

Basis of Design Report

for

Demolition and Disposal of Groundwater Operable Unit Treatment System

**Tanks 53 and 56, Tank Farm 5
Naval Station Newport
Newport, Rhode Island**



**Naval Facilities Engineering Command
Mid-Atlantic**

Contract Number N62467-04-D-0055

Contract Task Order 459

January 2008



TETRA TECH



TETRA TECH

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Project Number G00989

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Reference CLEAN Contract No N62467-04-D-0055
Contract Task Order (CTO) No 459

Subject Basis of Design Report for Demolition and Disposal of Groundwater OU Treatment System
Tanks 53 and 56, Tank Farm 5
Naval Station Newport, Newport, Rhode Island

Dear Mr Colter

Enclosed for submittal are one paper copy and two CD's of the draft Basis of Design Report for Demolition and Disposal of the Groundwater OU Treatment System, Tanks 53 and 56, Tank Farm 5 at Naval Station Newport.

In accordance with the task order, copies of this report have been provided to the persons on the distribution list below for their records. If you have any questions regarding this material, please do not hesitate to contact me

Very truly yours,


James R Forrelli, P E
Project Manager

JRF/rac

Enclosures

- c R Lim, USEPA (w/encl - 2 paper, 2 CD)
- P Kulpa, RIDEM (w/encl. - 2 paper, 2 CD)
- C Mueller, NAVSTA (w/encl - 1 paper, 1 CD)
- R Krivinkas, FEAD Newport (w/encl. - 1 paper, 1 CD)
- NAVSTA RAB (c/o C. Mueller w/encl - 4 CD)
- P Loht, Gannett Fleming (w/encl - 1 paper, 2 CD)
- J Trepanowski, TtNUS (w/encl - 1 CD)
- G Glenn, TtNUS (w/o encl)
- (S Parker, TtNUS (w/encl - 1 paper)
- File G00989-3 2 (w/o encl)/G00989-8 0 (w/enc 1 paper, 1 CD)

BASIS OF DESIGN REPORT
FOR
DEMOLITION AND DISPOSAL OF GROUNDWATER
OPERABLE UNIT TREATMENT SYSTEM
TANKS 53 AND 56, TANK FARM 5
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND
COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION - NAVY (CLEAN) CONTRACT

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Contract Number N62467-04-D-0055
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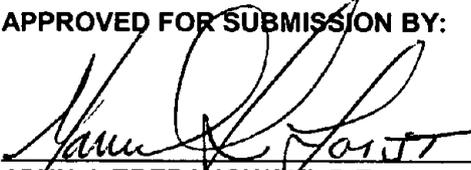

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1.0 INTRODUCTION

This Basis of Design (BOD) Report has been prepared to support the development a demolition and disposal design and Request for Proposal (RFP) package for the Groundwater Operable Unit (OU), Tanks 53 and 56, Tank Farm 5, Naval Station (NAVSTA) Newport (Project Location (Figure 1-1)). The BOD Report has been prepared Tetra Tech NUS, Inc. (TtNUS) under the Comprehensive Long-Term Environmental Action Navy (CLEAN IV) Contract No. N62472-04-D-0055 pursuant to Contract Task Order (CTO) 459.

1.1 SCOPE

The objective of this project is to prepare a demolition design and RFP package to be used by the Navy for Environmental Multiple Award Contact (EMAC) competitive bidding for a fixed price contract for demolition and disposal of the treatment system and related structures at the Tank Farm 5 Groundwater Operable Unit. The demolition design will outline the demolition strategy that will be used in removing, segregating and disposing of the groundwater treatment system equipment, modules and structures and site restoration. The scope also includes preparing a construction estimate for the anticipated demolition contractor costs to complete the work outlined in the RFP.

1.2 REPORT ORGANIZATION

This BOD report provides pertinent background information, identifies structures and equipment to be demolished and removed for disposal, recycling, reuse, or resale and related requirements. It discusses materials management, design assumptions, construction activities and health and safety requirements. It is divided into six sections, with tables and figures presented following the text. The sections include: Introduction, Background Information, Materials Management, Work Description and Design Assumptions, Construction Activities, and Health and Safety Considerations.

Appendix A presents reports for site visits made to the facility, and Appendix B presents photo-documentation of the current treatment system conditions. Lastly, copies of select construction drawings with "as-built" markup are provided in Appendix C.

2.0 BACKGROUND INFORMATION

This section details the Tank Farm 5 Groundwater OU treatment system location and access, the facility background, design, and construction, provides a description of the facility, and an operations history.

2.1 LOCATION AND ACCESS

NAVSTA Newport is located in the towns of Newport, Middletown and Portsmouth, Rhode Island. The Groundwater OU treatment system is situated in the southwest area of Tank Farm 5 near former Underground Storage Tanks 53 and 56 and adjacent to the Naval Fire Fighting School on Defense Highway in Middletown, Rhode Island. The system is made up of a building housing the treatment process units, two lines of extraction wells, extraction well collection piping, and an effluent discharge line. The area where the treatment building is situated is surrounded by an 8-foot high chain-link fence and access is gained through a vehicle gate facing the Naval Fire Fighting School (Figure 2-1).

2.2 FACILITY BACKGROUND, DESIGN, AND CONSTRUCTION

Tank Farm 5 was constructed between 1942 and 1943, and used for fuel oil storage from World War II to 1974. With the exception of Tanks 53 and 56, the tank farm was abandoned by 1974. In 1975, Tanks 53 and 56 were used for waste oil storage as part of an oil recovery and recycling program. In 1982 the Rhode Island Department of Environmental Management (RIDEM) adopted hazardous waste regulations applicable to the waste oils in Tanks 53 and 56. Sampling of the tank contents in 1983 revealed the oil phase in both tanks was classified as hazardous due to elevated concentrations of lead and that the sludge layer in both tanks was hazardous due to the presence of elevated concentrations of lead, cadmium, chromium, barium, mercury and silver. The water in Tank 56 was found to contain dissolved hydrocarbon compounds. Groundwater sampling near both tanks in 1985 revealed the presence of chlorinated and aromatic hydrocarbons, and metals. In 1985, RIDEM issued a hazardous waste facility permit requiring the removal and closure of Tanks 53 and 56.

As a result of these findings and additional investigation, the Navy implemented an interim remedial action to contain groundwater contamination in the vicinity of Tanks 53 and 56 and to prevent it from migrating toward Narragansett Bay. The containment action included the extraction of contaminated groundwater, treatment on site and discharge to the local sanitary sewer. The Navy contractor, TRC Environmental Corporation, completed the design for the groundwater treatment system in 1993. Construction of the system was completed in December 1994.

In accordance with the 1992 Record of Decision (ROD), the groundwater treatment system process consisted of an inorganic treatment for removal of dissolved metals followed by an organic treatment for removal of VOCs. Dissolved metals were removed using a coagulation/filtration process to meet discharge standards and so that metals did not interfere with subsequent treatment. Metal removal was accomplished by adding sodium hydroxide to raise the pH to 8.5 to decrease metals solubility followed by addition of cationic coagulant, anionic flocculant, and hydrogen peroxide to precipitate metals out of solution. The precipitate and settleable solids were removed in a clarifier tank. Remaining metals were removed by passing through pressure filters. Following filtration, sulfuric acid was added to lower the pH and the flow was injected with an oxidant (hydrogen peroxide) and pumped to a reactor exposing it to ultraviolet (UV) light to destroy VOCs. Finally the flow was polished by passing it through a granular activated carbon (GAC) adsorption media before discharge of the treated water by gravity flow to the Newport publicly owned treatment works (POTW) via the NAVSTA Newport sanitary sewer system (TRC, 1993).

Off-line systems consisted of a sludge thickener tank to receive the clarifier bottom sludge and filter backwash water, and a filter press to dewater the sludge from the sludge thickener tank. In addition, chemical feed systems were installed for sodium hydroxide, cationic coagulant, anionic flocculant, sulfuric acid and hydrogen peroxide. The hydrogen peroxide storage tank was located outside of the treatment building.

Remediation of soil contamination at Tanks 53 and 56 was addressed under Resource Conservation and Recovery Act (RCRA) tank closure activities. In later actions, the tanks were demolished by collapsing the roofs and backfilling with soil.

2.3 FACILITY DESCRIPTION

The treatment system facility system consists of thirteen extraction wells and a treatment process housed in a 32-foot by 76-foot metal building. Two sets of 4-inch diameter extraction wells were installed northwest of the treatment system. The first set of extraction wells (EW-9 through EW-13) is located approximately 60 to 70 feet northwest of Tank 53 and a second set (EW-1 through EW-8) is located approximately 280 feet northwest of Tank 53. The screened interval extends from the unconsolidated overburden into the fractured bedrock to a depth of greater than 100 feet. The extraction well screens are stainless steel.

The 50-gallon per minute (gpm) treatment process was installed with the following major components

- Groundwater collection tank,

- Treatment equipment including transfer pumps, coagulation, flocculant and caustic injection, flocculator/coagulator and storage tank;
- Filtration equipment, including transfer pumps, filter components, a storage tank with acid feed, oxidation component and an activated carbon tank,
- Pumps and piping associated with the effluent discharge,
- Waste stream process equipment, including sludge pumps, thickener and decanter tanks, recycle pump, and filter press with compressed air source;
- Various related utility and support equipment and structures (electrical, sanitation and potable water connections, fencing, building, office, and storage equipment, oil-fired heater and related storage tanks and contents)

Copies of the following as-built drawings related to the building, extraction system, process equipment and electrical system are provided in Appendix C for informational purposes:

- C-2 General Site Plan
- C-4 Groundwater Extraction Details
- A-1 Treatment Building Elevations
- A-2 Building Floor Plan
- A-3 Treatment Building Details
- E-3 Distribution Riser Diagram & Details (electrical controls)

2.4 OPERATIONS HISTORY

Construction of the system was completed in December 1994 and system startup commenced on February 28, 1995. After almost 22 months of operation the system was shut down in December 1996 because influent contaminant levels were lower than the groundwater clean up levels (FWENC, 1997). The system has not been used to treat groundwater since that time

In 1999, the Navy imploded Tanks 53 and 56 along with the other tanks at Tank Farm 5. In May 2001, a Navy contractor constructed a temporary lined, holding pond in the footprint of former Tank 53 to store sediment dredged from the McAllister Point Landfill Site. The treatment system was modified to treat water that drained from the sediment (mostly generated during rainfall events). After the sediment removal project was completed, the holding pond and drainage collection system was removed.

The groundwater extraction and treatment system has remained inactive since the sediment drainage water treatment activity. In late 2003/early 2004, the Navy performed various housekeeping activities at the facility including vegetation removal, construction materials removal, tank cleaning and chemical

disposal During this activity, above ground tanks were checked for residual solids and/or liquids The residual solids and liquids were removed and disposed of at approved facilities and the tanks were cleaned In addition, all chemicals, including treatment and lab chemicals stored at the treatment building were containerized and disposed of at approved facilities (TtFW, 2004)

The treatment building is currently used by other Navy contractors as a staging area for activities unrelated to the treatment system. Items located inside the perimeter fence include an office trailer (located within approximately 20 feet of the southern side of the treatment building), two portable toilets, a dumpster, and three piles of hay bales. The building is used for storage of miscellaneous equipment and material

2.5 RECORDS REVIEW AND SITE VISITS

TtNUS personnel visited the Tanks 53 and 56 site on September 25 and 26, 2007 and on October 10, 2007 The purpose of the visits were to review NAVSTA files for pertinent information, to inspect and evaluate the condition of the equipment and structures at the treatment system, and to discuss disposal and/or resale alternatives with NAVSTA Newport and Defense Reutilization and Marketing Office (DRMO) representatives The site visit reports are provided in Appendix A Site photographs are provided in Appendix B

During the site visits items not related to the treatment system were observed inside the perimeter fence, including an office trailer (located within approximately 20 feet of the southern side of the treatment building), two portable toilets, a dumpster, and three piles of hay bales The treatment building is presently being used to store various materials (equipment and consumables) not related to the treatment system operations These items include ladders, safety equipment, caution fencing, and environmental sampling equipment Also in storage is a portable radiation detector unit (not part of the groundwater treatment system) that the Navy has asked DRMO to take custody of

In addition, four drums with radiation hazard labeling are currently stored in the treatment building, near the filter press. Three of the drums are 55-gallon size, while the fourth is approximately 30-gallon size NAVSTA Newport reports that these drums contain low level radioactive waste and is making arrangements for their removal from the treatment building

3.0 MATERIALS MANAGEMENT

This section presents the materials management options for the groundwater treatment system demolition. The system will be dismantled and demolished in a systematic manner to recover equipment and materials for cost-effective re-use or recycling before disposal is performed. Underground components (utilities and wells) will be abandoned in place. The options discussed include:

- Reuse and/or resale,
- Abandonment in place,
- Recycle through approved facilities, and
- Disposal at approved facilities.

