr> <td>V-4</td> <td>2</td> <td>1/2" BALL VALVE, THREADED</td> <td>-</td> <td>-</td> <td>WW-V-35C TYPE II</td> <td>CARBON STEEL</td> <td>FIG# 93-103-01</td> <td>-</td> <td>IAF</td> <td>.56</td> <td>1.12</td> <td>SIM. TO APOLLO</td> </tr> <tr> <td>F-1</td> <td>6</td> <td>5" ELBOW 90°, LR, SCH 80, BUTTWELD</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A234</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>21.4</td> <td>128.4</td> <td>ANSI-B16.9</td> </tr> <tr> <td>F-2</td> <td>8</td> <td>4" ELBOW 90°, LR, SCH 80, BUTTWELD</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A234</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>12.4</td> <td>99.2</td> <td>ANSI-B16.9</td> </tr> <tr> <td>F-3</td> <td>5</td> <td>5" TEE, SCH 80, BUTTWELD</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A234</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>28.5</td> <td>142.5</td> <td>ANSI-B16.9</td> </tr> <tr> <td>F-4</td> <td>2</td> <td>4" TEE, SCH 80, BUTTWELD</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A234</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>18.6</td> <td>37.2</td> <td>ANSI-B16.9</td> </tr> <tr> <td>F-5</td> <td>1</td> <td>6" x 4" CONC. RED., SCH 80, BUTTWELD</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A234</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>13.1</td> <td>13.1</td> <td>ANSI-B16.9</td> </tr> <tr> <td>F-6</td> <td>2</td> <td>5" x 3" CONC. RED., SCH 80, BUTTWELD</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A234</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>8.7</td> <td>17.4</td> <td>ANSI-B16.9</td> </tr> <tr> <td>F-7</td> <td>15</td> <td>5" WELDNECK FLANGE, 150#, SCH 80</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A105</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>19</td> <td>285</td> <td>ANSI-B16.5 RAISED FACE</td> </tr> <tr> <td>F-8</td> <td>8</td> <td>4" WELDNECK FLANGE, 150#, SCH 80</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A105</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>15</td> <td>120</td> <td>ANSI-B16.5 RAISED FACE</td> </tr> <tr> <td>F-9</td> <td>2</td> <td>4" WELDNECK FLANGE, 150#, SCH 80</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A105</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>15</td> <td>30</td> <td>ANSI-B16.5 FLAT FACE</td> </tr> <tr> <td>F-10</td> <td>2</td> <td>3" WELDNECK FLANGE, 150#, SCH 80</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A105</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>10</td> <td>20</td> <td>ANSI-B16.5 FLAT FACE</td> </tr> <tr> <td>F-11</td> <td>2</td> <td>1/2" THREADOLET, SCH 80</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A105</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>.74</td> <td>1.48</td> <td>ANSI-B16.11</td> </tr> <tr> <td>F-12</td> <td>2</td> <td>1/2" PIPE NIPPLE, SCH 80, 3" LG, TBE</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A106 GRADE B, TYPE S</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>.27</td> <td>.54</td> <td>ANSI-B36.10</td> </tr> <tr> <td>F-13</td> <td>2</td> <td>3/4" THREADOLET, SCH 80</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A105</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>1.20</td> <td>2.40</td> <td>ANSI-B16.11</td> </tr> <tr> <td>F-14</td> <td>1</td> <td>5" ELBOW 45°, LR, SCH 80, BUTTWELD</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A234</td> <td>CARBON STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>10.7</td> <td>10.7</td> <td>ANSI-B16.9</td> </tr> <tr> <td>F-15</td> <td>24</td> <td>BOLT, HEX HD, 3/4"-10UNC-2A x 5 3/4" LG</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A307 GRADE B</td> <td>GALV. STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>1.12</td> <td>26.88</td> <td>@ V-3</td> </tr> <tr> <td>F-16</td> <td>40</td> <td>BOLT, HEX HD, 3/4"-10UNC-2A x 5 1/4" LG</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A307 GRADE B</td> <td>GALV. STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>1.06</td> <td>42.4</td> <td>@ V-1</td> </tr> <tr> <td>F-17</td> <td>32</td> <td>BOLT, HEX HD, 5/8"-11UNC-2A x 5" LG</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A307 GRADE B</td> <td>ALLOY STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>0.67</td> <td>21.44</td> <td>@ V-2</td> </tr> <tr> <td>F-18</td> <td>24</td> <td>BOLT HEX, HD, 5/8"-11UNC-2A x 3" LG</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A307 GRADE B</td> <td>ALLOY STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>0.51</td> <td>12.24</td> <td>@ PUMP SUCT & DISCH</td> </tr> <tr> <td>F-19</td> <td>64</td> <td>NUT, HEX, HD, 3/4"-10UNC-2B</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A563 GRADE A</td> <td>ALLOY STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>F-20</td> <td>56</td> <td>NUT, HEX, HD, 5/8"-11UNC-2B</td> <td>N/A</td> <td>N/A</td> <td>ASTM-A563 GRADE A</td> <td>ALLOY STEEL</td> <td>-</td> <td>-</td> <td>IAF</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>F-21</td> <td>2</td> <td>4"-150# FULL FACE GASKET</td> <td>N/A</td> <td>N/A</td> <td>HH-P-151</td> <td>SYNTHETIC RUBBER</td> <td>-</td> <td>-</td> <td>IAF</td> <td>-</td> <td>-</td> <td>@ PUMP SUCTION</td> </tr> <tr> <td>F-22</td> <td>2</td> <td>3"-150# FULL FACE GASKET</td> <td>N/A</td> <td>N/A</td> <td>HH-P-151</td> <td>SYNTHETIC RUBBER</td> <td>-</td> <td>-</td> <td>IAF</td> <td>-</td> <td>-</td> <td>@ PUMP DISCHARGE</td> </tr> <tr> <td>F-23</td> <td>2</td> <td>PRESSURE GAGE, 1/2"MPT x 4 1/2" DIAL</td> <td>N/A</td> <td>N/A</td> <td>SEE REMARKS</td> <td>STAINLESS STEEL</td> <td>P/N 3702K44</td> <td>-</td> <td>IAF</td> <td>-</td> <td>-</td> <td>SIM TO MCMMASTER-CARR, 0-160PSI</td> </tr> </tbody> </table>						ITEM NO	QTY REQD	DESCRIPTION	LAST NO. USED	PCS REQD	MATERIAL SPEC	MATL REQ	MFR PART NO.	APL/PN/VIEW NO.	SOURCE	WEIGHT UNIT	WEIGHT TOTAL	REMARKS	P-1	30'-0"	PIPE 5.563" OD x .375" THK, SEAMLESS, SCH 80	-	-	ASTM-A53 GRADE B, TYPE S	CARBON STEEL	-	-	IAF	20.78	623	ANSI-B36.10	P-2	22'-0"	PIPE 4.500" OD x .337" THK, SEAMLESS, SCH 80	-	-	ASTM-A53 GRADE B, TYPE S	CARBON STEEL	-	-	IAF	14.98	330	ANSI-B36.10	V-1	5	5" BUTTERFLY VALVE, 150# WAFER SS DISC, BUNA-N SEAT	-	-	ASTM-A-536	DUCTILE IRON	141 SERIES	-	IAF	15	75	SIM. TO APOLLO	V-2	4	4" BUTTERFLY VALVE, 150# WAFER SS DISC, BUNA-N SEAT	-	-	ASTM-A-536	DUCTILE IRON	141 SERIES	-	IAF	11	44	SIM. TO APOLLO	V-3	3	5" WAFER CHECK VALVE, 150# CLASS 125, BUNA-N SEAT	-	-	ASTM-A-395	CAST IRON	FIG# WG-970	-	IAF	22	66	SIM. TO STOCKHAM	V-4	2	1/2" BALL VALVE, THREADED	-	-	WW-V-35C TYPE II	CARBON STEEL	FIG# 93-103-01	-	IAF	.56	1.12	SIM. TO APOLLO	F-1	6	5" ELBOW 90°, LR, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	21.4	128.4	ANSI-B16.9	F-2	8	4" ELBOW 90°, LR, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	12.4	99.2	ANSI-B16.9	F-3	5	5" TEE, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	28.5	142.5	ANSI-B16.9	F-4	2	4" TEE, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	18.6	37.2	ANSI-B16.9	F-5	1	6" x 4" CONC. RED., SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	13.1	13.1	ANSI-B16.9	F-6	2	5" x 3" CONC. RED., SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	8.7	17.4	ANSI-B16.9	F-7	15	5" WELDNECK FLANGE, 150#, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	19	285	ANSI-B16.5 RAISED FACE	F-8	8	4" WELDNECK FLANGE, 150#, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	15	120	ANSI-B16.5 RAISED FACE	F-9	2	4" WELDNECK FLANGE, 150#, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	15	30	ANSI-B16.5 FLAT FACE	F-10	2	3" WELDNECK FLANGE, 150#, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	10	20	ANSI-B16.5 FLAT FACE	F-11	2	1/2" THREADOLET, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	.74	1.48	ANSI-B16.11	F-12	2	1/2" PIPE NIPPLE, SCH 80, 3" LG, TBE	N/A	N/A	ASTM-A106 GRADE B, TYPE S	CARBON STEEL	-	-	IAF	.27	.54	ANSI-B36.10	F-13	2	3/4" THREADOLET, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	1.20	2.40	ANSI-B16.11	F-14	1	5" ELBOW 45°, LR, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	10.7	10.7	ANSI-B16.9	F-15	24	BOLT, HEX HD, 3/4"-10UNC-2A x 5 3/4" LG	N/A	N/A	ASTM-A307 GRADE B	GALV. STEEL	-	-	IAF	1.12	26.88	@ V-3	F-16	40	BOLT, HEX HD, 3/4"-10UNC-2A x 5 1/4" LG	N/A	N/A	ASTM-A307 GRADE B	GALV. STEEL	-	-	IAF	1.06	42.4	@ V-1	F-17	32	BOLT, HEX HD, 5/8"-11UNC-2A x 5" LG	N/A	N/A	ASTM-A307 GRADE B	ALLOY STEEL	-	-	IAF	0.67	21.44	@ V-2	F-18	24	BOLT HEX, HD, 5/8"-11UNC-2A x 3" LG	N/A	N/A	ASTM-A307 GRADE B	ALLOY STEEL	-	-	IAF	0.51	12.24	@ PUMP SUCT & DISCH	F-19	64	NUT, HEX, HD, 3/4"-10UNC-2B	N/A	N/A	ASTM-A563 GRADE A	ALLOY STEEL	-	-	IAF	-	-	-	F-20	56	NUT, HEX, HD, 5/8"-11UNC-2B	N/A	N/A	ASTM-A563 GRADE A	ALLOY STEEL	-	-	IAF	-	-	-	F-21	2	4"-150# FULL FACE GASKET	N/A	N/A	HH-P-151	SYNTHETIC RUBBER	-	-	IAF	-	-	@ PUMP SUCTION	F-22	2	3"-150# FULL FACE GASKET	N/A	N/A	HH-P-151	SYNTHETIC RUBBER	-	-	IAF	-	-	@ PUMP DISCHARGE	F-23	2	PRESSURE GAGE, 1/2"MPT x 4 1/2" DIAL	N/A	N/A	SEE REMARKS	STAINLESS STEEL	P/N 3702K44	-	IAF	-	-	SIM TO MCMMASTER-CARR, 0-160PSI	REVISIONS <table border="1"> <thead> <tr> <th>ZONE</th> <th>REV</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APPROVED</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		ZONE	REV	DESCRIPTION	DATE	APPROVED																																																																																																																																																							
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V-1	5	5" BUTTERFLY VALVE, 150# WAFER SS DISC, BUNA-N SEAT	-	-	ASTM-A-536	DUCTILE IRON	141 SERIES	-	IAF	15	75	SIM. TO APOLLO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
V-2	4	4" BUTTERFLY VALVE, 150# WAFER SS DISC, BUNA-N SEAT	-	-	ASTM-A-536	DUCTILE IRON	141 SERIES	-	IAF	11	44	SIM. TO APOLLO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
V-3	3	5" WAFER CHECK VALVE, 150# CLASS 125, BUNA-N SEAT	-	-	ASTM-A-395	CAST IRON	FIG# WG-970	-	IAF	22	66	SIM. TO STOCKHAM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
V-4	2	1/2" BALL VALVE, THREADED	-	-	WW-V-35C TYPE II	CARBON STEEL	FIG# 93-103-01	-	IAF	.56	1.12	SIM. TO APOLLO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-1	6	5" ELBOW 90°, LR, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	21.4	128.4	ANSI-B16.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-2	8	4" ELBOW 90°, LR, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	12.4	99.2	ANSI-B16.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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F-4	2	4" TEE, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	18.6	37.2	ANSI-B16.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-5	1	6" x 4" CONC. RED., SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	13.1	13.1	ANSI-B16.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-6	2	5" x 3" CONC. RED., SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	8.7	17.4	ANSI-B16.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-7	15	5" WELDNECK FLANGE, 150#, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	19	285	ANSI-B16.5 RAISED FACE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-8	8	4" WELDNECK FLANGE, 150#, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	15	120	ANSI-B16.5 RAISED FACE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-9	2	4" WELDNECK FLANGE, 150#, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	15	30	ANSI-B16.5 FLAT FACE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-10	2	3" WELDNECK FLANGE, 150#, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	10	20	ANSI-B16.5 FLAT FACE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-11	2	1/2" THREADOLET, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	.74	1.48	ANSI-B16.11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-12	2	1/2" PIPE NIPPLE, SCH 80, 3" LG, TBE	N/A	N/A	ASTM-A106 GRADE B, TYPE S	CARBON STEEL	-	-	IAF	.27	.54	ANSI-B36.10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-13	2	3/4" THREADOLET, SCH 80	N/A	N/A	ASTM-A105	CARBON STEEL	-	-	IAF	1.20	2.40	ANSI-B16.11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-14	1	5" ELBOW 45°, LR, SCH 80, BUTTWELD	N/A	N/A	ASTM-A234	CARBON STEEL	-	-	IAF	10.7	10.7	ANSI-B16.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-15	24	BOLT, HEX HD, 3/4"-10UNC-2A x 5 3/4" LG	N/A	N/A	ASTM-A307 GRADE B	GALV. STEEL	-	-	IAF	1.12	26.88	@ V-3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-16	40	BOLT, HEX HD, 3/4"-10UNC-2A x 5 1/4" LG	N/A	N/A	ASTM-A307 GRADE B	GALV. STEEL	-	-	IAF	1.06	42.4	@ V-1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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F-18	24	BOLT HEX, HD, 5/8"-11UNC-2A x 3" LG	N/A	N/A	ASTM-A307 GRADE B	ALLOY STEEL	-	-	IAF	0.51	12.24	@ PUMP SUCT & DISCH																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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F-20	56	NUT, HEX, HD, 5/8"-11UNC-2B	N/A	N/A	ASTM-A563 GRADE A	ALLOY STEEL	-	-	IAF	-	-	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-21	2	4"-150# FULL FACE GASKET	N/A	N/A	HH-P-151	SYNTHETIC RUBBER	-	-	IAF	-	-	@ PUMP SUCTION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
F-22	2	3"-150# FULL FACE GASKET	N/A	N/A	HH-P-151	SYNTHETIC RUBBER	-	-	IAF	-	-	@ PUMP DISCHARGE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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TEST NOTES T-1. THE NEW AND DISTURBED SEAWATER PIPING SHALL BE BLANKED OFF AND HYDROSTATICALLY TESTED AT 135% OF DESIGN PRESSURE FOR 30 MINUTES TO ASSURE THAT THERE ARE NO LEAKS OR WEEPS. CORRECT ANY DEFECTS AND RETEST. T-2. THE NEW AND DISTURBED SYSTEMS SHALL BE TESTED FOR PROPER OPERATION AND UNOBSTRUCTED FLOW.		ABS Houston Letter P-50978 Dated 29-JUL-2010						APPROVED This approval covers only ABS requirements and does not include items not required by ABS. See comments in ABS letter 																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

