



PORT OF GUAM
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Lourdes A. Leon Guerrero
Governor of Guam
Joshua F. Tenorio
Lieutenant Governor



PUBLIC NOTICE

The U.S. Department of Commerce, Economic Development Administration (EDA) is considering a request for Federal assistance from the Port Authority of Guam (PAG) to construct a fuel pipeline system to connect F1 and Golf piers at the Jose D. Leon Guerrero Commercial Port in Piti, Guam. Pursuant to the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA), EDA is conducting an assessment of the potential of the proposed project to affect the environment and/or historic properties. Notice is hereby given that the project is proposed to be located in, or may affect, a floodplain and/or wetland as defined by Executive Order (EO) 11988 and/or EO 11990.

The project calls for the installation of a fuel pipeline systems consisting of three (3) 10-inch fuel pipes between the PAG's F1 and Golf Piers. The project will provide connectivity between the PAG's two piers to ensure that bulk fuel, jet fuel, and diesel gas distribution and delivery remains uninterrupted for the island of Guam in the event that either pier is impacted by natural or man-made incidents or should either pier be taken off line for repairs and/or rehabilitation. The project will be located along the southern part of Route 11 at the Port Authority of Guam owned property within the Commercial Port at Cabras Island (13.4613N Latitude, 144.6705E Longitude) in the village of Piti.

The comment period is extended to **Thursday, August 6, 2020** and project information is available for review at <https://www.portguam.com/news/public-notices> or at the PAG Planning Division Office 2nd Floor, 1026 Cabras Highway Suite 201, Piti, Guam 96925 or by phone at (671) 477-5931/35.

If you have any information regarding potential impacts to historic properties or environmental resources including wetlands or floodplains associated with this proposed project, please provide it in writing to:

Regional Environmental Officer
Department of Commerce
Economic Development Administration
915 Second Avenue, Room 1890
Seattle, WA 98174
RDimmick@eda.gov

The comment period is extended to **Thursday, August 6, 2020** and comments received in the EDA Regional Office by 5:00 pm eastern will be considered. A copy of the NEPA/NHPA decisional document will be available upon request at the above EDA Regional Office.



Port Area: Apra Harbor, Piti
State: Guam
Applicant: Port Authority of Guam
Grant Title Name: **Installation of a Fuel Pipeline System for F1 Pier and Golf Pier Connectivity**

A. BENEFICIARIES

The entire island of Guam will benefit from this investment if awarded. Specifically, two critical Port Authority of Guam facilities that will be impacted from this project are the F1 and Golf Piers. These berths are Government of Guam-owned bulk fuel, jet fuel, and LP gas unloading facilities. Installing a fuel connectivity between these two piers will improve the island's resiliency, provide continuity of service and support uninterrupted efficient movement of fuel operations from the PAG to the island community.

The F1 and Golf Piers are managed and operated by TriStar Terminals Guam Inc. and Mobil Oil Guam Inc., respectively. Two other petroleum companies unload their products at F1 Pier; South Pacific Petroleum Corporation (SPPC) distributing the 76 brand and Isla Petroleum & Energy Holdings, LLC. (IP&E) representing the Shell brand.

In addition to the entire island being beneficiaries of this proposed project, all four (4) petroleum products service providers are direct beneficiaries. Form ED900B will be submitted by each entity.