Except for the components specifically identified for reuse or resale through the DRMO and abandonment in place, the disposition of all other equipment and materials will be determined by the demolition contractor. The demolition contractor will be required to submit a Materials Management Plan to document the disposition of all anticipated materials generated by the demolition process. In addition to the materials disposition, the Material Management Plan will identify sampling and analytical procedures for the characterization, if necessary, of all materials to be transported off site. Equipment and materials currently stored at the treatment building and not related to the system will be removed through other arrangements made by the Navy and are not addressed in this report.

3.1 REUSE OR RESALE

Certain treatment system components were identified for potential reuse or resale through the DRMO or reuse through the demolition contract. During the site visit to the facility on October 10, 2007 (Appendix A), the DRMO representative identified equipment items, listed in Section 4.1.1, that will be turned over to the Navy DRMO program for reuse or resale.

To prepare equipment for release to the DRMO all piping and wiring will be disconnected at the unit and the anchor floor bolts will be removed. The equipment will be staged at a location accessible for pickup. A forklift or other equipment must be available for loading the item onto the DRMO truck. Prior to DRMO taking custody, the equipment may be relocated for temporary storage at NAVSTA Newport. In addition, all contact treatment process units must be certified clean, with the certification paperwork for attachment to the DRMO Form 1348 for the individual equipment. According to the 2004 removal action letter report, visible liquids and solids were removed from treatment process units and were disposed off site, however, a complete decontamination was not performed. Therefore, prior to release for off site reuse or resale the

contact process units will be decontaminated and a certificate of decontamination will be prepared to document the procedure and any confirmation sampling results.

Other components that could be potentially reused include the treatment building itself, which could be dismantled and erected at another site, and the polyethylene process tanks. Prior to disposition of polyethylene tanks or any other treatment process equipment for reuse, such items must be decontaminated and certified as not containing hazardous waste by the demolition contractor.

3.2 ABANDONMENT IN PLACE

Components to be abandoned in place included extraction wells, buried piping, and wiring conduit. Buried utilities will be abandoned in place in accordance with procedures specified by NAVSTA Newport Public Works and other local utilities. The following components will be abandoned in place:

- Thirteen extraction wells,
- Approximately 290 feet of 1½-inch copper water service line,
- Approximately 725 feet of 2-inch polyethylene (PE) extraction well collection pipe, and
- Underground conduit for all power and control wiring.

3.3 RECYCLE

Construction and demolition (C&D) waste resulting from the treatment building demolition may be recycled after processing. Recyclable C&D waste includes, but is not limited to building foundation concrete, the metal building components (roofing, siding, structural metal), insulation, wire and asphalt. These materials will be recycled at off-site salvage/recycling facilities, as appropriate, as identified in the demolition contractor's Materials Management Plan. All recyclable metals will be segregated on-site by type (steel, iron, iron, copper, aluminum, etc.) and delivered to the NAVSTA Newport scrap yard (Building 47) for recycling.

The Contractor will be required to submit bills of lading and other appropriate shipping and disposal documents for the handling of wastes to the Navy a minimum of 5 days prior to shipping the wastes off-site. All transportation documentation will be submitted to the Navy for review, approval, and signature prior to shipment.

3.4 DISPOSAL

C&D waste materials that cannot be diverted for recycling or beneficial use will be disposed at off-site solid waste disposal facilities or hazardous waste disposal facilities, as appropriate, as identified in the contractor's Materials Management Plan. These materials include electrical equipment and fixtures, PVC piping and fittings, and miscellaneous polyethylene process tanks. Overhead fluorescent lights contain mercury and must be disposed of offsite at an approved disposal facility. In addition, waste to be disposed off site includes fluids generated during the cleaning and decontamination of various components, including process related items. The Material Management Plan will identify sampling procedures for the characterization of all C&D waste to be transported off site.

Based on the construction date of the building and system, no asbestos-containing materials (ACM), lead-based paint, or PCB ballasts were used in the groundwater treatment system construction. During the demolition design phase, the contractor will conduct an inspection to identify if any of these regulated materials is present. If encountered, the contractor will revise demolition plans as needed to comply with the applicable regulation(s).

The characterization and off-site disposal of waste must be approved by TtNUS and the Navy prior to off-site transport. All laboratory testing shall meet the licensing requirements of facilities that may accept the waste. In addition, the transporters that convey the waste and the off-site disposal facility(ies) that will receive the wastes under this subcontract must be pre-approved by the Navy. The off-site disposal of hazardous substances must comply with the CERCLA Off-site Rule (EPA OSWER Directive No. 9834.11, October 22, 1993), which establishes criteria for selecting an appropriate treatment, storage, or disposal facility, and prohibits the use of a RCRA facility for off-site management of Superfund hazardous substances if the facility has significant RCRA violations. The contractor will provide all transport manifests and bills of lading, waste disposal documentation, and any other relevant project documentation within 10 days of completion of work.

4.0 WORK DESCRIPTION AND DESIGN ASSUMPTIONS

This section describes the groundwater treatment system demolition process and the design assumptions regarding the work sequence and the major components based on available information. Actual material disposition may change based on the Contractor's Material Management Plan

4.1 DEMOLITION SEQUENCE

The anticipated system demolition sequence is as follows.

- 1 Locate, disconnect, and seal utilities with exception of temporary services required to support demolition activities
- 2 Locate, mark, and protect monitoring wells*
- 3 Remove vegetation in work areas, establish treatment equipment and material staging areas, including a 6 to 8 months DRMO-designated equipment staging area, and install site erosion and sedimentation controls
- 4 Set up equipment and materials decontamination station with wash down area, waste water containment and storage areas
- 5 Prepare and remove equipment for DRMO reuse or resale
- 6 Move DRMO-designated equipment to staging area for future pick up by DRMO
- 7 Dismantle, segregate and stage electrical and instrumentation equipment
- 8 Dismantle, segregate and stage remaining treatment process components
- 9 Remove heating oil tank and heating system
- 10 Dismantle, segregate and stage ancillary components (plumbing, ventilation, fencing, lighting etc.)
- 11 Dismantle building roofing and sidewall panels
- 12 Remove building concrete slab and foundation and asphalt parking area
- 13 Abandon extraction well collection pipe and the effluent gravity discharge line
- 14 Abandon extraction wells
- 15 Restore site with exception of DRMO staging area
- 16 Load DRMO equipment from DRMO equipment staging area
- 17 Close and restore DRMO equipment staging area

* Monitoring wells in the Tanks 53 and 56 Groundwater OU monitoring network may be required for the future Tank Farm 5 groundwater assessment. When the wells required for future groundwater sampling are identified by the Navy, remaining wells may be decommissioned as part of the treatment system demolition scope

4.2 MATERIAL STAGING AREAS AND EROSION AND SEDIMENTATION CONTROL

Vegetation in work areas, including the brush growth surrounding the treatment plant building, will be removed as necessary, to prepare the site. Material staging area(s) will be established inside the fenced areas to stockpile all material generated during the demolition. The area will be large enough to accommodate anticipated multiple segregated material stockpiles based on contractor's Material Management Plan. A portion of the area will be dedicated for temporary storage of DRMO-designated equipment on pallets. The material staging area will be equipped with a plastic or geotextile base to place the C&D waste materials on. Stored materials will be covered as appropriate to prevent intrusion of rain, and to prevent weather damage.

An Erosion and Sediment Control Plan, which describes how soil erosion and sediment control devices will be constructed, will be supplied with the demolition design documents. The contractor will be required to construct adequate erosion controls at any location necessary to prevent runoff or erosion of soil or debris from any work areas, staged debris piles, disturbed areas, excavated soil, and stockpiled soil. Erosion control structures will be adequate to sustain weather damage and degradation and will be maintained by the contractor until site restoration has provided new vegetation adequate to stabilize remaining soils in-place on the surface of the ground which has been worked by the contractor.

4.3 PROCESS EQUIPMENT AND PIPING

All process equipment and piping will be dismantled, decontaminated, and disposed of through the DRMO program, recycled, or disposed of off-site. Process equipment and piping may contain groundwater or process chemicals, such as acids and caustics. The contractor will arrange for proper containment, testing, and disposal.

A summary of major process equipment associated with the treatment system is provided in Table 4-1. Based on a site visit to the treatment system conducted on October 10, 2007 by the DRMO representative (Appendix A), the following items will be turned over to the DRMO program for reuse or resell:

- flocculator/clarifier unit (1)
- multimedia pressure filters, excluding media (2)
- UV oxidation unit (1)
- stainless steel GAC tank, excluding media (1)
- filter press (1)
- dry transformer (1)
- air compressor (1)

- mixer units (6)
- motors throughout the system

Equipment to be handled through DRMO will be prepared as discussed in Section 3.1. This equipment will be stored on-site at a designated area for 6 to 8 months until DRMO is ready to take possession. At that time, the subcontractor will provide lifting equipment to load the DRMO trucks. All materials not identified for reuse/resale by the Navy DRMO, including polyethylene tanks or PVC/polyethylene system components, will be disposed of off site at an approved disposal facility(ies)

Prior to release for off-site reuse or resale to DRMO the contact process units will be decontaminated and a certificate of decontamination will be prepared to document the procedure and any confirmation sampling results. In addition, prior to disposal as solid waste of other treatment process components such as piping and polyethylene tanks, the interiors must be certified as not containing hazardous materials. These components will be decontaminated and certified non-hazardous prior to disposal off site.

4.4 ELECTRICAL AND INSTRUMENTATION

The NAVSTA Newport Environmental Department has advised that there are no foreseeable future electrical service needs at the site. The electrical demolition will consist of complete removal and disposal of the electrical system. This electrical system consists of the main power feeder, transformer, power and control systems, fire and security system, lighting, motor control systems, distribution panels, emergency lighting, control panels, disconnect switches, instruments, and all ancillary devices. Power and control wiring will be removed, underground conduit will be abandoned in place. The utility pole located northeast of the treatment building appears to be a temporary service unrelated to the treatment system, it will be removed as part of this project.

All fluorescent and/or mercury vapor lamps and emergency lighting batteries will be treated as hazardous waste. These lamps and batteries will be packed and sent to a licensed facility to handle and safely dispose of these devices. Hazardous waste tracking procedures will apply. No PCB ballasts are anticipated.

4.5 HEATING OIL STORAGE TANK AND HEATING SYSTEM

An aboveground 1,000-gallon heating oil tank with a 110 percent containment dike is located on the west side of the building exterior and will be closed as part of the project. Aboveground heating oil storage tank registration is not required by RIDEM. A closure application is not required by RIDEM. The only state

administrative requirement is a letter to RIDEM from the Navy advising that the tank was taken out of service and properly disposed of.

