

SPECIFICATIONS

FOR

**CIRCUITS 641, 668, 671 & 672 POTHEAD
REPLACEMENT**

AT

GEORGIA SUBSTATION

JEA

Jacksonville, Florida



Oct 28, 2025

TECHNICAL SPECIFICATION - INSTALLATION

1. SCOPE OF WORK

- 1.1. Intent: The Contractor shall provide all labor, equipment, material, and supervision required for construction and final commissioning of the twelve (12) High Pressure Fluid Filled (HPFF) pipe-type cable terminations. The Contractor is responsible under this contract to purchase, inspect, receive, unload, and install all material at the job site. **The Contractor will be providing all G&W ATA 139N-HS terminations, shipped to Jacksonville.**
- 1.2. Scope of Work Statement: Provide for the installation of twelve 115kV HPFF pipe type cable terminations. The Contractor shall provide and install the G&W terminations at Georgia Substation. The HPFF cable system consists of steel pipe with a nominal diameter of 5.5625 inches, with three 450 or 1250 kcmil copper cables, and insulated with .285 inches of insulating paper material. Provisions shall be made to curtail any possibility of cable slipping past a point where the use of the supplied lugs will no longer be feasible.
- 1.3. Location of Project: The work will take place in Georgia Substation that is located approximately two (2) miles east of downtown Jacksonville at 637 N Georgia St.
- 1.4. General Description of Project: Twelve (12) new HPFF 115kV terminations will need to be installed at four separate 69kV circuit termination locations (at Georgia St Substation) within Duval County. The Contractor shall supply all material, labor, and equipment to complete the work. **The Contractor will be responsible for cleanup and disposal of all oil, boxes, old terminations, debris or any other trash associated with this, and with the previous termination project.**
- 1.5. Project Manager: Mohsen Shojaeion
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- Project Representative: Howard J. Hockett
225 N Pearl St,
Jacksonville, FL 32202
Cell: (904) 603-1987
email: hockhj@jea.com
- 1.5. Pre-Bid Meeting and Site Visit: The Contractor shall be prepared to attend a mandatory pre-bid meeting and site visit held for the benefit of communication and coordination.
- 1.6. Sequence of Work and Project Schedule: All work shall be performed in an orderly and workman like manner. Sequence of work may be scheduled at the discretion of the Contractor within the guidelines of these specifications. Based on the availability and lead times of the material, the Contractor shall prepare a Project Schedule in Bar Chart format to be submitted with their bid.
- 1.7. Standards: The installation covered by these specifications shall conform to the practices set forth in the latest edition of the National Electrical Code and the National Electric Safety Code unless otherwise specified in these specifications.
- 1.8. Electrical Clearances (Outages):
- The Circuit 641 outage will likely be a two and half (2.5) weeks continuous outage and will occur on Nov 3, 2026 – November 19, 2026. These are subject to change once more information is known about material availability.
 - The Circuit 668 outage will likely be a two and half (2.5) weeks continuous outage and will occur on Nov 21, 2026 – Dec 9, 2026. These are subject to change once more information is known about material availability.

- The Circuit 671 outage will likely be a two and half (2.5) weeks continuous outage and will occur on Dec 11, 2026 – Dec 29, 2026. These are subject to change once more information is known about material availability.
- The Circuit 672 outage will likely be a two and half (2.5) weeks continuous outage and will occur on Jan 5, 2027 – Jan 21, 2027. These are subject to change once more information is known about material availability.

1.9 Material: the contractor shall furnish all material and equipment required for work, unless otherwise specified. Material shall include, but not be limited to the following:

- Twelve (12) G&W ATA 139N-HS terminations.
- Twelve (12) #269 rubber gaskets.
- Any bolts needed to attach termination to base plate.
- Any additional oil to complete the work.
 - The Contractor will also supply any oil drums needed to capture spent oil.
- Twelve standard and twelve long cable lugs.
 - Due to the possibility of cable slipping into the pipe an unknown distance, The Contractor shall procure from G&W, two different lengths of terminal lugs. The contractor shall be responsible for providing any other means to hold the cable prior to removing the existing lug in order to provide a controlled settlement and prevent slippage beyond the longest supplied lug.

2. CONDITIONS FOR PERFORMING THE WORK

2.1 Construction Drawings: Construction Drawings, Specifications, and Permits, if applicable, shall be furnished by the Contractor and shall be signed and sealed by a Professional Engineer licensed in the State of Florida. The Construction Drawings may be used to determine the quantity and type of labor, equipment, and material intended for use on this project.

2.2 Existing Drawings: The Owner has supplied existing construction drawings, as originally designed, which are included in the attachments of these specifications. The drawings are not to scale and are for the purpose of study and design only. The Owner does not assume any responsibility with respect to the sufficiency or accuracy of the drawings, or of the interpretations made thereof. The Contractor shall develop a design according to the conditions under which the work is to be performed.

2.3 Shop Drawings and Submittals: **The Contractor shall submit shop drawings and/ or submittals to the Project Representative for approval of any contractor furnished materials, equipment, or installation methods.** These shop drawings may be submitted in the form of drawings, diagrams, illustrations, schedules, or any other form deemed best to convey or illustrate the material, equipment or installation method to the Project Engineer. The data submitted shall be complete with respect to dimensions, design criteria, materials of construction, etc., to enable the Project Engineer to properly and completely review and evaluate the submittal without unnecessary delays.

2.3.1 The Contractor shall submit an electronic copy of all shop drawings and submittals to the JEA Project Manager. Each submittal must be accompanied by a Transmittal Letter.

- 2.4 As Built Drawings: The Contractor is required to provide the JEA with a complete set of "As Built" Drawings. The Contractor's "As Built" field markings shall be accurately transferred to a clean set of drawings provided by the Contractor. **As-builts shall be submitted no more than 90 calendar days after the date on which each circuit is energized.**
- 2.5 Permits: The Contractor shall obtain all federal, state, and local permit requirements required to complete work.
- 2.6 Materials:
- 2.6.1 All Contractor furnished materials, unless otherwise indicated, shall be new, of the first quality and of the proper type for use intended. When applicable, all material will be in accordance with the latest published NEMA Standards and/or carry the approval of the Underwriter's Laboratories. Miscellaneous material such as inhibitors, cleaning solvents, grout, epoxy, paint, rope, etc., required for construction shall be supplied by the Contractor and costs of such material shall be included in the bid.
- 2.6.2 The use of a manufacturer's trade name and catalog number is intended to indicate preference. Products of reputable manufacture, equal quality, and functional type may be used only after approval by the Project Engineer.
- 2.6.3 All material and equipment stored on the construction site shall be in the care, custody and control of the Contractor. The Contractor shall be responsible for any necessary repairs or replacement of materials and equipment damaged while in the care and custody of the Contractor.
- 2.7 Access to the Work: Access to perform all work is the responsibility of the Contractor. The Contractor shall display all signs and follow all Florida Department of Transportation (FDOT) and City of Jacksonville. The Contractor shall repair any damage to all roads, R/W's and adjacent property as directed by and to the satisfaction of JEA. Access to Easements and Right-Of-Way will be from Public Roads. Any access arrangements crossing private property will be the responsibility of the Contractor.
- 2.7.1 **The Contractor must have all members of the crew attend the JEA's Substation Entry Course prior to the commencement of any work inside the substation. The Entry Course is offered on the second Wednesday of every month at JEA's Westside Service Center, located at 6727 Broadway Avenue, Jacksonville Florida 32254. Coordinated by Jim Ayers AyerJL@jea.com 904-665-5362.**
- 2.8 Maintenance of Traffic: The Contractor shall conduct his work with as little interference as possible to traffic, with the Owner's operations, and the work of other contractors. Whenever it is necessary to cross, obstruct, or close roads, driveways, parking areas, and walks, the Contractor shall provide and maintain suitable and safe bridges, detours, or other temporary expedients at his own expense. All operations which will present a hazard to traffic, both pedestrian and vehicular, shall be suitably protected by use of safety barricades and warning lights. Installation of safety and warning equipment shall be sufficient to comply with governing authorities and to the satisfaction of the Project Representative.
- 2.9 Security: Contractor shall be responsible at all times for providing security to the work site including any areas outside the substation where freeze pits are to be installed, equipment, and materials. In addition, the Contractor shall provide site security for contractor worker safety.

3. ENVIRONMENTAL, EARTHWORK, AND TRENCHING

- 3.1. General: This section covers general earthwork and includes preparation of the construction areas; removal and disposal of debris; excavation and trenching; the handling, storage, transportation, and disposal of

excavated material; sheeting, shoring, and protection work; preparation of subgrades; dewatering; protection of adjacent construction; backfill; temporary plating of trench; jack and bore casing; construction of fills and embankments; surfacing and grading; and other appurtenant work, all in accordance with applicable federal, state and local laws, ordinances, permits and codes. The work shall consist of furnishing all labor, equipment and materials required of the work on this project.

The Contractor shall at all times exercise all reasonable precaution and diligence in all excavation and backfill activities so that the right-of-way of pedestrians and vehicles is obstructed for minimum periods only. To achieve these results the coordination of the equipment, personnel, and materials shall be given major consideration. All equipment, material and necessary personnel should be readily available or actually on the site of work before any excavation is started. All work shall be so planned that the time between the beginning of the excavation and the completion of the project is reduced to an absolute minimum.

- 3.2. Environmental Indemnity: The Contractor shall hold harmless, indemnify, and defend Owner, including without limitation, its officers, directors, members, representatives, affiliates, agents and employees, successors and assigns (the "Indemnified Parties") and will reimburse the Indemnified Parties from and against any and all claims, suits, demands, judgments, losses, costs, fines, penalties, damages, liabilities and expenses (including all costs of cleanup, containment or other remediation, and all costs for investigation and defense thereof including, but not limited to, court costs, reasonable expert witness fees and attorney fees) arising from or in connection with (a) the Contractor's, including, but not limited to, its agents, affiliates or assigns ("Parties"), actions or activities that result in a violation of any environmental law, ordinance, rule, or regulation or that leads to an environmental claim or citation or to damages due to the Contractor's or other Parties' activities, (b) any environmental, health and safety liabilities arising out of or relating to the operation or other activities performed in connection with the Work in by the Contractor or any Party at any time on or after the effective date of the Contract, or (c) any bodily injury (including illness, disability and death, regardless of when any such bodily injury occurred, was incurred or manifested itself), personal injury, property damage (including trespass, nuisance, wrongful eviction and deprivation of the use of real property) or other damage of or to any person in any way arising from or allegedly arising from any hazardous activity conducted by the Contractor or any Party. Owner will be entitled to control any remedial action, any proceeding relating to an environmental claim. This indemnification agreement is separate and apart from, and is in no way limited by, any insurance provided pursuant to this Contract or otherwise. This section relating to indemnification shall survive the Term of this Contract, and any holdover and/or Contract extensions thereto, whether such Term expires naturally by the passage of time or is terminated earlier pursuant to the provisions of this Contract.

There shall be no storage or stockpiling of tools, equipment, or materials and supplies within wetlands or other surface waters within or adjacent to the Work Area. Contractor shall prevent all cleared vegetation, lumber, scrap wood, trash, garbage, construction debris, equipment, tires, trailers, and other foreign debris or material from entering wetlands and surface waters not otherwise authorized by permit to be disturbed and impacted.

- 3.3. Environmental Requirements: Environmental Requirements shall be defined as all laws, ordinances, statutes, codes, rules, regulations, agreements, judgments, orders, permits including their conditions, and decrees, now or hereafter enacted, promulgated, or amended, of the United States, the states, the counties, the cities, or any other political subdivisions in which the Work Location is located, and any other political subdivision, agency or instrumentality exercising jurisdiction over JEA, the Work Location, or the use of the Work Location, relating to pollution, the protection or regulation of human health, natural resources, or the environment, or the emission, discharge, release or threatened release of pollutants, contaminants, chemicals, or industrial, toxic or hazardous substances or waste or Hazardous Materials (as defined in this Contract) into the environment (including, without limitation, ambient air, surface water, ground water or land or soil).

The Contractor shall be familiar, and otherwise comply with Environmental Requirements as they apply to the erection work under this Contract unless relieved from compliance with specified Environmental Requirements identified in this Contract.

- 3.4. Environmental Permitting: Contactor shall contact Andrew Sears, JEA Environmental Services at (904) 665-7719 or via email at searar@jea.com, within 30 days of being awarded this contract to discuss permitting requirements pertaining to the FL DEP Submerged Lands and Environmental Resources Program and to US Army Corp of Engineers (Agencies) permitting requirements. The Contractor shall not commence with application preparation or submittal of any applications to the Agencies, nor shall the Contractor hold meetings or otherwise discuss permitting requirements with the Agencies until the Contractor is authorized to do so by JEA Environmental Services.

- 3.5. NPDES Construction Generic Permit Conformance: The Contractor shall be responsible for making application and obtaining an NPDES Generic Permit for Stormwater Discharges from Large and Small Construction Activities as may be applicable pursuant to Chapter 62-621.300(4) F.A.C. The Contractor shall further be responsible for; developing and implementing a performance based Stormwater Pollution Prevention Plan (SWPPP), installing and maintaining in a functional manner structural and nonstructural best management practices identified by the SWPPP, evaluating the effectiveness of the best management practices, and employing additional performance based best management practices as may be deemed necessary by the Owner. The Contractor shall be responsible for completing inspections, required weekly and within 24 hours after a storm event resulting in greater than 0.5" of rainfall, as must be accurately determined in situ by the Contractor. The SWPPP and the weekly inspection reports are required to be kept at the project site and available for review upon request. The Contractor shall further ensure that the SWPPP will also comply with the City of Jacksonville Ordinance 98-994-E. The Contractor shall revise, or include as addendum to the SWPPP measures required by the City of Jacksonville necessary to remain compliant with the referenced ordinance. **No separate payment shall be made for Contractor revisions or addendums to the SWPPP, and their implementation, including those made so as to achieve functional, performance based best management practices, but all associated costs shall be included in the associated item of work in the Bid Form.**

The Contractor shall obtain all other applicable local, state, and federal permits. It is unlawful to have any discharges that are not composed entirely of stormwater (except discharges pursuant to a NPDES permit) to the Municipal Separate Stormwater System (MS4). Only non-contaminated water/non-turbid water shall be transported through the MS4. Groundwater discharge (approved by the Florida Department of Environmental Protection pursuant to 62-621.300(2)) from dewatering activities may be routed into the stormwater system, drainage ditch, creek, river or wetland providing that erosion, and transportation of suspended solids to the system is prevented.

If contaminated soil or contaminated groundwater is encountered, the dewatering activity shall cease immediately, and the Contractor shall contact the Owner's Environmental Coordinator, Andrew Sears at (904) 665-7719 and the Owner's Project Representative, Greg Couture at (904) 502-5925. The Owner shall complete Notice of Termination (NOT) (DEP Doc. No. 62-621.300(6), F.A.C.) within one (1) week of final site stabilization.

If the above requirements are not followed, the Contractor shall be held liable for any fines and/or violations incurred by the Owner.

- 3.6. Soil Management: No hazardous materials or contaminated soil are expected to be encountered during excavation.

Any excess soil generated by the excavation on either end of the installation which is not replaced within the excavation shall be disposed of in accordance with Chapters 62-770, 780, and 777, Florida Administrative Code (F.A.C.), and any other applicable federal, state, or local rules or regulations. Excess soil cannot be used or placed in a residential setting without first demonstrating that the material meets the soil cleanup target levels specified in 62-777 for a residential setting.

The contractor shall assume all liabilities and bear all costs associated with the disposition of the excess excavated materials (including but not limited to sampling, analyzing, storing, transporting, and disposal).

- 3.7. Sheeting and Shoring: The stability of previously constructed structures and facilities shall not be impaired or endangered by excavation work. Previously constructed structures and facilities include both structures and facilities existing when the work under these specifications begins and structures and facilities already provided under these specifications.

Adequate sheeting and shoring in accordance with OSHA regulations 29 CFR Part 1926 shall be provided to protect and maintain the stability of previously constructed structures and facilities and the sides of excavations and trenches until they are backfilled. Sheeting, bracing, and shoring shall be designed and built to withstand all loads that might be caused by earth movement or pressure and shall maintain the shape of the excavation under all circumstances. Certified/stamped drawings prepared by a registered professional engineer of all shoring details as required by OSHA shall be furnished to the Owner or the Owner's Engineer before any excavation begins. When "sloping" of the sides of the excavation or trench is used in lieu of sheeting or shoring the name of the "Competent Person" in charge for the Contractor shall be submitted in writing to the Owner or the Owner's Engineer before any excavation begins.

- 3.8. Dewatering: The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface and ground water entering excavations and other parts of the work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until construction to be provided therein is completed to the extent that no damage from hydrostatic pressure, flotation, or other cause will result. Ground water level shall be maintained at least 12 inches below the bottom of each excavation.

Surface water shall be diverted and prevented from entering trenches and excavations by means acceptable to the Project Representative **The Contractor will be responsible for any permit needed to properly discharge any groundwater.**

- 3.9. Existing Subsurface Installations: The Contractor shall conduct his operations on the basis that underground installations may exist which are not indicated. The Contractor shall be solely responsible for locating and identifying all existing underground installations such as, but not limited to, service connections, power lines, oil, water, air, and gas lines; sewers and other drains; circulating water lines; oil separators; septic tanks; telephone lines; electrical duct banks and raceway; or buried structures within the construction limits of the work and elsewhere where any penetration such as, but not limited to, excavation, plowing, trenching, driving of well points, or insertion of any tool or device below the surface is anticipated or required or where construction operations may subject underground installations to damage prior to the performance of such work. Surveying shall include contacting the Owners of underground utilities. Locator services and detection devices provided by the utility Owners shall be utilized when such are available. The Contractor shall hand excavate and positively identify all underground installations. **All information relative to the underground installations shall be recorded by the Contractor and incorporated into the field records.**

The Contractor will be held responsible for any interruption in the service of underground facilities resulting from his operations, unless the facility owner has given specific approval for the interruption in each case.

Except where the damaged parties desire to conduct their own repair and restoration work, the Contractor shall repair and fully restore any underground facility damaged during the construction period to a condition equal to or better than that which existed just prior to the time of damage. All repair and restoration work shall be done to the complete satisfaction of the facility owners and the Owner.

The Contractor shall make his own arrangements with any jurisdictional authority requiring inspection of repaired or reconditioned utility facilities. All inspection fees applicable shall be paid by the Contractor.

Where the facility owners desire to conduct their own repair and restoration work, the Contractor shall render all assistance to facilitate this corrective work. The Contractor shall assume all just and reasonable expenses incurred by the facility owners.

Any delay, additional work, or extra cost to the Contractor caused by existing underground installations shall not constitute a claim for increased work, additional work, additional payment, or damages.

- 3.10. Testing: All field and laboratory testing required to determine compliance with the requirements of this section shall be provided by the Contractor. Laboratory testing shall be performed by an independent testing laboratory acceptable to the Project Representative. Field sampling shall be performed by the testing laboratory. Field samples shall be taken at locations and depths selected by the Project Representative. If additional field control tests are necessary, in the opinion of the Project Representative, such tests shall be made.
- 3.11. Compaction: Backfill material over the top of pipe to finished grade shall be placed in 12 inch compacted thickness layers and shall be compacted to match existing conditions but not less than 95% of its maximum density as determined by the Laboratory Modified Proctor Test, ASTM D1557. Density testing shall be made on every compacted lift and at grade, located at 20% of all manholes/ structures and at (3) random locations as determined by the JEA Representative.
- 3.12. Structure Excavation: Excavation for structures shall be completed to the designated lines and elevations. Machine excavation shall be controlled to prevent undercutting the subgrade elevations indicated on the approved for construction drawings. Machinery shall not be used within 3 feet of permanent structures and facilities unless approved by the Project Engineer. Only hand tools shall be used for excavation around permanent structures and facilities. The Contractor shall be responsible for any damage caused by excavation. Construction areas shall be kept as free as possible from obstructions. Work shall not interfere with the transportation, storage, or handling of materials. Unused excavated materials shall be hauled away to an approved disposal site.
- 3.13. Over Excavation: All over excavated material shall be backfilled and compacted as specified at no additional cost to the JEA.
- 3.14. Structure and Trench Subgrades: Subgrades for structures and the bottom of trenches shall be firm, dense, free from mud, thoroughly compacted, and sufficiently stable to remain firm and intact.
- 3.15. Excavation: No more trench or other excavation shall be opened in advance of freeze pit installation than is necessary to expedite the work, or as required by city or county ordinance. All local laws and ordinances shall be strictly followed and acquired by the Contractor. Special care shall be taken to ensure safety to the workers and the public and minimize public inconvenience.
- The Contractor shall provide safety barricades, tape, guards, netting or other acceptable means to safeguard the public from hazards associated with the Contractor's work. All excavation shall be open cut from the surface.
- 3.16. Alignment and Grade: The Contractor shall be responsible for staking the alignment including offset stakes and maintaining the staked alignment and the elevation of each trench. The alignment and grade or elevation of each trench shall be fixed and determined by means of batter boards and offset stakes, laser beam equipment, or surveying instruments unless otherwise accepted.
- 3.17. Trench Dimensions: Trenches shall be excavated to a minimum width that will provide adequate working space and pipe clearance for safe and proper installation. Trenches shall be excavated to only a depth required by the approved construction issue drawings.

4. TERMINAL INSTALLATION

- 4.1. Scope: This work shall consist of furnishing all labor, equipment, and material required for the terminal installation of the cable system.

- 4.2. Installation of Terminals: The terminator shall be installed in strict accordance with the instructions and drawings issued by the cable and the terminator manufacturers. Where the instructions and/or drawings differ or contradict each other, the Project Representative shall determine the applicable instruction or method to follow.
Once a cap is removed from the end of a rise pipe, the connector installation shall proceed to completion without interruption.
- 4.3. Cable Support: **The possibility exists that the cable may be under some amount of unknown tension due to settlement. It is the responsibility of the contractor to relieve the tension enough to be able to install each termination and to protect the existing cable.**

5. SPREADER HEAD, RISER PIPE, AND TERMINATOR PRESSURE INSPECTION

- 5.1. After all terminators have been installed, they shall be tested for tightness by raising the pressure in the joined section to 15 psig with dry nitrogen and then checking each field weld, valves, and associated equipment not previously field tested, as follows:

When the pressure within the section has reached 15 psig, each weld (if any) shall be tapped around its circumference with a 2 pound ball peen hammer and liberally sprayed with "Leak-Tec" leak detector solution. Leaky welds, as indicated by the formation of gas bubbles in the film, shall be repaired and retested until they are tight. Other testing means shall be used only with the approval of the Project Representative.

6. PIPE FREEZE

- 6.1. Scope: The Contractor shall be responsible for furnishing and installing all necessary labor, equipment, and materials to successfully freeze the pipe-type cable system. The method to be used shall employ liquid nitrogen in copper coils wrapped around the bare steel pipe. The Contractor shall monitor the freeze continually to ensure the frozen plug remains intact during construction.
- 6.2. Personnel Safety: Direct contact with liquid nitrogen will result in burns and/or frost bit. Therefore, the Contractor shall adhere to the following minimum safety precautions:

Face shields, long sleeve shirts, and protective gloves shall be worn at all times while working in the freeze area. Only authorized personnel shall be allowed in the freeze area. All personnel shall be kept out of the freeze pit. Keep the freeze pit well ventilated. In a confined area, the nitrogen fumes can cause oxygen deficiency resulting in suffocation without warning. Fence off the area immediately around the exhaust of the nitrogen fumes.

During the freeze process, the Contractor shall have in force an effective safety program. The Contractor shall take all the necessary safety precautions when removing the existing pipe fluid and cable from the abandoned portion of cable pipe.
- 6.3. Material: The Contractor shall be responsible for disposing of all materials removed from service in accordance with all applicable federal, state, and local ordinances.
- 6.4. Excavation: A pit approximately 9 feet long, 5 feet wide, with a depth of 2 feet below the bottom of the pipe shall be excavated in an area deemed suitable by the Contractor. Portable water pumps shall be available in case of flooding to prevent water from coming in contact with the freezing coils which would provide a heat sink and thaw the freeze. Tarpaulins shall also be available to protect the freeze area from rain.
- 6.5. Establishing and Maintaining the Freeze: The pressure in the cable system shall be lowered to a maximum 75 psi and maintained at reduced pressure for the duration of the freeze.

Connect the feed lines to the liquid nitrogen tanks. Position the vent lines to face away from the valves and work area, so that the valves can be operated without danger of contact with the vented gas.

Record the ambient pipe surface temperatures. Record the time and start of the flow of liquid nitrogen at a rate sufficient to completely fill the coils. Use caution in vicinity of vents to prevent injury to skin or eyes from the extremely cold discharge.

Read and record temperatures at 15 minute intervals after the liquid nitrogen flow is started.

CAUTION: At no time during the hard freeze, should any external pressure, sharp blows or impact be applied to the frozen area of the pipe.

- 6.6. Thawing the Freeze: Once construction is complete, and oil has been received at steady flow, the freeze is ready to be thawed. The Contractor shall take measures to assure a balance of pressures on either side of the freeze. No external heat shall be applied to accelerate the thawing process.

Release the freeze by closing the valves to shut off the liquid nitrogen flow. Allow the tubes to vent before disconnecting from the tanks. Strip all insulation and allow the pipe to warm to ambient temperature. The frozen plug will thaw in 6 to 9 hours under normal ambient temperature conditions.

After the plug is completely thawed, fluid samples shall be taken to check the dielectric strength of the fluid. Once the dielectric strength is greater than 30 kV (ASTM D-877), the pressure shall be gradually raised to pressure with specification titled *Termination Evacuation and Liquid Filling*.

All this work shall be continued 24 hours a day until completed.

7. TERMINATION EVACUATION AND LIQUID FILLING

- 7.1. Scope: The Contractor shall furnish equipment and trained personnel as required for evacuation and admission of liquid into the pipe-type cable system. The requirements of the manufacturer for this process will be strictly adhered to by the Contractor.
- 7.2. General: Each termination shall be filled directly from the delivering tank trucks and will be degasified by the Contractor.
- 7.3. Evacuation: When the termination installation is complete, the circuit may be considered ready for final evacuation and filling with liquid.

The terminations shall be purged and then evacuated to an absolute pressure of 250 microns or less. Evacuation pumping shall be continued for 8 hours after which a vacuum drop test shall be conducted. If after 1 hour the vacuum loss is less than 250 microns, the pipeline shall be considered sound. If the loss is greater than 250 microns, the cause of the loss shall be determined and the Project Representative notified.

A vacuum pump of suitable capacity shall be connected to and operated at each liquid pump connection to establish and maintain the high vacuum initially and during filling operations. Suitable vacuum connections shall be made to each terminator.

Liquid Test: Prior to injecting any liquid into the pipeline system, a sample of liquid shall be withdrawn from each tank truck and checked for dielectric strength. The insulating fluid furnished and installed by the contractor shall be DICHEVEROL DIELECTRIC 500. The fluid shall be furnished in sufficient quantity to completely fill the entire section of new termination(s) and any associated losses from work performed. Fluid shall be degasified before shipping. Upon delivery of the fluid to the site, a dielectric test per ASTM D-877 and a moisture content test per ASTM D-1533 (Karl Fischer) test of the fluid shall be performed prior to acceptance and installation. The fluid must pass both tests to be acceptable.

- 7.4. Liquid Filling: Extreme care shall be exercised to prevent air or other contaminants from coming into contact with the liquid. As the line is filled, a high vacuum shall be maintained in front of the advancing liquid and a slight positive nitrogen pressure (approx. 2 psi) shall be applied to the discharging tank. The filling rate shall not exceed 50 gallons per minute. Pressure gauges shall be installed at the terminations to monitor the pressure.

Each terminator shall be flushed through with at least 2 gallons of fluid. After initial flushing, a sample shall be withdrawn and checked for clarity and dielectric strength. If the dielectric strength is 35 kV or better, the terminators may be sealed.

Excess insulating fluid shall become the property of JEA and shall be deposited in the tank reservoir at Georgia Substation, 637 N Georgia St, Jacksonville, FL.

- 7.5. Pressurizing: After the pipe system is filled and pressurized to 25 psi, the pipeline shall then be further pressurized using the pumping plant. Before proceeding from one pressure stage to the next, gas shall be bled from each bleed point. The following stages of pressurization shall be utilized in bringing the line up to full pressure.

50 psi	8 hours minimum
100 psi	6 hours minimum
150 psi	6 hours minimum
200 psi	24 hours minimum

8. CLEAN UP & RESTORATION

- 8.1. Site Clean Up & Restoration: The work included under these specifications shall include removal of all foreign materials from the job site, repair of all damages, and restoration of the construction area to as good or better condition than when construction started. Complete all "Punch List Items" to the "Owners" satisfaction prior to demobilization.
- 8.1.1. Removal of debris at Georgia Substation: Upon completion of the termination installation, the Contractor shall remove and dispose of all oil drums, boxes, old terminations etc. inside the Georgia 69kV Substation.
- 8.1.2. Removal of debris at Georgia Substation around Circuits 641, 668, 671 & 672: There are two (2) 55-gallon oil drums, and various boxes/debris located under each riser. It will be the responsibility of the Contractor to remove this debris.
- 8.2. Removal of Contaminated Fill: It will be the responsibility of the Contractor to remove and dispose of all substation rock encountered at Georgia Substation under circuits 641, 668, 671 & 672. The Contractor shall remove fill up to 1-foot in depth and replace with FDOT #5 Blue-Grey Limerock. **All bidders shall include a cost of removal and fill per cubic yard, as a separate line item on their bid.**

9. SEQUENCE OF WORK

- 9.1. Mobilize at circuit 641
- 9.2. Receive and Unload Material
- 9.3. Begin outage on 641
- 9.4. Install Freeze Pits

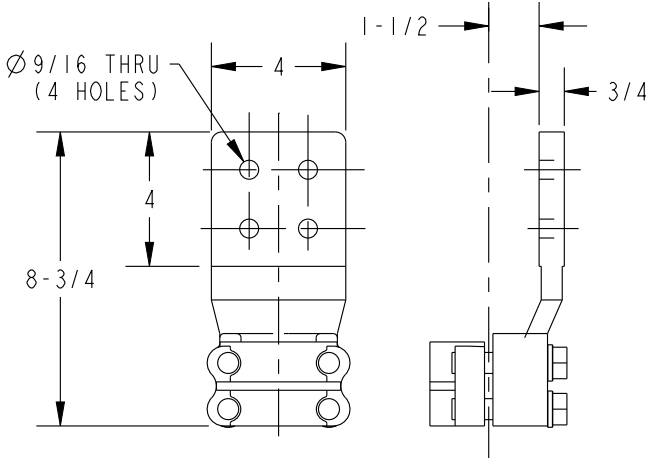
- 9.5. Remove and Install Pot Heads
- 9.6. Vacuum Test
- 9.7. Install DF 500 Dielectric Fluid
- 9.8. DC Test
- 9.9. Re-energize 641
- 9.10. Cleanup & Restore
- 9.11. Mobilize at circuit 668
- 9.12. Receive and Unload Material
- 9.13. Begin outage on 668
- 9.14. Install Freeze Pits
- 9.15. Remove and Install Pot Heads
- 9.16. Vacuum Test
- 9.17. Install DF 500 Dielectric Fluid
- 9.18. DC Test
- 9.19. Re-energize 668
- 9.20. Cleanup & Restore
- 9.21. Mobilize at circuit 671
- 9.22. Receive and Unload Material
- 9.23. Begin outage on 671
- 9.24. Install Freeze Pits
- 9.25. Remove and Install Pot Heads
- 9.26. Vacuum Test
- 9.27. Install DF 500 Dielectric Fluid
- 9.28. DC Test
- 9.29. Re-energize 671
- 9.30. Cleanup & Restore
- 9.31. Mobilize at circuit 672
- 9.32. Receive and Unload Material

- 9.33. Begin outage on 672
- 9.34. Install Freeze Pits
- 9.35. Remove and Install Pot Heads
- 9.36. Vacuum Test
- 9.37. Install DF 500 Dielectric Fluid
- 9.38. DC Test
- 9.39. Re-energize 672
- 9.40. Cleanup & Restore

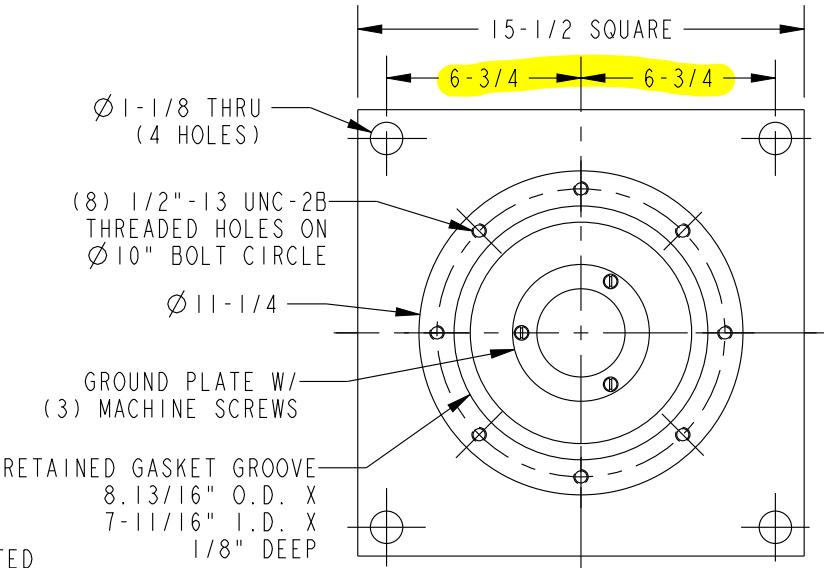
DRAWING REVIEW TEAM		REVISIONS		
		REV.	CHANGE	DATE
		A	398754 - PRL	7-2-18
		B	411076 - PRL	9-25-18

✱ - FIELD ASSEMBLY NOTE

IF AERIAL LUG ORIENTATION IS FIXED, BEFORE ATTACHING CONNECTOR TO CABLE, TEMPORARILY ASSEMBLE VALVE INTO CONNECTOR & ALIGN CONNECTOR WITH VALVE OUTLET POINTED AWAY FROM AERIAL LUG PAD LOCATION. THEN CRIMP CONNECTOR ONTO CABLE CONDUCTOR.



