

NOTICE

All drawings located at the end of the document.

**STATEMENT OF WORK
FOR
TANK CLOSURE ACTIVITIES**

ADMIN RECORD

**Phase I – Individual Hazardous Substance Site 129
Phase II – Resource Conservation and Recovery Act Tanks**

Revision 0

Prepared By

Rocky Mountain Remediation Services, L L C

Environmental Restoration, Accelerated Actions
Rocky Flats Environmental Technology Site

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Authorization No 951822
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**DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE**

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1.0 OBJECTIVE

Rocky Mountain Remediation Services, L L C, hereinafter referred to as Contractor, requires services of a specialty subcontractor, hereinafter referred to as Subcontractor, to provide the labor, materials and equipment to decommission one underground storage tank (UST) in addition to filling six (6) other USTs with urethane foam at the Rocky Flats Environmental Technology Site (RFETS)

The seven underground storage tanks include the following

<u>Tank Number</u>	<u>Building</u>	<u>IHSS</u>
Tanks 2 and 3	441	122
Tank 4	443	129
Tank 10	776	132
Tank 14	774	124 1
Tank 16	774	124 2, 124 3
Tank 40	889	121

2.0 SCOPE

This Statement of Work (SOW) describes the required services for the execution of these tank closure activities. This SOW describes two separate projects that are defined in two phases. Phase I consists of the Individual Hazardous Substance Site (IHSS) 129 Interim Action project, and Phase II consists of the Resource Conservation and Recovery Act (RCRA) Tank project.

2.1 PHASE I – IHSS 129 Interim Action

The Subcontractor shall provide the following services:

- Remove contents (oil/water/sludge) from Tank #4,
- Process contents through an oil/water separator (Subcontractor furnished),
- Containerize RCRA waste (i.e., oil, sludge and miscellaneous personal protective equipment) for proper disposal,
- Remove fuel oil in the concrete pipe chase, the inlet fill vault and above the tank to preclude fuel oil from coming in contact with Tank #4 in the future,
- Remove, package and ship asbestos insulation from fuel oil supply/return and steam/condensate piping in accordance with TSCA requirements,
- Cut and cap piping (i.e., fuel oil supply/return and steam/condensate and main supply) to isolate Tank #4 from the tank system,
- Rinse Tank #4 interior and inlet fill vault to "clean" condition;
- Process rinse water through oil/water separator for treatment of water at Building 891,
- Fill Tank #4 with inert material (i.e., urethane foam) to preclude groundwater from entering tank,
- Decontamination of equipment will be performed at decon pad (by others), and
- Restore work area to original condition.

2.1.1 Condition of the Tank

Provide documentation pertaining to the condition of tank prior to filling with inert material. This effort may require the use of video equipment to inspect the interior of the tank to identify if a breach in the tank exists. An independent Professional Engineer shall certify the tanks have been rinsed and sampled in accordance with the Contractors' approved Sampling and Analysis Plan.

2.1.2 Additional Work

A separate bid item may be executed for similar work to be performed at Tank #3 (i.e., removal of contents, rinsing and filling) if additional funding becomes available.

2.2 Phase II – RCRA Tanks

The Subcontractor shall provide the following services:

2.2.1 Locations of Tanks

Fill six tanks with inert material (i.e., urethane foam) in various locations both inside and outside of the Protected Area (PA) as follows:

- Tanks T-2 and T-3 (interconnected), south of Building 441
- Tanks T-10 East and West, north of Building 777 (in PA)
- Tank T-14 south of Building 774 (in PA)
- Tank T-16 North and South, south of Building 774 (in PA)
- Tank T-40 west of Building 889

2.2.2 Condition of Tanks

Provide documentation pertaining to the condition of tanks prior to foaming. This effort may require the use of remote video equipment to inspect the interior of the tank to identify if a breach in the tank exists. An independent Professional Engineer shall certify the tanks have been rinsed and sampled in accordance with the Contractors' approved Sampling and Analysis Plan.

2.3 Schedule

Provide to the Contractor Technical Representative (CTR), a level IV detailed status schedule on a weekly basis to document progress. Also, provide CTR with any recommendations for potential cost or schedule savings.

The estimated period of performance for the construction phase of this work is 90 days. The Subcontractor shall perform work vigorously through completion and report any deficiencies noted to the CTR with timely recommendations for correction. Delays due to weather should be anticipated and downtime minimized.

The working hours for this project are 7:00 a.m. to 4:30 p.m. (in accordance with the Alternate Work Schedule [AWS]). All project support personnel will be notified in advance of changes in sequence, project working hours, and holiday and weekend work.

3.0 BACKGROUND

3.1 Introduction

This accelerated removal action is being performed to support the stabilization of potential contaminants in seven Interagency Agreement underground storage tanks (USTs) located at RFETS. This removal action is designed to prevent, minimize, or mitigate damage to the public health or to the environment which may otherwise result from a release or threat of release of removable contaminants (CERCLA, 42 USC9601, Section 101(23)). This removal action proposes to use polyurethane foam, an inert material, to fill the tanks to prevent possible contaminant migration into the surrounding groundwater.

3.2 History of the Site

3.2.1 Phase I – IHSS 129

Tank #4 is one of four 19,000 gallon below ground fuel oil storage tanks that were used to store fuel oil for back-up fuel supply for the Steam Plant boiler burners. The tank is located east of Building 443, constructed of carbon steel and is oriented longitudinally east to west. Tank #4 is located in Individual Hazardous Substance Site (IHSS) 129 due to several chemical spills in the area. Additionally, small amounts of compressor oil, diesel fuel and spent organic "F-listed" solvents are known to have been added to the tank on an intermittent basis.

Radiological Engineering personnel at RFETS have documented that the IHSS 129 area as a Non-Radiological Materials Management Area.

