Final
Environmental Assessment/Overseas Environmental Assessment for the Decommissioning of Air Combat Maneuvering Instrumentation Towers

August 2025

Department of the Air Force

Privacy Advisory

This Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) has been provided for public comment in accordance with the National Environmental Policy Act (NEPA) as amended by the Fiscal Responsibility Act of 2023 (Public Law 118-5) (FRA) , and E.O. 12114, Environmental Effects Abroad of Major Federal Actions, which provides an opportunity for public input on Department of the Air Force (DAF) decision-making, allows the public to offer input on alternative ways for the DAF to accomplish what it is proposing, and solicits comments on the DAF's analysis of environmental effects.

Public input allows DAF to make better-informed decisions. Letters or other written or verbal comments provided may be published in this EA/OEA. Providing personal information is voluntary. Private addresses will be compiled to develop a stakeholders inventory. However, only the names of the individuals making comments and specific comments will be disclosed. Personal information, home addresses, telephone numbers, and email addresses will not be published in this EA/OEA.

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Cover Sheet

Environmental Assessment/Overseas Environmental Assessment for the Decommissioning of Air Combat Maneuvering Instrumentation Towers

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a. *Responsible Agency:* Department of the Air Force (DAF)

b. *Cooperating Agency:* None

c. *Proposals and Actions:* This environmental assessment (EA)/overseas environmental assessment (OEA) analyzes the potential environmental impacts from the Proposed Action to decommission 14 Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico (the Gulf of Mexico was renamed 'Gulf of America' in January 2025). The Proposed Action would allow the DAF to divest from infrastructure that is no longer needed to support DAF flight training requirements and that is deteriorated beyond economical repair.

d. *For Additional Information:* Ms. Grace Keesling, AFCEC/CIE, grace.keesling.1@us.af.mil.

e. *Report Designation:* Final Environmental Assessment

f. *Abstract:* This EA has been prepared pursuant to provisions of the National Environmental Policy Act (NEPA) (Title 42 United States Code [U.S.C.] §§ 4321-4347)[1].

The purpose of the Proposed Action is to decommission 14 DAF ACMI towers, including 6 northern ACMI towers southeast of Carabelle, Florida, and 8 southern towers northwest of Key West, Florida. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance. Four alternative actions that meet the purpose of and need for the action and that satisfy the criteria set forth in the selection standards were analyzed in this EA/OEA.

The Proposed Action and all alternatives actions would include the following:

- Removing all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials for proper disposal through Defense Logistics Agency Disposition Services.
- Severing the support structure below the water surface using mechanical methods.
- Disposing of the towers in place, at an established artificial reefing area, at a new artificial reefing area, or at an onshore disposal area.

Based on the analysis of the affected environment and potential environmental consequences presented in the EA/OEA, Alternative 4a is the preferred alternative.

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[1] 32 CFR 989, DAF's NEPA implementing regulations, was rescinded after the Draft EA was published, so references to these regulations have been removed from the Final EA.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing materials
ACMI	Air Combat Maneuvering Instrumentation
AFCEC	Air Force Civil Engineer Center
AOA	aquaculture opportunity area
APE	Area of Potential Effects
APPS	Act to Prevent Pollution from Ships
AWJ	abrasive water jet cutter
BA	Biological Assessment
BCC	Birds of Conservation Concern
BOEM	Bureau of Ocean Energy Management
CAA	Clean Air Act
CFMC	Caribbean Fisheries Management Council
CFR	Code of Federal Regulations
CO_2e	carbon dioxide equivalent
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DAF	Department of the Air Force
DLA	Defense Logistics Agency
DoN	Department of the Navy
DWC	diamond wire cutter
E.O.	Executive order
EA	Environmental Assessment
EEZ	exclusive economic zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FBAR	Florida Bureau of Archaeological Research
FDEP	Florida Department of Environmental Protection
FDS	Florida Department of State
FMP	Fishery Management Plan
FR	Federal Register
GHG	greenhouse gases
GMFMC	Gulf of Mexico Fishery Management Council
HAPC	Habitat Areas of Particular Concern
HAZMAT	hazardous materials
HMS	highly migratory species
LBP	lead-based paint
MARPOL	International Convention for the Prevention of Pollution from Ships
MBTA	Migratory Bird Treaty Act
mg/m^3	milligram per cubic meter
MSA	Magnuson-Stevens Fishery Conservation and Management Act
mton/yr	metric ton per year
NAAQS	National Ambient Air Quality Standards

NAGPRA	Native American Graves Protection and Repatriation Act
NAVFAC	Naval Facilities Engineering Command
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NM	nautical mile
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
OEA	Overseas Environmental Assessment
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyls
PPE	personal protective equipment
ppm	part per million
PSD	Prevention of Significant Deterioration
ROI	Region of Influence
SAV	submerged aquatic vegetation
SHPO	State Historic Preservation Office
tpy	tons per year
TSCA	Toxic Substances Control Act
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WFS	West Florida Shelf

CHAPTER 1 PURPOSE OF AND NEED FOR ACTION

1.1 Introduction and Background

Air Combat Maneuvering Instrumentation (ACMI) towers were used by the Department of the Air Force (DAF) to monitor and control air combat training during aerial warfare training exercises in controlled airspace. These systems facilitated accurate, real-time monitoring and control, mission reconstruction, and detailed quantitative evaluation of aircrew performance. Multiple ACMI towers located in the Gulf of Mexico (the Gulf of Mexico was renamed 'Gulf of America' in January 2025) that were constructed between 1977 and 1994 are no longer required to meet DAF flight training mission requirements. In addition, the structural stability of the towers is deteriorating, maintenance costs are rapidly increasing, and the towers are becoming a liability to the DAF and a hindrance to navigation. Since installation, there has been no work to maintain the structural integrity of the towers. The last inspection of the southern towers occurred in 2002 and found the towers were in overall good condition, but corrosion was evident and repair needs were noted. An official structural inspection of the northern towers has not been accomplished, although visits by crews to maintain the navigational lights have documented deterioration of some above-water structures.

1.2 Location

The DAF is proposing to decommission 14 ACMI towers in the Gulf of Mexico. Eight of the towers are located northwest of Key West, Florida and six are located southeast of Carrabelle, Florida **(Table 1-1** and **Figure 1-1)**. All towers are located outside of the 9-nautical mile (NM) limit for the state of Florida waters. The towers are between 10 and 50 NM offshore in water depths of approximately 20 to 130 feet. The northern ACMI towers offshore from Apalachicola Bay were constructed and installed in 1977, except for Station 6 (Tower SM1) that was installed in 1994. The southern towers were constructed in 1989. The northern towers, except for Station 6, were deployed using weighted down barges that were sunk, with the tower base column as the primary support column **(Figure 1-2)**. The southern towers (and Station 6 of the northern towers) were constructed and supported with a tripod anchor configuration on the sea floor **(Figure 1-3)**. As-built drawings are available for the southern ACMI towers and Station 6 in the north, and are provided in **Appendix A**. To aid in navigation, towers have identification lights powered either by solar panels and nickel-cadmium battery packs or U.S. Coast Guard (USCG)-approved light and battery packs, as well as horns. These aids are maintained by the DAF. Specific towers are hereafter referred to by their station numbers, rather than the tower designation, to avoid confusion.

Table 1-1 Locations and Descriptions of the ACMI Towers

Station No.	Tower Designation	Latitude (north)	Longitude (west)	Distance from Shore (NM)	Tower Depth (feet)	Total Tower Height (feet)[1]
Northern Towers						
1	N4	29.4127	-84.8563	12.2	85	184
2	N3	29.5391	-84.6163	11.7	65	164
3	N7	29.6661	-84.3692	10.4	54	154
4	N5	29.2993	-84.6109	23.9	102	203
5	N6	29.4058	-84.3446	27.2	78	177
6	SM1	29.0818	-84.3200	42.8	97	381
Southern Towers						
7	Northwest Corner	25.8000	-82.2167	26.3	69	213
8	Northeast Corner	25.5667	-81.7167	14.3	30	174
9	North Master	25.4670	-82.0997	30.8	69	213
10	West Center	25.3672	-82.4665	50.7	102	246

Table 1-1 Locations and Descriptions of the ACMI Towers

Station No.	Tower Designation	Latitude (north)	Longitude (west)	Distance from Shore (NM)	Tower Depth (feet)	Total Tower Height (feet)[1]
11	Southwest Corner	24.9348	-82.7164	37.9	125	269
12	South Master	25.0338	-82.3665	29.3	82	226
13	East Center	25.1171	-81.9998	33.5	65	210
14	Southeast Corner	24.6798	-82.2864	9.6	20	164

Notes:
[1] Includes the underwater portion of the towers.
NM = nautical mile

1.3 Purpose and Need of the Proposed Action

The purpose of the Proposed Action is the decommissioning of 14 DAF ACMI towers, including 6 northern ACMI towers southeast of Carabelle, Florida and 8 southern towers northwest of Key West, Florida. The Proposed Action would allow the DAF to divest from infrastructure that is no longer needed to support DAF flight training requirements and that is deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance.

1.4 Scope of the Environmental Analysis

The provisions under the National Environmental Policy Act (NEPA) require that federal agencies consider potential environmental consequences of proposed actions. The law's intent is to protect, restore, or enhance the environment through well-informed federal decisions. Executive Order (E.O.) 12114, Environmental Effects Abroad of Major Federal Actions, details the requirement to consider potential environmental consequences of proposed actions for places outside the United States, its territories, and possessions. The policy and procedures to enable the DoD to achieve the purposes of E.O. 12114 are set out in 32 CFR Part 187, Environmental Effects Abroad of Major Department of Defense Actions, and specify that an Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) should be prepared if a Proposed Action and alternatives have the potential to significantly harm the environment of the global commons. The global commons are defined as geographical areas outside the jurisdiction of any nation and include the oceans outside of the territorial limits (more than 12 NM from the coast; non-territorial waters) and Antarctica, but do not include contiguous zones and fisheries zones of foreign nations (32 CFR § 187.3). If a major federal action is determined to have the potential to significantly harm the environment of the global commons, an Overseas Environmental Impact Statement (EIS) would be prepared.

This EA/OEA analyzes the potential environmental consequences associated with the Proposed Action or alternative actions to decommission 14 ACMI towers in the Gulf of Mexico. Based on the analysis in this EA/OEA, the DAF will make one of three decisions regarding the Proposed Action:

(1) Determine the potential environmental impacts associated with the Proposed Action and alternatives and sign a Finding of No Significant Impact;

(2) Initiate preparation of an EIS/Overseas EIS if it is determined that significant impacts would occur through implementation of the Proposed Action or alternatives; or

(3) Select the No Action Alternative, whereby the Proposed Action would not be implemented.

As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed project and be available to inform decision-makers of the potential environmental impacts.

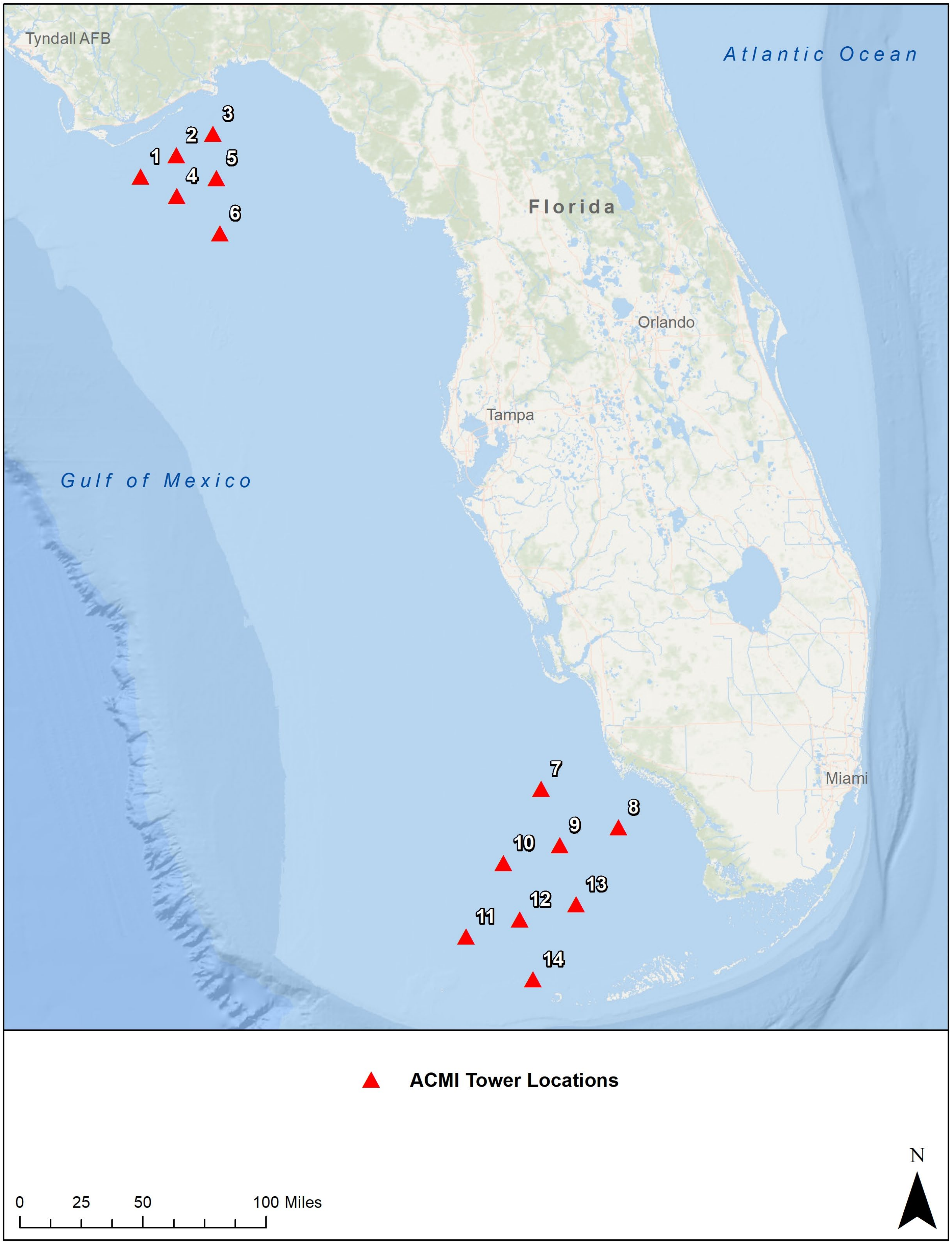

Figure 1-1 Locations of ACMI Towers Proposed for Decommissioning

Figure 1-2 Basic Structure of Stations 1-5

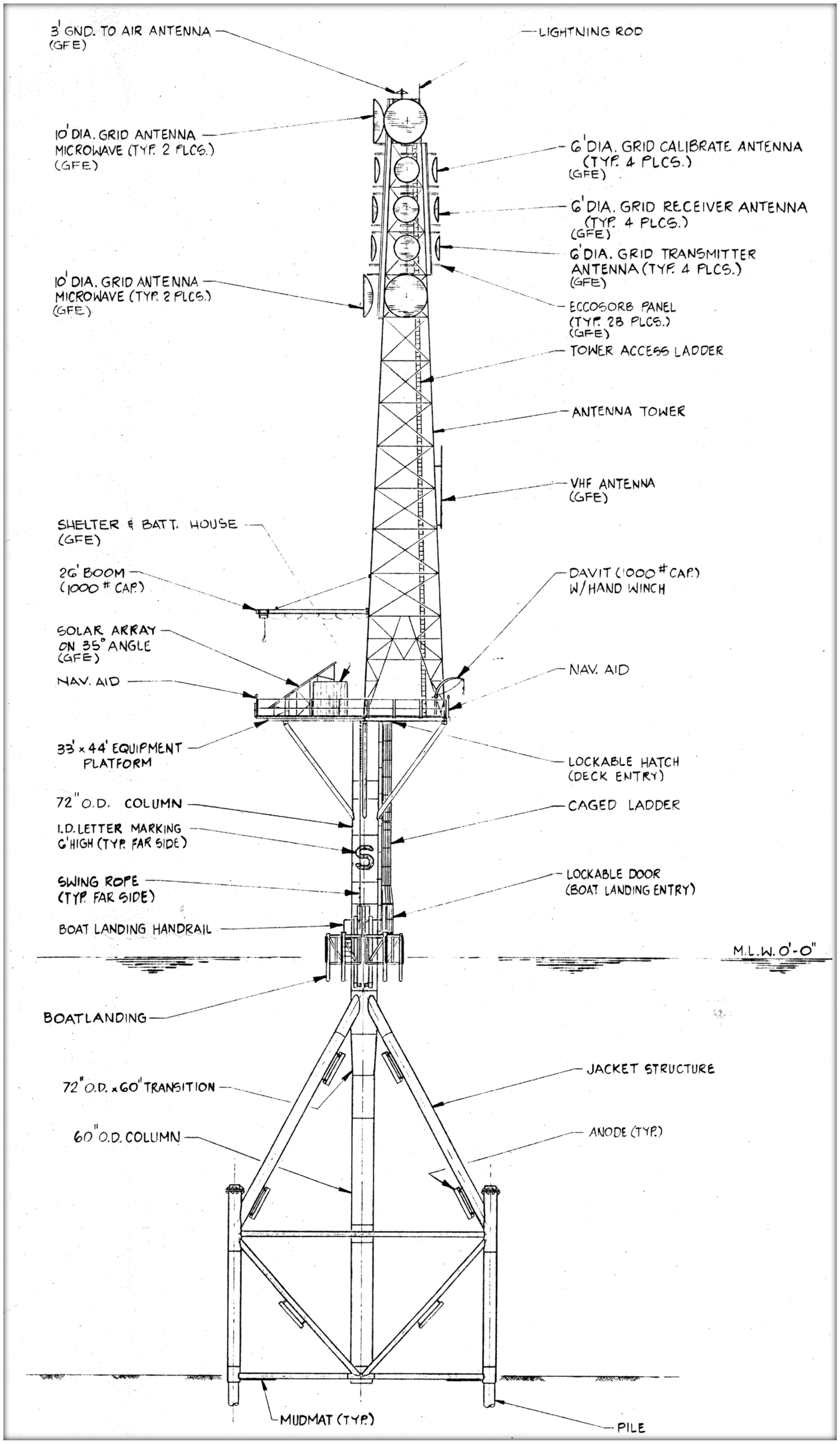

Figure 1-3 Basic Structure of Stations 6-14

1.5 Intergovernmental Coordination, Public and Agency Coordination

The environmental analysis process, in compliance with NEPA guidance, includes public and agency review of information pertinent to the proposed and alternative actions. Further, compliance with Section 7 of the Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires consultation with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS). During consultation with the NMFS, DAF identified Alternative 4a as the preferred alternative because it is the only alternative that would not be likely to adversely affect federally-listed sea turtles. Consultation on Alternative 4a was concluded on July 23, 2025 with a Letter of Concurrence (see **Appendix B – Section B.2.5**); consultation was not completed for the other alternatives analyzed.

In addition, Section 106 of the National Historic Preservation Act (NHPA) requires consultation with the State Historic Preservation Office (SHPO). Tribal consultation may also be required under the NHPA. Under the Coastal Zone Management Act (CZMA), a Federal Consistency Determination through the Florida Department of Environmental Protection (FDEP) is also necessary.

Consultations with both the SHPO and for the Coastal Zone Management Program were conducted through the FDEP Florida State Clearinghouse, the state's single point of contact for the review of federal projects and federally funded activities. Consultation with the Florida SHPO is complete, as no comments from the SHPO were included in the Florida State Clearinghouse response received on August 1, 2025 (see **Appendix B – Section B.2.7**). Permits, approvals, and coordination required are listed in detail in **Chapter 4**.

Intergovernmental and agency memoranda and responses, stakeholders list, agency and intergovernmental coordination and agency and tribal consultation letters and responses are included in **Appendix B**. In addition, the Notice of Availability that announced the availability of the Draft EA/OEA for public review and comments and responses is also included in **Appendix B**.

CHAPTER 2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

The DAF is proposing to decommission 14 ACMI towers in the Gulf of Mexico. Eight of the towers are located northwest of Key West, Florida and six are located southeast of Carrabelle, Florida **(Figure 1-1)**. The proposed decommissioning activities would include removing ACMI electronics, dishes, batteries, and other hazardous equipment, and disposal of enough of the structure to eliminate navigational hazards to vessels.

2.2 Screening Criteria

In accordance with NEPA regulations, reasonable alternatives that also could be utilized to meet the purpose of and need for the Proposed Action were considered. The following selection standards were used to identify reasonable alternatives for meeting the purpose of and need for the Proposed Action.

- **Mission Compatibility:** Must not displace, interfere with, detract from, or reduce DAF missions or ongoing activities. The DAF no longer needs these towers to meet flight training mission requirements, and they have no foreseeable military use. The resources needed to inspect and maintain the towers to ensure they do not deteriorate and become safety or navigational hazards detract from other DAF missions.
- **Prioritize Safety:** Be protective of human health and safety.
- **Economically Sustainable:** Be protective of the environment and support the recreation and tourism economy of local communities.

The DAF uses several guidelines and instructions in determining the best approach for construction, renovation, and demolition.

The NEPA process is intended to support flexible, informed decision-making; the analysis provided by this EA/OEA and feedback from stakeholders will inform decisions about whether, when, and how to execute the Proposed Action. Among the alternatives evaluated for each project is a No Action Alternative. The EA/OEA included analysis of the No Action Alternative, which evaluated the potential consequences of not undertaking the Proposed Action and served to establish a comparative baseline for analysis. Each alternative was assessed relative to the selection standards.

The selection standards described above were applied to these alternatives to determine which alternative(s) considered would successfully fulfill the purpose of and need for the action, and are therefore carried forward for analysis in this EA/OEA.

2.3 Alternatives Considered but Eliminated From Further Analysis

A total of 10 action alternatives were considered by the DAF to decommission the 14 ACMI towers. As shown in **Table 2-1**, six of those alternatives did not meet the selection standards as described in **Section 2.2** and, as such, were not considered as viable alternatives to be carried forward for consideration. Details on the alternatives carried forward for analysis are provided in **Section 2.4**. Summaries of the alternatives considered but eliminated from analysis are provided below.

2.3.1 Partial Decommissioning and Leave In Place

This alternative would remove all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials. These components would be disposed of through the Defense Logistics Agency (DLA) Disposition Services and may be reutilized, auctioned off, donated, recycled, or disposed of at adequate facilities. To the greatest extent possible, corrosion preventative actions would be taken on the above water structure. The horns and lights would be maintained for navigational safety.

Table 2-1 Summary of Alternatives Screening

Alternatives Considered	Selection Standards			Meets Purpose and Need
	Mission Compatibility	Prioritize Safety	Economically Sustainable	
Partial Decommissioning and Leave In Place	No	Yes	Yes	**No**
Explosive Removal and In-Place Disposition	Yes	Yes	No	**No**
Explosive Removal and Onshore Disposition	Yes	Yes	No	**No**
Explosive Removal and Offshore Disposition in Established Artificial Reefing Area	Yes	Yes	No	**No**
No Removal and As-Is Property Transfer	No	Yes	Yes	**No**
No Removal and As-Is Property Lease	No	Yes	Yes	**No**
Mechanical Removal (Sever at the Bottom or Below Warning Buoy Depth) and In-Place Disposition	Yes	Yes	Yes	**Yes**
Mechanical Removal (Sever at Bottom or Below Warning Buoy Depth) and Offshore Disposition at Established Artificial Reefing Areas	Yes	Yes	Yes	**Yes**
Mechanical Removal (Sever at Bottom or Below Warning Buoy Depth) and Offshore Disposition at New North and South Artificial Reefing Areas	Yes	Yes	Yes	**Yes**
Mechanical Removal (Sever at the Bottom or Below Warning Buoy Depth) and Onshore Disposition	Yes	Yes	Yes	**Yes**

This alternative would not meet selection standards. Leaving the towers in place, to include the aerial portions, would require continued maintenance to ensure they do not become navigational hazards. To do so, the DAF would need to commit long-term resources (work force, time, money, and transportation) toward the continued inspection and upkeep of navigational warning lights and horns and corrosion prevention. Similarly, recent surveys have identified deterioration and erosion of some of the tower pilings that would require periodic underwater inspections and potential maintenance actions. Therefore, this alternative fails to meet the mission compatibility standard.

2.3.2 Explosive Removal and In-Place Disposition

This alternative would remove towers by explosively severing the towers' support structure at the mudline. Under this alternative, the severed tower would be laid in place on the sea floor at a depth and location where buoys are not required to ensure maximum navigational safety, and to avoid the high cost of long-term buoy maintenance and oversight. Prior to the towers being severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services and may be reutilized, auctioned off, donated, recycled, or disposed of at adequate facilities.

This alternative fails to meet the selection standard to be economically sustainable as it would be temporarily disruptive to the local environment and thus the economy of local communities, as the use of explosives increases the risk of harassment and concussive injury or mortality to listed and protected species (e.g., fish, turtles, and marine mammals) that are living on the tower and/or may be nearby and not detected by observers.

2.3.3 Explosive Removal and Onshore Disposition

Under this alternative, the tower would be removed by explosively severing the towers' support structure. The support structure would be severed at a depth (relative to the water's surface) where buoys are not required by the USCG. This would ensure maximum navigational safety and avoid the high cost of long-term buoy maintenance and oversight. After they are removed, the severed towers would be loaded onto, and transported by, a surface craft or barge to shore. The disposition location would be at a predetermined salvage or disposal location. Materials would be recycled to the maximum extent possible. Prior to the towers being severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services.

This alternative fails to meet the selection standard to be economically sustainable for the same reasons discussed in **Section 2.3.2**.

2.3.4 Explosive Removal and Offshore Disposition in an Established Artificial Reefing Area

This alternative would remove the towers by explosively severing the towers' support structure. The water level depth at which the support structure is severed at a depth and location where buoys are not required by the USCG to ensure maximum navigational safety and to avoid the high cost of long-term buoy maintenance and oversight. After they are removed, the severed towers would be loaded onto, and transported by, a surface craft or barge to an approved artificial reefing location. The towers would be cut into sections and placed on the ocean floor such that the tops of the structures are at depths described above to avoid the need for marker buoys. Prior to the towers being severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services.

This alternative fails to meet the selection standard to be economically sustainable for the same reasons discussed in **Section 2.3.2**.

2.3.5 No Removal and As-Is Property Transfer

Under this alternative, there would be no decommissioning actions. The towers would be retained in their current condition, with the exclusion of the components listed below. The property would be transferred to another federal, state, or local agency, such as the Florida Department of Fish and Wildlife Conservation Commission, or to private entities. The agency or entity accepting the transfer would assume all maintenance and upkeep activities. Prior to the towers being transferred, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services. No other maintenance or corrosion preventative actions would occur prior to transfer.

This alternative would not meet the mission compatibility selection standard as the tower removal is needed to eliminate navigational risks to vessels from the towers. The process to locate potential new owners, undertake negotiations for ownership transfer, and execute the agreement terms may extend the timelines, requiring extended expenditures of time and costs for tower upkeep.

2.3.6 No Removal and As-Is Property Lease

Under this alternative, there would be no decommissioning actions. The towers would be retained in their current condition, with the exclusion of the components listed below. The property would be leased to another federal, state, or local agency, or to private entities. The agency or entity accepting the lease would assume all maintenance and upkeep activities for the term of the lease. Prior to the towers being leased, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services. No other maintenance or corrosion preventative actions would occur prior to transfer.

This alternative fails to meet the mission compatibility selection standard for the same reasons discussed in **Section 2.3.5**. The process to locate potential lessees, undertake negotiations for lease terms, and execute the lease may extend the timelines, requiring extended expenditures of time and costs for tower upkeep. In addition, while the towers would be maintained by the lessee over the term of the lease, at the end of the lease the towers would be transferred back, at which time the DAF would be required to maintain the towers until new disposition actions are considered and completed.

2.4 Alternatives Carried Forward for Analysis

NEPA regulations mandate the consideration of reasonable alternatives to the Proposed Action. "Reasonable alternatives" are those that also could be utilized to meet the purpose of and need for the Proposed Action. The NEPA process is intended to support flexible, informed decision-making; the analysis provided by this EA/OEA and feedback from the public and other agencies will inform decisions made about whether, when, and how to execute the Proposed Action. Four alternative actions meet the purpose of and need for the action, satisfy the criteria set forth in the selection standards, and were carried forward for further detailed analysis in this EA/OEA. Multiple alternatives carried forward for analysis may be selected to best meet the Proposed Action for the specific tower location. **Table 2-2** provides a summary of the proposed alternatives by station number. The depth of water and the tower type (barge or tripod) influenced the feasible alternatives for each tower. Due to its location within the Florida Keys National Marine Sanctuary, the only permittable alternatives for Station 14 are alternatives 2a, 3a, or 4a. The proposed alternatives for Station 11 are limited to alternatives 1 and 4 as they do not include moving the cut towers to an established or new artificial reef. This is due to the presence of an invasive coral species at Station 11. The No Action Alternative provides a benchmark used to compare potential impacts of the Proposed Action. Alternatives carried forward for evaluation are described in **Sections 2.4.1** through **2.4.5**.

Table 2-2 Proposed Alternatives by Station Number

Alternatives	Station
1a: Mechanical Removal (Sever at the Bottom) and In-Place Disposition as an Artificial Reef	1-13
1b: Mechanical Removal (Sever Below Warning Buoy Depth) and In-Place Disposition as an Artificial Reef	4, 6, 10, and 11
2a: Mechanical Removal (Sever at Bottom) and Offshore Disposition in an Established Artificial Reefing Area	1-10 and 12-14
2b: Mechanical Removal (Sever Below Warning Buoy Depth) and Offshore Disposition in an Established Reefing Area	1-10, 12, and 13
3a: Mechanical Removal (Sever at Bottom) and Offshore Disposition in a new North/South Artificial Reefing Area	1-10 and 12-14
3b: Mechanical Removal (Sever Below Warning Buoy Depth) and Offshore Disposition in a new North/South Artificial Reefing Area	1-10, 12, and 13
4a: Mechanical Removal (Sever at the Bottom) and Onshore Disposition	1-14
4b: Mechanical Removal (Sever Below Warning Buoy Depth) and Onshore Disposition	4, 6, 10, and 11

2.4.1 Alternative 1: Mechanical Removal and In-Place Disposition as an Artificial Reef

Under Alternative 1, the towers would be removed by severing the support structure below the water surface using mechanical methods and disposing of the towers in place on the sea floor as an artificial reef. Under this alternative, the DAF would coordinate with the U.S. Army Corps of Engineers (USACE) and the Florida Department of Fish and Wildlife Conservation Commission for the disposition of the tower structures in place as new artificial reefing areas. Artificial reefing permits would be obtained in compliance with 33 CFR Part 322, Permits for Structures or Work in or Affecting Navigable Waters of the United States. Prior to the towers being severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services. Two methods of mechanical removal are summarized below.

1a. Sever at the Bottom

The towers would be severed at the mudline or at the barge structure. The barge structure for northern towers (N3 through N7) would be left in place. They would be cut into sections and placed on the ocean floor such that the tops of the structures are at depths and locations where buoys are not required by the USCG to ensure maximum navigational safety and to avoid the high cost of long-term buoy maintenance and oversight. These depths would provide for acceptable deep draft vessel navigation. Required permits would be obtained in compliance with 33 CFR Part 322.

1b. Sever Below Warning Buoy Depth

The support structure would be severed at a depth and location where buoys are not required by the USCG to ensure maximum navigational safety and to avoid the high cost of long-term buoy maintenance and oversight. The remaining structure would be cut into sections and placed on the ocean floor such that the tops of the structures are at depths and locations where buoys are not required by the USCG. These depths would provide for acceptable deep draft vessel navigation. Required permits would be obtained in compliance with 33 CFR Part 322.

2.4.2 Alternative 2: Mechanical Removal and Offshore Disposition in an Established Artificial Reefing Area

Under this alternative, the DAF would coordinate with USACE and the Florida Department of Fish and Wildlife Conservation Commission for the disposition of the tower structures in an established artificial reefing area closest to the tower. These distances range from 0.24 miles to 39 miles. An artificial reefing permit for each tower would be obtained in compliance with 33 CFR Part 322.

This alternative would remove towers by mechanically severing the towers' support structure. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to an existing artificial reefing area. Prior to the towers being severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services.

2a. Sever at Bottom

Under this alternative the towers would be removed by mechanically severing the towers' support structure at the bottom as described in **Section 2.4.1** under Alternative 1a.

2b. Sever Below Warning Buoy Depth

Under this alternative the towers would be removed by mechanically severing the towers' support structure as described in **Section 2.4.1** under Alternative 1b.

2.4.3 Alternative 3: Mechanical Removal and Offshore Disposition in a New Artificial Reefing Area

Under this alternative, the DAF would coordinate with USACE and the Florida Department of Fish and Wildlife Conservation Commission for the disposition of the tower structures in newly established artificial reefing areas in the proximity of the northern and southern towers. The exact locations of these areas would be determined in coordination with the permitting agencies. It is assumed that this alternative would require barging the towers longer distances compared to Alternative 2. An artificial reefing permit for both the northern and southern locations would be obtained in compliance with 33 CFR Part 322.

This alternative would remove towers by mechanically severing the towers' support structure. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to one of the two newly established artificial reefing areas (north or south) depending on the tower location. Prior to the towers being severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services.

3a. Sever at Bottom

Under this alternative the towers would be removed by mechanically severing the towers' support structure at the bottom as described in **Section 2.4.1** under Alternative 1a.

3b. Sever Below Warning Buoy Depth

Under this alternative the towers would be removed by mechanically severing the towers' support structure as described in **Section 2.4.1** under Alternative 1b.

2.4.4 Alternative 4: Mechanical Removal and Onshore Disposition

This alternative would remove towers by mechanically severing the towers' support structure. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to shore. The disposition location would be at a predetermined salvage or disposal location. Materials would be recycled to the maximum extent possible. Prior to the towers being severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services.

4a. Sever at Bottom

Under this alternative the towers would be removed by mechanically severing the towers' support structure at the bottom. The DAF has identified this as the Preferred Alternative because it avoids the potential for adverse impacts to federally listed sea turtles that may occur under any of the other action alternatives.

4b. Sever Below Warning Buoy Depth

Under this alternative the towers would be removed by mechanically severing the towers' support structure at a depth and location where buoys are not required by the USCG to ensure maximum navigational safety and to avoid the high cost of long-term buoy maintenance and oversight.

2.5 No Action Alternative

Analysis of the No Action Alternative provides a benchmark, enabling decision-makers to compare the magnitude of the potential environmental effects of the Proposed Action. NEPA requires an EA/OEA to analyze the No Action Alternative. No action means that an action would not take place at this time, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed activity to go forward. No action for this EA/OEA reflects the status quo, where the ACMI towers would not be decommissioned. Under the No Action Alternative, the ACMI towers would require inspection and maintenance activities to ensure they do not deteriorate and become safety or navigational hazards.

2.6 Description of Demolition, Severance, and Disposal Activities

2.6.1 Demolition and Disposal

The alternative actions carried forward for analysis share similar proposed demolition and disposal activities. These activities can be summarized as:

- Remove all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials for proper disposal through DLA Disposition Services.
- Sever the support structure below the water surface using mechanical methods.
- Dispose of the towers in place, at an established artificial reefing area, at a new artificial reefing area, or onshore disposal area.

The demolition and disposal operation would follow a sequential approach to ensure protection of the public and the environment, contractor safety, adherence to project schedule, and cost-effective project implementation. Each tower would be fully removed and placed on the sea floor via crane before moving on to the next tower. An estimate of the total number of days and hours of vessel operation was derived by scaling up the operational data used in the *Final Overseas Environmental Assessment (OEA) for the Removal, Disposal, and Transfer of the Tactical Aircrew Combat Training System (TACTS) Towers, Naval Submarine Base Kings Bay, Georgia* (Kings Bay OEA, 2016). The *Kings Bay OEA* assumed that demolition, severance, and disposal activities would be expected to take less than a week for each tower (5 days). As such, a single 70-day trip (40 days of operations for the 6 northern towers and 30 days for the 8 southern towers) would be required for the demolition, severance, and in-place disposal of the 14 ACMI towers.

2.6.2 Severance Operations

Under the Proposed Action, mechanical severance would be used. Mechanical severance options include the use of torches, abrasive water jets, sand cutters, diamond-wire saws, carbide cutters, shears, and guillotine saws (USACE, 2016). Diamond wire cutter (DWC) or abrasive water jet cutter (AWJ) methods are standard practice for offshore oil rig platforms and are likely to be used for severing the ACMI towers. Both methods may be used to sever towers at different locations on the tower, so for example, DWC would likely be used to sever the above water tower structure. The typical cutting spread for both the DWC and AWJ operations are fully self-contained with no marine discharges, other than the jet from the AWJ system. Additionally, underwater noise issues are minimal for mechanical severance compared with explosive severance (USACE, 2016). Before the tower legs would be cut below the water, pile jetting equipment may be used to wash sediment out of the jacket and piles (Kings Bay OEA, 2016). Structural surveys, including associated documentation, to determine specific tower severance requirements would be performed prior to severing the towers. To determine what cutting equipment is required, divers would measure the thickness of each leg and structure to be cut (USACE, 2016).

2.6.3 Planning Activities

Appropriate planning is necessary for a safe and successful removal operation, and to minimize the risk of accidents or injuries. This planning would include analyzing engineering, safety, environmental, physical conditions, and weather contingency aspects, which are detailed below.

Engineering. An engineering survey and assessment of health hazards is needed before any demolition work takes place. The assessment would include items such as:

- The condition of the in-place structures and planned changes to the structure condition during the demolition process.
- Identification of features requiring environmental considerations during demolition, transport, storage, and disposal.

Safety. A fire prevention and evacuation plan would be developed that includes identification of first aid and emergency medical services for the onshore and offshore project locations. Additional health and safety planning efforts are detailed in **Section 4.2.1**.

Environmental. An understanding of environmental conditions includes identifying the materials to be removed prior to demolition to ensure safe handling, transportation, and storage until proper disposal. Such items may include batteries and hazardous materials or items containing hazardous materials that may be released if damaged during removal operations.

- Lead-based paint (LBP), polychlorinated biphenyls (PCBs), and asbestos-containing materials (ACM) were not found during testing of the above-water structures of the southern towers (USACE, 2016). Paint and PCB analysis performed on the northern towers did not detect PCBs and only low levels of lead. U.S. Environmental Protection Agency (USEPA) does not consider the lead in paints used in vessels being utilized as artificial reefs as a significant environmental or human health hazard (GASMFC, 2004).
- Navigation lights on the towers are known to be powered by solar panels and nickel-cadmium batteries (USACE, 2016).

Physical Conditions. The ACMI towers, consisting of six northern towers and eight southern towers, were constructed between 1977 and 1994. The base supports for the towers differ between the northern and southern groups. There has been no work to maintain the structural integrity of the towers since they were installed, and structural stability of the towers is deteriorating. The last inspection of the southern towers occurred in 2002 and found the towers were in overall good condition, but corrosion was evident and repair needs were noted. An official structural inspection of the northern towers has not been accomplished, although visits by crews to maintain the navigational lights have documented deterioration of some above-water structures (USACE, 2016). The physical conditions of the towers are susceptible to change over time, with two past documented strikes by vessels, and the recognition that the life expectancy of the towers is unknown. Additional concerns include structure weakening by significant weather events such as hurricanes (USACE, 2016).

Weather Contingency. Part of the project planning process would include development of safe working conditions with respect to weather. The work sites may be subject to both short-term (e.g., lightning) and long-term (hurricane, high wind, and storm surge) events that impact a safe work environment. Forecasting lead time, go/no-go assessments, shelter/safe harbor and project stabilization/project stop work guidance would be prepared as part of the planning process.

2.7 Summary of Potential Environmental Consequences

The potential impacts associated with the analyzed alternatives and the No Action Alternative are summarized in **Table 2-3.** The summary is based on information discussed in detail in **Chapter 3** of the EA/OEA and includes a concise definition of the issues addressed and the potential environmental impacts associated with each alternative action. As summarized in **Table 2-3**, no significant impacts are anticipated as a result of the Proposed Action.

Table 2-3 Comparison of Potential Environmental Consequences of the Alternatives

Resource	Alternatives 1a and 1b	Alternatives 2a and 2b	Alternatives 3a and 3b	Alternatives 4a and 4b	No Action Alternative
Marine Biological Resources	**1a.** Short-term adverse impacts on hardbottom habitats, plankton and invertebrates, and coral communities as some attached flora and fauna or	**2a.** Impacts on marine biological resources would be similar to 1a; however, adding new habitat to established artificial reefs may reduce	**3a.** Impacts on marine biological resources would be similar to 1a; however, the increase in habitat would occur at new reef sites. Creating	**4a.** Impacts on marine biological resources would be similar to 1a except sea turtles would not be adversely affected because the entire towers	No significant impacts.

Table 2-3 Comparison of Potential Environmental Consequences of the Alternatives

Resource	Alternatives 1a and 1b	Alternatives 2a and 2b	Alternatives 3a and 3b	Alternatives 4a and 4b	No Action Alternative
Marine Biological Resources *(continued)*	infaunal species may be crushed during tower placement or relocated to an unsuitable depth. The impacts would not be significant. The chance of adverse impacts on fish, marine mammals, from short-term, localized behavioral disturbance during underwater cutting activities is small. Sea turtles may be adversely affected by the remaining portions of the towers. Long-term beneficial impacts to marine biological resources from the increase in hardbottom habitat that results in a reef effect that encourages colonization. The impacts would not be significant. No effect on the content or management attributes of any of the EFH areas. **1b.** Impacts on hardbottom habitats, plankton and invertebrates, coral communities, fish, EFH, marine mammals, and sea turtles would be the same as	colonization time since there may be more individuals and potentially greater diversity of species at the established reef sites. **2b.** Similar to 1b, but with shorter colonization time.	new areas of artificial reefs may increase the colonization time since there may be few individuals and potentially lower diversity of coral species at these unestablished reef sites unless there is suitable hardbottom habitat nearby. Creating new sites may have other indirect effects on the distribution and abundance of coral species since these new sites may create patches of suitable habitat in areas that were previously unoccupied. **3b.** Similar to 1b, but with longer colonization time.	would be moved onshore; there would also be a small amount of hardbottom habitat at each tower site that would be permanently lost when the tower structures are removed. **4b**. Similar to 1b but less habitat would be lost for those towers that are in water deep enough to allow some portion of vertical structure to remain. Sea turtles may be adversely affected by the remaining portions of the towers.	

Table 2-3 Comparison of Potential Environmental Consequences of the Alternatives

Resource	Alternatives 1a and 1b	Alternatives 2a and 2b	Alternatives 3a and 3b	Alternatives 4a and 4b	No Action Alternative
Marine Biological Resources *(continued)*	under 1a. However, mobile species, including fishes, may continue to be attracted to the remaining vertical sections.				
Terrestrial Biological Resources	**1a.** Short-term adverse impacts on bats and birds would occur from disturbance and loss of roosting habitat. Long-term beneficial impact from removal of potential collision risk. The impacts would not be significant. **1b.** Impacts would be the same as those described for 1a.	**2a.** Impacts would be the same as those described for 1a. **2b**. Impacts would be the same as those described for 1a.	**3a.** Impacts would be the same as those described for 1a. **3b**. Impacts would be the same as those described for 1a.	**4a.** Impacts would be the same as those described for 1a. **4b**. Impacts would be the same as those described for 1a.	No short-term adverse disturbance impacts, but continued risk of bat and bird collisions with the towers.
Air Quality	**1a.** Short-term adverse impacts from the operation of construction equipment and marine vessels. The impacts would not be significant. **1b**. Impacts on air quality would be the same as under 1a.	**2a.** The increased barge distance would result in marginal increase in annual emissions of all pollutants. Impacts to air quality would be adverse, and short term but would not cause or contribute to emissions that would exceed one or more NAAQSs. The impacts would not be significant. **2b.** Impacts would be the same as those described for 2a.	**3a.** The increased barge distance would result in marginal increase in annual emissions of all pollutants. Impacts to air quality would be adverse, and short term but would not cause or contribute to emissions that would exceed one or more NAAQSs. The impacts would not be significant. **3b.** Impacts would be the same as those described for 3a.	**4a.** The increased barge distance would result in marginal increase in annual emissions of all pollutants. Impacts to air quality would be adverse, and short term but would not cause or contribute to emissions that would exceed one or more NAAQSs. The impacts would not be significant. **4b.** Impacts would be the same as those described for 4a.	Short-term, impacts on air quality during maintenance activities. The impacts would not be significant.
Water Resources	**1a.** Short-term adverse impacts to water quality from severance operations, vessel	**2a.** Same as impacts of 1a (short-term adverse) impacts to water quality. The longer travel	**3a.** Same as impacts of 1a (short-term adverse) impacts to water quality. The longer travel	**4a.** Same as impacts of 1a (short-term adverse) impacts to water quality. The longer travel	Short-term adverse impacts on water quality due to maintenance

Table 2-3 Comparison of Potential Environmental Consequences of the Alternatives

Resource	Alternatives 1a and 1b	Alternatives 2a and 2b	Alternatives 3a and 3b	Alternatives 4a and 4b	No Action Alternative
Water Resources *(continued)*	discharges, tower paint, and potential antifouling treatments. The impacts would not be significant. **1b.** Impacts on water resources would also not be significant under Alternative 1b, however there would be less impacts from suspended solids and turbidity due to the reduced amount of tower structure laid on the sea floor.	distances for vessels transporting the severed tower components would increase the potential for discharge of water contaminants. The impacts would not be significant. **2b.** Same as impacts of 1b (short-term adverse). The increased amount of tower structure that would remain upright and the reduced amount that would be laid on the seafloor, would reduce the footprint of components deposited on the sea floor, resulting in less temporary sediment disturbance than 2a. The impacts would not be significant.	distances for vessels transporting the severed tower components would increase the potential for discharge of water contaminants. The impacts would not be significant. **3b.** Same as impacts of 1b (short-term adverse). The increased amount of tower structure that would remain upright and the reduced amount that would be laid on the seafloor, would reduce the footprint of components deposited on the sea floor, resulting in less temporary sediment disturbance than 3a. The impacts would not be significant.	distances for vessels transporting the severed tower components would increase the potential for discharge of water contaminants. The impacts would not be significant. However, the disposition of the towers at an onshore location would minimize the disturbance of sediments associated with underwater disposition. **4b.** Same as impacts of 1a (short-term adverse). The increased amount of tower structure that would remain upright and the reduced amount that would be laid on the seafloor, would reduce the footprint of components deposited on the sea floor, resulting in less temporary sediment disturbance than 4a.	trips that would cause resuspension of any sediments from temporary anchoring may result in a temporary impact to water quality from an increase in suspended solids and turbidity. The impacts would not be significant.
Geological Resources	**1a.** Short-term adverse impacts from sediment disturbance. Long-term adverse impacts from disturbances to the sea floor. The impacts	**2a.** Impacts would be the same as described for 1a (short-term adverse). The impacts would not be significant. **2b.** The reduced footprint on the sea floor would	**3a.** Impacts would be the same as described for 1a (short-term adverse). The impacts would not be significant. **3b.** The reduced footprint on the sea floor would	**4a.** Less short-term adverse impacts because the towers would not be laid on the sea floor. Long-term adverse impacts due to the loss of coarse shell material	Short-term adverse impacts from the periodic vessel trips to perform regular maintenance of the structures

Table 2-3 Comparison of Potential Environmental Consequences of the Alternatives

Resource	Alternatives 1a and 1b	Alternatives 2a and 2b	Alternatives 3a and 3b	Alternatives 4a and 4b	No Action Alternative
Geological Resources *(continued)*	would not be significant. **1b.** Impacts would also be short term and adverse under 1b; however, there would be less impacts from suspended solids and turbidity due to the reduced amount of tower structure laid on the sea floor. The impacts would not be significant.	result in less disturbance to the seabed and less temporary sediment disturbance than 2a. The impacts would not be significant.	result in less disturbance to the seabed and less temporary sediment disturbance than 3a. The impacts would not be significant.	being shed from and accumulating in the vicinity of the towers. The impacts would not be significant. **4b**. Same as 4a except coarse shell material would continue to accumulate around the remainder of the towers at a reduced rate. The impacts would not be significant.	Anchoring would cause the temporary resuspension of marine sediments that are anticipated to rapidly resettle on the sea floor, and therefore no significant effects on geology or marine sediments.
Cultural Resources	**1a.** No historic properties would be affected by the Proposed Action under 1a. **1b**. No historic properties would be affected by the Proposed Action under 1b.	**2a.** Potential impacts to cultural resources under 2a are the same as those identified under 1a. **2b.** Potential impacts to cultural resources under 2b are the same as those identified under 1a.	**3a.** Potential impacts to cultural resources under 3a are the same as those identified under 1a. **3b**. Potential impacts to cultural resources under 3b are the same as those identified under 1a.	**4a.** Potential impacts to cultural resources under 4a are the same as those identified under 1a. **4b**. Potential impacts to cultural resources under 4b are the same as those identified under 1a.	No impacts.
Socio-economics and Recreation	**1a.** Long-term beneficial impact on both recreation and socioeconomics due to the increase in artificial reef area which may attract more recreational use. Short-term beneficial impact to the local economy from decommissioning expenditures. The impacts would not be significant. **1b.** Impacts would be the same as 1a (long-term beneficial). However, this	**2a**. Expansion of existing reefs could encourage more visitation by anglers and divers, due to greater variety and area/extent of habitat. However, complete removal of the deepest-water towers would reduce or eliminate fishing/diving at these sites. Longer construction crew stays than 2b (short-term local economic benefit). The	**3a.** Impacts would be similar to 2a if the new reefing areas are 20-40 miles from shore (average Florida reef distance is 26 miles). However, complete removal of the deepest-water towers would reduce or eliminate fishing/diving at these sites. Longer construction crew stays than 3b (short-term local economic benefit). The	**4a**.This alternative could result in short-term beneficial economic impacts to local economies, but also long-term adverse economic impact (due to loss of future recreational angler/diver visitation income). The impacts would not be significant. **4b**. Same as 4a.	No impacts.

Table 2-3 Comparison of Potential Environmental Consequences of the Alternatives

Resource	Alternatives 1a and 1b	Alternatives 2a and 2b	Alternatives 3a and 3b	Alternatives 4a and 4b	No Action Alternative
Socio-economics and Recreation *(continued)*	alternative may be more beneficial for the diving community as it leaves a portion of the tower in a vertical orientation, allowing for variation in the diving experience. The impacts would not be significant.	impacts would not be significant. **2b.** This alternative (and 3b) could have the greatest positive long-term socioeconomic benefit. Expansion of shallower-water reef areas and retention of deeper water habitat structure at existing tower locations would maximize visitor appeal. The impacts would not be significant.	impacts would not be significant. **3b**. This alternative (and 2b) could have the greatest positive long-term socioeconomic benefit. Construction of new shallower-water reef areas and retention of some deeper water habitat structure at existing tower locations would maximize visitor appeal. The impacts would not be significant.		
Hazardous Materials and Waste	**1a.** Short-term adverse impacts from the generation of small amounts of hazardous waste. Long-term adverse impacts from tower paint and potential antifouling treatments. The impacts would not be significant. **1b.** Same as 1a.	**2a.** Same as 1a. **2b.** Same as 1a	**3a.** Same as 1a. **3b.** Same as 1a.	**4a.** Same as 1a, except there would be no long-term adverse impacts as the tower would be removed entirely. **4b**. Same as 4a.	The No Action Alternative would have no impacts on hazardous materials or waste beyond the current level of impact being experienced by the degradation of the towers
Health and Safety	**1a**. Short-term adverse impacts to the safety of workers during demolition and disposition. Short-term adverse impacts to the public could occur if an accident during operations created a release or exposure to chemical or toxic substances. The impacts would not be significant.	**2a.** Same as 1a. During the transportation and replacement activities at the artificial reef site, similar safety controls would also be implemented to prevent worker injury and accidents. **2b.** Same as 1b.	**3a.** Same as 1a. **3b.** Same as 1b.	**4a.** Same as 1a. **4b**. Same as 1b. During transportation to the onshore disposal facility, safety controls would be implemented to prevent worker injury and accidents.	Potential for risk to the public or environment if deterioration of the towers resulted in a release of toxic materials from objects present on the towers.

Table 2-3 Comparison of Potential Environmental Consequences of the Alternatives

Resource	Alternatives 1a and 1b	Alternatives 2a and 2b	Alternatives 3a and 3b	Alternatives 4a and 4b	No Action Alternative
Health and Safety *(continued)*	**1b.** Short-term impacts to the safety of workers. Lower risk to workers than under 1a, due to shallower dive depth and fewer cutting and section handling activities. Same short-term adverse impacts to the public as 1a. The impacts would not be significant.				

Notes:
EFH = Essential Fish Habitat; NAAQS = National Ambient Air Quality Standards

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CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the potential impacts on existing environmental conditions associated with the Proposed Action. This analysis considers the current, baseline conditions of the affected environment and compares those with the conditions that might occur should DAF implement the Proposed Action or the No Action Alternative.

A justification for those resources eliminated from detailed analysis is provided in this section. Then, each resource included in the analysis is defined and its evaluation criteria are outlined. Lastly, a description of existing conditions and a discussion of potential direct, indirect, and cumulative impacts are presented.

3.1 Resource Areas Eliminated From Analysis

Some resources were considered relative to the Proposed Action but were not carried forward for detailed analysis. They include resources whose baseline conditions lacked a relationship to, and any potential to be altered by, implementation of the Proposed Action.

3.1.1 Noise

Noise that would result from demolition will not be carried forward for detailed analysis. A temporary, localized increase in noise is anticipated; however, the proposed activities are offshore, so there are no sensitive receptors that could be affected by noise associated with the Proposed Action. Contractors would be required to use personal protective equipment (PPE) such as hearing protection which would be detailed in a Safe Work Plan. Noise as it relates to biological resources is discussed in **Sections 3.4** and **3.5**.

3.1.2 Utilities and Infrastructure

The Proposed Action would not require upgrades to, changes to, or interfere with utilities and infrastructure. Because of the large offshore oil and gas industry present in the Gulf of Mexico, existing utilities and infrastructure needed to support the vessels and personnel already exist at the ports or harbors that would be used for mobilization for the offshore disposition actions. The alternatives to sever and lay down some or all the tower structure on the sea floor at the tower locations would not interfere with offshore energy activities or exploration. Impacts on utilities and infrastructure would not occur under the Proposed Action.

3.1.3 Land Use

No activities are proposed that would alter land use designations, land use management, or that would be incompatible with existing land uses. Therefore, impacts on land use are not expected from the Proposed Action, and this resource has been dismissed from detailed analysis.

3.2 Relevant Laws and Regulations

Applicable federal, state, and local regulations were considered during analysis of the impacts on the individual resources evaluated as part of the EA/OEA. The following legislation and E.O.'s were specifically considered:

- Clean Air Act (CAA) (42 U.S.C. § 7401 et seq.)
- Clean Water Act (CWA) (33 U.S.C. § 1251 et seq.)
- CZMA (16 CFR Parts 1451–1464)
- ESA (16 U.S.C. § 1531 et seq.)
- Marine Mammal Protection Act (16 U.S.C. Chapter 31)
- MSA (16 U.S.C. § 1801 et seq.)

- Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703–712)
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668-668c)
- NHPA (54 U.S.C. § 300101 et seq.)
- E.O. 13186 Responsibilities of Federal Agencies to Protect Migratory Birds
- Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. § 403)

3.3 Analyzed Resources and Evaluation Criteria

Potential effects were evaluated for each resource in terms of type, duration, and degree. Type describes whether impacts would be beneficial or adverse, and direct or indirect:

- Beneficial: A positive change in the condition or appearance of the resource, or a change that moves the resource toward a desired condition.
- Adverse: A change that moves the resource away from a desired condition, or detracts from its appearance or condition.
- Direct: An effect caused by the action that occurs in the same place and at the same time.
- Indirect: An effect caused by the action but occurs later in time or farther removed in distance, but is still reasonably foreseeable.

Duration describes the length of time an effect would occur, either short term or long term. Short term generally describes effects that would be experienced during the removal process, and long-term refers to effects that would persist after the towers have been removed. Further descriptions of the criteria used to evaluate impacts are included in the environmental consequences sections of each resource.

Resource areas that are evaluated include marine biological resources, terrestrial biological resources, air quality, water resources, geological resources, cultural resources, socioeconomics and recreation, hazardous materials and waste, and health and safety. Reasonably foreseeable future actions that could result in increased impacts to these environmental resources in conjunction with the Proposed Action are summarized in **Appendix C.**

3.4 Marine Biological Resources

The analysis in this section focuses on marine biological resources, which are organisms that live in salt water. The marine biological resources that are analyzed in this section include plankton and invertebrates, fishes, coral communities, marine mammals, and sea turtles, as well as their habitats (e.g., hardbottom habitat and Essential Fish Habitat (EFH). The region of influence (ROI) for marine biological resources includes the towers, underwater barge structures, and areas surrounding each tower location. The potential for noise impacts is discussed for plankton and invertebrates, fishes, marine mammals, and sea turtles. Noise would not affect marine habitats, such as hard bottom habitats, EFH, and coral communities as these are physical (non-living) systems, rather than biological.

To avoid potential adverse impacts to marine biological resources throughout the ROI, Station 11 cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). This limits the proposed alternatives for Station 11 to 1a, 1b, 4a, and 4b. To avoid potential adverse impacts in the Florida Keys National Sanctuary, Station 14 must be moved entirely, which limits the proposed alternatives to 2a, 3a, and 4b.

3.4.1 Hardbottom Habitats

3.4.1.1 Definition of Resource

Natural hardbottom habitats in the Gulf of Mexico off the west coast of Florida include rocky outcrops, isolated rocks, and occasional small reef areas (DoN, 2007a). Florida's west coast is defined by an approximate 65,637 square miles of bedrock shelf from the Florida Panhandle to the lower Florida Keys. It is composed of discontinuous carbonate outcroppings that run north and south extending more than 1,988 miles west from the intertidal zone to a depth of 656 feet (200 meters) across a very gentle slope (much less than 1 degree) of ancient limestone platforms. Current estimates on the central/southwestern portions of the West Florida Shelf (WFS) show that 50 percent is flat hardbottom (Eagan, 2019). Hardbottom habitats are shallow (less than 65 feet [20 meters]) generally turbid waters that support low diversity mixtures of dominant non-reef building eurytopic taxa (*Cladocora arbuscula*, *Siderastrea* spp., *Oculina robusta,* and *Solenastrea hyades*) of stony corals, soft corals (Octocoral complex – *Muricea* spp. and Plexauridaes), benthic macroalgae (*Sargassum*), and sponges (Etnoyer, 2009; Eagan, 2019; Furman et al., 2020; Blank et al., in press).

Although the presence of a hard structure does not guarantee a live/hardbottom community, the structure provided by more stable hard surfaces allows larval organisms to attach and grow. Attachment for sessile invertebrates and molluscs is not sustainable on shifting sandy or silty habitats. Artificial structures, like the 14 ACMI towers, influence the surrounding underwater ecosystem by creating new habitat that can potentially change the abundance and distribution of living resources. These artificial structures provide similar ecological functions as natural hardbottom habitat, including developing epibiotic communities that create microhabitat for motile species, locally concentrate planktonic and pelagic food resources, alter current flows to provide sheltered areas, provide visual reference points, and create spawning sites (Bohnsack, 1991; Sheehy and Vik, 2010). For this impacts analysis, the hardbottom resource includes natural and artificial hard surfaces in the project area capable of supporting epibenthic colonization. The epibenthic groups of organisms that colonize and coat artificial structures, essentially using these substrates as hardbottom analogs, are often referred to as “fouling communities” because they may interfere with the structure’s function or require periodic removal during active use; however, the label does not imply that these communities pollute or “foul” the waters they inhabit.

3.4.1.2 Affected Environment

The affected environment includes the areas around each of the 14 ACMI towers proposed for decommissioning. This description of the affected environment considers the differences in environment and ecology of the two clusters of towers. All towers are in the Gulf of Mexico on the WFS. The WFS is characterized by a broad, flat limestone shelf that slopes gently to the west and has relatively few areas of high relief (DoN, 2007a). The 14 ACMI towers are within the shallowest depth zone of the WFS, also known as the inner shelf, which extends from the shoreline out to depths up to 131 feet. The inner shelf substrate is predominantly sandy but includes widely distributed areas of hard substrate that are either covered or interspersed with a thin covering of coarse sand (DoN, 2007a). Sand covering typically ranges from 20 to 24 inches or less. Sessile epibiota such as corals, gorgonians (soft corals), and sponges (Porifera) are almost exclusively attached at locations with exposed hardbottom or with a 4 inch or less covering of sand. The northern towers are in the Northern Gulf of Mexico Level I Ecoregion and the southern towers in the South Florida/Bahamian Atlantic Level I Ecoregion (Wilkinson et al., 2009; Ward, 2017b). There are several oil and gas platforms and artificial reefs (placed to augment recreational offshore fisheries) near the northern tower area; there are also one or two of these types of structures near the southern towers (DoN, 2007a).

Surveys were completed in 2021 to assess the benthic habitat and marine biota present on and surrounding 14 ACMI tower structures (NAVFAC SE and AFCEC, 2022). The purpose of these surveys was to assess and describe the pelagic and benthic environment of the tower structures and area surrounding each tower. The towers are divided into two areas, north and south, but the general survey results were consistent among these areas in that all towers exhibited 100 percent cover of exposed surface by marine fauna and flora from the upper water line to the base. There were no patches of bare metal below the water line, nor were there any areas of conspicuous rusting or flaking of deteriorating metal. In addition, the tower bases were surrounded by finer sediments including muddy-silt, silty-sand, sand, and shell fragments. The coarse shell on the sand bottom around the tower bases are bivalves formerly attached to the barge. This biologic halo effect is typical for artificial reef structures, which provide attachment surfaces for organisms that would not normally be present in a soft bottom benthic habitat. Barge bases were usually filled with larger rocks or debris, and these surfaces were also encrusted. The seabed was surveyed in four cardinal directions with horizontal transect lengths equal the total tower height plus 20 meters (66 feet) in each direction. Only one tower, Station 3/N7 (Station 3 in the northern towers) exhibited live bottom areas with epifauna outside of the barge or tower structure. No other towers exhibited live bottom or encrusted habitat outside of the varying haloes of shell fragments. Many towers had infaunal burrows near their bases inhabited by mantis shrimp or polychaete worms.

The basic structure of the fouling communities for both the northern and southern towers was the same, being dominated by encrusting and erect Porifera (sponges). Calcareous encrusting algae were also common on most of the structures as well as on any hard substrate such as shell, rocks, and the metal barge surface. Bivalves also formed an important base component of the fouling community, although they were always covered with sponges, calcareous algae, and other epifauna, which made evaluation of the molluscan diversity impossible as the surveys were all non-destructive. The Anthozoa (a class of marine invertebrates that includes the sea anemones, stony corals, and soft corals) were well represented on both the northern and southern towers. Of this group the soft corals, mainly gorgonians, were most common, followed by hydroids (hydrozoans) and zoanthids. Stony corals were not common.

Since the above-water sections of the towers would become submerged after decommissioning, the surveys sampled representative areas of the tower paint and surface coatings for contaminants, metals, and PCBs. Paint was collected from just above the water line at four of the northern tower structures. Analysis of paint determined that that PCBs were non-detectable in collected samples (Appendix E in NAVFAC SE and AFCEC, 2022). Analysis of paint from Station 1/N4 and Station 4/N5 revealed low levels of lead; the greatest concentration measured was 54 parts per million (ppm). While paint was also collected from Station 5/N6, the amount of paint that was able to be collected was not enough for analysis of leads. USEPA does not consider the lead in paints used in vessels being utilized as artificial reefs as a significant environmental or human health hazard (GASMFC, 2004). Lead has low solubility in sea water and does not bioaccumulate in fish. While there may be some adverse effect on invertebrate marine organisms, it would apply only to those that graze directly on the painted surface. Examples of marine invertebrate groups that graze include sea urchins (Echinodermata), which are adapted to life in shallow waters and are unlikely to be present on the sunken sections, and molluscs with radula (primarily Gastropoda), a hard toothed structure used to scrape food off surfaces.

3.4.1.3 Environmental Consequences Evaluation Criteria

For hardbottom habitat, adverse impacts occur if impacts from project-related activities may harm individual organisms physically attached to the habitat; alter, increase, or destroy habitat components; or result in changes to existing habitat that contribute to population level effects. Impacts to hardbottom habitat contribute to impacts to other resources such as fish, invertebrates, and marine mammals because hardbottom habitat structure supports attached organisms and mobile species that use it for shelter, reproduction, or feeding. Those impacts are described in their respective sections.

Where potential stressors vary in intensity, frequency, duration, and location within the project areas, those that are applicable to hardbottom habitat are analyzed below:

- Physical disturbance, destruction, or relocation; and
- Beneficial impacts from increased hardbottom substrate surrogates caused by reef effect.

3.4.1.4 Environmental Consequences – Alternative 1

The impacts of alternatives 1a and 1b on hardbottom habitats would differ, but neither would be significant.

3.4.1.4.1 Sever at Bottom (1a)

Alternative 1a includes decommissioning the towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections and placed on the seafloor at each tower location.

The above-water sections for Stations 1 to 5 measure approximately 100 feet Station 6/SM1 extends approximately 284 feet above the water. The above-water sections for the southern towers vary from 125 to 144 feet. Because the submerged portion of each tower also varies with base depth, the increase in surface area of hardbottom habitat created would vary at each tower, depending on the total length of structure removed, including above and below-water sections (**Table D-1, Appendix D**). The DAF has not specified a segment length; therefore, the number and arrangement of sections are also likely to vary from tower site to tower site. However, the impacts of cutting and placing these sections on the ocean bottom can be generalized based on whether they were originally below water (previously colonized) or above water (uncolonized).

Cutting the below-water (previously colonized) sections of the towers would directly adversely affect any invertebrates attached to the towers where cuts occur, and it is likely that some encrusting organisms would be killed and injured during this process. The adverse impacts caused by the cutting would be of high intensity but limited to the immediate cutting sites and cutting period (very short duration) on each tower segment. Once the tower sections are laid on the ocean floor, sections that were located at shallow depths where light could penetrate and support photosynthesis may settle beyond the euphotic (lighted) zone. Sections placed at depths beyond the euphotic zone would no longer support attached photosynthetic organisms (algae or periphyton). The extent of this adverse impact would vary among the tower locations, depending on the base depth and local turbidity conditions. It is unlikely that placing the tower segments would directly adversely impact or disturb existing natural hardbottom habitat except at Station 3 (N7), which was the only tower that exhibited any such habitat, and it was limited in size and epifaunal community. Placement of tower sections would avoid the observed live bottom locations.

Indirect adverse effects of decommissioning would include changes in epifaunal communities resulting from relocation of tower segments as well as the increase in hard substrate from the sunken tower segments (see also **Section 3.4.2**). Previously colonized segments would be moved from their current depths to a more uniform depth on the ocean bottom. Some attached flora and fauna or infaunal species may be adversely affected by being crushed during placement or being relocated to a depth that is unsuitable based on changes in light penetration, pressure, currents, or other ambient conditions. However, much of the hardbottom community would persist, and once decommissioning is completed, epifaunal communities on previously colonized segments would adjust to the changes in location. Some species may be replaced, while other species may proliferate. Mobile species that previously used the structures would also be likely to return after decommissioning is completed (see also **Section 3.4.3**).

Potential beneficial impacts would be seen to the amount and distribution of potential hardbottom and reef-like habitat. The above-water tower sections would create new hardbottom substrate and would be colonized initially by periphyton, a complex phototropic, multispecies biofilm that grows on surfaces in aquatic environments. Periphyton communities harbor a large diversity of organisms that include bacteria, viruses, algae, fungi, protozoans, and metazoans. The exact composition of periphyton communities is largely unknown and likely varies spatially. It is believed that periphyton communities serve as either attractants or repellants for larval stages of organisms seeking a suitable habitat where they can settle. A periphyton community would likely begin developing weeks after the above-water tower sections are sunk. Early settlement of larger organisms may include barnacles, bivalves, small crustaceans, and macroscopic algae, depending on the water depth and local conditions. An epifaunal community has already been established around each tower, including sponges, echinoderms, and other invertebrates, as well as more mobile species such as crustaceans and fishes. It is reasonable to expect that these communities would be likely to become reestablished around each tower segment complex after decommissioning ceases, as the habitat provides shelter, life history support, and food. Colonization of hardbottom substrate depends on the nature of the surrounding habitat and currents that provide the planktonic larvae necessary to colonize the structure; however, the segments with established epifaunal communities would be likely to provide ample larvae for colonization of the bare sections.

Corals are typically slow to colonize new habitats because of comparatively low reproductive output limited to a specific time of year. The nature of the fauna and flora present on any artificial structure depends on the associated physical parameters including, most importantly, parameters of composition of the substrate, circulation and currents, salinity, temperature, dissolved oxygen levels, turbidity and light penetration, primary production, and any complicating factors such as antifouling paints or water-borne contaminants.

Federally Listed Species

The coral species (invertebrates) that are protected under the ESA and the potential for impacts to these species are described in **Section 3.4.4**. There are no other federally listed invertebrate species with the potential to occur in the ROI.

3.4.1.4.2 Sever Below Warning Buoy Depth (1b)

Alternative 1b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The tower sections would be placed on the seafloor at each existing tower location. The potential adverse and beneficial effects to hardbottom habitat would be similar to those described for Alternative 1a. Alternative 1b would leave some vertical sections of the towers at all locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Mobile species may continue to be attracted to the vertical sections long-term. These impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 1a.

3.4.1.5 Environmental Consequences - Alternative 2

The primary difference between Alternative 1 and Alternative 2 is that the severed tower components would be transported to existing artificial reef locations rather than deposited near their original tower base. Alternative 2 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). The impacts of alternatives 2a and 2b on hardbottom habitats would differ, but neither would be significant.

3.4.1.5.1 Sever at Bottom (2a)

Alternative 2a includes decommissioning the towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges, transported to existing artificial reef sites, and placed on the seafloor at several locations to be identified once the project is approved.

Under Alternative 2a, the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in hardbottom analogous habitats would occur at the established reef sites. Adding new areas to established artificial reefs may reduce the colonization time since there may be more individuals and potentially greater diversity of species at these established reef sites. However, because the reef sites have not been identified, the specific communities cannot be specified. Moving the sections with established, attached fauna would disperse these species to the new sites. Again, whether this dispersal would introduce new species or add individuals of species present in the receiving communities is currently unknown.

3.4.1.5.2 Sever Below Warning Buoy Depth (2b)

Alternative 2b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges, transported to existing artificial reef sites, and placed on the seafloor at several locations to be identified once the project is approved.

The potential adverse and beneficial effects to hardbottom habitat would be similar to those described for Alternative 2a. Alternative 2b would leave some vertical sections of the towers at all locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Mobile species may continue to be attracted to the vertical sections. The impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 2a.

3.4.1.6 Environmental Consequences – Alternative 3

The primary difference between Alternative 1 and Alternative 3 is that the severed tower components would be transported to new artificial reef locations rather than deposited near their original tower base. Alternative 3 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). The impacts of alternatives 3a and 3b on hardbottom habitats would differ, but neither would be significant.

3.4.1.6.1 Sever at Bottom (3a)

Alternative 3a includes decommissioning the towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges, transported to new artificial reef sites, and placed on the seafloor at several locations to be identified once the project is approved.

Under Alternative 3a, the potential impacts would be similar to those described for Alternative 1a.The main difference would be that the increase in hardbottom analogous habitats would occur at the new reef sites. Adding new areas of artificial reefs may increase the colonization time since there may be few individuals and potentially lower diversity of species at these unestablished reef sites. However, because the reef sites have not been identified, the specific nearby communities that could serve as sources for colonization cannot be specified. Moving the sections with established attached fauna would disperse these species to the new sites. Again, whether this dispersal would introduce new species or add individuals of species present in the receiving communities cannot be predicted.

3.4.1.6.2 Sever Below Warning Buoy Depth (3b)

Alternative 3b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges, transported to existing new reef sites, and placed on the seafloor at several locations to be identified once the project is approved.

The potential adverse and beneficial effects to hardbottom habitat would be similar to those described for Alternative 3a. Alternative 3b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Mobile species may continue to be attracted to the vertical sections. The impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 3a.

3.4.1.7 Environmental Consequences – Alternative 4

The primary difference between Alternative 1 and Alternative 4 is that the severed tower components would be transported to an onshore salvage or disposal location. The impacts of alternatives 4a and 4b on hardbottom habitats would differ, but neither would be significant.

3.4.1.7.1 Sever at Bottom (4a)

Alternative 4a includes decommissioning the towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges, and transported to a land-based salvage or disposal site to be identified once the project is approved.

Under Alternative 4a, there would be a small loss of hardbottom habitat at each tower site because the tower structures would be removed between the water line and the mudline. This loss would be small but would reduce the amount of hardbottom analogous structure and attached fauna at each site. The loss of these habitats would be permanent.

3.4.1.7.2 Sever Below Warning Buoy Depth (4b)

Alternative 4b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges, and transported to a land-based salvage or disposal site to be identified once the project is approved.

The potential adverse and beneficial effects to hardbottom habitat would be similar to those described for Alternative 4a. Alternative 4b would leave some vertical sections of the towers at all tower locations, except Towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Mobile species may continue to be attracted to the vertical sections. The impacts would not be significant. There would be a smaller loss of hardbottom habitat under Alternative 4b because the sections below the safe navigation depth would remain intact, although some submerged segments would be removed.

3.4.1.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the status quo would be maintained, and the 14 ACMI towers would not be decommissioned. The 14 towers would remain in their current locations and, therefore, there would be no demolition, severance, or disposal actions. As such, the No Action Alternative would result in no change to the environment surrounding the towers, and no impacts on the hardbottom habitat near each tower would occur from its implementation. Therefore, the No Action Alternative would result in no adverse impact or benefit to hardbottom habitat in the project areas.

3.4.1.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

Other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) — including active oil and gas projects, new oil and gas leasing, ongoing oil spill restoration and remediation work, and existing or proposed artificial reef development — may have the potential to affect hardbottom habitat. However, given the very short duration of impacts associated with tower cutting/placement and likely geographical separation, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts to hardbottom habitats.

The increase in artificial hardbottom habitat in and around the existing tower locations may contribute to beneficial cumulative impacts to the available hardbottom habitat.

3.4.2 Plankton and Invertebrates

3.4.2.1 Definition of Resource

Plankton are organisms that float or drift and cannot swim or move against tides or ocean currents (Ambler and Butler, 2008). These free-floating organisms are sometimes called the drifters of the ocean, as they are generally at the mercy of their aquatic environment, moving in the direction of the prevailing current. There are many different types of plankton, including phytoplankton (plant-like single-celled organisms), such as diatoms and dinoflagellates, zooplankton (animals, like copepod crustaceans), bacterioplankton (cyanobacteria), and meroplankton (individual life stages of some organisms, like the eggs, and/or larvae and juvenile stages of certain fish species, referred to as ichthyoplankton) (DoN, 2007a; Ward, 2017a). Plankton can be grouped by size, with many organisms being very small or microscopic while others are multicellular, such as copepods and jellyfish (Ambler and Butler, 2008; Ward, 2017a). Hardbottom and reef-like structures tend to have higher densities of plankton nearby and can provide for colonization of a new substrate, which depends on the nature of the surrounding habitat and currents that provide the planktonic larvae necessary to colonize the structure.

Approximately 98 percent of the animals on earth are classified as invertebrates. The term invertebrates covers more than 30 phyla and includes arthropods and other benthic invertebrates, which populate the seafloor or artificial structures. Benthic invertebrates live either on the surface of bedforms, such as coral and rock, or within sedimentary deposits (infauna), and comprise several types of feeding groups (such as deposit-feeders, filter-feeders, grazers, and predators). The abundance, diversity, biomass, and species composition of benthic invertebrates can be used as indicators of changing environmental conditions. Of the benthic invertebrates, common phyla include *Annelida* (polychaetes or annelid worms and sea leeches), *Brachiopoda* (marine animals that have hard shells on the upper and lower surfaces), *Bryozoa* (moss animals or sea mats), *Chaetognatha* (commonly known as arrow worms), *Cnidaria* (jellyfish and sea anemones, but not corals), *Crustacea* (lobsters, crabs, shrimp, barnacles, hermit crabs, and copepods), *Ctenophora* (also known as comb jellies), and *Echinodermata* (sea stars, brittle stars, sea urchins, sand dollars, sea cucumbers, and crinoids).

3.4.2.2 Affected Environment

The affected environment includes the areas around each of the ACMI towers proposed for decommissioning. Although plankton communities were not directly surveyed or sampled in 2021, the information on the benthic and attached community, which are sources of many larval planktonic organisms, provides a robust indicator of the types and abundance of plankton in and around the towers. Surveys did assess the species present for invertebrate species on and around the towers **(Tables D-2** and **D-3, Appendix D)**.

The surveys documented that the towers act as artificial reefs with respect to marine life. They serve as surrogate natural hardbottom substrate such as exposed limestone or coarse exposed shell. Natural hardbottom substrate is not abundant within the study area of the northern or southern towers. Any structure placed in the marine environment would serve as a hardbottom surrogate, acting as a settlement site for planktonic larvae searching for a place to settle. A natural succession is involved in colonization of natural and artificial structures. Early colonizers consist of complex assemblages known as periphyton. In addition, crustose coralline algae can serve as a key early colonizer of hard substrates that may recruit or repel planktonic larvae. All the towers in both the north and south regions exhibited 100 percent cover of exposed surface by marine fauna and flora. There were no bare patches of metal, nor were there any areas of conspicuous rusting or flaking of deteriorating metal below the water line of all towers.

As noted previously in **Section 3.4.1**, the north and south towers are in different Level I Ecoregions (Northern Gulf of Mexico and South Florida/Bahamian Atlantic; Wilkinson et al., 2009) and the invertebrate and plankton-related communities observed vary accordingly. In addition, the northern tower bases are rock-filled barges, while the southern towers and Station 6/SM1 in the north region consist of a central pole supported by four accessory pilings. Therefore, the tower sets differ somewhat in the substrate and habitat complexity they provide for colonization; however, the basic structure of the fouling communities for both the northern and southern towers was the same, being dominated by encrusting and erect sponges (Porifera). Bivalves (molluscs) also formed an important element of the fouling community, although they were always covered with sponges, crustose coralline algae, and other epifauna. The sponge-dominated communities can be considered climax communities as the towers have been in place for decades —, five of the northern towers since the 1970s, and Station 6/SM1 in the north and all the southern towers since the 1990s.

The southern region (Stations 7-14) is heavily influenced by the subtropical climate, and the fauna observed on the surveyed towers was more diverse with what are considered more tropical species. Common fauna included Gorgoniidae (gorgonians a/k/a soft corals), Bivalvia (bivalve molluscs, inconspicuous and usually covered with sponge), occasional Nudibranchia (sea slugs), Hydrozoa (hydroids), occasional Zoantharia (small anemone-like clusters without a hard skeleton), Bryozoa (bryozoans), Tunicata (colonial tunicates), algae, and associated other fauna such as Crustacea (crabs and other small crustaceans), Echinodermata (sea stars, sea urchins and sea cucumbers) and reef dwelling and pelagic fishes (see **Section 3.4.3**). Sea urchins (Echinodermata) were common on the towers. Several echinoderms were sparsely distributed on the soft bottom sediments surrounding the towers, including sand dollars, sea biscuits, sea stars, and sea cucumbers. Perhaps the most abundant "larger" soft bottom infauna observed around the towers were the crustacean mantis shrimp (Stomatopoda), a burrow dwelling predator that emerges at night to hunt or ambush prey that wander past its burrow. The survey report (NAVFAC SE and AFCEC, 2022) provides greater detail on the variety and diversity at individual towers, but in general, every tower surveyed supported a diverse, climax undersea community similar to what would be expected at natural and artificial reefs in these ecoregions.

3.4.2.3 Environmental Consequences Evaluation Criteria

Adverse impacts for marine plankton and invertebrates occur if impacts from project-related activities may harm individual organisms, limit or reduce the availability of light (phytoplankton) or prey (zooplankton), or result in changes to survivability or population level effects. Because most plankton cannot direct their movement and many invertebrates are attached to substrate, impact avoidance is usually not possible for these organisms.

Where potential stressors vary in intensity, frequency, duration, and location within the project areas, those that are applicable to marine plankton and invertebrates are analyzed below:

- Behavioral disturbance;
- Physical disturbance and relocation; and
- Beneficial impacts from increased prey resources caused by the reef effect.

3.4.2.4 Environmental Consequences – Alternative 1

The impacts of alternatives 1a and 1b on plankton and invertebrates would differ, but neither would be significant.

3.4.2.4.1 Sever at Bottom (1a)

Proposed activities include decommissioning the towers by cutting at the mudline or at the barge structure. The sunken barge bases of the northern towers would be left in place. The severed sections would be placed on the seafloor at each tower location. Cutting the towers would directly adversely affect any invertebrates attached to the towers where cuts occur, and it is likely that some organisms would be killed, dislodged, and injured during this process. Underwater cutting of structures would create elevated noise levels from operation of power tools or cutting torches which could temporarily disturb invertebrates.

Indirect adverse effects of decommissioning would include changes in epifaunal communities resulting from relocation of tower segments as well as potential beneficial impacts from the increase in hard substrate from the sunken tower segments (see **Section 3.4.1**). Once the tower sections are laid on the ocean floor, sections that were located at shallow depths where light could penetrate and support photosynthesis may settle beyond the euphotic (lighted) zone. Some attached flora and fauna or infaunal species may be crushed during placement or may be relocated to a depth that is unsuitable because of changes in light penetration, pressure, currents, or other ambient conditions. The extent of these adverse impacts would vary among the tower locations, depending on the base depth and local turbidity conditions.

The survey results documented that all towers supported epifaunal communities on their bases; therefore, tower sections placed on the bottom at each site would be expected to become colonized by similar organisms. Species on previously colonized sections relocated from shallower depths may be replaced by deeper-adapted species once they are sunk, but it would be expected that all segments would develop epifaunal communities similar to that documented in the underwater surveys on and around the tower bases. The increase in available hard substrate would generally benefit colonizing invertebrates and the associated plankton communities.

Since the above-water sections of the towers would become submerged after decommissioning, the surveys sampled representative areas of the tower paint and surface coatings for contaminants, metals, and PCBs. Paint was collected from just above the water line at four of the northern tower structures. Analysis of paint from Station 1/N4 and Station 4/N5 revealed low levels of lead; the greatest concentration measured was 54 ppm. While paint was also collected from Station 5/N6, the amount of paint that was able to be collected was not enough for analysis of lead. USEPA does not consider the lead in paints used in vessels being utilized as artificial reefs as a significant environmental or human health hazard (GASMFC, 2004). Lead has low solubility in seawater and does not bioaccumulate in fish. While there may be some adverse effect on invertebrate marine organisms, it would apply only to those that graze directly on the painted surface. Once the surfaces are encrusted, which may take several months, the likelihood of an organism scraping a painted surface would be very low. The impacts would not be significant.

Federally Listed Species

The coral species (invertebrates) that are protected under the ESA and the potential for impacts to these species are described in **Section 3.4.5**. On 14 February 2024, NMFS listed the queen conch (*Aliger gigas*) as a threatened species under the ESA (NMFS, 2024). Critical habitat has not yet been designated for this species. Queen conch are not known to occur north of the Florida Keys in the Gulf of Mexico (Horn et al., 2022) and, therefore, are not expected to occur in the project areas. Their distribution in Florida is limited to two spatially distinct regions in the Florida Keys: nearshore in habitats immediately adjacent to the shoreline and offshore in habitats along the reef tract south of the islands (Horn et al. 2022). No queen conch were observed at any of the tower locations (NAVFAC SE and AFCEC, 2022). There are no other federally listed invertebrate species with the potential to occur in the project areas.

3.4.2.4.2 Sever Below Warning Buoy Depth (1b)

Alternative 1b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The tower sections would be placed on the seafloor at each existing tower location. The potential adverse and beneficial effects to plankton and invertebrates would be similar to those described for Alternative 1a. Alternative 1b would leave some vertical sections of the towers at all locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Mobile species may continue to be attracted to the vertical sections. The impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 1a.

3.4.2.5 Environmental Consequences - Alternative 2

The primary difference between Alternative 1 and Alternative 2 is that the severed tower components would be transported to existing artificial reef locations rather than deposited near their original tower base. Alternative 2 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). The impacts of alternatives 2a and 2b on plankton and invertebrates would differ, but neither would be significant.

3.4.2.5.1 Sever at Bottom (2a)

Under Alternative 2a, the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in potential habitat for invertebrates and plankton would occur at the established reef sites. Adding new areas to established artificial reefs may reduce the colonization time since there may be more individuals and potentially greater diversity of species at these established reef sites. However, because the reef sites have not been identified, the specific communities cannot be identified. Moving the sections with established attached fauna would disperse these species to the new sites. Again, whether this dispersal would introduce new species or add individuals of species present in the receiving communities cannot be specified.

3.4.2.5.2 Sever Below Warning Buoy Depth (2b)

The potential adverse and beneficial effects to invertebrates and plankton would be similar to those described for Alternative 2a. Alternative 2b would leave some vertical sections of the towers at all locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Mobile species may continue to be attracted to the vertical sections. The impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 2a.Environmental Consequences – Alternative 3

The primary difference between Alternative 1 and Alternative 3 is that the severed tower components would be transported to new artificial reef locations rather than deposited near their original tower base. Alternative 3 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). The impacts of alternatives 3a and 3b on plankton and invertebrates would differ, but neither would be significant.

3.4.2.5.3 Sever at Bottom (3a)

Under Alternative 3a, the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in habitat for invertebrates and plankton would occur at the new reef sites. Creating new areas of artificial reefs may increase the colonization time since there may be few individuals and potentially lower diversity of invertebrate and plankton species at these unestablished reef sites. Creating new sites may have other indirect effects on plankton and invertebrate species distribution and abundance, since these new sites may create patches of suitable habitat in areas that were previously unoccupied. However, because the reef sites have not been identified, the specific nearby communities that could serve as sources for colonization or how these new patches of habitat would affect the existing landscape cannot be specified. Moving the sections with established attached fauna would disperse these species to the new sites. Again, this dispersal would introduce new species or add individuals of species present in the receiving communities cannot be predicted.

3.4.2.5.4 Sever Below Warning Buoy Depth (3b)

The potential adverse and beneficial effects to invertebrates and plankton would be similar to those described for Alternative 3a. Alternative 3b would leave some vertical sections of the towers at all locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Mobile species may continue to be attracted to the vertical sections. The impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 3a.

3.4.2.6 Environmental Consequences – Alternative 4

The primary difference between Alternative 1 and Alternative 4 is that the severed tower components would be transported to an onshore salvage or disposal location. The impacts of alternatives 4a and 4b on plankton and invertebrates would differ, but neither would be significant.

3.4.2.6.1 Sever at Bottom (4a)

Under Alternative 4a, there would be a small loss of invertebrate and plankton habitat and any attached invertebrate individuals or colonies at each tower site because the tower structures would be removed between the water line and the mudline. This loss would be small, but would reduce the amount of available habitat for invertebrates and plankton at each site. The loss of these habitats would be permanent.

3.4.2.6.2 Sever Below Warning Buoy Depth (4b)

The potential adverse and beneficial effects to invertebrates and plankton resulting from the loss of hardbottom habitat and structure would be similar to those described for Alternative 4a. Alternative 4b would leave some vertical sections of the towers at all locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Mobile species may continue to be attracted to the vertical sections. The impacts would not be significant. There would be a smaller loss of suitable invertebrate and plankton habitat and loss of any attached invertebrate individuals or colonies under 4b because although some submerged segments would be removed, the sections below the safe navigation depth would remain intact.

3.4.2.7 Environmental Consequences – No Action Alternative

The potential effects on plankton and invertebrates would be similar to those described in **Section 3.4.1.8**. Under the No Action Alternative, the status quo would be maintained and the 14 ACMI towers would not be decommissioned. The 14 towers would remain in their current locations and, therefore, there would be no demolition, severance, or disposal actions. As such, the No Action Alternative would result in no change to the environment surrounding the towers, and current populations of plankton and invertebrates near each tower would persist. Therefore, the No Action Alternative would result in no measurable impacts to plankton or invertebrates in the project areas.

3.4.2.8 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The potential effects on plankton and invertebrates would be similar to those described in **Section 3.4.1.9** for hardbottom habitat. Other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) — including active oil and gas projects, new oil and gas leasing, ongoing oil spill restoration and remediation work, and existing or proposed artificial reef development — may have the potential to affect plankton or invertebrate resources. However, given the very short duration of impacts associated with tower cutting/placement, and likely geographical separation, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts to plankton and invertebrates. The increase in artificial hardbottom habitat in and around the existing tower locations under Alternative 1, and at existing or new artificial reef locations under Alternatives 2 and 3, may contribute to beneficial cumulative impacts to the available hardbottom habitat, which would benefit plankton and invertebrates.

3.4.3 Fishes

3.4.3.1 Definition of Resource

The WFS has the highest number of fish species (1,259) within the Gulf of Mexico. This diverse warm temperate and tropical ichthyofaunal community occupies all benthic and pelagic habitats. Species range from reef-dependent snappers *(Serranidae)* and groupers *(Lutjanidae)*, to highly migratory tuna *(Thunnini)* and billfish *(Xiphiidae and Istiophoridae)*, coastal pelagic menhaden *(Clupeidae)* and mackerel *(Scombridae)*, and coastal demersal drums *(Sciaenidae)* and jacks *(Carangidae)* (Ward, 2017b; Murawski et al., 2018). Matheson et al. (2017) reported that the various fish assemblages differ not only by region and depth, but also by time of day (day [lowest], night [highest], and crepuscular) within the northern regions (Panhandle and Big Bend) and the southern regions (Central, and Southwest) and by depth (inner shelf versus outer shelf).

The Gulf of Mexico also supports many important commercial fisheries as well as diverse marine habitats that support these and many more non-commercial (recreational) fish species and communities. For this assessment, the fish resources include all fish species likely to occur in the project areas at any life stage as well as commercial invertebrate species such as shrimp and spiny lobster (*Panulirus argus*) where Fishery Management Plans (FMPs) are in place in the Gulf of Mexico. Fisheries managed by the Gulf of Mexico Fishery Management Council (GMFMC)[1] and EFH associated with those fisheries are discussed in **Section 3.4.4**. The discussion of the affected environment focuses on the fish and other marine resources in and around the existing towers.

3.4.3.2 Affected Environment

The affected environment includes the areas around each of the ACMI towers proposed for decommissioning. As described in **Section 3.4.2**, the towers act as artificial reefs with respect to marine life. The submerged sections serve as surrogate natural hardbottom substrate similar to exposed limestone or coarse exposed shell. The survey report noted that there was total coverage of all surfaces by encrusting organisms. The species and composition at each tower were slightly different, but diverse and numerous fish were observed at all towers (NAVFAC SE and AFCEC, 2022).

Fishes were abundant at all the towers, consisting of both pelagic and resident reef species, many of which are protected or regulated species such as the conspicuous goliath grouper (*Epinephelus itajara*). The species observed during the 2021 underwater surveys are summarized in **Appendix D**, **Tables 3-1** and **3-2**. Pelagic predators were common, such as greater amberjack (*Seriola dumerili*), barracuda (*Sphyraena* sp.), and, at the northern towers, bull sharks (*Carcharhinus leucas*). The bull sharks encountered were generally not aggressive, but they seem to be conditioned to divers, likely spearfishing divers, and would rush in to investigate when the divers entered the water, afterwards loitering in the distance. Also common on most towers was the blue angelfish (*Holacanthus bermudensis*), which eat

[1] The Gulf of Mexico Fishery Management Council was renamed "Gulf Council" in April 2025.

sponges almost exclusively. The invasive species lionfish (*Pterois volitans*) was observed at four northern and one southern tower, and although common when present, it was not considered abundant within the fish communities. Another invasive fish species, the damselfish (*Stegastes* sp.), was observed at three northern and one southern tower.

Species of interest to GMFMC recorded during fish surveys included red snapper (*Lutjanus campechanus*) present at 7 sites; gray snapper (*Lutjanus griseus*) present at all 14 sites; yellowtail snapper (*Ocyurus chrysurus*) at 7 sites; lane snapper (*Lutjanus synagris*) at 7 sites; gag grouper (*Mycteroperca microlepis*) at 6 sites; black grouper (*Mycteroperca bonaci*) at 2 sites; scamp at 7 sites; goliath grouper at 12 sites; gray triggerfish (*Balistes capriscus*) at 1 site; hogfish (*Lachnolaimus maximus*) at 1 site; greater amberjack at 9 sites; Almaco jack (*Seriola rivoliana*) at 3 sites; and cobia (*Rachycentron canadum*) at 3 sites. At the northern towers, 10 species of reef fish managed by the GMFMC were observed, while at the southern towers, 11 reef fish species managed by the GMFMC and 1 species *(cobia)* from the Coastal Migratory Pelagic EFH were observed. The specific EFH considerations are described in **Section 3.4.4**.

As stated in **Section 3.4.1.2**, analysis of paint from Station 1/N4 and Station 4/N5 revealed low levels of lead, and USEPA does not consider the lead in paints used in vessels being utilized as artificial reefs as a significant environmental or human health hazard (GASMFC, 2004). Lead has low solubility in seawater and does not bioaccumulate in fish.

3.4.3.3 Environmental Consequences Evaluation Criteria

Adverse impacts for fish species occur if impacts from project-related activities may harm individual animals, limit or reduce prey availability, or result in changes to survivability or population-level effects.

Where potential stressors vary in intensity, frequency, duration, and location within the project areas, those that are applicable to fishes are analyzed below:

- Behavioral disturbance;
- Physical disturbance, harm, and strike (stress or injury); and
- Beneficial impacts from increased prey resources and shelter caused by the reef effect.

3.4.3.4 Environmental Consequences – Alternative 1

The impacts of alternatives 1a and 1b on fishes would differ, but neither would be significant.

3.4.3.4.1 Sever at Bottom (1a)

Proposed activities include decommissioning the towers by cutting at the mudline or at the barge structure. The severed tower sections would be placed on the seafloor at each tower's location. While operation of construction equipment and placement of tower debris on the seafloor pose a hypothetical risk of striking a fish, material would be placed slowly to minimize the risk of striking animals. Construction crews would also follow NMFS *Protected Species Construction Conditions* and cease construction when protected species are observed within 328 ft (100 m) of project activities. Work would not resume until the animal has left the area of its own volition.

Underwater cutting of structures would create elevated noise levels from operation of power tools or cutting torches. Based on source levels from Anthony et al. (2009), the highest source levels for cutting tools at 1 meter (3.28 feet) is 163 decibels root mean square. Using the NMFS multi-species calculator assuming a transmission loss constant of 15, this level could result in behavioral disturbance to fish (generalized species) at a distance of up to 7.3 meters (23.9 feet) under conservative assumptions because all towers are located in open water areas with primarily soft bottom substrate (NMFS, 2022a). Fish would be able to avoid or move away from the noise associated with severing the towers because the towers are located in open water habitat. Noise from cutting would be of short duration (up to 4 hours per day), after which any animals would be able to resume normal activity near the towers. Because the noise disturbances to fish would be of short duration, pose no risk of injury, and do not limit foraging opportunities based on the availability of nearby habitat, no adverse effects on fish are expected.

Indirect beneficial impacts from Alternative 1a may include an expansion of the available hardbottom and increased complex habitat in and around each tower site. Artificial reefs provide food, shelter from predation, and sites for orientation and reproduction (Bohnsack, 1991). Food resources include algae, invertebrates, and other fish that colonize artificial reefs; passing plankton; and organisms in surrounding accessible areas (Bohnsack, 1991). Some pelagic fishes are attracted to structures placed into the water within minutes or hours of placement. The physical structure itself seems to serve as a visual attractant, perhaps because the habitat heterogeneity creates shelter in otherwise consistent, sandy-bottom areas. Reef fishes may be somewhat slower to colonize artificial structures, as the habitat has to develop to a stage that provides food and shelter for the larval and juvenile stages; however, the mix of colonized and bare structure places the successional progression of the tower segments farther along than a completely bare artificial reef structure.

Reef fishes such as groupers, snappers, amberjacks, and triggerfish commonly aggregate around artificial habitats (DoN, 2007a). Other fishes such as grunts, porgies, and wrasses also seek out artificial reef habitats for shelter and food, especially the red grouper (*Epinephelus morio*), one of the most important commercial species off the west Florida coast, which congregates around physical structures in offshore areas. The process of artificial reef and shipwreck colonization and community building ultimately extends the potential range of some commercially and recreationally important fishes and invertebrates by providing more habitat area (DoN, 2007a).

Although artificial reefs are known to attract fish, disagreement remains as to whether artificial reefs result in production, where fishery biomass is increased because of artificial reefs, or if there is evidence of attraction only where the structures serve to concentrate fish locally (Svane and Petersen, 2001; Reubens et al., 2014). The degree of attraction or production may also be site-dependent, but it is well established that hard structures placed in an otherwise homogeneous habitat will develop diverse marine communities including plankton, invertebrates, and fishes similar to natural hardbottom areas in the region. The benefits of artificial reefs with respect to fisheries management may include a reduction of fishing pressure on and mitigation of lost natural hardbottom habitat; however, artificial reefs may create adverse impacts for overfished stocks (or stocks that are not limited by available hard bottom habitat), as remaining biomass is concentrated around artificial reefs where vulnerability to fishing is increased (GMFMC, 2016). Some invasive fish species may also benefit from the increase in available habitat. The invasive species lionfish was observed at four northern towers and one southern tower, although not in large numbers. Another invasive fish species, the damselfish was observed at three northern towers and one southern tower.

Removing the upper sections of the towers would also remove the structural attraction for fish near the ocean surface. The result may be fewer fish in and around areas that anglers currently frequent. The visible tower sections would be removed and would no longer mark these areas for anglers. However, the fish would still be likely to congregate in and around the sunken tower sections. Therefore, they would remain available to commercial and recreational anglers. Fishing pressure may be altered because of expected congregations of game fishes, but the lack of a surface structure may make the submerged sites less apparent.

The analysis of the paints and coatings suggests that the structures themselves would not pose any danger to fishes through inadvertent uptake or consumption of contaminants from the surfaces or from consumption of invertebrates or plankton that had consumed these materials (Appendix E in NAVFAC SE and AFCEC, 2022). The likelihood of accidental spills associated with decommissioning is low since the decommissioning process is expected to take no more than a few days at each site.

When considered collectively, the process of decommissioning the towers and the indirect effects that are likely to persist after the towers are sunk are unlikely to have measurable impacts to fish resources. Direct, and indirect adverse effects on fish species from implementation of Alternative 1a are unlikely to occur and would be insignificant. There may be some long-term, beneficial impacts to the fish communities through the increase in hard surface habitat and the expansion of the artificial reef habitat created by the tower segments placed on the ocean bottoms; however, these effects are not expected to be significant at a population level for any species.

Federally Listed Fish Species

The ESA of 1973 (16 U.S.C. § 1531 *et seq.*) established protection and conservation of threatened and endangered species and the ecosystems they depend on. The ESA requires all federal agencies to ensure that any action undertaken is not likely to jeopardize the continued existence of a federally listed threatened or endangered species or result in the destruction or adverse modification of habitat of such species. Section 7 of the ESA requires federal agencies to formally consult with NMFS for marine species if a proposed action has the potential to affect a listed species. Section 9 of the ESA prohibits the taking of any endangered species without special exemption.

NMFS determines the federal status of marine species. This status is used for all species protected under the ESA, including those proposed for listing. While candidate species have no legal protections, it is recommended that candidate species be addressed in the event the candidate species is proposed for listing during the consultation process, thus making consultation necessary. **Table 3-1** provides information on listed species that may be present on or near the ACMI towers and the status and presence of critical habitat.

Critical Habitat

The ESA also allows the designation of geographic areas as critical habitat for threatened or endangered species. Critical habitat includes areas occupied by a species at the time of listing that have the physical or biological features critical for the conservation of the species and that may require special management or protection. Critical habitat may also include areas outside a geographical area occupied by a species, but that has been determined to be essential for conservation. Critical habitat contains the physical or biological features or primary constituent elements that are essential to the conservation of the species and may require special management considerations or protections.

Table 3-1 Federally Listed Marine Fish and Invertebrate Species with the Potential to Occur Near the ACMI Towers

Common Name	Scientific Name	Federal Status	Critical Habitat in Eastern Gulf of Mexico
Fish			
Giant manta ray	*Mobula birostris*	T	No
Gulf sturgeon	*Acipenser oxyrinchus desotoi*	T	Yes – northern Gulf
Nassau grouper	*Epinephelus striatus*	T	No
Oceanic whitetip shark	*Carcharhinus longimanus*	T	No
Smalltooth sawfish	*Pristis pectinata*	E	Yes – southern Gulf

Notes:
Source: NOAA, 2022
E = endangered; T = threatened

None of the towers are located within designated critical habitat **(Figure 3-1)**. The northern ACMI towers are located about 10 miles south of designated critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*); while the southern ACMI towers are located about 10 miles north of designated critical habitat for two species, elkhorn and staghorn corals, and also proposed as critical habitat for the lobed star coral and mountainous star coral. The southern towers are also approximately 12 miles west of designated critical habitat for smalltooth sawfish (*Pristis pectinate*). The closest tower to Nassau grouper (*Epinephelus striatus*) critical habitat is Station 14, which is approximately 3.2 miles east of the critical habitat.

Because Alternative 1 has the potential to affect listed species, the DAF has determined that it "may affect, but is not likely to adversely affect," any ESA-listed fish species. Alternative 1a is anticipated to cause no harm to listed fish species in non-territorial waters. Furthermore, the Alternative 1a activities would not occur in any designated critical habitat for any species, and there is no mechanism by which the activities would affect critical habitat.

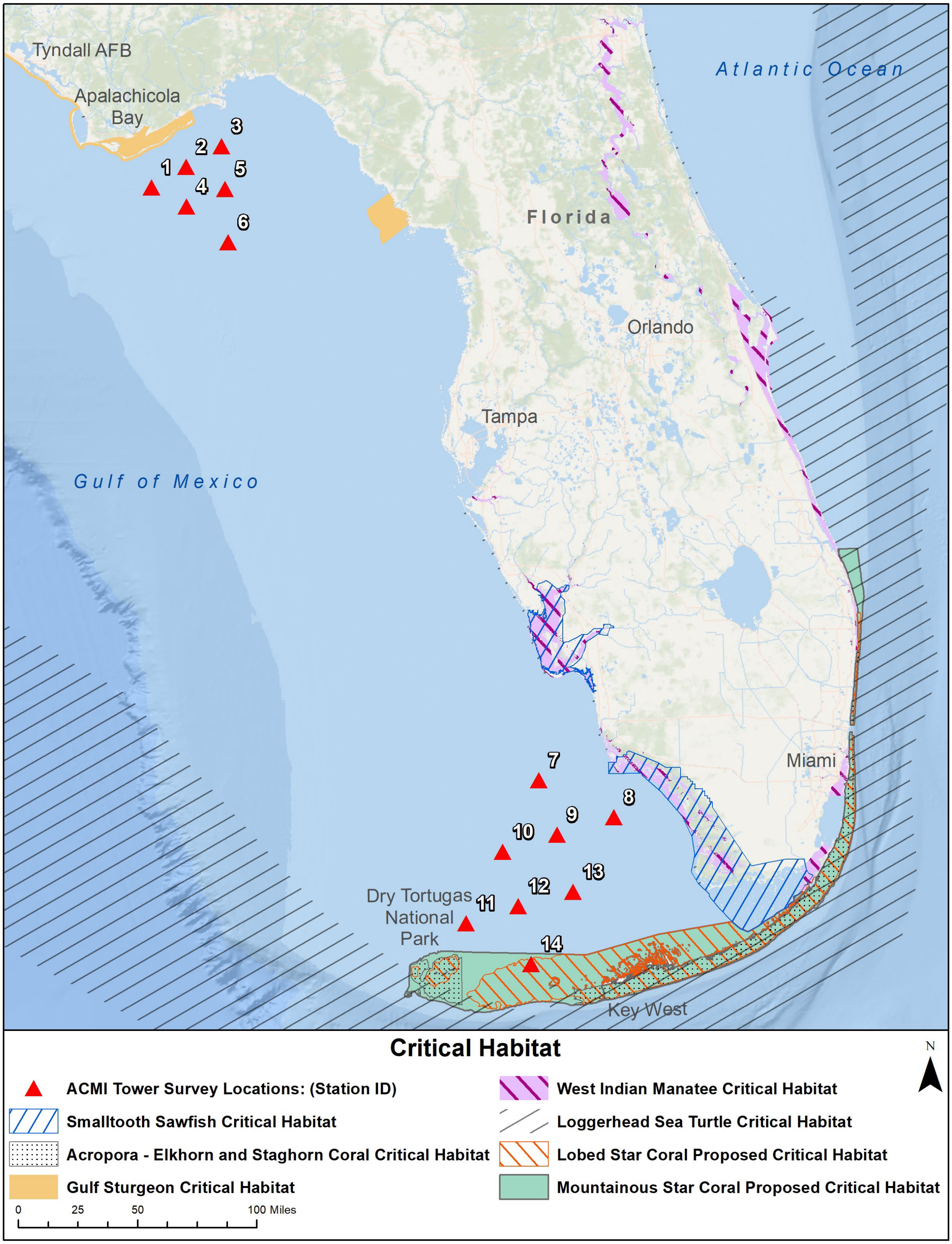

Figure 3-1 Designated Critical Habitat in the Vicinity of the ACMI Towers

3.4.3.4.2 Sever Below Warning Buoy Depth (1b)

Alternative 1b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed tower sections would be placed on the seafloor at each tower location. The potential effects to fishes would be similar to those described for Alternative 1a. Alternative 1b would leave some vertical sections of the towers at most tower locations, and these sections would function unchanged since their depth and location would not be altered. Mobile species, including fishes, may continue to be attracted to the vertical sections. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 1a.

3.4.3.5 Environmental Consequences – Alternative 2

The primary difference between Alternative 1 and Alternative 2 is that the severed tower components would be transported to existing artificial reef locations rather than deposited near their original tower base. Alternative 2 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). The impacts of alternatives 2a and 2b on fishes would differ, but neither would be significant.

Because Alternative 2 has the potential to affect listed species, the DAF has determined that it “may affect, but is not likely to adversely affect,” any ESA listed fish species. Alternative 2 is anticipated to cause no harm to listed fish species in non-territorial waters. Furthermore, the Alternative 2 activities would not occur in any designated critical habitat for any species, and there is no mechanism by which the activities would affect critical habitat.

3.4.3.5.1 Sever at Bottom (2a)

Under Alternative 2a, the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in potential habitat for fishes and their prey would occur at the established reef sites. Adding new areas to established artificial reefs may reduce the colonization time since there may be more individuals and potentially greater diversity of species at these established reef sites. However, because the reef sites have not been identified, the specific communities cannot be identified. Moving the sections with established attached fauna would disperse these species to the new sites and may attract fish to the new structure as a source of shelter and prey more quickly.

3.4.3.5.2 Sever Below Warning Buoy Depth (2b)

The potential adverse and beneficial effects to fishes would be similar to those described for Alternative 2a. Alternative 2b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Fish species may continue to be attracted to the vertical sections. These impacts would be long-term but not significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 2a.

3.4.3.6 Environmental Consequences – Alternative 3

The primary difference between Alternative 1 and Alternative 3 is that the severed tower components would be transported to new artificial reef locations rather than deposited near their original tower base. Alternative 3 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). The impacts of alternatives 3a and 3b on fishes would differ, but neither would be significant.

Because Alternative 3 has the potential to affect listed species, the DAF has determined that it “may affect, but is not likely to adversely affect,” any ESA listed fish species. Alternative 3 is anticipated to cause no harm to listed fish species in non-territorial waters. Furthermore, the Alternative 3 activities would not occur in any designated critical habitat for any species, and there is no mechanism by which the activities would affect critical habitat.

3.4.3.6.1 Sever at Bottom (3a)

Under Alternative 3a, the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in habitat for fishes and their prey would occur at the new reef sites. Creating new areas of artificial reefs may increase the colonization time since there may be few individuals and potentially lower diversity of potential prey species at these unestablished reef sites. Creating new sites may have other indirect effects on the distribution and abundance of fish species since these new sites may create patches of suitable habitat in areas that were previously unoccupied. However, because the reef sites have not been identified, the specific nearby communities that could serve as sources for colonization or how these new patches of habitat would affect the existing fish habitat landscape cannot be identified. Moving the sections with established attached fauna (prey) would disperse these species to the new sites. Again, whether this dispersal would introduce new species or add individuals of species present in the receiving communities cannot be predicted.

3.4.3.6.2 Sever Below Warning Buoy Depth (3b)

The potential adverse and beneficial effects to fishes and their prey would be similar to those described for Alternative 3a. Alternative 3b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Fish species may continue to be attracted to the remaining vertical sections. These impacts would be long-term. The impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 3a

3.4.3.7 Environmental Consequences – Alternative 4

The primary difference between Alternative 1 and Alternative 4 is that the severed tower components would be transported to an onshore salvage or disposal location. The impacts of alternatives 4a and 4b on fishes would differ, but neither would be significant.

Because Alternative 4 has the potential to affect listed species, the DAF has determined that it “may affect, but is not likely to adversely affect,” any ESA listed fish species. Alternative 4 is anticipated to cause no harm to listed fish species in non-territorial waters. Furthermore, the Alternative 4 activities would not occur in any designated critical habitat for any species, and there is no mechanism by which the activities would affect critical habitat.

3.4.3.7.1 Sever at Bottom (4a)

Under Alternative 4a, there would be a small loss of fish habitat at each tower site because the tower structures would be removed between the water line and the mudline. This loss would be small, but would reduce the amount of available habitat serving as shelter and prey resources at each site. Some fish may abandon these sites if suitable shelter is no longer available. The loss of these habitats would be permanent. However, there is available similar reeflike habitat near each existing tower site where fishes could disperse.

3.4.3.7.2 Sever Below Warning Buoy Depth (4b)

The potential adverse and beneficial effects to fishes resulting from the loss of submerged habitat structure and prey sources associated with these structures would be similar to those described for Alternative 4a. Alternative 4b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Fish species may continue to be attracted to the vertical sections. These impacts would be long-term. The impacts would not be significant. There would be a smaller loss of suitable fish habitat under 4b because, although some submerged segments would be removed, the sections below the safe navigation depth would remain intact.

3.4.3.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the status quo would be maintained and the 14 ACMI towers would not be decommissioned. The 14 towers would remain in their current locations and, therefore, there would be no demolition, severance, or disposal actions. As such, the No Action Alternative would result in no change to the environment surrounding the towers and no impacts on the fishes near each tower would occur from its implementation. Therefore, the No Action Alternative would result in no adverse impact or benefit to fishes or fishery resources in the project areas.

3.4.3.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

Other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) — including active oil and gas projects, new oil and gas leasing, ongoing oil spill restoration and remediation work, and existing or proposed artificial reef development — may have the potential to affect fish resources. As described in **Sections 3.4.3.4** and **3.4.3.5**, the potential for impacts to fish is extremely unlikely to occur or insignificant. Therefore, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts to fish.

The increase in artificial hardbottom habitat in and around the existing tower locations may contribute to beneficial cumulative impacts to the available hardbottom habitat, which would benefit fish. The in-place disposal of tower sections would alter the existing habitat, converting sandy bottom habitat to hardbottom habitat, and result in a reef effect that encourages colonization by assemblages of both sessile and mobile animals (Wilhelmsson et al., 2006; Bergström et al., 2014; Coates et al., 2014). Studies have shown that artificial structures could create increased habitat heterogeneity that is important for fish species diversity and density (Langhamer, 2012). This change in the habitat complexity and productivity would provide a long-term beneficial impact to some fish species by increasing prey species attracted to the proposed project infrastructure and providing complex structured habitat that is used as shelter for some species.

3.4.4 Essential Fish Habitat

3.4.4.1 Definition of Resource

EFH encompasses where fish species are and the resources they depend on at various life stages. It includes all types of aquatic habitat and, in practice, specifies where a certain fish species lives and reproduces. Congress established the EFH mandate in 1996 to improve the nation’s main fisheries law, the MSA, highlighting the importance of healthy habitat for commercial and recreational fisheries. EFH is applied to marine and anadromous fishes, and regional Fishery Management Councils develop FMPs that describe and identify EFH in text that clearly states the habitats or habitat types determined to be EFH for each life stage of the managed species. FMPs explain the physical, biological, and chemical characteristics of EFH and, if known, how these characteristics influence the use of EFH by the species by life stage. Finally, FMPs identify the specific geographic location or extent of habitats described as EFH. The GMFMC designates EFH using the FMP for each fishery. There are six FMPs with associated EFH in the project areas.

Coastal Migratory Pelagic FMP EFH. Coastal Migratory Pelagic EFH encompasses the water column, banks and shoals, and hardbottom within all Gulf of Mexico estuaries, waters, and substrates out to depths of 100 fathoms. It extends from the U.S./Mexico border to the boundary covered by the GMFMC and the South Atlantic Fishery Management Council (GASMFC, 2004). All the ACMI towers are within this FMP’s EFH. The species with FMPs within this EFH include adult king mackerel (*Scomberomorus cavalla*), adult and spawning adult Spanish mackerel (*S. maculatus*), and juvenile and adult cobia (*Rachycentron canadum*).

Coral FMP EFH. The corals currently in the GMFMC management units including black corals *(antipatharians)*, stony corals *(scleractinians)* soft corals *(alcyonaceans)*, stinging corals *(anthoathecatae)*, and octocorals *(alcyonaceans)* are managed by the State of Florida through a coral management unit that encompasses 142 species of stony and soft corals (GMFMC, 2016). In addition, seven species of coral that could occur in the project areas are protected under the ESA (see **Section 3.4.5**). Coral EFH includes areas in the Gulf of Mexico where various life stages of the coral commonly occur, extending from mean low water to the outer boundary of the exclusive economic zone (EEZ), habitats used by larvae, and coral and hard bottom substrates from mean low water to 100 fathoms depth (CFMC, 2004; GASMFC, 2004). The EFH for corals includes the total distribution of coral species and life stages throughout the Gulf of Mexico, including coral reefs in the North and South Tortugas Ecological Reserves, East and West Flower Garden Banks, McGrail Bank, and the southern portion of Pulley Ridge. Additionally, EFH includes hardbottom areas on the scattered pinnacles and banks from Texas to Mississippi, the shelf edge at the Florida Middle Grounds, the southwest tip of the Florida Reef Tract, and the hard bottom offshore of Florida from approximately the Crystal River south to the Florida Keys (GMFMC, 2004).

Stony corals are primarily located on hard substrate such as basalt, limestone, and authigenic carbonate[2]. Black corals are typically found on hard substrate, although some species are found on soft sediments. Four of the south ACMI towers, Stations 7, 11, 12, and 14, are within this FMP.

Red Drum FMP EFH. EFH for Red Drum encompasses the water column, submerged aquatic vegetation (SAV), soft bottom, sand/shell, and hardbottom within all Gulf of Mexico estuaries, waters, and substrates extending from Vermilion Bay, Louisiana, to Cape Sable, Florida, following the boundary covered by the GMFMC and the South Atlantic Fishery Management Council. Water depth for these fish ranges from 5 to 10 fathoms (GASMFC, 2004). In the nearshore and offshore environments, red drum juveniles use SAV, soft bottom, hard bottom, and sand/shell from September through December, while adults and spawning adults use SAV, soft and hard bottom, sand and shell, and the water column (GMFMC, 2016). Spawning typically occurs from mid-August through October. Station 14 lies within Red Drum EFH and Station 13 is relatively close. Based on the location within the fishery management unit EFH, adults and spawning red drum occur at these nearshore locations.

Reef Fish FMP EFH. EFH for reef fish includes the water column, SAV, reefs, sand/shell, banks/shoals, hard bottom, soft bottom, and shelf edge/slope within areas in the Gulf of Mexico where various species and life stages of reef fish commonly occur, extending from mean high water to the outer boundary of the EEZ and all substrates from mean high water to 100 fathoms depth (CFMC, 2004; GASMFC, 2004). All the ACMI towers are within this FMP.

Shrimp FMP EFH. EFH for shrimp encompasses the soft bottom, sand/shell, water column, SAV, oyster reefs, soft bottom, sand/shell, and reefs within all Gulf of Mexico estuaries, waters, and substrates with varying levels of depth. Gulf of Mexico waters and substrates extending from the U.S./Mexico border to Florida estuarine waters range up to depths of 100 fathoms, while waters near Pensacola Bay, Florida, reach depths between 100 and 325 fathoms (GASMFC, 2004). All the ACMI towers are within this FMP. There are four species of shrimp with FMPs within this FMP's EFH **(Appendix D)**.

Spiny Lobster FMP EFH. EFH for spiny lobster encompasses the water column, SAV, reefs, and hardbottom in the Gulf of Mexico where various life stages of the spiny lobster commonly occur, extending from mean high water to the outer boundary of the EEZ – habitats used by phyllosoma larvae – and seagrass, benthic algae, mangrove, coral, and live/hard bottom substrates from mean high water to 100 fathoms depth (CFMC, 2004; GASMFC, 2004). Three of the south ACMI towers, Stations 12, 13, and 14, are within this FMP's EFH. Spiny lobster habitat is in areas of high relief on the continental shelf and includes coral and artificial reefs, rocky hardbottoms, ledges, and caves, sloping soft bottoms, and limestone outcroppings. Reproductive adults are typically found on the eastward and westward reef and hard substrate fringes of the Florida Keys and southwest Florida Shelf.

Each FMP, except for the red drum FMP, covers several species. It should be noted that species that are part of the fishery within an FMP but not in the management unit have not been assigned EFH designations. NMFS manages the Highly Migratory Species EFH, which includes several species that occur in the project area; however, the GMFMC has not adopted an FMP for these species.

Highly Migratory Species EFH. Highly migratory species (HMS) travel long distances and often cross domestic and international boundaries. These pelagic species live in the water of the open ocean, although they may spend part of their life cycle in nearshore waters. HMS with EFH that intersect the project area include several sharks (eight large and three small coastal species) and Atlantic sailfish (*Istiophorus platypterus*). Some shark species use areas nearshore while others stay primarily offshore. The EFH for

[2] Authigenic carbonate occurs in the presence of oil reserves or large amounts of organic matter buried in marine sediment. Communities of microbes in the seabed feed on emitted gas-rich fluids that cause the formation of authigenic carbonate.

each species varies as does the life stage or stages (neonatal, juvenile, or adult) supported by the EFH. All the ACMI towers overlap one or more HMS EFH area.

These HMS are targeted by U.S. commercial and recreational fishermen and by foreign fishing fleets. Only a small fraction of the total harvest of these species is taken within U.S. waters because they migrate long distances and live primarily in the open ocean.

3.4.4.2 Affected Environment

The affected environment includes the areas around each of the ACMI towers proposed for decommissioning. As described in earlier sections that cover the hardbottom habitat and invertebrate resources, the towers act as artificial reefs with respect to marine life (see **Section 3.4.1** through **Section 3.4.3**). The species and composition at each tower were slightly different, but diverse and numerous fish were observed at all towers (NAVFAC SE and AFCEC, 2022).

Each tower is located in at least three EFHs and associated fishery management units (see **Figure 3-2**). **Appendix D** includes maps for each EFH area (NOAA, 2019a; NOAA, 2019b; NOAA, 2019c; NOAA, 2019d; NOAA, 2019e). The northern ACMI towers occur in three implemented FMPs, the Red Drum, Coastal Migratory Pelagic, and Shrimp, while the southern ACMI towers occur in six implemented FMPs, including the three listed for the northern towers, as well as the Reef Fish, the Coral, and the Spiny Lobster FMPs (NOAA, 2019a; NOAA, 2019b; NOAA, 2019c; NOAA, 2019d; NOAA, 2019e; NAVFAC SE and AFCEC, 2022).

3.4.4.3 Environmental Consequences Evaluation Criteria

Adverse impacts for EFH occur if impacts reduce the quality or quantity of EFH. These adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH (50 CFR § 600.810). Those impacts are described in the relevant sections. The rule further states that an adverse effect may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat and other ecosystems components, if such modifications reduce the quality or quantity of EFH. The EFH final rule also states that the loss of prey may have an adverse effect on EFH and managed species. As a result, actions that reduce the availability of prey species, either through direct harm or capture, or through adverse impacts to the prey species' habitat may also be considered adverse effects on EFH. Adverse effects to EFH may result from actions occurring within EFH or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Where potential stressors vary in intensity, frequency, duration, and location within the project areas, those that are applicable to EFH are analyzed below:

- Physical disturbance, destruction, or relocation
- Shifts in habitat structure and extent that may increase the total area of reef-like habitat

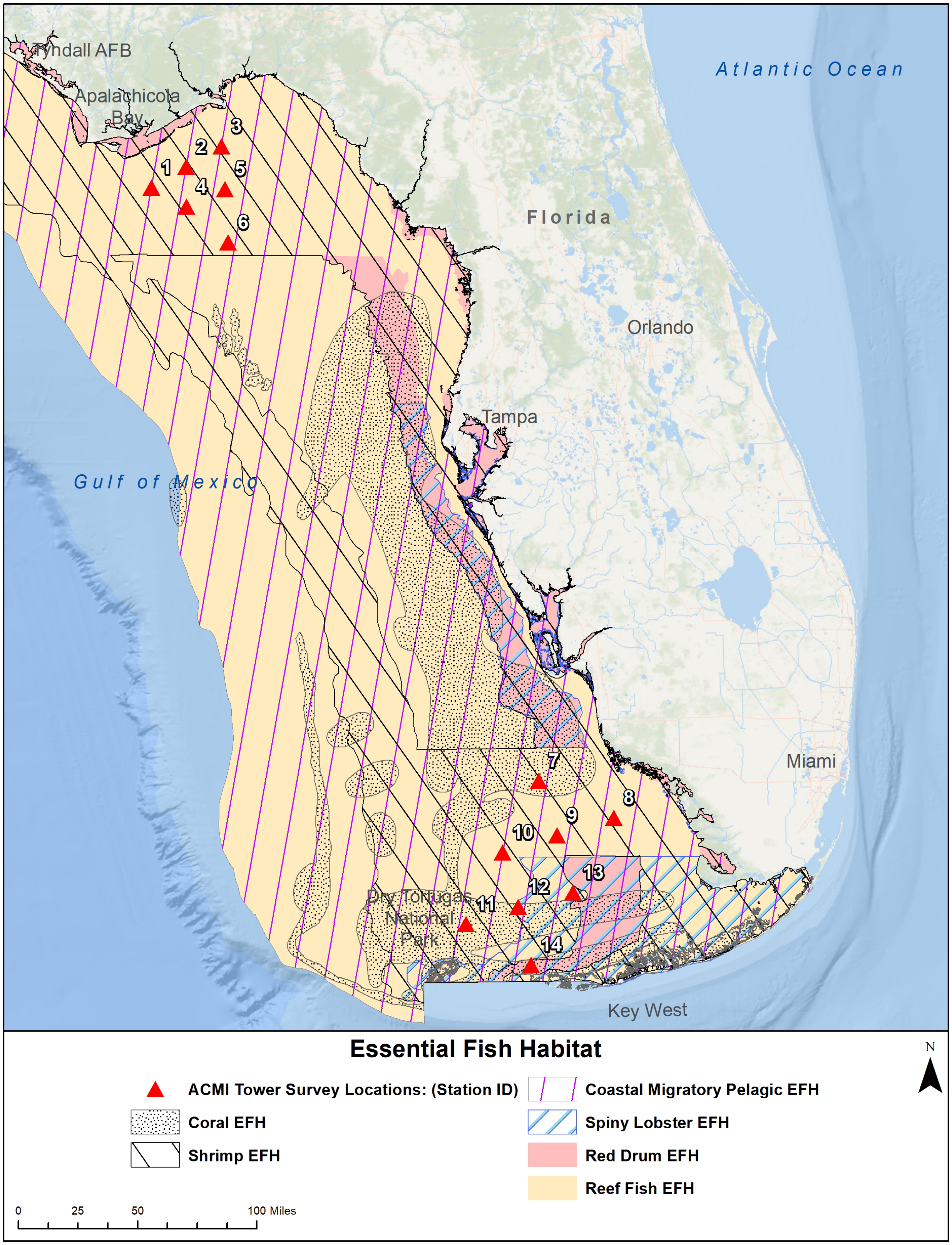

Figure 3-2 Essential Fish Habitat In and Around the 14 ACMI Towers

(Figure adapted from NAVFAC SE and AFCEC, 2022.)

3.4.4.4 Environmental Consequences – Alternative 1

The impacts of alternatives 1a and 1b on EFH would differ, but neither would be significant.

3.4.4.4.1 Sever at Bottom (1a)

The potential impacts of Alternative 1a on fishes are described in **Section 3.4.3**. This section focuses on the potential for the alternative to affect EFH in and around the towers. Since artificial structures, including structures developed for the express intent of augmenting hardbottom habitat, are not used as part of any FMP by the GMFMC, they are also not considered part of EFH (GMFMC, 2013; GMFMC, 2016). Therefore, adding artificial structures to the habitat available at each tower site would not affect the content or management attributes of any of the EFH areas; however, placement of additional hardbottom habitat surrogate is likely to have localized, long-term beneficial impacts to the fishes and epibenthic communities around these structures (DoN, 2007a). These impacts may attract anglers and commercial fishers to the decommissioned tower sites and increase fishing pressure near these sites. However, anglers without local area knowledge may have more difficulty locating the sunken towers once the above-water sections are removed. The GMFMC reviews the status of EFH including changes in gear, pressure, and species abundance in its 5-year reviews.

None of the towers are located in close proximity to any designated Habitat Areas of Particular Concern (HAPCs) for corals. No coral reefs were discovered during the benthic surveys (NAVFAC SE and AFCEC, 2022). The northern towers had primarily soft corals, with only one species of stony coral (knobby star coral [*Solenastrea hyades*]) observed on one tower (Station 3/N7). Soft and stony corals were found on most towers in the southern region (NAVFAC SE and AFCEC, 2022).

Given the number of similar artificial structures located throughout the project areas and across the EFH that intersect one or more tower sites, the small change in available reef-like habitat is unlikely to have any measurable effect on the quality or quantity of EFH covered by the FMPs. However, the Proposed Action is likely to have adverse direct impacts on individual fish or epifauna that serve as prey within EFH. These effects would be short term and localized, and more mobile species would be likely to be able to avoid them. The impacts would not be significant. Indirect effects due to the small increases in reef-like habitat structure from the Proposed Action would be beneficial. The beneficial impacts would also be localized to the tower sites and would affect prey species by providing expanded shelter areas, food resources, and reproductive life support.

3.4.4.4.2 Sever Below Warning Buoy Depth (1b)

Alternative 1b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation, and tower sections would be placed on the seafloor. The potential effects to fishes would be similar to those described for Alternative 1a. Alternative 1b would leave some vertical sections of the towers at most tower locations, and these sections would function unchanged since their depth and location would not be altered. Mobile species, including fishes, may continue to be attracted to the vertical sections. All other effects described for Alternative 1b would be the same as described for Alternative 1a.

3.4.4.5 Environmental Consequences – Alternative 2

The primary difference between Alternative 1 and Alternative 2 is that the severed tower components would be transported to existing artificial reef locations rather than deposited near their original tower base. However, since GMFMC does not use artificial structures, including structures developed for the express intent of augmenting hardbottom habitat, as part of any FMP, they are also not considered part of EFH (GMFMC, 2013; GMFMC, 2016). Therefore, adding artificial structures to the habitat available at an artificial reef site would not affect the content or management attributes of any of the EFH areas. The impacts of alternatives 2a and 2b on EFH would differ, but neither would be significant.

Alternative 2 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022).

3.4.4.5.1 Sever at Bottom (2a)

Under Alternative 2a, the potential impacts to EFH would be similar to those described for Alternative 1a. This alternative would remove and relocate most of the artificial structure created by each tower. As described for the Proposed Action, placement of additional hardbottom habitat surrogate is likely to have localized, long-term beneficial impacts to the fishes and epibenthic communities around each existing artificial reef where they are relocated (DoN, 2007a). However, these would not be considered as direct effects to EFH for the reasons described above. The total amount of hard bottom surrogate structure added would be greater under Alternative 2a than under 2b because more of each tower would be removed and relocated. Because the relocated tower segments would be distributed at multiple sites where there are existing reef-like structures, it is difficult to assess the relative benefits or adverse impacts to each receiving site because they are likely to differ in the current reef community, habitat quality, and water depth. These relocations, if deposited in or near EFH, could have minor indirect beneficial effects on factors contributing to EFH.

3.4.4.5.2 Sever Below Warning Buoy Depth (2b)

The potential adverse and beneficial effects to EFH would be similar to those described for Alternative 1b. The main difference between 2a and 2b is that a portion of each tower would remain and continue to serve as hard bottom surrogate as described under Alternative 1b. The relocated segments would be slightly shorter, but would be distributed across multiple existing artificial reef sites as described for Alternative 2a. All other effects described for Alternative 2b would be the same as described for Alternative 2a.

3.4.4.6 Environmental Consequences – Alternative 3

The primary difference between Alternative 1 and Alternative 3 is that the severed tower components would be transported to new artificial reef locations rather than deposited near their original tower base. However, since GMFMC does not use artificial structures, including structures developed for the express intent of augmenting hardbottom habitat, as part of any FMP, they are also not considered part of EFH (GMFMC, 2013; GMFMC, 2016). Therefore, adding artificial structures to create habitat available at a new artificial reef site would not affect the content or management attributes of any of the EFH areas. The impacts of alternatives 3a and 3b on EFH would differ, but neither would be significant.

Alternative 3 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022).

3.4.4.6.1 Sever at Bottom (3a)

Under Alternative 3a, the potential impacts to EFH would be similar to those described for Alternative 1a. This alternative would remove and relocate most of the artificial structure created by each tower. As described for the Proposed Action, placement of new hardbottom habitat surrogate is likely to have localized, long-term beneficial impacts to the fishes and epibenthic communities that could become established around each site where they are relocated (DoN, 2007a). However, these would not be considered as direct effects to EFH for the reasons described above. The total amount of new hard bottom surrogate structure created would be greater under Alternative 3a than under 3b because more of each tower would be removed and relocated. Because the relocated tower segments would be distributed at multiple sites to establish new reef-like structures, it is difficult to assess the relative benefits or adverse impacts to each receiving site because they are likely to differ in the amount of time it will take to establish a reef community, and the type of community will vary depending on the characteristics at each new site (e.g., distance to source communities, water depth, water quality). These relocations, if deposited in or near EFH, could have minor beneficial indirect effects on factors contributing to EFH.

3.4.4.6.2 Sever Below Warning Buoy Depth (3b)

The potential adverse and beneficial effects to EFH would be similar to those described for Alternative 1b. The main difference between 3a and 3b is that a portion of each tower would remain and continue to serve as hard bottom surrogate as described under Alternative 1b. The relocated segments would be slightly shorter, but would be distributed across multiple sites as described for Alternative 3a. All other effects described for Alternative 3b would be the same as described for Alternative 3a.

3.4.4.7 Environmental Consequences – Alternative 4

The primary difference between Alternative 1 and Alternative 4 is that the severed tower components would be transported to an onshore salvage or disposal location. Therefore, this alternative would remove some artificial structures from the ocean habitats, but would not affect EFH. Removal of reef-like structure would cause resident fishes to relocate to other sites, and the attached fauna on each tower would be lost. The impacts of Alternative 4 on EFH would not be significant.

3.4.4.7.1 Sever at Bottom (4a)

Under Alternative 4a, the potential impacts to EFH would be similar to those described for Alternative 1a. Alternative 4a would permanently remove existing hard bottom surrogate habitat from each site and reduce the available structure, shelter, and food resources for fish and other aquatic organisms. However, because artificial reefs are not considered EFH, these changes would not directly affect EFH. These removals, if located in or near EFH, could have minor adverse indirect effects on factors contributing to EFH.

3.4.4.7.2 Sever Below Warning Buoy Depth (4b)

Under Alternative 4a, the potential impacts to EFH would be similar to those described for Alternative 1b. Alternative 4b would permanently remove existing hard bottom surrogate habitat above the warning buoy depth from each site and reduce the available structure, shelter, and food resources for fish and other aquatic organisms. Some amount of structure would remain at each tower site, and these areas would continue to function as hard bottom surrogate, but the total area of reef-like habitat would be reduced. However, because artificial reefs are not considered EFH, these changes would not directly affect EFH. Similar to Alternative 4a, these removals, if located in or near EFH, could have minor adverse indirect effects on factors contributing to EFH.

3.4.4.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the status quo would be maintained and the 14 ACMI towers would not be decommissioned. The 14 towers would remain in their current locations and, therefore, there would be no demolition, severance, or disposal actions. As such, the No Action Alternative would result in no change to the environment surrounding the towers, and no impacts on the EFH near each tower would occur from its implementation. Therefore, the No Action Alternative would result in no significant harm or benefit to EFH in the project areas.

3.4.4.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

Other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) — including active oil and gas projects, new oil and gas leasing, ongoing oil spill restoration and remediation work, and existing or proposed artificial reef development — may have the potential to affect EFH. However, given the very short duration of impacts associated with tower cutting/placement and likely geographical separation, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts to EFH.

3.4.5 Coral Communities

3.4.5.1 Definition of Resource

Corals are colonial marine invertebrates with a circumglobal distribution from tropical to cool temperate oceanic waters. The GMFMC, in coordination with the State of Florida, define corals as species of the Classes Hydrozoa and Anthozoa, including soft corals, octocorallaria (sea fans), black corals *(*antipatharians*)*, and stony corals *(*scleractinians*)*. The Gulf of Mexico contains contains both coral reef communities and solitary coral colonies. They exist from nearshore environments to continental slopes and canyons, including intermediate shelf zones. Corals may dominate a habitat (coral reefs), be a significant component (hardbottom), or be individuals within a community characterized by other fauna (solitary corals) (Hine et al., 2008; Walker et al., 2020). Within the Gulf of Mexico, the shallow-water reef communities occupy roughly 1,019 square miles, with the largest distribution concentrated on the WFS (BOEM, 2021a).

Geologically and ecologically, the range of coral assemblages and habitat types in the Gulf is diverse. The coral reefs of shallow, warm waters are typically built upon coralline rock and support a wide array of hermatypic and ahermatypic corals, finfish, invertebrates, algae, plants, and microorganisms. Hard bottoms and hard banks, found on a wider bathymetric and geographic scale, often exhibit high species diversity but may lack hermatypic corals, the supporting coralline structure, or some of the associated biota. In deeper waters, large elongate mounds called deep-water banks, hundreds of feet in length, often support a rich fauna compared with adjacent areas. Lastly are communities including solitary corals; this category often lacks a topographic relief as its substrate but may use a sandy bottom instead. Solitary coral colonies are a minor component of the bottom communities and comprise a minor percentage of the total coral stocks in the Gulf of Mexico but are far more common than reef communities (GMFMC, 2004; Etnoyer, 2009). Coral EFH includes areas in the Gulf of Mexico where various life stages of the coral commonly occur, extending from mean low water to the outer boundary of the EEZ, habitats used by larvae, and coral and hardbottom substrates from mean low water to 100 fathoms depth (CFMC, 2004; GASMFC, 2004).

3.4.5.2 Affected Environment

All towers are in the Gulf of Mexico on the WFS, within the shallowest depth zone known as the inner shelf. The inner shelf substrate is predominantly sandy but includes widely distributed areas of hard substrate that are either covered or interspersed with a thin covering of coarse sand (DoN, 2007a). Sand covering typically ranges from 20 to 24 inches or less. Sessile epibiota such as corals, gorgonians (soft corals) and sponges *(*Porifera*)* are almost exclusively attached at locations with exposed hardbottom or with a 4 inch or less covering of sand. More information on the WFS was provided in **Section 3.4.1.1**.

Threatened Corals

Seven species of coral that could occur in the project areas **(Table 3-2)** are protected under the ESA, which requires that the DAF, in consultation with NMFS, ensure that the Proposed Action is not likely to jeopardize the continued existence of any endangered or threatened species or result in the modification of a critical habitat (16 U.S.C. 1536 [a][2]). Regulations implementing the ESA expand the consultation requirement to include those actions that “may affect” a listed species or adversely modify critical habitat. If an agency’s proposed action would “take” a listed species, then the agency must obtain an Incidental Take Statement from the responsible regulatory agency. The project areas do not overlap with any designated or proposed critical habitat for any listed coral species, and no listed corals were observed at any tower locations during benthic surveys (NAVFAC SE and AFCEC, 2022).

Table 3-2 ESA-Listed Coral Species that Could Occur in the Project Area

Common Name	Scientific Name	ESA Status	Listing	Critical Habitat
Boulder star coral	*Orbicella franksi*	T	79 FR 53851	No
Elkhorn coral	*Acropora palmata*	T	71 FR 26852	Yes, near the Gulf
Lobed star coral	*Orbicella annularis*	T	79 FR 53851	Proposed, near southern towers
Mountainous star coral	*Orbicella faveolata*	T	79 FR 53851	Proposed, near the southern towers
Pillar coral	*Dendrogyra cylindrus*	T	79 FR 53851	No
Rough cactus coral	*Mycetophyllia ferox*	T	79 FR 53851	No
Staghorn coral	*Acropora cervicornis*	T	71 FR 26852	Yes, near southern towers

Notes:
ESA = Endangered Species Act; FR = Federal Register; T = threatened

Essential Fish Habitat for Corals

See **Section 3.4.4.1** for a description of the Coral EFH.

3.4.5.3 Environmental Consequences Evaluation Criteria

Adverse impacts for corals occur if impacts from project-related activities may harm individual organisms physically attached to the habitat; alter, increase, or destroy habitat components; or result in changes to existing habitat that contribute to population-level effects. Because hardbottom habitat associated with the towers can provide suitable attachment locations for larval corals and subsequently support growth and reproduction, the destruction, removal, or addition of hardbottom habitat can impact corals. Those impacts are described in the relevant sections.

Where potential stressors vary in intensity, frequency, duration, and location within the project area, those that are applicable to hardbottom habitat are analyzed below:

- Physical disturbance, destruction, or relocation; and
- Beneficial impacts from increased hardbottom substrate surrogates caused by the reef effect.

3.4.5.4 Environmental Consequences – Alternative 1

The impacts of alternatives 1a and 1b on coral communities would differ, but neither would be significant.