See ABS Houston Letter Ref 598978 Dated 29-JUL-2010

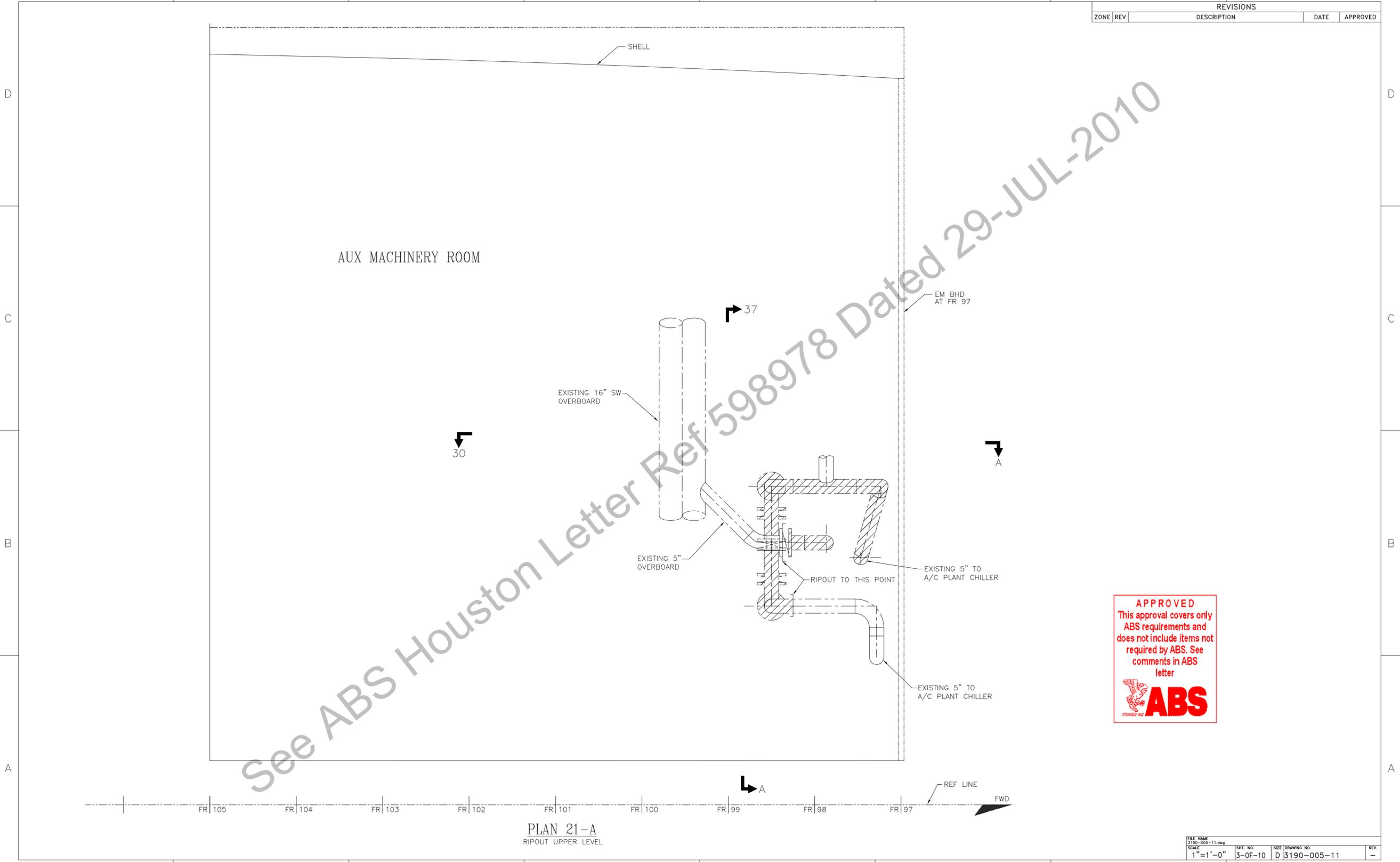
APPROVED
 This approval covers only
 ABS requirements and
 does not include items not
 required by ABS. See
 comments in ABS
 letter

PLAN 13-A
RIPOUT LOWER LEVEL

FILE NAME 3190-005-11.dwg	SHT. NO. 2-OF-10	SIZE D	DRAWING NO. 3190-005-11	REV. -
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24 23 22 21 20 19 18 17

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



APPROVED
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PLAN 21-A
 RIPOUT UPPER LEVEL

FILE NAME	3190-005-11.dwg	SHT. NO.	3-OF-10	SIZE	DRAWING NO.	REV.
SCALE	1"=1'-0"			D	3190-005-11	-

24 23 22 21 20 19 18 17

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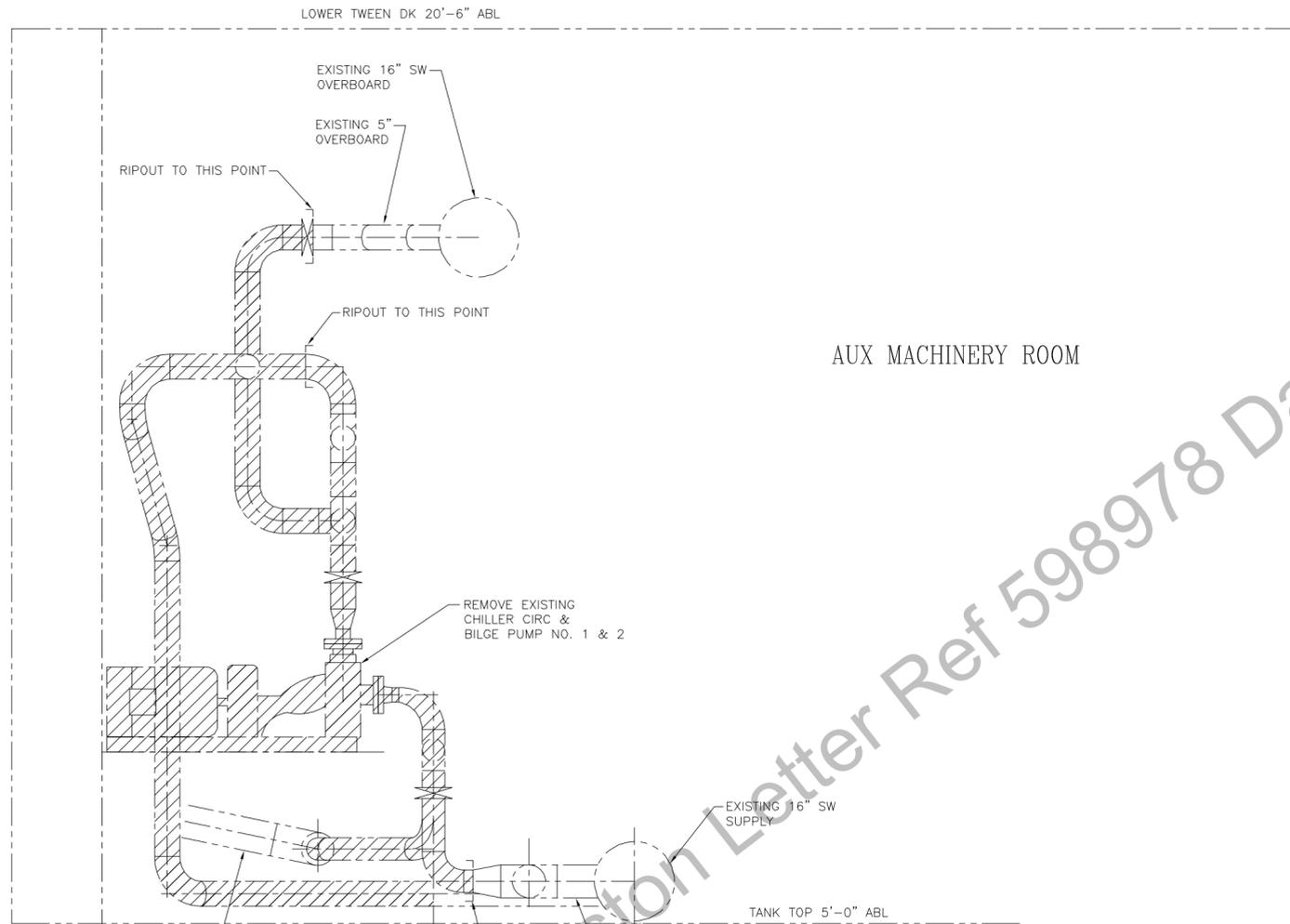
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



AUX MACHINERY ROOM

APPROVED
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ELEVATION 30-A
 RIPOUT LOOKING INBOARD

FILE NAME	3190-005-11.dwg	SHT. NO.	4-OF-10	SIZE	DRAWING NO.	REV.
SCALE	1"=1'-0"			D	3190-005-11	-

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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

LOWER TWEEN DK 20'-6" ABL

EXISTING 16" SW OVERBOARD

EXISTING 5" OVERBOARD

AUX MACHINERY ROOM

SHELL

EXIST ELEC VALVE OPER REMOVE & RETAIN FOR RELOCATION

EXISTING 5" TO A/C PLANT CHILLER

REMOVE EXISTING CHILLER CIRC & BILGE PUMP NO. 1

REMOVE EXISTING CHILLER CIRC & BILGE PUMP NO. 2

EXISTING 16" SW SUPPLY

TANK TOP 5'-0" ABL

RIPOUT TO THIS POINT

BASE LINE

SECTION 37-A
RIPOUT LOOKING FORWARD

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 letter



FILE NAME 3190-005-11.dwg	SHT. NO. 5-OF-10	SIZE D	DRAWING NO. 3190-005-11	REV. -
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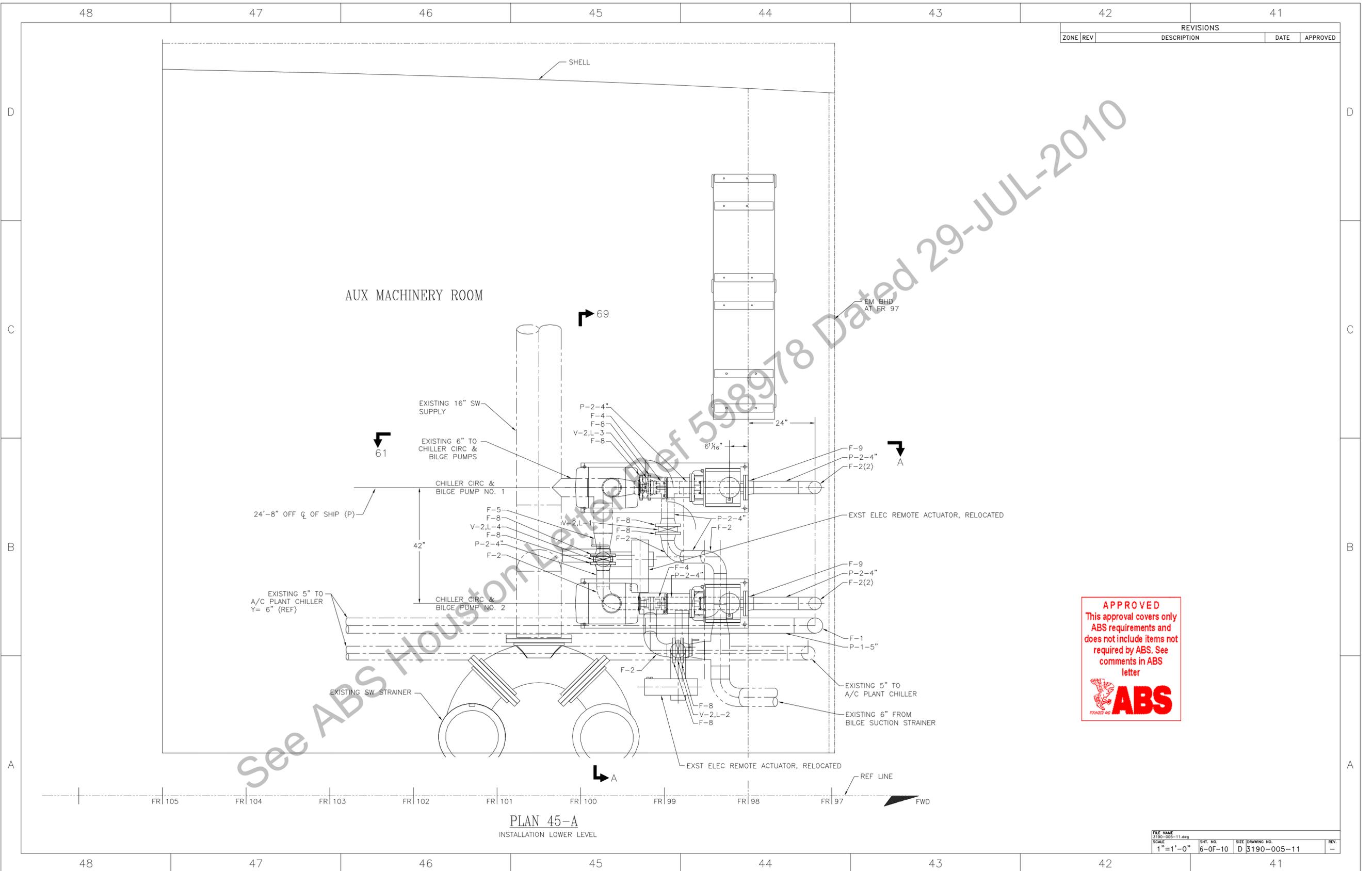
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



AUX MACHINERY ROOM

PLAN 45-A
INSTALLATION LOWER LEVEL

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FILE NAME 3190-005-11.dwg	SHT. NO. 6-OF-10	SIZE D	DRAWING NO. 3190-005-11	REV. -
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See ABS Houston Letter Ref 598978 Dated 29-JUL-2010