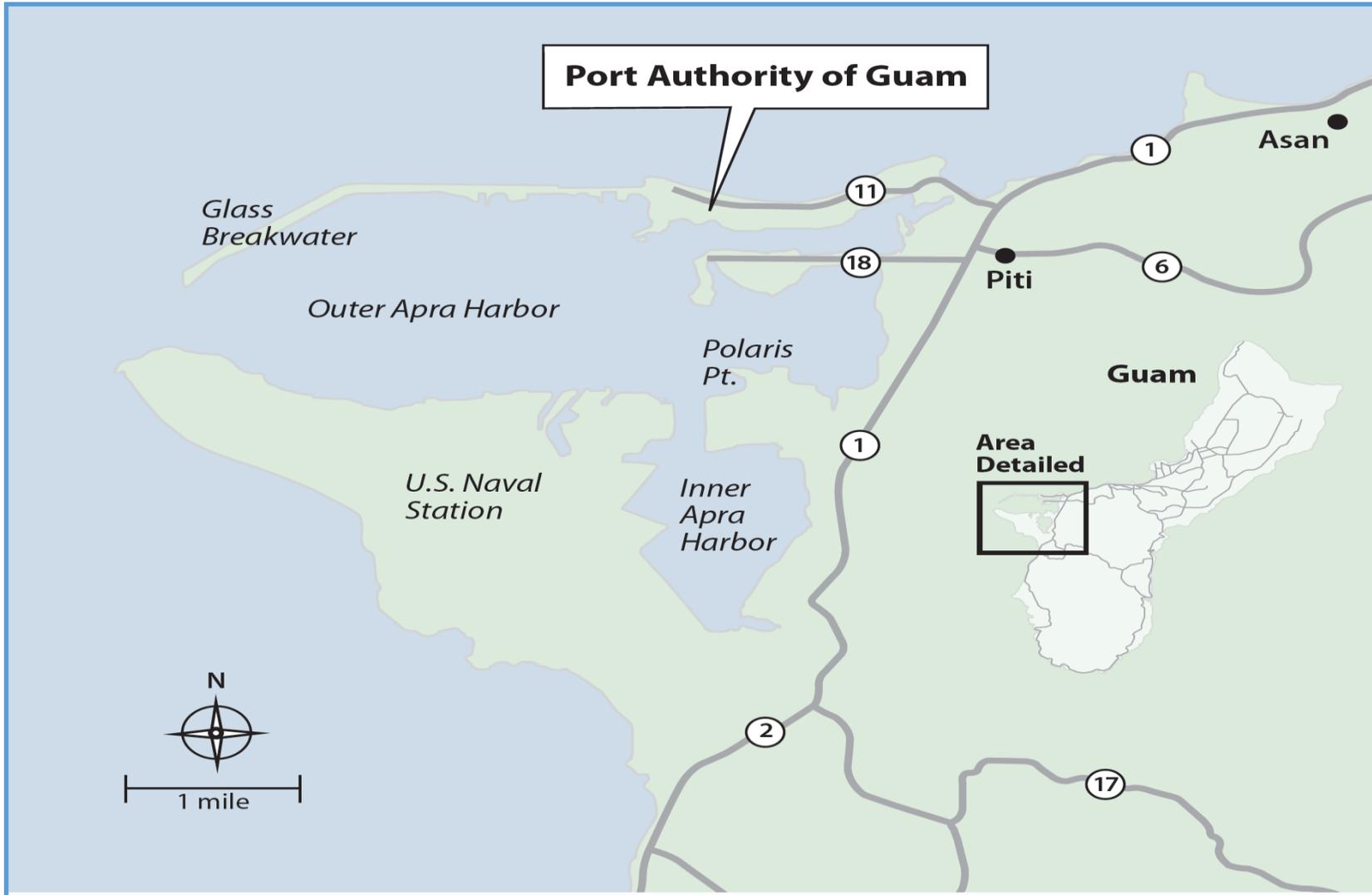
B. PROJECT DESCRIPTION

1. Proposed Construction

The PAG is proposing to install a fuel pipeline between two major fuel wharves, F1 and Golf Piers, to ensure connectivity and redundancy in the event either wharf becomes damaged by natural or man-made disaster. In addition, due to the age of both piers, this project will provide a new capability by allowing continuity of businesses and operations when either asset is taken off-line for repairs.

The project is located at the Jose D. Leon Guerrero Commercial Port of Guam at the northwestern side of Outer Apra Harbor (13.4613N, 144.6705E) in the village of Piti, Guam (Figure 1). The fuel connectivity project includes site work, engineering design, assessments, inspections, and construction.

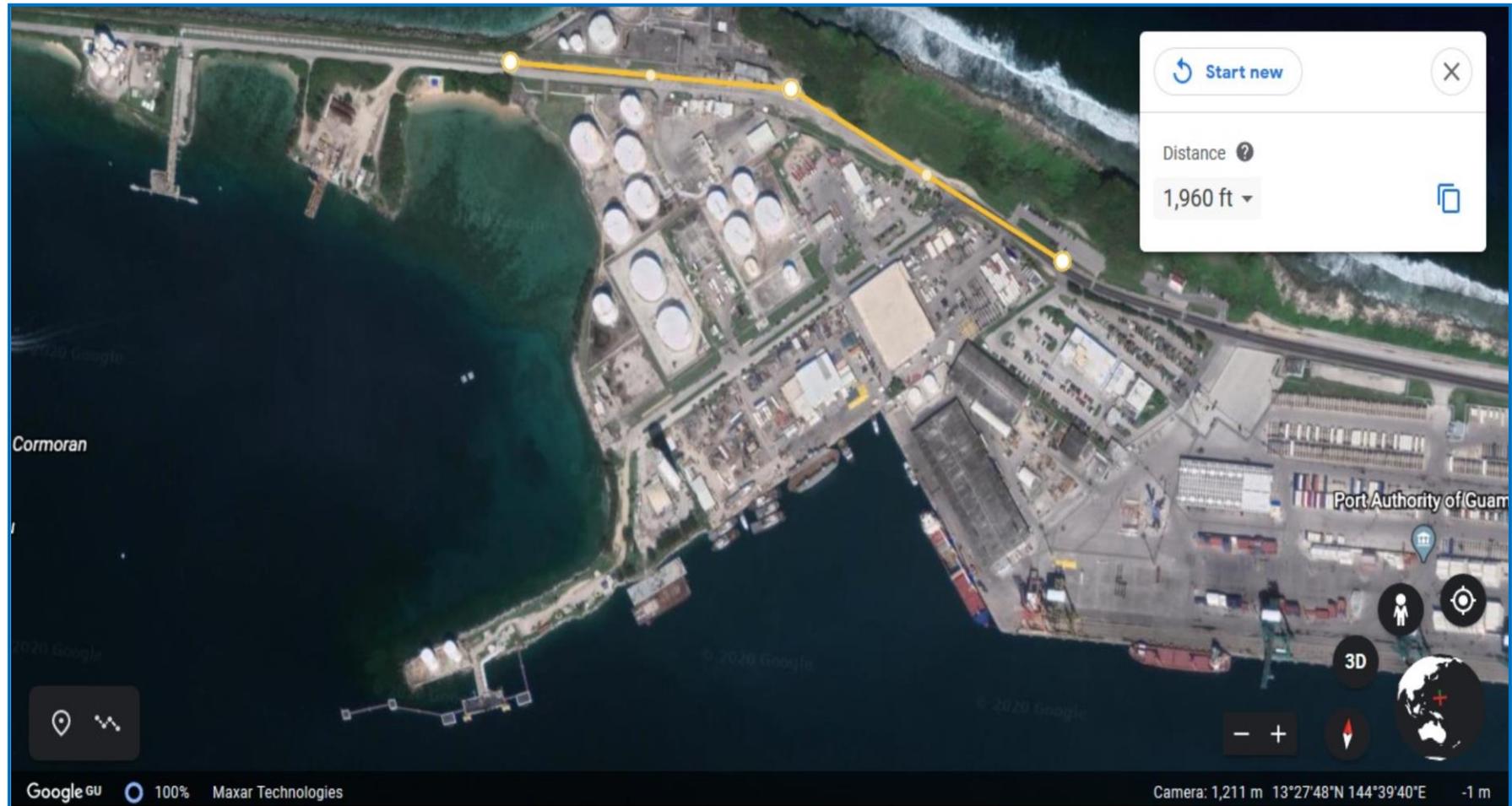
Figure 1: Site Map



The project contains two phases: the architectural and engineering (A&E) design phase and construction phase. A private architectural or engineering firm will provide detailed design plans and scope of work for the construction phase of the project. The construction phase entails trenching earthwork and subsequent installation of a new pipeline connecting to tie-ins of F1 Pier pipeline and Golf Pier pipeline along approximately 2,000 feet of roadway on

Route 11 (Figure 2). The intended method of the project is for the pipeline to be buried; specifics regarding dimensions, materials, and connections are stipulated in detail within the attached Scope of Work made a part of this application. The necessary and required safety equipment for the project will be determined by the third party contractor selected during the procurement process as part of their corresponding safety plan, OSHA regulations, and A&E design. Please see attached topographic surveys for further site specifications.