In the fall of 1994, samples were collected from liquids in Tank #4. The analysis was performed at on-site laboratories. Results of volatile organic analysis are presented in the table below. Samples collected for metals analysis indicated insignificant (trace) levels of various metals such as iron, manganese, calcium and sodium. None of the data listed has been validated.

Summary of Highest Concentrations from Samples of Contents of Tank #4

CONSTITUENT	LIQUID FROM TANK #4 (mg/L)
Acetone	0.091J
1,1-Dichloroethene	0.210J
1,1-Dichloroethane	0.056J
1,1,1-Trichloroethane (TCA)	0.65
Tetrachloroethene	1.9
Trichlorofluoromethane	0.66

3 2 2 Phase II – RCRA Tanks

Tanks 2 and 3 represent a tank system located along the south wall of Building 441 near its southwest corner. Both tanks were installed in 1952 and removed from service in 1982. Tank 2 is an underground concrete tank divided into two concrete vaults which partially underlies Building 441. Tank 3 refers to a 3000 gallon concrete vault which is interconnected with Tank 2. These tanks reportedly received waste streams from Building 122 (the Medical facility), Building 123 (the Health Physics Analytical Laboratory) and Building 441 (the Analytical Laboratory). Waste streams that were sent to these tanks included acids, bases, metals, organics, radionuclides, thiocyanate, ethylene glycol, trace polychlorinated biphenyls, bleach, soap, blood, and hydrogen peroxide. Tank 3 reportedly last stored ammonia after storing several other wastes. Historical information indicates one of the vault floors is covered with limestone to act as a neutralizing agent. This material is considered integral to the tank and will not be removed.

Tank 10 located outside of Building 730 consists of two 4,500 gallon underground concrete tanks. These tanks were used to store process and laundry water and were removed from service in 1982. The tank system measures about five feet on the north-south axis, 15 feet on the east-west axis, and about 10 feet deep.

Tank 14 located east of Building 774, is a 30,000 gallon underground concrete tank which received waste streams from Building 774 RCRA Unit 55, which includes Tank 14, supports Building 771 which historically generated characteristic (acids and bases) hazardous waste only.

Tank 16 is comprised of two 14,000 gallon underground concrete tanks (T-16 North and T-16 South), abandoned in 1989, which received process waste streams from Building 774 RCRA Unit 55, which includes Tank 16, supports Building 771 which historically generated characteristic (acids and bases) hazardous waste only.

Tank 40 is located west of Building 889 and is comprised of two underground concrete 1,000 gallon tanks underlying a vault measuring approximately 12 feet by 7 feet by 7 feet deep. The structural integrity of the vault appears good, although groundwater/surface water intrusion is noted on the vault walls. The tanks were decontaminated/abandoned in 1982. Analytical results of water in the vault confirmed the presence of listed hazardous constituents.

INTERAGENCY AGREEMENT UST TANK VOLUME CHART

Tank ID	T-2	T-40	T-10E	Tp-10W	T-14	T-16N	T16S
Tank volume (gallons)	6,000	2,000	4,500	4,500	30,000	14,000	14,000
Vault volume (ft ³)	300	540	n/a	n/a	n/a	n/a	n/a

n/a – not applicable

4.0 CONSTRUCTION

4.1 Construction Support

4.1.1 Materials, Equipment, Personnel and Services

The Subcontractor shall provide all materials, equipment, personnel and services required to perform the scope of work as outlined in this SOW.

4 1 2 Technical Specifications

This project shall be executed in accordance with the applicable codes, standards, and specifications and construction requirements set forth in the following Rocky Flats Plant, Technical Specification sections (reference Appendix A)

- Section 01100 Special Subcontractor Requirements
- Section 01300 Submittals
- Section 01500 Temporary Facilities Controls and Special Project Requirements
- Section 01610 Material Handling and Waste Disposal
- Section 01700 Subcontractor Safety & Health Requirements
- Section 02082 Removal and Disposal of Asbestos Material

4 1 3 Construction Problem Resolution

Subcontractor shall provide written, recommended resolutions to any problems and/or questions that arise during construction and incorporate any Engineering/Construction solutions issued by the Contractor. Field changes will be issued in accordance with COEM DES-255, Engineering Change Requests

4 1 4 IWCP Development

Assist the Contractor in the development of construction activity inspection points. An Integrated Work Control Program (IWCP) will be prepared by the Contractor that lists all required inspection activities during construction.

4 1 5 Subcontractor will provide CTR with any recommendations for potential cost or schedule savings.

4 1 6 Subcontractor shall field verify the conditions of the work area as compared to the drawings and provide "red-line" changes to reflect the as-built condition.

4.2 Meetings

4 2 1 Status Meetings

At a minimum, the Subcontractor shall attend Construction Status meetings every two (2) weeks at RFETS.

The specific dates and times for meetings will be specified in the beginning of the project. All appropriate personnel on the Subcontractor's team shall attend the status meetings. The Contractor reserves the right to call meetings as necessary to resolve problems, answer questions, or incorporate changes.

4.3 Construction Phase I – IHSS 129

This SOW describes the required services for the execution of the IHSS 129 Interim Action project. This work includes the below listed tasks. Rocky Flats drawings listed in Appendix B provide general tank information. These drawings are not accurate representations of the tank, but are useful for project discussion. All utility services to be disconnected must be locked out and tagged out (LOTO) by the Contractor's personnel. These services include steam, condensate, electrical power, and electrical controls.

4 3 1 Asbestos Removal and Disposition

The Subcontractor shall comply with specification Section 02082 for any work involving the removal and disposition of asbestos-containing material. The pipe insulation material was sampled and found to contain asbestos material. The Subcontractor shall develop an asbestos abatement plan in accordance with Specification Section 02082 (reference Appendix A).