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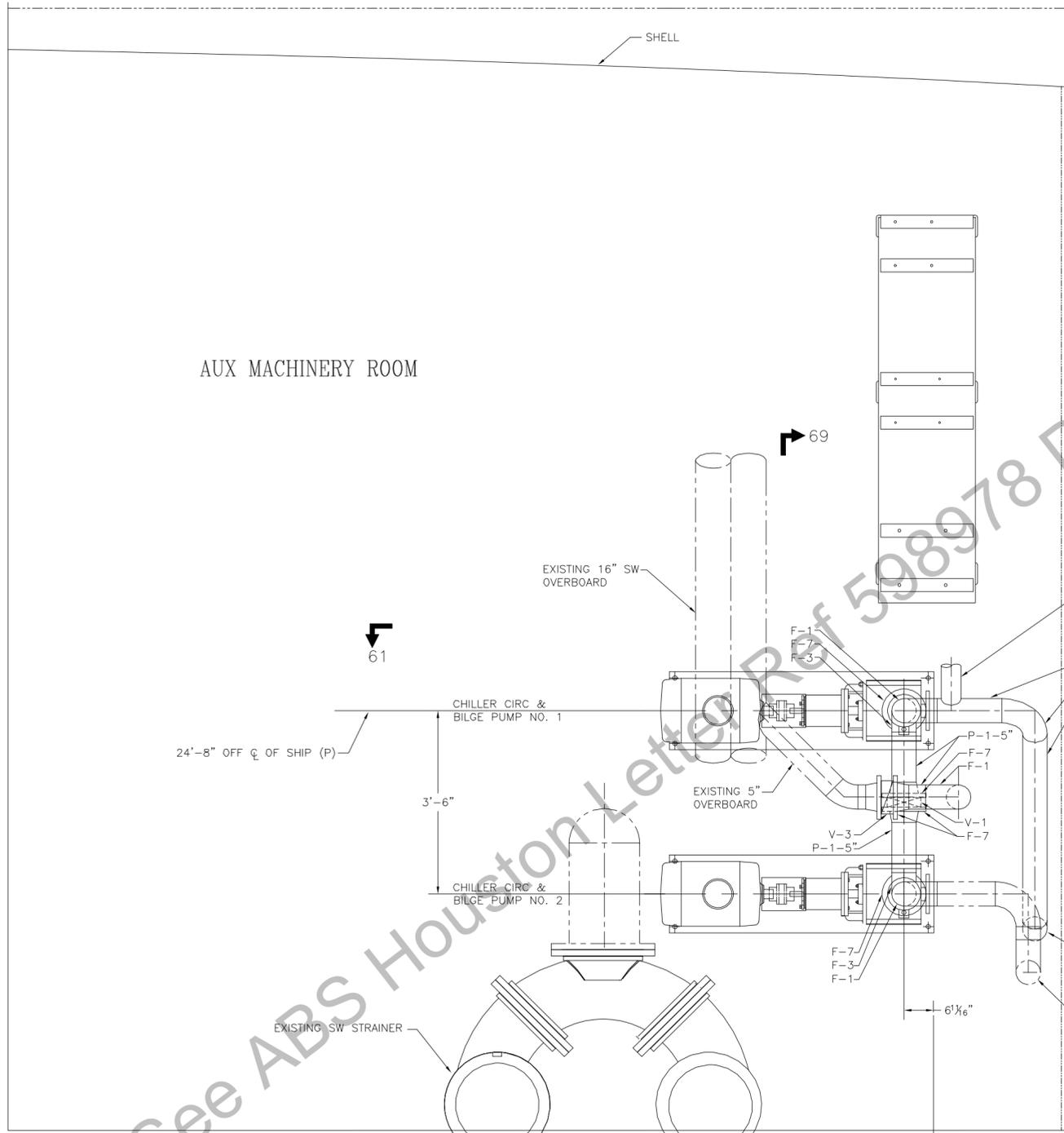
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

AUX MACHINERY ROOM



61

24'-8" OFF ϕ OF SHIP (P)

3'-6"

EXISTING 16" SW OVERBOARD

EXISTING 5" OVERBOARD

EXISTING SW STRAINER

EXISTING 4" TO AUX ENG COOLING CIRC PUMP

EXISTING 5" TO A/C PLANT CHILLER

69

EM BHD AT FR 97

A

A

REF LINE

FWD

6 1/8"

FR 105 FR 104 FR 103 FR 102 FR 101 FR 100 FR 99 FR 98 FR 97

PLAN 53-A
INSTALLATION UPPER LEVEL

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FILE NAME 13190-005-11.dwg	SHT. NO. 7-OF-10	SIZE D	DRAWING NO. 3190-005-11	REV. -
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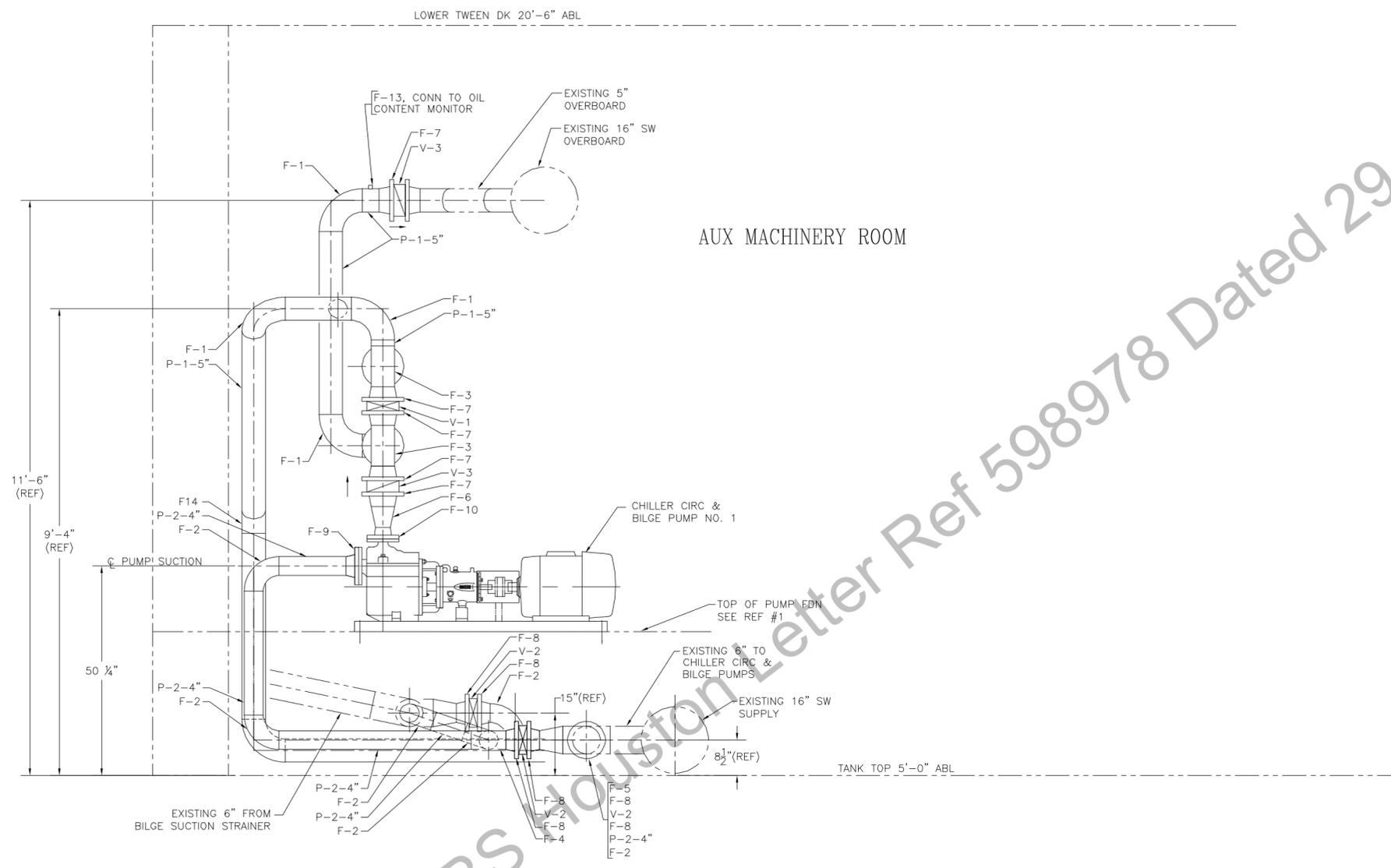
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64 63 62 61 60 59 58 57

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



AUX MACHINERY ROOM

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FWD FR 197 FR 198 FR 199 FR 200 FR 201 FR 202 FR 203 FR 204 FR 205 BASE LINE

