



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX**

**75 Hawthorne Street
San Francisco, CA 94105**

**Former Tanapag Naval Fuel Farm
Tanapag Village, Saipan
Commonwealth of Northern Mariana Islands**

PROJECT and EROSION CONTROL PLAN

APPLICANT and AUTHORIZED REPRESENTATIVE

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PROJECT LOCATION

Tanapag Village, Saipan, CNMI [See Figure 1]

Tank No.	Lot No.
4	011-B77
6	022-B78
10	203-E01
12	108-E02
13	108-E04
14	108-E06

PROJECT SUMMARY

The US Environmental Protection Agency (USEPA), Region 9, in cooperation with the CNMI Division of Environmental Quality (DEQ), plans to undertake a project to remove a number of the old aboveground oil storage tanks at the former Tanapag Naval Fuel Farm (TFF) in Tanapag Village, Saipan. Currently, there are 6 tanks which still contain oil and are located in a variety of locations in western Tanapag. The goal of the project is to remove the oil/sludge, contaminated water, tanks and contaminated soil in as many of the areas as funding allows. In order to conduct the work, vegetation removal and grading of each of the areas will be needed to allow access to the tanks and create an area to work in the vicinity of each of the tanks. Approximately 125,000 square feet of earthmoving will be conducted and 110,000 square feet of vegetation cleared to perform work. While it is essential to remove vegetation and perform grading, efforts will be taken to minimize impact to habitat and surrounding lands.

A number of the tanks are already surrounded by earthen berms which will serve as containment and erosion control structures during the work. In areas where there are no

earthen berms or berms have been breached, temporary erosion control measures will be utilized to prevent sediment migration. Once the tanks and associated contaminated materials have been removed, earthen berms may be leveled and graded to surrounding contours. EPA estimates that work in each tank area could be last up to two weeks. A start date has yet to be confirmed, but planning is underway. Work is anticipated to commence in the dry season, upon receipt of appropriate permits.

BACKGROUND

Based on historical information, the former TFF was built after July 8, 1944 and before March 1950. The TFF was utilized by the U.S. Navy to provide fuel for ships and aircraft during World War II through the 1950s, when the tanks were abandoned. Some residual oil was unable to be evacuated from the tanks and therefore oil was left in some of the tanks. Since the 1950s, vegetation has grown over much of the TFF area and many tanks have collapsed due to age and weather. The TFF is listed as a Defense Environmental Restoration Program - Formerly Used Defense Site (DERP-FUDS). Several previous investigations of the site have been conducted under the direction of the U.S. Army Corps of Engineers (USACE). These investigations have confirmed that oil still remains in the six tanks referenced in this permit application and some tank areas have associated soil contamination.

In order to further the cleanup of the TFF and build the capacity of the CNMI DEQ to manage environmental cleanups, USEPA is coordinating with the USACE, and CNMI DEQ to utilize limited funds to remove as many tanks and associated contamination as possible. While the former TFF includes two parcels of land; one 4.8-acre parcel near the Village of Sadog Tasi and one 96-acre parcel located near the Village of Tanapag, this project plan and earthmoving permit will only involve tanks in and around Tanapag Village. Currently, the work for this project will focus on six tank areas (tank nos. 4, 6, 10, 12, 13, 14) located near the Village of Tanapag. Based on previous reports, the six tanks originally each held up to 10,000 barrels (420,000 gallons) of Navy Special Fuel Oil (NSFO). The tanks are now located in heavily vegetated, residential areas.

PROJECT DESCRIPTION

The following tasks describe below will be conducted as part of the tank removal project. Note that each tank will be addressed individually and the list of project activities will be completed at each tank area, as necessary. When possible, and to reduce impact to project budget, activities from two different tanks may be combined. An overview of the tank locations is provided in Attachment A; Figure 1.

• Site Access and Vegetation Removal

Tank numbers 4, 6, 13, and 14 will require vegetation removal and the creation of access roads for heavy equipment to reach the tanks and begin the mitigation process. Tank numbers 10 and 12 have access roads, but they may have to be widened slightly and minimal vegetation clearance will be required. Manual means and/or heavy equipment will be employed to remove vegetation. A dozer will be utilized to grade access ways and work areas around the tanks. Green waste generated from vegetation clearing will be separated and managed utilizing the CNMI Department of Public Works (DPW) Office

of Solid Waste (OSW) green waste program. Photographs of current conditions at access road locations are provided in Attachment B.

• **Tank Removal and Metal Recycling**

An excavator or other piece of heavy equipment will be used to remove metal from the tanks. Tanks may be secured while work is ongoing. A blow torch or other metal cutting mechanism may be employed, as needed. (If a torch is utilized, the area will be void of vegetation and potential explosive vapors prior to its use. A fire plan will be developed and water source will be on site.) Oil-contaminated solids and liquids (if present) in the tank will be removed utilizing pumps, hoses, manual means, heavy equipment and other means as necessary. In order to prevent migration of oil-contaminated material, a temporary containment may be built around the tank during removal of any liquids and solids. The remaining metal will be collected, cut, decontaminated of oil/sludge and sent for recycling.

• **Municipal Solid Waste Removal**

Some of the tanks contain municipal solid waste, which has accumulated throughout the years. Municipal solid waste will be separated from other waste streams, decontaminated if necessary to remove free oil and transported to CNMI DPW's Marpi Landfill for disposal.