4 3 2 Steam and Condensate Line Disconnect

Condensate/steam lines feeding into Tank #4 must have their valves closed and their ends capped. One is located on the structural post labeled A06W052. Another valve is located within the Tank #4 metal enclosure. The stub just downstream of the valve shall be fitted with a threaded cap. To ensure the flow is shut off in both directions, the Subcontractor shall locate a valve within the main trench, to the north of Tank #4 and shut it off. These lines must be locked out and tagged out. Asbestos insulation is known to exist on these lines and valves.

4 3 3 Electrical Removal

Electrical control and power wiring must be removed from the pumps and valves before demolition can take place. It is the Subcontractor's responsibility to ensure wires are de-energized and properly locked and tagged out. The two conduits that run in the trench are to be removed up to the point of the junction box located on the vertical support, adjacent to a permanent ladder. The two circuits are labeled EMCIN 4 BKT 4D and EMCINN 4 BKT 4E. All wires taken out of service must be stripped back to the point of origin. The junction box must be labeled "abandoned" in accordance with RFETS Standard SX-164 Section 19.

4 3 4 Inlet Fill Vault

The inlet fill vault on the east end of Tank #4 contains a fill pipe, vent pipe and a main supply valve to isolate Tank #4 from the bulk storage supply. The supply valve must be closed and a blind flange installed downstream to prevent any oil that leaks through the valve from causing contamination to the site. The electrical wiring at the valve must be locked and tagged out prior to removal. The Subcontractor shall remove the oil and clean the interior surfaces of the vault. This oil has been in place for some time and is considered to be impure (i.e., possibly contains trace amounts of F-listed solvents and water). An elbow has been welded into the fill pipe downstream from the shutoff valve. This elbow will need to be removed to improve access for clean out. The fill and vent pipes shall be plugged to prevent their use after the tank is filled with foam.

4 3 5 Pipe Removal

Piping associated with the fuel oil supply/return system and the steam/condensate system shall be disconnected from the west end of Tank #4 to isolate the tank from the steam plant. The pipe insulation has been sampled and analyzed and is known to contain asbestos material. This insulation is also saturated with #6 fuel oil. Special precautions will be required to handle this waste material in accordance with TSCA regulations. Two oil supply and return valves located in a small vault over the concrete trench between the #2 and #3 tanks must be locked and tagged out. Individual valves to each line in the west end vault must also be closed. An approximate location for these valves are shown in Sketch 98122-SK2. The piping, pressure regulating valve, and pressure gauges between the closed valves, must be terminated with blind flanges or screw-on caps. The sizes are to be field determined by the Subcontractor.

A temporary barrier or "dam" will be installed in the pipe chase at the location where the pipes are disconnected to isolate that section of the trench from Tank #4. The purpose of this "dam" is to prevent the flow of oil from the trench back onto the tank until it is filled with an inert material.

4 3 6 Oil Residue Removal

The above ground metal enclosure, connecting pipe chase and the inlet fill vault have a significant amount of #6 fuel oil that possibly contain solvents and water. The Subcontractor shall remove the oil and contain it in drums provided by the Contractor. A heater may be required to liquify the material to allow it to be pumped. The surfaces of the piping removed shall be cleaned such that they are no longer a RCRA hazardous waste.

4 3 7 Removal of Tank Contents

Conduct removal in a manner that minimizes the spread of contamination into previously uncontaminated zones by using recovery and disposal techniques appropriate to the conditions at the site, and that properly treats, discharges or disposes of recovery byproducts in compliance with applicable regulations. The tank is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the tank system remains in the tank. Tank #4 shall be pumped empty and cleaned sufficiently to meet foam fill criteria. The contents of the tank are estimated to consist of primarily (approximately 95%) water, and the remainder (5%) oil/sludge. The tank shall be verified empty in accordance with 7 CCR 1101-14. A heater may be required to liquify the material to allow it to be pumped out of the tank. Any flammable products will be handled in a safe and competent manner to prevent fires or explosions. Product removal may be conducted using an air-driven diaphragm pump or gasoline-powered chemical pump.

4 3 8 Tank Inspection

The potential for a breach in Tank #4 exists. The Contractor will attempt to remotely inspect the interior of the tank using a groundwater monitoring video camera. This inspection will be performed prior to tank cleaning activities and after tank rinsing is completed to aid in documenting the interior condition of the UST.

4 3 9 Tank Rinsing/Cleaning

Prior to closure, the UST must be rinsed and flushed with high pressure water to ensure that the UST is clean in preparation for fill material. Lines also will be drained and cleaned to facilitate closure. A high-pressure spray using a high-temperature water and/or degreaser solution is anticipated to be used to clean the interior of the UST and associated piping. Each tank surface and pipeline will be triple-rinsed as the minimum level of cleaning. This process will remove residuals in the tank that may be leaking into the environment or that may adversely affect the inert material. Tank cleaning will be accommodated using equipment that will enter the UST through the existing openings, minimizing the amount of disturbance to the UST. The sludges and cleaning rinsates from this operation will be containerized for characterization and disposal/treatment by the Contractor.

Additional work – A separate bid option may be executed for the Subcontractor to perform additional rinses if deemed necessary by the Contractor to achieve the desired end point criteria.

4 3 10 Sampling Data

The Contractor reserves the right to perform sampling as necessary throughout the free product removal process tank cleaning/rinsing process for waste characterization and disposal. Full final sampling of tank rinsate liquids for all constituents of concern can take place at the same time the final rinsate sample is taken.

The sampling will be done in four phases. The first phase will be conducted prior to the content removal. One sample will be taken from the water layer of Tank #4 and analyzed for gross alpha/beta content and SVOCs.