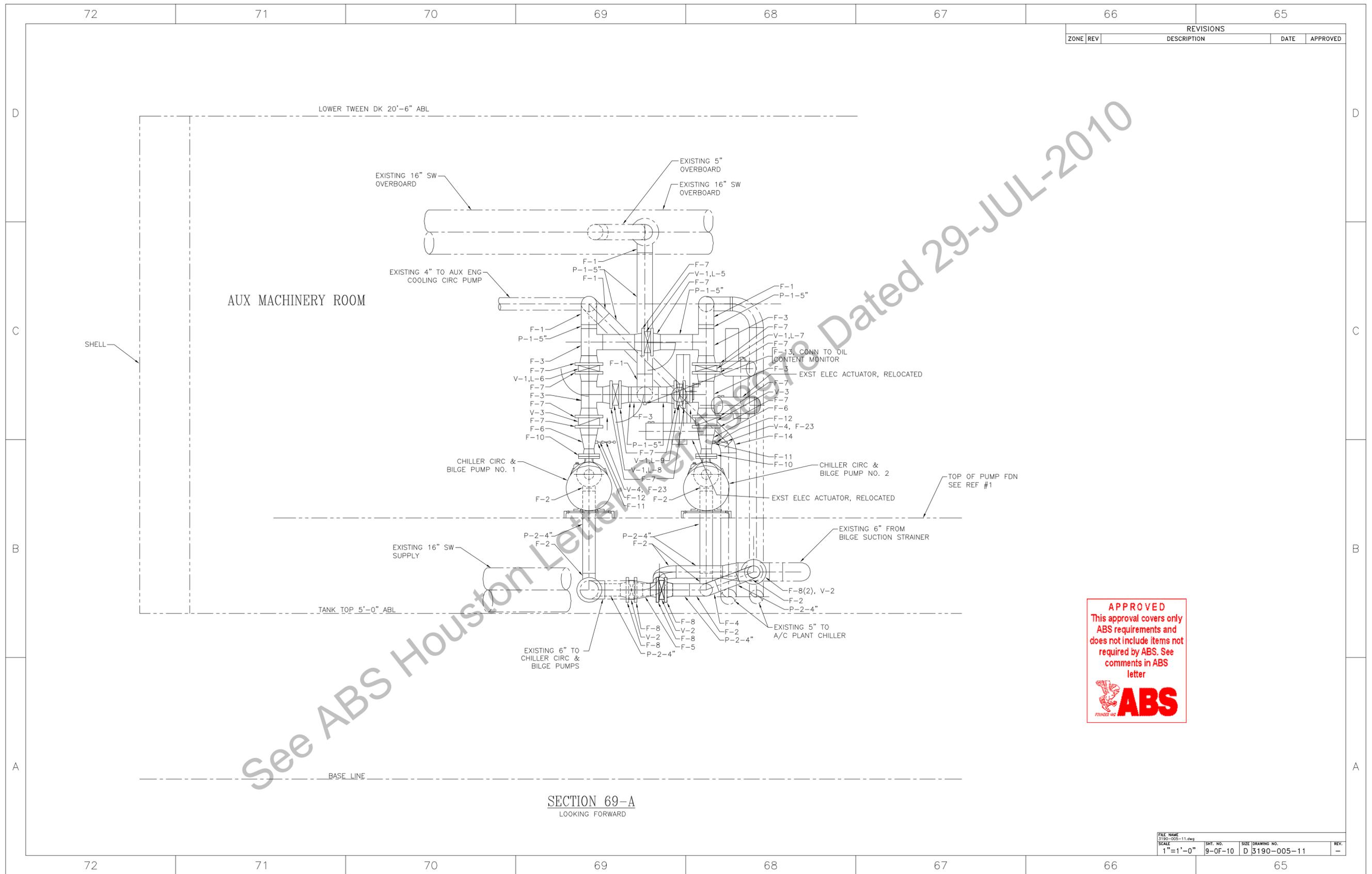
ELEVATION 61-A
 LOOKING INBOARD

FILE NAME	3190-005-11.dwg	SHT. NO.	8-OF-10	SIZE	DRAWING NO.	REV.
SCALE	1"=1'-0"			D	3190-005-11	-

64 63 62 61 60 59 58 57

72 71 70 69 68 67 66 65

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



AUX MACHINERY ROOM

SECTION 69-A
LOOKING FORWARD

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letter

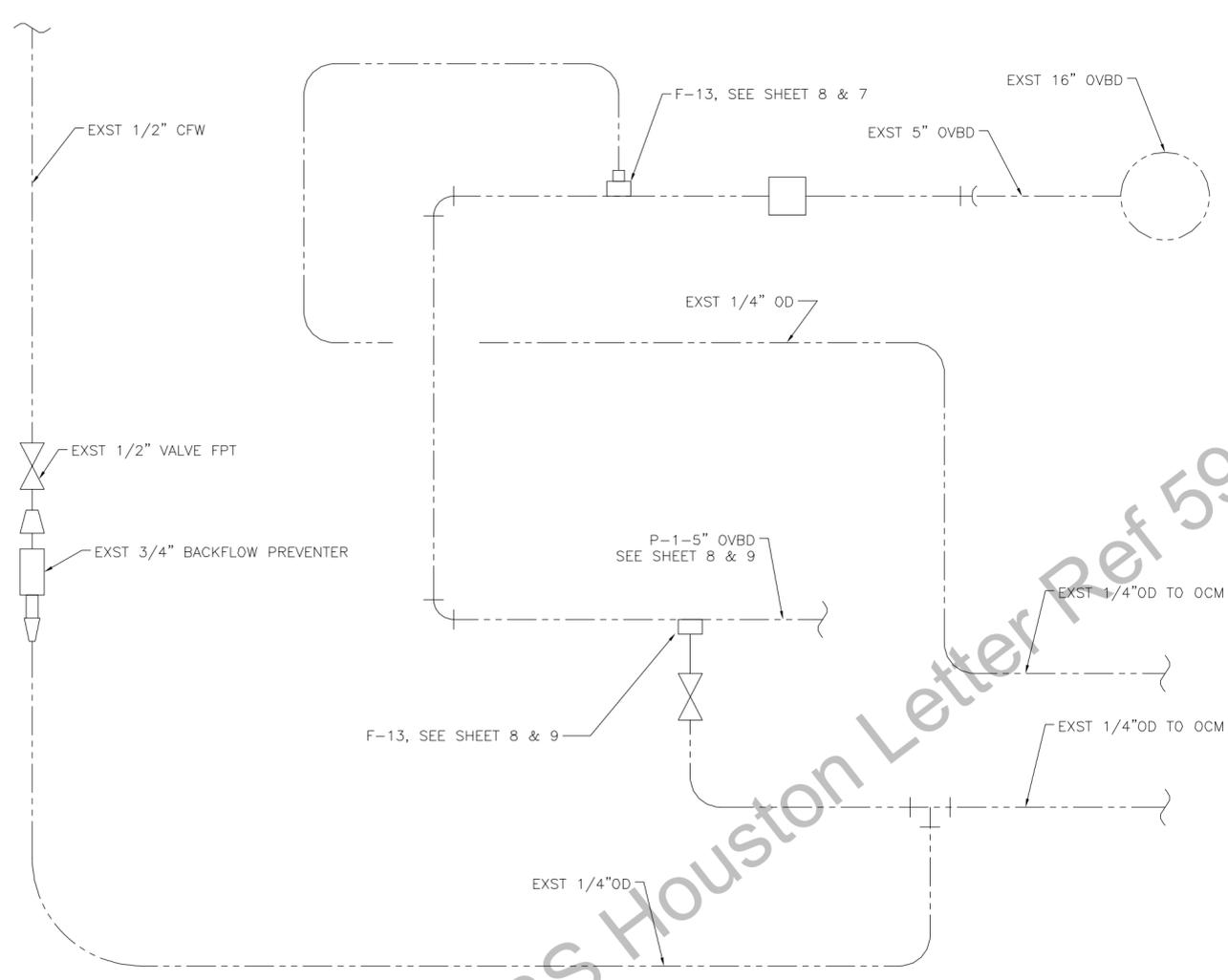


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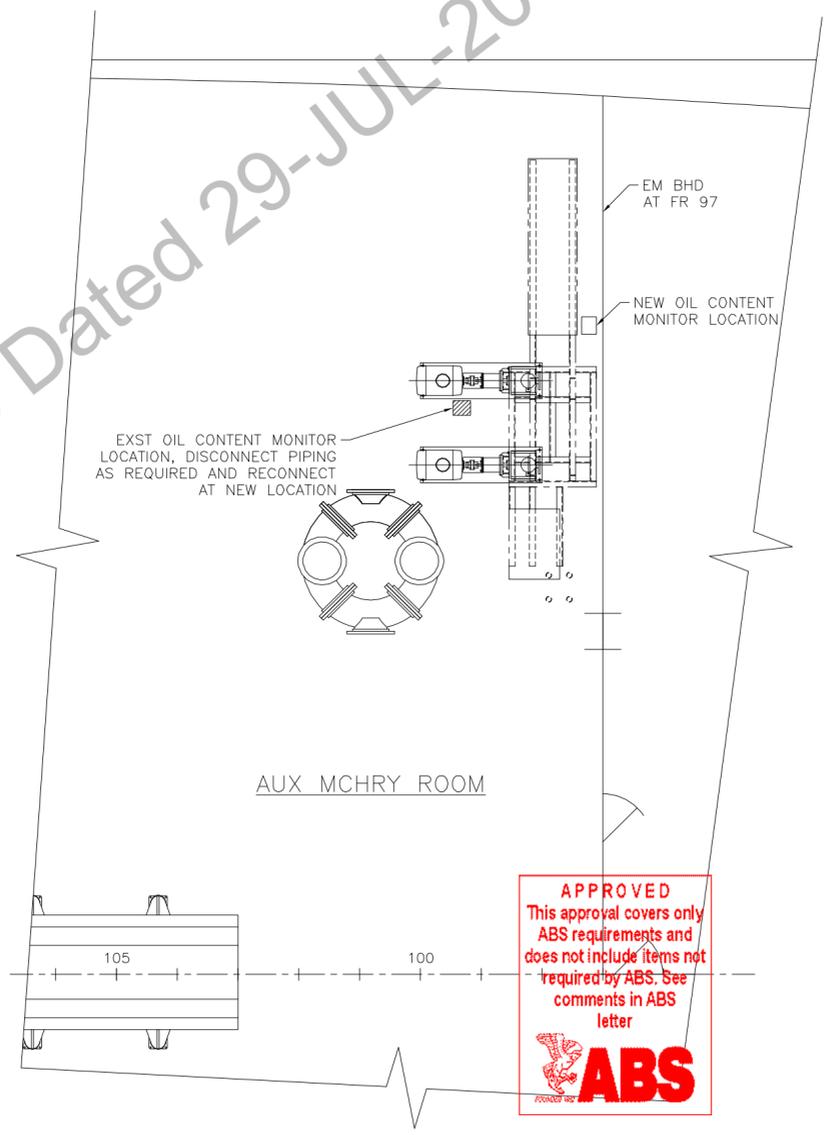
72 71 70 69 68 67 66 65

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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DETAIL 78-A
OIL CONTENT MONITOR PIPING



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required by ABS. See
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letter

KEY PLAN 74-A
AUX MCHRY RM
SCALE: 3/8"=1'-0"

FILE NAME	3190-005-11.dwg	SHT. NO.	10-OF-10	SIZE	DRAWING NO.	3190-005-11	REV.	-
SCALE	NONE							

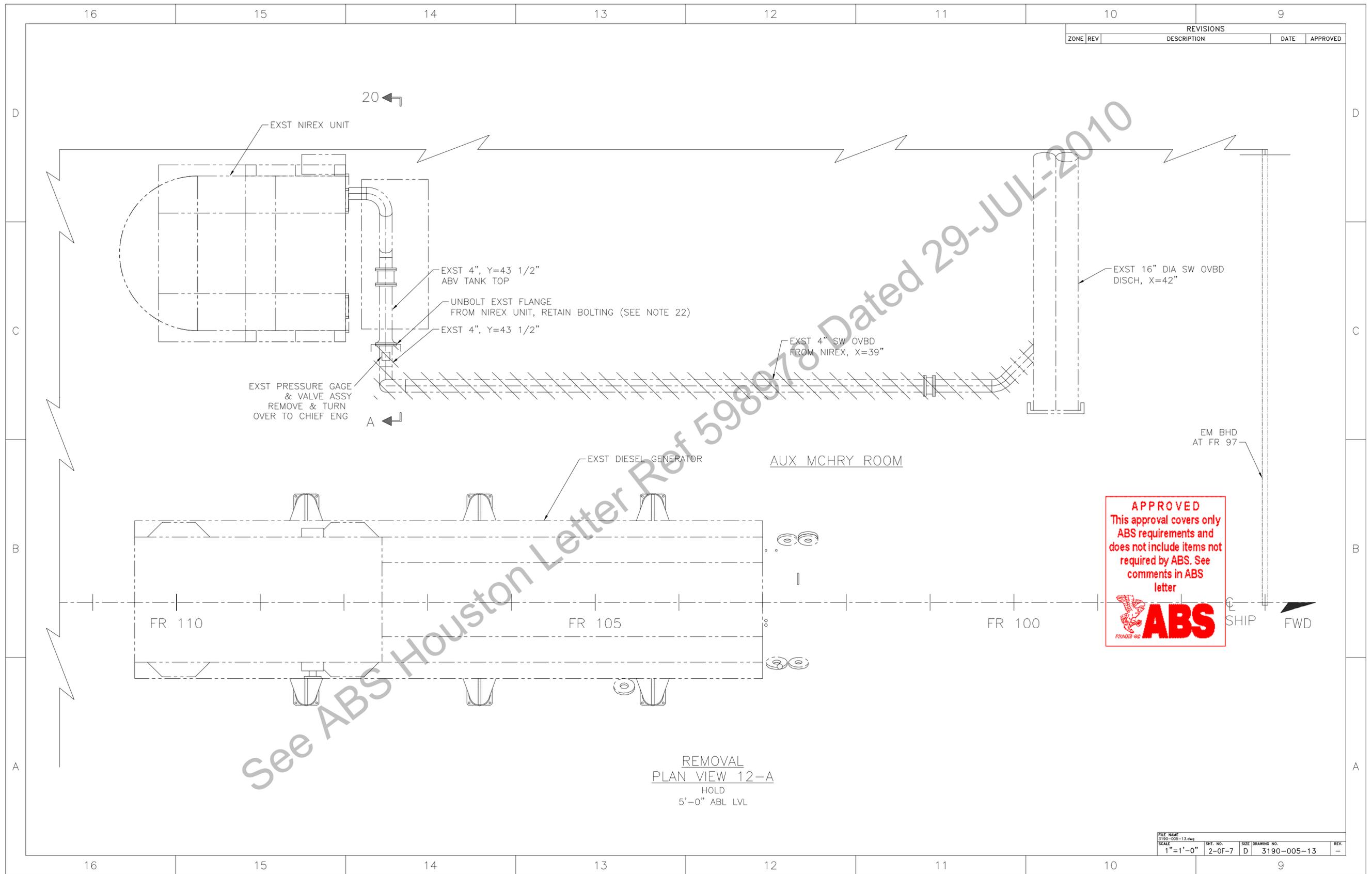
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See ABS Houston Letter Ref 598978 Dated 29-JUL-2010

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<p align="center">GENERAL NOTES</p> <p>1. THIS DRAWING WAS DEVELOPED FOR THE MODIFICATION OF THE NIREX SEAWATER OVERBOARD PIPING BASED ON A SHIPCHECK OF T/S KENNEDY. AN APPLICABILITY SHIPCHECK IS REQUIRED PRIOR TO ITS USE ON OTHER SHIPS.</p> <p>2. THE PURPOSE OF THIS DRAWING IS TO REMOVE THE EXISTING 4" NIREX SEAWATER OVERBOARD DISCHARGE PIPING AND REPLACE IT WITH 6" TO HELP DECREASE BACK PRESSURE ON THE NIREX.</p> <p>3. TEMPLATE WORK FROM SHIP AND EQUIPMENT</p> <p>4. FRAME SPACING IS 30 INCHES IN AREAS EFFECTED BY THIS DRAWING</p> <p>5. ALL FABRICATION, WELDING, MECHANICAL FASTENING AND INSPECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABS RULES</p> <p>6. MOUNTING HARDWARE NOT ORDERED IN THIS DRAWING SHALL BE SUPPLIED BY THE INSTALLING ACTIVITY AND SHALL INCLUDE SELF-LOCKING NUTS. ALL NUTS FOR DISSILIMAR METALS INSTALLATION SHALL BE NYLOCK STYLE.</p> <p>7. ALL EQUIPMENT AND FOUNDATIONS SHALL BE INSTALLED PARALLEL TO AND/OR PERPENDICULAR TO THE HORIZONTAL BASE PLAN OF THE CRAFT.</p> <p>8. EQUIPMENT LOCATIONS SHOWN MAY BE MODIFIED SLIGHTLY IF NECESSARY FOR CLEARANCE</p> <p>9. PIPING SHALL BE SUPPORTED BY HANGERS CONFORMING TO ASTM-F-708. CONTRACTOR TO SUPPLY ALL HANGERS, LINERS AND FASTENERS. MATERIAL SHALL BE APPROVED BY OWNERS REPRESENTATIVE. HANGERS SHALL BE MOUNTED FROM STRUCTURAL STIFFENERS. HANGER SPACING TO BE IN ACCORDANCE WITH ASTM F-708 FOR STEEL PIPING.</p> <p>10. ALL FLANGES BETWEEN DISSILIMAR MATERIALS TO BE INSTALLED WITH FLANGE ISOLATION KITS. ISOLATION KITS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.</p> <p>11. THE BILL OF MATERIALS IS THE OWNERS PRESENT BEST ESTIMATE OF MATERIALS REQUIRED. THE CONTRACTOR IS REQUIRED TO ESTIMATE MATERIALS FROM THE PROVIDED DRAWING INCLUDING BUT NOT LIMITED TO PIPE, FITTINGS, CONSUMABLES, HANGERS, FOUNDATIONS, GASKETS, AND ISOLATION KITS.</p> <p>12. USE OF SUBSTITUTE MATERIALS MAY ADVERSELY AFFECT SYSTEM PERFORMANCE OR INTEGRITY, SUBSTITUTE MATERIAL SHALL NOT BE USED WITHOUT PRIOR CONCURRENCE FROM THE OWNERS REPRESENTATIVE.</p> <p>13. ABBREVIATIONS FOR THIS DRAWING ARE AS FOLLOWS: (IAF): INSTALLING ACTIVITY FURNISHED (E): EXISTING (N): NEW</p> <p>14. GRIND SMOOTH ALL SHARP CORNERS AND ROUGH EDGES LIABLE TO CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.</p> <p>15. LABEL PLATES SHALL BE MADE FROM ANODIZED ALUMINUM WITH BLACK PHOTO ETCHED LETTERING, MINIMUM OF 1/8" HIGH. LABEL PLATES SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.</p> <p>16. PAINT, DECK COVERING, AND INSULATION DAMAGED BY WORK SHOWN ON THIS DRAWING SHALL BE REPAIRED TO MATCH EXISTING CONDITIONS.</p> <p>17. PIPING SHALL BE INSTALLED AS SHOWN; HOWEVER, MINOR DEVIATIONS MAY BE MADE TO SUIT CONDITIONS ABOARD SHIP.</p> <p>18. ALL EXCESS MATERIAL SHALL BE TURNED OVER TO THE OWNERS PROPERTY ADMINISTRATOR</p> <p>19. PIPING SHALL BE ARRANGED TO PERMIT MAINTENANCE OF SHIPS MACHINERY EQUIPMENT FOR OTHER PIPING SYSTEMS.</p> <p>20. PIPING, PIPING APPURTENANCES AND APPLICABLE EQUIPMENT SHALL BE CLEANED AFTER FABRICATION AND PRIOR TO INSTALLATION TO REMOVE LOOSE PARTICLES, GREASE, DIRT, AND OIL. AFTER COMPLETE SHIPBOARD INSTALLATION, EACH SYSTEM PIPING SHALL BE CLEANED AND FLUSHED OF FOREIGN MATTER. TEMPORARY STRAINERS SHALL BE INSTALLED DURING THE PROCEDURE.</p> <p>21. PIPING SYSTEMS SHALL BE FLUSHED AND MAINTAINED CLEAN UNTIL COMPLETION OF OVERHAUL.</p> <p>22. FLANGE (F-4) IS A DIN FLANGE, 100 DN, PN 10, DIN 2632. THE EXISTING FLANGE SHOULD BE REMOVED AND INSPECTED. IF FOUND TO BE IN GOOD CONDITION, IT MAY BE REUSED AT THE DISCRETION OF THE MARAD REP.</p> <p>23. SPOOL PIECE IN DETAIL 34-A IS PROVIDED SO THAT THE SHIP CAN REMOVE CHECK VALVE (V-2) WHEN REQUIRED TO GET LESS BACK PRESSURE DURING WATER MAKING OPERATIONS.</p>		<p align="center">LIST OF MATERIAL (QUANTITY FOR ONE SHIP)</p> <table border="1"> <thead> <tr> <th>ITEM NO</th> <th>QTY REQD</th> <th>DESCRIPTION</th> <th>LAST NO. 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TO APOLLO	F-1	1	6", ELBOW, 45', BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	17.5	17.5	SCH 80, ANSI B16.9	F-2	1	6", ELBOW, 90', BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	35.0	35.0	SCH 80, ANSI B16.9	F-3	1	6"x 4", ELBOW RED, 90', BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	32.0	32.0	SCH 80, ANSI B16.9	F-4	1	4", FLANGE, SLIP-ON, DN	N/A	N/A	SEE REMARKS	CARBON STEEL	-	-	IAF	13.0	13.0	SEE NOTE 22	F-5	4	GASKET, 1/8" THK, SHEET	N/A	N/A	HH-P-151	SYNTHETIC RUBBER	-	-	IAF	-	-	CUT TO SUIT	F-6	24	BOLT, HEX, 3/4"-10UNC-2A, 3 1/2" LG	N/A	N/A	ASTM A307 GR B	ALLOY STEEL	-	-	IAF	-	-	GALV	F-7	32	NUT, HEX, 3/4"-10UNC-2B	N/A	N/A	ASTM A563 GR A	ALLOY STEEL	-	-	IAF	-	-	GALV	F-8	1	BOSS, 1/4" FPT X WELD BASE	N/A	N/A	ASTM A-105	CARBON STEEL	-	-	IAF	1.50	1.50	3000#	F-9	1	1/4", NIPPLE, 4" LG	N/A	N/A	ASTM A-106	CARBON STEEL	-	-	IAF	1.60	1.60	THD BOTH ENDS, SCH 80	F-10	8	6", FLANGE, 150#, BTWLD	N/A	N/A	ASTM A-181	CARBON STEEL	-	-	IAF	26.0	104	BORE TO SCH 80	F-11	1	PRESSURE GAGE, 1/4"MPT x 3" DIAL	N/A	N/A	SEE REMARKS	STAINLESS STEEL	P/N 4005K5	-	IAF	-	-	SIM TO MCMMASTER-CARR, 0-30 PSI	F-12	2	4", FLANGE, 150#, BTWLD	N/A	N/A	ASTM A-181	CARBON STEEL	-	-	IAF	13.0	26.0	BORE TO SCH 80	F-13	2	4", TEE, BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	15.75	31.5	SCH 80, ANSI B16.9	F-14	2	4", ELBOW, 90', LT, BTWLD	N/A	N/A	ASTM A-234	CARBON STEEL	-	-	IAF	13.5	27.0	SCH 80, ANSI B16.9	F-15	16	BOLT, HEX, 5/8"-11UNC-2A, 3 1/4" LG	N/A	N/A	ASTM A307 GR B	ALLOY STEEL	-	-	IAF	-	-	GALV	F-16	16	NUT, HEX, 5/8"-11UNC-2B	N/A	N/A	ASTM A563 GR A	ALLOY STEEL	-	-	IAF	-	-	GALV	F-17	8	BOLT, HEX, 3/4"-10UNC-2A, 6" LG	N/A	N/A	ASTM A307 GR B	ALLOY STEEL	-	-	IAF	-	-	GALV	<p align="center">REVISIONS</p> <table border="1"> <thead> <tr> <th>ZONE</th> <th>REV</th> <th>DESCRIPTION</th> <th>DATE</th> <th>APPROVED</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		ZONE	REV	DESCRIPTION	DATE	APPROVED					
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PREPARED: J. LOWBARDO CHECKED: E. JOHNSON ENGINEER: E. JOHNSON APPROVED: E. JOHNSON APPROVED: J. STEVENS		DATE: 3/10 DATE: 3/10 DATE: 3/10 DATE: 3/10		U.S. Department of Transportation Maritime Administration Washington, DC		DRAWING TITLE: NIREX SEAWATER PIPING MODS	
MARINE SYSTEMS CORPORATION 70 FARGO ST. BOSTON, MA 02210 TELE: (617) 542-3345 FAX: (617) 542-2461		DRAWN BY: DATE: SUBMITAL STATUS: <input type="checkbox"/> ABS NOT REC'D <input type="checkbox"/> ABS SUBMITAL PENDING <input type="checkbox"/> ABS APPROVAL PENDING <input type="checkbox"/> ABS APPROVED <input type="checkbox"/> USCG NOT REC'D <input type="checkbox"/> USCG SUBMITAL PENDING <input type="checkbox"/> USCG APPROVAL PENDING <input type="checkbox"/> USCG APPROVED		DESIGNED: US DEPARTMENT OF TRANSPORTATION MARITIME ADMINISTRATION ISSUED: T/S KENNEDY FILE NAME: 3190-005-13.dwg SCALE: NONE		SHE. NO.: 1-OF-7 SIZE: D DRAWING NO.: 3190-005-13 REV: -	