• **Liquids Management**

At least one tank, tank number 14, contains a significant amount of rainwater. To the extent practical, water and oil will be separated on-site. Water testing may be conducted to ensure compliance with Clean Water Act pre-treatment standards. With approval from CNMI Commonwealth Utilities Corporation (CUC), once separated, water will be discharged to Sadog Tasi waste water treatment plant. It is anticipated that approximately 50,000 gallons of water will need to be discharged.

• **Oil and Oily Sludge Waste Management**

Oil and sludge will be removed from the tanks and stored in appropriate containers on site. The material may be treated further, if necessary. Oil may be recycled/reused on-island, if possible. If oil and/or oily sludge can not be recycled on-island, it will be transported for recycling or disposal off-island to Guam or the U.S. Mainland.

• **Contaminated Soils Excavation**

At the completion of tank removal, sampling will be conducted to determine the extent of contaminated surface soils in the former tank location. If oil concentrations in soils are above safe levels for residential areas, then they will be removed using an excavator. Soils may be stockpiled in the tanks areas temporarily, but efforts will be taken to move soils off site in a timely manner. If oil-contaminated soil levels are below site-specific oil standards developed for use at a municipal solid waste landfill, excavated soil will be loaded into trucks and transported to Marpi Landfill for use as daily/ weekly cover. If necessary, soil will be treated with a nutrient mixture to facilitate natural degradation of the oil contamination.

- **Waste Characterization, Handling, Transportation and Disposal**

To the degree possible, waste materials will be removed from the site as they are generated. Samples will be taken of waste to ensure compliance with parameters that have been established in permits and inter-agency agreements. When possible, on-island resources will be utilized for transportation and disposal of waste streams. Recycling will be employed where possible. Disposal of waste streams is discussed above and will be conducted in compliance with federal laws.

- **Post-Mitigation Verification Sampling**

After tank removal and excavation has been completed, soil sampling will be conducted to verify that areas have been addressed to safe levels. Soil samples will be analyzed using field test kits on-island, but some samples will also be sent to the U.S. Mainland for analysis.

- **Restoration**

To the extent practical, impacts to the areas will be minimized. Once the tank areas have been cleaned up and sampled, excavations will be filled with local soils where need to restore grade. Existing earthen berms may be leveled to fill excavations and allow free drainage from the area. Final grading will aim to establish proper draining in the area of the tank without allowing ponding. Vegetation will be allowed to re-establish on its own.

SITE DESCRIPTION

There are 6 primary locations for the work to be performed. All vegetation removal and earthmoving will be on land. Based on available information, none of the project areas are located in designated wetlands, although some of the areas are adjacent to wetlands. Each of the areas is the site of an above ground oil storage tank which has an approximate diameter of 50 feet. Because each area was leveled prior to installation of the tank, the areas have very little grade and it is proposed that each of the tank areas area in the less than 1% category. While a few locations have easy access, a number of the locations are overgrown with vegetation and access must be created. Also, tank areas 13, 14, 4 and 6 have existing earthen berms, which will be utilized for containment and erosion control. The following are brief descriptions of each of the tank locations and proposed area of vegetation clearance/earth moving. For each of the calculations, roads are assumed to have a width of 20 feet and each calculation is rounded upwards with a ten percent factor added to the estimate. Drawings of each of the tank areas and associated work zones are provided in the attached figures.

TANK #13

This tank is located east of Chalan Pale Arnold on the property of Rufina Falig. Heavy vegetation will need to be cleared to allow access and work in tank area. An 80 foot long and 20 feet wide access road will need to be cleared of vegetation and graded to allow heavy equipment access. Vegetation will need to be cleared from an area approximately 45 feet around the tank to allow for oil and tank removal and staging for equipment. The approximate area of soil disturbance is 15,400 square feet and the approximate area of vegetation clearance is 16,700 square feet. Therefore, the percentage of vegetation clearance in the earthmoving area is 89%. Site features are depicted on Attachment A; Figure 2.

TANK #14

This tank is located east of Chalan Pale Arnold on the property of Alejandro Falig. Heavy vegetation will need to be cleared to allow access and work in tank area. A 50 foot long and 20 feet wide access road will need to be cleared of vegetation and graded to allow heavy equipment access. Vegetation will need to be cleared from an area approximately 55 feet around the tank to allow for oil and tank removal and staging for equipment. The approximate area of soil disturbance is 20,100 square feet and the approximate area of vegetation clearance is 19,100 square feet. Therefore, the percentage of vegetation clearance in the earthmoving area is 90%. Site features are depicted on Attachment A; Figure 3.

TANK #4

This tank is located southeast of Santa Remedios Road on the property of Marcelino Pangelinan, on Haraw Street. The proposed 60 feet long access route to the tank is via Santa Remedios Road and the first portion of the route is free of vegetation. The second portion of the route and the tank will need to be cleared of heavy vegetation. The access will be graded to allow heavy equipment access. Vegetation will need to be cleared from an area varying from 50 to 75 feet around the tank to allow for oil and tank removal and staging for equipment. The approximate area of soil disturbance is 24,400 square feet and the approximate area of vegetation clearance is 25,400 square feet. Therefore, the percentage of vegetation clearance in the earthmoving area is 89%. Site features are depicted on Attachment A; Figure 4.