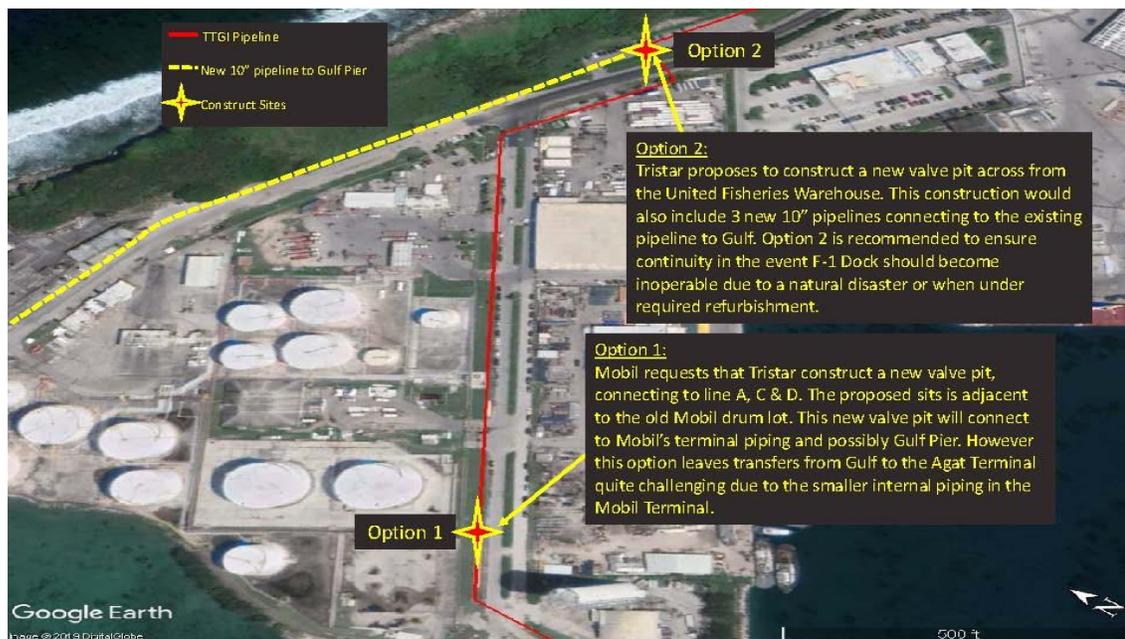
Figure 2: Proposed Fuel Line Connectivity Aerial Map



2. Alternatives to the Proposed Project

A “No Build” alternative would not involve new construction, hence, there would be no connectivity between the only two fuel line piers owned by the Government of Guam. This alternative would leave these facilities in their current vulnerable state. The potential economic benefits of providing continuous flow of fuel to the island in the event that one of the piers is inoperable would not be realized by the Government of Guam.

In addition to the No Build alternative, another alternate pipeline route was also considered, as illustrated in the diagram below.



Option 1 is the other alternative that was considered by the PAG. This proposal would involve the construction of a new valve pit that will connect Mobil Oil Guam’s terminal piping to F1 Pier. This proposed project was not selected for two (2) reasons:

- As noted in the above illustration, there will be a challenge in this interconnectivity due to the much smaller piping within the Mobil Terminal. The transfer from Gulf Pier to Tristar’s main fuel farm in Agat through Mobil’s internal piping web will require costly retrofitting that neither Tristar nor Mobil are willing to invest to attain redundancy; and
- The new valve pit installation and its connection to F1 Pier would run along an easement owned by Hanson Cement, a private bulk cement supplier. The proposed project was discussed with Hanson representatives and although they understood the critical need for the interconnectivity between the two fuel piers, they advised that a monthly fee would be charged for the duration that the pipeline ran through the company’s easement. The Port found this option not to be financially viable as it would result in far greater costs, with this recurring expense for the existence of the pipeline.

This project, as proposed, is to install three (3) 10” inch interconnectivity pipes below ground. Installation above ground was also considered; however, because Route 11 is a highly traveled route, it was determined that buried lines would be ideal and safest. Being exposed above ground, would make the lines more vulnerable to abrasions, corrosion and damages from the harsh, sulfuric environment and traffic along the roadway.

Need and Purpose of Project

The fuel industry is critically important to Guam and remains vibrant, but volatile. Damaging either of these piers and rendering them inoperable will cripple the entire island and will adversely impact continuity of fuel distribution. This investment will address the need for continuity of commerce and business operations as well as provide a solution to mitigate a vulnerability that has the potential to affect all economic drivers on Guam and the region.

As mentioned in the grant narrative, Guam’s isolated but geostrategic location provides a home to various branches of the Department of Defense. The PAG not only services these key federal agencies, but the entire island of Guam (local government, private sectors, non-governmental organizations, and the visitor economy) as well as neighboring island nations. The PAG’s mission is to provide the main lifeline of consumer goods into the island in a timely and efficient manner and this project will contribute to that purpose.

The project’s purpose is to ensure stability and redundancy, provide for the uninterrupted continuity of business and operations and mitigate the potential for downtime of fuel operations. Completion of this project addresses a current vulnerability as it would allow for the continuous receipt and distribution of fuel should one of the fuel piers be inoperable.

The problem and vulnerability is that should F1 or Golf Pier be taken offline or closed due to natural disasters, man-made incidents, or repairs/rehabilitation, fuel distribution will come to a halt. The project provides the solution for fuel being serviced in F1 to be received by Golf Pier and vice versa, ideally resulting in resiliency through the elimination of fuel operations disruption.

3. Mitigation

No significant environmental consequences or adverse impacts have been identified to occur from construction and operation of the proposed project; however, the PAG will apply for permits required from all applicable regulatory agencies. If mitigation measures are not required, best management practices (BMPs) will be employed during construction.

C. HISTORIC/ARCHEOLOGICAL RESOURCES

There are no known historic/archeological resources within the project site or area of potential effect that are either listed on the National Register of Historic Places or considered to be of local significance and perhaps eligible for listing on the National Register. However, if an inadvertent discovery of historic properties occurs, the PAG will engage the services of an archaeologist.

D. AFFECTED ENVIRONMENT

1. Affected Area

The general project area is located within the Marine Industrial Terminal (Figure 3 & 4) also known as Cabras Island Industrial Park which consist of liquid fuel, fishing, and marine industrial uses and activities. The affected area is to the East of the PAG's Administration Building and Container Yard. The area specifically affected are F1 Pier (13.459732, 144.661815) and Golf Pier (13.463947, 144.658630) with Route 11 adjacent to both piers, where the fuel line connectivity is proposed (13.464537, 144.664124). F1 Pier receives bulk fuel, jet fuel, and LP gas whereas Golf Pier receives LP gas and cement.

The proposed installation is located directly between the two areas piers that have been determined to have no significant impact based on the Final 2012 EA for the Port Modernization Program and the Final 2019 EA for the Hotel Wharf and Access Roadway Repair Project.