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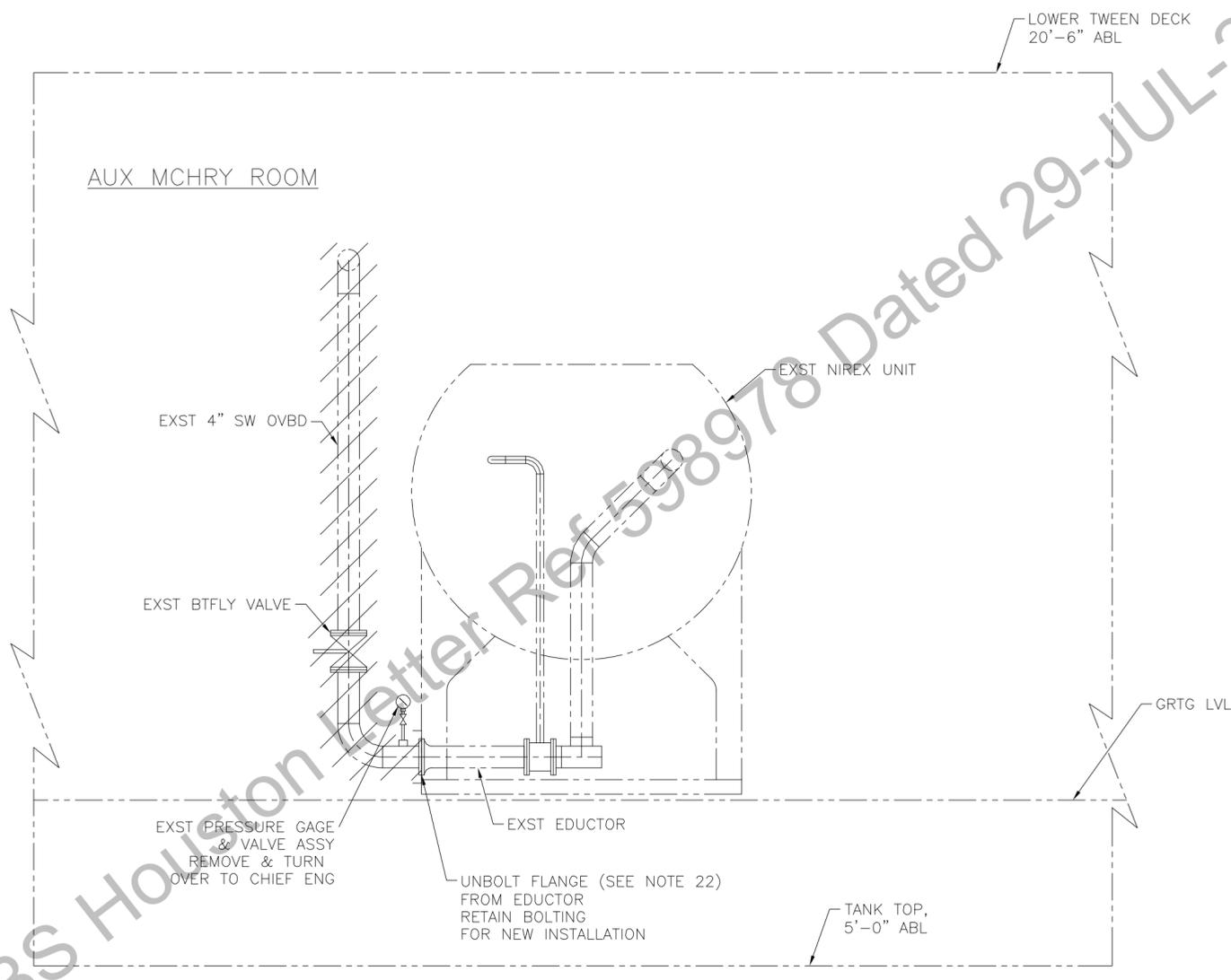
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REMOVAL
SECTION 20-A
 LKG AFT

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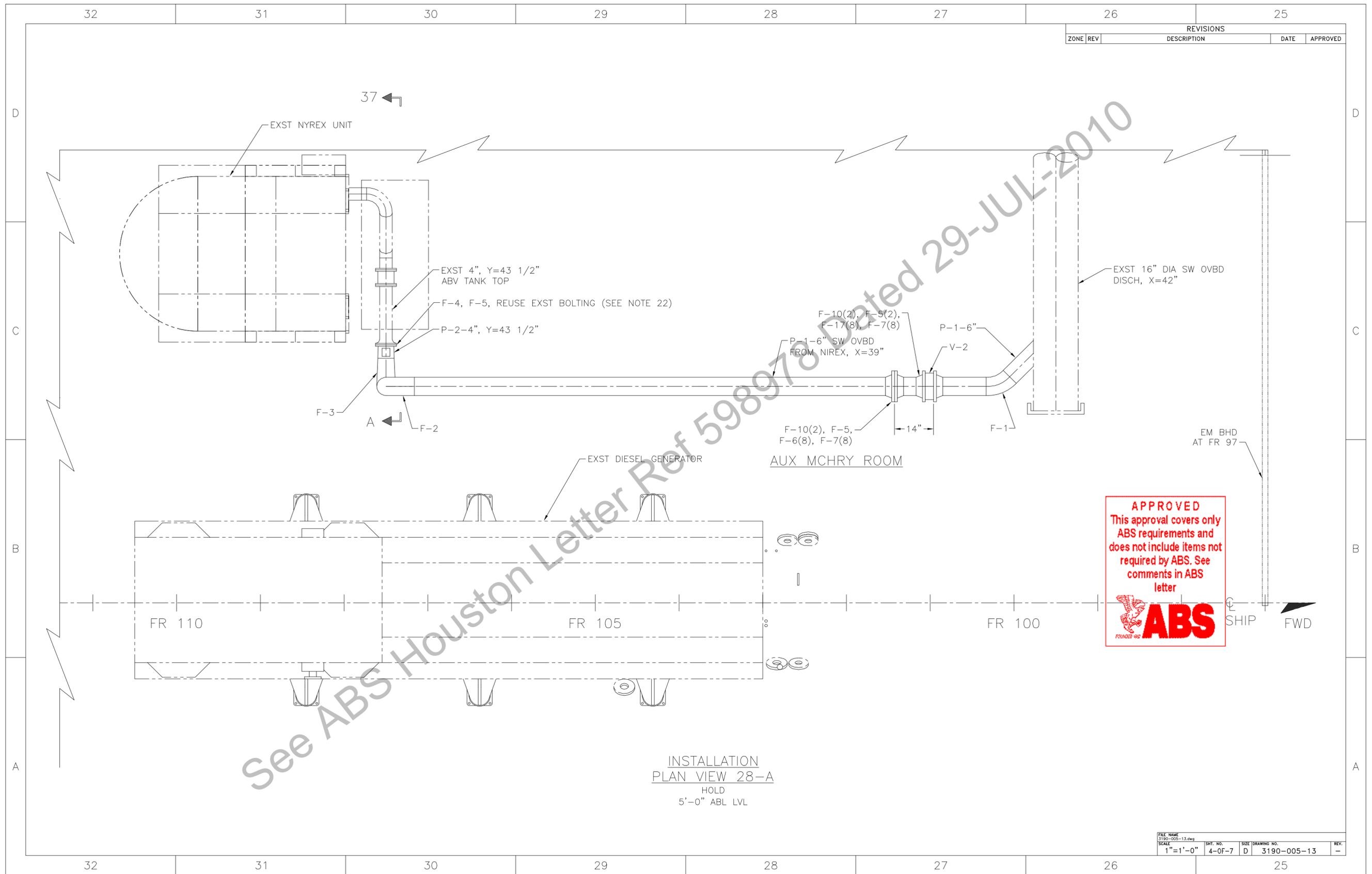
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INSTALLATION
 PLAN VIEW 28-A
 HOLD
 5'-0" ABL LVL

40

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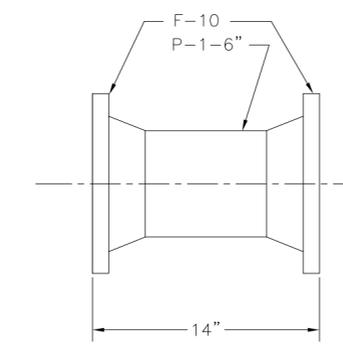
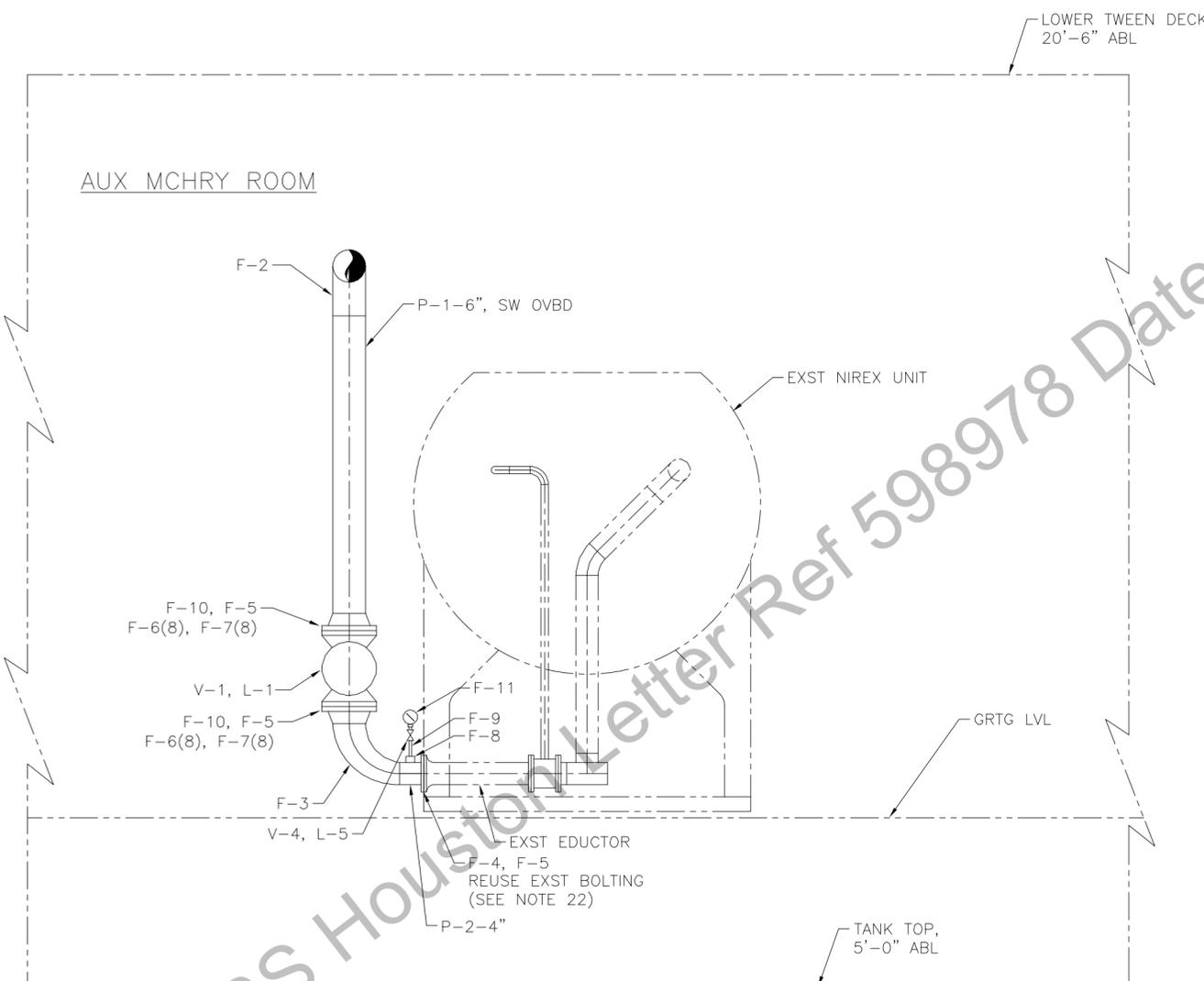
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



DETAIL 34-B
SPOOL ASSY
SCALE: NONE

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INSTALLATION
SECTION 37-A
LKG AFT