TANK #10

This tank is located between Chalan Pale Arnold and Santa Remedios Road, at the end of Houhafey Court on the property of Cynthia Marthin. The access to this tank is provided via a driveway to the outdoor kitchen. The only vegetation which exists in this area is on the backside of the tank. Minimal soil disturbance will be required for site access. Vegetation will need to be cleared from an area approximately 15 feet around the back of the tank to allow for tank removal. The approximate area of soil disturbance is 5,100 square feet and the approximate area of vegetation clearance is 1,800 square feet. Therefore, the percentage of vegetation clearance in the earthmoving area is 32%. Site features are depicted on Attachment A; Figure 5.

TANK #6

This tank is located southeast of Santa Remedios Road off Rop Place on the property which is believed to be under the management of the Marianas Public Lands Authority (MPLA). Heavy vegetation will need to be cleared to allow access and work in tank area and access may be via adjacent private lands owned by the Naog family. The 110 foot long and 20 feet wide access road will need to be cleared of vegetation and graded to allow heavy equipment access. Vegetation will need to be cleared from an area approximately 55 feet around the tank to allow for oil and tank removal and staging for equipment. The approximate area of soil disturbance is 20,100 square feet and the approximate area of vegetation clearance is 23,850 square feet. Therefore, the

percentage of vegetation clearance in the earthmoving area is 92%. Site features are depicted on Attachment A; Figure 6.

TANK #12

This tank is located east of Chalan Pale Arnold on the property of Jemma Falig. Access to this tank area is provided by an existing dirt road/foot path. The access may need to be widened over a portion of its 140 length by a maximum of 10 feet in width. Vegetation will need to be cleared from an area approximately 55 feet around the tank to allow for oil and tank removal and staging for equipment. The approximate area of soil disturbance is 20,100 square feet and the approximate area of vegetation clearance is 19,500 square feet. Therefore, the percentage of vegetation clearance in the earthmoving area is 91%. Site features are depicted on Attachment A; Figure 7.

EROSION CONTROL MEASURES

A number of the tank areas have an existing earthen berm which will be used to provide containment for the working area and erosion control so that sediments will not migrate off site. The berm may be breached in the area of the access road to allow equipment to enter the tank area, but the breach will be minimized. If the breach is in a low lying area, the portion of the berm may be replaced, drainage diverted from the area and/or a silt fence will be utilized to address water and sediment migration off site.

The sites which do not have earthen berms will be handled in a variety of ways, depending on the site situation. A temporary earthen berm may be installed or a trench may be utilized to provide containment. The area may be lined with plastic and silt fence may be employed to address sediment migration off site. Silt fence will be installed in the ground and provided with appropriate supports. Additional erosion control measures will be determined on an as-needed basis and depending on site specifics.

VEGETATION

The table below indicates the common vegetation found around each tank sites. The names given are local names and English names for some of the trees.

Tank Site	Vegetation Around Tank
Tank #13	Tangan Tangan, Pago Tree, Kamachili Tree
Tank #14	Gagu Tree, Pago Tree, Kamachili Tree, Mango Tree, Kariso
Tank #4	Pago Tree, Kamachili Tree, Banana Plants
Tank #10	Tangan Tangan, Kariso
Tank #6	Tangan Tangan, Gagu Tree, Pago Tree, Kamachilit Tree, Kalaskas Tree, Kariso (wetland grass), Banana plants
Tank #12	Tangan Tangan, Pago Tree, Kariso

ENVIRONMENTAL IMPACT

There will be short term environmental impact during the duration of this project, but long term environmental benefits outweigh short term impacts.

Vegetation removal will have an impact to habitat, but since areas were void of vegetation when tanks were constructed and utilized, it is apparent that vegetation will re-establish itself in the impacted areas. Care will be taken to minimize footprint of impacted areas, while still allowing adequate work space for equipment and personnel. The benefit to habitat, including land-based and avian species, is paramount. Currently the oil and oily water in the tanks is accessible to wildlife, who may try to utilize the water for drinking and/or cleaning. The impact of oiling to wildlife has been a demonstrated harm and can often result in death, especially to avian species. Removal of the oil, oily water and the tanks serves as a net gain to wildlife and habitat.

During vegetation clearance, earthwork and tank removal operations there will also be other short term environmental impacts. Heavy equipment will be utilized throughout the duration of the operation. This equipment will generate noise and have some emissions associated with diesel equipment. To minimize noise and emissions, only a few pieces of equipment will be utilized on site, due to the space constraints, and all equipment will not likely be used at the same time. Operating hours for heavy equipment will be limited to daylight hours. For safety, access to work areas will be restricted and in areas where residents are directly adjacent to work areas, residents will be informed of work schedule and requested to keep children away from work zones at all times.

Although it will most likely be minimal, dust may also be generated from earth moving activities. Monitoring of dust will be conducted and if needed, water will be used for dust suppression during earthmoving activities. The oil which is contained in the tanks, is old and does not contain any light hydrocarbons, therefore emissions are expected to be limited to odor. Monitoring for volatile organic carbons (VOCs) will be conducted during oil removal operations. Worker health and safety will be addressed in a site health and safety plan.

The removal involves oil contaminated water. One of the goals of the project is to address this contaminated water. During the oil/oily water removal operations there is some potential for spills due to the difficult nature of the action. Efforts will be taken to minimize spills and all spills will be addressed. The areas may be lined with plastic to prevent spills from migrating into soils. In addition, the work areas will be bermed or trenched to contain any liquids on site. Accomplishing this work on site will prevent any future discharges of oil.