It is assumed that the heating oil tank has not been emptied and cleaned. Prior to commencement of dismantling, the contractor will drain the heating system to remove the residual oil and dispose of it at an approved disposal facility. The oil tank, dike, furnace, and associated exhaust fans, heating ducts, and fuel oil piping will be dismantled, cleaned, and disposed of at an approved off-site disposal facility. Although the system is not known to have leaked; sampling will be required after removal to verify no residual oil contamination remains to close the tank system. Following the heating oil tank removal RIDEM will be notified that the tank has been taken out of service and disposed of properly.

4.6 TREATMENT BUILDING

The treatment building is a rigid metal-sided, painted structure on a concrete slab with an overhead door for equipment access, a service entry door, and an emergency exit door. The building dimensions are 76-foot long and 32-foot wide (2,432 square feet) with 15-foot inside wall clear height. The metal roof is equipped with gutters and downspouts. The interior houses the treatment process equipment and contains a bathroom with sink and toilet and an enclosed office/lab area. The insulated building has heating, ventilation, lighting, and fire alarms.

The building will be dismantled following removal of process equipment, piping, electrical, and instrumentation equipment. First remaining interior walls, fixtures, and insulation will be removed. Based on the construction drawings and the building age, no ACM or lead-based paint was used in the building construction. Using crane services building roofing, sidewall panels and structural steel components will be disassembled in the correct order and staged on site. The building concrete slab and foundation and the asphalt parking area will be broken up and staged on site; the paved access road will remain. The chain-link fencing will remain except for the section along the west side of the treatment building, which will be removed.

All non-regulated concrete and wood from the dismantled building may be recycled at local facilities. Non-hazardous concrete may be sent to a recycler where it will be crushed and sold as construction fill. All recyclable metals will turn over to the NAVSTA Newport scrap yard (Building 47) for recycling.

Wood may be sent to a recycler where it will be shredded and burned for energy recovery. Any non-regulated items not recycled/reused will be disposed of as solid waste at a licensed disposal facility.

4.7 UNDERGROUND PIPING

Underground piping consists of the water service, the treatment system's effluent gravity sewer discharge line, and the extraction well collection piping. The water service and sewer discharge will be decommissioned in accordance with procedures specified by the NAVSTA Newport Public Works Department. Prior to utilities disconnection a Utilities Request detailing the proposed work must be submitted to the Public Works Utilities Supervisor for approval. The service line termination and sewer line disconnection will be inspected by a Navy Public Works Department representative.

The water service line consists of approximately 290 feet of 1½-inch copper running from the NAVSTA Newport 8-inch ductile iron water main located southwest of the treatment building will be abandoned in place. The curb stop at the main will be closed and the service line will be cut and plugged at the on the service side of the stop to avoid a long dead end.

The effluent gravity discharge line, running northeast from the treatment building to connect to the sanitary sewer at manhole SSMH-8, consists of approximately 630 lineal feet of 8-inch diameter PVC sewer pipe buried approximately 6 to 8 feet bgs and three manholes (SSMH-1, -2 and -3). Sewer manhole SSMH-3 and the 5-foot sewer pipe run from the treatment building will be removed. In addition, the 260-foot PVC pipe run from SSMH-3 to SSMH-2 will be removed with a plug installed at SSMH-2 leaving manholes SSMH-2 and SSMH-1 in place for future use.

The buried 2-inch polyethylene (PE) extraction well collection pipe runs approximately 725 feet from the extraction well arrays to the treatment plant building at a minimum depth of 50 inches below ground surface (bgs). It has one air release valve and no secondary containment. The buried collection piping will be capped or plugged at the treatment building and at the connections to the extraction wells. In addition the air release valve and associated piping will be removed by excavation and the connection plugged.

4.8 EXTRACTION WELLS

A well driller licensed in the State of Rhode Island will provide well decommissioning services for the groundwater extraction system. The thirteen extraction wells will be abandoned in place in accordance with the RIDEM "Rules and Regulations Governing the Enforcement of Chapter 46-13.2 Relating to the Drilling of Drinking Water Wells." After removal of submersible pumps, wiring and the concrete manhole vaults, the well screen interval will be sealed with bentonite slurry. The well riser above the well screen seal will be removed to a minimum depth of 4 feet bgs, as required by RIDEM regulations. The 1-inch connection to the well collection pipe will be cut and plugged outside the well vault. The concrete well

vault will be removed and the well casing will be removed to 4 feet bgs. The excavation will be backfilled with clean fill and compacted prior to restoration.

4.9 RESTORATION

Upon removal of all staged C&D materials, the contractor will remove the material staging area and restore all disturbed and excavated areas. All soil material required for restoration will be obtained from off-site sources as no material is available at the Site or at NAVSTA Newport. Restoration materials including fill, topsoil, seed mixture, and soil amendments will conform to the applicable requirements the Rhode Island Department of Transportation (RIDOT) Standard Specifications for Road and Bridge Construction.

Excavation areas and other disturbed areas will be restored to base grade elevation with compacted select fill, topsoil and turf. The restoration scope includes, but is not limited to the following:

- Grade the excavated areas to match existing topography prior to excavation
- Place fill in loose lifts and compact to an 8-inch thick layer
- Following fill application, place topsoil a 4-inch thick minimum layer to finished grade
- Restore to original condition turf areas that have been disturbed and damaged (ruts or scarring in the soil) during excavation using topsoil
- Restore areas by revegetating
- Protect revegetated areas from pedestrian and vehicular traffic using temporary signs and/or barriers
- Maintain or install new appropriate erosion and sediment control measures

5.0 CONSTRUCTION ACTIVITIES

This section presents the construction bidding, submittals, and documentation requirements. TtNUS will provide design and oversight services, and prepare an RFP package for the Navy. The RFP package will be complete enough to provide to an EMAC contractor with the Navy's standard terms and conditions, such that a competitive fixed-price bid can be generated.

5.1 CONSTRUCTION BIDDING

The demolition design will consist of a scope of work and supporting drawings. The drawings will indicate the limits of the demolition and restoration work including erosion and sedimentation controls and a grading plan along with any necessary details and notes. The scope of work will specify requirements for cleaning piping and equipment, sampling, testing, removing, segregating, and disposing of the groundwater treatment system equipment, modules and structures, and site restoration. The scope of work will include a schedule of major equipment items and their disposition. The scope of work will also provide requirements including environmental permits, erosion and sedimentation control, storm water management, mechanical or other building permits, sanitation district, electrical and other utility interfaces. Because the site is still regulated under Superfund, permits are not expected to be required though the substantive requirements of such permits will be met. An operational schedule for the demolition and site restoration work will be developed as part of the demolition design.

The RFP will define the required EMAC contractor submittals (work plan, health and safety plan, disposal documentation, record drawings, etc.) A price quotation form for the bid package will be developed.

TtNUS project representatives will assist the Navy during the bidding process as follows:

- attending the pre-bid conference and assisting the Navy in responding to bidder's questions,
- evaluating bids for completeness and RFP requirements,
- preparing a bid tabulation summary form,
- notifying the Navy of any deficiencies and/or exceptions,
- identifying technically acceptable bids, and
- ranking the technically-acceptable bids in ascending price order.

5.2 SUBMITTALS

Prior to mobilization the selected contractor will submit medical surveillance and training records for all on-site workers (where required). In addition the contractor will be required to submit a Material Management Plan.

Contractor submittals required during demolition will consist of the following:

Before Transportation - Required submittals include waste profiles, bills of lading, manifests, and other appropriate shipping and disposal documents for the handling of wastes to the Navy a minimum of 5 days prior to shipping the wastes off-site. All transportation documentation will be submitted to the Navy for review, approval, and signature prior to shipment.

After Transportation - The return manifests or bills of lading that have been signed by the disposal facility, along with certified weight slips, will be submitted to the Navy within 10 days of waste delivery. Certified weight slips will contain, at a minimum, the gross truck weight, truck tare weight, the net weight of the material, cumulative daily weight, date of delivery, facility name, signature of person receiving the load of material, and the numerical load number for the day. Weight slips will also contain transportation company name, and plate numbers for both the tractor and trailer, if applicable. Copies of any discrepancy reports or exception reports will also be submitted.

5.3 OVERSIGHT AND FIELD INSPECTION

Daily reports will be required from the contractor. The daily reports will detail the quantities, types, and classification of materials removed from the project site each day. The report will include the manifest number, transporter, and disposal facility where the material was disposed. Daily summary reports will be submitted by TtNUS to the Navy on the following business day.

Weekly construction reports documenting demolition and restoration activities will be submitted by TtNUS (electronically and in hard copy) to the Navy Remedial Project Manager (RPM) and Resident Office in Charge of Construction (ROICC) PWD Newport.

5.4 RECORDS

Shipments and disposition of all equipment and materials leaving the project site will be tracked and documented as follows

Equipment released to DRMO – Standard DRMO procedures will be followed to document the release of designated equipment items to the DRMO

Hazardous Waste - The contractor will be responsible for providing and carrying waste manifests, bills of lading, placards, labeling, markings, licensing, and any other transportation/disposal documentation as required by federal, state, and local regulations. The contractor will provide TtNUS with a minimum of 48 hour notice prior to shipping waste materials from the site. A representative of the Navy will sign completed shipping manifests and bills of lading.

Material Disposition Records - The contractor will submit completed manifests and Certificates of Treatment/Disposal from the final disposal facility. Certificates must be received within 10 days of final waste disposal. These Certificates will be received separately and prior to invoicing.

6.0 HEALTH AND SAFETY CONSIDERATIONS

The selected contractor will be required to prepare and submit a Site Health and Safety Plan (SHSP) for Navy approval that conforms to the requirements set forth by OSHA and 29 CFR 1910.120 (HAZWOPER), specific to the anticipated site activities, approved by a Certified Industrial Hygienist

All contractor personnel working on-site will comply with the SHSP. The SHSP will be provided to the Navy for review prior to initiating work. The contractor will provide any and all personal protective equipment, as required by the SHSP, in order for the contractor's personnel to complete the work. Prior to the start of work, all on-site contractor personnel will attend a one-time site health and safety orientation. The contractor will conduct all work activities in a safe manner and in compliance with the SHSP. The Navy and their representatives will have the authority to audit and terminate the contractor's field operations if the operations violate the SHSP, or if work practices are being conducted in an unsafe manner.

It is anticipated that the demolition will require the use of cranes and other equipment for lifting heavy loads. The contractor will be required to document that operators have the necessary license and training. The SHSP must provide detailed procedures and practices for lifting operations involving heavy loads.

TABLE

TABLE 4-1
TREATMENT EQUIPMENT INVENTORY
GROUNDWATER TREATMENT SYSTEM, TANKS 53 AND 56, TANK FARM 5
NAVAL STATION NEWPORT, NEWPORT, RHODE ISLAND
PAGE 1 OF 3

Treatment Process Units

ID	Quantity	Description	DRMO Resale/ Reuse	Manufacturer	Model	Serial No.	Details
--	1	Flocculator/Clarifier	Yes	Lanco Corp.	80GPM-377		Mixing chamber with parallel plate upflow clarifier and sludge hopper, 50 gpm capacity
--	2	Pressure Filters	Yes	ECOWATER	Series L		42-inch diameter dual media pressure filters, 50 gpm capacity at 2.5 gpm/ft ²
--	1	UV/Oxidation Chamber	Yes	Perox-Pure	SSBDX-30RA		Hydrogen peroxide system, 50 gpm capacity
--	1	Granular Activated Carbon Filter	Yes	--	--		Skid mounted, 2000lb carbon, 50 gpm capacity, steel
--	5	Chemical Feed Systems	Yes	--	--		For caustic, coagulant, flocculant acid, and oxidant chemicals. ~35-gallon polyethylene tank with chemical feed pump on top
--	1	Filter Press	Yes	GHS Environmental	630-100	94119	4 CF size plate and frame press
--	1	Air compressor	Yes	Ingersoll Rand	T30 Model 2540		35 scfm @ 100 psig reciprocating; 120 gallon receiver.