Facilities on the Marine Industrial Terminal include oil tanks and pipelines, warehouses, a cement silo, and light-gauge sheds scattered throughout this area. The Marine Industrial Terminal area has been leased to private companies since 1969.

Bulk fuels from Mobil Oil Guam and Tristar Terminals, LLC are delivered to their storage tanks from the adjacent Golf Pier marine transfer facility and from Berth F-1, respectively, through terminal piping within the SPPC facility. Typically, liquid bulk products are delivered to the Marine Industrial Terminal via tanker vessels every 20 days. These products are then distributed by pipeline from their storage tanks to their loading racks, where the

products are loaded into tank trucks and distributed to service stations, as well as commercial and government accounts throughout Guam. A portion of the bulk fuels is reloaded at the pier to coastal tankers for distribution to the Federated States of Micronesia and the Commonwealth of the Northern Mariana Islands.

Figure 3: Marine Industrial Terminal



Figure 4: Port Authority of Guam Land Use Designation



2. Shorelines, Estuaries, Beaches and Dunes

There is only one small sandy beach between F1 Pier and Golf Pier. Guam's coastal zone includes all non-federal property on the island, including offshore islands and the submerged lands and waters extending seaward to a distance of 3 nautical miles. Due to the small island size; Guam's coastal zone is the entire territory. Guam's comprehensive planning enabling legislation, Seashore Protection Act, and several executive orders are among the key legislation for the coastal management program approved in 1979 and overseen by the Guam Bureau of Statistics and Plans.

As such, the proposed project site is located within the designated Guam coastal zone. This project will not have any overwater structures that could impact navigable waters. Although, the project will not have any adverse effects and no mitigation measures will be required, BMPs will be employed during construction.

3. Wetlands

There are no mangrove stands or wetlands located on or adjacent to the project site. According to a Delineation of Jurisdictional Waters conducted by AMEC Environment & Infrastructure, Inc. (AMEC) in December 2011, the nearest wetland is over 1,000 feet away.

4. Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicates that the F1 Pier and Golf Pier are within Flood Hazard Area Zone A. Areas located within this zone are subject to inundation by the 1% annual chance flood (100-year flood); however, no base flood elevation has yet been determined. The remaining areas of the project site are mapped within Zone X, which FEMA designates as areas located outside the 100-year flood zone (FEMA, 2007). Please see attached FEMA FIRM.

National Flood Hazard Layer FIRMette



5. Vegetation and Wildlife Resources

The entire project footprint is located within Guam's fuel facilities, cement import businesses, and other marine industrial and commercial businesses. Thus, the project site is largely devoid of vegetation. The vegetation along the roadway is interrupted by rock riprap, which divides the roadway from the sandy beach and nearshore environment.

The overall vegetation community primarily includes upland species *Leucaena leucocephala* (tangantangan) and *Casuarina equisetifolia* (ironwood). The common coastal strand species in the area include banalo (*Thespesia populnea*), Indian camphorweed (*Pluchea indica*), nanaso (*Scaevola taccada*), gasoso (*Colubrina asiatica*), and lodugao (*Clerodendrum inerme*).

6. Endangered Species

The project site is not within the critical habitat designated as Northern Guam for three ESA-listed species: Mariana fruit bat, Mariana crow, and Guam Micronesian kingfisher (69 FR 62943). Though the wharves are in close proximity to the water, this project will have no in-water work; therefore, no foreseeable impacts on any marine/coastal species.

7. Land Use and Zoning

Land use designations for various areas within the PAG property are identified in the PAG's 2013 Master Plan (Figure 5). F1 and Golf Piers are designated as "Fuel Facilities & Cement Import". F1 Pier is an unloading berth for liquid bulk and LP Gas which is operated by Tristar Terminals Guam, Inc. Golf Pier provides two critical services to the island: 1) unloading wharf for liquid bulk tankers operated by Mobil Oil Guam, Inc. and 2) unloading wharf for bulk cement operated by Cementon Micronesia.

Figure 5: Port Authority of Guam Land Use Designation



8. Solid Waste Management

The Guam Environmental Protection Agency (GEPA) governs the management of solid waste (22 Guam Administrative R. & Regs. §20101 *et seq.*). Currently, the Port receives general solid waste removal services from a private vendor. Dumpsters are provided at specific locations at the PAG and collection is generally available every day. Solid waste collected at the Port is disposed of at the Layon Landfill located in the village of Inarajan.

9. Hazardous or Toxic Substances

GEPA has been authorized by the United States Environmental Protection Agency (USEPA) to administer most regulations regarding the management of hazardous waste and materials on Guam. In 1976, the federal government passed the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §6901 *et seq.*, which gave USEPA greater ability to regulate hazardous waste from “cradle-to-grave”. USEPA authorized GEPA to develop Guam’s Hazardous Waste Management Program and regulations. The fuel line connectivity project will not store any fuel, but is a distribution line.

10. Water Resources

The project site is in the Apra watershed, which encompasses portions of Yona, Santa Rita, and Piti municipalities, and drains east into Apra Harbor and the Philippine Sea (Kottermair, 2012). There are no freshwater streams in the vicinity of the project area. The nearest river is the Sasa River, which empties into Sasa Bay approximately 3.5 km southeast of the project site. The PAG will follow standard conditions and implement BMPs during the construction phase.

11. Water Supply and Distribution System

The Guam Waterworks Authority (GWA) supplies water resources to the PAG and its tenants. In addition, as part of the Port Modernization Guam Commercial Improvement Project, the PAG installed a 274,000-gallon tank for fire suppression purposes.

12. Wastewater Collection and Treatment Facilities

The proposed project will not have any impact on the wastewater collection and treatment facilities. The PAG is currently served by a gravity sewer system which consists of underground pipes and sump pits. The sewage is collected at the central lift station (pump house) provided by GWA, which is located near the container yard main gate. The GWA lift station pumps sewage to the gravity line in Marine Drive which flows to the Hagatna Treatment Plant.

13. Environmental Justice (Executive Order 12898)

The fuel line connectivity project will not have any disproportionate effects on low-income or minority populations resulting from the site selection. The project will benefit all sectors of the island community through the efficient flow of fuel distribution and fuel operations

continuity should one fuel pier be taken off-line due to any natural or man-made disasters or necessary repairs.