The second phase will be conducted as the tanker trucks are filled with the water to be transported to the Building 891 Water Treatment Facility. One sample from each tanker truck will be analyzed for TPH as required by the waste acceptance criteria for the facility.

The third phase will consist of samples taken from the oil phase for waste characterization and will include one sample from 10% of the oil containers, chosen at random. These samples will be analyzed for VOCs, SVOCs, and metals.

The fourth phase will consist of one sample taken of the rinsate and analyzed for VOCs. This sample will be taken to show the final state of the tank as a basis for any final action that will be taken at a later date.

The rinsate sample will be taken to show the level of organics remaining in the tank after the contents are removed and the tank has been cleaned. There are no specific levels that the water has to meet to be accepted at the Building 891 Water Treatment Facility, but the levels of semi-volatile organics and radionuclides must be known to tailor the treatment to the contaminants.

4.3.11 Tank Filling

The tank shall be decommissioned in place by filling the UST and ancillary piping with an inert material (i.e., urethane foam). The Subcontractor is cautioned to inspect the tanks to ensure sufficient openings exist to allow the tank to be filled to 100% capacity. The Subcontractor may have to add access port(s) to the tank to ensure voids are not present after filling.

The tank shall be verified empty as set forth in 7 CCR 1101-14, "The UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue, or 0.3 percent by weight of the total capacity of the UST system, remain in the system."

There is an existing steam coil in the tank that is out of service. This may complicate the cleaning effort and also may restrict the flow of the fill material. The Subcontractor shall determine if the steam coil heater should be removed or if an acceptable job of cleaning and filling can be done with this obstruction in place.

4.3.12 RCRA Waste Issues

Solvent contaminated oil and sludge shall be removed and segregated from other waste streams. The oil/sludge shall be placed in the containers provided by the Contractor. Controls will be established to prevent the spread of contamination surrounding the work area. The Subcontractor will be responsible to ensure their employees have read and demonstrated understanding of the training for Emergency Response and Spill Control (required reading document) in the event of an incident.

4.3.13 Equipment decontamination (i.e., oil/water separator) will be performed by others.

4.3.14 Restore the work area to the original condition.

4.3.15 Handle any flammable products in a safe and competent manner to prevent fires or explosions.

4.3.16 Provide adequate ventilation of the tank, if necessary, to preclude an explosion hazard.

4.4 Construction Phase II – RCRA Tanks

This Statement of Work (SOW) describes the required services for the execution of the RCRA Tank closure project. This work includes the below listed tasks. The Rocky Flats drawings/sketches attached give a general layout of the tanks. These drawings are not accurate representations of the tank, but are useful for project discussion. All utility services to the tanks will be capped or isolated prior to Subcontractor work.

4.4.1 Inspection Prior to Filling with Foam

Document the existing interior condition of each of the six RCRA tanks prior to filling each tank with urethane foam fill material. This inspection will be performed after tank rinsing and cleaning activities have been completed to aid in documenting the interior condition of the UST.

4.4.2 Fill each of the following six (6) tanks with urethane foam

- Tanks T-2 and T-3, south of Building 441 in IHSS 122
- Tanks T-10 East/West, north of Building 777 in IHSS 132 (in Protected Area)
- Tank T-14 south of Building 774 in IHSS 124 1 (in Protected Area)
- Tank T-16 North/South, south of Building 774 in IHSS 124 2 and 124 3 (in Protected Area)
- Tank T-40 west of Building 889 in IHSS 121

5.0 APPLICABLE DOCUMENTS

The Resource Conservation and Recovery Act (RCRA) authorized the United States Environmental Protection Agency (EPA) to promulgate regulations for USTs that contain petroleum products. The regulations, codified in 40 CFR 265 and in the State of Colorado 6 CCR 1007-3, Part 264, Subpart J, set forth the requirements for closure of hazardous waste tank systems.

The following documents are applicable for activities in this SOW regarding pertinent regulations and internal requirements:

- 5.1 EG&G Rocky Flats Conduct of Engineering Manual (COEM), controlled copy
- 5.2 EG&G Rocky Flats Configuration Change Control Program (CCCP), controlled copy
- 5.3 Applicable Rocky Flats Plant (RFP) Standards and Manuals, current revision as listed in the "Design Requirements Document"
- 5.4 The Rocky Flats Health and Safety Practices Manual, controlled copy
- 5.5 RMRS Quality Assurance Program Plan (QAPP), 95-QAPP-001
- 5.6 RFETS Technical Specifications, Division 1 and 2 (see Appendix A of this document)
- 5.7 RFP Integrated Work Control Program (IWCP) Manual, latest revision
- 5.8 EPA Hazardous Waste Regulations, 40 CFR Parts 160-280
- 5.9 Colorado Hazardous Waste Regulations, 6 CCR 1007-3
- 5.10 RCRA, Subtitle C Regulations
- 5.11 RFETS Environmental Restoration Standard Operating Procedures (SOP)
- 5.12 RFETS Environmental Restoration Sampling and Analysis Plan
- 5.13 RFETS Hazardous Waste Requirements Manual
- 5.14 RFETS Records Capture and Transmittal, #2-G18-ER-ADM-17 01 Rev 0
- 5.15 American Petroleum Institute Publication 2015, "Cleaning Petroleum Storage Tanks"

6.0 SPECIAL CONSIDERATIONS

6.1 Contractor Technical Representative (CTR)

The CTR is the single point of contact for the Subcontractor. The CTR will be designated prior to subcontract award. The Contractor reserves the right to re-designate the CTR at any time. All technical communications between the Subcontractor, the Contractor, or the Department of Energy/Rocky Flats Field Office (DOE/RFFO) shall be initiated through the CTR. All technical submittals shall be delivered to the CTR with copies of the letter of transmittal being sent to the Contractor's Subcontract Administrator.