Mixers

ID	Quantity	Description/Service	DRMO Resale/Reuse	HP	RPM	Shaft Size	Propeller Size
M-1	1	Equalization Tank Mixer	Yes	1	350	1" dia. x 72" L	10.5"
M-2	1	Drum Mixer	Yes	1/20	350	5/16" dia. x 28" L	6"
M-3	1	Drum Mixer	Yes	1/20	--	5/16" dia. x 28" L	6"
M-4	1	Clearwell Tank #3 Acid Mixing	Yes	1	--	1" dia. x 72" L	10.5"
M-5	1	Sludge Thickener Tank	Yes	0.25	--	--	--
M-6	1	Water Recycle Tank	Yes	0.25	--	--	--

TABLE 4-1

TREATMENT EQUIPMENT INVENTORY
GROUNDWATER TREATMENT SYSTEM, TANKS 53 AND 56, TANK FARM 5
NAVAL STATION NEWPORT, NEWPORT, RHODE ISLAND
PAGE 2 OF 3

Pumps

ID	Quantity	Service	DRMO Resale/Reuse	Location	Flow (gpm)	TDH (ft.)	Electrical					Type
							HP	RPM	Volts	PH	HZ	
CIP-01	1	Chemical Feed	Yes	Hydrogen Peroxide	0.042	230	--	--	120	1	60	Positive Displacement
CIP-02	1	Chemical Feed	Yes	Flocculant	0.042	230	--	--	120	1	60	Positive Displacement
CIP-03	1	Chemical Feed	Yes	Sulfuric Acid	0.042	230	--	--	120	1	60	Positive Displacement
CIP-04	1	Chemical Feed	Yes	Hydrogen Peroxide	0.042	230	--	--	120	1	60	Positive Displacement
CIP-05	1	Chemical Feed	Yes	Sodium Hydroxide	0.042	230	--	--	120	1	60	Positive Displacement
P-01 A/B	2	Transfer Pump	Yes	Tank 1	30	25	2	3500	208	3	60	End Suction Pump
P-02 A/B	2	Transfer Pump	Yes	Tank 2	30	120	2	1750	208	1	60	End Suction Pump
P-03 A/B	2	Transfer Pump	Yes	Tank 3	30	50	2	1750	208	1	60	End Suction Pump
P-04	1	Backwash	Yes	Filter Backwash	150	60	5	3400	208	1	60	End Suction Pump
P-05	1	Recycle	Yes	Tank 6	20	50	1	1750	120	1	60	End Suction Pump
VP-01	1	Sump Pump	Yes	Floor Sump	10	30	2	3500	208	1	60	Vertical Sump Pump
WP1-14	14	Groundwater Extraction	Yes	Extraction Wells	7	200	1/3	--	120	1	60	Submersible Electric
SP-01	1	Sludge	Yes	Clarifier Sludge	30	50	--	--	--	--	--	Pneumatic Sludge Pump
SP-02	1	Sludge	Yes	Tank 5	20	230	--	--	--	--	--	Pneumatic Sludge Pump

TABLE 4-1

TREATMENT EQUIPMENT INVENTORY
 GROUNDWATER TREATMENT SYSTEM, TANKS 53 AND 56, TANK FARM 5
 NAVAL STATION NEWPORT, NEWPORT, RHODE ISLAND
 PAGE 3 OF 3

Tanks

ID	Quantity	Description	DRMO Resale/Reuse	Material	Capacity (gallons)	Details
Tank 1	1	Equalization Tank	no	Polyethylene	2,000	Height: 8' 6"; Diameter: 6' 6"
Tank 2	1	Clearwell Tank	no	Polyethylene	500	Height: 5' 4"; Diameter: 4' 0"
Tank 3	1	Clearwell/Backwash Tank	no	Polyethylene	2,000	Height: 8' 6"; Diameter: 6' 6"
Tank 5	1	Sludge Thickener Tank	no	Polyethylene	2,500	Height: 10' 6"; Diameter: 7' 6"
Tank 6	1	Water Recycle Tank	no	Polyethylene	1,750	Height: 8' 6"; Diameter: 6' 0"

Other

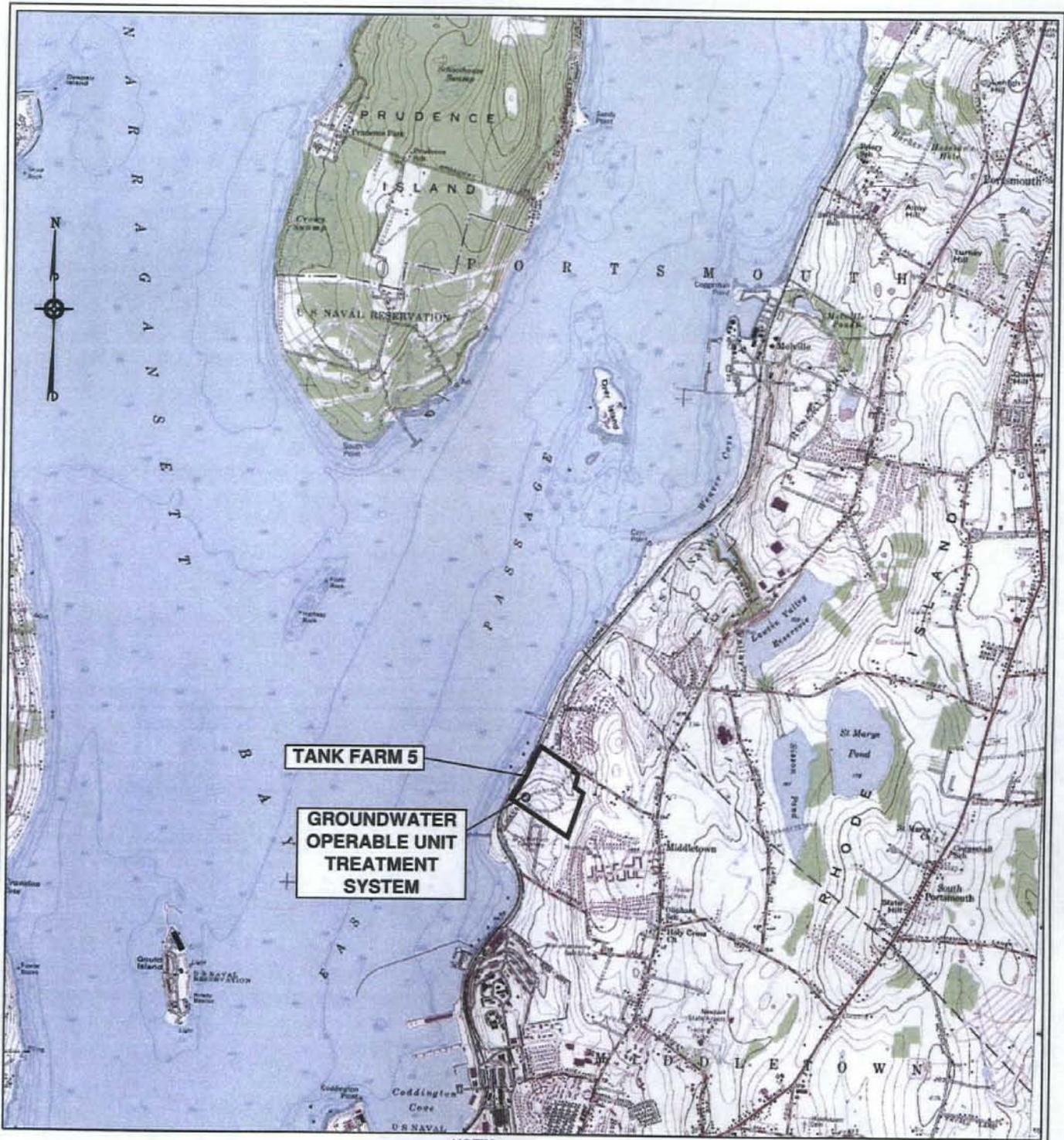
ID	Quantity	Description	DRMO Resale/Reuse	Material	Capacity (gallons)	Details
--	1	Dry Transformer	Yes	--	--	--

Notes:

Source. Interim Remedial Action – Tanks 53 and 56 As-Built Construction Drawings

- TBD – to be determined
- gpm - gallons per minute
- CF - cubic feet
- scfm - Square cubic feet per minute
- TDH - total dynamic head
- HP - horse power
- rpm - revolution per minute

FIGURES



TANK FARM 5

**GROUNDWATER
OPERABLE UNIT
TREATMENT
SYSTEM**

NOTES:

1. BASE MAP IS A PORTION OF THE USGS PRUDENCE ISLAND QUADRANGLE MAP (7.5 X 15 MINUTES), DATED: 1955 (PHOTOREVISED 1970 & 1975).
2. ALL LOCATIONS TO BE CONSIDERED APPROXIMATE.

GROUNDWATER OPERABLE UNIT TREATMENT SYSTEM LOCUS

FIGURE 1-1

TANKS 53 AND 56 - TANK FARM FIVE

NAVSTA NEWPORT - NEWPORT, RHODE ISLAND



TETRA TECH NUS, INC.

DRAWN BY: D.W. MACDOUGALL

REV.: 0

CHECKED BY: J. FORRELLI

DATE: OCTOBER 18, 2007

SCALE: AS SHOWN

ACAD NAME: \00989\0230\LOCUS.DWG

55 Jonspin Road

Wilmington, MA 01887

(978)658-7899

REFERENCES

REFERENCES

Foster Wheeler Environmental Corporation (FWENC), 1997 Site Closeout Report for Groundwater Remediation of Tank Farm #5 – Tanks #53 & #56 at the Naval Education and Testing Center, Newport, Rhode Island Northern Division, Naval Facilities Engineering Command. Contract No. N62472-94-D-0398 August.

Tetra Tech FW, Inc. (TtFW), 2004 Clean-Out of Tank Farm 5 Groundwater Treatment Plant, Naval Station Newport, Newport, Rhode Island. Engineering Field Activity Northeast, Naval Facilities Engineering Command. Contract No N62472-99-D-0032 February

TRC Environmental Corporation (TRC), 1993 Design Analysis for Bidding Documents Submission, Interim Remedial Action, Tanks 53 and 56 - Tank Farm 5, Naval Education and Testing Center, Newport, Rhode Island Northern Division, Naval Facilities Engineering Command. Contract No. N62472-86-D-1282. June

Department of the Navy (Navy) 1992. Record of Decision for an Interim Remedial Action at Tank Farm Five, Tanks 53 and 56 Ground Water Operable Unit, Navel Education and Training Center, Newport, Rhode Island October

APPENDIX A
SITE VISIT REPORTS

Site Visit Report
Groundwater Operable Unit Treatment System
Tanks 53 and 56, Tank Farm 5, NAVSTA Newport
September 25 and 26, 2007

A site visit was made by Tetra Tech NUS, Inc. (TtNUS) to the Groundwater Operable Unit Treatment System at Tanks 53 and 56, Tank Farm 5, NAVSTA Newport in support of the development of a demolition design and RFP package for the system. During September 25 and 26, 2007, site visit TtNUS representatives reviewed available, related documents and inspected and evaluated the condition of the equipment and structures at the groundwater treatment system. TtNUS personnel participating in the site visit were Brandon Smith and G. Michael Flory.

The 50-gallon per minute (gpm) design flow system consists of the groundwater treatment plant (GWTP); the 13 groundwater extraction wells, pumps and associated collection piping, and the surrounding security fence. The GWTP consist of the following major components:

- Treatment equipment and piping including transfer pumps, flocculator/clarifier, pressure filters, UV/oxidation chamber, granular activated carbon unit, chemical feed systems, filter press and air compressor;
- Various tanks including equalization tank, clearwell tank, clearwell/backwash tank, sludge thickener tank and water recycle tank;
- Effluent discharge pumps and piping;
- Various related utilities including electrical, sanitation and potable water connections;
- Treatment building, including office, laboratory and storage equipment; and
- Oil-fired heater and fuel oil storage tank (located on the exterior the GWTP building).