STYLE "8" AERIAL LUG
NEMA DRILLED, SILVER PLATED



EXISTING BASE PLATE AND
MOUNTING PLATE ASSEMBLY

CABLE SIZE		900 (kcmil)	
CONN. DIMENSIONS			
"A" ±.005	"B" ±.015	"C"	
1.100	1.500	3.75	
1.100	1.500	10.00	
PIPE STUB SIZE & MAT'L			
N/A			
PIPE STUB DIMS			
I.D.	O.D.	"L"	
N/A	N/A	N/A	
CABLE PREP DRAWING No.: D5080 0262 P00			
REMARKS			
REPLACES G&W D7260 0041 Z00			

PHYSICAL CHARACTERISTICS

NOMINAL OPERATING PRESSURE --- 300 PSI
MAX. TRANSIENT PRESSURE (UP TO 10 HR.) ----- 450 PSI
FACTORY TEST (1 HR) ----- 750 PSI
APPROX. WEIGHT ----- 800 LBS
OIL CAPACITY ----- 8 GALS.

DIELECTRIC CHARACTERISTICS

60 Hz. 6 HOUR DRY WITHSTAND ---- 200 kV
60 Hz. 1 MINUTE DRY WITHSTAND -- 260 kV
60 Hz. 10 SEC WET WITHSTAND ---- 230 kV
IMPULSE WITHSTAND - (1.2 X 50) = 550 kV

ALL DIMENSIONS ARE IN INCHES

ALL DRAWING CHANGES MUST BE MADE ON CAD. ANY MANUAL CHANGES WILL VOID DRAWING.

TERMINATION TYPE ATAI39N-HS 1/C, 115kV 300 P.S.I. OIL PRESSURE		G&W G&W ELECTRIC Co.	
CAT. NO.: ATAI39N-HS		DRAWING NO. D7263 0042 ARO	
DRAWN BY: PRL		DATE: Jun-27-18	
APPR BY: RHA		DATE: 6-29-18	
SCALE:		SHEET: 1 of 2	
REV		B	

PRINT IDENTIFICATION

DATE _____ G&W NO. _____

CUSTOMER _____

ORDER NO. _____

☐ FOR RECORD

☐ FOR APPROVAL

ITEM NO. _____

NO MORE WORK TO BE DONE UNTIL APPROVAL IS RECEIVED

This drawing and the information thereon are and remain the property of G&W and are not to be copied, reproduced or disclosed to others without the expressed written consent of G&W.

IT	DESCRIPTION	PART NUMBER	QTY	NOTES	PACKAGE
1	BASIC TERMINATION, ATAI39N-HS	B5083 0113 D00	1		A
2	NAMEPLATE, CUT-OFF/PRESSURE	A3717 0035 D00	1		A (W/BASIC TERM.)
3	NAMEPLATE, SERIAL NUMBER	A3717 0035 A00	1		A (W/BASIC TERM.)
4	#4 X 1/4" S.S. DRIVE SCREW	03000 0034 009	4		A (W/BASIC TERM.)
5	SEMI STOP ASSEMBLY, 115kV TERM.	B6322 0401 A00	1		B
6	CLAMPING DISC, 1.938" I.D.	A0018 0017 000	2		B (W/SEMI-STOP)
7	COMPRESSION GASKET,1.875" I.D.	A1881 0014 000	8		B (W/SEMI-STOP)
8	(3) OIL FILTERS & STANDS, ATA	A7260 1022 B00	1		BI
9	STUDS/HDWR KIT, SET OF 6	A7260 0554 C00	1		CI
10	STRESS CONTROL PORCELAIN	B6300 0006 000	1		DI
11	PAPER ROLL SUPPORT ASSEMBLY	A5080 0054 000	1		EI
12	CRNA SHLD KIT W/ CLIPS & VALVE	A7260 1081 B00	1		FI
13	STRESS CONE MATERIALS	A5080 1473 B00	1		GI
14	INSTALLATION GSKTS., ATAI39N	A7260 0583 P00	1		HI
15	STYLE 8 OFFSET CU LUG, AG PLT	A5076 0049 X00	1		JI
16	SPARE GSKTS., ATAI39N, ADAPTOR	A7260 0553 B00	1		KI
17	CONNECTOR, 900 kcmil, ATAI39N	B5025 0155 000	1		LI
18	EX. LG. CONN, 900kcmil,ATAI39N	B5025 0155 A00	1		MI
19	PAPER ROLL ASSEMBLY ATAI39N	B5323 0623 000	1	N1	
20	ADAPTOR KIT, ATAI30 TO ATAI39N	A7260 1817 000	1	N1	
21	CRATE KIT ATAI40 112 X 24 X 28	A1341 5816 A00	1		

DRAWING REVIEW TEAM		REVISIONS		
		REV.	CHANGE	DATE
		A	398754 - PRL	7-2-18
		B	411076 - PRL	9-25-18

G & W ELECTRIC CO.

CAT. NO.

ATAI39N-HS

115

 kV

900

 kcmil

SER. NO.

CABLE CUT-OFF
LENGTH _____

PRESSURE TESTED AT 750 PSI

CABLE CUT-OFF LENGTH EQUALS "L" MINUS 3-3/16"
(SEE BASIC TERM FOR "L")
FOR STANDARD LENGTH CONNECTORS ONLY

NOTES:

N1) THESE ITEMS ARE SPECIFIED AS SEPARATE LINE ITEMS.

SEE SHEET (1) FOR TERMINATION LAYOUT

ALL DIMENSIONS ARE IN INCHES

ALL DRAWING CHANGES MUST BE MADE ON CAD. ANY MANUAL CHANGES WILL VOID DRAWING.

TERMINATION TYPE ATAI39N-HS
1/C, 115kV
300 P.S.I. OIL PRESSURE



CAT. NO.: ATAI39N-HS		DRAWING NO. D7263 0042 ARO	REV B
DRAWN BY: PRL	DATE: Sep-25-18		
APPR BY:	DATE:	SCALE:	SHEET: 2 of 2

69KV TRANSMISSION CABLES

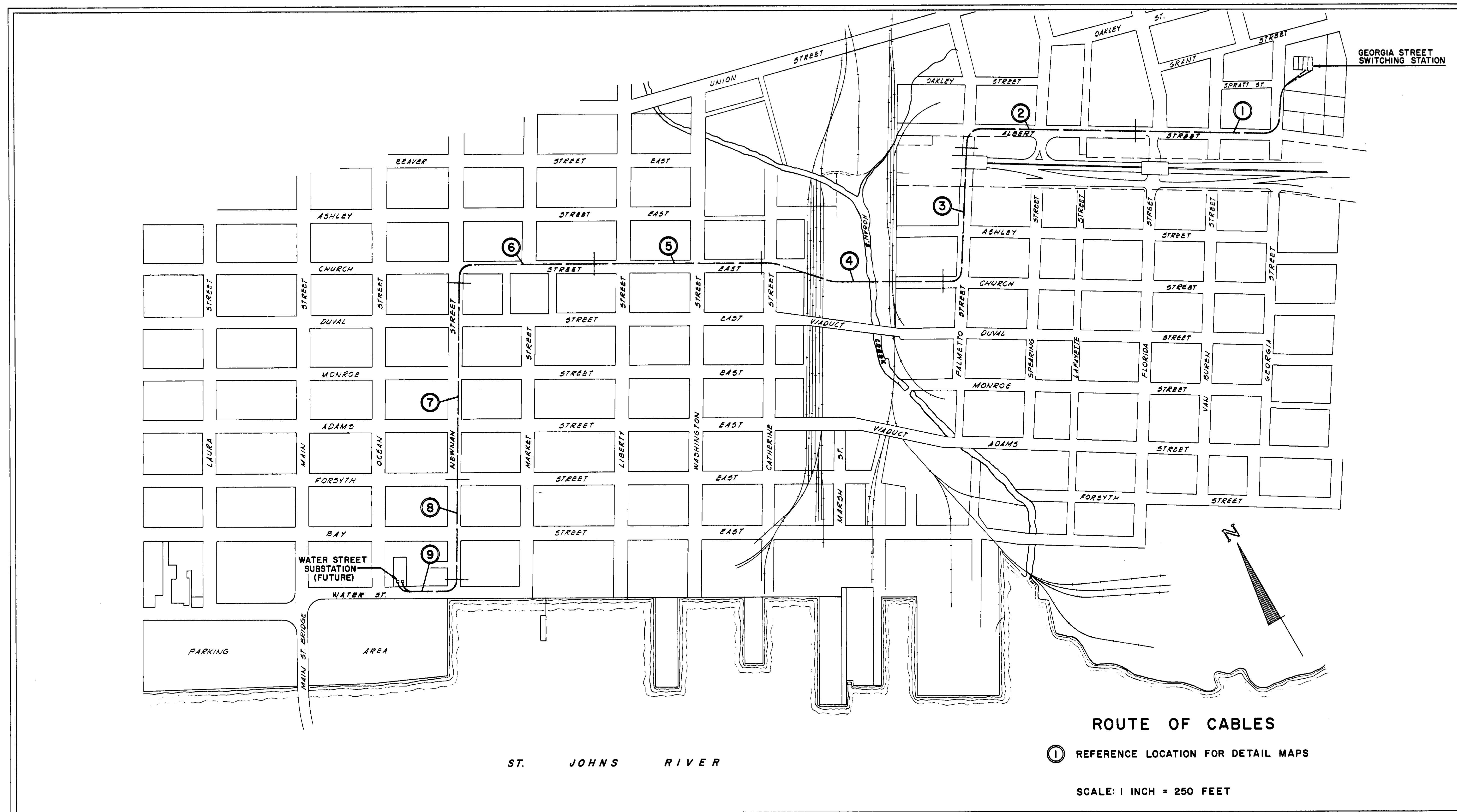
GEORGIA ST. SWITCHING STATION TO WATER ST. SUBSTATION

FOR

J. DILLON KENNEDY
PUBLIC UTILITIES COMMISSIONER

CITY OF JACKSONVILLE
JACKSONVILLE, FLORIDA

ROBERT B. COWAN - ENGINEER MANAGER
DEPARTMENT OF ELECTRIC & WATER UTILITIES

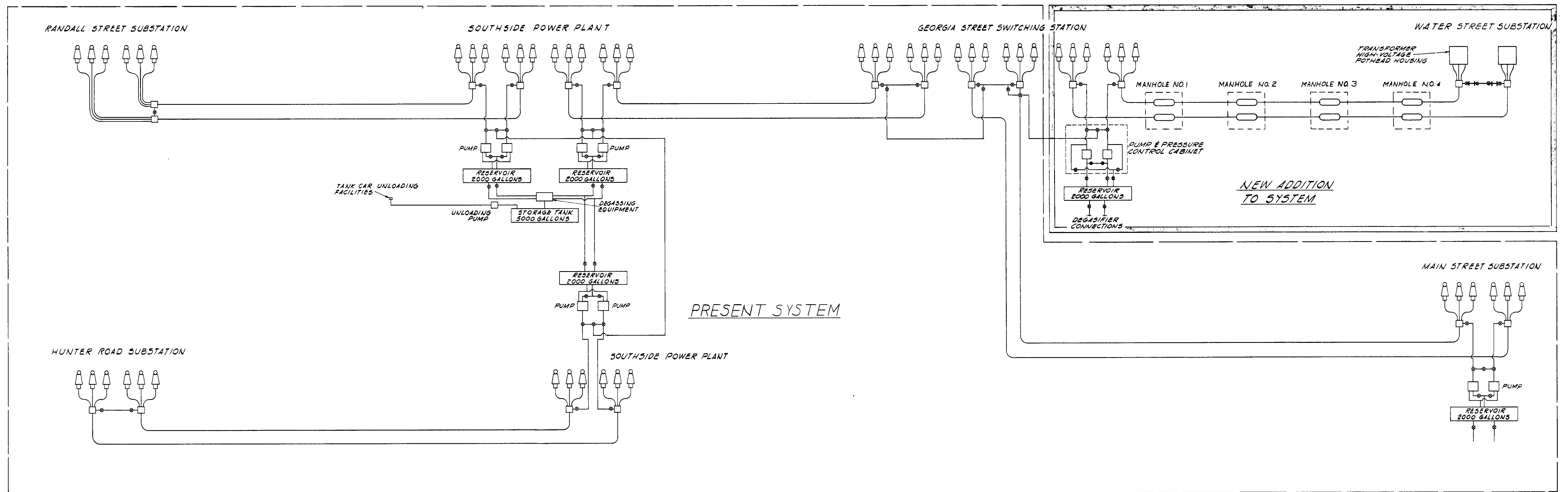


PROJECT NO. 59III-39

REYNOLDS, SMITH & HILLS
ARCHITECTS AND ENGINEERS
JACKSONVILLE, FLORIDA
JULY 1, 1960

CITY W.O. NO. 59III-39.1

DRAWING NO.	TITLE	SHEET NO.	DRAWING NO.	TITLE	SHEET NO.
59III-39 D5505	ROUTE OF CABLES & INDEX TO DRAWINGS	1	59III-39 D5513	CABLE TERMINATION AND DETAILS - GEORGIA STREET SWITCHING STATION	9
59III-39 D5506	GENERAL ARRANGEMENT OF 69 KV CABLE SYSTEM	2	59III-39 D5514	CABLE TERMINATION AND DETAILS - WATER STREET SUBSTATION	10
59III-39 D5507	ROUTE OF CABLES : REFERENCE LOCATION 1	3	59III-39 D5515	TYPICAL MANHOLE AND PIPE ANCHORS	11
59III-39 D5508	ROUTE OF CABLES : REFERENCE LOCATIONS 2 & 3	4	59III-39 D5516	TERMINAL STRUCTURE AND DETAILS	12
59III-39 D5509	ROUTE OF CABLES : REFERENCE LOCATION 4	5	59III-39 D5517	REMOTE PRESSURE RECORDING AND ALARM PANEL - MAIN STREET SUBSTATION	13
59III-39 D5510	ROUTE OF CABLES : REFERENCE LOCATIONS 5 & 6	6	59III-39 D5518	PUMPHOUSE - ELECTRICAL AND PIPING	14
59III-39 D5511	ROUTE OF CABLES : REFERENCE LOCATIONS 7 & 8	7	59III-39 D5519	PUMPHOUSE - STRUCTURAL	15
59III-39 D5512	ROUTE OF CABLES : REFERENCE LOCATION 9	8	SK-59III-39-54-R1	PILOT WIRE EQUIPMENT	



69KV PIPE-TYPE CABLE SYSTEM

DESIGN DATA							REMARKS
CIRCUIT NO. 642	TERMINATION AT GEORGIA STREET SWITCHING STATION	MANHOLE NO. 1	MANHOLE NO. 2	MANHOLE NO. 3	MANHOLE NO. 4	TERMINATION AT WATER STREET SUBSTATION	
STATION NUMBER	0+17	17+42.28	28+92.55	39+55.90	55+96.17	73+85.54	
SECTION DESIGNATION FOR CABLE	642-1	642-2	642-3	642-4	642-5	642-5	
DISTANCE BETWEEN MANHOLES - FEET	1,725.28	1,250.27	963.35	1,640.27	1,789.37		
CIRCUIT NO. 641	TERMINATION AT GEORGIA STREET SWITCHING STATION	MANHOLE NO. 1	MANHOLE NO. 2	MANHOLE NO. 3	MANHOLE NO. 4	TERMINATION AT WATER STREET SUBSTATION	REMARKS
STATION NUMBER	0+00	17+42.28	28+92.55	39+55.90	55+96.17	74+17.54	
SECTION DESIGNATION FOR CABLE	641-1	641-2	641-3	641-4	641-5	641-5	
DISTANCE BETWEEN MANHOLES - FEET	1,742.28	1,250.27	963.35	1,640.27	1,821.57		

AS CONSTRUCTED DATA							REMARKS
CIRCUIT NO. 642	TERMINATION AT GEORGIA STREET SWITCHING STATION	MANHOLE NO. 1	MANHOLE NO. 2	MANHOLE NO. 3	MANHOLE NO. 4	TERMINATION AT WATER STREET SUBSTATION	
STATION NUMBER	0+17	17+40.44	29+89.15	39+53.43	55+97.38	73+95.21	
SECTION DESIGNATION FOR CABLE	642-1	642-2	642-3	642-4	642-5	642-5	
DISTANCE BETWEEN MANHOLES - FEET	1,723.44	1,248.71	964.28	1,643.93	1,797.83		
VACUUM TEST DATA							
INSULATION TEST OF PIPE COATING - MEGOHMS/50 FT.							
DATE OF CABLE INSTALLATION	2-13-62	2-5-62	2-8-62	2-12-62	3-14-62		
MAXIMUM PULLING TENSION - POUNDS	2200	2200	1050	2000	2400		
TIME REQUIRED FOR PULL - MINUTES	70	55	40	60	50		
CIRCUIT NO. 641	TERMINATION AT GEORGIA STREET SWITCHING STATION	MANHOLE NO. 1	MANHOLE NO. 2	MANHOLE NO. 3	MANHOLE NO. 4	TERMINATION AT WATER STREET SUBSTATION	REMARKS
STATION NUMBER	0+00	17+40.44	29+89.15	39+53.43	55+97.38	74+30.08	
SECTION DESIGNATION FOR CABLE	641-1	641-2	641-3	641-4	641-5	641-5	
DISTANCE BETWEEN MANHOLES - FEET	1,740.44	1,248.71	964.28	1,643.93	1,832.70		
VACUUM TEST DATA							
INSULATION TEST OF PIPE COATING - MEGOHMS/50 FT.							
DATE OF CABLE INSTALLATION	2-14-62	2-3-62	2-7-62	2-9-62	3-8-62		
MAXIMUM PULLING TENSION - POUNDS	2200	1600	1000	1800	2000		
TIME REQUIRED FOR PULL - MINUTES	60	55	45	55	60		

PROJECT NO. 59111-39 H.O. NO. 59111-39.1

REYNOLDS, SMITH AND HILLS
ARCHITECTS & ENGINEERS
JACKSONVILLE, FLORIDA

DRAWN: S.M.
TRACED: R.A.H.
CHECKED: R.W.H.
SCALE: NONE
DATE: JULY 1, 1960

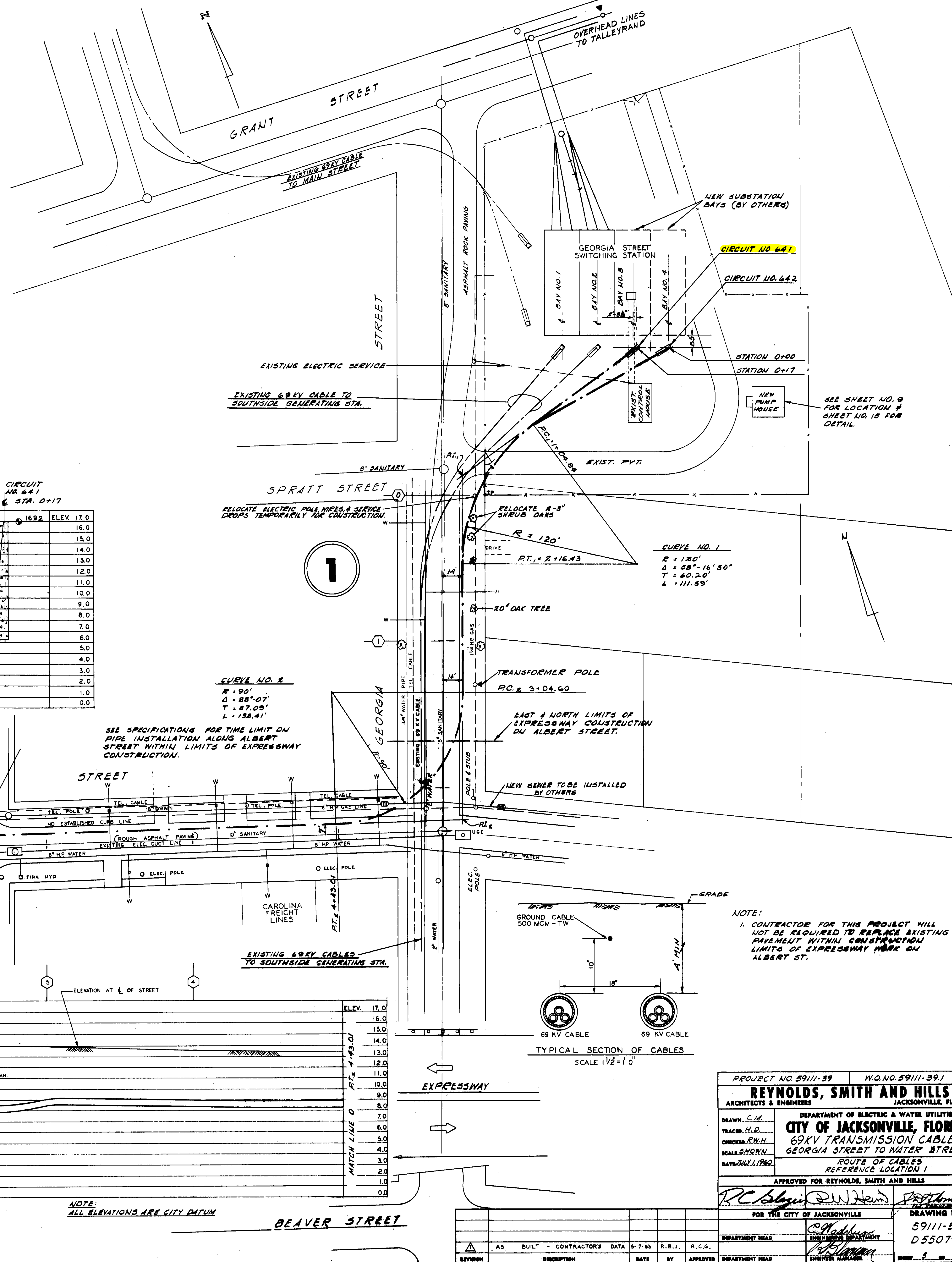
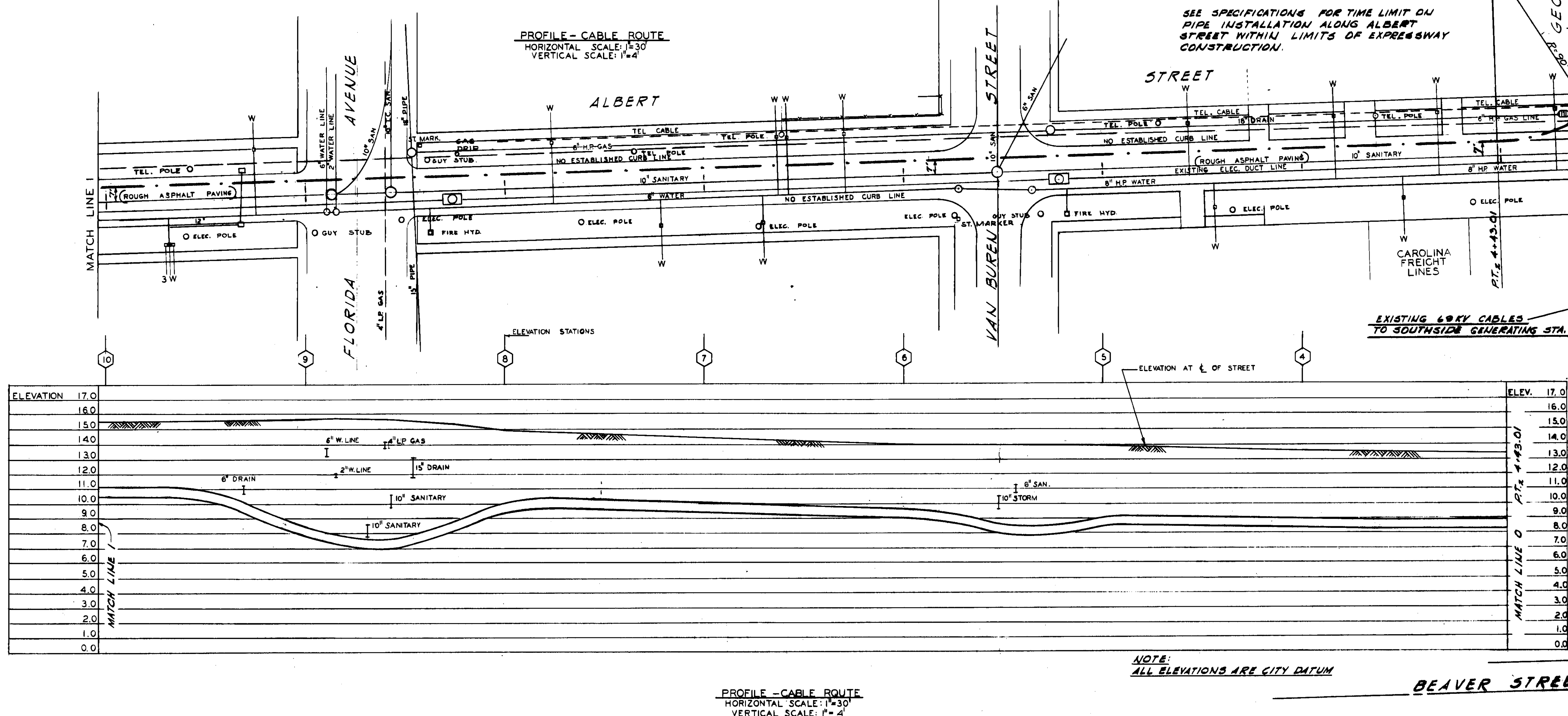
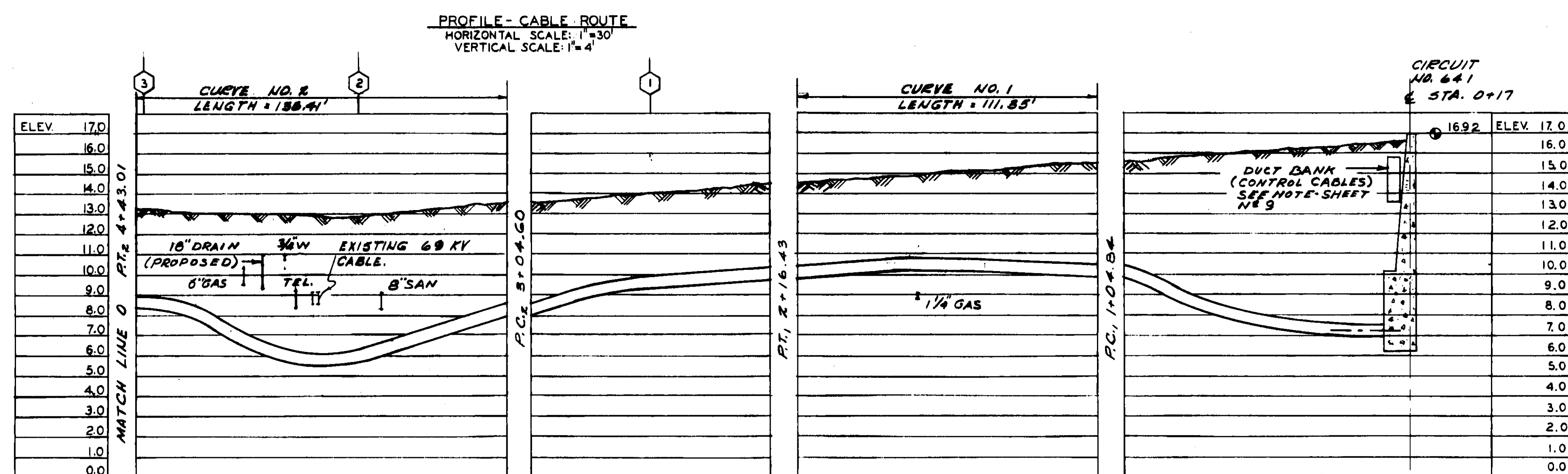
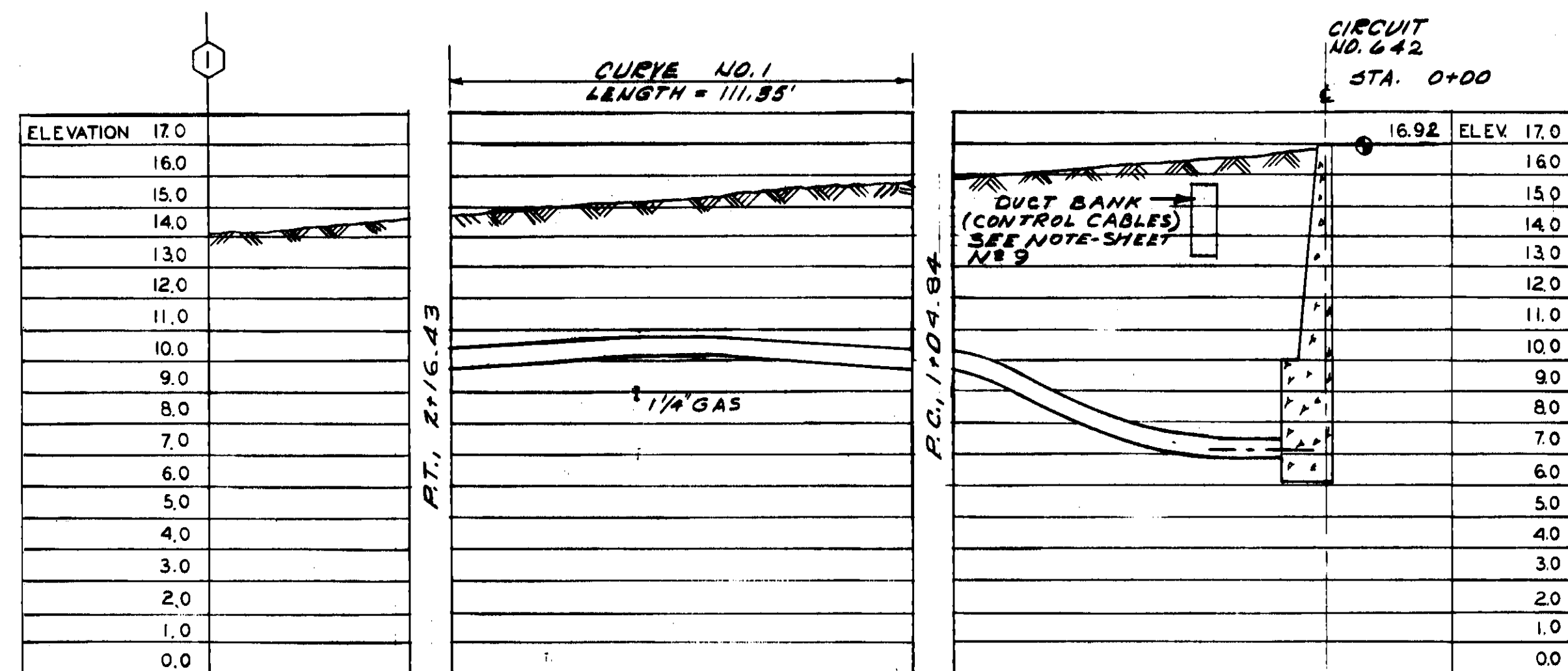
DEPARTMENT OF ELECTRIC & WATER UTILITIES
CITY OF JACKSONVILLE, FLORIDA
69KV TRANSMISSION CABLES
GEORGIA STREET TO WATER STREET
GENERAL ARRANGEMENT OF 69 KV CABLE SYSTEM