The Project Manager will act as the CTR and will be the responsible point of contact for Contractor review of all design submittals and for the construction portion of the project.

6.2 Rocky Flats Environmental Technology Site Access

6.2.1 Subcontractor is responsible for obtaining the required badges for performance of this subcontract. Approximately four hours shall be allowed for one-time initial paperwork and badging of individuals at RFETS. All personnel entering RFETS must be U.S. citizens.

6.2.2 All persons entering RFETS property will be required to comply with administrative procedures for badging and escorting.

6.2.3 Subcontractor shall notify CTR of any visits to RFETS.

6.2.4 Subcontractor shall be knowledgeable of and follow the RFETS Health and Safety Practices Manual.

6.2.5 Subcontractor shall ensure that all subcontract personnel receive and comply with training and indoctrination requirements while working at RFETS.

6.2.6 Subcontractor shall be knowledgeable of and shall follow the applicable Environmental Restoration Management Standard Operating Procedures (SOPs) and the applicable RFETS waste management packaging procedures.

6.2.7 Subcontractor shall be responsible for the proper packaging and documentation of wastes generated as a result of this project for sign off by the Contractor.

6.3 Government Furnished Equipment (GFE)

The following items will be provided to the Subcontractor at no charge for this project:

6.3.1 The Contractor will provide waste containers for oil and sludge.

6.3.2 The Contractor will provide a water tanker truck to collect and ship waste water generated by the project to the onsite water treatment facility.

6.4 Training

The Subcontractors' employees working on this subcontract will be required to attend the following classes and/or provide evidence in lieu of training. Reference Section 7.2 for additional training information.

6.4.1 General Training

The Subcontractor's employees are expected to be trained and certified in 40-Hour OSHA (or 8-Hour Refresher if 40-Hour not current) and asbestos training for workers/supervisors (as applicable) prior to work at RFETS.

6.4.2 Scheduling Required Training

The Subcontractor is responsible for scheduling and obtaining the required RFETS training of its personnel necessary for performance of this contract (also reference section 7.2 for personnel training and qualification). Information on these classes will be available from the CTR. Use the hours below as a basis for estimating purposes. The required classes/training for each employee are:

- a General Employee Radiological Training (GERT) – two hours
- b RCRA Hazardous Waste Compliance – Computer Based Training (CBT) – one hour
- c Confined Space Entry* – four hours
- d Current Medical Surveillance Certification for Hazardous Waste and Nuclear Work
- e Current physical
- f Hazard Communication Checklist – one hour
- g Radiation Worker Level II – 16 hours
- h Respirator Indoctrination and Respirator Fit Chamber Test* – one hour
- i Asbestos Trained Worker (or supervisor)*

*or approved program by Contractor's Health and Safety representative

Additional training will be provided at Pre-Evolution Briefings such as:

- a Emergency Response and Spill Control
- b Applicable Operations Procedures
- c Applicable Health and Safety requirements

7.0 QUALITY ASSURANCE

Work performed under this Statement of Work is governed by the RMRS QAPP (95-QAPP-001 Rev. 0), and the RFETS Environmental Restoration Program Division (ERPD) Quality Assurance Project Plan (QAPP). The Subcontractor shall perform all work in accordance with the site quality assurance requirements. Subcontractors who have a quality program that is in compliance with the ten criteria of DOE Order 5700.6C can perform work governed by that Quality Assurance (QA) Program if approved by the RMRS QA Program Manager and the CTR. To assure compliance to this SOW, the Subcontractor shall comply with the following specific requirements prior to initiating any work under the contract:

7.1 Organization

The authority and responsibility of persons and organizations performing work under this SOW shall be documented and submitted to the CTR. An organization chart shall identify specific individuals by name, their authority and responsibility as a suitable means of documenting this requirement.

7.2 Personnel Training and Qualification

Personnel conducting activities shall be identified and their training and qualification requirements documented. Such persons shall be trained and qualified to ensure they are capable of performing their assigned work. Personnel shall be provided continuing training to ensure that job proficiency is maintained. The Subcontractor shall maintain documented qualification requirements for all persons working on this project, and provide the CTR with evidence of training to meet those qualifications prior to starting work under this SOW.

7.3 Documents and Records

7.3.1 Records shall be identified, prepared, reviewed, approved, and maintained in accordance with procedures to be established in the quality assurance program

7.3.2 Records shall be turned over to the Contractor on completion of this SOW or as appropriate through the duration of the project. This is necessary to

- a Ensure that records documenting RFETS activities are properly captured and transmitted to Records Management for historical reference
- b Ensure that records created are legible, accurate, completed appropriate to the work accomplished, and are authenticated by authorized personnel
- c Ensure that records are corrected as necessary
- d Ensure that groups of records transmitted are available to satisfy regulatory requirements

7.4 Work Processes

Activities and processes shall be performed in accordance with RMRS operating procedures including established technical standards and administrative controls using approved instructions and procedures. Items shall be identified and controlled to ensure their proper use. Items shall be maintained to prevent their damage, loss, or deterioration. Equipment used for process monitoring or data collection shall be identified, calibrated and maintained, as necessary.

7.5 Design

Interfaces with the Contractor shall be established to ensure full incorporation of design requirements and associated changes into all construction activities.

7.6 Procurement

Procured items and services shall meet established requirements and perform as specified. Applicable technical, administrative, and quality requirements shall be incorporated into procurement documents. Prospective suppliers shall be evaluated and selected on the basis of specified criteria. Processes to ensure that approved suppliers continue to provide acceptable items and services shall be established and implemented.