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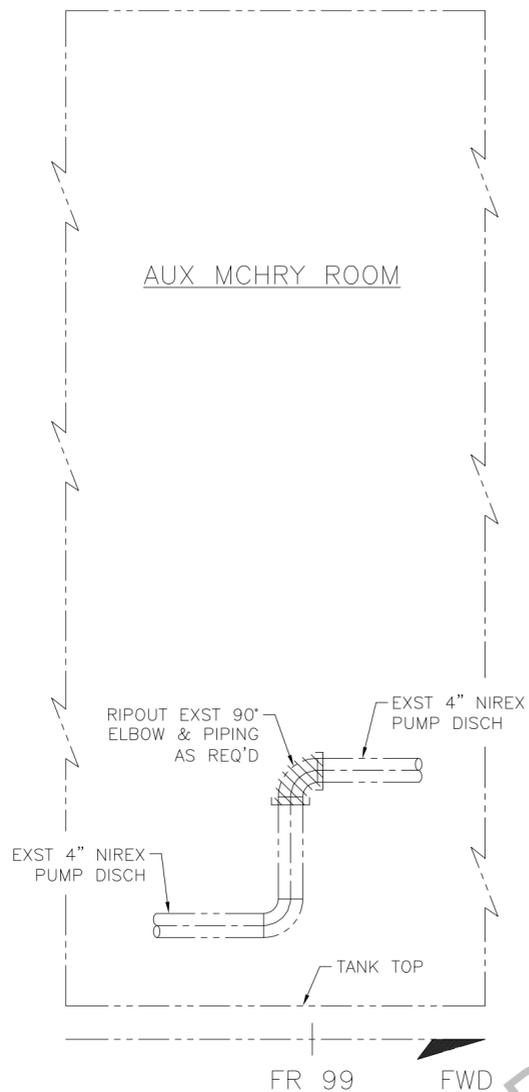
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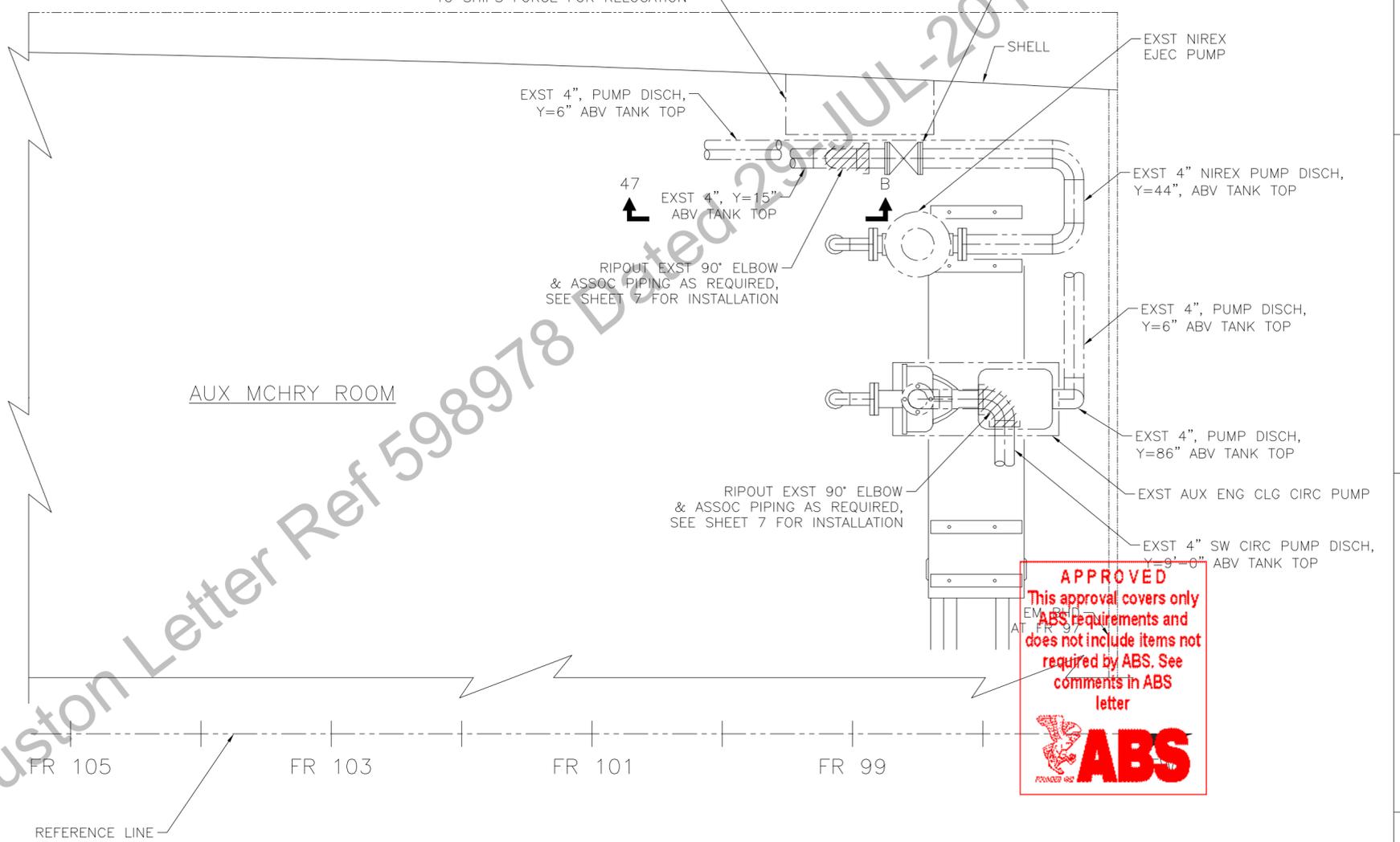
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



RIPOUT
ELEVATION 47-A
HOLD-LKG OUTBD
5'-0" ABL LVL



RIPOUT
PLAN VIEW 44-A
HOLD
5'-0" ABL LVL

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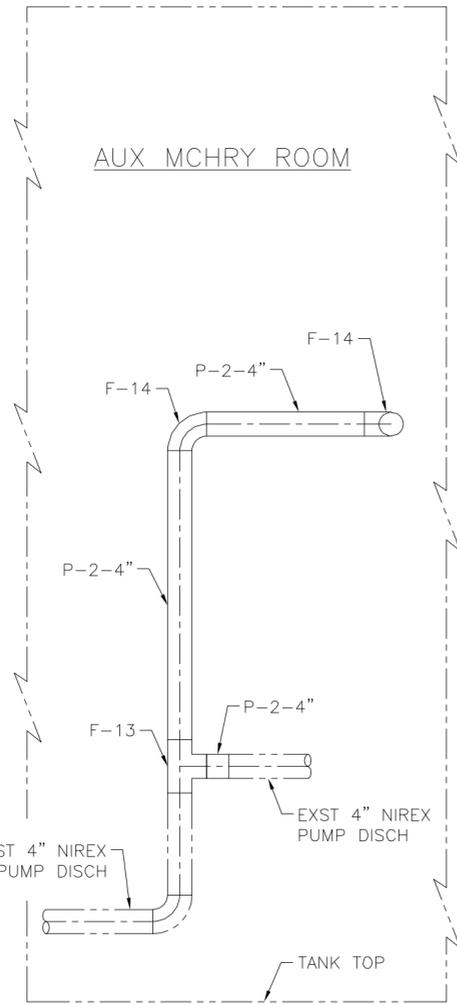
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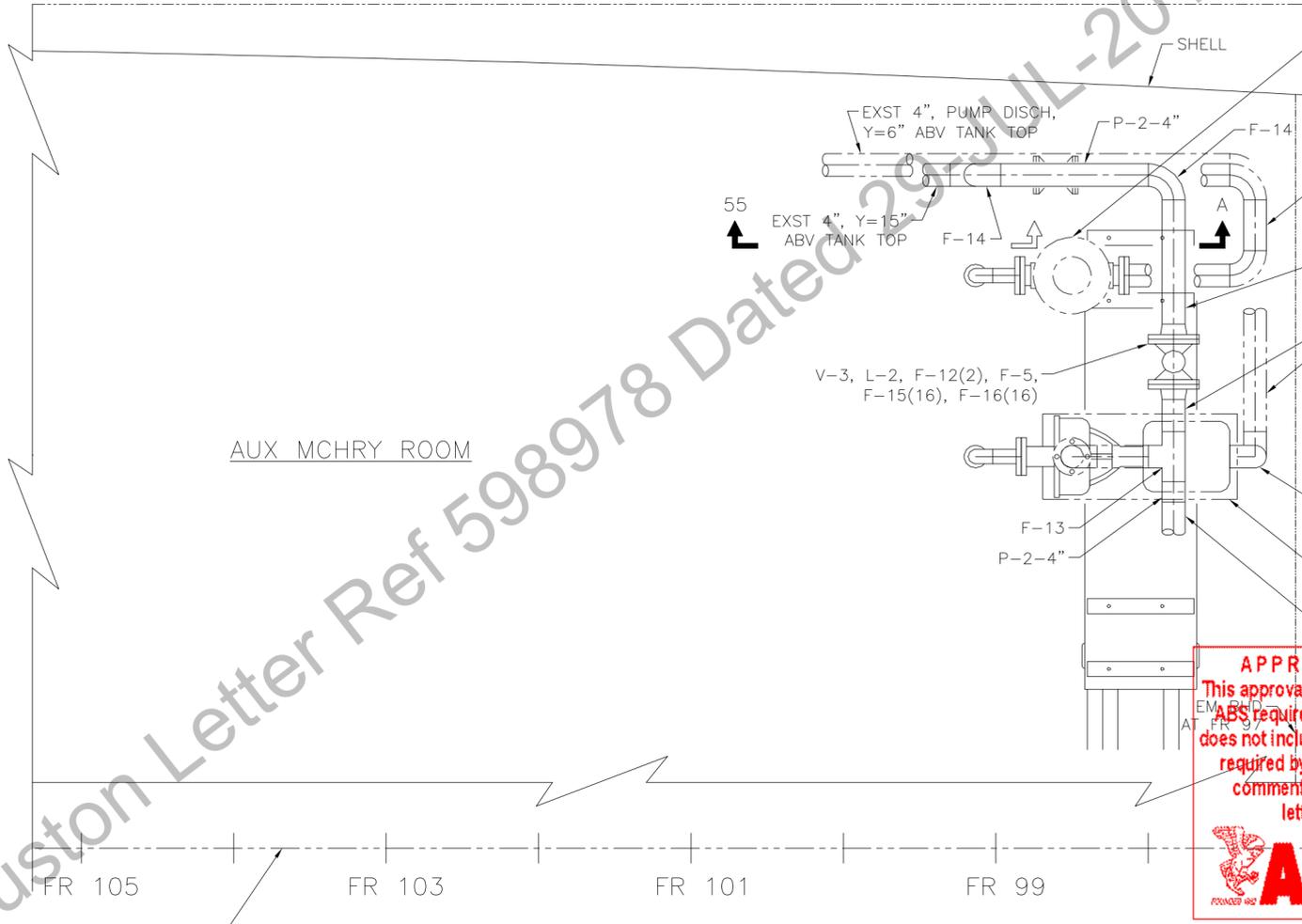
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



REFERENCE LINE
FR 99
FWD

INSTALLATION
ELEVATION 55-A
HOLD-LKG OUTBD
5'-0" ABL LVL



FR 105 FR 103 FR 101 FR 99
REFERENCE LINE

INSTALLATION
PLAN VIEW 52-A
HOLD
5'-0" ABL LVL

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6. INDEMNITY AND INSURANCE (Additional)
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10. Invoice Submission Requirements

52.212-04 Contract Terms and Conditions—Commercial Items (June 2010)

(a) *Inspection/Acceptance.* The Contractor shall only tender for acceptance those items that conform to the requirements of this contract. The Government reserves the right to inspect or test any supplies or services that have been tendered for acceptance. The Government may require repair or replacement of nonconforming supplies or reperformance of nonconforming services at no increase in contract price. If repair/replacement or reperformance will not correct the defects or is not possible, the Government may seek an equitable price reduction or adequate consideration for acceptance of nonconforming supplies or services. The Government must exercise its post-acceptance rights—

(1) Within a reasonable time after the defect was discovered or should have been discovered; and

(2) Before any substantial change occurs in the condition of the item, unless the change is due to the defect in the item.

(b) *Assignment.* The Contractor or its assignee may assign its rights to receive payment due as a result of performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency in accordance with the Assignment of Claims Act ([31 U.S.C. 3727](#)). However, when a third party makes payment (e.g., use of the Governmentwide commercial purchase card), the Contractor may not assign its rights to receive payment under this contract.

(c) *Changes.* Changes in the terms and conditions of this contract may be made only by written agreement of the parties.

(d) *Disputes.* This contract is subject to the Contract Disputes Act of 1978, as amended ([41 U.S.C. 601-613](#)). Failure of the parties to this contract to reach agreement on any request for equitable adjustment, claim, appeal or action arising under or relating to this contract shall be a dispute to be resolved in accordance with the clause at FAR [52.233-1](#), Disputes, which is incorporated herein by reference. The Contractor shall proceed diligently with performance of this contract, pending final resolution of any dispute arising under the contract.

(e) *Definitions.* The clause at FAR [52.202-1](#), Definitions, is incorporated herein by reference.

(f) *Excusable delays.* The Contractor shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Contractor and without its fault or negligence such as, acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Contractor shall notify the Contracting Officer in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to the Contracting Officer of the cessation of such occurrence.

(g) Invoice.

(1) The Contractor shall submit an original invoice and three copies (or electronic invoice, if authorized) to the address designated in the contract to receive invoices. An invoice must include—

(i) Name and address of the Contractor;

(ii) Invoice date and number;

(iii) Contract number, contract line item number and, if applicable, the order number;

(iv) Description, quantity, unit of measure, unit price and extended price of the items delivered;

(v) Shipping number and date of shipment, including the bill of lading number and weight of shipment if shipped on Government bill of lading;

(vi) Terms of any discount for prompt payment offered;

(vii) Name and address of official to whom payment is to be sent;

(viii) Name, title, and phone number of person to notify in event of defective invoice; and

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision, contract clause (e.g., [52.232-33](#), Payment by Electronic Funds Transfer—Central Contractor Registration, or [52.232-34](#), Payment by Electronic Funds Transfer—Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(2) Invoices will be handled in accordance with the Prompt Payment Act ([31 U.S.C. 3903](#)) and Office of Management and Budget (OMB) prompt payment regulations at 5 CFR Part 1315.

(h) *Patent indemnity*. The Contractor shall indemnify the Government and its officers, employees and agents against liability, including costs, for actual or alleged direct or contributory infringement of, or inducement to infringe, any United States or foreign patent, trademark or copyright, arising out of the performance of this contract, provided the Contractor is reasonably notified of such claims and proceedings.

(i) Payment.—

(1) *Items accepted*. Payment shall be made for items accepted by the Government that have been delivered to the delivery destinations set forth in this contract.

(2) *Prompt payment*. The Government will make payment in accordance with the Prompt Payment Act ([31 U.S.C. 3903](#)) and prompt payment regulations at 5 CFR Part 1315.

(3) *Electronic Funds Transfer (EFT)*. If the Government makes payment by EFT, see [52.212-5\(b\)](#) for the appropriate EFT clause.