14. Transportation (Streets, Traffic and Parking)

Landside access to the PAG from Tamuning and other urban areas is via the four-lane main arterial, Route 1 (known as Marine Corps Drive), which from this point runs Southwesterly towards Piti. Access to the Commercial Port from Piti is via an intersecting two-lane road, Route 11. On Cabras Island, Route 11 runs west past GPA's Cabras Power Plant Complex, through vacant lands set aside for the Cabras Island Industrial Park, north of the Commercial Port area and dead ends on Glass Breakwater, which forms the northern breakwater for Outer Apra Harbor. The Northern barrier along the Route 11 consists of a low seawall and armed breakwater protection facing the Philippine Sea.

The traffic volume along Route 11 adjacent to F1 Pier and Golf Pier is very low and the current posted speed limit is 25 miles per hour. The proposed project would not have a significant effect on traffic volumes or safety.

15. Air Quality

Construction activities at the Fuel Pipeline project site would be conducted consistent with best management practices related to control of construction equipment emissions and fugitive dust.

16. Noise Pollution

Construction noise is typically confined within the project boundary, occurs during daylight hours and is only present during the period of construction.

17. Permits

At this grant application phase the PAG has not engaged in the permitting process for the construction of this fuel connectivity project. However, upon notification of award and subsequent completion of the procurement process, the PAG will apply for all required regulatory permits.

18. Public Notification/Controversy

The "Installation of Fuel Pipeline for F1 Pier and Golf Pier Connectivity" project is a mitigation initiative that is a component of the PAG's 2020 Master Plan Update. The 2020 Master Plan has been shared in public forums through its "Port Modernization At A Glance" presentation delivered to the following local and national entities: Port Users Group of Guam (PUGG); Association of Terminal Operators, Stevedoring, and Shipping Companies of Micronesia (ATOSSCOM); Guam Society of American Engineers (SAME); Guam Chamber of Commerce; Guam Rotary Club; US Army Corps of Engineers;

Department of Homeland Security/FEMA; Maritime Administration (MARAD); and Department of Interior (DOI).

In all the presentations that were delivered by the PAG, there were no public objections. In fact, the PAG was commended for this innovative mitigation initiative that will enhance the PAG's core capabilities, capacity and provide for resiliency and sustainability.

19. Direct, Indirect, and Cumulative Effects

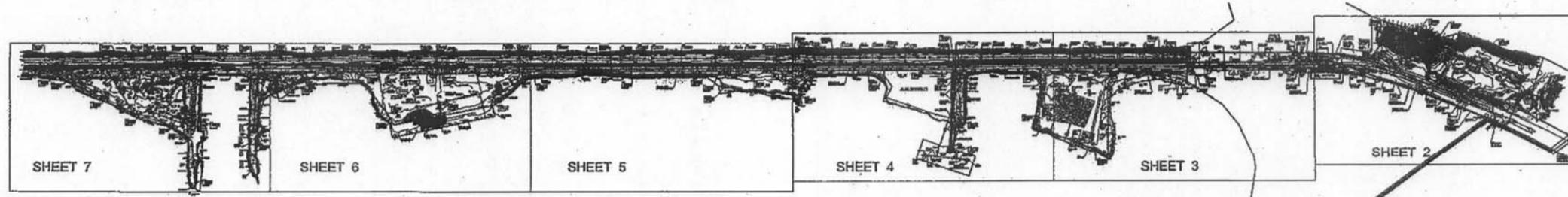
Both F1 and Golf Piers are designated as fuel facilities and cement import with no foreseeable change to operations in the near future. Forseeable direct impacts may halt fuel distribution during the construction, however, this connectivity project will address this vulnerability in the future should one fuel pier need to be taken off-line. There are no foreseen indirect or cumulative effects through this proposed action besides the efficient movement of fuel distribution.

E. LIST OF ATTACHMENTS

- USGS topographic map(s)
- FEMA floodplain map with map number
- Appendix A: Applicant Certification Clause
- 2012 FONSI – Port Authority of Guam Port Modernization Program
- 2012 Port Authority of Guam Port Modernization Program Final Environmental Assessment
- 2019 FONSI and Proposed Hotel Wharf and Access Road Maintenance and Repair Project Final Environmental Assessment
- Figures 1 – 5 (photos/ maps)

TOPOGRAPHIC MAP(s) and SITE MAP(s)

AREA 1



GENERAL NOTES:

1. ALL DISTANCES, DIMENSIONS, ELEVATIONS AND COORDINATES ARE IN FEET AND DECIMAL THEREOF.
2. HORIZONTAL AND VERTICAL CONTROL SURVEY WAS BASED FROM 1993 GUAM GEODETIC NETWORK (GGN) MONUMENT No. 2602 HAVING PLANE COORDINATES OF NORTH 643,723.5003 FEET AND EAST 305,441.6121 RESPECTIVELY WITH AN ELEVATION OF 8.20 FEET AND MONUMENT No. 2259 HAVING PLANE COORDINATES OF NORTH 640,603.7558 AND EAST 300,757.8852 RESPECTIVELY WITH AN ELEVATION OF 6.89 FEET MEAN SEA LEVEL (MSL) DATUM.
3. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKE NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
4. OVERLAYED PROPERTY BOUNDARY, RIGHT OF WAY AND EASEMENTS ARE BASED ON A PROPERTY RECORDS SEARCH AND ARE NOT NECESSARILY REPRESENTATIVE OF ACTUAL FIELD CONDITIONS.

ABBREVIATIONS:

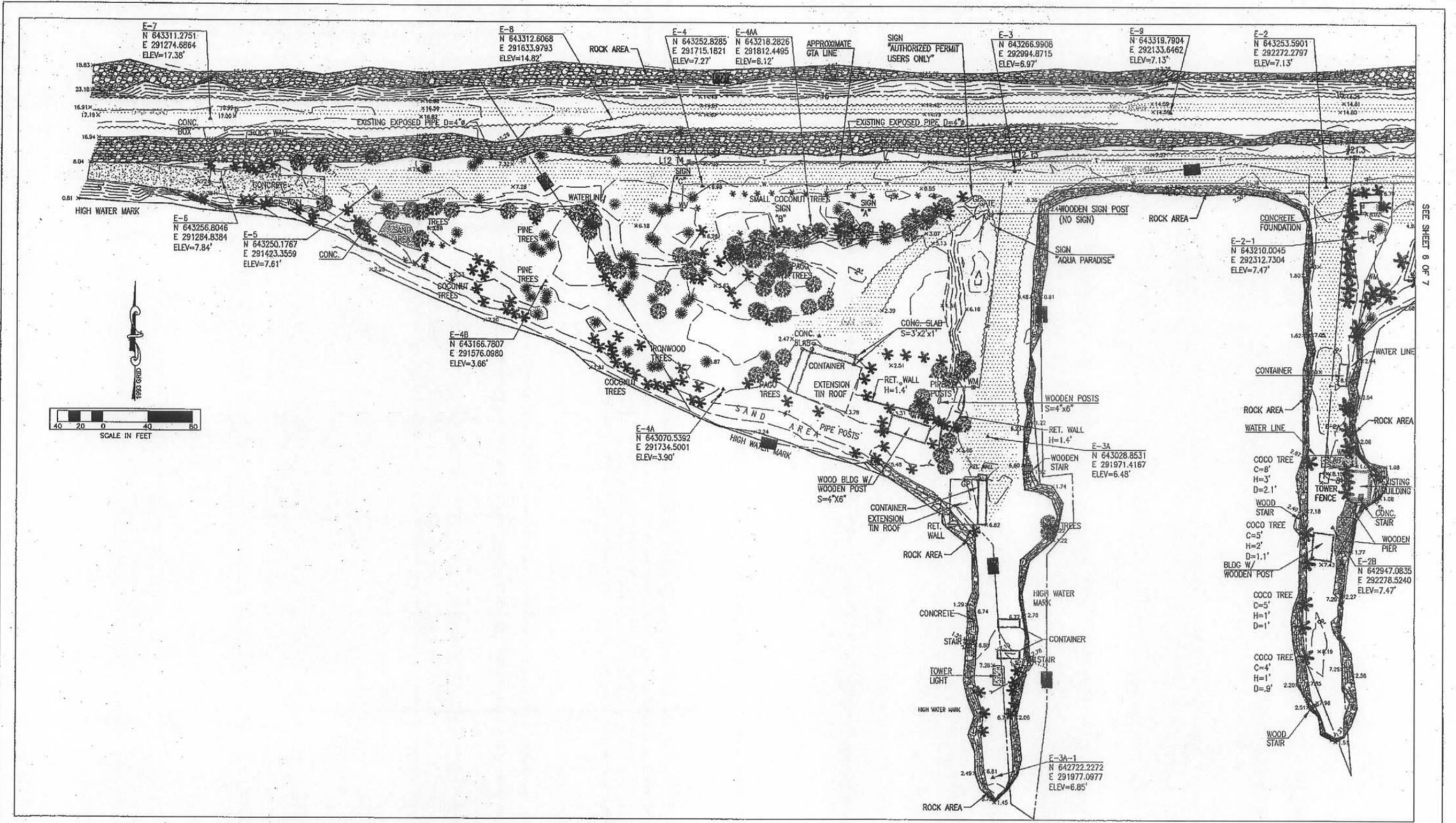
A.C.	ASPHALT CONCRETE	PAVT.	PAVEMENT
ABAND.	ABANDONED	PM	POWER METER
BB	BOTTOM BANK	RET.	RETAINING (WALL)
CLF	CHAIN LINK FENCE	S	APPROXIMATE SIZE
CM	CABLE MARKER	SMH	SEWER MANHOLE
CMU	CONCRETE MASONRY UNIT	SWL	SOLID WHITE PAVEMENT STRIPE
CONC.	CONCRETE	SYL	SOLID YELLOW PAVEMENT STRIPE
COS	CLEAN-OUT STUB	TB	TOP BANK
CP	CABLE POST	TC	TOP CURB
CPP	CONCRETE POWER POLE	TMH	TELEPHONE MANHOLE
CRB	CONCRETE CURB	TP	TELEPHONE BOX
D=	APPROXIMATE DIAMETER	TRANS.	ELECTRIC TRANSFORMER
EHH	ELECTRICAL HANDHOLE	WPP	WOODEN POWER POLE
EMH	ELECTRIC MANHOLE	WMH	WATER MANHOLE
ENCL.	ENCLOSURE	WM	WATER METER
FHY	FIRE HYDRANT	WV	WATER GATE VALVE
GP/G.P.	GUARD POST/GATE POST	YREF	YELLOW REFLECTOR
H	APPROXIMATE HEIGHT	—W—	WATER LINE
INV.	INVERT	—S—	SEWER LINE
LP	LIGHT POST	—T—	TELEPHONE LINE
		—E—	ELECTRIC LINE
		—E/T—	ELECTRIC/TELEPHONE LINE
		—P/L—	PROPERTY LINE
		—B—	CONTOUR LINE

LEGEND:

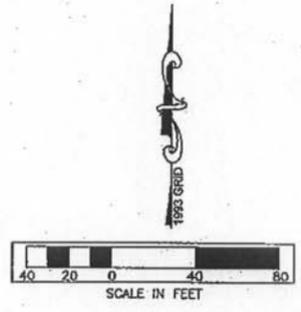
	GATE/GUARD POST		TELEPHONE BOX/PEDESTAL
	POWER POLE (CONCRETE, WOODEN)		COCONUT TREE
	LIGHT POST		PINE TREE
	SIGN		TREE
	FIRE HYDRANT		PLANT
	WATER GATE VALVE		
	WATER MANHOLE		
	WATER METER		
	GUAM GEODETIC NETWORK (GGN)		
	TRAVERSE STATION		

DRAWING REVISIONS					DESIGNER	CNB			JOSE D. LEON GUERRERO COMMERCIAL PORT OF GUAM	PORT OF GUAM EXPANSION AND MODERNIZATION PROJECT TOPOGRAPHIC SURVEY	DRAWING NO.	REF-01
REVISION	DATE	BY	DESCRIPTION		DETAILER	ADA					SHEET NO.	01
					CHECKER	GAV					TOTAL SHEETS	
					DATE	JUNE 29, 2011						