Items(s) or services(s) classified as System Category (SC) 1, 2, or 3 in accordance with COEM DES-223 shall be purchased in one of the following ways: a) Purchased from a supplier that has been audited and approved by the approved construction Subcontractor or by the Contractor, or b) For unapproved suppliers, the construction Subcontractor shall "dedicate" item(s) or service(s) to assure they meet requirements and perform as intended. The dedication process is defined as item(s) or service(s) that are inspected and approved by the Contractor or by the construction Subcontractor per specified criteria. Dedication can also be defined as requiring the supplier to follow all applicable portions of the Subcontractor's approved Quality Assurance program. The dedication process is based on the graded approach which is related to project liabilities, requirements, and commitments (i.e., DOE/RFFO, the Colorado Department of Public Health and Environment, etc.). The applicable procurement level shall be specified to the Subcontractor by the Contractor in the "Construction Specifications."

7.7 Inspection and Acceptance Testing

Inspection and testing of specified items, services, and processes shall be conducted using established acceptance and performance criteria. Equipment used for inspection and test shall be calibrated and maintained, as necessary.

7.8 Management Assessment

Management shall assess the Subcontractor's management processes and document the results. Problems that hinder the organization from achieving its objectives shall be identified and corrected.

**APPENDIX A
TECHNICAL SPECIFICATIONS**

Division 1 Technical Provisions

Section 1101 – Special Contract Requirements

Section 1300 – Submittals

Section 1500 – Temporary Facilities, Controls, and Special Project Requirements

Section 1610 – Material Handling and Waste Disposal

Section 1700 – Subcontractor Safety and Health Requirements

Division 2 Site Work

Section 02082 – Removal and Disposal of Asbestos Material

**APPENDIX B
ENGINEERING REFERENCE DRAWINGS**

IHSS 129

D-50189-200	Bldg 443 – Existing Site Survey
951822-SK1	Site Survey Details
951822-SK2	Piping Details
951822-SK3	Electrical Demo
14262-3	Steam and Condensate System
14254-8	General Fuel Oil Storage

RCRA Tanks

D-21641-39	Tanks T-2 & T-3, Plans & Sections
26378-X01	Tank T-40, Plan & Section
D-28714-401	Tanks T-9 & T-10 Plan & Section
D-5392-74	Tanks T-14 & T-16 Plans

**APPENDIX C
INTERAGENCY AGREEMENT UST TANK VOLUME CHART**

Tank ID	T-2	T-40	T-10E	TP-10W	T-14	T-16N	T16S
Tank volume (gallons)	6,000	2,000	4,500	4,500	30,000	14,000	14,000
Vault volume (ft³)	300	540	n/a	n/a	n/a	n/a	n/a

n/a – not applicable

SKETCH

951822-SK1

North

BUILDING 443
FF ELEV = 100 00

CUT AND CAP
LINES HERE
ALSO LOCATION
OF DAM

PIPE
CENTERLINE

LOCATION
ELECTRIC
JUNCTION BOX
CENTER
6 STEEL

COLUMN
(K)

COLUMN
(J)

BUILDING LINE

CONCRETE
RADIATOR PAD

1-4 SQ. CONC
PIERS (TYP)
TANK
9'13"

5 COLUMN

8 COLUMN

5 COLUMN

8 COLUMN

5 COLUMN

8 COLUMN

5 COLUMN

8 COLUMN

CONCRETE CURB

ATS 2

Posi
A06 W 052

LOCATION
OF CONDENSATE
VALVE

LOCATION OF
CONDENSATE VALVE
Column 303 21/051
A06 W 051

6'-1-BEAM
CONC. PAD

2# PADS

FIELD VERIFY
POSSIBLE LOCATION OF
UTILITY LINE
RUNNING TO EAST

#4
Fill Pt

#4
TANK
LOCATION

#3
TANK
LOCATION

5" FUEL OIL PIPE
BOTTOM OF PIPE
12" ABOVE FINISH
GRADE

ACCESS
HATCH (TYP)

ACCESS
HATCH (TYP)