On Tuesday, September 25, 2007, various record documents related to the GWTS were reviewed. The records also include a letter report by Tetra Tech FW, Inc. (TtFW) dated February 23, 2004 with the subject "Clean-Out of Tank Farm 5 Ground Water Treatment Plant". This report describes various removal actions performed at the Groundwater Operable Unit Treatment System from September 2003 through January 2004, including vegetation removal, construction materials removal, tank cleaning and chemical lab packing. During this activity above ground tanks were checked for residual solids and/or liquids. The residual solids and liquids were removed and disposed of at approved facilities. The tanks were cleaned. In addition, all chemicals, including lab and treatment chemicals stored at the treatment building were containerized and disposed of at approved facilities.

In addition, from previous assignments TtNUS representatives has a set of the "as-built" Interim Remedial Action – Tanks 53 and 56 construction drawings (dated December 9, 1994) that the TtNUS representatives referenced during the site visit.

On Wednesday, September 26, 2007, TtNUS representatives conducted a visual inspection of groundwater treatment system to determine general site and building conditions, to inventory treatment components, to locate potential hazardous materials, and to the electrical installation was conducted. Observations are summarized below.

1. Site

General condition

The site appeared to be in good condition. No visible debris or unknown materials were noted.

Site access

Site access is gained through a secure pad locked gate with access provided by NAVSTA Newport. The paved asphalt access roadway from the gate to the treatment building was clear and functional although some signs of deterioration were noted (cracking and vegetation growth). The GWTS building main door was secure upon arrival by the TtNUS representatives and Robert

Krivinkas, the Navy's Resident Officer in Charge of Construction (RIOCC), on September 26, 2007. The lock appears to be damaged since the key would not operate the lock. The building was accessed through the garage bay door.

Security Fence

The perimeter chain-link fencing appeared to be in good condition; no breaks in the fence were observed.

Overgrown vegetation

Overgrown vegetation was noted around the northern, eastern, and western sides of the GWTP building, as well as near the set of extraction wells and control panel within the fenced in area.

Items stored inside fence not connected to treatment system

Items not connected to treatment system were observed inside the perimeter fence including an office trailer (located within approximately 20 feet of the southern side of the GWTP building), two portable toilets, a dumpster, and three piles of hay bales.

2. Treatment Building

The GWTP building is a 32-foot by 76-foot steel structure on a concrete slab foundation.

Building Exterior

General condition

The GWTS building appears to be in good condition. Inspection of the exterior was limited due to overgrown vegetation surrounding the structure. No signs of foundation damage or exterior damage to the building were observed.

Inconsistencies with "as-built" plan (unrecorded modifications)

No inconsistencies with the "as-built" plan were noted.

Damaged or deteriorated roofing and walls

No damage or deterioration to the roofing or exterior walls was observed from ground level.

Building Interior

General condition

The building interior appeared to be in good condition. No major deficiencies or problem areas were noted. A number of rat traps were noted, indicating a rodent infestation problem, however no rats were observed and no rodent damage was noted.

Inconsistencies with "as-built" plan (unrecorded modifications)

No inconsistencies with the "as-built" plan were noted.

Possible lead-based paint

No interior painted surfaces were noted during the inspection.

Possible asbestos containing materials

No possible asbestos containing materials (ACM) were noted during the inspection.

Signs of water, fire damage

No signs of fire damage were noted. A small section of foam insulation board located near the sump pump and furnace appears to have suffered water damage.

Signs of structural instability

The GWTP building appears to be structural sound. No damaged girders or support structures were observed.

Damaged flooring, roofing, walls that be a hazard

No damage to flooring, roofing, or walls was observed.

Deteriorated flooring, roofing, walls that be a concern during deconstruction

No deterioration of the flooring, roofing, or walls was observed.

Miscellaneous materials stored inside building

The GWTP building is presently being used to store a large amount of materials (equipment and consumables) not related to the GWTP operations. These items include ladders, safety equipment, caution fencing, and environmental sampling equipment. An inventory of these items was conducted during the site visit and is available but not included in this report.

Low level radiation waste.

Four drums with radiation hazard labeling are being stored on pallets at the northern end of the treatment building. Three 55-gallon drums reportedly contain low level radiation waste generated during remedial activities at the MacAllister Landfill. The fourth smaller drum (20 to 30 gallons size) was generated by Naval Undersea Warfare center (NUWC) operations. Radiation warning signs are located on the GWTP building exterior.

3. Process equipment and piping

General condition

The process equipment appeared to be in good condition during the site visit. No equipment was turned on to check if it was in proper working order. However, due to the limited use and recent installation (1994) of the process equipment, it is assumed the majority of the equipment is in working order.

Inconsistencies with "as-built" plan (unrecorded modifications)

A minor inconsistency with the "as-built" plan was noted. Transfer Pumps P-02A/B were oriented in a different place than noted on the "as-built" plans. In addition, the 500-gallon aluminum hydrogen peroxide storage tank noted on the "as-built" was not located.

Signs of damage

No signs of damage to the process equipment were observed. All piping and conduit was still connected to process equipment.

Possible residual materials

The interior of process equipment, tanks, and piping were noted inspected during the site visit. The TtFW letter report referenced earlier detailed the removed and disposal of residual materials from the process tanks and the subsequently decontamination of the tanks to industrial standard. The process piping and process equipment were not accessed during the site visit; with the exception of the storage tanks, it could not be confirmed that the process piping and process equipment do not contain residual materials.

4. Electrical and Instrumentation

General condition

The well vaults and the electrical manholes were not opened during this site visit for investigation.

The routing of the main 13.8 KV feeder was investigated. The utility pole data running parallel to the main road was recorded. This pole contains two high voltage transmission lines. The pole has fused link disconnect hardware and a down feeder, apparently to the adjacent electrical manhole. This could not be confirmed. The indicated routing from the pole to the GWTP building

was then followed, although an intermediate manhole within the plant fence could not be found. This manhole is adjacent to Control Panel "B" located northwest of the GWTP building. The brush in this area is very dense.

All electrical distribution panels within the plant were inspected and data regarding the circuits was collected and recorded. This information conflicted with the "as-built" drawings. The circuits were not tested, nor were the motors "bumped" to confirm the accuracy of the data.

Inconsistencies with "as-built" plan (unrecorded modifications)

In reviewing the "as-built" electrical drawings numerous revisions and changes were discovered that are not recorded on the drawings. A brief description of these findings will follow.

Possible Polychlorinated biphenyls (PCBs) and mercury containing equipment

Since the plant was constructed in 1994, no PCBs are expected to be found in the lighting ballasts or the dry-type transformers. It is anticipated that the fluorescent lamps contain hazardous material (mercury). These lamps should be packaged and sent for disposal during demolition. The exit signs and emergency lighting fixtures should be addressed during demolition for proper disposal of the batteries and low level radiation.

Damaged equipment

The main control panel appears to be salvageable for parts only. In general, the components of the electrical system are in good physical shape.

5. Heating Oil System

General condition

The heating oil system located on the west side of the GWTP building appears to be in good condition. The 1,000-gallon exterior fuel oil tank and interior furnace appeared to be in working order. It is unknown how much fuel oil is contained in the tank.

Inconsistencies with "as-built" plan (unrecorded modifications)

No inconsistencies with the "as-built" plan were noted.

Possible oil leaks

No oil leaks or staining around the fuel oil tank was observed.

Damaged equipment

No equipment damage was observed during the site visit.

Site Visit Report N . 2
Groundwater Operabl Unit Treatment Syst m
Tanks 53 and 56, Tank Farm 5, NAVSTA Newport
October 10, 2007

A site visit was made by Tetra Tech NUS, Inc. (TtNUS) on October 10, 2007 to the Groundwater Operable Unit Treatment System at Tanks 53 and 56, Tank Farm 5, NAVSTA Newport in support of the development of a demolition design and RFP package for the system. During the site visit a TtNUS representative met with Defense Reutilization and Marketing Office (DRMO) and NAVSTA Newport representatives to determine if DRMO will take custody of any of the groundwater treatment system components and the requirements for acceptance by DRMO for recycling and resale, including decontamination requirements. NAVSTA Newport personnel participating in the site visit were Lori Hall and Robert Krivinskas. The DRMO (Groton) was represented by Michael Efstathiou. TtNUS was represented by James Forrelli, Project Manager.

A treatment system equipment inventory (attached) made up by TtNUS during a previous visit on September 26, 2007 was provided to L. Hall prior to the site visit.

M. Efstathiou said that he will review the existing equipment inventory for those items that DRMO will take into their system. He indicated that the following items should go through the DMRO process:

- flocculator/clarifier (1)
- pressure filters (2)
- UV/oxidation chamber (1)
- granular activated carbon filter (1)
- filter press (1)
- air compressor (1)
- mixer units
- motors throughout the WWTP
- dry transformer (1)

DRMO will not take any of the plastic tanks or components. M. Efstathiou also advised that DRMO would not take the electrical equipment and that it should be scraped.

M. Efstathiou also indicated DRMO would take the portable radiation detector unit (not part of the groundwater treatment system), which is being stored at the treatment building.

Treatment units must be decontaminated and the clean and purged certification provided to DRMO with Form 1348 before they take custody of individual equipment. In addition, the equipment must be completely disconnected from the system and be accessible.

DRMO indicated that the disposal process may take 6 to 8 months. Large items may need to be held in place at the treatment building, or stored elsewhere at NAVSTA Newport. Loading equipment will be required when DRMO picks up equipment, or if it is transport to a NAVSTA Newport storage yard.

R. Krivinskas said he has a copy of the system O&M manual. He review it and provide additional information for the items of interest to DRMO. DRMO also asked for the item original cost; it is not known if that information available.

Also, R. Krivinskas advised that he will notify the contractor teams to remove the various tools and materials they have in storage at the treatment building.