3.4.5.4.1 Sever at Bottom (1a)

Proposed Alternative 1a includes decommissioning the towers by cutting at the mudline or at the barge structure. The severed towers would be cut into sections and placed on the seafloor at each tower location. The above-water sections for northern Stations 1 through 5 measure approximately 100 feet; Station 6/SM1 extends approximately 284 feet above the water. The above-water sections for the southern towers vary from 125 to 144 feet. Because the submerged portion of each tower also varies with base depth, the increase in surface area of hardbottom habitat created would vary at each tower, depending on the total length of structure removed including above- and below-water sections **(Table D-1, Appendix D)**. The DAF has not specified a segment length; therefore, the number and arrangement of sections is also likely to vary from tower site to tower site; however, the impacts of cutting and placing these sections on the ocean bottom can be generalized based on whether they were originally below water (previously colonized) or above water (uncolonized).

Cutting the below-water (previously colonized) sections of the towers would directly adversely affect any corals attached to the towers where cuts occur, and it is likely that some organisms would be killed and injured during this process. During placement, additional organisms may be killed or injured during rigging, and any organisms on the underside of the structure would likely be killed during placement on the seafloor. Once the tower sections are laid on the ocean floor, sections that were located at shallow depths where light could penetrate and support photosynthesis may be placed in areas with reduced light. However, the depths for all towers ranged from 20 to 130 feet and with the placement of sections at the tower locations, it is expected that all placed materials would remain within the photic zone as indicated by the presence of algae at the tower bases.

Indirect adverse effects of decommissioning would include changes in epifaunal communities resulting from relocation of tower segments as well as potential beneficial impacts from the increase in hard substrate from the sunken tower segments. Previously colonized segments would be moved from their current depths to a more uniform depth on the ocean bottom. Some attached corals may be adversely affected because they would be relocated to a depth that is unsuitable resulting from changes in light penetration, pressure, currents, or other ambient conditions. Reduced light conditions could reduce the productivity of symbiotic zooxanthellae, reducing survival and reproductive success for species that depend on this symbiosis. However, many of the corals would persist, and once decommissioning is completed, epifaunal communities on previously colonized segments would adjust to the changes in location; some species may be replaced, while other species may proliferate.

The above-water tower sections would create new hardbottom substrate and would be colonized initially by periphyton, a complex phototropic, multispecies biofilm that grows on surfaces in aquatic environments (see **Section 3.4.2**). Corals are typically slow to colonize new habitats, and artificial reef structures tend to be dominated by other fouling organisms. Solitary corals would likely colonize newly created hardbottom substrate over a period of years as the communities mature. The overall benefit from, and potential for coral to dominate artificial reef structures depends on orientation and structural complexity (Perkol-Finkel et al., 2006), and thus would depend on the final orientation of the placed structures. Regardless of the structure orientation, some benefit to corals is anticipated from Alternative 1a.

The DAF would implement the following protective measures at Station 3/N7 to minimize potential adverse impacts to corals and live bottom communities:

- Avoidance of anchoring within the anchor watch circle diameter of surveyed shallow coral reefs, live hardbottom, artificial reefs, and shipwrecks
- Placement footprint of the tower sections would be minimized to reduce the potential for contact with coral, coral reefs, and live/hardbottom EFH and HAPC communities
- Work vessels would be prohibited from anchoring or spudding over coral, coral reefs, and live/hardbottom EFH and HAPC communities

The deconstruction of the towers is likely to result in short-term, adverse impacts to corals through destruction of small numbers of colonies or individuals; however, the number of impacted corals is expected to have a non-measurable impact on regional coral populations and would have adverse impact to all affected species. The impacts would not be significant. Additionally, the project is likely to create long- term beneficial impacts for corals through additional hardbottom substrate suitable for coral attachment.

3.4.5.4.2 Sever Below Warning Buoy Depth (1b)

The potential effects to corals would be similar to those described for Alternative 1a. Alternative 1b would leave some vertical sections of the towers at most tower locations, and these sections would function unchanged since their depth and location would not be altered. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 1a.

3.4.5.5 Environmental Consequences – Alternative 2

The primary difference between Alternative 1 and Alternative 2 is that the severed tower components would be transported to existing artificial reef locations rather than deposited near their original tower base. Alternative 2 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). The impacts of alternatives 2a and 2b on coral communities would differ, but neither would be significant.

3.4.5.5.1 Sever at Bottom (2a)

Under Alternative 2a, the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in potential habitat for corals would occur at the established reef sites. Adding new areas to established artificial reefs may reduce the colonization time since there may be more individuals and potentially greater diversity of species at these established reef sites. However, because the reef sites have not been identified, the specific communities cannot be identified. Moving the sections with established attached fauna would disperse these species to the new sites. Again, whether this dispersal would introduce new species or add individuals of species present in the receiving communities cannot be predicted.

3.4.5.5.2 Sever Below Warning Buoy Depth (2b)

The potential adverse and beneficial effects to corals would be similar to those described for Alternative 2a. Alternative 2b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. These impacts would be long-term. The impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 2a.

3.4.5.6 Environmental Consequences – Alternative 3

The primary difference between Alternative 1 and Alternative 3 is that the severed tower components would be transported to new artificial reef locations rather than deposited near their original tower base. Alternative 3 cannot be chosen for Station 11 because it cannot be relocated due to the presence of orange cup coral, an invasive coral species, found during the dive surveys (NAVFAC SE and AFCEC, 2022). The impacts of alternatives 3a and 3b on coral communities would differ, but neither would be significant.

3.4.5.6.1 Sever at Bottom (3a)

Under Alternative 3a, the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in coral habitat for colonization would occur at the new reef sites. Creating new areas of artificial reefs may increase the colonization time since there may be few individuals and potentially lower diversity of coral species at these unestablished reef sites unless there is suitable hardbottom habitat nearby. Creating new sites may have other indirect effects on the distribution and abundance of coral species since these new sites may create patches of suitable habitat in areas that were previously unoccupied. However, because the reef sites have not been identified, the specific nearby communities that could serve as sources for colonization or how these new patches of habitat would affect the existing landscape cannot be identified. Moving the sections with established attached fauna would disperse these species to the new sites. Again, whether this dispersal would introduce new species or add individuals of species present in the receiving communities cannot be predicted.

3.4.5.6.2 Sever Below Warning Buoy Depth (3b)

The potential adverse and beneficial effects to corals would be similar to those described for Alternative 3a. Alternative 3b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. These impacts would be long-term. The impacts would not be significant. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 3a.

3.4.5.7 Environmental Consequences – Alternative 4

The primary difference between Alternative 1 and Alternative 4 is that the severed tower components would be transported to an onshore salvage or disposal location. The impacts of alternatives 4a and 4b on coral communities would differ, but neither would be significant.

3.4.5.7.1 Sever at Bottom (4a)

Under Alternative 4a, there would be a small loss of coral habitat and attached colonies at each tower site because the tower structures would be removed between the water line and the mudline. This loss would be small, but would reduce the amount of available habitat for corals at each site. The loss of these habitats would be permanent.

3.4.5.7.2 Sever Below Warning Buoy Depth (4b)

The potential adverse and beneficial effects to corals caused by the loss of hardbottom habitat and structure would be similar to those described for Alternative 4a. Alternative 4b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. These impacts would be long-term. The impacts would not be significant. There would be a smaller loss of suitable coral habitat under Alternative 4b because, although some submerged segments would be removed, the sections below the safe navigation depth would remain intact

3.4.5.8 Environmental Consequences – No Action Alternative

The potential effects on coral communities would be similar to those described in **Section 3.4.1.8**. Under the No Action Alternative, the status quo would be maintained and the 14 ACMI towers would not be decommissioned. The 14 towers would remain in their current locations and, therefore, there would be no demolition, severance, or disposal actions. As such, the No Action Alternative would result in no change to the environment surrounding the towers, and the corals on each tower would be likely to persist. Therefore, the No Action Alternative would result in no significant harm or benefit to corals in the project areas.

3.4.5.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The potential effects on coral communities would be similar to those described in **Section 3.4.1.9**. Other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) — including active oil and gas projects, new oil and gas leasing, ongoing oil spill restoration and remediation work, and existing or proposed artificial reef development — may have the potential to affect corals. However, given the very short duration of impacts associated with tower cutting/placement and likely geographical separation, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts to coral communities.

The increase in artificial hardbottom habitat in and around the existing tower locations may contribute to beneficial cumulative impacts to corals through increased available hardbottom habitat.

3.4.6 Marine Mammals

3.4.6.1 Definition of Resource

More than 120 species of marine mammals occur worldwide (Rice, 1998). The term “marine mammal” is purely descriptive, referring to mammals that carry out all or a substantial part of their foraging in marine or, in some cases, freshwater environments. Marine mammals as a group are composed of various species from three orders (Cetacea, Carnivora, and Sirenia). The vast majority of the 29 marine mammal species occurring in the Gulf of Mexico are cetaceans (whales and dolphins). Cetaceans are divided into two major suborders: Mysticeti and Odontoceti (baleen and toothed whales, respectively). Toothed whales use teeth to capture prey, while baleen whales use baleen plates to filter their food from the water. In addition to contrasts in feeding methods, there are differences in life history and social organization (Tyack, 1986). The West Indian manatee (*Trichechus manatus*) is the only sirenian species occurring in the Gulf of Mexico. Marine mammal habitats in the Gulf of Mexico range from deep ocean canyons to shallow estuarine waters. Marine mammal distribution is affected by demographic, evolutionary, ecological, habitat-related, and anthropogenic factors (Bjørge, 2002; Bowen et al., 2002; Forcada, 2002; Stevick et al., 2002).

All marine mammals are protected under the MMPA (Public Law 92-522) which provides for the conservation and management of marine mammals and their habitats. The MMPA established, with limited exceptions, a complete moratorium on the taking of marine mammals in waters or on lands under U.S. jurisdiction. This broad prohibition applies to all marine mammals, not just those deemed threatened or endangered under the ESA. The term “take” is defined in the MMPA as to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. Although the MMPA establishes a moratorium on the taking of marine mammals by any person in U.S. waters and by U.S. citizens in international waters, certain activities are exempt from the moratorium, as outlined in Sections 101 and 104 of the act. The category potentially pertinent to the Proposed Action is that of incidental take during non-fishery activities (Section 101[a][5][A][ii]). Authorization from NMFS is required to participate in such a designated activity. The National Defense Authorization Act of 2004 amended Section 101(a)(5)(A) of the MMPA by removing the small numbers and specified geographic region provisions; revising the definition of harassment as it applies to a military readiness activity; and explicitly requiring that the determination of ‘‘least practicable adverse impact’’ include consideration of (1) personnel safety; (2) the practicality of implementation; and (3) the impact on the effectiveness of the military readiness activity. The National Defense Authorization Act’s definition of harassment as it applies to a military readiness activity is (i) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild (Level A Harassment) or (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered (Level B Harassment).

Brief descriptions of the marine mammal species most likely to occur in the vicinity of the ACMI towers are provided below. Additional information on the abundance, distribution, status, habitat preference, behavior, life history, acoustics, and hearing ability of marine mammals occurring in the Gulf of Mexico is provided in the Marine Resources Assessment for the Gulf of Mexico (DoN, 2007a) and the Navy Operating Area (OPAREA) Density Estimates for the Gulf of Mexico OPAREA (DoN, 2007b).

3.4.6.2 Affected Environment

Threatened and Endangered Marine Mammals

Of the 29 marine mammal species occurring in the Gulf of Mexico, seven are listed under the ESA: the endangered North Atlantic right whale (*Eubalaena glacialis*), Rice's whale (*Balaenoptera ricei*), sei whale (*Balaenoptera borealis*), fin whale (*Balaenoptera physalus*), blue whale (*Balaenoptera musculus*), and sperm whale (*Physeter macrocephalus*), and the threatened West Indian manatee. No critical habitat for these species is designated in or near the project areas. The endangered Rice's whale is the only one of these species with the potential to occur in the vicinity of the ACMI towers. The other ESA-listed baleen whale species are considered rare or extralimital to the Gulf of Mexico (DoN, 2007a). For example, occasional sightings of North Atlantic right whales have been documented in the Gulf of Mexico during winter and spring (e.g., Schmidly et al., 1972; Anonymous, 2004; NOAA and FWC, 2006), when this species is known to occur on the calving and wintering grounds in the waters of the southeastern United States. (Silber and Clapham, 2001). These records likely represent extralimital strays from the wintering grounds or might even reflect a more extensive historical range beyond the known calving and wintering ground in the waters of the southeastern United States (Jefferson and Schiro, 1997; Waring et al., 2006). Sightings of sei, fin, and blue whales are documented in the Gulf of Mexico but thought to be outside the normal ranges of these species (Weller et al., 1996; Jefferson and Schiro, 1997). The sperm whale is not expected to occur on the continental shelf because its primary occurrence is along the continental slope and in canyon regions (Mullin et al., 1994; Davis and Fargion, 1996; Davis et al., 1998; Biggs et al., 2000; Weller et al., 2000; Würsig et al., 2000; Baumgartner et al., 2001; Davis et al., 2002; Jochens et al., 2006; Hayes et al., 2021). The West Indian manatee primarily occurs in warm freshwater, estuarine, and extremely nearshore coastal waters inshore of the ACMI towers (Lefebvre et al., 2001). Although some offshore movements in the Gulf of Mexico have been documented, manatee experts note that these movements should be considered anomalies based on the known habitat preferences of this species (Reynolds III and Ferguson, 1984; Reid, 2000; Fertl et al., 2005; Alvarez-Alemán et al., 2010).

Rice's Whale

The Rice's whale is listed as endangered under the ESA (84 Federal Register [FR] 15446), and the northern Gulf of Mexico stock is considered strategic under the MMPA (Hayes et al., 2021). No critical habitat has been designated for this species. In 2021, the Rice's whale was classified as a separate species from the Bryde's whale (*Balaenoptera edeni*), which occurs in tropical and subtropical waters (Rosel et al., 2021). The Rice's whale is the only regularly occurring baleen whale found in the Gulf of Mexico and is resident year-round (Soldevilla et al., 2022). Rice's whale core habitat is limited to the region between the 100- and 400-meter isobaths in the northeastern Gulf of Mexico from south of Pascagoula, Mississippi, to west of Tampa, Florida (Soldevilla et al., 2017; Rosel and Garrison, 2022), and is designated as a Biologically Important Area (LaBrecque et al., 2015). The closest tower to this core habitat is Station 1/N4 at approximately 43 miles, shown in **Figure 3-3**. There is limited information on Rice's whale occurrence beyond this known core habitat (Rosel et al. 2016). Occurrence in the northwestern portion of the Gulf has been confirmed based on one visual sighting and numerous acoustic detections, suggesting that this species persists over a broader range in the Gulf than was previously thought (Hayes et al., 2021; Soldevilla et al., 2022). The best estimate of abundance is 51 Rice's whales based on 2017–2018 survey data from the northeastern Gulf of Mexico (Hayes et al., 2021).

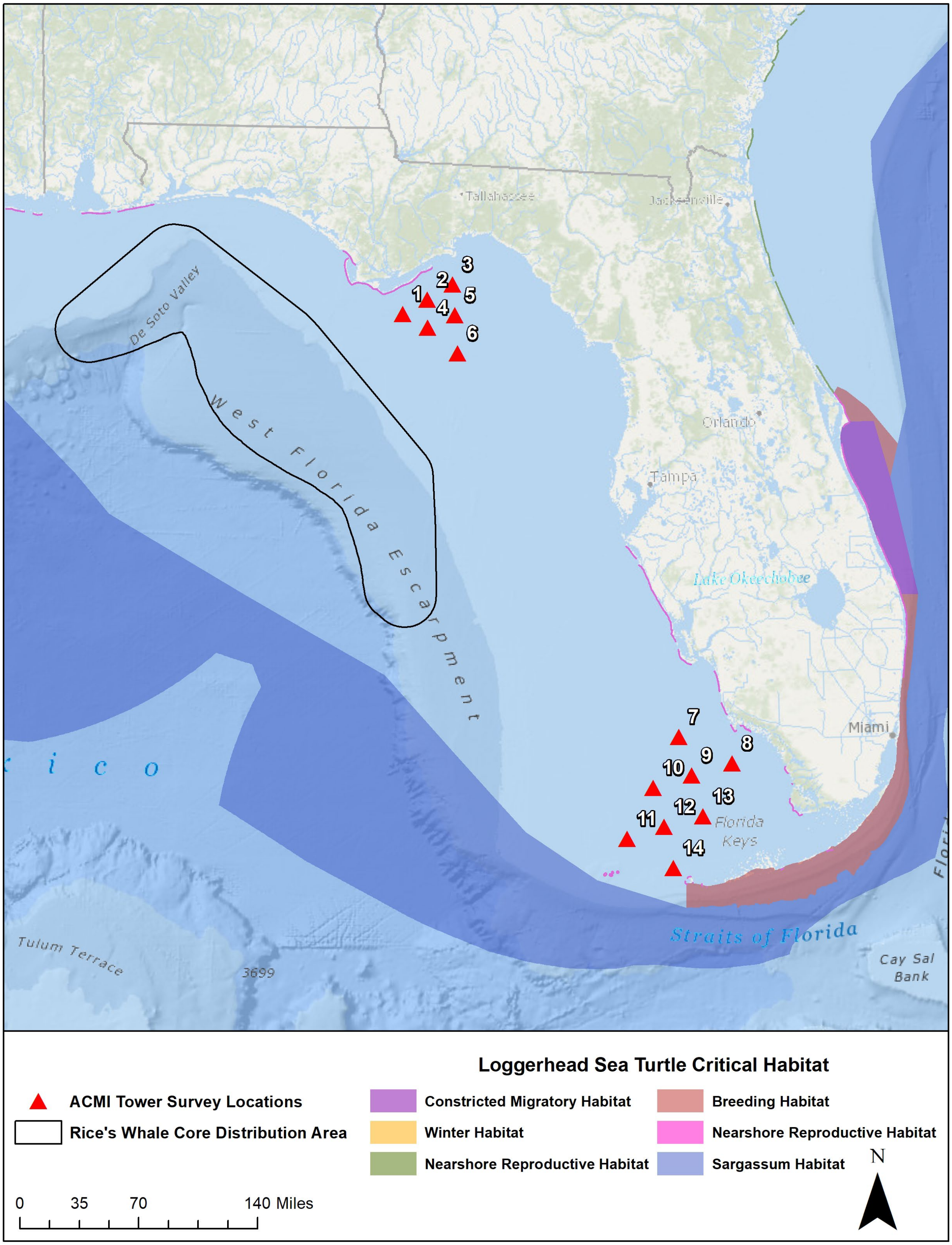

Figure 3-3 Rice's Whale Core Distribution Area and Loggerhead Sea Turtle Critical Habitat Areas

More research is needed to identify the primary prey species and feeding behaviors of Rice's whales. Based on limited tagging data, Rice's whales exhibit diel diving behavior with diurnal deep dives at or near the seafloor, where there is potential for entanglement in bottom longline gear, and mostly shallow dives at night within the draught depths of large commercial vessels (Soldevilla et al., 2017). In addition to vessel strikes and entanglement in fishing gear, potential threats to Rice's whales include energy exploration and development, oil spills and spill response, ocean noise, ocean debris, and aquaculture (Rosel et al., 2016; Hayes et al., 2021).

Atlantic Spotted Dolphin

Atlantic spotted dolphins primarily occur on the continental shelf in the Gulf of Mexico (Mills and Rademacher, 1996; Davis et al., 1998; Davis et al., 2002; Fulling et al., 2003; Griffin and Griffin, 2003). They are most abundant on the WFS in the eastern Gulf (DoN, 2007b), where they seem to prefer the mid-shelf region from 20 to 180 meters (66 feet to 591 feet), which overlaps with the ACMI towers (Griffin and Griffin, 2003). In their less common habitat of oceanic waters of the Gulf, Atlantic spotted dolphins usually occur near the shelf break in waters less than 500 meters (1,640 feet) in bottom depth (Davis et al., 1998; Mullin et al., 2004). Atlantic spotted dolphins feed on small cephalopods, fishes, and benthic invertebrates (Perrin et al., 1994) and have been seen feeding cooperatively on clupeid fishes and in association with shrimp trawlers in the Gulf of Mexico (Fertl and Würsig, 1995; Fertl and Leatherwood, 1997). The current population size for the Atlantic spotted dolphin in the northern Gulf of Mexico is 21,506 individuals (Hayes et al., 2021) based on survey data from summer 2017 and 2018 (Garrison et al., 2020 and Garrison et al., 2021).

Killer Whale

Killer whales are sighted year-round in the northern Gulf of Mexico (Jefferson and Schiro, 1997; O'Sullivan and Mullin, 1997; Würsig et al., 2000). Sightings are sporadic, and it is not known whether killer whales in the Gulf stay within the confines of the Gulf or range more widely into the Caribbean and adjacent North Atlantic Ocean (Würsig et al., 2000). Most sightings in the Gulf have been in waters with a bottom depth greater than 200 meters (656 feet), although there have also been occasional sightings over the continental shelf (Jefferson and Schiro, 1997; O'Sullivan and Mullin, 1997; DoN, 2007a; Hayes et al., 2021). Killer whales feed on an incredibly wide variety of prey types, including bony fishes, elasmobranchs, cephalopods, seabirds, sea turtles, and other marine mammals (e.g., Jefferson et al. ,1991; Fertl et al., 1996; Pyle et al., 1999; Pitman et al., 2003; and Dunn and Claridge, 2012). The best abundance estimate for the northern Gulf of Mexico killer whale is 267 individuals (Hayes et al., 2021) based on survey data from summer 2017 and 2018 (Garrison et al., 2020). Although not abundant, killer whales are thought to be regular inhabitants of the northern Gulf (O'Sullivan and Mullin, 1997; DoN ,2007a) and may occur in or near the project area based on their known associations with shelf waters in the Gulf.

3.4.6.3 Environmental Consequences Evaluation Criteria

Adverse impacts for marine mammals occur if impacts from project-related activities may harm individual animals, limit or reduce prey availability, or result in changes to survivability or cause population-level effects.

Where potential stressors vary in intensity, frequency, duration, and location within the project areas, those that are applicable to marine mammals are included in the analysis below:

- Behavioral disturbance;
- Physical disturbance and strike (stress or injury); and
- Beneficial impacts from increased prey resources caused by the reef effect.

3.4.6.4 Environmental Consequences – Alternative 1

3.4.6.4.1 Sever at Bottom (1a)

Proposed Alternative 1a activities include decommissioning of the towers by cutting at the mudline or at the barge structure. The severed towers would be placed on the seafloor at each tower location. While the operation of construction equipment and the placement of tower sections on the seafloor poses a hypothetical risk of striking a marine mammal, material would be placed slowly to minimize the risk of striking animals. Construction crews would also follow NMFS *Protected Species Construction Conditions* and cease construction activities when protected species are observed within 100 meters (328 feet) of project activities. Work shall not resume until the animal has left the area of its own volition.

Underwater cutting of structures would create elevated noise levels from operation of power tools or cutting torches. Based on source levels from Anthony et al. (2009), the highest source levels for cutting tools at 1 meter (3.28 feet) is 163 decibels root mean square. Using NMFS' multi-species calculator assuming a transmission loss constant of 15, this level could result in behavioral disturbance to marine mammals at a distance of up to 2,414 feet under conservative assumptions because all towers are located in open water areas with primarily soft bottom substrate (NMFS, 2022a). There is no potential for injury or permanent hearing loss to marine mammals from Alternative 1a. Because the towers are located in open water habitat, marine mammals would be able to avoid or move away from the noise associated with tower deconstruction. Noise from cutting would be of short duration (up to 4 hours per day), after which any animals would be able to resume normal activity near the towers. Because potential noise disturbance would be of short duration, poses no risk of injury, and does not limit foraging opportunities based on availability of nearby habitat, the potential for effects to marine mammals from elevated noise is insignificant, and would have negligible adverse impacts on marine mammals.

Vessel strikes are a known source of injury and mortality for marine mammals. The operation of vessels for the alternative would pose a theoretical risk of collision-related injury and mortality. Marine mammals generally engage in avoidance behavior when surface vessels move toward them (Würsig et al., 1998), and the risk of collision is commensurate with vessel speed. The probability of a vessel strike increases significantly as speeds increase above 10 knots (Laist et al., 2001; Kite-Powell et al., 2007; Vanderlaan and Taggart, 2007; Conn and Silber, 2013). Construction vessels, including those that would be used for severing the towers, travel at very slow speeds, lower than 10 knots. It is expected that the total number of vessel trips would be low; the project may require up to 14 trips, one for each tower to be removed. Even if 14 separate trips were required, this number represents an extremely small proportion of vessel traffic for the Gulf of Mexico. Alternative 1 would reduce the amount of vessel traffic that is currently required for maintenance and inspections at the towers and is therefore likely to reduce the risk of vessel strike in comparison to the No Action Alternative. Project vessels would operate according to NMFS guidance titled *Vessel Strike Avoidance Measures and Reporting for Mariners* (NMFS, 2008) to reduce the potential for vessel strikes to marine mammals. Based on the vessel characteristics, low number of trips, and protective measures, the potential for vessel strike to marine mammals is extremely unlikely and is therefore discountable and would have negligible adverse impact on marine mammals.

The in-place disposal of tower sections would alter the existing habitat, converting sandy bottom habitat to hardbottom habitat, and resulting in a reef effect that encourages colonization by assemblages of both sessile and mobile animals (Wilhelmsson et al., 2006; Bergström et al., 2014; Coates et al., 2014). Studies have shown that artificial structures could create increased habitat heterogeneity that is important for species diversity and density (Langhamer, 2012). This change in the habitat complexity and productivity would provide a long-term beneficial impact to some marine mammals (primarily odontocetes) by increasing prey species attracted to the proposed project infrastructure.

Federally Listed Marine Mammals

Direct, indirect, and cumulative adverse effects on marine mammals from implementation of Alternative 1a are extremely unlikely to occur (discountable) and are insignificant. The DAF has determined that Alternative 1a 'may affect, but is not likely to adversely affect,' any ESA listed marine mammals. Furthermore, the project areas do not occur in any designated critical habitat for any species, and there is no mechanism by which the Proposed Action would affect critical habitat.

The DAF has determined that Alternative 1a would have "no effect" on the West Indian manatee because this species is unlikely to occur in the vicinity of the towers and because project vessels would operate to avoid strikes.

3.4.6.4.2 Sever Below Warning Buoy Depth (1b)

Alternative 1b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed tower sections would be placed on the seafloor at each tower location. The potential effects to marine mammals would be the same as described for Alternative 1a.

3.4.6.5 Environmental Consequences – Alternative 2

The primary difference between Alternative 1 and Alternative 2 is that the severed tower components would be transported to existing artificial reef locations rather than being deposited near their original tower base. Alternative 2 is not feasible for Tower 11 because it cannot be relocated to any other offshore location due to the presence of orange cup coral, an invasive coral species, which was found during the dive surveys.

Because Alternative 2 has the potential to affect listed species, the DAF has determined that it 'may affect, but is not likely to adversely affect,' any ESA listed marine mammal species. Alternative 2 is anticipated to cause no harm to listed marine mammal species in non-territorial waters. Furthermore, the Alternative 2 activities would not occur in any designated critical habitat for any species, and there is no mechanism by which the activities would affect critical habitat.

3.4.6.5.1 Sever at Bottom (2a)

Alternative 2a activities include the decommissioning of towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges and transported to existing artificial reef sites, and placed on the seafloor at several locations to be determined once the project is approved.

Under Alternative 2a the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in potential habitat for marine mammal prey species would occur at the established reef sites. Adding new areas to established artificial reefs may reduce the colonization time since there may be more individuals and potentially greater diversity of species at these established reef sites. However, because the reef sites have not been identified, we cannot speculate on the specific communities. Moving the sections with established attached fauna will disperse these species to the new sites and may help establish the structure as a source of prey more quickly.

3.4.6.5.2 Sever Below Warning Buoy Depth (2b)

Alternative 2b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges and transported to existing artificial reef sites, and placed on the seafloor at several locations to be determined once the project is approved.

The potential adverse and beneficial effects to marine mammals would be similar to those described for Alternative 2a. Alternative 2b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Prey species for some marine mammal species may continue to be attracted to the vertical sections. These impacts would be of low intensity and would be long-term in duration. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 2a.

3.4.6.6 Environmental Consequences – Alternative 3

The primary difference between Alternative 1 and Alternative 3 is that the severed tower components would be transported to create new artificial reef locations rather than being deposited near their original tower base. Alternative 3 is not feasible for Tower 11 because it cannot be relocated to any other offshore location due to the presence of orange cup coral, an invasive coral species, which was found during the dive surveys.

Because Alternative 3 has the potential to affect listed species, the DAF has determined that it ‘may affect, but is not likely to adversely affect,’ any ESA-listed marine mammal species. Alternative 3 is anticipated to cause no harm to listed marine mammal species in non-territorial waters. Furthermore, the Alternative 3 activities would not occur in any designated critical habitat for any species, and there is no mechanism by which the activities would affect critical habitat.

3.4.6.6.1 Sever at Bottom (3a)

Alternative 3a activities include the decommissioning of towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges and transported to new artificial reef sites, and placed on the seafloor at several locations to be determined once the project is approved.

Under Alternative 3a the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in habitat for prey species of some marine mammals would occur at the new reef sites. Creating new areas of artificial reefs may increase the colonization time to provide reef habitat functions since they would have an increased distance between donor sights potentially lower diversity of potential prey species at these unestablished reef sites since they would be smaller and support lower populations relative to existing artificial reef sites which would be larger and more resilient in comparison. Creating new sites may have other indirect effects on prey species distribution and abundance since these new sites may create patches of suitable habitat in areas that were previously unoccupied. However, because the reef sites have not been identified, we cannot speculate on the specific nearby communities that could serve as sources for colonization or how these new patches of habitat will affect the existing fish habitat landscape. Moving the sections with established attached fauna (prey) will disperse these species to the new sites. Again, we cannot know whether this will introduce new species or add individuals of species present in the receiving communities.

3.4.6.6.2 Sever Below Warning Buoy Depth (3b)

Alternative 3b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges and transported to existing new reef sites, and placed on the seafloor at several locations to be determined once the project is approved.

The potential adverse and beneficial effects for marine mammals and their prey would be similar to those described for Alternative 3a. Alternative 3b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Fish species may continue to be attracted to the remaining vertical sections. These impacts would be of low intensity and would be long-term in duration. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 3a.

3.4.6.7 Environmental Consequences – Alternative 4

The primary difference between Alternative 1 and Alternative 4 is that the severed tower components would be transported to an onshore salvage or disposal location. Tower 11 would be disposed of either on-site or onshore and would not be transported to any other offshore locations because orange cup coral, an invasive coral species, was found during the dive surveys. On-site or onshore disposal would avoid additional spread of the invasive coral to other sites.

Because Alternative 4 has the potential to affect listed species, the DAF has determined that it ‘may affect, but is not likely to adversely affect,’ any ESA-listed marine mammal species. Alternative 4 is anticipated to cause no harm to listed marine mammal species in non-territorial waters. Furthermore, the Alternative 4 activities would not occur in any designated critical habitat for any species, and there is no mechanism by which the activities would affect critical habitat.

3.4.6.7.1 Sever at Bottom (4a)

Alternative 4a activities include the decommissioning of towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges and transported to a land-based salvage or disposal site to be determined once the project is approved.

Under Alternative 4a there would be a small loss of prey habitat for some marine mammals at each tower site due to the removal of the tower structures between the water line and the mudline. This loss would be small, but would reduce the amount of available habitat serving prey resources at each site. Mobile prey species may abandon these sites if suitable shelter is no longer available. The loss of these habitats would be permanent. However, there is available similar reeflike habitat near each existing tower site where mobile prey species could disperse.

3.4.6.7.2 Sever Below Warning Buoy Depth (4b)

Alternative 4b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges and transported to a land-based salvage or disposal site to be determined once the project is approved.

The potential adverse and beneficial effects to marine mammals due to the loss of habitat for prey sources associated with these structures would be similar to those described for Alternative 4a. Alternative 4b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Prey species for some marine mammals may continue to be attracted to the vertical sections. These impacts would be of low intensity and would be long-term in duration. There would be a smaller loss of suitable habitat for marine mammal prey under 4b because, although some submerged segments would be removed, the sections below the safe navigation depth would remain intact.

3.4.6.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the DAF would be required to conduct regular inspection and maintenance visits to each of the towers to ensure that they do not pose a danger to the public. These visits would require vessel trips on a regular basis. Furthermore, it is anticipated that, in the near future, substantial work to maintain the structures and ensure their safety would be required to repair corrosion and other damage to ensure structural soundness. Repairs would require a similar amount of construction traffic as Alternatives 1 and 2 in addition to the routine maintenance and inspection traffic. Though vessel traffic associated with the towers would continue indefinitely into the future, the amount of vessel traffic would be extremely small (approximately 0.001 percent) relative to the overall traffic levels in the Gulf of Mexico. The small number of vessel trips would make it extremely unlikely that marine mammals would experience a vessel strike from maintenance and inspection activities under the No Action Alternative.

3.4.6.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

In the context of other actions that are ongoing or projected to occur in the project area (see **Appendix C**) — including active oil and gas projects, new oil and gas leasing, ongoing oil spill restoration and remediation work, and existing or proposed artificial reef development — the Proposed Action would not contribute to measurable, incremental, or cumulative adverse impacts to marine mammals in the vicinity of the northern or southern ACMI tower areas. The increase in artificial hardbottom habitat in and around the existing tower locations may contribute to minor beneficial cumulative impacts to marine mammal species whose prey are associated with hardbottom habitats. It is reasonable to expect that the level of offshore activities along the Gulf Coast of Florida, including commercial and recreational fishing as well energy development, would continue and that the proposed project would not alter these activities appreciably.

3.4.7 Sea Turtles

3.4.7.1 Definition of Resource

Sea turtles are long-lived, highly migratory reptiles found throughout the world's tropical, subtropical, and temperate seas (Lutz and Musick, 1997). There are seven living species of sea turtles from two distinct families: the Dermochelyidae (one species, leatherback sea turtle [*Dermochelys coriacea*]) and the Cheloniidae (hard-shelled sea turtles; six species). Sea turtles in these two families are distinguished from one another based on their carapace structure (upper shell) and other morphological characteristics. Sea turtles are an important marine resource that provide economic (consumptive and non-consumptive) and ecological (existence and intrinsic) value to humans (Witherington and Frazer, 2003). Sea turtle populations have declined dramatically in the last few centuries as a result of anthropogenic activities such as coastal development, oil exploration, commercial fishing, marine-based recreation, pollution, and over-harvesting (NRC, 1990; Eckert, 1995).

Brief descriptions of the sea turtle species most likely to occur in the vicinity of the ACMI towers are provided below. Additional information on the abundance, distribution, status, habitat preference, behavior, and life history of sea turtles occurring in the Gulf of Mexico is provided in the Marine Resources Assessment for the Gulf of Mexico (DoN, 2007a) and the OPAREA Density Estimates for the Gulf of Mexico OPAREA (DoN, 2007b).

3.4.7.2 Affected Environment

All sea turtle species are protected under the ESA, which requires that the DAF, in consultation with USFWS, ensure that proposed actions are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of a critical habitat (16 U.S.C. 1536 [a][2]). Regulations implementing the ESA expand the consultation requirement to include those actions that "may affect" a listed species or adversely modify critical habitat. If an agency's proposed action would take a listed species, then the agency must obtain an Incidental Take Statement from the responsible regulatory agency. NMFS and the USFWS share jurisdiction for sea turtles, with NMFS having jurisdiction for the conservation and recovery of sea turtles in the marine environment and USFWS for sea turtles on nesting beaches. The ESA outlines the need to protect the designated critical habitat of listed species.

Of the seven living species of sea turtles, six are known to occur in the Gulf of Mexico (DoN, 2007a): the leatherback turtle (*Dermochelys coriacea*), loggerhead turtle (*Caretta caretta*), Kemp's ridley turtle (*Lepidochelys kempii*), olive ridley turtle (*Lepidochelys oliveacea*), green turtle (*Chelonia mydas*), and hawksbill turtle (*Eretmochelys imbricata*). Except for the olive ridley turtle, which in the Atlantic Ocean occurs off Africa and South America (NMFS and USFWS, 2007), these turtle species are regular inhabitants of the Gulf and may occur in or near the project area. Olive ridley turtles are considered extralimital to the Gulf based on a few stranding records (Foley et al., 2003) and are not expected to occur near the ACMI towers.

The waters of the northern Gulf of Mexico play an essential role in many aspects of sea turtle ecology (LeBuff, 1990). The northern Gulf possesses a diverse array of juvenile developmental and adult foraging habitats (from shallow water habitats such as seagrass beds and coral reefs to deeper water habitats including artificial reef [including oil and gas] structures and canyons) (Carr et al., 1982). Sea turtles often use the dominant currents of the northern Gulf, such as the Loop and Florida Currents, to transport themselves to distant areas of the northern Atlantic Ocean or Caribbean Sea (Fritts et al., 1983a; Fritts et al., 1983b; TEWG, 1998).

Leatherback Turtle

Leatherback turtles are listed as endangered under the ESA throughout their range (NMFS and USFWS, 1992). No critical habitat occurs along the continental U.S. for the leatherback sea turtle. The leatherbacks found in the Gulf of Mexico are part of the Northwest Atlantic distinct population segment (DPS). The total index of 20,659 nesting females is based on the most recent and relevant information and represents the best available data for this DPS (NMFS and USFWS, 2020). Threats to this DPS include habitat loss and modification, overutilization, predation, inadequate regulatory mechanisms, fisheries bycatch, pollution, vessel strikes, and oil and gas activities NMFS and USFWS, 2020).

The leatherback turtle is distributed circumglobally in tropical, subtropical, and warm-temperate waters throughout the year and in cooler temperate waters during the warmer months (NMFS and USFWS, 1992; James et al., 2005). Leatherbacks are pelagic but also commonly observed in coastal waters along the U.S. continental shelf (NMFS and USFWS, 1992). Post-hatchlings and early juveniles are entirely oceanic and restricted to waters warmer than 26 degrees Celsius (°C; 79 degrees Fahrenheit [°F]) (NMFS and USFWS, 1992; Eckert, 2002). Late juveniles and adults range from deep, mid-ocean habitats to the continental shelf and nearshore waters (Schroeder and Thompson, 1987; Shoop and Kenney, 1992; Grant and Ferrell, 1993; Epperly et al., 1995). Juvenile and adult foraging habitats include both coastal feeding areas in temperate waters and offshore feeding areas in tropical waters (Frazier, 2001). Nesting occurs on isolated mainland beaches in tropical and temperate oceans (NMFS and USFWS, 1992) and to a lesser degree on some islands, such as the Greater and Lesser Antilles. In the U.S., the densest nesting is on the Atlantic coast of Florida (Stewart and Johnson, 2006). Low levels of nesting activity have been documented on both Florida Panhandle and south Florida beaches (LeBuff, 1990; Meylan et al., 1995). Occurrence in the Gulf of Mexico is year-round in deep, offshore waters (e.g., DeSoto Canyon) (Landry and Costa, 1999; Davis et al., 2000) and in shallow waters over the continental shelf. Individuals have been observed feeding on dense aggregations of jellyfish in nearshore waters off the Florida Panhandle, the Mississippi River Delta, and the Texas coast (Leary, 1957; Collard, 1990; Lohoefener et al., 1990).

Loggerhead Turtle

The loggerhead turtles found in the Gulf of Mexico are part of the Northwest Atlantic DPS, which is designated as threatened under the ESA (USFWS and NMFS, 2011). Critical habitat for this DPS is designated in the U.S. Atlantic and Gulf of Mexico, including approximately 10 miles south of the project area, as shown in **Figure 3-1** and **Figure 3-3** (NMFS, 2014). The recent best abundance estimate for the western North Atlantic adult female loggerhead population is 38,334 nesters (nesting female turtles) based on 2001 to 2010 nest counts (Richards et al., 2011). Although some progress has been made since the 2008 recovery plan was published for the Northwest Atlantic population (NMFS and USFWS, 2008), the Recovery Units have not met most of the critical benchmarks, and dedicated large-scale aerial surveys designed specifically for sea turtles are still needed (Bolten et al., 2019). Primary threats include barriers to nesting (e.g., beach armoring and shoreline stabilization structures), light pollution, bycatch, vessel strikes, and marine debris ingestion and entanglement, as well as emerging issues including aquaculture, power generation in the marine environment, and harmful algal blooms (Bolten et al., 2019).

Loggerheads are primarily oceanic as post-hatchlings and early juveniles, often occurring in *Sargassum* driftlines where they are transported throughout the ocean by dominant currents (Carr, 1987; Witherington, 1994). Late juveniles and adults routinely occur in shallow, continental shelf habitats such as bays, sounds, and lagoons (Fritts et al., 1983a; Shoop and Kenney, 1992). In the Gulf of Mexico, loggerhead turtles can be found throughout the year in both continental shelf and slope waters from southeastern Florida to southern Texas. Juvenile loggerheads are known to inhabit offshore waters in the Gulf, where they are often associated with artificial reefs and oil platforms (Fritts, 1983; Davis et al., 2000). These offshore habitats provide juveniles with an abundance of prey as well as sheltered locations where they can rest (Rosman et al., 1987). The density and abundance of loggerhead turtles is highest in the northeastern Gulf (Fritts et al., 1983a; Davis et al., 2000; DoN, 2007b), which serves as an important foraging area (Hart et al., 2020) and a high-use migratory corridor for loggerheads traveling to and from nesting beaches (Iverson et al., 2020). Loggerhead abundance in continental slope waters of the eastern Gulf is known to increase during the winter as the temperatures of inshore and nearshore waters approach the lower thermal limits of this species (Davis et al., 2000). The shallow bays and sounds of the eastern Gulf (e.g., Chandeleur Sound; Mobile, Escambia, and Tampa Bays) likely serve as important developmental habitats for late juvenile loggerheads (Lohoefener et al., 1990; Davis et al., 2000). Loggerhead turtles nest almost exclusively in warm-temperate regions throughout the world, and nesting in the tropics is uncommon (TEWG, 2000). Females typically nest on continental coastlines adjacent to warm-temperate currents. This pattern is evident along Alabama and western Florida coasts in the northern Gulf of Mexico that are adjacent to the Loop Current (Dodd, 1988). Much lower levels of loggerhead nesting have been recorded throughout coastal Texas, primarily on North and South Padre Islands (Hildebrand, 1983).

Kemp's Ridley Turtle

The Kemp's ridley turtle is classified as endangered under the ESA and is considered the world's most endangered sea turtle (USFWS and NMFS, 1992); no critical habitat is designated. The worldwide population declined from tens of thousands of nesting females in the late 1940s to approximately 300 nesting females in 1985 (TEWG, 2000). The only major nesting site for Kemp's ridleys is a single stretch of beach near Rancho Nuevo on the eastern coast of Mexico (USFWS and NMFS, 1992). The most recent abundance estimate is 4,395 nesters based on 2.5 nests per female per nesting season and the total number of nests in Mexico in 2014 (NMFS and USFWS, 2015). There are an estimated 3,900 to 8,100 juvenile Kemp's ridleys that utilize developmental habitats annually along the western North Atlantic coast (Seney and Musick, 2005). Current threats to this species include bycatch, oil spills, ingestion and entanglement in marine debris, and vessel strikes (NMFS and USFWS, 2015).

Kemp's ridley sea turtles occur primarily in the Gulf of Mexico and along the Atlantic coast of the U.S. Atlantic, but also make trans-Atlantic crossings (e.g., Wibbels, 1983; Fontaine et al., 1985). They inhabit open-ocean and *Sargassum* habitats of the North Atlantic Ocean as post-hatchlings and small juveniles (Manzella et al., 1991; Witherington et al., 2012). The species is primarily associated with habitats on the continental shelf, with preferred habitats consisting of sheltered areas along the coastline, including estuaries, lagoons, and bays (Lutcavage and Musick, 1985; Burke et al., 1994; Landry and Costa, 1999; Seney and Musick, 2005) and nearshore waters less than 120 feet deep, although they can be found in deeper offshore waters (Shaver et al., 2005; Shaver and Rubio, 2008). Their most suitable habitats are less than 33 feet deep with sea surface temperatures between 22 and 32°C (72 and 90°F) (Coyne et al., 2000). Nesting occurs primarily on a single beach at Rancho Nuevo on the eastern coast of Mexico (USFWS and NMFS, 1992) with a few additional nests in Texas, Florida, South Carolina, and North Carolina (Meylan et al., 1990; Weber, 1995; Godfrey, 1996; Foote and Mueller, 2002) and an occasional nest in Virginia (Boettcher, 2015) and New York (Rafferty et al., 2019).

Green Turtle

Of the 11 DPSs of green turtles, the North Atlantic DPS is found in the North Atlantic Ocean and Gulf of Mexico and is listed as threatened (NMFS and USFWS, 2016). No critical habitat is currently designated along the continental U.S. On July 19, 2023, NMFS published a proposed rule to designate new critical habitat and modify existing critical habitat at Culebra Island (NMFS 2023). The project is located within the new proposed critical habitat of the North Atlantic DPS Florida Unit, which includes *Sargassum* habitat in the Gulf of Mexico and off the East Coast of the U.S. from the 10-meter depth contour or the edge of the Gulf Stream to the Exclusive Economic Zone (NMFS 2023). Nesting concentrations of particular interest in the North Atlantic DPS are found in Costa Rica (Tortuguero), Mexico (Campeche, Yucatan, and Quintana Roo), U.S. (Florida), and Cuba. The most recent abundance estimate is 167,424 nesters in this DPS based on nest monitoring conducted through 2012. Current threats include degradation of nesting habitat and effects from artificial lighting resulting from coastal development, degradation and loss of seagrass and marine algae foraging resources, illegal harvest of eggs and mature adults, bycatch, and vessel strikes and (Seminoff et al., 2015).

The green turtle has a circumglobal distribution throughout tropical and subtropical waters (Seminoff and MTSG (Marine Turtle Specialist Group) Green Turtle Task Force, 2004). The most important nesting and feeding grounds lie within the tropics (Sternberg, 1981; Pritchard, 1997; Seminoff et al., 2015). Most nesting in North America occurs in southern Florida and Mexico (Seminoff et al., 2015). Suitable nesting beaches are located throughout the Gulf of Mexico from northern Mexico and southern Texas in the western Gulf to southern Florida and the Florida Panhandle in the eastern Gulf (NMFS and USFWS, 1991; Meylan, 1995). The highest concentration of nesting activity in the Gulf occurs in Monroe County, Florida, which includes most of the Florida Keys and the Dry Tortugas (Meylan, 1995). The preferred habitats of green turtles are located primarily along the coasts of southwestern Florida and southern Texas (Renaud et al., 1995; Landry and Costa, 1999). Juvenile green turtles also utilize the inshore and nearshore waters of central Florida (e.g., Cedar Keys, Homosassa Springs, Crystal River, and Tampa Bay) throughout the year as developmental habitats (NMFS and USFWS, 1991; Dodd, 1995). Aside from the Florida Keys, Florida Bay, and Cedar Keys regions, green turtles in the northern Gulf are most likely to reside in inshore waters (e.g., lagoons, channels, inlets, and bays) where seagrass beds and macroalgae are abundant. These areas include Texas's Laguna Madre and most of Florida's Gulf Coast estuaries, such as Pensacola Bay, St. Joseph Bay, Tampa Bay, and Charlotte Harbor. Additional areas supporting juvenile green populations are the shallow bays and sounds of the northeastern Gulf (e.g., Chandeleur Sound; Mobile and Escambia Bays).

Hawksbill Turtle

Hawksbills are endangered under the ESA; no critical habitat occurs along the continental U.S. for the hawksbill sea turtle. The most recent abundance estimate is 3,626 to 6,108 nesters based on nest monitoring data from 33 sites in the Atlantic (NMFS and USFWS, 2013). Current threats include degradation of nesting habitat and effects from artificial lighting resulting from coastal development, degradation and loss of seagrass and marine algae foraging resources, illegal harvest of eggs and mature adults, bycatch, and vessel strikes (NMFS and USFWS, 1993).

This species primarily occurs in warmer southern waters associated with coral reef habitats (NMFS and USFWS, 1993; Diez et al., 2003) and is exceedingly rare north of Florida (Lee and Palmer, 1981; Keinath et al., 1991; Parker, 1995; Plotkin, 1995; USFWS, 2001; GARFO, 2021). Juvenile and adult hawksbills are found in the Gulf of Mexico, the Caribbean Sea, and along the coast of southeastern Florida (Witzell, 1983; NMFS and USFWS, 1993). In the Gulf of Mexico, the hawksbill primarily inhabits shallow, nearshore waters off southern Florida year-round. Small numbers of hawksbill occurrences are documented annually from southeastern Florida (Palm Beach, Broward, and Dade Counties) through the Florida Keys to coastal waters just northwest of Tampa Bay, where the northernmost stranding records occur. Hawksbills are rarely observed in waters off the Florida Panhandle, Alabama, Mississippi, Louisiana, and Texas (Rabalais and Rabalais, 1980; Witzell, 1983; Rester and Condrey, 1996). Hawksbill sightings in these areas likely involve early juveniles that are born on nesting beaches in Mexico and have drifted north with the predominant currents (Landry and Costa, 1999). Hawksbill turtles inhabit oceanic waters as post-hatchlings and small juveniles, where they are sometimes associated with driftlines and floating patches of *Sargassum* (Parker, 1995; Witherington and Hirama, 2006). The developmental habitats for juvenile benthic-stage hawksbills are the same as the primary feeding grounds for adults; they include tropical, nearshore waters associated with coral reefs, hard bottoms, or estuaries with mangroves (Musick and Limpus, 1997). Hawksbills tend to nest in multiple, small, scattered colonies, with the most significant nesting in the western North Atlantic Ocean occurring along the Yucatan Peninsula, Mexico. Hawksbill nesting within the continental U.S. is restricted to beaches in southern Florida and the Florida Keys, although even there it is extremely rare (Dodd, 1995).

3.4.7.3 Environmental Consequences Evaluation Criteria

Adverse impacts for sea turtles occur if impacts from project-related activities harm individual animals, limit or reduce prey availability, or result in changes to survivability or cause population-level effects.

Where potential stressors vary in intensity, frequency, duration, and location within the project areas, those that are applicable to sea turtles are included in the analysis below:

- Physical disturbance and strikes.
- Beneficial impacts from increased prey resources caused by the reef effect.

Underwater noise would not reach the NMFS threshold 175-decibel sound pressure level for behavioral disturbance to sea turtles, and therefore no underwater acoustic impacts are expected or analyzed for sea turtles.

Because all action alternatives would have the potential to affect listed sea turtle species, the DAF consulted with the NMFS. As a result of the consultation, DAF has determined that all action alternatives except Alternative 4a would be likely to adversely affect ESA-listed sea turtles through the risk of entanglement or entrapment in marine debris that may become attached to the portion of the towers that would remain extending above the sea floor. However, because Alternative 4a would leave a smaller portion of the towers on the sea floor, the DAF has determined that it 'may affect, but is not likely to adversely affect,' any ESA-listed sea turtle species. Consultation with NMFS on Alternative 4a concluded on July 23, 2025 with a Letter of Concurrence (see **Appendix B – Section B.2.5**). Consultation was not completed on any of the other alternatives analyzed.

3.4.7.4 Environmental Consequences – Alternative 1

Federally Listed Sea Turtles

All sea turtles in the Gulf of Mexico are listed as either threatened or endangered under the ESA. Because Alternative 1a has the potential to affect listed sea turtle species, the DAF consulted with the NMFS. As a result of the consultation DAF has determined that both Alternative 1a and 1b are likely to adversely affect ESA-listed sea turtles through the risk of entanglement or entrapment in marine debris that may become attached to the portion of the towers that would remain extending above the sea floor. Project activities would occur in proposed critical habitat for the North Atlantic DPS of green sea turtles. However, there is no mechanism by which the Proposed Action would affect the essential features of proposed critical habitat for this species.

3.4.7.4.1 Sever at the Bottom (1a)

Proposed Alternative 1a activities include decommissioning of the towers by cutting at the mudline or at the barge structure. While the operation of construction equipment and the placement of tower debris on the seafloor pose a hypothetical risk of striking a sea turtle, material would be placed slowly to minimize the risk of striking animals. Construction crews would also follow NMFS *Protected Species Construction Conditions* (NMFS, 2021) and cease construction when protected species are observed within 100 meters (328 feet) of project activities. Work shall not resume until the animal has left the area of its own volition.

Vessel strikes are a known source of injury and mortality for sea turtles. The operation of vessels for Alternative 1a poses a theoretical risk of collision-related injury and mortality. Construction vessels, including those that would be used for tower removal, travel at very slow speeds, lower than 10 knots. It is expected that the total number of vessel trips would be low; the project may require up to 14 trips, one for each tower to be removed. Even if 14 separate trips were required, this number represents an extremely small proportion of vessel traffic for the Gulf of Mexico. Alternative 1a would reduce the amount of vessel traffic currently required for maintenance and inspections at the towers and is, therefore, likely to lower the risk of vessel strike for sea turtles in comparison to the No Action Alternative. Project vessels would operate according to NMFS *Vessel Strike Avoidance Measures and Reporting for Mariners* (NMFS, 2008) guidance to reduce the potential for vessel strikes to sea turtles. Based on the vessel characteristics, low number of trips, and protective measures included, the potential for vessel strikes to sea turtles is extremely unlikely and is therefore discountable and would have negligible adverse impact on sea turtles.

The in-place disposal of tower sections would alter the existing habitat, converting sandy bottom habitat to hardbottom habitat, resulting in a reef effect that encourages colonization by assemblages of both sessile and mobile animals (Wilhelmsson et al., 2006; Bergström et al., 2014; Coates et al., 2014). Studies have shown that artificial structures could create increased habitat heterogeneity that is important for species diversity and density (Langhamer, 2012). This change in the habitat complexity and productivity would provide a long-term beneficial impact to some sea turtles that forage on prey associated with hardbottom communities by increasing prey species attracted to the proposed project infrastructure.

3.4.7.4.2 Sever Below Warning Buoy Depth (1b)

Alternative 1b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed tower sections would be placed on the seafloor at each tower location. The potential effects to sea turtles would be similar to those described for Alternative 1a, however, the risk of entanglement or entrapment would be greater because a larger portion of the tower would remain extending above the sea floor.

3.4.7.5 Environmental Consequences – Alternative 2

The primary difference between Alternative 1 and Alternative 2 is that the severed tower components would be transported to existing artificial reef locations rather than being deposited near their original tower base.

Alternative 2 is not feasible for Tower 11 because it cannot be relocated to any other offshore location due to the presence of orange cup coral, an invasive coral species, which was found during the dive surveys.

Because Alternative 2 has the potential to affect listed sea turtle species, the DAF consulted with the NMFS. As a result of the consultation DAF has determined that both Alternative 2a and 2b are likely to adversely affect ESA-listed sea turtles through the risk of entanglement or entrapment in marine debris that may become attached to the portion of the towers that would remain extending above the sea floor. Alternative 2 activities would occur in proposed critical habitat for the North Atlantic DPS of green sea turtles. However, there is no mechanism by which the activities would affect the essential features of critical habitat for these species.

3.4.7.5.1 Sever at Bottom (2a)

Alternative 2a activities include the decommissioning of towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges and transported to existing artificial reef sites, and placed on the seafloor at several locations to be determined once the project is approved.

Under Alternative 2a the potential impacts would be similar to those described for Alternative 1a. The main difference would be that the increase in potential habitat for sea turtle prey species would occur at the established reef sites. Adding new areas to established artificial reefs may reduce the colonization time since there may be more individuals for colonization and potentially greater diversity of species at these established reef sites. However, because the reef sites have not been identified, the specific communities are unknown. Moving the sections with established attached fauna will disperse these species to the new sites and may help establish the structure as a source of prey more quickly.

3.4.7.5.2 Sever Below Warning Buoy Depth (2b)

Alternative 2b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges and transported to existing artificial reef sites, and placed on the seafloor at several locations to be determined once the project is approved.

The potential effects to sea turtles would be similar to those described for Alternative 2a, however, the risk of entanglement or entrapment would be greater because a larger portion of the tower would remain extending above the sea floor. Alternative 2b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Prey species for sea turtles may continue to be attracted to the vertical sections. These impacts would be of low intensity and would be long-term in duration. Environmental Consequences – Alternative 3

The primary difference between Alternative 1 and Alternative 3 is that the severed tower components would be transported to create new artificial reef locations rather than being deposited near their original tower base. Alternative 3 is not feasible for Tower 11 because it cannot be relocated to any other offshore location due to the presence of orange cup coral, an invasive coral species, which was found during the dive surveys.

Because Alternative 3 has the potential to affect listed sea turtle species, the DAF consulted with the NMFS. As a result of the consultation DAF has determined that Alternative 3a and 3b are likely to adversely affect ESA-listed sea turtles through the risk of entanglement or entrapment in marine debris that may become attached to the portion of the towers that would remain extending above the sea floor. Alternative 3 activities would occur in proposed critical habitat for the North Atlantic DPS of green sea turtles. However, there is no mechanism by which the activities would affect the essential features of critical habitat for these species.

3.4.7.5.3 Sever at Bottom (3a)

Alternative 3a activities include the decommissioning of towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges and transported to new artificial reef sites, and placed on the seafloor at several locations to be determined once the project is approved.

Under Alternative 3a the potential impacts would be similar to those described for Alternative 1a.The main difference would be that the increase in habitat for prey species of sea turtles would occur at the new reef sites. Creating new areas of artificial reefs may increase the colonization time to provide reef habitat functions since they would have an increased distance between donor sights potentially lower diversity of potential prey species at these unestablished reef sites since they would be smaller and support lower populations relative to existing artificial reef sites which would be larger and more resilient in comparison. Creating new sites may have other indirect effects on prey species distribution and abundance since these new sites may create patches of suitable habitat in areas that were previously unoccupied. However, because the reef sites have not been identified, we cannot speculate on the specific nearby communities that could serve as sources for colonization or how these new patches of habitat will affect the habitat landscape for sea turtle prey. Moving the sections with established attached fauna (prey) will disperse these species to the new sites. Again, we cannot know whether this will introduce new species or add individuals of species present in the receiving communities.

3.4.7.5.4 Sever Below Warning Buoy Depth (3b)

Alternative 3b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges and transported to existing new reef sites, and placed on the seafloor at several locations to be determined once the project is approved.

The potential effects on sea turtles would be similar to those described for Alternative 3a, however, the risk of entanglement or entrapment would be greater because a larger portion of the tower would remain extending above the sea floor. Alternative 3b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Sea turtle prey species may continue to be attracted to the remaining vertical sections. These impacts would be of low intensity and would be long-term in duration. All other effects described for the relocated previously colonized and uncolonized sections would be the same as described for Alternative 3a.

3.4.7.6 Environmental Consequences – Alternative 4

The primary difference between Alternative 1 and Alternative 4 is that the severed tower components would be transported to an onshore salvage or disposal location. Tower 11 would be disposed of either on-site or onshore and would not be transported to any other offshore locations because orange cup coral, an invasive coral species, was found during the dive surveys. On-site or onshore disposal would avoid additional spread of the invasive coral to other sites.

Because Alternative 4 has the potential to affect listed sea turtle species, the DAF consulted with the NMFS. As a result of the consultation, DAF has determined that Alternative 4b is likely to adversely affect ESA-listed sea turtles through the risk of entanglement or entrapment in marine debris that may become attached to the portion of the towers that would remain extending above the sea floor. However, because Alternative 4a would leave a smaller portion of the towers on the sea floor, the DAF has determined that it ‘may affect, but is not likely to adversely affect,’ any ESA-listed sea turtle species. Consultation with NMFS on Alternative 4a concluded on July 23, 2025 with a Letter of Concurrence (see **Appendix B – Section B.2.5.2**). Alternative 4 activities would occur in proposed critical habitat for the North Atlantic DPS of green sea turtles. However, there is no mechanism by which the activities would affect the essential features of critical habitat for these species.

3.4.7.6.1 Sever at Bottom (4a)

Alternative 4a activities include the decommissioning of towers by cutting at the mudline or at the barge structures. The sunken barge bases of the northern towers (Stations 1 to 5) would be left in place. The severed towers would be cut into sections, loaded onto barges and transported to a land-based salvage or disposal site to be determined once the project is approved.

Under Alternative 4a there would be a small loss of prey habitat for sea turtles at each tower site due to the removal of the tower structures between the water line and the mudline. This loss would be small, but would reduce the amount of available habitat serving prey resources at each site. Mobile prey species may abandon these sites if suitable shelter is no longer available. The loss of these habitats would be permanent. However, there is available similar reeflike habitat near each existing tower site where fishes could disperse.

3.4.7.6.2 Sever Below Warning Buoy Depth (4b)

Alternative 4b would cut structures below the waterline, but above the mudline, at a depth sufficient to ensure safe navigation. The severed towers would be cut into sections, loaded onto barges and transported to a land-based salvage or disposal site to be determined once the project is approved.

The potential adverse to sea turtles due to the loss of habitat for prey sources associated with these structures would be similar to those described for Alternative 4a. Alternative 4b would leave some vertical sections of the towers at all tower locations, except towers 8 and 14 in the southern group, which are in waters less than 40 feet (12 meters) deep. The remaining vertical sections would function unchanged since their depth and location would not be altered. Prey species for sea turtles may continue to be attracted to the vertical sections. These impacts would be of low intensity and would be long-term in duration. There would be a smaller loss of suitable fish habitat under 4b because, although some submerged segments would be removed, the sections below the safe navigation depth would remain intact.

3.4.7.7 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the DAF would be required to conduct regular inspection and maintenance visits to each of the towers to ensure that they do not pose a danger to the public. These visits would require vessel trips on a regular basis. Furthermore, it is anticipated that, in the near future, substantial work to maintain the structures and ensure their safety would be required to repair corrosion and other damage to ensure structural soundness. Repairs would require a similar amount of construction traffic as Alternatives 1 and 2 in addition to the routine maintenance and inspection traffic. Though vessel traffic associated with the towers would continue indefinitely into the future, the amount of vessel traffic would be extremely small (approximately 0.001 percent) relative to the overall traffic levels in the Gulf of Mexico. The small number of vessel trips would make it extremely unlikely that sea turtles would experience a vessel strike from maintenance and inspection activities under the No Action Alternative.

3.4.7.8 Reasonably Foreseeable Future Actions and Other Environmental Considerations

In the context of other actions that are ongoing or projected to occur in the project area (see **Appendix C**) — including active oil and gas projects, new oil and gas leasing, ongoing oil spill restoration and remediation work, and existing or proposed artificial reef development — the Proposed Action would not contribute to measurable, incremental, or cumulative adverse impacts to sea turtles in the vicinity of the northern or southern ACMI tower areas. The increase in artificial hardbottom habitat in and around the existing tower locations may contribute to minor beneficial cumulative impacts to sea turtle species whose prey are associated with hardbottom habitats. It is reasonable to expect that the level of offshore activities along the Gulf Coast of Florida, including commercial and recreational fishing as well energy development, would continue and that the proposed project would not alter these activities appreciably.

3.5 Terrestrial Biological Resources

3.5.1 Definition of Resource

The analysis in this section focuses on terrestrial biological resources, which are non-marine species, namely bats and birds, that may be found on or in the vicinity of the towers. Sensitive and protected biological resources include species listed as threatened or endangered by federal or state agencies.

Migratory birds are protected under the MBTA, which prohibits take of protected migratory bird species without prior authorization by the USFWS. The term “migratory birds” means all wild birds native to North America that are in an unconfined state and that are protected under the MBTA (16 U.S.C. 703 et seq.), including ducks, geese, and swans of the family Anatidae, species listed as threatened or endangered under the ESA of 1973 (16 U.S.C. 1531 et seq.), and species defined as nongame under the Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901–2912). The USFWS has statutory authority and responsibility for enforcing the MBTA, the Fish and Wildlife Improvement Act of 1978 (16 U.S.C. 742l), and the Fish and Wildlife Act of 1956 (16 U.S.C. 742a–j). The MBTA provides for protection of migratory birds through various treaties and conventions between the United States and Canada, Mexico, Japan, and Russia. The MBTA was enacted to ensure protection of shared migratory bird resources. This act prohibits intentional take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase, or barter of any migratory bird or its eggs, body parts (feathers and plumes), or nests, except as authorized under a valid permit. Take is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities” (MBTA, 1918). Take does not include habitat destruction or alteration, as long as there is no direct taking of birds, active nests, eggs, or parts thereof. Many common birds are protected under the act; a complete list of MBTA-protected species is found at 50 CFR 10.13. Under the amendments in 50 CFR 21, Migratory Bird Permits, take resulting from otherwise lawful military readiness activities is authorized. However, this rule does not authorize takes under the ESA; formal consultation would be necessary for incidental take of an ESA-listed species. The USFWS retains authority to withdraw or suspend authorization for incidental takes occurring during military readiness activities under certain circumstances.

Sensitive habitats include designated critical habitat protected under the ESA and sensitive ecological areas designated by state or other federal rulings. The ROI for terrestrial biological resources includes the towers and the immediate area surrounding each tower location where terrestrial species may forage or migrate.

3.5.2 Affected Environment

3.5.2.1 Bats

Bats are wide-ranging, occurring on many islands and every continent except for Antarctica. The vast majority of bat species occur in tropical regions; of the more than 1,400 species known world-wide, 45 species occur in the U.S. and Canada (DOI, 2021). Thirteen species of bats are known to occur in Florida (Florida Fish and Game Commission, 2022). One bat species in Florida is listed as endangered under the ESA, the Florida bonneted bat (*Eumops floridanus*). This species occurs in southern Florida, excluding the Florida Keys, and is therefore not expected to occur in the vicinity of the towers. USFWS recently proposed the tricolored bat (*Perimyotis subflavus*) to be listed as endangered. No critical habitat has been proposed. The range of the tricolored bat includes the State of Florida except the Florida Keys.

Most of the 13 species can be found throughout Florida except for the Florida Keys (Florida Bat Conservancy, 2005). The eastern red bat (*Lasiurus borealis*), gray myotis (*Myotis grisences*), and the hoary bat (*Lasiurus cinereus*) are found only in northern Florida. The velvety free-tailed bat (*Molossus molossus*) is found only in the Florida Keys (Florida Bat Conservancy, 2005). Four of the bat species in Florida are of the genus *Lasiurus*; eastern red bat, Seminole bat (*Lasiurus seminolus*), northern yellow bat (*Lasiurus intermedius*), and hoary bat.

Although all bats are terrestrial, many species occur in coastal (nearshore) waters, offshore waters (continental shelf), or open ocean areas while migrating or foraging, and use islands, ships, and other offshore structures as opportunistic or deliberate stopover sites for resting or roosting (Constantine, 2003; Cryan and Brown, 2007; Pelletier et al., 2013; Thompson et al., 2015; U.S. Department of Energy, 2016). While bats are typically nocturnal, there are anecdotal accounts of migratory tree bats (*Lasiurus* and *Lasionycteris* spp.) traveling during autumn migration in diurnal flocks (Hatch et al., 2013). Numerous studies have shown that many bat species forage within or migrate over marine environments, sometimes at considerable distances from shore that would place them in the vicinity of the towers. Hatch et al. (2013), for example, reported that offshore bats observed were located between 10 and 26 miles from shore (with an average distance of 18.6 miles), and that historical observations ranged from 1.8 to 1,211 miles offshore (with an average distance of 64.4 miles). Several North American bats have been found on Bermuda, located approximately 670 miles from the U.S. coast (Constantine, 2003; Pelletier et al., 2013). One study found that the eastern red bat (73 percent of all occurrences) and hoary bat (22 percent of all occurrences) were the most likely species to be detected at offshore buoy monitoring sites (U.S. Department of Energy, 2016).

3.5.2.2 Seabirds

Seabirds are birds whose normal habitat and food source is the sea, whether they utilize coastal waters (nearshore), offshore waters (continental shelf), or pelagic waters (open sea) (Harrison,1983). Pelagic birds, such as albatrosses (*Diomedeidae*), petrels, frigatebirds (*Fregatidae*), tropicbirds (*Phaethontidae*), boobies (*Sula* spp.), and some terns (*Sternidae)* forage over the ocean and nest on oceanic islands. Some seabirds nest along the coast and forage in nearshore areas, including pelicans (*Pelecanidae*), cormorants (*Phalacrocoracidae*), gulls (*Laridae*), and some terns. Other seabirds use coastal areas only during breeding season, nesting and foraging in inland habitats, such as such as skuas and jaegers (*Stercorarius* spp.), Franklin’s gull (*Leucophaeus pipixcan*), Bonaparte’s gull (*Chroicocephalus philadelphia*), ring-billed gull (*Larus delawarensis*), and black tern (*Chlidonias niger*) (Schreiber and Burger, 2002).

Seabirds may travel considerable distances to forage; some albatross and petrel species are known to travel hundreds of miles on single foraging trips. Several species exhibit feeding behavior that would place them in the vicinity of the towers. Some birds dive from the air or water surface. Some of these birds, called plunge divers, fly over water seeking potential prey and dive from the air to attempt capture. Boobies and northern gannets (*Morus bassanus*) penetrate well below the surface and also actively chase fish underwater. Many other birds dive from the water surface, including loons (*Gavia* spp.), grebes (*Podicipedidae*), cormorants, alcids (Alcidae [puffins and their relatives]), diving petrels (*Hydrobatidae*), some shearwaters (*Puffinus* spp.), coots (*Fulica americana*), and many ducks (*Anatidae*).

The following seabirds are known to use offshore waters in the area of the towers: northern gannet (*Morus bassanus*), brown pelican (*Pelecanus occidentalis*), double-crested cormorant (*Phalacrocorax auritus*), laughing gull (*Leucophaeus atricilla*), roseate tern (*Sterna douglallii*), sooty tern (*Onychoprion fuscatus*), brown noddy (*Anous stolidus*), herring gull (*Larus argentatus*), Cory's shearwater (*Calonectris borealis*), masked booby (*Sula dactylatra*), forester’s tern (*Sterna forsteri*), osprey (*Pandion haliaetus*), royal tern (*Thalasseus maximus*), sooty tern (*Onychoprion fuscatus),* and magnificent frigatebird *(Fregata magnificens)* (NPS, 2004 and USFWS, 2007).

3.5.2.3 Migratory Birds

Florida lies within the Mississippi and Atlantic Flyways, major migration routes for thousands of birds along the eastern United States. Large numbers of birds utilize the flyways during fall and spring migratory seasons. The towers are located within the principal routes of hundreds of migratory birds, both in terms of number and species. Examples include shorebirds, such as sanderling (*Calidris alba*) and waterfowl, such as ring-necked duck (*Aythya collaris*).

3.5.2.4 Protected Birds

There are three bird species listed under the ESA with the potential to occur in the vicinity of the towers: the piping plover (*Charadrius melodus*) and the roseate tern, are both listed as threatened, and the black-capped petrel (*Pterodroma hasitata*) is listed as endangered. Piping plovers are found along the northwestern and southern Florida coasts outside of the breeding season. This species may occur in the project areas during winter and migration periods; however, their presence would be transitory. Roseate terns are known to nest in colonies at Dry Tortugas National Park, which is in the vicinity of the south towers. Black-capped petrels may occur throughout the project area.

3.5.2.5 Birds of Conservation Concern

The birds listed below are of particular concern, either because they occur on the USFWS Birds of Conservation Concern (BCC) list or otherwise warrant special attention in the project areas. The purpose of the BCC list is to identify birds that require the most conservation attention. Cory’s shearwater and magnificent frigatebird are on the BCC list. The following species are not on the BCC list in this area, but warrant attention because of potential susceptibilities in offshore areas from certain types of development or activities, such as energy development or longline fishing (USFWS, 2024):

- Ring-billed gull *(Larus delawarensis)*
- Common loon *(Gavia immer)*
- Brown pelican *(Pelecanus occidentalis)*
- Royal tern *(Thalasseus maximus)*
- Great shearwater *(Puffinus gravis)*
- Pomarine jaeger *(Stercorarius pomarinus)*
- Audubon's shearwater *(Puffinus lherminieri)*

3.5.3 Environmental Consequences Evaluation Criteria

The level of impact on terrestrial biological resources is based on the following factors:

- The importance (legal, commercial, recreational, ecological, or scientific) of the resource;
- The proportion of the resource that would be affected relative to its occurrence in the region;
- The sensitivity of the resource to the proposed activities; and
- The duration of potential ecological ramifications.

Impacts on terrestrial biological resources would be significant if species or habitats of high concern (federally and state-listed threatened and endangered species or designated critical habitat) are negatively affected over relatively large areas. Impacts would also be considered adverse if disturbances cause reductions in population size or distribution of a species of high concern.

As a requirement under the ESA, federal agencies must provide documentation that ensures that agency actions do not adversely affect the existence of any threatened or endangered species. The ESA requires that all federal agencies avoid unauthorized "take" of federally threatened or endangered species or adverse modification of designated critical habitat. The ESA Section 7 consultation process would result in either a concurrence on the DAF's determination of "may affect, but no adverse effect" on listed species, or a biological opinion with either an Incidental Take Statement that authorizes a specified amount of "take" (or adverse modification of designated critical habitat) or a jeopardy determination. No ESA Section 7 consultation is required if the DAF determines there would be no effect on a threatened or endangered species.

3.5.4 Environmental Consequences – Alternative 1

The impacts of alternatives 1a and 1b on terrestrial biological resources would be the same, and would not be significant.

3.5.4.1 Sever at Bottom (1a)

Alternative 1 is anticipated to result in short-term adverse impacts on bats and seabirds. The movement and typical noise associated with the equipment operation (generators, crane, small vessels, and mechanical cutters) are anticipated to prompt any roosting bats or seabirds to leave the towers. Bats and seabirds are expected to fly away from the towers when equipment operations are taking place and select alternative activities (return to flight or select other roosting locations [work vessels or other towers]).

Removal of the towers would result in a loss of perching/roosting sites and possibly nesting sites. As all above-water portions of the towers would be removed, so too would any surface resting areas for bats, seabirds, migratory birds, and protected birds in the vicinity of the structures. Although the towers have served this function since 1977, the birds that are known to roost on the towers use them as an artificial extension of their land-based habitat. Neither bats nor seabirds requires such artificial structures to successfully make their migrations or foraging trips.

Before they are removed, the towers would be inspected for migratory bird nests. If nesting materials are present, then the DAF would determine if eggs or hatchlings are present. If the nesting activity appears active, then the DAF would not remove that tower until the nesting cycle has been completed. A qualified biologist would identify the species and the DAF would consult with the USFWS if it were listed as threatened or endangered under the ESA.

Removal of the towers may also adversely affect seabird foraging, from both the loss of perching sites and the potential change in the diversity or abundance of available prey. Seabirds accustomed to foraging from the towers may be forced to adapt their behavior. Some species may still visit the area because of the abundance of prey. However, some species, such as the roseate tern, herring gull, and brown pelican, may abandon the area because the towers are at or beyond their foraging range. Brown pelicans generally forage within 12 miles of the shore, and perching sites are important habitat: they cannot remain on the water for more than an hour, as their feathers become water-logged, hindering thermoregulation (Stinson, 2015). In the absence of the towers, this species may no longer use the area for foraging, even if the amount of prey species is unchanged. It is expected that these species would be able to use other available suitable habitat, and the number of birds potentially affected would be small. Other seabirds, such as the northern gannet, magnificent frigatebird, and shearwater (*Puffinus*) species, commonly travel long distances during foraging and are not likely to change their behavior because of the absence of the perching habitat the towers provide.

Removal of the above-water portions of the towers would provide an ecological benefit by eliminating the possibility of towerkills often associated with tower structures. Towerkill is a phenomenon in which numbers of birds are killed annually by communication and other tower structures (USFWS, 1998). The USFWS has estimated that between 5 and 50 million birds are killed in the U.S. each year by towerkill. Two mechanisms of bird death are caused by communications towers: the first is "blind kill" where the birds do not see the towers in time to avoid them in poor visibility. The second occurs during low cloud ceiling or foggy conditions, where lights on a tower reflect off water or other air particles, creating an illuminated area around the tower. Migrating birds lose their stellar cues for nocturnal migration in such conditions. Removal of the above-water portions of the towers would provide a benefit by eliminating the possibility of towerkills. As such, Alternative 1 would result in short-term adverse impacts to both bats and birds and potential long-term beneficial impacts. The impacts would not be significant.

Adverse impacts to bats, seabirds, migratory birds, or protected birds from vessel strikes are very unlikely because of the vessels' predominantly stationary positioning during the removal activities. Other adverse impacts would occur from the visual and behavioral disturbance from approaching vessels. Vessel movements could elicit short-term behavioral or physiological responses (such as alert response, startle response, fleeing the immediate area, or a temporary increase in heart rate). These behavioral reactions are not expected to result in substantial changes to an individual's fitness or species recruitment and are not expected to result in population-level impacts.

Because Alternative 1 has the potential to affect the tricolored bat and the roseate tern and black-capped petrel, the DAF has made a "may affect, but is not likely to adversely affect," determination. Also, Alternative 1 activities would not occur in any designated critical habitat for any species, and there is no mechanism by which the activities would affect critical habitat.

3.5.4.2 Sever Below Warning Buoy Depth (1b)

Under Alternative 1b , the support structures at each tower would be severed at a depth and location where buoys are not required through consultation with the USCG. A vertical portion of the tower structure would remain in place beneath the surface. This difference would not affect the types or level of impacts on bats or birds, and the impacts would be the same as those described for Alternative 1a.

3.5.5 Environmental Consequences – Alternative 2

The impacts of alternatives 2a and 2b on terrestrial biological resources would be the same, and would not be significant.

3.5.5.1 Sever at Bottom (2a)

Under Alternative 2a the potential impacts would be the same as those described for Alternative 1a. The only difference (use of a barge to transport the towers to the nearest existing artificial reef) would not change the type or level of impacts on terrestrial biological resources as those described for Alternative 1a.

3.5.5.2 Sever Below Warning Buoy Depth (2b)

The depth at which the towers are cut would not affect the type or level of impacts on terrestrial biological resources. Therefore, the impacts of Alternative 2b would be the same as those described under Alternative 1a.

3.5.6 Environmental Consequences – Alternative 3

The impacts of alternatives 3a and 3b on terrestrial biological resources would be the same, and would not be significant.

3.5.6.1 Sever at Bottom (3a)

Under Alternative 3a, the potential impacts would be the same as those described for Alternative 1a. The only difference (use of a barge to transport the towers to a newly created artificial reef) would not change the type or level of impacts on terrestrial biological resources as those described for Alternative 1a.

3.5.6.2 Sever Below Warning Buoy Depth (3b)

The depth at which the towers are cut would not affect the type or level of impacts on terrestrial biological resources. Therefore, the impacts of Alternative 3b would be the same as those described under Alternative 1a.

3.5.7 Environmental Consequences – Alternative 4

The impacts of alternatives 4a and 4b on terrestrial biological resources would be the same, and would not be significant.

3.5.7.1 Sever at Bottom (4a)

Under Alternative 4b, the potential impacts would be the same as those described for Alternative 1a. The only difference (the use of a barge to transport the cut towers to an onshore location) would not change the impacts on terrestrial biological resources as described under Alternative 1a.

3.5.7.2 Sever Below Warning Buoy Depth (4b)

The depth at which the towers are cut would not affect the type or level of impacts on terrestrial biological resources. Therefore, the impacts of Alternative 4b would be the same as those described under Alternative 1a.

3.5.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the towers would not be decommissioned and would be remain available for perching and roosting, which is a long-term beneficial impact. The impacts would not be significant. Birds and bats would continue to be at risk of towerkills (**see Section 3.5.4.1**). Inspection and maintenance would continue to ensure they do not deteriorate and become safety or navigational hazards. Direct collisions with most DAF (or contracted) vessels by bats or seabirds are unlikely but do occur, especially at night. Birds are anticipated to have an extremely remote potential for impacts via vessel strikes posed by the vessels' predominantly stationary positioning during maintenance. Other long-term adverse impacts may occur from the visual and behavioral disturbance from a vessel. Birds respond to moving vessels in various ways. Some birds, including certain species of gulls, storm petrels (Hydrobatidae), and albatrosses, commonly follow vessels (Favero et al., 2011; Hyrenbach, 2001); while other species such as frigatebirds (Fregatidae) and sooty terns seem to avoid vessels (Borberg et al., 2005). There could be an increased risk of adverse impacts during the winter or fall/spring migrations when migratory birds are concentrated in coastal areas. Despite this concentration, most birds would still be able to avoid collision with a vessel. Vessel movements could elicit short-term behavioral or physiological responses (such as alert response, startle response, fleeing the immediate area, or a temporary increase in heart rate). The general health of individual birds would not be compromised. These behavioral reactions are not expected to result in substantial changes to an individual's fitness or species recruitment, nor result in population-level impacts.

3.5.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

Planned installations of artificial reefs and several Gulf spill restoration projects may improve foraging for seabirds in the vicinity of the north towers. This impact would be additive to the beneficial impact of removing the risk of towerkill, which would occur under either of the action alternatives. No future actions that would adversely affect bats or birds have been identified in the vicinity of the towers.

3.6 Air Quality

3.6.1 Definition of Resource

Air quality in various areas of the country is affected by air pollutants emitted by numerous sources, including natural and anthropogenic. Weather conditions and topography of the area further influence the amounts and types of pollutants that are present in the ambient air.

To manage pollutant emission levels in ambient air, USEPA was mandated under the federal CAA to set standards for select pollutants that are known to affect human health and the environment. These standards, known as National Ambient Air Quality Standards (NAAQS), are currently established for six criteria air pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, respirable particulate matter (including particulates equal to or less than 10 microns in diameter and particulates equal to or less than 2.5 microns in diameter, and lead).

To evaluate compliance with NAAQS, USEPA has divided the country into geographical regions with regulatory areas that are designated as an attainment area or nonattainment area for each of the criteria pollutants, depending on whether it meets or exceeds NAAQS. Attainment areas that were reclassified from a previous nonattainment status to attainment are called maintenance areas. The state must prepare a State Implementation Plan or a Maintenance Plan for areas designated as nonattainment or maintenance for one or more criteria pollutants to show how the area will meet or maintain NAAQS within a specified timeframe.

Federal actions in NAAQS nonattainment and maintenance areas are also required to comply with USEPA's General Conformity Rule (40 CFR 93). Federal actions are evaluated to determine if project emissions are below *de minimis* levels for each of the pollutants as specified in 40 CFR § 93.153. If project emissions are below *de minimis* levels (or are minimal), no further evaluation is required. If project emissions are exceeded for any of the criteria pollutants, detailed analysis is necessary.

Some areas of the state have been designated as Class I federal wilderness areas to address the problem of visibility (40 CFR 81.410, 81.425, and 81.434). Class I areas are defined as national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. State Implementation Plans must also address visibility as an air quality issue to maintain good air quality in these pristine areas in the country.

USEPA's Prevention of Significant Deterioration (PSD) regulations apply in attainment areas and only to a major stationary source (a source with the potential to emit 250 tons per year of any regulated pollutant), and significant modifications to major stationary sources. Additional PSD major source and significant modification thresholds apply for greenhouse gases (GHG). PSD permitting can also apply to a proposed project if the following conditions exist: (1) the proposed project is a modification with a net emission increase to an existing PSD major source, (2) the proposed project is within 10 kilometers (6.2 miles) of national parks or wilderness areas (Class I Areas), and (3) regulated stationary source pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 milligram per cubic meter (mg/m^3) or more (40 CFR 52.21[b][23][iii]).

GHG are gases, occurring from natural processes and human activities, that trap heat in the atmosphere. The accumulation of GHG in the atmosphere helps regulate the earth's temperature. USEPA regulates GHG emissions via permitting and reporting requirements that are applicable mainly to large stationary sources of emissions.

The 14 ACMI towers include 6 northern towers southeast of Carrabelle, Florida, and 8 southern towers northwest of Key West, Florida. The onshore coastal counties located closest to the towers include Franklin (northern towers), Monroe (southern towers), and Collier (southern towers). These three counties, as well as the tower areas themselves, represent the ROI for air quality. All three counties are designated in attainment for NAAQS (USEPA, 2022). A detailed discussion on air quality regulations, general conformity, and GHG emissions is contained in **Appendix E**.

3.6.2 Affected Environment

The climate in the northern parts of Florida is humid subtropical. Apalachicola, close to where the northern towers are located, is characterized by relatively high temperatures and evenly distributed rainfall throughout the year. The average temperature for the year is 68.4°F. The average amount of precipitation for the year in Apalachicola is 57.7 inches (Weatherbase, 2022). The climate of the Florida Keys, close to where the southern towers are located, is notably mild, tropical-maritime because of the nearby Gulf Stream in the Straits of Florida and the tempering effects of the Gulf of Mexico. Diurnal variations in temperature throughout the year are about 10 degrees. Winter cold fronts from the north tend to be modified by the warm water, keeping monthly average temperatures typically only 15 degrees lower in the winter than during the summer. December through April tend to be drier, while June through October is considered the wet season. Easterly waves during this season occasionally bring excessive rainfall, while infrequent hurricanes may be accompanied by unusually heavy amounts of rainfall (NWS, 2022).

In general, the air quality off the western Florida coastline is relatively good. The closest coastal counties for the Proposed Action — Franklin, Monroe, and Collier — are not designated as nonattainment or maintenance for any criteria pollutant (USEPA, 2022). Based on the attainment status at or near the proposed project locations, the requirements of the General Conformity Rule are not applicable.

3.6.3 Environmental Consequences Evaluation Criteria

The Florida coastal counties where the offshore water activities for the Proposed Action would occur are in attainment for NAAQS; therefore, the General Conformity Rule does not apply. However, to be conservative, the total emissions from activities for the Proposed Action are compared against General Conformity *de minimis* thresholds. If emissions are demonstrated to be below General Conformity Rule *de minimis* thresholds, there would be no significant adverse impacts on air quality with the Proposed Action; thus, no significant harm to air quality over non-territorial waters would occur.

All towers are located outside of the 9 NM limit for the State of Florida waters. Most emission-generating activities for the Proposed Action would likely occur beyond state territorial boundaries. Emissions from these pollutants offshore are likely to be widely dispersed before they reach the boundaries of the air quality control regions close to the coastal shoreline. However, as a conservative approach, all emissions that would occur within and beyond the state territorial waters are evaluated.

Air emissions from the Proposed Action are estimated based on the methodology and assumptions used in the *Final Kings Bay OEA*. The *Kings Bay OEA* used the NONROAD 2008 (USEPA, 2009) model to estimate air emissions from marine vessels and construction equipment, which is the USEPA preferred model for estimating emissions from non-road sources. The total number of days and hours used for each piece of equipment for each alternative were derived based on the information provided in the *Kings Bay OEA*. Assumptions of the data used in the model are discussed in **Appendix E**.

Based on guidance in Chapter 4 of the *Air Force Air Quality EIAP Guide, Volume II – Advanced Assessments*, estimated criteria pollutant emissions from the Proposed Action were compared against the insignificance indicator of 250 tons per year (tpy) (25 tpy for lead) PSD major source permitting threshold for actions occurring in areas that are in attainment for all criteria pollutants (AFCEC, 2020). These “Insignificance Indicators” were used in the analysis to provide an indication of the significance of potential impacts on air quality based on current ambient air quality relative to the NAAQS. These insignificance indicators do not define a significant impact; rather, they provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for a criteria pollutant indicates that the action would not cause or contribute to emissions that would exceed one or more NAAQSs. Although PSD and Title V permit requirements are not applicable to mobile sources, the PSD major source thresholds provide a benchmark for the comparison of estimated emissions and description of potential impacts.

GHG. The Proposed Action would contribute incrementally to global GHG emissions. Projected GHG emissions from the Proposed Action are estimated using NONROAD emission factors and were evaluated based on methodology in ACAM Version 5.0.23a.The evaluation calculates projected potential GHG emissions (carbon dioxide equivalent or [CO_2e]) over the life cycle of the Proposed Action, determines if the action’s emissions are insignificant, and provides a relative significance comparison with projected national and state GHG. For the analysis, the PSD threshold for GHG of 75,000 tpy of CO_2e (or 68,039 metric ton per year, [mton/yr] was used as an indicator or "threshold of insignificance" to determine air quality impacts. If activities have *de minimis* (insignificant) GHG emissions, then on a global scale they are effectively zero and irrelevant (AFCEC, 2023). Detailed emissions calculations and assumptions of the data used to evaluate GHG emissions are discussed in **Appendix E**.

3.6.4 Environmental Consequences – Alternative 1

3.6.4.1 Sever at Bottom (1a)

Activities associated with Alternative 1a would include demolition, severance, and in-place disposal of the towers. These activities are anticipated to result in short-term, moderate impacts on air quality. The impacts would not be significant. The short-term impacts from operation of marine vessels and construction equipment associated with Alternative 1a would generate moderate amounts of criteria pollutant emissions, but would not significantly affect air quality in the region.

DAF provided an estimate of the total number of days and hours of operation for the alternative. Operational hours for the vessels and equipment were estimated based on data provided by DAF. It is expected to take 420 days to decommission all towers (30 days/tower x 14 towers). For mechanical removal of tower and in-place disposition, two large (100 foot) vessels with two inboard 600-horsepower diesel engines and two smaller (25 foot) vessels with 300-horsepower outboard four-stroke engines are expected to be used. The primary vessels could include marine vessels with crane, berthing, galley, and ample deck space (possibly contracted) for personnel and equipment. The smaller vessels could include small boats used for personnel movement around the work area. In addition, two 60-horsepower generators are expected to be used.

Emission factors generated in the NONROAD 2008 model in the *Kings Bay OEA* were used to estimate air emissions from vessel traffic from the operation of each vessel and generator.

Table 3-3 presents the net change in annual emissions associated with Alternative 1a. Emissions for each pollutant would increase as a result of proposed operations under Alternative 1a, but the net increase in emissions for each criteria pollutant would be less than the insignificance indicator values. Therefore, these increases in emissions are not expected to result in an exceedance of the NAAQS for any criteria pollutant and would not result in significant air quality impacts.

It is assumed that the activities associated with Alternative 1a would not involve construction, installation of new stationary sources of air emissions, or changes in personnel or ground-based operations. As such, no air quality permits would be required. It is also assumed that work would be conducted in accordance with all applicable federal and state emission laws and standards. Standard methods to control particulates would be required so that air pollution standards are not exceeded and visibility is not affected.

Table 3-3 Net Emissions from Alternatives 1a Compared to the Insignificance Indicators

Pollutant	VOC	CO	NOx	PM-10	PM-2.5	SO_2
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Baseline (No Action Alternative)[1]	0.27	0.89	0.29	0.01	0.01	0.03
Alternative 1a[1]	42.68	141.96	46.02	1.26	1.22	4.51
TOTAL NET EMISSIONS	**42.41**	**141.07**	**45.73**	**1.26**	**1.21**	**4.48**
Insignificance Indicator	*250*	*250*	*250*	*250*	*250*	*250*
Exceed Indicator Values (Yes/No)	No	No	No	No	No	No

Notes:
[1] Estimated using NONROAD emission factors from *Kings Bay OEA* (see **Appendix E**)
CO = carbon monoxide; NO_x = nitrogen oxide; SO_2 = sulfur dioxide; $PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = particulate matter less than 10 microns; VOC = volatile organic compound

GHG. The projected increases in GHG emissions from Alternative 1a would not have a significant adverse effect. As presented in **Table 3-4,** the estimated CO_2e emissions increase associated with Alternative 1a are below the DAF's GHG insignificance indicator. As such, GHG emissions from Alternative 1a are effectively negligible relative to GHG emissions on a national, regional, or global scale.

Table 3-4 Annual GHG Emissions Associated with Alternative 1a Compared to Insignificance Indicator

Year	CO_2 (mton/yr)[1]	CH_4 (mton/yr)[1]	N_2O (mton/yr)[1]	CO_2e (mton/yr)[1]	Threshold (mton/yr)[2]	Exceeded
2025	4,189.30	38.72	41.75	17,598.01	68,039	No
Total GHG (CO_2e) Relative Significance (mton)[1]						
Percent of State Totals	0.77179%					
Percent of U.S. Totals	0.03408%					

Notes:
[1] Estimated using NONROAD emission factors. Projected estimated GHG emissions over the life cycle of the Proposed Action, its relative significance estimated using Air Conformity Applicability Model methodology.
[2] Air Force Prevention of Significant Deterioration threshold for GHG of 75,000 tons per year of CO_2e (or 68,039 mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas.
CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gases; mton/yr = metric ton per year; N_2O = nitrous oxide

3.6.4.2 Sever Below Warning Buoy Depth (1b)

Under Alternative 1b, the support structures at each tower would be severed at a depth and location where buoys are not required by the USCG. A vertical portion of the tower structure would remain in place beneath the surface. This difference would not affect the type or quantity of air emissions and would result in the same level of air emissions as presented in **Table 3-1**. The air emission impacts would be the same as those described for Alternative 1a.

GHG. The projected increases in GHG emissions from Alternative 1b would be the same as for Alternative 1a and presented in **Table 3-2**. GHG emissions from Alternative 1b are effectively negligible relative to GHG emissions on a national, regional, or global scale.

3.6.5 *Environmental Consequences – Alternative 2*

3.6.5.1 Sever at Bottom (2a)

One additional 1200-horsepower marine vessel (barge) and one additional 60-horsepower generator are expected to be used for transporting severed towers to the nearby reefing area, beyond the equipment used in Alternative 1a. It is assumed to take 1 day per tower for transportation and disposition at a nearby reefing area.

Table 3-5 presents the net change in annual emissions associated with Alternative 2a. Emissions for each pollutant would increase as a result of proposed operations under Alternative 2a, but the net increase in emissions for each criteria pollutant would be less than the insignificance indicator values.

Table 3-5 Net Emissions from Alternatives 2a Compared to the Insignificance Indicators

Pollutant	VOC	CO	NOx	PM-10	PM-2.5	SO_2
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Baseline (No Action Alternative)[1]	0.27	0.89	0.29	0.01	0.01	0.03
Alternative 2a[1]	42.72	142.14	47.06	1.30	1.25	4.64
TOTAL NET EMISSIONS	**42.46**	**141.25**	**46.78**	**1.29**	**1.24**	**4.61**
Insignificance Indicator	*250*	*250*	*250*	*250*	*250*	*250*
Exceed Indicator Values (Yes/No)	No	No	No	No	No	No

Notes:
[1] Estimated using NONROAD emission factors from *Kings Bay OEA* (see **Appendix E**)
CO = Carbon monoxide; NO_x = nitrogen oxide; SO_2 = sulfur dioxide; $PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = Particulate matter less than 10 microns; VOC = volatile organic compound

The potential impacts for Alternative 2a would be similar to those described for Alternative 1a. The only difference (use of a barge and equipment to transport the towers to the nearest existing artificial reef) would result in a marginal increase in annual emissions of all pollutants, but it would not change the type or level of impacts on air quality. Impacts to air quality would be short term and moderate.

GHG. The projected increases in GHG emissions from Alternative 1a would not have a significant adverse effect. As presented in **Table 3-6,** the estimated CO_2e emissions increase associated with Alternative 2a are below the DAF's GHG insignificance indicator. As such, GHG emissions from Alternative 2a are effectively negligible relative to GHG emissions on a national, regional, or global scale.

Table 3-6 Annual GHG Emissions Associated with Alternative 2a Compared to Insignificance Indicator

Year	CO_2 (mton/yr)[1]	CH_4 (mton/yr)[1]	N_2O (mton/yr)[1]	CO_2e (mton/yr)[1]	Threshold (mton/yr)[2]	Exceedance
2025	4,264.57	38.76	42.70	17,940.69	68,039	No
Total GHG (CO_2e) Relative Significance (mton)[1]						
Percent of State Totals	0.78682%					
Percent of U.S. Totals	0.03474%					

Notes:
[1] Estimated using NONROAD emission factors. Projected estimated GHG emissions over the life cycle of the Proposed Action, its relative significance estimated using Air Conformity Applicability Model methodology.
[2] Air Force Prevention of Significant Deterioration threshold for GHG of 75,000 tons per year of CO_2e (or 68,039 mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas.
CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gases; mton/yr = metric ton per year; N_2O = nitrous oxide

3.6.5.2 Sever Below Warning Buoy Depth (2b)

Alternative 2b would result in the same level of air emissions as those for Alternative 2a and is as presented in **Table 3-5**. The type and quantity of emissions would remain the same irrespective of where the severance would occur (at bottom of support structure or at warning buoy depth). Therefore, the air emission impacts for Alternative 2b would be the same as those described for Alternative 2a.

GHG. The projected increases in GHG emissions from Alternative 2b would be the same as for Alternative 2a and presented in **Table 3-6**. GHG emissions from Alternative 2b are effectively negligible relative to GHG emissions on a national, regional, or global scale.

3.6.6 Environmental Consequences – Alternative 3

3.6.6.1 Sever at Bottom (3a)

The equipment used to transport severed towers to new reefing areas would be identical to those used in Alternative 2a.

Table 3-7 presents the net change in annual emissions associated with Alternative 3a. Emissions for each pollutant would increase as a result of proposed operations under Alternative 3a, but the net increase in emissions for each criteria pollutant would be less than the insignificance indicator values.

Table 3-7 Net Emissions from Alternatives 3a Compared to the Insignificance Indicators

Pollutant	VOC	CO	NOx	PM-10	PM-2.5	SO_2
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Baseline (No Action Alternative)[1]	0.27	0.89	0.29	0.01	0.01	0.03
Alternative 3a[1]	42.72	142.14	47.06	1.30	1.25	4.64
TOTAL NET EMISSIONS	**42.46**	**141.25**	**46.78**	**1.29**	**1.24**	**4.61**
Insignificance Indicator	*250*	*250*	*250*	*250*	*250*	*250*
Exceed Indicator Values (Yes/No)	No	No	No	No	No	No

Notes:
[1] Estimated using NONROAD emission factors from *Kings Bay OEA* (see **Appendix E**)
CO = carbon monoxide; NOx = nitrogen oxide; SO_2 = sulfur dioxide; $PM_{2.5}$ = particulate matter less than 2.5 microns;
PM_{10} = particulate matter less than 10 microns; VOC = volatile organic compound

The potential impacts for Alternative 3a would be the same as those described for Alternative 2a. Activities performed under Alternative 3a would result in short-term, moderate impacts on air quality and would not cause or contribute to emissions that would exceed one or more NAAQSs.

GHG. The projected increases in GHG emissions from Alternative 3a would not have a significant adverse effect. As presented in **Table 3-8,** the estimated CO_2e emissions increase associated with Alternative 3a are below the DAF's GHG insignificance indicator. As such, GHG emissions from Alternative 3a are considered effectively negligible relative to GHG emissions on a national, regional, or global scale. Details of GHG emissions evaluation for Alternative 3a is included in **Appendix E**.

Table 3-8 Annual GHG Emissions Associated with Alternative 3a Compared to Insignificance Indicator

Year	CO_2 (mton/yr)[1]	CH_4 (mton/yr)[1]	N_2O (mton/yr)[1]	CO_2e (mton/yr)[1]	Threshold (mton/yr)[2]	Exceedance
2025	4,264.57	38.76	42.70	17,940.69	68,039	No
Total GHG (CO_2e) Relative Significance (mton)[1]						
Percent of State Totals	0.78682%					
Percent of U.S. Totals	0.03474%					

Notes:
[1] Estimated using NONROAD emission factors. Projected estimated GHG emissions over the life cycle of the Proposed Action, its relative significance estimated using Air Conformity Applicability Model methodology.
[2] Air Force Prevention of Significant Deterioration threshold for GHG of 75,000 tons per year of CO_2e (or 68,039 mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas.
CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gases; mton/yr = metric ton per year; N_2O = nitrous oxide

3.6.6.2 Sever Below Warning Buoy Depth (3b)

Alternative 3b would result in the same level of air emissions as those for Alternative 3a and as presented in **Table 3-7**. The type and quantity of emissions would remain the same irrespective of where the severance of the support structures would occur (at bottom or at warning buoy depth). Therefore, the air emission impacts for Alternative 3b would be the same as those described for Alternative 3a.

GHG. The projected increases in GHG emissions from Alternative 3b would be the same as for Alternative 3a and presented in **Table 3-8**. GHG emissions from Alternative 3b are considered to be effectively negligible relative to GHG emissions on a national, regional, or global scale.

3.6.7 Environmental Consequences – Alternative 4

3.6.7.1 Sever at Bottom (4a)

One additional 1,200-horsepower marine vessel (barge) and one additional 60-horsepower generator are expected to be used to transport the severed towers to the nearest port for disposal onshore, beyond the equipment used in Alternative 1a. One long haul diesel truck is assumed to transport severed towers to a disposal location onshore. The truck is assumed to travel a maximum of 4,000 miles for each tower (round trip distance) from port to salvage disposal location and back.

Table 3-9 presents the net change in annual emissions associated with Alternative 4a. Emissions for each pollutant would increase as a result of proposed operations under Alternative 4a, but the net increase in emissions for each criteria pollutant would be less than the insignificance indicator values.

Table 3-9 Net Emissions from Alternatives 4a Compared to the Insignificance Indicators

Pollutant	VOC	CO	NOx	PM-10	PM-2.5	SO_2
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Baseline (No Action Alternative)[1]	0.27	0.89	0.29	0.01	0.01	0.03
Alternative 4a[1]	42.878	142.362	47.976	1.335	1.296	4.644
TOTAL NET EMISSIONS	**42.61**	**141.48**	**47.69**	**1.33**	**1.29**	**4.62**
Insignificance Indicator	*250*	*250*	*250*	*250*	*250*	*250*
Exceed Indicator Values (Yes/No)	No	No	No	No	No	No

Notes:
[1] Estimated using NONROAD emission factors from *Kings Bay OEA* (see **Appendix E**)
CO = Carbon monoxide; NO_x = nitrogen oxides; SO_x = sulfur oxides; VOC = volatile organic compound;
$PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = Particulate matter less than 10 microns

The potential impacts for Alternative 4a would be similar to those described for Alternative 1a. The only difference (the use of a barge, equipment and a long-haul truck to transport the cut towers to an onshore location for disposal) would result in elevated levels of emissions of all pollutants, but it would not change the type or level of impacts on air quality. Activities under Alternative 4a would result in short-term, moderate impacts on air quality, but these increases in emissions are not expected to result in an exceedance of the NAAQS for any criteria pollutant and would not result in significant air quality impacts.

GHG. The projected increases in GHG emissions from Alternative 4a would not have a significant adverse effect. As presented in **Table 3-10,** the estimated CO_2e emissions increase associated with Alternative 4a are below the DAF's GHG insignificance indicator. As such, GHG emissions from Alternative 4a are considered effectively negligible relative to GHG emissions on a national, regional, or global scale. Details of GHG emissions evaluation for Alternative 4a is included in **Appendix E**.

Table 3-10 Annual GHG Emissions Associated with Alternative 4a Compared to Insignificance Indicator

Year	CO_2 (mton/yr)[1]	CH_4 (mton/yr)[1]	N_2O (mton/yr)[1]	CO_2e (mton/yr)[1]	Threshold (mton/yr)[2]	Exceedance
2025	4,377.66	38.90	43.52	18,319.92	68,039	No
Total GHG (CO2e) Relative Significance (mton)[1]						
Percent of State Totals	0.80345%					
Percent of U.S. Totals	0.03548%					

Notes:

[1] Estimated using NONROAD emission factors. Projected estimated GHG emissions over the life cycle of the Proposed Action, its relative significance estimated using Air Conformity Applicability Model methodology.

[2] Air Force Prevention of Significant Deterioration threshold for GHG of 75,000 tons per year of CO_2e (or 68,039 mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gases; mton/yr = metric ton per year; N_2O = nitrous oxide

3.6.7.2 Sever Below Warning Buoy Depth (4b)

Alternative 4b would result in the same level of air emissions as those for Alternative 4a as presented in **Table 3-9**. The type and quantity of emissions would remain the same irrespective of where the severance of the support structures would occur (at bottom of support structure or at warning buoy depth). Therefore, the air emission impacts for Alternative 4b would be the same as those described for Alternative 4a. Activities under Alternative 4b would result in short-term, moderate impacts on air quality, but these impacts would not be significant.

GHG. The projected increases in GHG emissions from Alternative 4b would be the same as for Alternative 4a and presented in **Table 3-10**. GHG emissions from Alternative 4b are considered effectively negligible relative to GHG emissions on a national, regional, or global scale.

3.6.8 Environmental Consequences – No Action Alternative

Activities associated with the No Action Alternative would involve maintaining the towers in their current locations, and therefore, include no demolition, severance, or disposal actions. The No Action Alternative would require continuing actions to bring the towers into compliance with safety standards, as well as continued regular maintenance of the structures and the navigation warning systems.

It is estimated that a single vessel trip per year would be sufficient to ensure that the towers are following all required safety standards, as well as for regular maintenance of the structures and for verifying working conditions of the navigation warning systems.

The NONROAD 2008 model was used to estimate air emissions from vessel traffic from one 25-foot vessel with outboard four-stroke engines, one 100-foot vessel with two inboard 600 horsepower diesel engines, and a single generator. An estimate of the total number of days and hours of operation for the No Action Alternative was derived based on scaling up the operational data used in the *Kings Bay OEA*. The analyses assumed that the small, 25-foot vessel and the 100-foot vessel would work 5 days offshore, totaling approximately 40 hours (5 X 8-hour days) for each vessel and generator used under the No Action Alternative.

Table 3-11 presents the total annual emissions associated with the No Action Alternative. Emissions for each pollutant would marginally increase as a result of proposed operations under the No Action Alternative, but the total emissions for each criteria pollutant would be less than the insignificance indicator values. Since the total emissions from activities are demonstrated to be below insignificance indicator values, there would be no significant adverse impacts on air emissions from the No Action Alternative; thus, no significant harm to air quality over non-territorial waters would occur. Activities under the No Action Alternative would result in short-term, moderate impacts on air quality.

Table 3-11 Annual Emissions from the No Action Alternative Compared to the Insignificance Indicators

Pollutant	VOC tons/yr	CO tons/yr	NOx tons/yr	PM-10 tons/yr	PM-2.5 tons/yr	SO_2 tons/yr
Baseline (No Action Alternative)[1]	0.27	0.89	0.29	0.01	0.01	0.03
Insignificance Indicator	*250*	*250*	*250*	*250*	*250*	*250*
Exceed Indicator Values (Yes/No)	No	No	No	No	No	No

Notes:
[1] Estimated using NONROAD emission factors from *Kings Bay OEA* (see **Appendix E**)
CO = Carbon monoxide; NO_x = nitrogen oxides; SO_2 = sulfur dioxide; $PM_{2.5}$ = particulate matter less than 2.5 microns; PM_{10} = Particulate matter less than 10 microns; VOC = volatile organic compound

<u>GHG</u>. The estimated GHG emissions from the No Action Alternative would not have a significant adverse effect. As presented in **Table 3-12,** the estimated CO_2e emission increases associated with No Action Alternative are below the GHG insignificance indicator. As such, GHG emissions from the No Action Alternative are considered effectively negligible relative to GHG emissions on a national, regional, or global scale. Details of GHG emissions evaluation for the No Action Alternative are included in **Appendix E**.

Table 3-12 Annual GHG Emissions Associated with the No Action Alternative Compared to Insignificance Indicator

Year	CO_2 (mton/yr)[1]	CH_4 (mton/yr)[1]	N_2O (mton/yr)[1]	CO_2e (mton/yr)[1]	Threshold (mton/yr)[2]	Exceedance
2025	26.18	0.24	0.26	109.99	68,039	No
Total GHG (CO_2e) Relative Significance (mton)[1]						
Percent of State Totals	0.00482%					
Percent of U.S. Totals	0.00021%					

Notes:
[1] Estimated using NONROAD emission factors. Projected estimated GHG emissions over the life cycle of the Proposed Action, its relative significance and estimated using Air Conformity Applicability Model methodology.
[2] Air Force Prevention of Significant Deterioration threshold for GHG of 75,000 tons per year of CO_2e (or 68,039 mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas.
CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gases; mton/yr = metric ton per year; N_2O = nitrous oxide

3.6.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The adverse air quality impacts associated with the Proposed Action Alternatives in the offshore areas would be short term. The impacts would not be significant. The severance, demolition, and disposal (onshore and offshore) of the towers would involve a relatively small number of vessels and construction equipment. Assuming best management practices are employed during implementation of the Proposed Action, additional impacts can be minimized or avoided, and any cumulative effects would not be significant. Therefore, when added to past, present, and reasonably foreseeable future actions, the Proposed Action Alternatives would not have significant cumulative impacts on air quality onshore and offshore in the ROI. Increases in cumulative emissions over territorial waters are not expected to result in an exceedance of the NAAQS for any criteria pollutant and would not result in significant air quality impacts.

3.7 Water Resources

3.7.1 Definition of Resource

Water resources are natural and human-made sources of water that are available for use by, and for the benefit of, humans and the environment. For this analysis, water resources include the marine waters of the Gulf of Mexico. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes and ensures compliance with the CWA. The CWA (33 U.S.C. 1251 *et seq*., as amended) regulates pollution discharges into the Waters of the U.S., which includes the 3-mile territorial sea and the 12-mile contiguous zone. As the federal permitting agency for deployment of artificial reefs, USACE has jurisdiction under the CWA (Section 404) out to 3 NM and under the Rivers and Harbors Act (Section 10) out to 200 NM. Since all towers are outside 9 NM from shore, only the Rivers and Harbors Act applies.

The United States is currently a signatory to Annexes I, II, III, V, and VI of the International Convention for the Prevention of Pollution by Ships (MARPOL), subsequently modified it by Protocol in 1978, that is widely known as MARPOL 73/78 (USCG, 2022). The objective of MARPOL 73/78 is to limit ship-borne pollution by restricting operational pollution and reducing the possibility of accidental pollution by specifying standards for stowing, handling, shipping, and transferring pollutant cargoes, as well as standards for discharge of ship-generated operational wastes. The Annexes signed onto by the United States have all been incorporated into law by the Act to Prevent Pollution from Ships (APPS) and implemented within 33 U.S.C. 1901 and 33 CFR 151. While the United States has not ratified Annex IV (Regulations for the Prevention of Air Pollution from Ships), the United States has equivalent regulations for treatment and discharge standards of shipboard sewage – the Federal Water Pollution Control Act as amended by the CWA and implemented by 33 U.S.C. 1251 and 33 CFR 159. The USCG has the authority to draft regulations to implement MARPOL 73/78 and the amendments thereunder with respect to U.S. vessels and foreign vessels within U.S. navigable waters or the EEZ.

The ROI for water resources includes the ocean areas around the towers and the ocean areas around the vessels used demolition, severance, and disposal of the towers.

3.7.2 Affected Environment

The towers are located from 9.6 to 50.7 NM from shore at depths ranging from 20 to 125 feet. The Gulf of Mexico loop current carries warm Caribbean water between the Yucatan Peninsula and Cuba into the Gulf and loops around the Gulf. The Gulf of Mexico loop current is the parent current for the Florida current, where it exits through the Florida Straits. Current speeds average about 0.8 meters/second (NOAA, 2021a). Tides in the Gulf are shallow, typically less than 2 feet, with average water temperatures of about 70°F in the winter and 90°F in the summer (USF CHNEP, 2024).

3.7.3 Environmental Consequences Evaluation Criteria

Adverse impacts on water resources would occur if the Proposed Action exceeded current effluent or discharge limitations established under existing regulatory discharge limitations in offshore waters of the Gulf of Mexico.

3.7.4 Environmental Consequences – Alternative 1

3.7.4.1 Sever at Bottom (1a)

Alternative 1 would result in short-term adverse impacts to water quality. The impacts would not be significant. Severance methods may include DWC or AWJ methods. Both methods may be used to sever towers at different locations on the tower, for example DWC would likely be used to sever the above-water tower structure. A small amount of metal shavings would be deposited within the water column and on the sea floor from the use of DWC as the only residual byproduct of this method. The AWJ involves using sea water and garnet or copper slag as grit. Since the fluid used in AWJ is sea water and the grit is essentially inert, the environmental impact is thought to be insignificant (Twachtman Snyder & Byrd, Inc. and Center for Energy Studies, Louisiana State University, 2004). Garnet is an abrasive inert silicate that does not contain heavy metals or other toxic materials (Evans and Moyle, 2006). Copper slag is an iron silicate waste created during copper processing and may contain several metals such as copper, lead, and arsenic, although the level of copper in the slag is very low and there are no restrictions on its use nor environmental issues (USEPA, 1995). The typical cutting spread for both the DWC and AWJ operations is fully self-contained with no marine discharges, other than the jet from the AWJ system. DWC and AWJ are considered generally harmless to marine life and the environment (Twachtman Snyder & Byrd, Inc. and Center for Energy Studies, Louisiana State University, 2004).

Severance and disposition of the towers would use lift vessels, cranes, and generators that have the potential to emit water contaminants. Discharges to marine waters from vessels may include sanitary waste or sewage; domestic waste such as water from shipboard sinks, laundries, and galleys; bilge and ballast waste; cooling water; and deck drainage. However, operations vessels would comply with all laws and regulations implemented jointly by the USCG and USEPA to restrict operational pollution and reduce the possibility of accidental pollution. Trash and debris would be retained and transported to shore for disposal in compliance with Annex V of MARPOL 73/78 and U.S. laws established by the APPS and implemented within 33 U.S.C. 1901 and 33 CFR 151.

While operations such as anchoring, excavation, jetting, and lifting and toppling of the structure would also result in the temporary resuspension of unconsolidated sediments that would increase suspended solids or turbidity; these are expected to rapidly disperse and resettle on the seafloor. There is an additional possibility for resuspension of sediment contaminants within the limited area of activity, should they exist, from temporary sediment disturbance. This disturbance would occur only over the short period of time for each tower's disposition, typically less than a week, but perhaps longer for the more extensive disposition operations. Suspended sediments would rapidly disperse and settle on the seafloor; resuspension and transportation are naturally occurring processes that are typically the result of enhanced bottom currents and storms (DOI-MMS, 2005).

No LBP, PCBs, or ACM was found during testing of the above-water structures of the southern towers (USACE, 2016). PCBs were not detected in paint samples analyzed from the northern towers; however, low levels of lead were detected. USEPA does not consider the lead in paints used in vessels being utilized as artificial reefs as a significant environmental or human health hazard and would not affect water quality at a regional level (GASMFC, 2004). Potential impacts of antifouling treatments are addressed in **Section 3.11**.

3.7.4.2 Sever Below Warning Buoy Depth (1b)

The potential impacts of Alternative 1b would be similar to those described under Alternative 1a. The difference between Alternative 1a and Alternative 1b is the increased amount of tower structure that would remain upright and the reduced amount that would be laid down on the seafloor, thus reducing the footprint of components deposited on the sea floor. This reduced footprint would result in less temporary sediment disturbance than Alternative 1a. Alternative 1b would result in short-term adverse impacts to water quality. The impacts would not be significant.

3.7.5 Environmental Consequences – Alternative 2

3.7.5.1 Sever at Bottom (2a)

Under Alternative 2a, activity would include severance of the tower at the bottom and disposal in an established artificial reefing area closest to the tower. The potential impacts from Alternative 2a would be similar to those described under Alternative 1a. This alternative would result in greater travel distances for operations vessels transporting the severed tower components, resulting in greater potential for the discharge of water contaminants. Operations vessels would comply with all laws and regulations as described in Alternative 1a to restrict operational pollution and reduce the possibility of accidental pollution. Alternative 2a would result in short-term adverse impacts to water quality. The impacts would not be significant.

3.7.5.2 Sever Below Warning Buoy Depth (2b)

The potential impacts from Alternative 2b would be similar to those described under Alternative 2a. The difference between Alternative 2a and Alternative 2b is the increased amount of tower structure that would remain upright and the reduced amount that would be laid down on the seafloor, thus reducing the footprint of components deposited on the sea floor. This reduced footprint would result in less temporary sediment disturbance than Alternative 2a. Alternative 2b would result in short-term adverse impacts to water quality. The impacts would not be significant.

3.7.6 Environmental Consequences – Alternative 3

3.7.6.1 Sever at Bottom (3a)

Under Alternative 3a, activity would include severance of the tower at the bottom and disposal in a newly established artificial reefing area. The potential impacts from Alternative 3a would be similar to those described under Alternative 2a. The difference between Alternative 2a and Alternative 3a is the assumed increased barging distance required to transport the towers to the new artificial reef locations, resulting in greater potential for the discharge of water contaminants. Operations vessels would comply with all laws and regulations as described in Alternative 1a to restrict operational pollution and reduce the possibility of accidental pollution. Alternative 3a would result in short-term adverse impacts to water quality. The impacts would not be significant.

3.7.6.2 Sever Below Warning Buoy Depth (3b)

The potential impacts from Alternative 3b would be similar to those described under Alternative 3a. The difference between Alternative 3a and Alternative 3b is the increased amount of tower structure that would remain upright and the reduced amount that would be laid down on the seafloor, thus reducing the footprint of components deposited on the sea floor. This reduced footprint would result in less temporary sediment disturbance than Alternative 3a. Alternative 3b would result in short-term adverse impacts to water quality. The impacts would not be significant.

3.7.7 Environmental Consequences – Alternative 4

3.7.7.1 Sever at Bottom (4a)

Under Alternative 4a, activity would include severance of the tower at the bottom before it is transported to a predetermined onshore disposition location for salvage and disposal. The potential impacts from Alternative 4a would be similar to those of other alternatives. However, disposition of the towers at an onshore location would minimize disturbance of sediments associated with underwater disposition. Under this alternative, it is assumed that operations vessels would be required to travel greater distances to the disposal site than Alternatives 2 or 3, resulting in greater potential for the discharge of water contaminants. Operations vessels would comply with all laws and regulations as described in Alternative 1a to restrict operational pollution and reduce the possibility of accidental pollution. Under this alternative, impacts to water quality would primarily be a result of the methods used to sever the tower structure. Alternative 4a would result in short-term adverse impacts to water quality. The impacts would not be significant.

3.7.7.2 Sever Below Warning Buoy Depth (4b)

The potential impacts from Alternative 4b would be the same as those described under Alternative 4a. The difference between Alternative 4a and Alternative 4b is the increased amount of tower structure that would remain upright and the reduced amount that would be transported to shore. Impacts to water quality would primarily be a result of the methods used to sever the tower structure. Alternative 4b would result in short-term adverse impacts to water quality. The impacts would not be significant.

3.7.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the DAF would be required to maintain the towers, requiring periodic vessel trips for regular maintenance of the structures and navigational warning systems. The resuspension of any sediments from temporary anchoring may result in a temporary impact to water quality from an increase in suspended solids and turbidity. This increase in suspended solids and turbidity is anticipated to disperse rapidly and resettle to the seafloor. Maintenance on the structures would be required to comply with laws and regulations implemented jointly by the USCG and USEPA to restrict operational pollution and reduce the possibility of accidental pollution. Trash and debris would be retained and transported to shore for disposal in compliance with Annex V of MARPOL 73/78 and U.S. laws established by the APPS and implemented within 33 U.S.C. 1901 and 33 CFR 151. The No Action Alternative would have short-term adverse impacts on water quality. The impacts would not be significant.

3.7.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

In addition to the short-term adverse impacts to water resources that may occur under the Proposed Action and alternatives, other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) may also affect water resources. However, given the very short duration of impacts associated with tower cutting and placement, and likely geographical separation, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts to water resources.

3.8 Geological Resources

3.8.1 Definition of Resource

Geological resources are defined as the physiography, topography, geology, and substratum (sediments, sand, and hardbottom) of the sea floor. Physiography and topography pertain to the general shape and arrangement of the seafloor. The ROI for geological resources is the seabed areas around the towers.

3.8.2 Affected Environment

The geologic character of the Gulf of Mexico is primarily the result of Quaternary fluctuations in sea level and the resulting transgressions and regressions of the shoreline, variations in the amount of sediment transport to the coast by rivers such as the Mississippi, and the frequency of storm events (Williams et al, 2012). All 14 ACMI towers are on the West Florida Shelf (WFS). The WFS is characterized by a broad, flat limestone shelf that slopes gently to the west and has relatively few areas of high relief (ESE et al., 1987). The shelf is divided into three depth zones:

- Inner shelf is located from the shore to the 40-meter (131 feet) isobath[3]
- Middle shelf is located from the 40- to the 100-meter (328 feet) isobath
- Outer shelf is located from the 100- to the 200-meter (656 feet) isobath

All the towers are located on the inner shelf. Generally, the WFS bottom consists of thick sand, silt, or mud. The sediments in these regions contain a sizable amount of biogenic sediments[4]. There are widely distributed areas of hard substrate that are either covered by or interspersed with a thin covering of coarse sand. Sand covering typically ranges from 20 to 24 inches or less. Sessile epibiota such as corals, gorgonians (soft corals), and sponges (Porifera) are almost exclusively attached at locations with exposed hardbottom or with a sand covering up to 4 inches. **Table 3-13** describes the substratum beneath each station (NAVFAC SE and AFCEC, 2022).

3.8.3 Environmental Consequences Evaluation Criteria

Protection of unique geological features and minimization of disturbance are considered for the evaluation of potential impacts of a proposed action on geological resources. An alternative could have either an adverse or beneficial impact if it would directly or indirectly cause measurable and locally significant change in the substratum surrounding the towers.

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[3] An isobath is a line on a map or chart joining places of equal water depth.

[4] Biogenic sediments contain more than 30 percent of particles derived from the skeletal remains of pelagic marine microorganisms such as foraminiferans and coccoliths. Skeletal components include calcium carbonate, phosphatic, and siliceous materials.

Table 3-13 Description of the Substratum Surrounding the ACMI Towers

Northern Towers	Substratum Description
Station 1/Tower N4	Muddy-fine sand with shell fragments - soft bottom.
Station 2/Tower N3	A large expanse of fine sand, some coarse shell on the sand bottom around the barge.[1] Within 1 to 2 meters from the barge, the bottom transitions to continuous fine sand with a small amount of shell fragments. Small sand piles and burrows are typical of an otherwise featureless fine-sand bottom.
Station 3/Tower N7	Located on hardbottom that supports live bottom communities.
Station 4/Tower N5	Very uniform, consisting of medium to fine sand mixed with mostly small pieces of shell. The substratum is relatively free of fine particulates, mud, and silt.
Station 5/Tower N6	Consists primarily of fine quartz sands and calcareous sands mixed with a varying amount of larger shell material. The coarser shell material is limited to a halo around the barge.[1]
Station 6/Tower SM1	Around the tower base the substratum consists of coarse shell.[1] Outward from the tower, the substratum becomes mostly sand with varying amounts of coarse and fine shell material. The sand bottom exhibits low relief sand ridges up to 6 inches in height. Such ridges are created by a unidirectional current flow.
Southern Towers	**Substratum Description**
Station 7/NW Corner	The substratum at the base the tower consists of sand and fine shell. The substratum immediately around the tower base contains more coarse shell material[1], which transitions rapidly to calcareous sand with shell fragments farther away from the tower.
Station 8/NE Corner	The substratum surrounding the tower is characterized as shelly-sand substratum with more coarse shell material.[1] The substratum becomes increasingly finer grained away from the base of the tower and usually within 16 to 20 feet and is predominantly a mix of sand, fine sand, and shell fragments.
Station 9/N Master	Patches of large bivalve shell fragments around the periphery of the tower.[1] The sediment of the surrounding area quickly transitions to calcareous fine sand with sparse shell fragments.
Station 10/W Center	The substratum under the tower consists of relatively clean sand with coarse to fine shell material.[1] Beyond the tower legs, the sediment becomes a very uniform, very flat substratum of sand.
Station 11/SW Corner	The substratum around the tower base consists of coarse shell[1] and sand. A short distance away from the tower, the substratum consists of relatively clean sand and fine sand mixed with shell fragments.
Station 12/S Master	The soft bottom habitat surrounding the tower consists primarily of calcareous sands and shell fragments.[1] The substratum becomes less coarse within a few meters away from the tower.
Station 13/E Center	The bottom substrate at the base of the tower consists of coarse shell with sand. Coarse shell substratum was found only around the base of the tower.[1] Within 3 to 6 feet from the tower pads, the substratum quickly transitions to a sand fine-sand mix with a considerable crushed shell component.
Station 14 / SE Corner	The area surrounding the tower consists entirely of soft bottom composed of a mix of coarse and fine sands and a mix of large and small fragments of shell.[1] The sediment in this location has considerably more calcareous fine-grained and silty material farther from the tower. This site is on the northern edge of the shoals associated with the Marquesas Keys, and the sediment is likely often resuspended during storms.

Notes:
[1] This biologic halo effect is typical for artificial reef structures, which provide attachment surfaces for organisms that would not normally be present in a soft bottom benthic habitat. The halo is a result of many years of the tower shedding dead bivalves.

3.8.4 Environmental Consequences – Alternative 1

3.8.4.1 Sever at Bottom (1a)

Under Alternative 1a, activities would include severance and in-place disposal of the towers. These activities would result in short-term, localized sediment disturbance from operations conducted by lift vessels, anchoring, and pile jetting, and the disposition operations when the crane places the superstructure and tower sections on the seafloor. These operations would cause a temporary increase in suspended solids or turbidity in the immediate surrounding area of each tower structure. No significant long-term adverse impacts on the substratum resulting from severance operations are anticipated. There is an additional possibility for resuspension of sediment contaminants, should they exist. However, sediments would be disturbed within in a very limited area over a relatively short time, approximately 1 month, but perhaps longer for the more extensive disposition operations. During severance operations, resuspension of sediments may be caused by anchoring, excavation, and removal of severed structures that would result in a temporary increase of suspended sediments that would rapidly disperse and resettle on the seafloor (DOI-MMS, 2005). Resuspension of sediments occurs naturally during periods of enhanced bottom currents and storms.

The disposal operations would result in a placement footprint on the seafloor of the tower sections. Tower disposition is estimated to result in temporary (resuspension) and long-term (semi-permanent seafloor coverage) disturbances to the substratum. The temporary sediment disturbance is anticipated to occur in limited and discrete areas associated with each tower's site location, over an approximate 1-week time frame, depending on the individual tower and composition of the sediment. The resuspension of sediments would result in a temporary increase of suspended solids or turbidity that would likely disperse quickly and resettle on the seafloor.

The sunken tower section would not cover 100 percent of the area where the towers would be placed because of the tubular and cross-brace construction of the tower superstructure, platforms, and aerial components. Instead, they would cover far less because of the gaps in the structures. Long-term impacts would include a wider distribution of coarse shell material that would be shed from towers from the fouling bivalve community on the tower structures. This biologic halo effect is typical for artificial reef structures, which provide attachment surfaces for organisms that would not normally be present in a soft bottom benthic habitat. The substratum typically transitions back to the natural composition within 1 to 2 meters from the structure. Some minor changes to bathymetry may occur over time through natural scouring and build-up actions on opposite sides of the deposited structure components. In addition, the disposition of the Station 3 tower structure on the surrounding hardbottom would add vertical relief and complexity to the relatively flat seafloor, thus increasing habitat for reef-dwelling species (see **Section 3.4**). Therefore, Alternative 1a would result in short-term adverse impacts to geology or marine sediments in non-territorial waters. The impacts would not be significant.

3.8.4.2 Sever Below Warning Buoy Depth (1b)

The potential impacts from Alternative 1b would be similar to those described under Alternative 1a. The difference between Alternative 1a and Alternative 1b is the increased amount of tower structure that would remain upright and the reduced amount that would be laid down on the seafloor, thus reducing the footprint of components deposited on the sea floor. This reduced footprint would result in less disturbance to the seabed and less temporary sediment disturbance than Alternative 1a and short-term adverse impacts to geology or marine sediments in non-territorial waters. The impacts would not be significant.

3.8.5 Environmental Consequences – Alternative 2

3.8.5.1 Sever at Bottom (2a)

Alternative 2a would sever the towers at the bottom of the support structures. Disposition of the tower would be in an established artificial reef area; otherwise, impacts from this alternative would be the same as described for Alternative 1a. Therefore, Alternative 2a would result in short-term impacts to geology or marine sediments in non-territorial waters. The impacts would not be significant.

3.8.5.2 Sever Below Warning Buoy Depth (2b)

The potential impacts from Alternative 2b would be similar to those described under Alternative 2a. The difference between Alternative 2a and Alternative 2b is the increased amount of tower structure that would remain upright and the reduced amount that would be laid down on the seafloor, thus reducing the footprint of components deposited on the sea floor. This reduced footprint would result in less disturbance to the seabed and less temporary sediment disturbance than Alternative 2a and short-term adverse impacts to geology or marine sediments in non-territorial waters. The impacts would not be significant.

3.8.6 Environmental Consequences – Alternative 3

3.8.6.1 Sever at Bottom (3a)

Alternative 3a would sever the towers at the bottom of the support structures. Disposition of the tower would be in a newly established artificial reef area; otherwise, impacts from this alternative would be the same as described for Alternative 1a. Therefore, Alternative 3a would result in short-term adverse impacts to geology or marine sediments in non-territorial waters. The impacts would not be significant.

3.8.6.2 Sever Below Warning Buoy Depth (3b)

The potential impacts from Alternative 3b would be similar to those described under Alternative 3a. The difference between Alternative 3a and Alternative 3b is the increased amount of tower structure that would remain upright and the reduced amount that would be laid down on the seafloor, thus reducing the footprint of components deposited on the sea floor. This reduced footprint would result in less disturbance to the seabed and less temporary sediment disturbance than Alternative 3a and short-term adverse impacts to geology or marine sediments in non-territorial waters. The impacts would not be significant.

3.8.7 Environmental Consequences – Alternative 4

3.8.7.1 Sever at Bottom (4a)

Under Alternative 4a, activity would include severance of the tower at the bottom and disposing of them onshore at a predetermined salvage or disposal location. Long-term impacts would include the loss of coarse shell material that is shed from and accumulating in the vicinity of the tower. Given that this alternative does not involve laying down the towers on the seafloor, no impacts to geology or marine sediments are anticipated from disposition. Therefore, Alternative 4a would result in short-term adverse impacts to geology or marine sediments in non-territorial waters. The impacts would not be significant.

3.8.7.2 Sever Below Warning Buoy Depth (4b)

The potential impacts from Alternative 4b would be similar to those described under Alternative 4a. The difference between Alternative 4a and Alternative 4b is the increased amount of tower structure that would remain upright and the reduced amount that would be transported to shore for disposal. Coarse shell material would continue to accumulate around the remainder of the towers at a reduced rate. Alternative 4b would result in short-term adverse impacts to geology or marine sediments in non-territorial waters. The impacts would not be significant.

3.8.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the DAF would be required to maintain the towers and would require periodic vessel trips for regular maintenance of the structures and navigational warning systems. Anchoring would cause the temporary resuspension of marine sediments that are anticipated to rapidly resettle on the sea floor, and therefore, any adverse impacts would be short-term and not significant.

3.8.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

In addition to the short-term adverse impacts to geological resources that may occur under the Proposed Action and alternatives, other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) may also affect geological resources. However, given the very short duration of impacts associated with tower placement, and likely geographical separation, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts to geological resources.

3.9 Cultural Resources

3.9.1 Definition of Resource

Cultural resources are any prehistoric or historic district, site, building, structure, or object considered important to a culture or community for scientific, traditional, religious, or other purposes. These resources are protected and identified under several federal laws and E.O.s. NEPA regulations require establishments and agencies to consider how actions they implement affect all aspects of the human environment because humans relate to their environment through their cultures. The environment can include natural resources that are used in cultural contexts, resources that are built by cultural groups, and social or economic institutions. Cultural resources include the following subcategories:

- Archaeological (prehistoric, or historic sites where human activity has left physical evidence of that activity, but no structures remain standing).
- Architectural (buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance).
- Maritime (shipwrecks, sunken boats, or other structures related to human activity found in, related to, or around bodies of water).
- Traditional Cultural Properties (resources of traditional, religious, or cultural significance to Native American tribes and other communities).

Significant cultural resources are called historic properties and are listed on the National Register of Historic Places (NRHP) or have been determined to be eligible for listing. To be eligible for the NRHP, historic properties must be 50 years old and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. They must possess sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance, and meet at least one of four criteria (NPS, 1997):

- Associated with events that have made a significant contribution to the broad patterns of our history (Criterion A).
- Associated with the lives of persons significant in our past (Criterion B).
- Embody distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C).
- Have yielded or be likely to yield information important in prehistory or history (Criterion D).

Properties that are less than 50 years old can be considered eligible for the NRHP under Criterion Consideration G if they possess exceptional historical importance. Those properties must also retain historic integrity and meet at least one of the four NRHP Criteria for Evaluation (Criterion A, B, C, or D). The term "Historic Property" refers to National Historic Landmarks, NRHP-listed, and NRHP-eligible cultural resources.

Federal laws protecting cultural resources include the Archaeological and Historic Preservation Act of 1960 as amended, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection

Act of 1979, the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), the Abandoned Shipwrecks Act, and the NHPA. Under Section 106 of the NHPA, federal agencies must consider the effects of their proposed actions (or undertakings) on any historic property (any district, site, building, structure, or object that is listed or eligible for listing in the NRHP). To the extent possible, adverse effects on historic properties must be avoided, minimized, or mitigated in consultation with the SHPO and other consulting parties, as appropriate. The Florida Division of Historical Resources is the SHPO for the State of Florida.

Generally, if under Section 106 an action would have an adverse effect on a historic property listed in or eligible for the NRHP, the action would also have an adverse impact under NEPA. An adverse effect that is mitigated in consultation with the SHPO and other parties, as appropriate, can generally be considered a non-significant impact under NEPA

The Proposed Action is considered an undertaking for the purposes of Section 106. For cultural resource analysis, the Area of Potential Effects (APE) is used as the ROI. The APE is defined in 36 CFR Part 800.16[d] as the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist," and thereby diminish their historic integrity. The APE for direct and indirect effects for this project includes the total tower height (above and below water) plus a 30-foot buffer around each tower as listed in **Table 3-14**.

Table 3-14 Area of Potential Effect for Each ACMI Tower

Station No.	Tower Designation	Depth (feet)	Total Tower Height (feet)[1]	Buffer (feet)	Total Buffer Radius* (feet)
Northern Towers					
1	N4	85	184	30	214
2	N3	65	164	30	194
3	N7	54	154	30	184
4	N5	102	203	30	233
5	N6	78	177	30	207
6	SM1	97	381	30	411
Southern Towers					
7	Northwest Corner	69	213	30	244
8	Northeast Corner	30	174	30	204
9	North Master	69	213	30	243
10	West Center	102	246	30	276
11	Southwest Corner	125	269	30	299
12	South Master	82	226	30	256
13	East Center	65	210	30	240
14	Southeast Corner	20	164	30	194

Notes:
[1] Includes the underwater portion of the towers.
* Area of Potential Effect

3.9.2 Affected Environment

The ACMI towers used by the DAF include six northern towers southeast of Carrabelle, Florida, and eight southern towers northwest of Key West, Florida (see **Table 1-1** and **Figure 1-1**). All towers are located outside of the 9 NM limit for the State of Florida waters in the Gulf of Mexico. The northern towers were constructed and installed in 1977, except for Station 6, which was constructed and installed in 1994. The southern towers offshore from the Key West were constructed in 1989.

3.9.2.1 Archaeological and Architectural Resources

Since the APE for cultural resources is located completely offshore in the Gulf of Mexico, there are no terrestrial archaeological sites or architectural resources eligible for listing in the NRHP within or adjacent to the APE. The SHPO confirmed in November 2022 that the towers do not meet the criteria for listing as historic properties on the National Register (see **Appendix B – Section B.2.4**).

3.9.2.2 Traditional Cultural Properties

Traditional cultural properties are places eligible for inclusion in the NRHP because of their association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. Under NAGPRA, federal agencies are required to plan for and protect Native American human remains or cultural items that may be removed from federal lands and return such remains or items to lineal descendants or tribes (NPS, 2021). DoD Instruction 4710.2, DoD Interactions with Federally Recognized Tribes (September 24, 2018) establishes policy, assigns responsibilities, and provides procedures for DoD interactions with federally recognized Native American tribes. The 2021 DoD Plan of Action on Tribal Consultation (January 2021) outlines the DoD's commitment to improving implementation of E.O. 13175, Consultation and Coordination With Indian Tribal Governments.

In accordance with Section 106, DAF consulted with the Florida SHPO and initiated government-to-government consultation with Native American tribes. Copies of relevant Section 106 consultation correspondence are included in **Appendix B**. Tribes consulted for this EA/OEA include the Miccosukee Tribe of Indians of Florida, Muscogee (Creek) Nation, Poarch Band of Creek Indians, Seminole Nation of Oklahoma, Seminole Tribe of Florida, Coushatta Tribe of Louisiana, Kialegee Tribal Town, and Thlopthlocco Tribal Town (U.S. Department of Housing and Urban Development, 2024). The Seminole Tribe of Florida and the Miccosukee Tribe of Indians both have reservations in central and southern Florida (Bureau of Indian Affairs, 2024). No traditional cultural properties or sacred sites have been identified within the APE, based on consultation with Native American tribes undertaken as part of this EA/OEA.

3.9.2.3 Maritime Resources

Florida has one of the longest continuous coastlines in the country, and the resulting range of underwater archaeological sites is broad and covers thousands of years. Since the advent of scuba diving in the 1940s, many sites have been discovered by sport divers and amateur archaeologists; but there are hundreds more and very little is known about them. As a result of Florida's peninsular alignment and marine orientation, and ongoing rises in sea level during prehistoric times, the Florida Bureau of Archaeological Research (FBAR) estimates that there may be as many underwater archaeological sites as there are on land. Sites of that nature would represent resources that are non-renewable and require protection. These sites include human and material remains (FDS, 2018; FDS, 2024a; FDS, 2024b).

The Gulf of Mexico has a long, rich history of maritime exploration and traditions, especially surrounding Florida. Various groups of people traversed the seas from prehistoric times through to the present. Thus, Florida has many ports and marine areas with cultural, pre-historic, and historical significance. The APE includes portions of the waters of the Continental Shelf of Florida, which has specific programs wholly dedicated to the preservation of underwater resources (BOEM, 2021b).

There are no recorded submerged archaeological sites located within or adjacent to the APE. Underwater burials have been found more often in recent years, especially in Florida's lower peninsula. One such site found in 2016, the Manasota Key Offshore archaeological site, included remains of more than six individuals dated to be 7,000 years old found in an underwater burial only 21 feet below sea level and 900 feet offshore. The Manasota Key Offshore site is located off the coast of Venice, Florida (Gannon, 2018), more than 150 miles north of Key West. While neither human nor other material remains have been found within or adjacent to the APE, the potential for underwater resources exists throughout the Gulf of Mexico.