PROJECT SCHEDULE

This project will be conducted in the dry season in 2006, although an exact date has yet to be set. It is anticipated that work in each tank area could take up to two weeks. Each tank will be addressed individually, although some tasks, such as sampling and excavation may be ongoing at the same time. Some areas may take longer (or shorter) than the projected time. If funding allows, all six tank areas will be addressed and the project could take up to ten weeks to complete.

ATTACHMENT A

Figures





**Figure 1: Site Location Map
Tanapag Tank Farm
Tanapag Village, Saipan, CNMI**



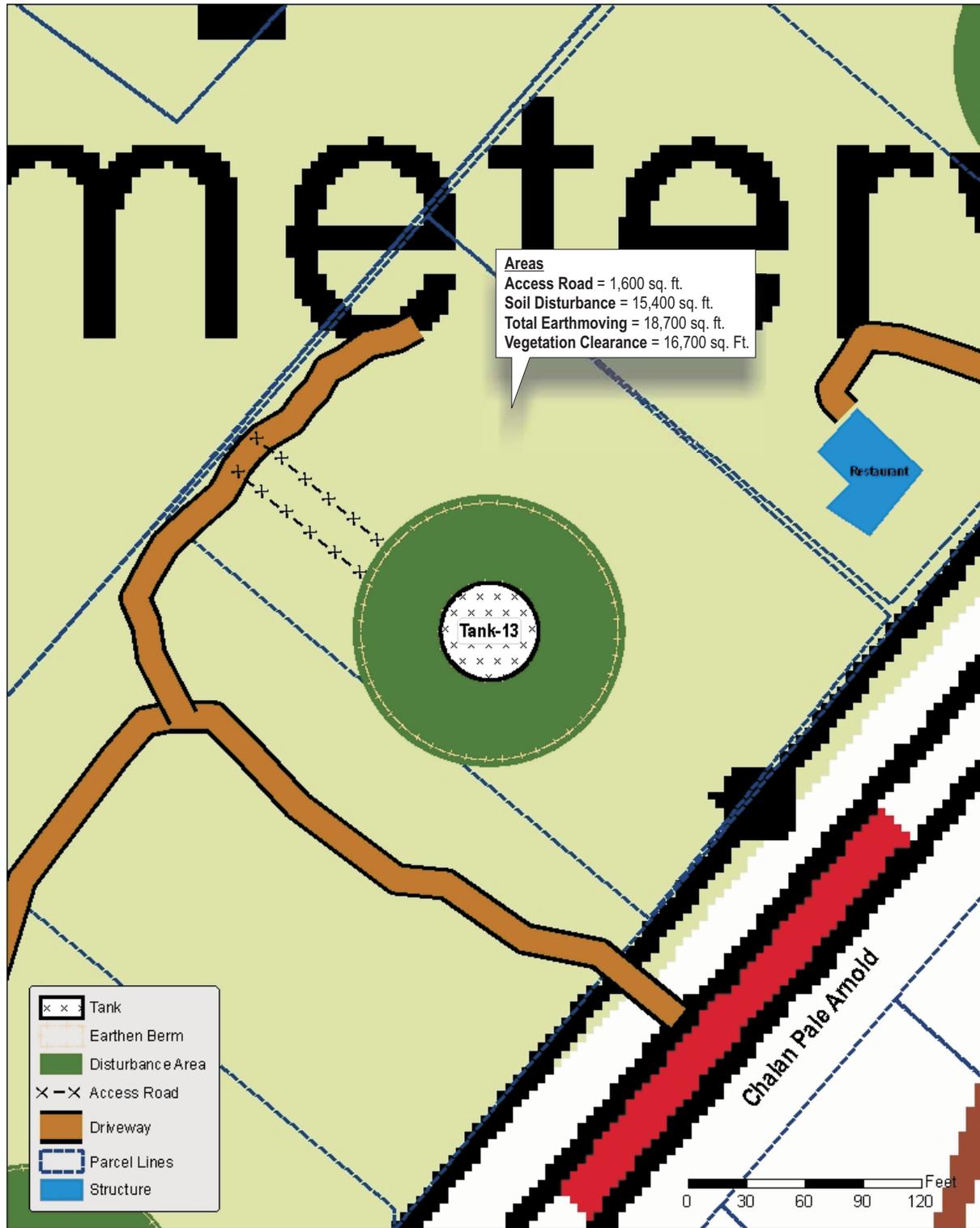
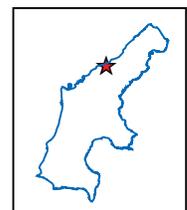
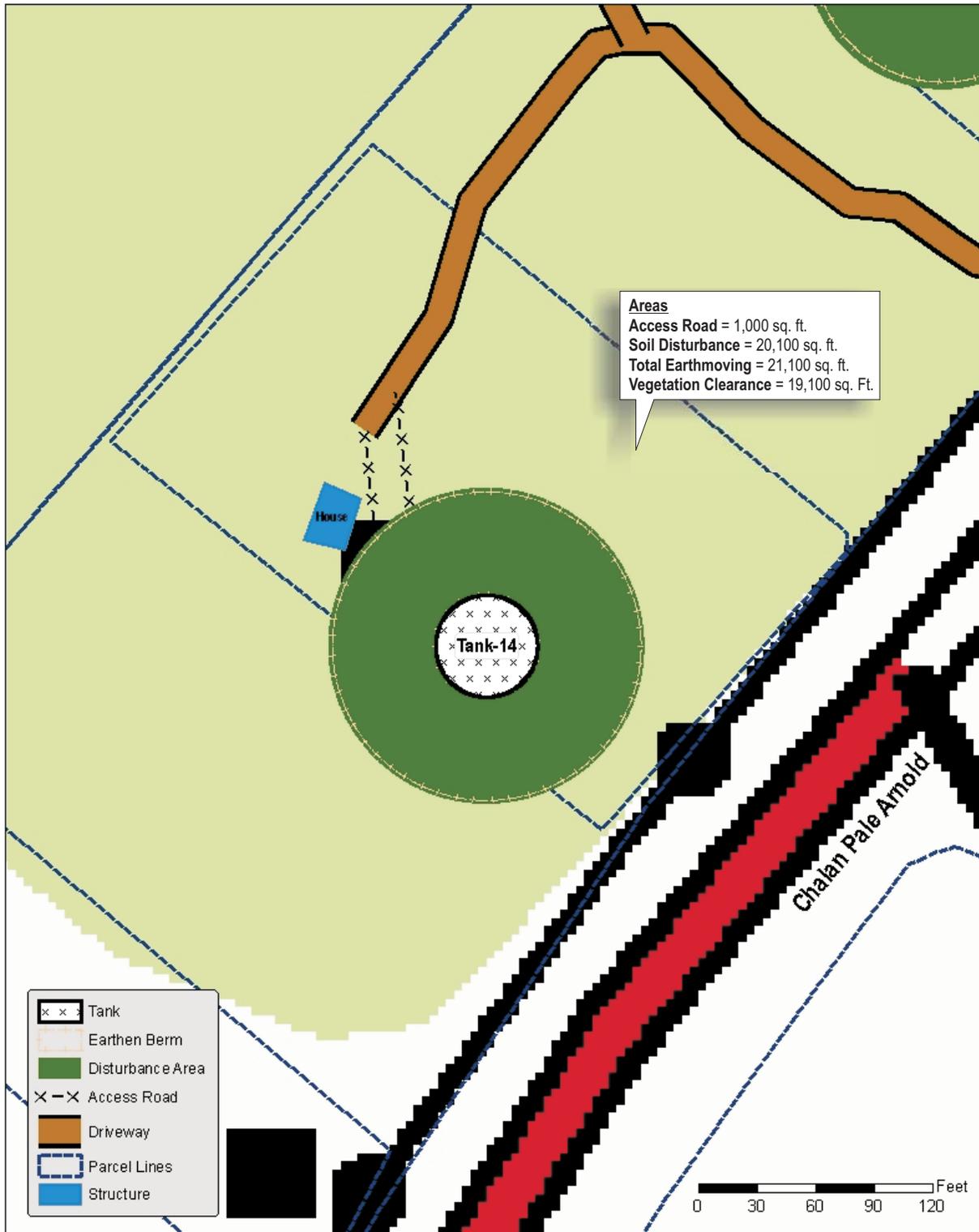
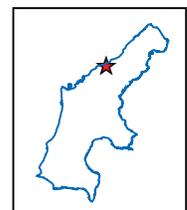