APPROVED FOR REYNOLDS, SMITH AND HILLS
R.C. Smith D.W. Hill

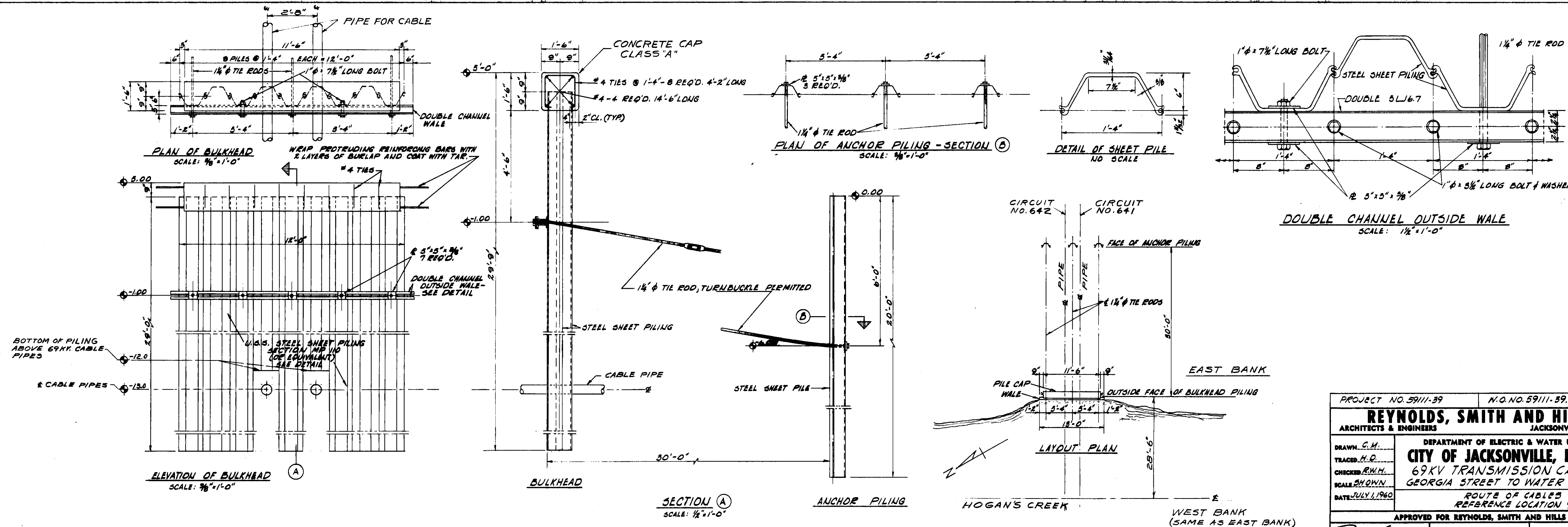
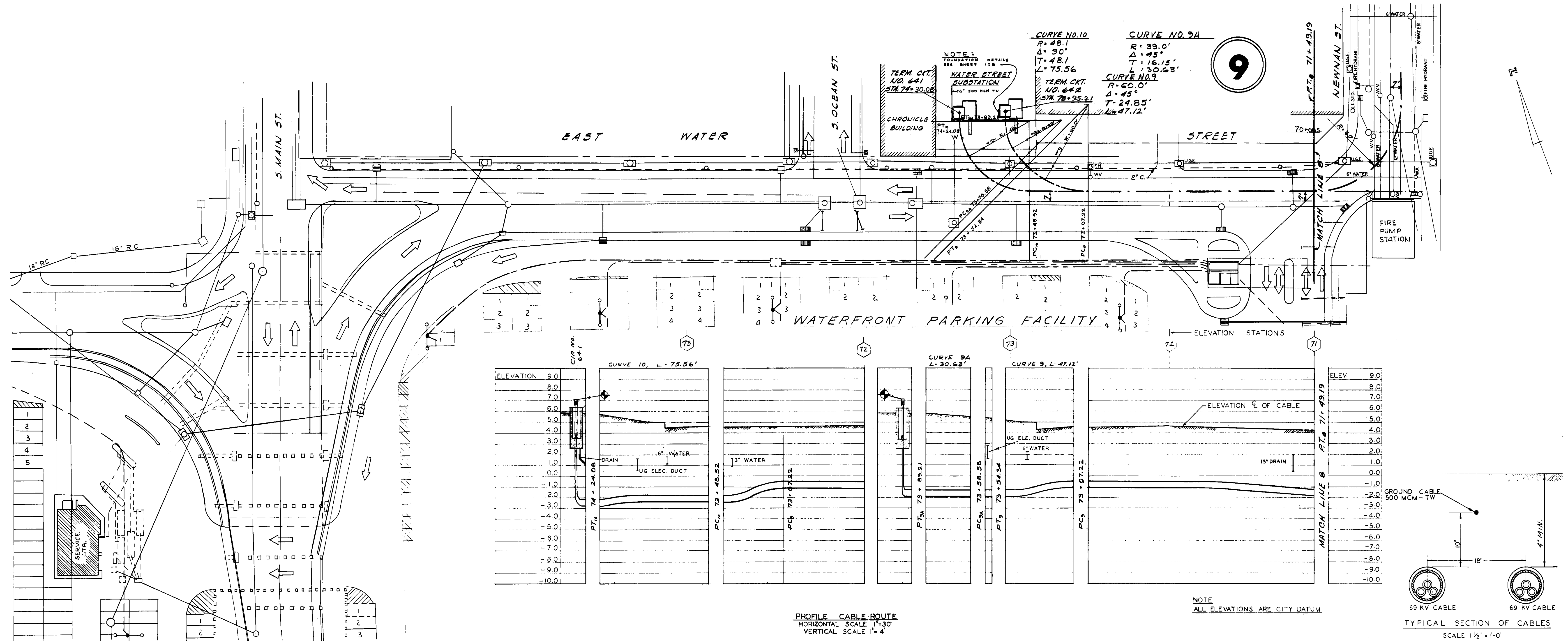
FOR THE CITY OF JACKSONVILLE
DEPARTMENT HEAD: R.C. Smith
ENGINEER: D.W. Hill

DRAWING NO. 59111-39 05506
SHEET 2 OF 15

REVISION	DESCRIPTION	DATE	BY	APPROVED	DEPARTMENT HEAD	ENGINEER	DATE
AS BUILT		5-7-63	RAH	RCG			

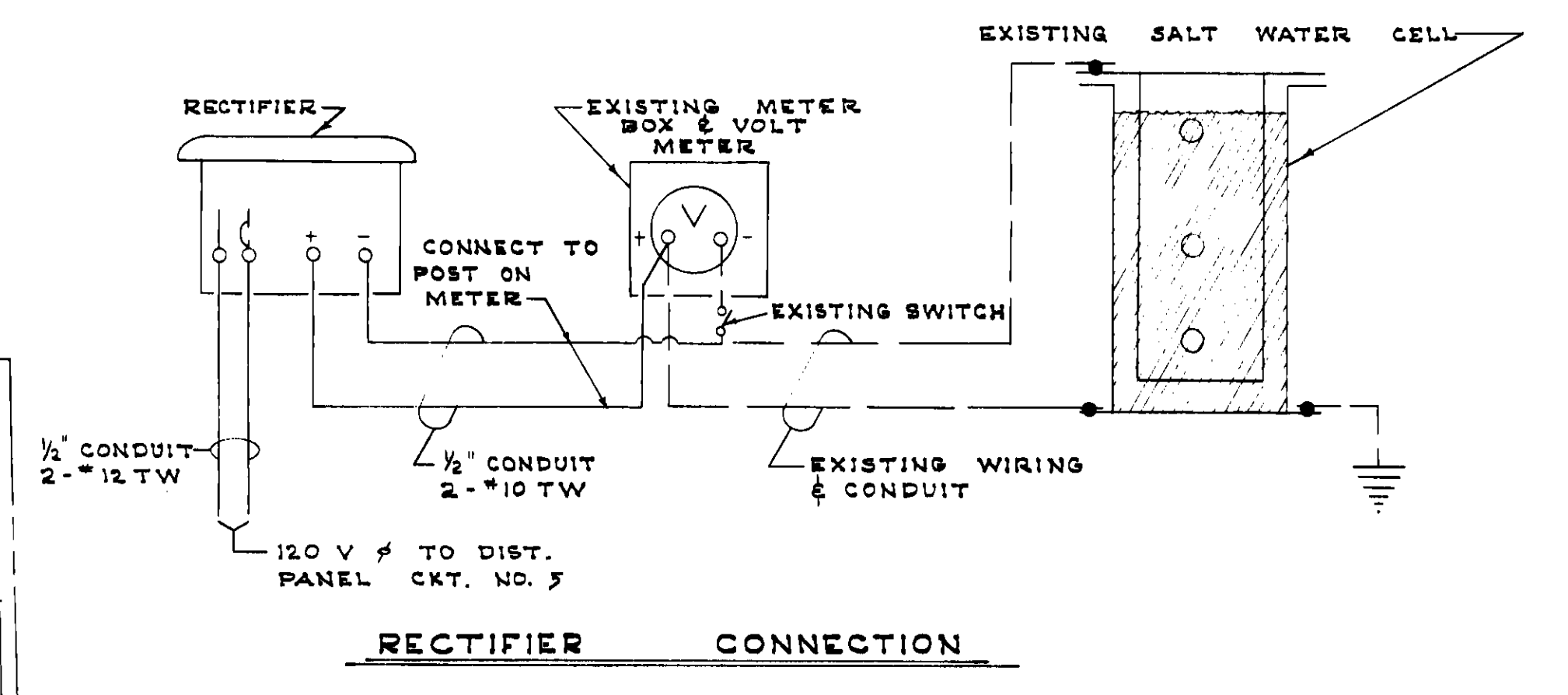
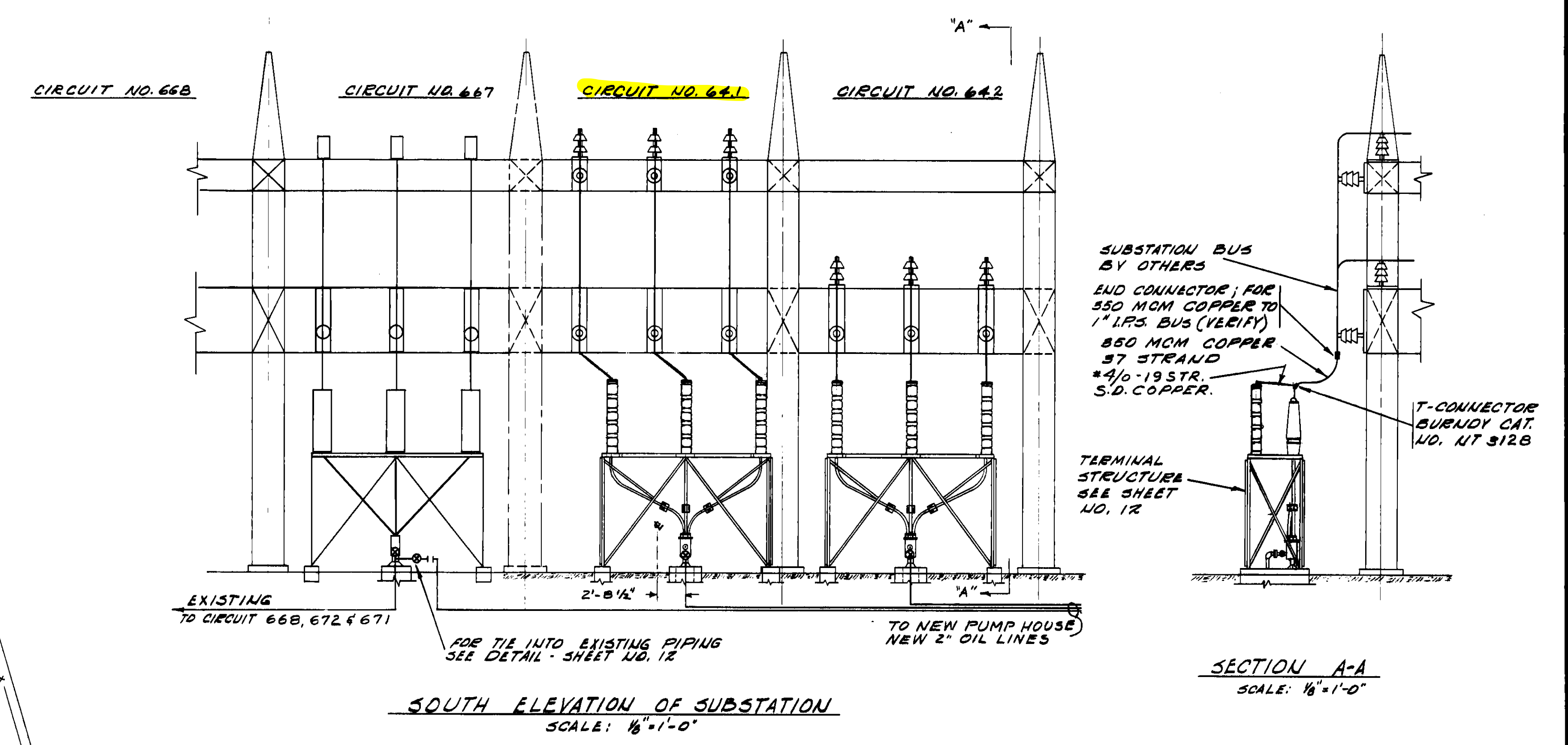
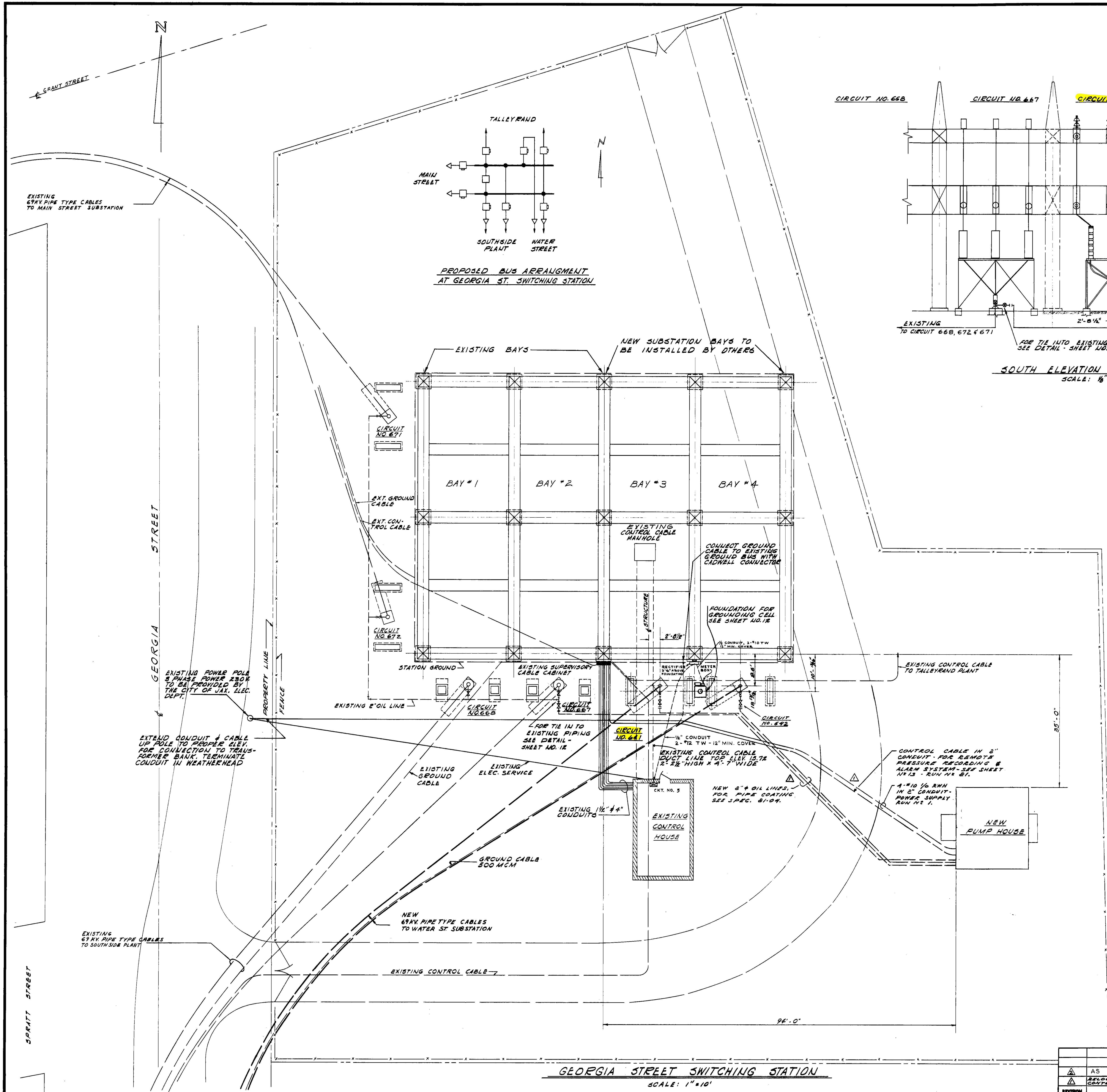


PROJECT NO. 59111-39		W.D. NO. 59111-39.1	
REYNOLDS, SMITH AND HILLS ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA			
DRAWN: C.M. TRACED: H.D. CHECKED: R.M.H. SCALE: SHOWN DATE: JULY 11, 1960		DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69KV TRANSMISSION CABLES GEORGIA STREET TO WATER STREET ROUTE OF CABLES REFERENCE LOCATION 1	
APPROVED FOR REYNOLDS, SMITH AND HILLS			
FOR THE CITY OF JACKSONVILLE DEPARTMENT HEAD ENGINEER		DRAWING NO. 59111-39 D5507 SHEET 5 OF 15	



DETAILS - STEEL PILING BULKHEAD FOR HOGAN'S CREEK

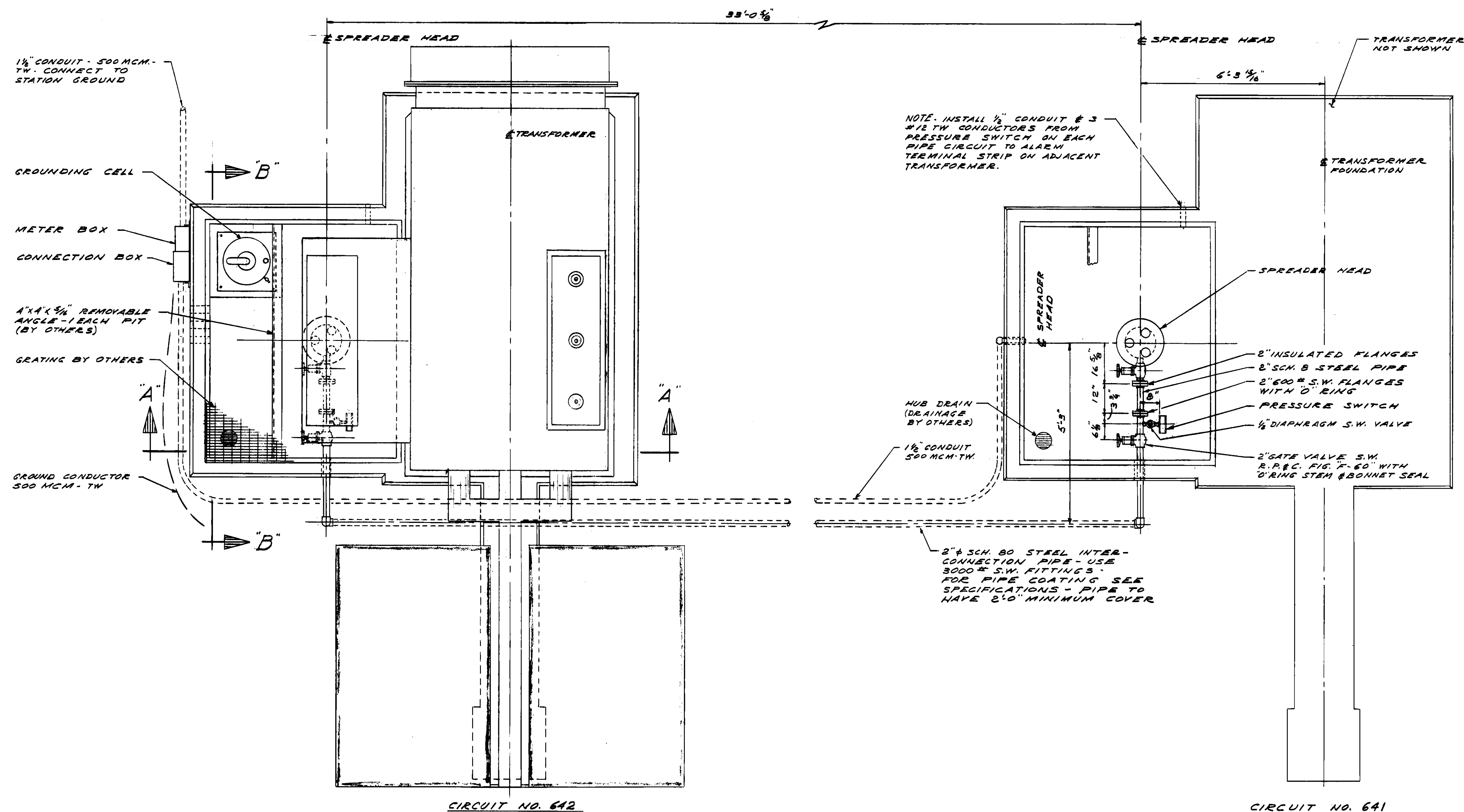
PROJECT NO. 59111-39		N.O. NO. 59111-39.1	
REYNOLDS, SMITH AND HILLS ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA			
DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69KV TRANSMISSION CABLES GEORGIA STREET TO WATER STREET ROUTE OF CABLES REFERENCE LOCATION 9			
APPROVED FOR REYNOLDS, SMITH AND HILLS			
FOR THE CITY OF JACKSONVILLE		DRAWING NO. 59111-39 D5512	
CONTRACTOR		SHEET 8 OF 13	



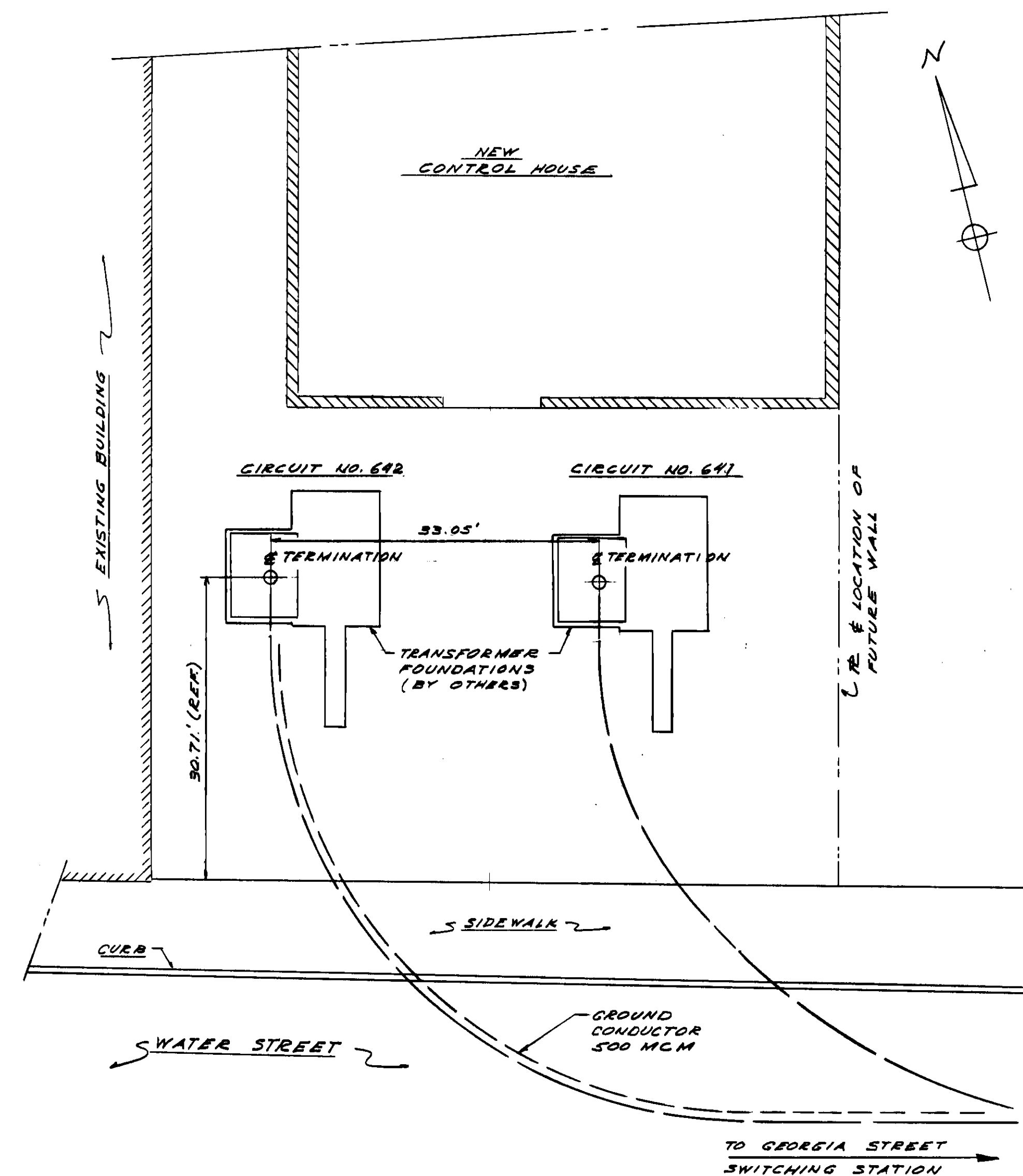
NOTE:
 1. THE ANCHOR & CENTER LINE OF CIRCUIT NO. 642 HAS BEEN OFF-SET TO PROVIDE CLEARANCE AROUND EXISTING CONTROL CABLE DUCT. THIS DUCT BANK SHALL BE ADEQUATELY PROTECTED FROM ALL DAMAGE DURING CONSTRUCTION OF ANCHOR AND INSTALLATION OF PIPE.