The location of shipwrecks and other submerged resources is tracked by various industry and government organizations. The Bureau of Ocean Energy Management maintains a technical report updated as needed on historical sea lanes and shipwrecks in the Gulf of Mexico (BOEM, 2021b). The Automated Wreck and

Obstruction Information System contains information on more than 10,000 sunken wrecks and obstructions in the coastal waters of the United States, including latitude and longitude and a brief historical description (NOAA, 2024a). The National Oceanic and Atmospheric Administration (NOAA's) wrecks and obstructions feature service shows four obstructions within the northern towers APE and 10 obstructions within the southern towers APE; however, the types of obstruction (shipwreck or natural) are not identified in the associated attribute tables (NOAA, 2024b).The Florida Division of Historical Resources acknowledges the importance of both prehistoric and historic submerged archaeological resources. Florida's Department of State, Office of Cultural, Historical and Information Programs includes FBAR, which employs a State Underwater Archaeologist and staff. Personnel from this office routinely work with the public, the diving community, universities, colleges, and museums to examine and interpret underwater sites. It has conducted surveys and excavations on both prehistoric and historic sites located offshore and in rivers and sinkholes — from submerged Native American middens (garbage dumps) and habitation sites to the remains of sunken steamboats and schooners. FBAR also maintains a database with project documentation and other research data that can be accessed by the public.

There are three historic shipwrecks listed in the NRHP in the northern Gulf of Mexico: the USS *Massachusetts;* the SS *Tarpon*; and the *Vamar* (Florida's Museums in the Sea, 2024a, 2024b, 2024c). None of these ships is located within or adjacent to the APE.

The Florida Keys National Marine Sanctuary includes a Shipwreck Trail including the *Adelaide Baker*, the *Amesbury*, the *Benwood*, the *City of Washington*, the *Duane*, the *Eagle*, the *North America*, the *San Pedro*, and the *Thunderbolt* (Florida Keys National Marine Sanctuary, 2024). None of these wrecks is located within or adjacent to the APE. The *Amesbury* is the closest of these wrecks, lying 21 miles east of Station 14. Station 14 is the only ACMI tower located within the Florida Keys National Marine Sanctuary.

3.9.3 Environmental Consequences – Evaluation Criteria

Adverse impacts on cultural resources might include physically altering, damaging, or destroying all or part of a historic property; altering characteristics of the surrounding environment that contribute to its significance; introducing visual or audible elements that affect the character or alter its setting; neglecting the historic property to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of a historic property out of agency ownership (or control) without adequate enforceable restrictions or conditions to ensure preservation of the its historic significance. This EA/OEA considers an impact significant if it alters the integrity of a NRHP-eligible or listed historic property within the APE or potentially impacts a traditional cultural property.

3.9.4 Environmental Consequences – Alternative 1

3.9.4.1 Sever at Bottom (1a)

Under Alternative 1a, the towers would be removed by severing the support structure below the water surface using mechanical methods and disposing of the towers in place on the sea floor. The towers would be severed at the mudline or at the sunken barge structure. Given this approach, no ground disturbance would take place as part of Alternative 1a. While this in-place disposal would result in temporary (resuspension) and long-term (semipermanent seafloor coverage) disturbances in the immediate area surrounding each tower structure, no submerged archaeological resources have been recorded within or adjacent to the APE, and it is not anticipated that any undiscovered resources would be disturbed or otherwise affected. No traditional cultural properties or sacred sites have been identified in the APE. As the APE is completely offshore in the Gulf of Mexico, there are no historic districts or individual historic structures eligible for inclusion in the NRHP in the APE. Therefore, per guidance set forth in 36 CFR 800.4(d)(1), it has been determined that no historic properties would be affected by the Proposed Action under Alternative 1a. Consultation with the Florida SHPO is complete, as no comments from the SHPO were included in the Florida State Clearinghouse response received on August 1, 2025 (see **Appendix B – Section B.2.7**).

If unexpected cultural resources are encountered at any time within the APE, when practicable, work would cease in the immediate vicinity of such discoveries. There could be instances, however, where work could not be terminated immediately based on safety or other concerns.

3.9.4.2 Sever Below Warning Buoy Depth (1b)

Under Alternative 1b, the towers would be removed by severing the support structure below the water surface using mechanical methods and disposing of the towers in place on the sea floor. The support structure would be severed at a depth and location where buoys are not required by the USCG to ensure maximum navigational safety and to avoid the high cost of long-term buoy maintenance and oversight. Potential impacts to cultural resources under Alternative 1b are the same as those identified under Alternative 1a.

As with Alternative 1a, if unexpected cultural resources are encountered at any time within the APE, where safe and practicable, work would cease in the immediate vicinity of such discoveries.

3.9.5 Environmental Consequences – Alternative 2

3.9.5.1 Sever at Bottom (2a)

Under Alternative 2a, the towers would be removed by mechanically severing the support structure at the mudline. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to an existing artificial reefing area per the Florida Fish and Wildlife Conservation Commission Artificial Reef Program. Potential impacts to cultural resources under Alternative 2a are the same as those identified under Alternative 1a.

As with Alternative 1a, if unexpected cultural resources are encountered at any time within the APE, where safe and practicable, work would cease in the immediate vicinity of such discoveries.

3.9.5.2 Sever Below Warning Buoy Depth (2b)

Under Alternative 2b, the towers would be removed by mechanically severing the support structure at a depth and location where buoys are not required by the USCG to ensure maximum navigational safety and to avoid the high cost of long-term buoy maintenance and oversight. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to an existing artificial reefing area. Potential impacts to cultural resources under Alternative 2b are the same as those identified under Alternative 1a.

As with Alternative 1a, if unexpected cultural resources are encountered at any time within the APE, where safe and practicable, work would cease in the immediate vicinity of such discoveries.

3.9.6 Environmental Consequences – Alternative 3

3.9.6.1 Sever at Bottom (3a)

Under Alternative 3a, the towers would be removed by mechanically severing the support structure at the mudline. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to newly established artificial reefing areas in the area of the northern and southern towers. Potential impacts to cultural resources under Alternative 3a are the same as those identified under Alternative 1a.

As with Alternative 1a, if unexpected cultural resources are encountered at any time within the APE, where safe and practicable, work would cease in the immediate vicinity of such discoveries.

3.9.6.2 Sever Below Warning Buoy Depth (3b)

Under Alternative 3b, the towers would be removed by mechanically severing the support structure at a depth and location where buoys are not required by the USCG to ensure maximum navigational safety and to avoid the high cost of long-term buoy maintenance and oversight. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to newly established artificial reefing areas in the area of the northern and southern towers. Potential impacts to cultural resources under Alternative 3b are the same as those identified under Alternative 1a.

As with Alternative 1a, if unexpected cultural resources are encountered at any time within the APE, where safe and practicable, work would cease in the immediate vicinity of such discoveries.

3.9.7 Environmental Consequences – Alternative 4

3.9.7.1 Sever at Bottom (4a)

Under Alternative 4a, the towers would be removed by mechanically severing the support structure at the mudline. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to a predetermined, existing salvage or disposal location onshore. Potential impacts to cultural resources under Alternative 4a are the same as those identified under Alternative 1a.

As with Alternative 1a, if unexpected cultural resources are encountered at any time within the APE, where safe and practicable, work would cease in the immediate vicinity of such discoveries.

3.9.7.2 Sever Below Warning Buoy Depth (4b)

Under Alternative 4b, the towers would be removed by mechanically severing the support structure at a depth and location where buoys are not required by the USCG to ensure maximum navigational safety and to avoid the high cost of long-term buoy maintenance and oversight. After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to a predetermined, existing salvage or disposal location onshore. Potential impacts to cultural resources under Alternative 4b are the same as those identified under Alternative 1a.

As with Alternative 1a, if unexpected cultural resources are encountered at any time within the APE, where safe and practicable, work would cease in the immediate vicinity of such discoveries.

3.9.8 Environmental Consequences – No Action Alternative

Under this alternative, no impacts to cultural resources would be expected. The DAF would be required to maintain the towers, which would require periodic vessel trips for regular maintenance of the structures and navigational warning systems.

3.9.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

The Proposed Action and alternatives would have no effect on cultural resources. Therefore, when considered with other reasonably foreseeable future actions in and adjacent to the APE, the Proposed Action and alternatives are not anticipated to result in significant cumulative impacts to cultural resources, including archaeological and architectural resources, maritime resources, or Native American traditional cultural properties.

3.10 Socioeconomics and Recreation

3.10.1 Definition of Resource

Socioeconomic analyses generally include detailed investigations of the prevailing population, income, employment, and housing conditions of a community, region, or project area. However, the project area for this EA/OEA is two regions offshore from Florida in the Gulf of Mexico. As such, there are no human populations in the project area to analyze in terms of socioeconomic conditions. Therefore, the analysis in this section will first focus on any economic or recreational conditions associated with the towers, and then evaluate any economic and recreational impacts of each alternative to decommission the ACMI towers. Impacts to recreation are related to both enjoyment of leisure activities and associated economic expenditures. The ROI for socioeconomics and recreation is the groups that routinely use the towers to generate income or to provide recreational opportunities.

3.10.2 Affected Environment

According to the 2021 Economic Impact Analysis of Recreational Fishing on Florida Reefs report (NOAA, 2021b), "Trip-based expenditures on reef-related recreation fishing in southeast Florida support approximately 3,787 jobs and generate economic output of $384 million" with $173 million (and 1,677 jobs) in Monroe County alone.

Charter boat captains, fishermen (including spear fishermen), divers, and boaters are known to use the ACMI towers offshore from Florida for recreation because the towers attract fish and other sea life (Stanley, 2017). The waters of the Gulf of Mexico have long supported both recreational and commercial fisheries. In 2019, the commercial fishing and seafood industry in Florida generated the largest employment impacts in the Gulf of Mexico region with 81,647 full- and part-time jobs (NMFS, 2022b). West Florida also generated the largest sales impacts ($19.4 billion), value-added impacts ($6.5 billion), and income impacts ($3.6 billion) in the Gulf region for commercial fisheries (NMFS, 2022b). Income includes personal income (wages and salaries) and proprietors' income (income from self-employment). Value-added is the contribution made to the gross domestic product in a region (NMFS, 2022b).

The greatest employment impacts from expenditures on saltwater recreational fishing in the Gulf of Mexico region in 2019 were generated in West Florida with 23,301 jobs (NMFS, 2022b). West Florida also generated the largest sales impacts ($2.5 billion), largest value-added impacts ($1.6 billion), and largest income impacts ($849.3 million) in the Gulf region for saltwater recreational fishing in 2019 (NMFS, 2022b). In 2019, recreational fishermen took 50 million fishing trips in the Gulf of Mexico region, with 35.6 million of these trips taken to West Florida (NMFS, 2022b). Since 1990, 56 percent of the annual total number of Gulf region angler trips occurred in inland waters, while an additional 35 percent occurred in state territorial waters (Keithly and Roberts, 2017). Angler trips in the U.S. EEZ, averaging 1.8 million annually during 1990 to 2009, accounted for less than 10 percent of the total annual number of angler trips in the Gulf of Mexico region (Keithly and Roberts, 2017). Keithly and Roberts (2017) hypothesize that it is likely that, given the reduction in income and high fuel prices, some anglers substituted the less expensive fishing in inland and state territorial waters for the more expensive fishing in federal waters.

Private/rental boat fishing represented 50 to 60 percent of total Florida-based angler trips during 1995 through 2009, shore-based fishing generally represented 45 to 50 percent of total angler trips, and the share of total trips attributable to the for-hire sector never exceeded 6 percent, and in some years was as low as 3 percent (Keithly and Roberts, 2017). Savolainen et al. (2012) estimate that the 2009 number of for-hire operations in Florida's West Coast area totaled 1,372, composed of 118 head boat (USCG-inspected vessels) operations, 473 charter (primarily conducts offshore fishing trips) operations, and 781 guide boat (vessel is 28 feet or less in length and primarily fishes inshore) operations. Head boat operations made, on average, 115 trips in 2009, while charter operations and guide operations made close to 100 each. In 2009, the average net income to owners of head boat operations in Florida equaled $65,000, while owners of charter operations and guide operations netted $21,000 (charter) and $28,000 (guide) (Savolainen et. al., 2012).

In southeast Florida and the Keys alone, expenditures on reef-related diving and snorkeling support 8,668 jobs and generate about $902 million in total economic output per year (Wallmo et al., 2021). A 1998 study of northwest Florida found that a total of $414 million in expenditures were associated with artificial reef use (including both diving and fishing) and that those expenditures supported 8,136 jobs (Ropicki et al., 2021). Expenditures by divers visiting artificial reefs are similar to divers visiting oil rigs (Pendleton, 2004). A 2002 study found a total of $324.6 million in economic output in coastal counties of the Gulf region associated with fishing and diving near oil and gas structures (Hiett and Milon, 2002). The value-added impacts of fishing and diving at oil and gas rigs was estimated at $164.1 million, with employment estimated at 5,560 full time workers (Hiett and Milon, 2002).

No resident human populations (including children) or existing housing resources are present in proximity to the ACMI towers, since these structures are automated (un-manned) and were constructed at significant distances from shore. The centroids of the two tower clusters are located approximately 27 to 34 miles (43 to 55 kilometers) from the nearest coast and associated resident human populations, with the closest individual tower located 9.6 miles (15.4 kilometers) from an inhabited Florida Key island, and the tower closest to the Florida mainland being approximately 10.4 miles (16.7 kilometers) distant.

3.10.3 Environmental Consequences Evaluation Criteria

A significant impact to socioeconomic conditions can be defined as a change that is outside the normal or anticipated range of those conditions that would affect the economy and community, creating substantial adverse or beneficial effects. Socioeconomic impacts generally have the potential to affect economic activity, employment, income, population, housing, public services, and social conditions in a community. A significant impact to socioeconomic conditions can be defined as a change that is outside the normal or anticipated range of those conditions that would affect the economy and community, creating substantial adverse or beneficial effects. Small percentage changes in individual attributes would be unlikely to result in significant impacts at the total level of analysis (statewide). Impact significance is typically defined in terms of ‘context’ and ‘intensity’ (with context including geographic, social, and environmental aspects, while intensity reflects the severity of effects). Examples of significant socioeconomic effects can include increased/decreased local employment opportunities, changes to local housing supply or demand, population growth/decline beyond background patterns, and/or strained public service coverage (e.g., police, fire, and EMS). Insignificant socioeconomic impacts often include minor effects to these criteria which are difficult to measure because they are small and are within the range of natural variability.

3.10.4 Environmental Consequences – Alternative 1

3.10.4.1 Sever at Bottom (1a)

Under Alternative 1, the towers would be severed at the mudline, cut into sections, and sunk to the sea floor. Depending on the height of the tower, varying amounts of additional artificial reef would be created at each tower location. These areas of additional artificial reef would provide more areas for divers to explore. Impacts to marine biological resources are described in **Section 3.4**. Specifically, **Section 3.4.3.4** states that game fish would remain available to commercial and recreational anglers and that measurable impacts (adverse and beneficial) to game fish are not anticipated. Although the above-water portion of the tower would no longer serve as a visual indicator of the artificial reef location, fishermen and boat captains can use Global Positioning System units to locate the sections of the sunken towers. There are no anticipated adverse impacts to recreation from Alternative 1a.

The increase in artificial reef area could have a beneficial impact on socioeconomic conditions because the additional artificial reef areas could attract more recreation to these areas. There would be a short-term beneficial impact to the local economy from decommissioning expenditures. The impacts would not be significant. Because of their distance from shore, Towers 6, 9, 10, 11, 12, and 13 may have less visitation by anglers and divers as a result of Alternative 1a but could provide valuable habitat for flora and fauna species at these locations. No other impacts to human populations (including children) or housing are anticipated, due to tower distances from shore. This alternative would likely benefit the local community.

3.10.4.2 Sever Below Warning Buoy Depth (1b)

Under Alternative 1b, the towers would be severed at a depth and location where buoys are not required by the USCG. In terms of recreation, this alternative may be more desirable for divers and anglers because it leaves a portion of the tower in a vertical orientation, allowing for variation in the diving experience and because mobile species, including fishes, may continue to be attracted to the vertical sections left in place. No significant adverse socioeconomic impacts are anticipated, since diving and angling appeal would remain comparable to existing conditions, tower remnants would not obstruct or limit economic activity or boat traffic, no barge transport would be necessary, demolition time and fuel costs would be minimized, and no effects on human populations (including children) or housing would occur. This alternative would likely benefit the local community.

3.10.5 Environmental Consequences – Alternative 2

3.10.5.1 Sever at Bottom (2a)

Under Alternative 2a, the towers would be severed at the mudline and cut into sections before they are transported to the nearest existing reefing area. By removing the tower structures from their existing sites, this alternative would reduce or eliminate the appeal of diving or fishing at these locations, but would expand diving and fishing opportunities at other existing artificial reef areas. Recognizing that the average Florida artificial reef distance is 26 miles from shore, this alternative could shift the habitat value of the farthest towers closer to land (improving accessibility for recreational anglers and divers). This alternative is not expected to significantly affect county-level socioeconomics, since the ACMI tower structures would generally be placed in reefing areas in the same county. Barge transport costs would provide more short-term local employment benefits during project implementation. No other significant impacts to human populations, long-term employment, or housing are anticipated. This alternative would likely benefit the communities where established reefing areas are located.

3.10.5.2 Sever Below Warning Buoy Depth (2b)

Under Alternative 2b, the towers would be severed at a depth and location where buoys are not required by the USCG, with the cut sections being transported to the nearest existing reefing area (and the uncut sections remaining vertically underwater at the original ACMI tower sites). By leaving the lower tower support sections at their existing locations, this alternative would result in continued angler/diver visitation to these sites and would provide continued habitat benefits there. This alternative would also expand existing reefing areas nearby, though less extensively than Alternative 2a. This alternative could provide more economic benefit than Alternative 2a, as it may encourage continued visitation to both the original ACMI tower locations and the expanded reefing areas. Barge transport costs may provide more short-term local employment benefits during project implementation. No other significant impacts to human populations, long-term employment, or housing are anticipated. This alternative would likely benefit the communities where established reefing areas are located.

3.10.6 Environmental Consequences – Alternative 3

3.10.6.1 Sever at Bottom (3a)

Under Alternative 3a, the towers would be severed at the mudline and cut into sections before they are transported to a new centrally-located reefing area (one in the north, and one in the south). By removing the tower structures from their existing sites, this alternative would reduce or eliminate the appeal of diving or fishing at these locations, but would create diving and fishing opportunities at the new artificial reef areas. This analysis assumed that a centrally located new reefing area would be a comparable distance to the average Florida artificial reef-to-shore distance of 26 miles. This distance would make them both accessible and appealing to visit. This alternative is not expected to significantly affect county-level socioeconomics, since the ACMI tower structures would generally be placed in reefing areas in the same county. Alternative 3a would have similar short-term local employment benefits as Alternative 2a during project implementation. No other significant impacts to human populations, employment, or housing are anticipated. This alternative would likely benefit the communities where new reefing areas are sited.

3.10.6.2 Sever Below Warning Buoy Depth (3b)

Under Alternative 3b, the towers would be severed at a depth and location where buoys are not required by the USCG, with the cut sections being transported to a new centrally located existing reefing area (and the uncut sections remaining vertically underwater at the original ACMI tower sites). By leaving the lower tower support sections at their existing locations, this alternative would result in continued angler/diver visitation to these sites and would provide continued habitat benefits there. This alternative would also create new reefing areas nearby, though these would be smaller than with Alternative 3a. This alternative could provide more economic benefit than Alternative 3a, since it would encourage continued visitation to both the original ACMI tower locations and the new reefing areas. Barge transport could provide more short-term local employment benefits during project implementation. This alternative is not expected to significantly affect county-level socioeconomics since the ACMI tower structures would generally be placed in reefing areas in the same county. No other significant impacts to human populations, employment, or housing are anticipated. This alternative would likely provide socioeconomic benefits in the communities where new reefing areas are sited.

3.10.7 Environmental Consequences – Alternative 4

3.10.7.1 Sever at Bottom (4a)

Under Alternative 4a, the towers would be severed at the mudline and cut into sections before they are transported by barge to land, where they would then be loaded onto trucks for subsequent onshore disposal. By removing the tower structures from their existing sites, this alternative would reduce or eliminate the appeal of diving or fishing at these locations. Barge and truck transport costs would provide short-term economic benefit for the selected demolition contractor and associated transportation companies. The impacts would not be significant. This alternative would likely have long-term adverse economic impacts at the county level, since it would eliminate opportunities for divers and anglers. The impacts would not be significant. No other significant impacts to human populations, employment, or housing are anticipated. This alternative would not likely provide long-term socioeconomic benefits to the local community.

3.10.7.2 Sever Below Warning Buoy Depth (4b)

Under Alternative 4b, the towers would be severed at a depth and location where buoys are not required by the USCG, with the cut sections being transported by barge to land, where they would then be loaded onto trucks for subsequent onshore disposal. By leaving the lower tower support sections at their existing locations, this alternative should result in continued angler/diver visitation to these sites Barge and truck transport would provide economic benefit for the selected demolition contractor and associated transportation companies. This alternative would also have less county-level economic impact than Alternative 4a, because portions of the towers would remain in place (attracting continued anglers and divers), and would maintain available habitat structure. No other significant impacts to human populations, employment, or housing are anticipated. This alternative would not likely provide long-term socioeconomic benefits to the local community.

3.10.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the towers would not be decommissioned and there would be no significant socioeconomic changes. The DAF would likely have to increase its spending on repairs as the towers continue to age. Inspection and maintenance expenditures would continue to ensure that the towers do not deteriorate and become safety or navigational hazards. No other impacts to human populations, employment, or housing would be anticipated.

3.10.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

In addition to the short- and long-term beneficial and adverse impacts to socioeconomics and recreation that may occur under the Proposed Action and alternatives, other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) may also affect socioeconomics and recreation. However, given the very short duration of economic benefits associated with tower removal, and likely geographical separation from other actions, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts to socioeconomics and recreation.

3.11 Hazardous Materials and Waste

3.11.1 Definition of Resource

Hazardous materials (HAZMAT) are defined by the Occupational Safety and Health Administration (OSHA) and the U.S. General Services Administration as any items or chemicals, either themselves or their by-products (dust, fumes, vapors, smoke) that pose human or environmental health hazards. The categories include chemicals that are carcinogenic, toxic, corrosive, irritants, combustible, flammable, or explosive (29 CFR 1910.1200; FED-STD-313).

HAZMAT is also defined under Section 1802 of the Hazardous Materials Transportation Act as “a substance or material in a quantity and form which may pose an unreasonable risk to health and safety or property when transported in commerce” (49 U.S.C. §§ 5101-5127). OSHA is responsible for enforcement and implementation of federal laws and regulations pertaining to worker health and safety under 29 CFR Part 1910. OSHA also includes regulation of hazardous chemicals in the workplace (including HAZMAT) and ensures appropriate training for their handling.

The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act, which was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. Hazardous waste is defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes, that pose a substantial present or potential hazard to human health or the environment. In general, both HAZMAT and hazardous wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, might present substantial danger to public health and welfare or the environment when released or otherwise improperly managed.

Toxic substances might pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Included in this category are ACM, and LBP.

Asbestos. Asbestos is regulated by USEPA with the authority promulgated under the Occupational Safety and Health Act, 29 U.S.C. § 669 et seq. Section 112 of the Clean Air Act regulates emissions of asbestos fibers to ambient air. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Lead-based Paint. Human exposure to lead has been identified as an adverse health risk by agencies such as OSHA and USEPA. Sources of exposure to lead are dust, soils, and paint. In 1973, the Consumer Product Safety Commission established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the Consumer Product Safety Act (Public Law 101-608, as implemented by 16 CFR Part 1303), the Consumer Product Safety Commission lowered the allowable lead level in paint to 0.06 percent (600 parts per million [ppm]). The act also restricted the use of LBP in nonindustrial facilities. The Department of Defense implemented a ban of LBP use in 1978; therefore, it is possible that facilities constructed prior to or during 1978 may contain LBP.

Polychlorinated Biphenyls. PCBs are a group of chemical mixtures used as insulators in electrical equipment, such as transformers and fluorescent light ballasts. Chemicals classified as PCBs were widely manufactured and used in the United States until they were banned in 1979. The disposal of PCBs is regulated under the federal Toxic Substances Control Act (TSCA; 15 U.S.C. § 2601 et seq., as implemented by 40 CFR Part 761), which banned the manufacture and distribution of PCBs, with the exception of PCBs used in enclosed systems.

TSCA regulates and USEPA enforces the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment.

The ROI for hazardous materials and wastes includes the ocean areas around the towers and the ocean areas around the vessels used demolition, severance, and disposal of the towers. The ROI also includes the onshore facility that would be used for hazardous waste disposal, which would be identified in the planning process.

3.11.2 Affected Environment

The primary concern for hazardous materials is possible toxic substances on the tower structure itself. In 2009, LBP, ACM, and PCBs were not found during testing of the above-water structures of the southern towers (USACE, 2016). In 2021, paint was collected from just above the water line at four of the northern tower structures. Analysis of the paint determined that that PCBs were non-detectable in samples collected (Appendix E in NAVFAC SE and AFCEC, 2022). Analysis of paint from Station 1 and Station 4 revealed low levels of lead; the greatest concentration measured was 54 ppm. While paint was also collected from Station 5, the amount of paint that was able to be collected was not enough for analysis of lead. It is not known if the towers were treated with any corrosion protection, such as chromate or tributyltin.

Another source of toxic substances is equipment on the towers. Identification lights on the towers are powered either by solar panels and nickel-cadmium battery packs or USCG-approved light and battery packs. These battery packs may be hazardous waste depending on the material they contain. Other equipment on the towers has the potential to be hazardous such as motors, dielectric parts, or capacitors (USACE, 2016).

Lastly, activities for severance and disposition of the towers would use lift vessels, cranes, and generators that have the potential to emit water contaminants.

3.11.3 Environmental Consequences Evaluation Criteria

Impacts on HAZMAT management would be considered adverse if the Proposed Action resulted in noncompliance with applicable federal, state, and local regulations or increased the amounts generated or procured beyond the DAF's waste management procedures and capacities.

3.11.4 Environmental Consequences – Alternative 1

Alternatives 1a and 1b would have long-term adverse impacts from tower paint and potential antifouling treatments and would not significantly change the usage of hazardous materials or the generation of hazardous waste. The impacts would not be significant. LBP, PCBs, and ACM were not found during testing of the towers (USACE, 2016). Analysis of samples from the northern towers did not detect PCBs and only low levels of lead. USEPA does not consider the lead in paints used in vessels being utilized as artificial reefs as a significant environmental or human health hazard, and it would not affect water quality at a regional level (GASMFC, 2004).

Although it is possible that chromate formulations were used as a corrosion protection treatment in the splash zone of the northern towers that were constructed and installed in 1977, it is unlikely that that they were used because most uses were restricted by the late 1970s. Tributyltin was typically used on ship hulls and submerged equipment and required re-application after 5 to 6 years; its use was restricted after the 1980s. It is unlikely that the splash zones of the northern towers would have been treated with tributyltin, and if they were, the tributyltin would have biodegraded (USEPA, 2003)

Alternatives 1a and 1b would have short-term adverse impacts from generation of small amounts of hazardous waste. The impacts would not be significant. The hazardous waste that may be generated would be associated with removal of tower equipment under all action alternatives. Planning that would take place prior to demolition, described in **Section 2.6.3** and **4.2**, would ensure proper handling, storage, transportation, and disposal of any hazardous waste to a qualified facility. Work planning would ensure that the facility has the capacity and certifications required to handle, store, and dispose of the hazardous waste generated.

Lift vessels, cranes, and generators have the potential to emit water contaminants, but only under non-routine conditions. Discharges to marine waters from vessels may include sanitary waste or sewage; domestic waste such as water from shipboard sinks, laundries, and galleys; bilge and ballast waste; cooling water; and deck drainage. However, operations vessels would comply with all laws and regulations implemented jointly by the USCG and USEPA to restrict operational pollution and reduce the possibility of accidental pollution. Trash and debris would be retained and transported to shore for disposal in compliance with Annex V of MARPOL 73/78 and U.S. laws established by the APPS and implemented within 33 U.S.C. 1901 and 33 CFR 151.

Before the towers are severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through DLA Disposition Services.

Sever at Bottom (1a)

Alternative 1a, severing the tower at the sea floor or the anchor barge, would have short-term and long-term, adverse impacts on hazardous materials and wastes by leaving the tower materials at the project location. The metallic tower structure and surface coating would degrade over time and release these by-products into the marine environment. The impacts would not be significant.

Sever Below Warning Buoy Depth (1b)

Alternative 1b, severing the tower below the warning buoy depth but leaving a portion of the tower structure standing, would also have short-term and long-term, adverse impacts on hazardous materials and wastes by leaving the tower materials at the project location. The metallic tower structure and surface coating would degrade over time and release these by-products into the marine environment. The impacts would not be significant.

3.11.5 Environmental Consequences – Alternative 2

Alternative 2 provides the same short- and long-term adverse impacts from tower structure material, paint, and potential antifouling treatments that are described for Alternative 1 and would not significantly change the usage of hazardous materials or the generation of hazardous waste. The impacts would not be significant. Substantive differences between these alternatives involve transport of the tower to the closest existing artificial reef.

Sever at Bottom (2a)

Alternative 2a, severing the tower at the sea floor or the anchor barge, would have short-term and long-term, adverse impacts on hazardous materials and wastes by placing the tower materials at the closest existing artificial reef. The metallic tower structure and surface coating would degrade over time at the artificial reef and release these by-products into the marine environment. The impacts would not be significant.

Sever Below Warning Buoy Depth (2b)

Alternative 2b, severing the tower below the warning buoy depth but leaving a portion of the tower structure standing, would also have short-term and long-term, adverse impacts on hazardous materials and wastes by placing the tower materials at the closest artificial reef. The metallic tower structure and surface coating would degrade over time at the artificial reef and release these by-products into the marine environment. The impacts would not be significant.

3.11.6 Environmental Consequences – Alternative 3

Alternative 3 would result in the same short- and long-term adverse impacts from tower paint and potential antifouling treatments that are described for Alternative 1 and would not significantly change the usage of hazardous materials or the generation of hazardous waste. The impacts would not be significant. Substantive differences between these alternatives involve transport of the tower to create a new artificial reef.

Sever at Bottom (3a)

Alternative 3a, severing the tower at the sea floor or the anchor barge, would have short-term and long-term, adverse impacts on hazardous materials and wastes by placing the tower materials to create a new artificial reef. The metallic tower structure and surface coating would degrade over time at the new artificial reef and release these by-products into the marine environment. The impacts would not be significant.

Sever Below Warning Buoy Depth (3b)

Alternative 3b, severing the tower below the warning buoy depth but leaving a portion of the tower structure standing, would also have short-term and long-term, adverse impacts on hazardous materials and wastes by placing the tower materials to create a new artificial reef. The metallic tower structure and surface coating would degrade over time at the new artificial reef and release these by-products into the marine environment. The impacts would not be significant.

3.11.7 Environmental Consequences – Alternative 4

Alternative 4 involves removal of all or a portion of the tower and transport to an onshore disposal site and would have the same short-term adverse impacts from tower paint and potential antifouling treatments that are described for Alternative 1. However, the tower materials that are disposed of onshore would no longer be present in the marine environment; therefore, the risk of potential long-term adverse impacts would be eliminated. The impacts would not be significant.

Sever at Bottom (4a)

Alternative 4a would have short-term adverse impacts during demolition and removal. The potential long-term adverse impacts on hazardous materials and wastes are obviated for the removed materials, which would no longer affect the marine environment.

Sever Below Warning Buoy Depth (4b)

Alternative 4b would result in the same long-term adverse impacts from tower paint and potential antifouling treatments that would remain at the tower sites. A portion of the metallic tower structure and surface coating would remain on site and would degrade over time and release mineral by-products into the marine environment. The impacts would not be significant.

3.11.8 Environmental Consequences – No Action Alternative

Activities associated with the No Action Alternative would involve maintaining the towers in their current locations, and therefore, include no demolition, severance, or disposal actions. The No Action Alternative would require continued regular maintenance of the structures and the navigation warning systems. The No Action Alternative would have no impacts on hazardous materials or waste beyond the current level of impact being experienced.

3.11.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

In addition to the short-term adverse impacts of hazardous materials and waste that may occur under the Proposed Action and alternatives, other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) may also include hazardous materials and wastes. However, given the very short duration of impacts associated with tower demolition, and likely geographical separation from other actions, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts from hazardous materials and waste.

3.12 Health and Safety

3.12.1 Definition of Resource

The analysis of health and safety evaluates whether a Proposed Action would have the potential to affect the safety, well-being, or health of the workforce or the public. Health and safety concerns identified for the

Proposed Action are associated with physical demolition and disposal and exposure to chemicals or toxic substances used during those activities. **Section 3.11** specifically addresses the use of hazardous materials and waste.

The health and safety of workers is safeguarded by standards issued by OSHA and the DAF. OSHA Standards (29 CFR) govern general safety requirements relating to general industry practices (§ 1910), construction (§ 1926), and elements for federal employees (§ 1960). These standards include guidance for entry into areas where a hazard may exist. Air Force occupational safety and health requirements are identified in DAF Instruction 91-202 (2020) and the *Air Force Occupational Safety, Fire, and Health Standards.* The purpose of the Air Force Occupational Safety and Health program is to minimize the loss of DAF resources and protect DAF personnel from occupational deaths, injuries, or illnesses by managing risks and ensuring all DAF workplaces meet OSHA requirements. The ROI consists of all the areas where work would be performed, including the tower areas and all vessels required to complete the work.

3.12.2 Affected Environment

Health and safety concerns can be identified for two groups on different timelines. These timelines depend on the selection of either alternative or the selection of the No Action Alternative. The first group, and most at risk for health and safety impacts during implementation of the Proposed Action, are the workers responsible for the decommissioning. A lesser exposed population consists of members of the public not related to the project but potentially nearby during decommissioning-related activities.

All construction contractors would be required to conduct activities in a manner that minimizes risk to workers and personnel. All contractors would adhere to industrial hygiene program guidelines that address exposure to hazardous materials, use of personal protective equipment, and availability of Safety Data Sheets. Mishap prevention program requirements, assignment of responsibilities for program elements, and program management information are established in DAF Instruction 91-202, *The Department of the Air Force (DAF) Mishap Prevention Program*, dated March 20, 2020, incorporating change 1 on April 10, 2024, and implementing DAF Policy Directive 91-2, *Safety Programs*. All Air Force Occupational Safety and Health 91-series standards are consolidated in Air Force Guidance Memorandum to DAF Manual 91-203, *Air Force Occupational Safety, Fire and Health Standards*, dated March 24, 2022. The purpose of the Air Force Occupational Safety and Health program is to minimize the loss of resources and provide individual protection from death, injuries, or illnesses by managing risks and applies to all DAF activities, and its purpose.

All contractors involved in construction would be responsible for following federal OSHA regulations and are required to conduct these activities in a manner that does not increase risk to workers or the public. OSHA regulations address the health and safety of people at work, and the regulations cover potential exposure to a wide range of chemical, physical, and biological hazards. The regulations are designed to control these hazards by eliminating exposure via administrative or engineering controls, substitution, use of personal protective equipment, and availability of Safety Data Sheets. Additionally, all contractors would comply with the Safe Work Plan and protective measures described in **Section 4.2**.

3.12.3 Environmental Consequences Evaluation Criteria

Each alternative was assessed in terms of the potential to affect health or safety, and the degree to which an alternative has the potential to increase or decrease safety risks to the public, contractors working on behalf of the DAF, and DAF property. Any increase in the level of safety risk is considered an adverse impact. Significant impacts would also include introduction of a new safety risk for which the DAF is not prepared or does not have adequate management and response plans in place.

3.12.4 Environmental Consequences – Alternative 1

3.12.4.1 Sever at Bottom (1a)

Under Alternative 1, there is the potential for short-term adverse impacts to the safety of contractor support personnel during demolition and disposal. The impacts would not be significant. The towers would be severed at the mudline, and the towers would be cut into sections and sunk to the sea floor. The potential health and safety impacts are greatest to the divers and other related workers during that effort. The depth of the mudline cut would influence diving risks as a function of time in water, number of below water cuts, and section handling. Adherence to OSHA standards, DAF standards**,** and the Safe Work Plan and protective measures described in **Section 4.2,** would minimize the potential risk for impacts to the safety of individuals. During demolition and disposition, trained lookouts would be responsible for detecting the presence of recreational or commercial boats, ensuring that any boaters in the area are asked to leave the construction area for public safety. These lookouts would ensure that there would be no direct impacts to public health and safety. Indirect health and safety impacts to the public could occur if an accident during operations created a release or exposure to chemical or toxic substances. However, given the distance of the towers to any public receptors and the lack of significant quantities of chemical or toxic substances to be used, any adverse impacts to public health and safety from Alternative 1 would be short-term. The impacts would not be significant. There are no anticipated adverse long-term health and safety impacts from Alternative 1a.

3.12.4.2 Sever Below Warning Buoy Depth (1b)

Under Alternative 1b, there is the potential for short-term adverse impacts to the safety of contractor support personnel during demolition and disposal. The impacts would not be significant. The towers would be severed at a depth below USCG required Warning Buoy depth. In terms of health and safety, this alternative would entail lower risk to workers than under Alternative 1a, both as a function of the shallower dive depth required for demolition and less cutting and section handling. Adherence to OSHA Standards, DAF standards**,** the Safe Work Plan, and protective measures described in **Section 4.2,** would minimize the potential risk for impacts to the safety of individuals. During demolition and disposition, trained lookouts would be responsible for detecting the presence of recreational or commercial boats, ensuring that any boaters in the area are asked to leave the construction area for public safety. These lookouts would ensure that there would be no direct impacts to public health and safety. Indirect health and safety impacts to the public could occur if an accident during operations created a release or exposure to chemical or toxic substances. However, given the distance of the towers to any public receptors and the lack of significant quantities of chemical or toxic substances to be used, any adverse impacts to public health and safety from Alternative 1b would be short-term. There are no anticipated long-term adverse health and safety impacts from Alternative 1b.

3.12.5 Environmental Consequences – Alternative 2

3.12.5.1 Sever at Bottom (2a)

The Alternative 2a activities would be identical to Alternative 1a, except the demolished tower structure would be removed from the water and transported to the location of a current, nearby artificial reef and added to it. There is the potential for short-term adverse impacts to the safety of contractor support personnel during demolition and disposal. The impacts would not be significant. The towers would be severed at the mudline and then cut into sections and sunk to the sea floor. The potential health and safety impacts are greatest to the divers and other related workers during that effort. The depth of the mudline cut would influence diving risks as a function of time in water, number of below-water cuts, and section handling.

For the demolition phase of Alternative 2a, the project would use the same safety and work performance protocols as described for Alternative 1a to minimize the potential safety risks for contractor personnel. During transportation and replacement at the artificial reef site, similar safety controls would also be implemented to prevent worker injury and accidents. Overall, there are no anticipated adverse long-term health and safety impacts from Alternative 2a.

3.12.5.2 Sever Below Warning Buoy Depth (2b)

Under Alternative 2b, work would be identical to Alternative 1b, except the demolished tower structure would be removed from the water and transported to the location of a current, nearby artificial reef and added to it. There is the potential for short-term adverse impacts to the safety of contractor support personnel during demolition and disposal. The impacts would not be significant. The towers would be severed at a depth below USCG required Warning Buoy depth. In terms of health and safety, this would entail lower risk to workers than under Alternative 2a, both as a function of the shallower dive depth required for the demolition and less cutting and section handling.

For the demolition phase of Alternative 2b, the project would use the same safety and work performance protocols as described for Alternative 1b to minimize the potential safety risks for contractor personnel. During transportation and placement at the artificial reef site, similar safety controls would also be implemented to prevent worker injury and accidents. Overall, there are no anticipated adverse long-term health and safety impacts from Alternative 2b.

3.12.6 Environmental Consequences – Alternative 3

3.12.6.1 Sever at Bottom (3a)

The Alternative 3a activities would be identical to Alternative 1a, except the demolished tower structure would be removed from the water and transported to the location of a new, nearby artificial reef. There is the potential for short-term adverse impacts to the safety of contractor support personnel during demolition and disposal. The impacts would not be significant. The towers would be severed at the mudline and then cut into sections and sunk to the sea floor. The potential health and safety impacts are greatest to the divers and other related workers during that effort. The depth of the mudline cut would influence diving risks as a function of time in water, number of below-water cuts, and section handling.

For the demolition phase of Alternative 3a, the project would use the same safety and work performance protocols as described for Alternative 1a to minimize the potential safety risks for contractor personnel. During the transportation and replacement activities at the artificial reef site, similar safety controls would also be implemented to prevent worker injury and accidents. Overall, there are no anticipated adverse long-term health and safety impacts from Alternative 3a.

3.12.6.2 Sever Below Warning Buoy Depth (3b)

Under Alternative 3b, work would be identical to Alternative 1b, except the demolished tower structure would be removed from the water and transported to the location of a new, nearby artificial reef. There is the potential for short-term adverse impacts to the safety of contractor support personnel during demolition and disposal. The impacts would not be significant. The towers would be severed at a depth below USCG required Warning Buoy depth. In terms of health and safety, this alternative would entail lower risk to workers than under Alternative 3a, both as a function of the shallower dive depth required for the demolition and less cutting and section handling.

For the demolition phase of Alternative 3b, the project would use the same safety and work performance protocols as described for Alternative 1b to minimize the potential safety risks for contractor personnel. During transportation and replacement at the artificial reef site, similar safety controls would also be implemented to prevent worker injury and accidents. Overall, there are no anticipated adverse long-term health and safety impacts from Alternative 3b.

3.12.7 Environmental Consequences – Alternative 4

3.12.7.1 Sever at Bottom (4a)

The Alternative 4a activities would be identical to Alternative 1a, except the demolished tower structure would be removed from the water and transported onshore for subsequent overland transportation and disposal. There is the potential for short-term adverse impacts to the safety of contractor support personnel during demolition and disposal. The impacts would not be significant. The towers would be severed at the mudline and loaded onto a barge. The potential health and safety impacts are greatest to the divers and other related workers during that effort. The depth of the mudline cut would influence diving risks as a function of time in water, number of below-water cuts, and section handling.

For the demolition phase of Alternative 4a, the project would use the same safety and work performance protocols as described for Alternative 1a to minimize the potential safety risks for contractor personnel. During transportation to the onshore disposal facility, similar safety controls would also be implemented to prevent worker injury and accidents. Overall, there are no anticipated adverse long-term health and safety impacts from Alternative 4a.

3.12.7.2 Sever Below Warning Buoy Depth (4b)

Under Alternative 4b, work activities would be identical to Alternative 1b, except the demolished tower structure would be removed from the water and transported onshore for subsequent overland transportation and disposal. There is the potential for short-term adverse impacts to the safety of contractor support personnel during demolition and disposal. The impacts would not be significant. The towers would be severed at a depth below USCG required Warning Buoy depth. In terms of health and safety, this alternative would entail lower risk to workers than under Alternative 4a, both as a function of the shallower dive depth required for the demolition and less cutting and section handling.

For the demolition phase of Alternative 4b, the project would use the same safety and work performance protocols as described for Alternative 1b to minimize the potential safety risks for contractor personnel. During transportation to the onshore disposal facility, similar safety controls would also be implemented to prevent worker injury and accidents. Overall, there are no anticipated adverse long-term health and safety impacts from Alternative 4b.

3.12.8 Environmental Consequences – No Action Alternative

Under the No Action Alternative, the towers would not be decommissioned. Potential risks to health and safety would be to recreational or commercial boaters through the continued risk of inadvertent collision with the towers, physical impact from objects being dislodged from the towers, or unexpected collapse of the towers, injuring boaters. Another potential risk to health and safety could occur to the public or environment if deterioration of the towers resulted in a release of toxic materials from objects present on the towers. The impacts would not be significant. Inspection and maintenance expenditures would continue to ensure that the towers do not deteriorate and become safety or navigational hazards. This continued maintenance would result in any adverse impacts to health and safety being long-term. However, as the towers age, the DAF would need to increase expenditures and repairs to maintain the safety of the towers.

3.12.9 Reasonably Foreseeable Future Actions and Other Environmental Considerations

In addition to the short-term adverse impacts on health and safety that may occur under the Proposed Action and alternatives, other reasonably foreseeable future actions that are ongoing or projected to occur in the project area (see **Appendix C**) may also affect health and safety. However, given the very short duration of impacts associated with tower demolition, and likely geographical separation from other actions, the Proposed Action and alternatives would not contribute to cumulatively significant adverse impacts on health and safety.

CHAPTER 4 PERMITS, APPROVALS, COORDINATION, AND PROTECTIVE MEASURES

Applicable federal, state, and local regulations were considered during analysis of the impacts on the individual resources evaluated as part of the EA/OEA. The following legislation and E.O.s were specifically considered:

- CAA (42 U.S.C. 7401 et seq.)
- CWA (33 U.S.C. 1251 et seq.)
- Rivers and Harbors Act of 1899 (33 U.S.C. 403)
- CZMA (16 CFR 1451–1464)
- ESA (16 U.S.C. 1531 et seq.)
- Marine Mammal Protection Act (16 U.S.C. Chapter 31)
- MSA (16 U.S.C. 1801 et seq.)
- MBTA (16 U.S.C. 703–712)
- Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)
- NHPA (54 U.S.C. 300101 et seq.)
- National Fishing Enhancement Act of 1984 (Pub. L. 98-623)
- E.O. 13186 Responsibilities of Federal Agencies to Protect Migratory Birds
- National Marine Sanctuaries Act (16 U.S.C. 1431-1445)

4.1 Permits, Approvals, and Coordination

Permit requirements for all action alternatives, should a Finding of No Significant Impact/Finding of No Significant Harm be signed and the Proposed Action be implemented, are identical and are presented in this section according to the lead agency responsible for the permitting, approval, and coordination.

4.1.1 U.S. Army Corps of Engineers

The nature of the proposed work associated with the Proposed Action triggers the permitting requirements for navigable waters of the United States, including waters of the outer continental shelf.

Section 10 of the Rivers and Harbors Act requires approval before any work in, over, or under navigable waters of the United States, or which affects the course, location, condition or capacity of such waters, can be accomplished. An email from USACE dated October 21, 2022, confirmed that the Proposed Action requires two individual Section 10 permits. The northern towers are under the Panama City Permits Section and the southern towers are under the Keys Permits Section; as such, two Section 10 permits would need to be obtained from USACE.

Permits required to provide compliance with 33 CFR 322 are included in the Section 10/Nationwide General permitting regime provided by USACE. Prior to demolition, DAF should provide adequate notice to the USCG with a project timeline so a Local Notice to Mariners can be issued. Post-construction actions to update navigation resources are submitted by DAF to NOAA.

4.1.2 National Oceanic and Atmospheric Administration

After the demolition is complete, a “Permit/Public Notice Completion Report” submittal to NOAA, Office of Coast Survey, Nautical Data Branch, is required to update affected nautical charts. The Office of Coast Survey's mission is to help ensure safe navigation for all vessels, regardless of size and purpose, by updating nautical charts, to provide mariners with accurate water depths and precise locations of structures.

The notification is also important because the towers are assigned international light list numbers. As the towers are demolished, the USCG would notify both domestic and international stakeholders.

4.1.2.1 National Marine Fisheries Service

Endangered Species Act

Since the Proposed Action may affect federally listed species and their habitat, the DAF was required to consult with the NMFS under Section 7 of the ESA of 1973. The DAF completed a Biological Assessment (BA) to meet the requirements for consultation with the NMFS and made a “no effect” determination for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and a “may affect, not likely to adversely affect” determination for Rice’s whale, green sea turtle (*Chelonia mydas*), Kemp’s ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), hawksbill sea turtle (*Eretmochelys imbricata*), giant manta ray (*Manta birostris*), Nassau grouper, oceanic whitetip shark (*Carcharhinus longimanus),* and the smalltooth sawfish (*Pristis pectinate*). The NMFS Section 7 ESA consultation for Alternative 4a concluded on July 23, 2025 with a Letter of Concurrence (see **Appendix B – Section B.2.5.2**); consultation was not completed for the other alternatives.

Magnuson Stevens Act

Because the Proposed Action may affect EFH, the DAF was required to consult with the NMFS under the MSA. The DAF completed an EFH Assessment to meet the requirements for consultation with the NMFS and made a determination that the Proposed Action would have short-term adverse impacts on EFH, but that impacts would not be significant. Consultation was concluded on December 13, 2024 when NMFS concurred with this assessment (see **Appendix B – Section B.2.5.1)**

4.1.2.2 Office of National Marine Sanctuaries

Station 14 is located within the Florida Keys National Marine Sanctuary, which is a federal marine area protected under the National Marine Sanctuaries Act. Section 304(d) of the act requires that federal agencies taking action that may affect sanctuary resources consult with the NOAA Office of National Marine Sanctuaries. A permit may be required before Station 14 can be removed, as it may involve alteration of the seabed or abandonment of materials or equipment.

4.1.3 U.S. Fish and Wildlife Service

Endangered Species Act

Since the Proposed Action may affect federally listed species and their habitat, the DAF was required to consult with the USFWS under Section 7 of the ESA of 1973. Consultation was conducted in accordance with the *Endangered Species Act Consultation Handbook* (USFWS and NMFS, 1998). The DAF completed a BA to meet the requirement for consultation with the USFWS and made a “may affect, not likely to adversely affect” determination for the tricolored bat, piping plover, roseate tern, and black-capped petrel. Consultation was concluded on February 19, 2025 when USFWS concurred with these determinations (see **Appendix B – Section B.2.5.3**. A determination of "no effect" was made for the West Indian manatee.

4.1.4 Florida Department of Environmental Protection

Florida is an authorized state for USEPA’s National Pollutant Discharge Elimination System and issues applicable permits for discharges, including demolition waste placement in navigable waters. Florida’s Outer Continental Shelf Program is responsible for conducting the department's technical review of, and coordinating the state's review, oversight, monitoring, and response to, activities that occur in federal waters on the outer continental shelf to ensure consistency with state laws and policies and that these activities do not adversely affect state resources.

4.1.5 Florida Division of Historical Resources

Under the requirements of NHPA Section 106, consultation with and concurrence by the SHPO is required for the project. Consultation is a formal process defined by each affected state and coordination is completed before work begins. The Florida Division of Historical Resources Compliance and Review Section reviews projects and provides technical assistance to ensure compliance with state and federal preservation laws mandating consideration of a project's impact on historic and archaeological properties. Coastal Zone Management Act

Consistency reviews for projects located in federal offshore waters, including activities conducted under the Outer Continental Shelf Lands Act, are coordinated through Florida's Office of Intergovernmental Program's Offshore Projects Section. The state reviews the activities for consistency with state laws and policies and provides comments to federal agencies and applicants in accordance with Presidential E.O. 12372, NEPA, the CZMA, and other federal laws and policies. Consistency reviews of environmental resource permits are conducted in conjunction with the processing of permit applications by the FDEP and the water management districts' environmental resource permit programs. Since none of the towers are located within Florida's coastal zone, a negative determination has been prepared (see **Appendix F**).

4.2 Protective Measures and Standard Operating Procedures

The following protective measures focus on demolition and disposal to ensure that potential effects on marine resources, both biological and physical, are avoided or minimized to the maximum extent practicable, while also being protective of human health and safety. The protective measures in **Table 4-1** would be incorporated into standard operating procedures under any of the action alternatives.

Table 4-1 Protective Measures for the Environment, Public, and At-Sea Operations and Training Requirements

Protective Measures for the Environment
• Locations of important biological and physical seafloor features would be reviewed before the tower sections are disposed of on the seafloor. Knowledge of the presence of these features would allow for their avoidance to the maximum extent practicable.
• A Protected Species Observer (PSO) would be stationed on the barge during all in-water activities to ensure no marine mammals or protected species are impacted during removal
• Construction crews would also follow NMFS Protected Species Construction Conditions and cease construction activities when protected species are observed within 100 meters (328 feet) of project activities. Work shall not resume until the animal has left the area of its own volition.
• Any collision with and/or injury to an ESA-listed species shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312). For additional reporting resources, please go to: https://www.fisheries.noaa.gov/report.
• Placement footprint of the tower sections would be minimized to reduce the potential for contact with coral, coral reefs, and live/hardbottom EFH and HAPC communities.
• Placement locations of the tower sections would be identified in advance to minimize at-sea mission time and navigation.
• At-sea mission time and navigation would be minimized to reduce potential contact with protected marine species (sea turtles and marine mammals). The recommended operational window for removal of the towers is from April 1 through July 15 (105-day work window) to minimize overlap with the Atlantic hurricane season.
• A comprehensive list of shipwrecks and other obstructions would be compiled and confirmed with the Automated Wreck and Obstruction Information System annually and referenced before the demolition and disposal operations begin.
• If unexpected cultural resources are encountered, when practicable, work would cease in the immediate vicinity of such discoveries. There could be instances, however, where work could not cease immediately based on safety or other concerns.
• Before any demolition is initiated, the towers would be checked for the presence of any federally listed species under the jurisdiction of USFWS.

Table 4-1 Protective Measures for the Environment, Public, and At-Sea Operations and Training Requirements

Protective Measures for the Environment *(continued)*
• Before they are removed, the towers would be inspected for migratory bird nests. If nesting materials are present, the DAF would determine if eggs or hatchlings are present. If nesting activity appears active, the DAF would not remove that tower until the nesting cycle has been completed.
• Vessels would not activate any acoustic sources other than the required shipboard depth finders.
• All remaining tower materials must be clean and free from asphalt, petroleum, other hydrocarbons and toxic residues, plastics, Styrofoam, and other loose free-floating material, or other deleterious substances.
• Deployment activities will not commence until the project supervisor reports that no sea turtles, marine mammals, or other ESA-listed species have been sighted within 300 ft (100 yards [yds]) of the active deployment site (i.e., barge carrying material or moored vessel to be deliberately sunk) for at least 20 minutes.
• Deployment activities will cease immediately if sea turtles, marine mammals, or other ESA-listed species are sighted within 300 ft (100 yds) of the active deployment site.
• Deployment activities will not resume until the project supervisor reports that no sea turtles, marine mammals, or other ESA-listed species have been sighted for at least 20 minutes.
• Any vessel involved in decommissioning a tower shall follow NMFS's Vessel Strike Avoidance Measures (NMFS 2021a).
Protective Measures for the Public
• During transit navigation to, at, and from the mission site, trained lookouts would be onboard all vessels.
• Trained lookouts would have multiple observation objectives, which would include but are not limited to detecting the presence of biological resources and recreational or fishing boats, and monitoring for vessel and personnel safety concerns.
• Small work craft vessels serving as "chase boats" would be utilized to prohibit commercial and recreational activities from occurring in the work area when the activity poses a risk to their safety.
• Trained lookouts would have completed the Personal Qualification Standard program.
• The onshore project site would be maintained to prevent non-project personnel from interrupting or interfering with project activities.
Protective Measures for At-Sea Operations
• The dive team would maintain continuous underwater communications and operate with real-time video systems to monitor the cutting operation and surrounding conditions. Visual feeds would be displayed on the barge to provide full situational awareness.
• Operations would be conducted only when sea and wind conditions allow the vessels to maintain maximum position and speed control.
• Vessels would operate at slow speeds (expected to be slower than 10 knots) when performing work. Vessels in transit would travel at speeds necessary for safe and efficient navigation (at speeds necessary to maintain steerage if towing equipment, but not so fast that objects in the water cannot be avoided). These considerations are expected to further reduce the potential for ship strike of protected marine species (sea turtles and marine mammals).
• Administrative and engineering controls would be developed for the safe removal, packaging, transport, and disposal of materials removed from the ACMI towers prior to demolition. Proper PPE would be used to supplement these controls.
• Trained lookouts would observe for the presence of protected marine mammals and advise the Captain/Master of potential encounters to prevent entanglement or ship strike.
• Trained lookouts would observe for Sargassum mats and inform the Captain/Master to facilitate avoiding the mats to the maximum extent possible.

Table 4-1 Protective Measures for the Environment, Public, and At-Sea Operations and Training Requirements

Protective Measures for At-Sea Operations ***(continued)***
• Vessels would hold a relatively fixed position over the work area using a dynamic positioning navigation system with global positioning system, as appropriate.
• Vessel movement and drift would be minimized to ensure that the proposed disposal plan is followed with limited deviation.
• Work vessels would be prohibited from anchoring or spudding over coral, coral reefs, and live/hardbottom EFH and HAPC communities.
• No mooring equipment would be installed on the seafloor within 200 feet of known historical resources.
• Semi-permanent anchoring that was surveyed and installed clear of sensitive resources would be utilized. These anchoring systems would be assisted with riser buoys to prohibit contact of the mooring cable with the seafloor.
• No toxic substances would be introduced to the ocean environment during demolition and disposal.
• No explosive devices would be utilized during demolition and disposal.
• Deployment of moorings and tethered buoys will be performed when positioned at the required fixed site location.
• Avoidance of precision anchoring within the anchor watch circle diameter of surveyed shallow coral reefs, live hard bottom, artificial reefs, and shipwrecks.
• Semi-permanent anchoring that was surveyed and installed clear of sensitive resources will be utilized. These anchoring systems will be assisted with riser buoys to prohibit contact of the mooring cable with the seafloor.
Training Requirements
• Trained lookouts will have completed the Introduction to the U.S. Navy Afloat Environmental Compliance Training Series.
• Trained lookouts will have completed the U.S. Navy Protective Measures Assessment Protocol.
• Trained lookouts will have completed the Marine Mammal Incident Reporting training.
• Trained lookouts will have completed the U.S. Navy Marine Species Awareness training.
• Trained lookouts will use binoculars of sufficient strength to adequately view the project corridor during deployment of infrastructure.

4.2.1 Health and Safety Planning

Demolition work involves many of the hazards associated with construction; therefore, 29 CFR Part 1926, *Safety and Health Regulations for Construction*, would apply at demolition sites. However, demolition can involve additional hazards resulting from unknown conditions (such as undocumented modifications, effects of decay, lack of maintenance, weathering, and wear). For this reason, 29 CFR 1926.850(a) requires an engineering survey to be completed before demolition can begin. The ACMI tower demolition and disposal work plan would require review of the applicable subparts of 29 CFR Part 1926 for the ACMI tower demolition.

A Safe Work Plan will identify and document site-specific work procedures and practices and safety equipment that would be in place when demolition begins. The Safe Work Plan would be tailored to the specific demolition tasks being undertaken. An overarching project-specific Safe Work Plan would be developed and augmented with any necessary addendums to account for the variations between the tower types, selected alternative, and location-specific requirements. The protective measures in **Table 4-2** are recommended for contractors.

Table 4-2 Protective Measures for Contractors

Protective Measures for Contractors
• A Safe Work Plan would be developed for the onshore and offshore demolition and disposal activities specific to the northern and southern work areas. The work plan would be based on the engineering assessment prepared for demolition and disposal consistent with 29 CFR 1926.850.
• Documentation that jobsite personnel have read or are familiar with the work plan would become part of the site record.
• A health and safety plan would be developed that includes the onshore and offshore demolition and disposal activities.
• Notification procedures for USCG, medical personnel, fire department, utility companies, and local authorities of planned site activities, location of operations, and schedule would be included in the health and safety plan.
• Site personnel would be informed of procedures and have emergency contact information available.
• Appropriate PPE for the work task would be available and worn on site. Site personnel would be trained in proper use of PPE.
• Fall protection would be implemented in accordance with OSHA requirements for construction and maritime activities.
• Personal flotation devices would be worn during over-water work.
• A fire warning system would be in place so that personnel can be quickly notified and evacuated in the event of a fire.
• Smoking, open flames, and spark-producing operations would be restricted to specific and posted areas.

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APPENDICES

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APPENDIX A
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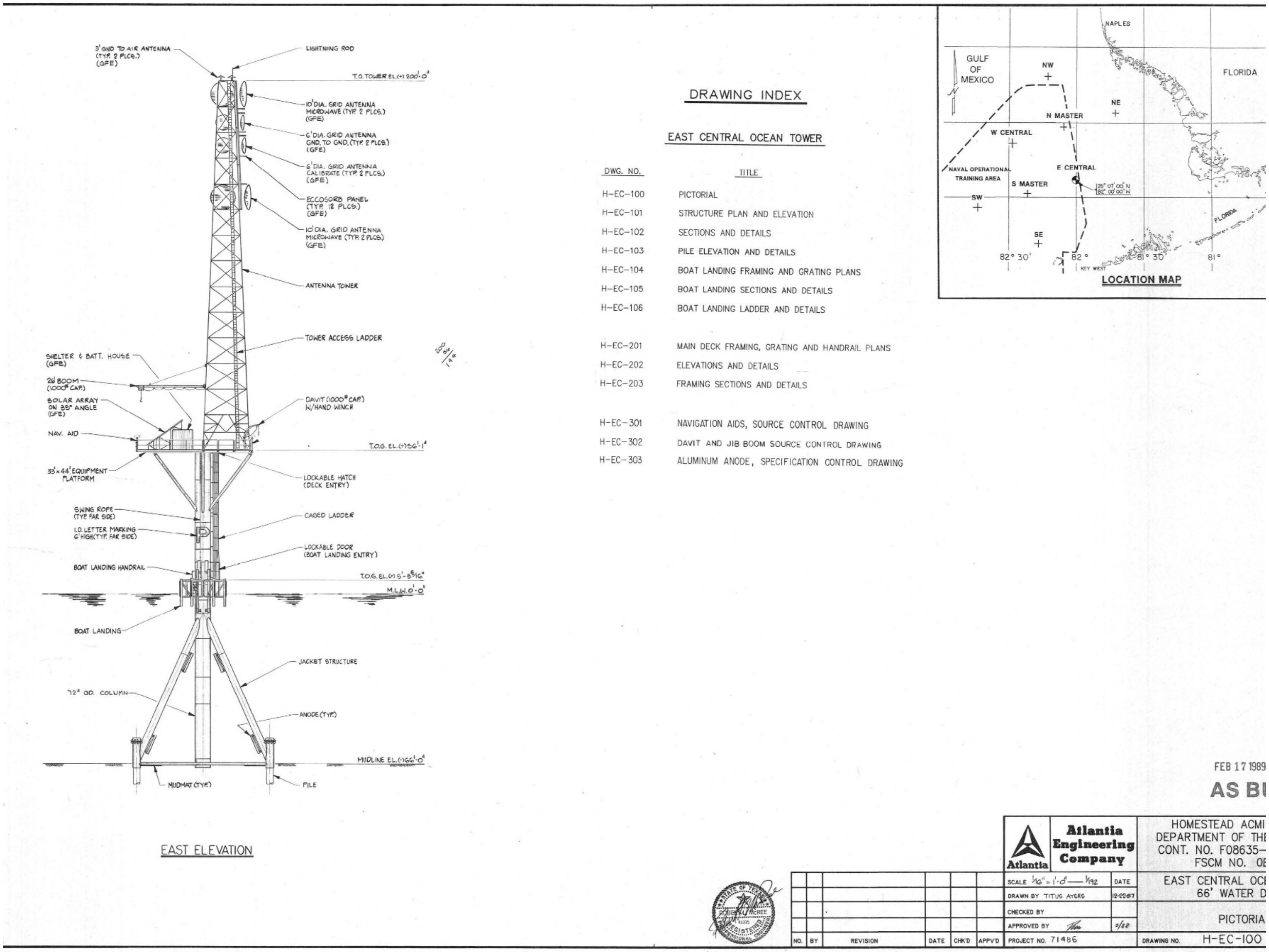
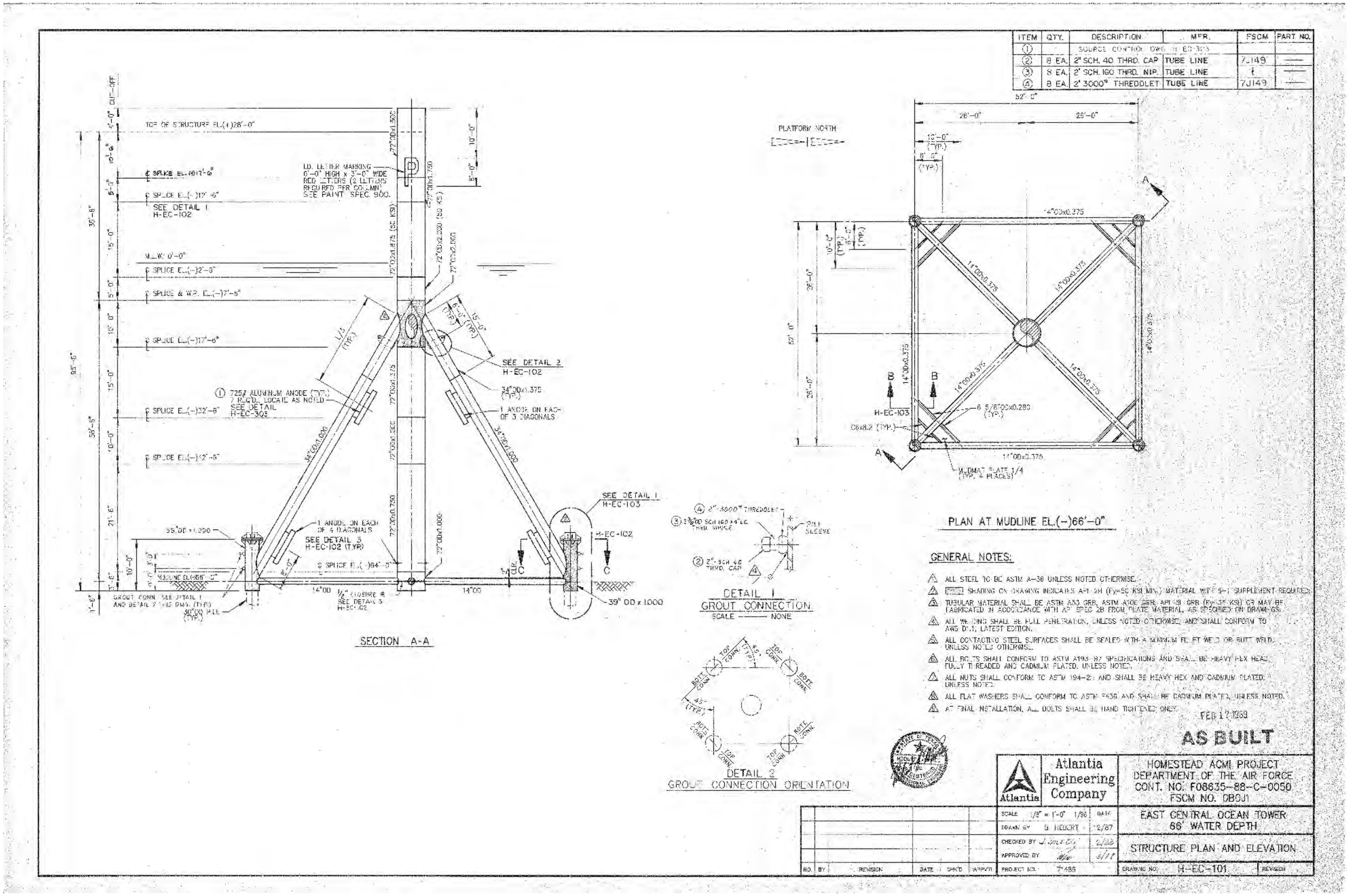
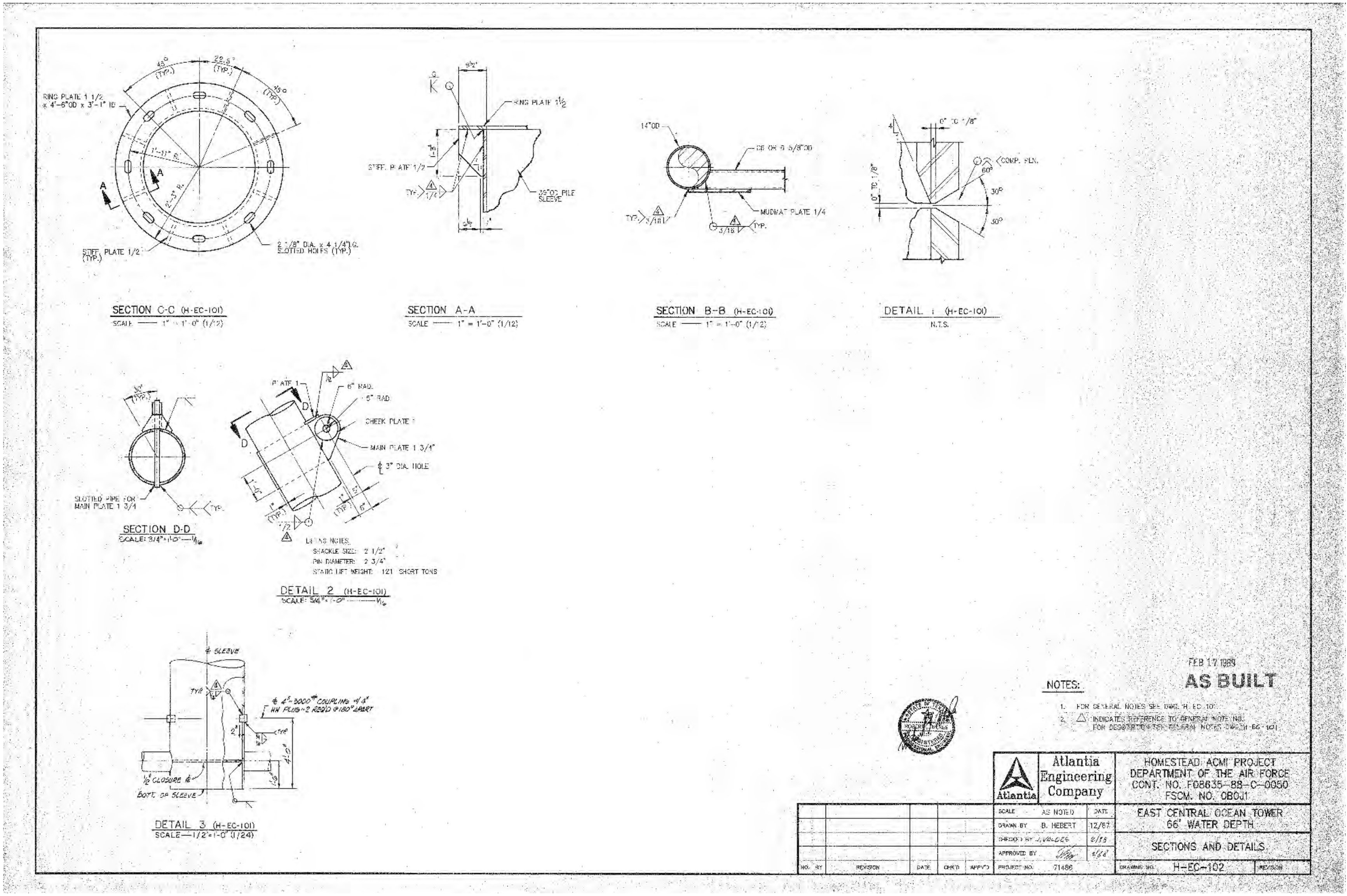
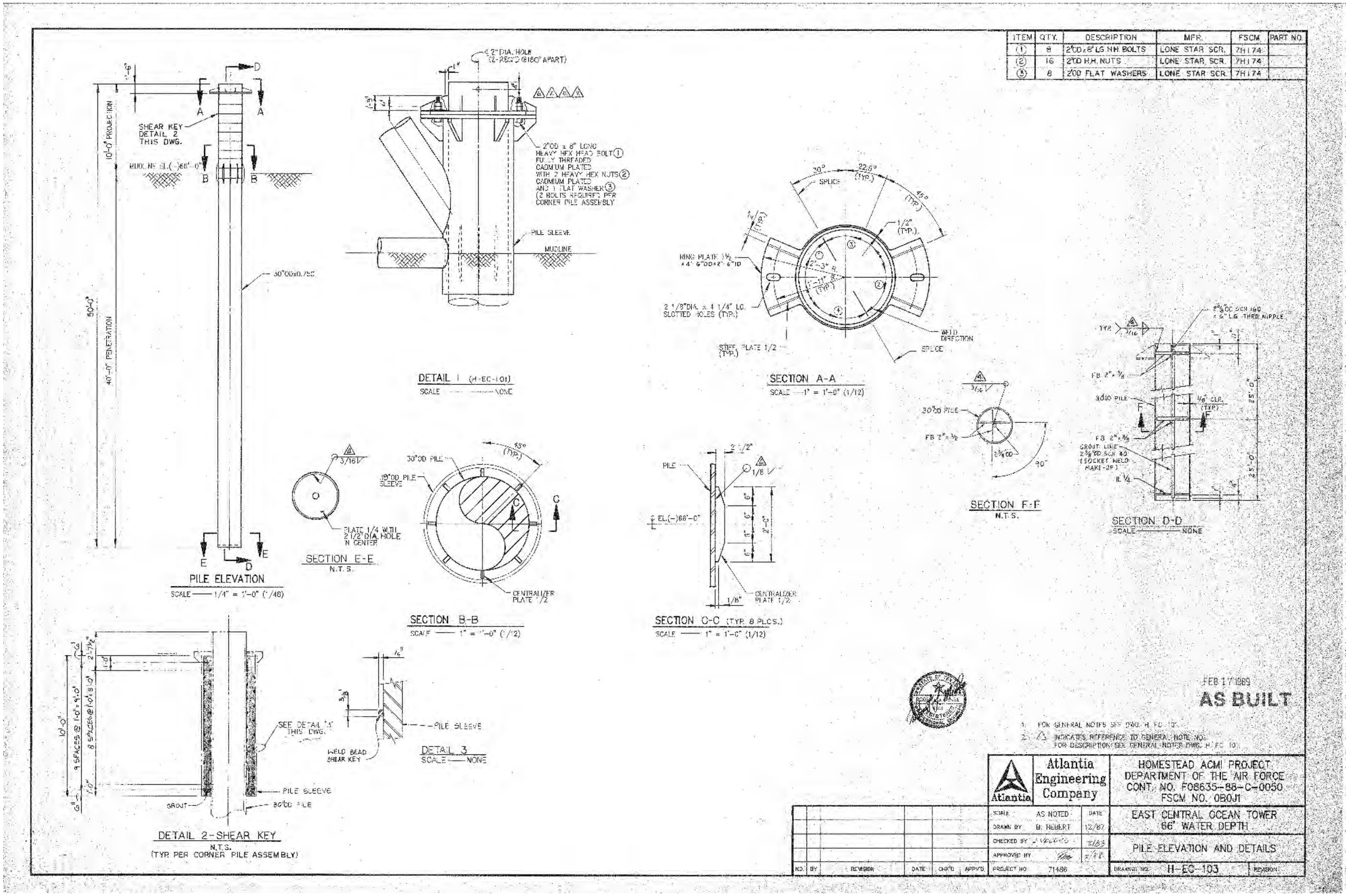
APPENDIX A – AS-BUILT CONSTRUCTION DRAWINGS

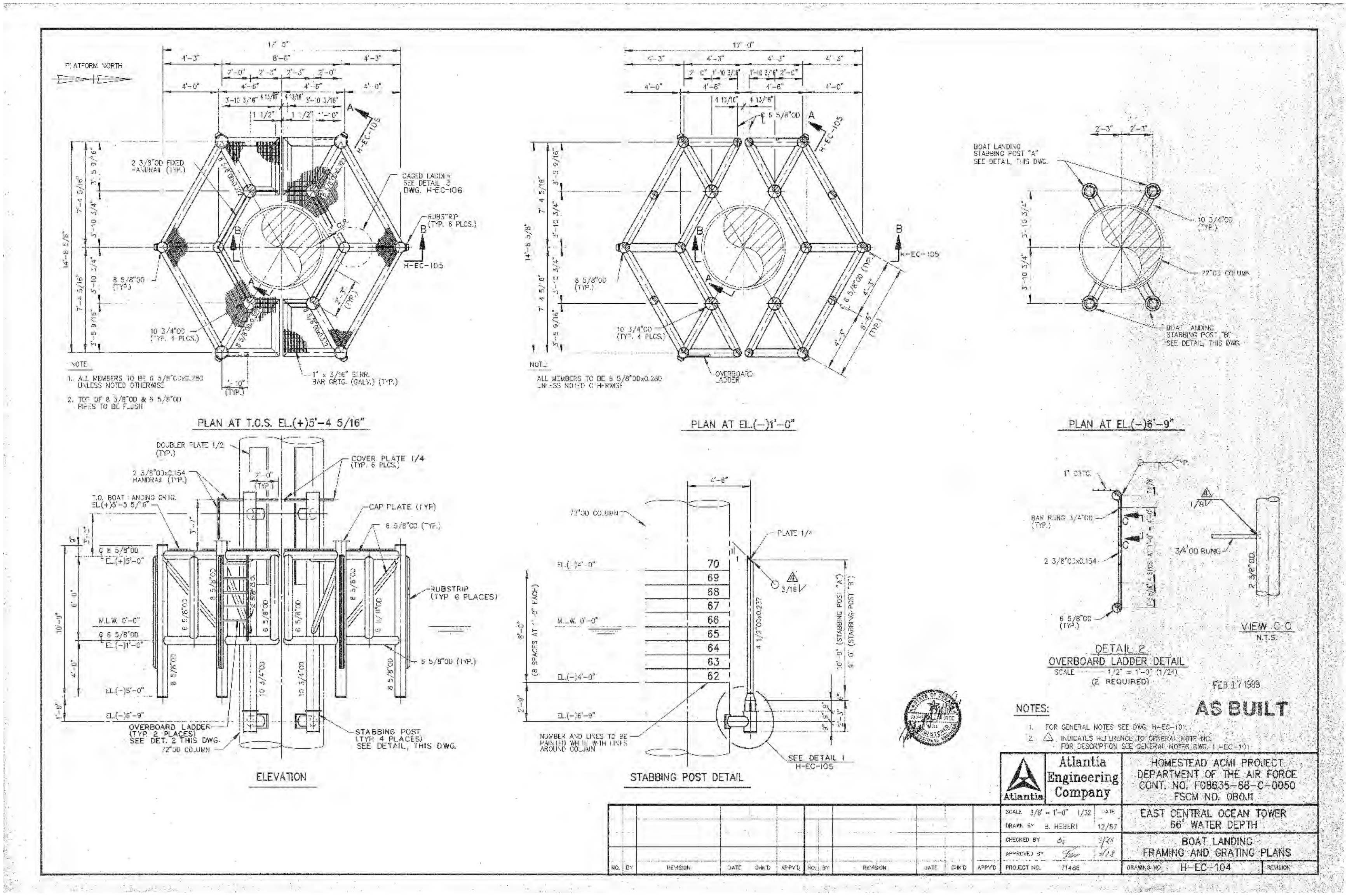
A.1 EAST CENTRAL TOWER

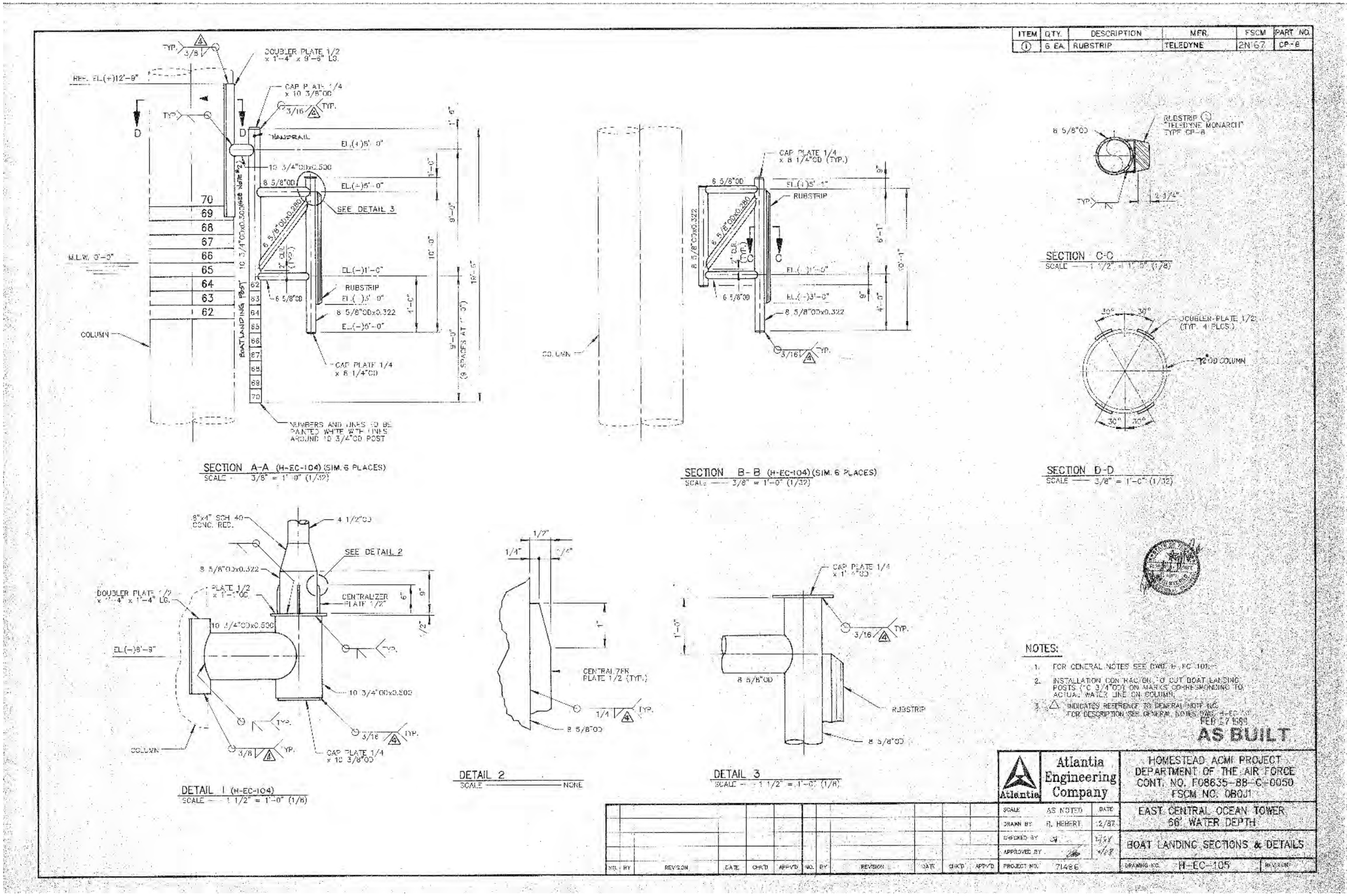


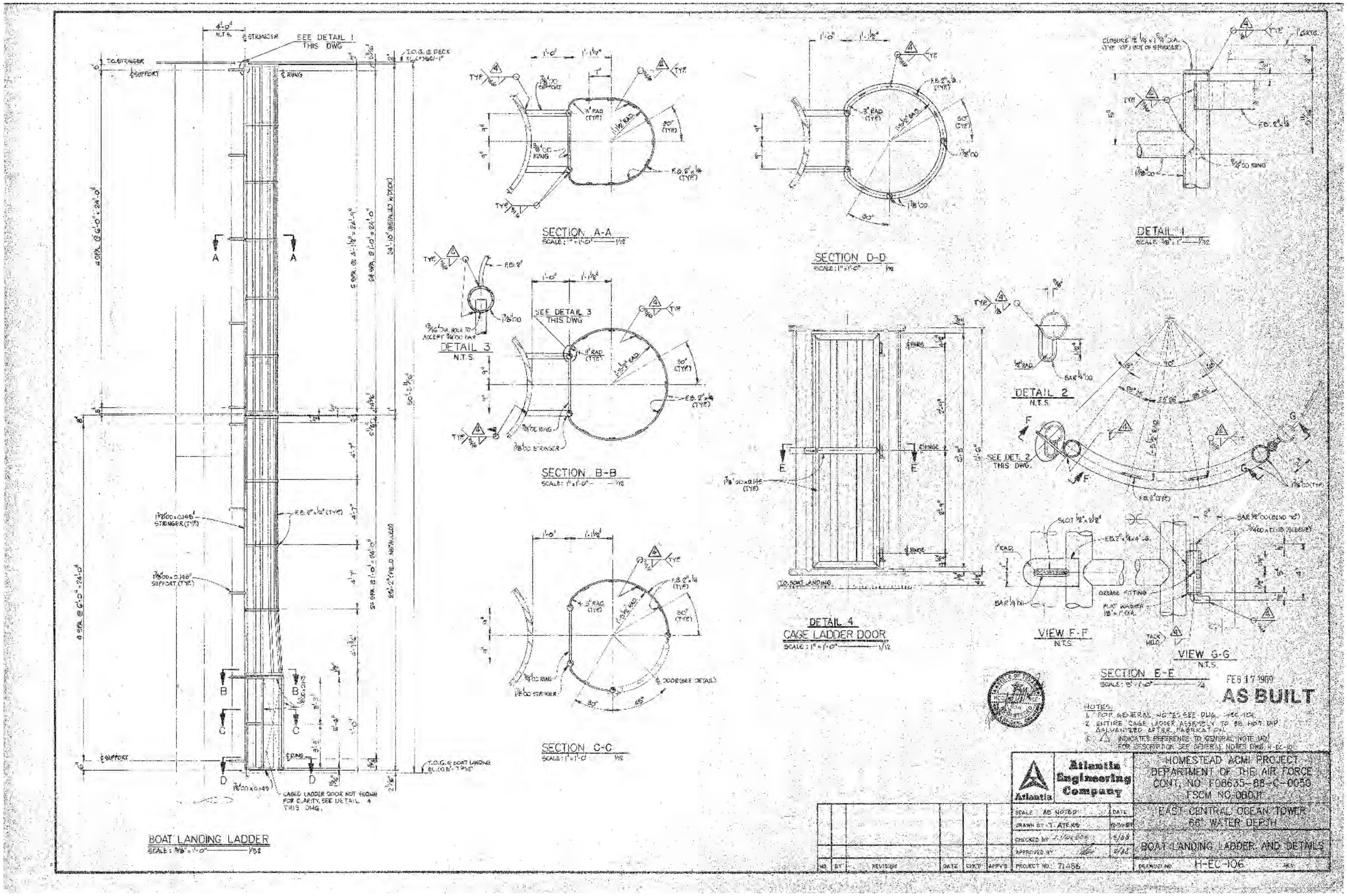

SECTION A-A
PLAN AT MUDLINE EL.(–)66'–0"
DETAIL 1 GROUT CONNECTION
DETAIL 2 GROUT CONNECTION ORIENTATION
GENERAL NOTES:
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635–88–C–0050
FSCM NO. 0BOJ1
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
STRUCTURE PLAN AND ELEVATION
H–EC–101

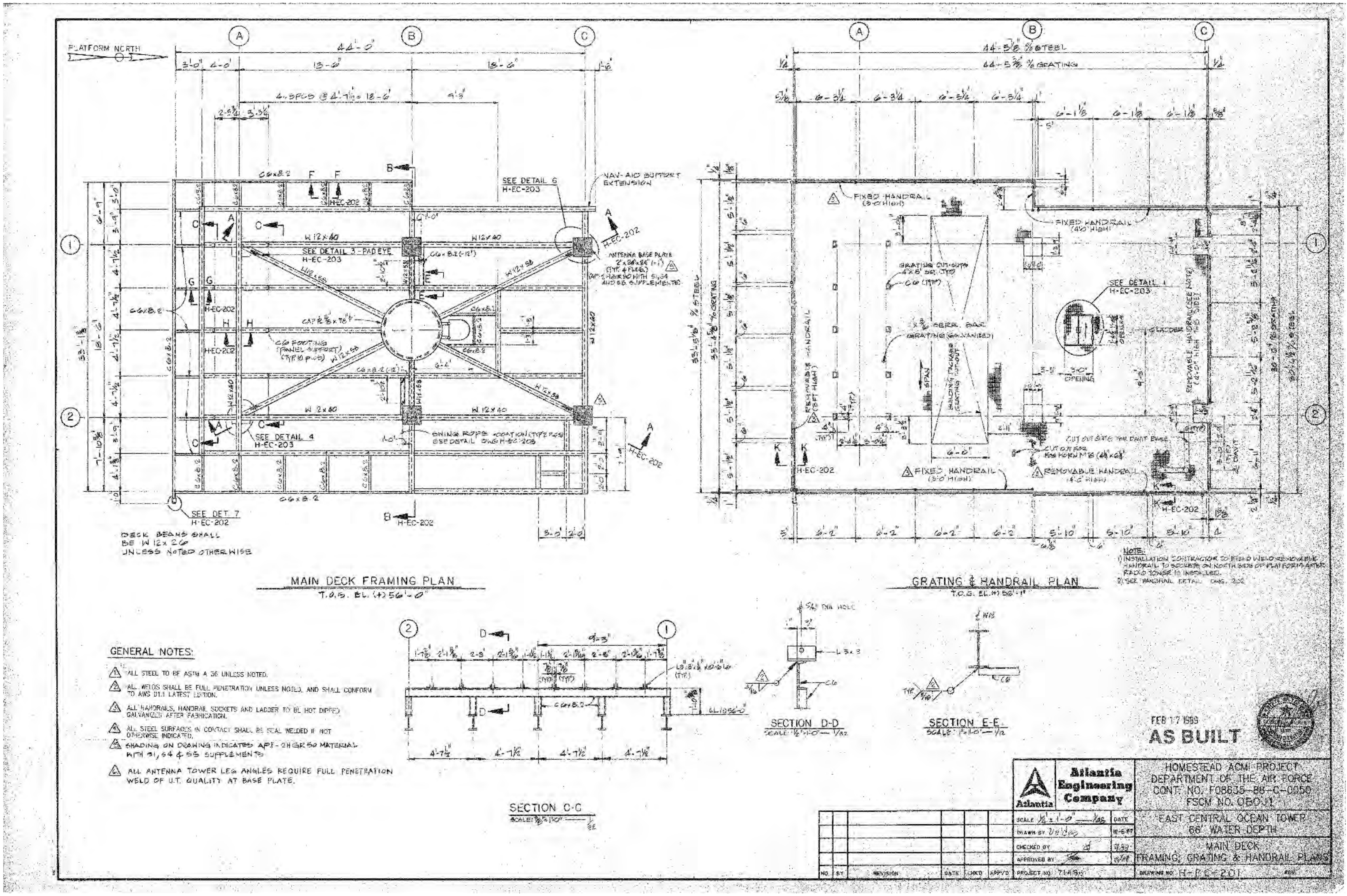

SECTION C-C (H-EC-101)
SECTION A-A
SECTION B-B (H-EC-101)
DETAIL 1 (H-EC-101)
N.T.S.
SECTION D-D
DETAIL 2 (H-EC-101)
DETAIL 3 (H-EC-101)
NOTES:
AS BUILT
FEB 17 1989
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM. NO. 0B0J1
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
SECTIONS AND DETAILS
B. HEBERT
H-EC-102

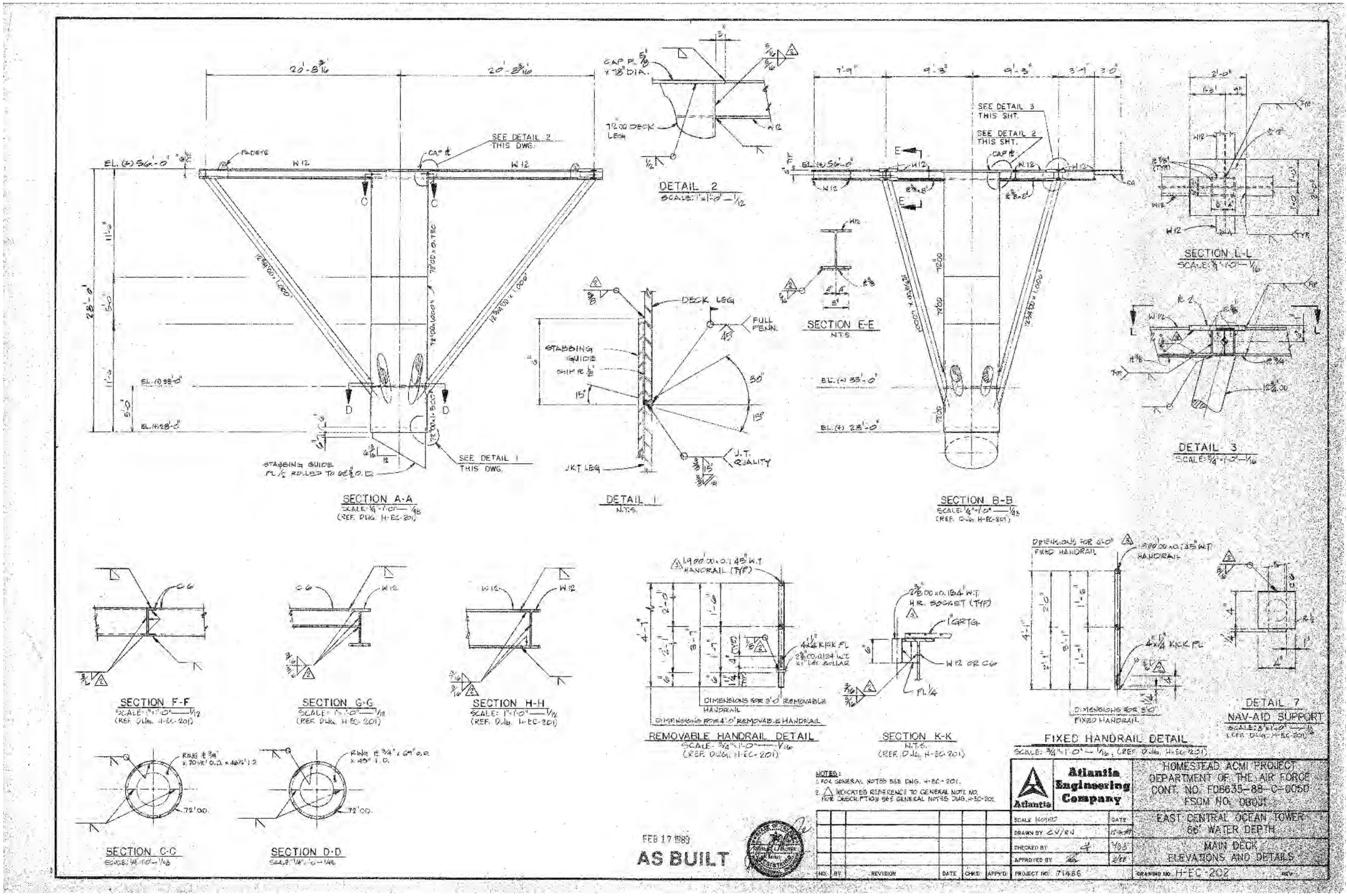

PILE ELEVATION
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
SECTION F-F
DETAIL 1
DETAIL 2-SHEAR KEY
DETAIL 3
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
PILE ELEVATION AND DETAILS
H-EC-103

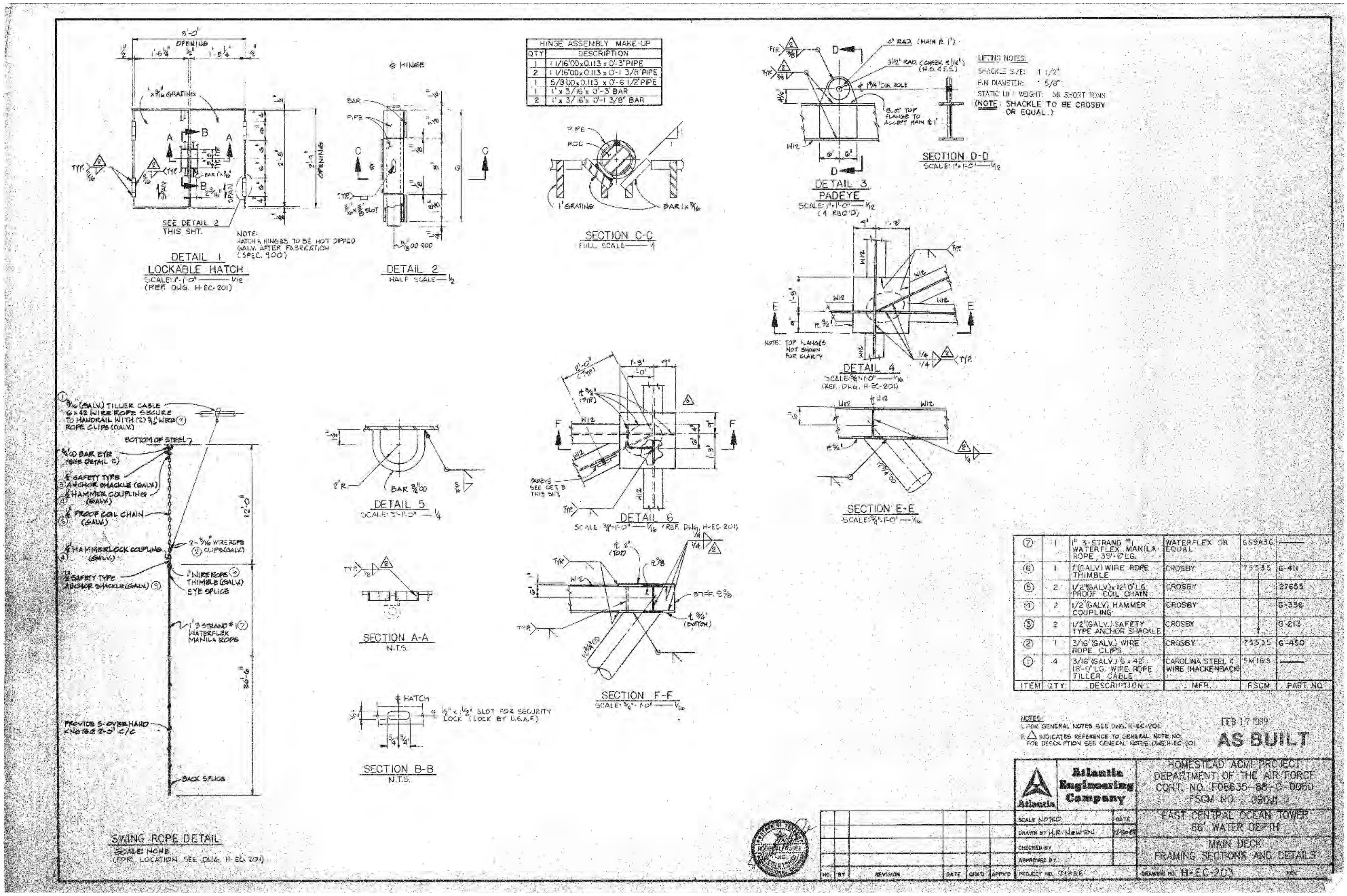

PLAN AT T.O.S. EL.(+)5'-4 5/16"
PLAN AT EL.(-)1'-0"
PLAN AT EL.(-)6'-9"
ELEVATION
STABBING POST DETAIL
DETAIL 2
OVERBOARD LADDER DETAIL
VIEW C-C
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
BOAT LANDING
FRAMING AND GRATING PLANS
H-EC-104

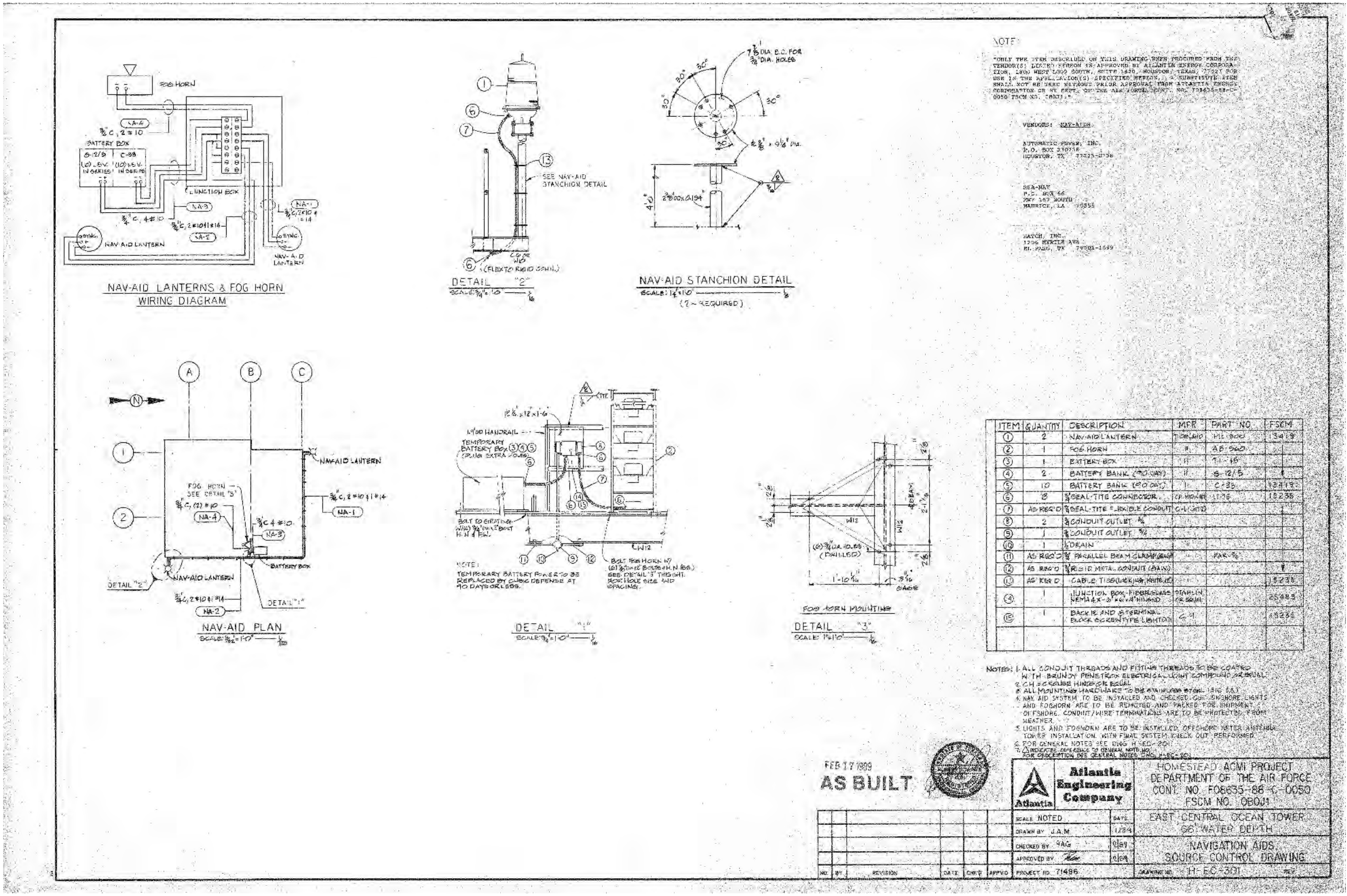

ITEM QTY. DESCRIPTION MFR. FSCM PART NO.
1 6 EA. RUBSTRIP TELEDYNE 2N167 CP-8
SECTION A-A (H-EC-104) (SIM. 6 PLACES)
SCALE 3/8" = 1'-0" (1/32)
SECTION B-B (H-EC-104) (SIM. 6 PLACES)
SCALE 3/8" = 1'-0" (1/32)
SECTION C-C
SCALE 1 1/2" = 1'-0" (1/8)
SECTION D-D
SCALE 3/8" = 1'-0" (1/32)
DETAIL 1 (H-EC-104)
SCALE 1 1/2" = 1'-0" (1/8)
DETAIL 2
SCALE NONE
DETAIL 3
SCALE 1 1/2" = 1'-0" (1/8)
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-EC-101.
2. INSTALLATION CONTRACTOR TO CUT BOAT LANDING POSTS (10 3/4" OD) ON MARKS CORRESPONDING TO ACTUAL WATER LINE ON COLUMN.
3. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-EC-101.
FEB 27 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
BOAT LANDING SECTIONS & DETAILS
SCALE AS NOTED
DRAWN BY R. HEBERT
PROJECT NO. 71486
DRAWING NO. H-EC-105


BOAT LANDING LADDER
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
CAGE LADDER DOOR
VIEW F-F
VIEW G-G
FEB 17 1989
AS BUILT
NOTES:
2. ENTIRE CAGE LADDER ASSEMBLY TO BE HOT DIP GALVANIZED AFTER FABRICATION.
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
BOAT LANDING LADDER AND DETAILS
SCALE AS NOTED
DRAWN BY T. AYERS
PROJECT NO. 71486
H-EC-106


MAIN DECK FRAMING PLAN
T.O.S. EL. (+) 56'-0"
GRATING & HANDRAIL PLAN
SECTION C-C
SECTION D-D
SECTION E-E
GENERAL NOTES:
ALL STEEL TO BE ASTM A 36 UNLESS NOTED.
ALL WELDS SHALL BE FULL PENETRATION UNLESS NOTED, AND SHALL CONFORM TO AWS D1.1 LATEST EDITION.
ALL HANDRAILS, HANDRAIL SOCKETS AND LADDER TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
ALL STEEL SURFACES IN CONTACT SHALL BE SEAL WELDED IF NOT OTHERWISE INDICATED.
SHADING ON DRAWING INDICATES API-2H GR 50 MATERIAL WITH S1, S4 & S5 SUPPLEMENTS.
ALL ANTENNA TOWER LEG ANGLES REQUIRE FULL PENETRATION WELD OF U.T. QUALITY AT BASE PLATE.
DECK BEAMS SHALL BE W 12x 26 UNLESS NOTED OTHERWISE
PLATFORM NORTH
FEB 17 1989
AS BUILT
Atlantic Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
MAIN DECK
FRAMING, GRATING & HANDRAIL PLANS
H-EC-201


SECTION A-A
SCALE: 1/4"=1'-0"
(REF. DWG. H-EC-201)
DETAIL 2
DETAIL 1
N.T.S.
SECTION E-E
N.T.S.
SECTION B-B
(REF. DWG. H-EC-201)
SECTION L-L
DETAIL 3
SEE DETAIL 2 THIS DWG.
SEE DETAIL 1 THIS DWG.
SEE DETAIL 3 THIS SHT.
SEE DETAIL 2 THIS SHT.
DECK LEG
JKT LEG
STABBING GUIDE
FULL PENN.
J.T. QUALITY
EL. (+) 56'-0"
EL. (+) 33'-0"
EL. (+) 28'-0"
20'-8 3/16"
SECTION F-F
SECTION G-G
SECTION H-H
SECTION C-C
SECTION D-D
REMOVABLE HANDRAIL DETAIL
DIMENSIONS FOR 3'-0" REMOVABLE HANDRAIL
DIMENSIONS FOR 4'-0" REMOVABLE HANDRAIL
SECTION K-K
N.T.S.
FIXED HANDRAIL DETAIL
DIMENSIONS FOR 3'-0" FIXED HANDRAIL
DIMENSIONS FOR 4'-0" FIXED HANDRAIL
DETAIL 7
NAV-AID SUPPORT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-EC-201.
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-EC-201.
FEB 17 1989
AS BUILT
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSOM NO. 0B031
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
MAIN DECK
ELEVATIONS AND DETAILS
PROJECT NO. 71486
DRAWING NO. H-EC-202
NO. BY REVISION DATE CHKD APPV'D


HINGE ASSEMBLY MAKE-UP
DETAIL 1
LOCKABLE HATCH
DETAIL 2
SECTION C-C
DETAIL 3
PADEYE
SECTION D-D
LIFTING NOTES:
DETAIL 4
SECTION E-E
DETAIL 5
DETAIL 6
SECTION A-A
SECTION B-B
SECTION F-F
SWING ROPE DETAIL
AS BUILT
Atlantic Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH
MAIN DECK
FRAMING SECTIONS AND DETAILS



ITEM	QUANTITY	DESCRIPTION	MFR	PART NO.	FSCM
1	2	NAV-AID LANTERN	TIDELAND	ML-300	13419
2	1	FOG HORN	"	AB-560	
3	1	BATTERY BOX	"	TI-15	
4	2	BATTERY BANK (90 DAY)	"	S-12/5	
5	10	BATTERY BANK (90 DAY)	"	C-35	13419
6	8	¾ SEAL-TITE CONNECTOR	CR. HINDS	LT-75	15235
7	AS REQ'D	¾ SEAL-TITE FLEXIBLE CONDUIT	C.H.		
8	2	¾ CONDUIT OUTLET			
9	1	¾ CONDUIT OUTLET			
10	1	½ DRAIN			
11	AS REQ'D	¾ PARALLEL BEAM CLAMP		PAR-¾	
12	AS REQ'D	¾ RIGID METAL CONDUIT (GALV)			
13	AS REQ'D	CABLE TIES			15235
14	1	JUNCTION BOX-FIBERGLASS NEMA 4X	STAHLIN OR EQUAL		25485
15	1	BACKPLATE AND 8 TERMINAL BLOCK SCREW TYPE	C.H.		15235

NOTE:

"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTED ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."

VENDORS: DAVITS

WEATHERFORD
11909 SPENCER RD. (FM 529)
HOUSTON, TX 77042

AREX EQUIPMENT CORPORATION, INC.
P.O. BOX 19681
HOUSTON, TX 77224-9681

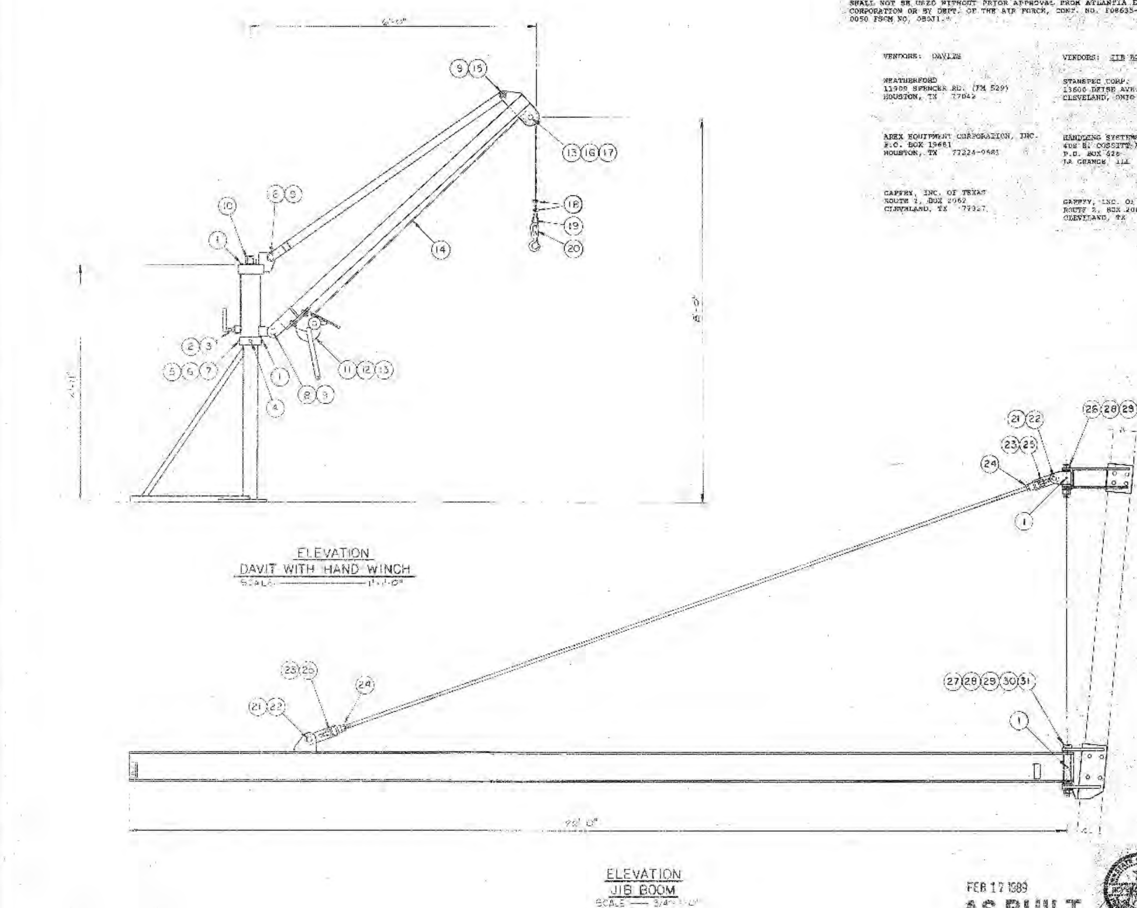
CAFFEY, INC. OF TEXAS
ROUTE 1, BOX 2062
CLEVELAND, TX 77327

VENDORS: JIB BOOMS

STANSPEC CORP.
13600 DEISE AVE.
CLEVELAND, OHIO 44110

HANDLING SYSTEMS, INC.
408 E. COSSITT AVE.
P.O. BOX 628
LA GRANGE, ILL 60525

CAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2062
CLEVELAND, TX 77327



ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
18	3	1/4" S.S. WIRE ROPE CLIPS	CAMBELL CHAIN	80535	840-3004
16	1	1/2"-13 NC x 2 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
15	2	3/4"-10 NC x 2 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.		—
10	1	1 1/2"-12 NC ELASTIC LOCK NUT	LONE STAR SCR.		—
8	2	3/4"-10 NC x 3" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—

SPARE PARTS

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
30	2	1" HELICAL SPRING LOCK WASHER 316 S.S.	LONE STAR SCR.	7H174	—
29	2	3" OD x 1 1/3" ID x 1/4" THK. NYLON THRUST WASHER	MARTEC CRANE	2H098	—
28	4	2 1/4" OD x 1 1/2" ID x 1 1/2" LG BRONZE BUSHING	OILITE	7E404M	—
27	1	1 1/2" OD x 14 1/4" LG x 2" HD. 17-4PH S.S. MACH. PIN W/1" OD-8 NC x 1 1/2" LG THRD. INCL. 316 S.S.	MARTEC CRANE	2H098	—
26	1	1 1/2" OD x 8 3/4" LG x 2" HD. 17-4PH S.S. MACH. PIN W/1" OD-8 NC x 1 1/2" LG THRD. INCL. 316 S.S.	MARTEC CRANE	2H098	—
25	2	1" PLAIN FLAT WASHER 316 S.S.	LONE STAR SCR.	7H174	—
24	2	1"-8 NC H.H. JAM NUT 316 S.S.	LONE STAR SCR.		—
23	2	1"-8 NC H.H. NUT 316 S.S.	LONE STAR SCR.		—
22	4	1"-8 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.		—
21	2	1"-8 NC x 4 1/4" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
20	1	2 TON SWIVEL HOOK	CROSBY	75535	S-322C
19	1	1/4" S.S. WIRE ROPE THIMBLE	CAMPBELL CHAIN	80585	640-7604
18	2	1/4" S.S. WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	640-3004
17	1	4" x 5/8" x 1/2" SHEAVE W/BRONZE BUSHING 1/4" GROOVE	CROSBY	75535	4173
16	1	1/2"-13 NC x 2 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
15	1	3/4"-10 NC x 2 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
14	100'-0"	1/4", 1 x 7, 316 S.S. WIRE ROPE	CAROLINA STEEL AND WIRE (HACKENSACK)	5M165	—
13	5	1/2"-13 NC x ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	—
12	4	1/2"-13 NC x 1 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
11	1	WINCH WITH MANUAL GEAR (GALVANIZED)	BEEBE	0G550	BM66
10	1	1 1/2"-12 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	—
9	3	3/4"-10 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	—
8	2	3/4"-10 NC x 3" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
7	1	4 1/2" OD x 4" ID x 1 1/2" LG BRONZE BUSHING	OILITE	7E404M	—
6	1	BEARING CUP	TIMKEN	3G357	53376
5	1	BEARING CONE	TIMKEN	3G357	53162
4	1	1/4"-20 NC x 3/4" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
3	1	1 1/2" OD x 1 1/2" LG NYLON BRAKE PAD	MARTEC CRANE	2H098	—
2	1	5/8"-11 NC x 3" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
1	4	1/8" NPT S.S. GREASE FITTING	ALEMITE	02260	1966-S

PARTS LIST

NO.	BY	REVISION	DATE	CHK'D	APPV'D

Atlantia Engineering Company

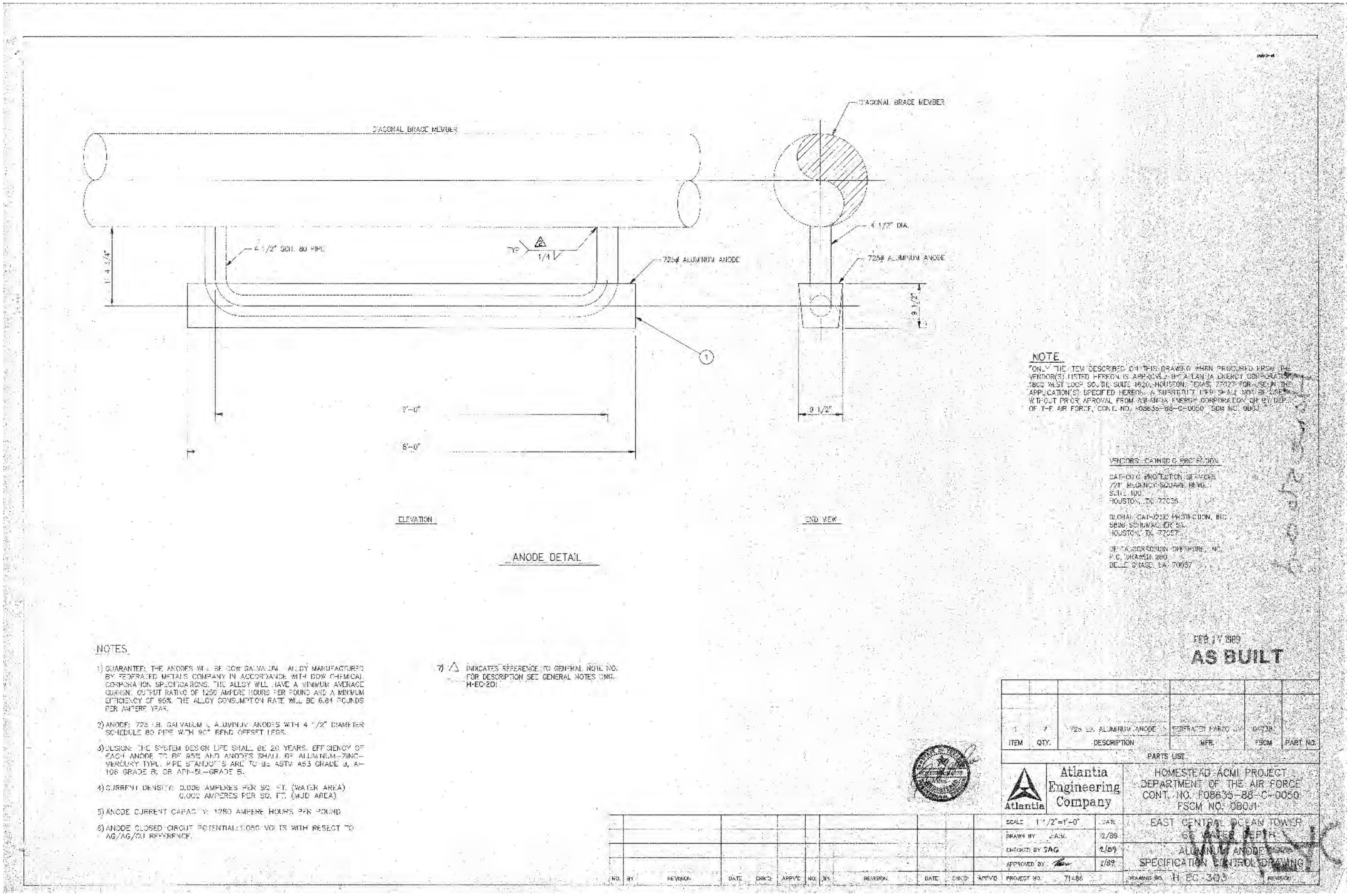
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1

SCALE AS NOTED | DATE
DRAWN BY B. TAYLOR | 1/89
CHECKED BY SAG | 2/89
APPROVED BY | 2/89
PROJECT NO. 71486

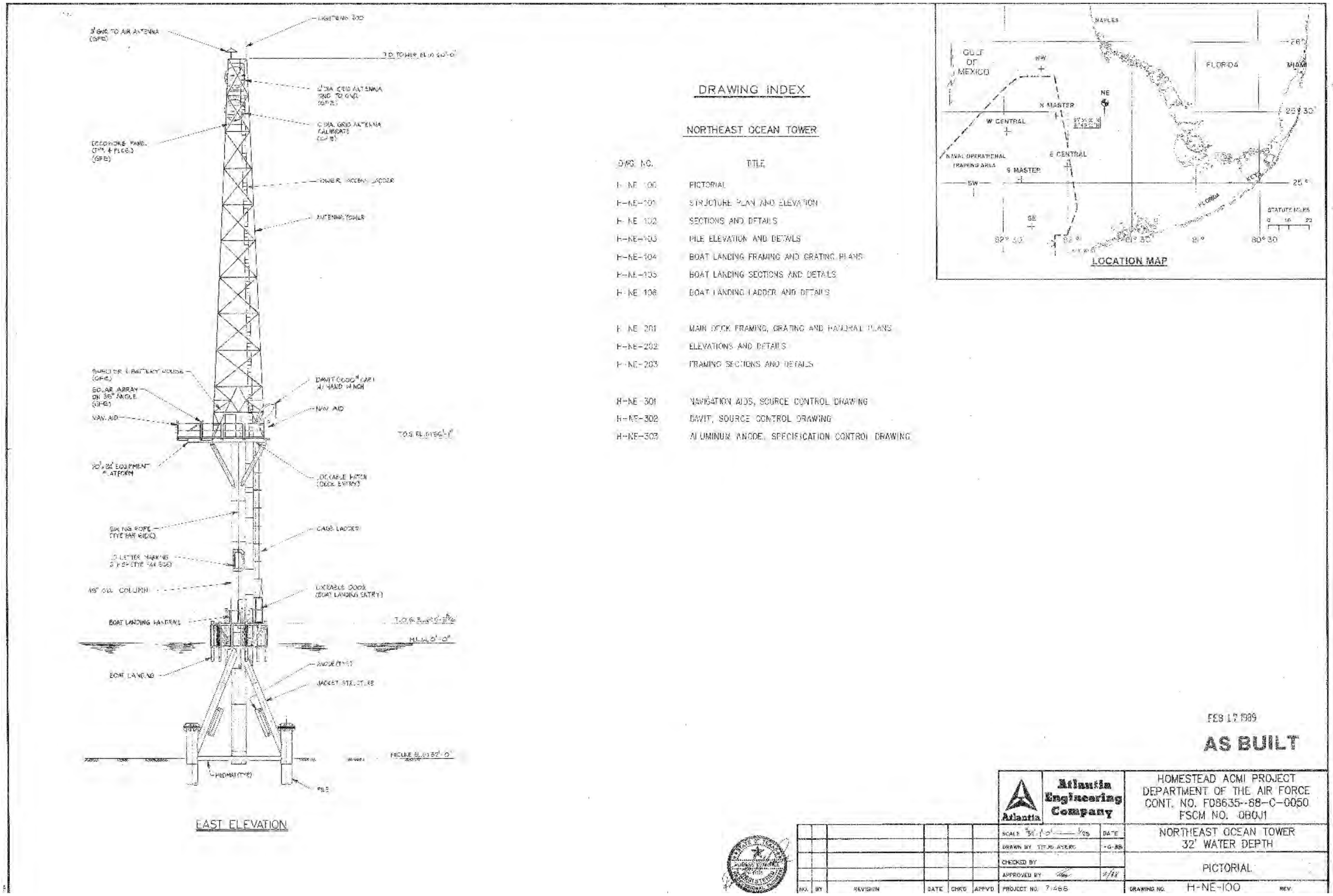
EAST CENTRAL OCEAN TOWER
66' WATER DEPTH

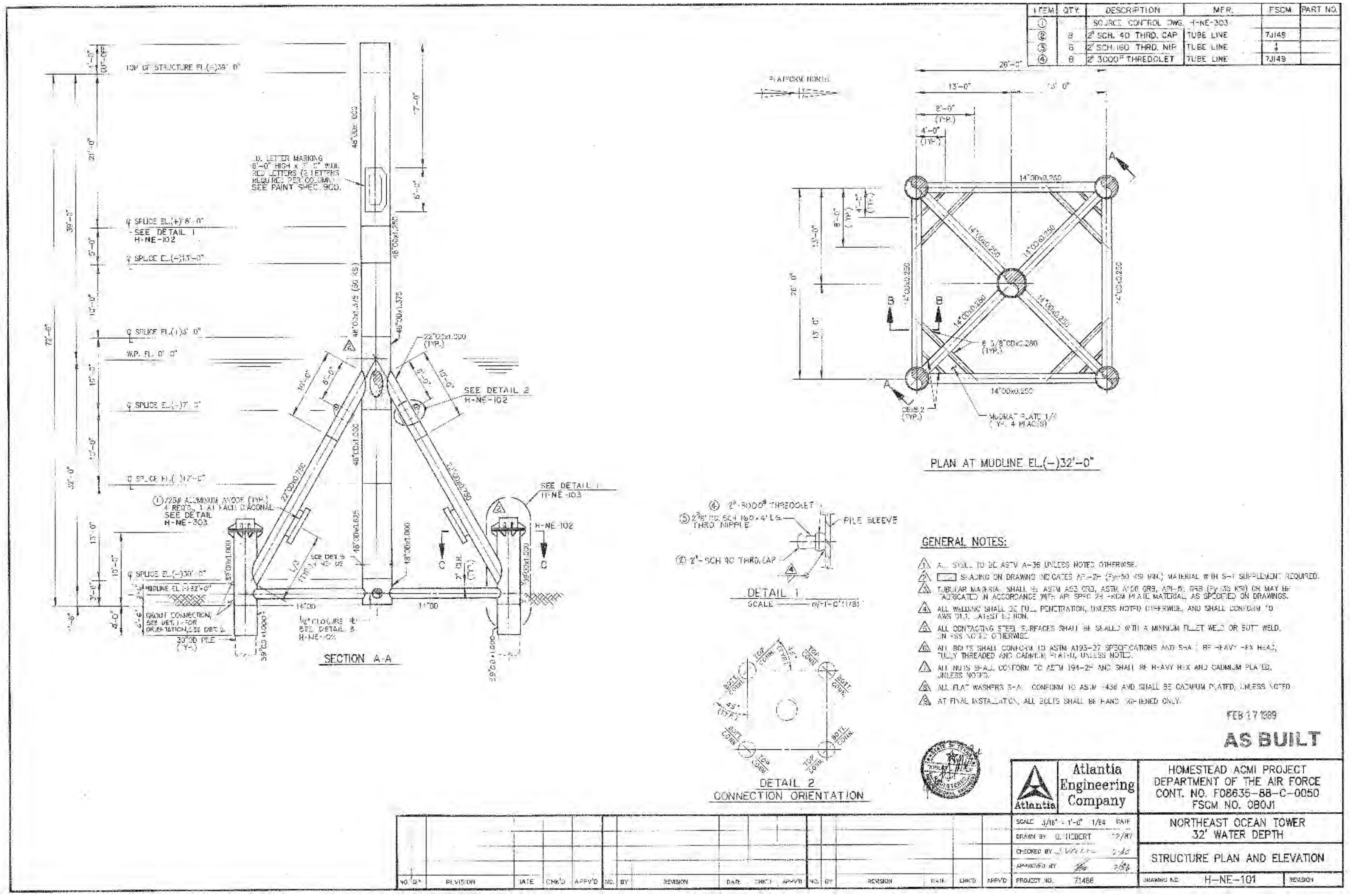
DAVIT AND JIB BOOM
SOURCE CONTROL DRAWING

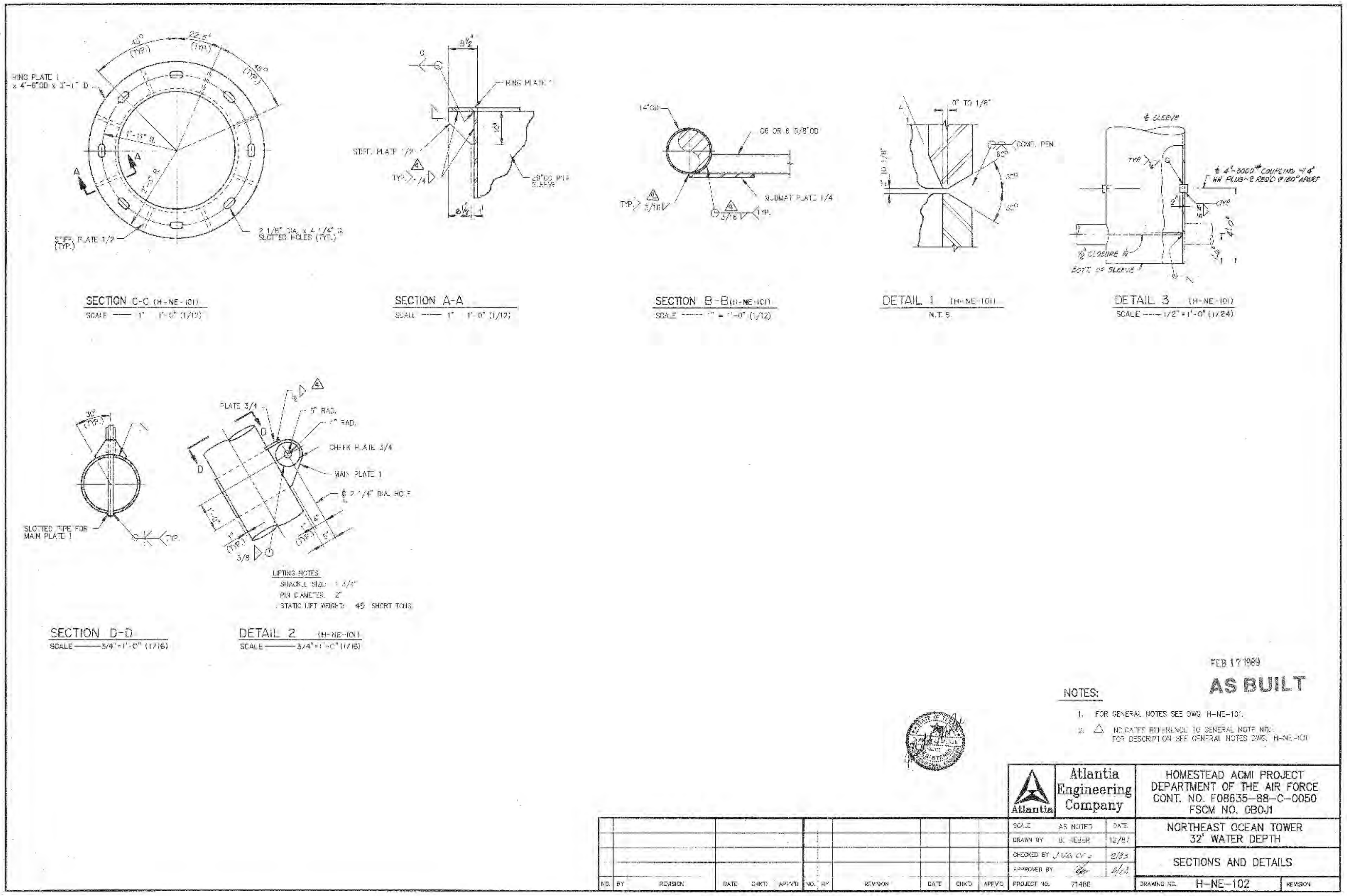
DRAWING NO. H-EG-302 REV.