(4) *Discount*. In connection with any discount offered for early payment, time shall be computed from the date of the invoice. For the purpose of computing the discount earned, payment shall be considered to have been made on the date which appears on the payment check or the specified payment date if an electronic funds transfer payment is made.

(5) *Overpayments*. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall—

(i) Remit the overpayment amount to the payment office cited in the contract along with a description of the overpayment including the—

(A) Circumstances of the overpayment (e.g., duplicate payment, erroneous payment, liquidation errors, date(s) of overpayment);

(B) Affected contract number and delivery order number, if applicable;

(C) Affected contract line item or subline item, if applicable; and

(D) Contractor point of contact.

(ii) Provide a copy of the remittance and supporting documentation to the Contracting Officer.

(6) *Interest*.

(i) All amounts that become payable by the Contractor to the Government under this contract shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 611 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in (i)(6)(v) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid.

(ii) The Government may issue a demand for payment to the Contractor upon finding a debt is due under the contract.

(iii) *Final decisions.* The Contracting Officer will issue a final decision as required by [33.211](#) if—

(A) The Contracting Officer and the Contractor are unable to reach agreement on the existence or amount of a debt within 30 days;

(B) The Contractor fails to liquidate a debt previously demanded by the Contracting Officer within the timeline specified in the demand for payment unless the amounts were not repaid because the Contractor has requested an installment payment agreement; or

(C) The Contractor requests a deferment of collection on a debt previously demanded by the Contracting Officer (see [32.607-2](#)).

(iv) If a demand for payment was previously issued for the debt, the demand for payment included in the final decision shall identify the same due date as the original demand for payment.

(v) Amounts shall be due at the earliest of the following dates:

(A) The date fixed under this contract.

(B) The date of the first written demand for payment, including any demand for payment resulting from a default termination.

(vi) The interest charge shall be computed for the actual number of calendar days involved beginning on the due date and ending on—

(A) The date on which the designated office receives payment from the Contractor;

(B) The date of issuance of a Government check to the Contractor from which an amount otherwise payable has been withheld as a credit against the contract debt; or

(C) The date on which an amount withheld and applied to the contract debt would otherwise have become payable to the Contractor.

(vii) The interest charge made under this clause may be reduced under the procedures prescribed in [32.608-2](#) of the Federal Acquisition Regulation in effect on the date of this contract.

(j) *Risk of loss.* Unless the contract specifically provides otherwise, risk of loss or damage to the supplies provided under this contract shall remain with the Contractor until, and shall pass to the Government upon:

(1) Delivery of the supplies to a carrier, if transportation is f.o.b. origin; or

(2) Delivery of the supplies to the Government at the destination specified in the contract, if transportation is f.o.b. destination.

(k) *Taxes.* The contract price includes all applicable Federal, State, and local taxes and duties.

(l) *Termination for the Government's convenience.* The Government reserves the right to terminate this contract, or any part hereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges the Contractor can demonstrate to the satisfaction of the

Government using its standard record keeping system, have resulted from the termination. The Contractor shall not be required to comply with the cost accounting standards or contract cost principles for this purpose. This paragraph does not give the Government any right to audit the Contractor's records. The Contractor shall not be paid for any work performed or costs incurred which reasonably could have been avoided.

(m) *Termination for cause.* The Government may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Government, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Government for any and all rights and remedies provided by law. If it is determined that the Government improperly terminated this contract for default, such termination shall be deemed a termination for convenience.

(n) *Title.* Unless specified elsewhere in this contract, title to items furnished under this contract shall pass to the Government upon acceptance, regardless of when or where the Government takes physical possession.

(o) *Warranty.* The Contractor warrants and implies that the items delivered hereunder are merchantable and fit for use for the particular purpose described in this contract.

(p) *Limitation of liability.* Except as otherwise provided by an express warranty, the Contractor will not be liable to the Government for consequential damages resulting from any defect or deficiencies in accepted items.

(q) *Other compliances.* The Contractor shall comply with all applicable Federal, State and local laws, executive orders, rules and regulations applicable to its performance under this contract.

(r) *Compliance with laws unique to Government contracts.* The Contractor agrees to comply with [31 U.S.C. 1352](#) relating to limitations on the use of appropriated funds to influence certain Federal contracts; [18 U.S.C. 431](#) relating to officials not to benefit; [40 U.S.C. 3701](#), *et seq.*, Contract Work Hours and Safety Standards Act; [41 U.S.C. 51-58](#), Anti-Kickback Act of 1986; [41 U.S.C. 265](#) and [10 U.S.C. 2409](#) relating to whistleblower protections; [49 U.S.C. 40118](#), Fly American; and [41 U.S.C. 423](#) relating to procurement integrity.

(s) *Order of precedence.* Any inconsistencies in this solicitation or contract shall be resolved by giving precedence in the following order:

- (1) The schedule of supplies/services.
 - (2) The Assignments, Disputes, Payments, Invoice, Other Compliances, and Compliance with Laws Unique to Government Contracts paragraphs of this clause.
 - (3) The clause at [52.212-5](#).
 - (4) Addenda to this solicitation or contract, including any license agreements for computer software.
 - (5) Solicitation provisions if this is a solicitation.
 - (6) Other paragraphs of this clause.
 - (7) The [Standard Form 1449](#).
 - (8) Other documents, exhibits, and attachments.
 - (9) The specification.
- (t) Central Contractor Registration (CCR).

(1) Unless exempted by an addendum to this contract, the Contractor is responsible during performance and through final payment of any contract for the accuracy and completeness of the data within the CCR database, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to review and update on an annual basis from the date of initial registration

or subsequent updates its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.

(2)(i) If a Contractor has legally changed its business name, “doing business as” name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of-name agreements in FAR [Subpart 42.12](#), the Contractor shall provide the responsible Contracting Officer a minimum of one business day’s written notification of its intention to (A) change the name in the CCR database; (B) comply with the requirements of [Subpart 42.12](#); and (C) agree in writing to the timeline and procedures specified by the responsible Contracting Officer.

The Contractor must provide with the notification sufficient documentation to support the legally changed name.

(ii) If the Contractor fails to comply with the requirements of paragraph (t)(2)(i) of this clause, or fails to perform the agreement at paragraph (t)(2)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of-name agreement, the CCR information that shows the Contractor to be other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the “Suspension of Payment” paragraph of the electronic funds transfer (EFT) clause of this contract.

(3) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see [Subpart 32.8](#), Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor’s CCR record that indicates payments, including those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the “Suspension of payment” paragraph of the EFT clause of this contract.

(4) Offerors and Contractors may obtain information on registration and annual confirmation requirements via the internet at <http://www.ccr.gov> or by calling 1-888-227-2423 or 269-961-5757.

52.212-05 Contract Terms and Conditions Required to Implement Statutes or Executive Orders—Commercial Items (Oct 2010)

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clauses, which are incorporated in this contract by reference, to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

(1) [52.222-50](#), Combating Trafficking in Persons (Feb 2009) ([22 U.S.C. 7104\(g\)](#)).

___ Alternate I (Aug 2007) of [52.222-50](#) ([22 U.S.C. 7104\(g\)](#)).

(2) [52.233-3](#), Protest After Award (AUG 1996) ([31 U.S.C. 3553](#)).

(3) [52.233-4](#), Applicable Law for Breach of Contract Claim (OCT 2004) (Pub. L. 108-77, 108-78).

(b) The Contractor shall comply with the FAR clauses in this paragraph (b) that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

[Contracting Officer check as appropriate.]

___ (1) [52.203-6](#), Restrictions on Subcontractor Sales to the Government (Sept 2006), with Alternate I (Oct 1995) ([41 U.S.C. 253g](#) and [10 U.S.C. 2402](#)).

___ (2) [52.203-13](#), Contractor Code of Business Ethics and Conduct (Apr 2010) (Pub. L. 110-252, Title VI, Chapter 1 ([41 U.S.C. 251 note](#))).

___ (3) [52.203-15](#), Whistleblower Protections under the American Recovery and Reinvestment Act of 2009 (June 2010) (Section 1553 of Pub. L. 111-5). (Applies to contracts funded by the American Recovery and Reinvestment Act of 2009.)

- __ (4) [52.204-10](#), Reporting Executive Compensation and First-Tier Subcontract Awards (Jul 2010) (Pub. L. 109-282) ([31 U.S.C. 6101 note](#)).
- __ (5) [52.204-11](#), American Recovery and Reinvestment Act—Reporting Requirements (Jul 2010) (Pub. L. 111-5).
- __ (6) [52.219-3](#), Notice of Total HUBZone Set-Aside (Jan 1999) ([15 U.S.C. 657a](#)).
- __ (7) [52.219-4](#), Notice of Price Evaluation Preference for HUBZone Small Business Concerns (JULY 2005) (if the offeror elects to waive the preference, it shall so indicate in its offer) ([15 U.S.C. 657a](#)).
- __ (8) [Reserved]
- __ (9)(i) [52.219-6](#), Notice of Total Small Business Set-Aside (June 2003) ([15 U.S.C. 644](#)).
- __ (ii) Alternate I (Oct 1995) of [52.219-6](#).
- __ (iii) Alternate II (Mar 2004) of [52.219-6](#).
- __ (10)(i) [52.219-7](#), Notice of Partial Small Business Set-Aside (June 2003) ([15 U.S.C. 644](#)).
- __ (ii) Alternate I (Oct 1995) of [52.219-7](#).
- __ (iii) Alternate II (Mar 2004) of [52.219-7](#).
- __ (11) [52.219-8](#), Utilization of Small Business Concerns (May 2004) ([15 U.S.C. 637\(d\)\(2\)](#) and (3)).
- __ (12)(i) [52.219-9](#), Small Business Subcontracting Plan (Oct 2010) ([15 U.S.C. 637\(d\)\(4\)](#)).
- __ (ii) Alternate I (Oct 2001) of [52.219-9](#).
- __ (iii) Alternate II (Oct 2001) of [52.219-9](#).
- __ (iv) Alternate III (Jul 2010) of [52.219-9](#).
- __ (13) [52.219-14](#), Limitations on Subcontracting (Dec 1996) ([15 U.S.C. 637\(a\)\(14\)](#)).
- __ (14) [52.219-16](#), Liquidated Damages—Subcontracting Plan (Jan 1999) ([15 U.S.C. 637\(d\)\(4\)\(F\)\(i\)](#)).
- __ (15)(i) [52.219-23](#), Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns (OCT 2008) ([10 U.S.C. 2323](#)) (if the offeror elects to waive the adjustment, it shall so indicate in its offer).
- __ (ii) Alternate I (June 2003) of [52.219-23](#).
- __ (16) [52.219-25](#), Small Disadvantaged Business Participation Program—Disadvantaged Status and Reporting (Apr 2008) (Pub. L. 103-355, section 7102, and [10 U.S.C. 2323](#)).
- __ (17) [52.219-26](#), Small Disadvantaged Business Participation Program— Incentive Subcontracting (Oct 2000) (Pub. L. 103-355, section 7102, and [10 U.S.C. 2323](#)).
- __ (18) [52.219-27](#), Notice of Total Service-Disabled Veteran-Owned Small Business Set-Aside (May 2004) ([15 U.S.C. 657 f](#)).
- __ (19) [52.219-28](#), Post Award Small Business Program Rerepresentation (Apr 2009) ([15 U.S.C. 632\(a\)\(2\)](#)).
- __X_ (20) [52.222-3](#), Convict Labor (June 2003) (E.O. 11755).

- _X_ (21) [52.222-19](#), Child Labor—Cooperation with Authorities and Remedies (Jul 2010) (E.O. 13126).
- _X_ (22) [52.222-21](#), Prohibition of Segregated Facilities (Feb 1999).
- _X_ (23) [52.222-26](#), Equal Opportunity (Mar 2007) (E.O. 11246).
- _X_ (24) [52.222-35](#), Equal Opportunity for Veterans (Sep 2010)([38 U.S.C. 4212](#)).
- _X_ (25) [52.222-36](#), Affirmative Action for Workers with Disabilities (Oct 2010) ([29 U.S.C. 793](#)).
- __ (26) [52.222-37](#), Employment Reports on Veterans, (Sep 2010) ([38 U.S.C. 4212](#)).
- __ (27) [52.222-54](#), Employment Eligibility Verification (JAN 2009). (Executive Order 12989). (Not applicable to the acquisition of commercially available off-the-shelf items or certain other types of commercial items as prescribed in [22.1803](#).)
- __ (28)(i) [52.223-9](#), Estimate of Percentage of Recovered Material Content for EPA—Designated Items (May 2008) ([42 U.S.C. 6962\(c\)\(3\)\(A\)\(ii\)](#)). (Not applicable to the acquisition of commercially available off-the-shelf items.)
- __ (ii) Alternate I (May 2008) of [52.223-9](#) ([42 U.S.C. 6962\(i\)\(2\)\(C\)](#)). (Not applicable to the acquisition of commercially available off-the-shelf items.)
- _X_ (29) [52.223-15](#), Energy Efficiency in Energy-Consuming Products (DEC 2007) ([42 U.S.C. 8259b](#)).
- __ (30)(i) [52.223-16](#), IEEE 1680 Standard for the Environmental Assessment of Personal Computer Products (DEC 2007) (E.O. 13423).
- __ (ii) Alternate I (DEC 2007) of [52.223-16](#).
- __ (31) [52.223-18](#), Contractor Policy to Ban Text Messaging While Driving (SEP 2010) (E.O. 13513).
- _X_ (32) [52.225-1](#), Buy American Act—Supplies (Feb 2009) ([41 U.S.C. 10a-10d](#)).
- _X_ (33)(i) [52.225-3](#), Buy American Act—Free Trade Agreements—Israeli Trade Act (June 2009) ([41 U.S.C. 10a-10d](#), [19 U.S.C. 3301](#) note, [19 U.S.C. 2112](#) note, [19 U.S.C. 3805](#) note, Pub. L. 108-77, 108-78, 108-286, 108-302, 109-53, 109-169, 109-283, and 110-138).
- __ (ii) Alternate I (Jan 2004) of [52.225-3](#).
- __ (iii) Alternate II (Jan 2004) of [52.225-3](#).
- __ (34) [52.225-5](#), Trade Agreements (AUG 2009) ([19 U.S.C. 2501](#), *et seq.*, [19 U.S.C. 3301](#) note).
- __ (35) [52.225-13](#), Restrictions on Certain Foreign Purchases (June 2008) (E.O.'s, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury).
- __ (36) [52.226-4](#), Notice of Disaster or Emergency Area Set-Aside (Nov 2007) ([42 U.S.C. 5150](#)).
- __ (37) [52.226-5](#), Restrictions on Subcontracting Outside Disaster or Emergency Area (Nov 2007) ([42 U.S.C. 5150](#)).
- __ (38) [52.232-29](#), Terms for Financing of Purchases of Commercial Items (Feb 2002) ([41 U.S.C. 255\(f\)](#), [10 U.S.C. 2307\(f\)](#)).
- __ (39) [52.232-30](#), Installment Payments for Commercial Items (Oct 1995) ([41 U.S.C. 255\(f\)](#), [10 U.S.C. 2307\(f\)](#)).
- _X_ (40) [52.232-33](#), Payment by Electronic Funds Transfer—Central Contractor Registration (Oct 2003) ([31 U.S.C. 3332](#)).

___ (41) [52.232-34](#), Payment by Electronic Funds Transfer—Other than Central Contractor Registration (May 1999) ([31 U.S.C. 3332](#)).