GEORGIA STREET SWITCHING STATION
 SCALE: 1"=10'

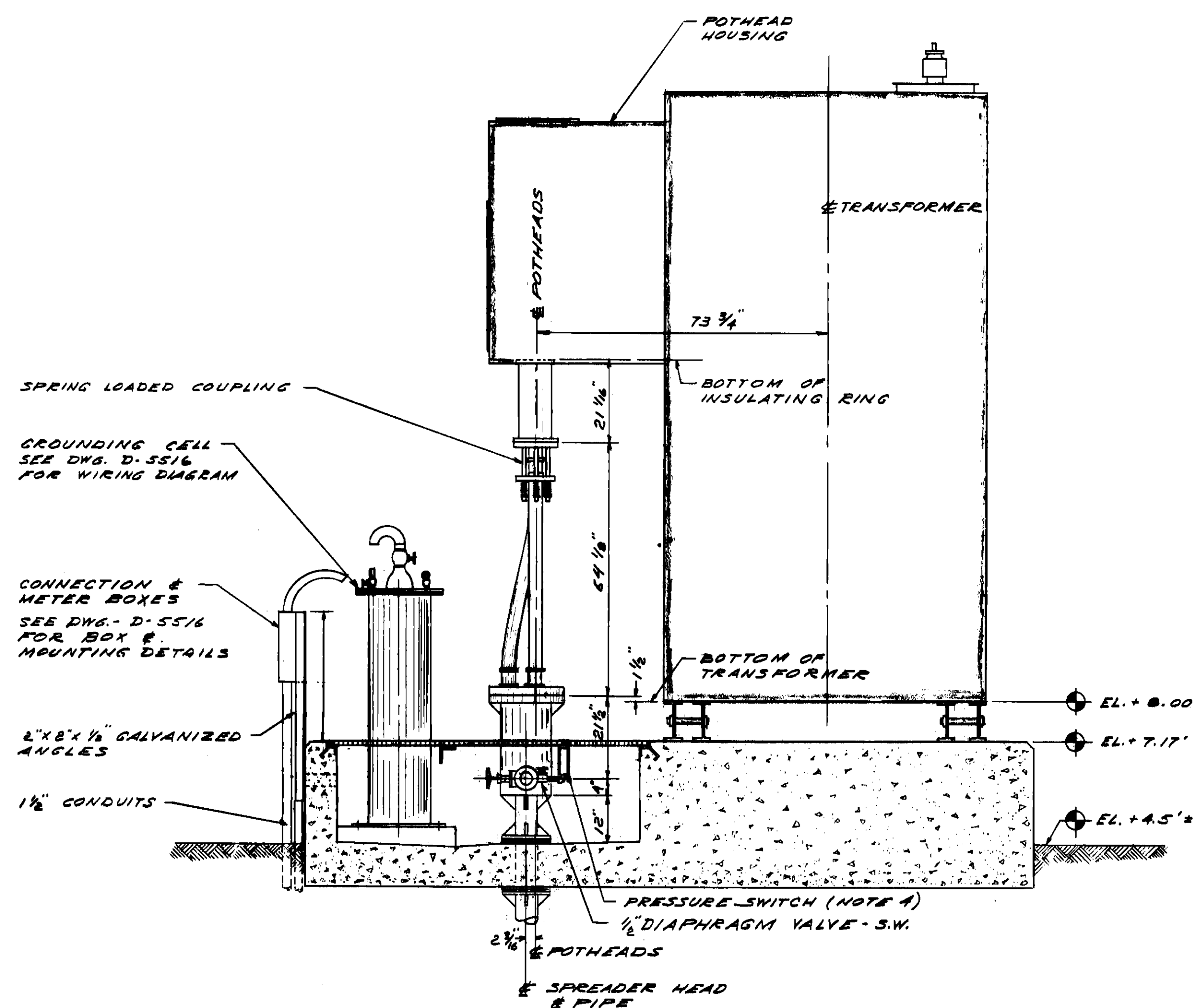
PROJECT NO. 59111-39		W.O. NO. 59111-39.1	
REYNOLDS, SMITH AND HILLS ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA			
DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69KV TRANSMISSION CABLES GEORGIA STREET TO WATER STREET CABLE TERMINATION & DETAILS GEORGIA STREET SWITCHING STATION			
APPROVED FOR REYNOLDS, SMITH AND HILLS			
FOR THE CITY OF JACKSONVILLE		DRAWING NO. 59111-39 D5513	
DESIGNED BY R.A.H.	CHECKED BY R.A.H.	SCALE AS SHOWN	DATE JULY 11, 1960
REVISION	DESCRIPTION	DATE	BY
AS BUILT	5-15-63	R.B.J.	R.C.G.
REPLACE 3-2\"/>			



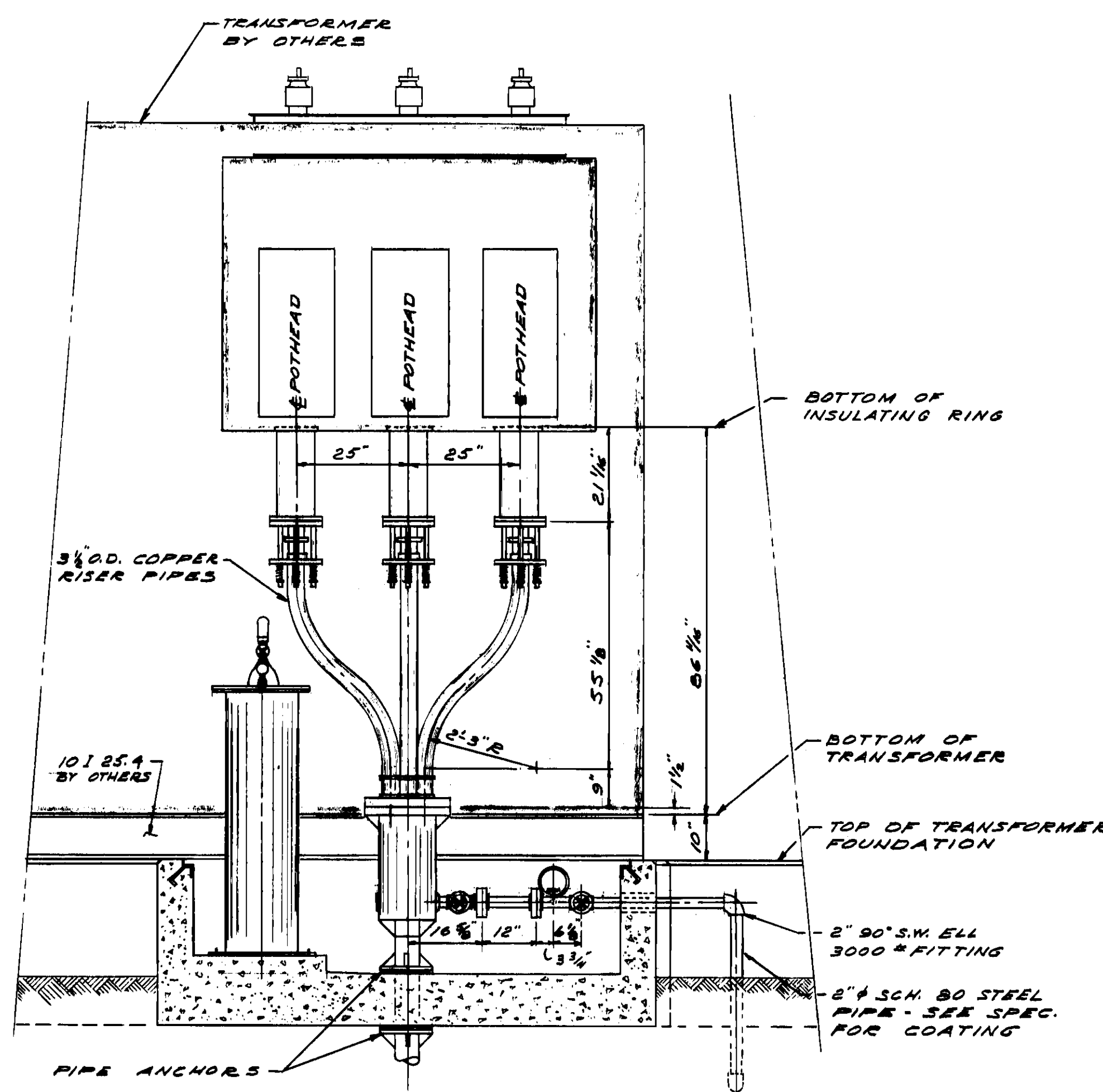
PLAN
SCALE 1/2" = 1'0"



PLAN
WATER STREET SUBSTATION
SCALE 1" = 10'0"



SECTION A-A
SCALE 1/2" = 1'0"



SECTION B-B
SCALE 1/2" = 1'0"

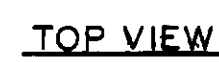
- NOTES**
1. THE WORK FOR THIS PROJECT SHALL CO-ORDINATED WITH THE CONSTRUCTION OF THE WATER STREET SUBSTATION, AND WITH THE INSTALLATION OF THE TRANSFORMERS BY OTHERS.
 2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL ON ALL EQUIPMENT FURNISHED FOR THE CABLE TERMINATION, SPREADER HEADS, RISER PIPES, COUPLINGS, ETC. SHALL BE PURCHASED BY THE CONTRACTOR FROM THE CABLE MANUFACTURERS FOR THIS PROJECT. POTHEADS FOR THE TERMINATION OF THE CABLE WILL BE FURNISHED BY OTHERS AS A PART OF THE TRANSFORMER.
 3. THE CONTRACTOR SHALL MAKE-UP POTHEADS, AND PERFORM ALL WORK AS REQUIRED FOR THE COMPLETE INSTALLATION OF THE CABLE CONNECTIONS TO THE TRANSFORMERS.
 4. PRESSURE SWITCHES SHALL BE MERCURIAL SERIES DAW-23 - WEATHER RESISTANT CASE, TYPE 93, RANGE 0-300 P.S.I.G. - 115 VOLTS. CONTACTS - 1 SET CLOSURE ON DECREASE TO 150 P.S.I.G. 1 SET CLOSURE ON INCREASE TO 250 P.S.I.G. SUITABLE FOR JUNISO OIL NO. 6.

PROJECT NO. 59111-39		W.O. NO. 59111-39.1	
REYNOLDS, SMITH AND HILLS ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA			
DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69KV TRANSMISSION CABLES GEORGIA STREET TO WATER STREET WATER STREET SUBSTATION			
CABLE TERMINATION & DETAILS WATER STREET SUBSTATION			
APPROVED FOR REYNOLDS, SMITH AND HILLS			
FOR THE CITY OF JACKSONVILLE		DRAWING NO.	
DEPARTMENT HEAD		59111-39	
ENGINEERING DEPARTMENT		D5514 R-1	
ENGINEER MANAGER		SHEET 12 OF 15	

REVISION	DESCRIPTION	DATE	BY	APPROVED
1	AS BUILT	5-15-63	RBU	RCG
2	REVISION TO LEASE WITH TRANSFORMERS PURCHASED	5-20-61	G.M.C.	J.O.T.



SCALE: $\frac{1}{2}'' = 1'-0''$



SCALE: 1" = 1'-0"



ELEVATION



SCALE: 1/2" = 1'-0"



ANCHOR PLATE

MICARTA DISC



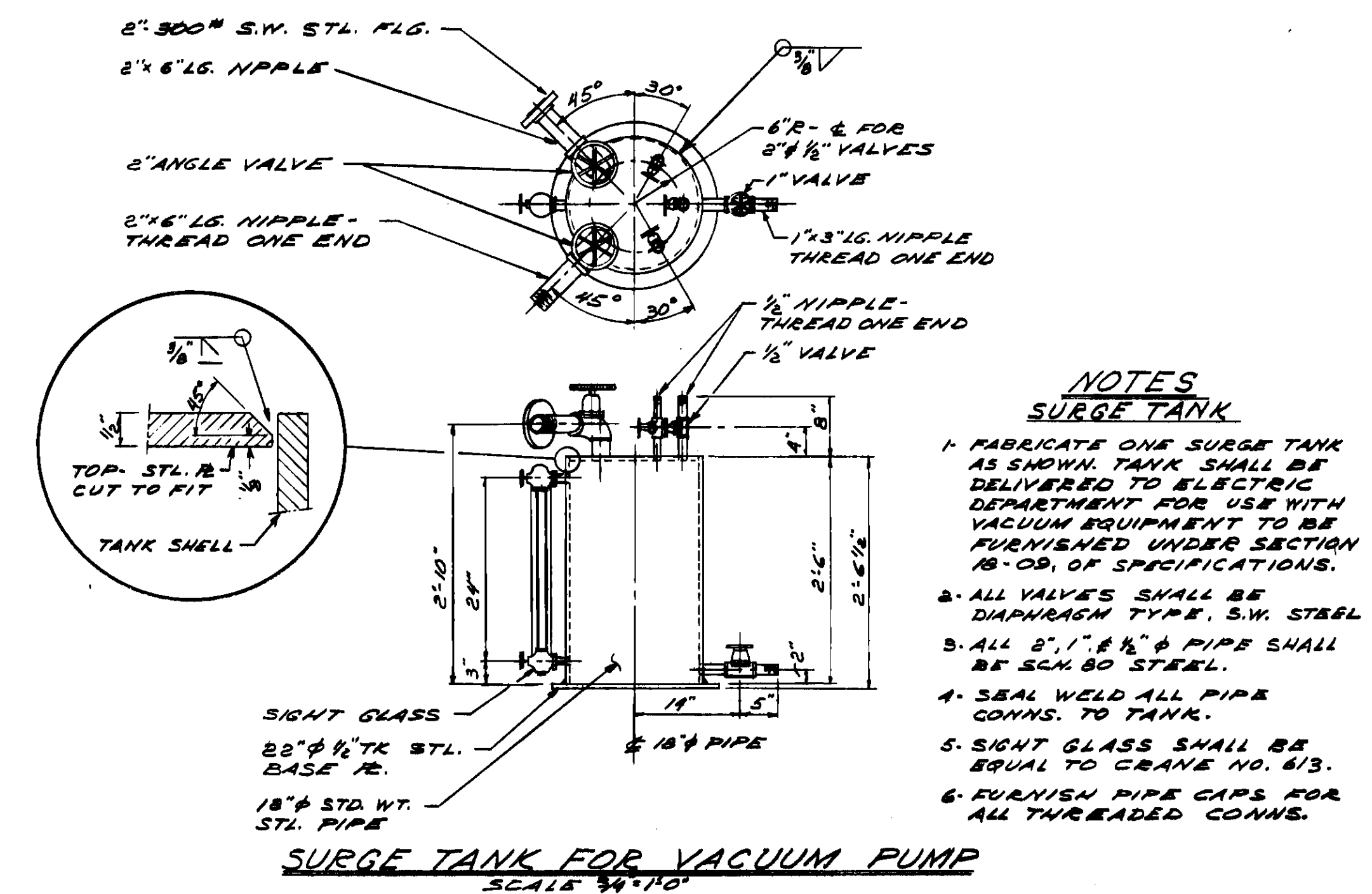
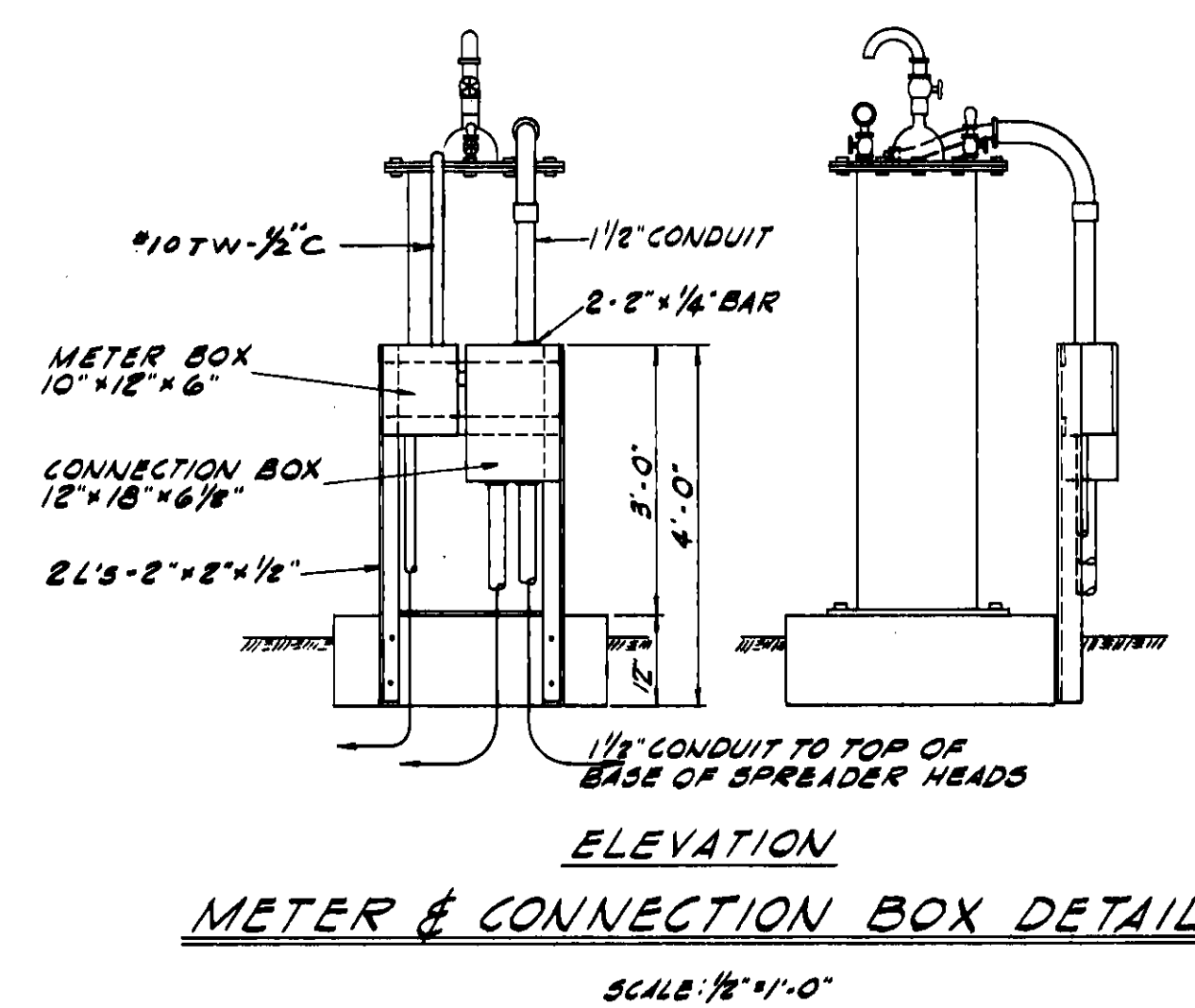
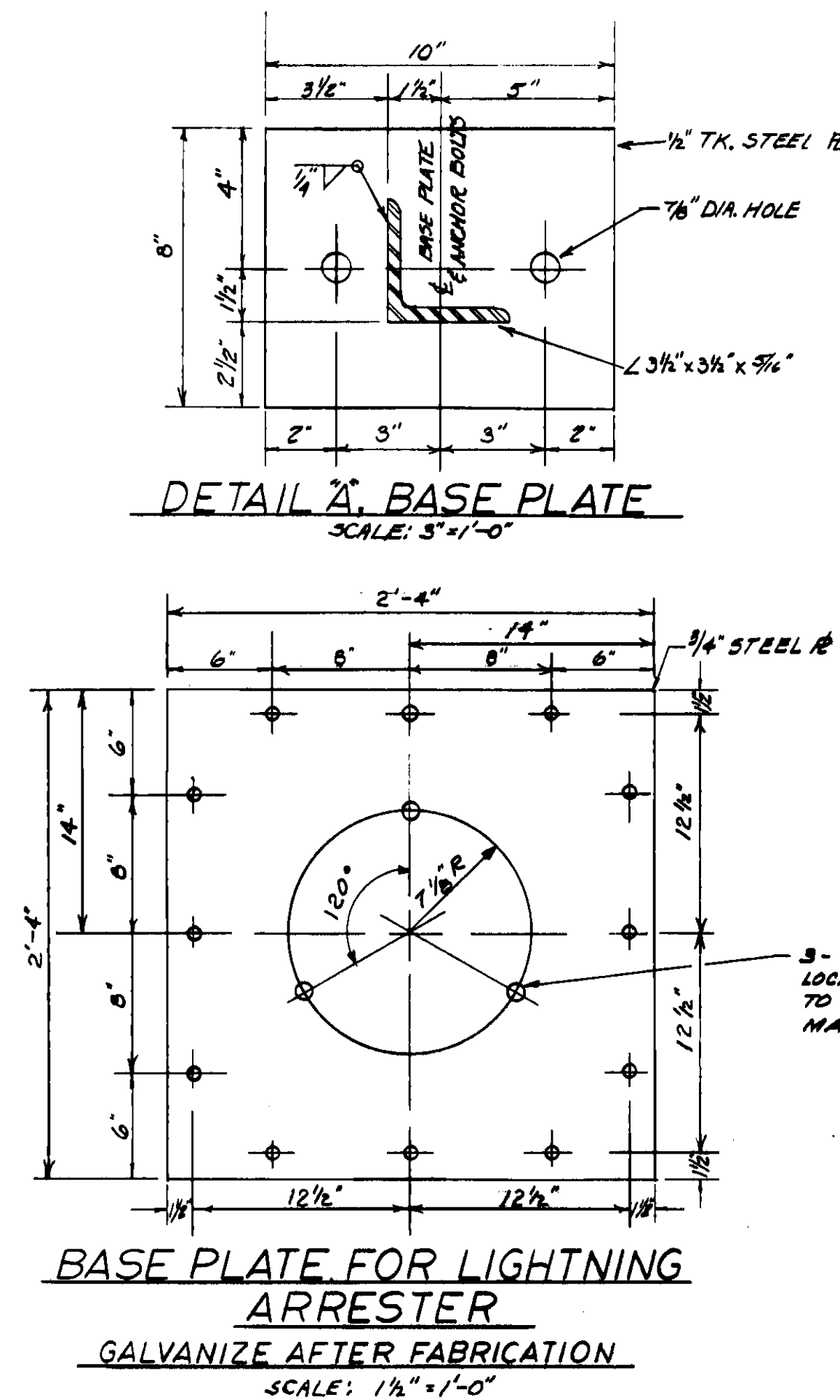
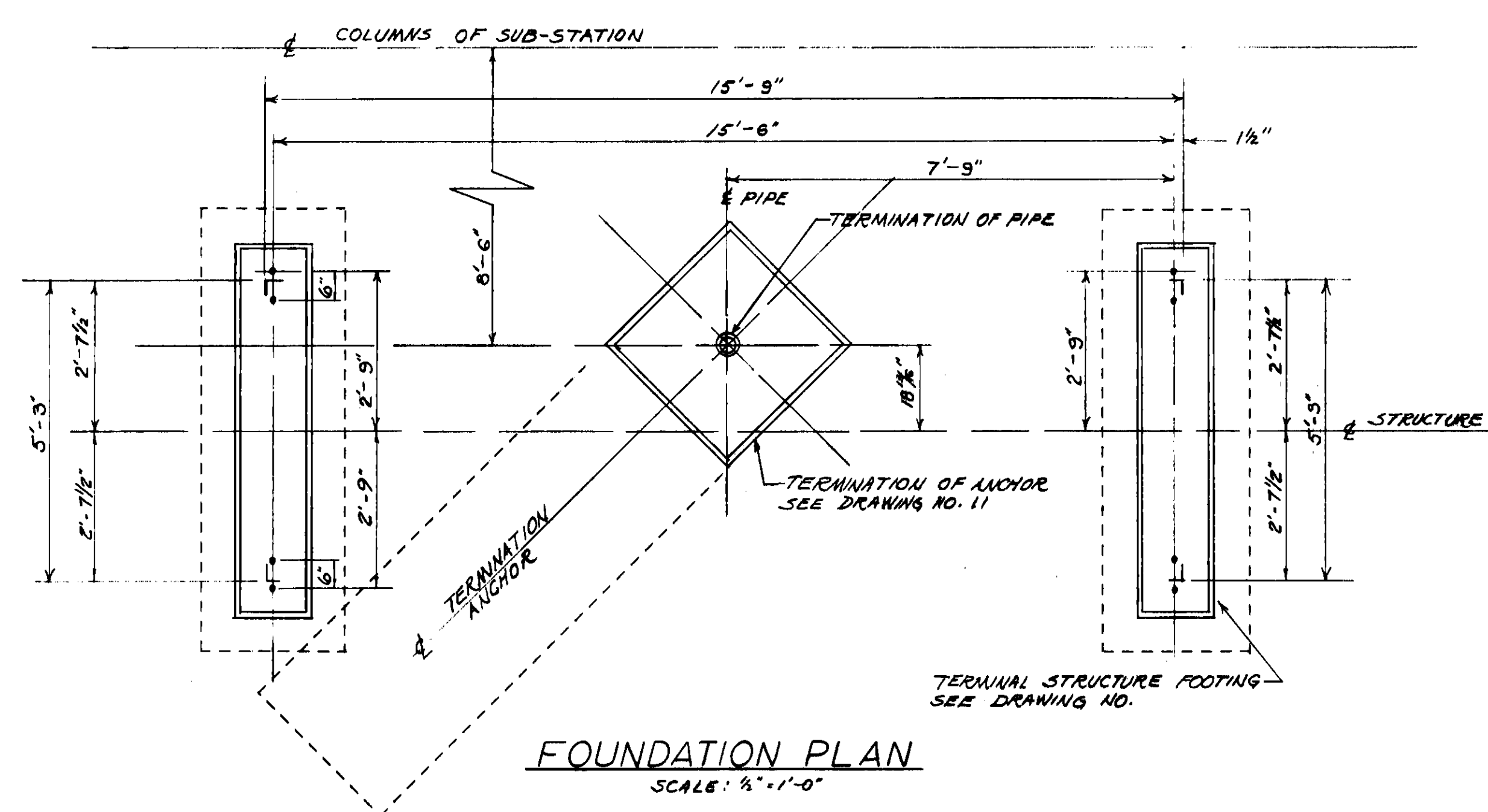
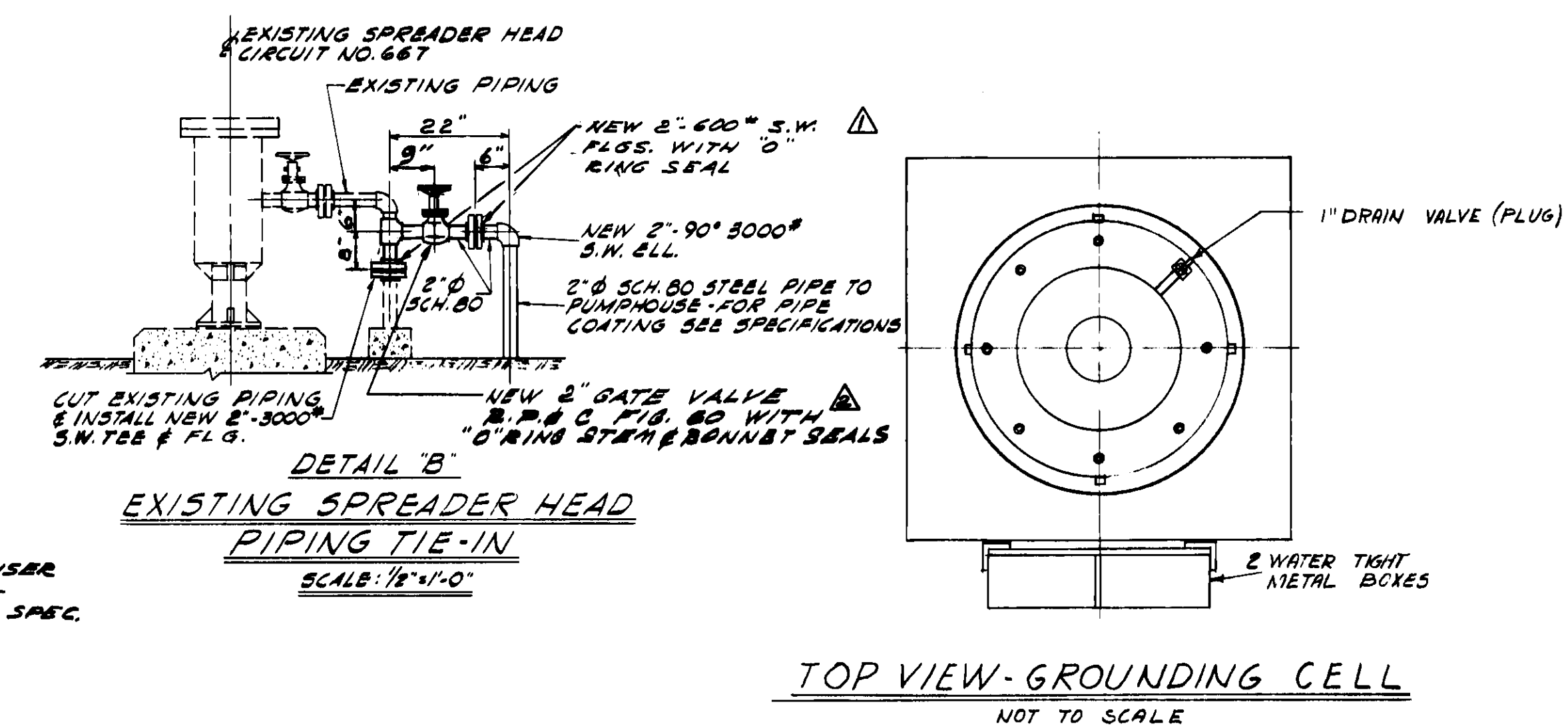
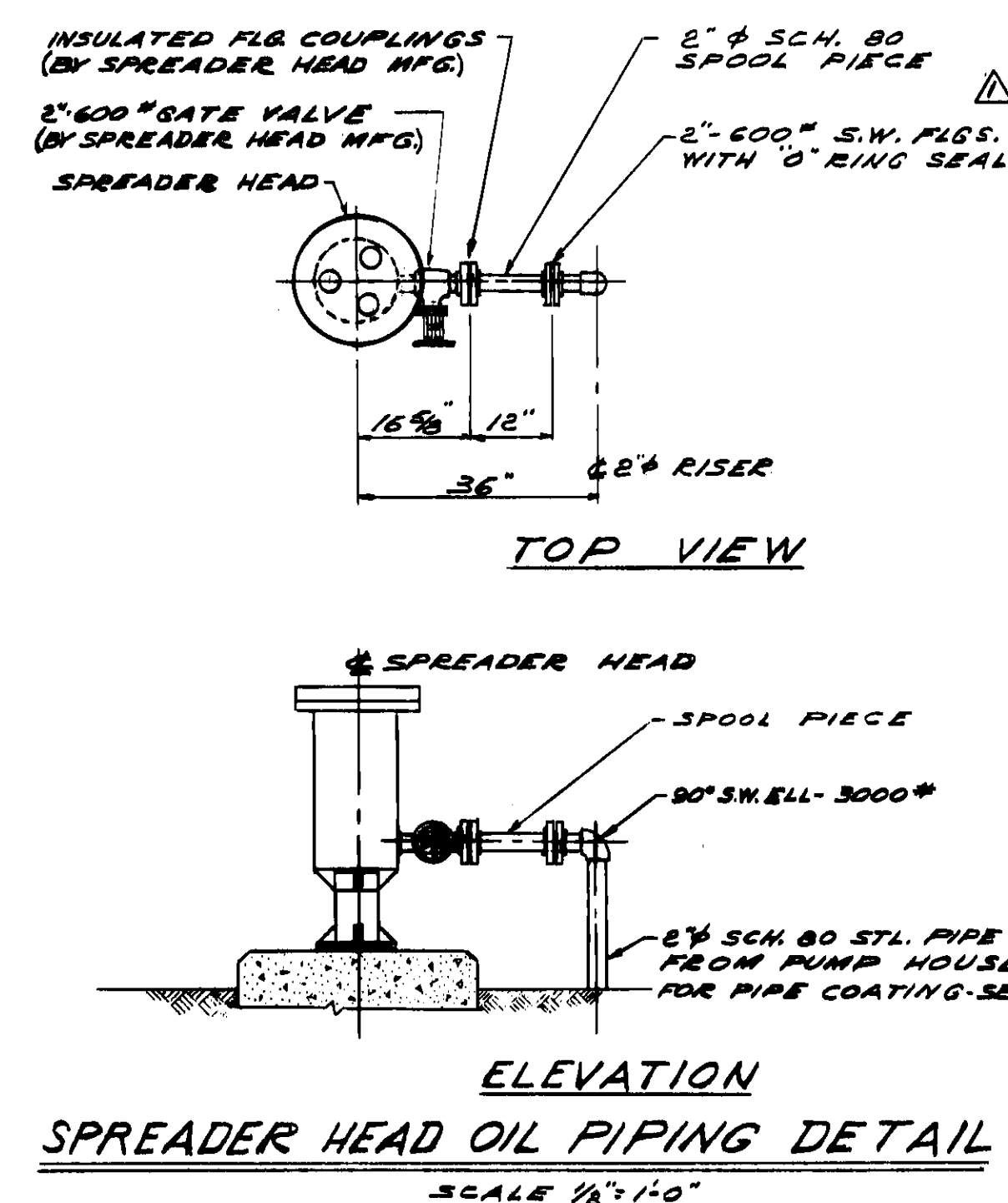
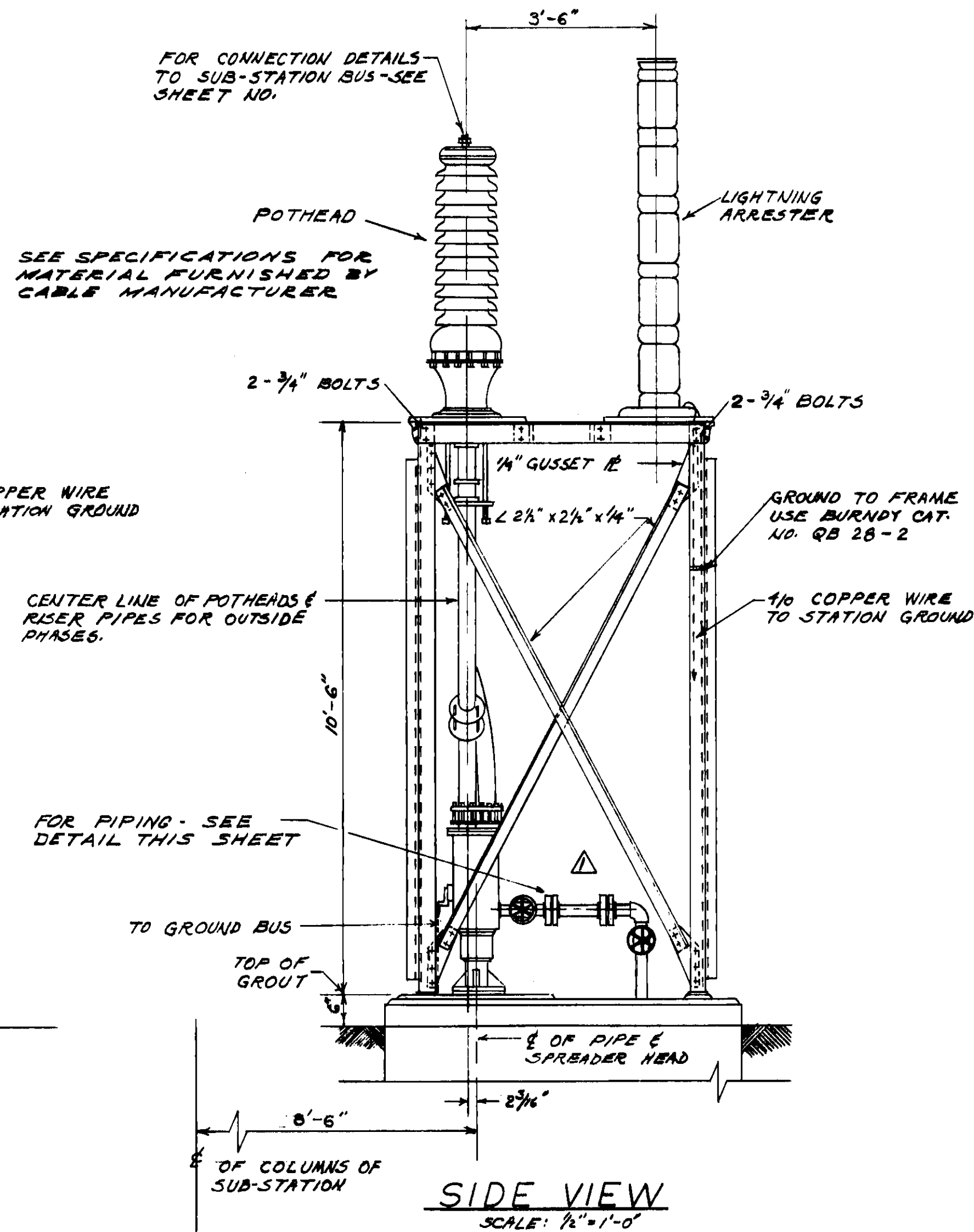
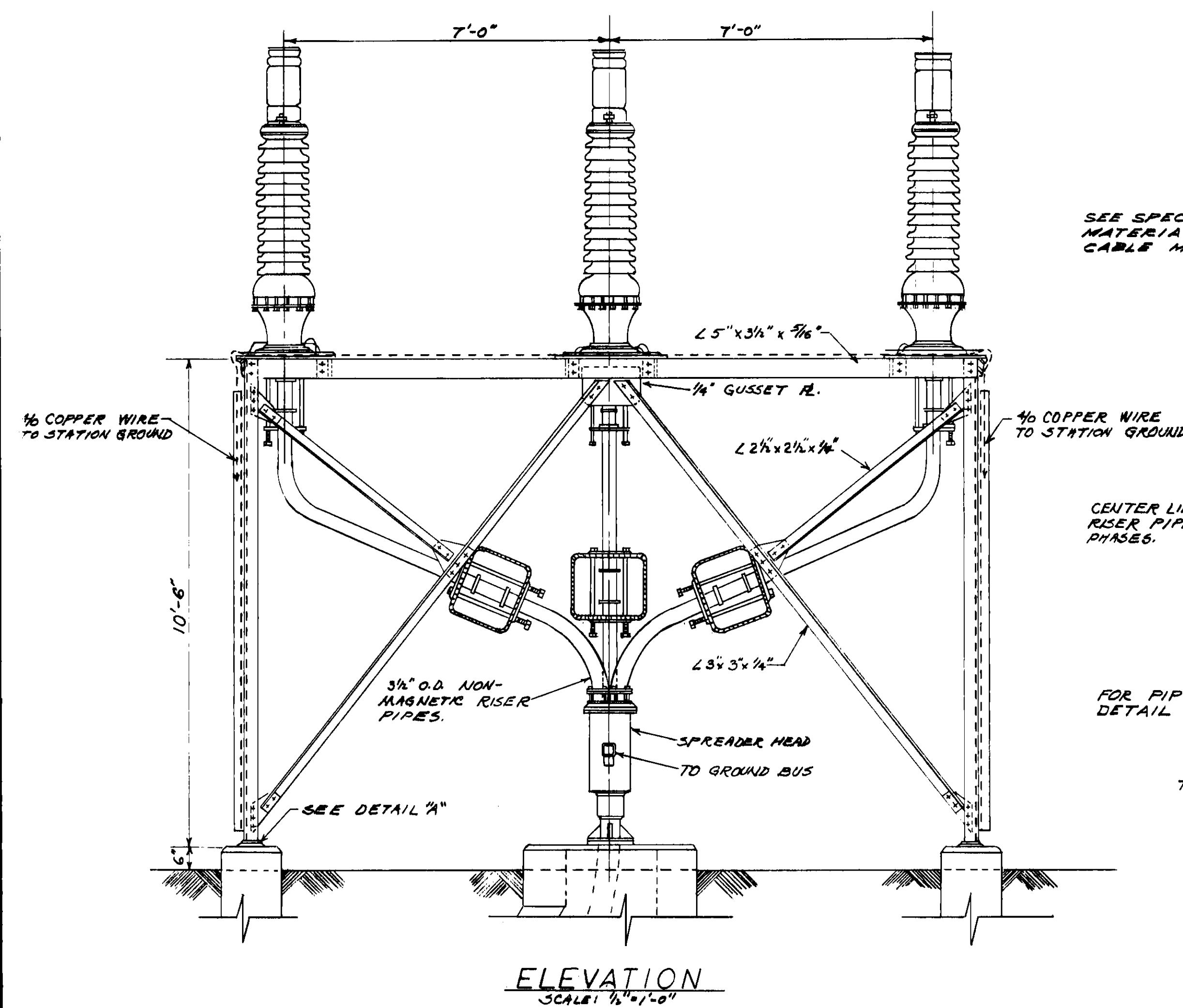
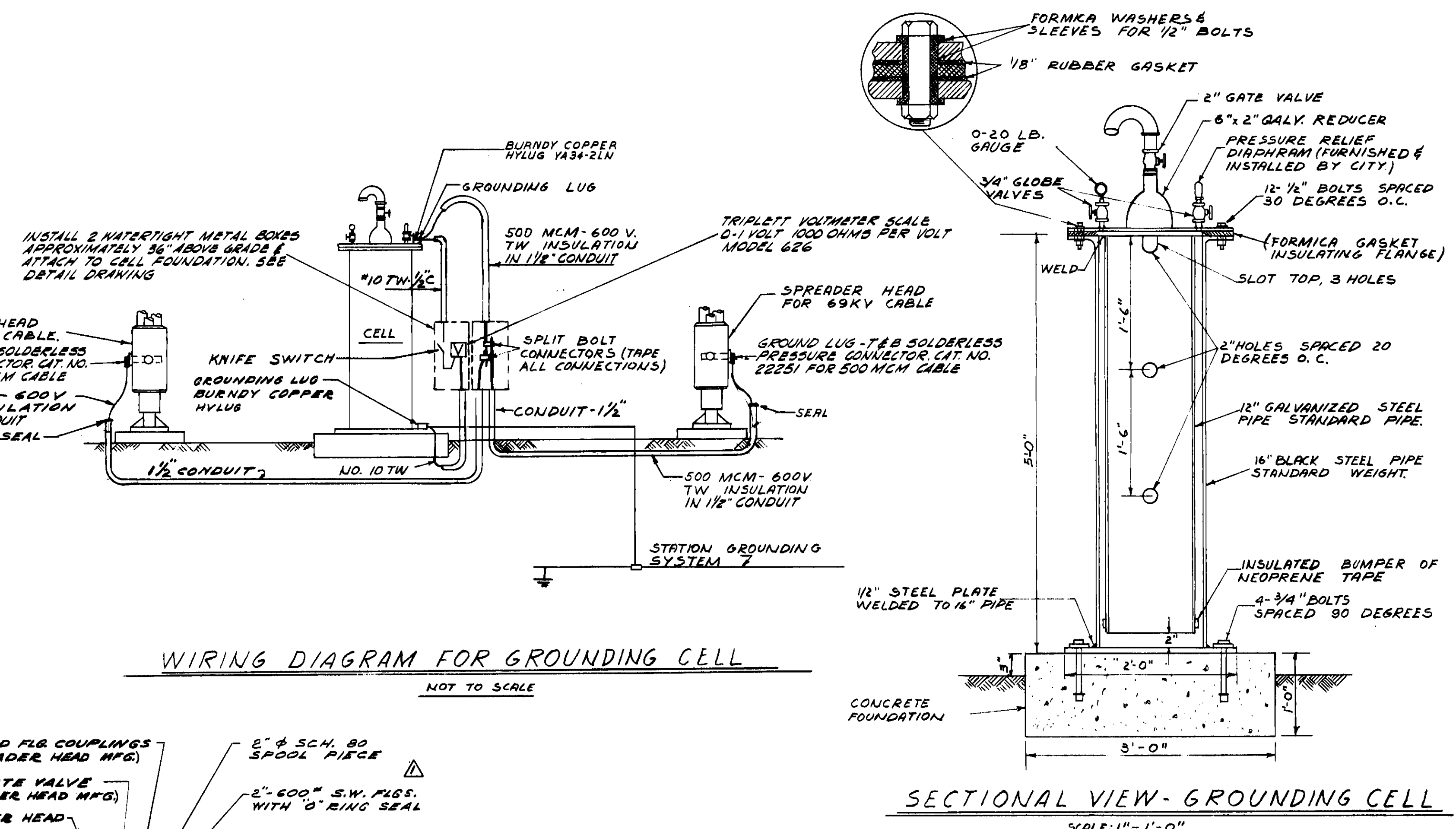
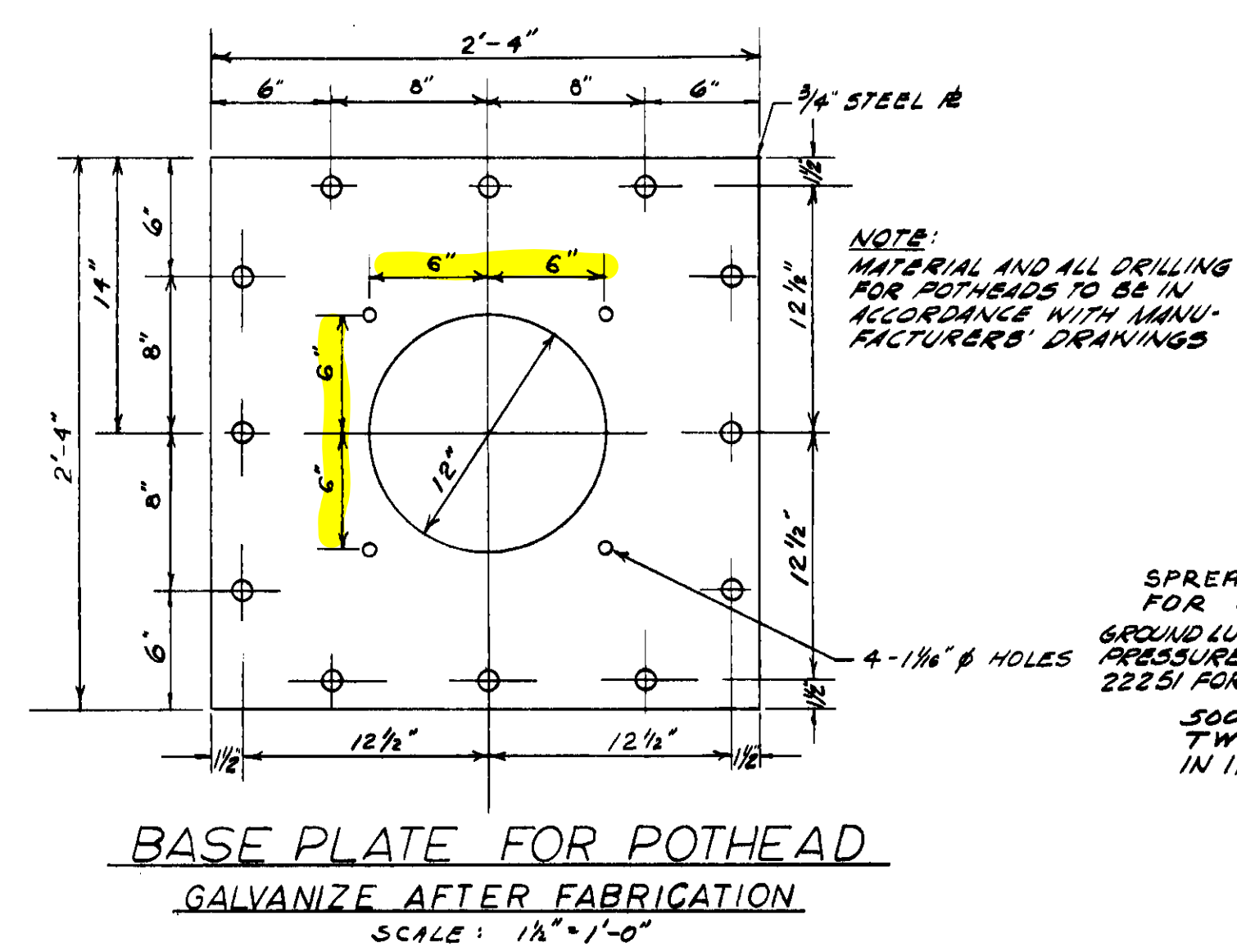
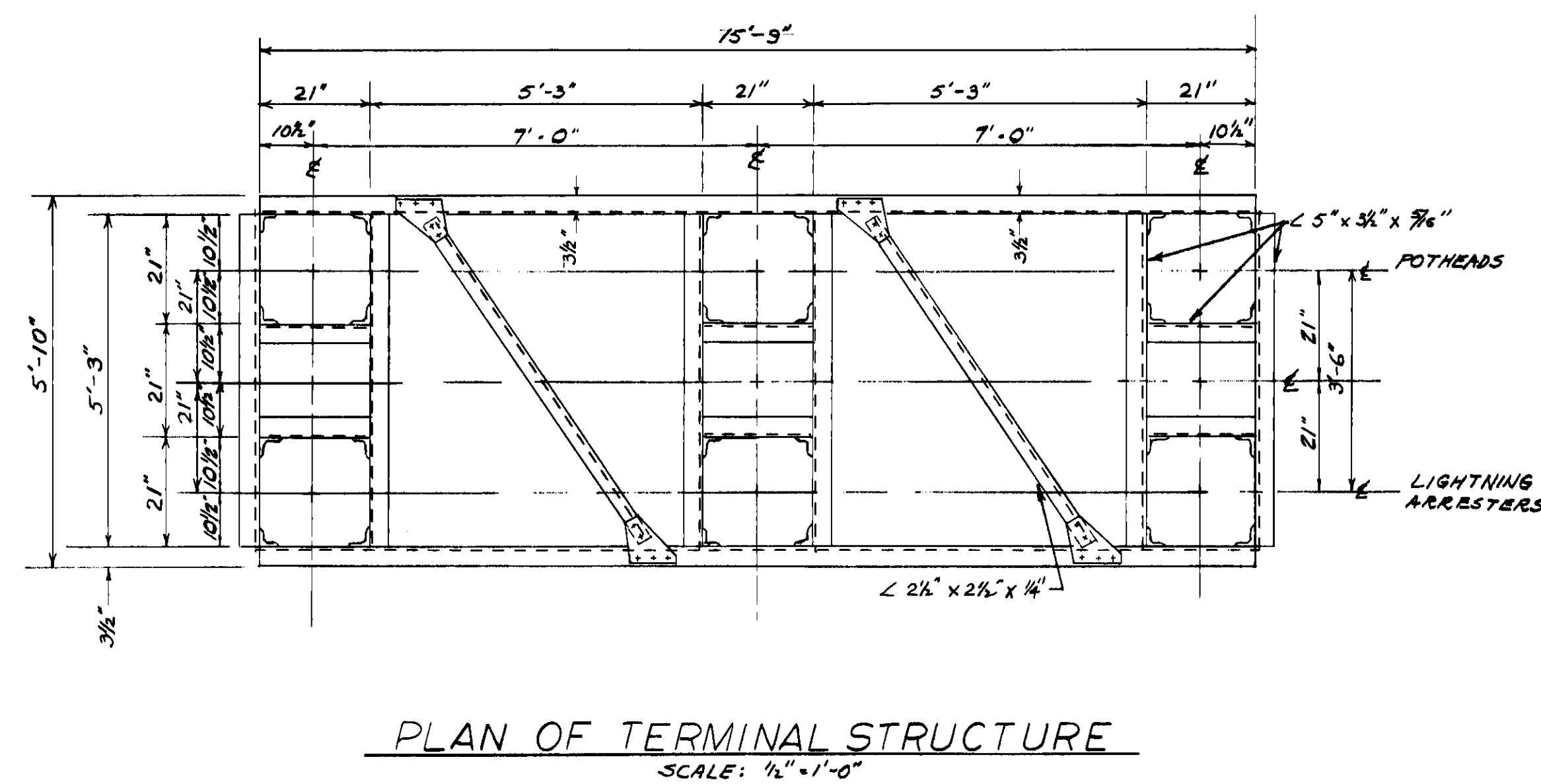
ASSEMBLED PIPE ANCHOR