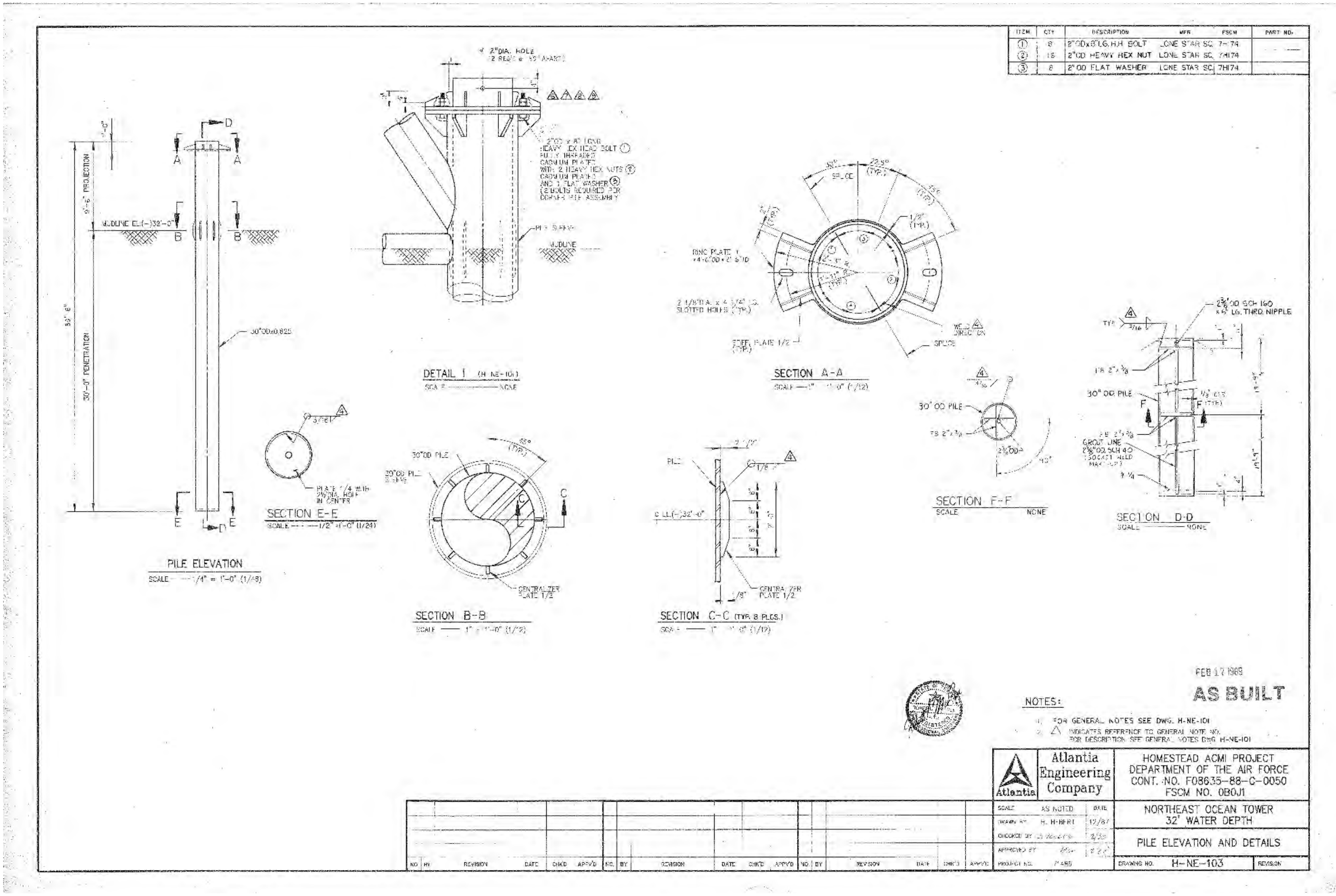

DIAGONAL BRACE MEMBER
4 1/2" SCH. 80 PIPE
725# ALUMINUM ANODE
4 1/2" DIA.
7'-0"
8'-0"
9 1/2"
ELEVATION
END VIEW
ANODE DETAIL
NOTES
1) GUARANTEE: THE ANODES WILL BE DOW GALVALUM ALLOY MANUFACTURED BY FEDERATED METALS COMPANY IN ACCORDANCE WITH DOW CHEMICAL CORPORATION SPECIFICATIONS. THE ALLOY WILL HAVE A MINIMUM AVERAGE CURRENT OUTPUT RATING OF 1250 AMPERE HOURS PER POUND AND A MINIMUM EFFICIENCY OF 95%. THE ALLOY CONSUMPTION RATE WILL BE 6.84 POUNDS PER AMPERE YEAR.
2) ANODE: 725 LB. GALVALUM I, ALUMINUM ANODES WITH 4 1/2" DIAMETER SCHEDULE 80 PIPE WITH 90° BEND OFFSET LEGS.
3) DESIGN: THE SYSTEM DESIGN LIFE SHALL BE 20 YEARS. EFFICIENCY OF EACH ANODE TO BE 95% AND ANODES SHALL BE ALUMINUM-ZINC-MERCURY TYPE. PIPE STANDOFFS ARE TO BE ASTM A53 GRADE B, A-106 GRADE B, OR API-5L-GRADE B.
4) CURRENT DENSITY: 0.006 AMPERES PER SQ. FT. (WATER AREA)
0.002 AMPERES PER SQ. FT. (MUD AREA)
5) ANODE CURRENT CAPACITY: 1250 AMPERE HOURS PER POUND
6) ANODE CLOSED CIRCUIT POTENTIAL: 1.050 VOLTS WITH RESECT TO AG/AG/CL REFERENCE.
7) △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-EC-201
NOTE
FEB 17 1989
AS BUILT
1
7
725 LB. ALUMINUM ANODE
ITEM
QTY.
DESCRIPTION
MFR.
FSCM
PART NO.
PARTS LIST
Atlantia
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE 1 1/2"=1'-0"
DATE
DRAWN BY J.A.M.
2/89
CHECKED BY SAG
2/89
APPROVED BY
2/89
PROJECT NO. 71486
EAST CENTRAL OCEAN TOWER
SPECIFICATION CONTROL DRAWING
DRAWING NO. H-EC-303
REVISION
NO.
BY
REVISION
DATE
CHK'D
APPV'D

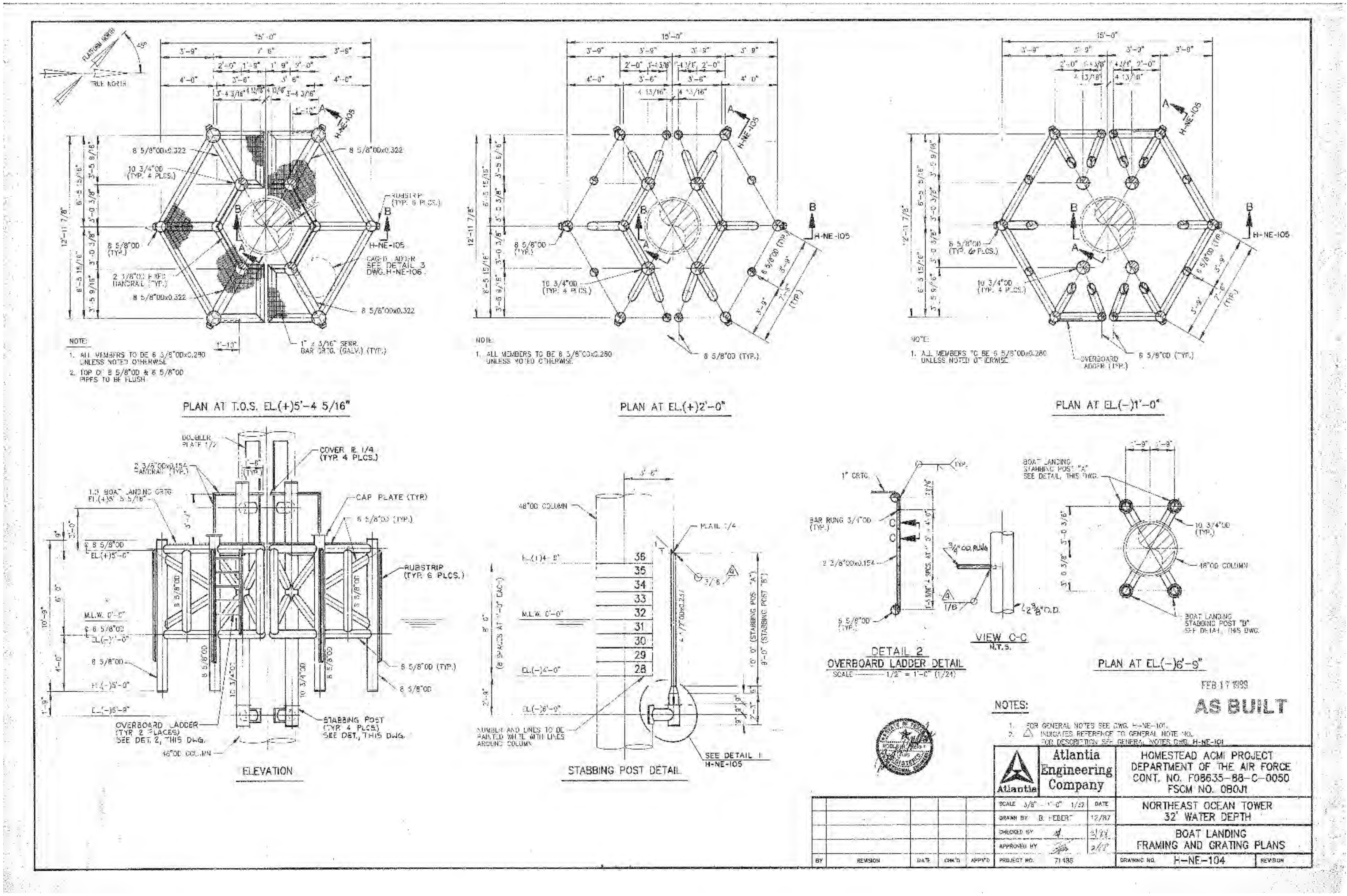
A.2 NORTHEAST TOWER

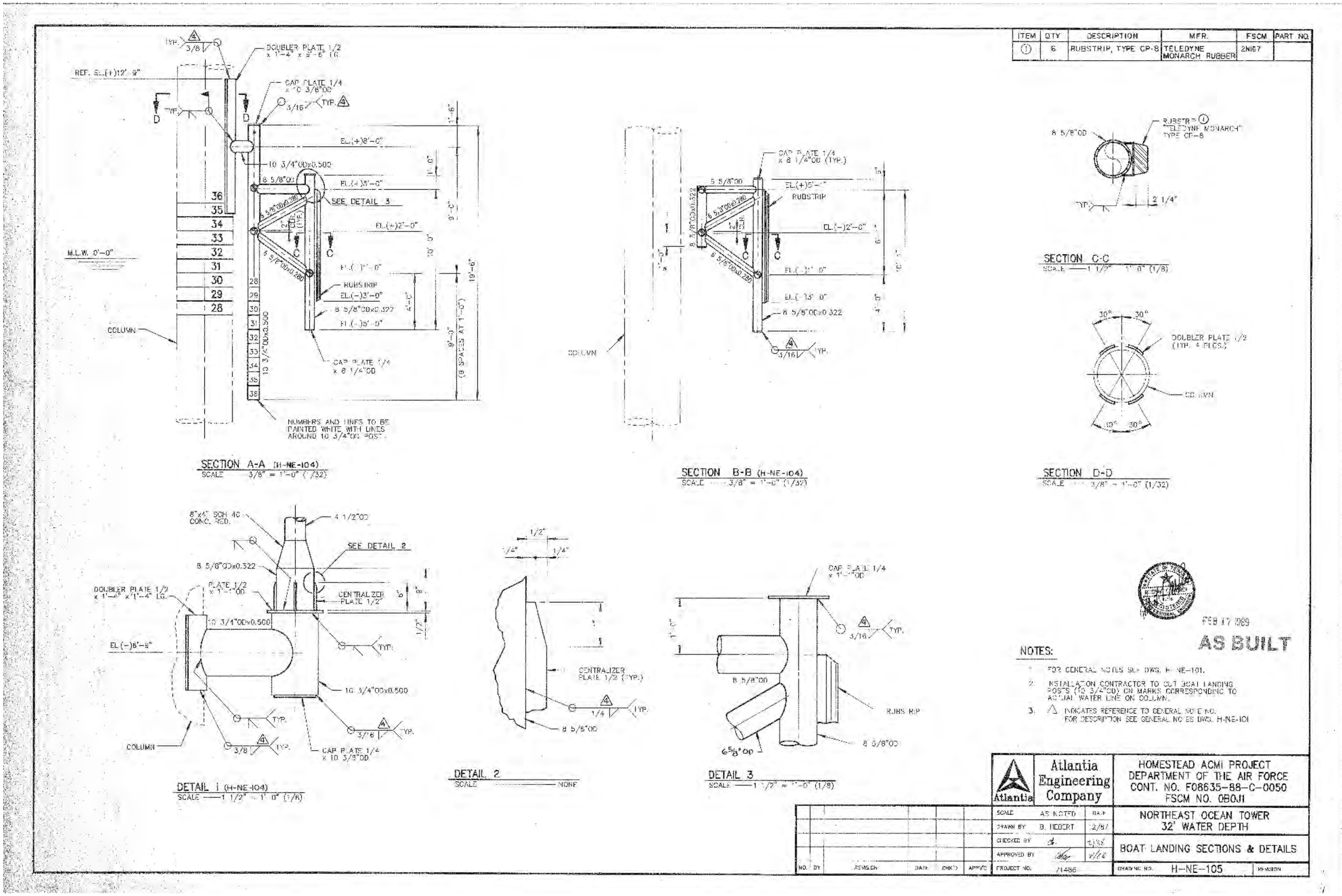


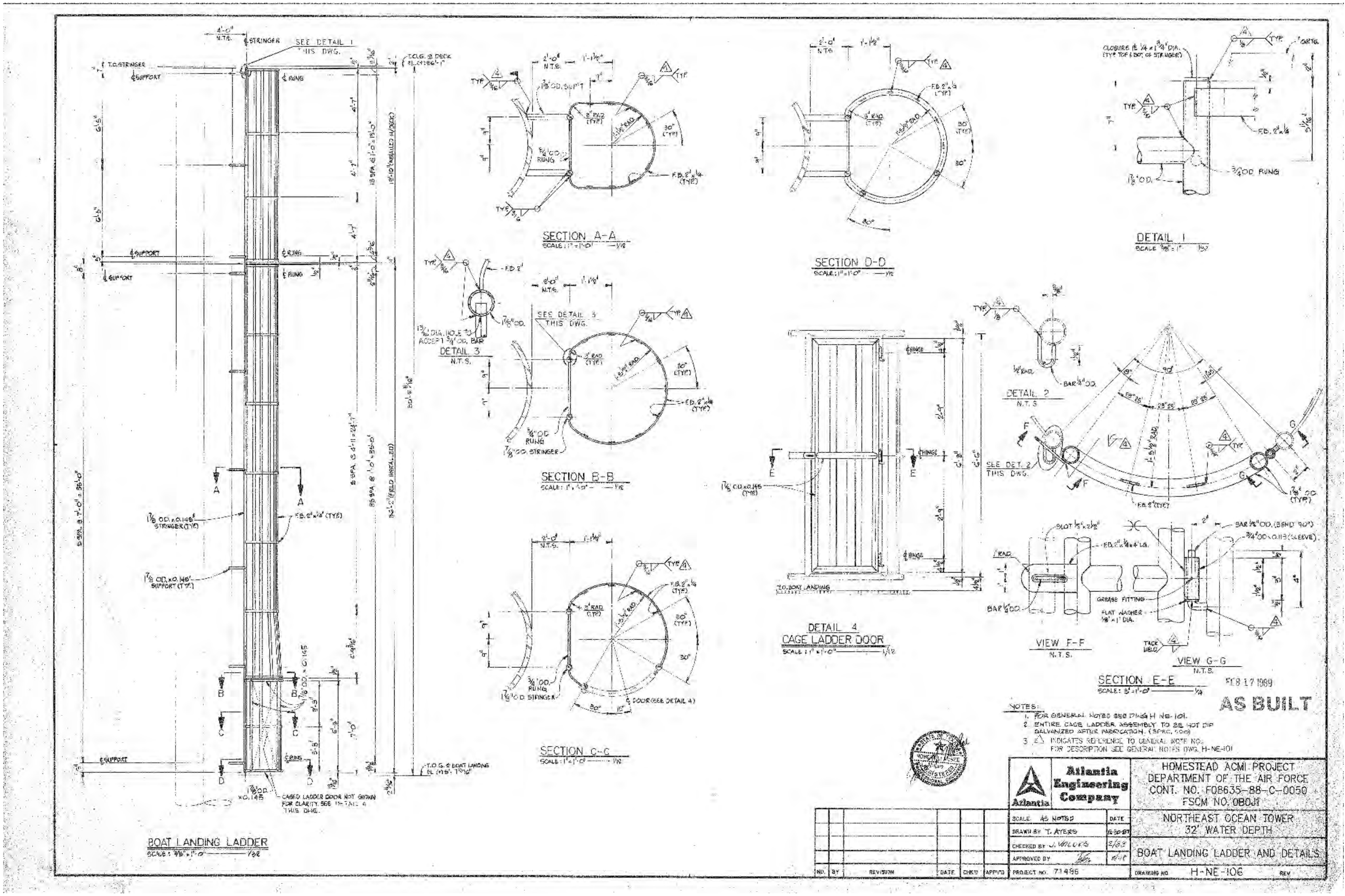

SECTION A-A
PLAN AT MUDLINE EL.(–)32'–0"
DETAIL 1
DETAIL 2
CONNECTION ORIENTATION
GENERAL NOTES:
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTHEAST OCEAN TOWER
32' WATER DEPTH
STRUCTURE PLAN AND ELEVATION
H-NE-101

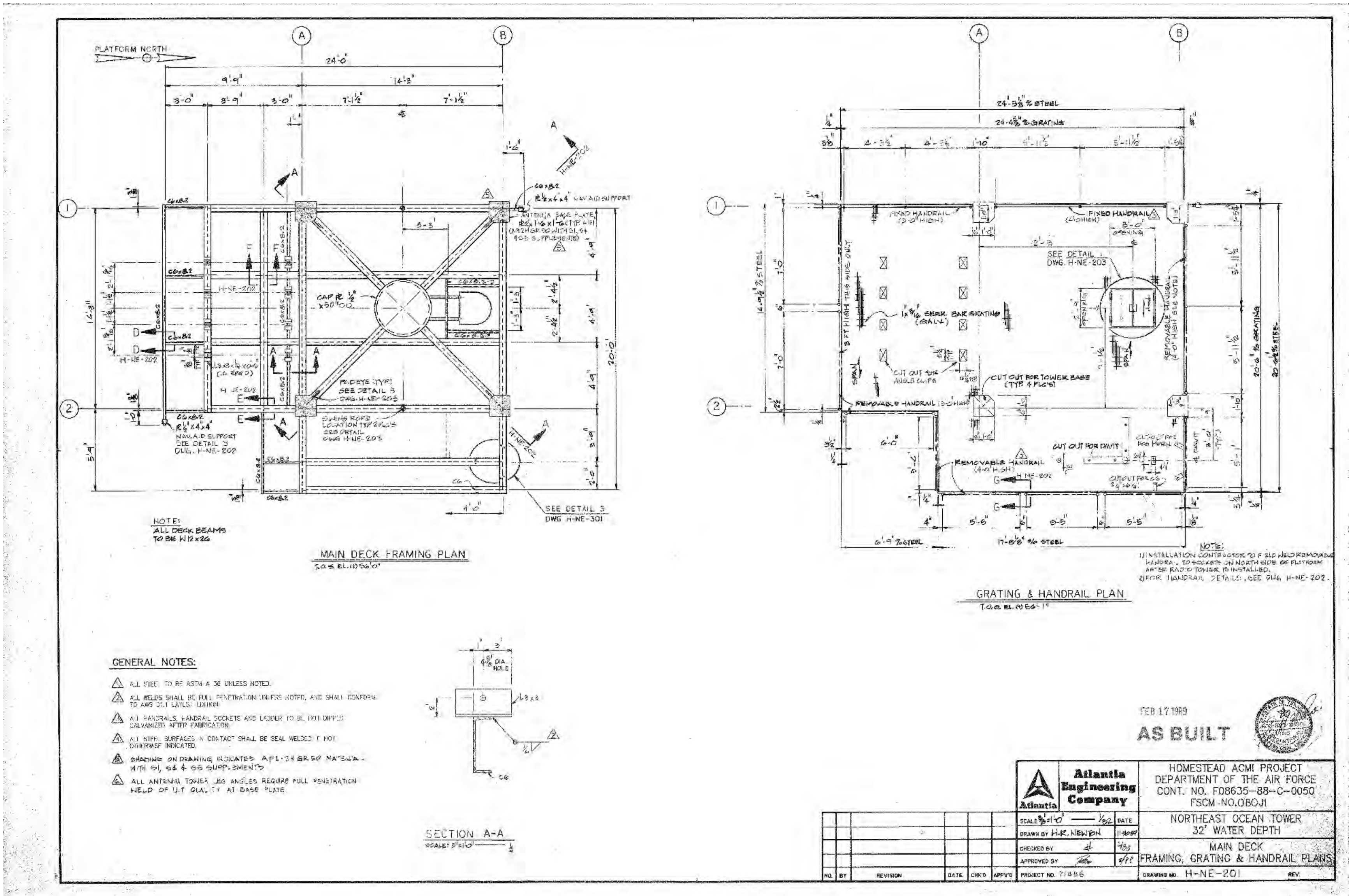

SECTION C-C (H-NE-101)
SCALE 1" = 1'-0" (1/12)
SECTION A-A
SCALE 1" = 1'-0" (1/12)
SECTION B-B (H-NE-101)
SCALE 1" = 1'-0" (1/12)
DETAIL 1 (H-NE-101)
N.T.S.
DETAIL 3 (H-NE-101)
SCALE 1/2" = 1'-0" (1/24)
SECTION D-D
SCALE 3/4" = 1'-0" (1/16)
DETAIL 2 (H-NE-101)
SCALE 3/4" = 1'-0" (1/16)
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG H-NE-101.
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NE-101
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE AS NOTED
DRAWN BY 12/87
PROJECT NO. 71486
NORTHEAST OCEAN TOWER
32' WATER DEPTH
SECTIONS AND DETAILS
DRAWING NO. H-NE-102

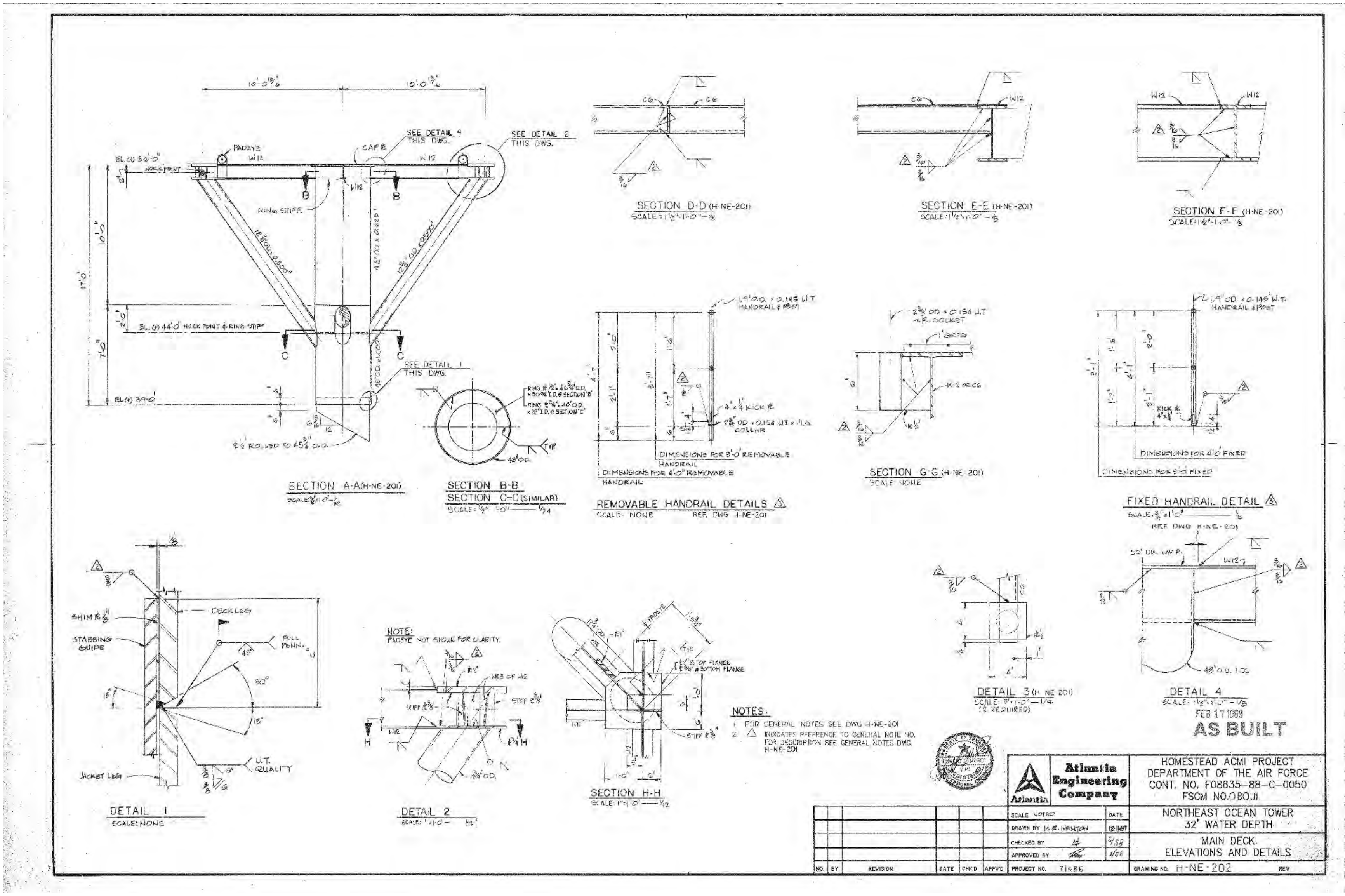

PILE ELEVATION
DETAIL 1
SECTION A-A
SECTION B-B
SECTION C-C (TYP. 8 PLCS.)
SECTION D-D
SECTION E-E
SECTION F-F
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-NE-101
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTHEAST OCEAN TOWER
32' WATER DEPTH
PILE ELEVATION AND DETAILS
H-NE-103

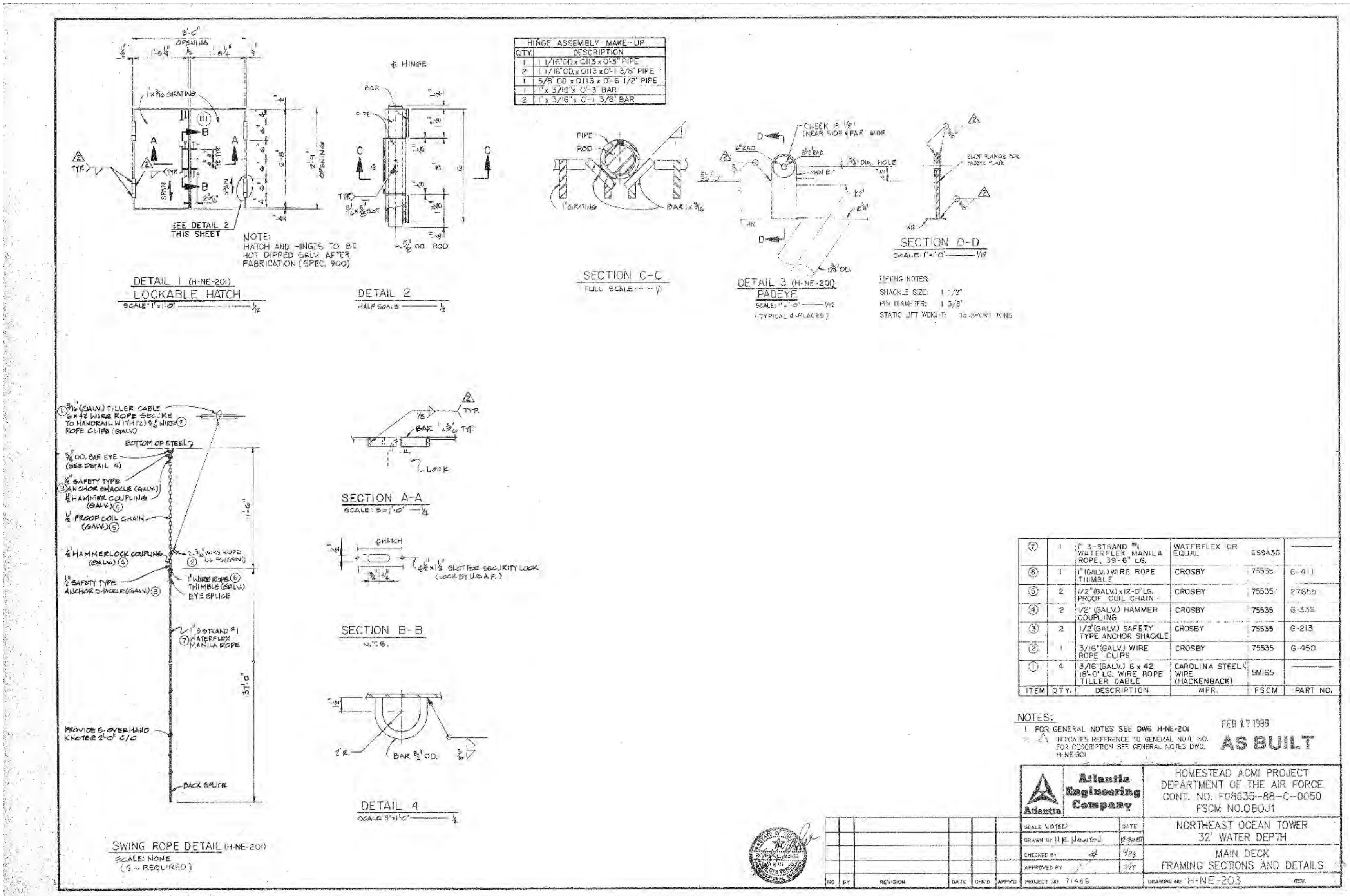

PLAN AT T.O.S. EL.(+)5'-4 5/16"
PLAN AT EL.(+)2'-0"
PLAN AT EL.(-)1'-0"
ELEVATION
STABBING POST DETAIL
DETAIL 2
OVERBOARD LADDER DETAIL
VIEW C-C
PLAN AT EL.(-)6'-9"
FEB 17 1999
AS BUILT
NOTES:
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTHEAST OCEAN TOWER
32' WATER DEPTH
BOAT LANDING
FRAMING AND GRATING PLANS
H-NE-104


ITEM QTY DESCRIPTION MFR. FSCM PART NO.
① 6 RUBSTRIP, TYPE CP-8 TELEDYNE MONARCH RUBBER 2NI67
SECTION A-A (H-NE-104)
SCALE 3/8" = 1'-0" (1/32)
SECTION B-B (H-NE-104)
SCALE 3/8" = 1'-0" (1/32)
SECTION C-C
SCALE 1 1/2" = 1'-0" (1/8)
SECTION D-D
SCALE 3/8" = 1'-0" (1/32)
DETAIL 1 (H-NE-104)
SCALE 1 1/2" = 1'-0" (1/8)
DETAIL 2
SCALE NONE
DETAIL 3
SCALE 1 1/2" = 1'-0" (1/8)
M.L.W. 0'-0"
COLUMN
RUBSTRIP
NUMBERS AND LINES TO BE PAINTED WHITE WITH LINES AROUND 10 3/4"OD POST.
CENTRALIZER PLATE 1/2 (TYP.)
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-NE-101.
2. INSTALLATION CONTRACTOR TO CUT BOAT LANDING POSTS (10 3/4"OD) ON MARKS CORRESPONDING TO ACTUAL WATER LINE ON COLUMN.
3. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NE-101
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTHEAST OCEAN TOWER
32' WATER DEPTH
BOAT LANDING SECTIONS & DETAILS
DRAWING NO. H-NE-105


BOAT LANDING LADDER
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
CAGE LADDER DOOR
VIEW F-F
VIEW G-G
AS BUILT
FEB 17 1989
NOTES:
1. FOR GENERAL NOTES SEE DWG H-NE-101.
2. ENTIRE CAGE LADDER ASSEMBLY TO BE HOT DIP GALVANIZED AFTER FABRICATION.
3. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NE-101
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTHEAST OCEAN TOWER
32' WATER DEPTH
BOAT LANDING LADDER AND DETAILS
SCALE AS NOTED
DRAWN BY T. AYERS
PROJECT NO. 71496
DRAWING NO. H-NE-106


MAIN DECK FRAMING PLAN
GRATING & HANDRAIL PLAN
SECTION A-A
GENERAL NOTES:
ALL STEEL TO BE ASTM A 36 UNLESS NOTED.
ALL ANTENNA TOWER LEG ANGLES REQUIRE FULL PENETRATION WELD OF U.T. QUALITY AT BASE PLATE.
NOTE: ALL DECK BEAMS TO BE W12x26
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO.OBOJ1
NORTHEAST OCEAN TOWER
32' WATER DEPTH
MAIN DECK
FRAMING, GRATING & HANDRAIL PLANS
DRAWING NO. H-NE-201

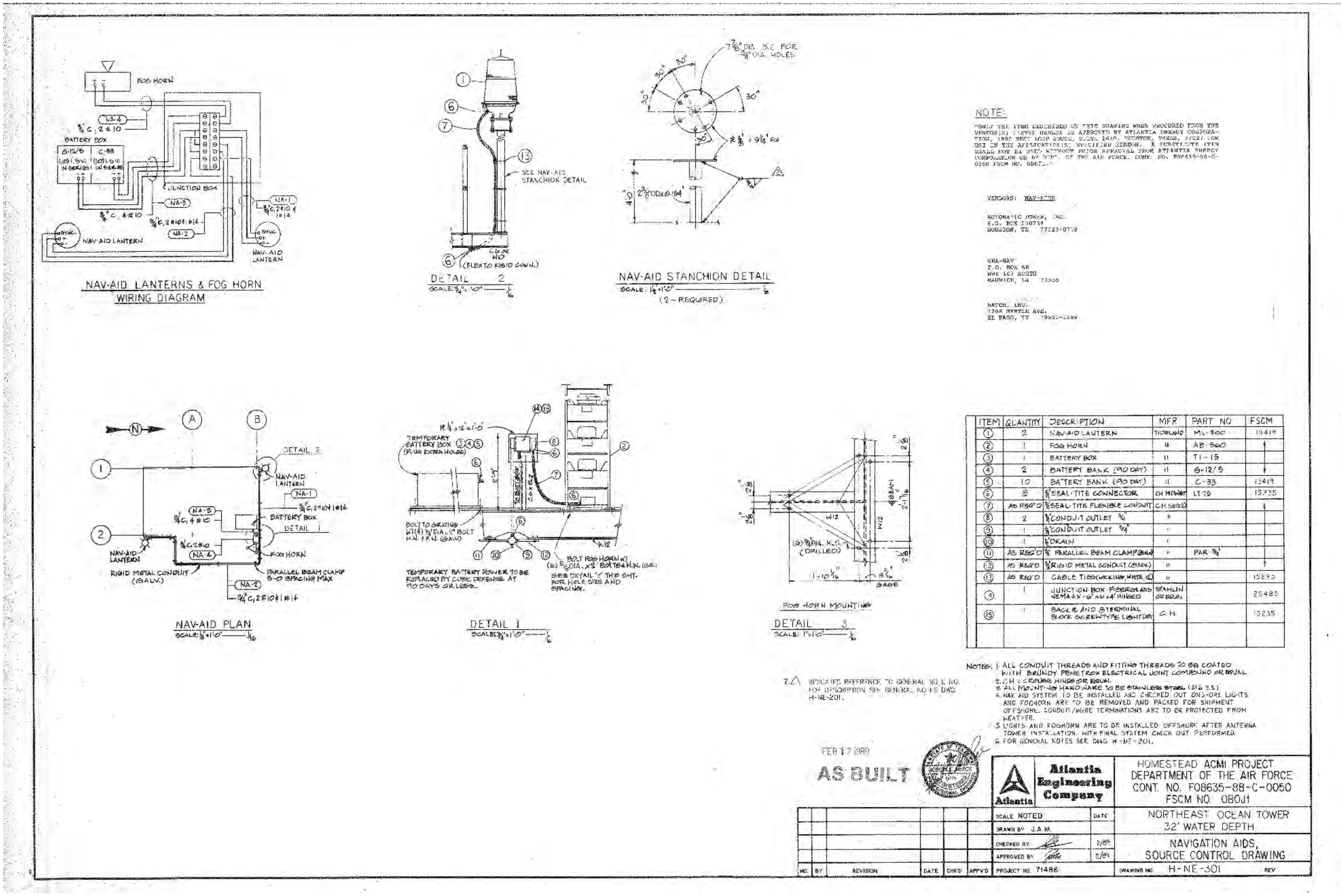

SECTION A-A (H-NE-201)
SECTION B-B
SECTION C-C (SIMILAR)
SECTION D-D (H-NE-201)
SECTION E-E (H-NE-201)
SECTION F-F (H-NE-201)
SECTION G-G (H-NE-201)
REMOVABLE HANDRAIL DETAILS
FIXED HANDRAIL DETAIL
DETAIL 1
DETAIL 2
SECTION H-H
DETAIL 3 (H-NE-201)
DETAIL 4
NOTES:
1. FOR GENERAL NOTES SEE DWG H-NE-201
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NE-201
FEB 17 1989
AS BUILT
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO.0BOJ1
NORTHEAST OCEAN TOWER
32' WATER DEPTH
MAIN DECK
ELEVATIONS AND DETAILS
PROJECT NO. 71486
DRAWING NO. H-NE-202



HINGE ASSEMBLY MAKE-UP	
QTY.	DESCRIPTION
1	1 1/16" OD x 0.113 x 0'-3" PIPE
2	1 1/16" OD x 0.113 x 0'-1 3/8" PIPE
1	5/8" OD x 0.113 x 0'-6 1/2" PIPE
1	1" x 3/16" x 0'-3" BAR
2	1" x 3/16" x 0'-1 3/8" BAR

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
7	1	1" 3-STRAND #1 WATERFLEX MANILA ROPE, 39'-6" LG.	WATERFLEX OR EQUAL	ES9A3G	—
6	1	1" (GALV.) WIRE ROPE THIMBLE	CROSBY	75535	G-411
5	2	1/2" (GALV.) x 12'-0" LG. PROOF COIL CHAIN	CROSBY	75535	27655
4	2	1/2" (GALV.) HAMMER COUPLING	CROSBY	75535	G-336
3	2	1/2" (GALV.) SAFETY TYPE ANCHOR SHACKLE	CROSBY	75535	G-213
2	1	3/16" (GALV.) WIRE ROPE CLIPS	CROSBY	75535	G-450
1	4	3/16" (GALV.) 6 x 42 18'-0" LG. WIRE ROPE TILLER CABLE	CAROLINA STEEL & WIRE (HACKENBACK)	5MI65	—

NOTES:
1. FOR GENERAL NOTES SEE DWG H-NE-201
2. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NE-201


NAV-AID LANTERNS & FOG HORN WIRING DIAGRAM
FOG HORN
BATTERY BOX
JUNCTION BOX
NAV-AID LANTERN
NAV-AID LANTERN
DETAIL 2
(FLEX TO RIGID CONN.)
SEE NAV-AID STANCHION DETAIL
NAV-AID STANCHION DETAIL
(2 - REQUIRED)
NOTE:
VENDORS:
NAV-AID PLAN
DETAIL 2
NAV-AID LANTERN
BATTERY BOX
DETAIL 1
FOG HORN
RIGID METAL CONDUIT (GALV.)
PARALLEL BEAM CLAMP 5'-0" SPACING MAX
TEMPORARY BATTERY BOX
TEMPORARY BATTERY POWER TO BE REPLACED BY CUBIC DEFENSE AT 90 DAYS OR LESS.
DETAIL 1
FOG HORN MOUNTING
DETAIL 3
ITEM | QUANTITY | DESCRIPTION | MFR | PART NO | FSCM
1 | 2 | NAV-AID LANTERN | TIDELAND | ML-300 | 15419
2 | 1 | FOG HORN | " | AB-560 |
3 | 1 | BATTERY BOX | " | T1-15 |
4 | 2 | BATTERY BANK (90 DAY) | " | G-12/5 |
5 | 10 | BATTERY BANK (90 DAY) | " | C-33 | 15419
6 | 3 | 3/4" SEAL-TITE CONNECTOR | CH MIDWEST | LT-75 | 15235
7 | AS REQ'D | 3/4" SEAL-TITE FLEXIBLE CONDUIT | C.H. (NOTE 2) | |
8 | 2 | 3/4" CONDUIT OUTLET 3/4" | " | |
9 | 1 | 3/4" CONDUIT OUTLET 3/4" | " | |
10 | 1 | 3/4" DRAIN | " | |
11 | AS REQ'D | 3/4" PARALLEL BEAM CLAMP (GALV) | " | PAR-3/4" |
12 | AS REQ'D | 3/4" RIGID METAL CONDUIT (GALV.) | " | |
13 | AS REQ'D | CABLE TIES (LOCKING, WHITE, 12") | " | | 15235
14 | 1 | JUNCTION BOX - FIBERGLASS NEMA 4X - 6" x 6" x 4" HINGED | STAHLIN OR EQUAL | | 28485
15 | 1 | BACK & AND 3 TERMINAL BLOCK SCREWTYPE LIGHTDUTY | C.H. | | 15235
NOTES: 1. ALL CONDUIT THREADS AND FITTING THREADS TO BE COATED WITH BRUNDY PENETROX ELECTRICAL JOINT COMPOUND OR EQUAL.
2. C.H. = CROUSE HINDS OR EQUAL.
3. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL (316 S.S.)
4. NAV AID SYSTEM TO BE INSTALLED AND CHECKED OUT ONSHORE. LIGHTS AND FOGHORN ARE TO BE REMOVED AND PACKED FOR SHIPMENT OFFSHORE. CONDUIT/WIRE TERMINATIONS ARE TO BE PROTECTED FROM WEATHER.
5. LIGHTS AND FOGHORN ARE TO BE INSTALLED OFFSHORE AFTER ANTENNA TOWER INSTALLATION, WITH FINAL SYSTEM CHECK OUT PERFORMED.
6. FOR GENERAL NOTES SEE DWG. H-NE-201.
INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NE-201.
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE NOTED
DRAWN BY J.A.M.
CHECKED BY 2/89
APPROVED BY 2/89
PROJECT NO. 71486
NORTHEAST OCEAN TOWER
32' WATER DEPTH
NAVIGATION AIDS, SOURCE CONTROL DRAWING
DRAWING NO. H-NE-301
NO. BY REVISION DATE CHK'D APPV'D REV

NOTE:

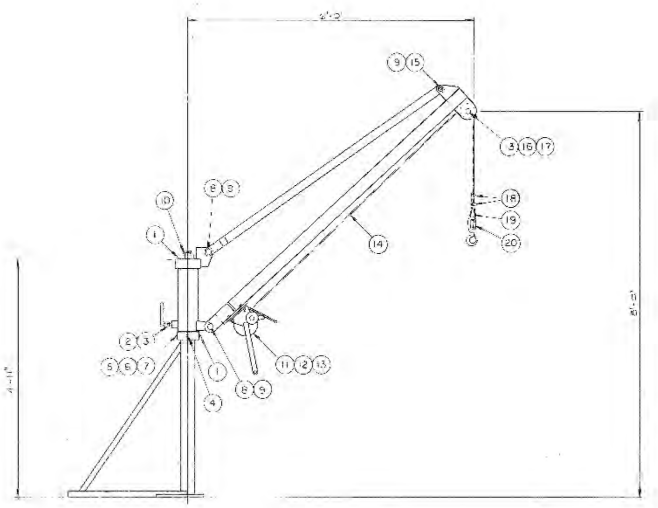
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."

VENDORS: DAVITS

WEATHERFORD
11909 SPENCER RD. (FM 529)
HOUSTON, TX 77042

GAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2062
CLEVELAND, TX 77327

APEX EQUIPMENT CORPORATION, INC
P.O. BOX 15681
HOUSTON, TX 77220-5681



ELEVATION
DAVIT WITH HAND WINCH
SCALE 1"=1'-0"

19	3	1/4" S.S. WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	[illegible]
16	[illegible]	1/2"-13 NC x 2 1/2" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	———
15	2	3/4"-10 NC x 3 1/2" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	———
11	[illegible]	1 1/2"-12 NC ELASTIC LOCK NUT	LONE STAR SCR.	7H174	———
8	2	3/4"-10 NC x 3" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	

SPARE PARTS

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
20	1	[illegible] TON SWIVEL HOOK	CROSBY	75535	S-322C
19	1	1/4" S.S. WIRE ROPE THIMBLE	CAMPBELL CHAIN	80535	640 7604
18	2	1/4" S.S. WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	640 3004
17	1	1" x [illegible] x 1/2" SHEAVE W/NYLON BUSHING 1/4" [illegible]	CROSBY	75535	1173
16	[illegible]	1/2"-13 NC x 2 1/2" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	———
15	1	3/4"-10 NC x 3 1/2" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	
14	100'-0"	1/4", 7 x 19, 316 S.S. WIRE ROPE	[illegible]	5M165	———
13	5	1/2"-13 NC x ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	———
12	4	1/2"-13 NC x 1 1/2" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	
11	1	WINCH, [illegible] MANUAL GEAR (GALVANIZED)	REESE	06550	[illegible]
10	1	1 1/2"-12 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	———
9	3	3/4"-10 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	———
8	2	3/4"-10 NC x 3" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	———
7	1	1 1/2" ID x 4" OD x [illegible]" LG BRONZE BUSHING	OILITE	72404M	———
6	1	BEARING CUP	TIMKEN	86357	53375
5	1	BEARING CONE	TIMKEN	86357	[illegible]
4	1	1/4"-20 NC x 3/4" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	———
3	1	1 1/2" OD x [illegible]" LG NYLON BRAKE PAD	MARTEC [illegible]	2F093	
2	1	5/8"-11 NC x 3" LG HHCS 316 SS BOLT	LONE STAR SCR.	7H174	———
1	2	1/8" NPT S.S. GREASE FITTING	ALEMITE	02260	1966-S

PARTS LIST

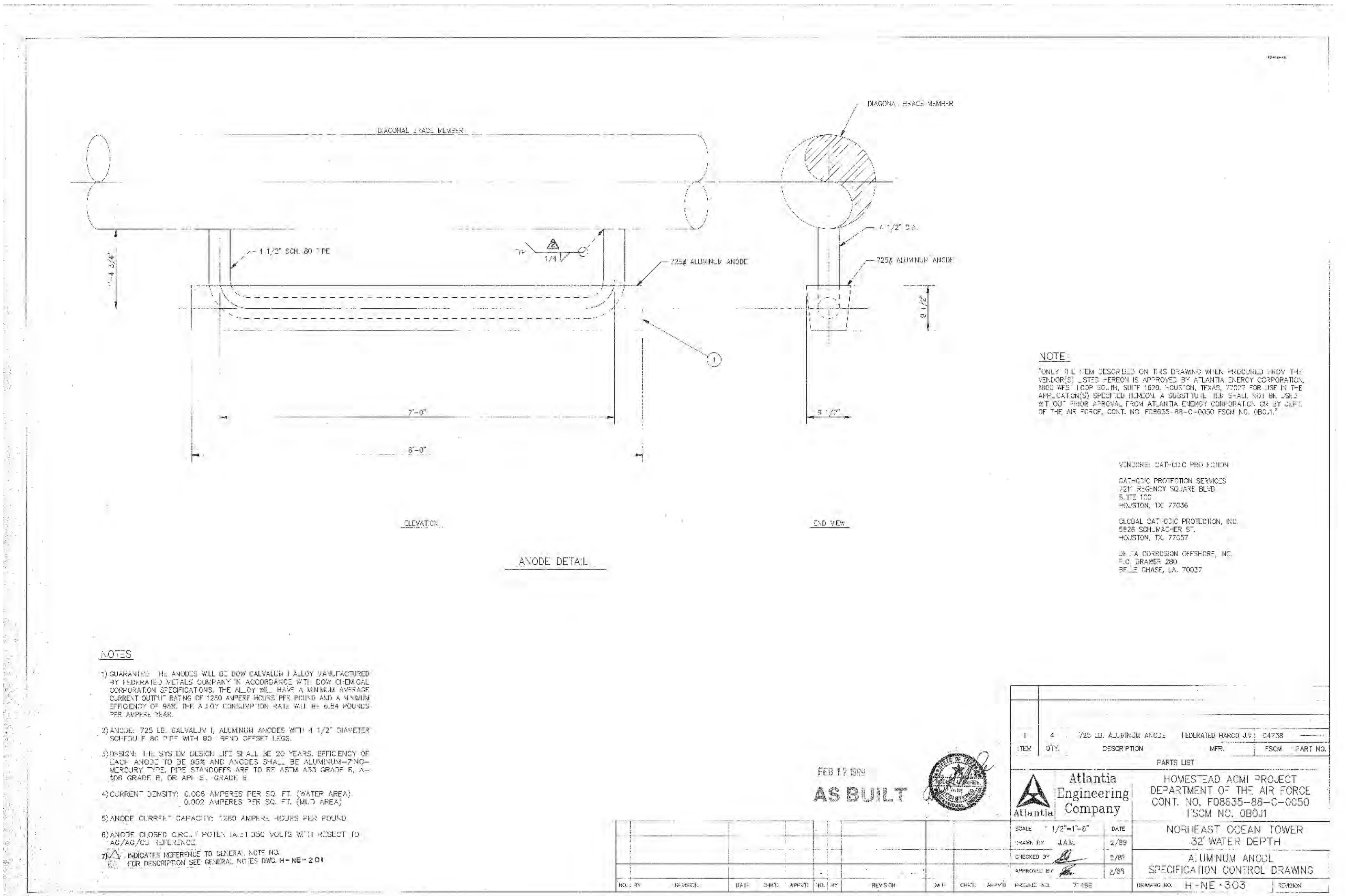
FEB 17 1989
AS BUILT

Atlantia Engineering Company

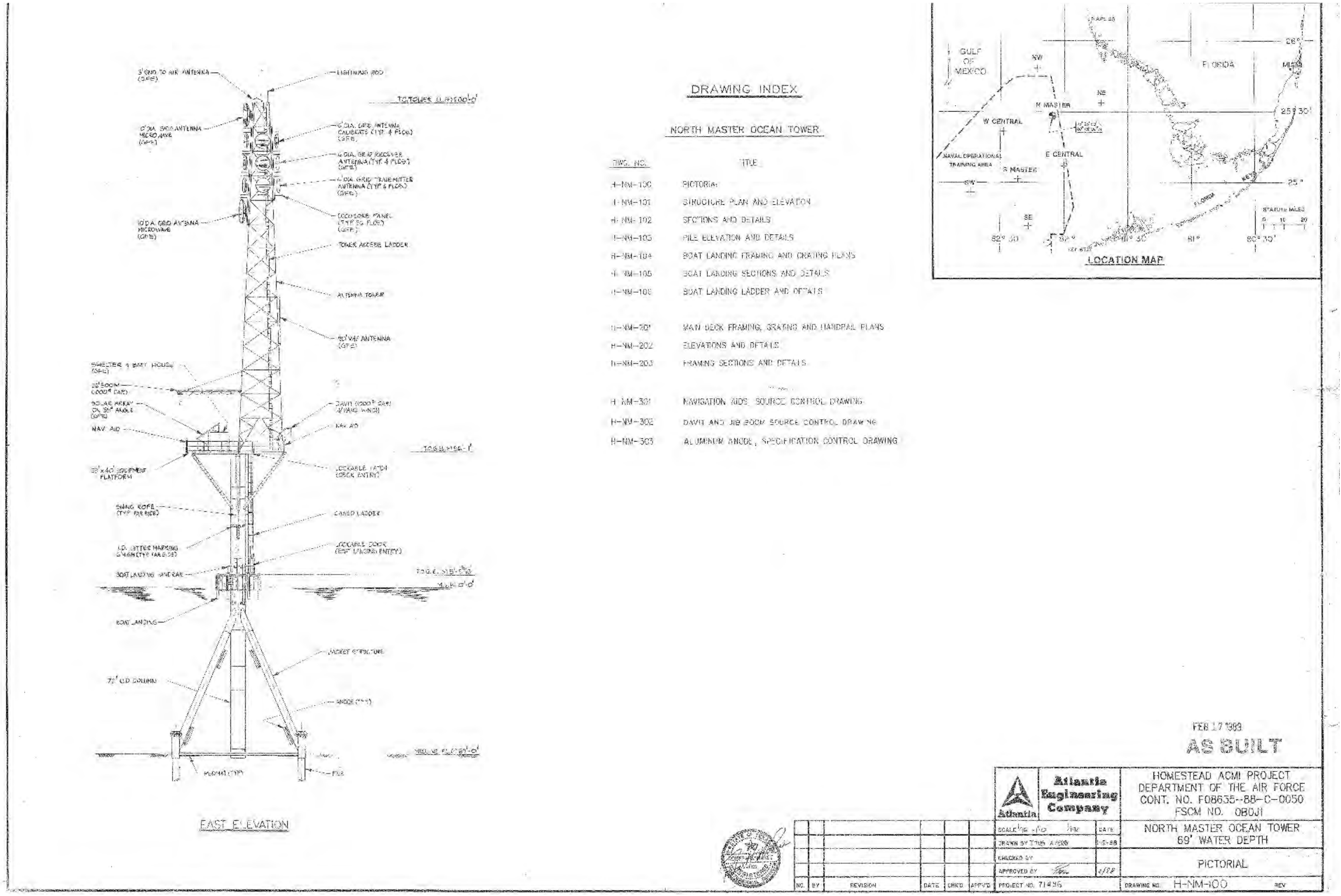
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1

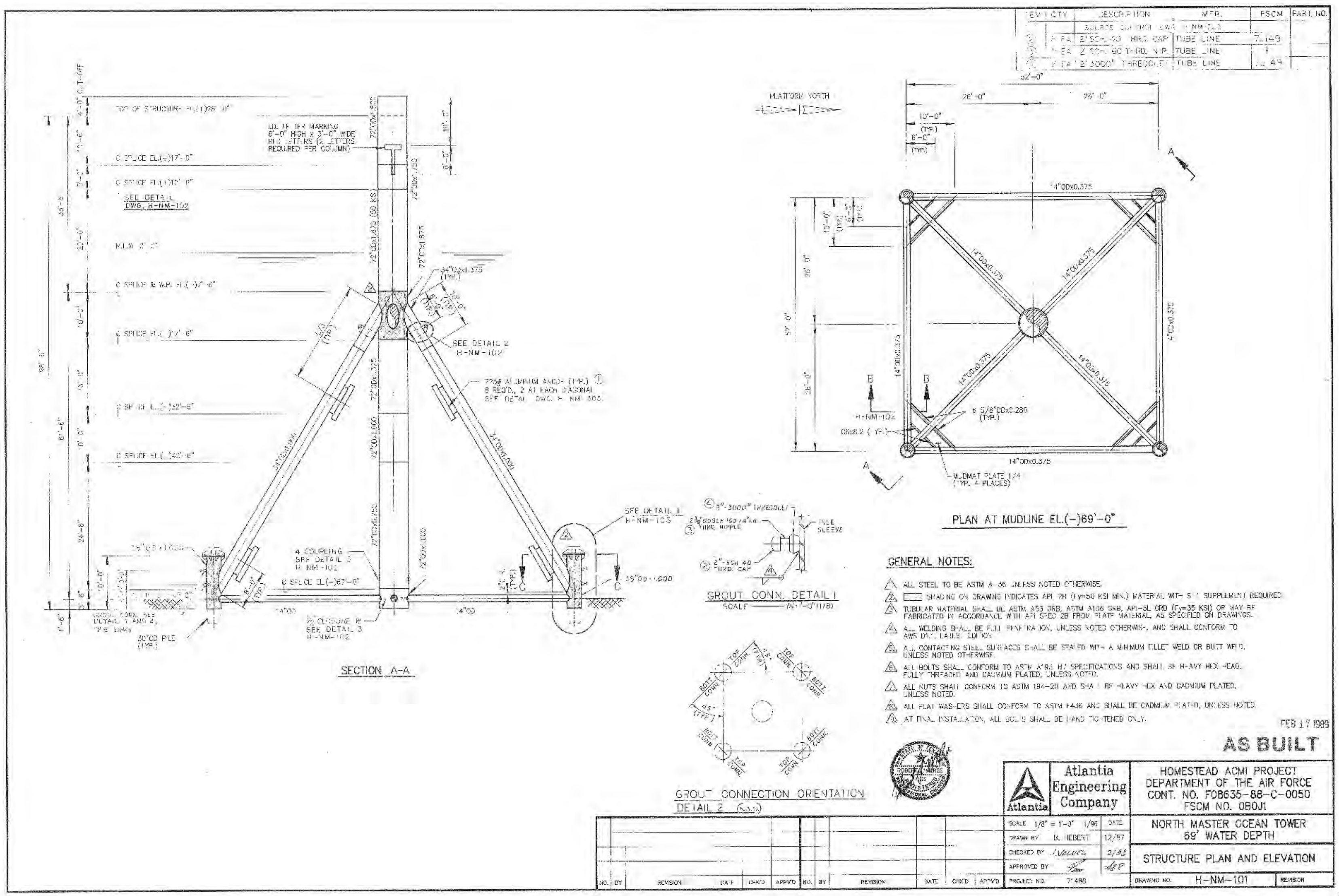
SCALE AS NOTED	DATE	NORTHEAST OCEAN TOWER 32' WATER DEPTH
DRAWN BY R. TAYLOR	1/89	
CHECKED BY	2/89	DAVIT SOURCE CONTROL DRAWING
APPROVED BY	2/89	
PROJECT NO. 71468		DRAWING NO. H-NE-302 REV.

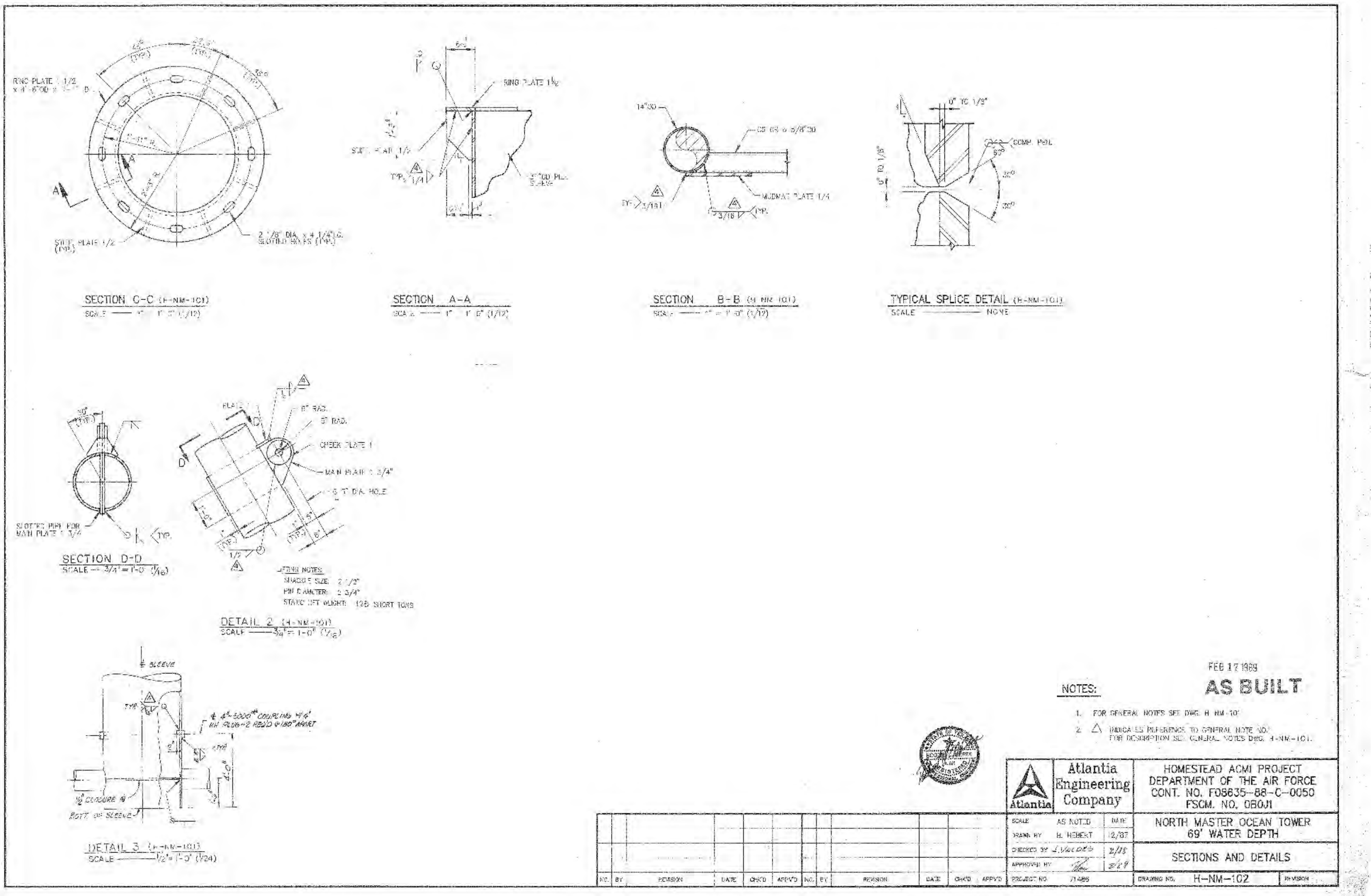
NO.	BY	REVISION	DATE	CHK'D	APPR'D

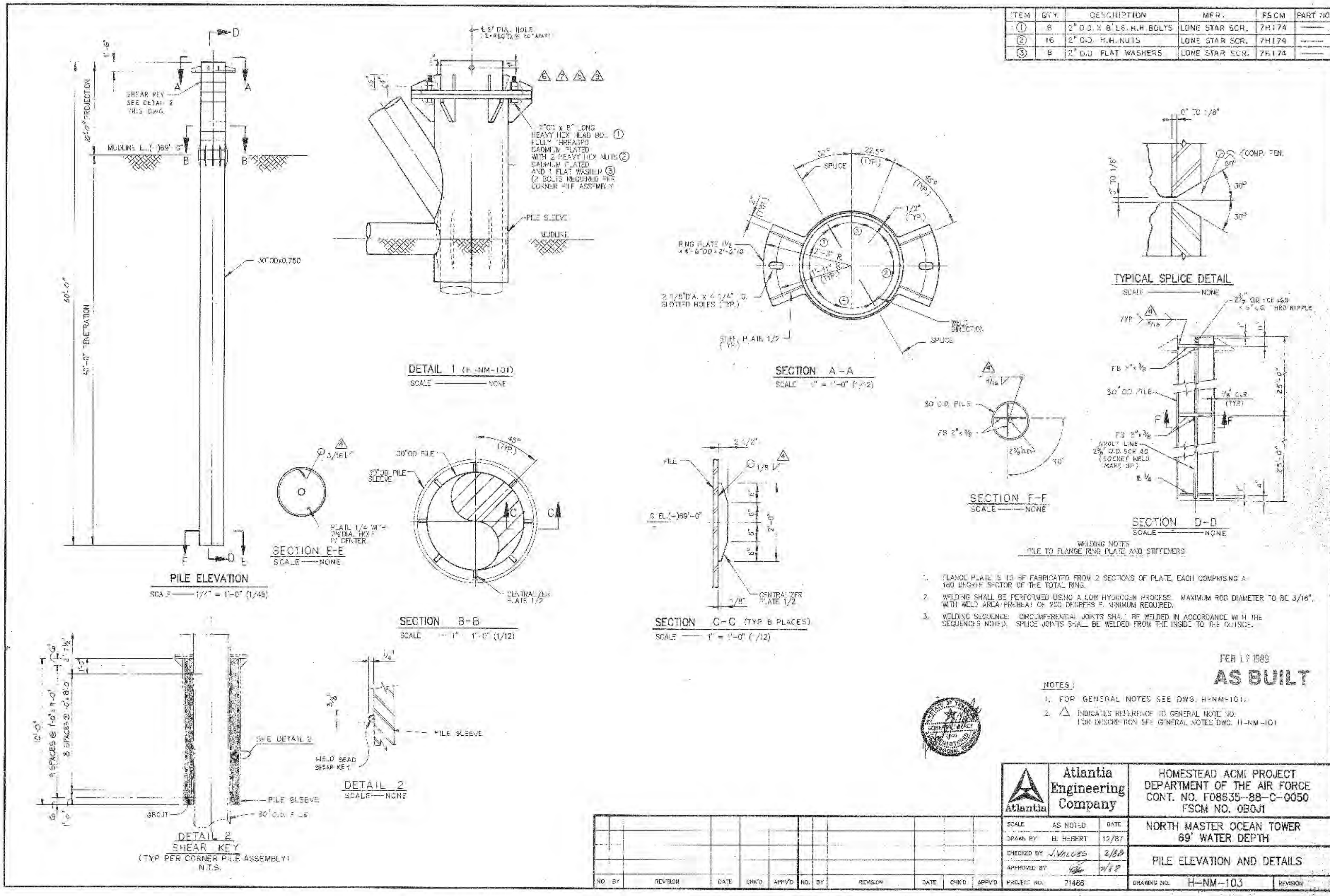

DIAGONAL BRACE MEMBER
DIAGONAL BRACE MEMBER
1 1/2" SCH. 80 PIPE
725# ALUMINUM ANODE
4 1/2" O.D.
725# ALUMINUM ANODE
4 3/4"
1/4
7'-0"
8'-0"
9 1/2"
9 1/2"
ELEVATION
END VIEW
ANODE DETAIL
NOTE:
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0BOJ1."
VENDORS: CATHODIC PROTECTION
CATHODIC PROTECTION SERVICES
7211 REGENCY SQUARE BLVD
SUITE 100
HOUSTON, TX 77036
GLOBAL CATHODIC PROTECTION, INC.
5826 SCHUMACHER ST.
HOUSTON, TX. 77057
DELTA CORROSION OFFSHORE, INC.
P.O. DRAWER 280
BELLE CHASE, LA. 70037
NOTES
1) GUARANTEE: THE ANODES WILL BE DOW CALVALUM I ALLOY MANUFACTURED BY FEDERATED METALS COMPANY IN ACCORDANCE WITH DOW CHEMICAL CORPORATION SPECIFICATIONS. THE ALLOY WILL HAVE A MINIMUM AVERAGE CURRENT OUTPUT RATING OF 1250 AMPERE HOURS PER POUND AND A MINIMUM EFFICIENCY OF 95%. THE ALLOY CONSUMPTION RATE WILL BE 6.84 POUNDS PER AMPERE YEAR.
2) ANODE: 725 LB. CALVALUM I, ALUMINUM ANODES WITH 4 1/2" DIAMETER SCHEDULE 80 PIPE WITH 90° BEND OFFSET LEGS.
3) DESIGN: THE SYSTEM DESIGN LIFE SHALL BE 20 YEARS. EFFICIENCY OF EACH ANODE TO BE 95% AND ANODES SHALL BE ALUMINUM-ZINC-MERCURY TYPE. PIPE STANDOFFS ARE TO BE ASTM A53 GRADE B, A-106 GRADE B, OR API 5L GRADE B.
4) CURRENT DENSITY: 0.006 AMPERES PER SQ. FT. (WATER AREA)
0.002 AMPERES PER SQ. FT. (MUD AREA)
5) ANODE CURRENT CAPACITY: 1280 AMPERE HOURS PER POUND
6) ANODE CLOSED CIRCUIT POTENTIAL: 1.050 VOLTS WITH RESPECT TO AG/AG/CU REFERENCE.
7) INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NE-201
FEB 17 1989
AS BUILT
1 | 4 | 725 LB. ALUMINUM ANODE | FEDERATED HARCO J.V. | 04738
ITEM | QTY. | DESCRIPTION | MFR. | FSCM | PART NO.
PARTS LIST
Atlantia Engineering Company
Atlantia
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
SCALE 1 1/2"=1'-0"
DATE
DRAWN BY J.A.M. 2/89
CHECKED BY 2/89
APPROVED BY 2/89
NORTHEAST OCEAN TOWER
32' WATER DEPTH
ALUMINUM ANODE
SPECIFICATION CONTROL DRAWING
PROJECT NO. 71486
DRAWING NO. H-NE-303
REVISION
NO. BY REVISION DATE CHK'D APPR'D NO. BY REVISION DATE CHK'D APPR'D

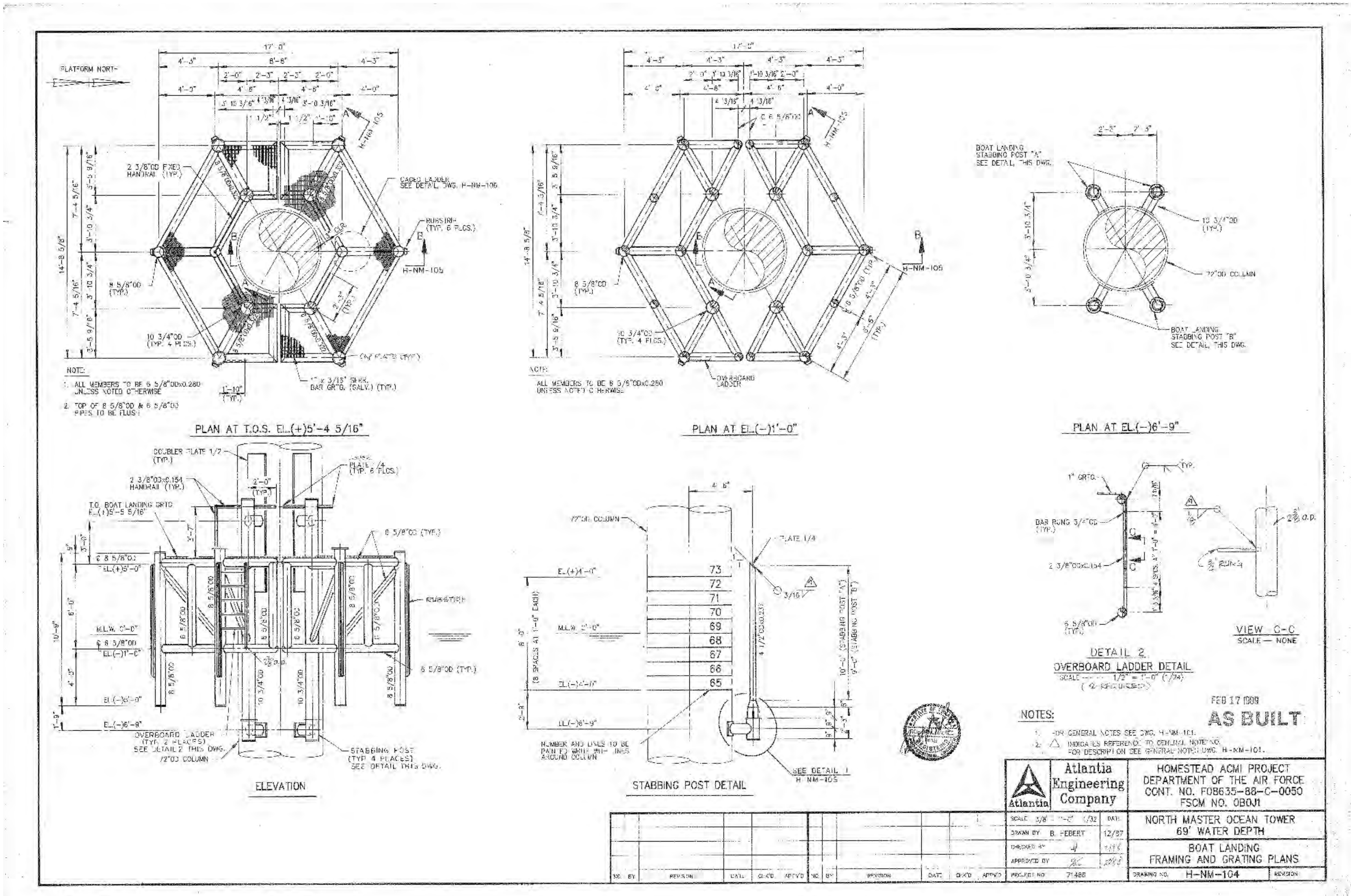
A.3 NORTH MASTER TOWER

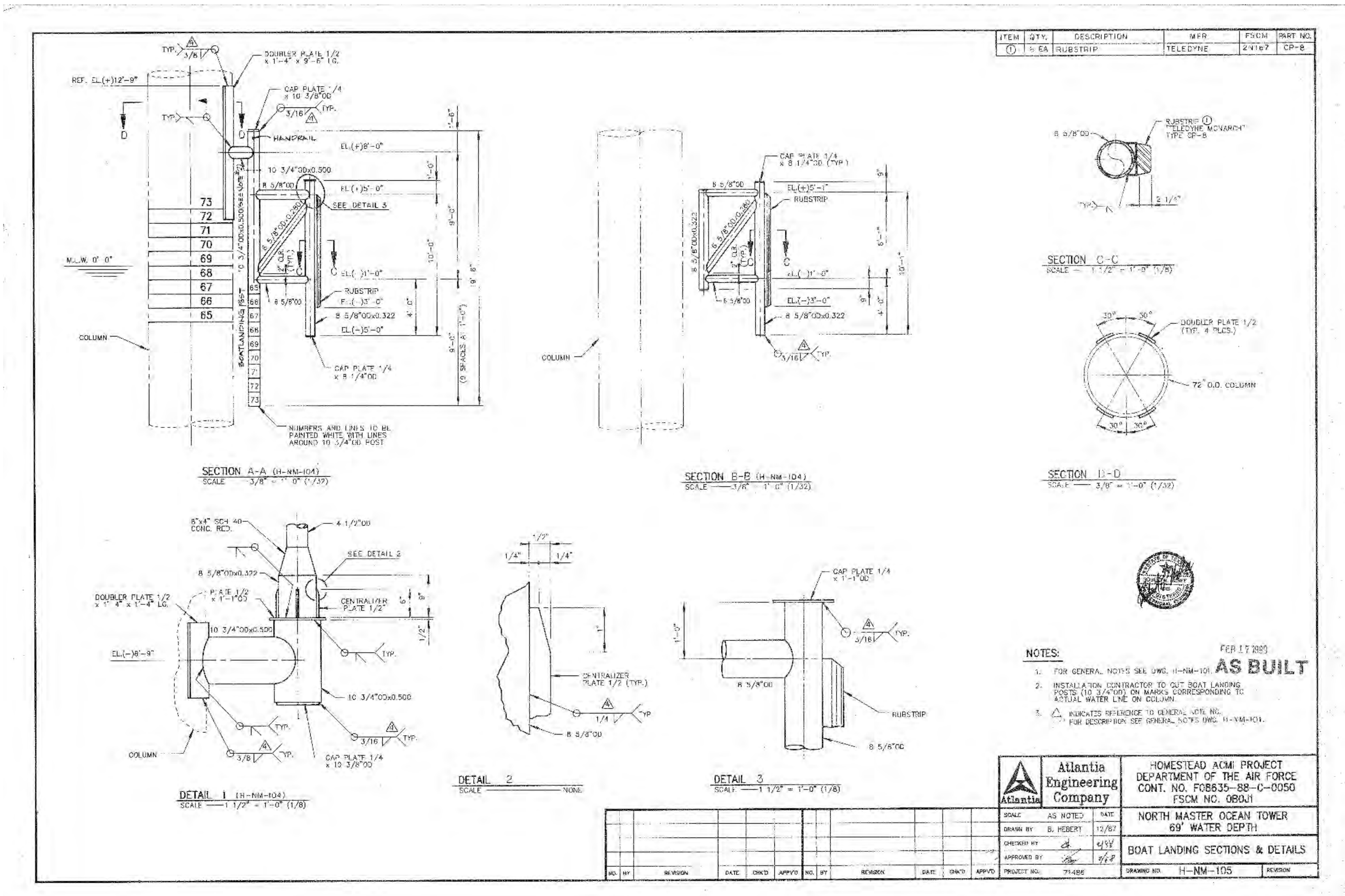


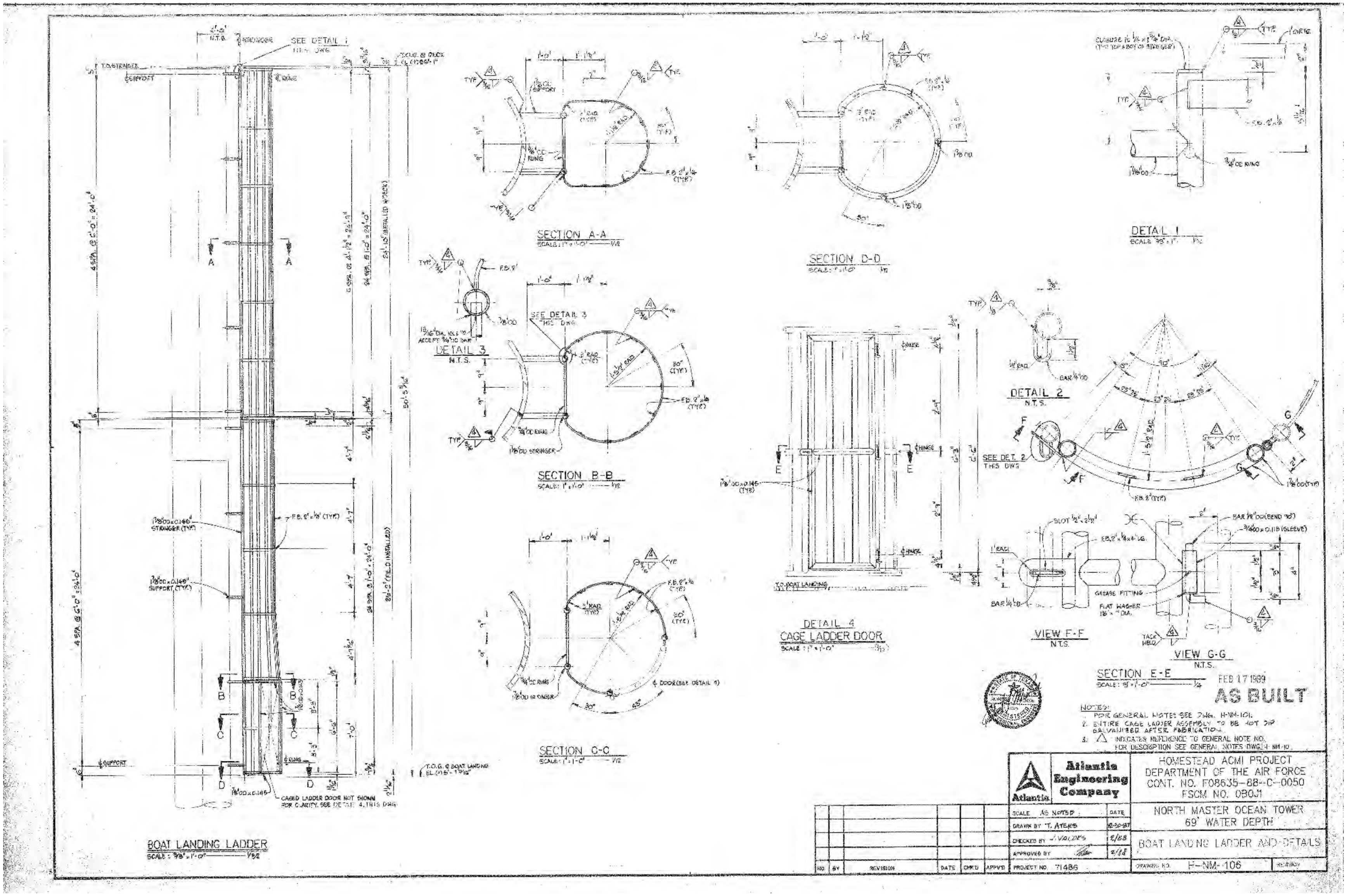

SECTION A-A
PLAN AT MUDLINE EL.(–)69'–0"
GROUT CONN. DETAIL 1
GROUT CONNECTION ORIENTATION DETAIL 2
GENERAL NOTES:
AS BUILT
FEB 17 1989
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
STRUCTURE PLAN AND ELEVATION
H-NM-101

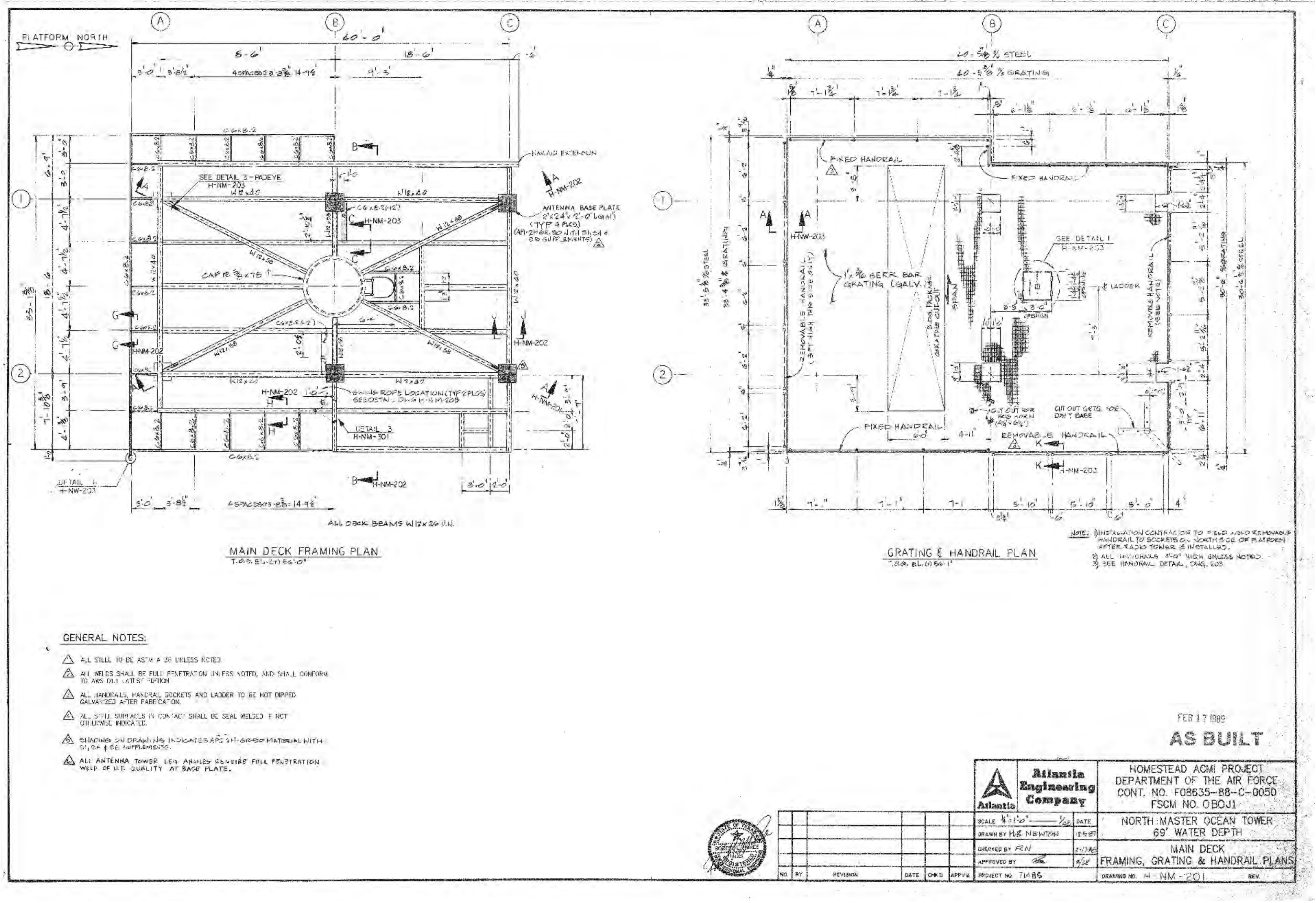

SECTION C-C (H-NM-101)
SECTION A-A
SECTION B-B
TYPICAL SPLICE DETAIL (H-NM-101)
SCALE NONE
SECTION D-D
DETAIL 2 (H-NM-101)
DETAIL 3 (H-NM-101)
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-NM-101
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM. NO. 0B0J1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
SECTIONS AND DETAILS
H-NM-102

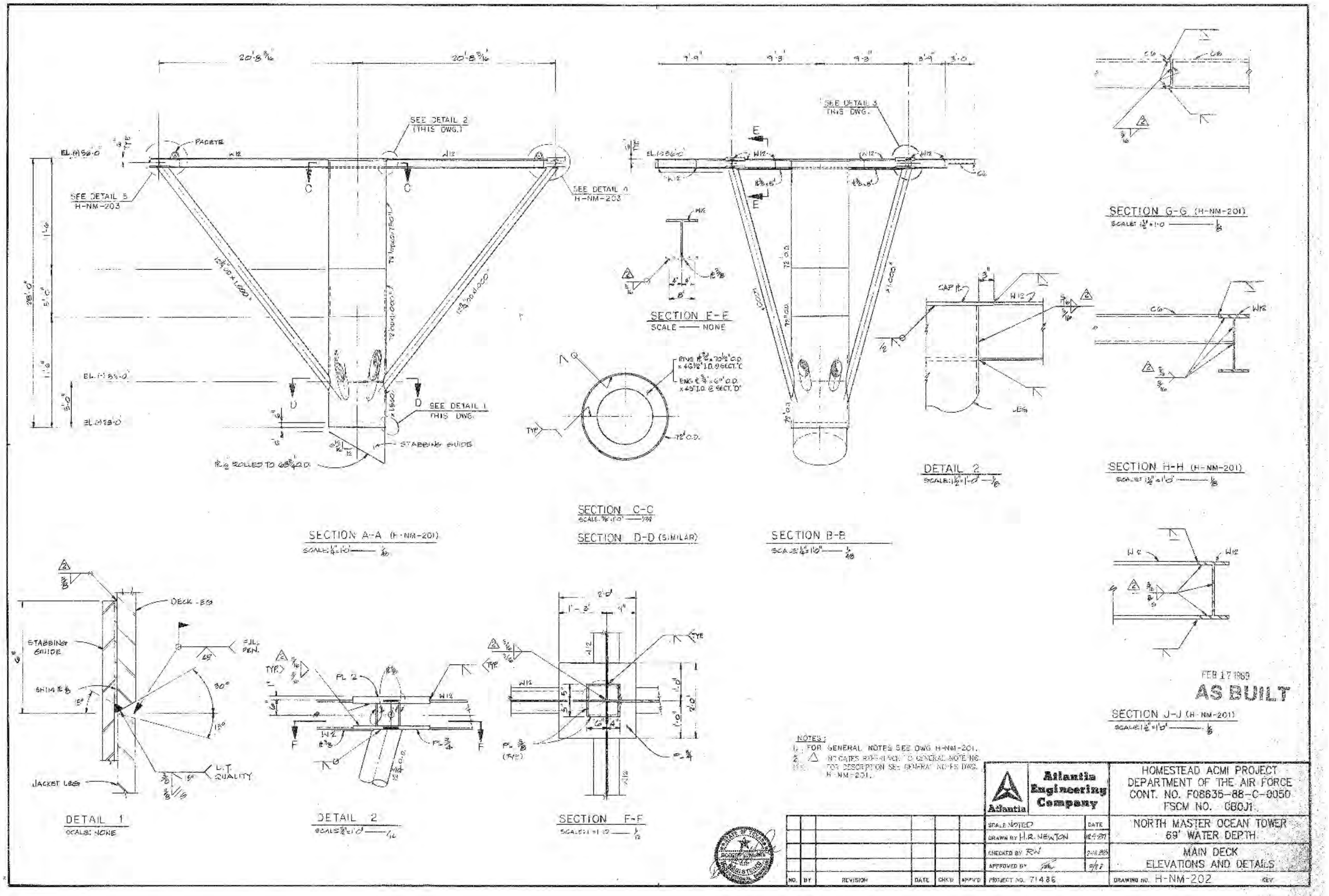

PILE ELEVATION
SCALE 1/4" = 1'-0" (1/48)
DETAIL 1
SECTION A-A
TYPICAL SPLICE DETAIL
SECTION E-E
SECTION B-B
SECTION C-C (TYP 8 PLACES)
SECTION F-F
SECTION D-D
DETAIL 2
DETAIL 2 SHEAR KEY (TYP PER CORNER PILE ASSEMBLY) N.T.S.
FEB 1 7 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-NM-101.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
PILE ELEVATION AND DETAILS
H-NM-103

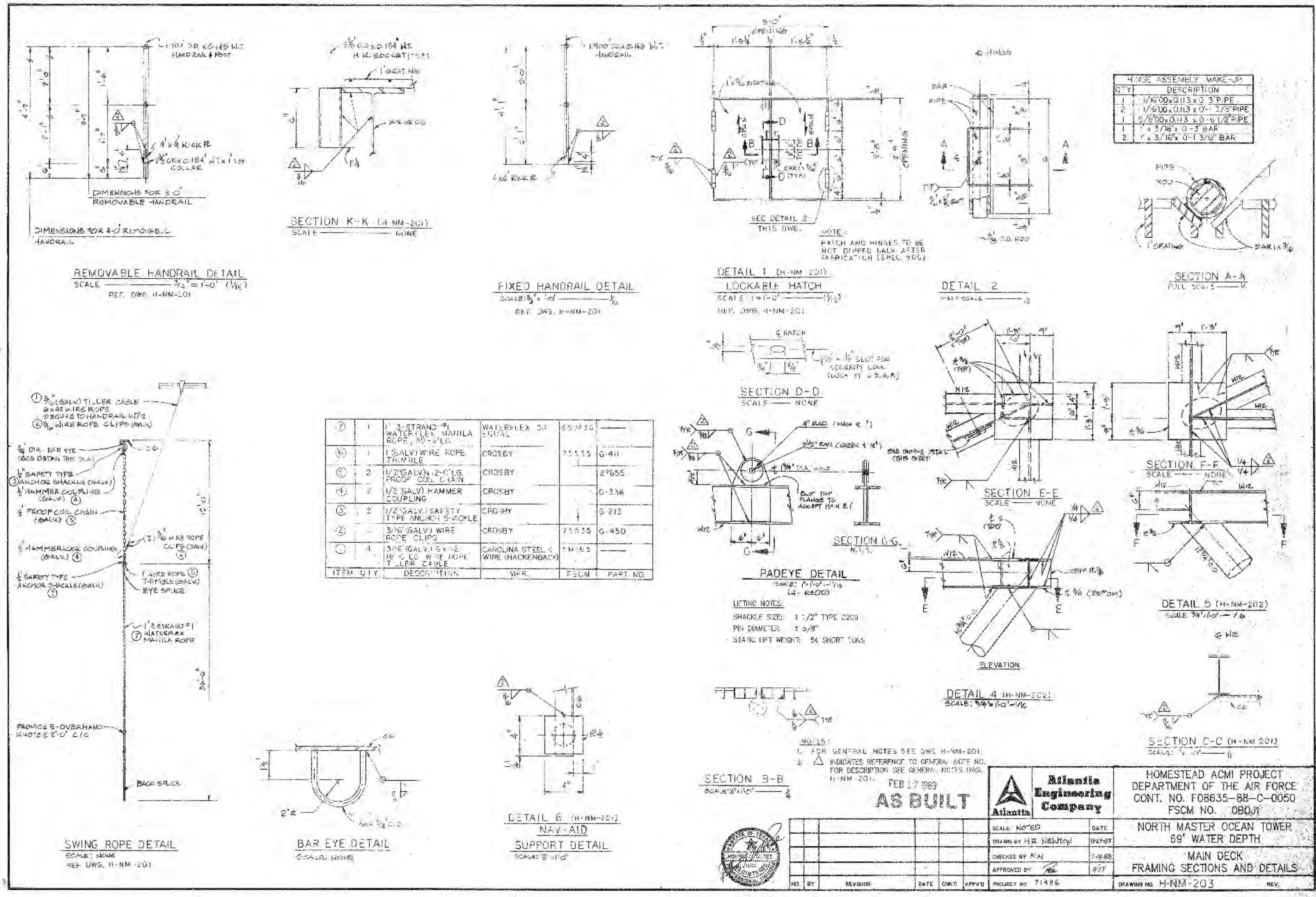

PLAN AT T.O.S. EL.(+)5'-4 5/16"
PLAN AT EL.(-)1'-0"
PLAN AT EL.(-)6'-9"
ELEVATION
STABBING POST DETAIL
DETAIL 2
OVERBOARD LADDER DETAIL
VIEW C-C
SCALE — NONE
NOTES:
AS BUILT
FEB 17 1989
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
BOAT LANDING
FRAMING AND GRATING PLANS
H-NM-104

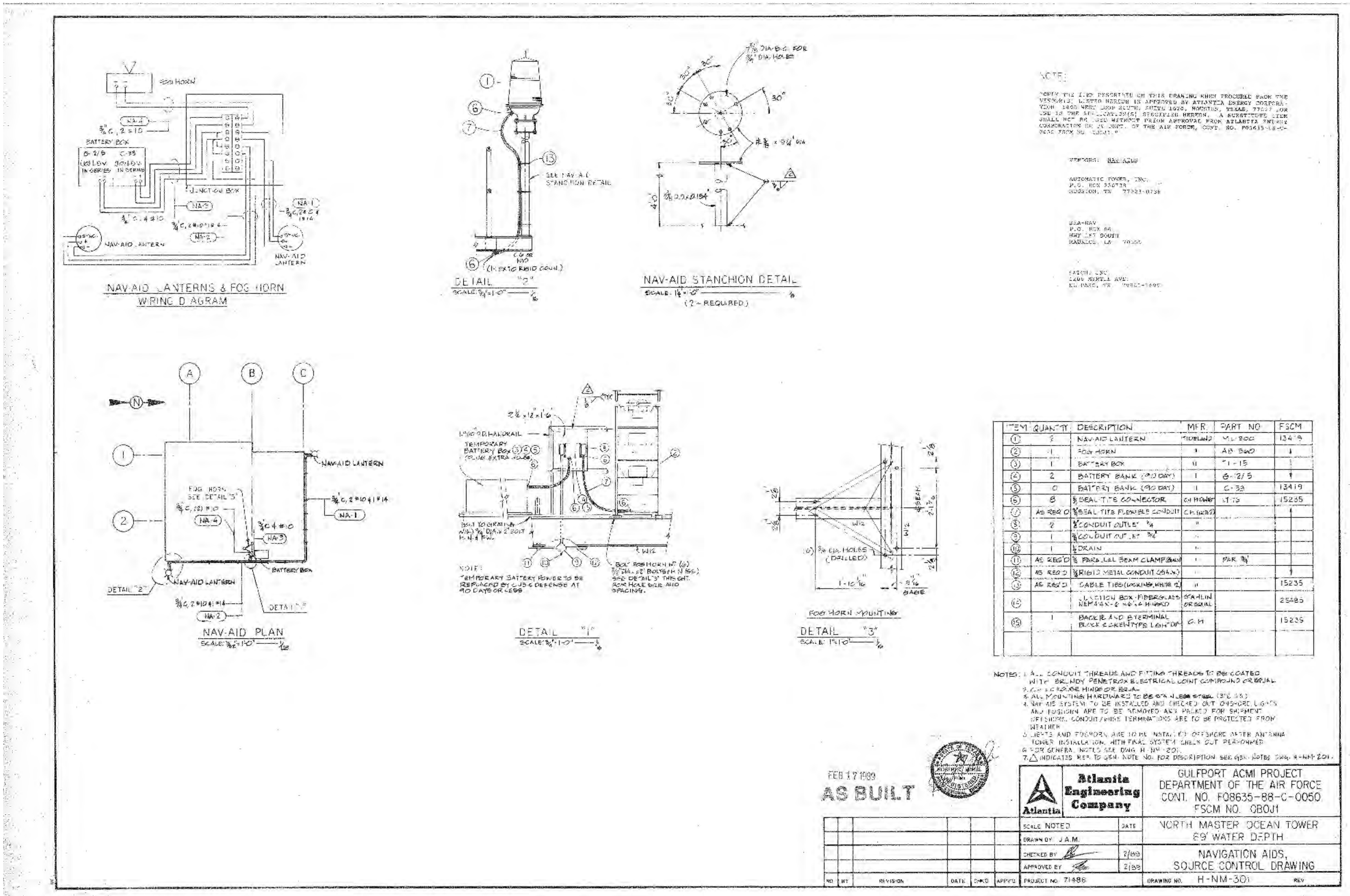

SECTION A-A (H-NM-104)
SECTION B-B (H-NM-104)
SECTION C-C
SECTION D-D
DETAIL 1 (H-NM-104)
DETAIL 2
DETAIL 3
NOTES:
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
BOAT LANDING SECTIONS & DETAILS
H-NM-105

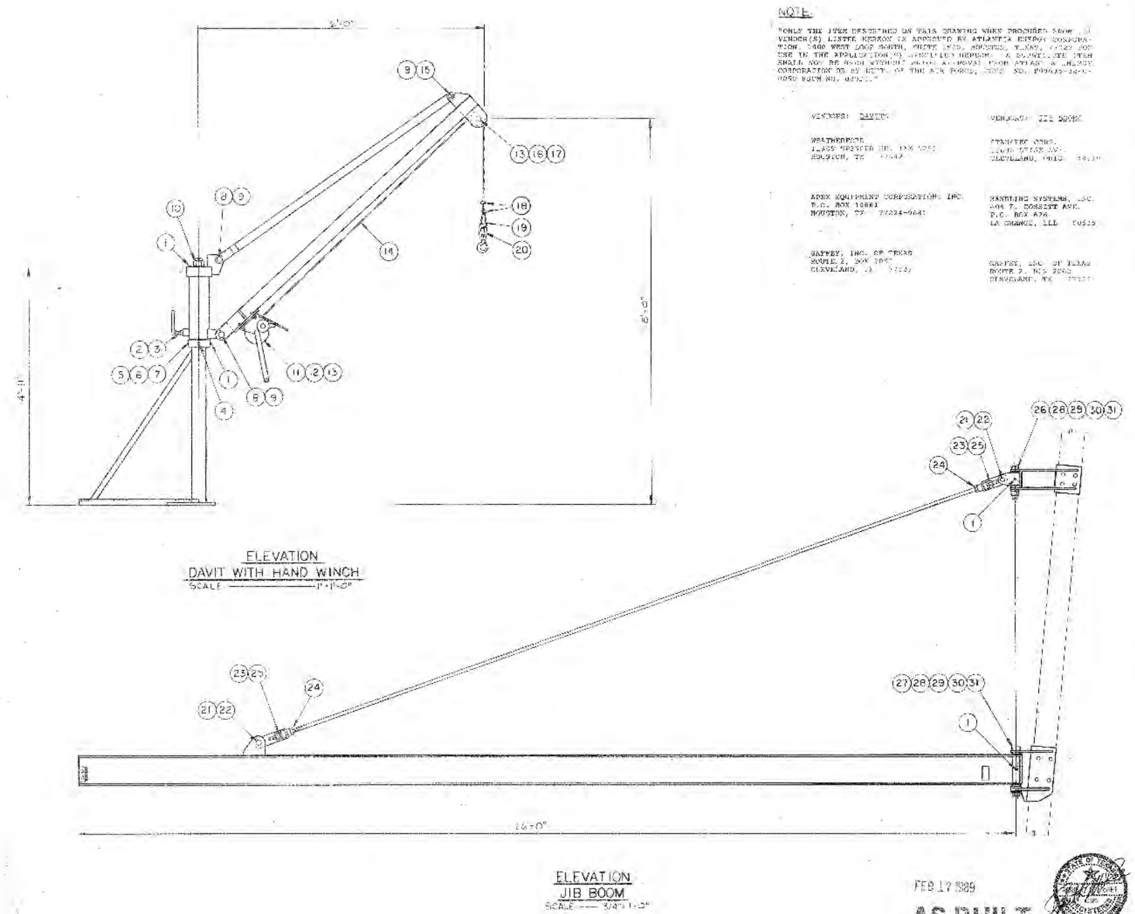

BOAT LANDING LADDER
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
CAGE LADDER DOOR
VIEW F-F
VIEW G-G
SECTION E-E
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-NM-101.
2. ENTIRE CAGE LADDER ASSEMBLY TO BE HOT DIP GALVANIZED AFTER FABRICATION.
3. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NM-101.
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
BOAT LANDING LADDER AND DETAILS
SCALE AS NOTED
DRAWN BY T. AYERS
CHECKED BY J. VALDES
APPROVED BY
PROJECT NO. 71486
DRAWING NO. H-NM-106


PLATFORM NORTH
MAIN DECK FRAMING PLAN
GRATING & HANDRAIL PLAN
ALL DECK BEAMS W12x26 U.N.O.
GENERAL NOTES:
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. OBOJ1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
MAIN DECK
FRAMING, GRATING & HANDRAIL PLANS


SECTION A-A (H-NM-201)
SECTION C-C
SECTION D-D (SIMILAR)
SECTION B-B
SECTION E-E
SCALE — NONE
DETAIL 2
SECTION G-G (H-NM-201)
SECTION H-H (H-NM-201)
SECTION J-J (H-NM-201)
DETAIL 1
SCALE: NONE
DETAIL 2
SECTION F-F
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG H-NM-201.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
MAIN DECK
ELEVATIONS AND DETAILS
DRAWN BY H.R. NEWTON
PROJECT NO. 71486
DRAWING NO. H-NM-202


REMOVABLE HANDRAIL DETAIL
SECTION K-K (H-NM-201)
FIXED HANDRAIL DETAIL
DETAIL 1 (H-NM-201)
LOCKABLE HATCH
DETAIL 2
SECTION A-A
SECTION D-D
PADEYE DETAIL
SECTION G-G
SECTION E-E
ELEVATION
DETAIL 4 (H-NM-202)
SECTION F-F
DETAIL 5 (H-NM-202)
SECTION C-C (H-NM 201)
SWING ROPE DETAIL
BAR EYE DETAIL
DETAIL 6 (H-NM-201)
NAV-AID
SUPPORT DETAIL
SECTION B-B
NOTES:
1. FOR GENERAL NOTES SEE DWG H-NM-201.
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NM-201.
FEB 17 1989
AS BUILT
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
MAIN DECK
FRAMING SECTIONS AND DETAILS
SCALE NOTED
DRAWN BY H.R. NEWTON
PROJECT NO 71486
DRAWING NO. H-NM-203


NAV-AID LANTERNS & FOG HORN WIRING DIAGRAM
DETAIL "2"
NAV-AID STANCHION DETAIL
(2 - REQUIRED)
NAV-AID PLAN
DETAIL "1"
DETAIL "3"
FOG HORN MOUNTING
NAV-AID LANTERN
FEB 17 1989
AS BUILT
Atlantia Engineering Company
GULFPORT ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
NORTH MASTER OCEAN TOWER
89' WATER DEPTH
NAVIGATION AIDS,
SOURCE CONTROL DRAWING
H-NM-301



ELEVATION
DAVIT WITH HAND WINCH
SCALE 1" = 1'-0"

ELEVATION
JIB BOOM
SCALE 3/4" = 1'-0"

18	3	1/4" S.S. WIRE ROPE CLIPS	CAMBELL CHAIN	80535	640-3004
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
15	2	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.		—
10	1	1 1/2"-12 NC ELASTIC LOCK NUT	LONE STAR SCR.		—
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—

SPARE PARTS

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
30	2	1" HELICAL SPRING LOCK WASHER 316 S.S.	LONE STAR SCR.	7H174	—
29	2	3"OD x 1 1/6"ID x 1/4" THK. NYLON THRUST WASHER	MARTEC CRANE	2H098	—
28	4	2 1/16"OD x 1 1/2"ID x 1 1/2"LG BRONZE BUSHING	OILITE	7E404M	—
27	1	1 1/2"OD x 14 1/4"LG x 2" HD. 17-4PH S.S. MACH. PIN W/1"OD-8 NC x 1 1/2"LG THRD. INCL. 316 S.S.	MARTEC CRANE	2H098	—
26	1	1 1/2"OD x 8 3/4"LG x 2" HD. 17-4PH S.S. MACH. PIN W/1"OD-8 NC x 1 1/2"LG THRD. INCL. 316 S.S.	MARTEC CRANE	2H098	—
25	2	1" PLAIN FLAT WASHER 316 S.S.	LONE STAR SCR.	7H174	—
24	2	1"-8 NC H.H. JAM NUT 316 S.S.	LONE STAR SCR.		—
23	2	1"-8 NC H.H. NUT 316 S.S.	LONE STAR SCR.		—
22	4	1"-8 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.		—
21	2	1"-8 NC x 4 1/4"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
20	1	2 TON SWIVEL HOOK	CROSBY	75535	S-322C
19	1	1/4" S.S. WIRE ROPE THIMBLE	CAMPBELL CHAIN	80535	640-7604
18	2	1/4" S.S WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	640-3004
17	1	4" x 5/8" x 1/2" SHEAVE W/BRONZE BUSHING 1/4" GROOVE	CROSBY	75535	1173
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
15	1	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
14	100'-0"	1/4", 1 x 7, 316 S.S. WIRE ROPE	CAROLINA STEEL AND WIRE (HACKENRACK)	5M165	—
13	5	1/2"-13 NC x ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	—
12	4	1/2"-13 NC x 1 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
11	1	WINCH WITH MANUAL GEAR (GALVANIZED)	BEEBE	06550	BM6B
10	1	1 1/2"-12 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	—
9	3	3/4"-10 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.		—
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
7	1	4 1/2"OD x 4"ID x 1 1/2"LG BRONZE BUSHING	OILITE	7E404M	—
6	1	BEARING CUP	TIMKEN	66357	53375
5	1	BEARING CONE	TIMKEN	66357	53162
4	1	1/4"-20 NC x 3/4"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
3	1	1 1/2"OD x 1 1/2"LG NYLON BRAKE PAD	MARTEC CRANE	2H096	—
2	1	5/8"-11 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
1	4	1/8" NPT S.S. GREASE FITTING	ALEMITE	02260	1966-S

PARTS LIST

FEB 17 1989
AS BUILT

Atlantia Engineering Company

HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1

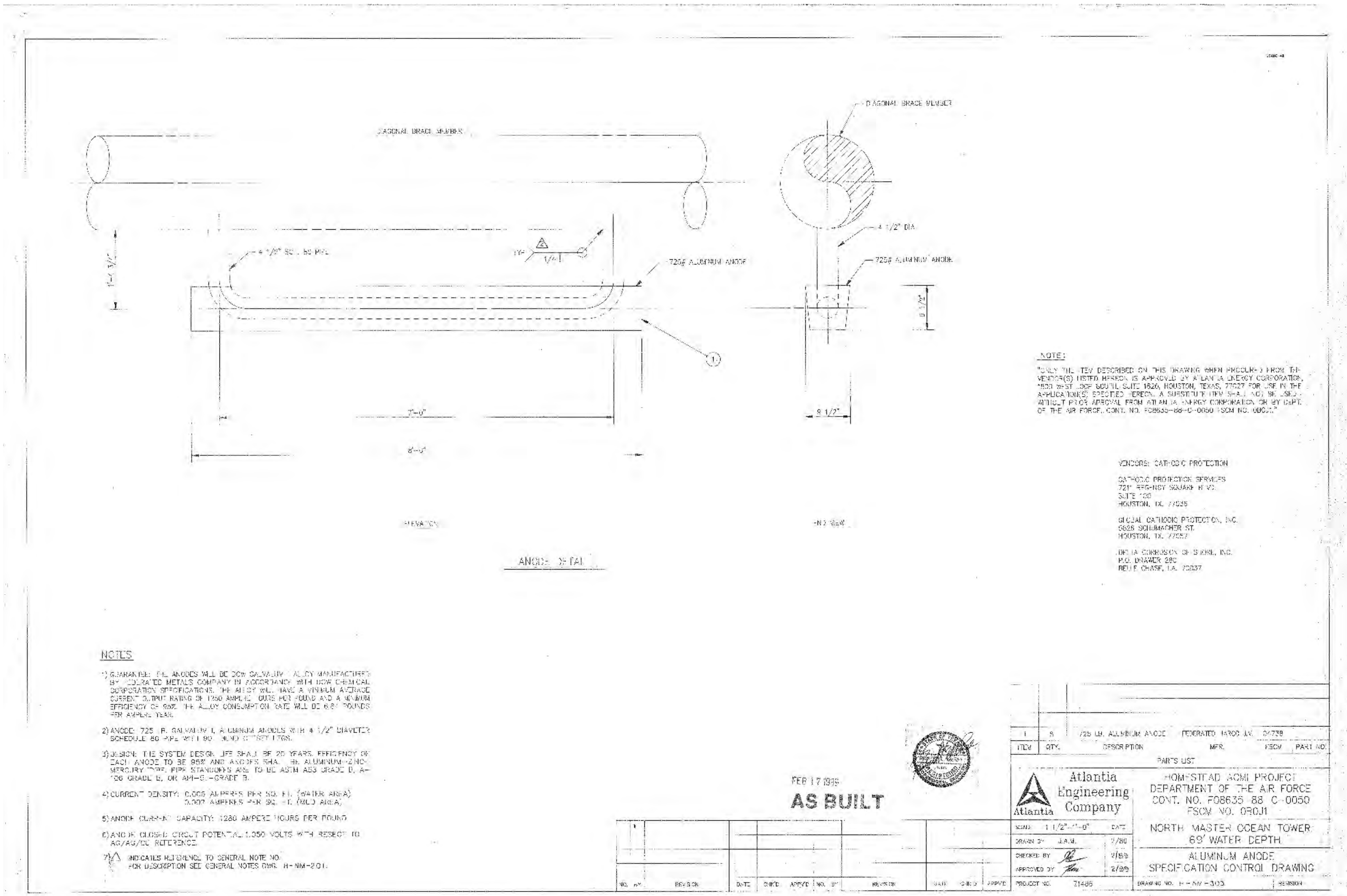
SCALE AS NOTED	DATE
DRAWN BY B. TAYLOR	1/89
CHECKED BY	2/89
APPROVED BY	2/89
PROJECT NO. 7148G	

NORTH MASTER OCEAN TOWER
69' WATER DEPTH

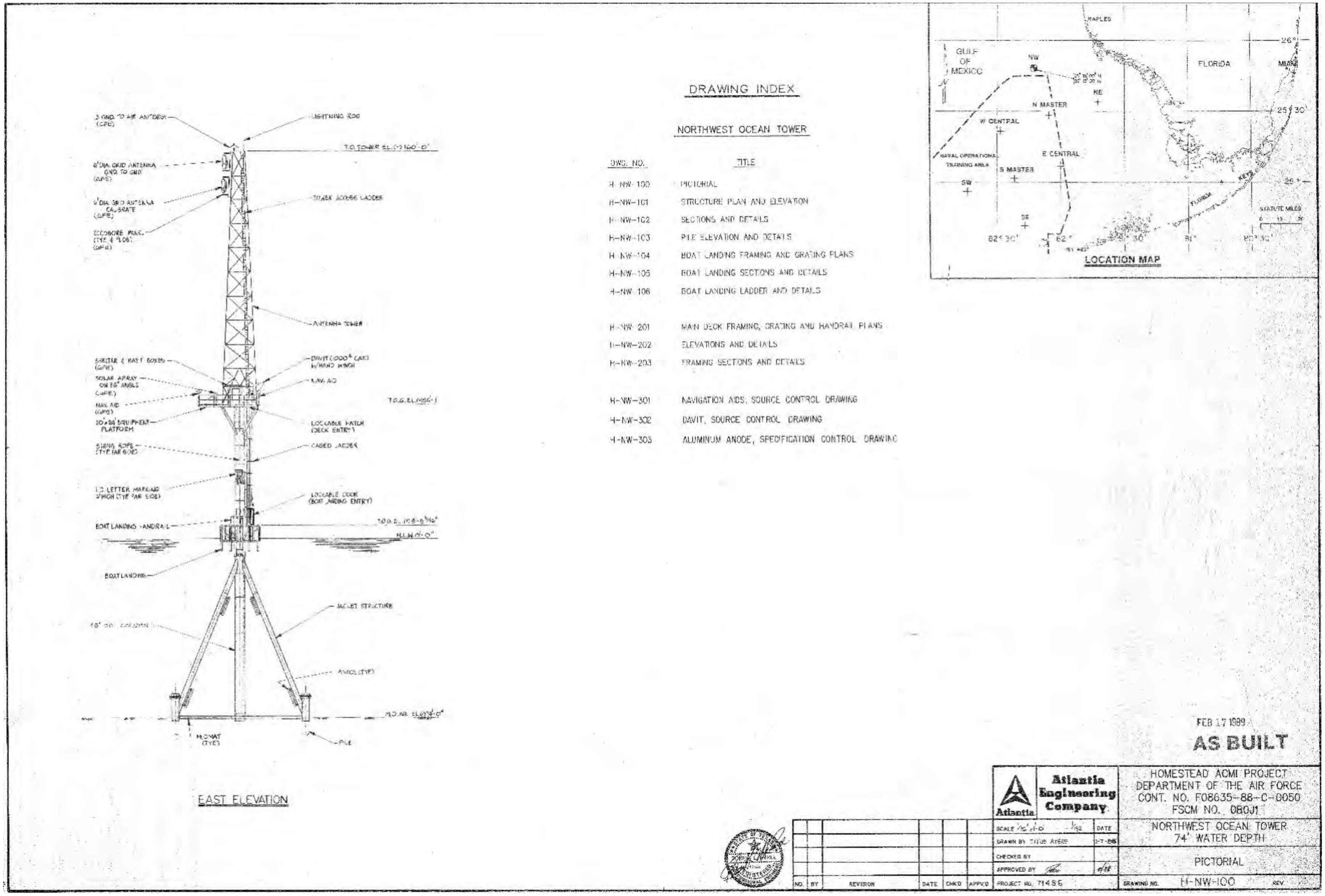
DAVIT AND JIB BOOM
SOURCE CONTROL DRAWING

DRAWING NO. 302 REV

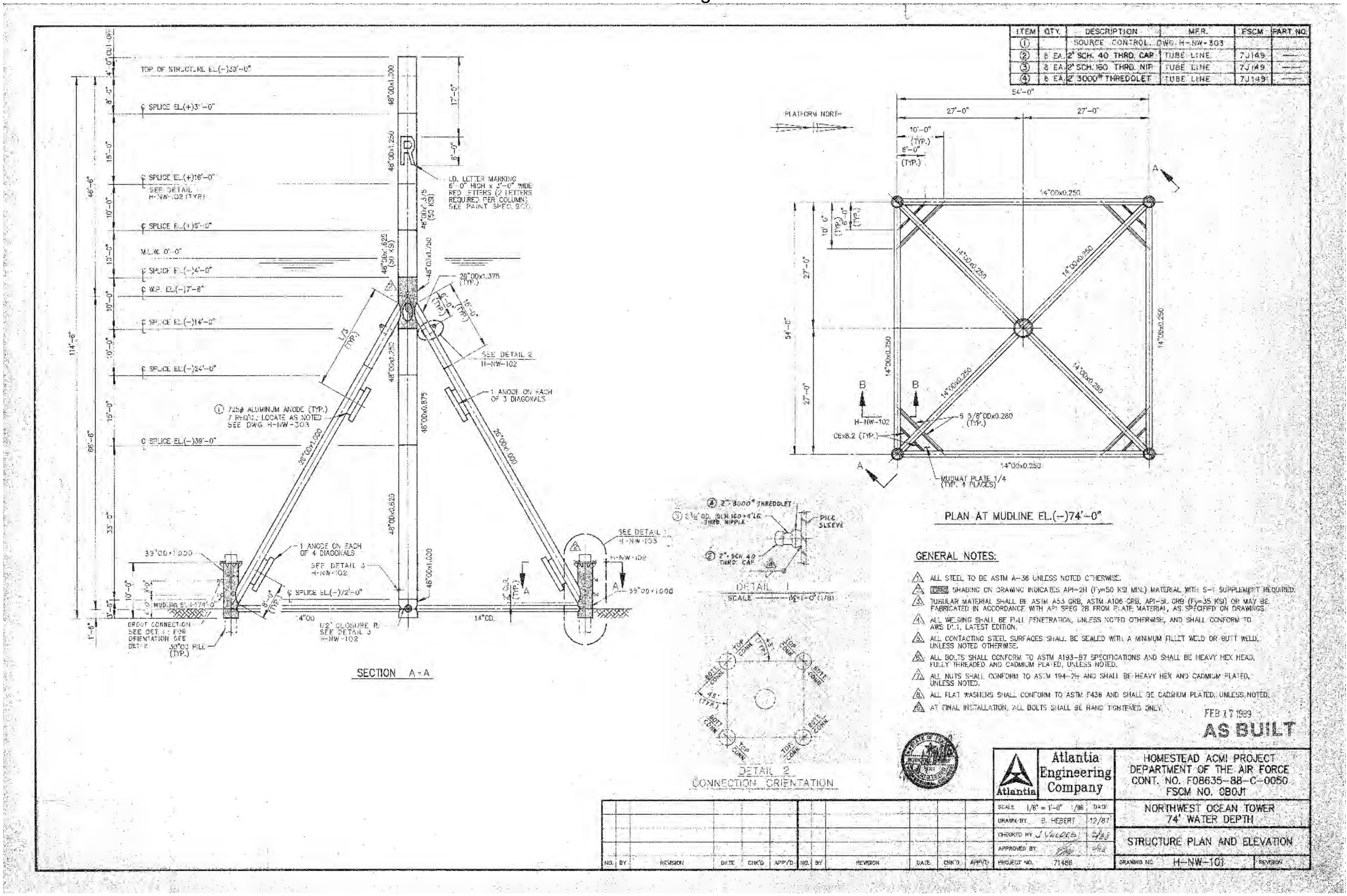
NO.	BY	REVISION	DATE	CHK'D	APPV'D

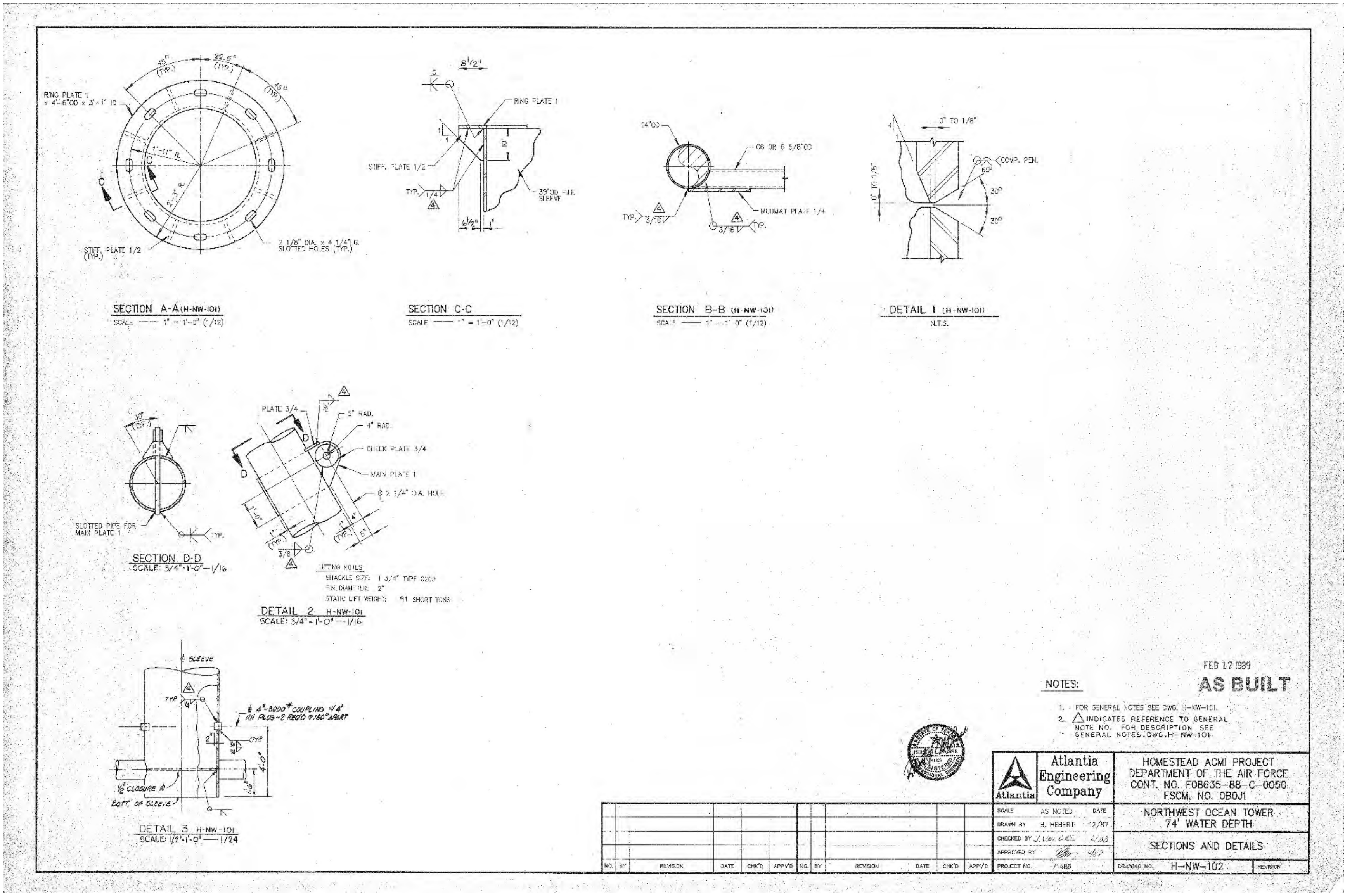

DIAGONAL BRACE MEMBER
4 1/2" DIA
725# ALUMINUM ANODE
7'-0"
8'-0"
9 1/2"
ANODE DETAIL
NOTE:
VENDORS: CATHODIC PROTECTION
CATHODIC PROTECTION SERVICES
SUITE 100
GLOBAL CATHODIC PROTECTION, INC.
5626 SCHUMACHER ST.
HOUSTON, TX. 77057
P.O. DRAWER 280
NOTES
5) ANODE CURRENT CAPACITY: 1280 AMPERE HOURS PER POUND
FEB 17 1999
AS BUILT
ITEM
QTY.
DESCRIPTION
MFR.
FSCM
PART NO.
PARTS LIST
725 LB. ALUMINUM ANODE
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635 88 C 0050
FSCM NO. 0R0J1
NORTH MASTER OCEAN TOWER
69' WATER DEPTH
ALUMINUM ANODE
SPECIFICATION CONTROL DRAWING
SCALE
DRAWN BY
CHECKED BY
APPROVED BY
PROJECT NO.
71486
DRAWING NO.
REVISION

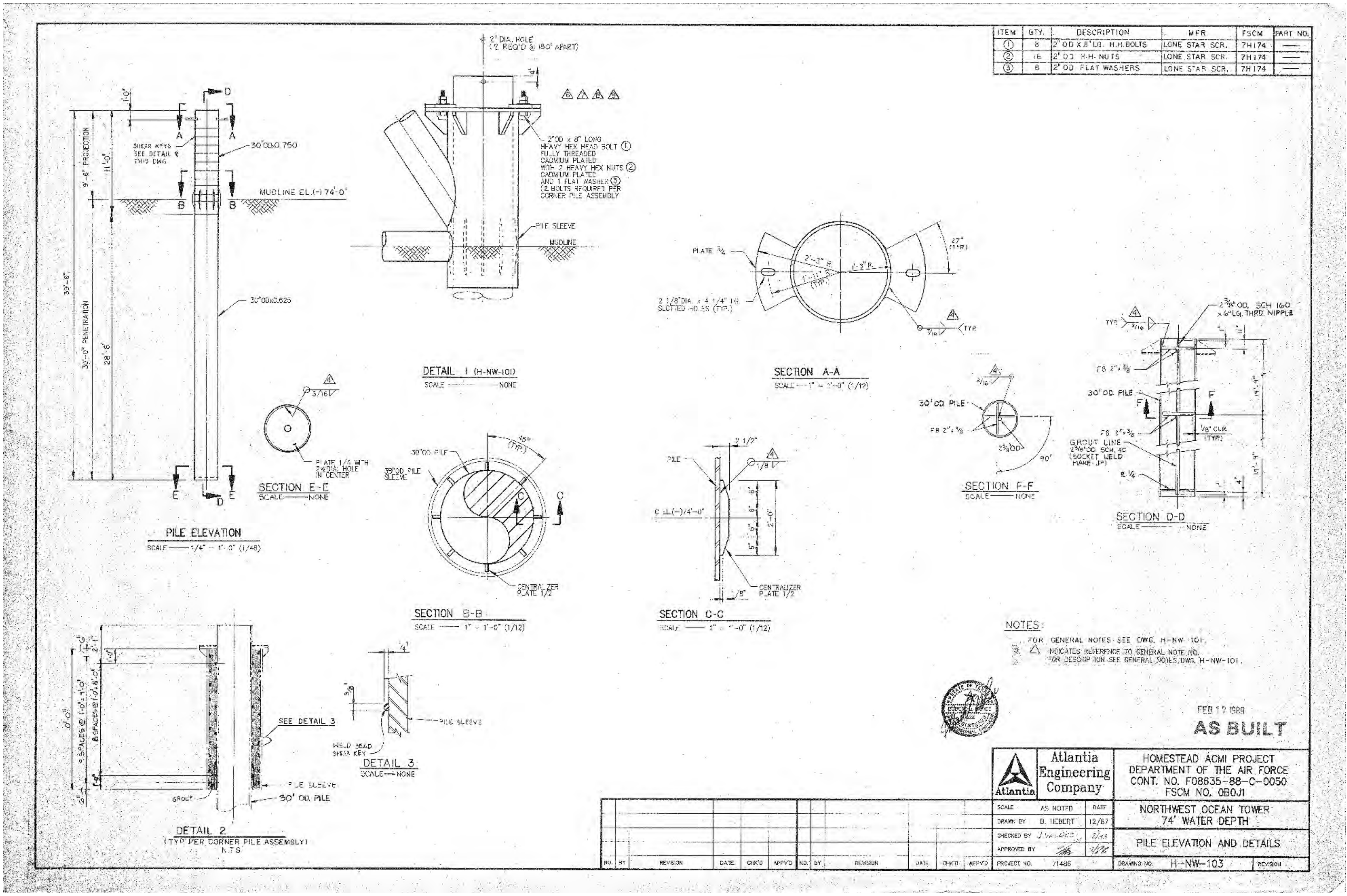
A.4 NORTHWEST TOWER

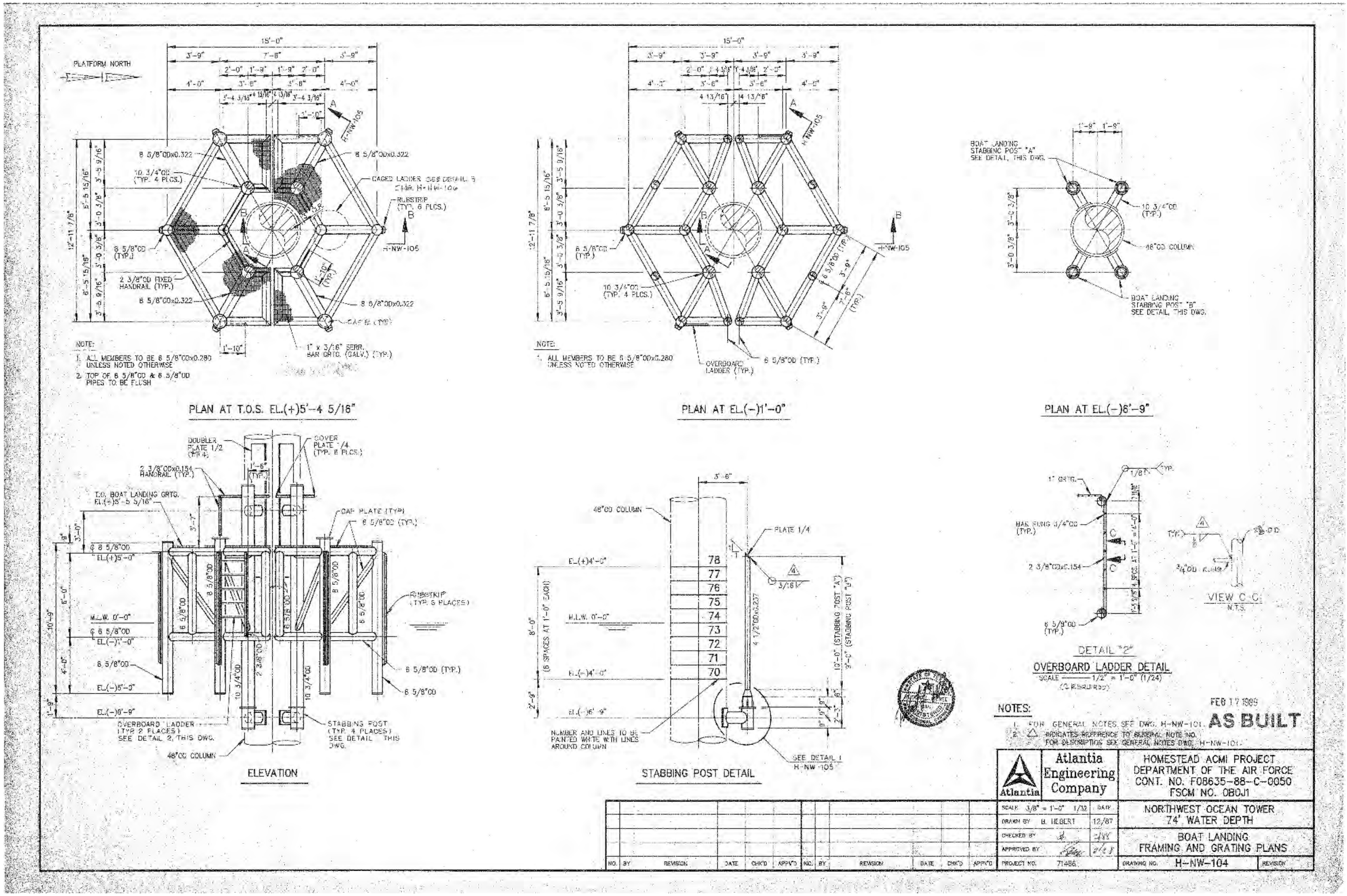


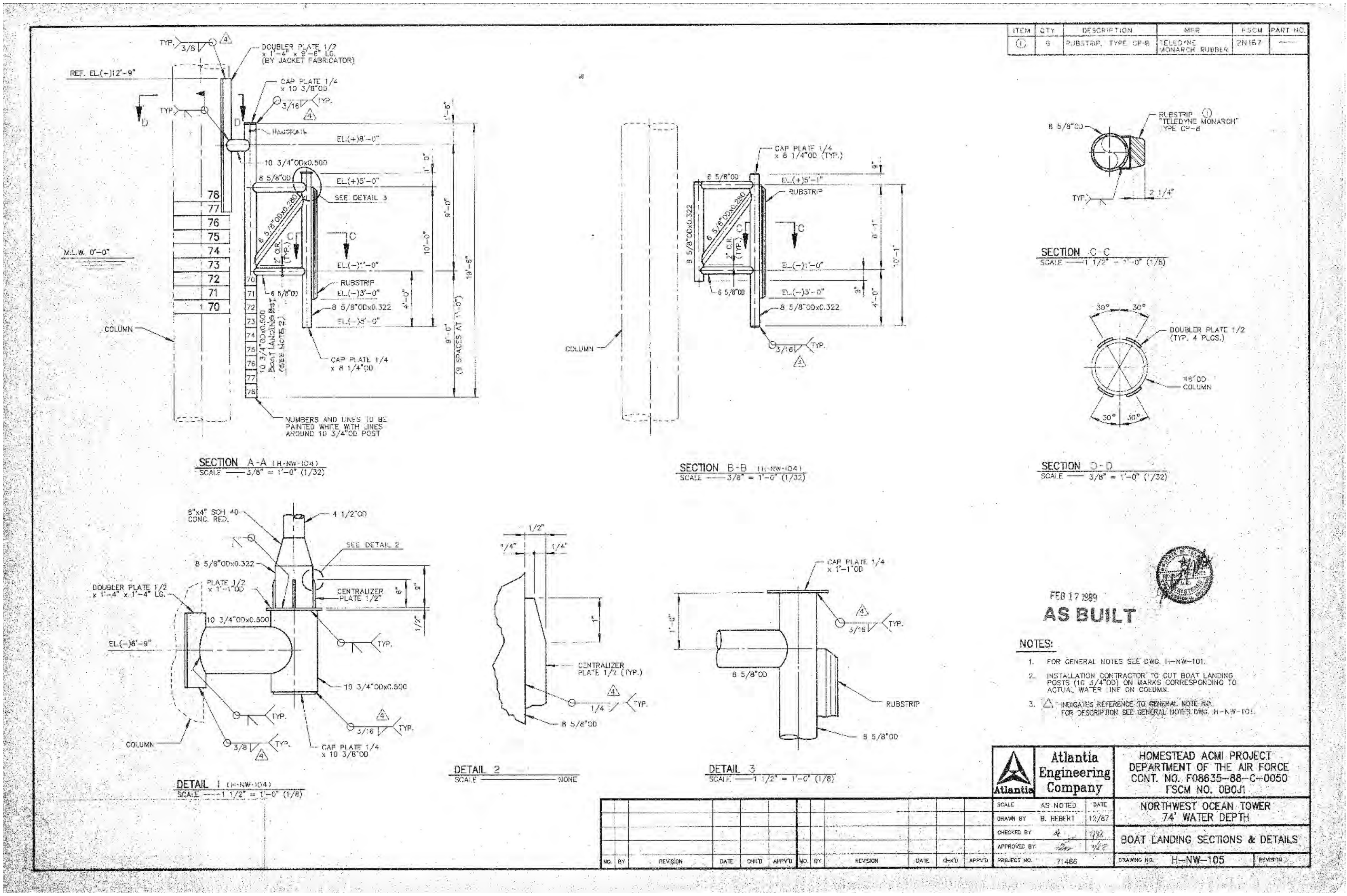
As-built construction drawing of Northwest Tower.