APPENDIX B
PHOTOGRAPHS

TANKS 53 AND 56 GROUNDWATER TREATMENT SYSTEM PHOTOGRAPHS



No. 1 GWTP building entrance (north face)

June, 21, 2007



No. 2 Heating oil storage tank near northwest corner of GWTP building

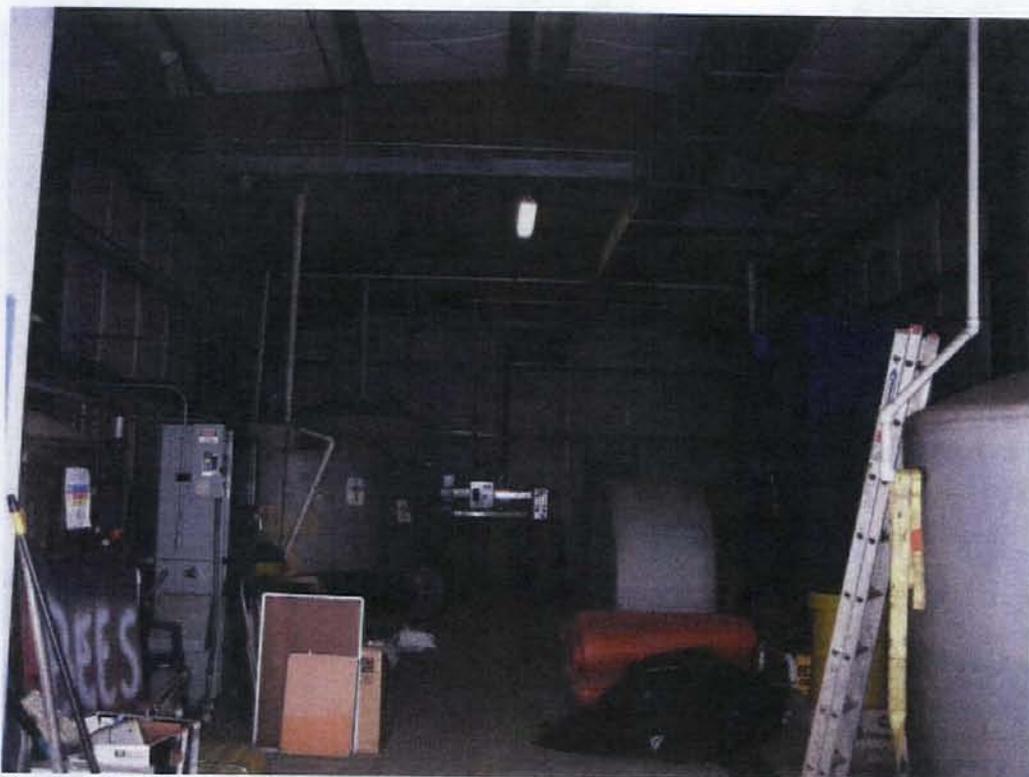
June 21, 2007

TANKS 53 AND 56 GROUNDWATER TREATMENT SYSTEM PHOTOGRAPHS



No. 3 Extraction well line 1 location

September 26, 2007



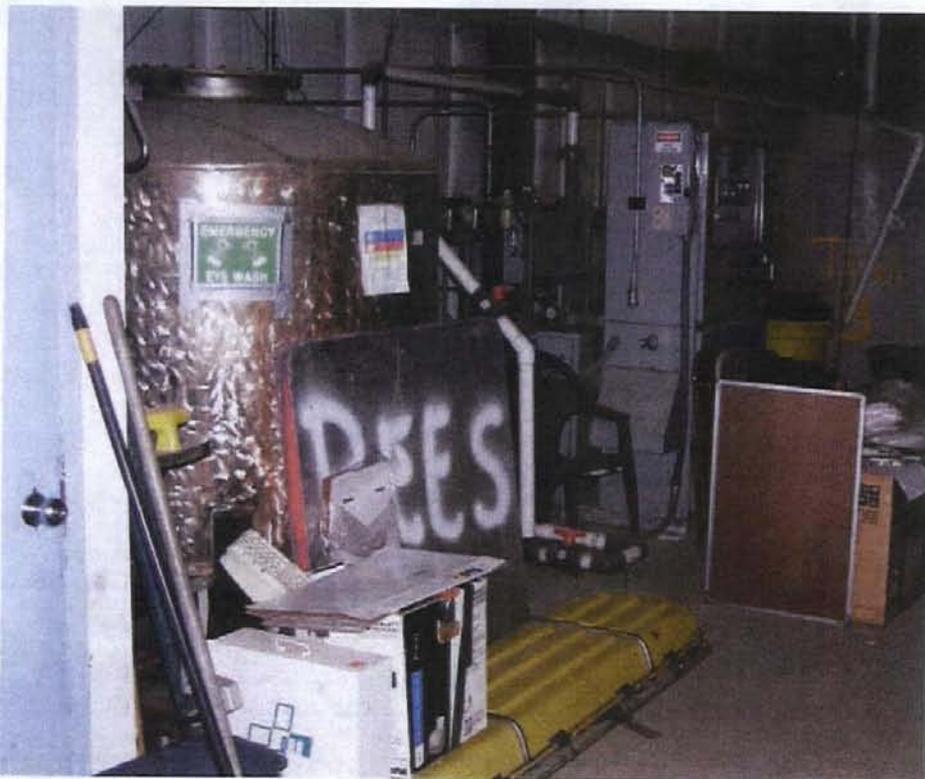
No. 4 GWTP building interior (view from north end)

September 26, 2007

TANKS 53 AND 56 GROUNDWATER TREATMENT SYSTEM PHOTOGRAPHS



No. 5 Flocculator/clarifier process unit June 21, 2007

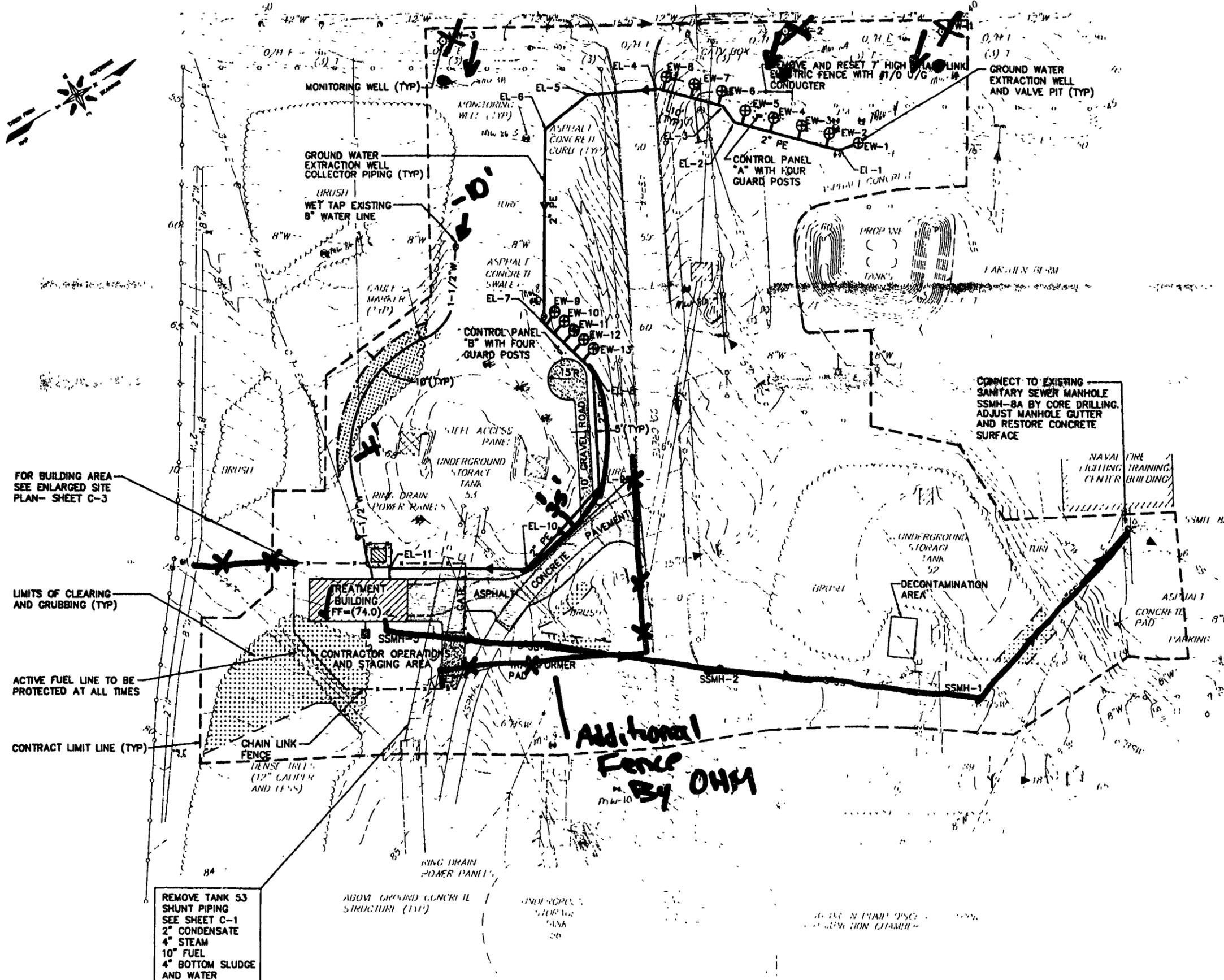


No. 4 GAC filter and UV/oxidation process units (left to right) June 21, 2007

APPENDIX C
AS-BUILT CONSTRUCTION DRAWINGS

DEFENSE

HIGHWAY



SYSTEM LAYOUT SCHEDULE OF COORDINATES

DESCRIPTION	NORTHING	EASTING
EXTRACTION WELLS		
EW-1	170165.7	552584.5
EW-2	170149.5	552566.7
EW-3	170133.4	552551.1
EW-4	170117.4	552535.6
EW-5	170101.3	552520.0
EW-6	170093.1	552498.0
EW-7	170077.0	552482.4
EW-8	170061.0	552466.8
EW-9	169900.0	552376.0
EW-10	169903.3	552385.3
EW-11	169906.6	552394.9
EW-12	169909.9	552404.4
EW-13	169913.2	552413.8
MONITORING WELLS		
MW-1	170263.04	552544.00
MW-2	170157.39	552483.49
MW-3	169923.67	552357.03
TREATMENT BUILDING CORNERS		
NORTHWEST	169703.9	552691.2
SOUTHWEST	169638.0	552653.2
SOUTHEAST	169621.6	552681.0
NORTHEAST	169687.3	552718.9
EXTRACTION SYSTEM COLLECTOR PIPING BENDS		
EL-1	170150.0	552581.6
EL-2	170089.8	552523.7
EL-3	170088.1	552508.4
EL-4	170051.7	552472.2
EL-5	170002.0	552448.5
EL-6	169960.7	552454.8
EL-7	169888.9	552579.2
EL-8	169904.9	552627.7
EL-9	169866.7	552704.6
EL-10	169787.5	552730.3
EL-11	169695.8	552677.2
SANITARY SEWER MANHOLES		
SSMH-1	170043.5	552987.8
SSMH-2	169880.3	552869.6
SSMH-3	169670.9	552716.3
PAVEMENT GEOMETRY (SEE SHEET C-3)		
PI	169789.34	552682.8
PC	169800.64	552731.51
PT	169764.34	552726.11

FOR BUILDING AREA SEE ENLARGED SITE PLAN- SHEET C-3

LIMITS OF CLEARING AND GRUBBING (TYP)

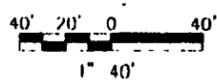
ACTIVE FUEL LINE TO BE PROTECTED AT ALL TIMES

CONTRACT LIMIT LINE (TYP)

REMOVE TANK S3 SHUNT PIPING SEE SHEET C-1
2" CONDENSATE
4" STEAM
10" FUEL
4" BOTTOM SLUDGE AND WATER

Additional Fence By OMM

GRAPHIC SCALES
CHECK GRAPHIC SCALES BEFORE USING



REV. DESCRIPTION

PREP BY DATE APPROVD

TRC THE DOCUMENTS CORPORATION

NAVY FACILITIES ENGINEERING COMMAND

NORTHERN DIVISION

NAVY, EDUCATION AND TRAINING CENTER

INTERM REMEDIAL ACTION- TANKS 53 AND 56

TANK FARM 5

GENERAL SITE PLAN

STATE OF CALIFORNIA

SEAL AREA

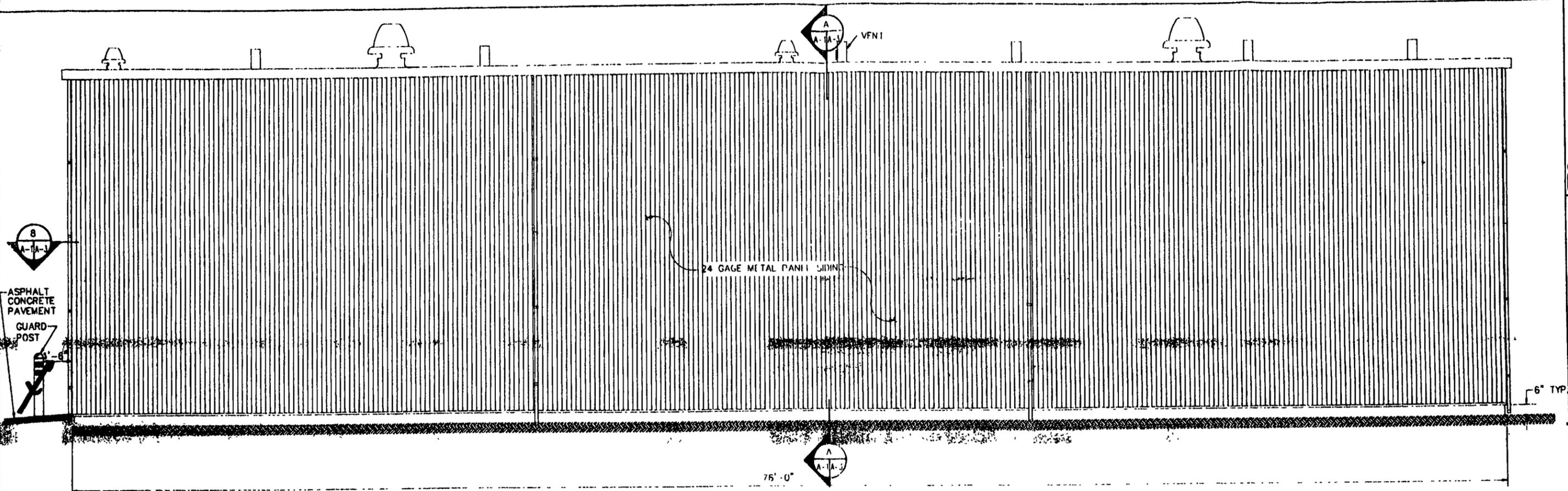
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SCALE AS NOTED