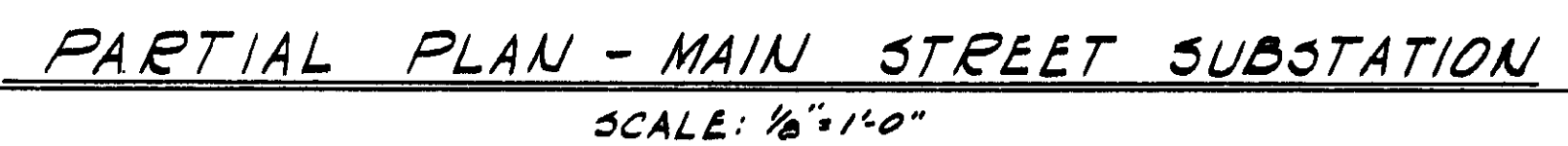
SCALE: 3" 1' - 0"



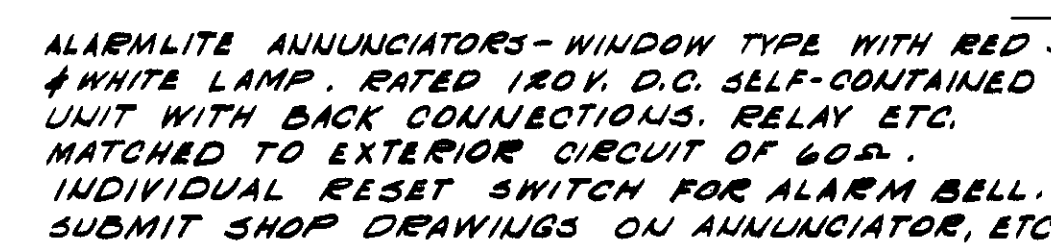
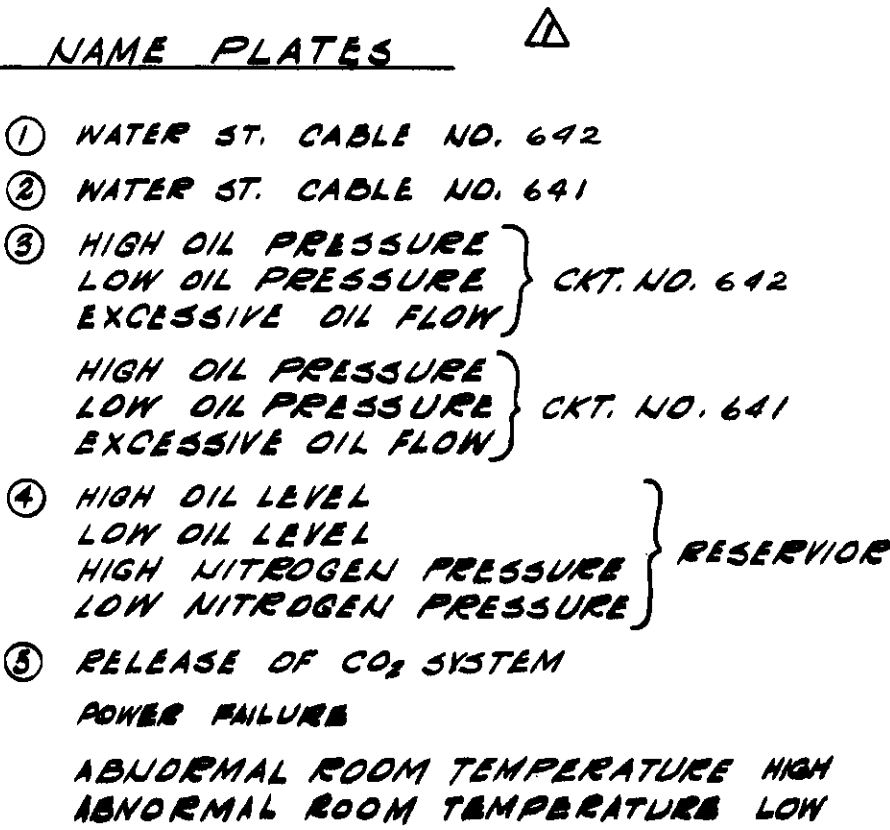
SCALE: 1/2" = 1'-0"

[illegible]

[illegible]



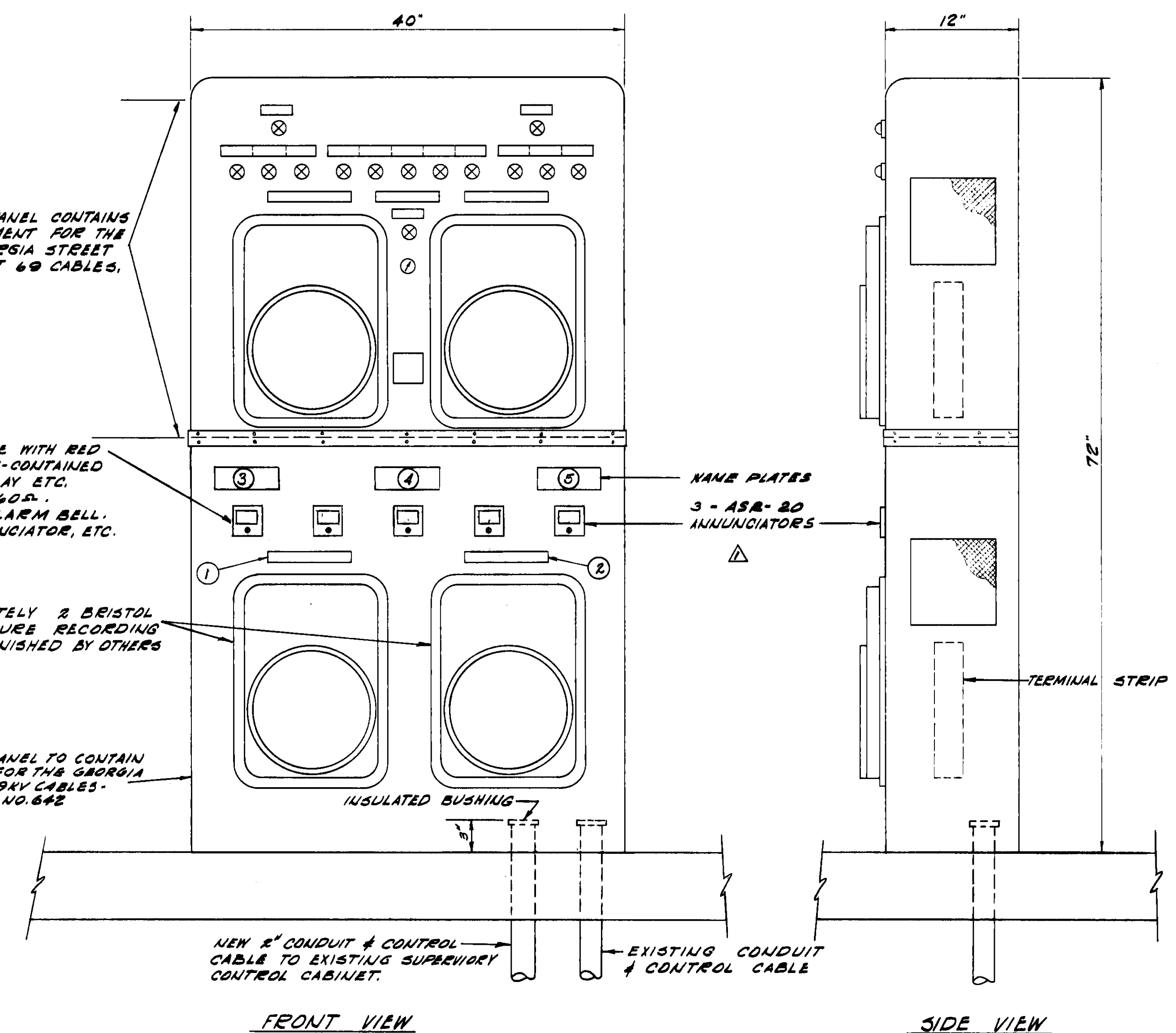
-
- PUMP HOUSE**
- ④ — CKT. 642 — OCT. 641 — ④
- PRESSURE TRANSMITTERS
- ① — ② — ③ — ① — ② — ③
- PIPE PRESSURE & EXCESSIVE FLOW
- ⑤ — ④ — ⑦ — ⑤
- RESERVOIR SYSTEM
- ⑥ — ⑩ — ⑪ — ⑫
- FIRE ALARM, POWER FAILURE & TEMPERATURE
- 1 PAIR SPARE
- TERMINAL STRIP IN PRESSURE CONTROL CABINET
- SEE SCHEMATIC BELOW
- EXISTING OUTDOOR CABINET GEORGIA ST.
- EXISTING SUP. CONTROL CABINET MAIN STREET
- TA7
TB1
TB2
TB4
TA3
TA4
TA5
TA6
TA1
TA2
- 12 CONDUCTOR CONTROL CABLE
6 2" CONDUIT
- GEORGIA STREET SWITCHING STATION



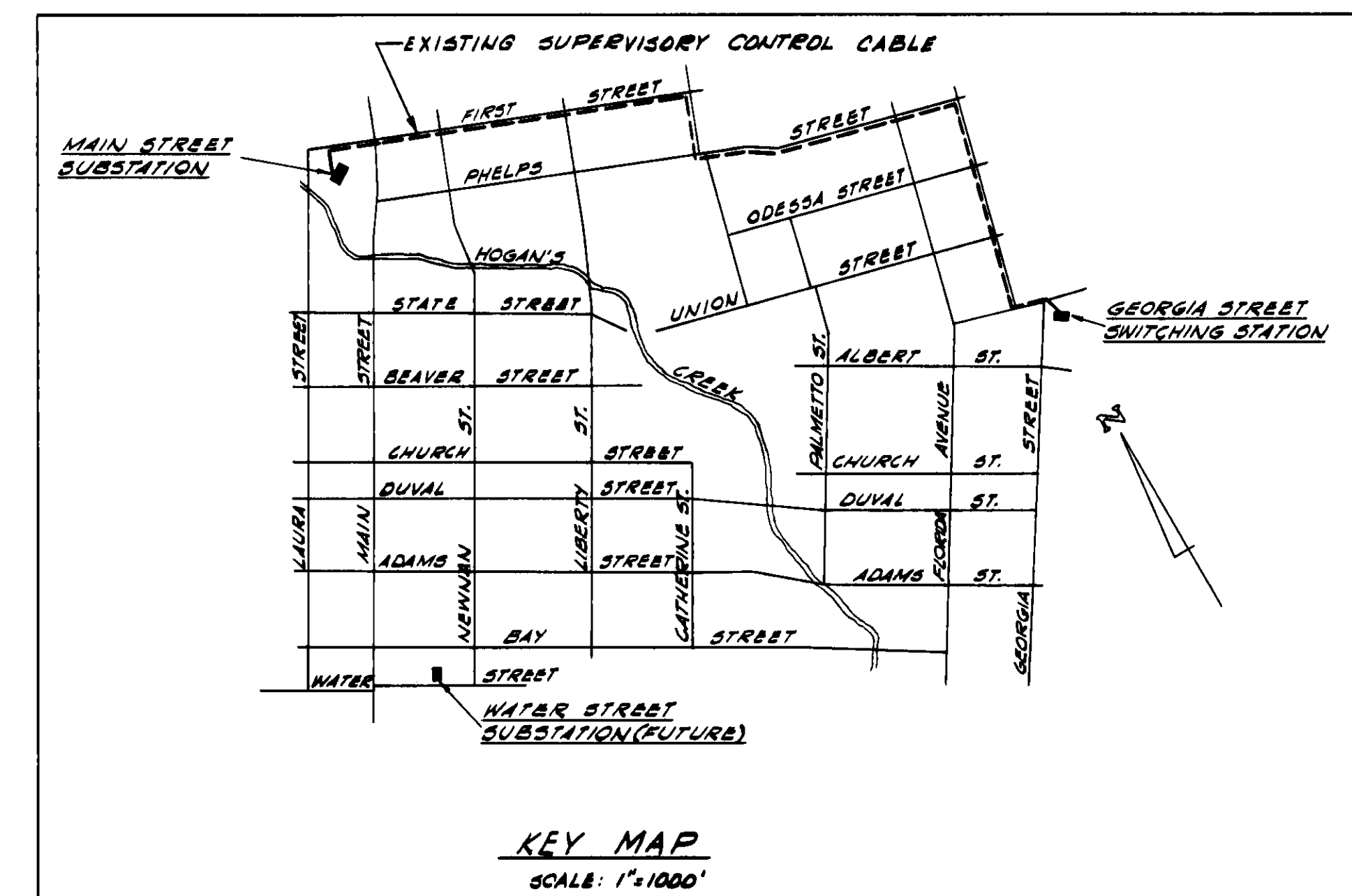
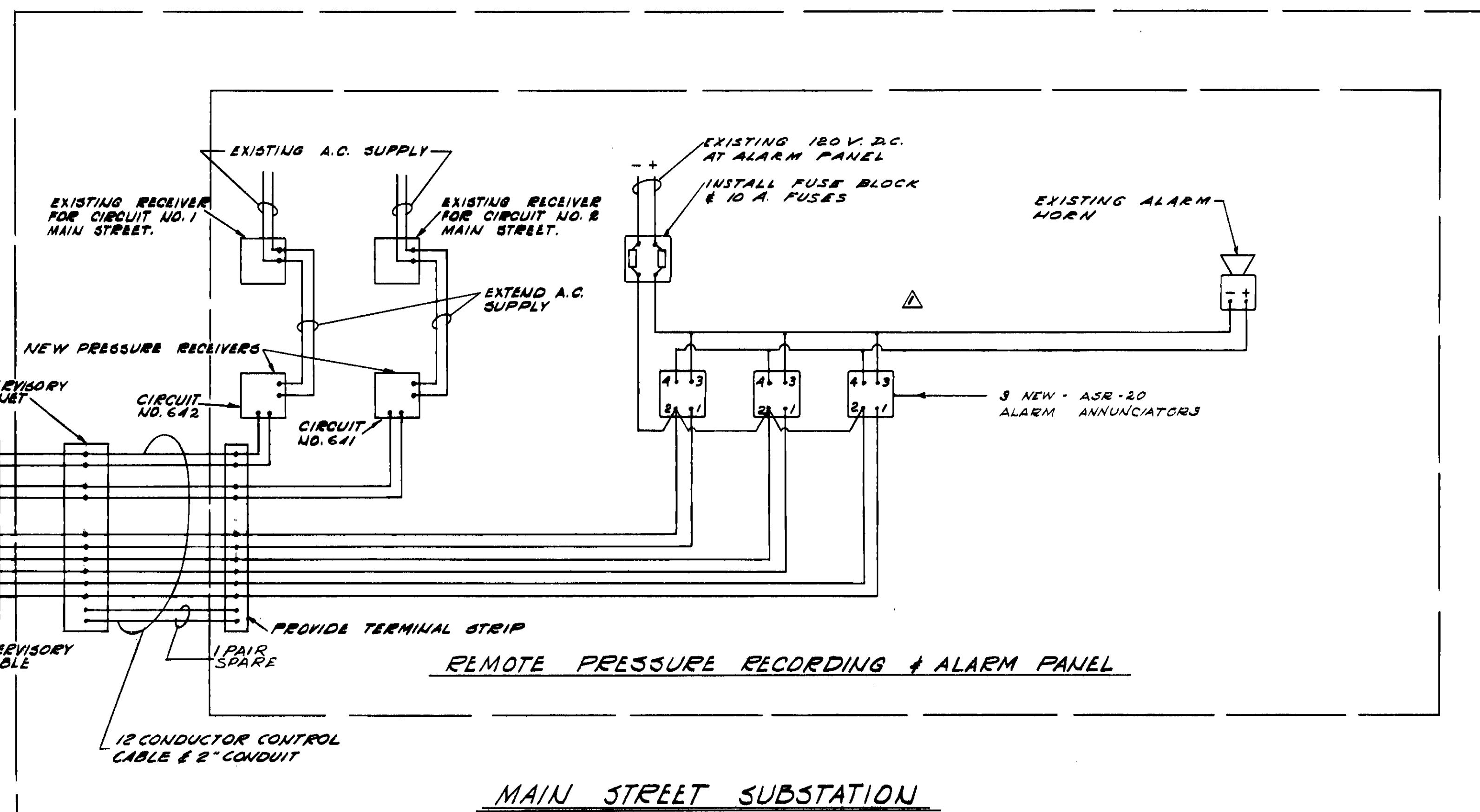
INSTALL COMPLETELY 2 BRISTOL
REMOTE PRESSURE RECORDING
RECEIVERS FURNISHED BY OTHERS