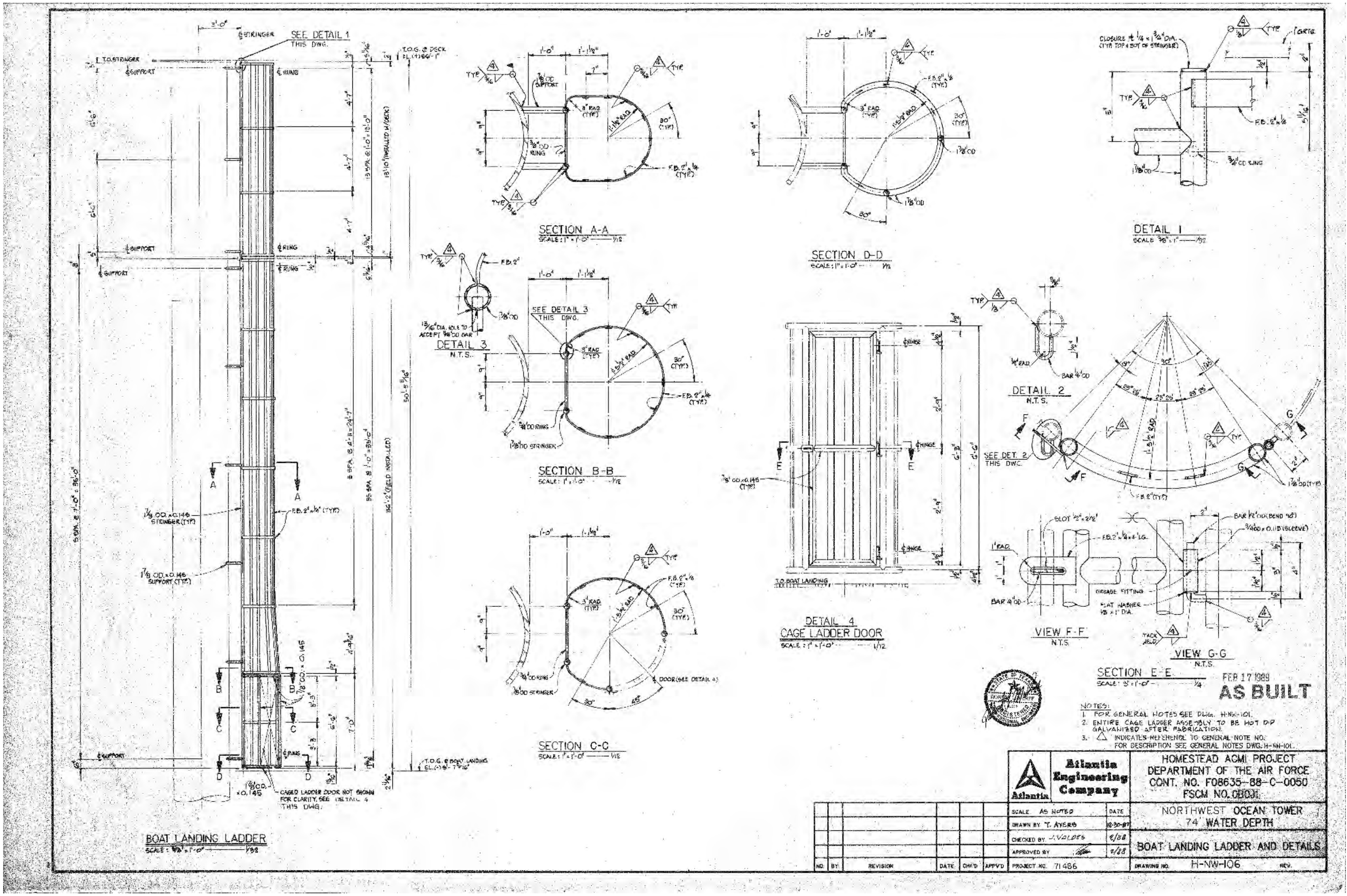


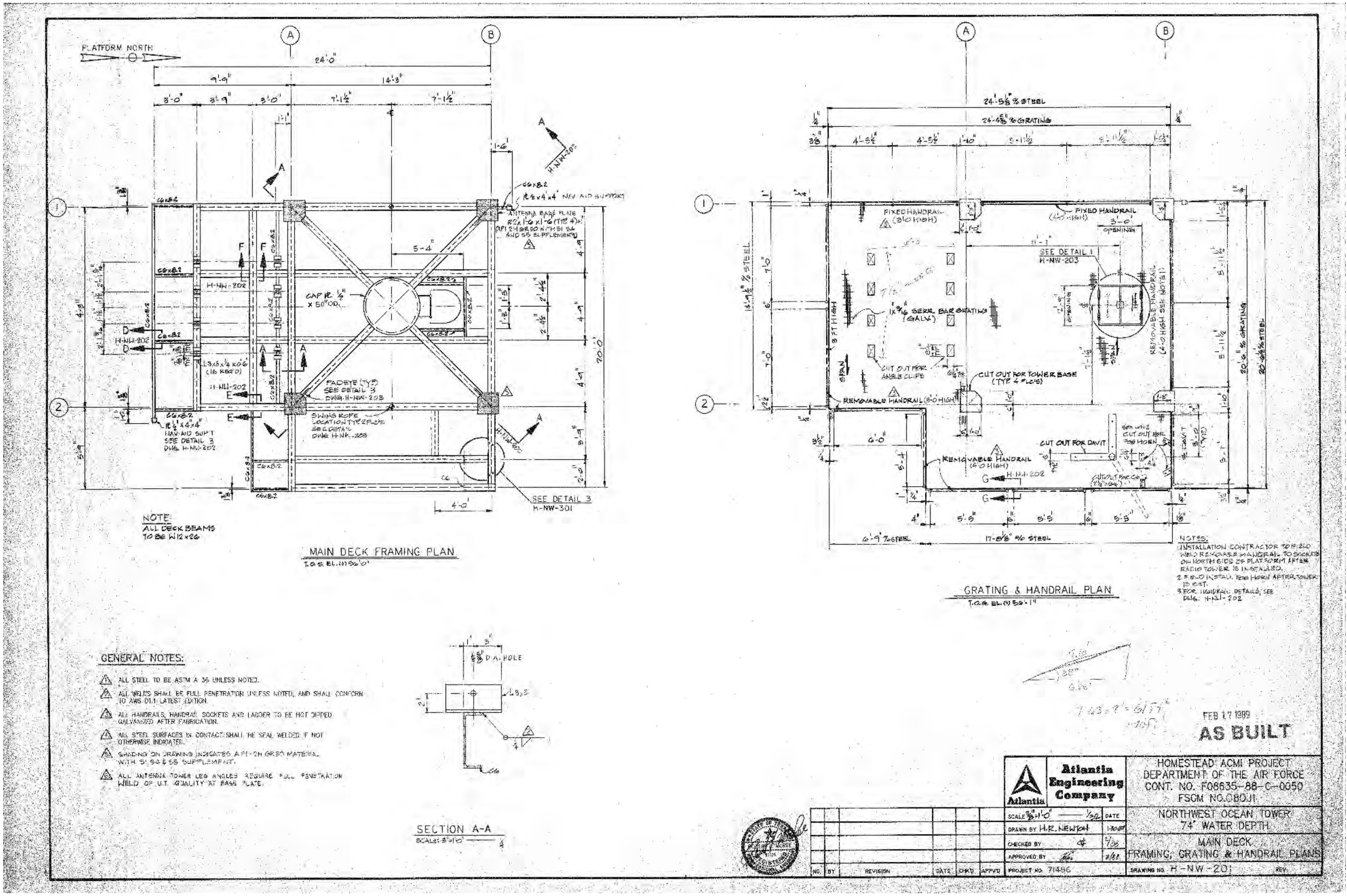

SECTION A-A (H-NW-101)
SECTION C-C
SECTION B-B (H-NW-101)
DETAIL 1 (H-NW-101)
N.T.S.
SECTION D-D
SCALE: 3/4"=1'-0"—1/16
DETAIL 2 H-NW-101
SCALE: 3/4"=1'-0"—1/16
DETAIL 3 H-NW-101
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-NW-101.
2. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NW-101.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM. NO. 0B0J1
NORTHWEST OCEAN TOWER
74' WATER DEPTH
SECTIONS AND DETAILS
H-NW-102

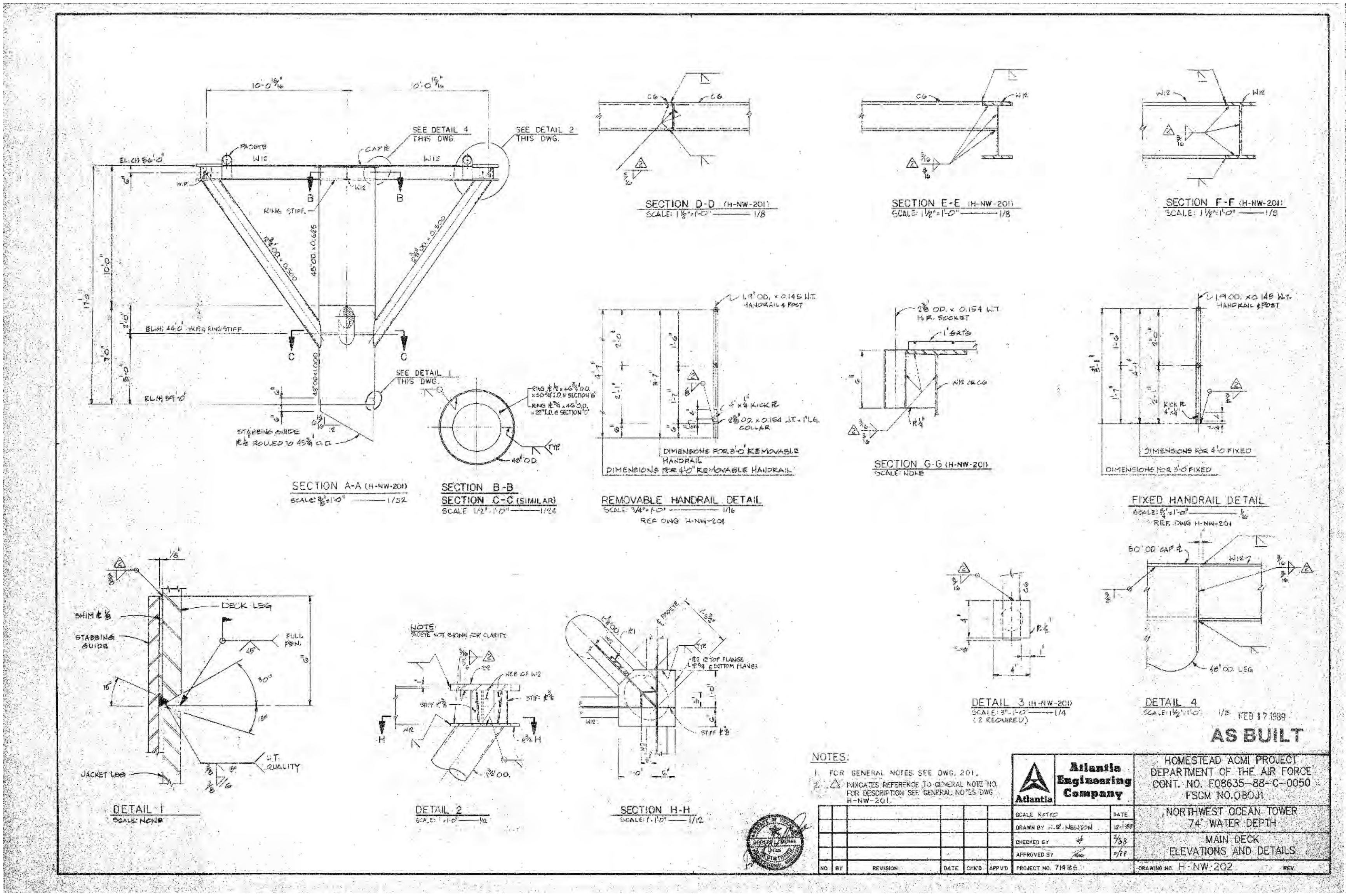

ITEM | QTY. | DESCRIPTION | MFR | FSCM | PART NO.
1 | 8 | 2" OD X 8" LG. H.H. BOLTS | LONE STAR SCR. | 7H174
2 | 16 | 2" OD H.H. NUTS | LONE STAR SCR. | 7H174
3 | 8 | 2" OD FLAT WASHERS | LONE STAR SCR. | 7H174
PILE ELEVATION
SCALE 1/4" = 1'-0" (1/48)
MUDLINE EL.(-) 74'-0"
30"ODx0.750
30"ODx0.625
DETAIL 1 (H-NW-101)
SCALE NONE
PILE SLEEVE
MUDLINE
SECTION A-A
SCALE 1" = 1'-0" (1/12)
SECTION E-E
SCALE NONE
SECTION B-B
SCALE 1" = 1'-0" (1/12)
SECTION C-C
SCALE 1" = 1'-0" (1/12)
CENTRALIZER PLATE 1/2
SECTION F-F
SCALE NONE
SECTION D-D
SCALE NONE
30' OD PILE
DETAIL 2
(TYP PER CORNER PILE ASSEMBLY)
N.T.S.
SEE DETAIL 3
PILE SLEEVE
30' OD. PILE
DETAIL 3
SCALE NONE
NOTES:
FOR GENERAL NOTES SEE DWG. H-NW-101.
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTHWEST OCEAN TOWER
74' WATER DEPTH
PILE ELEVATION AND DETAILS
SCALE AS NOTED
DRAWING NO. H-NW-103

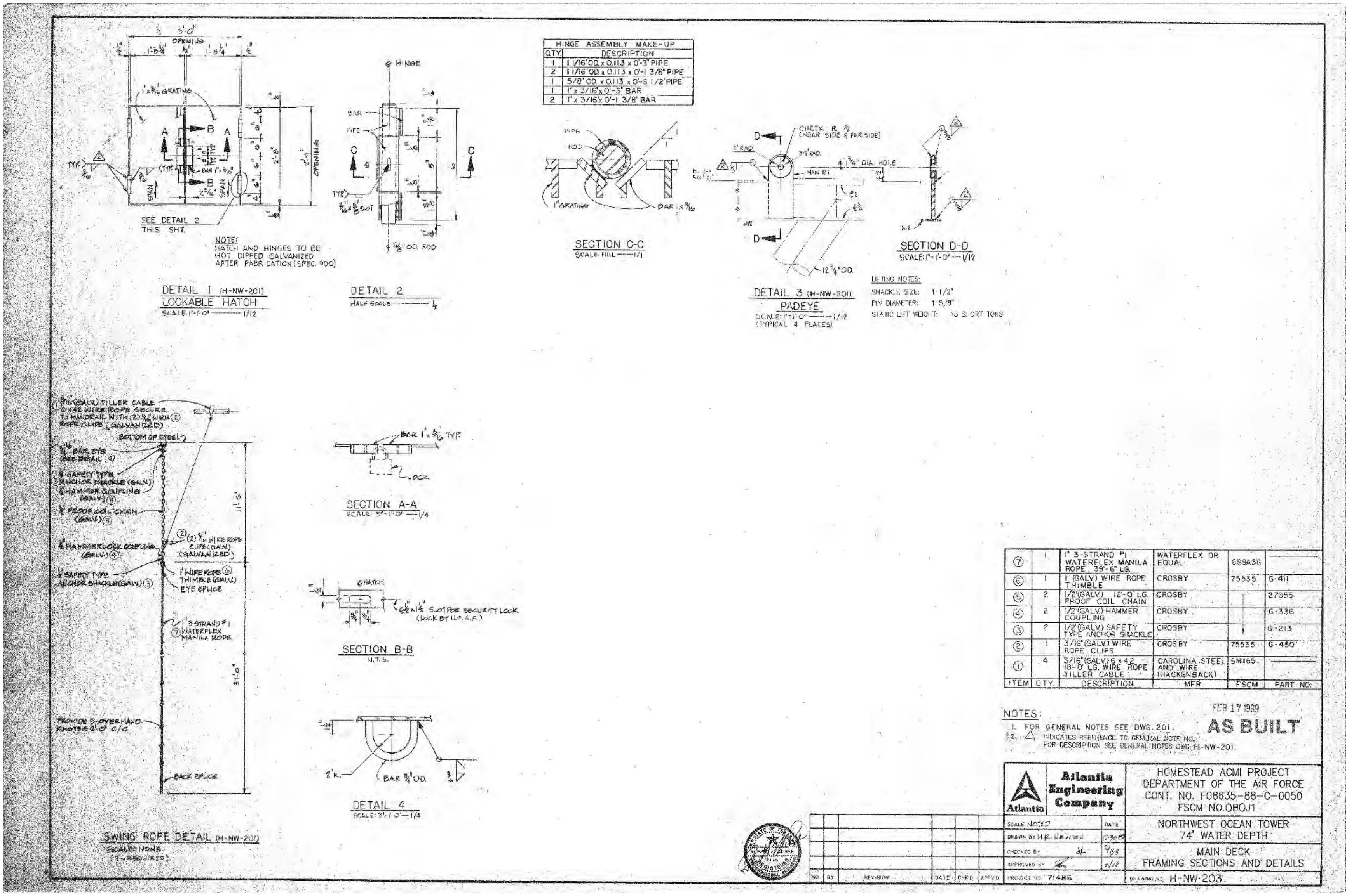

PLAN AT T.O.S. EL.(+)5'-4 5/16"
PLAN AT EL.(-)1'-0"
PLAN AT EL.(-)8'-9"
ELEVATION
STABBING POST DETAIL
DETAIL "2"
OVERBOARD LADDER DETAIL
VIEW C-C
AS BUILT
FEB 17 1989
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
NORTHWEST OCEAN TOWER
74' WATER DEPTH
BOAT LANDING
FRAMING AND GRATING PLANS
H-NW-104

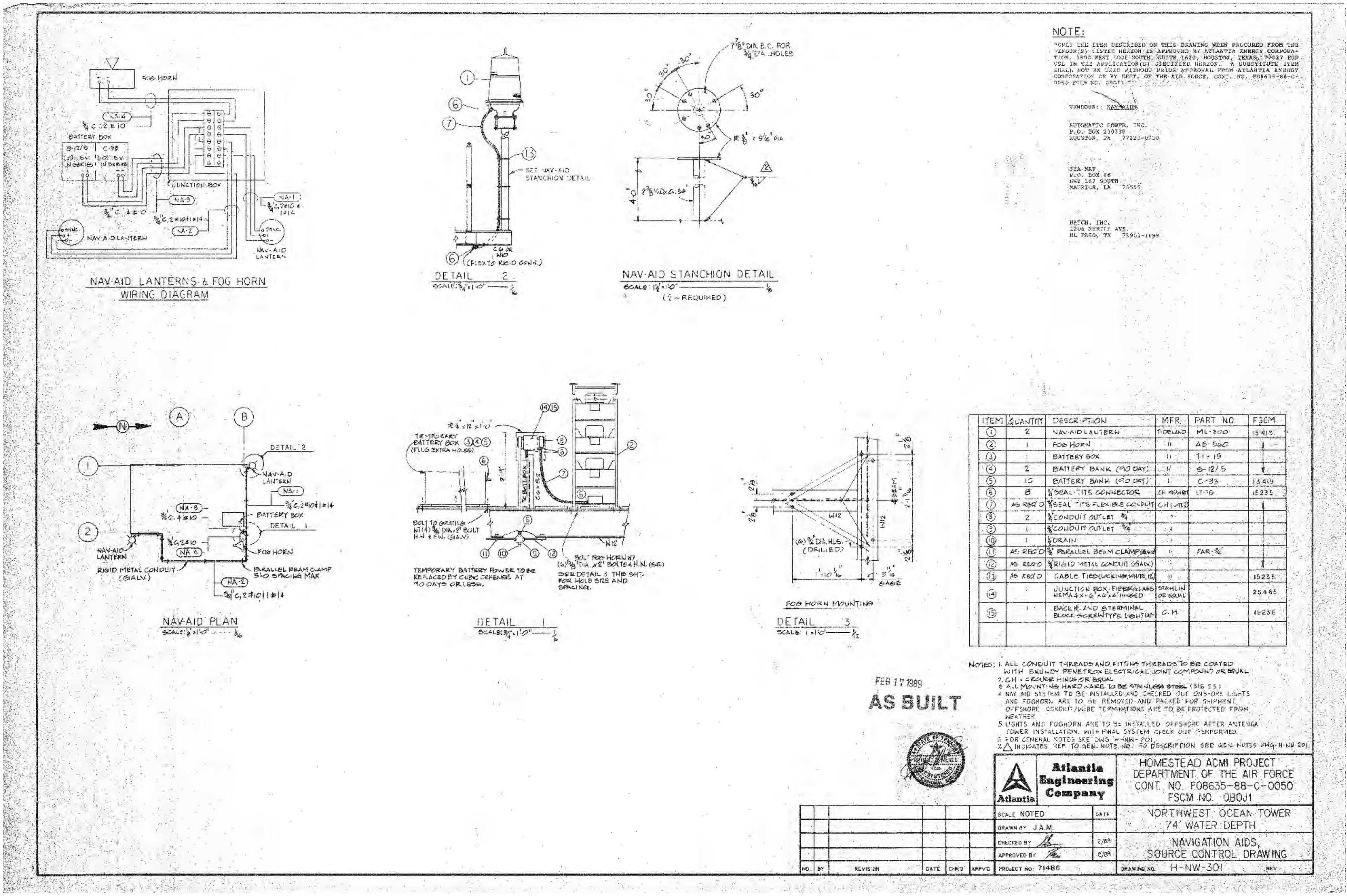


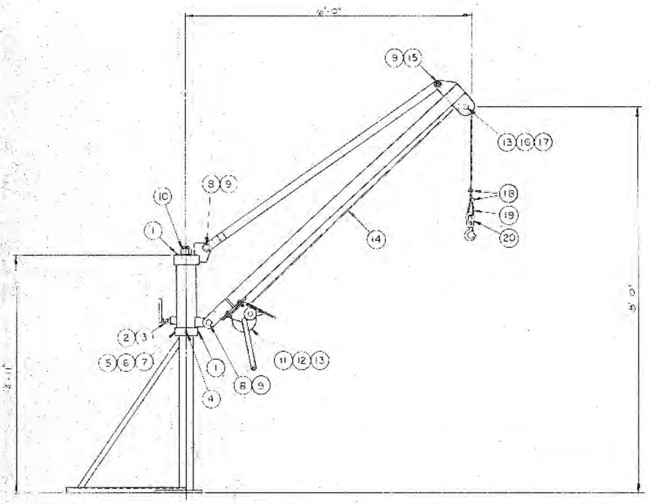

BOAT LANDING LADDER
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
CAGE LADDER DOOR
VIEW F-F
VIEW G-G
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-NW-101.
2. ENTIRE CAGE LADDER ASSEMBLY TO BE HOT DIP GALVANIZED AFTER FABRICATION.
3. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NW-101.
Atlantic Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
NORTHWEST OCEAN TOWER
74' WATER DEPTH
BOAT LANDING LADDER AND DETAILS
DRAWN BY T. AYERS
PROJECT NO. 71486
DRAWING NO. H-NW-106


PLATFORM NORTH
MAIN DECK FRAMING PLAN
NOTE:
ALL DECK BEAMS
TO BE W12x26
SEE DETAIL 3
H-NW-301
GRATING & HANDRAIL PLAN
GENERAL NOTES:
1 ALL STEEL TO BE ASTM A 36 UNLESS NOTED.
2 ALL WELDS SHALL BE FULL PENETRATION UNLESS NOTED, AND SHALL CONFORM TO AWS D1.1 LATEST EDITION.
3 ALL HANDRAILS, HANDRAIL SOCKETS AND LADDER TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
4 ALL STEEL SURFACES IN CONTACT SHALL BE SEAL WELDED IF NOT OTHERWISE INDICATED.
5 SHADING ON DRAWING INDICATES API-2H GR50 MATERIAL WITH S1, S4 & S5 SUPPLEMENT.
6 ALL ANTENNA TOWER LEG ANGLES REQUIRE FULL PENETRATION WELD OF U.T. QUALITY AT BASE PLATE.
SECTION A-A
FEB 17 1989
AS BUILT
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO.0BOJ1
NORTHWEST OCEAN TOWER
74' WATER DEPTH
MAIN DECK
FRAMING, GRATING & HANDRAIL PLANS
SCALE 3/8"=1'-0"
DRAWN BY H.R. NEWTON
CHECKED BY
APPROVED BY
PROJECT NO. 71486
DRAWING NO. H-NW-201
REV.
NO. BY REVISION DATE CHK'D APPV'D


SECTION A-A (H-NW-201)
SECTION B-B
SECTION C-C (SIMILAR)
SECTION D-D (H-NW-201)
SECTION E-E (H-NW-201)
SECTION F-F (H-NW-201)
REMOVABLE HANDRAIL DETAIL
SECTION G-G (H-NW-201)
FIXED HANDRAIL DETAIL
DETAIL 1
DETAIL 2
SECTION H-H
DETAIL 3 (H-NW-201)
DETAIL 4
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. 201.
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG H-NW-201.
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO.OBOJ1
NORTHWEST OCEAN TOWER
74' WATER DEPTH
MAIN DECK
ELEVATIONS AND DETAILS
PROJECT NO. 71486
DRAWING NO. H-NW-202


HINGE ASSEMBLY MAKE-UP
QTY. DESCRIPTION
1 1 1/16" OD. x 0.113 x 0'-3" PIPE
2 1 1/16" OD. x 0.113 x 0'-1 3/8" PIPE
1 5/8" OD. x 0.113 x 0'-6 1/2" PIPE
1 1" x 3/16" x 0'-3" BAR
2 1" x 3/16" x 0'-1 3/8" BAR
DETAIL 1 (H-NW-201)
LOCKABLE HATCH
DETAIL 2
SECTION C-C
DETAIL 3 (H-NW-201)
PADEYE
SECTION D-D
SECTION A-A
SECTION B-B
DETAIL 4
SWING ROPE DETAIL (H-NW-201)
7 1 1" 3-STRAND #1 WATERFLEX MANILA ROPE, 39'-6" LG. WATERFLEX OR EQUAL 6S9A3G
6 1 1" (GALV.) WIRE ROPE THIMBLE CROSBY 75535 G-411
5 2 1/2" (GALV.) 12'-0" LG. PROOF COIL CHAIN CROSBY 27955
4 2 1/2" (GALV.) HAMMER COUPLING CROSBY G-336
3 2 1/2" (GALV.) SAFETY TYPE ANCHOR SHACKLE CROSBY G-213
2 1 3/16" (GALV.) WIRE ROPE CLIPS CROSBY 75535 G-450
1 4 3/16" (GALV.) 6 x 42 18'-0" LG. WIRE ROPE TILLER CABLE CAROLINA STEEL AND WIRE (HACKENBACK) 5M165
ITEM QTY. DESCRIPTION MFR FSCM PART NO.
NOTES:
1. FOR GENERAL NOTES SEE DWG. 201.
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NW-201.
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO.0BOJ1
NORTHWEST OCEAN TOWER
74' WATER DEPTH
MAIN DECK
FRAMING SECTIONS AND DETAILS
PROJECT NO. 71486
DRAWING NO. H-NW-203


NAV-AID LANTERNS & FOG HORN WIRING DIAGRAM
DETAIL 2
NAV-AID STANCHION DETAIL
(2 - REQUIRED)
NAV-AID PLAN
DETAIL 1
DETAIL 3
FOG HORN MOUNTING
FEB 17 1989
AS BUILT
ITEM | QUANTITY | DESCRIPTION | MFR. | PART NO. | FSCM
1 | 2 | NAV-AID LANTERN | TIDELAND | ML-300 | 13419
2 | 1 | FOG HORN | " | AB-560 |
3 | | BATTERY BOX | " | TI-15 |
4 | 2 | BATTERY BANK (90 DAY) | " | S-12/5 |
5 | 10 | BATTERY BANK (90 DAY) | " | C-33 | 13419
6 | 8 | SEAL-TITE CONNECTOR | | LT-75 | 15235
7 | AS REQ'D | SEAL TITE FLEXIBLE CONDUIT | CH | |
8 | 2 | CONDUIT OUTLET | | |
9 | | CONDUIT OUTLET | | |
10 | 1 | DRAIN | | |
11 | AS REQ'D | PARALLEL BEAM CLAMP | " | PAR- |
12 | AS REQ'D | RIGID METAL CONDUIT (GALV.) | | |
13 | AS REQ'D | CABLE TIES (LOCKING, WHITE) | " | | 15235
14 | | JUNCTION BOX, FIBERGLASS NEMA 4X HINGED | STAHLIN OR EQUAL | | 25485
15 | 1 | BACKPLANE AND TERMINAL BLOCK, SCREW TYPE | C. H. | | 15235
NOTES: 1. ALL CONDUIT THREADS AND FITTING THREADS TO BE COATED WITH BRUNDY PENETROX ELECTRICAL JOINT COMPOUND OR EQUAL.
2. CH = CROUSE HINDS OR EQUAL
3. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL (316 SS)
4. NAV AID SYSTEM TO BE INSTALLED AND CHECKED OUT ONSHORE. LIGHTS AND FOGHORN ARE TO BE REMOVED AND PACKED FOR SHIPMENT. OFFSHORE CONDUIT/WIRE TERMINATIONS ARE TO BE PROTECTED FROM WEATHER.
5. LIGHTS AND FOGHORN ARE TO BE INSTALLED OFFSHORE AFTER ANTENNA TOWER INSTALLATION, WITH FINAL SYSTEM CHECK OUT PERFORMED.
6. FOR GENERAL NOTES SEE DWG H-NW-201.
7. INDICATES REF. TO GEN. NOTE NO. FOR DESCRIPTION SEE GEN. NOTES DWG H-NW-201.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
SCALE NOTED
DRAWN BY J.A.M.
CHECKED BY 2/89
APPROVED BY 2/89
PROJECT NO. 71486
NORTHWEST OCEAN TOWER
74' WATER DEPTH
NAVIGATION AIDS,
SOURCE CONTROL DRAWING
DRAWING NO. H-NW-301



ELEVATION
DAVIT WITH HAND WINCH
SCALE: 1"=1'-0"

NOTE:
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1860 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."

VENDORS: DAVITS

WEATHERFORD
11909 SPENCER RD. (FM 529)
HOUSTON, TX. 77043

APEX EQUIPMENT CORPORATION, INC.
P.O. BOX 19681
HOUSTON, TX 77224-9581

GAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2067
CLEVELAND, TX 77327

FEB 17 1989

AS BUILT

SPARE PARTS

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
18	[illegible]	1/4" S.S. WIRE ROPE CLIPS	CAMBELL CHAIN	80535	[illegible]
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
15	2	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	↕	—
10	1	1 1/2"-12 NC ELASTIC LOCK NUT	LONE STAR SCR.	↕	—
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—

PARTS LIST

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
20	[illegible]	2 TON SWIVEL HOOK	CROSBY	78535	S-322C
19	[illegible]	1/4" S.S. WIRE ROPE THIMBLE	CAMPBELL CHAIN	80535	540-7604
18	2	1/4" S.S WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	540-3004
17	[illegible]	4" x 5/8" x 1/2" SHEAVE W/BRONZE BUSHING 1/4" GROOVE	CROSBY	78535	1173
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
15	1	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
14	100'-0"	1/4", 1 x 7, 316 S.S. WIRE ROPE	CAROLINA STEEL AND WIRE (HACKENBACK)	5M165	[illegible]
13	5	1/2"-13 NC x ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	[illegible]
12	4	1/2"-13 NC x 1 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
11	1	WINCH WITH MANUAL GEAR (GALVANIZED)	BEEBE	06550	DN8B
10	1	1 1/2"-12 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	—
9	3	3/4"-10 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	↕	—
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	[illegible]
7	1	4 1/2"OD x 4"ID x 1 1/2"LG BRONZE BUSHING	[illegible]	7F4C4M	—
6	1	BEARING CUP	TIMKEN	88357	53375
5	1	BEARING CONE	TIMKEN	88357	53162
4	1	1/4"-20 NC x 3/4"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
3	1	1 1/2"OD x 1 1/2"LG NYLON BRAKE PAD	MARTHO CRANE	2H098	—
2	1	5/8"-11 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
1	2	1/8" NPT S.S. GREASE FITTING	ALEMITE	02260	1966-S

Atlantia Engineering Company

HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1

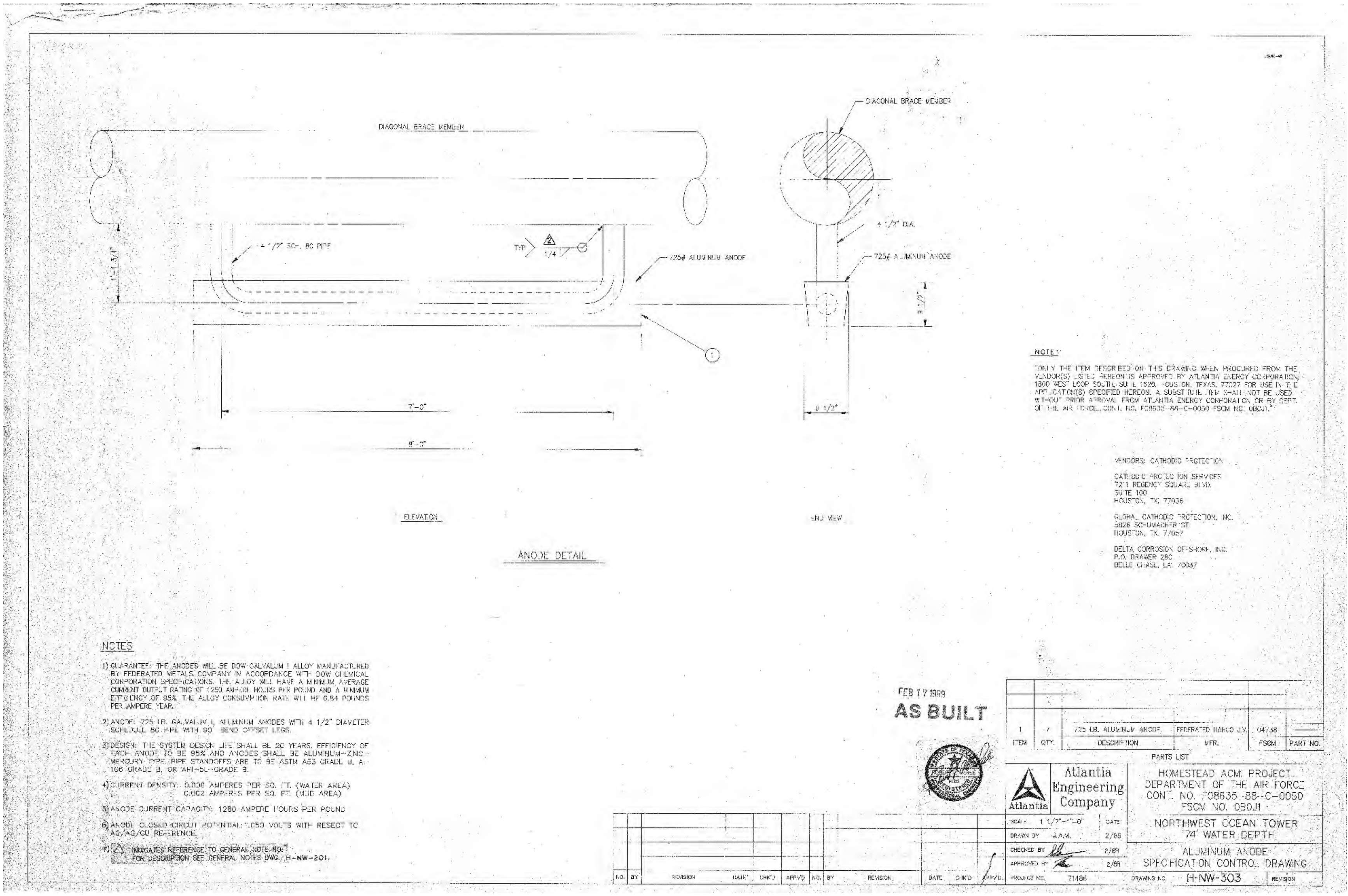
NO.	BY	REVISION	DATE	CHK'D	APPV'D

SCALE AS NOTED
DRAWN BY B. TAYLOR — DATE 1/89
CHECKED BY — 2/89
APPROVED BY — 2/89
PROJECT NO 71486

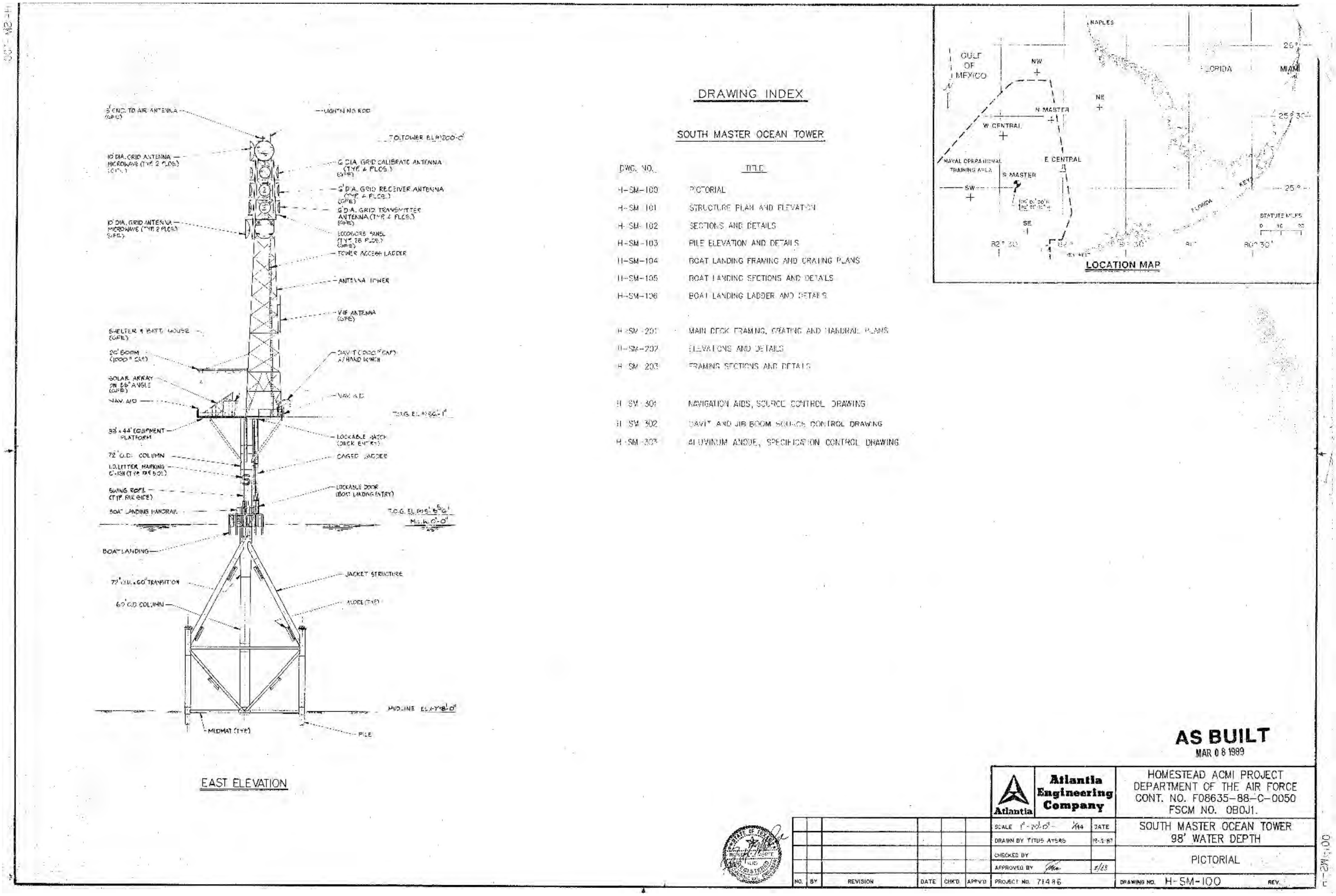
NORTHWEST OCEAN TOWER
74' WATER DEPTH

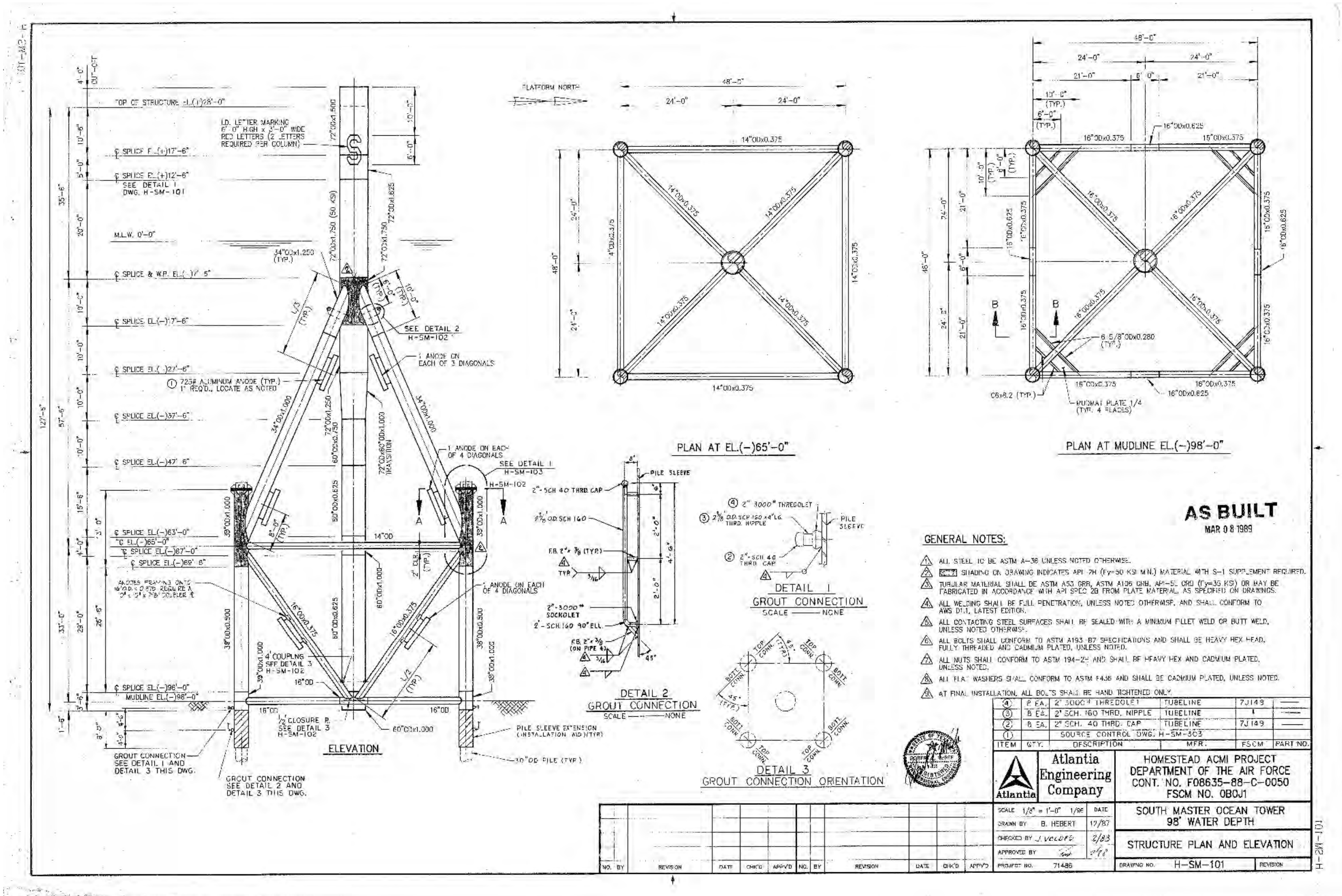
DAVIT
SOURCE CONTROL DRAWING

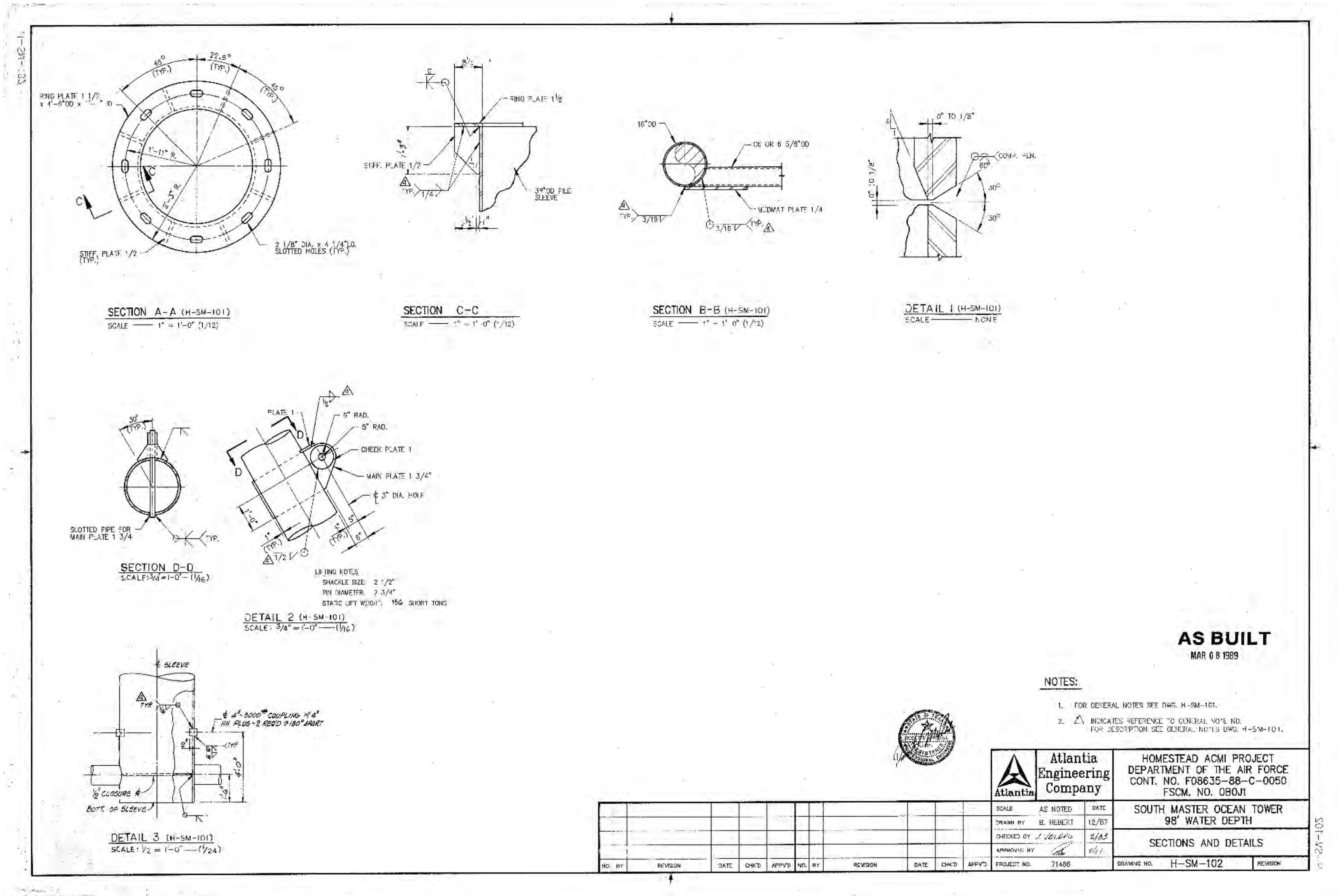
DRAWING NO. H-NW-302 REV.

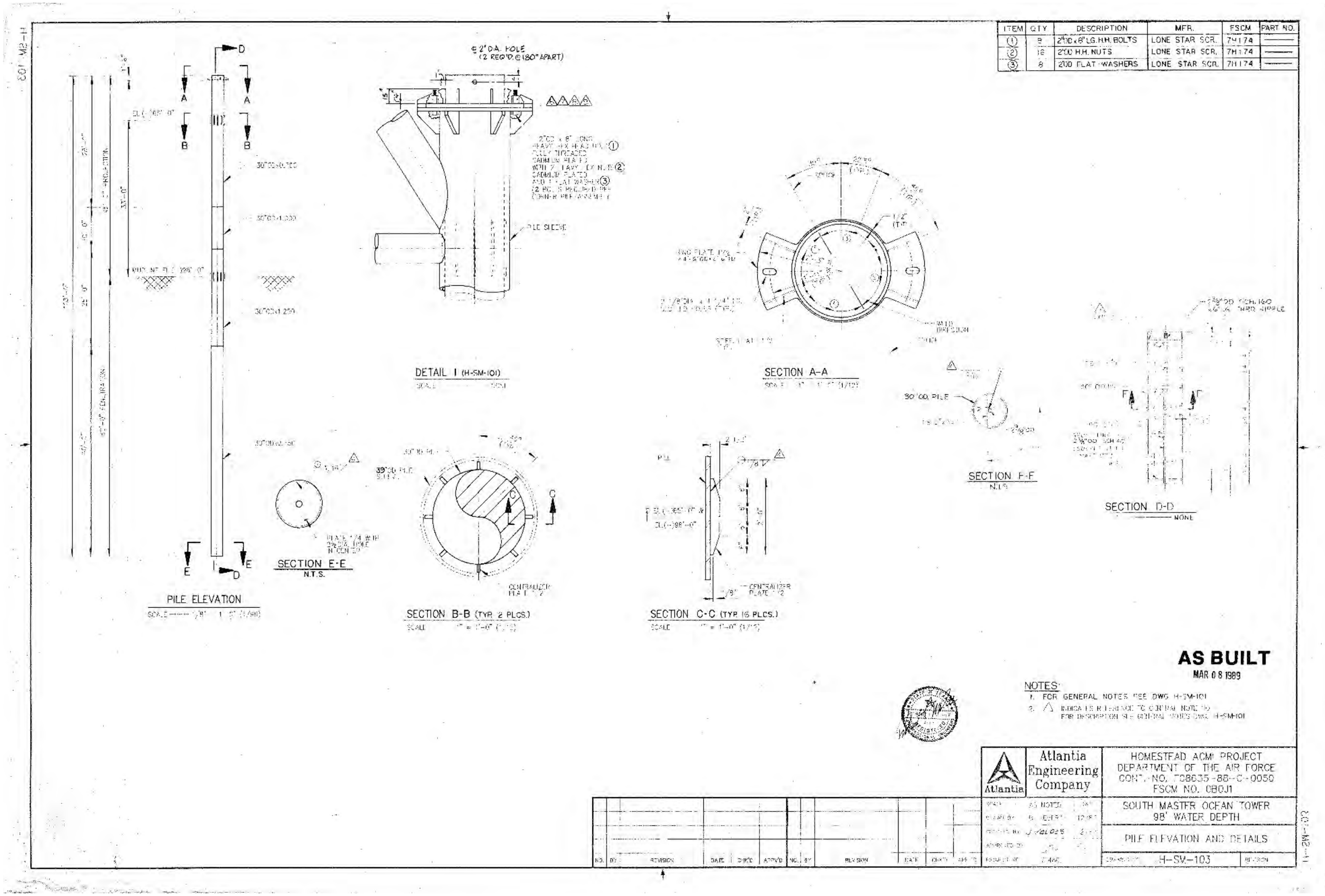

DIAGONAL BRACE MEMBER
4 1/2" SCH. 80 PIPE
TYP
1/4
725# ALUMINUM ANODE
7'-0"
8'-0"
ELEVATION
DIAGONAL BRACE MEMBER
4 1/2" DIA.
725# ALUMINUM ANODE
END VIEW
ANODE DETAIL
NOTE:
ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1520, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0BCJ1.
VENDORS: CATHODIC PROTECTION
CATHODIC PROTECTION SERVICES
7211 REGENCY SQUARE BLVD.
SUITE 100
HOUSTON, TX 77036
GLOBAL CATHODIC PROTECTION, INC.
5826 SCHUMACHER ST.
HOUSTON, TX 77057
DELTA CORROSION OFFSHORE, INC.
P.O. DRAWER 280
BELLE CHASE, LA 70037
NOTES
1) GUARANTEE: THE ANODES WILL BE DOW GALVALUM I ALLOY MANUFACTURED BY FEDERATED METALS COMPANY IN ACCORDANCE WITH DOW CHEMICAL CORPORATION SPECIFICATIONS. THE ALLOY WILL HAVE A MINIMUM AVERAGE CURRENT OUTPUT RATING OF 1250 AMPERE HOURS PER POUND AND A MINIMUM EFFICIENCY OF 95%. THE ALLOY CONSUMPTION RATE WILL BE 6.84 POUNDS PER AMPERE YEAR.
2) ANODE: 725 LB. GALVALUM I, ALUMINUM ANODES WITH 4 1/2" DIAMETER SCHEDULE 80 PIPE WITH 90° BEND OFFSET LEGS.
3) DESIGN: THE SYSTEM DESIGN LIFE SHALL BE 20 YEARS. EFFICIENCY OF EACH ANODE TO BE 95% AND ANODES SHALL BE ALUMINUM-ZINC-MERCURY TYPE. PIPE STANDOFFS ARE TO BE ASTM A53 GRADE B, A-106 GRADE B, OR API-5L-GRADE B.
4) CURRENT DENSITY: 0.006 AMPERES PER SQ. FT. (WATER AREA)
0.002 AMPERES PER SQ. FT. (MUD AREA)
5) ANODE CURRENT CAPACITY: 1280 AMPERE HOURS PER POUND
6) ANODE CLOSED CIRCUIT POTENTIAL: 1.050 VOLTS WITH RESPECT TO AG/AG/CL REFERENCE.
7) INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-NW-201.
FEB 17 1989
AS BUILT
1
725 LB. ALUMINUM ANODE
FEDERATED HARCO J.V.
04738
ITEM
QTY.
DESCRIPTION
MFR.
FSCM
PART NO.
PARTS LIST
Atlantia Engineering Company
Atlantia
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BCJ1
SCALE 1 1/2"=1'-0"
DATE
DRAWN BY J.A.M. 2/89
CHECKED BY 2/89
APPROVED BY 2/89
NORTHWEST OCEAN TOWER
74' WATER DEPTH
ALUMINUM ANODE
SPECIFICATION CONTROL DRAWING
PROJECT NO. 71486
DRAWING NO. H-NW-303
REVISION
NO.
BY
REVISION
DATE
CHK'D
APPV'D

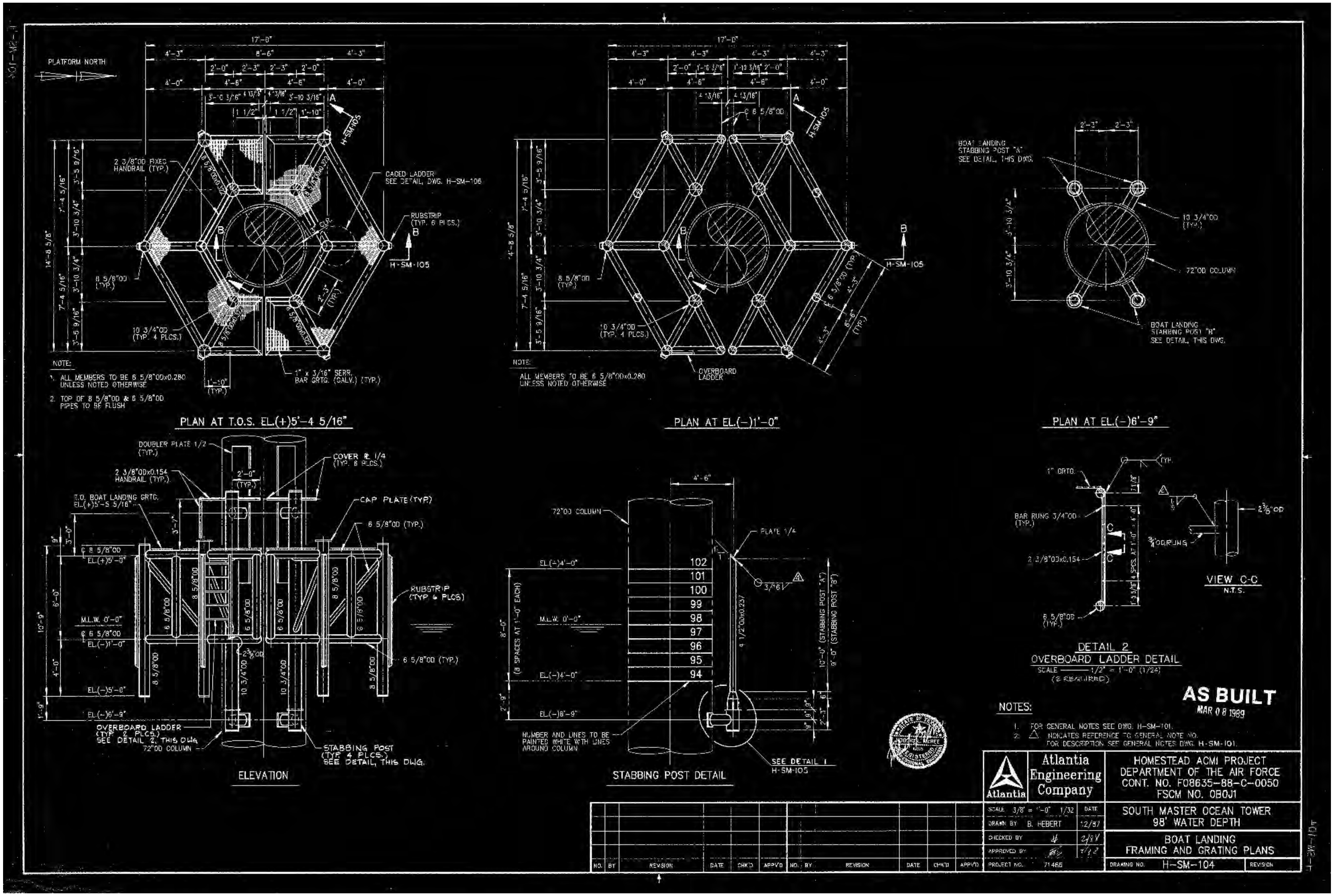
A.5 South Master Tower

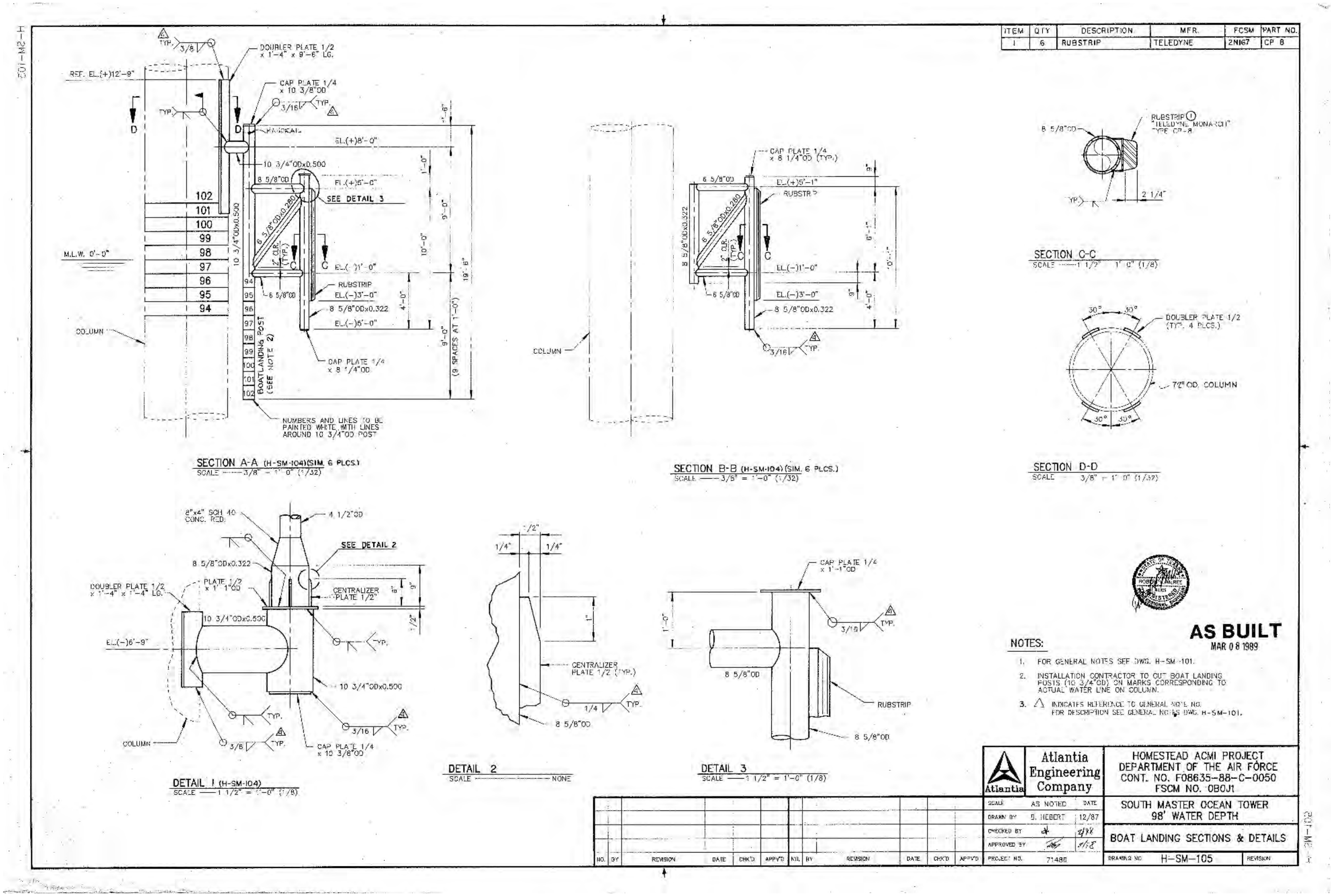



ELEVATION
PLAN AT EL.(−)65'−0"
PLAN AT MUDLINE EL.(−)98'−0"
DETAIL 1
GROUT CONNECTION
DETAIL 2
GROUT CONNECTION
DETAIL 3
GROUT CONNECTION ORIENTATION
AS BUILT
MAR 0 8 1989
GENERAL NOTES:
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635−88−C−0050
FSCM NO. 0B0J1
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
STRUCTURE PLAN AND ELEVATION
H−SM−101


SECTION A-A (H-SM-101)
SCALE 1" = 1'-0" (1/12)
SECTION C-C
SECTION B-B (H-SM-101)
DETAIL 1 (H-SM-101)
SECTION D-D
DETAIL 2 (H-SM-101)
DETAIL 3 (H-SM-101)
AS BUILT
MAR 0 8 1989
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SM-101.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM. NO. 0B0J1
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
SECTIONS AND DETAILS
H-SM-102


ITEM | QTY | DESCRIPTION | MFR. | FSCM | PART NO.
1 | 8 | 2"OD x 8" LG. H.H. BOLTS | LONE STAR SCR. | 7H174
2 | 16 | 2"OD H.H. NUTS | LONE STAR SCR. | 7H174
3 | 8 | 2"OD FLAT WASHERS | LONE STAR SCR. | 7H174
PILE ELEVATION
DETAIL I (H-SM-101)
SECTION A-A
SECTION E-E
N.T.S.
SECTION B-B (TYP. 2 PLCS.)
SECTION C-C (TYP. 16 PLCS.)
SECTION F-F
SECTION D-D
PILE SLEEVE
30"OD PILE
AS BUILT
MAR 0 8 1989
NOTES:
1. FOR GENERAL NOTES SEE DWG H-SM-101
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
FSCM NO. 0B0J1
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
PILE ELEVATION AND DETAILS
H-SV-103

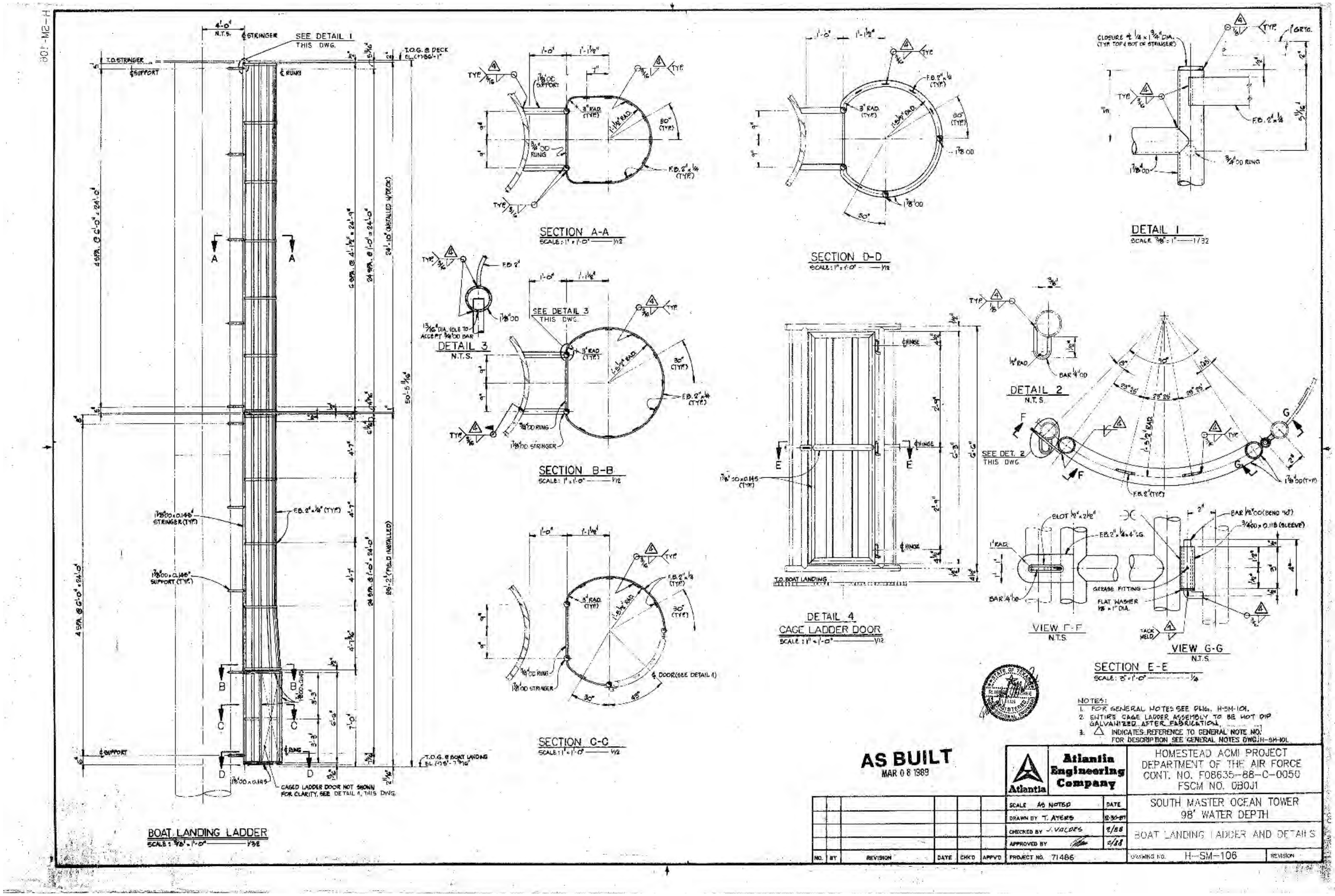

PLAN AT T.O.S. EL.(+)5'-4 5/16"
PLAN AT EL.(-)1'-0"
PLAN AT EL.(-)6'-9"
ELEVATION
STABBING POST DETAIL
DETAIL 2
OVERBOARD LADDER DETAIL
VIEW C-C
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SM-101.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
BOAT LANDING
FRAMING AND GRATING PLANS
H-SM-104

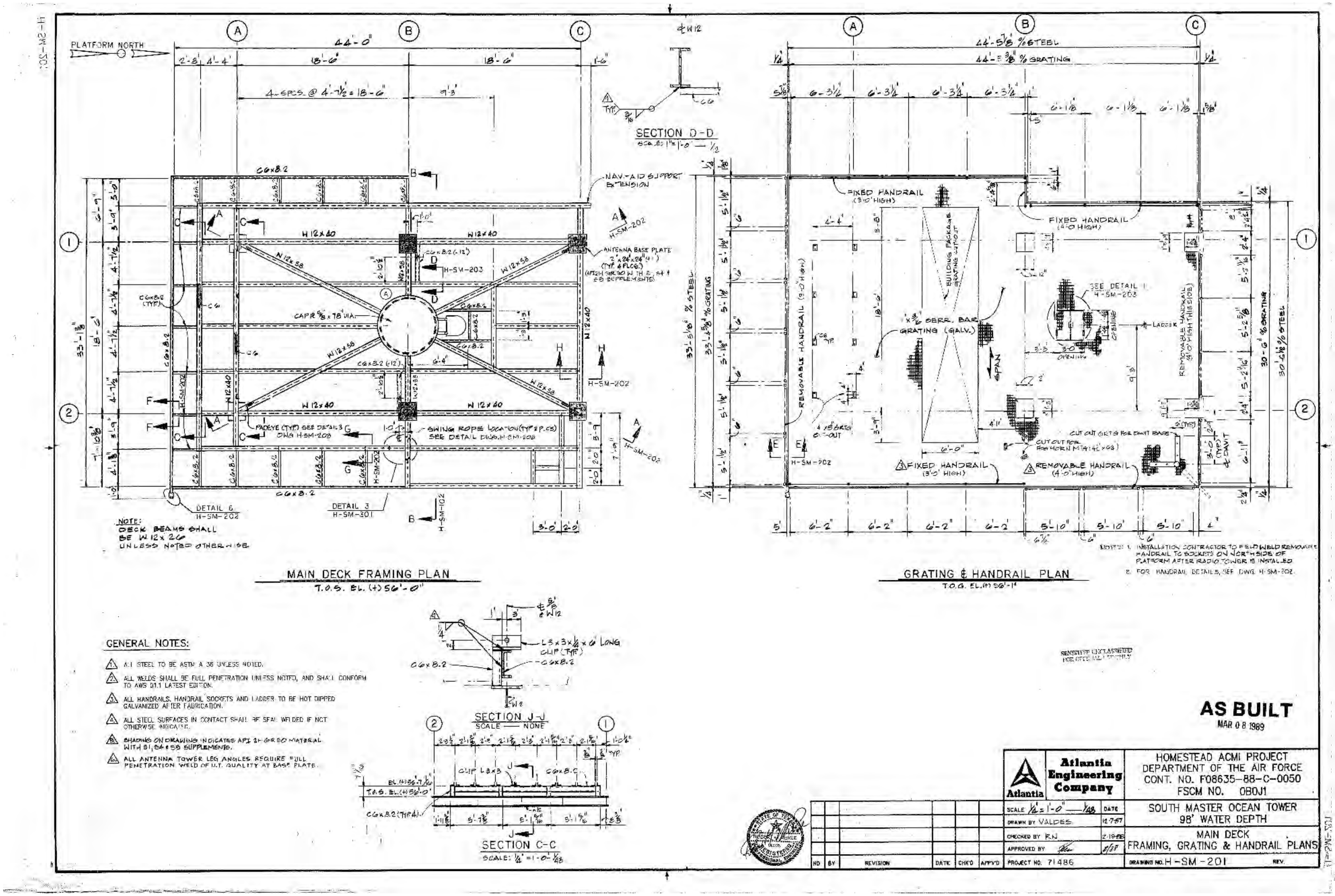


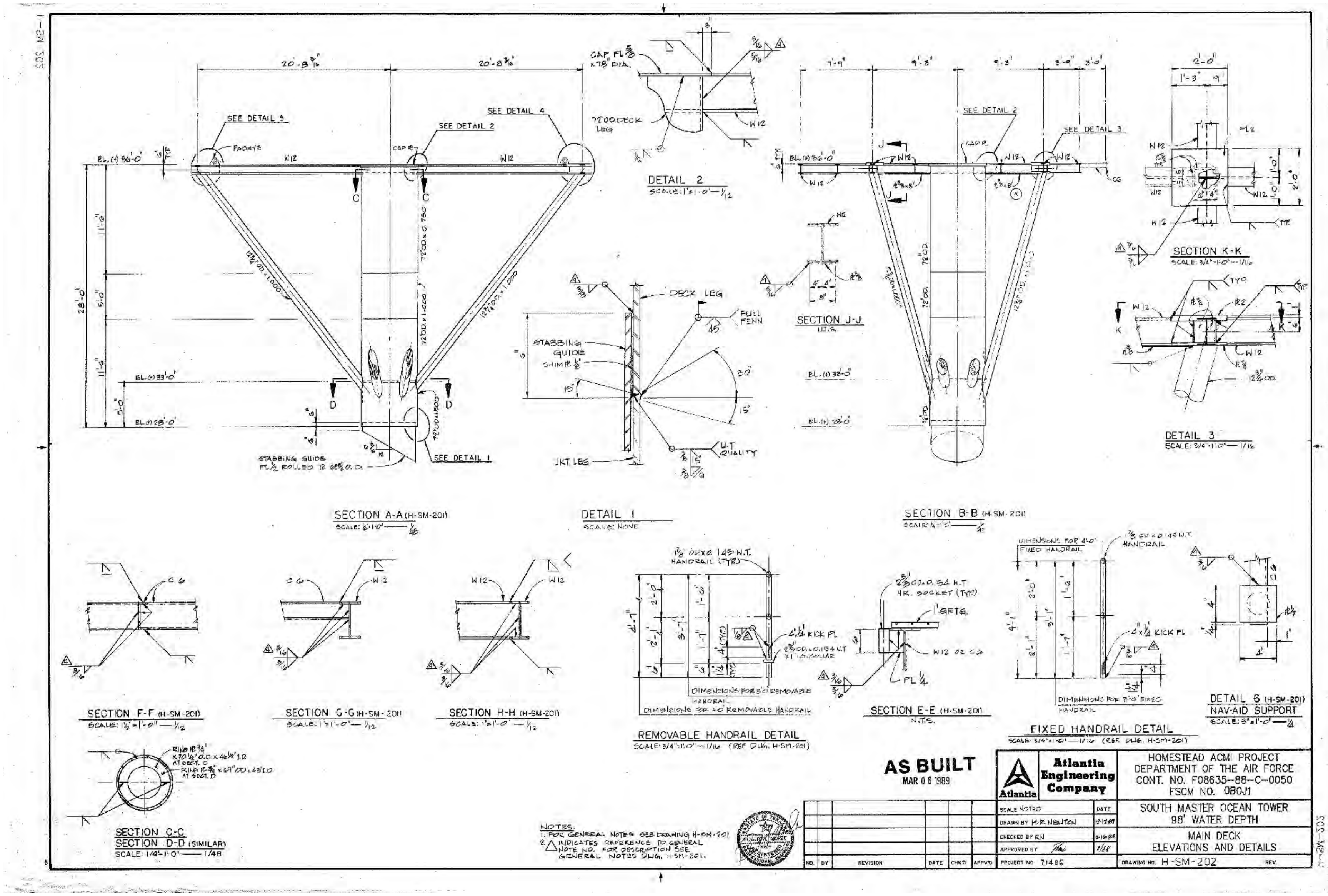
NOTES:

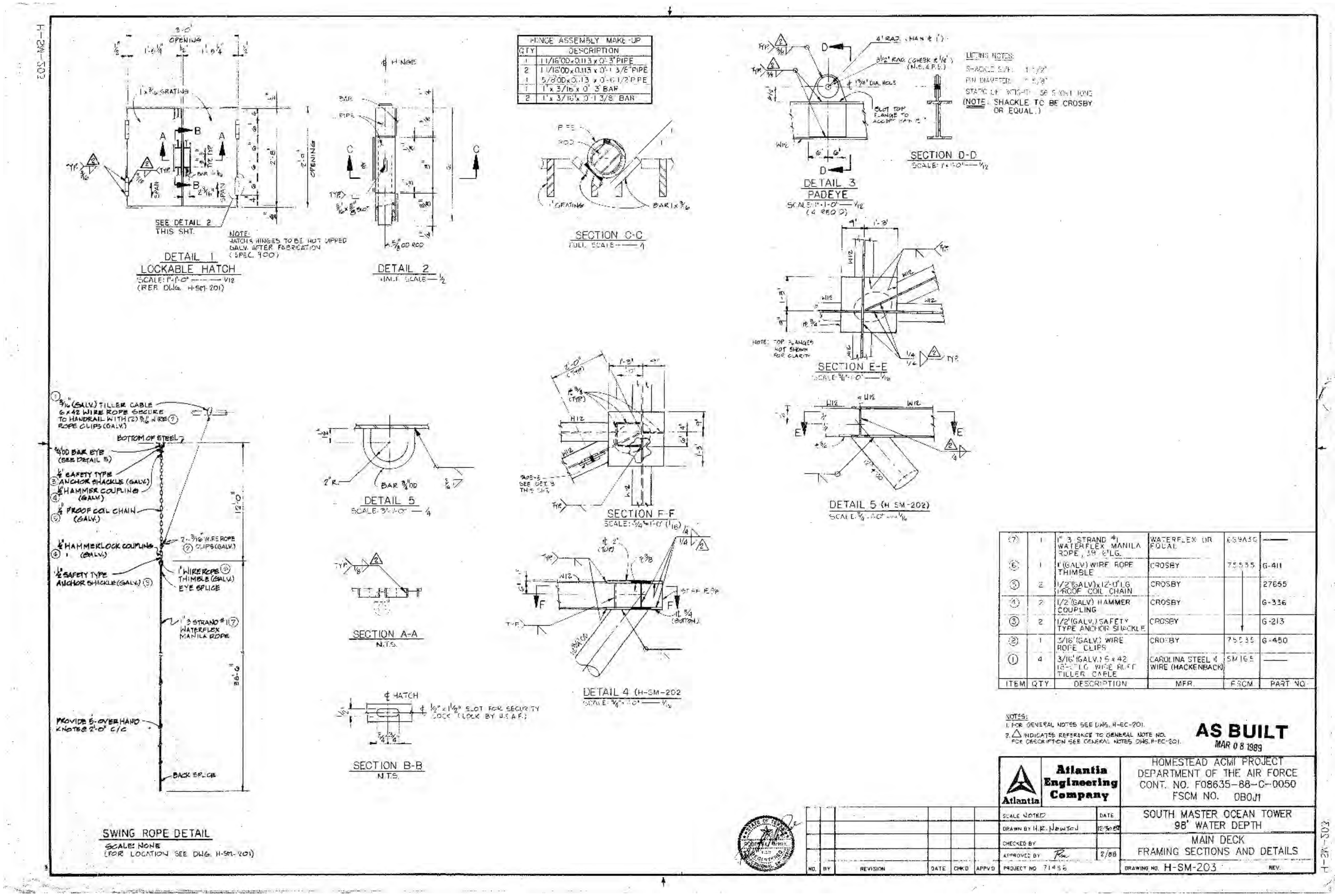
1. FOR GENERAL NOTES SEE DWG. H-SM-101.
2. INSTALLATION CONTRACTOR TO CUT BOAT LANDING POSTS (10 3/4"OD) ON MARKS CORRESPONDING TO ACTUAL WATER LINE ON COLUMN.
3. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SM-101.

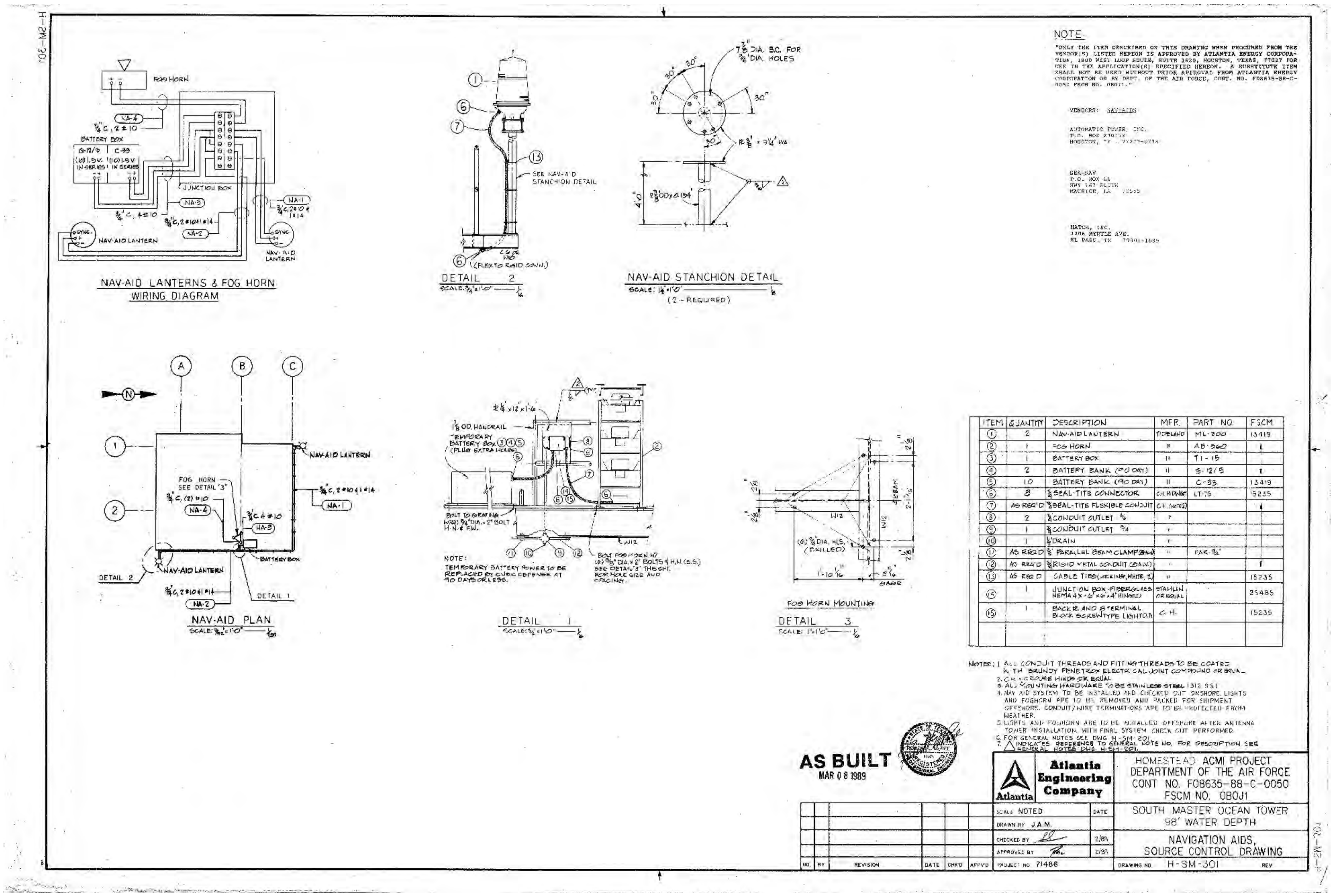
Atlantia Engineering Company	HOMESTEAD ACMI PROJECT DEPARTMENT OF THE AIR FORCE CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1
SCALE: AS NOTED; DRAWN BY: S. HEBERT 12/87	SOUTH MASTER OCEAN TOWER 98' WATER DEPTH
CHECKED BY; APPROVED BY	BOAT LANDING SECTIONS & DETAILS
PROJECT NO. 71488	DRAWING NO. H-SM-105


BOAT LANDING LADDER
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
CAGE LADDER DOOR
VIEW F-F
VIEW G-G
AS BUILT
MAR 0 8 1989
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
BOAT LANDING LADDER AND DETAILS
H-SM-106
PROJECT NO. 71486

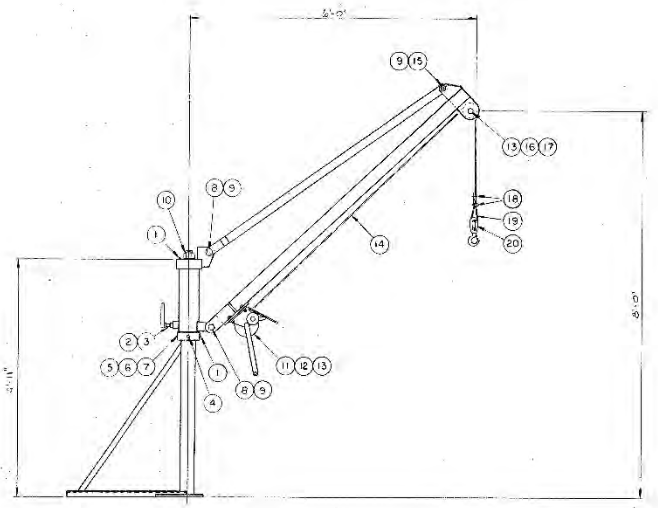

MAIN DECK FRAMING PLAN
T.O.S. EL. (+) 56'-0"
GRATING & HANDRAIL PLAN
SECTION D-D
SECTION J-J
SECTION C-C
PLATFORM NORTH
GENERAL NOTES:
ALL STEEL TO BE ASTM A 36 UNLESS NOTED.
ALL WELDS SHALL BE FULL PENETRATION UNLESS NOTED, AND SHALL CONFORM TO AWS D1.1 LATEST EDITION.
ALL HANDRAILS, HANDRAIL SOCKETS AND LADDER TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
ALL STEEL SURFACES IN CONTACT SHALL BE SEAL WELDED IF NOT OTHERWISE INDICATED.
NOTE: DECK BEAMS SHALL BE W12x26 UNLESS NOTED OTHERWISE
AS BUILT
MAR 08 1989
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
MAIN DECK
FRAMING, GRATING & HANDRAIL PLANS
PROJECT NO. 71486
DRAWING NO. H-SM-201


SECTION A-A (H-SM-201)
DETAIL 1
SECTION B-B (H-SM-201)
DETAIL 2
SECTION J-J
SECTION K-K
DETAIL 3
SECTION F-F (H-SM-201)
SECTION G-G (H-SM-201)
SECTION H-H (H-SM-201)
REMOVABLE HANDRAIL DETAIL
SECTION E-E (H-SM-201)
FIXED HANDRAIL DETAIL
DETAIL 6 (H-SM-201)
NAV-AID SUPPORT
SECTION C-C
SECTION D-D (SIMILAR)
AS BUILT
MAR 0 8 1989
Atlantic Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
MAIN DECK
ELEVATIONS AND DETAILS
DRAWING NO. H-SM-202
PROJECT NO. 71486


H-SM-503
HINGE ASSEMBLY MAKE-UP
QTY DESCRIPTION
1 1 1/16"OD x 0.113 x 0'-3" PIPE
2 1 1/16"OD x 0.113 x 0'-1 3/8" PIPE
1 5/8"OD x 0.13 x 0'-6 1/2" PIPE
1 1" x 3/16" x 0'-3" BAR
2 1" x 3/16" x 0'-1 3/8" BAR
DETAIL 1
LOCKABLE HATCH
SEE DETAIL 2 THIS SHT.
DETAIL 2
SECTION C-C
DETAIL 3
PADEYE
SECTION D-D
LIFTING NOTES:
(NOTE: SHACKLE TO BE CROSBY OR EQUAL.)
SECTION E-E
DETAIL 5
SECTION F-F
DETAIL 5 (H-SM-202)
SECTION A-A
N.T.S.
DETAIL 4 (H-SM-202)
SECTION B-B
N.T.S.
SWING ROPE DETAIL
SCALE: NONE
(FOR LOCATION SEE DWG. H-SM-201)
BOTTOM OF STEEL
PROVIDE 5-OVERHAND KNOTS @ 2'-0" C/C
BACK SPLICE
EYE SPLICE
ITEM QTY DESCRIPTION MFR. FSCM PART NO.
7 1 1" 3 STRAND #1 WATERFLEX MANILA ROPE, 39'-6"LG. WATERFLEX OR EQUAL
6 1 1"(GALV) WIRE ROPE THIMBLE CROSBY 75535 G-411
5 2 1/2"(GALV) x 12'-0" LG PROOF COIL CHAIN CROSBY 27655
4 2 1/2"(GALV) HAMMER COUPLING CROSBY G-336
3 2 1/2"(GALV.) SAFETY TYPE ANCHOR SHACKLE CROSBY G-213
2 1 3/16"(GALV.) WIRE ROPE CLIPS CROSBY 75535 G-450
1 4 3/16"(GALV.) 6 x 42 WIRE ROPE TILLER CABLE CAROLINA STEEL & WIRE (HACKENBACK) SM195
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-EC-201.
2. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-EC-201.
AS BUILT
MAR 08 1989
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
MAIN DECK
FRAMING SECTIONS AND DETAILS
SCALE NOTED
DRAWN BY H.R. Newton
CHECKED BY
APPROVED BY
2/88
PROJECT NO. 71456
DRAWING NO. H-SM-203
REV.
NO. BY REVISION DATE CHK'D APPV'D


NOTE:
VENDORS: SAV-AIDS
NAV-AID LANTERNS & FOG HORN WIRING DIAGRAM
DETAIL 2
NAV-AID STANCHION DETAIL
(2-REQUIRED)
NAV-AID PLAN
DETAIL 1
FOG HORN MOUNTING
DETAIL 3
ITEM | QUANTITY | DESCRIPTION | MFR. | PART NO. | FSCM
1 | 2 | NAV-AID LANTERN | TIDELAND | ML-300 | 13419
2 | 1 | FOG HORN | " | AB-560 |
3 | 1 | BATTERY BOX | " | TI-15 |
4 | 2 | BATTERY BANK (90 DAY) | " | S-12/5 |
5 | 10 | BATTERY BANK (90 DAY) | " | C-33 | 13419
6 | 8 | SEAL-TITE CONNECTOR | | LT/75 | 15235
7 | AS REQ'D | SEAL-TITE FLEXIBLE CONDUIT | | |
8 | 2 | CONDUIT OUTLET | " | |
9 | 1 | CONDUIT OUTLET | " | |
10 | 1 | DRAIN | " | |
11 | AS REQ'D | PARALLEL BEAM CLAMP | " | |
12 | AS REQ'D | RIGID METAL CONDUIT (GALV.) | " | |
13 | AS REQ'D | CABLE TIES | " | | 15235
14 | 1 | JUNCTION BOX-FIBERGLASS | STAHLIN OR EQUAL | | 25485
15 | 1 | BACK'R AND TERMINAL BLOCK SCREWTYPE | C.H. | | 15235
NOTES:
1. ALL CONDUIT THREADS AND FITTING THREADS TO BE COATED WITH BRUNDY PENETROX ELECTRICAL JOINT COMPOUND OR EQUAL
2. C.H. CROUSE HINDS OR EQUAL
3. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL (316 S.S.)
4. NAV AID SYSTEM TO BE INSTALLED AND CHECKED OUT ONSHORE. LIGHTS AND FOGHORN ARE TO BE REMOVED AND PACKED FOR SHIPMENT OFFSHORE. CONDUIT/WIRE TERMINATIONS ARE TO BE PROTECTED FROM WEATHER.
5. LIGHTS AND FOGHORN ARE TO BE INSTALLED OFFSHORE AFTER ANTENNA TOWER INSTALLATION, WITH FINAL SYSTEM CHECK OUT PERFORMED.
6. FOR GENERAL NOTES SEE DWG H-SM-201.
7. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SM-201.
AS BUILT
MAR 0 8 1989
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE NOTED
DRAWN BY J.A.M.
CHECKED BY
APPROVED BY
PROJECT NO. 71486
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
NAVIGATION AIDS,
SOURCE CONTROL DRAWING
DRAWING NO. H-SM-301

H-SM-302



ELEVATION
DAVIT WITH HAND WINCH
SCALE: 1"=1'-0"

NOTE:

"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1600 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."

VENDORS: DAVITS

WEATHERFORD
11909 SPENCER RD. (FM 529)
HOUSTON, TX 77042

APEX EQUIPMENT CORPORATION, INC.
P.O. BOX 19681
HOUSTON, TX 77224-9681

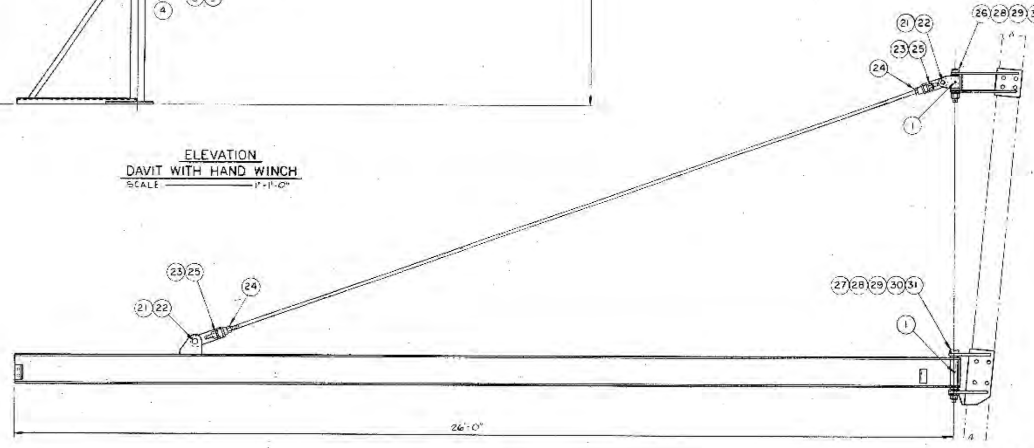
GAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2062
CLEVELAND, TX 77327

VENDORS: JIB BOOMS

STANSPEC CORP.
15600 CHISE AVE.
CLEVELAND, OHIO 44111

HANDLING SYSTEMS, INC.
428 E. COSSITT AVE.
P.O. BOX 626
LA GRANGE, ILL 60525

GAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2062
CLEVELAND, TX 77327



ELEVATION
JIB BOOM
SCALE: 3/4"=1'-0"

SPARE PARTS

18	3	1/4" S.S. WIRE ROPE CLIPS	CAMBELL CHAIN	80535	640-3004
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
15	2	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.		—
10	1	1 1/2"-12 NC ELASTIC LOCK NUT	LONE STAR SCR.		—
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—

PARTS LIST

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
30	2	1" HELICAL SPRING LOCK WASHER 316 S.S.	LONE STAR SCR.	7H174	—
29	2	3"OD x 1 1/8"ID x 1/4" THK. NYLON THRUST WASHER	MARTEC CRANE	2H098	—
28	4	2 1/16"OD x 1 1/2"ID x 1 1/2"LG BRONZE BUSHING	OILITE	7E404V	—
27	1	1 1/2"OD x 14 1/4"LG x 2" HD. 17-4PH S.S. MACH. PIN W/1"OD-8 NC x 1 1/2"LG THRD. INCL. 316 S.S.	MARTEC CRANE	2H098	—
26	1	1 1/2"OD x 8 3/4"LG x 2" HD. 17-4PH S.S. MACH. PIN W/1"OD-8 NC x 1 1/2"LG THRD. INCL. 316 S.S.	MARTEC CRANE	2H098	—
25	2	1" PLAIN FLAT WASHER 316 S.S.	LONE STAR SCR.	7H174	—
24	2	1"-8 NC H.H. JAM NUT 316 S.S.	LONE STAR SCR.		—
23	2	1"-8 NC H.H. NUT 316 S.S.	LONE STAR SCR.		—
22	4	1"-8 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.		—
21	2	1"-8 NC x 4 1/4"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
20	1	2 TON SWIVEL HOOK	CROSBY	75535	S-322C
19	1	1/4" S.S. WIRE ROPE THIMBLE	CAMPBELL CHAIN	80535	640-7804
18	2	1/4" S.S WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	640-3004
17	1	4" x 5/8" x 1/2" SHEAVE W/BRONZE BUSHING 1/4" GROOVE	CROSBY	75535	1173
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
15	1	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
14	100'-0"	1/4", 1 x 7, 316 S.S. WIRE ROPE	CAROLINA STEEL AND WIRE (HACKENBACK)	5M165	—
13	5	1/2"-13 NC x ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	—
12	4	1/2"-13 NC x 1 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
11	1	WINCH WITH MANUAL GEAR (GALVANIZED)	BEEBE	06550	BM6B
10	1	1 1/2"-12 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	—
9	3	3/4"-10 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.		—
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
7	1	4 1/2"OD x 4"ID x 1 1/2"LG BRONZE BUSHING	OILITE	7E4C4M	—
6	1	BEARING CUP	TIMKEN	8G357	53375
5	1	BEARING CONE	TIMKEN	8G357	53162
4	1	1/4"-20 NC x 3/4"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
3	1	1 1/2"OD x 1 1/2"LG NYLON BRAKE PAD	MARTEC CRANE	2H098	—
2	1	5/8"-11 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	—
1	4	1/8" NPT S.S. GREASE FITTING	ALEMITE	02260	1966-S

AS BUILT
MAR 0 8 1989

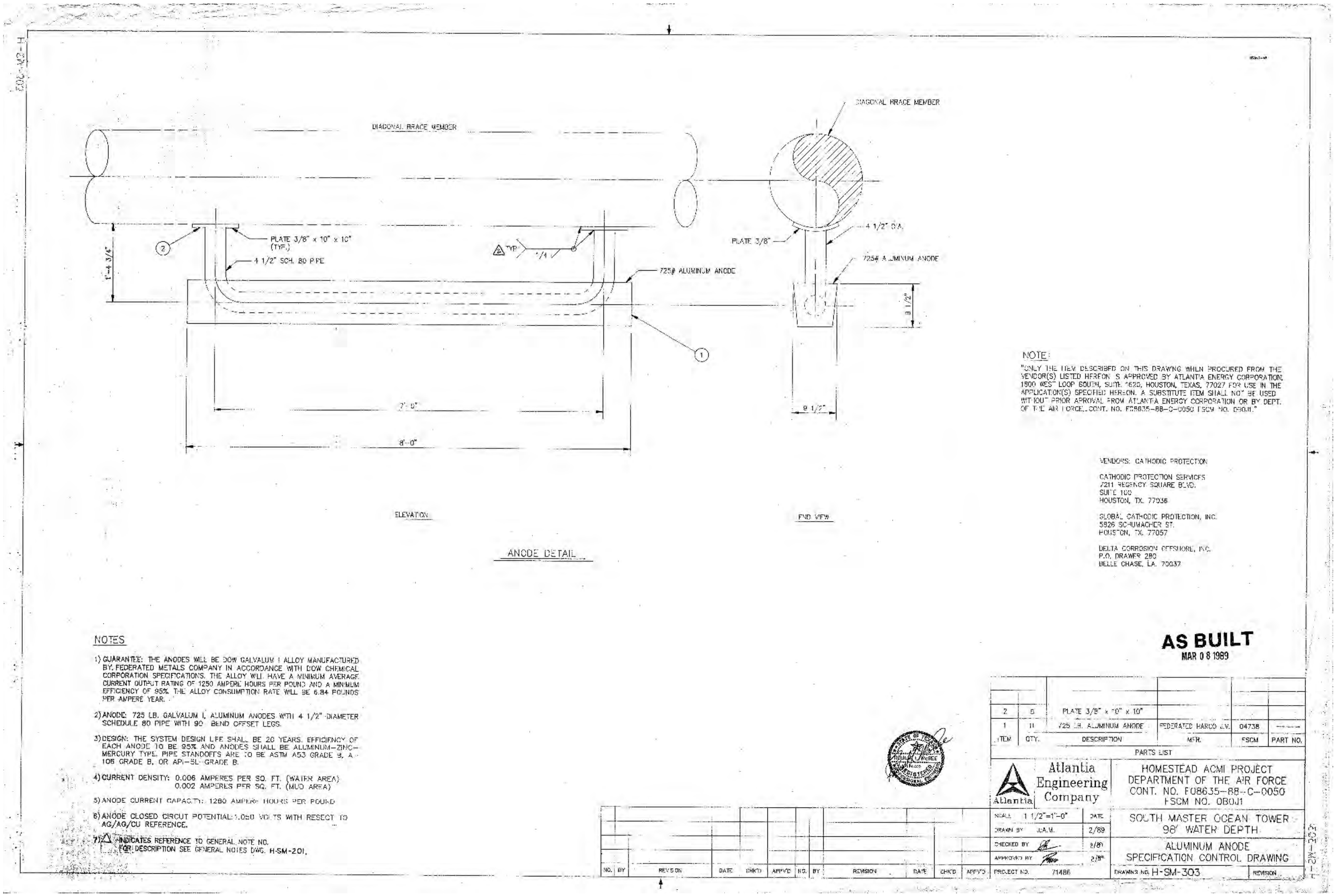
Atlantia
Atlantia Engineering Company

HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1

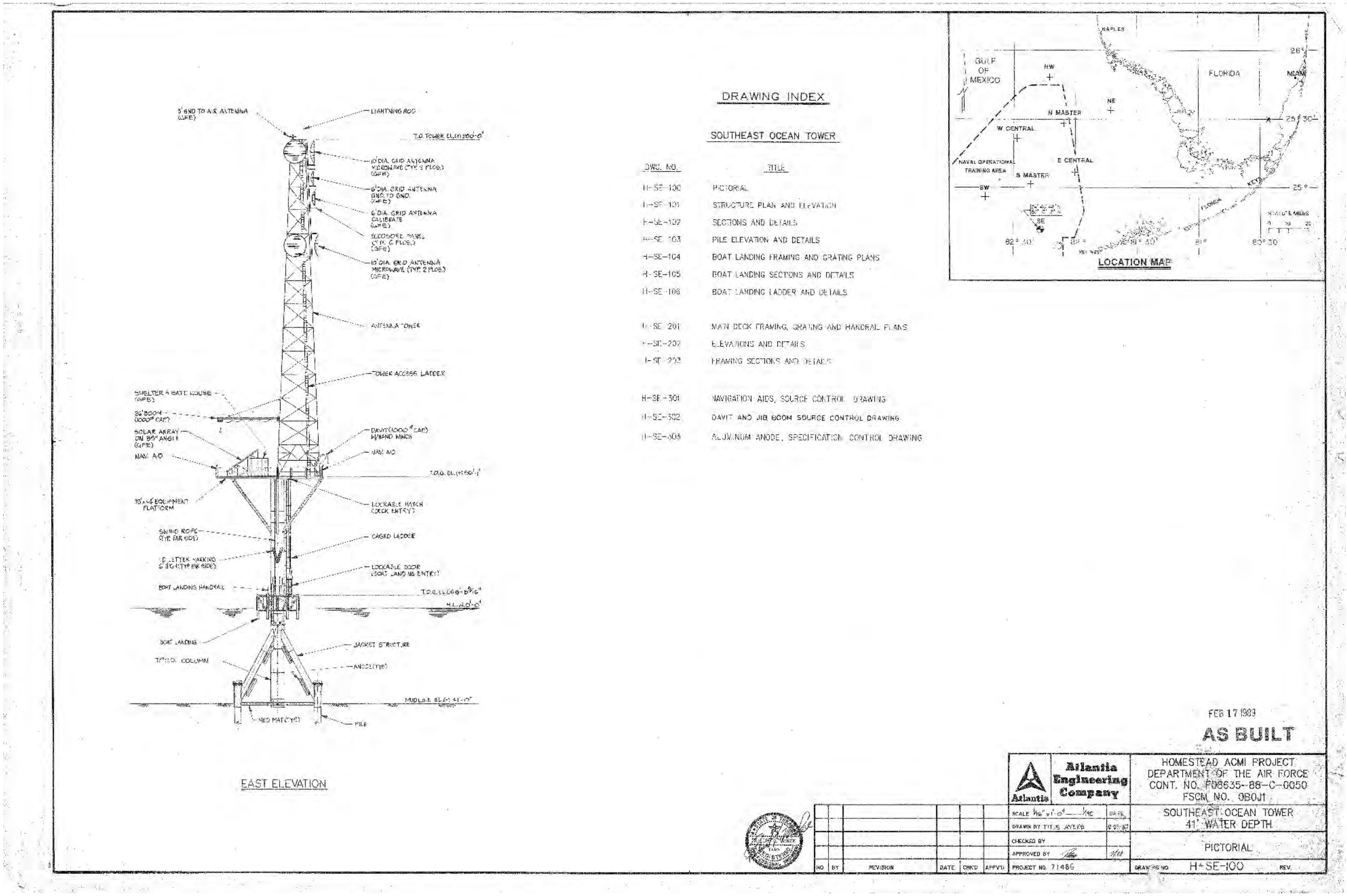
NO.	BY	REVISION	DATE	CHK'D	APPV'D

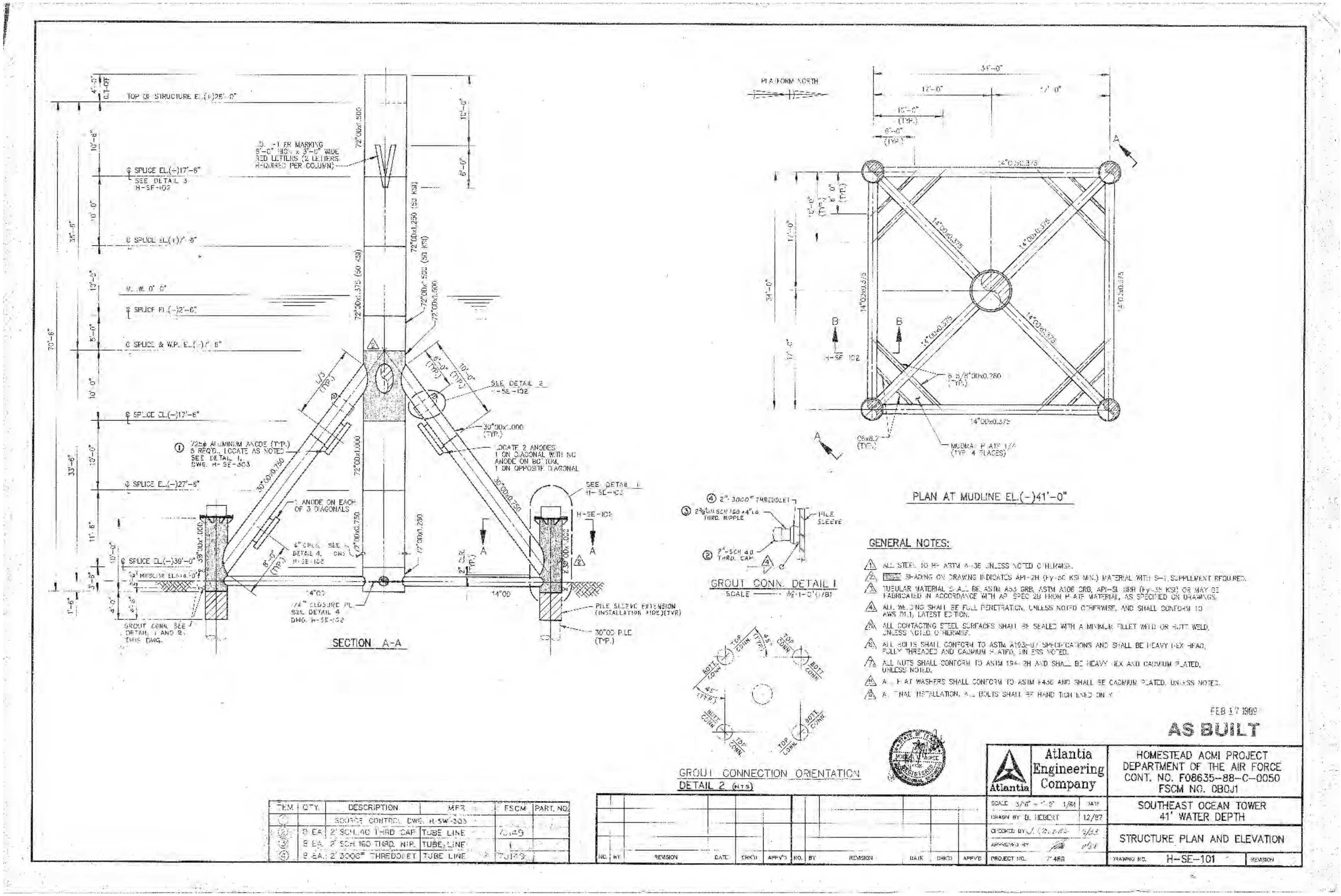
SCALE AS NOTED	DATE	SOUTH MASTER OCEAN TOWER 98' WATER DEPTH
DRAWN BY B. TAYLOR	1/89	
CHECKED BY	2/89	DAVIT AND JIB BOOM SOURCE CONTROL DRAWING
APPROVED BY	2/89	
PROJECT NO 71486		DRAWING NO. H-SM-302 REV.

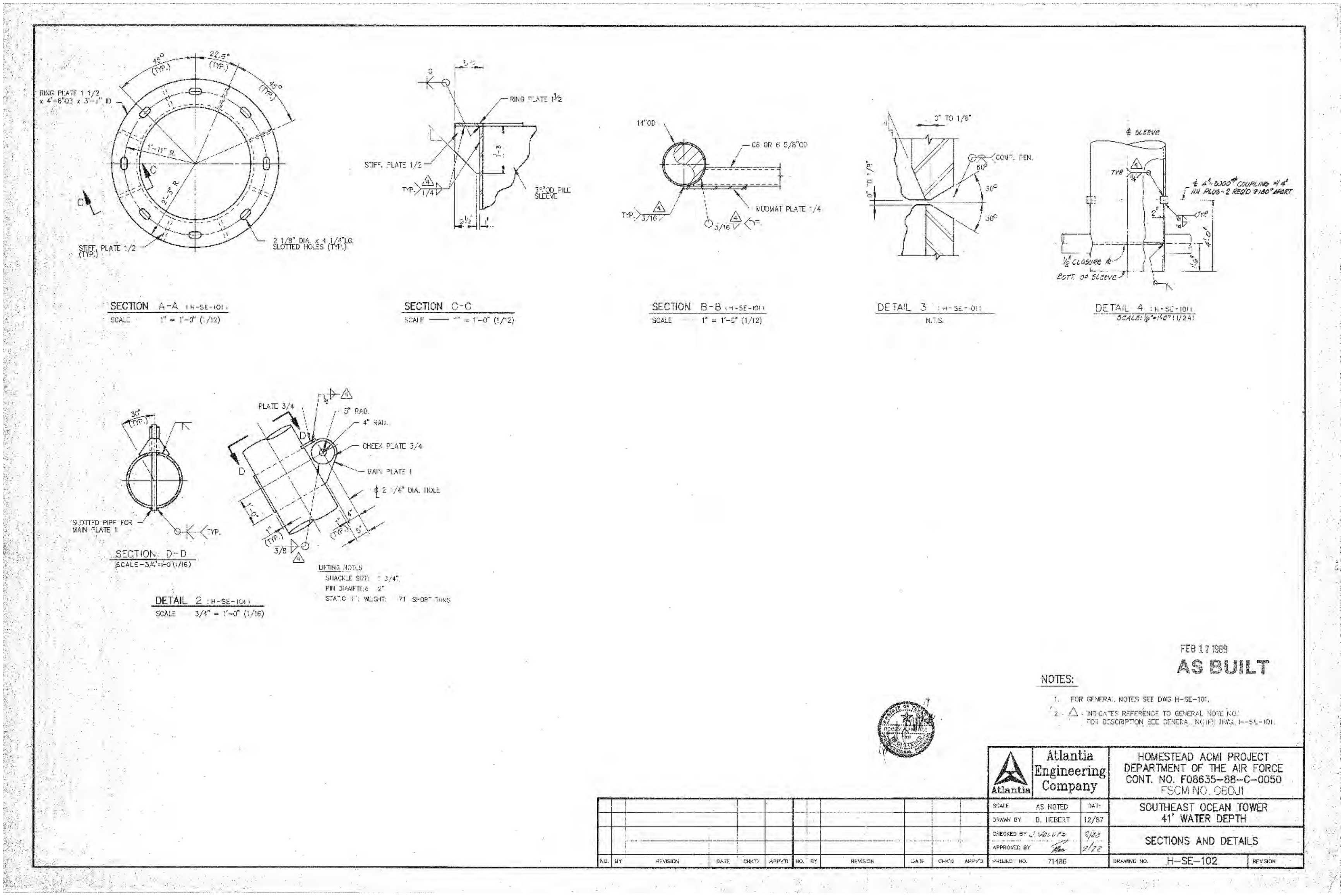
H-SM-302

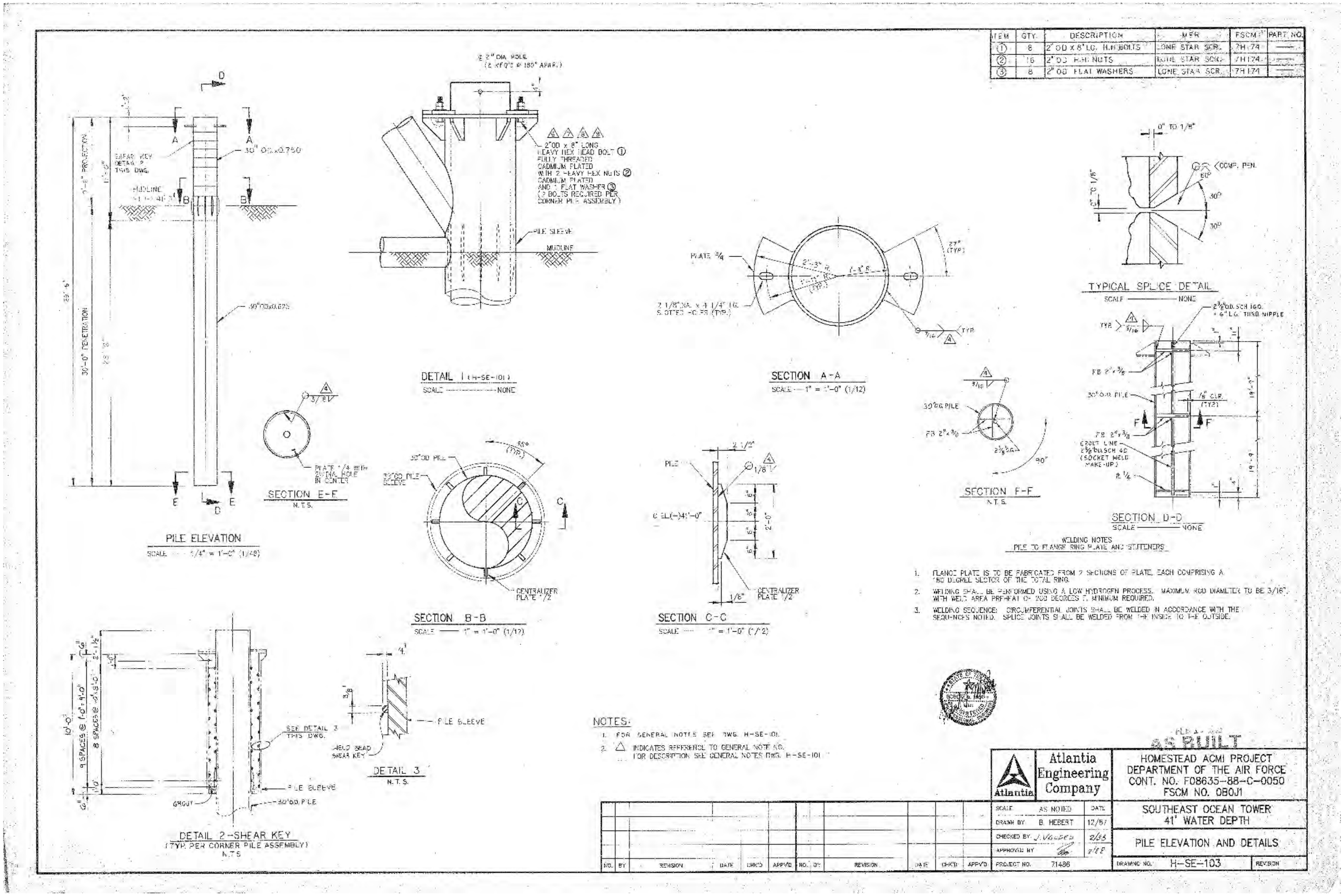

DIAGONAL BRACE MEMBER
PLATE 3/8" x 10" x 10" (TYP.)
4 1/2" SCH. 80 PIPE
725# ALUMINUM ANODE
1'-4 3/4"
7'-0"
8'-0"
ELEVATION
PLATE 3/8"
4 1/2" O.A.
725# ALUMINUM ANODE
9 1/2"
END VIEW
ANODE DETAIL
NOTE:
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1500 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."
VENDORS: CATHODIC PROTECTION
CATHODIC PROTECTION SERVICES
7211 REGENCY SQUARE BLVD.
SUITE 100
HOUSTON, TX. 77036
GLOBAL CATHODIC PROTECTION, INC.
5926 SCHUMACHER ST.
HOUSTON, TX. 77057
DELTA CORROSION OFFSHORE, INC.
P.O. DRAWER 280
BELLE CHASE, LA. 70037
NOTES
1) GUARANTEE: THE ANODES WILL BE DOW GALVALUM I ALLOY MANUFACTURED BY FEDERATED METALS COMPANY IN ACCORDANCE WITH DOW CHEMICAL CORPORATION SPECIFICATIONS. THE ALLOY WILL HAVE A MINIMUM AVERAGE CURRENT OUTPUT RATING OF 1250 AMPERE HOURS PER POUND AND A MINIMUM EFFICIENCY OF 95%. THE ALLOY CONSUMPTION RATE WILL BE 6.84 POUNDS PER AMPERE YEAR.
2) ANODE: 725 LB. GALVALUM I, ALUMINUM ANODES WITH 4 1/2" DIAMETER SCHEDULE 80 PIPE WITH 90° BEND OFFSET LEGS.
3) DESIGN: THE SYSTEM DESIGN LIFE SHALL BE 20 YEARS. EFFICIENCY OF EACH ANODE TO BE 95% AND ANODES SHALL BE ALUMINUM-ZINC-MERCURY TYPE. PIPE STANDOFFS ARE TO BE ASTM A53 GRADE B, A-106 GRADE B, OR API-5L GRADE B.
4) CURRENT DENSITY: 0.006 AMPERES PER SQ. FT. (WATER AREA)
0.002 AMPERES PER SQ. FT. (MUD AREA)
5) ANODE CURRENT CAPACITY: 1280 AMPERE HOURS PER POUND
6) ANODE CLOSED CIRCUIT POTENTIAL: 1.050 VOLTS WITH RESECT TO AG/AG/CU REFERENCE.
7) INDICATES REFERENCE TO GENERAL NOTE NO.
FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SM-201.
AS BUILT
MAR 0 8 1989
2 | 5 | PLATE 3/8" x 10" x 10"
1 | 11 | 725 LB. ALUMINUM ANODE | FEDERATED HARCO J.V. | 04738
ITEM | QTY. | DESCRIPTION | MFR. | FSCM | PART NO.
PARTS LIST
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE 1 1/2"=1'-0"
DRAWN BY J.A.M. 2/89
SOUTH MASTER OCEAN TOWER
98' WATER DEPTH
ALUMINUM ANODE
SPECIFICATION CONTROL DRAWING
PROJECT NO. 71486
DRAWING NO. H-SM-303
REVISION

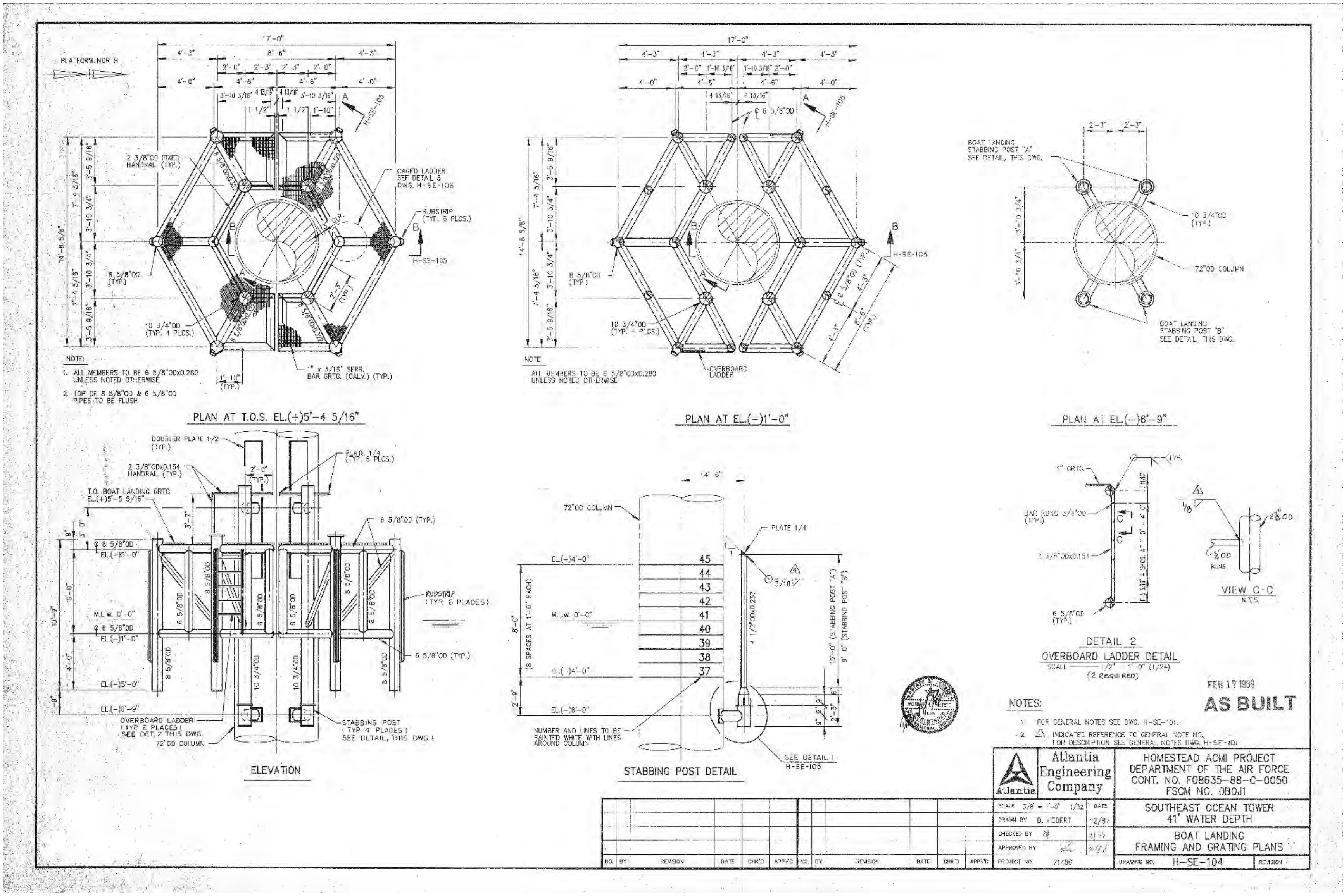
A.6 SOUTHEAST TOWER



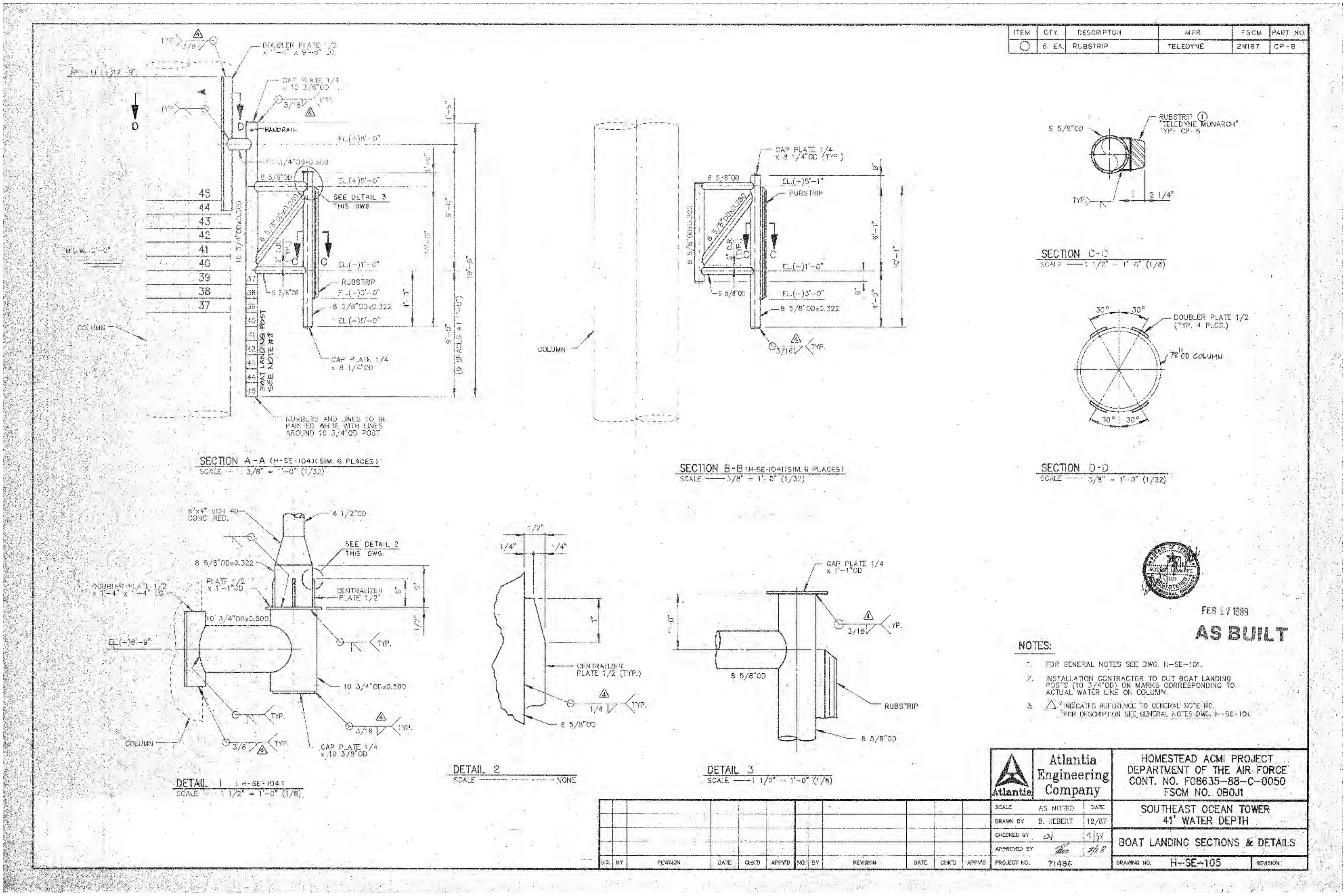

SECTION A-A
PLAN AT MUDLINE EL.(-)41'-0"
GENERAL NOTES:
GROUT CONN. DETAIL 1
GROUT CONNECTION ORIENTATION DETAIL 2 (NTS)
AS BUILT
FEB 17 1999
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
STRUCTURE PLAN AND ELEVATION
H-SE-101

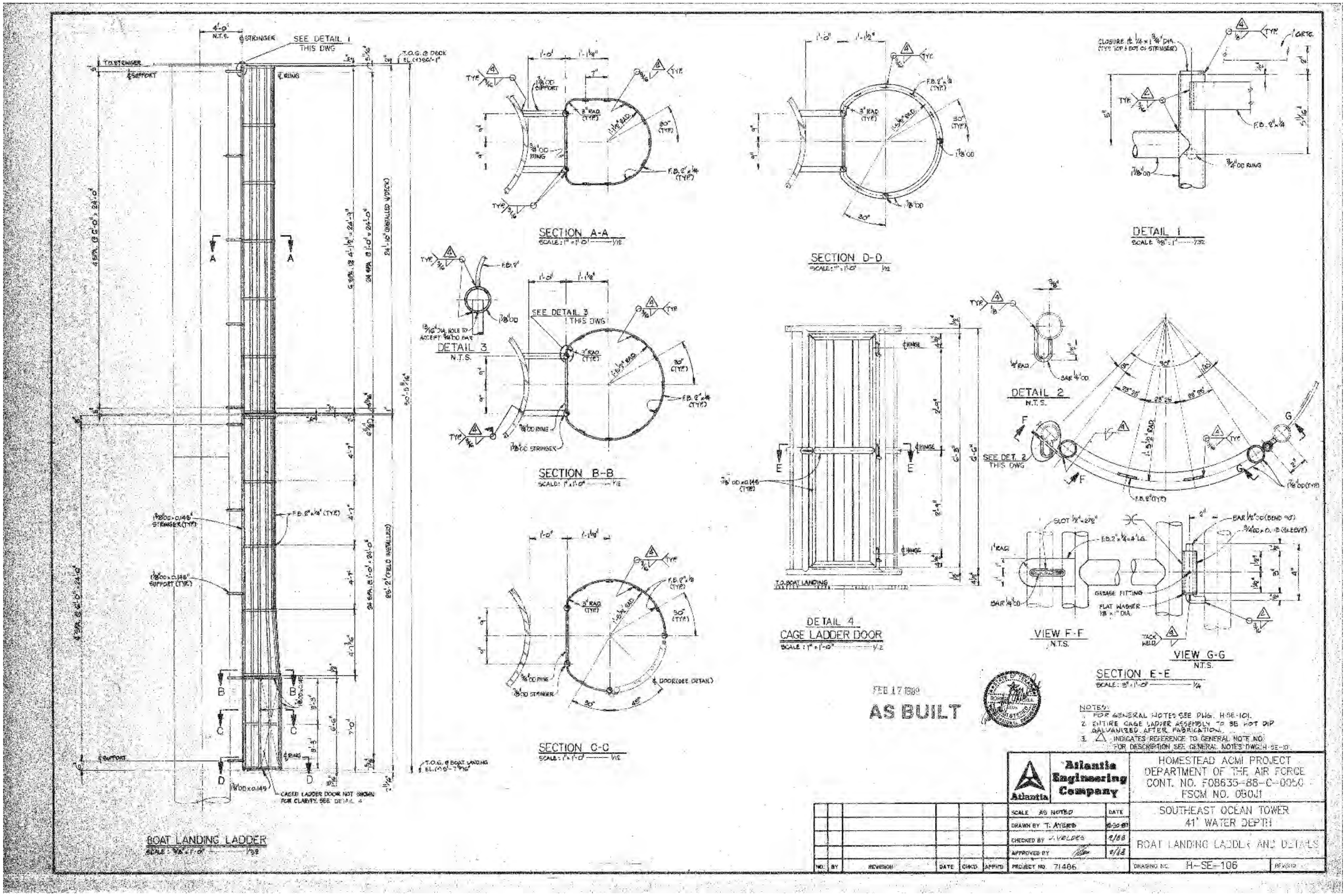

SECTION A-A (H-SE-101)
SCALE 1" = 1'-0" (1/12)
SECTION C-C
SECTION B-B (H-SE-101)
SCALE 1" = 1'-0" (1/12)
DETAIL 3 (H-SE-101)
N.T.S.
DETAIL 4 (H-SE-101)
SECTION D-D
DETAIL 2 (H-SE-101)
SCALE 3/4" = 1'-0" (1/16)
RING PLATE 1 1/2
STIFF. PLATE 1/2
2 1/8" DIA. x 4 1/4" LG. SLOTTED HOLES (TYP.)
BUDMAT PLATE 1/4
COMP. PEN.
PLATE 3/4
CHEEK PLATE 3/4
MAIN PLATE 1
SLOTTED PIPE FOR MAIN PLATE 1
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG H-SE-101.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. OEOJ1
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
SECTIONS AND DETAILS
AS NOTED
12/87
71486
H-SE-102

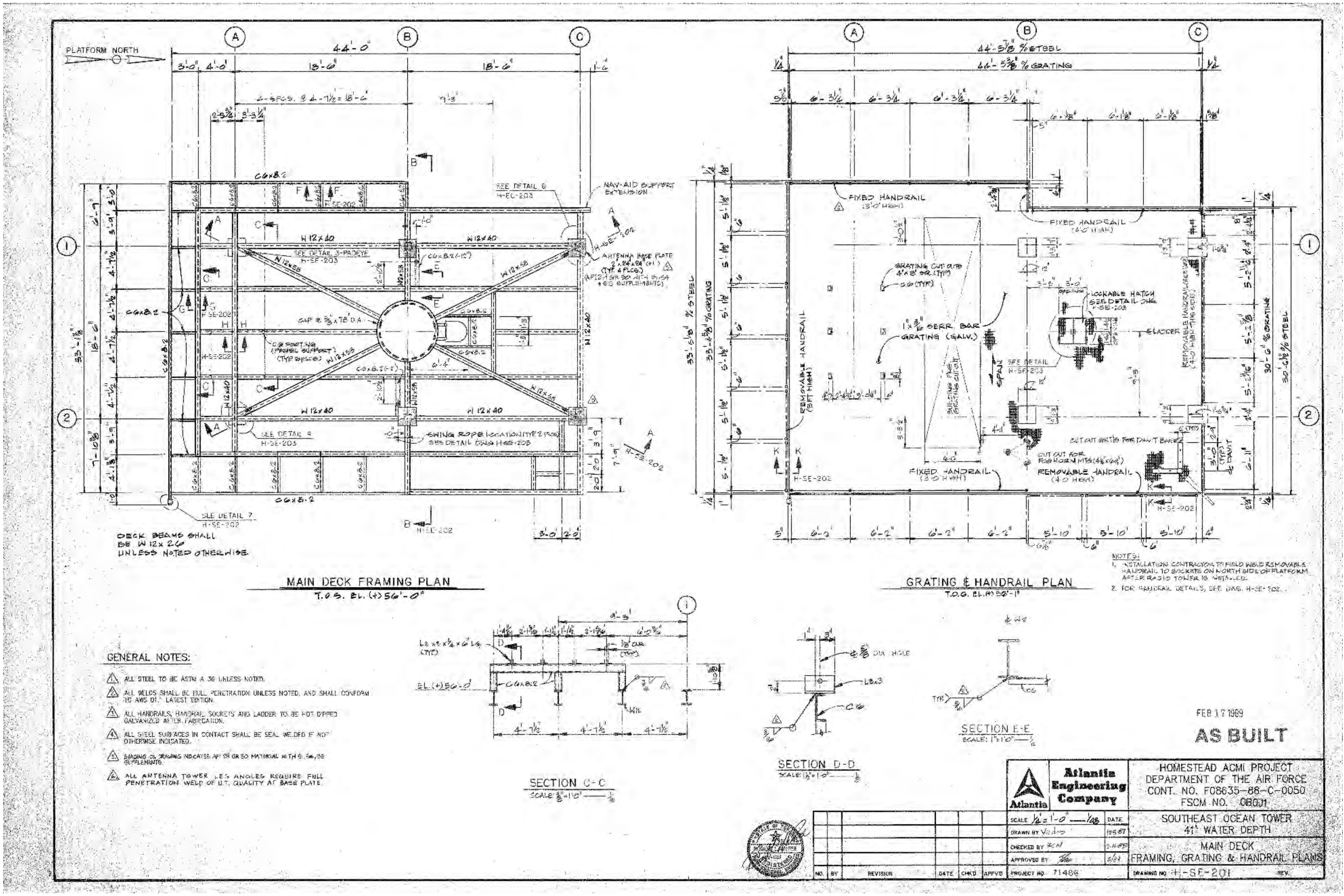

PILE ELEVATION
SCALE 1/4" = 1'-0" (1/48)
DETAIL 1 (H-SE-101)
SECTION A-A
SCALE 1" = 1'-0" (1/12)
TYPICAL SPLICE DETAIL
SECTION E-E
N.T.S.
SECTION B-B
SCALE 1" = 1'-0" (1/12)
SECTION C-C
SECTION F-F
N.T.S.
SECTION D-D
DETAIL 2-SHEAR KEY
(TYP. PER CORNER PILE ASSEMBLY)
DETAIL 3
N.T.S.
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SE-101
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SE-101
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
PILE ELEVATION AND DETAILS
DRAWN BY B. HEBERT
PROJECT NO. 71486
DRAWING NO. H-SE-103

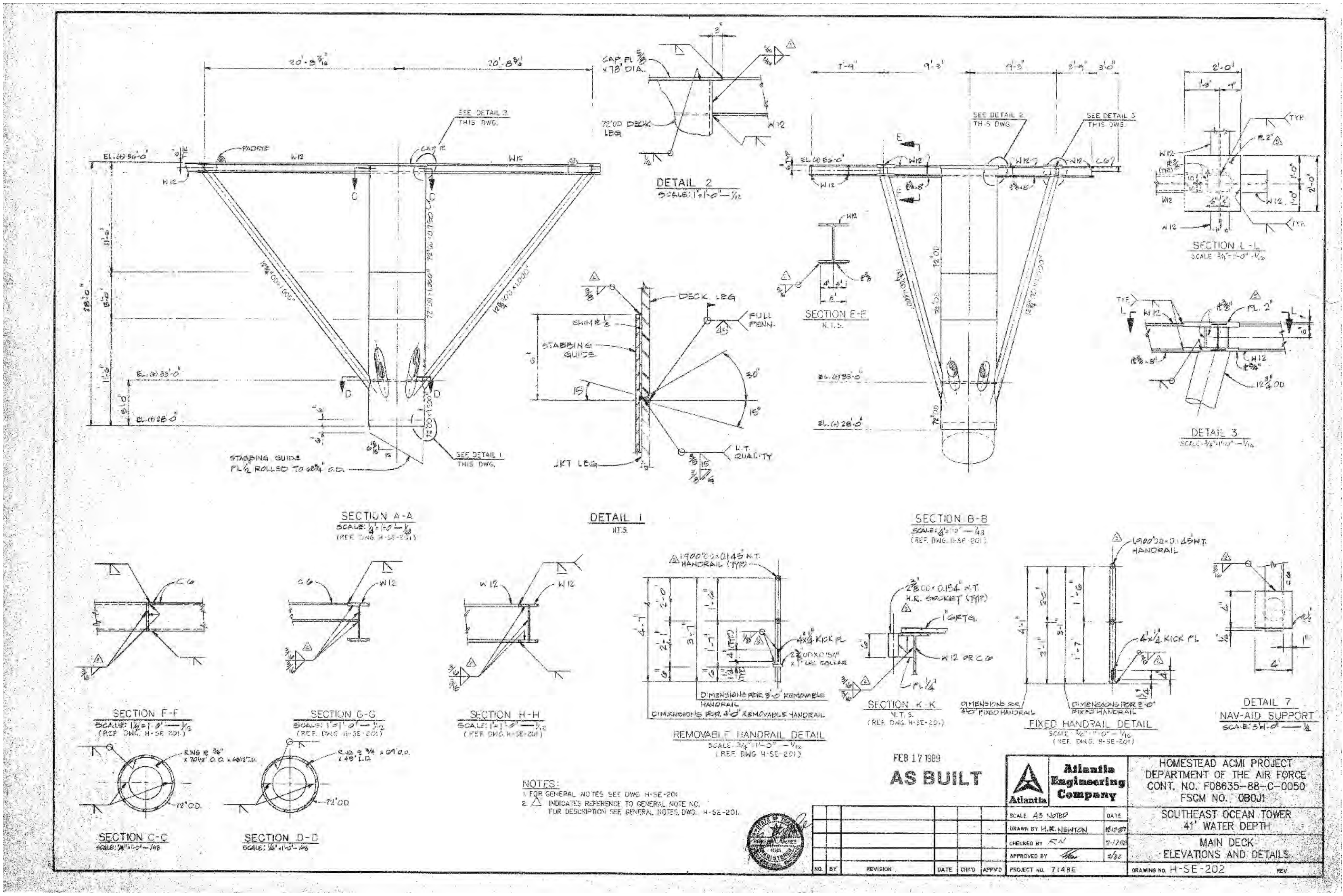


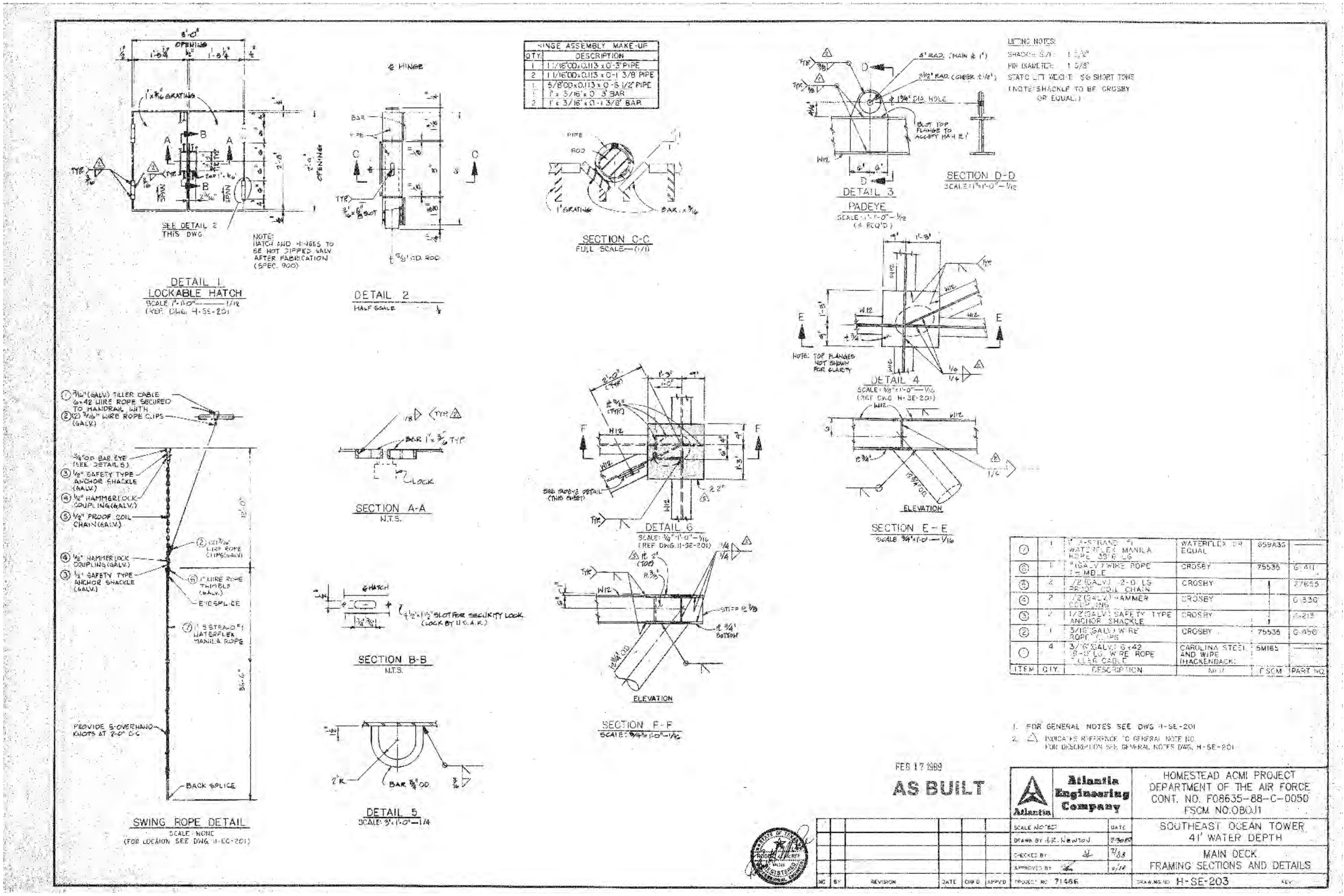
As-built construction drawing of Southeast Tower.

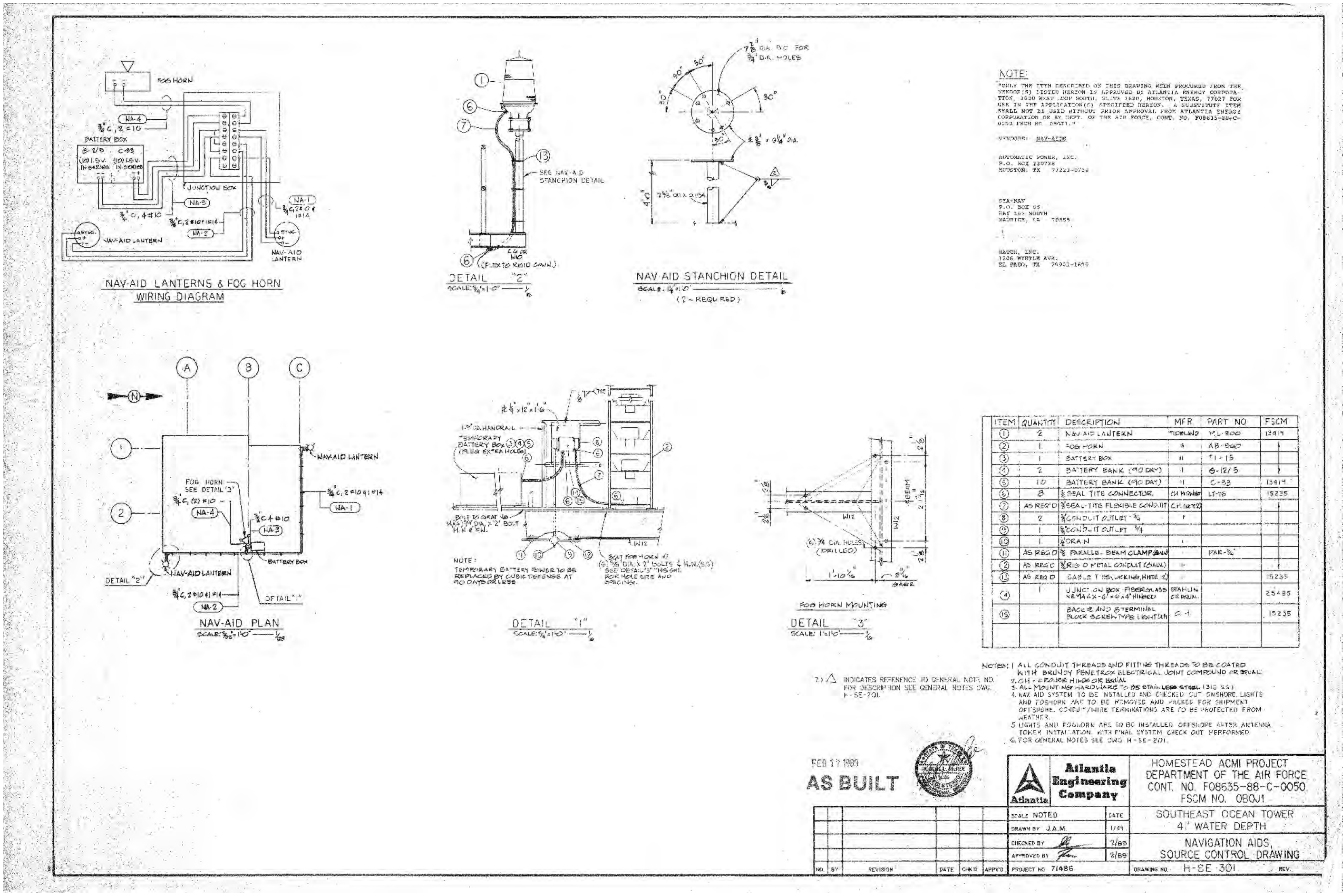

SECTION A-A (H-SE-104)(SIM. 6 PLACES)
SECTION B-B (H-SE-104)(SIM. 6 PLACES)
SECTION C-C
SECTION D-D
DETAIL 1
DETAIL 2
DETAIL 3
RUBSTRIP
TELEDYNE
COLUMN
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SE-101.
2. INSTALLATION CONTRACTOR TO CUT BOAT LANDING POSTS (10 3/4"OD) ON MARKS CORRESPONDING TO ACTUAL WATER LINE ON COLUMN.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
BOAT LANDING SECTIONS & DETAILS
H-SE-105

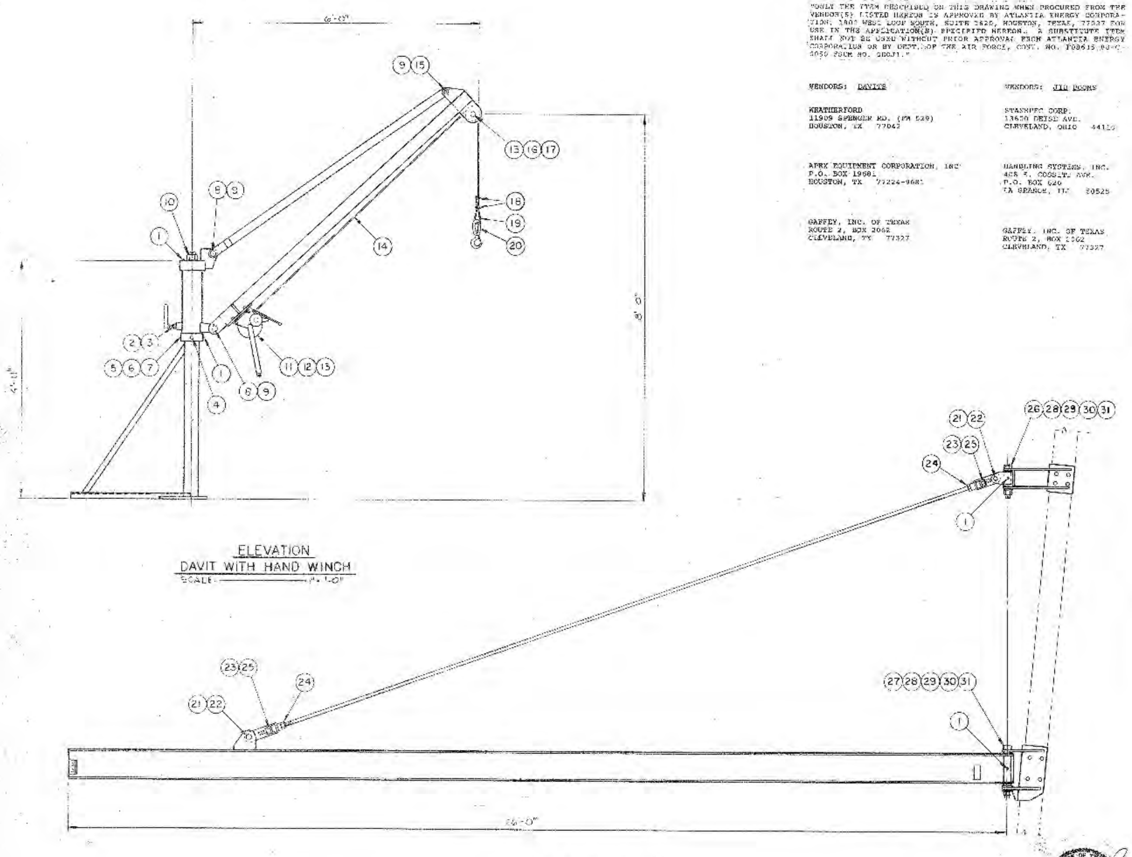

BOAT LANDING LADDER
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
CAGE LADDER DOOR
VIEW F-F
VIEW G-G
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SE-101.
2. ENTIRE CAGE LADDER ASSEMBLY TO BE HOT DIP GALVANIZED AFTER FABRICATION.
3. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SE-101.
Atlantic Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
BOAT LANDING LADDER AND DETAILS
SCALE AS NOTED
DRAWN BY T. AYERS
CHECKED BY J. VALDES
APPROVED BY
PROJECT NO. 71486
DRAWING NO. H-SE-106


MAIN DECK FRAMING PLAN
GRATING & HANDRAIL PLAN
SECTION C-C
SECTION D-D
SECTION E-E
GENERAL NOTES:
AS BUILT
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
MAIN DECK
FRAMING, GRATING & HANDRAIL PLANS


SECTION A-A
DETAIL 1
DETAIL 2
SECTION B-B
SECTION E-E
SECTION L-L
DETAIL 3
SECTION F-F
SECTION G-G
SECTION H-H
REMOVABLE HANDRAIL DETAIL
SECTION K-K
FIXED HANDRAIL DETAIL
DETAIL 7
NAV-AID SUPPORT
SECTION C-C
SECTION D-D
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SE-201
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES, DWG. H-SE-201.
FEB 17 1989
AS BUILT
Atlantic Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
MAIN DECK
ELEVATIONS AND DETAILS
PROJECT NO. 71486
DRAWING NO. H-SE-202


DETAIL 1
LOCKABLE HATCH
DETAIL 2
SECTION C-C
DETAIL 3
PADEYE
SECTION D-D
DETAIL 4
SECTION A-A
DETAIL 6
SECTION E-E
SECTION B-B
SECTION F-F
SWING ROPE DETAIL
DETAIL 5
AS BUILT
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
MAIN DECK
FRAMING SECTIONS AND DETAILS
H-SE-203


NAV-AID LANTERNS & FOG HORN WIRING DIAGRAM
FOG HORN
BATTERY BOX
JUNCTION BOX
NAV-AID LANTERN
DETAIL "2"
SEE NAV-AID STANCHION DETAIL
NAV AID STANCHION DETAIL
(2 - REQU RED)
NOTE:
VENDORS: NAV-AIDS
AUTOMATIC POWER, INC.
TIDELAND
SEA-NAV
HATCH, INC.
NAV-AID PLAN
NAV-AID LANTERN
FOG HORN SEE DETAIL "3"
BATTERY BOX
DETAIL "2"
DETAIL "1"
DETAIL "1"
FOG HORN MOUNTING
DETAIL "3"
ITEM | QUANTITY | DESCRIPTION | MFR | PART NO | FSCM
1 | 2 | NAV-AID LANTERN | TIDELAND | ML-300 | 13419
2 | 1 | FOG HORN | " | AB-560 |
3 | 1 | BATTERY BOX | " | TI-15 |
4 | 2 | BATTERY BANK (90 DAY) | " | G-12/5 |
5 | 10 | BATTERY BANK (90 DAY) | " | C-33 | 13419
6 | 8 | SEAL TITE CONNECTOR | CH HOWE | LT-75 | 15235
7 | AS REQ'D | SEAL-TITE FLEXIBLE CONDUIT | C.H. (NOTE 2) | |
8 | 2 | CONDUIT OUTLET | " | |
9 | 1 | CONDUIT OUTLET | | |
10 | 1 | DRAIN | " | |
11 | AS REQ'D | PARALLEL BEAM CLAMP (GALV) | | PAR- |
12 | AS REQ'D | RIGID METAL CONDUIT (GALV.) | " | |
13 | AS REQ'D | CABLE TIES | " | | 15235
14 | 1 | JUNCTION BOX FIBERGLASS NEMA 4X - 6"x6"x4" HINGED | STAHLIN OR EQUAL | | 25485
15 | | BACK PLANE AND TERMINAL BLOCK SCREW TYPE LIGHT DUTY | C-H | | 15235
NOTES: 1 ALL CONDUIT THREADS AND FITTING THREADS TO BE COATED WITH BRUNDY PENETROX ELECTRICAL JOINT COMPOUND OR EQUAL.
2. CH = CROUSE HINDS OR EQUAL
3. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL (316 S.S.)
4. NAV AID SYSTEM TO BE INSTALLED AND CHECKED OUT ONSHORE. LIGHTS AND FOGHORN ARE TO BE REMOVED AND PACKED FOR SHIPMENT OFFSHORE. CONDUIT/WIRE TERMINATIONS ARE TO BE PROTECTED FROM WEATHER.
5 LIGHTS AND FOGHORN ARE TO BE INSTALLED OFFSHORE AFTER ANTENNA TOWER INSTALLATION, WITH FINAL SYSTEM CHECK OUT PERFORMED.
6. FOR GENERAL NOTES SEE DWG. H-SE-201.
7. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SE-201.
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
SCALE NOTED
DRAWN BY J.A.M.
CHECKED BY
APPROVED BY
2/89
2/89
PROJECT NO. 71486
SOUTHEAST OCEAN TOWER
WATER DEPTH
NAVIGATION AIDS,
SOURCE CONTROL DRAWING
DRAWING NO. H-SE-301
NO. BY REVISION DATE CHK'D APPV'D REV.