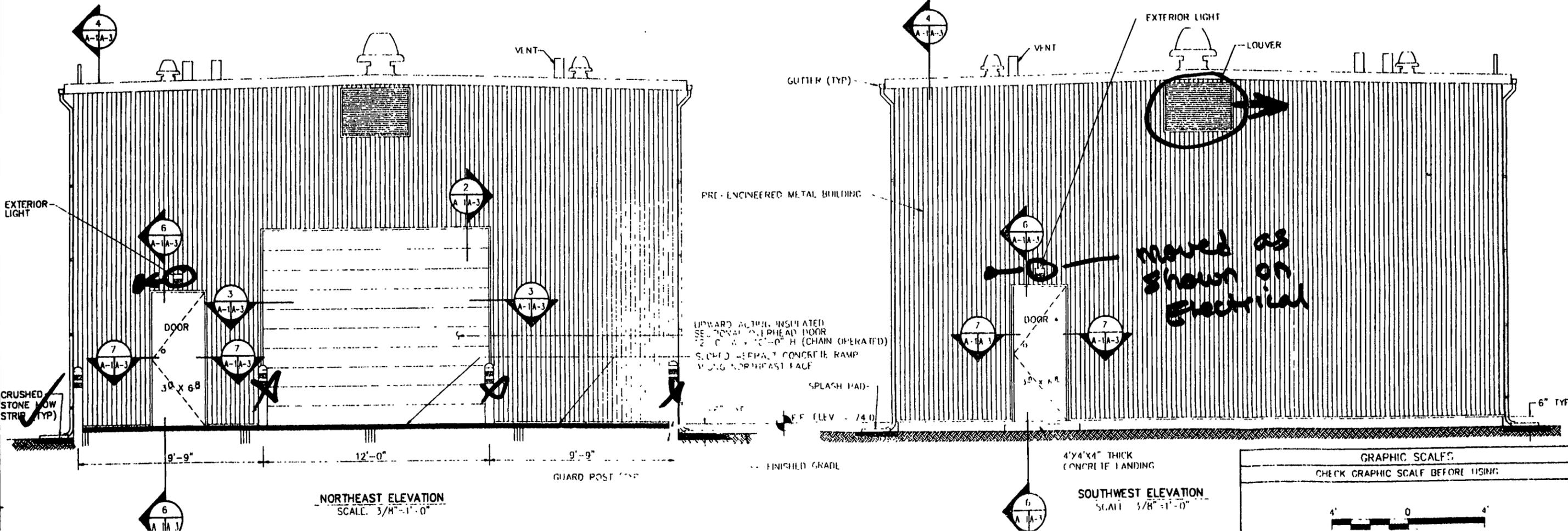
SPEC. NO. 84-92-0016

CONTRACTOR CONTROL NO. N62472-92-C-0006

NAVY FAC BRANDING NO. 210210



NORTHWEST ELEVATION (=SOUTHEAST MIRROR IMAGE)
SCALE: 3/8"=1'-0"

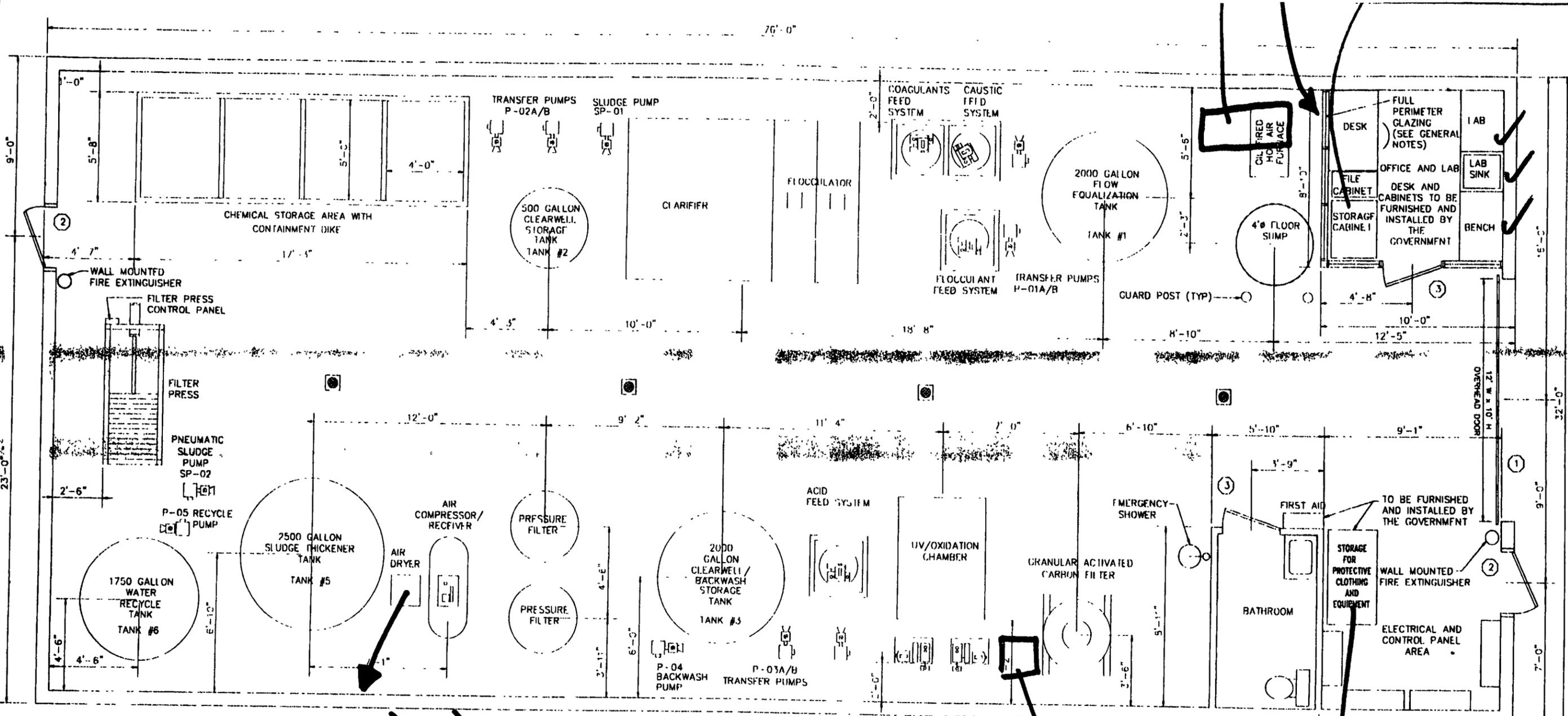


NORTHEAST ELEVATION
SCALE: 3/8"=1'-0"

SOUTHWEST ELEVATION
SCALE: 3/8"=1'-0"

GRAPHIC SCALE:
CHECK GRAPHIC SCALE BEFORE USING:

<p>DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND NORTH DIVISION NAVAL EDUCATION AND TRAINING CENTER INTERIM REMEDIAL ACTION - TANKS 53 AND 56 TANK FARM 5 TREATMENT BUILDING ELEVATIONS</p>	<p>PREP BY: DATE: APPROVED: DATE: REV DESCRIPTION:</p>	<p>REV: 1 REV: 2 REV: 3</p>	<p>DATE: 08/01/04 SCALE: AS NOTED SHEET NO: 04 - 02 - 003 CONTROL CENTER NO: N82472-02-C-0056 NAVFAC DRAWING NO: 210216</p>
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PLAN
SCALE 3/8" = 1' 0"

DOOR SCHEDULE			
NUMBER	QUANTITY	SIZE	DESCRIPTION
①	1	12' x 10'	UPWARD ACTING INSULATED STEEL OPTIONAL OVERHEAD DOOR
②	2	3' x 6'	EXTERIOR STEEL INSULATED MANDOOK
③	2	3' x 6'	INTERIOR STEEL MANDOOK

- GENERAL NOTES:**
- 1) DIMENSIONS TO MAJOR EQUIPMENT GIVEN AS REFERENCE ONLY. ACTUAL DIMENSIONAL REQUIREMENTS MAY VARY DEPENDENT ON VENDOR SELECTED CONTRACTOR TO VERIFY ALL EQUIPMENT AND CLEARANCE ENVELOPES AT TIME OF CONSTRUCTION
 - 2) THE OFFICE/LAB AREA TO BE CONSTRUCTED OF FULL FLOOR TO CEILING METAL STUD WALLS W/1/2" GWB BOTH SIDES. TO APPROXIMATE DIMENSIONS AS SHOWN. WALLS TO INCLUDE GLAZING AROUND ENTIRE INTERIOR PERIMETER AS SHOWN. 3'-8" HIGH MINIMUM STARTING 3'-0" OFF FLOOR. PROVIDE ALL REQUIRED TRIM AND APPURTENANCES TO FINISH ACCORDING TO SPECIFICATION.
 - 3) BATHROOM TO BE CONSTRUCTED OF FULL FLOOR TO CEILING METAL STUD WALLS W/ 1/2" GWB BOTH SIDES. LOCATE DOOR AND FIXTURES AS SHOWN.
 - 4) MAINTAIN 2'-0" CLEARANCE BETWEEN MAJOR EQUIPMENT ITEMS AND BUILDING WALLS. CONTRACTOR TO VERIFY MAINTENANCE CLEARANCES REQUIRED AROUND ALL EQUIPMENT TO REMOVE MOTORS, TUBS BUNDLES, MIXERS ETCETRA AS DEFINED BY SELECTED EQUIPMENT VENDOR.
 - 5) INTERIOR OF EXTERIOR WALLS IN THE OFFICE/LAB AND BATHROOM TO BE FINISHED W/1/2" GWB.

Transformer installed thru change order to operate by

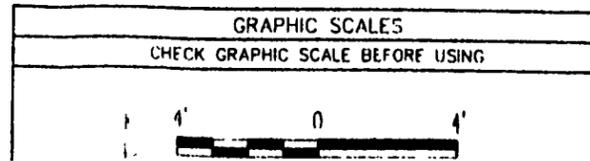
Waiting on govt.