BOTTOM HALF OF PANEL TO CONTAIN
NEW EQUIPMENT FOR THE GEORGIA
ST. TO WATER ST. 69KV CABLES -
CIRCUITS NO. 641 & NO. 642

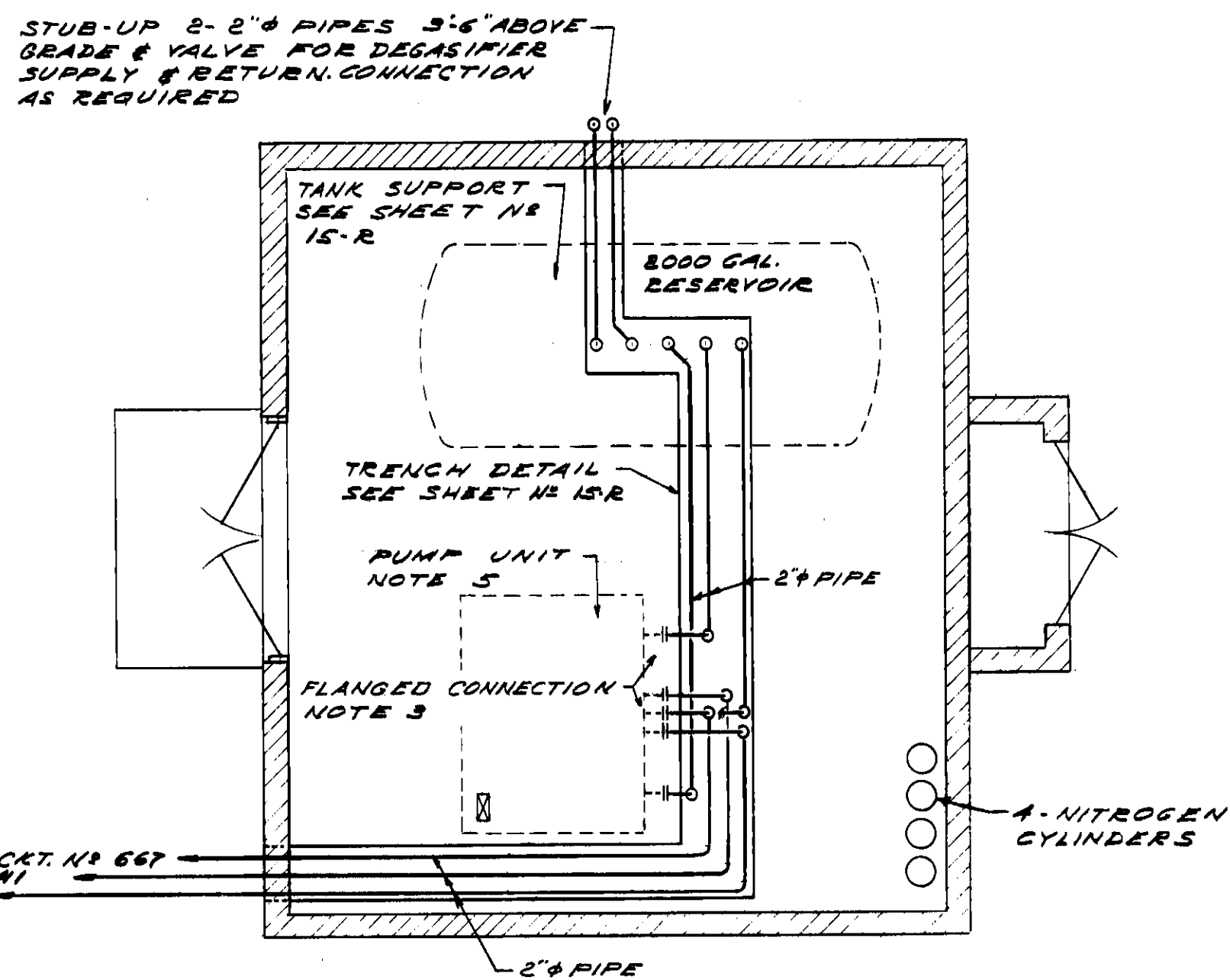
<u>ALARM SEQUENCE</u>			
REMOTE ALARM CONTACTS	RESET SWITCH	AUDIBLE BELL	WINDOW LIGHT
NORMAL (OPEN)	_____	OFF	OFF
ABNORMAL	_____	ON	RED - WHITE
ABNORMAL	OPERATE	OFF	RED
NORMAL	_____	ON	WHITE
NORMAL (CLOSE)	OPERATE	OFF	OFF



EXISTING REMOTE PRESSURE RECORDING & ALARM PANEL
SCALE: 1/2" = 1'-0"

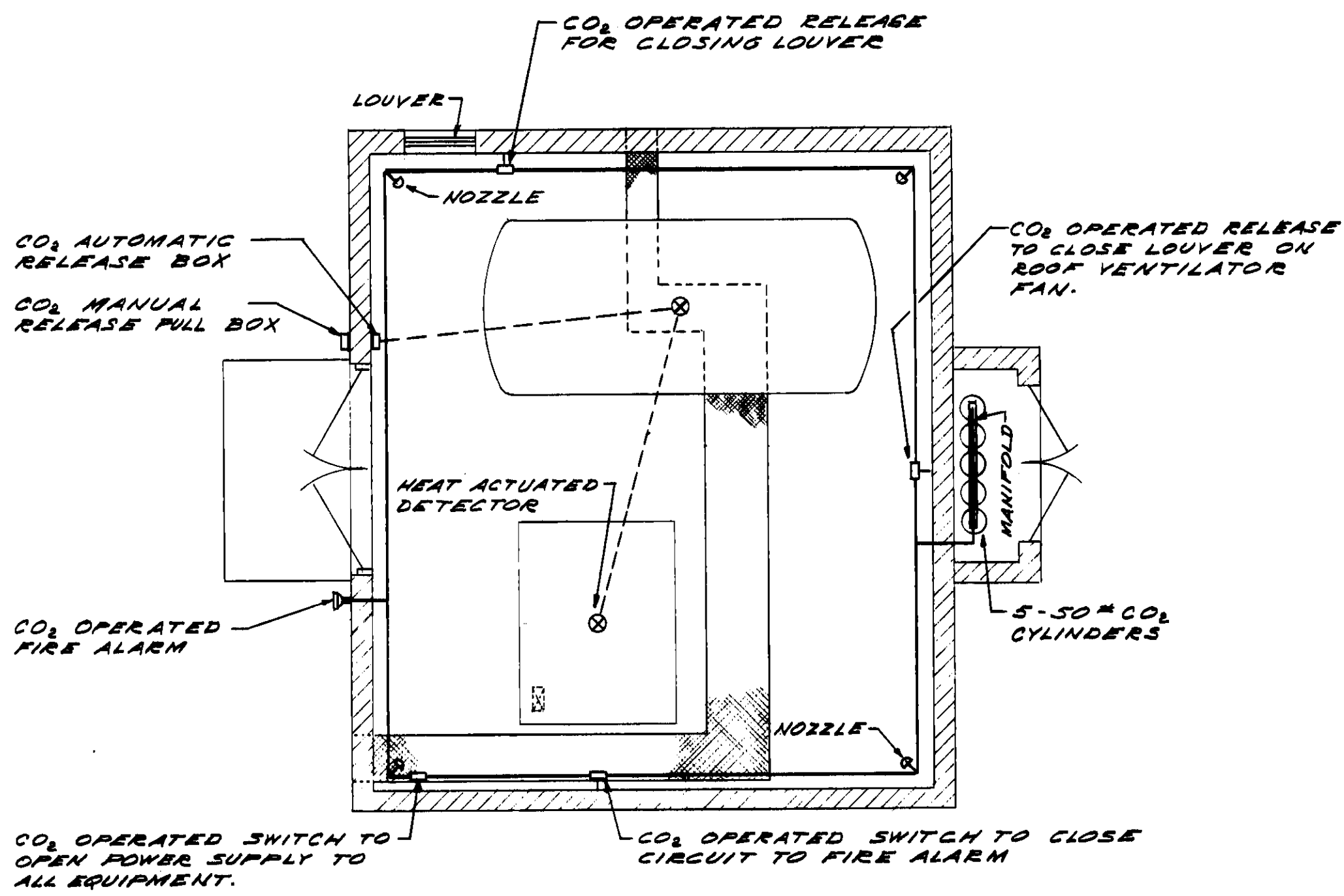


<u>CONTROL CABLE</u> ALL CONTROL CABLE FOR REMOTE PRESSURE RECORDING AND ALARM SYSTEM SHALL BE 12 CONDUCTORS NO. 14 AWG (19 STANDS), COLOR CODED, 600 V. JACKETED - GENERAL - ELECTRIC SI - 58135 OR APPROVED EQUAL, AND SHALL CONFORM TO IPCEA SPEC. S-19-91 APPENDICES C(A) AND K.	REYNOLDS, SMITH AND HILLS ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69KV TRANSMISSION CABLES GEORGIA STREET TO WATER STREET MAIN STREET SUBSTATION DATE <u>JULY 11, 1960</u> REMOTE PRESSURE RECORDING & ALARM PANEL
APPROVED FOR REYNOLDS, SMITH AND HILLS R.C. Higgins W.D. Heintz J. J. Schaefer	
FOR THE CITY OF JACKSONVILLE 5/14-63 R.B.J. R.C.G. T-6-61 C.M.C. R.C.G. DRAWING NO. 59111-39 D 5517-2-1 DATE 12-2-60	
AS BUILT ADD & AMENDMENTS & REVISIONS. REAMEND TO DRAW	DEPARTMENT HEAD <i>C. H. Williams</i> ENGINEER <i>R. E. Schaefer</i> DESIGNER <i>R. E. Schaefer</i>

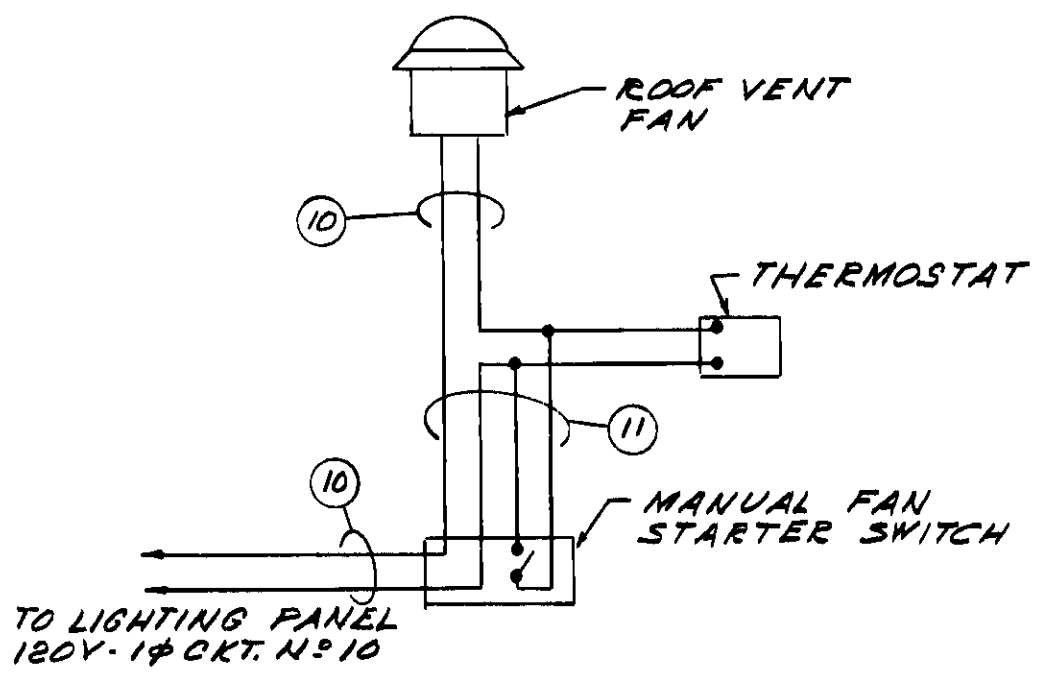


ARRANGEMENT OF PIPING
IN PUMP HOUSE
SCALE 1/4\"/>

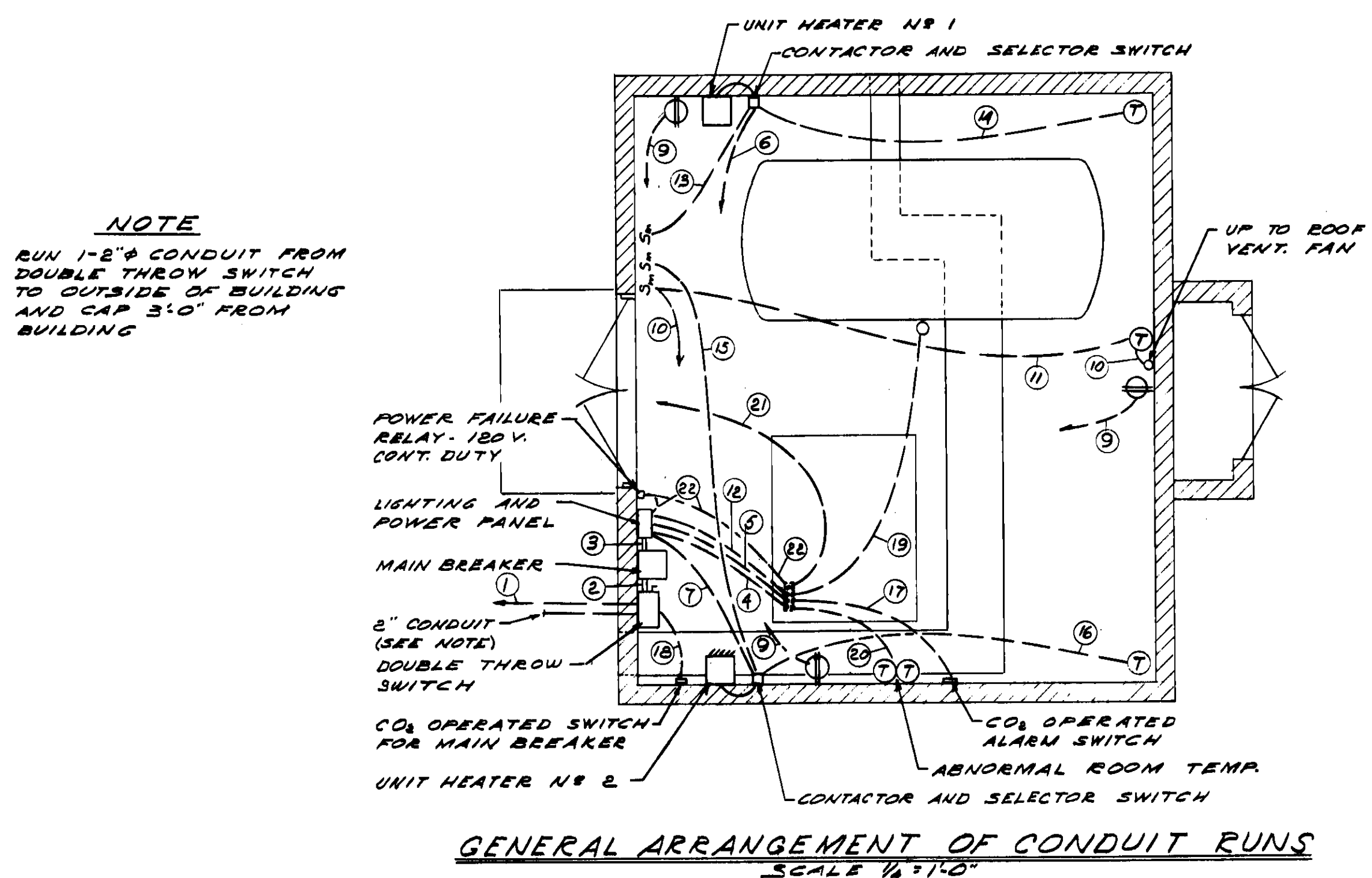
- PIPING NOTES**
1. ALL PIPING SHALL BE SCHEDULE 80 STEEL.
 2. ALL FITTINGS SHALL BE 3000# SOCKET-WELD STEEL.
 3. FOR LOCATION OF 2\"/>



DIAGRAMATIC LAYOUT OF CARBON DIOXIDE
FIRE EXTINGUISHING SYSTEM
SCALE 1/4\"/>



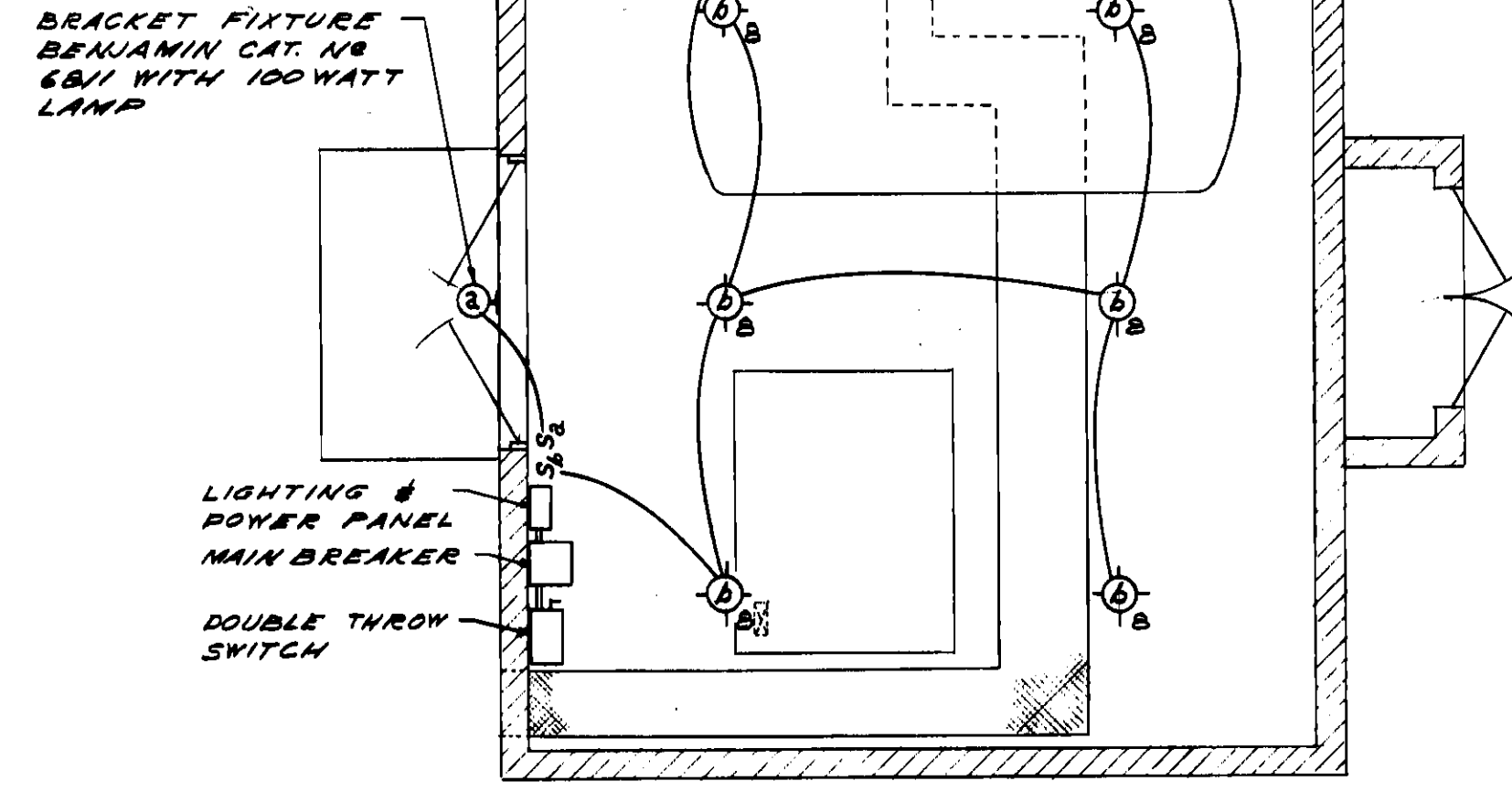
WIRING DIAGRAM FOR
VENT FAN
NOTE: SEE SPECIFICATIONS FOR DATA
ON EQUIPMENT SHOWN



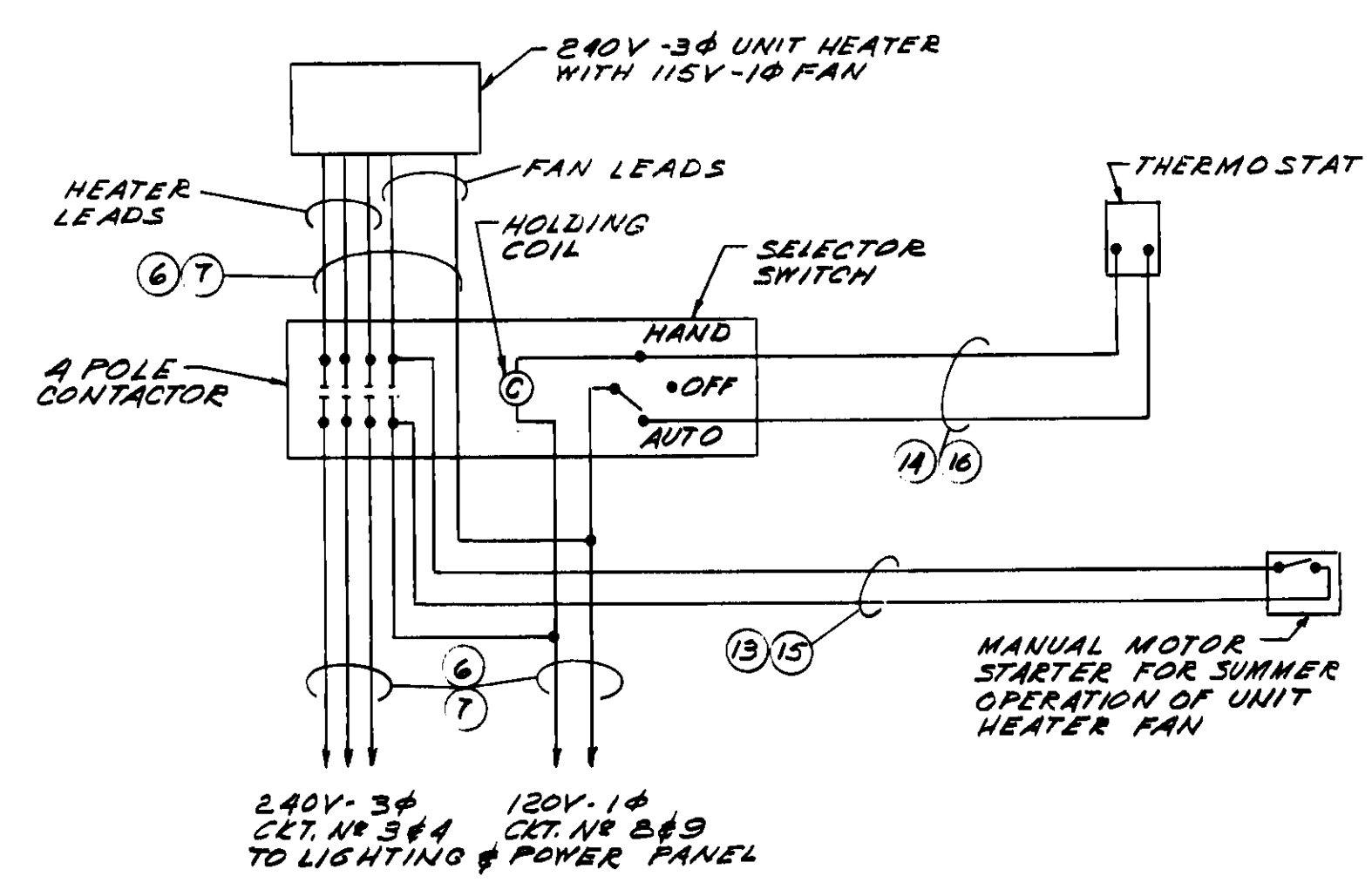
GENERAL ARRANGEMENT OF CONDUIT RUNS
SCALE 1/4\"/>

- LEGEND**
- ① LIGHTING FIXTURE - LETTER DENOTES SWITCHING CONTROL - NUMERAL DENOTES CIRCUIT NO.
 - ② DUPLEX CONVENIENCE OUTLET
 - ③ SINGLE POLE SWITCH - LETTER DENOTES SWITCHING CONTROL
 - ④ MANUAL MOTOR STARTER - SINGLE POLE
 - ⑤ PANELS AS NOTED
 - CONCEALED WIRING
 - WIRING CONCEALED UNDER CONCRETE SLAB OR GROUND. NUMBER IN CIRCLE INDICATES RUN NO.

NOTE: INTERIOR LIGHTING FIXTURES SHALL BE SIMILAR AND EQUAL TO APPELTON CAT. NO. 3-5734 (VAPOR PROOF) 150 WATT LAMP



LIGHTING SYSTEM
SCALE 1/4\"/>



TYPICAL WIRING DIAGRAM FOR UNIT HEATERS
2 REQUIRED
NOTE: SEE SPECIFICATIONS FOR DATA ON
EQUIPMENT SHOWN

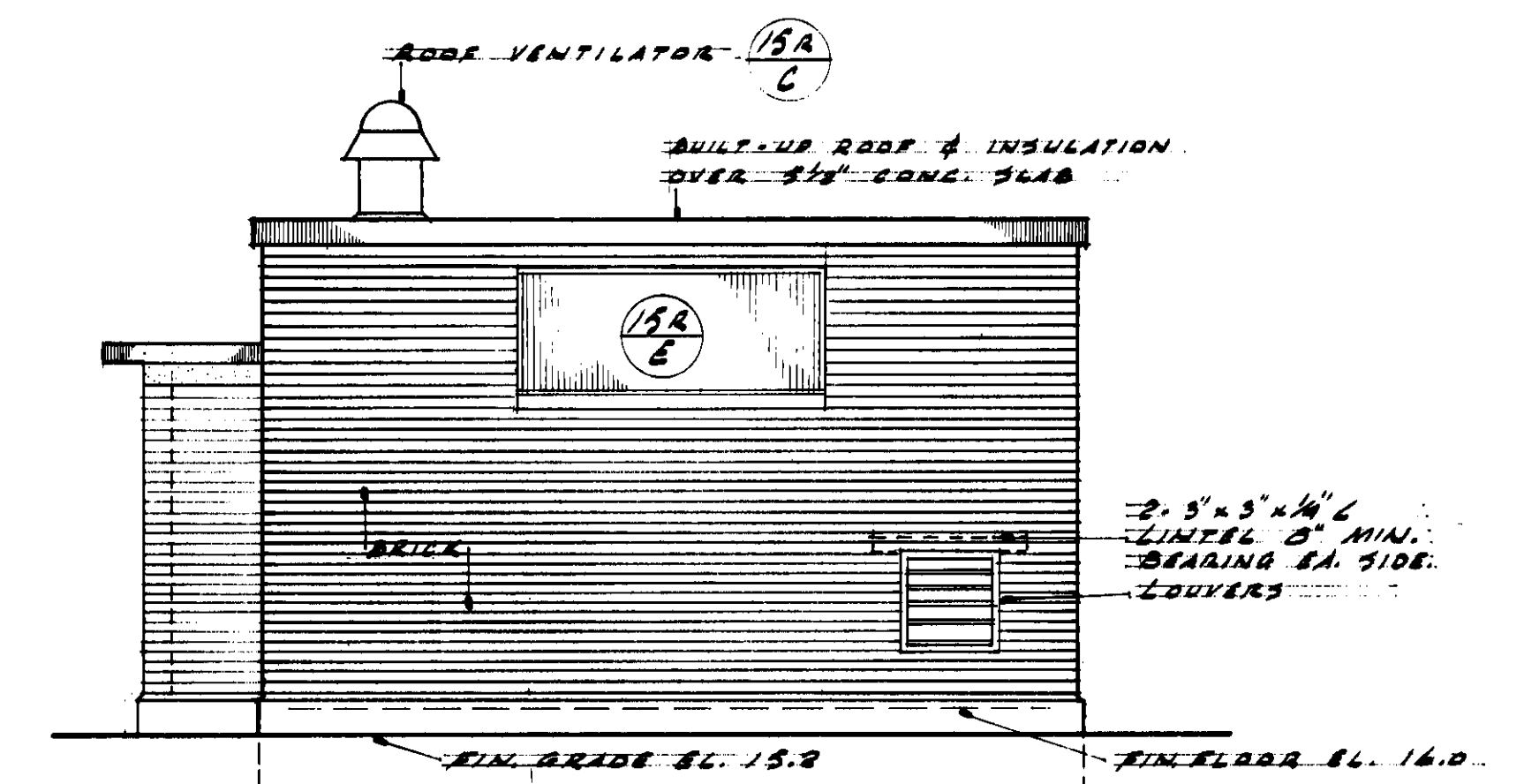
CONDUIT AND CIRCUIT SCHEDULE						
CIRCUIT NO	STARTING POINT	CONDUIT	WIRE	RUN NO	TERMINATION	REMARKS
-	POWER POLE ON GEORGIA ST.	2"	4"16BHW	1	DOUBLE THROW SWITCH-PUMP HOUSE	120/240-3+POWER SUPPLY FOR PUMP HOUSE
-	DOUBLE THROW SWITCH	2"	4"16BHW	2	MAIN BREAKER	
-	MAIN BREAKER	2"	4"16BHW	3	LIGHTING & POWER PANEL	
1	LIGHTING & POWER PANEL	3/4"	3"10	4	PUMP UNIT CONTROL CABINET	POWER FOR PUMP MOTOR N2 1#N2
2	LIGHTING & POWER PANEL	3/4"	EMPTY	5	PUMP UNIT CONTROL CABINET	SPARE
3 & 8	LIGHTING & POWER PANEL	3/4"	5"12	6	CONTACTOR-UNIT HEATER N#1	SEE WIRING DIAGRAM
4 & 9	LIGHTING & POWER PANEL	3/4"	5"12	7	CONTACTOR-UNIT HEATER N#2	SEE WIRING DIAGRAM
6	LIGHTING & POWER PANEL	1/2"	2"12	8	LIGHTS	
7	LIGHTING & POWER PANEL	1/2"	2"12	9	RECEPTACLES	
10	LIGHTING & POWER PANEL	1/2"	2"12	10	SWITCH FOR ROOFVENT FAN	SEE WIRING DIAGRAM
10	SWITCH FOR ROOFVENT FAN	3/4"	4"12	11	THERMOSTAT FOR ROOF FAN	SEE WIRING DIAGRAM
11	LIGHTING & POWER PANEL	1/2"	2"12	12	LIGHTING-PUMP UNIT CABINET	NORMAL LIGHTING FOR PUMP UNIT
-	CONTACTOR-UNIT HEATER N#1	1/2"	2"12	13	FAN MOTOR SWITCH	SEE WIRING DIAGRAM
-	CONTACTOR-UNIT HEATER N#1	1/2"	2"12	14	THERMOSTAT	SEE WIRING DIAGRAM
-	CONTACTOR-UNIT HEATER N#2	1/2"	2"12	15	FAN MOTOR SWITCH	SEE WIRING DIAGRAM
-	CONTACTOR-UNIT HEATER N#2	1/2"	2"12	16	THERMOSTAT	SEE WIRING DIAGRAM
-	CO ₂ PRESSURE SWITCH-FIRE ALARM	1/2"	2"12	17	PUMP UNIT CONTROL CABINET	FIRE ALARM SYSTEM
-	CO ₂ PRESSURE SWITCH-MAIN BRK.	1/2"	2"12	18	TRIP COIL-MAIN BREAKER	TRIPPING CIRCUIT FOR MAIN BREAKER
-	PUMP UNIT CONTROL CABINET	1/2"	3"12	19	RESERVOIR	LIQUID LEVEL ALARM - GAGE ON TANK
-	PUMP UNIT CONTROL CABINET	1/2"	2"12	20	THERMOSTAT-ABNORMAL TEMP.	SEE ALARM SYSTEM WIRING DIAGRAM
-	PUMP UNIT CONTROL CABINET	2"	12"14 *	21	CONTROL CAB.-SUB. STA. COL.	RECORDING & ALARM SYSTEM
12	LIGHTING & POWER PANEL RELAY	1/2"	2"12	22	PUMP UNIT CONTROL CABINET	POWER FAILURE RELAY