ELEVATION
DAVIT WITH HAND WINCH
SCALE: 1" = 1'-0"

ELEVATION
JIB BOOM
SCALE — 3/4" = 1'-0"

NOTE:

"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."

VENDORS: DAVITS

WEATHERFORD
11909 SPENCER RD. (FM 529)
HOUSTON, TX 77042

APEX EQUIPMENT CORPORATION, INC
P.O. BOX 19681
HOUSTON, TX 77224-9681

GAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2062
CLEVELAND, TX 77327

VENDORS: JIB BOOMS

STANSPEC CORP.
13630 DEISE AVE.
CLEVELAND, OHIO 44110

HANDLING SYSTEMS, INC.
405 E. COSSITT AVE.
P.O. BOX 626
LA GRANGE, ILL 60525

GAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2062
CLEVELAND, TX 77327

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
18	3	1/4" S.S. WIRE ROPE CLIPS	CAMBELL CHAIN	80535	640-3004
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
15	2	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	↑	——
10	1	1 1/2"-12 NC ELASTIC LOCK NUT	LONE STAR SCR.	↓	——
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
SPARE PARTS					
30	2	1" HELICAL SPRING LOCK WASHER 316 S.S.	LONE STAR SCR.	7H174	——
29	2	3"OD x 1 1/8"ID x 1/4" THK. NYLON THRUST WASHER	MARTEC CRANE	2H098	——
28	4	2 1/16"OD x 1 1/2"ID x 1 1/2"LG BRONZE BUSHING	OILITE	75404M	——
27	1	1 1/2"OD x 14 1/4"LG x 2" HD. 17-4PH S.S. MACH. PIN W/1"OD-8 NC x 1 1/2"LG THRD. INCL. 316 S.S.	MARTEC CRANE	2H098	——
26	1	1 1/2"OD x 8 3/4"LG x 2" HD. 17-4PH S.S. MACH. PIN W/1"OD-8 NC x 1 1/2"LG THRD. INCL. 316 S.S.	MARTEC CRANE	2H098	——
25	2	1" PLAIN FLAT WASHER 316 S.S.	LONE STAR SCR.	7H174	——
24	2	1"-8 NC H.H. JAM NUT 316 S.S.	LONE STAR SCR.	↑	——
23	2	1"-8 NC H.H. NUT 316 S.S.	LONE STAR SCR.		——
22	4	1"-8 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	↓	——
21	2	1"-8 NC x 4 1/4"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
20	1	2 TON SWIVEL HOOK	CROSBY	75535	S-322C
19	1	1/4" S.S. WIRE ROPE THIMBLE	CAMPBELL CHAIN	80535	640-7604
18	2	1/4" S.S WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	640-3004
17	1	4" x 5/8" x 1/2" SHEAVE W/BRONZE BUSHING 1/4" GROOVE	CROSBY	75535	1173
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
15	1	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
14	100'-0"	1/4", 1 x 7, 316 S.S. WIRE ROPE	CAROLINA STEEL AND WIRE (HACKENBACK)	5M165	——
13	5	1/2"-13 NC x ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	——
12	4	1/2"-13 NC x 1 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
11	1	WINCH WITH MANUAL GEAR (GALVANIZED)	BEEBE	06550	BM6B
10	1	1 1/2"-12 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	——
9	3	3/4"-10 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	——
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
7	1	4 1/2"OD x 4"ID x 1 1/2"LG BRONZE BUSHING	OILITE	7E404M	——
6	1	BEARING CUP	TIMKEN	86357	53375
5	1	BEARING CONE	TIMKEN	86357	53162
4	1	1/4"-20 NC x 3/4"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
3	1	1 1/2"OD x 1 1/2"LG NYLON BRAKE PAD	MARTEC CRANE	2H098	——
2	1	5/8"-11 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	——
1	4	1/8" NPT S.S. GREASE FITTING	ALEMITE	02260	1966-S

PARTS LIST

FEB 17 1989
AS BUILT

Atlantia Engineering Company

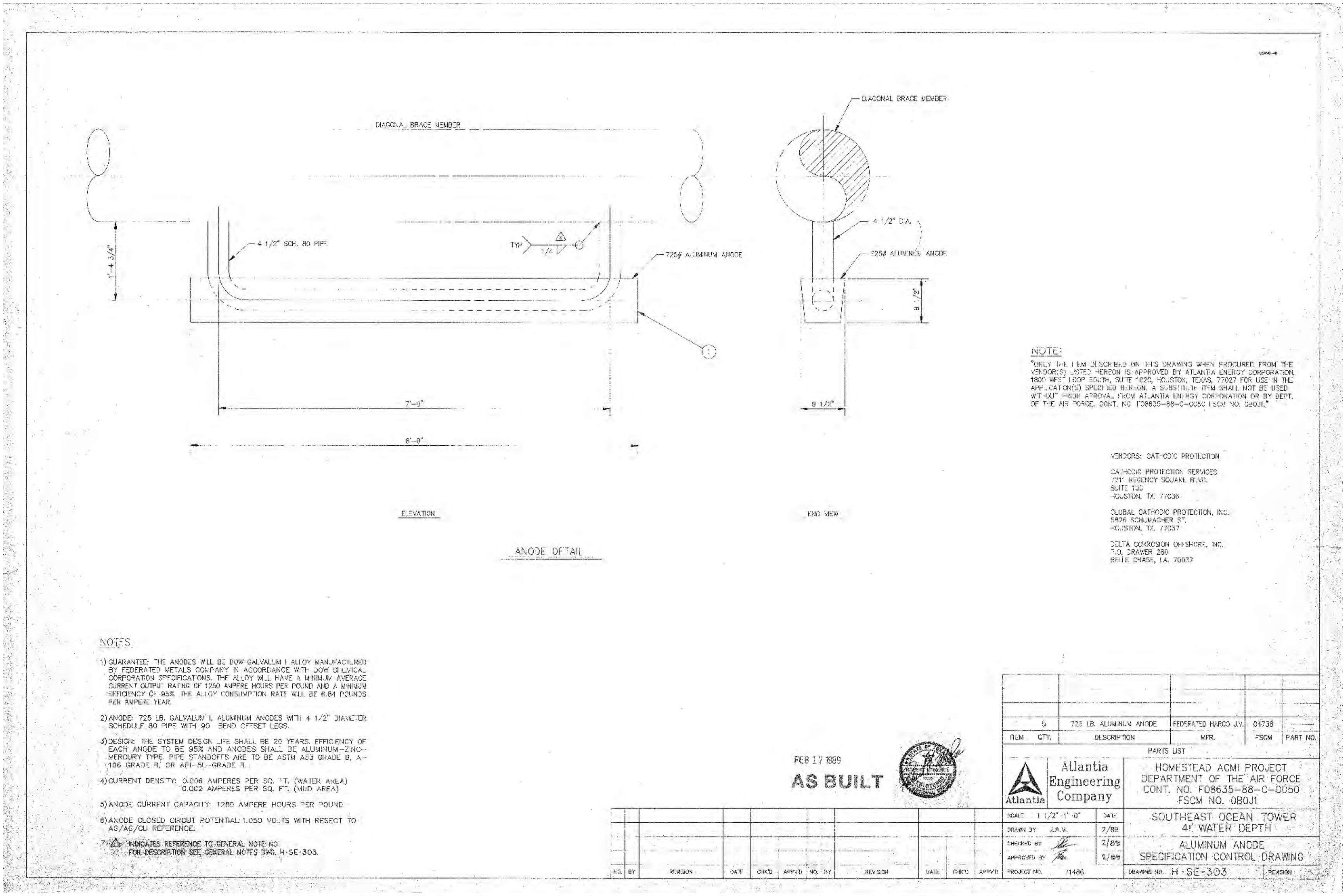
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1

SOUTHEAST OCEAN TOWER
41' WATER DEPTH

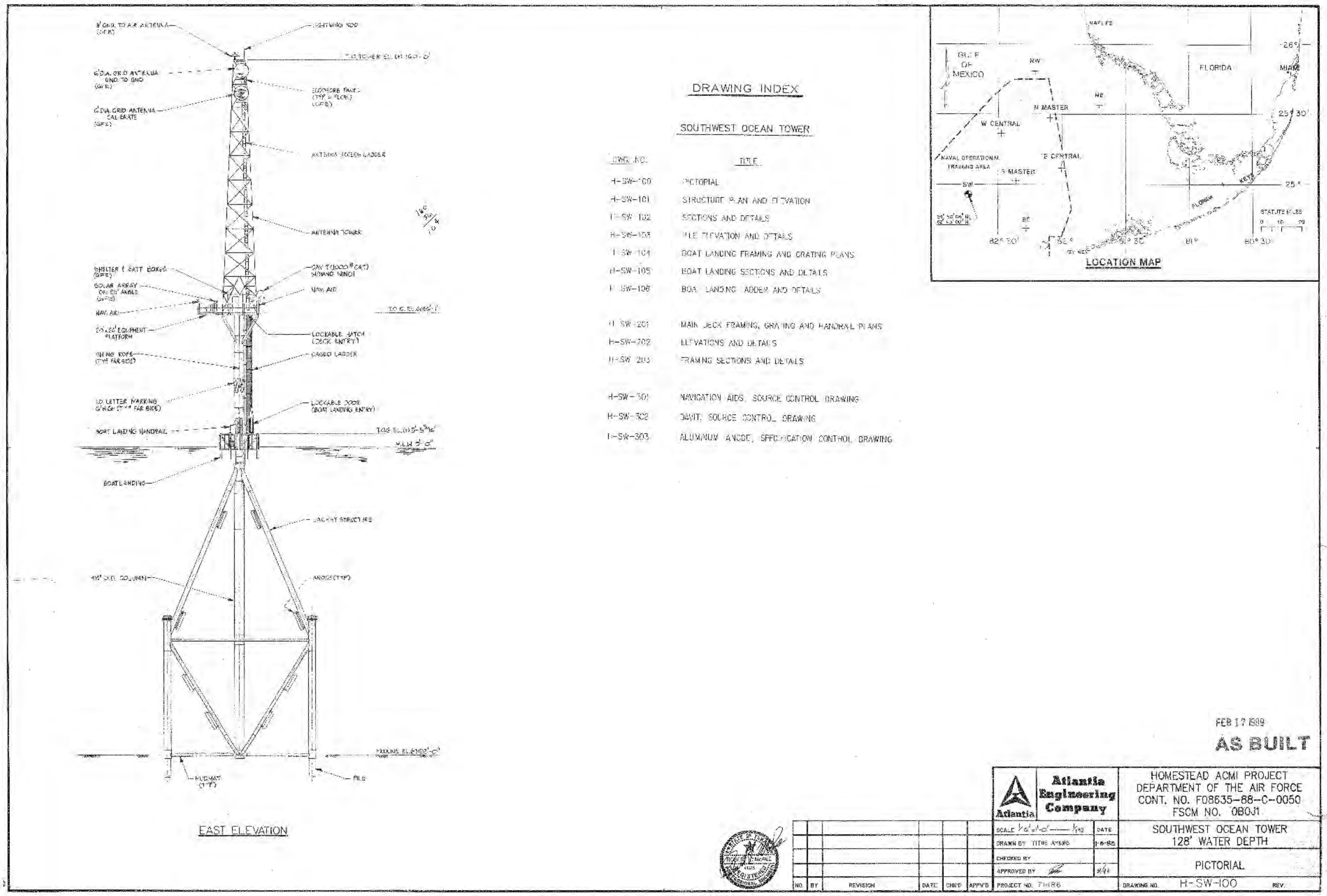
DAVIT AND JIB BOOM
SOURCE CONTROL DRAWING

SCALE AS NOTED		DATE
DRAWN BY B. TAYLOR		1/89
CHECKED BY		2/89
APPROVED BY		2/89
PROJECT NO 71486	DRAWING NO H-SE-302	REV.

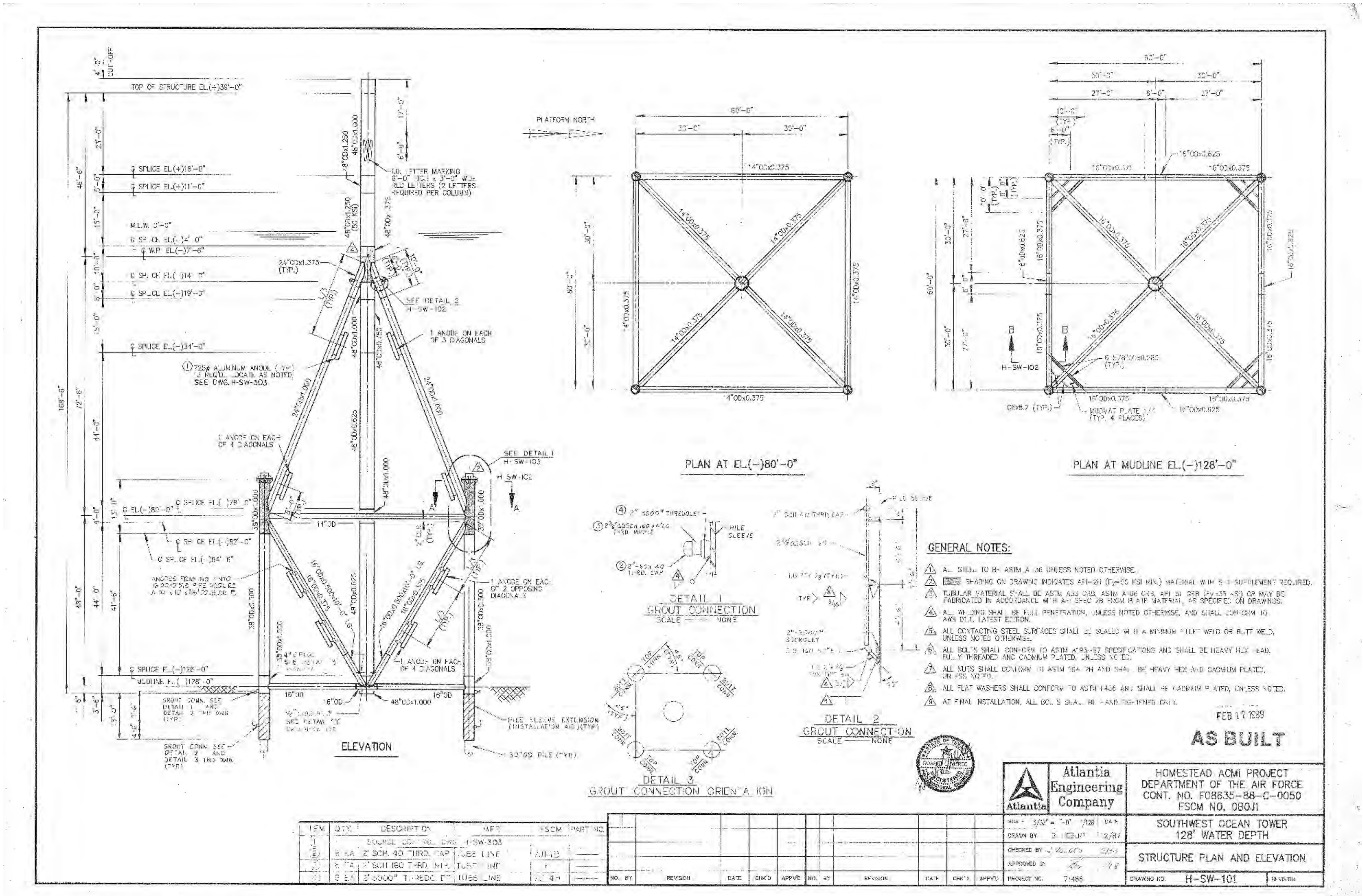
NO.	BY	REVISION	DATE	CHK'D	APPV'D

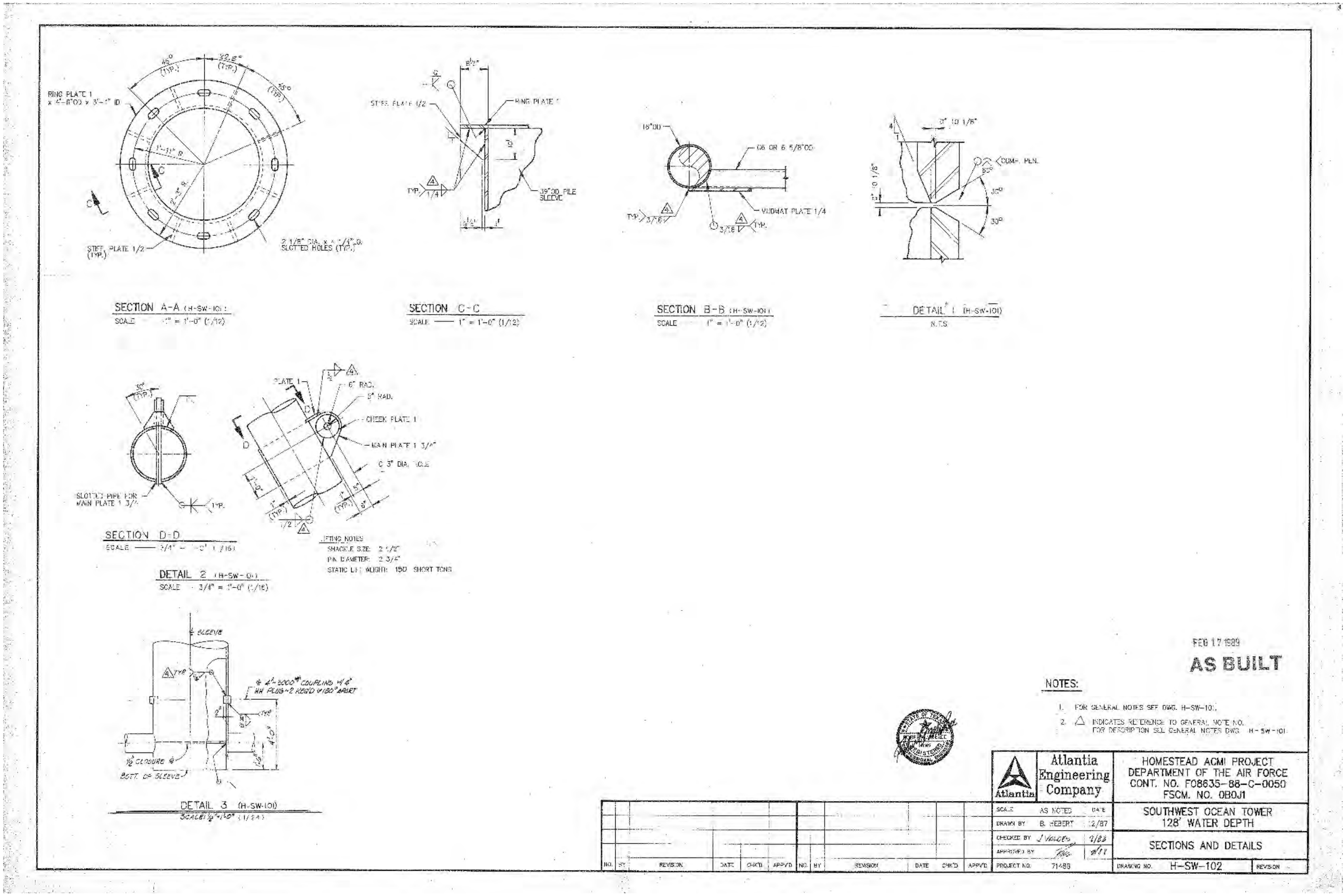

DIAGONAL BRACE MEMBER
4 1/2" SCH. 80 PIPE
TYP
1/4
725# ALUMINUM ANODE
1'-4 3/4"
7'-0"
8'-0"
ELEVATION
DIAGONAL BRACE MEMBER
4 1/2" DIA.
725# ALUMINUM ANODE
9 1/2"
END VIEW
ANODE DETAIL
NOTE:
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1020, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."
VENDORS: CATHODIC PROTECTION
CATHODIC PROTECTION SERVICES
7211 REGENCY SQUARE BLVD.
SUITE 100
HOUSTON, TX. 77036
GLOBAL CATHODIC PROTECTION, INC.
5826 SCHUMACHER ST.
HOUSTON, TX. 77057
DELTA CORROSION OFFSHORE, INC.
P.O. DRAWER 280
BELLE CHASE, LA. 70037
NOTES
1) GUARANTEE: THE ANODES WILL BE DOW GALVALUM I ALLOY MANUFACTURED BY FEDERATED METALS COMPANY IN ACCORDANCE WITH DOW CHEMICAL CORPORATION SPECIFICATIONS. THE ALLOY WILL HAVE A MINIMUM AVERAGE CURRENT OUTPUT RATING OF 1250 AMPERE HOURS PER POUND AND A MINIMUM EFFICIENCY OF 95%. THE ALLOY CONSUMPTION RATE WILL BE 6.84 POUNDS PER AMPERE YEAR.
2) ANODE: 725 LB. GALVALUM I, ALUMINUM ANODES WITH 4 1/2" DIAMETER SCHEDULE 80 PIPE WITH 90° BEND OFFSET LEGS.
3) DESIGN: THE SYSTEM DESIGN LIFE SHALL BE 20 YEARS. EFFICIENCY OF EACH ANODE TO BE 95% AND ANODES SHALL BE ALUMINUM-ZINC-MERCURY TYPE. PIPE STANDOFFS ARE TO BE ASTM A53 GRADE B, A-106 GRADE B, OR API-5L-GRADE B.
4) CURRENT DENSITY: 0.006 AMPERES PER SQ. FT. (WATER AREA)
0.002 AMPERES PER SQ. FT. (MUD AREA)
5) ANODE CURRENT CAPACITY: 1280 AMPERE HOURS PER POUND
6) ANODE CLOSED CIRCUIT POTENTIAL: 1.050 VOLTS WITH RESECT TO AG/AG/CU REFERENCE.
7) INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SE-303.
FEB 17 1989
AS BUILT
5
725 LB. ALUMINUM ANODE
FEDERATED HARCO J.V.
01738
ITEM
QTY.
DESCRIPTION
MFR.
FSCM
PART NO.
PARTS LIST
Atlantia
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE 1 1/2" = 1'-0"
DATE
DRAWN BY J.A.M.
2/89
CHECKED BY
2/89
APPROVED BY
2/89
SOUTHEAST OCEAN TOWER
41' WATER DEPTH
ALUMINUM ANODE
SPECIFICATION CONTROL DRAWING
PROJECT NO. 71486
DRAWING NO. H-SE-303
REVISION
NO.
BY
REVISION
DATE
CHK'D
APPV'D

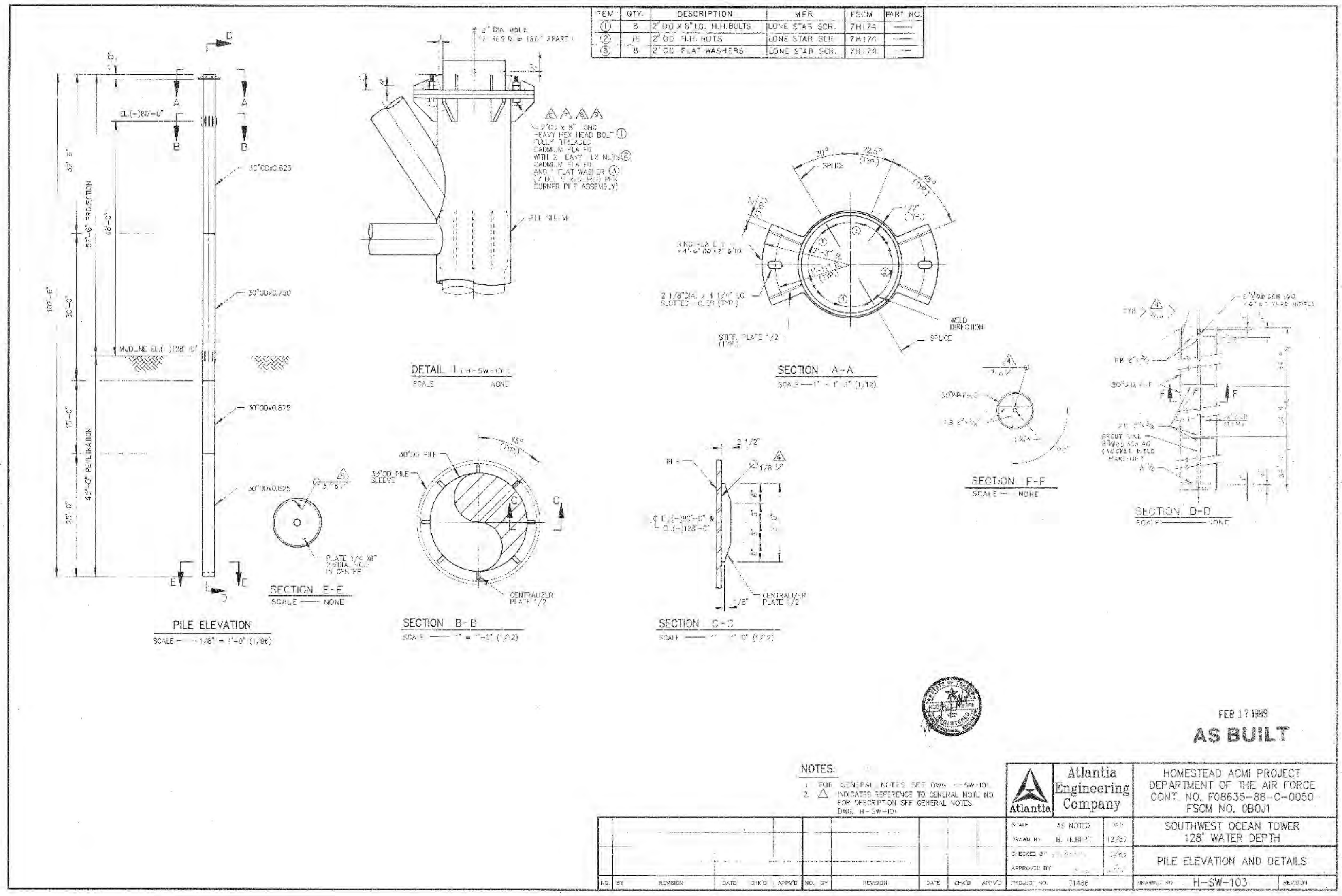
A.7 SOUTHWEST TOWER

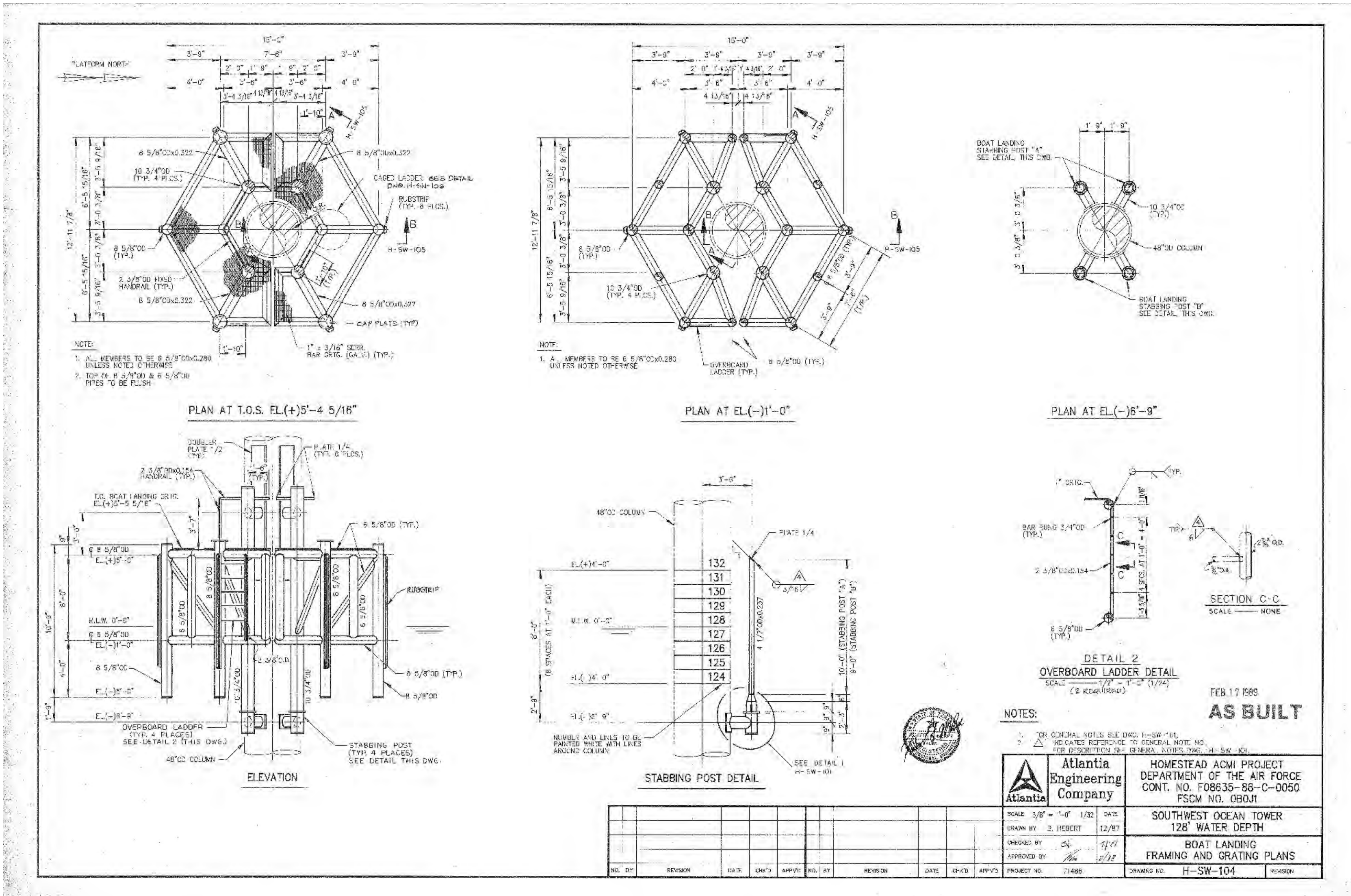


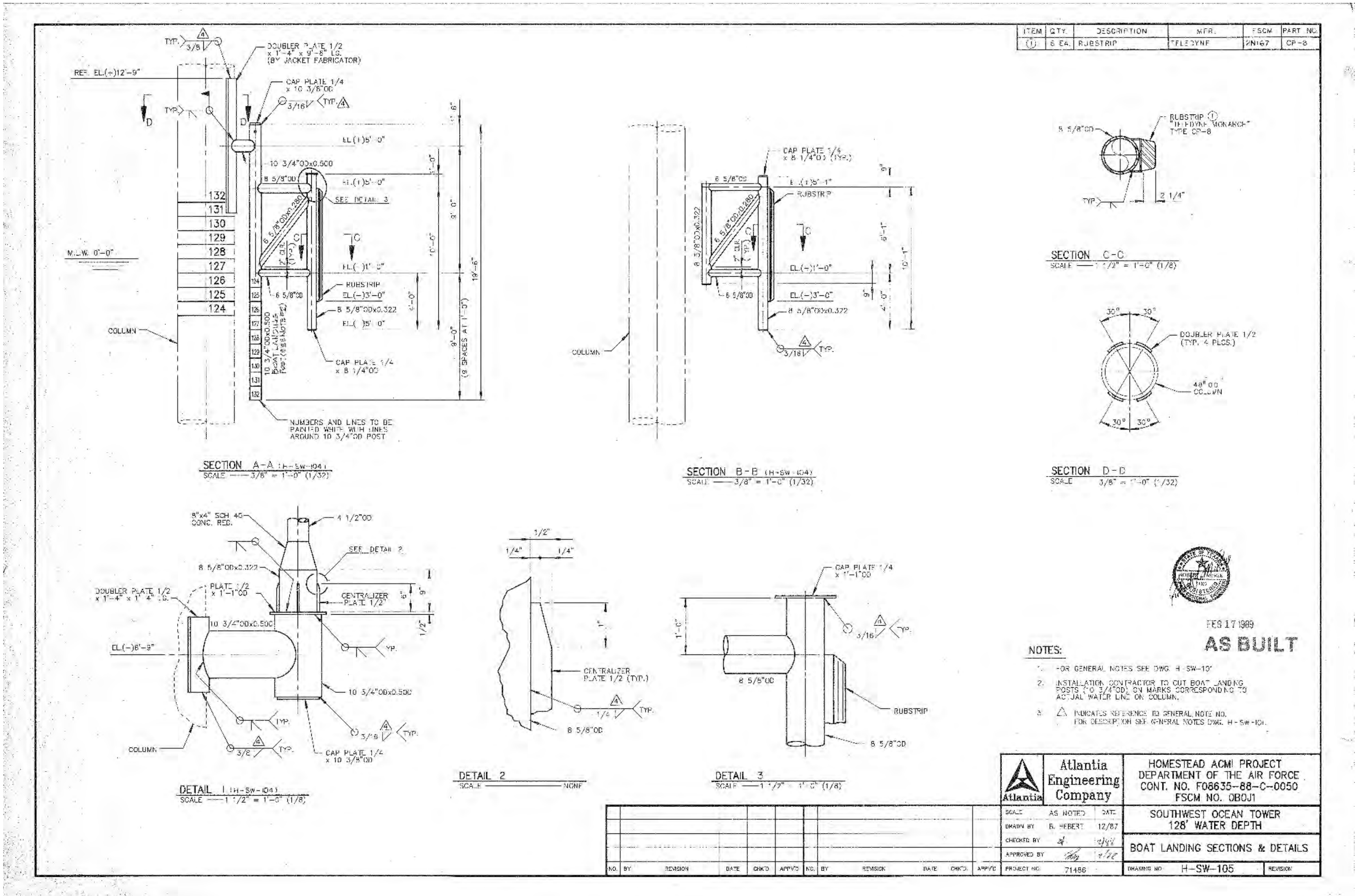
As-built construction drawing of Southwest Tower.

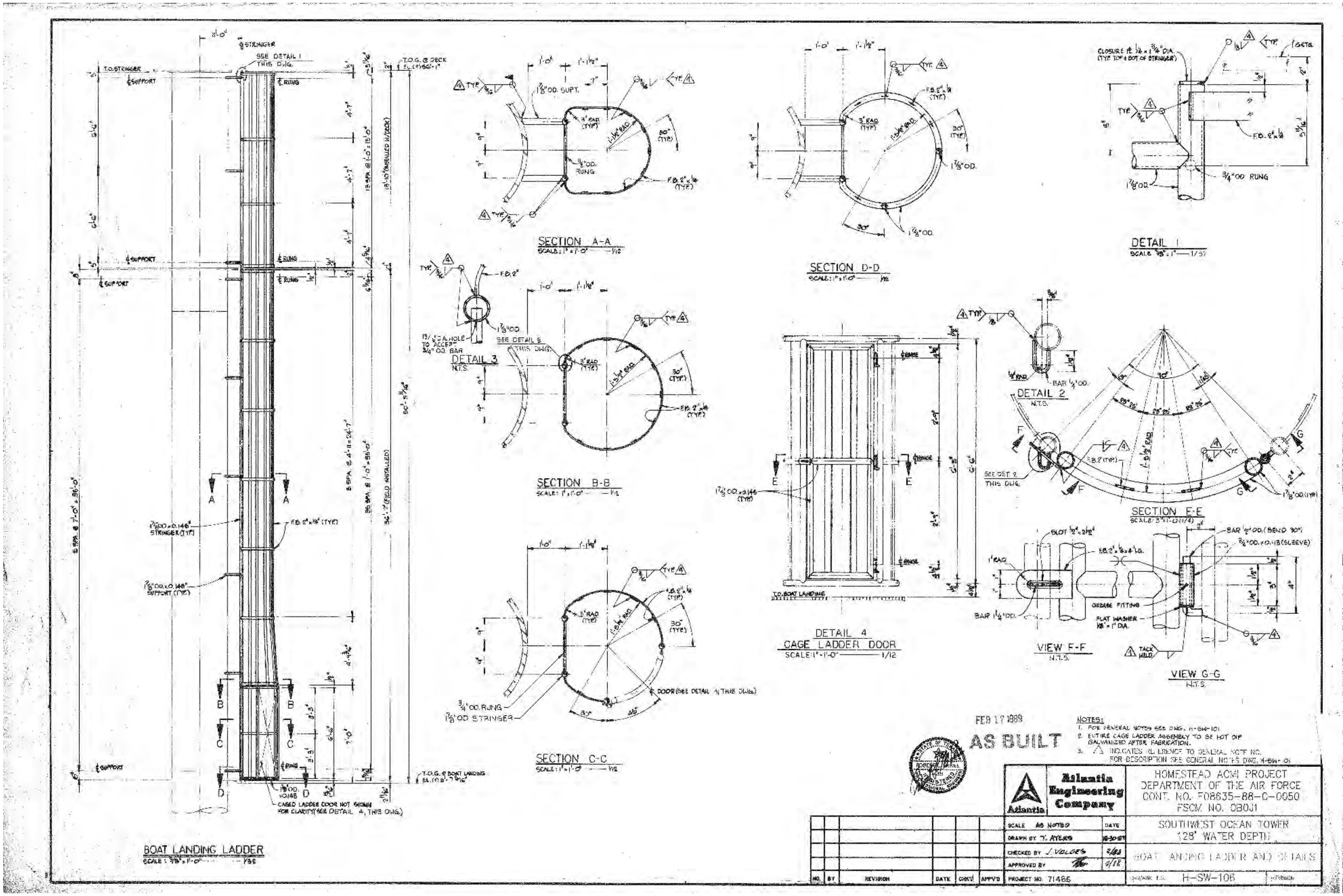

ELEVATION
PLAN AT EL.(–)80'–0"
PLAN AT MUDLINE EL.(–)128'–0"
DETAIL 1
GROUT CONNECTION
DETAIL 2
GROUT CONNECTION
DETAIL 3
GROUT CONNECTION ORIENTATION
GENERAL NOTES:
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635–88–C–0050
FSCM NO. 0BOJ1
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
STRUCTURE PLAN AND ELEVATION
H–SW–101

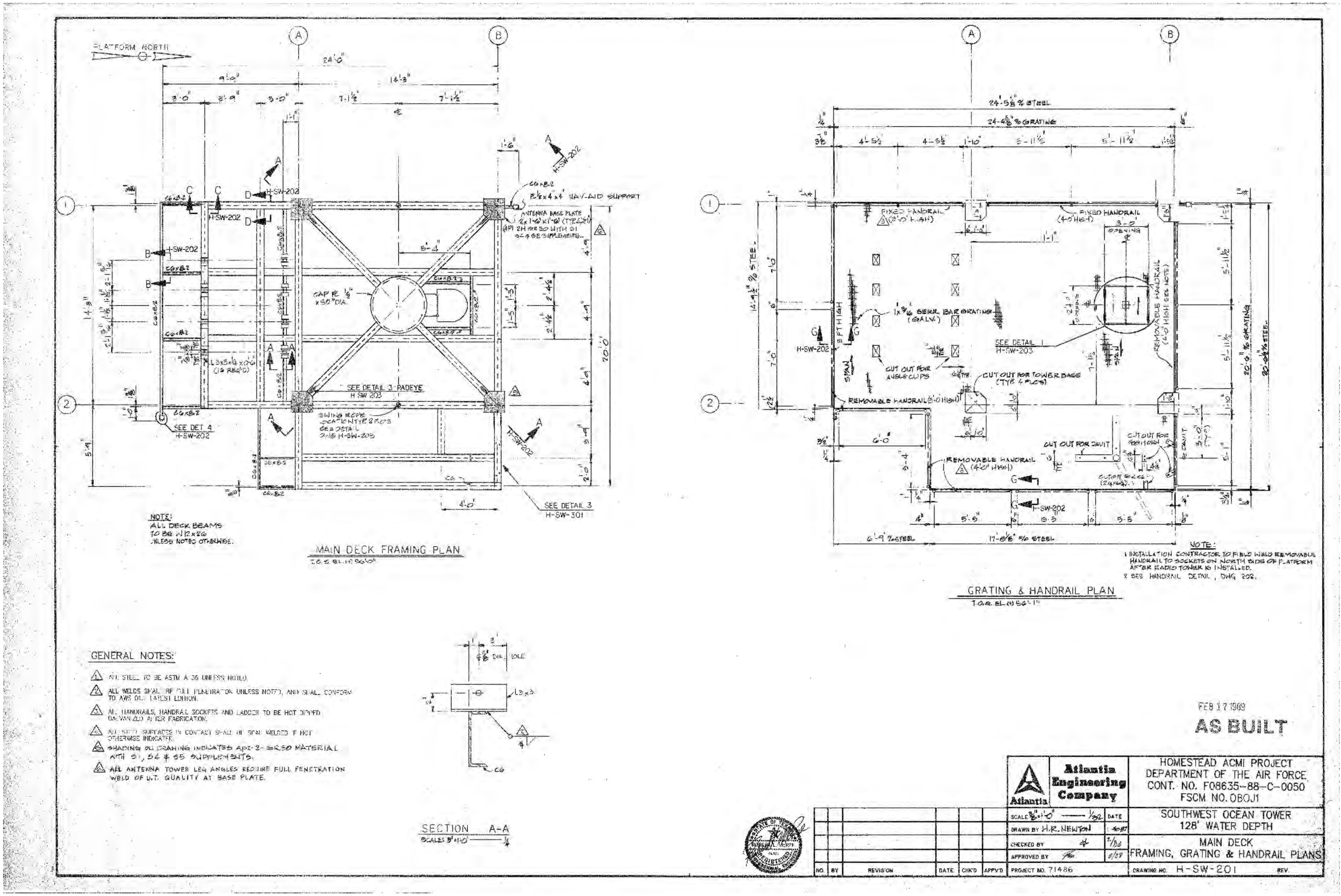

SECTION A-A (H-SW-101)
SECTION C-C
SECTION B-B (H-SW-101)
DETAIL 1 (H-SW-101)
N.T.S.
SECTION D-D
DETAIL 2 (H-SW-101)
DETAIL 3 (H-SW-101)
LIFTING NOTES
SHACKLE SIZE: 2 1/2"
PIN DIAMETER: 2 3/4"
STATIC LIFT WEIGHT: 150 SHORT TONS
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SW-101.
2. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SW-101
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM. NO. 0B0J1
SCALE AS NOTED
DRAWN BY B. HEBERT 12/87
CHECKED BY
APPROVED BY
PROJECT NO. 71485
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
SECTIONS AND DETAILS
DRAWING NO. H-SW-102
REVISION

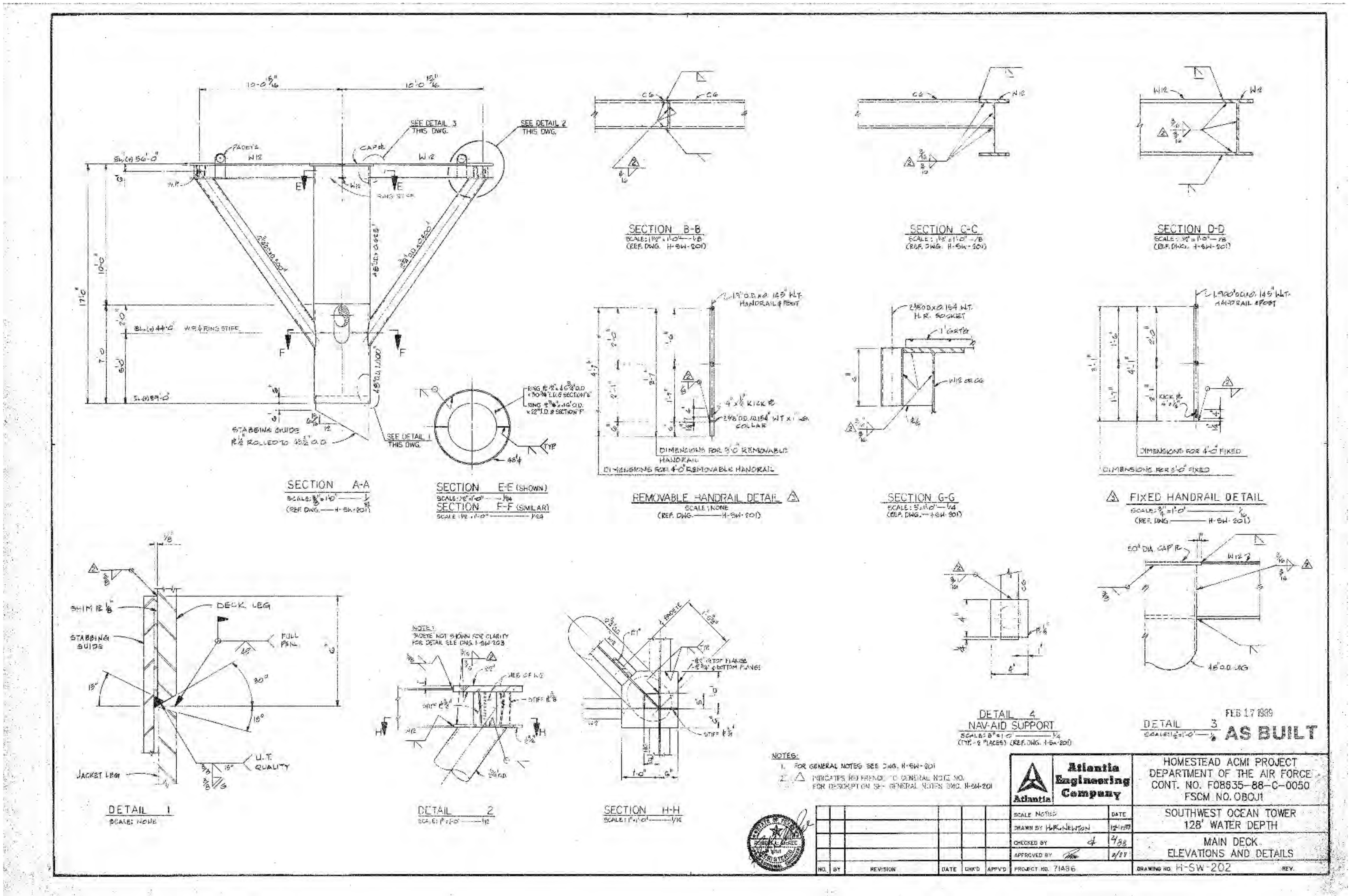

ITEM | QTY. | DESCRIPTION | MFR | FSCM | PART NO.
1 | 8 | 2" OD x 8" LG. H.H.BOLTS | LONE STAR SCR. | 7H174
2 | 16 | 2" OD H.H. NUTS | LONE STAR SCR. | 7H174
3 | 8 | 2" OD FLAT WASHERS | LONE STAR SCR. | 7H174
PILE ELEVATION
DETAIL 1
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
SECTION F-F
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SW-101.
2. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SW-101.
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE AS NOTED
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
PILE ELEVATION AND DETAILS
PROJECT NO. 71486
DRAWING NO. H-SW-103

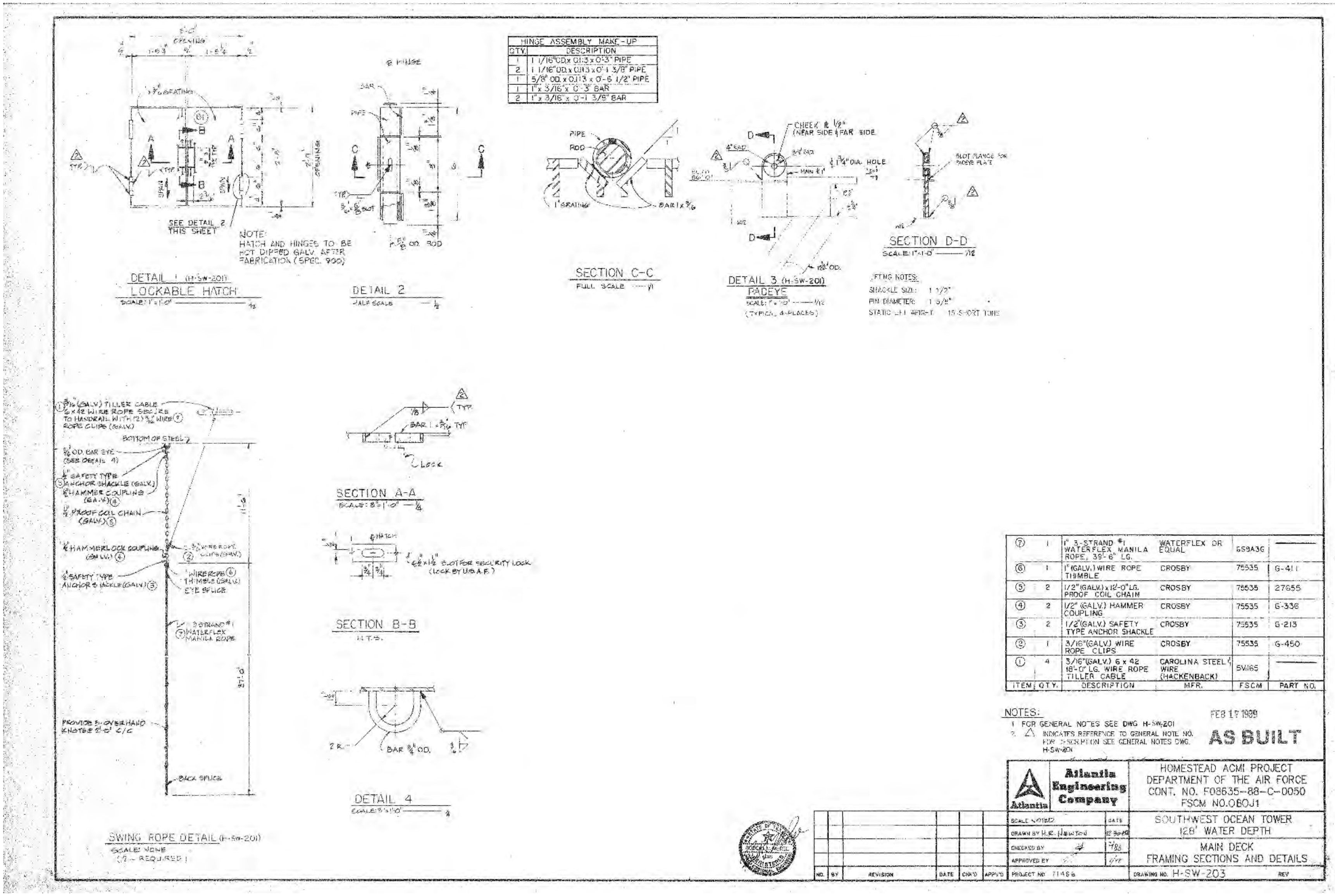

PLAN AT T.O.S. EL.(+)5'-4 5/16"
PLAN AT EL.(-)1'-0"
PLAN AT EL.(-)8'-9"
ELEVATION
STABBING POST DETAIL
DETAIL 2
OVERBOARD LADDER DETAIL
SECTION C-C
FEB 17 1989
AS BUILT
NOTES:
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-86-C-0050
FSCM NO. 0B0J1
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
BOAT LANDING
FRAMING AND GRATING PLANS
H-SW-104


SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
DETAIL 1
DETAIL 2
DETAIL 3
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SW-101
2. INSTALLATION CONTRACTOR TO CUT BOAT LANDING POSTS (10 3/4"OD) ON MARKS CORRESPONDING TO ACTUAL WATER LINE ON COLUMN.
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
BOAT LANDING SECTIONS & DETAILS
H-SW-105


BOAT LANDING LADDER
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
SECTION E-E
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
CAGE LADDER DOOR
VIEW F-F
VIEW G-G
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SW-101
2. ENTIRE CAGE LADDER ASSEMBLY TO BE HOT DIP GALVANIZED AFTER FABRICATION.
Atlantic Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
SCALE AS NOTED
DRAWN BY T. AYERS
CHECKED BY J. VALDES
APPROVED BY
PROJECT NO. 71485
H-SW-106

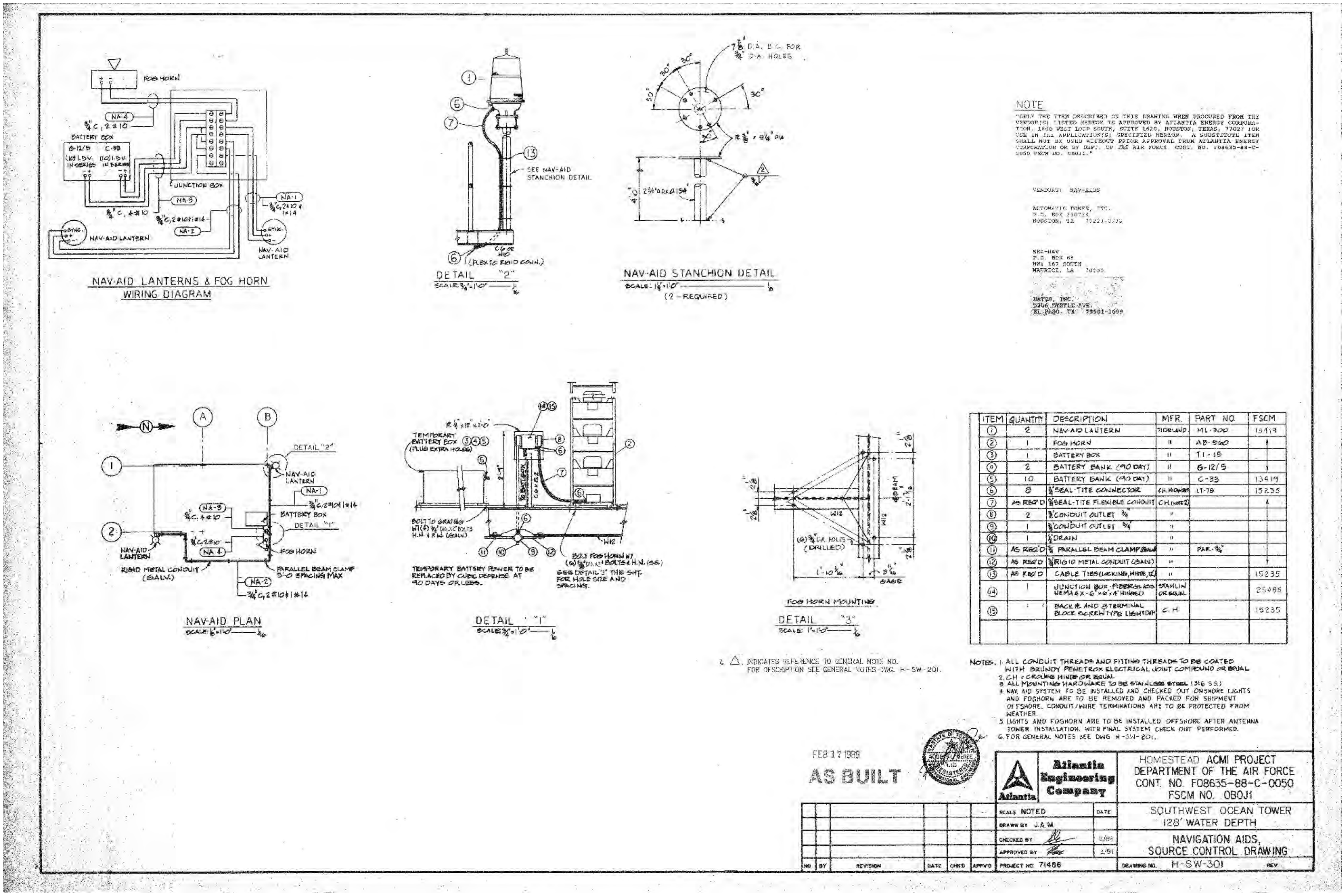

PLATFORM NORTH
MAIN DECK FRAMING PLAN
GRATING & HANDRAIL PLAN
SECTION A-A
GENERAL NOTES:
FEB 17 1989
AS BUILT
Atlantis Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. OBOJ1
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
DRAWN BY H.R. NEWTON
MAIN DECK
FRAMING, GRATING & HANDRAIL PLANS
PROJECT NO. 71486
DRAWING NO. H-SW-201


SECTION A-A
SECTION E-E (SHOWN)
SECTION F-F (SIMILAR)
SECTION B-B
SECTION C-C
SECTION D-D
REMOVABLE HANDRAIL DETAIL
SECTION G-G
FIXED HANDRAIL DETAIL
DETAIL 1
DETAIL 2
SECTION H-H
DETAIL 4 NAV-AID SUPPORT
DETAIL 3
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-SW-201
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
MAIN DECK
ELEVATIONS AND DETAILS
PROJECT NO. 71486
DRAWING NO. H-SW-202



HINGE ASSEMBLY MAKE-UP	
QTY.	DESCRIPTION
1	1 1/16" OD x 0.113 x 0'-3" PIPE
2	1 1/16" OD x 0.113 x 0'-1 3/8" PIPE
1	5/8" OD x 0.113 x 0'-6 1/2" PIPE
1	1" x 3/16" x 0'-3" BAR
2	1" x 3/16" x 0'-1 3/8" BAR

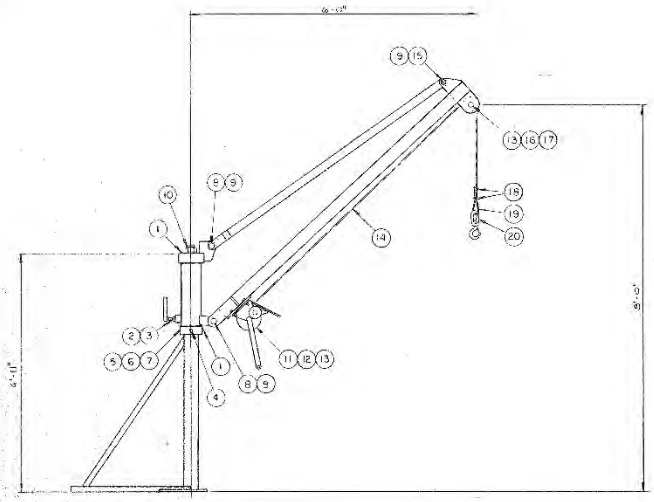
ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
7	1	1" 3-STRAND #1 WATERFLEX MANILA ROPE, 39'-6" LG.	WATERFLEX OR EQUAL	6S9A3G	—
6	1	1" (GALV.) WIRE ROPE THIMBLE	CROSBY	75535	G-411
5	2	1/2" (GALV.) x 12'-0" LG. PROOF COIL CHAIN	CROSBY	75535	27655
4	2	1/2" (GALV.) HAMMER COUPLING	CROSBY	75535	G-336
3	2	1/2" (GALV.) SAFETY TYPE ANCHOR SHACKLE	CROSBY	75535	G-213
2	1	3/16" (GALV.) WIRE ROPE CLIPS	CROSBY	75535	G-450
1	4	3/16" (GALV.) 6 x 42 18'-0" LG. WIRE ROPE TILLER CABLE	CAROLINA STEEL & WIRE (HACKENBACK)	5V165	—



FOG HORN
BATTERY BOX
JUNCTION BOX
NAV-AID LANTERN
NAV-AID LANTERN
NAV-AID LANTERNS & FOG HORN WIRING DIAGRAM
SEE NAV-AID STANCHION DETAIL
(FLEX TO RIGID CONN.)
DETAIL "2"
NAV-AID STANCHION DETAIL
(2 - REQUIRED)
NOTE
NAV-AID PLAN
DETAIL "1"
FOG HORN MOUNTING
DETAIL "3"

ITEM	QUANTITY	DESCRIPTION	MFR.	PART NO.	FSCM
1	2	NAV-AID LANTERN	TIDELAND	ML-300	13419
2	1	FOG HORN	"	AB-560	
3	1	BATTERY BOX	"	TI-15	
4	2	BATTERY BANK (90 DAY)	"	G-12/5	
5	10	BATTERY BANK (90 DAY)	"	C-33	13419
6	8	3/4" SEAL-TITE CONNECTOR	CH. HOWER	LT-75	15235
7	AS REQ'D	3/4" SEAL-TITE FLEXIBLE CONDUIT	CH (NOTE 2)		
8	2	3/4" CONDUIT OUTLET 3/4"	"		
9	1	3/4" CONDUIT OUTLET 3/4"	"		
10	1	1/2" DRAIN	"		
11	AS REQ'D	3/4" PARALLEL BEAM CLAMP (GALV.)	"	PAR-3/4"	
12	AS REQ'D	3/4" RIGID METAL CONDUIT (GALV.)	"		
13	AS REQ'D	CABLE TIES (LOCKING, WHITE, 12")	"		15235
14	1	JUNCTION BOX - FIBERGLASS NEMA 4X - 6"x6"x4" HINGED	STAHLIN OR EQUAL		25485
15	1	BACK PL. AND 8 TERMINAL BLOCK SCREW TYPE LIGHTDUTY	C.H.		15235

NOTES: 1. ALL CONDUIT THREADS AND FITTING THREADS TO BE COATED WITH BRUNDY PENETROX ELECTRICAL JOINT COMPOUND OR EQUAL.
2. CH = CROUSE HINDS OR EQUAL.
3. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL (316 S.S.)
4. NAV. AID SYSTEM TO BE INSTALLED AND CHECKED OUT ONSHORE. LIGHTS AND FOGHORN ARE TO BE REMOVED AND PACKED FOR SHIPMENT OFFSHORE. CONDUIT/WIRE TERMINATIONS ARE TO BE PROTECTED FROM WEATHER.
5. LIGHTS AND FOGHORN ARE TO BE INSTALLED OFFSHORE AFTER ANTENNA TOWER INSTALLATION, WITH FINAL SYSTEM CHECK OUT PERFORMED.
6. FOR GENERAL NOTES SEE DWG H-SW-201.
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE NOTED
DRAWN BY J.A.M.
CHECKED BY
APPROVED BY
PROJECT NO. 71486
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
NAVIGATION AIDS,
SOURCE CONTROL DRAWING
DRAWING NO. H-SW-301



ELEVATION
DAVIT WITH HAND WINCH
SCALE 1"=1'-0"

NOTE:
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1600 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."

VENDORS: DAVITS

WEATHERFORD
11909 SPENCER RD. (FM 529)
HOUSTON, TX 77042

APEX EQUIPMENT CORPORATION, INC
P.O. BOX 19601
HOUSTON, TX 77224-9601

CAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2042
CLEVELAND, TX 77327

18	3	1/4" S.S. WIRE ROPE CLIPS	CAMBELL CHAIN	80535	640-3004
16	[illegible]	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
15	2	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
10	[illegible]	1 1/2"-12 NC ELASTIC LOCK NUT	LONE STAR SCR.	7H174	———
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———

SPARE PARTS

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
20	1	2 TON SWIVEL HOOK	CROSBY	75535	S-322C
19	1	1/4" S.S. WIRE ROPE THIMBLE	CAMPBELL CHAIN	80535	640-7601
18	2	1/4" S.S. WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	640-3004
17	1	4" x 5/8" x 1/2" SHEAVE W/BRONZE BUSHING 1/4" GROOVE	CROSBY	75535	1173
16	1	1/2"-13 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
15	[illegible]	3/4"-10 NC x 2 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
14	100'-0"	1/4", 1 x 7, 316 S.S. WIRE ROPE	CAROLINA STEEL AND WIRE (HACKENBACK)	5M165	———
13	5	1/2"-13 NC x ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	———
12	4	1/2"-13 NC x 1 1/2"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
11	[illegible]	WINCH WITH MANUAL GEAR (GALVANIZED)	DEDGE	06550	DM6B
10	1	1 1/2"-12 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	———
9	3	3/4"-10 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	———
8	2	3/4"-10 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
7	1	4 1/2"OD x 4"ID x 1 1/2"LG BRONZE BUSHING	OILITE	75404M	
6	1	BEARING CUP	TIMKEN	85357	53375
5	1	BEARING CONE	TIMKEN	85357	53162
4	1	1/4"-20 NC x 3/4"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
3	1	1 1/2"OD x 1 1/2"LG NYLON BRAKE PAD	MARY-C CRANE	2T098	———
2	1	5/8"-11 NC x 3"LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
1	2	1/8" NPT S.S. GREASE FITTING	ALEMITE	02260	1968-B

PARTS LIST

FEB 17 1989
AS BUILT

Atlantia Engineering Company

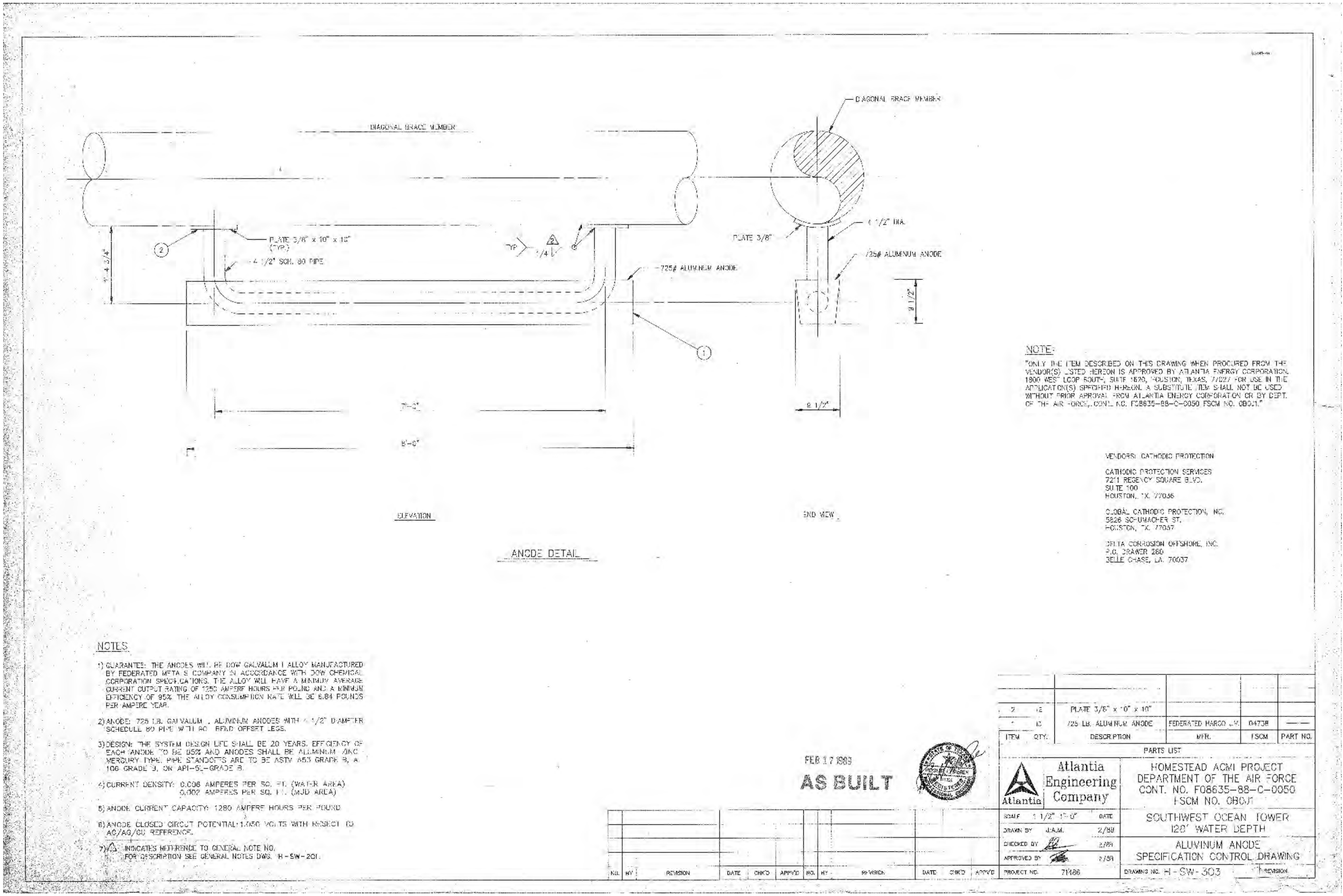
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1

NO.	BY	REVISION	DATE	CHK'D	APPV'D

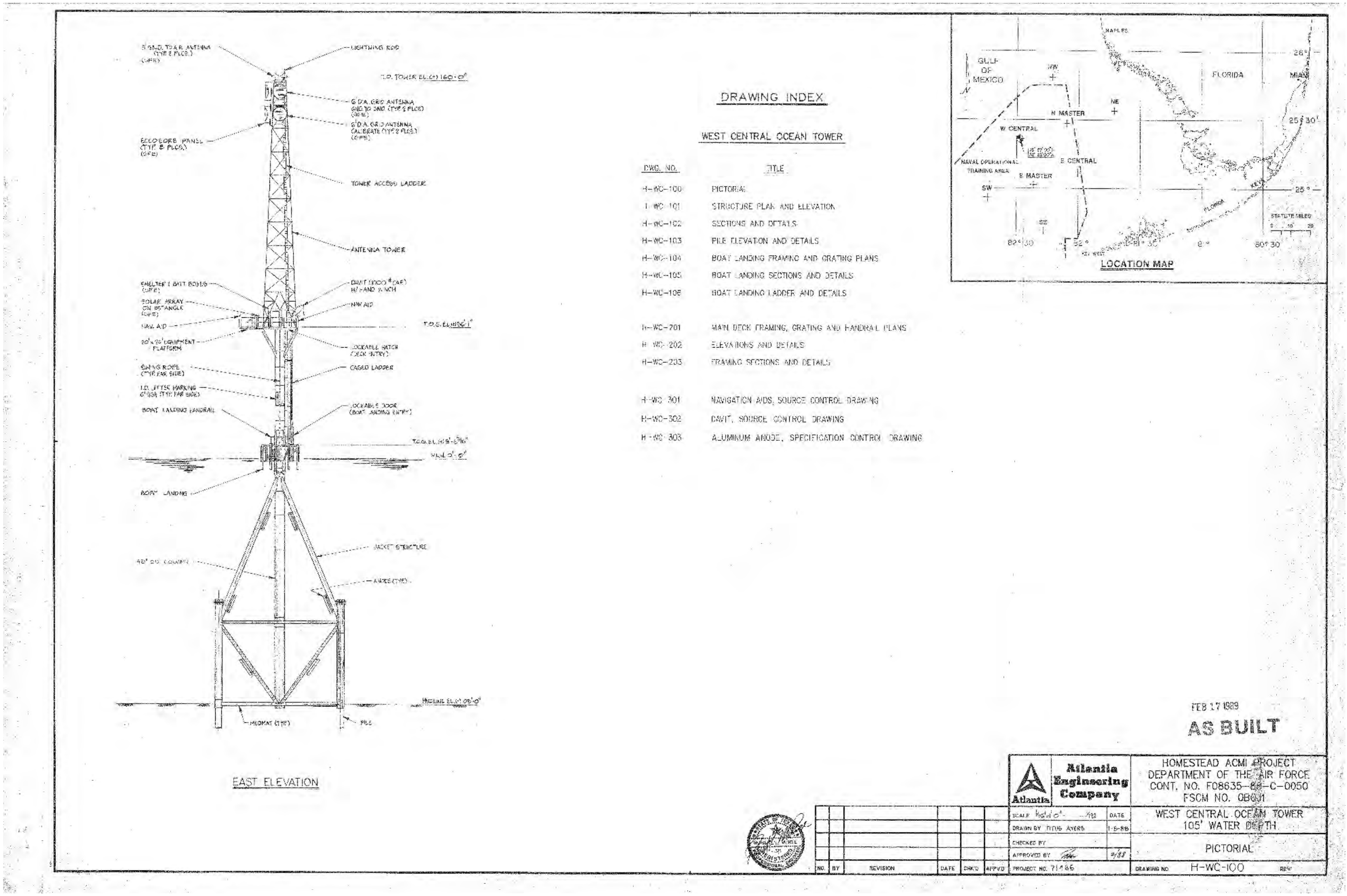
SCALE AS NOTED
DRAWN BY B.TAYLOR — DATE 1/89
CHECKED BY — 2/89
APPROVED BY — 2/89
PROJECT NO. 71486

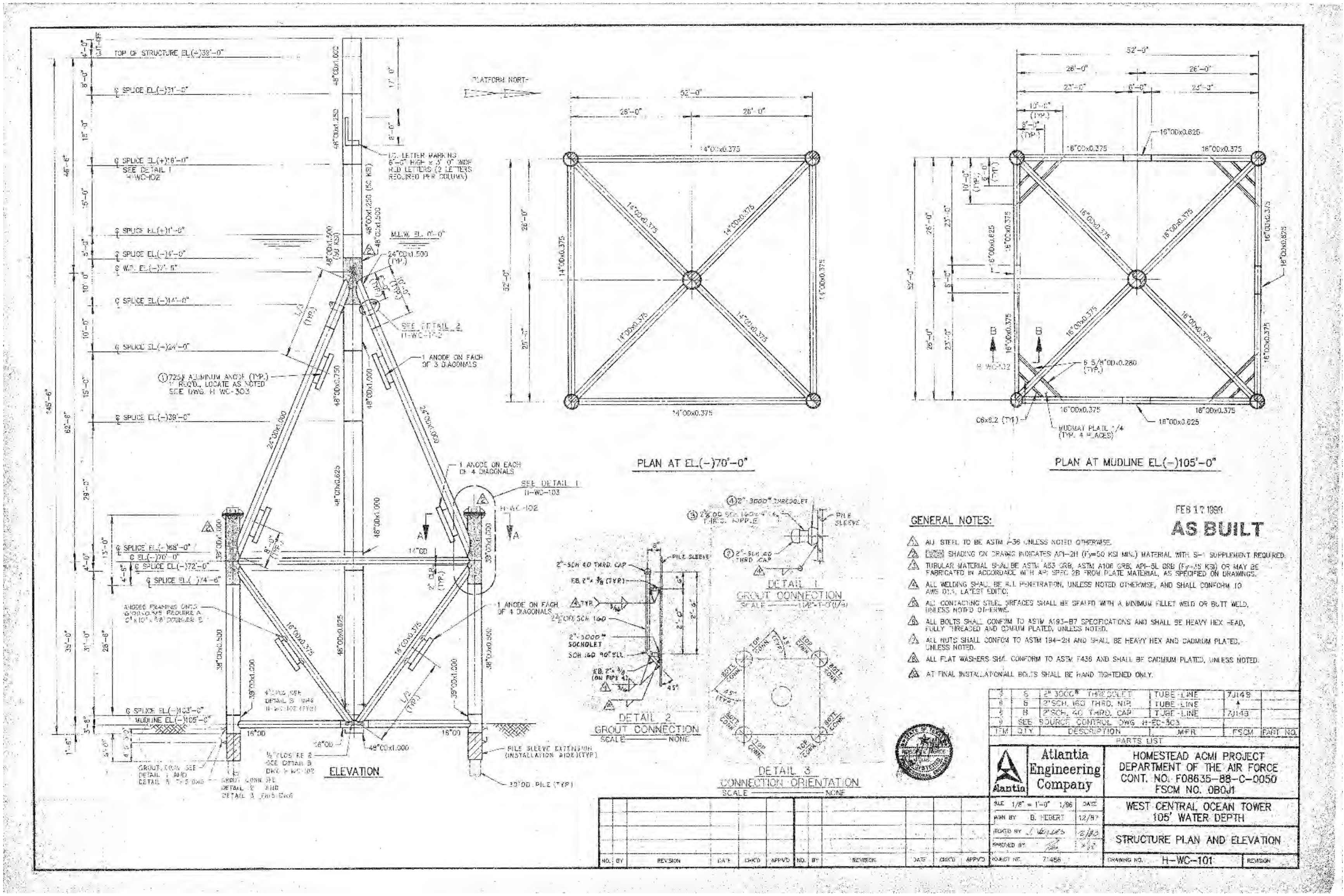
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
DAVIT
SOURCE CONTROL DRAWING

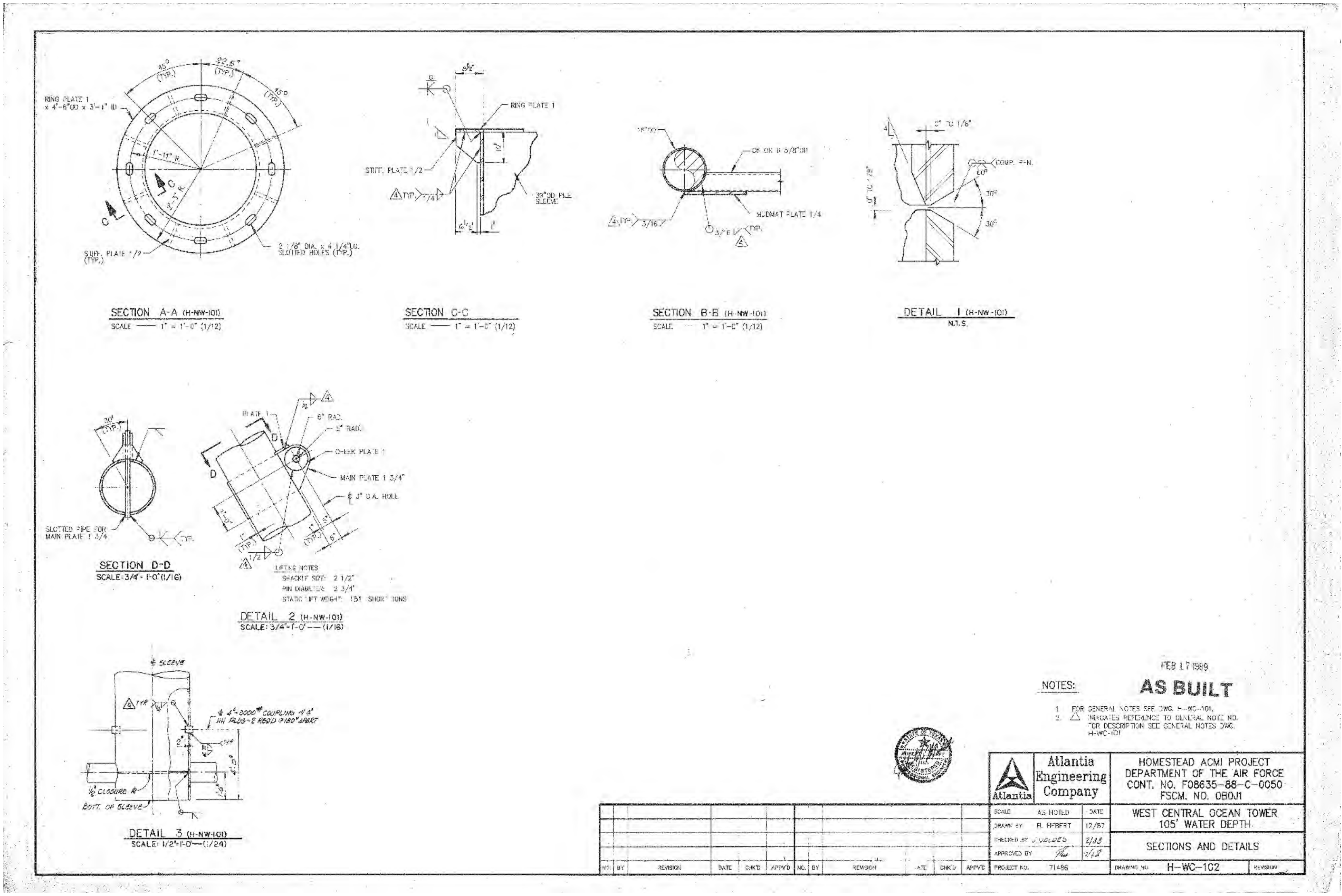
DRAWING NO. H-SW-302 REV.

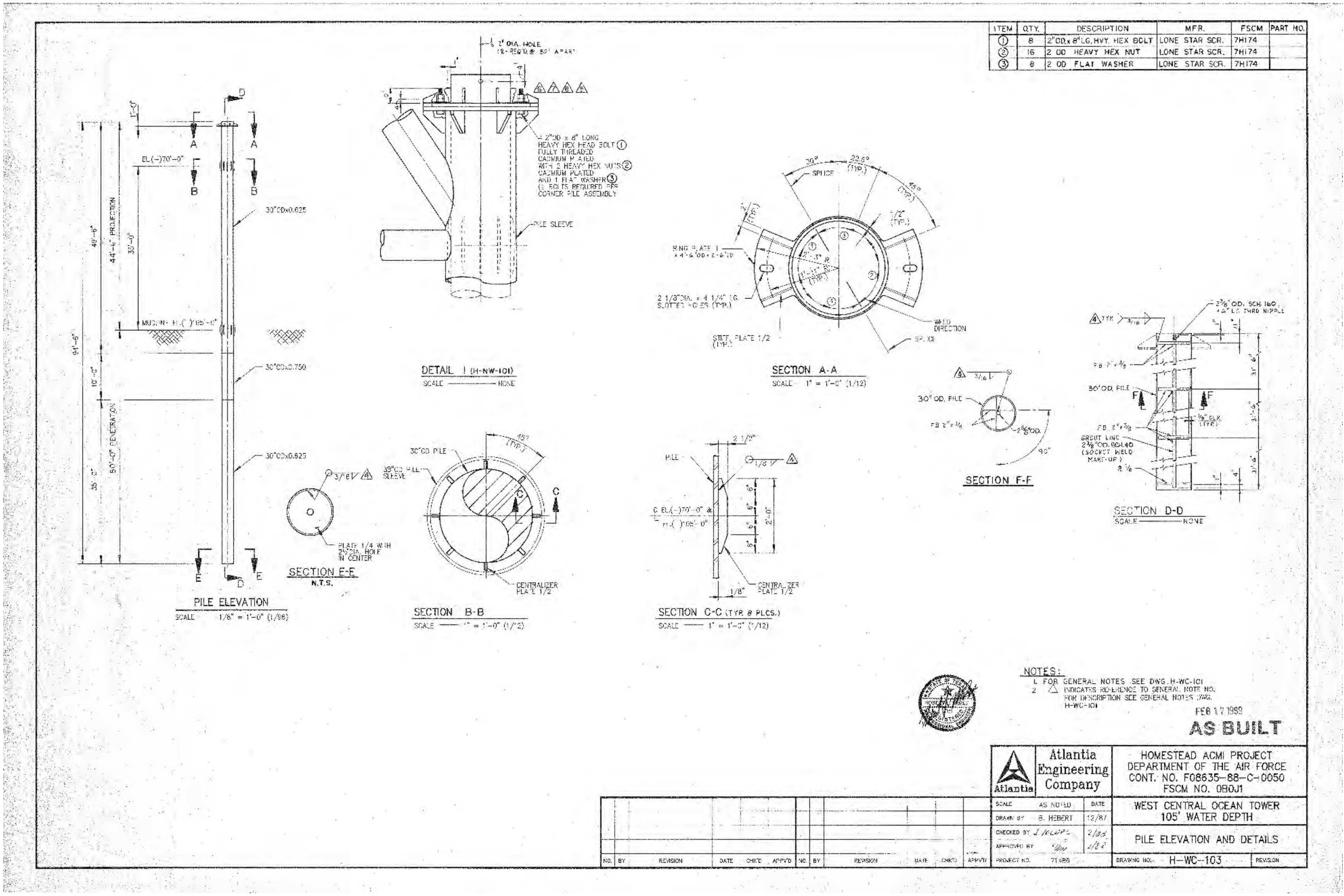

DIAGONAL BRACE MEMBER
PLATE 3/8" x 10" x 10" (TYP.)
4 1/2" SCH. 80 PIPE
725# ALUMINUM ANODE
PLATE 3/8"
4 1/2" DIA.
725# ALUMINUM ANODE
9 1/2"
8'-0"
ELEVATION
END VIEW
ANODE DETAIL
NOTE:
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0BOJ1."
VENDORS: CATHODIC PROTECTION
CATHODIC PROTECTION SERVICES
7211 REGENCY SQUARE BLVD.
SUITE 100
HOUSTON, TX. 77036
GLOBAL CATHODIC PROTECTION, INC.
5826 SCHUMACHER ST.
HOUSTON, TX. 77057
DELTA CORROSION OFFSHORE, INC.
P.O. DRAWER 280
BELLE CHASE, LA. 70037
NOTES
1) GUARANTEE: THE ANODES WILL BE DOW GALVALUM I ALLOY MANUFACTURED BY FEDERATED METALS COMPANY IN ACCORDANCE WITH DOW CHEMICAL CORPORATION SPECIFICATIONS. THE ALLOY WILL HAVE A MINIMUM AVERAGE CURRENT OUTPUT RATING OF 1250 AMPERE HOURS PER POUND AND A MINIMUM EFFICIENCY OF 95%. THE ALLOY CONSUMPTION RATE WILL BE 6.84 POUNDS PER AMPERE YEAR.
2) ANODE: 725 LB. GALVALUM I ALUMINUM ANODES WITH 4 1/2" DIAMETER SCHEDULE 80 PIPE WITH 90° BEND OFFSET LEGS.
3) DESIGN: THE SYSTEM DESIGN LIFE SHALL BE 20 YEARS. EFFICIENCY OF EACH ANODE TO BE 95% AND ANODES SHALL BE ALUMINUM ZINC MERCURY TYPE. PIPE STANDOFFS ARE TO BE ASTM A53 GRADE B, A 106 GRADE B, OR API-5L-GRADE B.
4) CURRENT DENSITY: 0.006 AMPERES PER SQ. FT. (WATER AREA)
0.002 AMPERES PER SQ. FT. (MUD AREA)
5) ANODE CURRENT CAPACITY: 1280 AMPERE HOURS PER POUND
6) ANODE CLOSED CIRCUIT POTENTIAL: 1.050 VOLTS WITH RESPECT TO AG/AG/CU REFERENCE.
7) INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-SW-201.
FEB 17 1989
AS BUILT
2 | 12 | PLATE 3/8" x 10" x 10"
1 | 10 | 725 LB. ALUMINUM ANODE | FEDERATED HARCO J.V. | 04738 | ——
ITEM | QTY. | DESCRIPTION | MFR. | FSCM | PART NO.
PARTS LIST
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
SCALE 1 1/2" 1'-0"
DRAWN BY J.A.M. 2/89
CHECKED BY 2/89
APPROVED BY 2/89
PROJECT NO. 71486
SOUTHWEST OCEAN TOWER
128' WATER DEPTH
ALUMINUM ANODE
SPECIFICATION CONTROL DRAWING
DRAWING NO. H-SW-303
REVISION

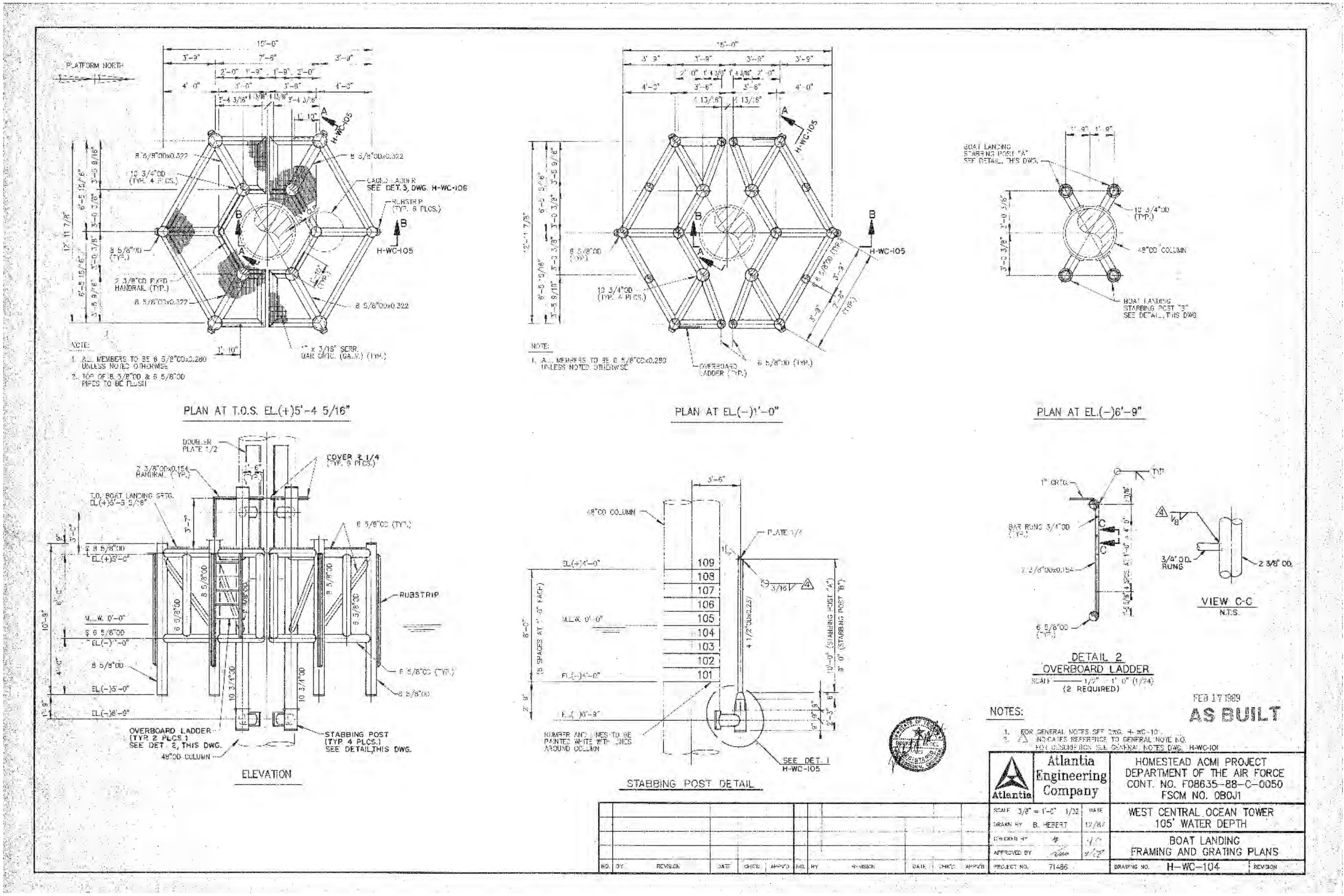
A.8 WEST CENTRAL TOWER

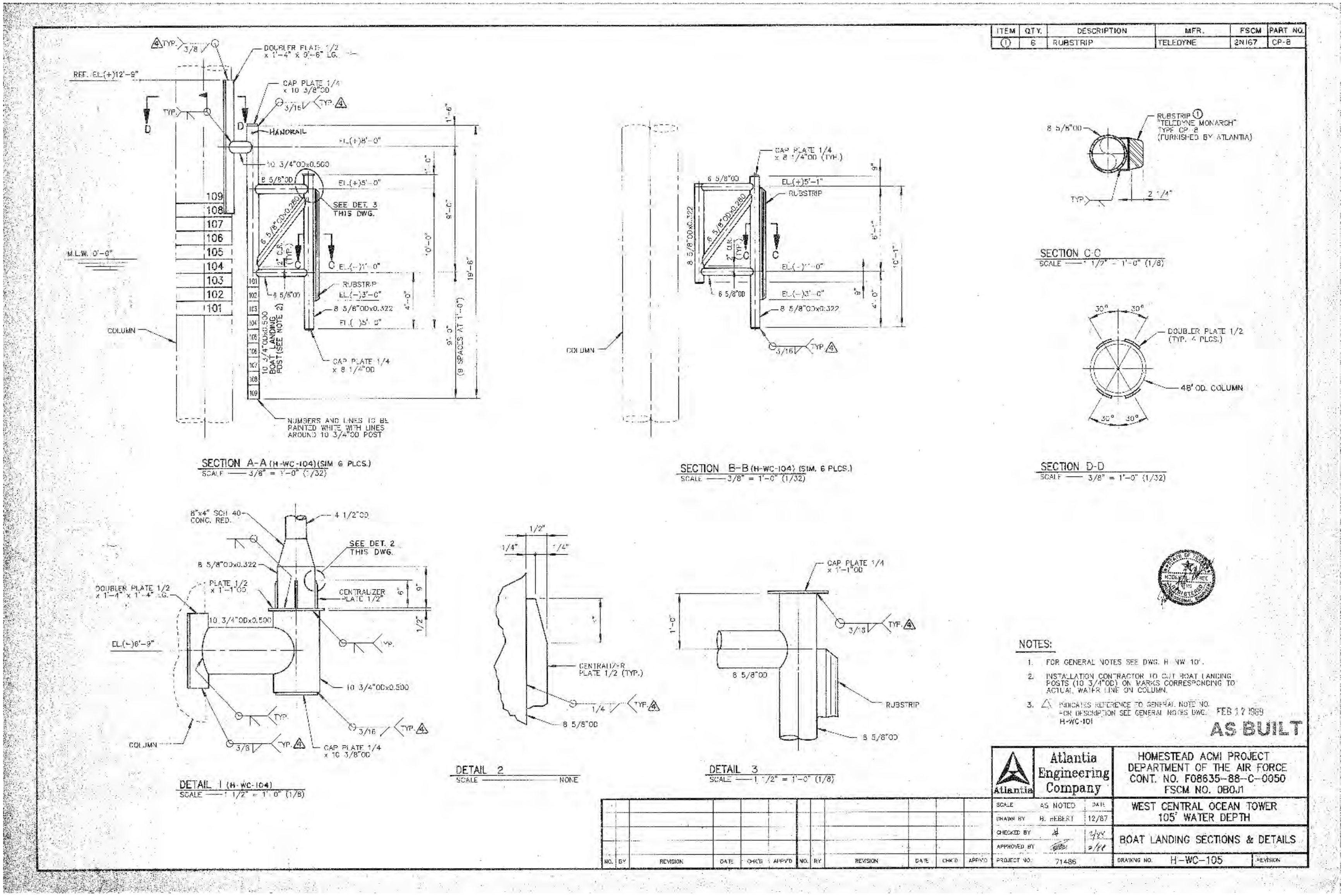


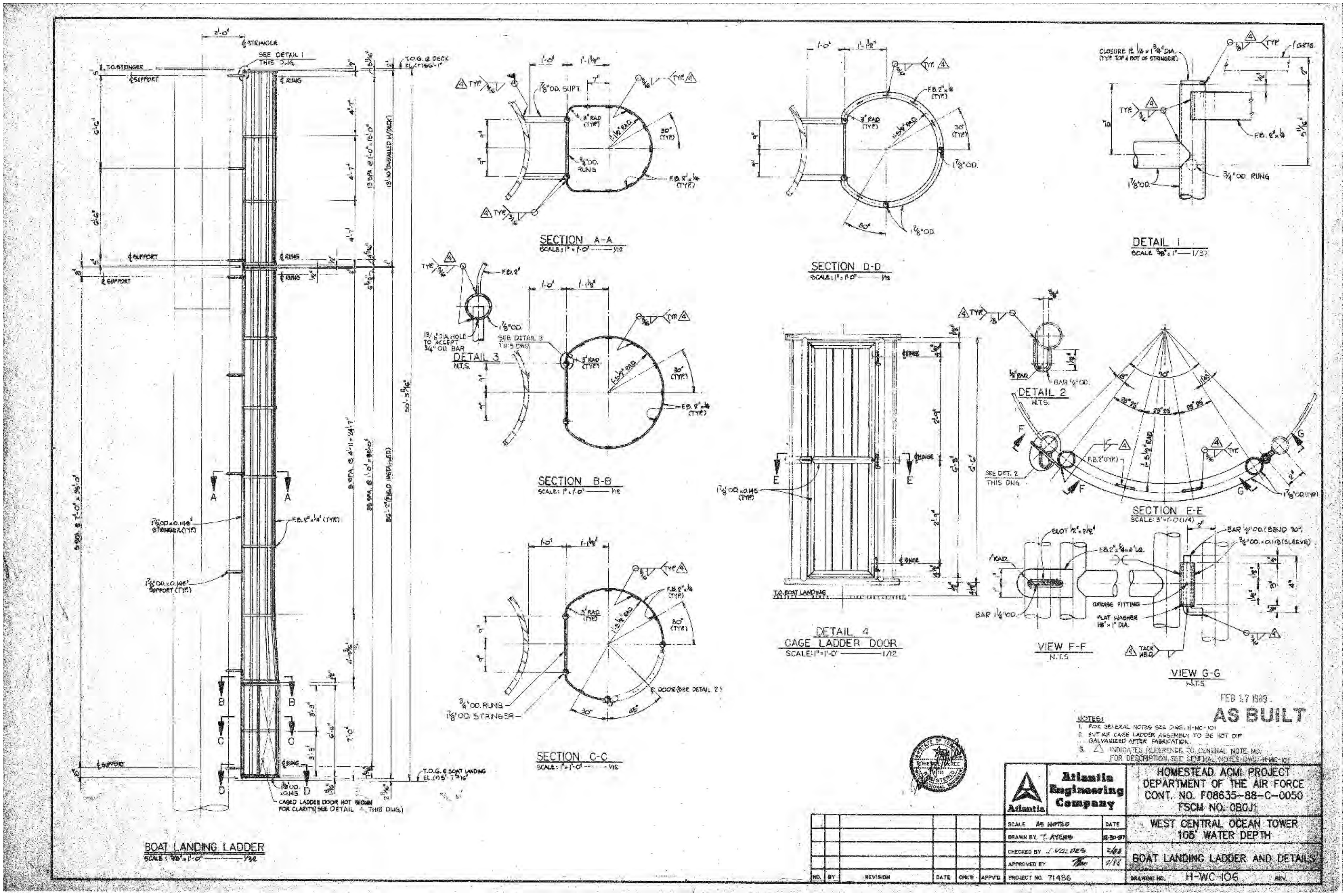

ELEVATION
PLAN AT EL.(-)70'-0"
PLAN AT MUDLINE EL.(-)105'-0"
DETAIL 1
GROUT CONNECTION
DETAIL 2
GROUT CONNECTION
DETAIL 3
CONNECTION ORIENTATION
TOP OF STRUCTURE EL.(+)39'-0"
MUDLINE EL.(-)105'-0"
52'-0"
26'-0"
FEB 17 1989
AS BUILT
GENERAL NOTES:
ALL STEEL TO BE ASTM A-36 UNLESS NOTED OTHERWISE.
SHADING ON DRAWING INDICATES API-2H (Fy=50 KSI MIN.) MATERIAL WITH S-1 SUPPLEMENT REQUIRED.
TUBULAR MATERIAL SHALL BE ASTM A53 GRB, ASTM A106 GRB, API-5L GRB (Fy=35 KSI) OR MAY BE FABRICATED IN ACCORDANCE WITH API SPEC 2B FROM PLATE MATERIAL, AS SPECIFIED ON DRAWINGS.
ALL WELDING SHALL BE FULL PENETRATION, UNLESS NOTED OTHERWISE, AND SHALL CONFORM TO AWS D1.1, LATEST EDITION.
ALL CONTACTING STEEL SURFACES SHALL BE SEALED WITH A MINIMUM FILLET WELD OR BUTT WELD, UNLESS NOTED OTHERWISE.
ALL BOLTS SHALL CONFORM TO ASTM A193-B7 SPECIFICATIONS AND SHALL BE HEAVY HEX HEAD, FULLY THREADED AND CADMIUM PLATED, UNLESS NOTED.
ALL NUTS SHALL CONFORM TO ASTM 194-2H AND SHALL BE HEAVY HEX AND CADMIUM PLATED, UNLESS NOTED.
ALL FLAT WASHERS SHALL CONFORM TO ASTM F436 AND SHALL BE CADMIUM PLATED, UNLESS NOTED.
AT FINAL INSTALLATION ALL BOLTS SHALL BE HAND TIGHTENED ONLY.
PARTS LIST
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
STRUCTURE PLAN AND ELEVATION
DRAWING NO. H-WC-101

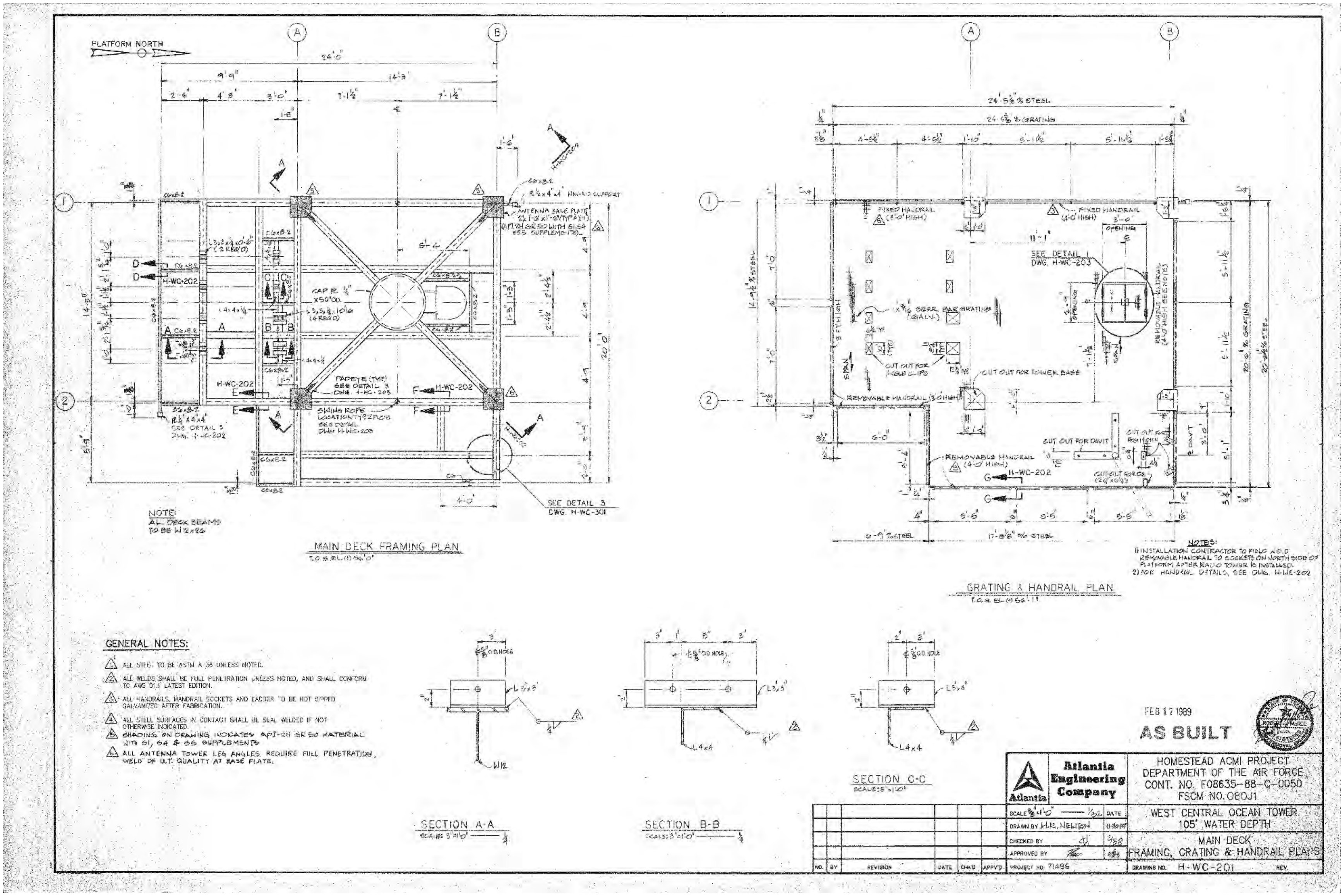

SECTION A-A (H-NW-101)
SCALE 1" = 1'-0" (1/12)
SECTION C-C
SCALE 1" = 1'-0" (1/12)
SECTION B-B (H-NW-101)
SCALE 1" = 1'-0" (1/12)
DETAIL 1 (H-NW-101)
N.T.S.
SECTION D-D
SCALE=3/4"= 1'-0"(1/16)
DETAIL 2 (H-NW-101)
SCALE: 3/4"=1'-0"--(1/16)
DETAIL 3 (H-NW-101)
SCALE: 1/2"=1'-0"--(1/24)
FEB 17 1989
AS BUILT
NOTES:
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM. NO. 0B0J1
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
SECTIONS AND DETAILS
H-WC-102

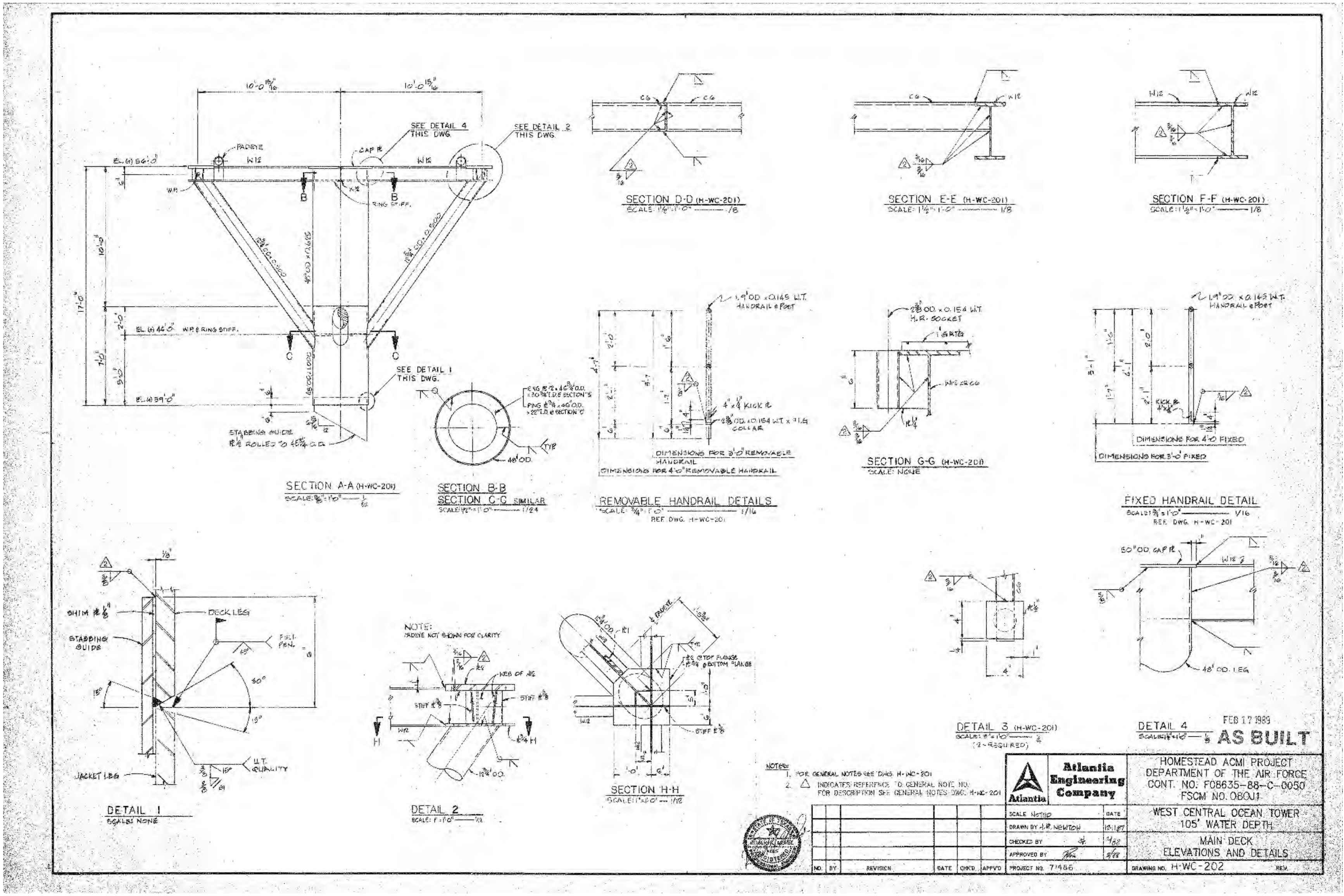

ITEM | QTY. | DESCRIPTION | MFR. | FSCM | PART NO.
1 | 8 | 2"OD x 8"LG. HVY. HEX BOLT | LONE STAR SCR. | 7H174
2 | 16 | 2 OD HEAVY HEX NUT | LONE STAR SCR. | 7H174
3 | 8 | 2 OD FLAT WASHER | LONE STAR SCR. | 7H174
30"ODx0.625
30"ODx0.750
30"ODx0.625
PILE SLEEVE
PILE ELEVATION
SCALE 1/8" = 1'-0" (1/96)
SECTION E-E
N.T.S.
DETAIL I (H-NW-101)
SCALE NONE
SECTION B-B
SCALE 1" = 1'-0" (1/12)
CENTRALIZER PLATE 1/2
SECTION A-A
SCALE 1" = 1'-0" (1/12)
SPLICE
WELD DIRECTION
SECTION C-C (TYP. 8 PLCS.)
SCALE 1" = 1'-0" (1/12)
SECTION F-F
SECTION D-D
SCALE NONE
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-WC-101
2. △ INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-WC-101
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE AS NOTED
DRAWN BY B. HEBERT 12/87
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
PILE ELEVATION AND DETAILS
PROJECT NO. 71486
DRAWING NO. H-WC-103

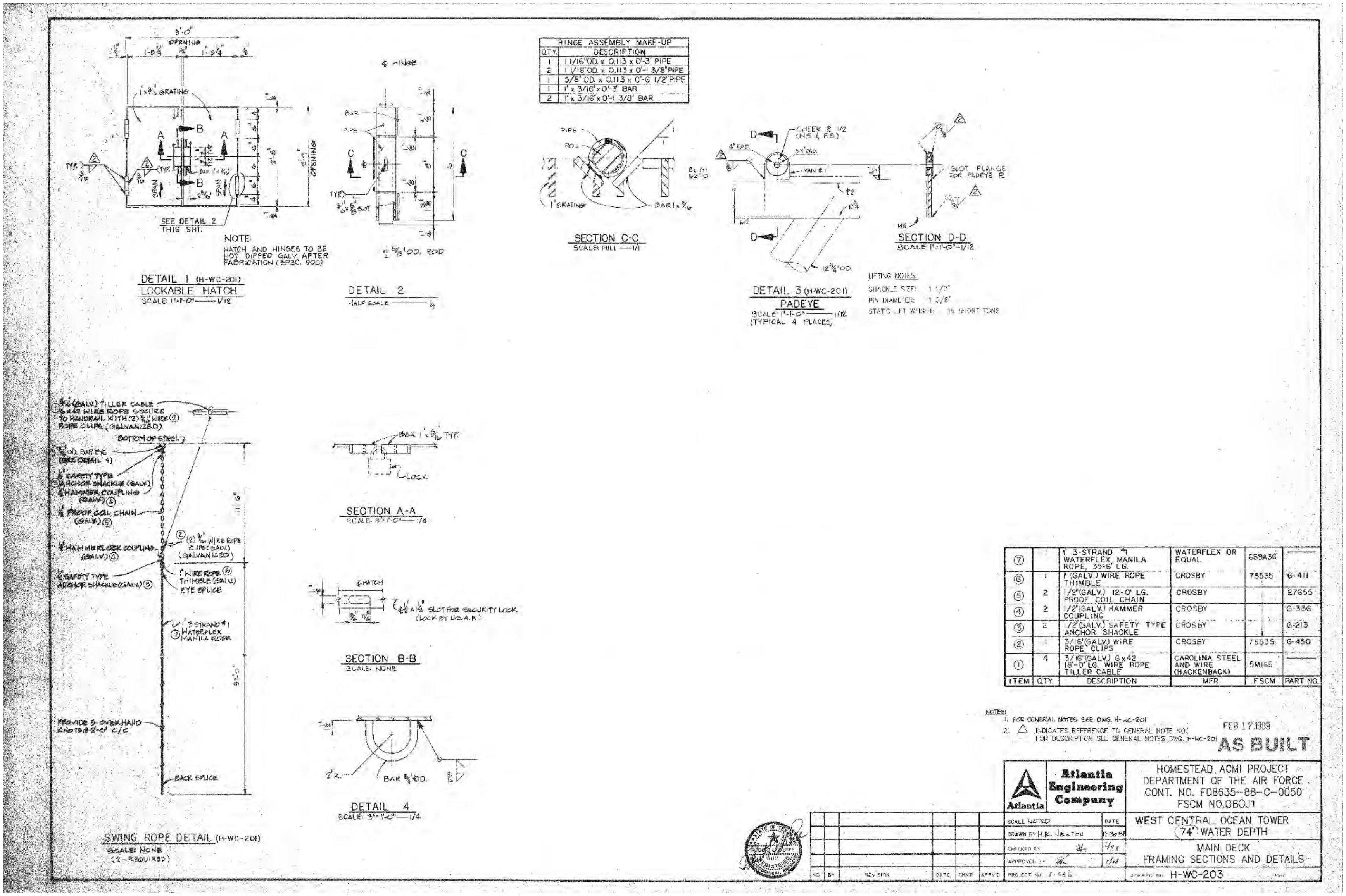

PLAN AT T.O.S. EL.(+)5'-4 5/16"
PLAN AT EL.(-)1'-0"
PLAN AT EL.(-)6'-9"
ELEVATION
STABBING POST DETAIL
DETAIL 2
OVERBOARD LADDER
(2 REQUIRED)
VIEW C-C
N.T.S.
RUBSTRIP
OVERBOARD LADDER
(TYP 2 PLCS.)
SEE DET. 2, THIS DWG.
STABBING POST
(TYP 4 PLCS.)
SEE DETAIL THIS DWG.
48"OD COLUMN
109
108
107
106
105
104
103
102
101
FEB 17 1989
AS BUILT
NOTES:
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
BOAT LANDING
FRAMING AND GRATING PLANS
SCALE 3/8" = 1'-0"
DRAWN BY B. HEBERT
PROJECT NO. 71486
DRAWING NO. H-WC-104

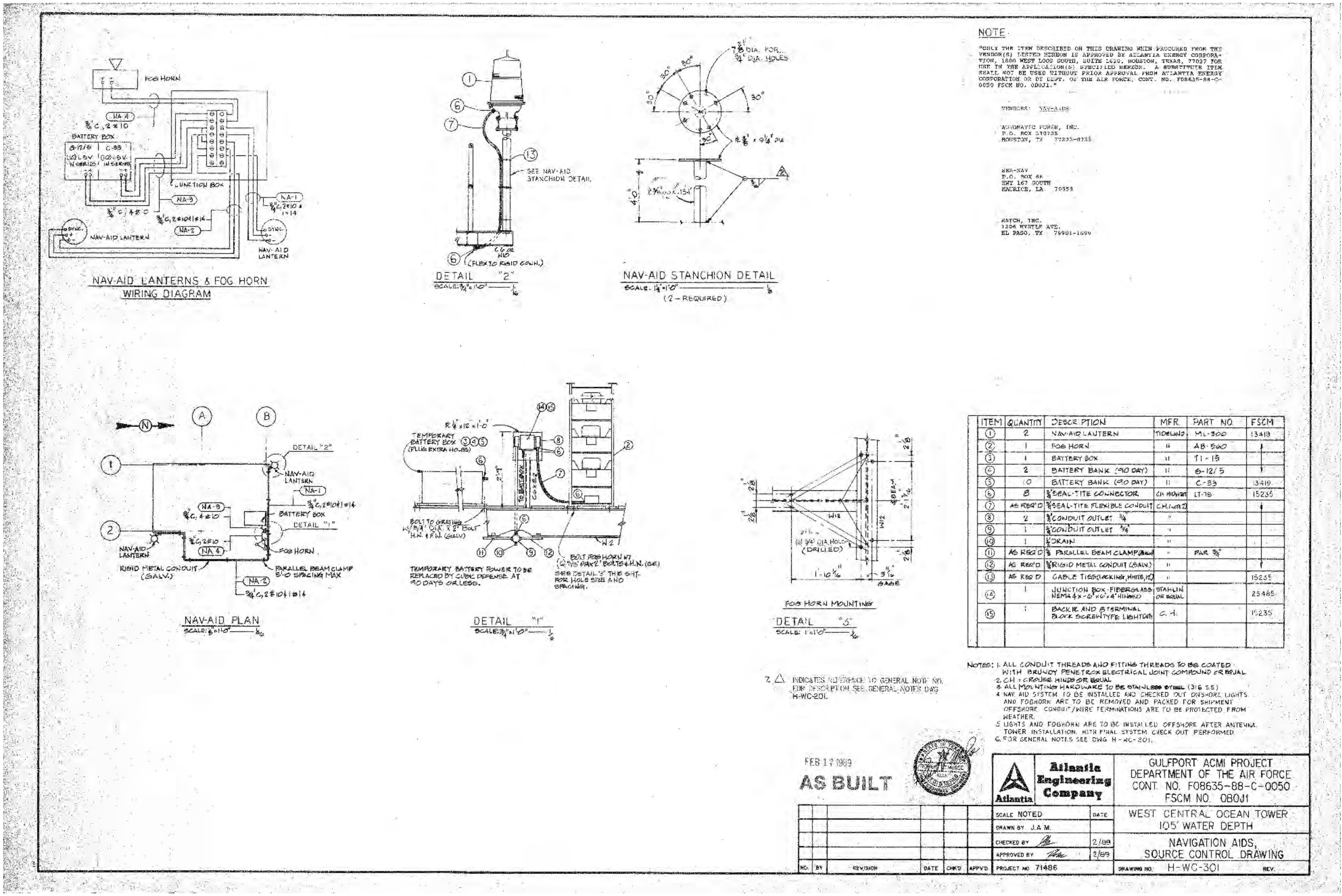

SECTION A-A (H-WC-104)(SIM 6 PLCS.)
SCALE 3/8" = 1'-0" (1/32)
SECTION B-B (H-WC-104) (SIM. 6 PLCS.)
SCALE 3/8" = 1'-0" (1/32)
SECTION C-C
SCALE 1 1/2" = 1'-0" (1/8)
SECTION D-D
SCALE 3/8" = 1'-0" (1/32)
DETAIL 1 (H-WC-104)
SCALE 1 1/2" = 1'-0" (1/8)
DETAIL 2
SCALE NONE
DETAIL 3
SCALE 1 1/2" = 1'-0" (1/8)
ITEM | QTY. | DESCRIPTION | MFR. | FSCM | PART NO.
1 | 6 | RUBSTRIP | TELEDYNE | 2N167 | CP-8
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-WW-101.
2. INSTALLATION CONTRACTOR TO CUT BOAT LANDING POSTS (10 3/4"OD) ON MARKS CORRESPONDING TO ACTUAL WATER LINE ON COLUMN.
3. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-WC-101
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
BOAT LANDING SECTIONS & DETAILS
SCALE AS NOTED
DRAWN BY H. HEBERT 12/87
PROJECT NO. 71486
DRAWING NO. H-WC-105


BOAT LANDING LADDER
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
DETAIL 1
DETAIL 2
DETAIL 3
DETAIL 4
CAGE LADDER DOOR
SECTION E-E
VIEW F-F
VIEW G-G
FEB 17 1989
AS BUILT
NOTES:
1. FOR GENERAL NOTES SEE DWG. H-WC-101
2. ENTIRE CAGE LADDER ASSEMBLY TO BE HOT DIP GALVANIZED AFTER FABRICATION.
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
Atlantis Engineering Company
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
BOAT LANDING LADDER AND DETAILS
SCALE AS NOTED
DRAWN BY T. AYERS
CHECKED BY J. VALDES
PROJECT NO. 71486
DRAWING NO. H-WC-106


PLATFORM NORTH
MAIN DECK FRAMING PLAN
NOTE: ALL DECK BEAMS TO BE W12x26
GRATING & HANDRAIL PLAN
GENERAL NOTES:
ALL STEEL TO BE ASTM A 36 UNLESS NOTED.
ALL WELDS SHALL BE FULL PENETRATION UNLESS NOTED, AND SHALL CONFORM TO AWS D1.1 LATEST EDITION.
ALL HANDRAILS, HANDRAIL SOCKETS AND LADDER TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
ALL STEEL SURFACES IN CONTACT SHALL BE SEAL WELDED IF NOT OTHERWISE INDICATED.
SHADING ON DRAWING INDICATES API-2H GR 50 MATERIAL WITH S1, S4 & S5 SUPPLEMENTS
ALL ANTENNA TOWER LEG ANGLES REQUIRE FULL PENETRATION WELD OF U.T. QUALITY AT BASE PLATE.
SECTION A-A
SECTION B-B
SECTION C-C
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0E0J1
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
MAIN DECK
FRAMING, GRATING & HANDRAIL PLANS
PROJECT NO. 71496
DRAWING NO. H-WC-201


SECTION A-A (H-WC-201)
SECTION B-B
SECTION C-C SIMILAR
SECTION D-D (H-WC-201)
SECTION E-E (H-WC-201)
SECTION F-F (H-WC-201)
SECTION G-G (H-WC-201)
REMOVABLE HANDRAIL DETAILS
FIXED HANDRAIL DETAIL
DETAIL 1
DETAIL 2
SECTION H-H
DETAIL 3 (H-WC-201)
DETAIL 4
FEB 17 1989
AS BUILT
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0BOJ1
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
MAIN DECK
ELEVATIONS AND DETAILS
H-WC-202


DETAIL 1 (H-WC-201) LOCKABLE HATCH
DETAIL 2
SECTION C-C
DETAIL 3 (H-WC-201) PADEYE
SECTION D-D
SECTION A-A
SECTION B-B
DETAIL 4
SWING ROPE DETAIL (H-WC-201)
AS BUILT
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
WEST CENTRAL OCEAN TOWER
74' WATER DEPTH
MAIN DECK
FRAMING SECTIONS AND DETAILS
H-WC-203


NAV-AID LANTERNS & FOG HORN WIRING DIAGRAM
DETAIL "2"
NAV-AID STANCHION DETAIL
(2-REQUIRED)
NOTE
NAV-AID PLAN
DETAIL "1"
FOG HORN MOUNTING
DETAIL "3"
NOTES: 1. ALL CONDUIT THREADS AND FITTING THREADS TO BE COATED WITH BRUNDY PENETROX ELECTRICAL JOINT COMPOUND OR EQUAL
2. CH = CROUSE HINDS OR EQUAL
3. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL (316 S.S.)
4. NAV AID SYSTEM TO BE INSTALLED AND CHECKED OUT ONSHORE. LIGHTS AND FOGHORN ARE TO BE REMOVED AND PACKED FOR SHIPMENT OFFSHORE. CONDUIT/WIRE TERMINATIONS ARE TO BE PROTECTED FROM WEATHER.
5. LIGHTS AND FOGHORN ARE TO BE INSTALLED OFFSHORE AFTER ANTENNA TOWER INSTALLATION, WITH FINAL SYSTEM CHECK OUT PERFORMED.
6. FOR GENERAL NOTES SEE DWG H-WC-201.
FEB 17 1989
AS BUILT
Atlantia Engineering Company
GULFPORT ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
NAVIGATION AIDS, SOURCE CONTROL DRAWING
SCALE NOTED
DRAWN BY J.A.M.
CHECKED BY 2/89
APPROVED BY 2/89
PROJECT NO 71486
DRAWING NO. H-WC-301

NOTE:

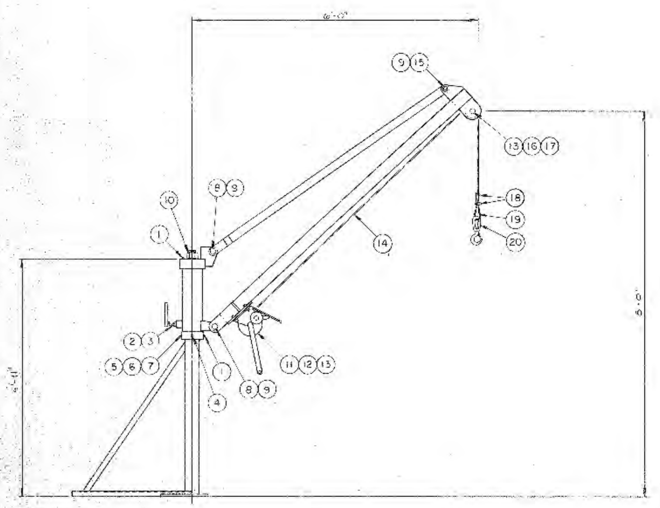
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."

VENDORS: DAVITS

WEATHERFORD
11909 SPENCER RD. (FM 529)
HOUSTON, TX 77042

APEX EQUIPMENT CORPORATION, INC
P.O. BOX 19681
HOUSTON, TX 77224-9681

GAFFEY, INC. OF TEXAS
ROUTE 2, BOX 2062
CLEVELAND, TX 77327



ELEVATION
DAVIT WITH HAND WINCH
SCALE: 1" = 1'-0"

SPARE PARTS

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
18	3	1/4" S.S. WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	640-3024
16	1	1/2"-13 NC x 2 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	
15	2	3/4"-10 NC x 3 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.		———
10	1	1 1/2"-12 NC ELASTIC LOCK NUT	LONE STAR SCR.		———
8	2	3/4"-10 NC x 3" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	

PARTS LIST

ITEM	QTY.	DESCRIPTION	MFR.	FSCM	PART NO.
20	1	2 TON SWIVEL HOOK	CROSBY	75535	S-322G
19	1	1/4" S.S. WIRE ROPE THIMBLE	CAMPBELL CHAIN	80535	640-7604
18	2	1/4" S.S. WIRE ROPE CLIPS	CAMPBELL CHAIN	80535	640-3024
17	1	4" x 5/8" x 1/2" SHEAVE W/BRONZE BUSHING 1/4" GROOVE	CROSBY	75535	1173
16	1	1/2"-13 NC x 2 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
15	1	3/4"-10 NC x 7 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
14	100'-0"	1/4", 1 x 7, 316 S.S. WIRE ROPE	CAROLINA STEEL AND WIRE (HACKNBACK)	5M165	———
13	5	1/2"-13 NC x ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	———
12	4	1/2"-13 NC x 1 1/2" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
11	1	WINCH WITH MANUAL GEAR (GALVANIZED)	BEEBE	06550	3W8B
10	1	1 1/2"-12 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.	7H174	———
9	3	3/4"-10 NC ELASTIC LOCK NUT 316 S.S.	LONE STAR SCR.		
8	2	3/4"-10 NC x 3" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
7	1	4 1/2" OD x 4" ID x 1 1/2" LG BRONZE BUSHING	OILITE	7E404M	———
6	1	BEARING CUP	TIMKEN	86637	53375
5	1	BEARING CONE	TIMKEN	86637	53162
4	1	1/4"-20 NC x 3/4" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	———
3	1	[illegible] 1/2" OD x 1 1/2" LG NYLON BRAKE PAD	MARTEC CRANE	2H098	———
2	1	5/8"-11 NC x 3" LG H.H.C.S. 316 S.S. BOLT	LONE STAR SCR.	7H174	
1	2	1/8" NPT S.S. GREASE FITTING	ALEMITE	02260	1966-3

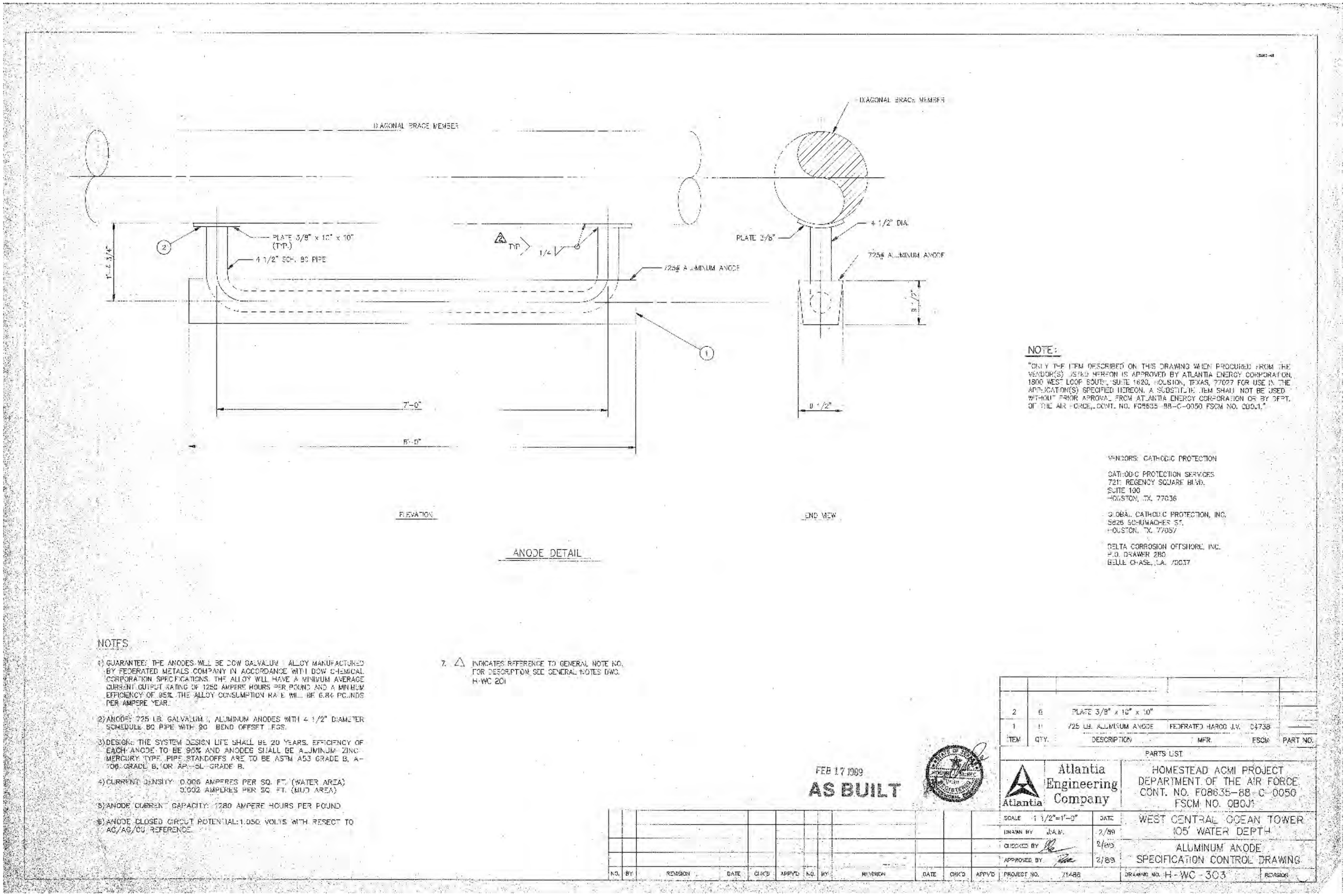
FEB 17 1989
AS BUILT

NO.	BY	REVISION	DATE	CHKD	APPVD

Atlantia Engineering Company

HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1

SCALE AS NOTED	DATE	WEST CENTRAL OCEAN TOWER 105' WATER DEPTH
DRAWN BY B. TAYLOR	1/89	
CHECKED BY [illegible]	2/89	DAVIT SOURCE CONTROL DRAWING
APPROVED BY	2/89	
PROJECT NO. 71486		DRAWING NO. H-WC-302 REV.


DIAGONAL BRACE MEMBER
PLATE 3/8" x 10" x 10" (TYP.)
4 1/2" SCH. 80 PIPE
725# ALUMINUM ANODE
1/4
TYP
7'-0"
8'-0"
PLATE 3/8"
4 1/2" DIA.
ELEVATION
END VIEW
ANODE DETAIL
NOTE:
"ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE VENDOR(S) LISTED HEREON IS APPROVED BY ATLANTIA ENERGY CORPORATION, 1800 WEST LOOP SOUTH, SUITE 1620, HOUSTON, TEXAS, 77027 FOR USE IN THE APPLICATION(S) SPECIFIED HEREON. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT PRIOR APROVAL FROM ATLANTIA ENERGY CORPORATION OR BY DEPT. OF THE AIR FORCE, CONT. NO. F08635-88-C-0050 FSCM NO. 0B0J1."
VENDORS: CATHODIC PROTECTION
CATHODIC PROTECTION SERVICES
7211 REGENCY SQUARE BLVD.
SUITE 100
HOUSTON, TX. 77036
GLOBAL CATHODIC PROTECTION, INC.
5826 SCHUMACHER ST.
HOUSTON, TX. 77057
DELTA CORROSION OFFSHORE, INC.
P.O. DRAWER 280
BELLE CHASE, LA. 70037
NOTES
1) GUARANTEE: THE ANODES WILL BE DOW GALVALUM I ALLOY MANUFACTURED BY FEDERATED METALS COMPANY IN ACCORDANCE WITH DOW CHEMICAL CORPORATION SPECIFICATIONS. THE ALLOY WILL HAVE A MINIMUM AVERAGE CURRENT OUTPUT RATING OF 1250 AMPERE HOURS PER POUND AND A MINIMUM EFFICIENCY OF 95%. THE ALLOY CONSUMPTION RATE WILL BE 6.84 POUNDS PER AMPERE YEAR.
2) ANODE: 725 LB. GALVALUM I, ALUMINUM ANODES WITH 4 1/2" DIAMETER SCHEDULE 80 PIPE WITH 90° BEND OFFSET LEGS.
3) DESIGN: THE SYSTEM DESIGN LIFE SHALL BE 20 YEARS. EFFICIENCY OF EACH ANODE TO BE 95% AND ANODES SHALL BE ALUMINUM ZINC MERCURY TYPE. PIPE STANDOFFS ARE TO BE ASTM A53 GRADE B, A-106 GRADE B, OR API-5L GRADE B.
4) CURRENT DENSITY: 0.006 AMPERES PER SQ. FT. (WATER AREA)
0.002 AMPERES PER SQ. FT. (MUD AREA)
5) ANODE CURRENT CAPACITY: 1280 AMPERE HOURS PER POUND
6) ANODE CLOSED CIRCUIT POTENTIAL: 1.050 VOLTS WITH RESECT TO AG/AG/CL REFERENCE.
7. INDICATES REFERENCE TO GENERAL NOTE NO. FOR DESCRIPTION SEE GENERAL NOTES DWG. H-WC 201
FEB 17 1989
AS BUILT
2 | 6 | PLATE 3/8" x 10" x 10"
1 | 11 | 725 LB. ALUMINUM ANODE | FEDERATED HARCO J.V. | 04738
ITEM | QTY. | DESCRIPTION | MFR. | FSCM | PART NO.
PARTS LIST
Atlantia Engineering Company
HOMESTEAD ACMI PROJECT
DEPARTMENT OF THE AIR FORCE
CONT. NO. F08635-88-C-0050
FSCM NO. 0B0J1
SCALE 1 1/2"=1'-0"
DATE
DRAWN BY J.A.M. 2/89
CHECKED BY 2/89
APPROVED BY 2/89
WEST CENTRAL OCEAN TOWER
105' WATER DEPTH
ALUMINUM ANODE
SPECIFICATION CONTROL DRAWING
PROJECT NO. 71488
DRAWING NO. H-WC-303
REVISION
NO. | BY | REVISION | DATE | CHK'D | APPV'D

APPENDIX B
STAKEHOLDER COORDINATION

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APPENDIX B – STAKEHOLDER COORDINATION

B.1 INTRODUCTION

Scoping is an early and open process for developing the breadth of issues to be addressed in an Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) and for identifying significant concerns related to an action. Per the requirements of Executive Order (E.O.) 12372, Intergovernmental Review of Federal Programs, as amended by E.O. 12416, federal, state, and local agencies with jurisdiction that could be affected by the Proposed Action or alternatives were notified during the development of this EA/OEA.

The Intergovernmental Coordination Act and E.O. 12372 require federal agencies to cooperate with and consider state and local views in implementing a federal proposal. Through the coordination process, the Department of the Air Force contacted potentially interested and affected government agencies, government representatives, elected officials, Tribes, and interested parties potentially affected by the Proposed Action. The stakeholder coordination process is summarized in this appendix.