4 WIDE CONCRETE SIDEWALK, 6" THICK

PAVEMENT

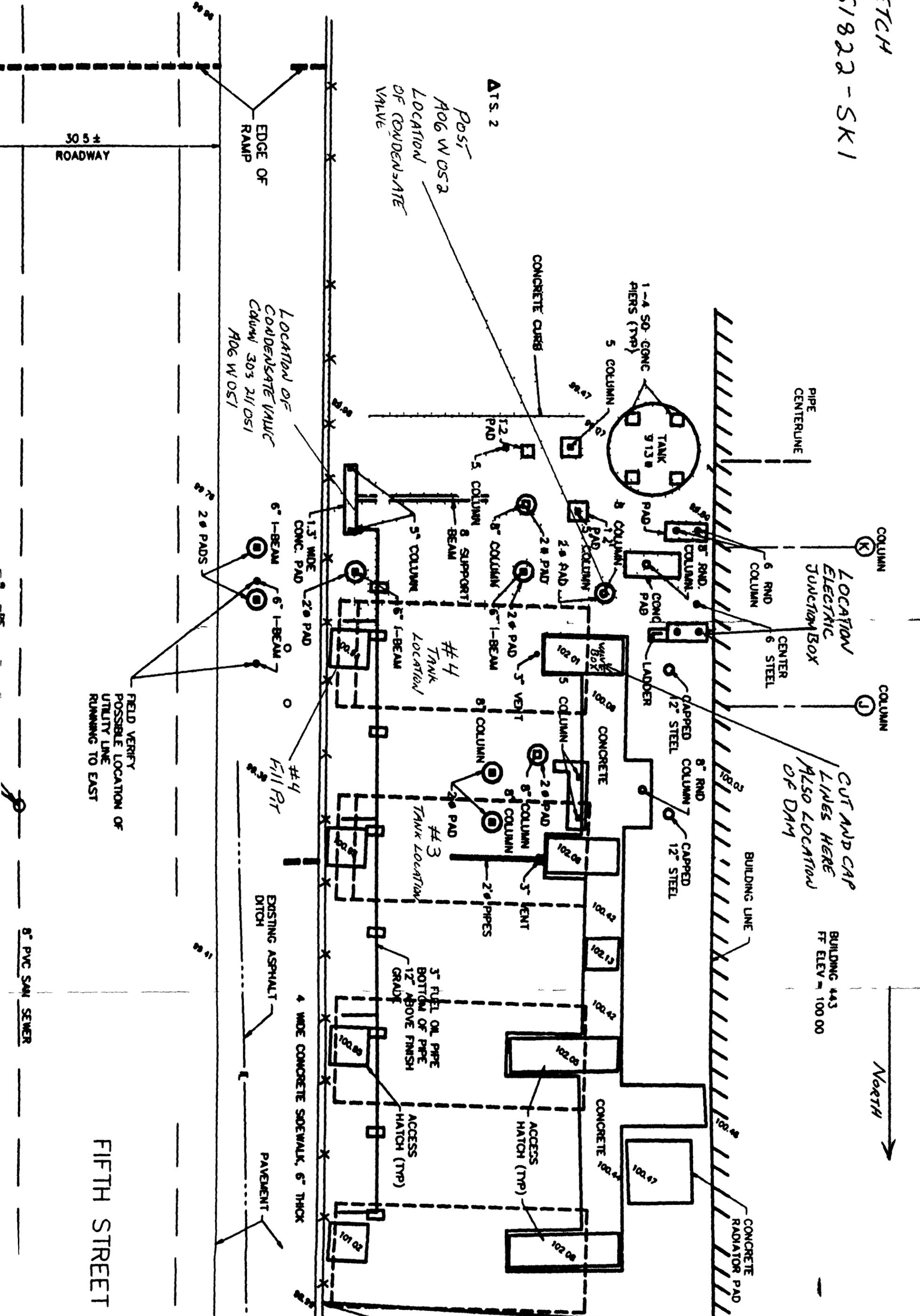
EXISTING ASPHALT
DITCH

EDGE OF
RAMP

30.5 ±
ROADWAY

FIFTH STREET

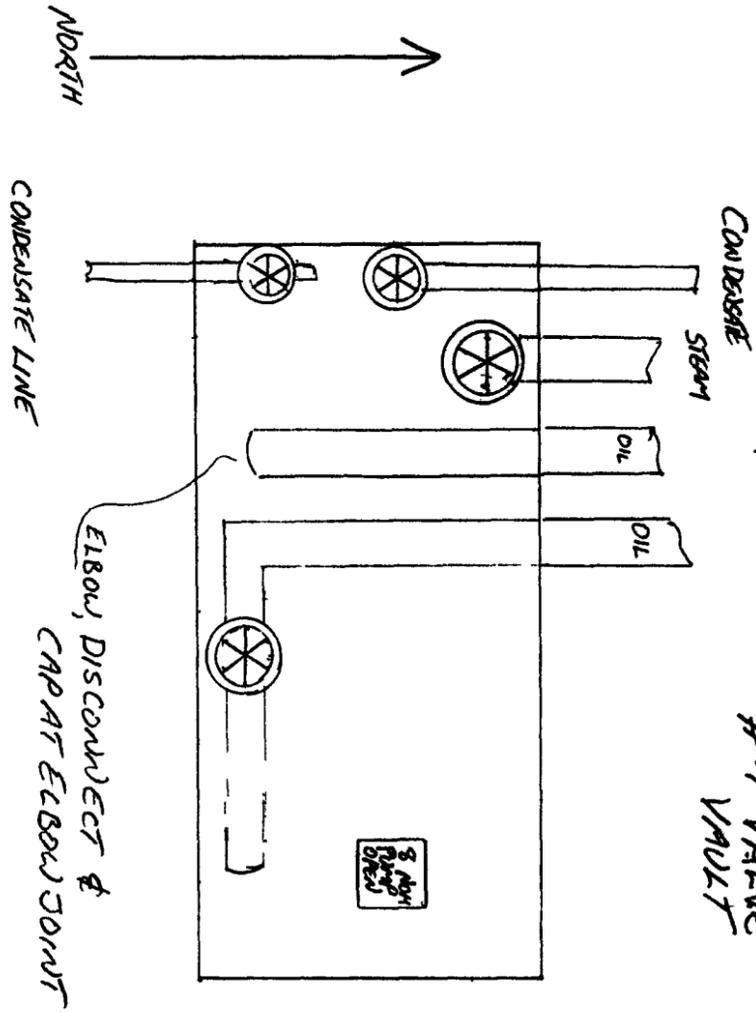
8" PVC SAN SEWER



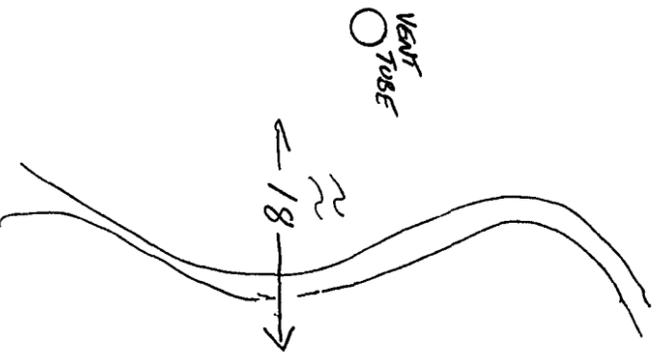
SKETCH 951822-SK2

TO SHUT OFF
VALVES IN TRENCH

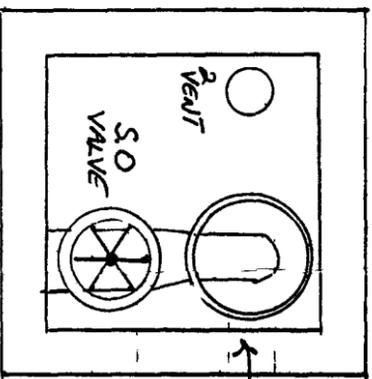
#4 VALVE
VAULT



NORTH



INLET FILL VAULT

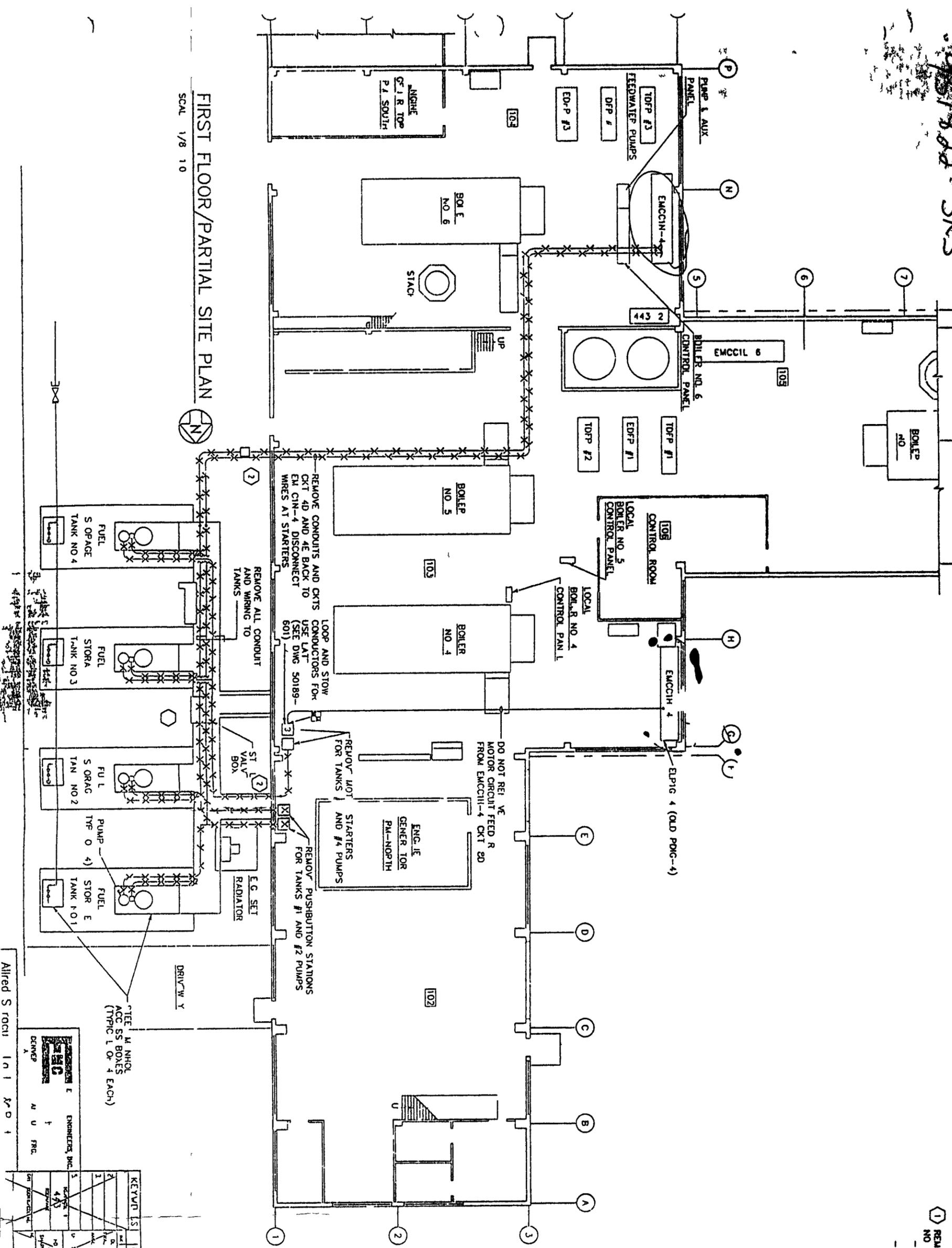


MAIN OIL
SUPPLY LINE



DRAWN
MARK MCKEON 2/19/82

951822-SK3



- NOTES**
- REMOVE ELECTRICAL WORK ASSOCIATED WITH TANKS NO 1, 2, 3 & 4 FOR EACH TANK.
 - INDICATION & ALARM CONDUIT WIRING & DEVICES - FUEL OIL PUMP CONDUIT WIRING & DEVICES - DISCONNECT SWITCHES.

NOT FOR CONSTRUCTION

INFORMATION ONLY

REV	DATE	BY	CHKD	DESCRIPTION
1	10/1/77	W. J. MOON	W. J. MOON	REVISED FOR CONSTRUCTION
2	10/1/77	W. J. MOON	W. J. MOON	REVISED FOR CONSTRUCTION
3	10/1/77	W. J. MOON	W. J. MOON	REVISED FOR CONSTRUCTION
4	10/1/77	W. J. MOON	W. J. MOON	REVISED FOR CONSTRUCTION
5	10/1/77	W. J. MOON	W. J. MOON	REVISED FOR CONSTRUCTION

DATE: 10/1/77

PROJECT: CENTRAL STEAM PLANT RENOVATION

DRAWING: DEMO PLAN FUEL OIL (ELEC)