LIGHTING & POWER PANEL SCHEDULE				
CIR. NO.	TRIP	POLES	SERVES	
1	50	3	PUMP MOTOR N:1 & N:2	
2	50	3	SPARE	
3	20	3	UNIT HEATER N:1	
4	20	3	UNIT HEATER N:2	
5	50	3	SPARE	
6	20	1	LIGHTS	
7	20	1	RECEPTACLES	
8	15	1	UNIT HEATER FAN 1/2 HP-1P	
9	15	1	UNIT HEATER FAN 1/2 HP-1P	
10	20	1	ROOF VENT FAN 1/2 HP-1P	
11	20	1	LIGHTING PUMP UNIT CABINET	
12	15	1	POWER FAILURE RELAY	
13	20	1	SPARE	
14	20	1	SPARE	

AS BUILT	5-14-63	RBJ	G.M.C.	FOR THE CITY OF JACKSONVILLE	DRAWING NO. 59111-39
INCREASED WIRE SIZE & TRIP	5-14-63	RBJ	G.M.C.	DEPARTMENT HEAD	59111-39
WIRING SET FOR DELETED GEORGIA ST. 69KV	5-14-63	RBJ	G.M.C.	ENGINEERING DEPARTMENT	D 5518-R2
WIRING SET FOR DELETED GEORGIA ST. 69KV	5-14-63	RBJ	G.M.C.	ENGINEERING DEPARTMENT	D 5518-R2
WIRING SET FOR DELETED GEORGIA ST. 69KV	5-14-63	RBJ	G.M.C.	ENGINEERING DEPARTMENT	D 5518-R2
WIRING SET FOR DELETED GEORGIA ST. 69KV	5-14-63	RBJ	G.M.C.	ENGINEERING DEPARTMENT	D 5518-R2
WIRING SET FOR DELETED GEORGIA ST. 69KV	5-14-63	RBJ	G.M.C.	ENGINEERING DEPARTMENT	D 5518-R2
WIRING SET FOR DELETED GEORGIA ST. 69KV	5-14-63	RBJ	G.M.C.	ENGINEERING DEPARTMENT	D 5518-R2
WIRING SET FOR DELETED GEORGIA ST. 69KV	5-14-63	RBJ	G.M.C.	ENGINEERING DEPARTMENT	D 5518-R2
WIRING SET FOR DELETED GEORGIA ST. 69KV	5-14-63	RBJ	G.M.C.	ENGINEERING DEPARTMENT	D 5518-R2

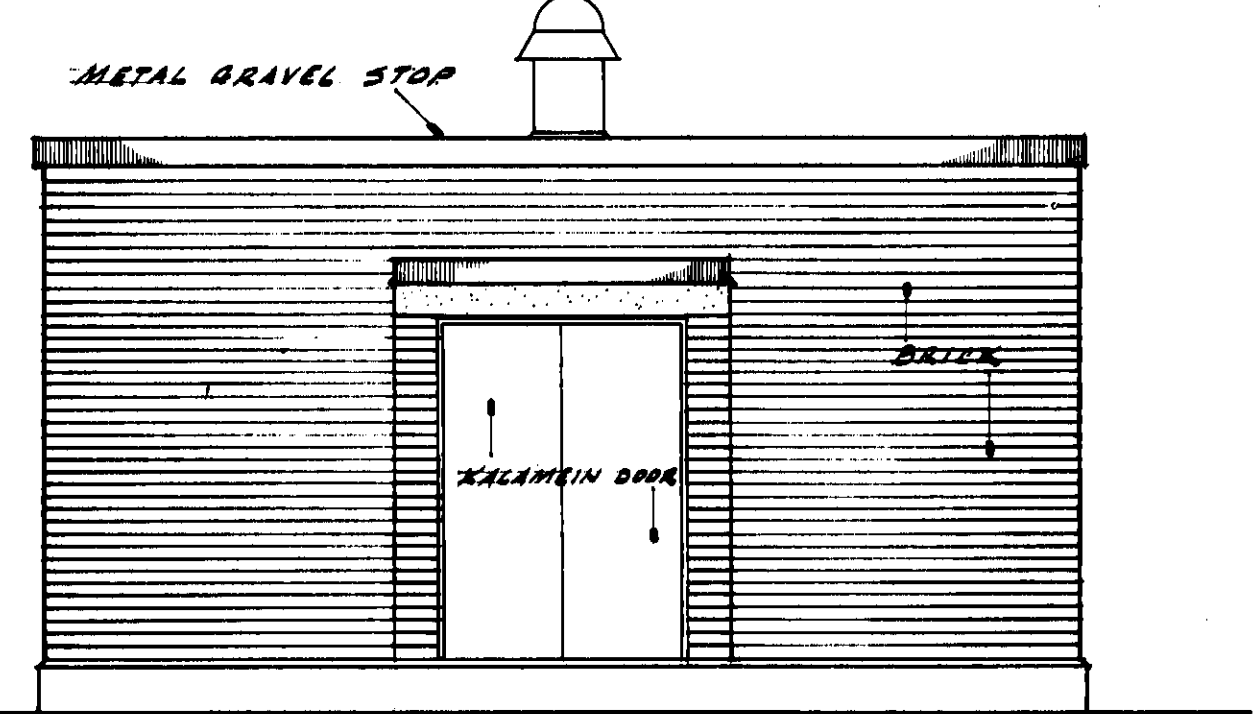
PROJECT NO. 59111-39		W.D. NO. 59111-39.1	
REYNOLDS, SMITH AND HILLS			
ARCHITECTS & ENGINEERS		JACKSONVILLE, FLORIDA	
DEPARTMENT OF ELECTRIC & WATER UTILITIES			
DRAWN: <u>G.M.C.</u>		CITY OF JACKSONVILLE, FLORIDA	
TRACED: <u>G.M.C.</u>		69KV TRANSMISSION CABLES	
CHECKED: <u>G.M.C.</u>		GEORGIA STREET TO WATER STREET	
SCALE: <u>SHOW N</u>			
DATE: <u>2-17-60</u>		PUMPHOUSE - ELECTRICAL & PIPING	
APPROVED FOR REYNOLDS, SMITH AND HILLS			
FOR THE CITY OF JACKSONVILLE		DRAWING NO.	
C		59111-39	
DEPARTMENT HEAD		D 5512-R-2	
D		59111-39.1	
DEPARTMENT HEAD		ENGINEERING MANAGER	
		SHEET 1423 15	

* SEE SHEET NO. 13 FOR DESCRIPTION



NORTH ELEVATION

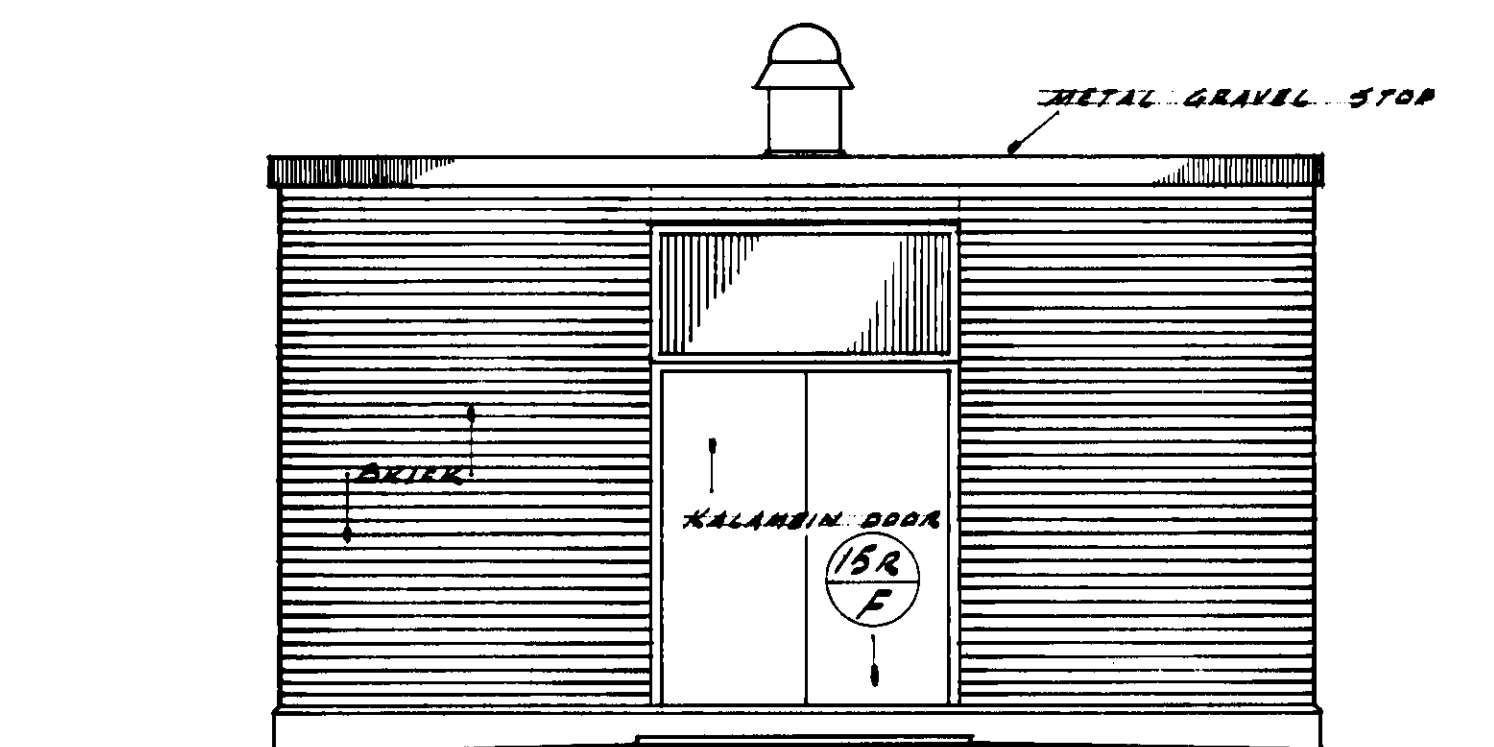
3 C A L E 14 1.6



EAST ELEVATION

5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042

NOTE: COVER ALL EXTERIOR WALL SURFACES WITH 2 COATS OF 3% SILICONE CLEAR WATERPROOFING

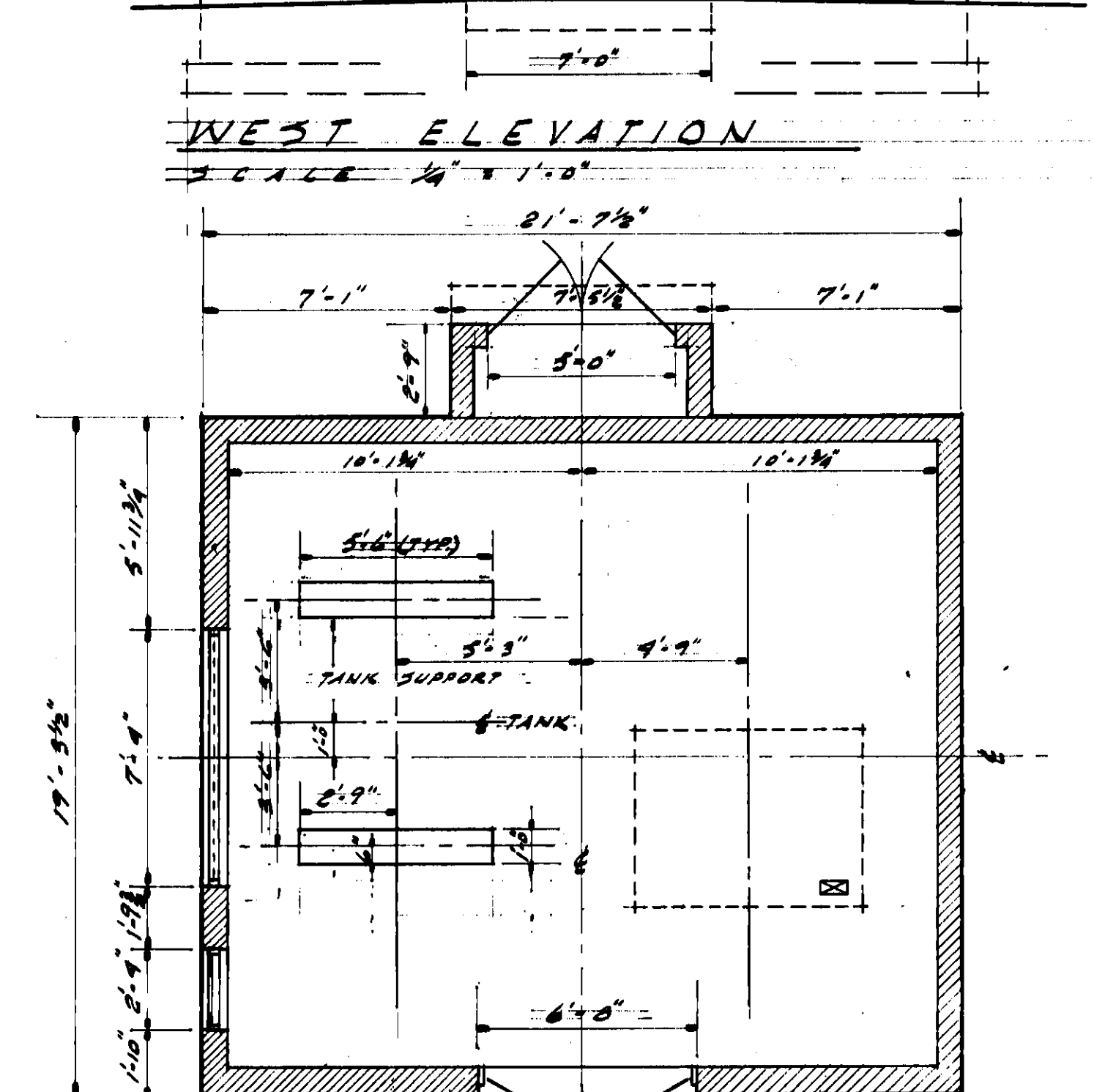


TRANSOM

TRANSOM

WEST ELEVATION

SCALE 1/4" = 1'-0"



ENT. DOOR DETAIL. (158)

30466 3' 11.0" F

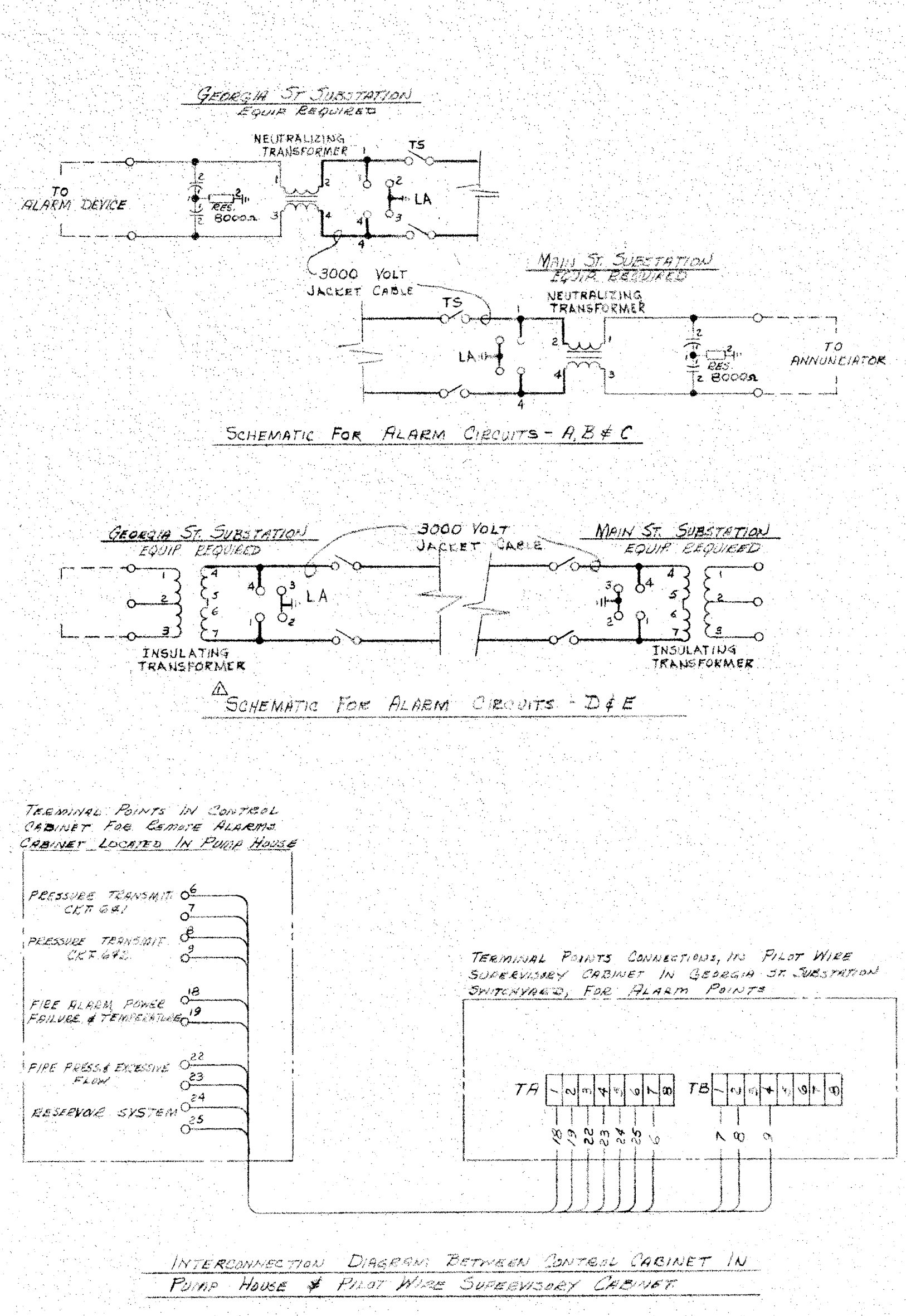
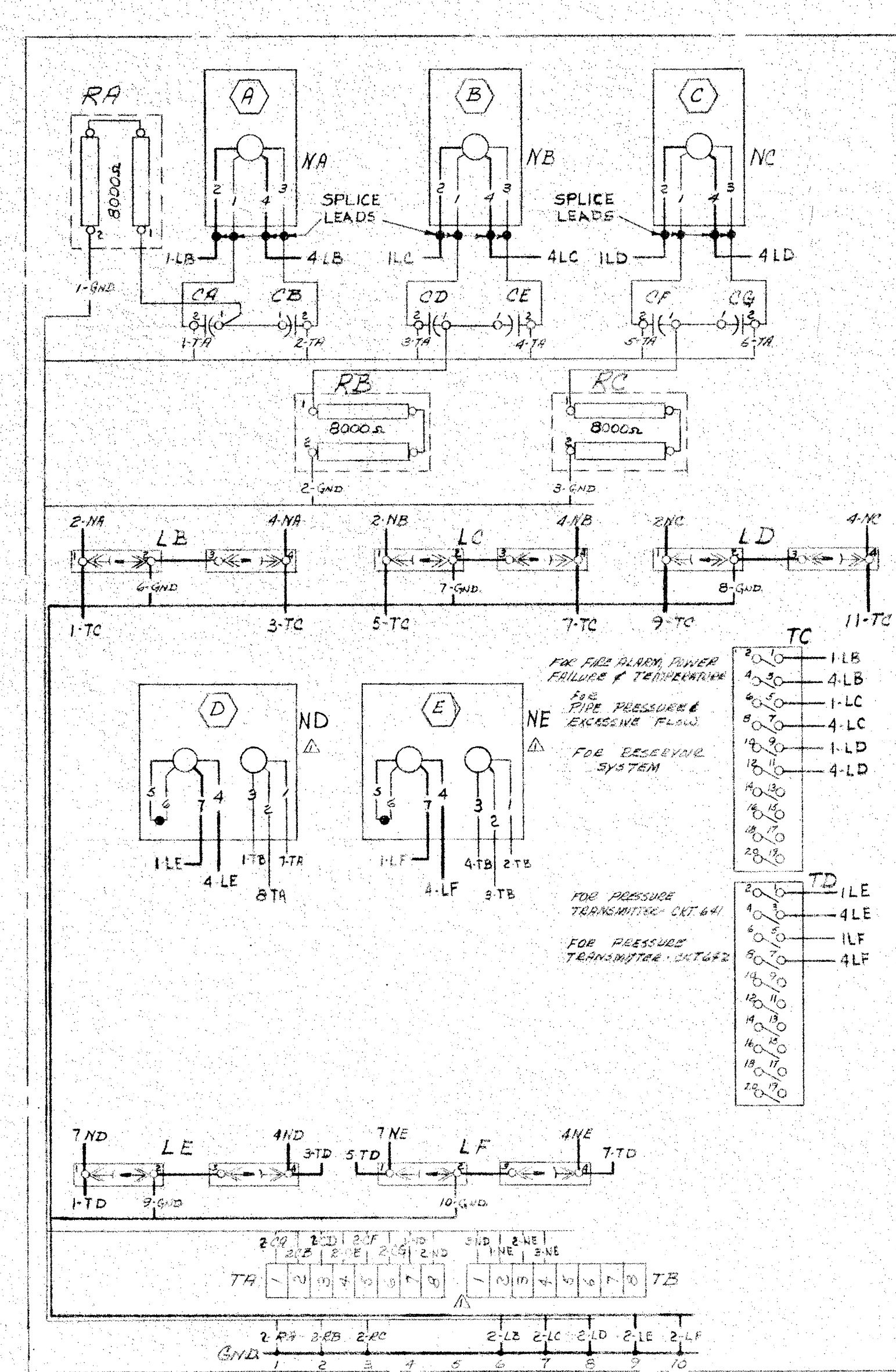
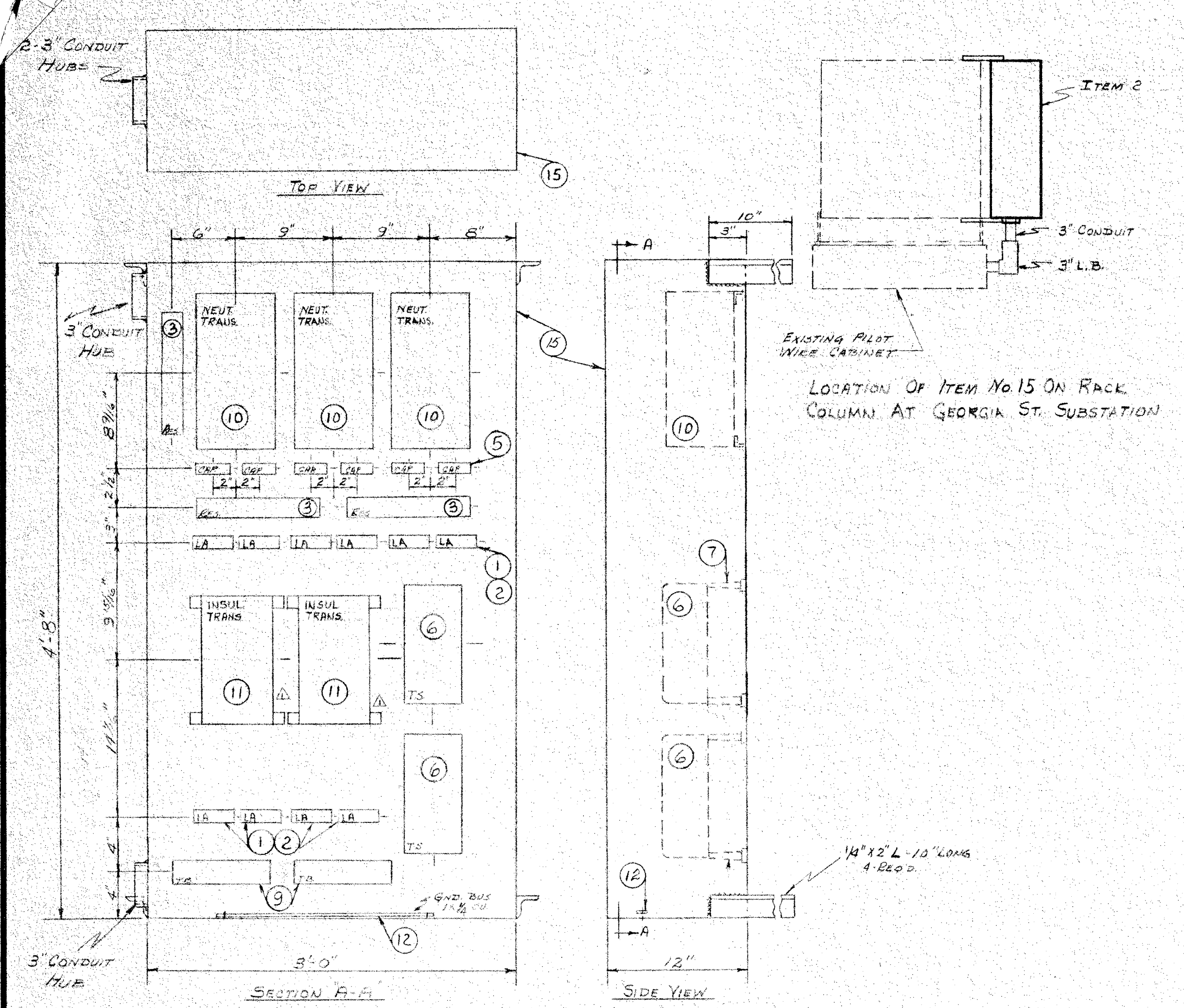
NOTE :
WIDTH AS SHOWN ON PLAN

NO. 6
EXACT POSITION OF
TANK FOUNDATIONS
SHALL BE DETERMINED
BY SURVEYING
AND SHALL BE
APPROVED. ALL ELEVATIONS
ON THIS SHEET
REFER TO CITY DATUM

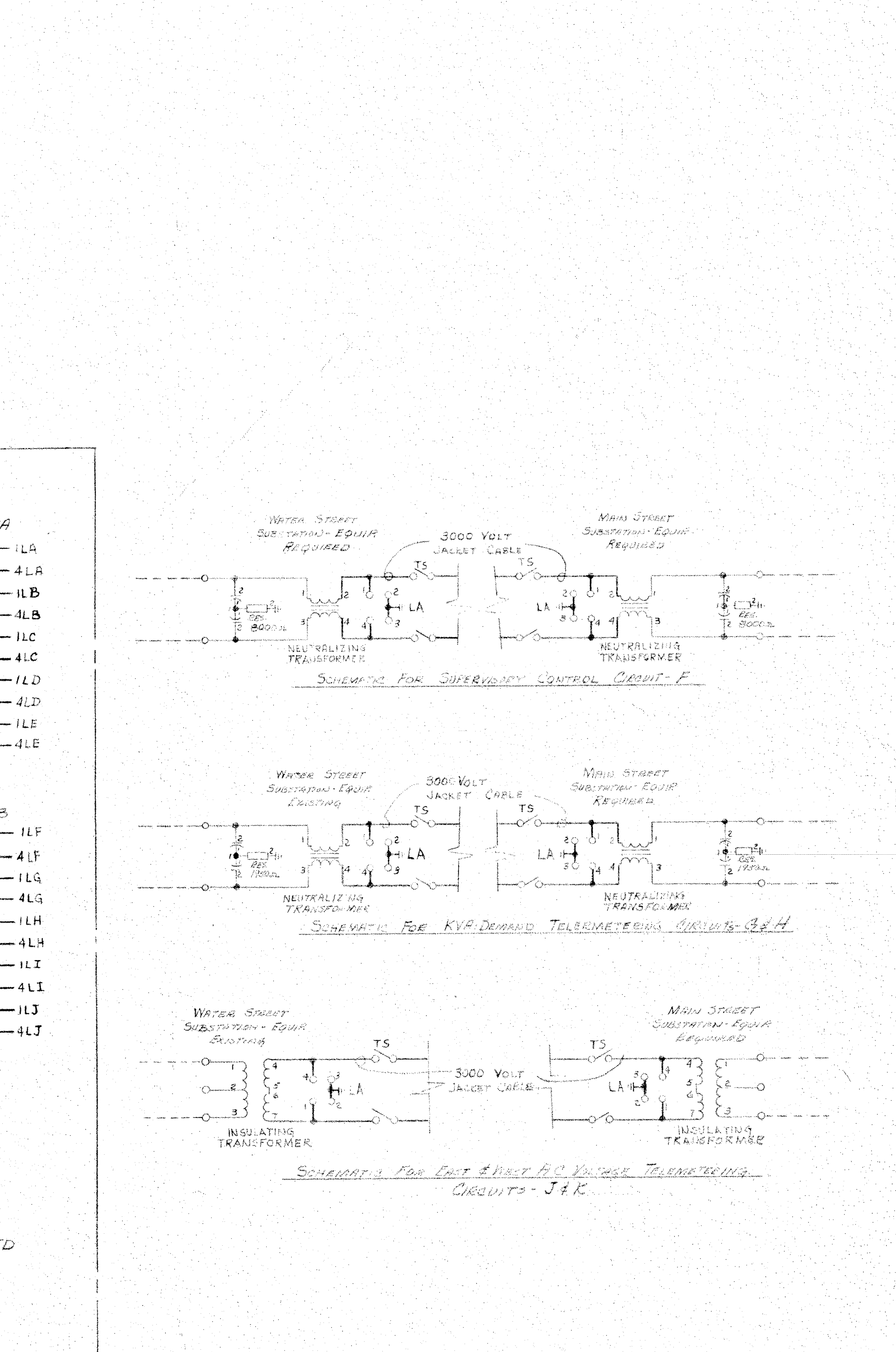
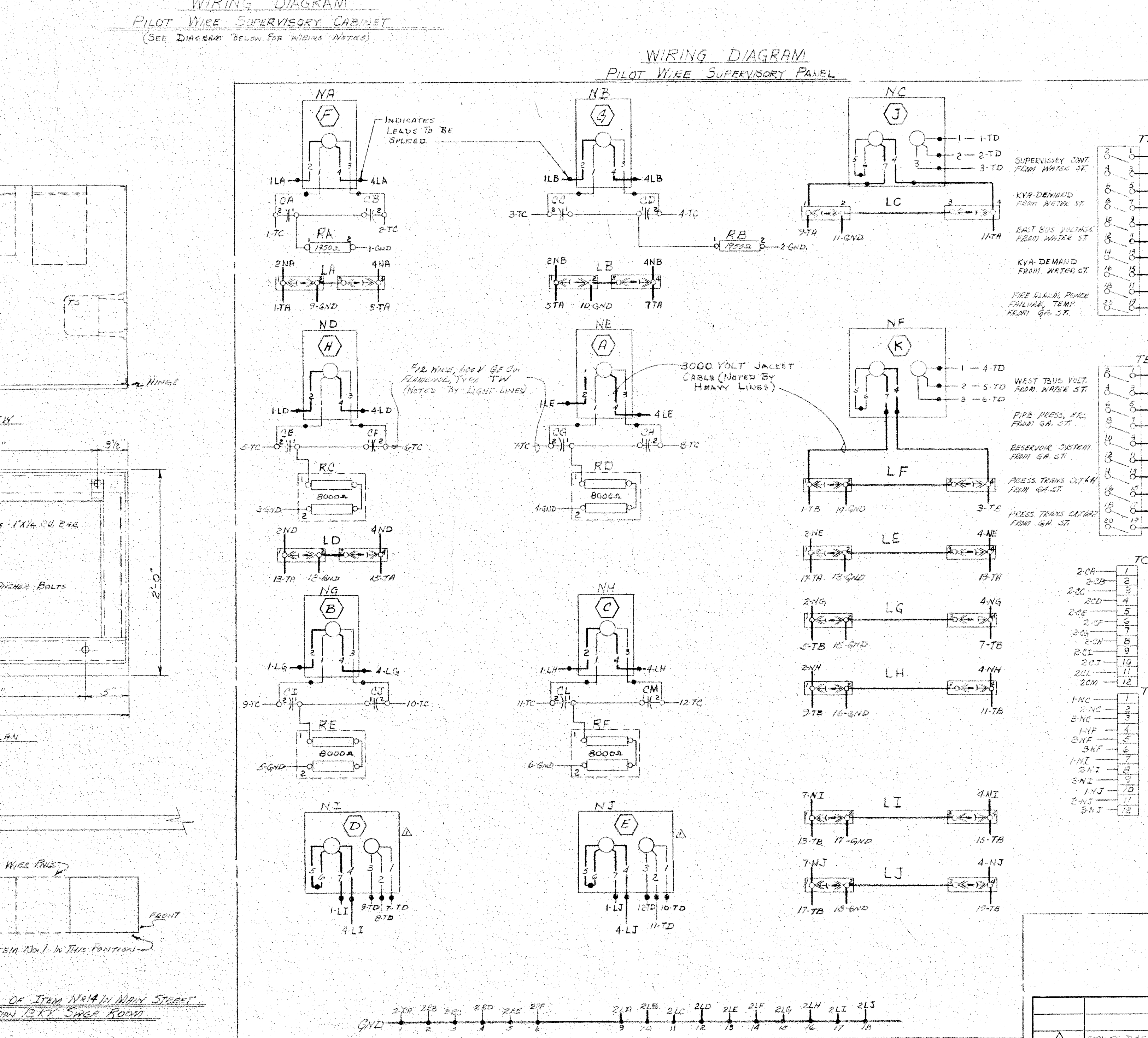
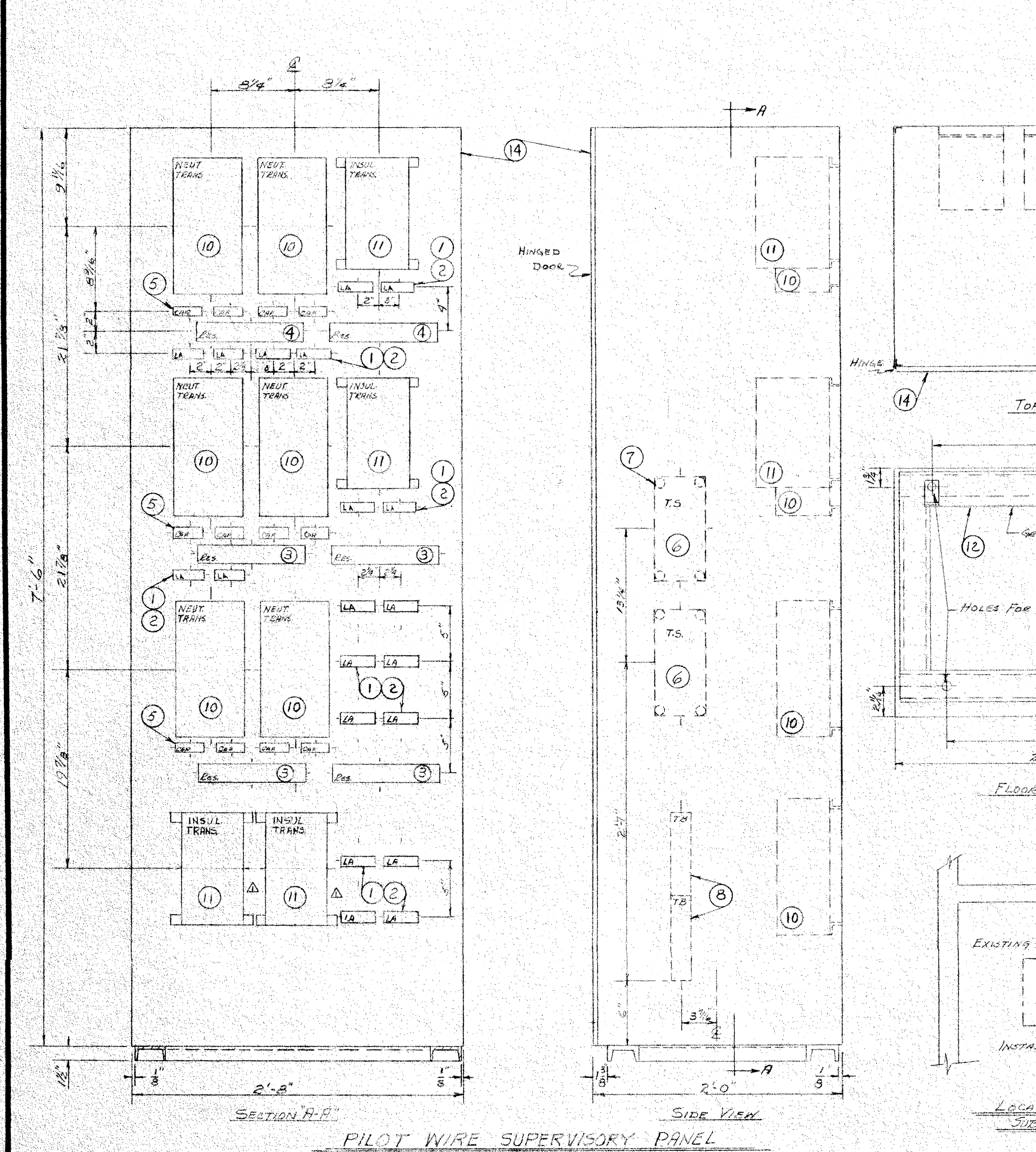
1/2" = 1'-0" PROJECT NO. 59111-35 I.W.O. NO. 59111-35.1	
REYNOLDS, SMITH AND HILLS ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA	
DRAWN <u>F.M.L.</u> TRACED <u>F.M.L.</u> CHECKED _____ SCALE <u>3/8" = 1'</u> DATE <u>6/21/1962</u>	DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69KY TRANSMISSION CABLES GEORGIA STREET TO WATER STREET PUMPHOUSE - ARCHITECTURAL
APPROVED FOR REYNOLDS, SMITH AND HILLS	