B.1.1 Government-to-Government Consultation

The National Historic Preservation Act (NHPA) and its regulations in 36 Code of Federal Regulations (CFR) Part 800 direct federal agencies to consult with federally recognized Indian tribes when a proposed or alternative action has the potential to affect tribal lands or properties of religious and cultural significance to a tribe. Consistent with the NHPA, federally recognized Tribes that are historically affiliated with lands in the vicinity of the Proposed Action have been invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the Tribes. Interested Tribes were sent two letters – the notification letter requested information on any properties of historic, religious, or cultural significance within the area of potential effect that may be affected, and the consultation letter requested review and comments on the Draft EA/OEA. The Native American Tribal Stakeholder List is included in this appendix and as well as responses received from Tribes.

B.1.2 Agency Consultations

Implementation of the Proposed Action involves coordination with several agencies. Compliance with Section 7 of the Endangered Species Act, and implementing regulations (50 CFR Part 402), requires communication with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) in cases where a federal action could affect listed threatened or endangered species, species proposed for listing, or candidates for listing. Letters were sent to the appropriate USFWS and NMFS offices as well as relevant state agencies informing them of the proposal and requesting data regarding applicable protected species. Consultation with the NMFS under the Magnusen Stevens Act was concluded in December 2024 (see **Section B.2.5.1**). Consultation with the NMFS under Section of the ESA was concluded in July 2025 (see **Section B.2.5.2**). Consultation with the USFWS under Section 7 of the ESA was concluded in December 2024 (see **Section B.2.5.3**).

B.2 PUBLIC REVIEW OF THE ENVIRONMENTAL ASSESSMENT

A Notice of Availability for the Draft EA/OEA and proposed Finding of No Significant Impact (FONSI) / Finding of No Significant Harm (FONSH) was published in the *Tallahassee Democrat*, the *Naples Daily News*, and the *Key West Citizen.* inviting the public to review and comment on the Draft EA/OEA during the 30-day review period.

Printed copies of the Draft EA/OEA and proposed FONSI/FONSH were available for review at the following libraries:

- Leroy Collins Leon County Main Public Library, 200 W Park Ave, Tallahassee, FL 32301
- Naples Regional Library, 650 Central Ave, Naples, FL 34102
- Monroe County Public Library, 700 Fleming Street, Key West, Florida 33040

The Draft EA/OEA and proposed FONSI/FONSH were available on Tyndall AFB's website at https://www.tyndall.af.mil/About/. No public comments were received.

B.2.1 Stakeholders List

The following is the stakeholder list for correspondence associated with this EA/OEA.

Federal Agencies

Maj Cory J. Bell
Deputy Commander for South Florida
U.S. Army Corps of Engineers
Palm Beach Gardens, FL

Jeremy M. LaDart
Chief, Planning and Environmental Division
USACE Mobile District
Mobile, AL

Ms. Catrina Martin
Supervisor, Environmental Review
U.S. Fish and Wildlife Service
Panama City, FL

John Filostrat
Bureau of Ocean Energy Management
Gulf of Mexico OCS Region & Atlantic OCS Region
New Orleans, LA

Matt Brookhart
Regional Director
NOAA Office of National Marine Sanctuaries
Northeast/Great Lakes & Southeast Regions
Silver Spring, MD

Rear Admiral Brendan C. McPherson
Commander, USCG Seventh District
Brickell Plaza Federal Building
Miami, FL

Rear Admiral David C. Barata
Commander, USCG Eighth District
Hale Boggs Federal Building
New Orleans, LA

Ntale Kajumba
Chief of the NEPA Program Office
U.S. EPA Region 4
Sam Nunn Atlanta Federal Center
Atlanta, GA

Andy Strelcheck
Regional Administrator
National Marine Fisheries Service
Southeast Regional Office
St. Petersburg, FL

State Agencies

Alissa Slade Lotane
State Historic Preservation Officer
Division of Historical Resources
Tallahassee, FL

Chris Stahl, Coordinator
Florida State Clearinghouse
Florida Dept of Environmental Protection
Tallahassee, FL

Dr. David Crass, Division Director
Deputy State Historic Preservation Officer
DNR Historic Preservation Division
Jewett Center for Historic Preservation
Stockbridge, GA

Native American Tribes

Ann Denson Tucker, Chairwoman
Muscogee Nation of Florida
Ponce de Leon, FL

Ryan Morrow, Town King
Thlopthlocco Tribal Town
Okemah, OK

Marcellus W. Osceola Jr.,Chairman
Seminole Tribe of Florida
Clewiston, FL

Mr. Lewis J. Johnson, Chief
Seminole Nation of Oklahoma
Wewoka, OK

Brian Givens, Town King
Kialegee Tribal Town
Wetumka, OK

Stephanie A. Bryan, Chairwoman
Poarch Band of Creek Indians
Atmore, AL

Muscogee Creek Nation
Attn: David Hill, Principal Chief
Okmulgee, OK

Talbert Cypress, Chairman
Miccosukee Tribe of Indians of Florida
Miami, FL

Crystal Williams, Acting Chairman
Coushatta Tribe of Louisiana
Elton, LA

B.2.2 Public Notices of Availability

B.2.2.1 Draft EA/OEA Notice of Availability

FROM PAGE 1A

Shoreline/from A1

weighted suitability score for various types of shoreline reinforcement where feasible. By integrating data on existing shoreline types — sourced from an updated version of NOAA's NOS Environmental Sensitivity Index — along with wind and wave exposure and physical environmental factors, they generated a composite Shoreline Relative Exposure Index. Based on this assessment, broadly defined categories of project types were recommended for various combinations of shoreline features and flood risk conditions.

Experts who completed the survey covered coastal engineering, stormwater management, marine biology, habitat restoration, community resilience, urban planning and sustainability. The data was used to calculate scores, which were analyzed through a machine-learning model to identify the best stabilization options for different shoreline types, including developed, undeveloped and protected areas.

Findings indicate that while conventional seawall armoring is needed in some areas of the Keys coastline, hybrid and living shorelines should be prioritized where possible to protect people, habitats and resources. This requires involvement from private stakeholders and coordination among public entities to strengthen coastal resilience.

"Implementing innovative shoreline stabilization methods is crucial as environmental shifts and population growth are expected to exacerbate flood management challenges, making it essential to adopt sustainable, nature-based solutions that enhance resilience and protect vulnerable communities," said Diana Mitsova, Ph.D., senior author and chair and professor of the Department of Urban and Regional Planning within FAU's Charles E. Schmidt College of Science.

South Florida's coastal ecosystems, including mangrove swamps and coastal strands, have already been incorporated into various shoreline management practices that reduce erosion potential and create appropriate habitat conditions. Mangroves are essential for sustaining estuarine and marine ecosystems in South Florida, providing critical habitat, stabilizing shorelines and supporting biodiversity. They offer nesting spots for many species and help the marine food chain by being a main source of small bits of organic matter. Their complex root systems keep the soil in place, reduce water cloudiness and help collect debris and particles in the water.

"New improvements in geospatial technology now allow us to combine human-made impact data with local land and ocean environmental data across large areas," said Chris Bergh, Keys field program director at The Nature Conservancy. "This information helps coastal managers identify key areas that need protection or are important for commercial and recreational activities. By doing this, it can help avoid conflicts between different uses of the coast and create a more flexible, forward-thinking and sustainable way of managing the area."

The data from this study can be accessed through The Nature Conservancy's Coastal Resilience, an online tool that uses GIS technology to help users visualize proposed shoreline stabilization methods tailored to different areas of the Keys. It also allows users to overlay local data, like projected sea-level rise, coastal habitats and land use.

MONROE COUNTY PLANNING COMMISSION

NOTICE OF PUBLIC MEETING - NOTICE OF PUBLIC HEARING

MAY 28, 2025

NOTICE IS HEREBY GIVEN that on **May 28, 2025,** the **Monroe County Planning Commission** will hold a Public Meeting, beginning at **10:00 AM.** The Planning Commission hearing will be held in hybrid format, allowing the public to attend either via Zoom Webinar or in person. The in-person meeting will be held at the **Marathon Government Center, located at 2798 Overseas Highway, Marathon, FL 33050.**

The following items will be considered at the **PUBLIC HEARING:**

A PUBLIC HEARING TO CONSIDER AND FINALIZE THE RANKING OF APPLICATIONS IN THE DWELLING UNIT ALLOCATION SYSTEM FOR JANUARY 14, 2025 THROUGH APRIL 14, 2025, ROGO (Quarter 3, Year 33). ALLOCATION AWARDS WILL BE ALLOCATED FOR ALL UNINCORPORATED MONROE COUNTY. (File 2024-140)

A PUBLIC HEARING TO CONSIDER AND FINALIZE THE RANKING OF APPLICATIONS IN THE NON-RESIDENTIAL ALLOCATION SYSTEM FOR JANUARY 14, 2025 THROUGH APRIL 14, 2025, NROGO (Quarter 3, Year 33). ALLOCATION AWARDS WILL BE ALLOCATED FOR ALL UNINCORPORATED MONROE COUNTY. Pursuant to Monroe County Code Section 138-53(e)(13), the Planning and Environmental Resources Department is providing a notification to the general public of the NROGO account balances. The balances are as follows:

NROGO Year 33 Balances Available for Quarter 3			
	ANNUAL NROGO	NROGO BANK	
	Year 33, Allocation Amount	Subarea Bank Accounts (rollover from Year 32	Year 33 General Bank (1. Joint Lower & Upper and 2. Big Pine/No Name) Total
Big Pine Key and No Name Key subarea	2,390 SF	29,523	29,523 SF*
Upper	22,944 SF	44,533	815,529 SF*
Lower	21,749 SF		
Totals	47,083 SF	74,056	845, 052 SF*

** Includes NROGO SF from expired allocation awards or corrections.* (File 2024-141)

NEW DUCK KEY MARINA, 1254 GREENBRIAR ROAD, DUCK KEY, MILE MARKER 61: A PUBLIC HEARING CONCERNING A REQUEST FOR A 2APS ALCOHOLIC BEVERAGE USE PERMIT, WHICH WOULD ALLOW FOR THE PACKAGE SALE OF BEER AND WINE IN SEALED CONTAINERS FOR OFF PREMISES CONSUMPTION, FROM A PORTION OF AN EXISTING MARINA. THE PROPERTY IS DESCRIBED AS A PARCEL OF LAND IN SECTION 21, TOWNSHIP 65 SOUTH, RANGE 34 EAST, MONROE COUNTY, FLORIDA, HAVING PARCEL IDENTIFICATION NUMBER 00099140-000100. (File 2024-221)

ADA ASSISTANCE: If you are a person with a disability who needs special accommodations in order to participate in this proceeding, please contact the County Administrator's Office, by phoning (305) 292-4441, between the hours of 8:30 a.m. - 5:00 p.m., no later than five (5) calendar days prior to the scheduled meeting; if you are hearing or voice impaired, call "711".

Please visit the Monroe County Website at www.monroecounty-fl.gov for meeting agenda updates and information regarding the various options available to the public to view the live meeting and/or to make public comments on certain agenda items.

IN CASE YOU MISSED IT

Stillwright road project has sinking sensation

CITIZEN STAFF

FILE PHOTO

Floodwaters collect along the intersection of North Blackwater Lane and Sexton Way in the Stillwright Point neighborhood in Key Largo in this file photo.

Stillwright Point homeowners urged county officials recently to raise roads 7-14 inches in their flood-prone Key Largo neighborhood and let them deal with water runoff into their yards.

None in attendance during the community meeting expressed support for the county's projected $41 million road adaption and stormwater project, which would require each owner to give up 10 feet along the front of their property for drainage systems and relocation of utilities, in addition to a possible capital assessment of $25,000 per home to help cover construction costs and an annual assessment for the operation and maintenance (O&M) of pump stations to drain and inject floodwater 80-100 feet below the surface.

The bayside community is one of several targeted by the county for resiliency projects to alleviate sunny-day flooding due to sea-level rise and king tides as well as weather-related flooding due to rainfall and storm surge.

The county's proposed design would elevate the neighborhood's roadways to a minimum of 2.26 feet based on 2045 projected sea-level rise and king tides. The higher roads would require widening and sloping with adjacent properties to avoid steep drop-offs. Engineered closed stormwater systems along the roads would collect floodwater, and pump stations and injection wells would treat and dispose of that water from the drainage areas.

Speaker after speaker during the Monday, April 28, meeting called instead for simple road raising, with some suggesting a "flowage easement" releasing the county from any legal liability if water from a higher road flows on their property. County officials say their projects cannot create additional hardships for adjacent properties.

Many residents attributed the sunny-day flooding to the installation of sewer infrastructure by the Key Largo Wastewater Treatment District several years ago, which they say has caused their roads to sink.

Monroe County Administrator Christine Hurley sought consensus from the gathering based on their experience with recurring flooding as to how much higher the roads should be raised and eventually arrived at a range of 7-14 inches.

With the exception of South Drive with a proposed increase of 1.04 feet, the other road segments were looking at an increase of 2.27 to 2.56 feet under the design proposal.

Residents also questioned whether they'd have to bear a higher cost burden for the proposed project if state and federal funding were not secured, or if construction costs were higher once bids for the anticipated $41 million project are returned.

"We never know what it is going to cost until we go out for bids," said Judith Clarke, county engineering director. "And the bids are what the bids are. It depends on which contractors are interested in the work. Tariffs? That might change things."

Some noted that projected costs for the project just a few years ago were in the $20 million range. Clarke said there have been "incredible increases in construction costs coming out of the COVID years."

Potential funding for the project includes $20 million in federal funds to be available upon completion of the design and permitting, and subject to cost-benefit analysis approval, and $21 million from the state, for which the county has applied but has not yet been awarded.

Meeting attendees were asked to take a survey at the conclusion of the meeting to determine their support for the 10-foot easement plan, which would require the participation of all property owners. They were also encouraged to submit preferred alternatives to be shared with the Monroe County Commission.

NOTICE OF AVAILABILITY

Draft Environmental Assessment/Overseas Environmental Assessment for Decommissioning of Air Combat Maneuvering Instrumentation Towers

The Department of the Air Force (DAF) has prepared a Draft Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) and proposed Finding of No Significant Impact (FONSI)/Finding of No Significant Harm (FONSH) to evaluate the environmental consequences of the Proposed Action to decommission 14 Air Combat Maneuvering Instrumentation towers. Eight of the towers are located northwest of Key West, Florida and six are located southeast of Carrabelle, Florida. The Proposed Action would allow the DAF to divest of infrastructure that is no longer needed to support DAF flight training requirements and that is deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance.

Printed copies of the Draft EA/OEA and proposed FONSI/FONSH are available at the following locations:

- Leroy Collins Leon County Main Public Library, 200 W Park Ave, Tallahassee, Florida 32301
- Naples Regional Library, 650 Central Ave, Naples, Florida 34102
- Monroe County Library, 700 Fleming Street, Key West, Florida 33040

The Draft EA/OEA and proposed FONSI/FONSH is available for review and download on the Tyndall AFB website at https://www.tyndall.af.mil/About/.

The DAF is requesting comments on the Draft EA/OEA and proposed FONSI/FONSH from interested local, state, and federal elected officials and agencies, as well as members of the public. Comments are requested within 30 days from the publication date of this notice to ensure full consideration in the process. Comments can be submitted by mail to the attention of Mr. Edwin Wallace, 325th Civil Engineer Squadron, 102 Checkertail Way, Bldg. 36234, Tyndall AFB, Florida 32404, or via email at edwin.wallace.1@us.af.mil.

PRIVACY ADVISORY NOTICE

Public input allows DAF to make better-informed decisions. Letters or other written or verbal comments provided may be published in this EA. Providing personal information is voluntary. Private addresses will be compiled to develop a stakeholders inventory. However, only the names of the individuals making comments and specific comments will be disclosed. Personal information, home addresses, telephone numbers, and email addresses will not be published in this EA.

The digital version of this EA/OEA is compliant with Section 508 of the Rehabilitation Act of 1973 because assistive technology (e.g., "screen readers") can be used to help people with disabilities to understand these electronic media. Due to the nature of graphics, figures, tables, and images occurring in the document, accessibility may be limited to a descriptive title for each item.

NOTICE OF PUBLIC MEETING

Key West Bight Management District Board
FY25/26 Key West Historic Seaport Budget Review
Wednesday, May 21, 2025, at 3:00 P.M.
1300 White Street, City Hall
Commission Conference Room 113

Members of the Key West City Commission may be in attendance at this meeting.
ADA Assistance: It is the policy of the City of Key West to comply with all requirements of the Americans with Disabilities Act (ADA). Please call the TTY number at 800-955-8771 or 800-955-8770 (Voice) or the ADA Coordinator at 305-809-3811 at least five business days in advance for sign language interpreters, assistive listening devices, or materials in accessible format.

NOTICE OF PUBLIC MEETING

City Marina Liveaboard Pricing Structure Proposal
Wednesday, May 21, 2025, at 5:00 P.M.
1300 White Street, City Hall, Commission Chambers

Members of the Key West City Commission may be in attendance at this meeting.
ADA Assistance: It is the policy of the City of Key West to comply with all requirements of the Americans with Disabilities Act (ADA). Please call the TTY number at 800-955-8771 or 800-955-8770 (Voice) or the ADA Coordinator at 305-809-3811 at least five business days in advance for sign language interpreters, assistive listening devices, or materials in accessible format.

City of Key West
Code Compliance Hearing
Thursday, May 22, 2025 at 1:30 p.m.
City Hall, 1300 White Street

It is the policy of the City of Key West to comply with all requirements of the Americans with Disabilities Act. The facility is accessible. For sign language interpreters, assistive listening devices, or materials in accessible format, please call the TTY number at 7-1-1(V), 1-800-955-8771(TTY), 1-800-955-8770(Voice), 1-877-955-5334(STS), 1-877-955-8773(Spanish) or the ADA Coordinator at 305-809-3811 at least five business days in advance.

NOTICE OF MEETING

Development Review Committee
Thursday, May 22, 2025 at 10:00 A.M.
City Hall, 1300 White Street, Key West, FL
Instructions on how to comment or listen to the meeting are available online at www.cityofkeywest-fl.gov.
Click on Agendas & Minutes.

Members of the Key West City Commission may be in attendance at this meeting.
It is the policy of the City of Key West to comply with all requirements of the Americans with Disabilities Act (ADA). Please call the TTY number at 1-800-955-8771 or for voice 1-800-955-8770 or the ADA Coordinator at 305-809-3811 at least five business days in advance for sign language interpreters, assistive listening devices, or materials in accessible format.

NOTICE OF AVAILABILITY

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The Department of the Air Force (DAF) has prepared a Draft Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) and proposed Finding of No Significant Impact (FONSI)/Finding of No Significant Harm (FONSH) to evaluate the environmental consequences of the Proposed Action to decommission 14 Air Combat Maneuvering Instrumentation towers. Eight of the towers are located northwest of Key West, Florida and six are located southeast of Carrabelle, Florida. The Proposed Action would allow the DAF to divest of infrastructure that is no longer needed to support DAF flight training requirements and that is deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance.

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- Leroy Collins Leon County Main Public Library, 200 W Park Ave, Tallahassee, Florida 32301
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- Monroe County Library, 700 Fleming Street, Key West, Florida 33040

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PRIVACY ADVISORY NOTICE

Public input allows DAF to make better-informed decisions. Letters or other written or verbal comments provided may be published in this EA. Providing personal information is voluntary. Private addresses will be compiled to develop a stakeholders inventory. However, only the names of the individuals making comments and specific comments will be disclosed. Personal information, home addresses, telephone numbers, and email addresses will not be published in this EA.

The digital version of this EA/OEA is compliant with Section 508 of the Rehabilitation Act of 1973 because assistive technology (e.g., "screen readers") can be used to help people with disabilities to understand these electronic media. Due to the nature of graphics, figures, tables, and images occurring in the document, accessibility may be limited to a descriptive title for each item.

NOTICE

Value Adjustment Board Special Magistrate Solicitation

Pursuant to the provision of Chapter 194.035(1) of the Florida Statutes, the Clerk of the Value Adjustment Board of Monroe County is now accepting applications from individuals who are willing and qualified to serve as Special Magistrate for the purpose of taking testimony and making recommendations to the Board.

"A special magistrate appointed to hear issues of exemptions and classifications shall be a member of The Florida Bar with no less than 5 years' experience in the area of ad valorem taxation. A special magistrate appointed to hear issues regarding the valuation of real estate shall be a state certified real estate appraiser with not less than 5 years' experience in real property valuation. A special magistrate appointed to hear issues regarding the valuation of tangible personal property shall be designated member of a nationally recognized appraiser's organization with not less than 5 years' experience in tangible personal property valuation."

All applicants must complete the Florida Department of Revenue's Value Adjustment Board Training to qualify for serve.

Please forward resume to:

VABClerk@Monroe-Clerk.com

Or by mail:
Monroe County Clerk of Court
ATTN: Value Adjustment Board Clerk
P.O. Box 1980
Key West, FL 33041-1980

Deadline for submission is June 30, 2025

NOTICE

DR-529
R. 12/09
Rule 12D-16.002
Florida Administrative Code

TAX IMPACT OF VALUE ADJUSTMENT BOARD

Monroe County Tax Year 2024

Members of the Board	
Honorable JIM SCHOLL	Board of County Commissioners, District No. 3
Honorable DAVID RICE	Board of County Commissioners, District No. 4
Honorable JOHN R. DICK	School Board, District No. 4
Citizen Member JASON KOLER	Business owner within the school district
Citizen Member JOHN REPETTO	Homestead property owner

The Value Adjustment Board (VAB) meets each year to hear petitions and make decisions relating to property tax assessments, exemptions, classifications, and tax deferrals.

Summary of Year's Actions

Type of Property	Number of Parcels					Reduction in County Taxable Value Due to Board Actions	Shift in Taxes Due to Board Actions
	Exemptions		Assessments*		Both		
	Granted	Requested	Reduced	Requested	Withdrawn or settled		
Residential		14		213	217	$	$
Commercial		2		260	259	$	$
Industrial and miscellaneous	1	6			5	$	$
Agricultural or classified use						$	$
High-water recharge						$	$
Historic commercial or nonprofit						$	$
Business machinery and equipment						$	$
Vacant lots and acreage						$	$
TOTALS	1	22		473	481	$	$

All values should be county taxable values. School and other taxing authority values may differ.
*Include transfer of assessment difference (portability) requests.

If you have a question about these actions, contact the Chair or the Clerk of the Value Adjustment Board.				
Chair's name	JIM SCHOLL	Phone	305-292-3430	ext.
Clerk's name	KEVIN MADOK	Phone	305-295-3950	ext.

8A | FRIDAY, MAY 9, 2025 | NAPLES DAILY NEWS

DeSantis scorches GOP legislative leaders over proposed tax plan

Gray Rohrer
USA TODAY NETWORK - FLORIDA

Gov. Ron DeSantis, shown here at a news conference on Feb. 13, 2025, says he would veto a proposed cut to the state sales tax. ALICIA DEVINE/TALLAHASSEE DEMOCRAT

Gov. Ron DeSantis said May 7 he would veto a proposed cut to the state sales tax, claiming it would jeopardize his push for cuts to property taxes.

"Any 'Florida last' tax package is going to be dead on arrival," he told reporters at an event in Tampa. "We are not going to kneecap our ability to provide you property tax relief just so we can give a little bit of a benefit to Canadian tourists. That is not going to happen, so you can take that to the bank."

The veto threat could upend what was called a "framework" for a budget deal agreed to by House and Senate leaders, who failed to reach an agreement during the 60-day regular session that ended May 2. Lawmakers are set to return to Tallahassee May 12 to hammer out the details on a likely $115 billion budget.

But the framework includes a $1.6 billion cut to the state sales tax, lowering it from 6% to 5.75%. The total tax cut package would come to $2.8 billion, but what it will include is yet to be determined.

DeSantis has been feuding with House Speaker Daniel Perez, R-Miami, since the start of the year on several issues, including tax cuts. While Perez originally pushed for a 0.75% cut to the sales tax, saving consumers about $5 billion, DeSantis has insisted on a property tax cut.

In a statement responding to DeSantis' remarks, Perez said lawmakers could cut the sales tax and property taxes and rejected the Governor's framing of the issue.

"I'm concerned about how confused the governor seems to be. He is threatening to veto the largest state tax cut in history, and his excuse is that it limits our ability to cut local property taxes? That's bizarre," Perez said. "We can cut the sales tax by the largest amount in the history of our country and place a ballot initiative on property taxes on the 2026 ballot. This isn't about whether we can do both – it's about whether we will."

After floating the idea of eliminating property taxes completely, but without a concrete plan to do so, DeSantis unveiled a proposal on March 31 at a conference with Florida Realtors in Orlando to provide up to $1,000 for homestead property owners.

Under that plan, the state would pay for the portion of property taxes that go to K-12 public schools, backfilling it with state money and giving homestead owners a rebate.

That would allow homeowners to get the rebate later this year, which would be faster than the normal route of property tax cuts, where the Legislature puts a measure on the ballot in 2026 and, if voters approve, homeowners would see the cuts in 2027.

But neither the House or the Senate included that plan in its budget, and it doesn't appear it will be part of talks between chambers next week.

Perez panned that plan in his statement, likening it to a proposal Democratic California Gov. Gavin Newsom would support: "I give the governor credit for starting this debate, but he's had months to produce an actual plan to lower property tax rates, and we're still waiting. An imaginary plan can't cut real taxes."

"The Governor's team would like to respond that they do have a plan: send $1,000 checks from the state treasury as a fake refund for local property taxes. In fairness, it is consistent with the governor's record. He likes these Newsom-style 'free' money giveaways. Giving away $1,000 checks in a way that doesn't actually lower property taxes isn't a Band-Aid much less a solution," Perez added.

The House advanced an alternative plan to use tourist development taxes to backfill a cut in property taxes next year, but the Senate is unlikely to accept that proposal as it also includes eliminating tourist development councils, which the tourist industry argues are needed to keep people flocking to the state.

The lack of action on property taxes has angered DeSantis, who dubbed Perez's chamber the "House of Pettiness" at one point in the session.

DeSantis has emphasized that his property tax proposal would benefit Florida residents more, as opposed to a sales tax cut which he says would disproportionately help tourists.

In the 2021-22 budget year, state economists estimated that households paid 66% of sales taxes, with tourists paying 16% and businesses paying 18%. That was at a time when tourism was still rebounding from the COVID-19 pandemic doldrums.

DeSantis also claimed a sales tax cut would be used by House leaders to claim there isn't enough revenue to pass property tax cuts.

"We're going in a tangent that is not going to help people in any meaningful way that are Florida residents but will put the final nail in the coffin of any hope to do property tax relief," he said.

Perez, though, is standing by his sales tax cut.

"The House has negotiated a tax package that will put $30 billion back into the economy over the next ten years," Perez said. "If the Governor wants to veto that, he's welcome to explain to the voters why he thinks they do not deserve actual and meaningful tax relief. Maybe the truth is he just wants to spend all of it and be the only one who decides how."

Gray Rohrer is a reporter with the USA TODAY Network-Florida Capital Bureau. He can be reached at grohrer@gannett.com. Follow him on X: @GrayRohrer.

New York City and much of the Northeast is under a flood watch as a system moves through the country. SPENCER PLATT/GETTY IMAGES

Heavy rains threaten flash flooding across U.S.

Jeanine Santucci
USA TODAY

Widespread heavy rainfall across much of the eastern and southern United States brings the threat of scattered flash flooding and some thunderstorms to close out the week.

Nearly 4 million people in the Northeast were under a National Weather Service flood watch early on May 8 across parts of New York, Vermont, Massachusetts and Connecticut.

Meanwhile, flood warnings and advisories were also issued in Texas, Oklahoma and Arkansas because of full streams and rivers after heavy rains in April and early May.

Showers and thunderstorms are expected across a large swath of the country from New England, southwestward through the Ohio Valley, and southeastward along the Gulf Coast all the way into Texas, which has been hammered by repeated rounds of severe storms and flooding, the weather service said.

Thunderstorms, hail expected in Southeast

The Storm Prediction Center expected a "cluster of organized thunderstorms" to develop in the afternoon of May 8 over parts of western and central Kentucky, middle Tennessee and the southern Appalachians, bringing strong wind gusts and hail greater than 2 inches in diameter.

Those storms were predicted to move into Alabama, Georgia and the Carolinas later in the day. Isolated thunderstorms could also appear in northern Florida, the center said, while large hail and damaging wind gusts were forecast across much of Texas throughout the afternoon.

Slow-moving rain system to hit south, Gulf Coast states

Northeasterners enduring days of rain and flooding threats will see relief by Mother's Day, as a storm system makes its way out through New England and Canada, AccuWeather reported. But there are still days ahead of rain and flood risks coming to the southern United States into the next week.

The same slow-moving weather system that has brought heavy rains in the central and southern parts of the country in recent days will impact the Gulf Coast states, according to AccuWeather. The rain is expected to drench northern Florida, Alabama, Georgia and parts of the Carolinas over four to five days.

NOTICE OF AVAILABILITY

Draft Environmental Assessment/Overseas Environmental Assessment for Decommissioning of Air Combat Maneuvering Instrumentation Towers

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34A | SUNDAY, MAY 11, 2025 | NAPLES DAILY NEWS

A view from Los Nogales, the neighborhood where Kilmar Garcia Abrego, who was deported from Maryland and send to El Salvador by Trump Administration, grew up. JULIA GAVARRETE/USA TODAY

Continued from previous page

he talked with the officers, she said in a court filing. She could overhear the conversation as an agent told her husband to turn off the car and get out. Abrego Garcia explained to the officer, in English, that his son with autism was in the back seat. Vasquez Sura heard the officer take his phone and hang up.

Minutes later, she got another call, this time from the Department of Homeland Security. The caller gave her 10 minutes to get to the scene and pick up her son or child protective services would be contacted. When she got there, Abrego Garcia was on the curb and in handcuffs, crying, she said.

Officers said they were taking him in. His immigration status had changed, the agents informed him.

"I told him he would come back home," Vasquez Sura said, "because he hadn't done anything wrong."

Abrego Garcia was detained, sent to Baltimore and transferred to a Texas detention center. There, he was handcuffed, shackled and, three days later, put on a plane with other detainees. None of them had any idea where they were going. They were being sent to El Salvador, despite the protective order barring Abrego Garcia's return to his homeland.

In El Salvador, he and others expelled by the Trump administration were placed in the Terrorism Confinement Center a notorious prison criticized for its harsh and dangerous conditions and its rough treatment of prisoners.

Vasquez Sura and their 5-year-old sued the federal government, demanding that Abrego Garcia be returned home. Days later, government attorneys admitted in court records that he had been deported by mistake – an "administrative error" was the official explanation – but said they had no authority to return him because he was now in a foreign country.

A federal judge in Maryland, Paula Xinis, disagreed and ruled on April 4 that the Trump administration had committed an "illegal act" by deporting him. Xinis directed the U.S. government to "facilitate" his return. In a unanimous decision, the Supreme Court also demanded the administration start the process of bringing Abrego Garcia back to the United States.

The Trump administration, however, dug in.

Trump called Abrego Garcia a foreign terrorist. A White House spokesperson labeled him a "wife beater," citing Vasquez Sura's four-year-old request for a temporary protective order. Stephen Miller, one of Trump's top advisers, described him as a "human smuggler."

The administration released records from a traffic stop in an effort to back up its claims. The Tennessee Highway Patrol had pulled Abrego Garcia over on Interstate 40 in December 2022. He was driving with eight passengers and no luggage. Local authorities suspected he was smuggling people north from Texas to Maryland, the Department of Homeland Security said. But the state police officer who pulled him over released him without charges or even writing a ticket.

Abrego Garcia's wife said in a statement that he worked in construction and sometimes transported groups of workers between job sites, which could explain why there were others in the vehicle.

In search of Abrego Garcia

By now, it had been a month since Abrego Garcia had last been seen frog-walking through El Salvador's CECOT prison.

Sen. Chris Van Hollen, D-Maryland, wanted to know if his constituent was safe, healthy and, above all, alive. So he headed to the Central American country to check on Abrego Garcia himself.

Salvadoran Vice President Félix Ulloa had denied the senator's request to enter CECOT, and Van Hollen's last-minute push to drive to the prison and demand a meeting was thwarted by a military checkpoint.

Van Hollen and his team headed back to their hotel. In a few hours, they were to fly back to the United States.

Then, a phone call from the U.S. embassy: Would he be willing to meet with Abrego Garcia at his hotel that afternoon?

They negotiated the optics. The Salvadoran government wanted the meeting to take place next to the pool in the hotel's lush gardens. Van Hollen said no and suggested the hotel restaurant instead. Wait there, he was instructed.

Abrego Garcia emerged, escorted by at least five officials. Dressed casually in jeans, a plaid button-down shirt and a Kansas City Chiefs baseball cap, he was not handcuffed.

"He spoke of the trauma he had experienced, both with being abducted and then, when they got to Texas, being shackled, handcuffed, and put on a plane with no way to see out of the windows," Van Hollen told USA TODAY.

Abrego Garcia told the senator he had been placed into a cell with 25 people at CECOT. He said he was fearful of the prisoners in other cells who called out to him. But a few days earlier he had been moved out to a lower-security prison, Centro Industrial in Santa Ana, with better conditions.

When they finished, Van Hollen escorted Abrego Garcia to the front of the hotel lobby, and watched as officers whisked him from the Sheraton Presidente. Avenida de la Revolución was the last place he was seen.

His steps receding, he vanished again.

Contributing: Cybele Mayes-Osterman in Washington and Julia Gavarrete in San Salvador, El Salvador

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TALLAHASSEE.COM | FRIDAY, MAY 9, 2025 | 9A

Keep your bathroom looking its best

Ann Hoke
Special to Murfreesboro Daily News Journal
USA TODAY NETWORK - TENNESSEE


Skip the harsh chemicals when cleaning your grout. GETTY IMAGES

After 20-plus years in Tennessee real estate, I've walked through just about every kind of bathroom you can imagine – from spa-like retreats to spaces that have clearly seen better days.

One thing I've learned? Whether you're planning to sell or simply want to enjoy your home, clean and well-maintained stone, tile and grout make a big difference.

Natural stone adds elegance, but it comes with its own maintenance needs. Tile floors, meanwhile, are durable and practical – but without regular care, even the best tile can start to look dull or dingy. Luckily, a little know-how and consistency go a long way.

Know what you're working with

First, identify your materials. Bathroom surfaces might include marble, granite, slate, travertine, or ceramic and porcelain tile. Each has unique characteristics, especially when it comes to porosity. Most natural stone is absorbent and needs sealing. Porcelain and ceramic tiles are less porous, but their grout still needs attention.

Skip the harsh stuff

I used to think vinegar or bleach could fix anything. Turns out, they can actually damage natural stone and break down grout over time. For both stone and tile, stick to a pH-neutral cleaner designed for those surfaces. Most home improvement stores carry these, and a quick spray and wipe after showers can keep buildup at bay.

Don't overlook the floors

Tile floors can be a blessing – durable, water-resistant and easy to clean. But over time, soap residue, hard water, and everyday foot traffic can make them look tired. Sweep or vacuum regularly to remove grit that can scratch the surface, then mop with warm water and a tile-safe cleaner. If you have stone tile on the floor, treat it as you would stone countertops: mop gently, avoid acidic cleaners, and reseal as needed.

And grout – whether on the wall or underfoot – is still the unsung hero. Floor grout especially tends to collect dirt and darken with time. A soft-bristled brush and baking soda paste can work wonders. For a little extra oomph, add some hydrogen peroxide and a drop of dish soap. Just go easy–you want to clean, not erode.

Seal it to shield it

Sealing isn't just for countertops. Floors and shower walls benefit, too. Sealing grout and stone surfaces creates a protective barrier that helps resist stains and moisture. Depending on your materials and how much traffic the area sees, resealing once every 1 to 2 years is usually enough. It's a weekend project that pays off in looks and longevity.

Keep it simple and consistent

Here's an easy bathroom routine: a quick spray and wipe after showers, weekly sweeping and mopping of tile floors, and a monthly deeper clean for grout lines. That's it. It doesn't have to be complicated to be effective.

I think we can all agree that a fresh, well-maintained bathroom feels better to live in – and makes a fantastic impression if you're getting ready to sell.

CELEBRITY BIRTHDAYS

Director-producer **James L. Brooks** turns 85. Singer-guitarist **Richie Furay** (Buffalo Springfield), 81. Actor-producer **Candice Bergen**, 79. Singer-musician **Billy Joel**, 76. Actor **Alley Mills**, 74. Singer **Dave Gahan** (Depeche Mode), 63. Actor **Sonja Sohn**, 61. Rapper-actor **Ghostface Killah**, 55. Singer **Tamia**, 50. Actor **Rosario Dawson**, 46. Singer-musician **Andrew W.K.**, 46. Actor **Grace Gummer**, 39.

– USA TODAY Network

TODAY IN HISTORY

Today is Friday, May 9, the 129th day of 2025. There are 236 days left in the year. On this date in:

1867: Sojourner Truth, a former slave who had escaped to freedom and become an advocate for the rights of Black Americans and women, spoke at the first meeting of the American Equal Rights Association in New York. As Black men were gaining some of their rights, Truth spoke of the need to press for the rights of Black women.

1955: Having become an independent nation just four days earlier with the withdrawal of American and British troops, West Germany joined NATO.

1960: The U.S. Food and Drug Administration approved the first commercial birth control pill, Enovid.

1964: The Beatles had their 3½-month run atop the Billboard Hot 100 ended by Louis Armstrong's "Hello Dolly." The Beatles' run was the longest, at the time, for any pop act.

1980: The freighter MV Summit Venture collided with the Sunshine Skyway Bridge in Tampa Bay, Florida, causing a portion of the bridge to collapse. Several cars, a truck and a Greyhound bus fell to the water, killing 35 people.

1992: An underground methane explosion at the Westray Mine in Nova Scotia, Canada, killed 26 people.

2012: President Barack Obama became the first sitting U.S. president to endorse same-sex marriage. "I've just concluded that for me personally it is important for me to go ahead and affirm that I think same-sex couples should be able to get married," Obama told ABC News.

2020: The U.S. unemployment rate reached its highest mark since the Great Depression, 14.7%.

2022: President Joe Biden signed the Ukraine Democracy Defense Lend-Lease Act of 2022, which the previous month had passed unanimously in the Senate and by a vote of 417-10 in the House of Representatives. The legislation facilitated easier "loan and lease of defense articles" to the nation for its war with Russia, but it expired at the end of September 2023.

– William Cain, USA TODAY Network

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DEAR ABBY | ABIGAIL VAN BUREN

Close relative refuses to make good choices in life

Dear Abby: My cousin (more like a sister) has made some extremely rash and concerning choices over the last year. After she had her second baby, she left her husband and started seeing a series of borderline-abusive men. She's now in the process of signing full custody of the children over to her ex-husband and impulsively buying a house out of state.

What I'm finding challenging is, she will accept nothing less than "full support" from her family and friends. She has cut off her sister, to the point of not attending her wedding, because she expressed that maybe it was time for her to talk to a professional about her mental health. She hasn't spoken to her mother in months either.

I don't want to cut her off, because I think she genuinely needs help and is experiencing something very challenging. But she's trying to manipulate her ex-husband into giving her more alimony money, while she runs around with a man who verbally abuses her in public.

I think she's a danger to herself, but if I say as much, she'll cut me off too. Should I stay in her life so I can help when she inevitably needs it? Or should I take a harsher stance? – *Concerned Cousin In Oregon*

Dear Cousin: Tell your cousin (who is more like a sister) you love her dearly, but she's making some serious mistakes, and you are afraid for her future. It's the truth. Let her know that watching her estrange herself from her family has been painful for you, and if things don't turn out as she hopes, you will be there for her. Then back away until the dust settles.

Dear Abby: For the last 20 years, we have owned a comfortable home a few blocks from the ocean. With both a main and a back house, we can sleep as many as 11 or 12 people. We have always welcomed our children, grandchildren and their friends unconditionally. They, in turn, have been judicious about accepting our offer. Since we are now up in years, the work is becoming difficult for us.

Five years ago, one of our grandchildren married into a difficult family. While we are fond of our new grandson-in-law, he insists on bringing his parents, sibling and their family dog to our home. They are loud and ungracious. There is a difference of opinion among us as to whether we can or should refuse to continue welcoming them. Your thoughts? – *Tired In The East*

Dear Tired: For a guest to bring other people (and their pet!) without first clearing it with the host is extremely rude. If the host shows reluctance, for the guest to insist is even worse. I'm sorry you didn't nip it in the bud in the beginning. Explain to your grandchild that you are not getting any younger and hosting the entire family has taken a toll on you, which is why you WILL be restricting the invitation to only your family members in the future.

Contact Dear Abby at www.DearAbby.com or P.O. Box 69440, Los Angeles, CA 90069.

CELEBRITY CIPHER | LUIS CAMPOS

"YNH JVEVJUYF BW FBPSC EHBEDH YB EHKGHRHKH, HRHS PSZHK YNH TBGY VZRHKGH JBSZUYUBSG, SHRHK JHVGHG YB VTVMH TH."

— XVSH WBSZV

Previous Solution: "I believe the Abominable Snowman may be real. I think there may be something in that." — David Attenborough

TODAY'S CLUE: R equals V

'Beacon of justice': Adner Marcelin, Tallahassee NAACP president, dies

Jeff Burlew
Tallahassee Democrat
USA TODAY NETWORK – FLORIDA

In 2022 Adner Marcelin challenged City Commissioner Dianne Williams-Cox for Seat 5 as part of an unofficial slate of progressive-minded candidates. He came in second in a three-person contest. JEFF BURLEW

Adner Marcelin. PROVIDED

Adner Marcelin, well-known for his longtime leadership in the Tallahassee branch of the NAACP and behind-the-scenes work in high-profile civil rights cases, died Thursday, May 8.

Marcelin, 37, served for many years as an officer of the NAACP and began his second stint as president in January. He worked closely for years with Tallahassee civil rights attorneys Benjamin Crump and Daryl Parks and ran for a Tallahassee City Commission seat hoping to upset the status quo at City Hall.

In a statement to the Democrat, Crump called Marcelin a "champion, a beacon of justice and a brother" who left an indelible mark on Tallahassee.

"For nearly 20 years, Adner Marcelin stood at the forefront of the social justice movement in Leon County," Crump said. "Adner was often the first voice of compassion for clients seeking justice — and the spark that mobilized action. My brother took his work seriously because he cared about people deeply."

His sudden death shocked his friends and loved ones and prompted an outpouring of grief from the state capital and beyond.

"Two days ago, I spoke with my frat brother about life and slowing down to enjoy it," state Sen. Shevrin "Shev" Jones, D-Miami Gardens, said in a May 8 social media post. "Today, I got the devastating news that he took his own life. Check on your strong friends. Check on all your people. Life gets heavy — don't carry it alone."

Marcelin, a Stuart native who moved to Tallahassee in 2004 to attend Florida State University, got involved with the NAACP while he was in college, the organization said in a prepared statement.

"He was a tireless advocate for justice and equality, not only through his work with the NAACP but also in partnership with attorney Ben Crump and other community efforts," the local branch said. "He was a stalwart figure in the Tallahassee community — a passionate advocate, servant leader and respected voice for change. His absence will be deeply felt."

The NAACP said funeral arrangements will be announced later.

Marlon Williams-Clark, the NAACP's first vice president, will become the new president in the wake of Marcelin's death. Williams-Clark called him the "glue" of the operation who made sure everyone else could be successful in their position.

"Beyond Adner's advocacy for equality and justice, he was a friend, a mentor, a helper," Williams-Clark said. "He was a servant leader. Truly, his presence will be missed. His knowledge will be missed. His sense of humor will be missed."

Mutaqee Akbar, immediate past president of the local NAACP branch, succeeded Marcelin after his first time as president. He said Marcelin was the first person he turned to when he had any question about any of the NAACP's functions.

"He found happiness in community work," Akbar said. "He found happiness in helping people, building organizations, building community. He was the guy that didn't mind being in the background."

In 2022, he challenged City Commissioner Dianne Williams-Cox for Seat 5 as part of an unofficial slate of progressive-minded candidates. He came in second in a three-person contest.

City Commissioner Jeremy Matlow, who is the de facto leader of progressive Democrats in Tallahassee, joined a stream of locals who took to social media to honor Marcelin's life.

"Adner was a friend to all, a force to be reckoned with and was never afraid to tell you exactly what was on his mind," he wrote on Facebook. "My heart breaks for everyone grieving today and for our city losing another champion way too soon."

During the campaign, Marcelin lamented the infighting that had become the hallmark of the current commission.

"Somewhere in the fray, we've forgotten the biggest piece of the puzzle, and that is the constituents," he said during his campaign kickoff.

He earned a degree in criminology at FSU, where he was a member of the Alpha Phi Alpha fraternity. Though he never practiced law, he graduated from Cooley Law School in Michigan in 2012.

Marcelin worked as communications manager for the Parks and Crump law firm and later as the law firm administrator for Crump's solo firm. For the past few years, he worked as an executive with the Self-Help Credit Union, which serves disadvantaged people. Across the credit union's website was an announcement that said they were closed for the day.

Jones, a Florida A&M University graduate and fellow Alpha Phi Alpha member, got to know Marcelin when they were both in college and involved in student government.

"He was a strategist — he knew how to execute something," Jones said. "He would take someone's vision ... and he would put it together. He was good at that."

He was involved in numerous high-profile civil rights cases, including the deaths of Trayvon Martin, George Floyd and Michael Brown. He organized press conferences, interacted with news media and worked closely with victims' families.

"Adner Marcelin loved Tallahassee," said Parks, another of his fraternity brothers. "He loved its people. He loved its purpose. He loved being involved. He loved what Tallahassee could be — and he dedicated his life to that."

Contact Jeff Burlew at jburlew@tallahassee.com or 850-599-2180.

Two separate I-10 crashes Friday evening kill 2, critically injure 3

William L. Hatfield
Tallahassee Democrat
USA TODAY NETWORK – FLORIDA

Two fatal wrecks on Interstate 10 in northeast Tallahassee during periods of rainy weather Friday left two people dead, three people in critical condition and one person seriously injured, according to preliminary report by the Florida Highway Patrol.

The first incident happened at about 8:45 p.m, according to FHP Cpl. P.J. Shaw. She said the accident involved two vehicles with a rollover that closed all westbound lanes at mile marker 205. An official report has not yet been released on this accident.

Traffic was backed up in both directions and law enforcement directed drivers off the interstate at exit 209 (US-90/SR-10/Mahan Dr.)

Less than two hours later and just a mile away from where officers were directing traffic, a second fatal wreck sent troopers scrambling.

A sedan and SUV were traveling east in the inside eastbound lane of Interstate 10 (State Road 8) at about 10:15 p.m..

At about mile marker 210, the driver of the sedan almost rear-ended the SUV, but swerved right to avoid the crash. The left front of the sedan struck the right rear of the SUV.

The impact knocked the SUV into the grass median while the sedan was propelled on to the south grass shoulder, down a ditch embankment and into two oak trees.

The driver of the sedan, a 31-year-old Tallahassee woman, was pronounced dead at the scene by EMS. The driver of the SUV sustained minor injuries.

That accident closed the interstate in the other direction and law enforcement directed motorists off the highway at 209 eastbound.

Shaw said homicide investigators were not immediately available to attend to the scene, because they were still working the earlier westbound accident that killed one and critically injured three people.

See the latest traffic conditions and accidents at the Tallahassee Gridlock guide at https://data.tallahassee.com/tallahassee-gridlock-guide/

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B.2.3 Scoping Letters

Scoping letters were initially mailed in September 2022. The responses received resulted in changes to the Proposed Action and alternatives, thus a second scoping letter describing the revised proposed action was mailed in January 2025. Example letters are included in **sections B.2.3.1, B.2.3.2, B.2.3.3**, and **B.2.3.4.**

B.2.3.1 Example State Agency Letter (2022)

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS

21 September 2022

Nolan T. Swick
AFCEC/CZN
2261 Hughes Ave, Ste 155
JBSA Lackland, TX 78236-9853

Alissa Slade Lotane
State Historic Preservation Officer
Division of Historical Resources
500 South Bronough Street
Tallahassee, FL 32399

Subject: Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico Environmental Assessment

Dear Ms. Lotane,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, Executive Order (EO) 12114, *Environmental Effects Abroad of Major Federal Actions*, and the Air Force NEPA regulations, the Department of the Air Force (DAF) is in the process of preparing an Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) to assess the potential environmental impacts of decommissioning 14 Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico. The EA/OEA is being prepared in accordance with the National Environmental Policy Act (42 United States Code §§ 4321 through 4347), the Council on Environmental Quality Regulations for implementing the National Environmental Policy Act, (40 Code of Federal Regulation Parts 1500–1508), EO 12114, and the Air Force's Environmental Impact Analysis Process (32 Code of Federal Regulations Part 989).

The DAF is proposing to decommission 14 DAF ACMI towers including 6 northern ACMI towers offshore from Apalachicola Bay and 8 southern towers offshore from Key West. The Proposed Action would allow the DAF to divest from infrastructure that is no longer needed to support DAF flight training requirements and that is deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance. **Attachment 1** provides an in-depth summary of the Proposed Action.

All towers are located outside of the nine nautical mile (NM) limit for the State of Florida jurisdictional waters. The towers are over 9 to nearly 60 NM offshore in water depths of approximately 20 to 125 feet. The northern ACMI towers offshore from Apalachicola Bay were constructed and installed in 1977, except for Station 6 (Tower SM1) that was installed in 1994. The southern towers were constructed in 1989. The northern towers, except for Station 6, were deployed using weighted down barges that were sunk with the tower base column as the primary support column. The southern towers and Station 6 of the northern towers were constructed and supported with a tripod anchor configuration to the sea floor.

If you have additional information regarding potential impacts of the Proposed Action on the environmental aspects of the project area of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. We intend to provide you with access to the Draft EA/OEA when the document is completed. Please inform us if additional copies are needed or if someone else with your agency other than you should be notified of the availability of the Draft EA/OEA. We respectfully request your questions and comments be sent to Nolan Swick by email: nolan.swick@us.af.mil; phone: 210-925-3392; U.S. Postal Service delivery: Nolan Swick, AFCEC/CZN, 2261 Hughes Ave, Ste 155, JBSA Lackland, TX 78236-9853; or FedEx or UPS delivery: Nolan Swick, AFCEC/CZN, 3515 S General McMullen, Ste 155, San Antonio, TX 78226-2018. The DAF would greatly appreciate it if you would consolidate and submit your agency's comments within 30 days from receipt of this letter.

SWICK.NOLAN.T.1386410530 Digitally signed by SWICK.NOLAN.T.1386410530 Date: 2022.09.27 16:11:19 -05'00'

NOLAN T. SWICK, DAFC
Project Manager, AFCEC NEPA Division

1 Attachment:

1. Summary of the Proposed Action for the Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico.

Attachment 1. Summary of the Proposed Action for the Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico

Air Combat Maneuvering Instrumentation (ACMI) towers are used by the Department of the Air Force (DAF) to monitor and control air combat training during aerial warfare training exercises in a controlled airspace. These systems are designed to facilitate accurate, real-time monitoring and control, mission reconstruction, and detailed quantitative evaluation of aircrew performance. Multiple ACMI towers located in the Gulf of Mexico that were constructed between 1977 and 1994 are no longer required to meet DAF flight training mission requirements. In addition, the structural stability of the towers is deteriorating, maintenance costs are rapidly increasing, and the towers are becoming a liability to the DAF and a hindrance to navigation. Since installation, there has been no work to maintain the structural integrity of the towers. The last inspection of the southern towers occurred in 2002 and found the towers were in overall good condition, but corrosion was evident and repair needs were noted. An official structural inspection of the northern towers has not been accomplished, although visits by crews to maintain the navigational lights have documented deterioration of some above-water structures.

The towers proposed for decommissioning include six northern ACMI towers offshore from Apalachicola Bay and eight southern towers offshore from Key West (**Table 1 and Figure 1**). All towers are located outside of the nine nautical mile (NM) limit for the State of Florida waters. The towers are from 9.6 to 50.7 NM offshore in water depths of approximately 20 to 125 feet. The northern ACMI towers offshore from Apalachicola Bay were constructed and installed in 1977, except for Station No. 6 (SM1) that was installed in 1994. The southern towers were constructed in 1989. The northern towers, except for Station 6, were deployed using weighted down barges that were sunk with the tower base column as the primary support column (**Figure 2**). The southern towers and Station 6 of the northern towers were constructed and supported with a tripod anchor configuration to the sea floor (**Figure 3**). To aid in navigation, towers have identification lights powered either by solar panels and nickel-cadmium battery packs or US Coast Guard-approved light and battery packs, as well as horns. These aids are maintained by the DAF.

The purpose of the Proposed Action is the decommissioning of 14 DAF ACMI towers and would allow the DAF to divest from infrastructure that is no longer needed to support DAF flight training requirements and are deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels, the liability to the DAF from the tower's continued presence, age and deteriorating structural stability, and the increasing costs associated with tower maintenance. The DAF would coordinate with the 7th Coast Guard District to ensure that any remaining structural material meets the minimal depth requirement to preclude the need for navigational warning buoys.

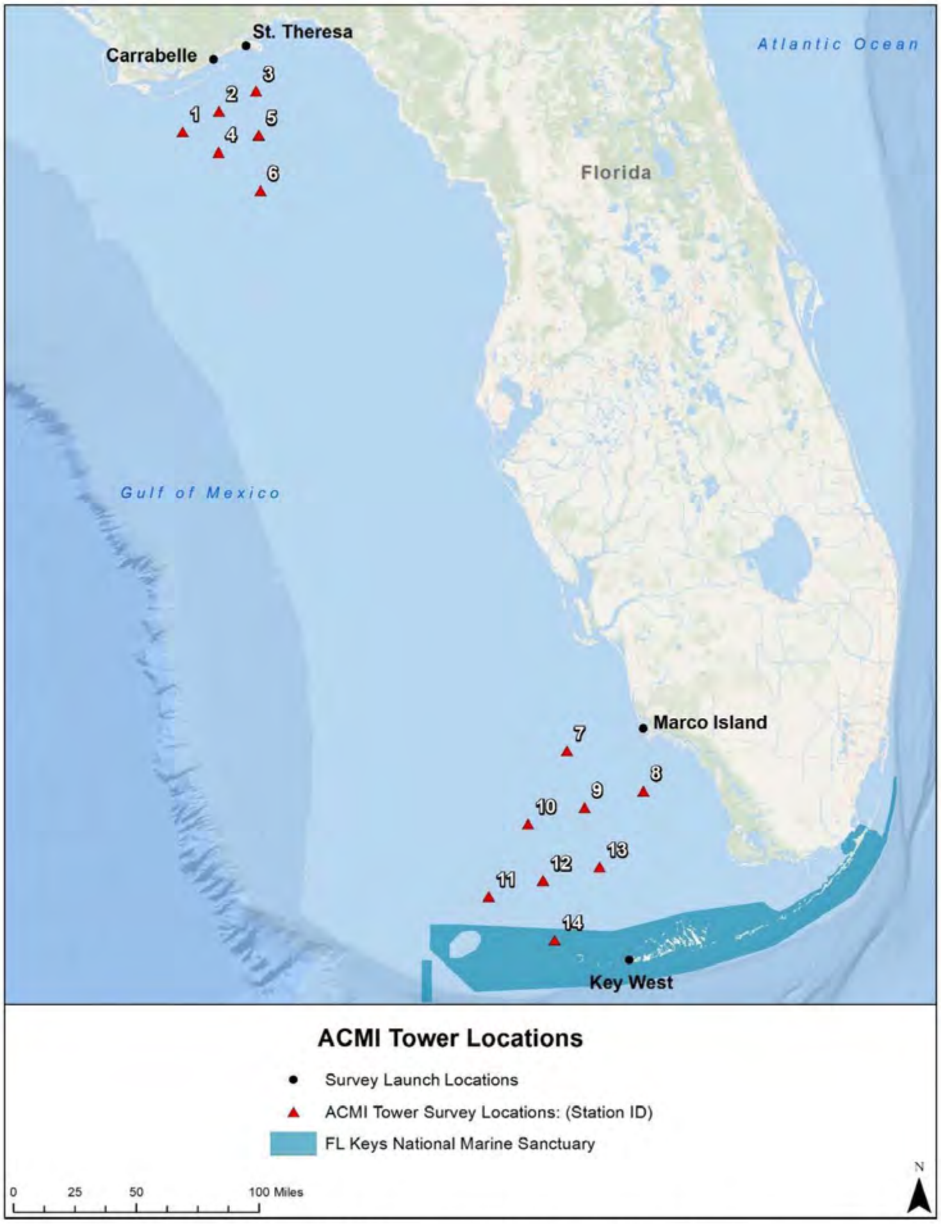

Figure 1. Locations of Air Combat Maneuvering Instrumentation Towers

Table 1. Air Combat Maneuvering Instrumentation Tower Details

Station No.	Tower Designation	Latitude (N)	Longitude (W)	Distance from Shore (NM)	Tower Depth (ft)	Total Tower Height (ft)[1]
Northern Towers						
1	N4	29.4127	-84.8563	12.2	85	184
2	N3	29.5391	-84.6163	11.7	65	164
3	N7	29.6661	-84.3692	10.4	54	154
4	N5	29.2993	-84.6109	23.9	102	203
5	N6	29.4058	-84.3446	27.2	78	177
6	SM1	29.0818	-84.3200	42.8	97	381
Southern Towers						
7	Northwest Corner	25.8000	-82.2167	26.3	69	213
8	Northeast Corner	25.5667	-81.7167	14.3	30	174
9	North Master	25.4670	-82.0997	30.8	69	213
10	West Center	25.3672	-82.4665	50.7	102	246
11	Southwest Corner	24.9348	-82.7164	37.9	125	269
12	South Master	25.0338	-82.3665	29.3	82	226
13	East Center	25.1171	-81.9998	33.5	65	210
14	Southeast Corner	24.6798	-82.2864	9.6	20	164

Abbreviations: ft = feet; N = north; W = west
Note 1. Includes the underwater portion of the towers.

Figure 2. Basic Structure of the Northern Gulf of Mexico Air Combat Maneuvering Instrumentation Towers

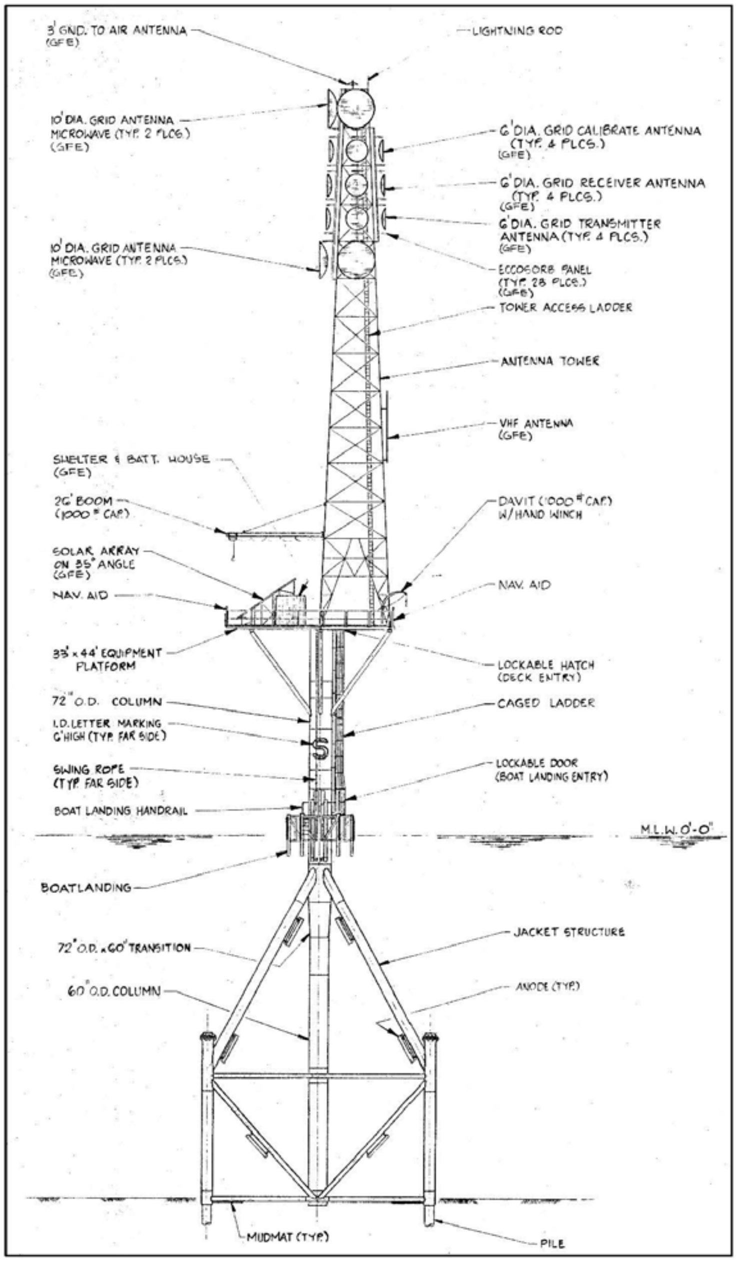

Figure 3. Basic Structure of the Southern and the SM1 (Station No. 6) Northern Gulf of Mexico Air Combat Maneuvering Instrumentation Towers

B.2.3.2 Example Federal Agency Letter (2022)

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS

21 September 2022

Nolan T. Swick
AFCEC/CZN
2261 Hughes Ave, Ste 155
JBSA Lackland, TX 78236-9853

John Filostrat
Bureau of Ocean Energy Management
Gulf of Mexico OCS Region & Atlantic OCS Region
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

Subject: Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico Environmental Assessment

Dear Mr. Filostrat,

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, Executive Order (EO) 12114, Envi*ronmental Effects Abroad of Major Federal Actions*, and the Air Force NEPA regulations, the Department of the Air Force (DAF) is in the process of preparing an Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) to assess the potential environmental impacts of decommissioning 14 Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico. The EA/OEA is being prepared in accordance with the National Environmental Policy Act (42 United States Code §§ 4321 through 4347), the Council on Environmental Quality Regulations for implementing the National Environmental Policy Act (40 Code of Federal Regulation Parts 1500–1508), EO 12114, and the Air Force's Environmental Impact Analysis Process (32 Code of Federal Regulations Part 989). Considering various environmental concerns, the DAF is engaging early with the appropriate resource and regulatory agencies as it formulates the Proposed Action.

The DAF is proposing to decommission 14 DAF ACMI towers including six northern ACMI towers offshore from Apalachicola Bay and eight southern towers offshore from Key West. All towers are located outside of the nine nautical mile (NM) limit for the State of Florida jurisdictional waters. The towers are over 9 to nearly 60 NM offshore in water depths of approximately 20 to 125 feet. The Proposed Action would allow the DAF to divest from infrastructure that is no longer needed to support DAF flight training requirements and that is deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance. **Attachment 1** provides an in-depth summary of the Proposed Action.

1

If you have additional information regarding potential impacts of the Proposed Action on the environmental aspects of the project area of which we are unaware, we would appreciate receiving such information for inclusion and consideration during the NEPA process. We intend to provide you with access to the Draft EA/OEA when the document is completed. Please inform us if additional copies are needed or if someone else with your agency other than you should be notified of the availability of the Draft EA/OEA. We respectfully request your questions and comments be sent to Nolan Swick by email: nolan.swick@us.af.mil; phone: 210-925-3392; U.S. Postal Service delivery: Nolan Swick, AFCEC/CZN, 2261 Hughes Ave, Ste 155, JBSA Lackland, TX 78236-9853; or FedEx or UPS delivery: Nolan Swick, AFCEC/CZN, 3515 S General McMullen, Ste 155, San Antonio, TX 78226-2018. The DAF would greatly appreciate it if you would consolidate and submit your agency's comments within 30 days from receipt of this letter.

SWICK.NOLAN.T.1386410530 Digitally signed by SWICK.NOLAN.T.1386410530 Date: 2022.09.21 16:13:14 -05'00'

NOLAN T. SWICK, DAFC
Project Manager, AFCEC NEPA Division

1 Attachment:

1. Summary of the Proposed Action for the Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico.

2

Attachment 1. Summary of the Proposed Action for the Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico

Air Combat Maneuvering Instrumentation (ACMI) towers are used by the Department of the Air Force (DAF) to monitor and control air combat training during aerial warfare training exercises in a controlled airspace. These systems are designed to facilitate accurate, real-time monitoring and control, mission reconstruction, and detailed quantitative evaluation of aircrew performance. Multiple ACMI towers located in the Gulf of Mexico that were constructed between 1977 and 1994 are no longer required to meet DAF flight training mission requirements. In addition, the structural stability of the towers is deteriorating, maintenance costs are rapidly increasing, and the towers are becoming a liability to the DAF and a hindrance to navigation. Since installation, there has been no work to maintain the structural integrity of the towers. The last inspection of the southern towers occurred in 2002 and found the towers were in overall good condition, but corrosion was evident and repair needs were noted. An official structural inspection of the northern towers has not been accomplished, although visits by crews to maintain the navigational lights have documented deterioration of some above-water structures.

The towers proposed for decommissioning include six northern ACMI towers offshore from Apalachicola Bay and eight southern towers offshore from Key West (**Table 1 and Figure 1**). All towers are located outside of the nine nautical mile (NM) limit for the State of Florida waters. The towers are from 9.6 to 50.7 NM offshore in water depths of approximately 20 to 125 feet. The northern ACMI towers offshore from Apalachicola Bay were constructed and installed in 1977, except for Station No. 6 (SM1) that was installed in 1994. The southern towers were constructed in 1989. The northern towers, except for Station 6, were deployed using weighted down barges that were sunk with the tower base column as the primary support column (**Figure 2**). The southern towers and Station 6 of the northern towers were constructed and supported with a tripod anchor configuration to the sea floor (**Figure 3**). As-built drawings are available for the southern ACMI towers and tower SM1 in the north; however, drawings are not available for the remaining northern towers. To aid in navigation, towers have identification lights powered either by solar panels and nickel-cadmium battery packs or US Coast Guard-approved light and battery packs, as well as horns. These aids are maintained by the DAF.

The purpose of the Proposed Action is the decommissioning of 14 DAF ACMI towers and would allow the DAF to divest from infrastructure that is no longer needed to support DAF flight training requirements and are deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels, the liability to the DAF from the tower's continued presence, age and deteriorating structural stability, and the increasing costs associated with tower maintenance. The DAF would coordinate with the 7th Coast Guard District to ensure that any remaining structural material meets the minimal depth requirement to preclude the need for navigational warning buoys.

Table 1. Air Combat Maneuvering Instrumentation Towers Details

Station No.	Tower Designation	Latitude (N)	Longitude (W)	Distance from Shore (NM)	Tower Depth (ft)	Total Tower Height (ft)[1]
Northern Towers						
1	N4	29.4127	-84.8563	12.2	85	184
2	N3	29.5391	-84.6163	11.7	65	164
3	N7	29.6661	-84.3692	10.4	54	154
4	N5	29.2993	-84.6109	23.9	102	203
5	N6	29.4058	-84.3446	27.2	78	177
6	SMI	29.0818	-84.3200	42.8	97	381
Southern Towers						
7	Northwest Corner	25.8000	-82.2167	26.3	69	213
8	Northeast Corner	25.5667	-81.7167	14.3	30	174
9	North Master	25.4670	-82.0997	30.8	69	213
10	West Center	25.3672	-82.4665	50.7	102	246
11	Southwest Corner	24.9348	-82.7164	37.9	125	269
12	South Master	25.0338	-82.3665	29.3	82	226
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14	Southeast Corner	24.6798	-82.2864	9.6	20	164

Abbreviations: ft = feet; N = north; W = west
Note 1. Includes the underwater portion of the towers.

4

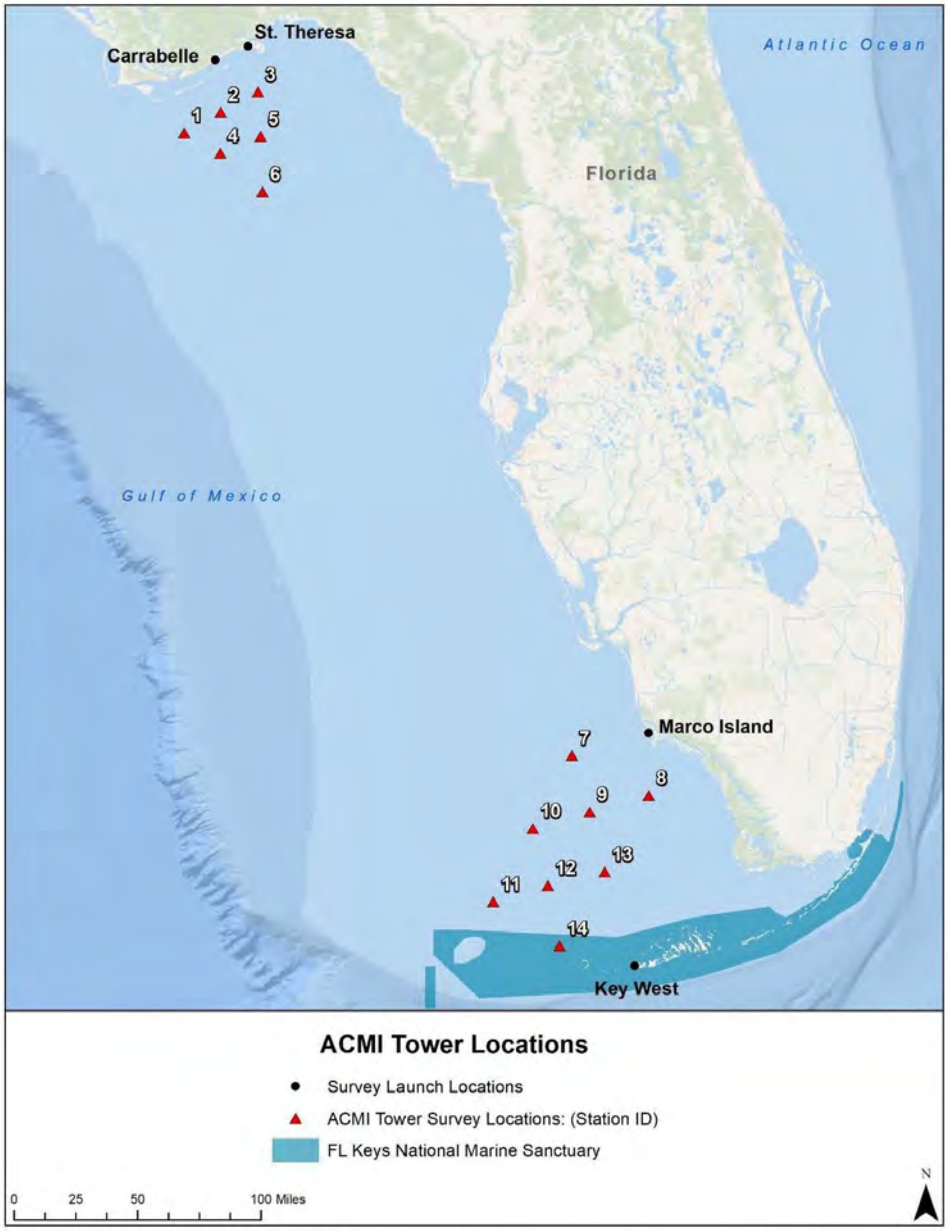

Figure 1. Locations of Air Combat Maneuvering Instrumentation Towers

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Figure 2. Basic Structure of the Northern Gulf of Mexico Air Combat Maneuvering Instrumentation Towers

6

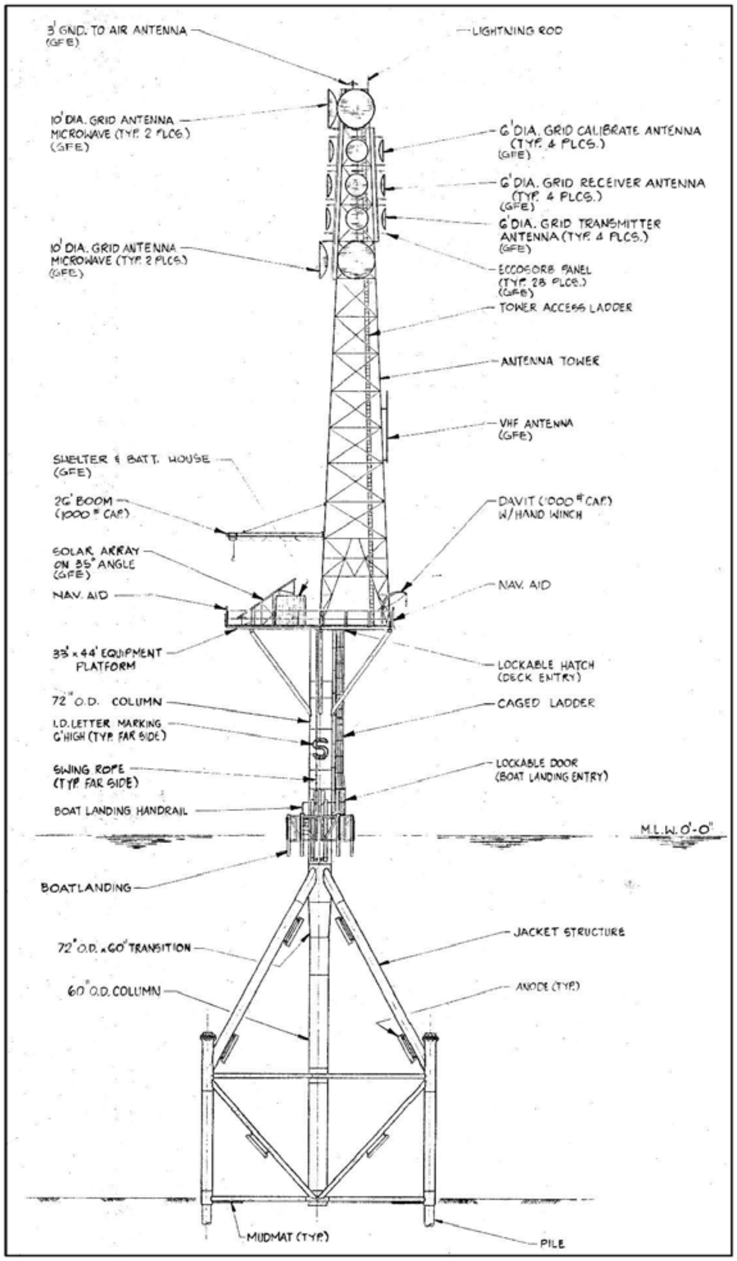

Figure 3. Basic Structure of the Southern and the SM1 (Station No. 6) Northern Gulf of Mexico Air Combat Maneuvering Instrumentation Towers

7

B.2.3.3 Example State Agency Letter (2024)

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
100 Checkertail Way (Building 36233)
Tyndall AFB FL 32403-5014

Alissa Slade Lotane
State Historic Preservation Officer
Division of Historical Resources
500 South Bronough Street
Tallahassee FL 32399

Re: **Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico Environmental Assessment**

Dear Ms. Lotane

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations, Executive Order (E.O.) 12114, Environmental Effects Abroad of Major Federal Actions, and the Air Force NEPA regulations, the Department of the Air Force (DAF) is preparing an Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) to assess the potential environmental impacts of decommissioning 14 Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico. The DAF notified stakeholders of this proposed action in 2022, but has since revised the project alternatives, and is therefore contacting your agency again. The EA/OEA is being prepared in accordance with NEPA (42 United States Code §§ 4321 through 4347), the Council on Environmental Quality regulations for implementing NEPA, (40 Code of Federal Regulation [CFR] Parts 1500–1508), E.O. 12114, and the Air Force's Environmental Impact Analysis Process (32 CFR Part 989).

The DAF is proposing to decommission 14 ACMI towers. Eight of the towers are located just northwest of Key West, Florida, and six are located just southeast of Carrabelle, Florida. The Proposed Action would allow the DAF to divest from infrastructure that is no longer needed to support DAF flight training requirements and that is deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance. Attachment 1 provides additional information regarding the Proposed Action.

All towers are located outside of the 9 nautical mile (NM) limit for the State of Florida jurisdictional waters. The towers are more than 9 to just over 50 NM offshore in water depths of approximately 20 to 130 feet. The northern ACMI towers offshore from Apalachicola Bay were constructed and installed in 1977, except for Station 6 (Tower SM1) that was installed in 1994. The southern towers were constructed in 1989. The northern towers, except for Station 6, were deployed using weighted down barges that were sunk with the tower base as the primary support column. The southern towers and Station 6 of the northern towers were constructed and supported with a tripod anchor configuration to the sea floor.

If you have additional information regarding potential impacts of the Proposed Action on the environmental aspects of the project area of which we are unaware, we would appreciate receiving this information for inclusion and consideration during the NEPA process. We intend to provide you with access to the Draft EA/OEA when the document is completed. Please inform us if someone else with your agency other than you should be notified of the availability of the Draft EA/OEA. We respectfully request your questions and comments be sent to Edwin Wallace by email:edwin.wallace.1@us.af.mil; phone: 850-283-2714; U.S. Postal Service delivery: Edwin Wallace, 325 CES/CEIEC, 102 Checkertail Way, Bldg. 36234, Tyndall AFB, FL 32403. The DAF would greatly appreciate it if you would consolidate and submit your agency's comments within 30 days after you receive this letter.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2024.12.05 15:33:04 -06'00'

JOSÉ CINTRON, GS-13, DAF

Attachment:
Tower Locations and Details

Attachment 1. Locations and Tower Details

Table 1. Air Combat Maneuvering Instrumentation Tower Details

Station No.	Tower Designation	Latitude (north)	Longitude (west)	Distance from Shore (nautical miles)	Tower Depth (feet)	Total Tower Height (feet)[1]
Northern Towers						
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[1] Includes the underwater portion of the towers.

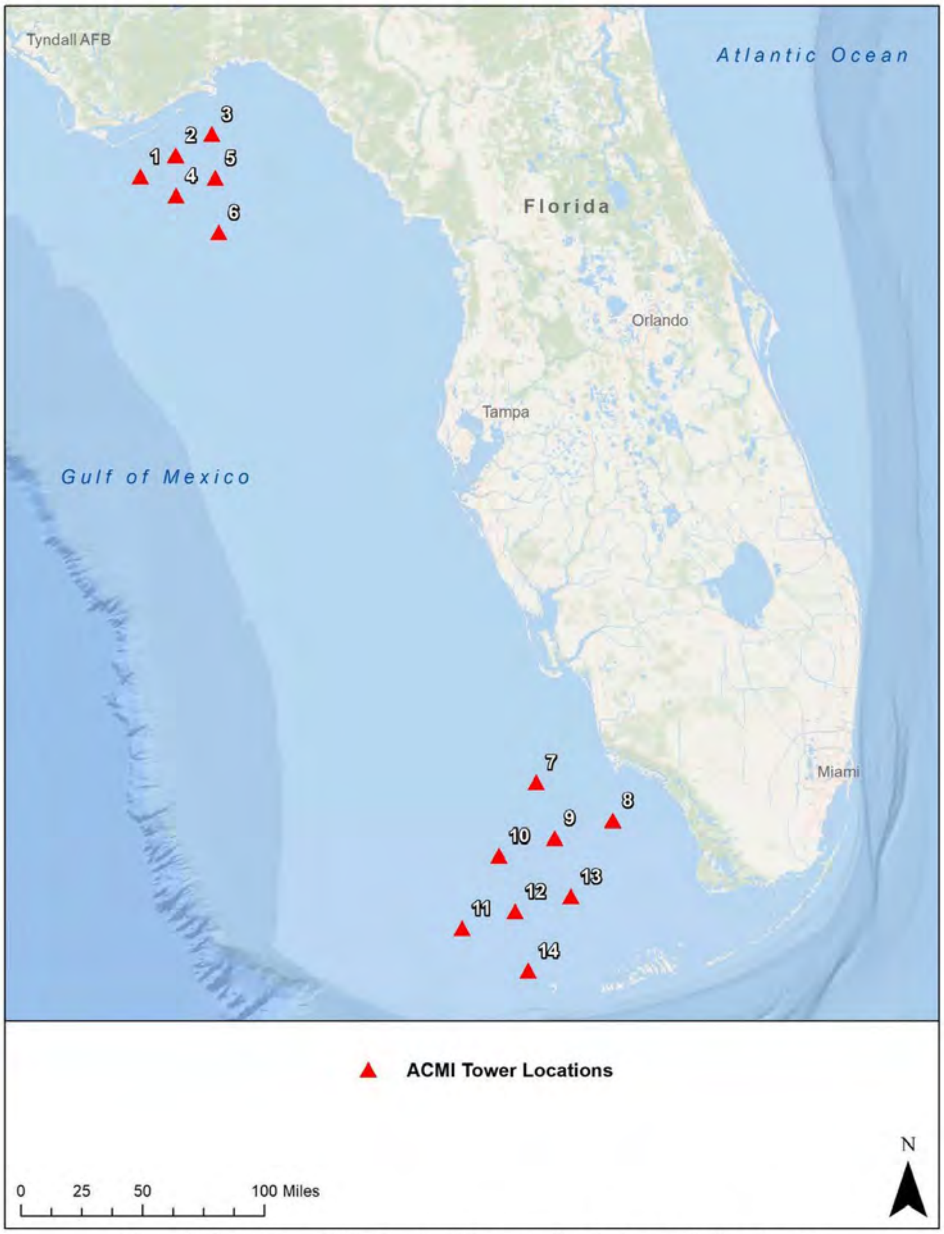

Figure 1. Locations of Air Combat Maneuvering Instrumentation Towers

Figure 2. Basic Structure of the Northern Gulf of Mexico Air Combat Maneuvering Instrumentation Towers

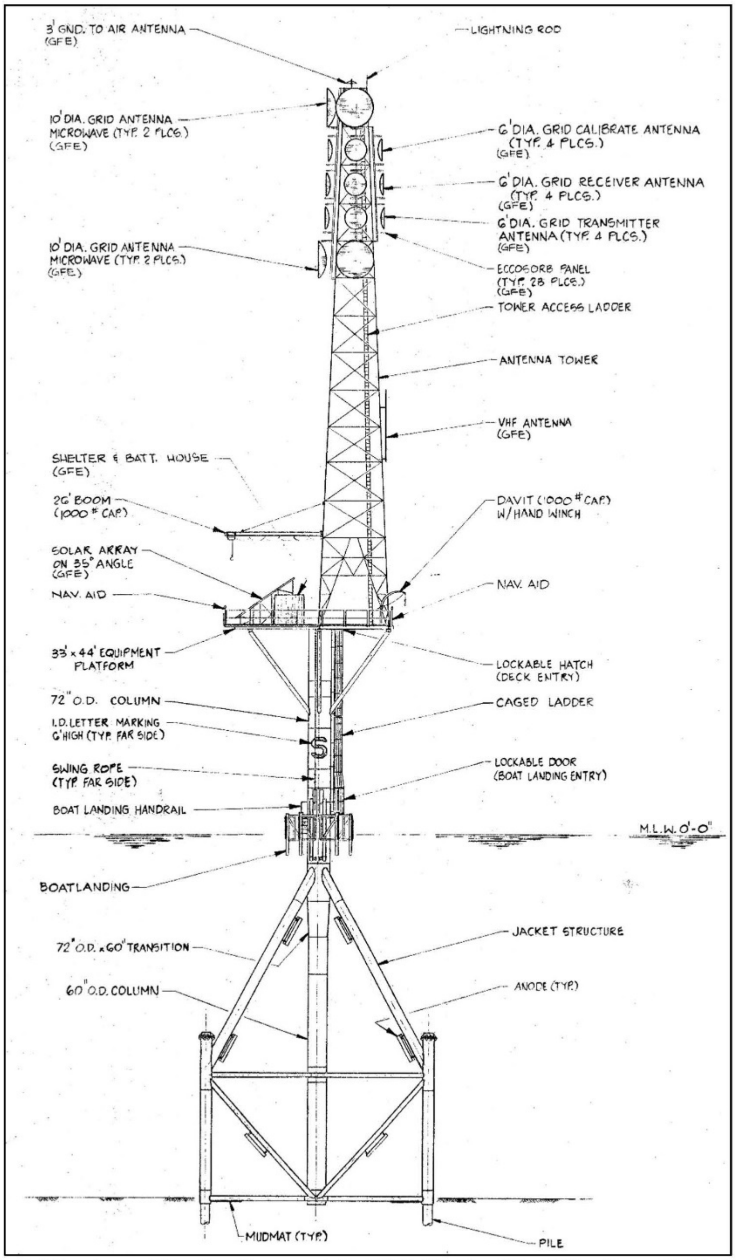

Figure 3. Basic Structure of the Southern and the SM1 (Station No. 6) Northern Gulf of Mexico Air Combat Maneuvering Instrumentation Towers

B.2.3.4 Example Federal Agency Letter (2024)

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS

Grace Keesling
AFCEC/CIE
2261 Hughes Ave., Ste. 155
JBSA Lackland, TX 78236-9853

Jeremy M. LaDart
Chief, Planning and Environmental Division
USACE, Mobile District
P.O. Box 2288
Mobile, AL 36628

Subject: Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico Environmental Assessment

Dear Mr. LaDart:

In accordance with the National Environmental Policy Act (NEPA) of 1969; the Council on Environmental Quality (CEQ) regulations; Executive Order (E.O.) 12114, Environmental Effects Abroad of Major Federal Actions; and the Air Force NEPA regulations; the Department of the Air Force (DAF) is preparing an Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) to assess the potential environmental impacts of decommissioning 14 Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico. The DAF notified stakeholders of this proposed action in 2022, but has since revised the project alternatives, and is therefore contacting your agency again. The EA/OEA is being prepared in accordance with the NEPA (42 United States Code §§ 4321 through 4347), CEQ regulations for implementing NEPA (40 Code of Federal Regulation Parts [CFR] Parts 1500–1508), E.O. 12114, and the Air Force's Environmental Impact Analysis Process (32 CFR Part 989). Considering various environmental concerns, the DAF is engaging early with the appropriate resource and regulatory agencies as it formulates the Proposed Action.

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KEESLING.GRACE.ELIZABETH.1470224165
Digitally signed by KEESLING.GRACE.ELIZABETH.1470224165
Date: 2024.12.06 10:33:24 -06'00'

GRACE KEESLING, GS-13, DAF
Program Manager, AFCEC/CIE

Attachment 1. Locations and Tower Details

2

Attachment 1. Locations and Tower Details

Table 1. Air Combat Maneuvering Instrumentation Towers Details

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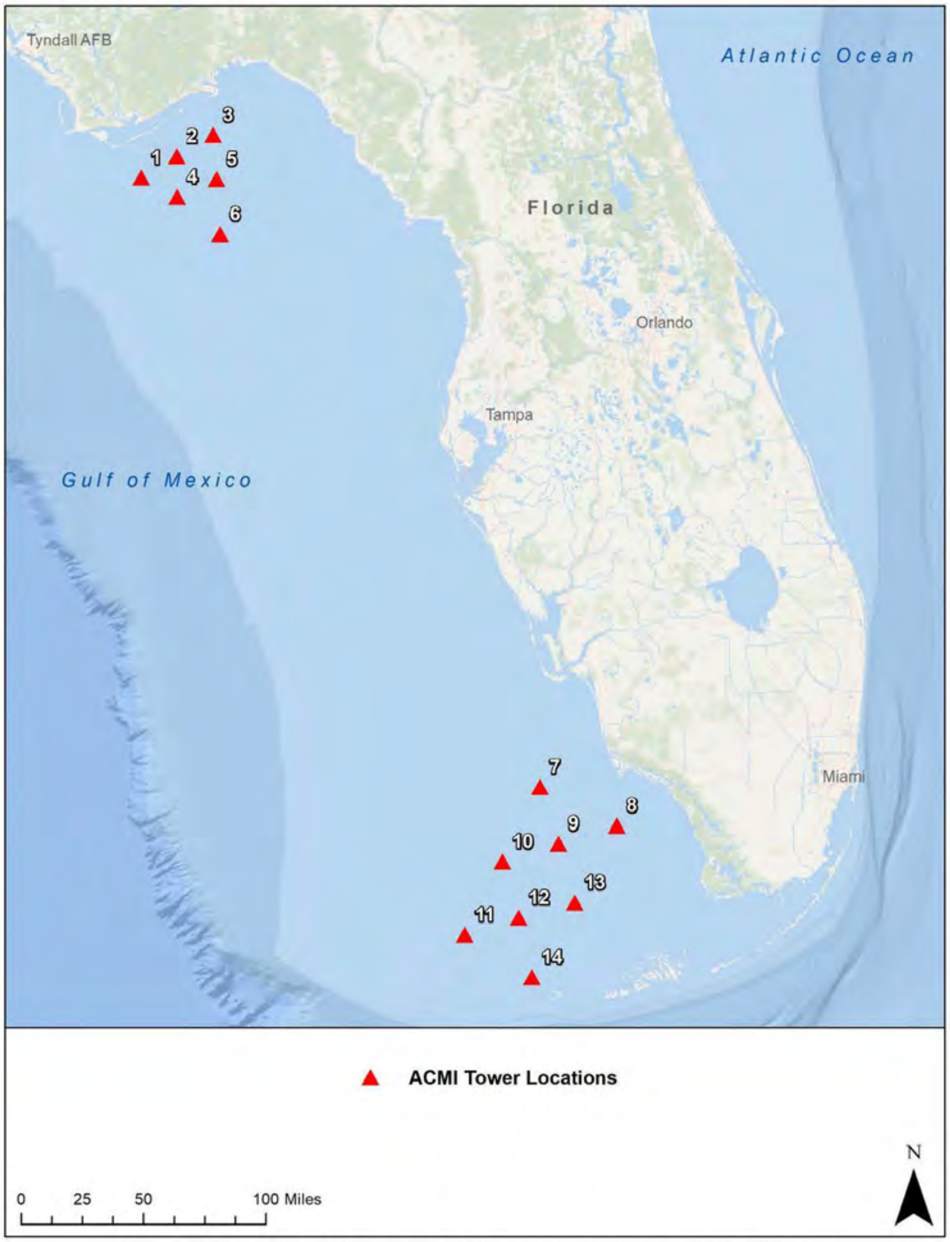

Figure 1. Locations of Air Combat Maneuvering Instrumentation Towers

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Figure 2. Basic Structure of the Northern Gulf of Mexico Air Combat Maneuvering Instrumentation Towers

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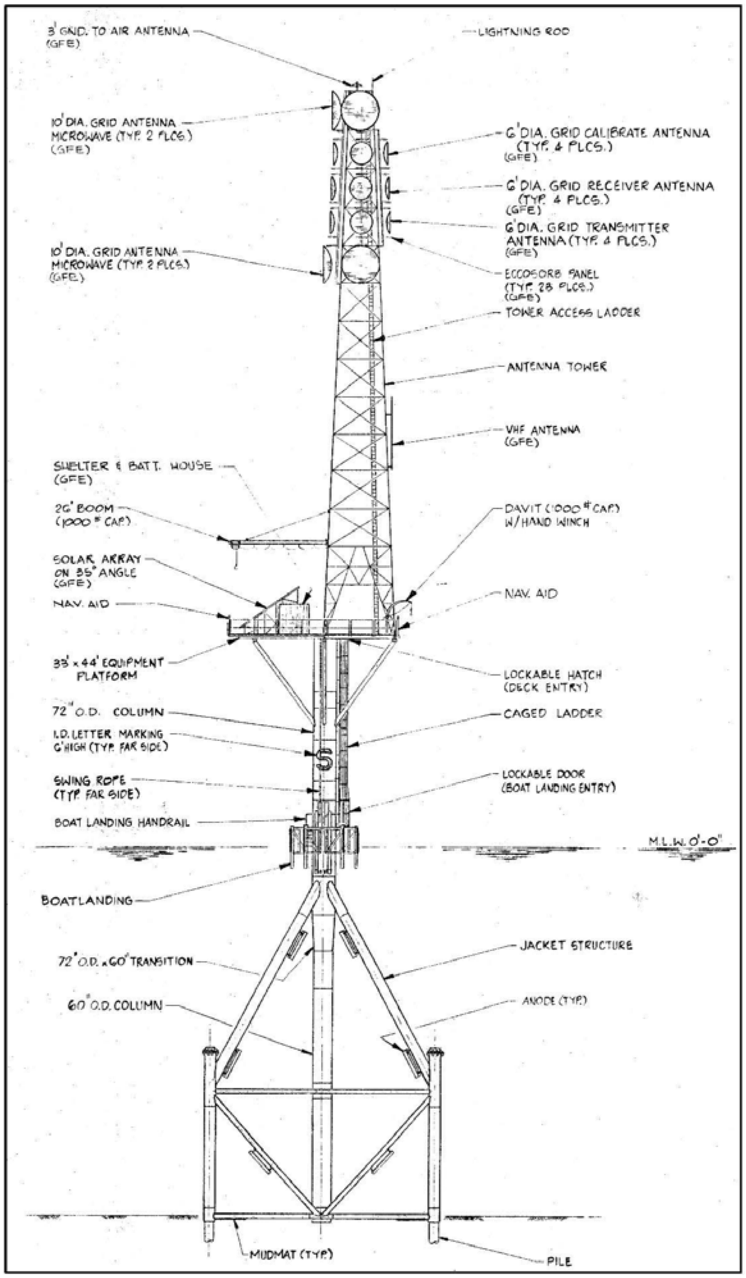

Figure 3. Basic Structure of the Southern and the SM1 (Station No. 6) Northern Gulf of Mexico Air Combat Maneuvering Instrumentation Towers

6

B.2.4 Scoping Letter Comments

From: Lovvorn, Lisa S CIV USARMY CESAJ (USA) [redacted]
Sent: Friday, October 21, 2022 10:34 AM
To: SWICK, NOLAN T GS-13 USAF AFMC AFCEC/CZN [redacted]
Cc: Gilbert, Ingrid N CIV USARMY CESAJ (USA) [redacted] Kizlauskas, Andrew A CIV USARMY CESAJ (USA) [redacted] Zarbo, Alisa Ann CIV USARMY CESAJ (USA) [redacted]
Subject: Decommissioning of Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico Environmental Assessment

Mr. Swick,

We are in receipt of your request for comments regarding the environmental aspects of decommissioning 14 Department of the Air Force (DAF) Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico. Specifically, 6 northern ACMI towers offshore from Apalachicola Bay and 8 southern towers offshore from Key West would be targeted for removal.

Your project as proposed would require a Department of the Army (DA) permit in accordance with Section 10 of the Rivers and Harbors Act of 1899 as it is located within the navigable waters of the United States. Your project is located within 2 separate permitting areas of responsibility: Panama City Permits Section (Apalachicola Bay) and Keys Section (Key West). You will need to submit an application to each of the offices specific to the project location. At minimum, you will need to submit an application and drawings to include plan view and cross section. I've included an application and instructions as well as completeness checklists for the application and drawings. When you are ready to submit your application package for Apalachicola Bay, send to [redacted] when ready to submit for Key West, send to [redacted]

If you have questions regarding the portion of your project from Apalachicola Bay, please contact me at [redacted]. If you have questions regarding the portion of your project from Key West, please call Ms. Ingrid Gilbert at [redacted].

Thank you,
Lisa S. Lovvorn
Chief, Panama City Permits Section
Jacksonville District, Regulatory Division
U.S. Army Corps of Engineers
415 Richard Jackson Boulevard, Suite 411
Panama City Beach, Florida 32407
(O) 850-763-0717, Ext. 1
[redacted]

**NOTICE: All permit applications must be made via the ENG 4345 form and submitted directly to the Jacksonville District Corps Regulatory Division. Projects located in Jackson, Bay, Calhoun, Gulf, Liberty, Gadsden, Franklin, Leon, Wakulla, Jefferson, Madison, Hamilton, Taylor, Lafayette, and Dixie Counties, Florida, should be sent to [redacted] All FDOT projects should be sent to [redacted]

U.S. Department of Homeland Security
United States Coast Guard

Commander
United States Coast Guard
Seventh District

909 S.E. 1st Avenue, Suite 808
Miami, FL 33131-3050
Staff Symbol: (dpw)
Phone: [redacted]
Fax: [redacted]

16500
November 03, 2022

DAF AFCEC/ CZN
Attn: Nolan T. Swick
2261 Hughes Ave. Ste 155
JBSA Lackland, TX 78236-9853

Sent via email to: [redacted]

Dear Mr. Swick,

Thank you for reaching out regarding The Department of the Air Force's (DAF) proposed decommissioning and removal of your air combat maneuvering instrument towers (ACMI) in the Gulf of Mexico. I am in receipt of your letter dated September 21, 2022. In this letter, you sought input from the Seventh Coast Guard District in four key areas, for your formulated, proposed action. Those areas are: environmental concerns from appropriate agencies and stakeholders, the proposed work and potential effects on operational navigation situations on areas in the vicinity of the towers, mitigating risk factors the U.S. Coast Guard conducts when weighing options to endeavor on navigational waterway projects, and decommissioning aids to navigation (ATON). Furthermore you expressed a desire to establish, liaise and partner with the U.S. Coast Guard where concurring authority may overlap, to ensure mutual agreements are established for the duration of the DAF proposed action. This letter will serve as the Coast Guard's formal response to your concerns and inquiries.

As far as the environmental aspects are concerned, we would be happy to help you in your environmental review, but we do not have enough information to move forward at this time. Once we receive your draft Overseas Environmental Assessment (OEA) / Environmental Assessment (EA), we can evaluate it through our normal process, and let you know if we see any potential issues that have not already been identified. The USCG utilizes a decision support system (DSS) for environmental planning & historical preservation. The Department of Homeland Security's DSS assists USCG project managers by providing amplifying information and considerations including processes for engaging with environmental authorities as well as shared stakeholders in ecologically sensitive and historically relevant areas. The USCG engages with specific subject matter experts and expands information gathering and awareness depending on the scope and specifics of a given project. As soon as we receive the draft OEA/EA we can get started on this process.

When it comes to your proposal's effects on navigable waters subject to the jurisdiction of the United States, the USCG uses Waterways Management (WWM): Navigation Safety Risk Assessments Tactics, Techniques, and Procedures (TTP); (CGTTP 3-71.7) to evaluate the potential impacts that certain actions may have on the navigable waterway. The USCG's TTP is authorized for internet release, and therefore can be shared upon request. This TTP identifies the USCG as the Federal government's navigation safety experts. CGTTP 3-71.7 formalizes a standardized process for navigational risk assessments and provides USCG Captains of the Port tools and guidelines for WWM projects varying in size and scope.

16500
November 3, 2022

Based on the information that you provided to us thus far, there are elements of your proposed action that would, for vessel navigational purposes, prompt individual assessments. Regarding only the removal of towers, and not the disposition of the severed tower structures, it is the USCG's common practice to remove towers at the "mud line." This means, we typically remove structures like this to the point where there is nothing protruding from the seabed. This action is undertaken to avoid having to take additional, subsequent actions on the same project due to unforeseen, future issues that may not be known at the time of the removal, and it reduces administrative burdens. For instance, when the USCG takes action removing an aid to navigation or other "in water" structure, it is the USCG's objective to remove the structure without triggering additional processes such as listing a new or additional hazard(s) on a chart or notice to mariners. Some of those hazards include, but are not limited to chart corrections newly identifying wreckage (wk) or obstruction (obstn) as listed on a nautical chart. When the USCG removes a structure at the "mud line", this action does not adversely affect the water depth.

As for the disposition of the tower structures the cognizant USCG Captain of the Port and their staff would coordinate with environmental stakeholders and historical preservation societies, regarding oceanic disposal of the structures. As you may know, waters subject to the jurisdiction of the United States involve many common and shared stakeholders. Furthermore, coordinating efforts amongst stakeholders presents challenges, particularly while applying best management practices to include all stakeholders. Additionally stakeholders may vary between location, situation, and even present different issues in certain seasons, particularly regarding migration periods for certain species. It is the USCG's management practice to thoroughly and continually review common or shared stakeholders for the duration of projects, including post project completion for potential impacts from actions taken.

The last key area this letter seeks is the commencement of liaison effort between the Department of the Air Force and the U.S. Coast Guard. For the Seventh Coast Guard District the point of contact for the area of the 8 Southern DAF ACMI towers is Mrs. Jessica Wolchak-Benggio and can be reached at [redacted].

I would like to sincerely thank you for your early engagement with my office regarding this project and DAF initiative. Please allow this letter to serve as an initiating event for coordination efforts between the Department of the Air Force and the Seventh Coast Guard District.

Sincerely,
SENIUK.NICHOLAS.CHARLES.1248446222 Digitally signed by SENIUK.NICHOLAS.CHARLES.1248446222 Date: 2022.11.29 15:04:31 -05'00'
N. C. Seniuk, Commander, USCG
Chief, Waterways Management Branch
Seventh Coast Guard District

2

FLORIDA DEPARTMENT *of* STATE

RON DESANTIS
Governor

CORD BYRD
Secretary of State

Mr. Nolen T. Swick
AFCEC/CZN
2261 Hughes Acenue, Ste. 155
JBSA Lackland, Texas 78236-9853

November 15, 2022

Re: DHR Project File No.: 2022-7076
Proposed Environmental Assessment for the Decommissioning of Fourteen Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico

Dear Mr. Swick:

The Florida State Historic Preservation Officer reviewed the referenced project for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, *36 CFR Part 800: Protection of Historic Properties*, and the *National Environmental Policy Act of 1969,* as amended.

We note that the Air Force is in the process of preparing an Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) to access the potential impacts from the decommissioning of fourteen Air Combat Maneuvering Instrumentation towers in the Gulf of Mexico.

Based on the information provided at this time, it is the opinion of this office that the towers do not appear to meet the criteria for listing on the *National Register*. Therefore, no historic properties should be affected by this undertaking.

We look forward to reviewing the draft EA/OEA when it becomes available.

If you have any questions, please contact Scott Edwards, Historic Preservationist, by electronic mail [redacted], or at [redacted] or [redacted]

Sincerely,

Kelly L Chase
For

Alissa Slade Lotane
Director, Division of Historical Resources
and State Historic Preservation Officer

Division of Historical Resources
R.A. Gray Building • 500 South Bronough Street• Tallahassee, Florida 32399
850.245.6300 • 850.245.6436 (Fax) • FLHeritage.com

From: Victoria Menchaca <[redacted]>
Sent: Tuesday, February 11, 2025 3:34 PM
To: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC <[redacted]>; MOSS, JENNIFER E CTR USAF ACC 325 CES/CEIE <[redacted]
Cc: THPO Compliance <[redacted]
Subject: [Non-DoD Source] RE: ACMI Towers Environmental Assessment/Overseas Environmental Assessment Scoping Letter, Tyndall Air Force Base (AFB), Bay County, Florida

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA

TRIBAL HISTORIC
PRESERVATION OFFICE

THPO PHONE: (863) 983-6549

THPO TRIBAL CONSULTATION EMAIL:
THPOCOMPLIANCE@SEMTRIBE.COM

THPO WEBSITE: WWW.STOFTHPO.COM

February 11, 2024

Edwin Wallace
325 CES/CEIEC
[redacted]
Tyndall AFB, FL 32403
Email: [redacted]
Phone: [redacted]

Subject: Decommission of 14 Air Combat Maneuvering Instrumentation (ACMI Towers), Tyndall Air Force Base, Multiple Counties, Florida

THPO Compliance Tracking Number: 0034672

In order to expedite the THPO review process:

1. Please correspond via email and provide documents as attachments,
2. Please send all emails to THPOCompliance@semtribe.com,
3. Please reference the THPO Compliance Tracking Number if one has been assigned.

Dear Edwin Wallace,

Thank you for contacting the Seminole Tribe of Florida Tribal Historic Preservation Office (STOF THPO) Compliance Section regarding the *Decommission of 14 Air Combat Maneuvering Instrumentation (ACMI Towers), Tyndall Air Force Base, Multiple Counties, Florida*.

The proposed undertaking does fall within the STOF Area of Interest. We have reviewed the documents that you provided pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) as amended and its implementing regulations (36 CFR 800), and the National Environmental Policy Act (NEPA) of 1969. For us to complete our review we would like to request the following additional information:

- A copy of the Environmental Assessment/ Overseas Environmental Assessment report when it is available to review.

We look forward to the delivery of the additional information requested. Please continue to consult with our office and feel free to contact us with any questions or concerns.

Sincerely,

Victoria L. Menchaca, MA, Compliance Analyst II
STOF THPO, Compliance Section
Phone:[redacted]
Email: [redacted]

From: MOSS, JENNIFER E CTR USAF ACC 325 CES/CEIE <[redacted]>
Sent: Wednesday, January 15, 2025 12:57 PM
To: Chairman <[redacted]>; THPO Compliance <[redacted]>; Tina Osceola <[redacted]>
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC <[redacted]>;
[redacted]EESLING, GRACE E CIV USAF AFMC AFIMSC/CIEE <[redacted] [redacted] <[redacted]>
Subject: ACMI Towers Environmental Assessment/Overseas Environmental Assessment Scoping Letter, Tyndall Air Force Base (AFB), Bay County, Florida

Chairmen Osceola Jr.

On behalf of Tyndall AFB, the Department of the Air Force is preparing an Environmental Assessment / Overseas Environmental Assessment to assess the potential environmental impacts of decommissioning 14 Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico. Attached is the scoping letter and invitation to participate in consultation for the proposed undertaking.

If you have any questions, please contact Edwin Wallace at [redacted] or [redacted]

Respectfully,

Jennifer E. Moss
CTR- Jacobs
[redacted]

B.2.5 Agency Consultations

B.2.5.1 National Marine Fisheries Service – Essential Fish Habitat Consultation

From: Mark Sramek - NOAA Federal
To: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC
Cc: Shepherd, Maria [USA - EMP]; _NMFS ser HCDconsultations
Subject: Re: Tyndall AFB - ESA Section 7 Consultation Request (ACMI Towers)
Date: Friday, December 13, 2024 6:23:55 AM
Attachments: image001.png
ACMI Towers EA EFH Consultation Request Letter_NMFS (Dec 2024).pdf
ACMI Towers Final EFH Assessment (Dec 2024).pdf

Good morning Edwin,

Thank you for the below transmitting the attached Department of the Air Force essential fish habitat assessment initiating the consultation for the proposed decommissioning of 14 individual Air Combat Maneuvering Instrumentation Towers in the Gulf of Mexico. NOAA's National Marine Fisheries Service (NMFS), Southeast Region, Habitat Conservation Division (HCD), has reviewed the information regarding the subject Department of the Army permit application. From our evaluation of the project area using Google Earth Pro software, we anticipate any adverse effects that might occur on marine and anadromous fishery resources would be minimal. Accordingly, the NMFS HCD does not have any EFH conservation recommendations to provide regarding these activities.

This satisfies the consultation procedures outlined in 50 CFR Section 600.920, of the regulation to implement the EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act. Therefore, no further consultation with NMFS HCD is required for this action unless the proposed activities are modified and may result in adverse impacts to EFH.

Mark

25.53481 N
-82.464821 W
Substrate (Sand/Shell, Marine)
Substrate (Mud/Silt, Marine)

---------- Forwarded message ---------
From: **Shepherd, Maria [USA - EMP]** [redacted]
Date: Wed, Dec 11, 2024 at 12:22 PM
Subject: Tyndall AFB - ESA Section 7 Consultation Request (ACMI Towers)
To: [redacted]
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC [redacted]
BUSKER, LORENCE T CIV USAF ACC 23 CES/CEIEA [redacted]
Grace Keesling [redacted]

Hello Mr. Dale,

On behalf of the Department of the Air Force and Tyndall Air Force Base, please find attached a letter requesting consultation with the NMFS in accordance with the Magnuson-Stevens Act regarding the proposed action to decommission 14 Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico. Also attached is an Essential Fish Assessment (EFH) describing the potential effects of the proposed action on EFH.

B.2.5.2 National Marine Fisheries Service – Section 7 Endangered Species Act Consultation

From: Shelby Casali - NOAA Affiliate
To: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC; KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR; Shepherd, Maria [USA - EMP]; Stumpf, Christa [USA - EMP]; nmfs ser esa consultations - NOAA Service Account; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE)
Subject: EXP LOC: Decommision ACMI Towers - Gulf, SERO-2024-03102
Date: Wednesday, July 23, 2025 1:25:14 PM
Attachments: SERO-2024-03102_Decommission-ACMI-Towers-Gulf_LOC.pdf

Good afternoon everybody,

Please see the NMFS letter of concurrence (LOC) attached in reference to the project, Decommission ACMI Towers - Gulf, SERO-2024-03102. Thank you for your assistance through this process and helping to protect our resources. Please confirm receipt of this email, and let me know if you have any questions.

Thank You,

Shelby L. Casali (Mrs.)
ESA Consultation Scientist
Contractor with Spatial Front International in support of NOAA Fisheries
Office of Protected Resources | U.S. Department of Commerce
Google Voice: [redacted]
Section 7 Guidance Webpage - UPDATED URL
Updated Construction Conditions, (May 2021)
Section 7 Mapper: Identify Species in your Project area!

From: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE
To: Shelby Casali - NOAA Affiliate
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE); SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR; Shepherd, Maria [USA - EMP]; Stumpf, Christa [USA - EMP]; Melissa Alvarez - NOAA Federal; Mary Wunderlich - NOAA Federal
Subject: RE: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf RAI#2
Date: Tuesday, July 15, 2025 8:47:24 AM
Attachments: Figure 1-4 with Notes.pdf

Hi Shelby,

Please see responses to your questions in purple text within your email below, and the attached for your reference. If you would still like to set up a call please let us know and we will work to get something scheduled.

Thank you! Please let me know if you have any questions or would like to discuss.

//SIGNED//
Grace Keesling, NH-03, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Shelby Casali - NOAA Affiliate [redacted]>
Sent: Tuesday, July 8, 2025 4:47 PM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC [redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) [redacted]; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR [redacted]; Shepherd, Maria [USA - EMP] [redacted]>; Stumpf, Christa [USA - EMP] [redacted]>; Melissa Alvarez - NOAA Federal [redacted]>; Mary Wunderlich - NOAA Federal [redacted]>
Subject: Re: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf RAI#2

Hi Grace,

Thank you! I'll elaborate on where I'm confused. If we can resolve this over email, then we are happy to move forward without a call. Otherwise, a call would be helpful.

I understand that the max height of the tripod base tower pieces proposed to remain after decommissioning is 10 ft, and that the area that is proposed to remain on the substrate is 448 square feet per tripod tower, per the tables. Table 1 lists Station No. 5 as having an area of 448 square feet, but I believe based on the rest of the letter and this correspondence that Towers 1 - 5 have a barge base that will remain that is 9,025 square feet, and Towers 6 - 14 have a tripod base with 448 square feet to remain. That would make a total area of 49,157 square feet left behind at the action area (which agrees within a few square feet of what is stated in the letter).

- I believe Figure 1-4 (specifically Section A-A) is representative of the tripod base towers in their current condition, correct? As the tripod base stands right now, we have concerns that the existing submerged tripod shape could trap marine debris like fishing line and become an entanglement hazard for ESA-listed species. This risk is significantly reduced due to the proposed action of cutting the towers as close to the mudline as possible (within 10 feet).

Correct – Figure 1-4 illustrates the tripod base towers. Please see pink and blue highlights on the attached. The tripod shape would be removed such that only portions of the posts would remain (if they cannot be severed at the mudline).

- For a cut at 10 feet height from the mudline, will all tripod-base towers, regardless of the water depth the towers are in (i.e. 20 ft MLLW at shallowest, 125 ft MLLW at deepest) look like the attached picture "Figure1-4-after" once they have been decommissioned with tower pieces removed and disposed of onshore? In that picture, the yellow line is the mud line, the red line is the cut line and the blue line is the MLLW line. If that is not accurate for every tripod-base tower, then let's discuss further over a call, please. We need to have an idea of what the tripod base will look like after being cut to establish the risk of entanglement that the remaining decommissioned structure presents to ESA listed species. The closer the cut is to the mudline and the less angled pipe and small pieces are left, the less entanglement risk there is.

Tripod-base towers would be cut at the mudline wherever possible. If for some reason any of the tripod-base towers cannot be cut at the mudline then only portions of the existing posts would remain as shown in pink and blue highlights on the attached.

- In the square of Figure 1-4 just above "Plan at Mudline" are the spaces between the pipes that make an X shape in the center of the square representative of bare seafloor substrate? Are the pipes that make up that X shape flush with the sea floor/mudline, or are they a top down view of the diagonal pipes in the "Section A-A" view?

Correct – the spaces between the pipes that make an X shape are not tower material but bare seafloor substrate. The X shaped pipes are flush with the seafloor/mudline as shown with yellow highlights on the attached.

- Is the 448 sq. ft. area of remaining tripod base on substrate the sum of each 52 foot long pipe making up the 4 sides of the square, plus the 4 diagonal pipes(X shape) that are ~37 ft long (assuming my math is correct, as this length was not specified and needed to be calculated) that meet at the 6 ft diamater central pipe?

The 448 sf area includes the 4 (52') pipes making a square, plus the 4 (~37') diagonal pipes, and also the area from the 4 corner posts.

Thank you for taking the time to clarify. If a call is needed, I am generally available over the next two weeks except for Tuesday and Friday mornings. The 16th, 17th, 22nd, and 23rd appear to be available for Melissa and Mary - I will confirm with them shortly. Please let me know if you have any questions or concerns.

Thank You,

Shelby L. Casali | ESA Consultation Scientist
SFI Contractor for NOAA NMFS SERO PRD
[redacted]
www.fisheries.noaa.gov

On Tue, Jul 8, 2025 at 12:57 PM KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE <[redacted]> wrote:

Hi Shelby,

We would be happy to set up a discussion if needed. Please note that we did include information on the size/shape/area in the documentation provided:

- The size (height) of the tripod base towers (towers 6-14) is shown in Table 1 and Table 2 in the Request to NOAA Fisheries Southeast Regional Office for Initiation of Expedited Informal Consultation letter.
- The area of the tripod base towers that would remain is 448 square feet (also shown in Table 1 and 2).
- The shape of the tripod base towers is shown in Figure 2 in the Request to NOAA Fisheries Southeast Regional Office for Initiation of Expedited Informal Consultation letter. More detail is shown in an As Built diagram of the tripod base (Figure 1-4 in the project description redline).

I will query our team to get some mutually available dates/times to propose if a discussion is still needed/desired and get back to you with those soonest.

Thank you!

//SIGNED//
Grace Keesling, NH-03, DAF

Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Shelby Casali - NOAA Affiliate <[redacted]
Sent: Monday, July 7, 2025 9:37 AM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]>
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC [redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) <[redacted]>; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR [redacted]>; Shepherd, Maria [USA - EMP] <[redacted]>; Stumpf, Christa [USA - EMP] [redacted]>; Melissa Alvarez - NOAA Federal [redacted]>; Mary Wunderlich - NOAA Federal <[redacted]>
Subject: Re: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf RAI#2

Good morning all,

After reviewing the revised consultation request letter, I have questions about the size, shape, and area of the portions of the tripod base towers that will remain after decommissioning. Do you have time for a call sometime over the next two weeks to discuss?

Thank You,

Shelby L. Casali | **ESA Consultation Scientist**
SFI Contractor for NOAA NMFS SERO PRD
[redacted]
www.fisheries.noaa.gov

On Thu, Jun 26, 2025 at 10:05 AM KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]> wrote:

> Thank you, Shelby!
>
> //SIGNED//
> Grace Keesling, NH-03, DAF
> Air Force EIAP/NEPA Division (AFCEC/CIE)

JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Shelby Casali - NOAA Affiliate [redacted]
Sent: Thursday, June 26, 2025 8:36 AM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE <[redacted]>
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC <[redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) <[redacted]; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR <[redacted]>; Shepherd, Maria [USA - EMP] <[redacted]>; Stumpf, Christa [USA - EMP] <[redacted]>; Melissa Alvarez - NOAA Federal [redacted]>; Mary Wunderlich - NOAA Federal <[redacted]>
Subject: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf RAI#2

Hi Grace,

Received, thank you! I'll review the updated materials and let you know if I have any questions.

Best,

Shelby L. Casali | **ESA Consultation Scientist**
SFI Contractor for NOAA NMFS SERO PRD
[redacted]
www.fisheries.noaa.gov

On Thu, Jun 26, 2025 at 9:28 AM KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]> wrote:

> Hi Shelby,
>
> Please find attached the updated project description for the subject consultation (in pdf and word), along with a request for expedited consultation for this action using SERO's Template. Please let us know if you have any questions or require any additional information or revisions. We look forward to your response.
>
> If you could please confirm receipt of this submission we would greatly appreciate it.

Thank you! Please let me know if you have any questions or would like to discuss.

//SIGNED//
Grace Keesling, NH-03, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Shelby Casali - NOAA Affiliate <[redacted]>
Sent: Wednesday, May 14, 2025 8:52 AM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE <[redacted]>
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC [redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) <[redacted]>; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR <[redacted]; Shepherd, Maria [USA - EMP] <[redacted]>; Stumpf, Christa [USA - EMP] <[redacted]; Melissa Alvarez - NOAA Federal <[redacted]>; Mary Wunderlich - NOAA Federal <[redacted]>
Subject: [Non-DoD Source] SERO-2024-03102 Decommission ACMI Towers - Gulf RAI#2

Hi Grace,

I have reviewed the consultation request documents for SERO-2024-03102, Decommission ACMI Towers - Gulf, and additional information is required to continue with project review and initiate consultation. Please see the attached draft project description with comments asking for additional information and confirmation of the project description. When providing a revised document, please provide edits and updates as necessary in Word's tracked changes. In order for us to better evaluate the proposed action, please include the updated project description and additional information about proposed project effects within SERO's Expedited Template. It is linked and attached below for your convenience. Providing additional project information in this format is needed to initiate consultation, whether through a letter of concurrence or a biological opinion.

The draft project description I have attached should correspond to the following sections of SERO's Expedited Template: "Proposed Action", "Conservation Measures and BMPs", and "Description of the Action Area". Following the bullet points for those sections should help answer the commented questions I included in the draft project description. Information from the draft BA and the recently posted draft EA can be copied into and referenced in the sections regarding effects to ESA listed species and critical habitats. I have also attached Section 7 mapper results from the action area in case you find them helpful. Please let me know if you have any questions or concerns.

If no response to this request for additional information is received within 45 days, by June 30th, we will assume the consultation is no longer active, close out the consultation request, and change the request status to "withdrawn". This 45-day period has been established as a national policy. Please let me know if you have any questions or concerns.

Thank You,

Shelby L. Casali (Mrs.)
ESA Consultation Scientist
Contractor with Spatial Front International in support of NOAA Fisheries
Office of Protected Resources | U.S. Department of Commerce
Google Voice: [redacted]
Section 7 Guidance Webpage - UPDATED URL
Updated Construction Conditions, (May 2021)
Section 7 Mapper: Identify Species in your Project area!

//SIGNED//

Grace Keesling, NH-03, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE
To: Shelby Casali - NOAA Affiliate
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC; Mary Wunderlich - NOAA Federal; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE); SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR; Shepherd, Maria [USA - EMP]; Stumpf, Christa [USA - EMP]; Melissa Alvarez - NOAA Federal
Subject: RE: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf. Response to JAXBO Inquiry and RAI#1
Date: Monday, May 12, 2025 6:13:17 AM

Thank you for the update, Shelby! For your awareness, the Draft EA Public Comment Period began over the weekend and the Draft EA is available on Tyndall AFB's website (link below):
https://www.tyndall.af.mil/About/

Hope you enjoyed your leave!

//SIGNED//
Grace Keesling, GS-13, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Shelby Casali - NOAA Affiliate <[redacted]>
Sent: Friday, May 9, 2025 6:41 PM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE <[redacted]
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC [redacted]>; Mary Wunderlich - NOAA Federal [redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) [redacted]; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR [redacted]; Shepherd, Maria [USA - EMP] [redacted]>; Stumpf, Christa [USA - EMP] [redacted]; Melissa Alvarez - NOAA Federal [redacted]
Subject: Re: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf. Response to JAXBO Inquiry and RAI#1

Hi Grace,

You're welcome! I just submitted the draft project description for internal review. I am on leave through Tuesday, but I will be back on Wednesday.

Best,

Shelby L. Casali | **ESA Consultation Scientist**
SFI Contractor for NOAA NMFS SERO PRD
(727) 537-0249
www.fisheries.noaa.gov

On Mon, Apr 28, 2025 at 1:48 PM KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]> wrote:

> Hi Shelby,

Thank you for this information, and for continuing to work this for us! We understand the staffing/workload limitations NOAA is experiencing, and appreciate your continued support along with all your other projects and responsibilities. We will await the draft project description you are preparing for approval. If you could please keep us updated on your progress for our planning purposes we would greatly appreciate it.

Thank you! Please let me know if you have any questions or would like to discuss.

//SIGNED//
Grace Keesling, GS-13, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Shelby Casali - NOAA Affiliate <[redacted]
Sent: Wednesday, April 23, 2025 11:46 AM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC [redacted]; Mary Wunderlich - NOAA Federal [redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) <[redacted]>; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR [redacted]; Shepherd, Maria [USA - EMP] [redacted]>; Stumpf, Christa [USA - EMP] [redacted] Melissa Alvarez - NOAA Federal [redacted]>
Subject: Re: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf. Response to JAXBO Inquiry and RAI#1

Hi Grace,

Thank you for the call on April 3rd and the summary provided in your April 8th email. Thank you as well for providing the tower drawings, benthic survey final report and appendices, and the tower video. I could not open the tower video after it was downloaded from the DOD SAFE Service file drop. However, the survey appendix has several site photos and stills from video surveys that help me understand the site conditions. I think additional survey videos are not necessary at this time. I was able to access and open all the other files sent. Thank you for confirming your coordination with FKNMS. I will coordinate with Joanne Delaney and Steve Werndli as well. I will also be sure to include Maria and Christa on all communication moving forward, as requested.

The 7 ft X 200 ft2 dimensions provided are a generalized cut off point to differentiate between low-relief, simple, artificial reefs and complex, high relief artificial reefs. It is possible to have a short but complex structure that can snag a lot of fishing line, just like it is possible to have a larger structure that is simple and poses less entanglement risk. However, all proposed artificial reefs, regardless of their dimensions, need to be evaluated for potential adverse effects to ESA listed species due to entanglement and entrapment. Some materials present much less entanglement risk than others (i.e. quarried limestone, rock rubble, reefball modules). If you are interested in learning more, the NOAA Tech Memo NMFS-SER-5 "Potential impacts of artificial reef development on sea turtle conservation in Florida" by Michael Barnette is a good resource http://doi.org/10.7289/V5/TM-NMFS-SER-5

The proposed action describes modification of existing structure, rather than the introduction of new artificial reef material to natural substrate. We will consider that distinction as we evaluate effects of the proposed action. We will use the information submitted to continue drafting a project description for your approval. Unfortunately, it will be difficult to provide a timeline estimate to complete this consultation request. We are spread thin due to staffing levels that are incompatible with our workload, which has only been exacerbated by recent staffing losses. In addition, I have several other projects that I work on simultaneously, which have deadlines within the next two weeks. However, I have scheduled time to resume work on this request Monday May 5th. Please let me know if you have any questions or concerns.

Thank You,

Shelby L. Casali | **ESA Consultation Scientist**
SFI Contractor for NOAA NMFS SERO PRD
[redacted]
www.fisheries.noaa.gov

On Tue, Apr 22, 2025 at 1:08 PM KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted] wrote:

Hi Shelby,

Following up on this – I know we provided a lot of information and I'm sure you're juggling other tasks, just want to keep it on the front burner as we move forward with the EA process. Based on our last discussion it sounds like this proposal will not qualify for an expedited consultation. If this is true, DAF would like to move forward with a BO for Alternative 4a. If you could please let us know an anticipated timeline for that for our planning purposes we would greatly appreciate it! Please let us know if you have any questions or need any additional information to move this forward.

Thank you!

//SIGNED//
Grace Keesling, GS-13, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE
Sent: Tuesday, April 8, 2025 2:41 PM
To: Shelby Casali - NOAA Affiliate [redacted]
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC <[redacted]>; Mary Wunderlich - NOAA Federal [redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) <[redacted]; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR [redacted]; Shepherd, Maria [USA - EMP] [redacted]>; Stumpf, Christa [USA - EMP] <[redacted]>
Subject: RE: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf. Response to JAXBO Inquiry and RAI#1

Hi Shelby,

Thanks for the discussion last week! As indicated during our call, DAF is not prepared to coordinate with USACE at this time and thus would like to proceed with stand-alone consultation for our preferred alternative, Alternative 4a.

We have looked into design/engineering drawings for both the barge-base (Towers 1-5; drawings refer to the barges as 'mats') and tripod-base (Towers 6-14) towers to determine the dimensions of remaining materials if the towers were decommissioned as proposed. The mats to be left in place at Towers 1-5 would be ~10 ft tall with a flat surface, and exceed 200 ft^2 in horizontal dimensions. Tripod-base towers would be severed at the mudline, and we anticipate no remaining materials would be left above the mudline. In the event the four corner piles cannot be severed at the mudline and would remain in place, their height would be ~8 ft, 6 in and also exceed the 200 ft^2 in horizontal dimensions. A few questions:

- Could you please clarify for us where the 7ft height, 200 ft2 horizontal dimension requirement for expedited consultation is coming from?
- Since the potential ~8 ft height of tripod corner piles is close to the 7ft requirement, could an exception be made?
- Based on our discussion it sounds like the height requirement is based on entanglement concerns – since the 10 ft mat would have a flat surface, could an exception be made there?

Please let us know if any exceptions are possible or if formal consultation will be required based on these dimensions.

I have also gathered some of the additional information we discussed. The Survey Report for the towers is attached for your reference. I will provide the Survey Report Appendices, drawings for both types of towers (barge- and tripod-bases), as well as video of the survey conducted for Tower 1 via DoD Safe shortly due to size constraints. Please note that the surveys conducted did not determine sediment depth at any of the towers, but we do have information on sediment type at each tower in the survey report. We were hoping that the videos for the Tower 1 survey would be an accurate representation of sediment type for the barge-base towers; however, it appears the sediment type is different at each – please see summary of sediment type for Towers 1-5 attached. If you need survey videos for the other towers please let us know and we'll be happy to pass those along and/or set up a meeting to review them together.

We have been in contact with FKNMS with regards to Tower 14, which lies within the Sanctuary. We met with Joanne Delaney and Steve Werndli in May & June 2023 to discuss the proposed action/alternatives, review survey video for Tower 14, and discuss limitations/requirements for the action in FKNMS. NOAA reps were satisfied with the discussion and provided required BMPs for DAF to adhere to during decommissioning. DAF would continue to coordinate with FKNMS as we plan to decommission Tower 14 to ensure all requirements are met.

Please let us know if there is any additional information you need from DAF in order to continue working either the expedited consultation or BO for Alternative 4a. We are tracking ~135 days for development of the BO but unsure where that clock would start for this effort. As discussed last week, DAF will need to execute a Period of Performance extension for the EA/OEA regardless of consultation timeline; however, we would like to ensure the extension we request accounts for the consultation timeline to avoid future contract actions for this effort. Thus, if you could please provide an estimate on when you expect the expedited consultation or BO could be provided for our planning purposes we would greatly appreciate it.

Finally, please note I have copied our contractors for this EA/OEA, Ms. Maria Shepherd and Ms. Christa Stumpf of Versar. While I intend to lead correspondence with you/NMFS directly, should I be on leave, TDY, or otherwise occupied you may receive information/requests from them on my behalf. So long as Edwin and I are copied in that correspondence from Versar, please engage with them on DAF's behalf.

Thank you! Please let me know if you have any questions or would like to discuss.

//SIGNED//
Grace Keesling, GS-13, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

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From: Shelby Casali - NOAA Affiliate [redacted]
Sent: Monday, March 31, 2025 4:56 PM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]
Cc: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC [redacted]; Mary Wunderlich - NOAA Federal <[redacted]
Subject: Re: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf. Response to JAXBO Inquiry and RAI#1

Hi Everybody,

Thank you! I had a great weekend, and I hope y'all did as well.

I am available Wednesday 4/2 between 3 PM – 5:30 PM EST, or Thursday 4/3 between 9 AM – 1:30 PM EST. However, it may be more productive for DAF to coordinate with USACE first on the chosen alternative prior to meeting with NMFS.

The proposed action, decommissioning the ACMI towers by mechanically severing them at the mudline and disposing of the cut tower pieces at an authorized onshore disposal site, would require a permit or authorization by USACE since it occurs within navigable waters of the US. For the use of JAXBO, a federal action agency may rely on JAXBO in meeting its ESA Section 7 requirements as long as the USACE is part of the consultation and the project under consultation meets the PDCs and all other requirements of the Opinion. The USACE remains responsible for meeting the project-specific review and programmatic review requirements. USACE would make the ultimate determination on whether the proposed action fits within JAXBO, and would only involve NMFS if USACE decides to submit the proposed action as a supersede request. Since I am on the team that processes JAXBO supersede requests, I thought it might be helpful to provide my insights on that process. However, that process begins with a conversation with USACE first.

If the DAF would prefer not to coordinate with USACE at this time, and would instead prefer to coordinate with the USACE at a later date, then we would proceed through a stand-alone consultation request between DAF and NMFS. Generally in that process, once consultation is initiated we will provide a NMFS SERO tracking number for the ESA Section 7 consultation. That tracking number can be provided to the USACE upon application for permits and other authorization for work in waters of the US. Then, the USACE would be aware that the DAF ESA Section 7 consultation obligations have been met, and they would only need to consult with us if

any of the following reinitiation triggers occured:
Reinitiation of consultation is required and shall be requested by the action agency or by NMFS where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) take occurs; (b) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in this consultation; (c) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not previously considered in this consultation; or (d) if a new species is listed or critical habitat designated that may be affected by the action.

We can talk through what additional information would be required in the consultation request. The biggest concern based on the materials received in the BA is that any remaining material from the decommissioned towers (i.e. barge bases at the mudline in the north towers) under proposed alternative 4a needs to meet the following parameters to fit the expedited consultation request process: we consider low-relief artificial reef material to be less than these dimensions (less than 7 ft from the seafloor and a horizontal footprint less than 200 ft2). We may have other questions about the process, but much of that guidance can be found in the expedited template. We can talk through any questions you may have about that process and what other information may be needed for the consultation request. Please let me know if you have any questions or concerns.

Thank You,

Shelby L. Casali | ESA Consultation Scientist
SFI Contractor for NOAA NMFS SERO PRD
[redacted]
www.fisheries.noaa.gov

On Fri, Mar 28, 2025 at 9:10 AM KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE
[redacted]> wrote:

> Thanks, Shelby! We will work on developing talking points for the discussion, and look forward to hearing from you next week to set something up.
>
> Have a great weekend all!
>
> //SIGNED//
> Grace Keesling, GS-13, DAF
> Air Force EIAP/NEPA Division (AFCEC/CIE)
> JBSA-Lackland
> San Antonio, TX 78236
> Comm: [redacted]
>
> **From:** Shelby Casali - NOAA Affiliate [redacted]
> **Sent:** Thursday, March 27, 2025 5:29 PM
> **To:** KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]
> **Cc:** WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC <[redacted]>; Mary Wunderlich - NOAA Federal <[redacted]

Subject: [Non-DoD Source] Re: SERO-2024-03102 Decommission ACMI Towers - Gulf. Response to JAXBO Inquiry and RAI#1

Hi Grace,

You're welcome! I'm glad that you and your team found the information to be helpful. I am out of the office tomorrow, but I will touch base again Monday so we can arrange a meeting later in the week. Please let me know if you have any questions or concerns in the meantime.

Thank You,

Shelby L. Casali | **ESA Consultation Scientist**
SFI Contractor for NOAA NMFS SERO PRD
[redacted]
www.fisheries.noaa.gov

On Thu, Mar 27, 2025 at 2:18 PM KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE
<[redacted]> wrote:

Hi Shelby,

My name is Grace Keesling and I am managing the subject EA/OEA for the DAF with the support of Edwin and others at the installations. Thank you for all of the detailed information you have provided below! We have coordinated internally with regards to this information, and have determined that we would like to proceed with consultation for Alternative 4a as our preferred alternative.

Based on your email it appears we have two options to move forward with Alternative 4a – either an expedited informal consultation using the link provided, or a JAXBO Supersede request of Activity 9. We do have some questions about which of these paths would be most efficient and what additional details/information is required for Alternative 4a. Would you have availability sometime next week to discuss? If you could let us know some dates/times you might be available I would be happy to set up a calendar invite.

Thank you! Please let me know if you have any questions or would like to discuss.

v/r, Grace

//SIGNED//
Grace Keesling, GS-13, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC [redacted]>
Sent: Tuesday, March 11, 2025 1:07 PM
To: Shepherd, Maria [USA - EMP] <[redacted]

Cc: Clayton, Adonna N CIV USN NAVFAC SE JAX FL (USA) <[redacted]; Stumpf, Christa [USA - EMP] <[redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) [redacted]>; KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE <[redacted]; Kemp, Royce B CIV USN NAVFAC SE JAX FL (USA) [redacted]; Jackson, Jered B CIV USN (USA) [redacted]; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR [redacted] BUSKER, LORENCE T CIV USAF ACC 23 CES/CEIEA <[redacted] LAWS, JOHNCHARLES M Maj USAF HAF ACC JA/JAOE-FSC (ACC) [redacted]>; Kenny, George P CIV USN COMNAVREG SE JAX FL (USA) <[redacted]
Subject: FW: [Non-DoD Source] SERO-2024-03102 Decommission ACMI Towers - Gulf. Response to JAXBO Inquiry and RAI#1

Maria,

Please see below response from NMFS regarding the use of the JAXBO for the ACMI Towers EA.

Edwin Wallace, GS-12, DAF
Program Manager NEPA
[redacted]
Tyndall Air Force Base, FL 32403
[redacted]

From: Shelby Casali - NOAA Affiliate <[redacted]
Sent: Tuesday, March 11, 2025 12:55 PM
To: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC <[redacted]
Cc: Mary Wunderlich - NOAA Federal <[redacted]
Subject: [Non-DoD Source] SERO-2024-03102 Decommission ACMI Towers - Gulf. Response to JAXBO Inquiry and RAI#1

You don't often get email from [redacted] Learn why this is important

Good afternoon Edwin,

Thank you for requesting NMFS assistance in completing consultation for the decommissioning of ACMI towers in the Gulf. I have been informed that, unless there is prior authorization in writing from a federal action agency that a consultant will be corresponding regarding consultation requests on their behalf, we are to communicate directly with the federal action agency. Thus, I will only correspond with you moving forward, unless written authorization requesting Maria to act as your representative is provided.

I understand the desire to move forward with the consultation request utilizing JAXBO. The proposed alternatives presented in the BA are summarized in the following table. Depths at the 14 tower stations range from 20 to 125 ft. Total tower height (in-water and out of water combined) ranges from 154 to 381 ft. Proposed artificial reef dimensions are not provided for any alternative, but are likely to be high relief in some of the proposed alternatives based on tower dimensions provided.

Proposed Alternative	Mechanically Sever Tower at Mudline/Bottom	Mechanically Sever Tower below USCG Navigation Warning	Dispose of Severed Pieces onsite	Dispose of Severed Pieces offsite in established	Dispose of Severed Pieces offsite in	Dispose of Severed Pieces at authorized

		Buoy Depth	as new Artificial Reef	Artificial Reef	newly permitted Artificial Reef	onshore disposal site
1a	X		X			
1b		X	X			
2a	X			X		
2b		X		X		
3a	X				X	
3b		X			X	
4a	X					X
4b		X				X

Unfortunately, most of the proposed alternatives as described in the BA do not meet several JAXBO PDCs for the reasons listed below:

· AP.3 – per the 2022 survey provided in the BA, there is *Halophila decipiens* near Station Number 5 and possibly 6. There are also non-listed stony corals *Phyllangia americana, Agaricia agaricites,* and *Eusmilia spp.* on/near Station Number 7, 9, 10, 11, and 12. Station Number 14 is within the boundaries of the FKNMS. Since there are corals and seagrass documented in the project area, we need to consider special conditions listed below.

o Per AP.13 All impacts to non-ESA listed native, non-invasive seagrasses should be avoided and minimized to the extent practicable.

§ This is stated in the BA, however insufficient information (i.e. work and artificial reef site placement buffer distances from SAV) is provided to verify that statement.

o Per AP.14, Projects occurring within in the Florida Keys National Marine Sanctuary (FKNMS) may require separate consultation or authorization from NOAA's FKNMS. Projects authorized to occur in the FKNMS shall comply with any measures NOAA FKNMS has developed to avoid, minimize, and/or mitigate any effects on non-listed corals. For projects occurring outside of the FKNMS, if non-listed corals are found within the project footprint, we recommend relocating all non-listed corals, when possible, in a manner that is protective of the corals.

§ No indication of consultation or authorization from NOAA FKNMS was provided in the BA for the proposed action on Station 14.

§ No discussion of the feasibility of coral relocation was included in the BA for non-listed corals found on/near Stations 7, 9, 10, 11, and 12.

§ It should also be noted that, while these corals were not listed at the time JAXBO was initiated, Station 14 falls within critical habitat boundaries for ESA listed corals *Orbicella faveolata, Orbicella annularis,* and *Orbicella franksi.* Please see the map titled "SERO-2024-03102 South Towers 7 - 14 CH Overlap" attached. This map was generated by using tower coordinates provided in the ESA Section 7 mapper https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=b184635835e34f4d904c6fb741cfb00d

· More information is needed to determine if essential features for coral critical habitat are present in the action area. More information is needed to evaluate whether or not proposed alternatives may adversely modify critical habitat for these ESA listed corals.

· Per A7.14, New reef sections are limited to 1 reef section measuring ¼- by ¼-nmi area (40 ac) in size with a distance of 500 ft between each section. Offshore reefs shall maintain a minimum vertical clearance of twice the height of the structure from the top of the deployed material relative to the MLW at all times.

o The vertical relief and square foot area of the proposed artificial reef disposition of severed tower materials under Proposed Alternatives 1a, 1b, 2a, 2b, 3a, 3b, and 4b was not provided in the BA.

o It is unclear if the minimum vertical clearance of tower materials severed below USCG warning buoy depth in Proposed Alternatives 1b, 2b, 3b, and 4b meet the stipulations stated in PDC A7.14.

· Per A7.15, Reauthorization of existing reefs is limited to the previously permitted size. Approved materials defined in PDC A7.19 can be added to the existing reef area.

o Insufficient information was provided in the BA to evaluate if this PDC is met under Proposed Alternatives 2a and 2b.

· Per A7.16, No artificial reef materials shall be deployed until a benthic assessment of the bottom conditions has been accomplished by diver or submersible video camera. The inspection of the deployment area may occur at the time of deployment but no more than 1 year prior to deployment. The permittee shall maintain a deployment buffer of at least 200 ft from any submerged aquatic resources, including seagrasses, macroalgae, hard or soft coral (including coral reefs), sponges, oysters, or hard bottom when placed in areas of sand. If materials are off-loaded from a barge or placed in areas that may generate turbidity (e.g., areas with fines or muck), a 500 ft buffer is required.

o Per the BA, the provided survey is 3 years old. Buffer distances from protected resources were not provided per Proposed Alternatives 1a, 1b, 2a, 2b, 3a, 3b, and 4b. A description of pre-construction benthic survey activity was not included for any of the proposed alternatives.