899 3RD AVENUE, SUITE 2200
 SEATTLE, WASHINGTON 98104
 PH: 206-382-6200



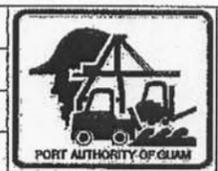
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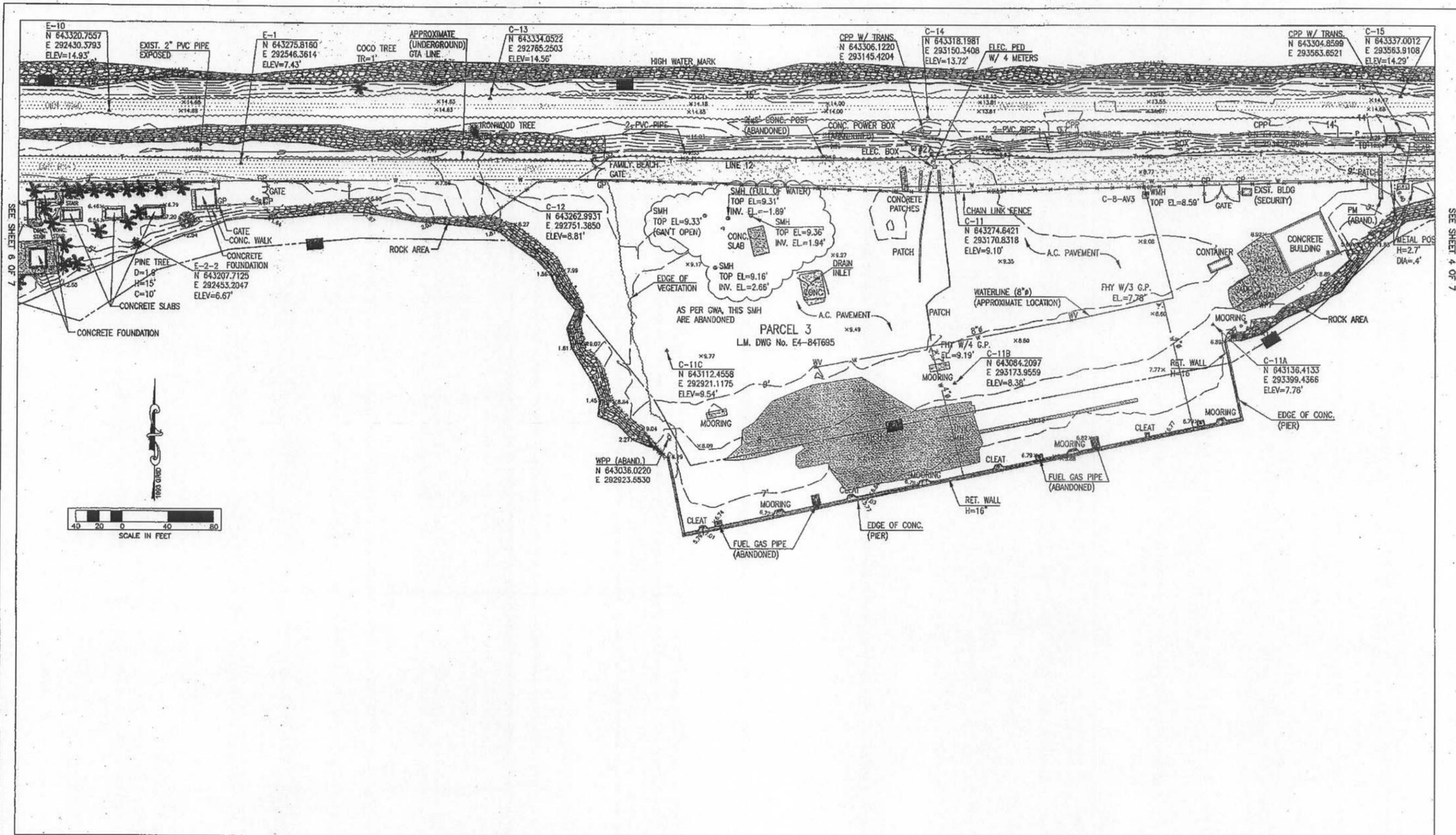
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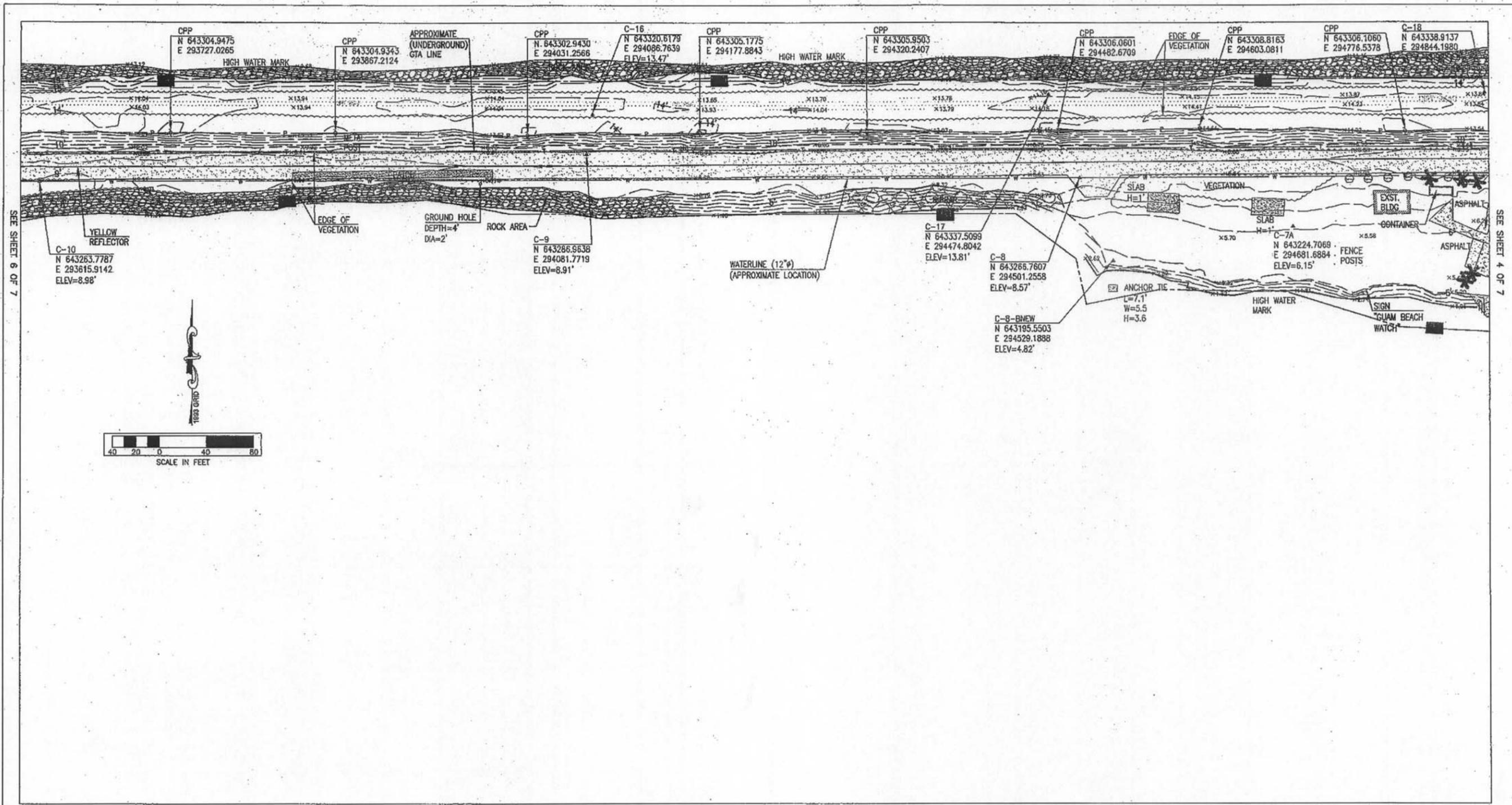
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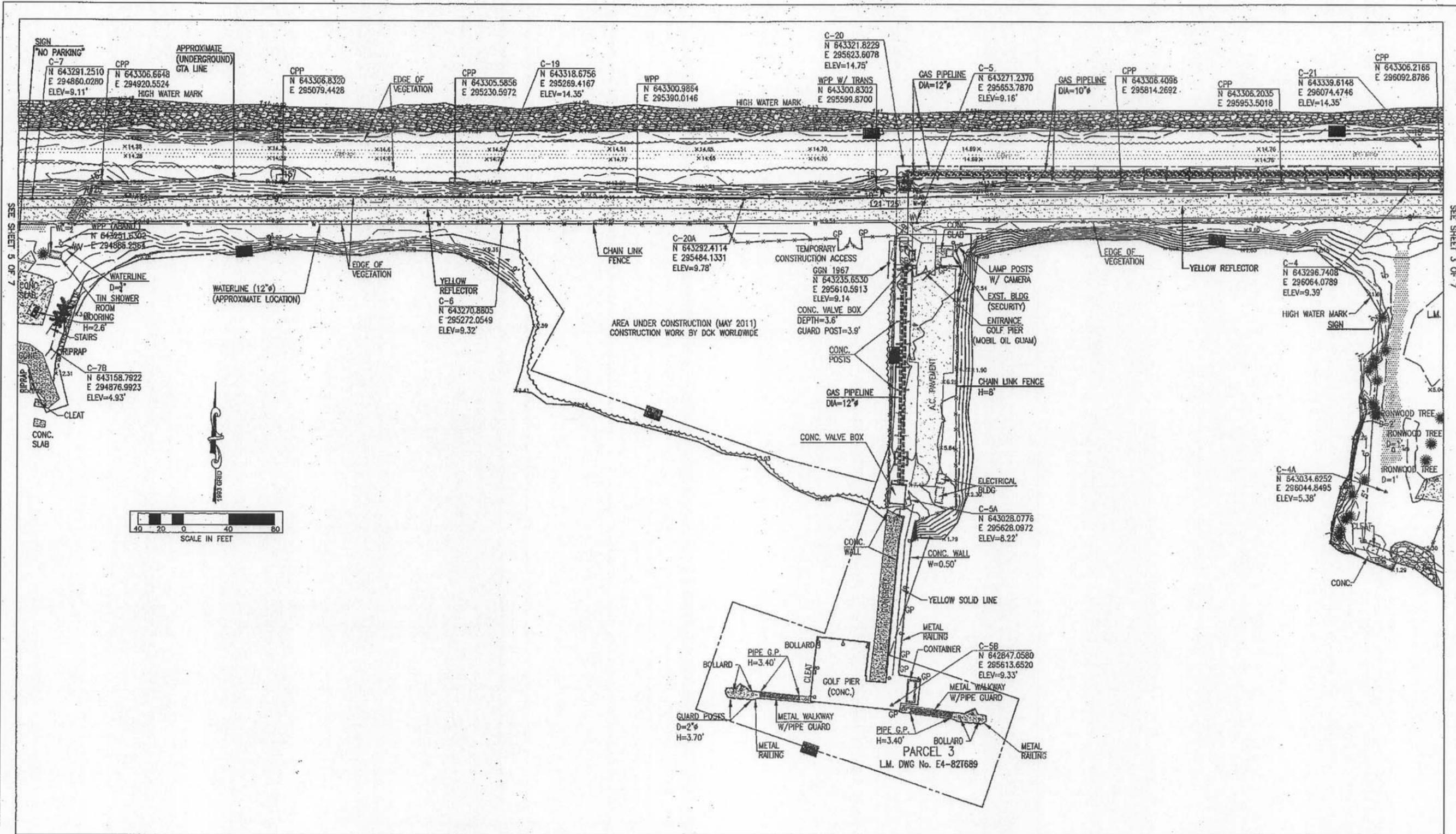
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 SHEET NO. 04
 TOTAL SHEETS