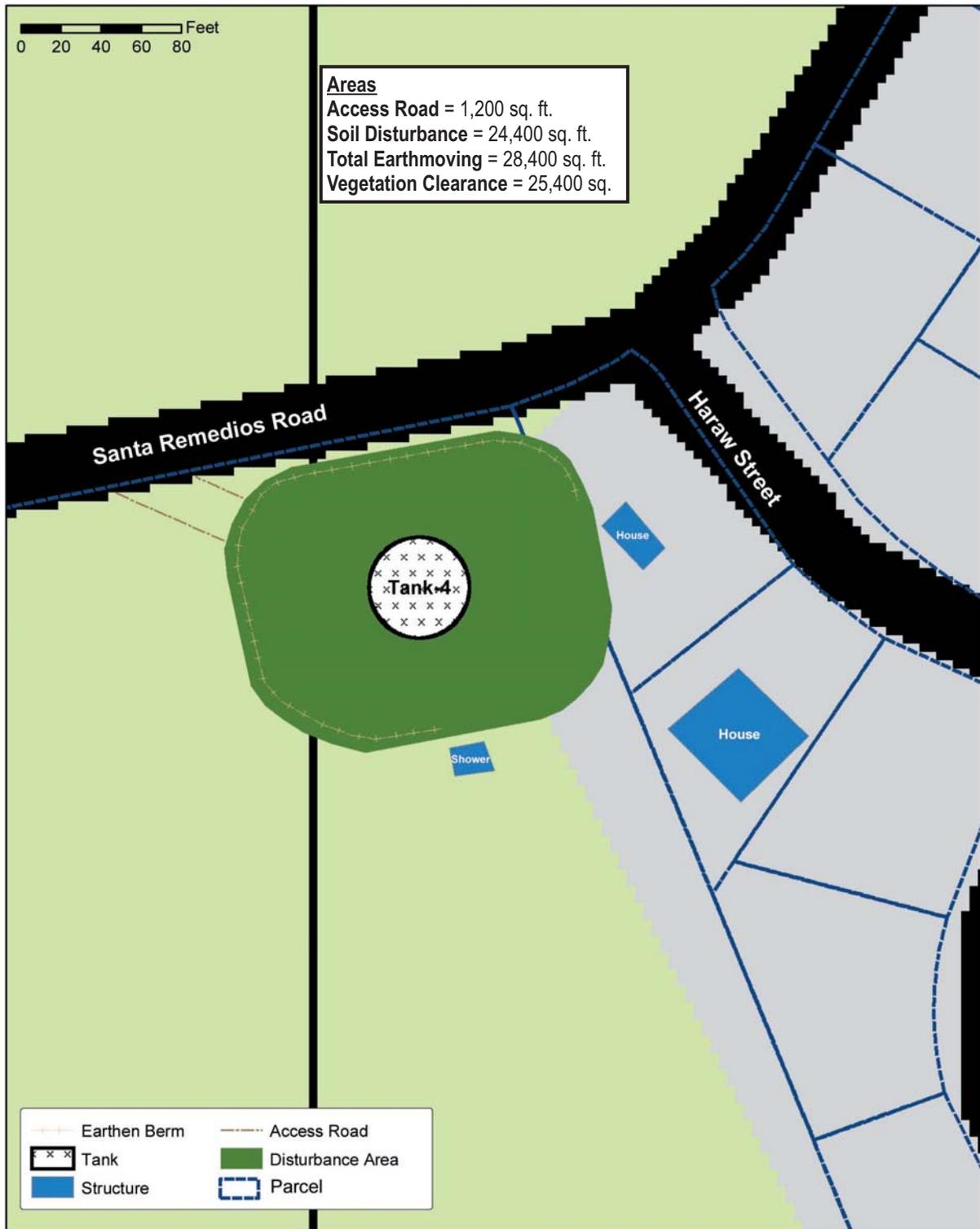
Figure 2: Tank 13
Tanapag Tank Farm
Tanapag Village, Saipan, CNMI