· Per A7.18, All reefs must be cleaned annually to remove marine debris and derelict fishing line in areas safely accessible to recreational SCUBA divers. Cleanup efforts shall follow the PDCs for Activity 9, marine debris removal, and all pertinent general PDCs.

o No information about the removal of marine debris and derelict fishing line was provided in the BA per Proposed Alternatives 1a, 1b, 2a, 2b, 3a, 3b, and 4b. Three of the towers are located at depths exceeding 100 ft, and are not safely accessible to recreational SCUBA divers. The accumulation of marine debris and derelict fishing line is a serious concern for listed sea turtles, elaborated in the next point.

· Per A7.19, Individual reef units or modules must weigh at least 500 pounds. Reef materials shall be clean and free from asphalt, petroleum, other hydrocarbons, and toxic residues, as well as loose, free-floating material, or other deleterious substances. All artificial reef materials and/or structures will be selected, designed, constructed, and deployed to create stable and durable marine habitat. Only the following reef materials may be used under this Opinion:

A7.19.1. Prefabricated artificial reef modules composed of ferrous and/or aluminum-alloy metals, concrete, rock, or a combination of these materials.

A7.19.2. Natural rock boulders and pre-cast concrete material, such as culverts, stormwater junction boxes, power poles, railroad ties, jersey barriers, or other similar concrete material.

A7.19.3. Clean steel and concrete bridge or large building demolition materials such as slabs or piles with all steel reinforcement rods cut at the base of the concrete so no rebar or metal protrudes from the concrete.

o While the BA did state that reef materials shall be clean and free from asphalt, petroleum, other hydrocarbons, and toxic residues, as well as loose, free-floating material, or other deleterious substances, the weight of reef materials was not provided. Sufficient details were not provided about the design, construction, and deployment of the severed tower pieces to create stable and durable marine habitat for Proposed alternatives 1a, 1b, 2a, 2b, 3a, 3b, and 4b.

- Per A7.20, Reef structures, materials, and installation methods shall be designed and deployed to prevent entanglement and entrapment of listed species.

  - o The deployment design of the proposed artificial reef disposition of severed tower materials was not provided per Proposed Alternatives 1a, 1b, 2a, 2b, 3a, 3b, and 4b in the BA. It is unclear how the severed pieces will be oriented, as well as the height and complexity of the proposed structures.

  - o The support structure of the southern towers appears to be high relief, complex structure. In the BA, it is stated "The visible tower sections would be removed and would no longer mark these areas for anglers; however, the fish would still be likely to congregate in and around the sunken tower sections, Therefore, they would remain available to commercial and recreational anglers." Derelict fishing gear and debris can accumulate on high relief, complex underwater structure in areas where fishing occurs. Accumulated derelict fishing gear on complex, high relief structure is likely to adversely affect sea turtles, since they can become entangled in the derelict gear and drown. Sea turtle entanglement would not occur but for the creation of artificial reefs that accumulate derelict fishing gear.

  - o Entanglement also presents a risk for several other ESA listed fish species that may be in the action area: giant manta ray, gulf sturgeon, Nassau grouper, and smalltooth sawfish.

Please note that, per the information provided in the BA, Proposed Alternative 4a (removal of all tower pieces severed at the mudline with onshore disposal, including Station Number 11 which is colonized by invasive cup coral) is the only alternative that appears to be NLAA for ESA listed species and critical habitat. That alternative alone may be appropriate for an expedited informal consultation request. More information would need to be provided in a format following the guidance and template at this link:
https://www.fisheries.noaa.gov/southeast/consultations/expedited-informal-consultations

It is also possible that if JAXBO conditions in AP.3, AP.13, AP.14, and PDCs for Activity 9 – Marine Debris Removal are adequately addressed, then Proposed Alternative 4a (removal of all tower pieces mechanically severed at the mudline with onshore disposal, including Tower 11 encrusted in invasive cup coral) may be considered for a JAXBO Supersede request of Activity 9.

The preferred alternative was not provided in the BA. If Proposed Alternative 4a is the preferred alternative, I will gladly assist you in applying for either a JAXBO Supersede request for Activity 9 or an expedited informal consultation request. However, under all of the other proposed alternatives, the information provided in the BA is insufficient to justify a NLAA determination for sea turtles and other ESA-listed species. Under all other proposed alternatives, coordinating on the draft project description for the biological opinion is the most expedient way to process the consultation request.

Please let me know how you would like to proceed so we can eliminate the liability of derelict ACMI towers while also ensuring the protection of ESA listed species and critical habitat.

If no response to this request for additional information is received within 45 days, by **Friday, April 25th,** we will assume the consultation is no longer active, close out the consultation request, and change the request status to "withdrawn". This 45-day period has been established as a national policy. In the event of a government shutdown, an extension request would not be required after government operations recommence. The consultation request would keep its place in line, and we will just resume where we left off when furlough ends. Please let me know if you have any questions or concerns.

Thank You,

Shelby L. Casali (Mrs.)
ESA Consultation Scientist
Contractor with Spatial Front International in support of NOAA Fisheries
Office of Protected Resources | U.S. Department of Commerce
Google Voice: [redacted]
[Section 7 Guidance Webpage - UPDATED URL]
[Updated Construction Conditions, (May 2021)]
[Section 7 Mapper: Identify Species in your Project area!]

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
https://www.fisheries.noaa.gov/region/southeast

07/23/2025

F/SER31:SC
SERO-2024-03102

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
102 Checkertail Way, Bldg. 36234
Tyndall AFB FL 32403

Ref.: Department of the Air Force, Decommission ACMI Towers - Gulf, Tyndall Air Force Base, Bay County, Florida – EXPEDITED TRACK

Dear José Cintron,

This letter responds to your June 26, 2025 request (dated June 18, 2025) and email with additional information dated July 15, 2025 pursuant to Section 7 of the Endangered Species Act (ESA) for consultation with the National Marine Fisheries Service (NMFS) on the subject action.

We reviewed the action agency's consultation request document and related materials. Based on our knowledge, expertise, and the action agency's materials, we concur with the action agency's conclusions that the proposed action is not likely to adversely affect the NMFS ESA-listed species and/or designated critical habitat.

Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on May 6, 2024 (89 Fed. Reg. 24268). We are applying the updated regulations to this consultation. The 2024 regulatory changes, like those from 2019, were intended to improve and clarify the consultation process, and, with one exception from 2024 (offsetting reasonable and prudent measures), were not intended to result in changes to the Services' existing practice in implementing section 7(a)(2) of the Act. 84 Fed. Reg. at 45015; 89 Fed. Reg. at 24268. We have considered the prior rules and affirm that the substantive analysis and conclusions articulated in this letter of concurrence would not have been any different under the 2019 regulations or pre-2019 regulations.

This concludes your consultation responsibilities under the ESA for species and/or designated critical habitat under NMFS's purview. Reinitiation of consultation is required and shall be requested by the action agency where discretionary Federal action agency involvement or control over the action has been retained or is authorized by law and: (a) take occurs; (b) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in this consultation; (c) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not previously considered in this consultation; or (d) if a new species is listed or critical habitat designated that may be affected by the action.

We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any questions on this consultation, please contact Shelby Casali, Consultation Biologist, by email at Shelby.Casali@noaa.gov.

Sincerely,

Digitally signed by BRAME.ADAM.B.1399406516
Date: 2025.07.23 13:20:48 -04'00'

for Dennis Klemm
Acting Assistant Regional Administrator
for Protected Resources

File: 1514-22.s

2

B.2.5.3 U.S. Fish and Wildlife Service – Section 7 Endangered Species Act Consultation

Outlook

[EXTERNAL] Tyndall AFB - ESA Section 7 Consultation Request (ACMI Towers)

From Shepherd, Maria [USA - EMP] <[redacted]>
Date Wed 12/11/2024 12:17 PM
To FLESRegs, FW4 <[redacted]>
Cc Martin, Catrina M <[redacted]>; WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC <[redacted]>; Grace Keesling <[redacted]>; BUSKER, LORENCE T CIV USAF ACC 23 CES/CEIEA <[redacted]>

2 attachments (4 MB)
ACMI Towers Final USFWS BA (Dec 2024).pdf; ACMI Towers EA Section 7 Consultation Request Letter_USFWS (Dec 2024).pdf;

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hello,

On behalf of the Department of the Air Force and Tyndall Air Force Base, please find attached a letter requesting consultation with the USFWS in accordance with Section 7 of the Endangered Species Act regarding the proposed action to decommission 14 Air Combat Maneuvering Instrumentation (ACMI) towers in the Gulf of Mexico. Also attached is a Biological Assessment describing the potential effects of the proposed action on federally listed species.

Sincerely,

Maria Shepherd
Senior Environmental Scientist
Applied Professional & Technology Solutions
Environmental Management

VERSAR
GLOBAL SOLUTIONS

Direct: [redacted]
Email: [redacted]
Versar.com

U.S. FISH & WILDLIFE SERVICE

Florida Ecological Services Field Office
Service Project Code No. 2025-0030846
The U.S. Fish and Wildlife Service has reviewed the information provided and finds that the proposed action is not likely to adversely affect any federally listed species or designated critical habitat protected by the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 et. seq.). A record of this consultation is on file at the Florida Ecological Services Field Office.
This fulfills the requirements of section 7 of the Act and further action is not required. If modifications are made to the project, if additional information involving potential effects to listed species becomes available, or if a new species is listed, reinitiation of consultation may be necessary.

ROBERT CAREY Digitally signed by ROBERT CAREY Date: 2025.02.19 14:01:17 -05'00'

B.2.6 Draft EA/OEA Letters

B.2.6.1 Example State Agency Letter

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
103 Mississippi Road
Tyndall AFB FL 32403-5014

Chris Stahl, Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3800 Commonwealth Boulevard, Mail Station 47
Tallahassee FL 32399-2400

Subject: Notification of Draft Environmental Assessment/ Overseas Environmental Assessment for Decommissioning of Air Combat Maneuvering Instrumentation Towers, Proposed Finding of No Significant Impact/ Finding of No Significant Harm, and Federal Coastal Consistency Determination

Dear Mr. Stahl

The Department of the Air Force (DAF) has prepared a Draft Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) and proposed Finding of No Significant Impact (FONSI)/Finding of No Significant Harm (FONSH) to assess the potential environmental impacts of decommissioning 14 Air Combat Maneuvering Instrumentation towers. The EA/OEA is being prepared in accordance with the National Environmental Protection Act (42 United States Code §§ 4321 - 4347), Executive Order 12114, and the Air Force's Environmental Impact Analysis Process (32 Code of Federal Regulations [CFR] Part 989).

In January 2025, the DAF sent a letter to your office describing the Proposed Action and requesting comments to support development of the EA/OEA. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance.

No significant environmental impacts from the Proposed Action are identified in the Draft EA/OEA and proposed FONSI/FONSH, including potential impacts on resources regulated by the Florida Department of Environmental Protection. In accordance with Section 307(c)(1) of the Coastal Zone Management Act and 15 CFR Part 930, the DAF has determined that the Proposed Action would be consistent to the maximum extent practicable with the Enforceable Policies of the Florida Coastal Management Program. The DAF's Federal Coastal Consistency Determination (FCCD) is included as Appendix F in the Draft EA/OEA.

The DAF respectfully requests your written comments and other input on the Draft EA/OEA and proposed FONSI/FONSH (included as attachments) within 30 days of receipt of this letter. The State's concurrence with, or objection to, the FCCD, or request for an extension, is requested within 60 days of this letter pursuant to 15 CFR 930.41.

Comments on the Draft EA/OEA and response to the FCCD should be sent to Edwin Wallace by email at edwin.wallace.1@us.af.mil. In accordance with 15 CFR 930.41(a), the State's concurrence with the FCCD will be presumed if not received by the DAF by the 60th day from receipt of this letter.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2025.04.01 07:01:25 -05'00'

JOSÉ CINTRON, GS-13, DAF

Attachments:

1. Draft EA/OEA for Decommissioning of Air Combat Maneuvering Instrumentation Towers (electronic)
2. Draft FONSI/FONSH for Decommissioning of Air Combat Maneuvering Instrumentation Towers (electronic)

Sent via email to: state.clearinghouse@dep.state.fl.us; Chris.Stahl@dep.state.fl.us

B.2.6.2 Example Federal Agency Letter

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS

Grace Keesling
AFCEC/CIE
c/o 325th Civil Engineer Squadron,
102 Checkertail Way, Bldg. 36234,
Tyndall AFB, Florida 32404

John Filostrat
Bureau of Ocean Energy Management
Gulf of Mexico OCS Region & Atlantic OCS Region
1201 Elmwood Park Blvd.
New Orleans LA 70123-2394

Subject: Notification of Draft Environmental Assessment/Overseas Environmental Assessment for Decommissioning of Air Combat Maneuvering Instrumentation Towers and Finding of No Significant Impact/Finding of No Significant Harm

Dear Mr. Filostrat

The Department of the Air Force (DAF) has prepared a Draft Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) and proposed Finding of No Significant Impact (FONSI)/Finding of No Significant Harm (FONSH) to assess the potential environmental impacts of decommissioning 14 Air Combat Maneuvering Instrumentation towers. The EA/OEA is being prepared in accordance with the National Environmental Protection Act (42 United States Code §§ 4321 - 4347), Executive Order 12114, and the Air Force's Environmental Impact Analysis Process (32 Code of Federal Regulations Part 989).

In January 2025, the DAF sent a letter to your office describing the Proposed Action and requesting comments to support development of the EA/OEA. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance.

The Draft EA/OEA and proposed FONSI/FONSH are available for review and download on the Tyndall Air Force Base website at https://www.tyndall.af.mil.About/. The DAF respectfully requests your written comments and other input on the Draft EA/OEA and proposed FONSI/FONSH within 30 days of receipt of this letter. Comments should be sent to Grace Keesling by e-mail: grace.keesling.1@us.af.mil, or by mail: c/o Edwin Wallace, 325th Civil Engineer Squadron, 102 Checkertail Way, Bldg. 36234, Tyndall AFB, Florida 32404.

Sincerely

KEESLING.GRACE.ELIZABETH.1470224165
Digitally signed by KEESLING.GRACE.ELIZABETH.1470224165
Date: 2025.04.01 10:17:49 -05'00'

GRACE KEESLING, DAF
Program Manager, AFCEC/CIE

B.2.6.3 Example Government-to-Government Letter

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 23D WING (ACC)
MOODY AIR FORCE BASE GEORGIA

Colonel Paul E. Sheets
Commander
23d Wing
23 Flying Tiger Way
Bldg 105, Suite 1
Moody AFB GA 31699

05 MAY 2025

Crystal Williams, Acting Chairman
Coushatta Tribe of Louisiana
1940 C.C. Bel Road
Elton LA 70532

SUBJECT: Notification of Draft Environmental Assessment/Overseas Environmental Assessment for Decommissioning of Air Combat Maneuvering Instrumentation Towers and Finding of No Significant Impact/Finding of No Significant Harm

Dear Chairman Williams

The Department of the Air Force (DAF) has prepared a Draft Environmental Assessment (EA)/Overseas Environmental Assessment (OEA) and proposed Finding of No Significant Impact (FONSI)/Finding of No Significant Harm (FONSH) to assess the potential environmental impacts of decommissioning 14 Air Combat Maneuvering Instrumentation towers. The EA/OEA is being prepared in accordance with the National Environmental Protection Act (42 United States Code §§ 4321 - 4347), Executive Order 12114, and the Air Force's Environmental Impact Analysis Process (32 CFR Part 989). The Proposed Action to remove the towers is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance.

The Proposed Action is considered an undertaking under Section 106 of the National Historic Preservation Act. In January 2025, the DAF sent you a letter briefly describing the proposed undertaking and the proposed Area of Potential Effect (APE). Information on any properties of historic, religious, or cultural significance that could potentially be affected by the proposed undertaking, or input in identifying any issues or areas of concern that should be addressed in the EA/OEA, was also requested. In accordance with Section 106, implementing regulations at 36 CFR Part 800, and DoD Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, the DAF is inviting you to continue government-to-government consultation regarding the proposed undertaking. The DAF is also consulting with the Florida State Historic Preservation Officer with respect to the proposed undertaking.

Attack · Rescue · Prevail ~ Tigers Lead!

The DAF is not aware of any historic properties of religious or tribal significance located within the APE. No significant environmental impacts are identified in the Draft EA/OEA and proposed FONSI/FONSH. In the event that archaeological resources or human remains are discovered during the proposed undertaking, work would immediately cease and the DAF would inform you of the discovery regardless of whether you choose to participate in government-to-government consultation.

The DAF respectfully requests your written comments and other input on the Draft EA/OEA and proposed FONSI/FONSH within 30 days of receipt of this letter. Comments should be sent to Lorence Busker by email: lorence.busker@us.af.mil; phone: 229-257-1395; or mail: Lorence Busker, 23 CES/CEIEA, 3485 Georgia Street, Moody AFB, Georgia 31699-1707. Thank you in advance for your consideration.

Sincerely

PAUL E. SHEETS, Colonel, USAF
Commander

2 Attachments:
1. Draft EA/OEA for Decommissioning of Air Combat Maneuvering Instrumentation Towers (electronic)
2. Draft FONSI/FONSH for Decommissioning of Air Combat Maneuvering Instrumentation Towers (electronic)

B.2.7 Draft EA/OEA Comments

From: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE
To: Benggio, Morgan D CIV USCG D7 (USA)
Cc: Busby, Brian T CIV USCG D7 (USA); SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE); Shepherd, Maria [USA - EMP]; Stumpf, Christa [USA - EMP]
Subject: RE: Draft EA/ EO 12114 Tower Decom.
Date: Wednesday, July 9, 2025 2:19:28 PM
Attachments: image001.png

Thank you, Morgan! Air Combat Command (ACC) would implement the action once the EA is complete, so I have copied those POCs for their SA. If there is any information regarding standards/practices regarding notifying mariners that should be added to or referenced in the Final EA please let us know.

Thank you! Please let me know if you have any questions or would like to discuss.

//SIGNED//
Grace Keesling, NH-03, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Benggio, Morgan D CIV USCG D7 (USA) [redacted]
Sent: Wednesday, July 9, 2025 6:51 AM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]>
Cc: Busby, Brian T CIV USCG D7 (USA) [redacted]>
Subject: RE: Draft EA/ EO 12114 Tower Decom.

Good afternoon Grace,
No worries on the delay. Hope you had a GREAT holiday weekend. Thank you for sending over the link to review the DAF's DOPAA.

Similar to Rachael Stryker's response, coordination with NOAA Charts would be necessary to update nautical charts. I have copied our office's POC for when the towers are removed.

I did not see in the EA/ FONSI any request to broadcast the in-water work while ongoing. I'll defer to Mr. Busby on standards and practices regarding Notice to Mariners and Broadcast Notice to Mariners.

Thank you again for sending over for review from our office, and I hope for a safe and successful project.

Very respectfully,
Morgan Benggio
Environmental Protection Specialist
Southesat Coast Guard District
Waterways Management
Email: [redacted]
Phone: [redacted]

From: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE <[redacted]>
Sent: Tuesday, July 8, 2025 11:05 AM
To: Benggio, Morgan D CIV USCG D7 (USA) <[redacted]>
Cc: Hemmati, Nabil J LCDR USCG D7 (USA) <[redacted]>; Lieberman, David L IV CIV (USA) [redacted]>; Stryker, Rachel A CDR USCG D8 (USA) <[redacted]>; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR [redacted]>; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) [redacted]>; Shepherd, Maria [USA - EMP] [redacted]>; Stumpf, Christa [USA - EMP]

<[redacted]
Subject: RE: Draft EA/ EO 12114 Tower Decom.

Hi Morgan,

Thank you for your patience – I just returned from leave this morning. Please use the link below to access the Draft EA/OEA and FONSI/FONSH (linked separately in the column on the left-hand side of the page):
https://www.tyndall.af.mil/About/

The Towers do fall within both CGD7 & CDG8, and both districts received notifications letters. Please let us know if you have any additional questions or need any additional information.

Thank you!

//SIGNED//
Grace Keesling, NH-03, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Benggio, Morgan D CIV USCG D7 (USA) <[redacted]>
Sent: Friday, June 27, 2025 12:07 PM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE <[redacted]>
Cc: Hemmati, Nabil J LCDR USCG D7 (USA) <[redacted]>; Lieberman, David L IV CIV (USA) <[redacted]>; Stryker, Rachel A CDR USCG D8 (USA) <[redacted]>
Subject: Draft EA/ EO 12114 Tower Decom.

Good afternoon and thank you for your letter to USCG D7 for input regarding the Draft EA announcement.

Looking at www.tyndall.afd.mil I could not find the draft EA for review, specifically the description of proposed federal action (DOPA). I believe these towers fall within both USCG District 7 (CGD7) and District 8 (CGD8) and I want to verify the location of the towers and ensure CGD8 has been notified as well.

Below is a chart-let where the North towers fall within CGD8 and the South towers are in CGD7. I believe these towers are listed in the CGD8 Light List, however D7 did not list these in the CGD7 Light List.

For now I am requesting the draft EA for review to verify USCG intersects with the DAF's proposed action and Maritime Safety. I anticipate the only intersect for these towers will be Notice to Mariners via our publications to the Maritime Domain.

Again this email only represents CGD7, however I have included CGD8 (CDR R. Stryker) on here for awareness.

I look forward to coordination with the DAF where intersects exist between the two agencies.

Thank you for the notice of Draft EA.

Very respectfully,
Morgan Benggio
Environmental Protection Specialist
Seventh Coast Guard District
Waterways Management
Email: [redacted]
Phone: [redacted]

From: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE
Sent: Tuesday, July 8, 2025 11:26 AM
To: Stryker, Rachel A CDR USCG D8 (USA) [redacted]>
Cc: Hemmati, Nabil J LCDR USCG D7 (USA) [redacted]>; Lieberman, David L IV CIV (USA) [redacted]>; Benggio, Morgan D CIV USCG D7 (USA) [redacted]>; Temple, Joseph M CIV USCG D8 (USA) [redacted]>; Steiner, Paul A CIV USCG D8 (USA) [redacted]>; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR [redacted] AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE) [redacted]>
Subject: RE: Draft EA/ EO 12114 Tower Decom.

Hi Rachel,

Thank you for this information! I have added our ACC team who will be responsible for implementing this action once NEPA is complete for their awareness.

//SIGNED//
Grace Keesling, NH-03, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Stryker, Rachel A CDR USCG D8 (USA) [redacted]
Sent: Tuesday, July 8, 2025 9:20 AM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]
Cc: Hemmati, Nabil J LCDR USCG D7 (USA) [redacted]>; Lieberman, David L IV CIV (USA) <[redacted] ; Benggio, Morgan D CIV USCG D7 (USA) <[redacted]; Temple, Joseph M CIV USCG D8 (USA) <[redacted]>; Steiner, Paul A CIV USCG D8 (USA) [redacted]
Subject: RE: Draft EA/ EO 12114 Tower Decom.

Good morning,

CG Heartland (D8) has reviewed and sees no concern about the EA. Heartland District handles the northern towers. Southeast District (D7) handles the southern towers.

However, if the towers are not completely removed, they are likely to have to be marked. Also, if the towers are not placed in a marked artificial reef area or removed to the shore, they are likely to have to be marked. Markings are usually required if in water that is less than 200 ft deep.

Mr. Temple and Mr. Steiner above are the experts for marking hazards in the Gulf of America.

v/r,
CDR Rachel Stryker
Deputy Director Western Rivers & Waterways
Heartland District
United States Coast Guard
Teams Phone: [redacted]

From: Benggio, Morgan D CIV USCG D7 (USA) <[redacted]>
Sent: Friday, June 27, 2025 12:07 PM
To: [redacted]
Cc: Hemmati, Nabil J LCDR USCG D7 (USA) <[redacted]; Lieberman, David L IV CIV (USA) [redacted]; Stryker, Rachel A CDR USCG D8 (USA) [redacted]
Subject: Draft EA/ EO 12114 Tower Decom.

Good afternoon and thank you for your letter to USCG D7 for input regarding the Draft EA announcement.

Looking at www.tyndall.afd.mil I could not find the draft EA for review, specifically the description of proposed federal action (DOPA). I believe these towers fall within both USCG District 7 (CGD7) and District 8 (CGD8) and I want to verify the location of the towers and ensure CGD8 has been notified as well.

Below is a chart-let where the North tow~~ers fall within CGD8 and~~ the South towers are in CGD7. I believe these towers are listed in the CGD8 Light List, however D7 did not list these in the CGD7 Light List.

For now I am requesting the draft EA for review to verify USCG intersects with the DAF's proposed action and Maritime Safety. I anticipate the only intersect for these towers will be Notice to Mariners via our publications to the Maritime Domain.

Again this email only represents CGD7, however I have included CGD8 (CDR R. Stryker) on here for awareness.

I look forward to coordination with the DAF where intersects exist between the two agencies.

Thank you for the notice of Draft EA.

Very respectfully,

Morgan Benggio
Environmental Protection Specialist
Seventh Coast Guard District
Waterways Management
Email: [redacted]
Phone: [redacted]

From: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE
To: Steiner, Paul A CIV USCG D8 (USA)
Cc: D08-DG-District-DPWPaton; SEIBERT, JORDAN S CTR USAF ACC ACC A3/A3AR; AMTHOR, SARAH B CIV USAF AFMC AFIMSC Det 8/CEB(CE)
Subject: RE: Draft EA/ EO 12114 Tower Decom.
Date: Tuesday, July 8, 2025 1:02:35 PM
Attachments: image002.png
image003.png
image004.png

Hi Paul,

Thanks for the information and the call earlier (sorry I missed you)! The Draft EA/OEA public comment period has closed and we are working through ESA Section 7 consultation with NMFS before we can finalize the EA and sign the FONSI/FONSH. I do not believe we have requested approval to decommission from USACE yet since we are still awaiting completion of the EA. We have been in contact with Florida FWCC Artificial Reef Program as we developed the Draft EA to ensure our alternatives were viable, but have not initiated a work plan or anything else with them to date.

My office is responsible for managing the EA process – once the EA is complete and DAF is ready to implement the proposed action Air Combat Command (ACC) will take the lead on implementing the action. I have cc'd my POCs there so they have this information for their future action. I would also defer to ACC for any information on the MS towers you mentioned. They are more likely to be the correct office (or at least point you in the right direction) – I am only aware of the towers that were proposed for decommissioning in this EA.

Thank you! Please let me know if you have any questions or would like to discuss.

//SIGNED//
Grace Keesling, NH-03, DAF
Air Force EIAP/NEPA Division (AFCEC/CIE)
JBSA-Lackland
San Antonio, TX 78236
Comm: [redacted]

From: Steiner, Paul A CIV USCG D8 (USA) [redacted]
Sent: Tuesday, July 8, 2025 10:37 AM
To: KEESLING, GRACE E CIV USAF AFMC AFCEC/CIEE [redacted]
Cc: D08 DG District DPWPaton [redacted]
Subject: FW: Draft EA/ EO 12114 Tower Decom.

Good morning Ms. Keesling,

I apologize you're having to deal with two offices: USCG Heartland District (D8) and USCG Southeast District (D7) as each office has processed these slightly differently! This office (USCG Heatland-D8) will assist with the disposition of the 6 towers off the coast of Carrabelle, FL. As I have not been included on the original email to Ms. Morgan Benggio, I'd like to see where we are in this process as is appears the environmental side is complete or nearing completion.

USCG Heartland District-D8 will normally receive notice of any proposed actions such as those listed here in the environmental assessment for the tower decommission project directly from the Army Corps of Engineers during their public notice for proposed actions review phase. During this phase USCG Heartland District will incorporate any requirements such as the need for private aids to navigation markings.

1. Has your office already received approval from the Army Corps for the decommission work?
2. Has your office coordinated with the Florida Fish and Wildlife Conservation Commission (FWCC), Division of Marine Fisheries Management-Artificial Reef Program?

I apologize if you have not gotten this far along, just trying to get an idea on where we are in the process!

For this office, it will be very streamlined and far less complicated now that the environmental piece is finished. For us:

1. Once the towers have been removed, submit a CG-2554 form to request the aids to navigation be discontinued (quick flash white lights and foghorns on each tower). Once we review the site clearance survey post decommissioning, we will submit a chart correction to NOAA and have each tower symbol and light symbol removed from all NOAA electronic navigation products if the structure is removed entirely.

2. If the towers will be converted to an artificial reef, we would need to review the Army Corp permit and associated drawings. At this time, we will make a marking determination on whether the reef may need private aids to navigation (buoy or fixed light).

For your convenience, I have attached the CG-2554 form and chartlet for each towers aids to navigation (light and foghorn) and a blank form to request discontinuation once each is removed. Immediately below each tower light is listed by USCG Light List Number and GPS. This can also be referenced to list each one when you are requesting the discontinue. At the very end you will find your Army Corps District contact and the FWCC contact for the artificial reef program.

**Just so they do not get left out, we also have 7 more ACMI towers and 1 platform off the MS coast. These were reported as not being used and the contacts we had on these which were between Tyndall and Eglin AFB and the Mississippi Air National Guard (Gulfport) went cold. Are these proposed to be removed, or could you put us in touch with the correct office to ensure they do not get left out and turn into hazards? (see attached email string)

Feel free to reach out via phone or email if this if you need anything further. I can help guide you through the process!

Paul Steiner
Marine Information Specialist

;. Coast Guard Heartland District (D8)
Waterways Branch (dpw)
Private Aids to Navigation
[redacted]
New Orleans, LA 70130
[redacted] (Teams)

20	U.S. Air Force Instrumentation Tower Light Smi	29-04-54.000N	084-19-12.000W
25	U.S. Air Force Instrumentation Tower Light N6	29-24-54.000N	084-20-42.000W
30	U.S. Air Force Instrumentation Tower Light N7	29-39-54.000N	084-22-12.000W
35	U.S. Air Force Instrumentation Tower Light N5	29-17-54.000N	084-36-42.000W
40	U.S. Air Force Instrumentation Tower Light N3	29-32-18.000N	084-37-00.000W
45	U.S. Air Force Instrumentation Tower Light N4	29-24-42.000N	084-51-24.000W

Keith Mille, Biological Administrator II
Division of Marine Fisheries Management - Artificial Reef Program

Florida Fish and Wildlife Conservation Commission
[redacted]
Tallahassee, FL 32399-1600
web: http://myfwc.com/conservation/saltwater/artificial-reefs/
office: [redacted]
mobile: [redacted]
fax: [redacted]
email: [redacted]

From: Stryker, Rachel A CDR USCG D8 (USA) [redacted]>
Sent: Monday, July 7, 2025 2:45 PM
To: Temple, Joseph M CIV USCG D8 (USA) [redacted]
Subject: FW: Draft EA/ EO 12114 Tower Decom.

Joe,

The Air Force is planning to remove 6 towers south of Apalachicola Bay. They are looking at mechanically severing the towers either at the bottom or below the navigational depth for needing buoys and then placing the severed tower pieces either on the bottom near the current tower, in an approved artificial reef area on the bottom, or on shore. Do you see any concerns from a wrecks and hazards perspective. Table 1-1 has lat/long and depth info (page 15).

Thanks!

v/r,
CDR Rachel Stryker
Deputy Director Western Rivers & Waterways
Heartland District
United States Coast Guard
Teams Phone: [redacted]

From: Benggio, Morgan D CIV USCG D7 (USA) [redacted]
Sent: Friday, June 27, 2025 12:07 PM
To: [redacted]
Cc: Hemmati, Nabil J LCDR USCG D7 (USA) [redacted] Lieberman, David L IV CIV (USA) [redacted]; Stryker, Rachel A CDR USCG D8 (USA) [redacted]
Subject: Draft EA/ EO 12114 Tower Decom.

Good afternoon and thank you for your letter to USCG D7 for input regarding the Draft EA announcement.

Looking at www.tyndall.afd.mil I could not find the draft EA for review, specifically the description of proposed federal action (DOPA). I believe these towers fall within both USCG District 7 (CGD7) and District 8 (CGD8) and I want to verify the location of the towers and ensure CGD8 has been notified as well.

Below is a chart-let where the North towers fall within CGD8 and the South towers are in CGD7. I believe these towers are listed in the CGD8 Light List, however D7 did not list these in the CGD7 Light List.

For now I am requesting the draft EA for review to verify USCG intersects with the DAF's proposed action and Maritime Safety. I anticipate the only intersect for these towers will be Notice to Mariners via our publications to the Maritime Domain.

Again this email only represents CGD7, however I have included CGD8 (CDR R. Stryker) on here for awareness.

I look forward to coordination with the DAF where intersects exist between the two agencies.

Thank you for the notice of Draft EA.

Very respectfully,
Morgan Benggio
Environmental Protection Specialist
Seventh Coast Guard District
Waterways Management
Email: [redacted]
Phone: [redacted]

From: State_Clearinghouse <[redacted]
Sent: Friday, August 1, 2025 4:25 PM
To: WALLACE, EDWIN B CIV USAF ACC 325 CES/CEIEC <[redacted]
Cc: State_Clearinghouse <[redacted]
Subject: [Non-DoD Source] State Clearance Letter for FL202506040480C - Draft Environmental Assessment/ Overseas Environmental Assessment for the Decommissioning of Air Combat Maneuvering Instrumentation Towers, Waters of the Gulf of America, Florida

August 1, 2025

Edwin Wallace
USAF -Tyndall
[redacted]

RE: Department of Defense, Department of the Air Force, U.S. Air Force, Draft Environmental Assessment/Overseas Environmental Assessment for the Decommissioning of Air Combat Maneuvering Instrumentation Towers, Waters of the Gulf of America, Florida

SAI # FL202506040480C

Dear Edwin:

Florida State Clearinghouse staff has reviewed the proposal under the following authorities: Presidential Executive Order 12372; § 403.061(42), Florida Statutes; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Environmental Protection's (DEP) Office of Resilience and Coastal Protection (ORCP) has reviewed the submitted information and is more supportive of Alternatives 1 and 4. ORCP is not supportive of Alternatives 2 or 3 due to the inadvertent transport of unknown organisms to additional locations. For Station/Tower 3, onshore disposal is preferred. For Stations 4, 6, 10 and 11, severing below warning depths instead of at the bottom is acceptable but not preferred. For all stations, ORCP would prefer severing at bottom. For Station 11, if onshore disposal cannot be realized, leaving the structures in place after severing is acceptable. If left in place at current location, it is believed that the orange cup coral should pose little risk of spreading as it is common on artificial structures throughout the keys.

Based on the information submitted, the state has no objections to the subject project and, therefore, it is consistent with the Florida Coastal Management Program (FCMP). Thank you for the opportunity to review the proposed plan. If you have any questions or need further assistance, please don't hesitate to contact me at [redacted]

Sincerely,

Lindsay Weaver

Lindsay Weaver
Florida State Clearinghouse
Office of Intergovernmental Programs
Florida Department of Environmental Protection
State.Clearinghouse@FloridaDEP.gov

APPENDIX C
REASONABLY FORESEEABLE FUTURE ACTIONS

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APPENDIX C – REASONABLY FORESEEABLE FUTURE ACTIONS

Table C-1 Reasonably Foreseeable Future Actions

Project	Project Summary	Implementation Date	Relevance to Proposed Action	Interaction with Resources
Future Actions				
Florida Artificial Reef Creation and Restoration - Phase 2	This project involves deploying artificial reefs off Gulf, Franklin, and Wakulla Counties. These improvements include the construction of artificial reefs with one or more of the following materials: (1) rock boulders, (2) prefabricated concrete, and (3) designed modules in permitted areas within state or federal waters in the Gulf of Mexico.	Monitoring will occur twice a year from 2024 to 2025	Future action may contribute to cumulative impacts of the Proposed Action. Occurs in Franklin and Wakulla Counties	Biological Resources, Socioeconomic, Recreation
Gulf Spill Restoration Projects	Projects located in involved counties aiming to restore areas impacted by oil spills in Gulf of Mexico.	Monitoring will occur twice a year from 2024 to 2025	Future action may contribute to cumulative impacts of the Proposed Action.	Biological Resources, Socioeconomic, Recreation
Oil and Gas Production in Gulf of Mexico Region	Exploration, development, and production activity, as well as operations of a wide range of private businesses that are directly or indirectly involved in the development of oil and gas resources in Gulf of Mexico.	Forecast years 2022 - 2031	Future action may contribute to cumulative impacts of the Proposed Action.	All resources

APPENDIX D
SUPPLEMENTAL INFORMATION FOR MARINE RESOURCES

APPENDIX D – SUPPLEMENTAL INFORMATION FOR MARINE RESOURCES

Table D-1 Summary of Tower Locations and Dimensions

Station No.	Tower Designation	Latitude (north)	Longitude (west)	Distance from Shore (NM)	Surveyed Depth of Base (feet)	Total Tower Height (feet)[1]	Above Water Height (feet)
Northern Towers							
1	N4 (C)	29.4127	-84.8563	12.2	85	184	99
2	N3 (O)	29.5391	-84.6163	11.7	69	164	95
3	N7 (K)	29.6661	-84.3692	10.4	63	154	91
4	N5 (S)	29.2991	-84.6110	23.9	110	203	93
5	N6 (V)	29.4160	-84.3446	27.2	88	177	89
6	SM1	29.0818	-84.3200	42.8	97	381	284
Southern Towers							
7	NW Corner (R)	25.8000	-82.2167	26.3	75	213	138
8	NE Corner (D)	25.5667	-81.7167	14.3	34	174	140
9	N Master (T)	25.4670	-82.0997	30.8	71	213	142
10	W Center (L)	25.3672	-82.4665	50.7	105	246	141
11	SW Corner (W)	24.9348	-82.7164	37.9	125	269	144
12	S Master (S)	25.0338	-82.3665	29.3	100	226	126
13	E Center (P)	25.1171	-81.9998	33.5	66	210	144
14	SE Corner (W)	24.6798	-82.2864	9.6	39	164	125

Source: Underwater Survey Report for the ACMI Towers (Swift River Environmental Services LLC et al., 2022)

Table D-2 Summary of Biological Organisms Observed During Underwater Surveys of the Six Northern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Managed	Notes	Station Number / Tower					
					1/N4	2/N3	3/N7	4/N5	5/N6	6/SM1
Benthic										
Sponges	Porifera				X	X	X	X	X	X
Encrusting sponge					X	X	X	X	X	X
Loggerhead sponge	*Spheciospongia vesprarium*						X			
Sulfur sponge	*Cliona* sp (possibly *C. celata)*						X	X		
Vase sponge	*Ircinia campana*						X			
Rope sponge	Aplysina sp.						X			
Hydroids					X	X	X	X	X	X
Gorgonian soft corals	Gorgoniidae				X	X	X			X
Anemone, octocoral	Possibly *Plexaurella* sp.		Coral FMU				X			
Soft coral	*Telesto sanguinea*		Coral FMU			X			X	
Soft coral	*Leptogorgia* sp.		Coral FMU				X			
Sea fan	*Gorgonia* sp. *(possibly G. ventalina)*	S2, S3	Coral FMU					X		
Knobby star coral	*Solenastrea hyades*		Coral FMU	All stony corals are State protected. Bleaching and grazing noted.			X			
Burrowing anemone	*Cerianthus* sp				X	X				X
Colonial bryozoa						X	X			
Bivalves	Mollusca				X	X	X	X	X	X
Rigid pin shell	*Atrina rigida*								X	
Scallop	*Argopecten* sp									X
Florida Regal Doris (nudibranch)	*Felimare picta*									X
Black sea urchin	*Arbacia* sp.					X	X	X	X	X
Long-spined sea urchin	*Diadema antillarum*					X		X		X
Lace murex	Muricidae, (possibly *Chicoreus florifer)*							X		

Table D-2 Summary of Biological Organisms Observed During Underwater Surveys of the Six Northern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Managed	Notes	Station Number / Tower					
					1/N4	2/N3	3/N7	4/N5	5/N6	6/SM1
Sea snail	(possibly Busycon, Gastropoda)			Egg case, not positively identified				X		
Lace murex snail	*Chicoreus florifer*								X	
Sea stars	Echinasteridae					X	X		X	X
Sea star	*Luidia* sp.						X			
Slender-armed starfish	*Luidia clathrata*					X				
Small-spine sea star	*Echinaster spinulosus*					X				X
Royal sea star	*Astropecten articulatus*					X			X	
Sand Dollar	*Clypeaster subdepressus*									X
Sea biscuit	*Clypeaster rosaceus*									X
Florida sea cucumber	*Holothuria floridana*				X	X	X			
Jellyfish	Ulmaridae, (possibly *Aurelia aurita)*									X
Mantis shrimp	*Squilla empusa*			Tower N7: Burrows, not positively identified	X	X	?	X	X	X
Arrow crab	*Stenorhynchus seticornis*					X				X
Polychaete worms	Class Polychaeta			Burrows, not positively identified	X					
Tube worm	*Spirobranchus* sp.							X		
Encrusting calcareous algae	Order Corallinales			Also known as crustose coralline algae (CCA)	X	X	X	X	X	X
Calcareous green algae	*Halimeda copiosa*									X
Green algae	Caulerpaceae, *Caulerpa* sp. (possibly *C. mexicana)*						X		X	X
Green algae	Codiaceae*, Codium* sp.						X			
Green algae	Ulva sp.						X			
Micro algae	Ulvophyceae, *Halimeda* sp. (possibly *H. copiosa)*						X			X
Ruffled fan green algae	Udoteaceae, *Udotea* sp.						X			X
Paddlegrass	*Halophila decipiens*			SM1 not positively identified					X	?

Table D-2 Summary of Biological Organisms Observed During Underwater Surveys of the Six Northern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Managed	Notes	Station Number / Tower					
					1/N4	2/N3	3/N7	4/N5	5/N6	6/SM1
Fish										
Almaco jack	*Seriola rivoliana*		GMFMC managed							X
Angelfish	*Holacanthus* sp.							X		X
Atlantic spadefish	*Chaetodipterus faber*				X		X			X
Bermuda chub	*Kyphosus sectatrix*									X
Blenny	Blenniidae			Not positively identified		?				
Blue angelfish	*Holacanthus bermudensis*				X		X			
Blue dartfish	*Ptereleotris calliura*						X			
Blue goby	*Ioglossus calliurus*									
Blue runner	*Caranx crysos*						X		X	X
Crevalle jack	*Caranx hippos*						X		X	
Damselfish	*Stegastes* sp.			Invasive		X	X		X	
Gag grouper	*Mycteroperca microlepis*		GMFMC managed		X		X			
Goliath grouper	*Epinephelus itajara*		GMFMC managed; Reef Fish FMU			X	X	X		
Grasby	*Cephalopholis cruentatus*								X	
Gray snapper	*Lutjanus griseus*		GMFMC managed; Reef Fish FMU		X	X	X	X	X	X
Great barracuda	*Sphyraena barracuda*					X	X	X	X	X
Greater amberjack	*Seriola dumerili*		GMFMC managed		X		X	X	X	X
Gray triggerfish	*Balistes capriscus*		GMFMC managed		X					
Highhat	*Pareques acuminatus*					X	X		X	
Hogfish	*Lachnolaimus maximus*		GMFMC managed		X					
Horse eye jack	*Caranx latus*									X

Table D-2 Summary of Biological Organisms Observed During Underwater Surveys of the Six Northern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Managed	Notes	Station Number / Tower					
					1/N4	2/N3	3/N7	4/N5	5/N6	6/SM1
Lane snapper	*Lutjanus synagris*		GMFMC managed; Reef Fish FMU					X		X
Lionfish	*Pterois volitans*			Invasive	X	X				X
Permit	*Trachinotus falcatus*							X		X
Queen/Townsend angelfish	*Holocanthus* sp.					X	X	X	X	X
Red hind	*Epinephelus guttatus*									
Red snapper	*Lutjanus campechanus*		GMFMC managed; Red Snapper FMU		X	X	X	X		X
Scamp	*Mycteroperca phenax*		GMFMC managed		X		X			X
Sheepshead	*Archosargus probatocephalus*				X	X	X			
Soapfish	*Rypticus maculatus*					X			X	
Spotfin butterflyfish	*Chaetodon ocellatus*					X				
Spotted batfish	*Ogcocephalus cubifrons*				X	X			X	
Tomtate	*Haemulon aurolineatum*				X	X	X			
White grunt	*Haemulon plumieri*				X	X	X			
Wrasse	*Halichoeres* sp.					X	X		X	
Yellow jack	*Caranx bartholomaei*					X				
Bull shark	*Carcharhinus leucas*						X			
Southern stingray	*Hypanus americanus*				X					
Atlantic stingray	*Dasyyatis sabina*							X		
Other										
Loggerhead Sea Turtle	*Caretta caretta*	FE; S3							X	

Notes:
Source: Underwater Survey Report for the ACMI Towers (Swift River Environmental Services LLC et al., 2022)
EFH = Essential Fish Habitat; FE = federally endangered; FMU =Fishery Management Unit; GMFMC = Gulf of Mexico Fishery Management Council; S2 = Imperiled; S3 = Vulnerable

Table D-3 Summary of Biological Organisms Observed During Underwater Surveys of the Eight Southern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Status	Notes	Station Number / Tower							
					7 / NW Corner	8 / NE Corner	9 / N Master	10 W Center	11 / W Corner	12 / S Master	13 / E Center	14 / SE Corner
Benthic												
Sponges	Porifera				X	X	X	X	X	X	X	X
Encrusting sponge					X	X		X	X		X	X
Sponge sp.	*Ircinia* sp.										X	
Sponge sp.	*Hallisarca* sp.										X	
Row pore rope sponge	*Aplysina cauliformis,*				X				X			
Pitted sponge	*Verongula rigida*				X							
Loggerhead sponge	*Spheciospongia vesparium*				X			X				X
Red lobate sponge	*Phorbas amaranthus*											X
Branching tube sponge	*Pseudoceratina crassa*								X			
Vase sponge	*Ircinia campana*											X
Blue sponges	(possibly *Aiolochroia crassa)*				X							
Hydroids					X	X	X	X	X	X	X	X
Branching hydroid	*Sertularella speciosa*										X	X
Feather hydroids	*Pennaria disticha*				X	X				X		
Gorgonians soft corals	Gorgoniidae				X			X	X	X	X	X
Sea whip soft coral	*Leptogorgia* sp.								X			
Soft coral	(possibly *Carijoa riisei)*		Coral					X				
Fire coral	*Millepora* sp.		Coral					X	X	X		
Orange cup coral	*Tubastracea coccinea*		Coral	Native to Indo-Pacific, considered invasive in the Gulf of Mexico.					X			
Branched pipe coral	*Carijoa riisei*		Coral					X				

Table D-3 Summary of Biological Organisms Observed During Underwater Surveys of the Eight Southern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Status	Notes	Station Number / Tower							
					7 / NW Corner	8 / NE Corner	9 / N Master	10 W Center	11 / W Corner	12 / S Master	13 / E Center	14 / SE Corner
Hidden cup coral	*Phyllangia americana*		Coral	All stony corals are state protected.	X		X	X		X		
Lettuce coral	*Agaricia (=Undaria) agaricites*	S4	Coral	All stony corals are state protected.					X			
Flower coral	*Eusmilia* sp.	S3, S4	Coral	All stony corals are state protected. Bleaching noted.				X				
Tube-dwelling anemones	Cerianthidae						X	X			X	
Rock flower anemone	*Anthopleura* sp.										X	
Burrowing anemone	*Cerianthus* sp.					X	X				X	X
Colonial bryozoa						X		X				X
Colonial tunicates	Subphylum: Tunicata						X					
Bivalves	Mollusca				X	X	X	X	X	X	X	X
Pen shell	*Atrina* sp.							X		X	X	
Thorny oyster	*Spondylus tenuis*								X			
Frons oyster	*Lopha frons or Hyotissa hyotis*			*H. hyotis* is non-native	X							
Pen shell	*Atrini rigida*					X	X					
Atlantic wing oyster	*Pteria colymbus*									X		
Sea urchins	Echinoidea						X					
Long-spined sea urchin	*Diadema antillarum*						X					
Decorator urchin	*Lytechinus variegatus*					X						
Long-spined sea urchin	*Diadema antillarum*						X					
Slate pencil urchin	*Eucidaris tribuloides*							X				
Sea snail	Possibly Busycon			Egg case		?						
Tulip snail	Fasciolariidae					X						

Table D-3 Summary of Biological Organisms Observed During Underwater Surveys of the Eight Southern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Status	Notes	Station Number / Tower							
					7 / NW Corner	8 / NE Corner	9 / N Master	10 W Center	11 / W Corner	12 / S Master	13 / E Center	14 / SE Corner
Marine gastropod	Cerithiidae					X		X			X	
Conch	*Melongena* sp.					X				X		
Sea stars	Echinasteridae				X	X					X	
Sea star	*Echinaster* sp.					X					X	
Slender-armed starfish	*Luidia clathrata*					X	X					
Small-spine sea star	*Echinaster spinulosus*					X	X					
Sea biscuit	*Clypeaster subdepressus*											X
Sea cucumber	*Holothuia* sp., possibly *H. floridana*							X				
Arrow crab	*Stenorhynchus seticornis*								X			
Mantis shrimp	*Squilla* sp.			SW corner: not positively identified					?		X	X
Isopod	*Edotea* sp.				X							
Polychaete Christmas tree worm	Serpulidae								X			
Green algae	Codiaceae					X		X				
Sea grass Caulerpaceae	*Caulerpa* sp.				X	X	X	X		X		
Sea grass	*Caulerpa prolifera*				X							
Filamentous green algae	Chlorophyta			Unidentified species	X			X				
Filamentous red algae	Chlorophyta			Unidentified species				X				
Red drift algae	Rhodophyta, Gracilariaceae						X					
Ruffled fan green algae	Chlorophyta, Udoteaceae, *Udotea* sp.				X			X				
Fish												
Almaco jack	*Seriola rivoliana*		Reef Fish					X				

Table D-3 Summary of Biological Organisms Observed During Underwater Surveys of the Eight Southern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Status	Notes	Station Number / Tower							
					7 / NW Corner	8 / NE Corner	9 / N Master	10 W Center	11 / W Corner	12 / S Master	13 / E Center	14 / SE Corner
Banded butterfly	*Chaetodon striatus*								X			
Bar jack	*Carangoides ruber*				X			X		X		
Black grouper	*Mycteroperca bonaci*		Reef Fish		X			X				
Blue angelfish	*Holocanthus bermudensis*								X	X		
Blue stripped grunt	*Haemulon sciurus*						X		X	X	X	X
Bule runner	*Caranx crysos*				X			X				X
Bull shark	*Carcharhinus leucas*						X	X		X	X	
Chub	*Kyphosus sectatrix/incisor*				X			X				X
Cobia	*Rachycentron canadum*		Coastal Migratory Pelagic				X			X	X	
Common snook	*Centropomus undecimalis*					X						
Crevalle jack	*Caranx hippos*					X	X			X		
Damselfish	*Stegastes* sp.			Invasive	X							
Doctorfish	*Acanthurus chirurgus*								X			
Gag grouper	*Mycteroperca microlepis*		Reef Fish				X		X		X	X
Goliath grouper	*Epinephelus itajara*		Reef Fish		X	X	X	X	X	X	X	
Grasby	*Cephalopholis cruentatus*							X	X			
Gray angel	*Pomacanthus arcuatus*								X		X	
Gray snapper	*Lutjanus griseus*		Reef Fish		X	X	X	X	X	X	X	X
Great barracuda	*Sphyraena barracuda*				X	X	X	X	X	X	X	X
Greater amberjack	*Seriola dumerili*		Reef Fish		X		X	X		X		
Jackknife fish	*Equetus lancelatus*								X			
Jacknife fish	*Equetus lanceolatus*								X	X		
Jolthead porgy	*Calamus bajonado*							X				

Table D-3 Summary of Biological Organisms Observed During Underwater Surveys of the Eight Southern ACMI Towers

Common Name	Identified Taxonomic Classification	Status	GMFMC Status	Notes	Station Number / Tower							
					7 / NW Corner	8 / NE Corner	9 / N Master	10 W Center	11 / W Corner	12 / S Master	13 / E Center	14 / SE Corner
Lane snapper	*Lutjanus synagris*		Reef Fish		X			X	X	X	X	
Lionfish	*Pterois volitans*			Invasive					X			
Lookdown	*Selene vomer*									X	X	
Ocean surgeonfish	*Acanthurus bahianus*								X			
Permit	*Trachinotus falcatus*				X		X		X	X	X	X
Porkfish	*Anisotremus virginicus*				X	X		X	X	X	X	X
Red snapper	*Lutjanus campechanus*		Reef Fish and Red Snapper					X	X			
Roughtail stingray	*Bathytoshia centroura*					X						
Scamp	*Mycteroperca phenax*		Reef Fish		X		X	X	X			
Sheepshead	*Archosargus probatocephalus*				X	X					X	
Southern stingray	*Dasyatis americana*					X		X			X	X
Spadefish	*Chaetodipterus faber*				X	X	X					
Spotfin butterfly fish	*Chaetodon ocellatus*							X	X	X		
Tomtate	*Haemulon aurolineatum*								X	X	X	X
White grunt	*Haemulon plumierii*				X	X			X	X	X	X
Yellow jack	*Caranx bartholomaei*				X				X	X	X	X
Yellowtail snapper	*Ocyurus chrysurus*		Reef Fish		X		X	X	X	X	X	X

Notes:
Source: Underwater Survey Report for the ACMI Towers (Swift River Environmental Services LLC et al., 2022)
EFH = Essential Fish Habitat; FE = federally endangered; GMFMC = Gulf of Mexico Fishery Management Council; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure

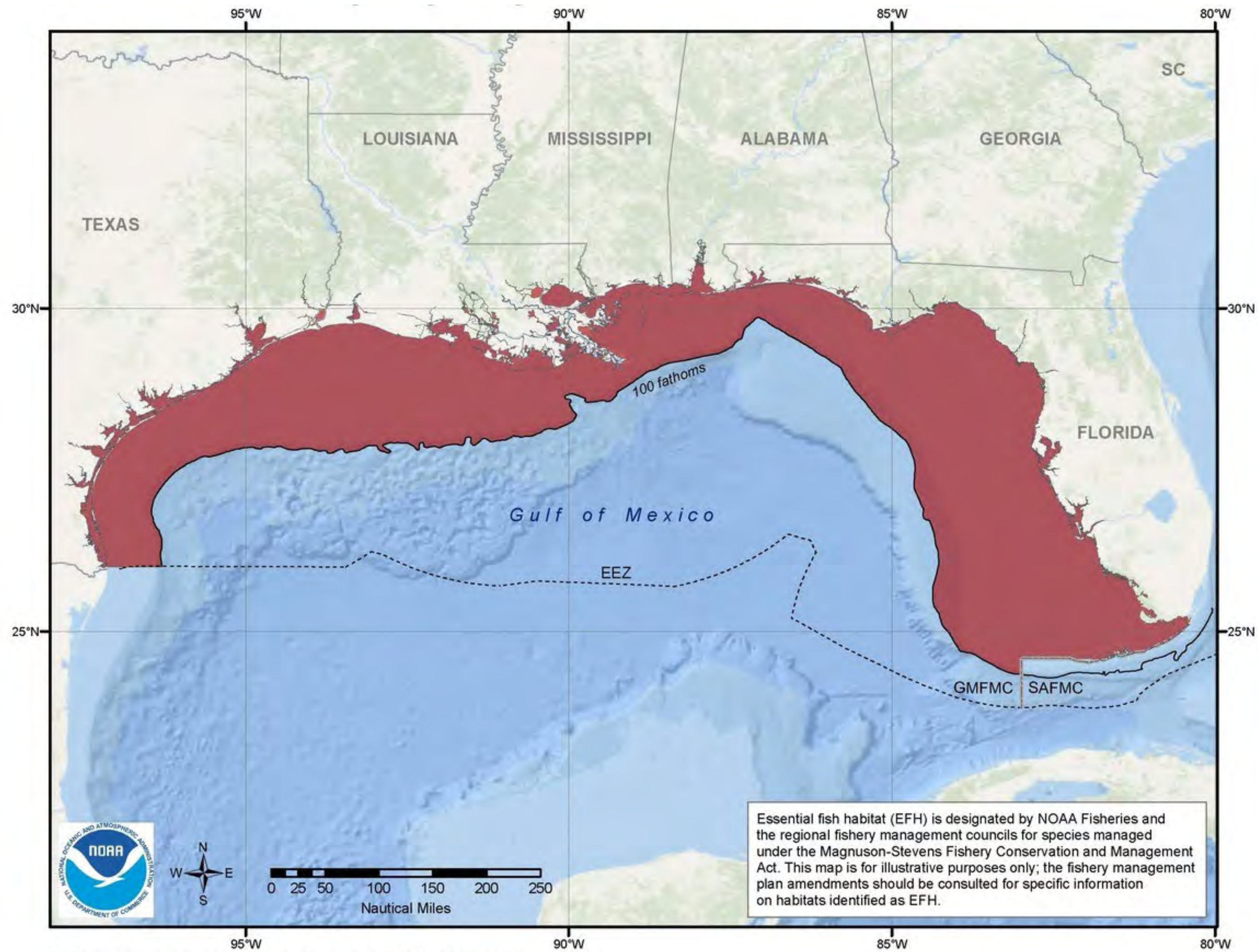
Table D-4 EFH Fisheries Management Plans, Associated Species, and Known Habitat Associations Overlapping the 14 ACMI Tower Locations

Common Name	Scientific Name	EFH General Habitat Associations
Red Drum FMP		
Red drum	*Sciaenops ocellatus*	Water column, SAV, soft bottom, sand/shell, hard bottom
Coastal Migratory Pelagic FMP		
King mackerel	*Scomberomorus cavalla*	Water column
Spanish mackerel	*S. maculatus*	Water column
Cobia	*Rachycentron canadum*	Water column, banks/shoals, hard bottom
Reef Fish FMP		
Lutjanidae snapper		
Queen snapper	*Etelis oculatus*	Water column, hard bottom, shelf edge/slope
Mutton snapper	*Lutjanus analis*	Water column, SAV, reefs, banks/shoals, hard bottom, shelf edge/slope
Blackfin snapper	*L. bucanella*	Water column, hard bottom, shelf edge/slope
Red snapper	*L. campechanus*	Water column, reefs, hard bottom, banks/shoals, soft bottom, sand/shell
Cubera snapper	*L. cyanopterus*	Water column, SAV, reefs, shelf edge/slope, hard bottom, bank/shoal
Gray snapper	*L. griseus*	Water column, SAV, reefs, hard bottom, soft bottom, reef, sand/shell, banks/shoals
Lane snapper	*L. synagris*	Water column, SAV, reefs, hard bottom, soft bottom, reef, sand/shell, banks/shoals
Silk Snapper	*L. vivanus*	Shelf edge/slope, soft bottom, hard bottom
Yellowtail snapper	*Ocyurus chrysurus*	Water column, SAV, reefs, hard bottom
Wenchman	*Pristipomoides aquilonaris*	Water column, hard bottom, shelf edge/slope
Vermilion Snapper	*Rhomboplites aurorubens*	Water column, hard bottom, reefs, banks/shoals
Serranidae sea bass and grouper		
Speckled Hind	*Epinephelus drummondhayi*	Water column, reefs, hard bottom, shelf edge/slope
Goliath Grouper	*E. itajara*	Water column, SAV, reefs, hard bottom, banks/shoals
Red Grouper	*E. morio*	Water column, SAV, hard bottom, reefs, shelf edge/slope
Yellowedge Grouper	*Hyporthodus flavolimbatus*	Water column, hard bottom, soft bottom, shelf edge/slope, reefs
Shrimp FMP		
Brown Shrimp	*Penaeus aztecus*	Soft bottom, sand/shell, water column, SAV, oyster reef, soft bottom, sand/shell

Table D-4 EFH Fisheries Management Plans, Associated Species, and Known Habitat Associations Overlapping the 14 ACMI Tower Locations

Common Name	Scientific Name	EFH General Habitat Associations
White Shrimp	*P. setiferus*	SAV, oyster reef, soft bottom, sand/shell
Pink shrimp	*P. duorarum*	Sand/shell, water column, SAV, soft bottom, oyster reefs
Royal red shrimp	*Pleoticus robustus*	Shelf edge/slope, soft bottom, sand/shell, reefs
Spiny Lobster FMP		
Spiny Lobster	*Panulirus argus*	Water column, SAV, reefs, hard bottom

Notes:
Source: Underwater Survey Report for the ACMI Towers (Swift River Environmental Services LLC et al., 2022)
EFH = essential fish habitat; FMP = Fisheries Management Plan; SAV = submerged aquatic vegetation



ArcGIS.com Ocean Basemap Sources: Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

Figure D-1 EFH for Coastal Migratory Pelagic Resources in the Gulf of Mexico (NOAA, 2019a)

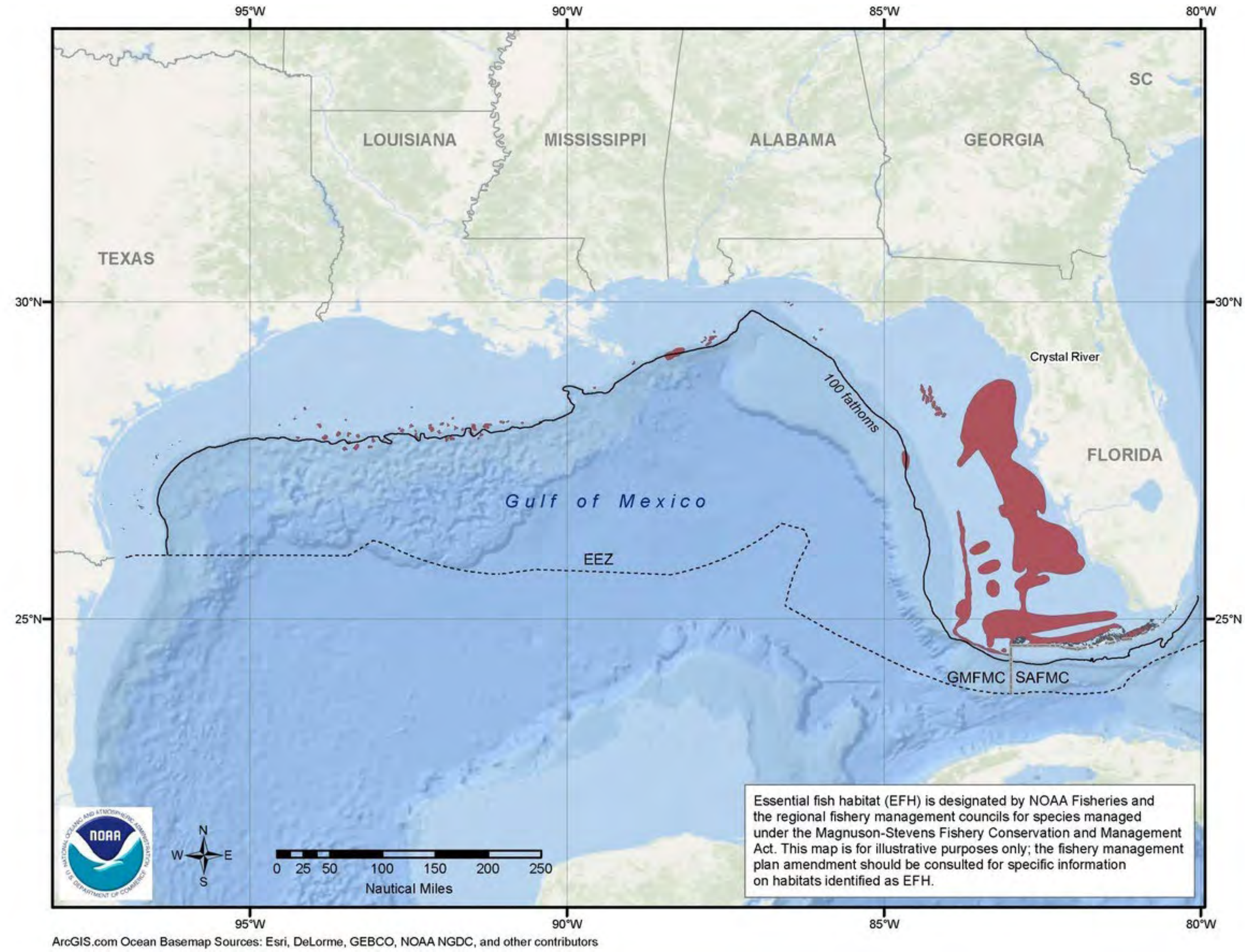


Figure D-2 EFH for Corals in the Gulf of Mexico (NOAA, 2019b)

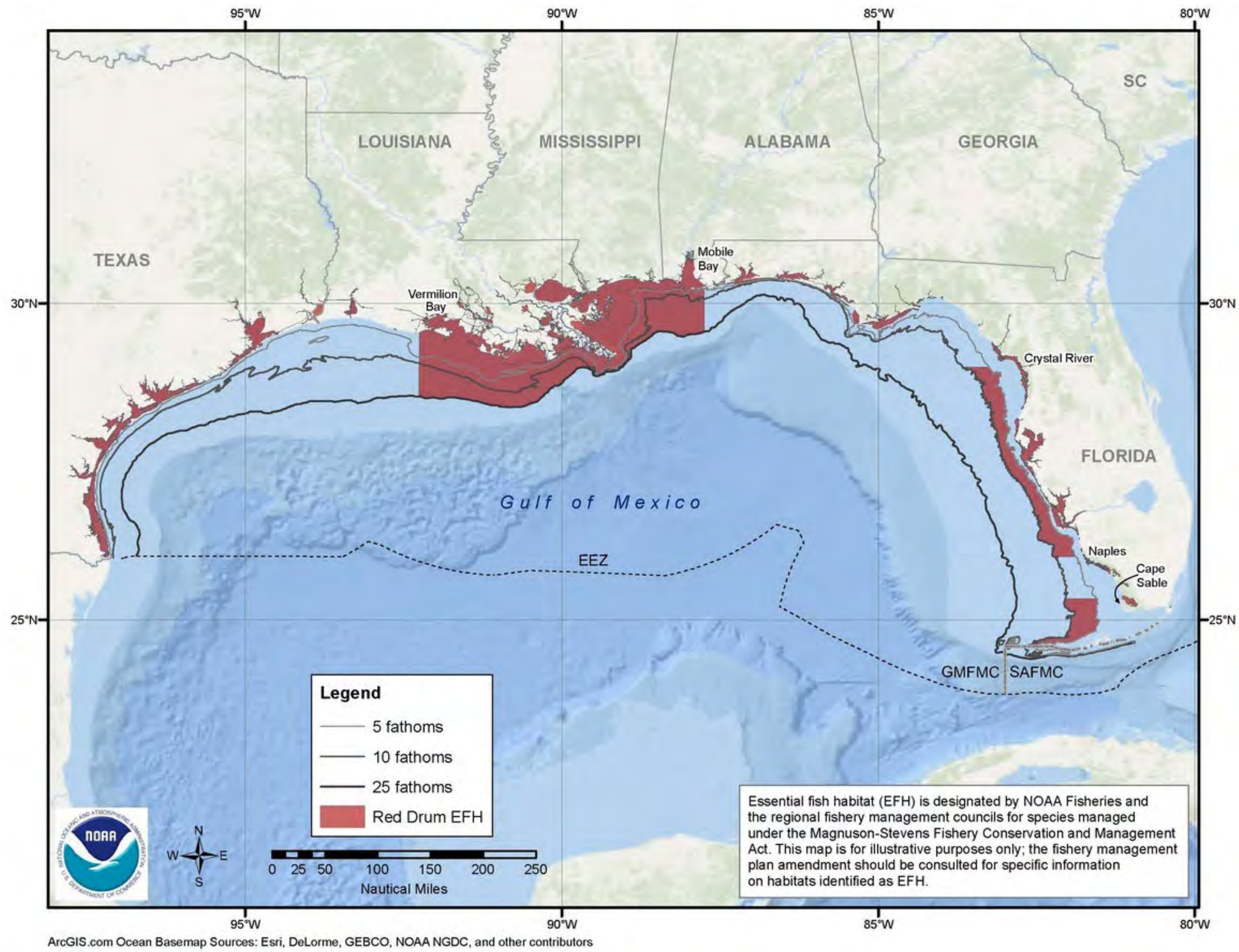


Figure D-3 EFH for Red Drum in the Gulf of Mexico (NOAA, 2019c)

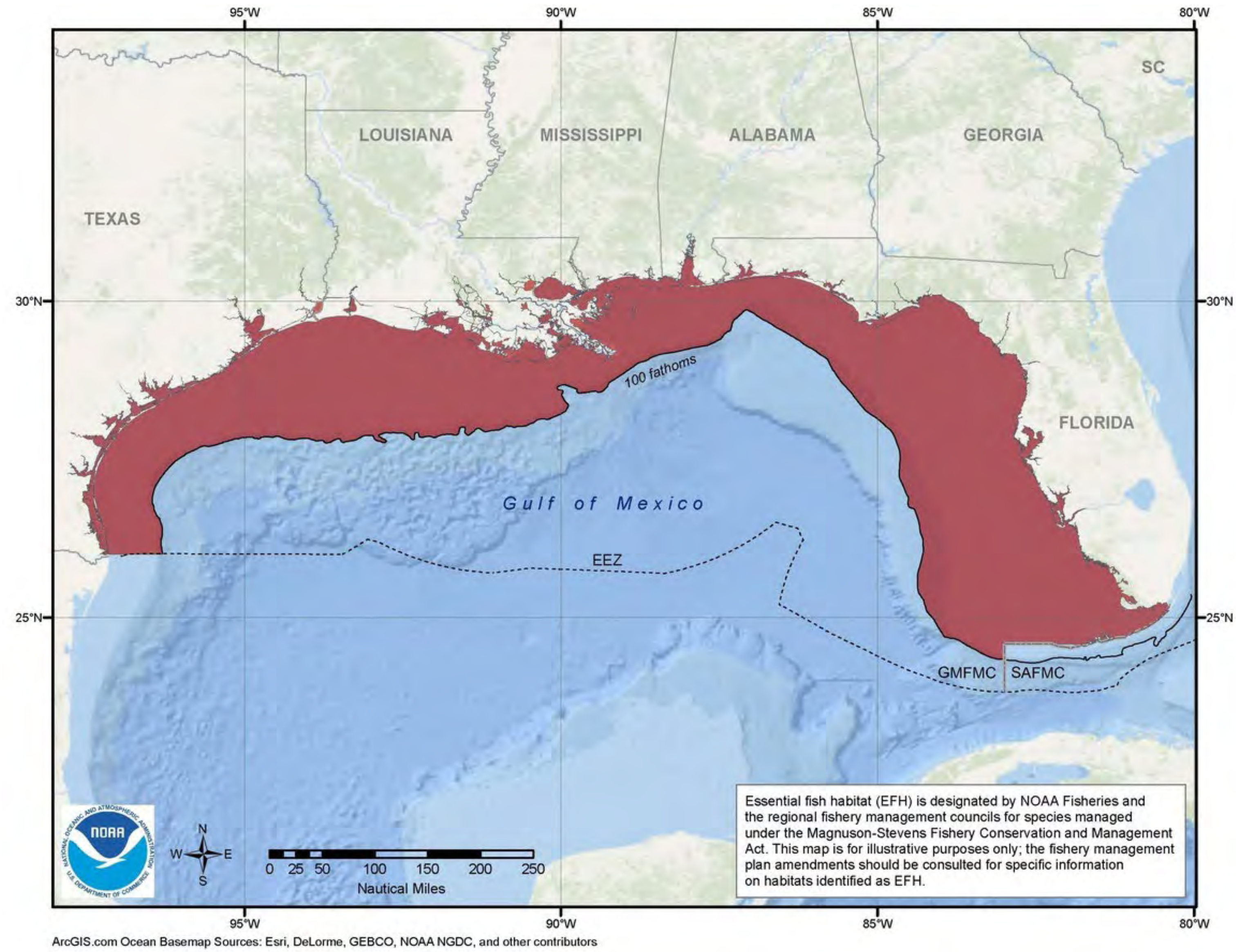


Figure D-4 EFH for Reef Fishes in the Gulf of Mexico (NOAA, 2019d)

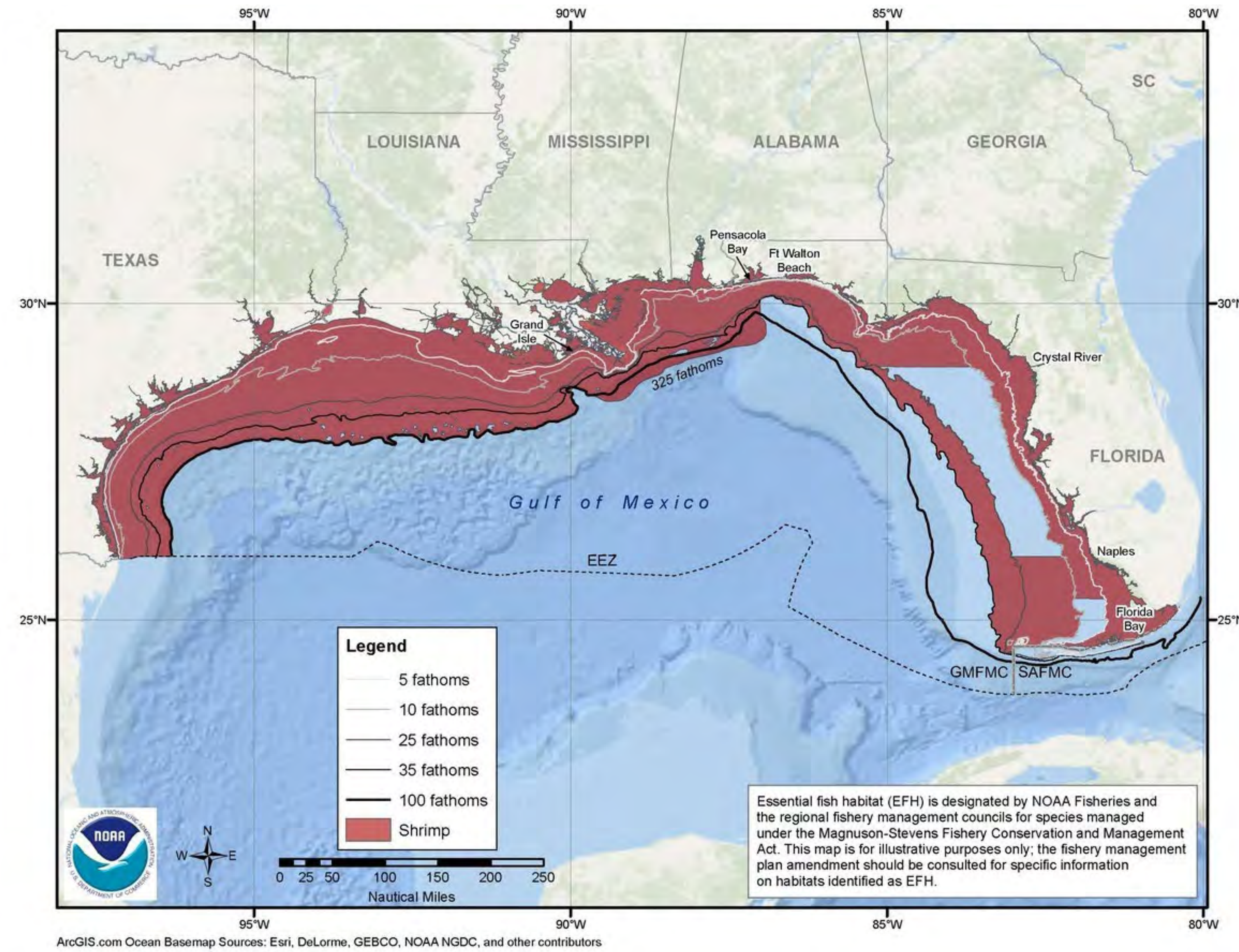
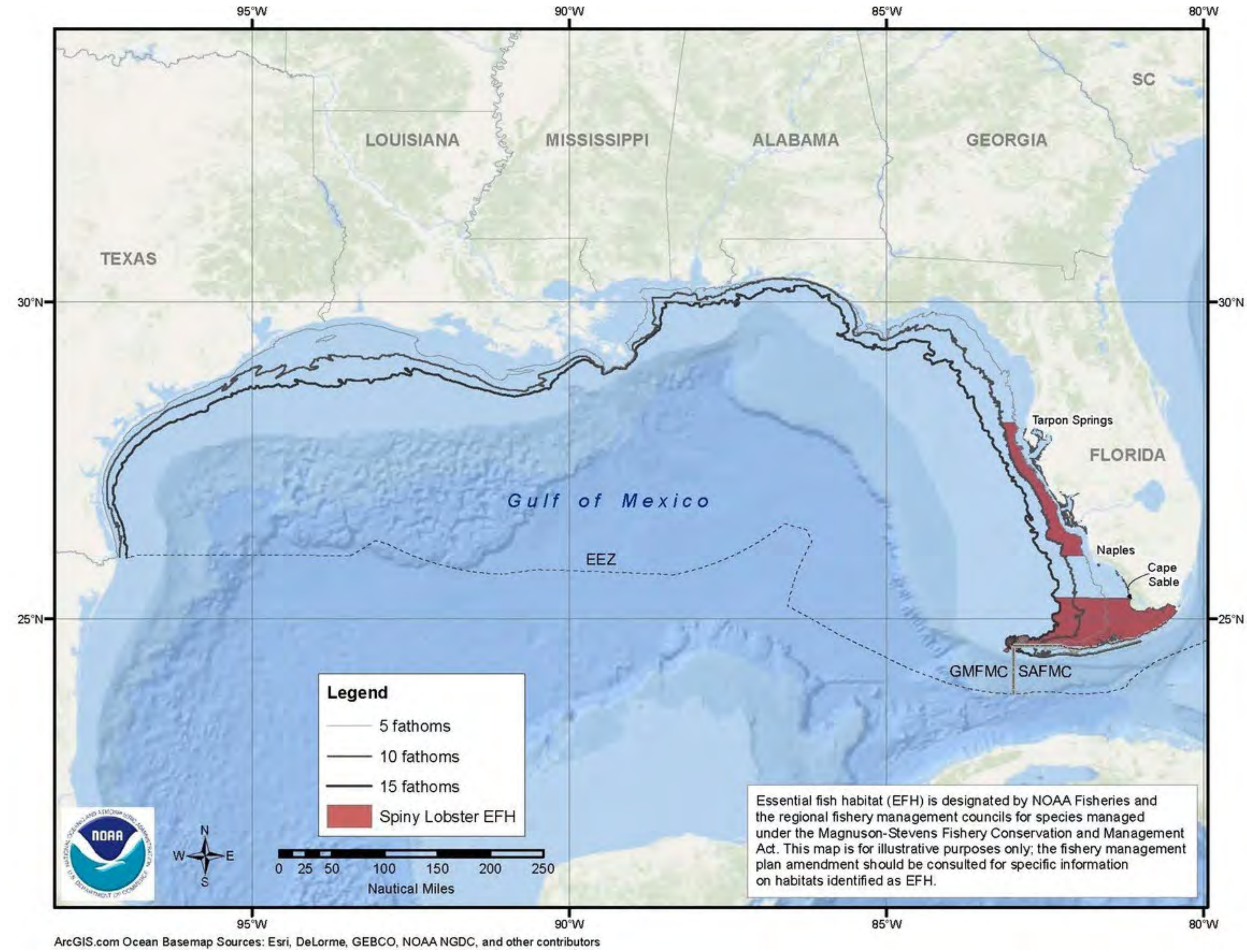


Figure D-5 EFH for Shrimp in the Gulf of Mexico (NOAA, 2019e)

1



2

3 **Figure D-6 EFH for Spiny Lobster in the Gulf of Mexico (NOAA, 2022)**

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APPENDIX E
AIR QUALITY EMISSIONS ESTIMATION AND ANALYSES

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APPENDIX E – AIR QUALITY EMISSIONS ESTIMATION AND ANALYSES

E.1 AIR QUALITY AND AIR CONFORMITY APPLICABILITY ANALYSIS

E.1.1 Air Quality

This appendix presents an overview of the Clean Air Act (CAA) and Florida air quality regulations/standards. Air quality modeling and calculations, including the assumptions used for the air quality analyses presented in **Section 3.5,** are also included.

E.1.1.1 Definition of the Resource

The U.S. Environmental Protection Agency (USEPA) has divided the country into geographical regions known as Air Quality Control Regions (AQCRs) to evaluate compliance with the National Ambient Air Quality Standards (NAAQS). NAAQS are currently established for six criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (including particulates equal to or less than 10 microns in diameter [PM_{10}] and particulates equal to or less than 2.5 microns in diameter {$PM_{2.5}$]), and lead (Pb). Regulatory areas in each AQCR are designated as an attainment area or nonattainment area for each of the criteria pollutants, depending on whether it meets or exceeds the NAAQS. The proposed Air Combat Maneuvering Instrumentation (ACMI) tower project includes six northern towers offshore from Apalachicola Bay and eight southern towers offshore from Key West. The onshore coastal counties located closest to the towers include Franklin (northern towers), Monroe (southern towers) and Collier (southern towers). All three counties are designated in attainment for NAAQS (USEPA, 2022).

Federal actions in NAAQS nonattainment areas are also required to comply with USEPA's General Conformity Rule. These regulations are designed to ensure that federal actions do not impede local efforts to achieve or maintain attainment with the NAAQS.

Greenhouse gases (GHG) are gases, occurring from natural processes and human activities, that trap heat in the atmosphere. USEPA regulates GHG emissions via permitting and reporting requirements that are applicable mainly to large stationary sources of emissions.

The region of influence (ROI) for air quality analysis is the area that includes the closest onshore Florida coastal counties adjacent to where the proposed action alternatives are located. Activities would occur in areas adjacent to coastal attainment areas but located beyond state waters, offshore.

E.1.1.2 Criteria Pollutants and National Ambient Air Quality Standards

In accordance with CAA requirements, the air quality in each region or area is measured by the concentration of various pollutants in the atmosphere. Measurements of these "criteria pollutants" in ambient air are expressed in units of parts per million or in units of micrograms per cubic meter. Regional air quality is a result of the types and quantities of atmospheric pollutants and pollutant sources in an area as well as surface topography, the size of the "air basin," and prevailing meteorological conditions. The CAA directed the USEPA to develop, implement, and enforce strong environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, the USEPA developed numerical concentration-based standards, NAAQS, for pollutants that have been determined to impact human health and the environment and established both primary and secondary NAAQS under the provisions of the CAA. NAAQS are currently established for six criteria air pollutants: O_3, CO, NO_2, SO_2, respirable particulate matter (including PM_{10} and $PM_{2.5}$), and Pb. The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources in addition to maintaining visibility standards. The primary and secondary NAAQS are presented in **Table E-1**.

Table-E-1 National Ambient Air Quality Standards

Pollutant	Standard Value[6]		Standard Type
Carbon Monoxide (CO)			
8-hour average	9 ppm	(10 mg/m^3)	Primary
1-hour average	35 ppm	(40 mg/m^3)	Primary
Nitrogen Dioxide (NO_2)			
Annual arithmetic mean	0.053 ppm	(100 µg/m^3)	Primary and Secondary
1-hour average[1]	0.100 ppm	(188 µg/m^3)	Primary
Ozone (O_3)			
8-hour average[2]	0.070 ppm	(137 µg/m^3)	Primary and Secondary
Lead (Pb)			
3-month average[3]		0.15 µg/m^3	Primary and Secondary
Particulate <10 Micrometers (PM_{10})			
24-hour average[4]		150 µg/m^3	Primary and Secondary
Particulate <2.5 Micrometers ($PM_{2.5}$)			
Annual arithmetic mean[4]		12 µg/m^3	Primary
Annual arithmetic mean[4]		15 µg/m^3	Secondary
24-hour average[4]		35 µg/m^3	Primary and Secondary
Sulfur Dioxide (SO_2)			
1-hour average[5]	0.075 ppm	(196 µg/m^3)	Primary
3-hour average[5]	0.5 ppm	(1,300 µg/m^3)	Secondary

Source: USEPA, 2018, 2020a

Notes:

[1] In February 2010, the USEPA established a new 1-hour standard for NO_2 at a level of 0.100 ppm, based on the 3-year average of the 98th percentile of the yearly distribution concentration, to supplement the then-existing annual standard.

[2] In October 2015, the USEPA revised the level of the 8-hour standard to 0.070 ppm, based on the annual 4th highest daily maximum concentration, averaged over 3 years; the regulation became effective on 28 December 2015. The previous (2008) standard of 0.075 ppm remains in effect for some areas. A 1-hour standard no longer exists.

[3] In November 2008, USEPA revised the primary Pb standard to 0.15 µg/m^3. USEPA revised the averaging time to a rolling 3-month average.

[4] In October 2006, USEPA revised the level of the 24-hour $PM_{2.5}$ standard to 35 µg/m^3 and retained the level of the annual $PM_{2.5}$ standard at 15 µg/m^3. In 2012, USEPA split standards for primary and secondary annual $PM_{2.5}$. All are averaged over 3 years, with the 24-hour average determined at the 98th percentile for the 24-hour standard. USEPA retained the 24-hour primary standard and revoked the annual primary standard for PM_{10}.

[5] In 2012, the USEPA retained a secondary 3-hour standard, which is not to be exceeded more than once per year. In June 2010, USEPA established a new 1-hour SO_2 standard at a level of 75 parts per billion, based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations.

[6] Parenthetical value is an approximately equivalent concentration for NO_2, O_3, and SO_2.

µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; ppm = parts per million; USEPA = U.S. Environmental Protection Agency

The criteria pollutant O_3 is not usually emitted directly into the air but is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants, or "O_3 precursors." These O_3 precursors consist primarily of nitrogen oxides and volatile organic compounds that are directly emitted from a wide range of emissions sources. For this reason, regulatory agencies limit atmospheric O_3 concentrations by controlling volatile organic compound pollutants (also identified as reactive organic gases) and nitrogen oxides.

The USEPA has recognized that particulate matter emissions can have different health effects depending on particle size and, therefore, developed separate NAAQS for coarse particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$). The pollutant $PM_{2.5}$ can be emitted from emission sources directly as very fine dust or liquid mist or formed secondarily in the atmosphere as condensable particulate matter, typically forming nitrate and sulfate compounds. Secondary (indirect) emissions vary by region, depending on the predominant emission sources located there and thus which precursors are considered significant for $PM_{2.5}$ formation and identified for ultimate control.

The CAA and USEPA delegated responsibility for ensuring compliance with NAAQS to the states and local agencies.

Each state must develop air pollutant control programs and promulgate regulations and rules that focus on meeting NAAQS and maintaining healthy ambient air quality levels. When a region or area fails to meet a NAAQS for a pollutant, that region is classified as “non-attainment” for that pollutant. In such cases, the affected state must develop a State Implementation Plan (SIP) that is subject to USEPA review and approval. A SIP is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS. Any changes to the compliance schedule or plan (such as new regulations, emissions budgets, or controls) must be incorporated into the SIP and approved by USEPA.

E.1.1.3 Greenhouse Gases

GHG are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. GHG include water vapor, carbon dioxide (CO_2), methane, nitrous oxide, O_3, and several hydrocarbons and chlorofluorocarbons. Each GHG has been assigned an estimated global warming potential (GWP), which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth’s surface. The GWP of a particular gas provides a relative basis for calculating its carbon dioxide equivalent (CO_2e) or the amount of CO_2e to the emissions of that gas. The GWP for CO_2 is 1 and is, therefore, the standard by which all other GHG are measured. Potential impacts associated with GHG emissions are discussed in **Section E.1.1.4**.

In Florida, the USEPA regulates GHG primarily through a permitting program known as the GHG Tailoring Rule. This rule applies to GHG emissions from stationary sources. As virtually all of the emissions increase from the Proposed Action would occur from mobile sources, this rule would not apply here. In addition to the GHG Tailoring Rule, in 2009, the USEPA promulgated a rule requiring sources to report their GHG emissions if they emit 25,000 metric tons or more of CO_2e per year (40 Code of Federal Regulations [CFR] § 98.2[a][2]). Again, this rule applies only to stationary sources of emissions.

GHG emissions in Florida have steadily decreased between 2014 through 2020. Significant reductions in Florida’s GHG emissions have occurred as a result of various factors, including changes in the energy sector since 2011, which is the state’s largest sector of GHG. For 2020, Florida’s total reported GHG emissions was 120 million metric tons CO_2e, with the power plant sector accounting for approximately 77 percent of the total (USEPA, 2020b). Based on the relative magnitude of the project’s GHG emissions, a general inference can be drawn regarding the impacts of the Proposed Action.

E.1.2 Methodology

E.1.2.1 Air Conformity Applicability Analysis

The CAA required the USEPA to promulgate general conformity regulations that are applicable in nonattainment areas, or in designated maintenance areas (attainment areas that were reclassified from a previous nonattainment status, which are required to prepare a maintenance plan for air quality). These regulations are designed to ensure that federal actions do not impede local efforts to achieve or maintain attainment with the NAAQS. The General Conformity Rule and the promulgated regulations found in 40 CFR Part 93 exempt certain federal actions from conformity determinations (for example, contaminated site cleanup and natural disaster response). Other federal actions are assumed to conform if total indirect and direct project emissions are below *de minimis* levels presented in **Table E-2**. Demonstration of conformity can be shown if Proposed Action emissions are within the state- or Tribe-approved budget of the facility as part of the State Implementation Plan or Tribal Implementation Plan (USEPA, 2010).

Direct emissions are those that occur as a direct result of the action. For example, emissions from new equipment that are a permanent component of the completed action (boilers, heaters, generators, and paint booths, among others) are considered direct emissions. Indirect emissions are those that occur at a later time or at a distance from the Proposed Action. For example, increased vehicular/commuter traffic because of the action is considered an indirect emission. As shown on **Table E-2**, the threshold levels (in tons of pollutant per year) depend on the nonattainment status that USEPA has assigned to a region. Once the net change in nonattainment pollutants is calculated, the federal agency must compare them with the *de minimis* thresholds.

Table E-2 General Conformity Rule *De Minimis* Emission Thresholds

Pollutant	Attainment Classification	Tons per year
Ozone (VOC and NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon Monoxide, SO_2 and NO_2	All nonattainment and maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
$PM_{2.5}$ Direct emissions, SO_2, NO_x (unless determined not to be a significant precursor), VOC and ammonia (if determined to be significant precursors)	All nonattainment and maintenance	100
Lead	All nonattainment and maintenance	25

Source: USEPA, 2017
NO_2 = nitrogen dioxide; NO_x = nitrogen oxides; $PM_{2.5}$ = particulates equal to or less than 2.5 microns in diameter; PM_{10} = particulates equal to or less than 10 microns in diameter; SO_2 = sulfur dioxide; VOC = volatile organic compound

E.1.2.2 Assumptions

The following assumptions were used in the air quality analysis for the Proposed Action:

1. The Air Force Air Conformity Applicability Model (ACAM) model was not used for air emissions analysis, as it does not support emissions estimation from marine engines. However, ACAM methodology was used for estimating GHG emissions from the Proposed Action.
2. Air emissions are estimated based on information provided by the Department of the Air Force (DAF) and the methodology and assumptions used in the final *Overseas Environmental Assessment (OEA) for the Removal, Disposal, and Transfer of the Tactical Aircrew Combat Training System (TACTS) Towers, Naval Submarine Base Kings Bay, Georgia* (Kings Bay OEA, 2016). The *Kings Bay OEA* used the NONROAD 2008 (USEPA, 2009) model to estimate air emissions from marine vessels and construction equipment, which is the USEPA preferred model for estimating emissions from non-road sources.
3. For the No Action Alternative, the number of hours and number of days operated for each marine vessel and generator were derived based on the *Kings Bay OEA*. Operational data in the *Kings Bay*

OEA were provided for eight offshore towers, which were scaled up appropriately to derive operational data for the 14 ACMI towers.

4. For Alternatives 2, 3 and 4, the number of days operated by marine vessels were provided by DAF.
5. To estimate emissions, emission factors provided in Appendix F of the *Kings Bay OEA* were used. These emission factors were generated in NONROAD 2008 for 2007 model year. It is likely that the proposed activities would likely use equipment with newer (or post 2007 model) engines. However, the 2007 model year emission factors are likely to be more conservative as newer model year engines would be less polluting.
6. It should be noted that USEPA has released MOVES2014 that incorporates existing NONROAD 2008 into MOVES framework. There are no changes to basic model design or data, and it provides the same results as NONROAD 2008.
7. For air quality analyses, the proposed activities are assumed to occur within a single calendar year to provide a conservative estimate of emissions.
8. The calculations assumed there were no controls used to reduce emissions. It is assumed that reasonable mitigation measures would be used during the activities to reduce emissions.
9. Worker or personnel commute emissions and emissions from land transportation are assumed to be negligible.

E.1.2.3 Significance Indicators and Evaluation Criteria

The CAA Section 176(c), *General Conformity*, requires federal agencies to demonstrate that their proposed activities would conform to the applicable State Implementation Plan for attainment of the NAAQS. General conformity applies only to nonattainment and maintenance areas. If the emissions from a federal action proposed in a nonattainment area exceed annual *de minimis* thresholds identified in the rule, a formal conformity determination is required of that action. The thresholds are more restrictive as the severity of the nonattainment status of the region increases.

Based on guidance in Chapter 4 of the *Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide*, *Volume II - Advanced Assessments*, for air quality impact analysis, criteria pollutant emissions are to be compared against the insignificance indicator of 250 tons per year for Prevention of Significant Deterioration (PSD) major source permitting threshold for actions occurring in areas that are in attainment for all criteria pollutants (25 tons per year for lead). These "Insignificance Indicators" are to be used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the NAAQSs. These insignificance indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an emission that exceeds one or more NAAQSs. Although PSD and Title V are not applicable to mobile sources, the PSD major source thresholds provide a benchmark to compare air emissions against and to determine project impacts.

For projects proposed in nonattainment/maintenance areas, the net-change emissions estimated for the relevant criteria pollutants are compared against General Conformity *de minimis* values for a General Conformity evaluation. If the estimated annual net emissions for each relevant pollutant from the Proposed Action alternative are below the corresponding *de minimis* threshold values, General Conformity Rule requirements would not be applicable. The net emissions from the Proposed Action Alternatives are assessed in the EA/OEA and compared with applicable insignificance indicators.

GHG Emissions

The methodology in ACAM (5.0.23a) was used to evaluate GHG emissions for this EA/OEA. Appendix Section E.1.5 presents the detailed GHG emissions calculation results and a GHG emissions evaluation.

A GHG Emissions Evaluation establishes the quantity of speciated GHG and CO_2e, determines if an action's emissions are insignificant, and provides a relative significance comparison. For the analysis, the

PSD threshold for GHG of 75,000 tons per year (tpy) of CO_2e (or 68,039 metric tpy) was used as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (*de minimis*, too trivial or minor to merit consideration). Actions with a net change in GHG (CO_2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO_2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. The action related GHG have no significant impact to local air quality. However, from a global perspective, individual actions with GHG emissions each make a relatively small addition to global atmospheric GHG concentrations. If activities have *de minimis* (insignificant) GHG emissions, then on a global scale they are effectively zero and irrelevant (AFCEC, 2023).

E.1.3 References

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E.1.4 Air Emissions Calculations

Baseline (No Action Alternative) Emissions Estimation

- No action for this EA/overseas environmental assessment (OEA) reflects the status quo, where the ACMI Towers would not be decommissioned.
- Under the No Action Alternative, the ACMI Towers would require inspection and maintenance to ensure they do not deteriorate and become safety or navigational hazards.
- For inspection and maintenance, 1 large vessel (100 feet) and 1 smaller vessel (25 feet) are expected to be used.)
- Operational data were based on information in the King's Bay OEA. Marine vessel and generator operations were scaled up from 8 towers (Kings Bay) to 14 towers (ACMI). This information results in 5 (8-hour) days of operation for the 14 ACMI towers to ensure compliance with all required safety standards, as well as performing regular maintenance of the structures and verifying working conditions of the navigation warning systems.

<u>The following assumptions were used:</u>

- Proposed No Action Alternative operations would occur within a 12-month period for all 14 towers
- Worker commute emissions are negligible
- Assume any emissions from land transportation are negligible

Construction Equipment Combustion Emissions

Assumptions for Combustion Emissions					
Type of Construction Equipment	**No. of Units**	**Hp Rated**	**Hrs/day**	**Days/yr**	**Total hp-hrs**
Marine vessel (100 feet) diesel inboard	1	600	8	5	25,200
Marine vessel (25 feet) 4-stroke outboard	1	300	8	5	12,600
Diesel Generator Set	1	60	8	5	2,520

Emission Factors[1] (g/hp-hr)							
Type of Construction Equipment	**VOC[2] g/hp-hr**	**CO g/hp-hr**	**NOx g/hp-hr**	**PM-10 g/hp-hr**	**PM-2.5 g/hp-hr**	**SO_2 g/hp-hr**	**CO_2 g/hp-hr**
Marine vessel (100 feet) diesel inboard	0.237	1.040	6.639	0.177	0.172	0.842	530.817
Marine vessel (25 feet) 4-stroke outboard	18.494	61.066	6.242	0.069	0.063	0.185	899.520
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

[1]: Emission factors (EF) were generated using USEPA's preferred model for nonroad sources NONROAD 2008 model. Emissions were modelled for the 2007 calendar year. The construction equipment age distribution in the model is based on the population in the US for the 2007 calendar year.
[2]: Includes exhaust and evaporative emissions. The evaporative components included are diurnal hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage

No Action Alternative - Emission Calculations								
Type of Construction Equipment	**VOC tons/yr**	**CO tons/yr**	**NOx tons/yr**	**PM-10 tons/yr**	**PM-2.5 tons/yr**	**SO_2 tons/yr**	**CO_2 tons/yr**	**Total CO_2e[1,2]**
Marine vessel (100 feet) diesel inboard	0.007	0.029	0.184	0.005	0.005	0.023	14.741	69.847
Marine vessel (25 feet) 4-stroke outboard	0.257	0.848	0.087	0.001	0.0009	0.003	12.490	44.738
Diesel Generator Set	0.003	0.010	0.017	0.002	0.002	0.002	1.631	6.655
TOTAL EMISSIONS	**0.267**	**0.887**	**0.288**	**0.008**	**0.008**	**0.028**	**28.862**	**121.241**

Conversion factor 1 gram=1.102E-06 ton (metric)
[1]**:** The 100-year Global warming potential (GWP) is used to derive CO_2e. GWP for N_2O or NO_x is 298 and
GWP for methane or VOCs is 25 (https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks)
[2]: Emission factors and methodology based on Kings Bay OEA, which assumed methane emissions to be VOC and N_2O emissions to be NO_x.

Alternative 1a or Alternative 1b Emissions Estimation

- Alternatives 1a or 1b for this EA/OEA are associated with the mechanical removal and in-place disposition of the 14 offshore ACMI Towers in the Gulf of Mexico as an artificial reef.
- Operational hours for the vessels and equipment were estimated based on data provided by DAF. It is expected to take 30 days to decommission one tower; this duration works out to a total of 420 days (30 days/tower x 14 towers) of operation per year. For mechanical removal of tower and in-place disposition, 2 large (100 foot) vessels with 2 inboard 600-horsepower diesel engines and 2 smaller (25 foot) vessels with 300-horsepower (hp) outboard four-stroke engines are expected to be used (DAF). The primary vessels could include marine vessels with crane, berthing, galley, and ample deck space (possibly contracted) for personnel and equipment. The two smaller vessels could include two small boats used for personnel movement around work area. Also, two 60-horsepower generators are expected to be used.

The following assumptions were used:

- Proposed Alternative operations would occur within a 12-month period for all 14 towers
- Worker commute emissions are negligible
- Resupply of materials and people to offshore areas is not estimated and is assumed to be minimal
- Assume emissions from land transportation/disposal of material are negligible
- Assume emissions from diesel equipment (such as welders, air compressors, winches, pumps) that may be used for severing and disposal are negligible

Construction Equipment Combustion Emissions

Assumptions for Combustion Emissions					
Type of Construction Equipment	**No. of Units**	**Hp Rated**	**Hrs/ day**	**Days/ yr**	**Total hp-hrs**
Marine vessel (100 feet) diesel inboard	2	600	8	420	4032000
Marine vessel (25 feet) 4-stroke outboard	2	300	8	420	2016000
Diesel Generator Set	2	60	8	420	403200

Emission Factors[1] (g/hp-hr)							
Type of Construction Equipment	**VOC[2] g/hp-hr**	**CO g/hp-hr**	**NOx g/hp-hr**	**PM-10 g/hp-hr**	**PM-2.5 g/hp-hr**	**SO_2 g/hp-hr**	**CO_2 g/hp-hr**
Marine vessel (100 feet) diesel inboard	0.237	1.040	6.639	0.177	0.172	0.842	530.817
Marine vessel (25 feet) 4-stroke outboard	18.494	61.066	6.242	0.069	0.063	0.185	899.520
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

[1]: Emission factors were generated using USEPA's NONROAD 2008 model. Emissions were modelled for the 2007 calendar year. Construction equipment age distribution was based on the U.S. population in 2007.
[2]: Includes exhaust and evaporative emissions. The evaporative components included in the NONROAD model are diurnal hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage.

Alternative 1a or Alternative 1b - Emission Calculations								
Type of Construction Equipment	**VOC tons/yr**	**CO tons/yr**	**NOx tons/yr**	**PM-10 tons/yr**	**PM-2.5 tons/yr**	**SO_2 tons/yr**	**CO_2 tons/yr**	**Total CO_2e[1,2]**
Marine vessel (100 feet) diesel inboard	1.053	4.621	29.499	0.786	0.764	3.741	2358.560	11175.538
Marine vessel (25 feet) 4-stroke outboard	41.087	135.666	13.867	0.153	0.140	0.411	1998.402	7158.067
Diesel Generator Set	0.538	1.671	2.653	0.324	0.315	0.360	260.953	1064.877
TOTAL EMISSIONS	**42.678**	**141.958**	**46.019**	**1.264**	**1.220**	**4.512**	**4617.92**	**19398.48**

Conversion factor 1 gram=1.102E-06 ton (metric)
[1]**:** The 100-year global warming potential (GWP) is used to derive CO_2e. GWP for N_2O or NOx is 298 and GWP for methane or VOCs is 25 (https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks)
[2]: Emission factors and methodology based on *Kings Bay OEA*, which assumed methane emissions to be VOC and N_2O emissions to be NOx.

Alternative 2a, Alternative 2b, Alternative 3a or Alternative 3b Emissions Estimation

- Alternatives 2a and 2b and Alternatives 3a and 3b for this EA/OEA are associated with mechanical removal and offshore disposition in either an established artificial reefing area, or a newly established reefing area closest to the tower.
- After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to either existing (Alternatives 2a or 2b) or newly established (Alternatives 3a or 3b) artificial reefing areas.
- Operational hours for the vessels and equipment were estimated based on data provided by DAF. It is expected to take 30 days to decommission one tower; this duration works out to a total of 420 days (30 days/tower x 14 towers) of operation per year.
- For mechanical removal of tower and in-place disposition, 2 large (100 foot) vessels with two inboard 600-hp diesel engines and 2 smaller (25 foot) vessels with 300-hp outboard four-stroke diesel engines are expected to be used (DAF). The primary vessels could include marine vessels with crane, berthing, galley, and ample deck space (possibly contracted) for personnel and equipment. The two smaller vessels could include two small boats used for personnel movement around the work area. Also, two 60-hp generators were expected to be used.
- For transportation of severed towers to the nearby reefing area, one additional 1,200-hp marine vessel (such as a transportation cargo barge tug) and one additional 60 hp generator are expected to be used.
- It is expected to take 1 day for transportation and disposition of one tower in a barge to a nearby reefing area (DAF).
- (The *Kings Bay OEA* assumed that any additional, larger, marine vessel to be used would be rated at 1,200 hp)

The following assumptions were used:

- Proposed Alternative operations would occur within a 12-month period for all 14 towers
- Worker commute emissions are negligible
- Resupply of materials and people to offshore areas is not estimated and is assumed to be minimal
- Assume emissions from land transportation/disposal of material are negligible
- Assume emissions from diesel equipment (such as welders, air compressors, winches, and pumps) that may be used for severing and disposal are negligible

Construction Equipment Combustion Emissions

Assumptions for Combustion Emissions					
Type of Construction Equipment	**No. of Units**	**Hp Rated**	**Hrs/ day**	**Days/ yr**	**Total hp-hrs**
Marine vessel (100 feet) diesel inboard	2	600	8	420	4032000
Marine vessel (200 feet) diesel inboard	1	1200	8	14	134400
Marine vessel (25 feet) 4-stroke outboard	2	300	8	420	2016000
Diesel Generator Set	2	60	8	420	403200
Diesel Generator Set	1	60	8	14	6720

Emission Factors[1] (g/hp-hr)							
Type of Construction Equipment	**VOC[2] g/hp-hr**	**CO g/hp-hr**	**NOx g/hp-hr**	**PM-10 g/hp-hr**	**PM-2.5 g/hp-hr**	**SO_2 g/hp-hr**	**CO_2 g/hp-hr**
Marine vessel (100 feet) diesel inboard	0.237	1.040	6.639	0.177	0.172	0.842	530.817
Marine vessel (200 feet) diesel inboard	0.242	1.040	6.757	0.180	0.174	0.842	530.801
Marine vessel (25 feet) 4-stroke outboard	18.494	61.066	6.242	0.069	0.063	0.185	899.520
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

[1]: Emission factors were generated using USEPA's NONROAD 2008 model. Emissions were modelled for the 2007 calendar year. The construction equipment age distribution was based on the U.S. population in 2007.
[2]: Includes exhaust and evaporative emissions. The evaporative components included in the NONROAD model are diurnal hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage.

Alternative 2a, 2b, 3a or Alternative 3b - Emission Calculations								
Type of Construction Equipment	**VOC tons/yr**	**CO tons/yr**	**NOx tons/yr**	**PM-10 tons/yr**	**PM-2.5 tons/yr**	**SO_2 tons/yr**	**CO_2 tons/yr**	**Total CO_2e[1,2]**
Marine vessel (100 feet) diesel inboard	1.053	4.621	29.499	0.786	0.764	3.741	2358.560	11175.538
Marine vessel (200 feet) diesel inboard	0.036	0.154	1.001	0.027	0.026	0.125	78.616	377.742
Marine vessel (25 feet) 4-stroke outboard	41.087	135.666	13.867	0.153	0.140	0.411	1998.402	7158.067
Diesel Generator Set	0.538	1.671	2.653	0.324	0.315	0.360	260.953	1064.877
Diesel Generator Set	0.009	0.028	0.044	0.005	0.005	0.006	4.349	17.748
TOTAL EMISSIONS	**42.722**	**142.140**	**47.064**	**1.296**	**1.251**	**4.643**	**4700.881**	**19776.22**

Conversion factor 1 gram=1.102E-06 ton (metric)
[1]**:** The 100-year global warming potential (GWP) is used to derive CO_2e. GWP for N_2O or NOx is 298 and GWP for methane or VOCs is 25 (https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks)
[2]: Emission factors and methodology based on *Kings Bay OEA*, which assumed methane emissions to be VOC and N2O emissions to be NOx.

Alternatives 4a or 4b Emissions Estimation

- Alternatives 4a and 4b for this EA/OEA are associated with the mechanical removal and disposition at a predetermined salvage or disposal location on shore.
- After they are removed, the severed towers would be loaded onto a surface craft or barge and transported to shore.
- Operational hours for the vessels and equipment were estimated based on data provided by DAF. It is expected to take 30 days to decommission one tower; this duration works out to a total of 420 days (30 days/tower x 14 towers) of operation per year.
- For mechanical removal of tower and in-place disposition, 2 large (100 foot) vessels with two inboard 600-hp diesel engines and 2 smaller (25 foot) vessels with 300-hp outboard four-stroke diesel engines are expected to be used (DAF). The primary vessels could include marine vessels with crane, berthing, galley, and ample deck space (possibly contracted) for personnel and equipment. The two smaller vessels could include two small boats used for personnel movement around work area. Also, two 60-hp generators were expected to be used.
- For the transportation of severed towers to the nearby reefing area, one additional 1,200-hp marine vessel (such as a transportation cargo barge tug) and one additional 60 hp generator are expected to be used.
- It is expected to take 1 day for transportation one tower in a barge to the nearest port.
- For the transportation of severed towers to a disposal location onshore, one long haul diesel truck is assumed. The truck is assumed to travel a maximum of 4,000 miles for each tower (round trip distance) from the nearest port to the location of salvage disposal and back. One trip per tower is assumed.

The following assumptions were used:

- Proposed Alternative operations would occur within a 12-month period for all 14 towers
- Worker commute emissions are negligible
- Resupply of materials and people to offshore areas is not estimated and is assumed to be minimal.
- Assume emissions from land transportation/disposal of material are negligible
- Assume emissions from diesel equipment (such as welders, air compressors, winches, and pumps) that may be used for severing and disposal are negligible

Construction Equipment Combustion Emissions

Assumptions for Combustion Emissions					
Type of Construction Equipment	**No. of Units**	**Hp Rated**	**Hrs/day**	**Days/yr**	**Total hp-hrs**
Marine vessel (100 feet) diesel inboard	2	600	8	420	4032000
Marine vessel (200 feet) diesel inboard	1	1200	8	14	134400
Marine vessel (25 feet) 4-stroke outboard	2	300	8	420	2016000
Diesel Generator Set	2	60	8	420	403200
Diesel Generator Set	1	60	8	14	6720

Assumptions for on-Road Transportation Emissions					
Type of Vehicle	**No. of Vehicles**	**Miles traveled per trip**	**Trips/yr (1 trip/tower)**	**Miles/yr (all trips)**	**Total miles/yr**
Long Haul Truck Diesel	1	4000	14	56000	56000

Emission Factors[1] (g/hp-hr)							
Type of Construction Equipment	**VOC[2] (g/hp-hr)**	**CO (g/hp-hr)**	**NOx (g/hp-hr)**	**PM-10 (g/hp-hr)**	**PM-2.5 (g/hp-hr)**	**SO_2 (g/hp-hr)**	**CO_2 (g/hp-hr)**
Marine vessel (100 feet) diesel inboard	0.237	1.040	6.639	0.177	0.172	0.842	530.817
Marine vessel (200 feet) diesel inboard	0.242	1.040	6.757	0.180	0.174	0.842	530.801
Marine vessel (25 feet) 4-stroke outboard	18.494	61.066	6.242	0.069	0.063	0.185	899.520
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300
Diesel Generator Set	1.210	3.760	5.970	0.730	0.710	0.810	587.300

1: Emission factors were generated using USEPA's NONROAD 2008 model. Emissions were modelled for the 2007 calendar year. The construction equipment age distribution was based on the U.S. population in 2007.
2: Includes exhaust and evaporative emissions. The evaporative components included in the NONROAD model are diurnal hotsoak, running loss, tank permeation, hose permeation, displacement, and spillage.

MOVES 2010a Emission Factors[1] (g/hp-hr)							
Type of Vehicle	**VOC[2] (g/mile)**	**CO (g/mile)**	**NOx (g/mile)**	**PM-10 (g/mile)**	**PM-2.5 (g/mile)**	**SO_2 (g/mile)**	**CO_2 & CO_2 Equivalents (g/mile)**
Long Haul Truck Diesel	2.519	3.610	14.776	0.625	0.726	0.016	2020.000

1: Emission factors (EF) were generated using USEPA's preferred model for onroad sources MOVES 2010a model.

2. MOVES emission rates include sources from engine combustion, tire wear, brake wear, evaporative fuel permeation, vapor venting and leaking (running and parking), and crankcase loss. operations such as stop and go, highway travel, acceleration at on-ramps, parking, start-up, and extended idle.

Alternative 4a or 4b Alternative - Emission Calculations								
Type of Construction Equipment	**VOC tons/yr**	**CO tons/yr**	**NOx tons/yr**	**PM-10 tons/yr**	**PM-2.5 tons/yr**	**SO_2 tons/yr**	**CO_2 tons/yr**	**Total CO_2e[1,2]**
Marine vessel (100 feet) diesel inboard	1.053	4.621	29.499	0.786	0.764	3.741	2358.560	11175.538
Marine vessel (200 feet) diesel inboard	0.036	0.154	1.001	0.027	0.026	0.125	78.616	377.742
Marine vessel (25 feet) 4-stroke outboard	41.087	135.666	13.867	0.153	0.140	0.411	1998.402	7158.067
Diesel Generator Set	0.538	1.671	2.653	0.324	0.315	0.360	260.953	1064.877
Diesel Generator Set	0.009	0.028	0.044	0.005	0.005	0.006	4.349	17.748
Long Haul Truck Diesel	0.155	0.223	0.912	0.039	0.045	0.001	124.658	400.278
TOTAL EMISSIONS	**42.878**	**142.362**	**47.976**	**1.335**	**1.296**	**4.644**	**4825.539**	**20194.250**

Conversion factor 1 gram=1.102E-06 ton (metric)
[1]**:** The 100-year Global warming potential (GWP) is used to derive CO_2e. GWP for N_2O or NOx is 298 and GWP for methane or VOCs is 25 (https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks)
[2]: Emission factors and methodology based on Kings Bay OEA, which assumed methane emissions to be VOC and N2O emissions to be NOx.

Net Emissions Summary Table

Net Emissions Summary Compared to Insignificance Indicator for Proposed Action						
Combustion Emissions	**VOC (tons/yr)**	**CO (tons/yr)**	**NOx (tons/yr)**	**PM-10 (tons/yr)**	**PM-2.5 (tons/yr)**	**SO_2 (tons/yr)**
Baseline (No Action Alternative) Emissions Estimation	**0.27**	**0.89**	**0.29**	**0.01**	**0.01**	**0.03**
Insignificance Indicator	250	250	250	250	250	250
Exceed threshold (Y/N)	No	No	No	No	No	No
Alternative 1a or 1b	42.68	141.96	46.02	1.26	1.22	4.51
Baseline Emissions	0.27	0.89	0.29	0.01	0.01	0.03
TOTAL NET EMISSIONS	**42.41**	**141.07**	**45.73**	**1.26**	**1.21**	**4.48**
Insignificance Indicator	250	250	250	250	250	250
Exceed threshold (Y/N)	No	No	No	No	No	No
Alternative 2a or 2b and 3a or 3b	42.72	142.14	47.06	1.30	1.25	4.64
Baseline Emissions	0.27	0.89	0.29	0.01	0.01	0.03
TOTAL NET EMISSIONS	**42.46**	**141.25**	**46.78**	**1.29**	**1.24**	**4.61**
Insignificance Indicator	250	250	250	250	250	250
Exceed threshold (Y/N)	No	No	No	No	No	No
Alternative 4a or 4b	42.878	142.362	47.976	1.335	1.296	4.644
Baseline Emissions	0.27	0.89	0.29	0.01	0.01	0.03
TOTAL NET EMISSIONS	**42.61**	**141.48**	**47.69**	**1.33**	**1.29**	**4.62**
Insignificance Indicator	250	250	250	250	250	250
Exceed threshold (Y/N)	No	No	No	No	No	No

E.1.5 Evaluation of Greenhouse Gas Emissions Using ACAM Methodology

Alternatives 1a and 1b

General Information: An analysis is performed to assess the quantity of GHG emissions associated with the Proposed Action based on ACAM methodology. The analysis was performed in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989)(since rescinded); and the DAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions estimated using NONROAD2008 emission factors.

Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated using USEPA's NONROAD2008. ACAM methodology was used to determine GHG on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year.

GHG Emissions Analysis Summary: GHG produced by fossil-fuel combustion are primarily carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (NO_2). These three GHG represent more than 97 percent of all U.S. GHG emissions. Emissions of GHG are typically quantified and regulated in units of CO_2 equivalents (CO2e). The CO2e takes into account the GWP of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows to compare the warming potential between different gases; the higher the GWP, the more its potential for warming in comparison to CO_2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

DAF has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (*de minimis*, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators, see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	CO_2	CH_4	N_2O	CO_2e	Threshold	Exceedance
2025	4189.30	38.72	41.75	17598.01	68,039	No
2026 [SS]	0.00	0.00	0.00	0.00	68,039	No

The following U.S. and state's GHG emissions estimates (next two tables) are based on a 5-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	CO_2	CH_4	N_2O	CO_2e
2025	227,404,647	552,428	58,049	228,015,124
2026 [SS Year]	0	0	0	0

U.S. Annual GHG Emissions (mton/yr)				
YEAR	CO_2	CH_4	N_2O	CO_2e
2025	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2026 [SS Year]	0	0	0	0

GHG Relative Significance Assessment: A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHG are non-hazardous to health at normal ambient concentrations. Therefore, the action-related GHG generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG is global. Therefore, the intensity or degree of the proposed action's GHG emissions are gauged through the quantity of GHG associated with the action as compared with a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on its annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG emissions on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO_2	CH_4	N_2O	CO_2e
2025-2036	State Total	227,404,647	552,428	58,049	228,015,124
2025-2036	U.S. Total	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2025-2036	Action	4,189.303562	38.716434	41.747642	17,598.011848
Percent of State Totals		0.18422%	0.70084%	7.19179%	0.77179%
Percent of U.S. Totals		0.00816%	0.01511%	0.27819%	0.03408%

<u>Alternative 2a or 2b & Alternative 3a or 3b</u>

General Information: An analysis is performed to assess the GHG emissions associated with the action based on ACAM methodology. The analysis was performed in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989)(rescinded); and the DAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions estimated using NONROAD2008 emission factors and SC GHG analysis.

Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated using USEPA's NONROAD2008. ACAM methodology was used to determine GHG on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year.

GHG Emissions Analysis Summary: GHG produced by fossil-fuel combustion are primarily carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (NO_2). These three GHG represent more than 97 percent of all U.S. GHG emissions. Emissions of GHG are typically quantified and regulated in units of CO2e. The CO2e takes into account the GWP of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows to compare the warming potential between different gases; the higher the GWP, the more its potential for warming in comparison to CO_2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

DAF has adopted the PSD threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (*de minimis*, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators, see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	CO_2	CH_4	N_2O	CO_2e	Threshold	Exceedance
2025	4264.57	38.76	42.70	17940.69	68,039	No
2026 [SS]	0.00	0.00	0.00	0.00	68,039	No

The following U.S. and state's GHG emissions estimates (next two tables) are based on a 5-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	CO_2	CH_4	N_2O	CO_2e
2025	227,404,647	552,428	58,049	228,015,124
2026 [SS Year]	0	0	0	0

U.S. Annual GHG Emissions (mton/yr)				
YEAR	CO_2	CH_4	N_2O	CO_2e
2025	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2026 [SS Year]	0	0	0	0

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHG are non-hazardous to health at normal ambient concentrations. Therefore, the action-related GHG generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG is global. Therefore, the intensity or degree of the proposed action's GHG emissions are gauged through the quantity of GHG associated with the action as compared with a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on its annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG emissions on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO_2	CH_4	N_2O	CO_2e
2025-2036	State Total	227,404,647	552,428	58,049	228,015,124
2025-2036	U.S. Total	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2025-2036	Action	4,264.568632	38.757078	42.695634	17,940.693872
Percent of State Totals		0.18753%	0.70158%	7.35510%	0.78682%
Percent of U.S. Totals		0.00830%	0.01512%	0.28450%	0.03474%

<u>Alternative 4a or 4b</u>

General Information: An analysis is performed to assess the GHG emissions associated with the Proposed Action based on ACAM methodology. The analysis was performed in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989)(rescinded); and the DAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions estimated using NONROAD2008 emission factors and SC GHG analysis.

Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated using USEPA's NONROAD2008. ACAM methodology was used to determine GHG on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year.

GHG Emissions Analysis Summary: GHG produced by fossil-fuel combustion are primarily carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (NO_2). These three GHG represent more than 97 percent of all U.S. GHG emissions. Emissions of GHG are typically quantified and regulated in units of CCO2e. The CO2e takes into account the GWP of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows to compare the warming potential between different gases; the higher the GWP, the more its potential for warming in comparison to CO_2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

DAF has adopted the PSD threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (*de minimis*, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators, see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	CO_2	CH_4	N_2O	CO_2e	Threshold	Exceedance
2025	4377.66	38.90	43.52	18319.92	68,039	No
2026 [SS]	0.00	0.00	0.00	0.00	68,039	No

The following U.S. and state's GHG emissions estimates (next two tables) are based on a 5-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	CO_2	CH_4	N_2O	CO_2e
2025	227,404,647	552,428	58,049	228,015,124
2026 [SS Year]	0	0	0	0

U.S. Annual GHG Emissions (mton/yr)				
YEAR	CO_2	CH_4	N_2O	CO_2e
2025	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2026 [SS Year]	0	0	0	0

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHG are non-hazardous to health at normal ambient concentrations. Therefore, the action-related GHG generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG is global. Therefore, the intensity or degree of the proposed action's GHG emissions are gauged through the quantity of GHG associated with the action as compared with a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on its annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG emissions on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO_2	CH_4	N_2O	CO_2e
2025-2036	State Total	227,404,647	552,428	58,049	228,015,124
2025-2036	U.S. Total	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2025-2036	Action	4,377.656718	38.898103	43.522857	18,319.920558
Percent of State Totals		0.19251%	0.70413%	7.49761%	0.80345%
Percent of U.S. Totals		0.00852%	0.01518%	0.29002%	0.03548%

No Action Alternative

General Information: An analysis is performed to assess the GHG emissions associated with the Proposed Action based on ACAM methodology. The analysis was performed in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989)(rescinded); and the DAF Air Quality Environmental Impact Analysis Process (EIAP) Guide. This report provides a summary of GHG emissions estimated using NONROAD2008 emission factors and SC GHG analysis.

Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated using USEPA's NONROAD2008. ACAM methodology was used to determine GHG on a calendar-year basis from the action start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year.

GHG Emissions Analysis Summary: GHG produced by fossil-fuel combustion are primarily carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (NO_2). These three GHG represent more than 97 percent of all U.S. GHG emissions. Emissions of GHG are typically quantified and regulated in units of CO2e. The CO2e takes into account the GWP of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows to compare the warming potential between different gases; the higher the GWP, the more its potential for warming in comparison to CO_2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

DAF has adopted the PSD threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (*de minimis*, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators, see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2025	26.18	0.24	0.26	109.99	68,039	No
2026 [SS Year]	26.18	0.24	0.26	109.99	68,039	No
2027	26.18	0.24	0.26	109.99	68,039	No
2028	26.18	0.24	0.26	109.99	68,039	No

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2029	26.18	0.24	0.26	109.99	68,039	No
2030	26.18	0.24	0.26	109.99	68,039	No
2031	26.18	0.24	0.26	109.99	68,039	No
2032	26.18	0.24	0.26	109.99	68,039	No
2033	26.18	0.24	0.26	109.99	68,039	No
2034	26.18	0.24	0.26	109.99	68,039	No
2035	26.18	0.24	0.26	109.99	68,039	No
2036	26.18	0.24	0.26	109.99	68,039	No

The following U.S. and state's GHG emissions estimates (next two tables) are based on a 5-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
2025	227,404,647	552,428	58,049	228,015,124
2026 [SS Year]	227,404,647	552,428	58,049	228,015,124
2027	227,404,647	552,428	58,049	228,015,124
2028	227,404,647	552,428	58,049	228,015,124
2029	227,404,647	552,428	58,049	228,015,124
2030	227,404,647	552,428	58,049	228,015,124
2031	227,404,647	552,428	58,049	228,015,124
2032	227,404,647	552,428	58,049	228,015,124
2033	227,404,647	552,428	58,049	228,015,124
2034	227,404,647	552,428	58,049	228,015,124
2035	227,404,647	552,428	58,049	228,015,124
2036	227,404,647	552,428	58,049	228,015,124

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
2025	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2026 [SS Year]	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2027	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2028	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2029	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2030	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2031	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2032	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2033	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2034	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2035	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2036	5,136,454,179	25,626,912	1,500,708	5,163,581,798

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHG are non-hazardous to health at normal ambient concentrations and. Therefore, the action-related GHG generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG is global. Therefore, the intensity or degree of the proposed action's GHG emissions are gauged through the quantity of GHG associated with the action as compared with a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on its annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG emissions on a global scale, an action's net change in GHG emissions is compared relative to the state (where action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO_2	**CH_4**	**N_2O**	**CO_2e**
2025-2036	State Total	2,728,855,764	6,629,136	696,588	2,736,181,488
2025-2036	U.S. Total	61,637,450,148	307,522,944	18,008,496	61,962,981,576
2025-2036	Action	314.20	2.90	3.13	1,319.85
Percent of State Totals		0.00115%	0.00438%	0.04495%	0.00482%
Percent of U.S. Totals		0.00005%	0.00009%	0.00174%	0.00021%

APPENDIX F
COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

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APPENDIX F – COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

Notice of Negative Determination

This document provides the State of Florida with the Department of the Air Force's (DAF's) Negative Determination under the Coastal Zone Management Act (CZMA) Section 307 and 15 Code of Federal Regulations (CFR) Part 930 sub-part C. The information in this Determination is provided pursuant to 15 CFR Section 930.35 and Section 307 of the CZMA 16 United States Code (U.S.C.) § 1456, as amended, and its implementing regulations 15 C.F.R. Part 930.

Proposed Action:

The purpose of the Proposed Action is the decommissioning of 14 DAF ACMI towers, including 6 northern ACMI towers offshore from Apalachicola Bay and 8 southern towers offshore from Key West. The Proposed Action would allow the DAF to divest from infrastructure that is no longer needed to support DAF flight training requirements and that is deteriorated beyond economical repair. The Proposed Action is needed to eliminate navigational risks to vessels from the towers, to reduce the liability to the DAF from the deteriorating structural stability of the towers, and to forego increasing costs associated with tower maintenance.

The towers proposed for decommissioning include six northern ACMI towers southeast of Carrabelle, Florida, and eight southern towers northwest of Key West, Florida **(Table F-1)**. All towers are located outside of the 9-nautical mile (NM) limit for the State of Florida waters and the U.S. CZMA boundary **(Figures F-1 through F-3)**. The towers are between 9.6 and 50.7 NM offshore in water depths of approximately 20 to 130 feet.

Table F-1 Locations of ACMI Towers

Station No.	Tower Designation	Latitude (north)	Longitude (west)	Distance from Shore (NM)	Tower Depth (feet)	Total Tower Height (feet)[1]
Northern Towers						
1	N4	29.4127	-84.8563	12.2	85	184
2	N3	29.5391	-84.6163	11.7	65	164
3	N7	29.6661	-84.3692	10.4	54	154
4	N5	29.2993	-84.6109	23.9	102	203
5	N6	29.4058	-84.3446	27.2	78	177
6	SM1	29.0818	-84.3200	42.8	97	381
Southern Towers						
7	Northwest Corner	25.8000	-82.2167	26.3	69	213
8	Northeast Corner	25.5667	-81.7167	14.3	30	174
9	North Master	25.4670	-82.0997	30.8	69	213
10	West Center	25.3672	-82.4665	50.7	102	246
11	Southwest Corner	24.9348	-82.7164	37.9	125	269
12	South Master	25.0338	-82.3665	29.3	82	226
13	East Center	25.1171	-81.9998	33.5	65	210
14	Southeast Corner	24.6798	-82.2864	9.6	20	164

Notes:
[1] Includes the underwater portion of the towers.
NM = nautical mile

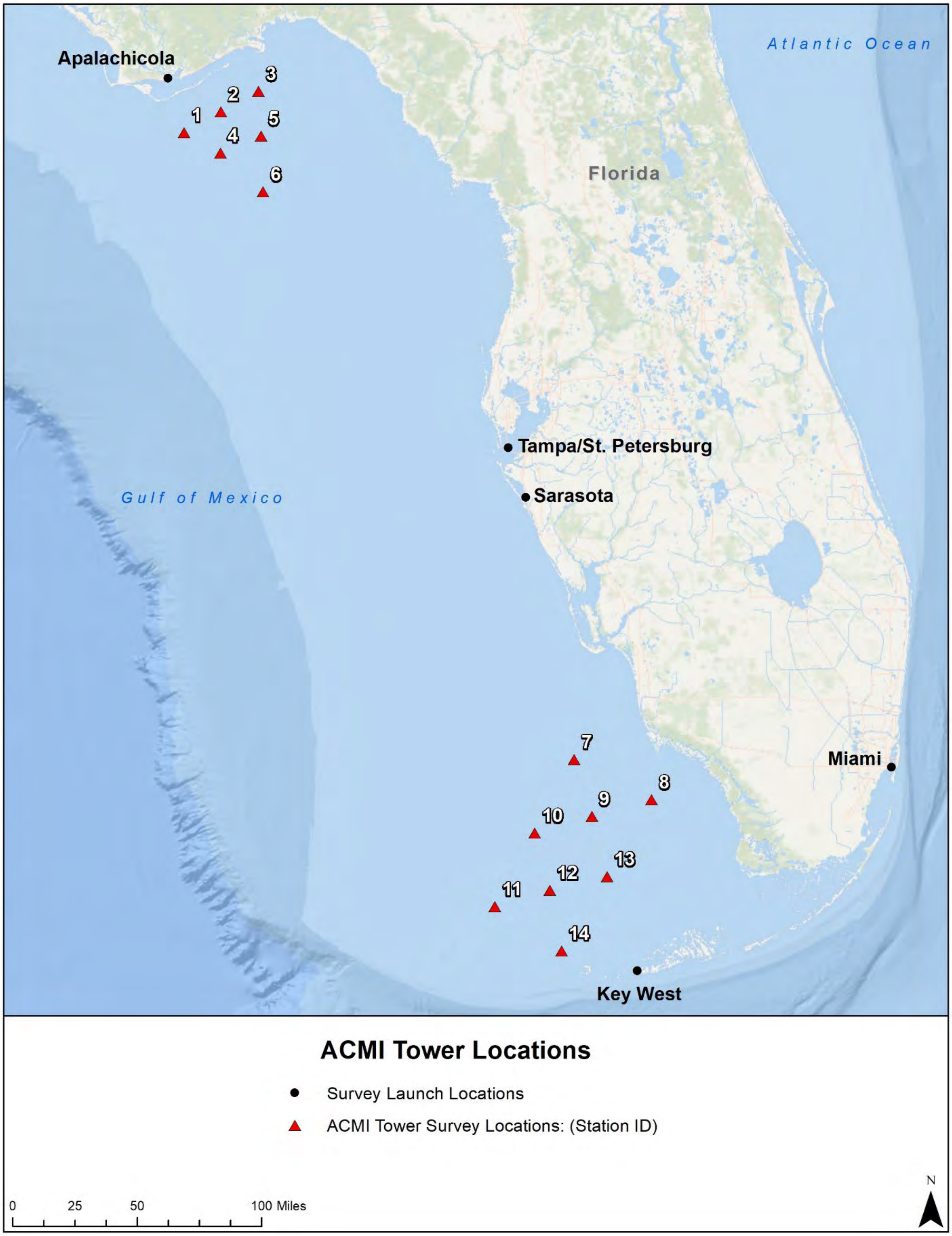

Figure F-1 Locations of ACMI Towers Proposed for Decommissioning

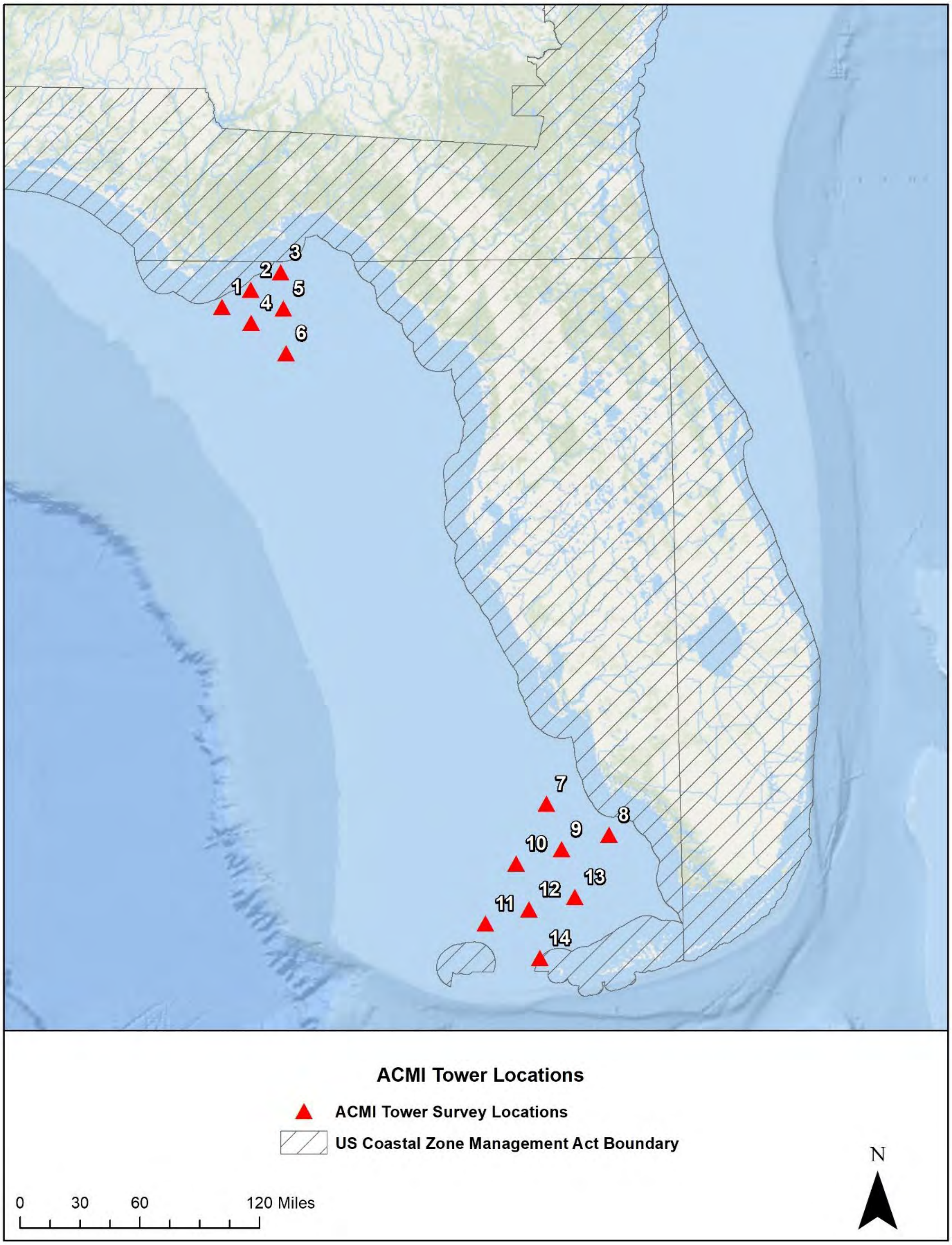

Figure F-2 Locations of ACMI Towers and the CZMA Boundary

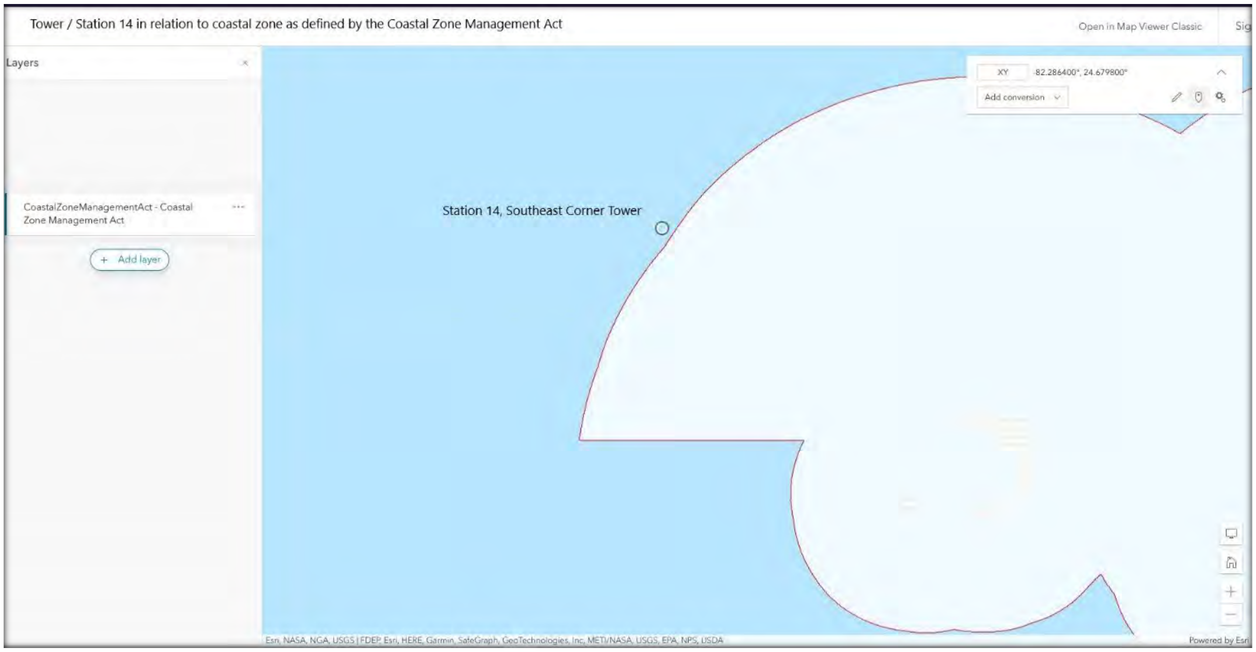

Figure F-3 Location of Tower / Station 14 (Southeast Corner) in Relation to the CZMA Boundary

The towers will be removed by severing the support structure below the water surface using mechanical methods and disposing of the towers in-place on the sea floor. Existing submerged barge anchoring structures for northern towers (N3 – N7) will be left in place. Towers will be cut into sections and placed on the ocean floor such that the tops of the structures are at depths and locations where the U.S. Coast Guard does not require buoys to ensure maximum navigational safety, and to avoid the high cost of long-term buoy maintenance and oversight. Towers will be cut below the waterline at sufficient depths for deep draft navigation and will be permitted and in compliance with 33 CFR 322, Permits for Structures or Work in or Affecting Navigable Waters of the United States.

The Proposed Action will require 14 or fewer vessel trips, resulting in a negligible amount of vessel traffic. Before the towers are severed, all electronics, antennas, transmitters, solar arrays, batteries, hazardous materials, or other reusable and recyclable materials would be removed. These components would be disposed of through Defense Logistics Agency Disposition Services at approved upland facilities.

Figure F-3 shows the position of Station 14 relative to the CZMA boundary. Because all towers are located outside of the coastal zone, and all work and placement of tower components will occur at these locations, no work associated with this proposed action will occur in Florida State waters managed under the CZMA.

Federal Review

Based on the above information, DAF has made a determination that this proposed federal activity would not affect any coastal resource or use as defined by the CZMA.

APPENDIX G
LIST OF PREPARERS AND CONTRIBUTORS

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