FEMA FLOODPLAIN MAP

National Flood Hazard Layer FIRMette



13°28'4.25"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- | | | |
|------------------------------------|--|--|
| SPECIAL FLOOD HAZARD AREAS | | Without Base Flood Elevation (BFE)
<i>Zone A, V, A99</i> |
| | | With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i> |
| | | Regulatory Floodway |
| OTHER AREAS OF FLOOD HAZARD | | 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i> |
| | | Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i> |
| | | Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i> |
| | | Area with Flood Risk due to Levee <i>Zone D</i> |
| OTHER AREAS | | NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i> |
| | | Effective LOMRs |
| GENERAL STRUCTURES | | Area of Undetermined Flood Hazard <i>Zone D</i> |
| | | Channel, Culvert, or Storm Sewer |
| | | Levee, Dike, or Floodwall |
| OTHER FEATURES | | 20.2 Cross Sections with 1% Annual Chance Water Surface Elevation |
| | | 17.5 Coastal Transect |
| | | Base Flood Elevation Line (BFE) |
| | | Limit of Study |
| | | Jurisdiction Boundary |
| MAP PANELS | | Coastal Transect Baseline |
| | | Profile Baseline |
| | | Hydrographic Feature |
| | | Digital Data Available |
| | | No Digital Data Available |
| | | Unmapped |
| | | The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location. |

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **12/1/2019 at 11:34:35 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

USGS The National Map: Orthoimagery, Data refreshed April, 2019.



13°27'29.26"N

144°40'59"E