**Figure 3: Tank 14
Tanapag Tank Farm
Tanapag Village, Saipan, CNMI**





**Figure 4: Tank 4
Tanapag Tank Farm
Tanapag Village, Saipan, CNMI**



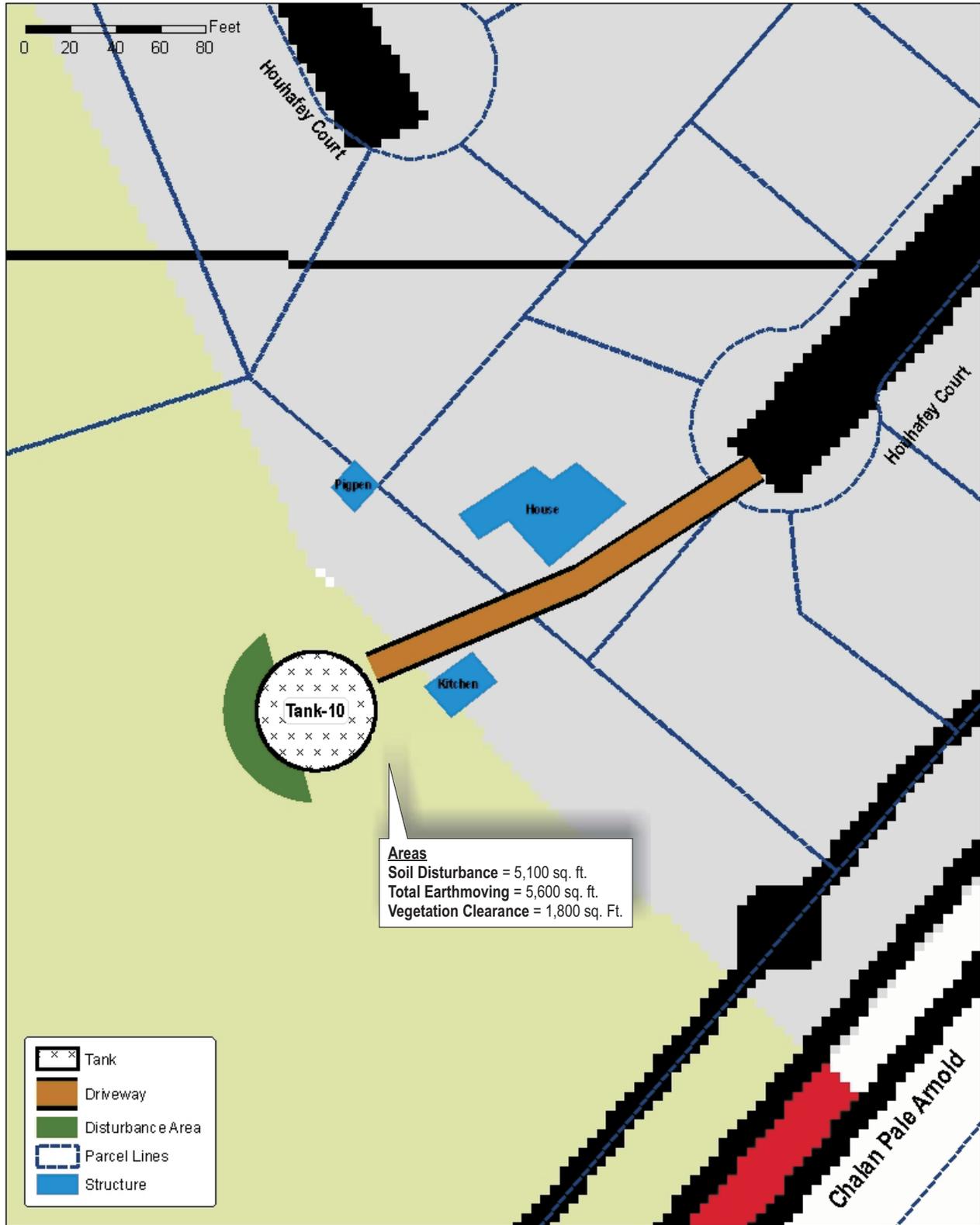
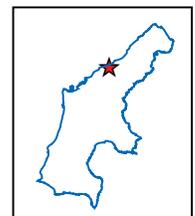
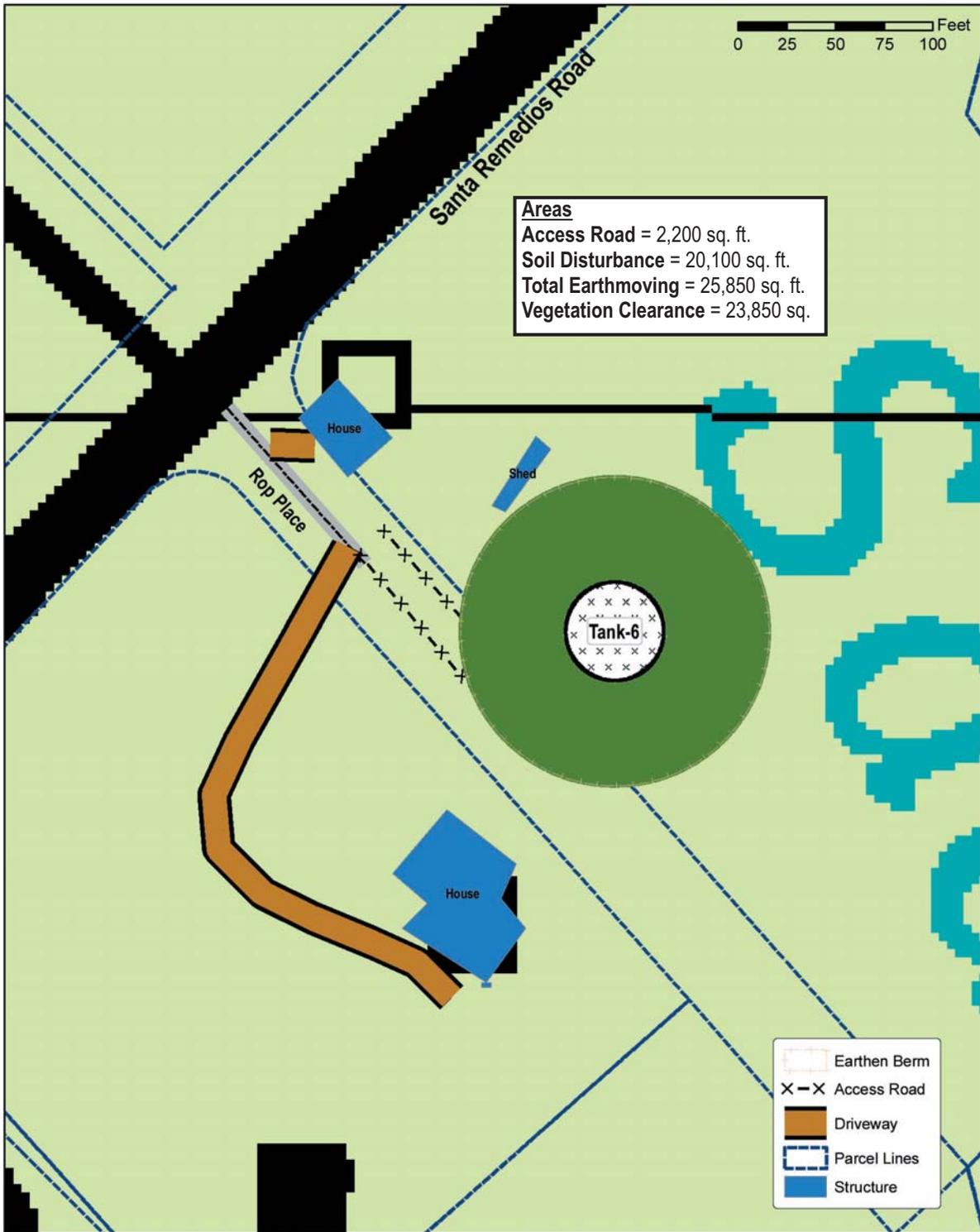