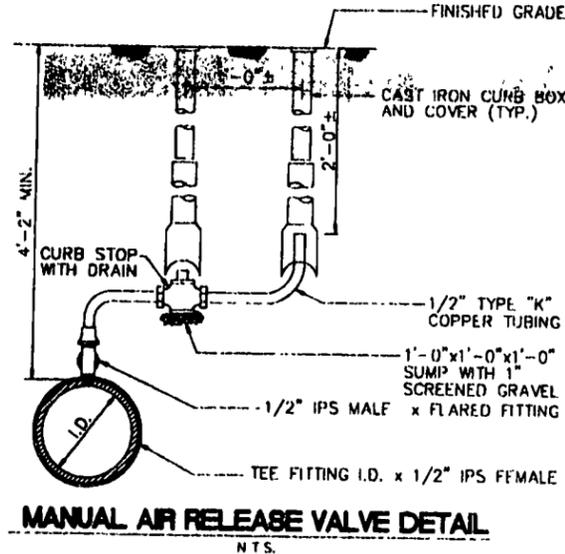
way marked

DEPARTMENT OF THE NAVY
NORTH NORTHERN DIVISION
NAVY FACILITIES ENGINEERING COMMAND
PACIFIC FLEET
NAVAL EDUCATION AND TRAINING CENTER
INTERIM REMEDIAL ACTION - TANKS S3 AND S6
TANK FARM 5
BUILDING FLOOR PLAN

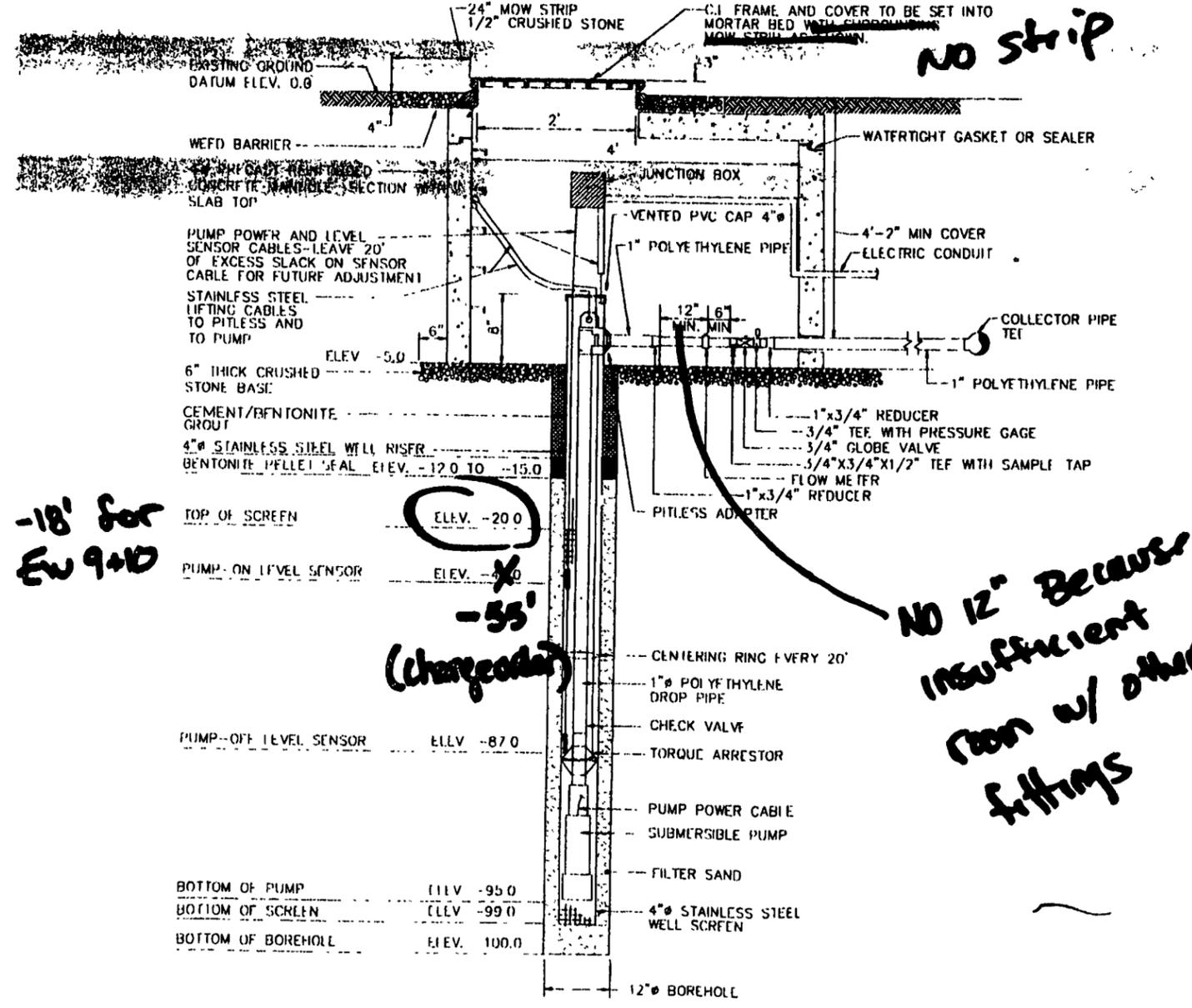
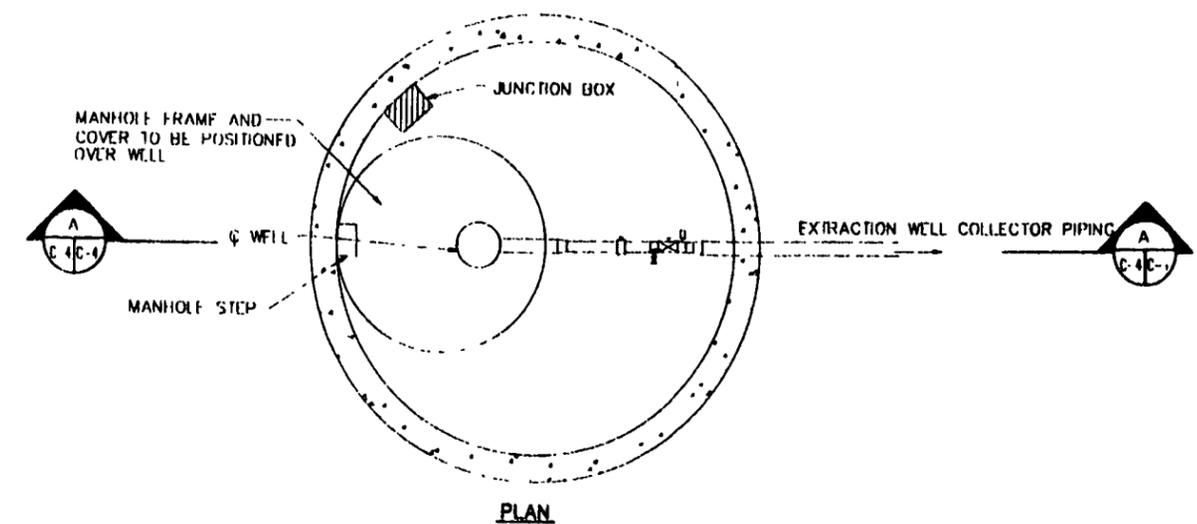
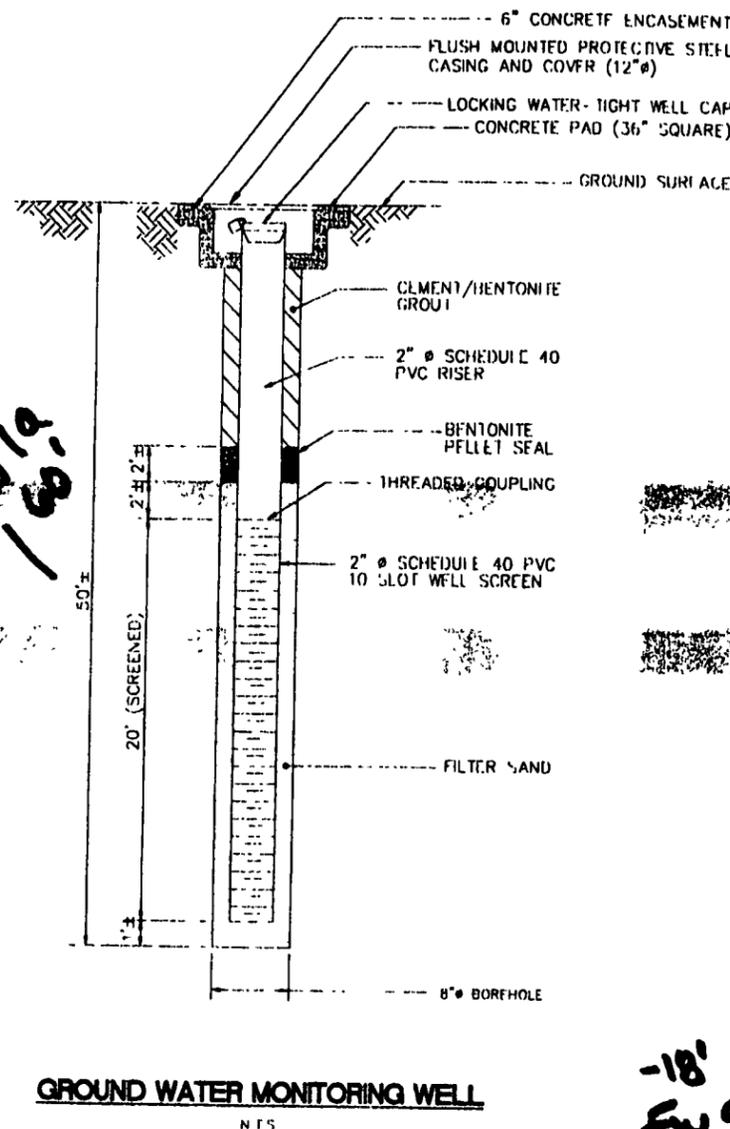
REV. DESCRIPTION
PREP BY DATE APPR'D
TAC The Environmental Corporation
MARK R. HODGE, P.E., M.S.E., M.A.S.H.A.
CH. USE
DATE
BY
DATE
BY

SAT TO DATE
CODE LIB. NO. 8009
SCALE AS NOTED
SPEC. NO. 04 - 92 - 0008
CONSTRUCTION NO. H82472-92-C-0086
DRAWING NUMBER 293217





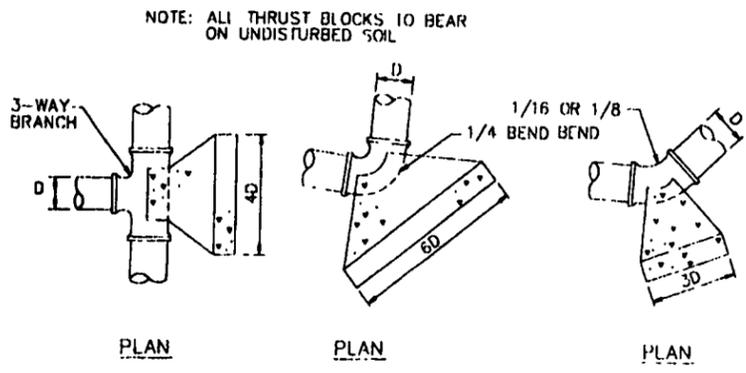
MW 19 / 6019



-18' for Ev 9+10

-55' (changeover)

NO 12" BECAUSE INSUFFICIENT ROOM w/ OTHER FITTINGS



THRUST BLOCKS ON BENDS AND TEES N.T.S.

GROUND WATER EXTRACTION WELL AND VALVE PIT N.T.S.

DEPARTMENT OF THE ARMY
 CIVIL ENGINEERING CENTER
 INTERIM REMEDIAL ACTION - TANKS 53 AND 56
 TANK FARM 5
 GROUND WATER EXTRACTION DETAILS
 SCALE: AS NOTED
 DATE: 04-98
 DRAWING NO: 82472-02-C-0088
 DRAWING NO: 2123119