___ (42) [52.232-36](#), Payment by Third Party (Feb 2010) ([31 U.S.C. 3332](#)).

___ (43) [52.239-1](#), Privacy or Security Safeguards (Aug 1996) ([5 U.S.C. 552a](#)).

___ (44)(i) [52.247-64](#), Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) ([46 U.S.C. Appx. 1241\(b\)](#) and [10 U.S.C. 2631](#)).

___ (ii) Alternate I (Apr 2003) of [52.247-64](#).

(c) The Contractor shall comply with the FAR clauses in this paragraph (c), applicable to commercial services, that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items:

[Contracting Officer check as appropriate.]

__X_ (1) [52.222-41](#), Service Contract Act of 1965 (Nov 2007) ([41 U.S.C. 351](#), *et seq.*).

___ (2) [52.222-42](#), Statement of Equivalent Rates for Federal Hires (May 1989) ([29 U.S.C. 206](#) and [41 U.S.C. 351](#), *et seq.*).

___ (3) [52.222-43](#), Fair Labor Standards Act and Service Contract Act—Price Adjustment (Multiple Year and Option Contracts) (Sep 2009) ([29 U.S.C. 206](#) and [41 U.S.C. 351](#), *et seq.*).

___ (4) [52.222-44](#), Fair Labor Standards Act and Service Contract Act—Price Adjustment (Sep 2009) ([29 U.S.C. 206](#) and [41 U.S.C. 351](#), *et seq.*).

___ (5) [52.222-51](#), Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment—Requirements (Nov 2007) ([41 U.S.C. 351](#), *et seq.*).

___ (6) [52.222-53](#), Exemption from Application of the Service Contract Act to Contracts for Certain Services—Requirements (Feb 2009) ([41 U.S.C. 351](#), *et seq.*).

___ (7) [52.226-6](#), Promoting Excess Food Donation to Nonprofit Organizations (Mar 2009) (Pub. L. 110-247).

___ (8) [52.237-11](#), Accepting and Dispensing of \$1 Coin (Sept 2008) ([31 U.S.C. 5112\(p\)\(1\)](#)).

(d) *Comptroller General Examination of Record*. The Contractor shall comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, and does not contain the clause at [52.215-2](#), Audit and Records—Negotiation.

(1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to examine any of the Contractor's directly pertinent records involving transactions related to this contract.

(2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR [Subpart 4.7](#), Contractor Records Retention, of the other clauses of this contract. If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement. Records relating to appeals under the disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e)(1) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c), and (d) of this clause, the Contractor is not required to flow down any FAR clause, other than those in this paragraph (e)(1) in a subcontract for commercial items. Unless otherwise indicated below, the extent of the flow down shall be as required by the clause—

(i) [52.203-13](#), Contractor Code of Business Ethics and Conduct (Apr 2010) (Pub. L. 110-252, Title VI, Chapter 1 ([41 U.S.C. 251 note](#))).

(ii) [52.219-8](#), Utilization of Small Business Concerns (May 2004) ([15 U.S.C. 637\(d\)\(2\)](#) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$650,000 (\$1.5 million for construction of any public facility), the subcontractor must include [52.219-8](#) in lower tier subcontracts that offer subcontracting opportunities.

(iii) [Reserved]

(iv) [52.222-26](#), Equal Opportunity (Mar 2007) (E.O. 11246).

(v) [52.222-35](#), Equal Opportunity for Veterans (Sep 2010) ([38 U.S.C. 4212](#)).

(vi) [52.222-36](#), Affirmative Action for Workers with Disabilities (Oct 2010) ([29 U.S.C. 793](#)).

(vii) [Reserved]

(viii) [52.222-41](#), Service Contract Act of 1965 (Nov 2007) ([41 U.S.C. 351](#), *et seq.*).

(ix) [52.222-50](#), Combating Trafficking in Persons (Feb 2009) ([22 U.S.C. 7104\(g\)](#)).

___Alternate I (Aug 2007) of [52.222-50](#) ([22 U.S.C. 7104\(g\)](#)).

(x) [52.222-51](#), Exemption from Application of the Service Contract Act to Contracts for Maintenance, Calibration, or Repair of Certain Equipment-Requirements (Nov 2007) ([41 U.S.C. 351](#), *et seq.*).

(xi) [52.222-53](#), Exemption from Application of the Service Contract Act to Contracts for Certain Services-Requirements (Feb 2009) ([41 U.S.C. 351](#), *et seq.*).

(xii) [52.222-54](#), Employment Eligibility Verification (JAN 2009).

(xiii) [52.226-6](#), Promoting Excess Food Donation to Nonprofit Organizations (Mar 2009) (Pub. L. 110-247). Flow down required in accordance with paragraph (e) of FAR clause [52.226-6](#).

(xiv) [52.247-64](#), Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) ([46 U.S.C. Appx. 1241\(b\)](#) and [10 U.S.C. 2631](#)). Flow down required in accordance with paragraph (d) of FAR clause [52.247-64](#).

(2) While not required, the contractor may include in its subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(End of clause)

52.246-4 Inspection of Services—Fixed-Price (Aug 1996)

(a) *Definition.* “Services,” as used in this clause, includes services performed, workmanship, and material furnished or utilized in the performance of services.

(b) The Contractor shall provide and maintain an inspection system acceptable to the Government covering the services under this contract. Complete records of all inspection work performed by the Contractor shall be maintained and made available to the Government during contract performance and for as long afterwards as the contract requires.

(c) The Government has the right to inspect and test all services called for by the contract, to the extent practicable at all times and places during the term of the contract. The Government shall perform inspections and tests in a manner that will not unduly delay the work.

(d) If the Government performs inspections or tests on the premises of the Contractor or a subcontractor, the Contractor shall furnish, and shall require subcontractors to furnish, at no increase in contract price, all reasonable facilities and assistance for the safe and convenient performance of these duties.

(e) If any of the services do not conform with contract requirements, the Government may require the Contractor to perform the services again in conformity with contract requirements, at no increase in contract amount. When the defects in services cannot be corrected by reperformance, the Government may—

(1) Require the Contractor to take necessary action to ensure that future performance conforms to contract requirements; and

(2) Reduce the contract price to reflect the reduced value of the services performed.

(f) If the Contractor fails to promptly perform the services again or to take the necessary action to ensure future performance in conformity with contract requirements, the Government may—

(1) By contract or otherwise, perform the services and charge to the Contractor any cost incurred by the Government that is directly related to the performance of such service; or

(2) Terminate the contract for default.

INDEMNITY AND INSURANCE: The Contractor shall indemnify and save and keep harmless the Government against any or all loss, cost, damage, claim, expense or liability whatsoever because of accident or injury to persons or property of others occurring in connection with the operations under this contract. The Contractor shall secure, pay the premiums for and keep in force until the expiration of this contract, and any renewal thereof, adequate insurance. Such insurance to specifically include liability assumed by the Contractor under this contract. Each policy of insurance shall contain an endorsement that any cancellation or material change in the coverage adversely affecting the Government's interest shall not be effective unless the insurer or the Contractor gives written notice of cancellation or change as required to the Contracting Officer. When the coverage is provided by self-insurance, the Contractor shall not change or decrease the coverage without the Administrative Contracting Officer's prior approval. A certificate of each policy of insurance shall be furnished to the Contracting Officer within ten (10) days after notice of award certifying, among other things, that the policy contains the aforesaid endorsement. The insurance companies providing the above insurance shall be satisfactory to the Government. Notices of policy changes shall be furnished to the Contracting Officer. The contractor shall provide at the Contractor's expense, within five days of request from the MARAD contracting officer, a copy of all original insurance policies. These may be sent by mail or facsimile machine.

INDEMNITY AND INSURANCE (ADDITIONAL): (a) INDEMNITY (1) The Contractor shall exercise reasonable care and use its best efforts to prevent accidents, injury or damage to all employees, persons and property in and about the work, and to the vessel or portion thereof upon which work is done. (2) Except as provided elsewhere in this contract, including any guarantee clause, the MARAD assumes the risk of physical loss or damage to any part of the vessel, its machinery, equipment, stores, and other property including cargo if owned by the Government except to the extent that such loss or damage is caused by the negligence, fault, error, act or omission of the Contractor, its subcontractors, agents, or employees. The burden of proving freedom from fault shall be borne by the Contractor. Unless the loss or damage was caused by the willful misconduct of the Contractor, its executive officers, or superintendents the Contractor's liability under this Contract shall not exceed total damage to the ship or ships including total loss up to \$1,000,000 per accident or occurrence per vessel, and shall not exceed in the aggregate per accident or occurrence the sum of total damage to the ship or ships including total loss up to \$1,000,000 multiplied by the number of MARAD's vessels in the care, custody or control of the Contractor at the location and at the time of the accident or occurrence giving to the loss or damage. (3) As to third parties, including, but not limited to, agents, employees or servants of the Contractor, or any subcontractor, the Contractor will defend, indemnify and hold harmless the Government, the vessel, its owners and charterers, from all claims, actions, suits, costs, demands and expense of all descriptions arising out of disease, illness, personal injury, death or property damage to any third party in any way related to or arising out of the performance of work under this contract except to the extent caused by the fault, error, act or omission, or negligence of the Government, its agencies or employees. The burden of proving fault of the Government, its agencies or employees shall be borne by the Contractor. (4) As to loss and damage which are the responsibility of the Government, the Government shall be subrogated to any claim, demand, or course of action against third parties which exists in favor of the Contractor, and the Contractor shall, if required, execute a formal assignment or transfer of such claim, demand, or course of action, and shall aid in securing information, evidence, obtaining of witnesses, and cooperate with MARAD in all matters MARAD may deem necessary in defense of any claim, or suit or

appeal from any judgment or in effecting indemnity, provided, further, that nothing contained in this paragraph shall create or give rise to any right, privilege or power in any person except the Contractor, nor shall any person (except the Contractor) be or become entitled thereby to proceed directly against the Government, its agencies or instrumentalities, or to join the Government, its agencies or instrumentalities, as a codefendant in any action against the Contractor brought to determine the Contractor's liability or for any other purpose. (b) TYPES OF INSURANCE AND MINIMUM COVERAGE. The Contractor shall at its own expense, provide and maintain the following insurances during the entire performance of this contract.

(1) Workmen's Compensation, including Longshoremen & Harbor Worker's Act coverage - Covering all agents, servants, borrowed servants, statutory employees of Contractor for all compensation and other benefits required by applicable state and federal law or by governmental authority on account of injury, death, sickness or disease - Statutory - no minimum. (2) Employers Liability - to cover both injury and death resulting from accident, sickness or disease - \$1 million bodily injury by accident, each accident - \$1 million bodily injury by disease each accident - \$1 million bodily injury by disease in the aggregate. (3) Maritime Employers Liability (Jones Act) to cover both injury and death resulting from accident, sickness or disease - \$1 million for each person per occurrence and \$1 million in the aggregate. (4) Comprehensive General Liability to include coverage for (but not limited to) products and completed operations liability, property damage liability and contractual liability - \$1 million combined single per occurrence limit for bodily injury and property damage and \$1 million in the aggregate. (5) Ship Repairers Legal Liability - coverage to be provided under the standard London or American Institute forms or their equivalent \$1 million per vessel, per occurrence or such other amount as may be requested. (6) Pollution - sudden and accidental liability - \$1 Million per occurrence. (c) All such insurance shall be subject to the approval of the Division of Marine Insurance and will contain thirty (30) calendar days advance notice of cancellation or of any non-renewal which is the option of the insurer, said notice to be provided to the U.S. Department of Transportation, Maritime Administration, Division of Marine Insurance, 1200 New Jersey Avenue, S.E., Washington, DC 20590. (d) FORM OF CONFIRMATION (1): The pollution insurance may be a separate policy or part of the Comprehensive General Liability policy, but the coverage must be specifically shown on the required confirmation of insurance. Excess liability and umbrella liability policies may be used in the excess of primary policies to meet the minimum limit requirements. The United States of America shall be an additional assured in the Ship Repairs Legal Liability policy, Comprehensive General Liability Policy and Pollution Policy. Such policies shall contain a clause statement that there is no recourse against the United States of America for payment of premium. All such insurance shall be subject to the approval of the Division of Marine Insurance and must contain thirty (30) calendar days advance notice of cancellation (without disclaimer) or of any non-renewal which is the option of the insurer, said notice to be provided to the U.S. Department of Transportation, Maritime Administration, Division of Marine Insurance, 1200 New Jersey Avenue, S.E., Washington, DC 20590. (2) The Contractor shall have its insurance broker provide a detailed certificate of insurance, cover note or policy confirming the above required coverage. The confirmation shall name the Contractor and United States of America as assureds and confirm the types of coverage, policy forms, policy periods, deductibles (if any) and underwriters with their percentage of participation. The N.Y. Suable Clause or Service of Suit USA Clause must be confirmed for any Foreign underwriter placements. The policy amounts, terms and conditions, deductibles and underwriters shall at all times be satisfactory to the Maritime Administration. (e) The contractor shall insert the substance of this clause in subcontracts under this contract that require work on a Government installation.

APPLICABLE WAGE DETERMINATION: The following Department of Labor Service Contract Act Wage Determination is applicable to performance of work at the Massachusetts Maritime Academy, Buzzards Bay, MA. WD 05-2259 (Rev.-11) was first posted on www.wdol.gov on 06/22/2010. The wage determination may be viewed on-line at: <http://www.wdol.gov/wdol/scafiles/std/05-2259.txt>

SECURITY: Contractor shall be responsible for obtaining installation access as required, for vehicles and personnel needed at the work site. Contractor personnel shall report to the Department of Transportation, Maritime Administration (MARAD), Division Atlantic Operation (DAO), **COTR, Mr. Matt O'Donnell, 757-286-2849, matthew.odonnell@dot.gov, before performance of work.** Contractor shall observe applicable personnel security directives in place at the Massachusetts Maritime Academy.

DAMAGE TO GOVERNMENT FACILITIES: Damage to any facility, interior/exterior equipment, or systems caused by the contractor, as a result of work performed under this contract, shall be repaired by the contractor at his/her own expense. The contractor shall be required to repair or replace all items and components, to return the damaged area to its condition before the damage incident.

INVOICE SUBMISSION - MARAD/SAR

The Contractor may submit invoices in either electronic or paper format. Electronic submission is preferred.

(1) Electronic invoices shall be addressed to MARADInvoices@faa.gov

Electronic invoices shall conform to the following criteria, or be subject to rejection:

- a. Invoice and supporting documentation shall be in Adobe Acrobat (pdf) format.
 - b. The e-mail subject shall include the contract/purchase order number and invoice number. If this information is omitted from the invoice, then invoice will be returned and payment will be delayed.
 - c. The transmitting e-mail shall include the following information: Name of the Contractor; Invoice date and number; Invoice amount; Contract number and, if applicable, the order or modification number; Terms of any discount for prompt payment offered; Payment instructions (i.e., financial institution, ABA routing #, account #)
- (2) Paper invoices shall be submitted to one of the following addresses. Multiple copies are not required.

MARAD A/P SAR Invoices Branch
AMZ-150
PO Box 25710
Oklahoma City, OK 73125

If a street address is required for delivery (i.e., Federal Express), the following address may be used in lieu of the post office box:

MARAD A/P SAR Invoices Branch
AMZ-150
6500 S MacArthur Blvd.
Oklahoma City, OK 73169