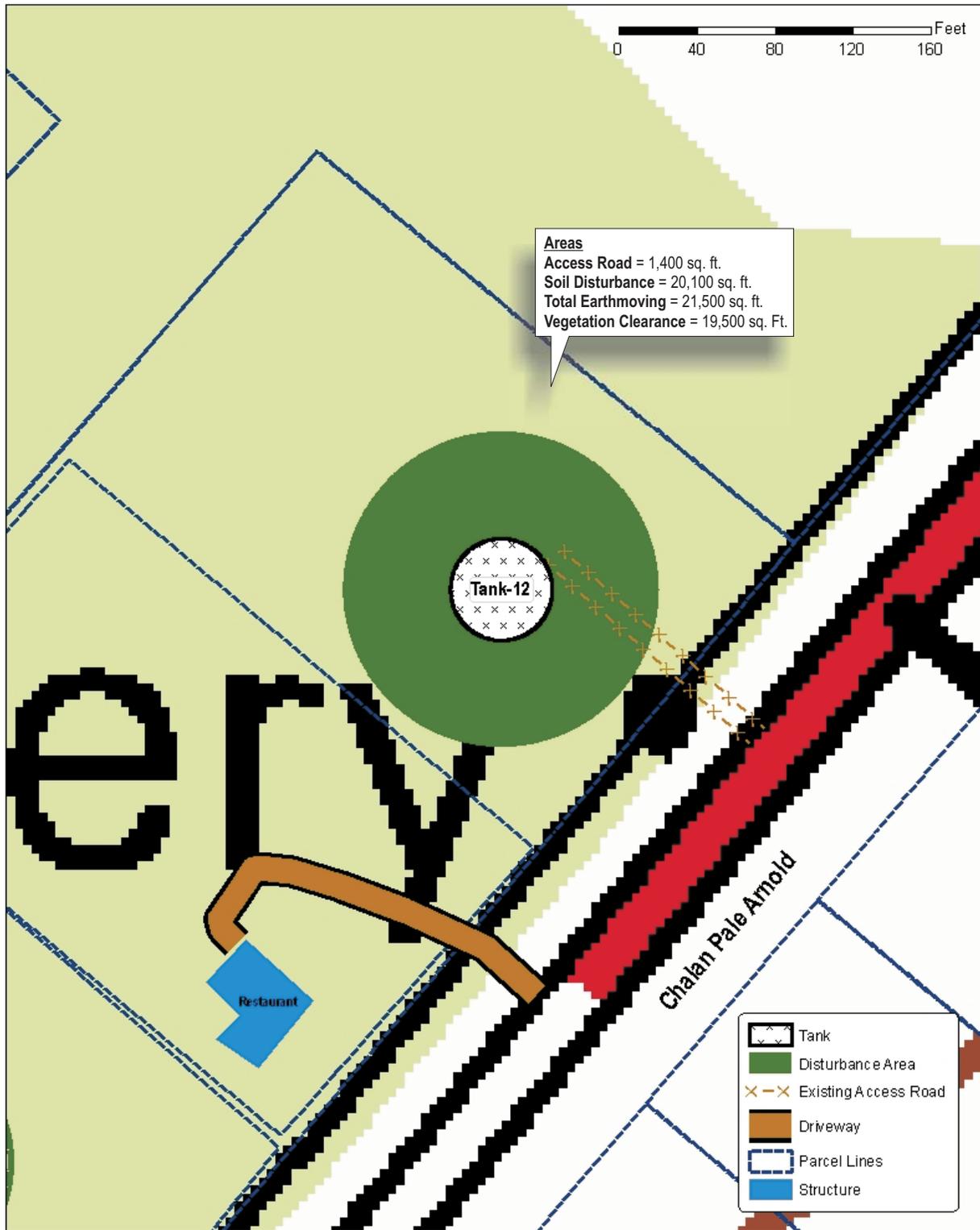
Figure 5: Tank 10
Tanapag Tank Farm
Tanapag Village, Saipan, CNMI



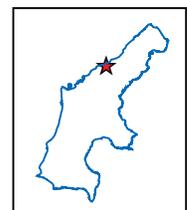


**Figure 6: Tank 6
Tanapag Tank Farm
Tanapag Village, Saipan, CNMI**





**Figure 7: Tank 12
Tanapag Tank Farm
Tanapag Village, Saipan, CNMI**



ATTACHMENT B

Photographs



Tanapag Fuel Farm
Tanapag Village, Saipan, CNMI

TDD No. 09-05-08-0002

E&E Project No. 0582.01RA



PHOTO 1

Tank Number: 13

Direction: Northeast

Photographer: CNMI DEQ

Description: View facing northeast of driveway curve. Access to Tank 13 is in the background along the line of telephone poles.



PHOTO 2

Tank Number: 14

Direction: Southwest

Photographer: CNMI DEQ

Description: View facing southwest of driveway to house near Tank 14. Access to tank is to the left of the photo.



PHOTO 3

Tank Number: 4

Direction: Southeast

Photographer: CNMI DEQ

Description: Access road location off of Santa Remedios Road.

Tanapag Fuel Farm
Tanapag Village, Saipan, CNMI

TDD No. 09-05-08-0002

E&E Project No. 0582.01RA



PHOTO 4

Tank Number: 10

Direction: West/ Southwest

Photographer: CNMI DEQ

Description: View of access to Tank 10. House is on right of photograph. Outdoor kitchen is in the background on the left of the photograph.



PHOTO 5

Tank Number: 6

Direction: Northeast

Photographer: CNMI DEQ

Description: View of future access road location.



PHOTO 6

Tank Number: 6

Direction: North/ Northeast

Photographer: CNMI DEQ

Description: Alternate view of access road location.

Tanapag Fuel Farm
Tanapag Village, Saipan, CNMI

TDD No. 09-05-08-0002

E&E Project No. 0582.01RA



PHOTO 7

Tank Number: 12

Direction: North/ Northwest

Photographer: CNMI DEQ

Description: View of the entrance to the access road just before the guardrail. Rust-colored tank 12 is visible through tops of trees in background.



PHOTO 8

Tank Number: 12

Direction: West/ Northwest

Photographer: CNMI DEQ

Description: View of narrow access road to Tank 12. Rusty-brown top of metal at Tank 12 is visible in the background.