FOR THE CITY OF JACKSONVILLE		DRAWING NO.
		59111-39
DEPARTMENT HEAD	ENGINEERING DEPARTMENT	D5519-R
DEPARTMENT HEAD	ENGINEER MANAGER	SHEET 15-R OF 15

59111-39 R57.0



BILL OF MATERIAL			
ITEM NO.	QUAN.	DESCRIPTION	REMARKS
1	30	UNION SWITCH AND SIGNAL CO., CAT. NO. AAR-1065F TERM.	
2	30	BLOCK COMPLETE WITH ALL NUTS & WASHERS	
3	7	THYRISTOR SIGNAL ARRESTOR, CAT. NO. 9LA404, WITH ADAPTER FOR MTS ON AAR TERMINAL BLOCK	
4	2	RESISTOR, G.E. CO. CAT. NO. IC90022102B8000	
5	20	RESISTOR, G.E. CO. CAT. NO. IC90022101A2000	
6	4	CAPACITOR, 1MFD, 1000 VOLT, G.E. CO. CAT. NO. 23F446	
7	1/6	SUPERIOR TEST SWITCH, CAT. NO. 1417-F	
8	2	STAND OFF INSULATOR, E.F. JOHNSON CAT. NO. 135-20-1	
9	2	TERMINAL BLOCK, 12 POINT - G.E. CO. CAT. NO. 6424B2312	
10	9	TERMINAL BLOCK, 8 POINT - G.E. CO. CAT. NO. 6424B2308	
11	6	TRANSFORMER, NEUTRALIZING, G.E. CO. CAT. NO. 3T21Y980A	
12	2	BUS, GROUND, 1/4" COPPER 2-3' LONG	
13	1	LOT WIRING, AS INDICATED ON WIRING DIAGRAMS	
14	1	PILOT WIRE PANEL, 1/8" SPECIALLY SMOOTH COLD ROLLED STEEL	
15	1	PILOT WIRE CABINET, 10 GAUGE STEEL, AS SHOWN FOR THIS DWG.	
16	1	LOT CONDUIT & CONDUITS AS INDICATED ON DRAWING	



ORIGINAL

PROJECT NO. 59111-39 WD NO. 59111-39.1

REYNOLDS, SMITH AND HILLS
ARCHITECTS & ENGINEERS

DEPARTMENT OF ELECTRIC & WATER UTILITIES
CITY OF JACKSONVILLE, FLORIDA
GEORGIA & MAIN STREETS
PILOT WIRE EQUIPMENT

APPROVED FOR REYNOLDS, SMITH AND HILLS

FOR THE CITY OF JACKSONVILLE

DEPARTMENT HEAD: ENGINEERING DEPARTMENT

ENGINEER: ENGINEER

DRAWING NO. SK-59111-39-54-R1

DATE: 1-22-68

REVISION: 1

DESCRIPTION: 5242 006

DATE: 1-22-68

APPROVED: 1-22-68

REVISION: 1

DESCRIPTION: 5242 006

DATE: 1-22-68

APPROVED: 1-22-68

RS 07

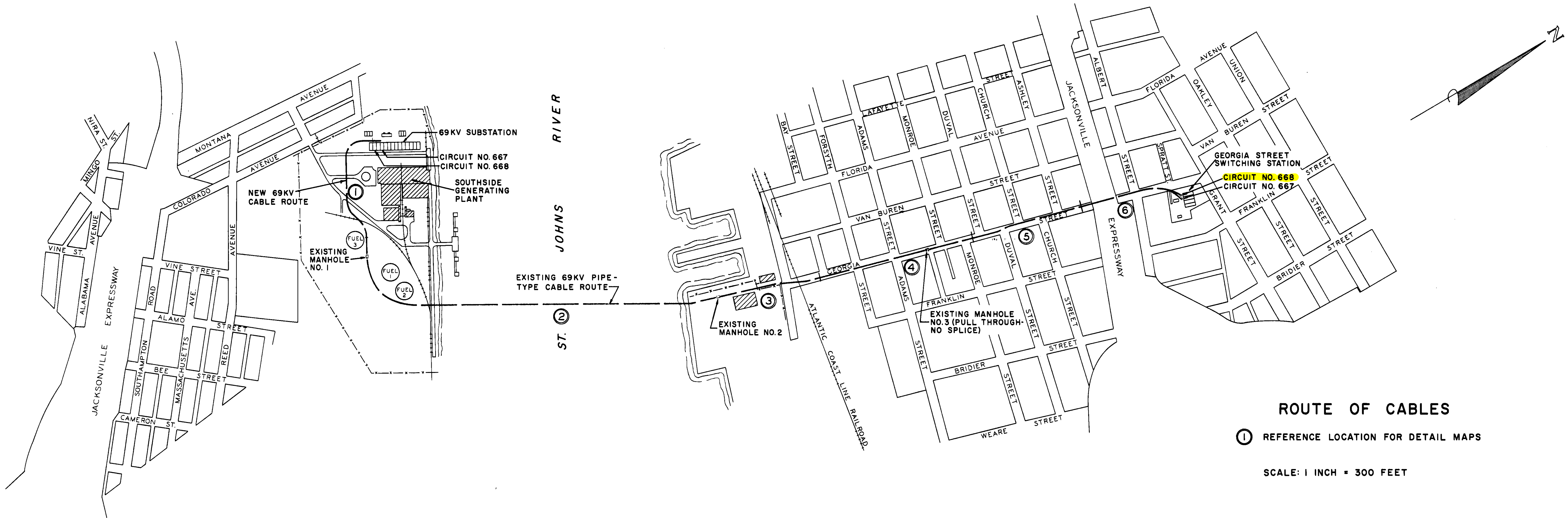
RECONDUCTOR OF 69KV CABLES
SOUTHSIDE POWER PLANT TO GEORGIA STREET SWITCHING STATION

J. DILLON KENNEDY
PUBLIC UTILITIES COMMISSIONER

FOR
CITY OF JACKSONVILLE
JACKSONVILLE, FLORIDA

ROBERT B. COWAN - ENGINEER MANAGER
DEPARTMENT OF ELECTRIC & WATER UTILITIES

MARCH 26, 1963



ROUTE OF CABLES
① REFERENCE LOCATION FOR DETAIL MAPS
SCALE: 1 INCH = 300 FEET

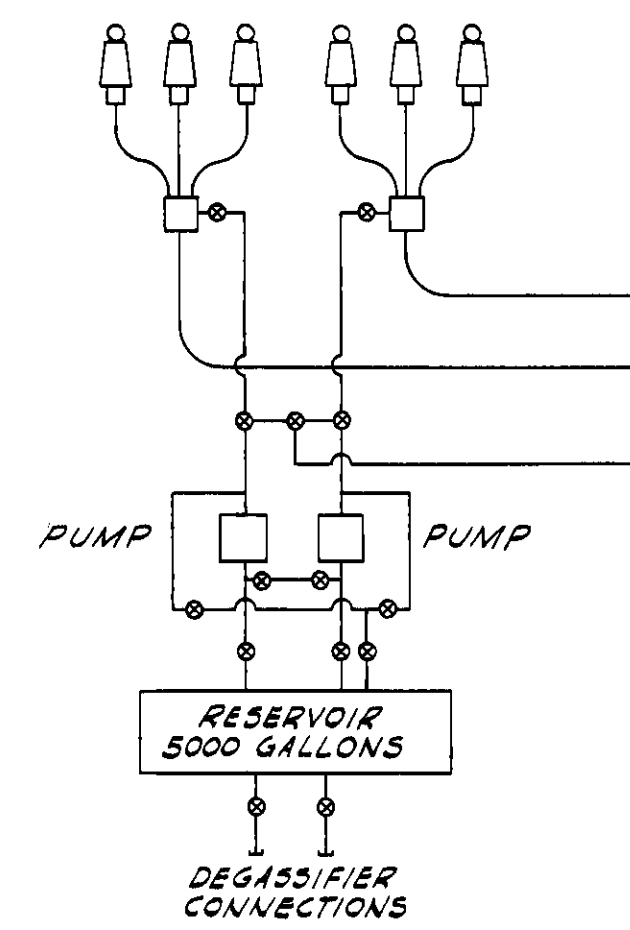
PROJECT NO. 59III-108

REYNOLDS, SMITH & HILLS
ARCHITECTS AND ENGINEERS
JACKSONVILLE, FLORIDA

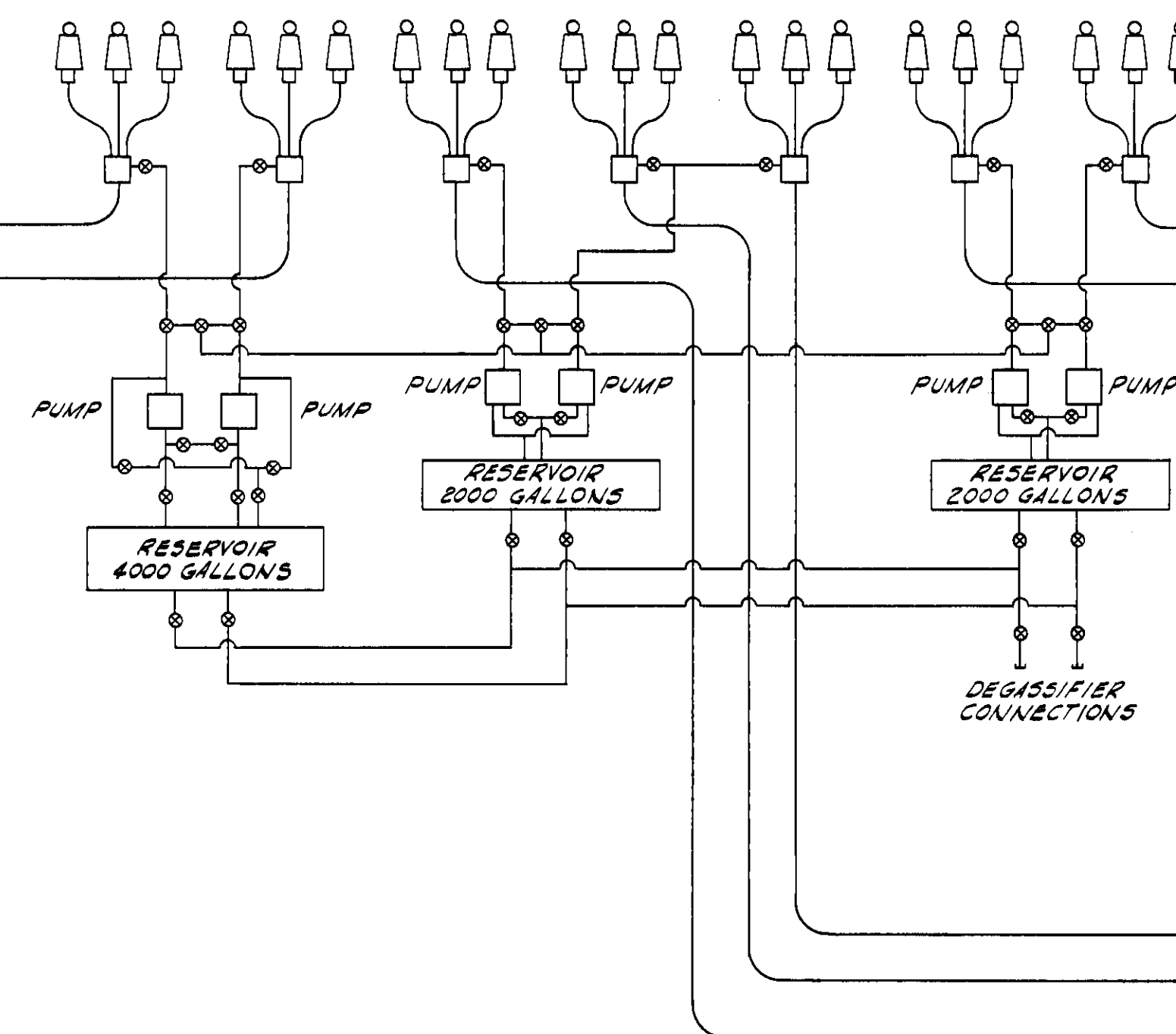
CITY W.O. NO. 59III-108.1

DRAWING NO.	TITLE	SHEET NO.	DRAWING NO.	TITLE	SHEET NO.
59III-D5725	ROUTE OF CABLE & INDEX TO DRAWINGS	1	59III-D5731	CABLE TERMINATION — SOUTHSIDE PLANT	7
59III-D5726	GENERAL ARRANGEMENT OF 69KV CABLE SYSTEM	2	59III-D5732	CABLE TERMINATION — GEORGIA STREET SWITCHING STATION	8
59III-D5727	ROUTE OF CABLE — REFERENCE LOCATION 1	3	59III-D5733	TERMINAL STRUCTURE & DETAILS	9
59III-D5728	ROUTE OF CABLE — REFERENCE LOCATION 2&3	4	59III-D5734	PIPE JOINTS & DETAILS	10
59III-D5729	ROUTE OF CABLE — REFERENCE LOCATION 4&5	5			
59III-D5730	ROUTE OF CABLE — REFERENCE LOCATION 6	6			

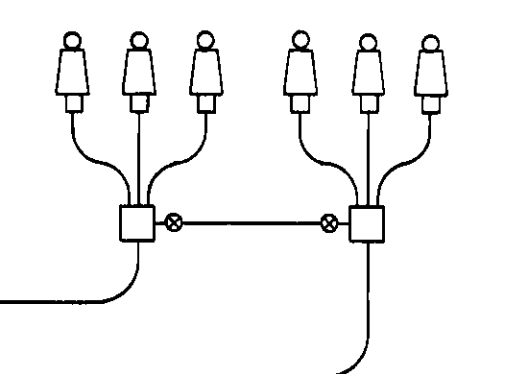
RANDALL STREET SUBSTATION



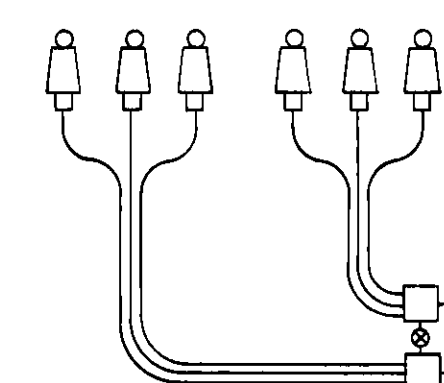
TALLEYRAND SUBSTATION



ARLINGTON CABLE TERMINAL

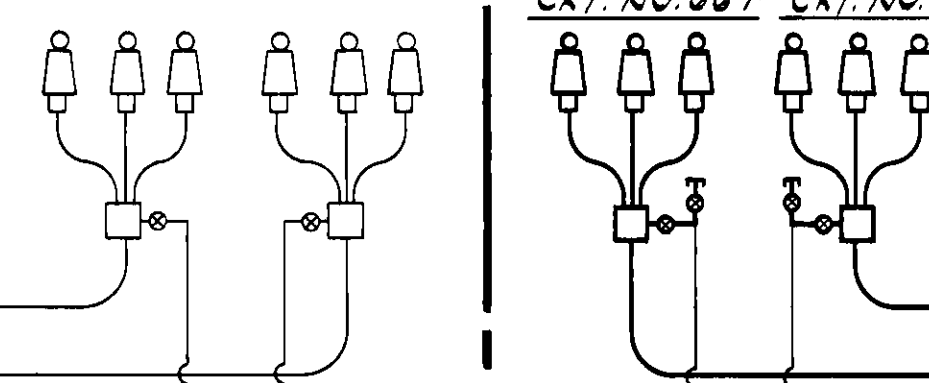


RANDALL STREET SUBSTATION



SOUTHSIDE POWER PLANT

CKT. NO. 667 CKT. NO. 668

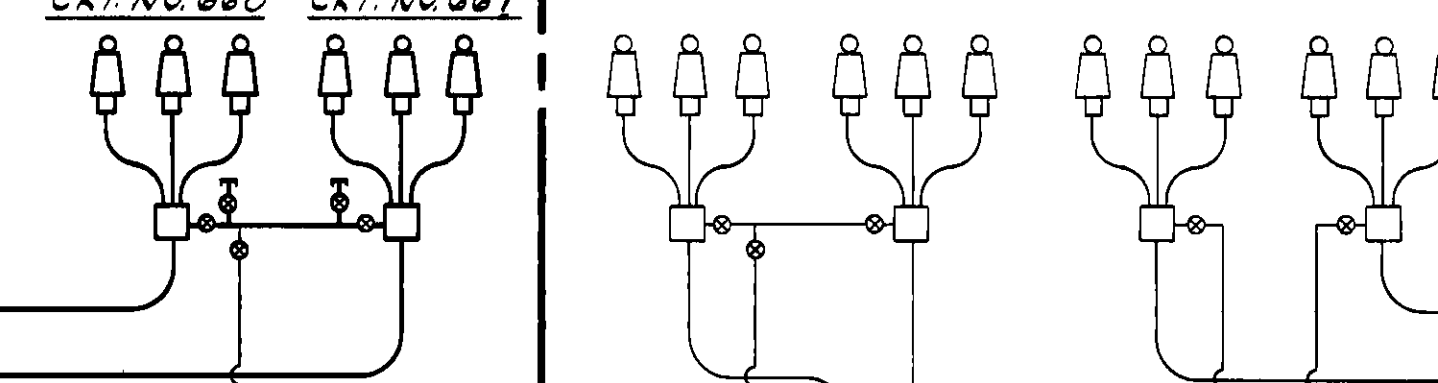


SECTION TO BE RECONDUCTED

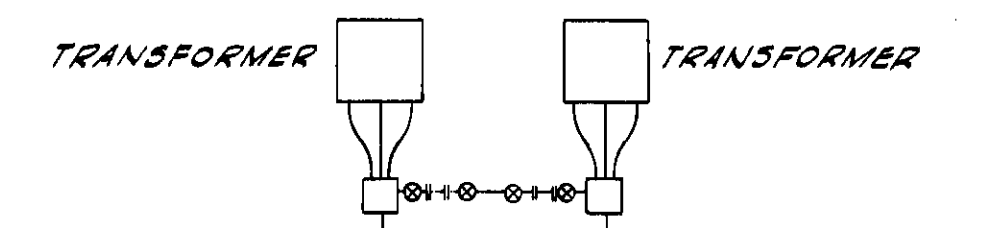
EXISTING ST. JOHNS RIVER CROSSING

GEORGIA STREET SWITCHING STATION

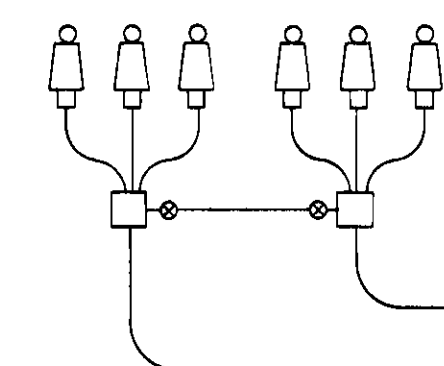
CKT. NO. 668 CKT. NO. 667



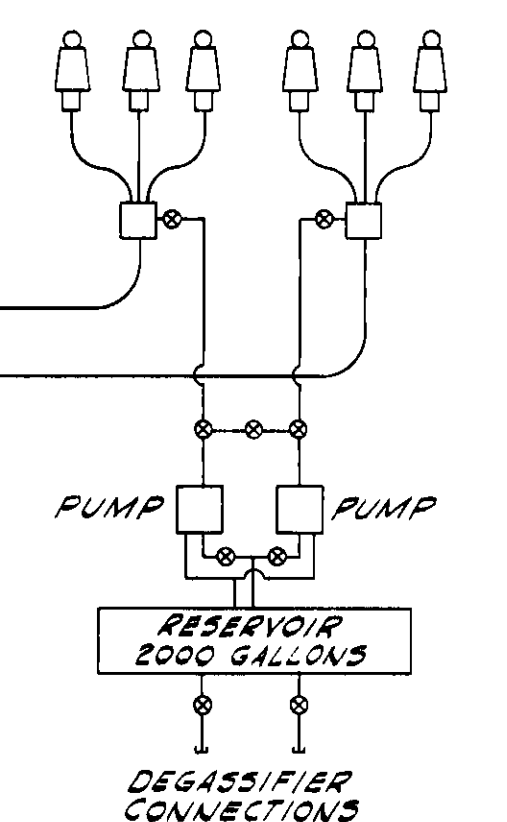
WATER STREET SUBSTATION



HUNTER STREET SUBSTATION



MAIN STREET SUBSTATION



69KV PIPE TYPE CABLE SYSTEM

DESIGN DATA

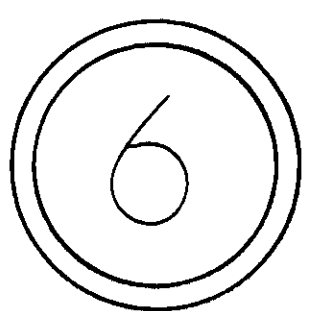
CIRCUIT NO. 667	CABLE TERMINATION SOUTHSIDE PWR. PLANT	MANHOLE NO. 1	MANHOLE NO. 2	CABLE TERMINATION GEORGIA ST. SW. STATION	REMARKS
STATION NUMBER	0+00	10+29.20	35+71.91	68+30.95	
SECTION DESIGNATION FOR CABLE		667-1	667-2	667-3	
DISTANCE BETWEEN MANHOLES - FEET		1029.2	2542.71	3259.04	
CIRCUIT NO. 668	CABLE TERMINATION SOUTHSIDE PWR. PLANT	MANHOLE NO. 1	MANHOLE NO. 2	CABLE TERMINATION GEORGIA ST. SW. STATION	REMARKS
STATION NUMBER	0+48	10+29.20	35+71.91	68+16.58	
SECTION DESIGNATION FOR CABLE		668-1	668-2	668-3	
DISTANCE BETWEEN MANHOLES - FEET		981.20	2542.71	3244.67	

AS CONSTRUCTED DATA

CIRCUIT NO. 667	CABLE TERMINATION SOUTHSIDE PWR. PLANT	MANHOLE NO. 1	MANHOLE NO. 2	CABLE TERMINATION GEORGIA ST. SW. STATION	REMARKS
STATION NUMBER					
SECTION DESIGNATION FOR CABLE					
DISTANCE BETWEEN MANHOLES - FEET					
VACUUM TEST DATA					
INSULATION TEST OF PIPE COATING - MEGOHMS/50 FT.					
DATE OF CABLE INSTALLATION					
MAXIMUM PULLING TENSION - POUNDS					
TIME REQUIRED FOR PULL - MINUTES					
CIRCUIT NO. 668	CABLE TERMINATION SOUTHSIDE PWR. PLANT	MANHOLE NO. 1	MANHOLE NO. 2	CABLE TERMINATION GEORGIA ST. SW. STATION	REMARKS
STATION NUMBER					
SECTION DESIGNATION FOR CABLE					
DISTANCE BETWEEN MANHOLES - FEET					
VACUUM TEST DATA					
INSULATION TEST OF PIPE COATING - MEGOHMS/50 FT.					
DATE OF CABLE INSTALLATION					
MAXIMUM PULLING TENSION - POUNDS					
TIME REQUIRED FOR PULL - MINUTES					

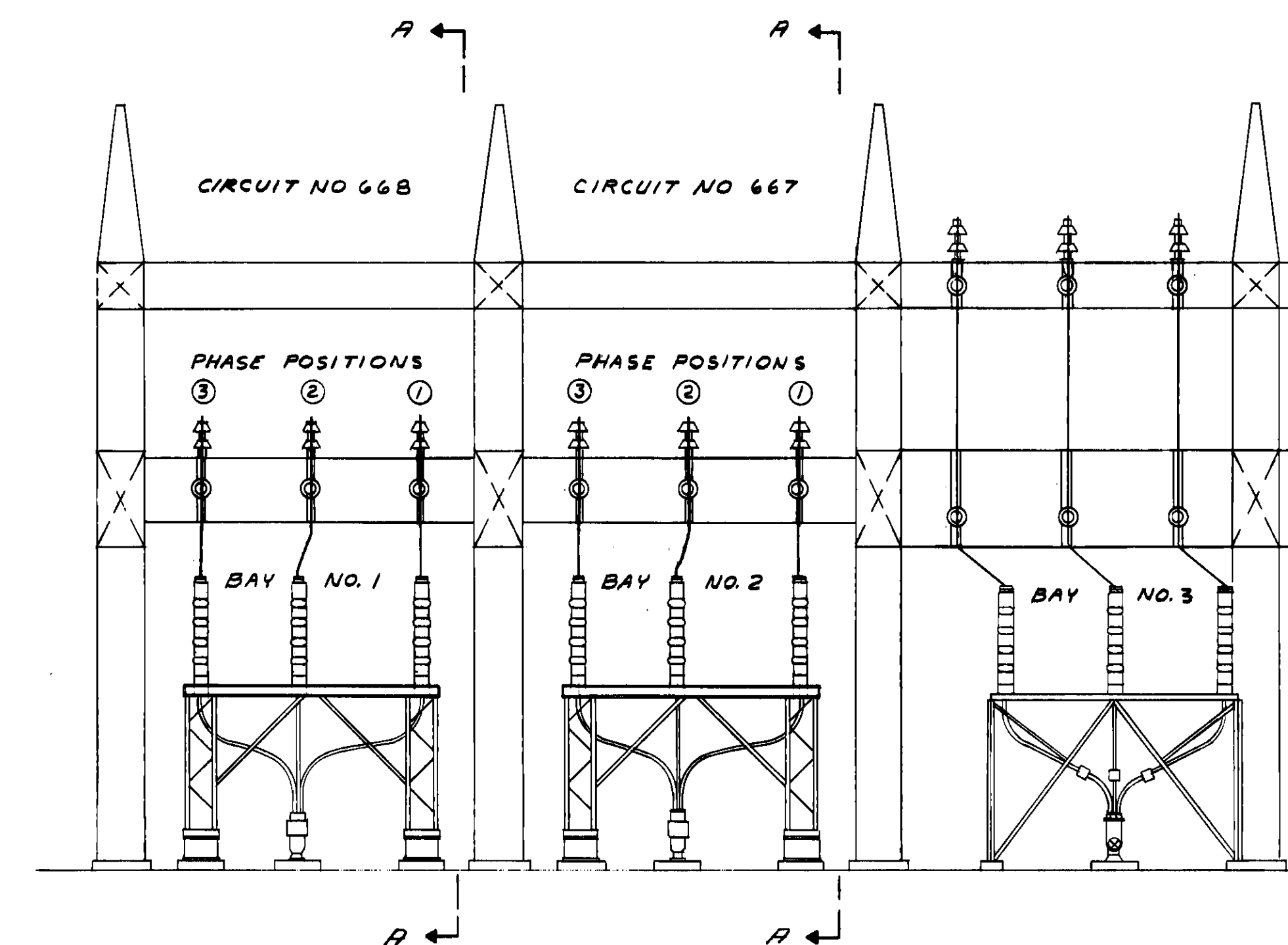
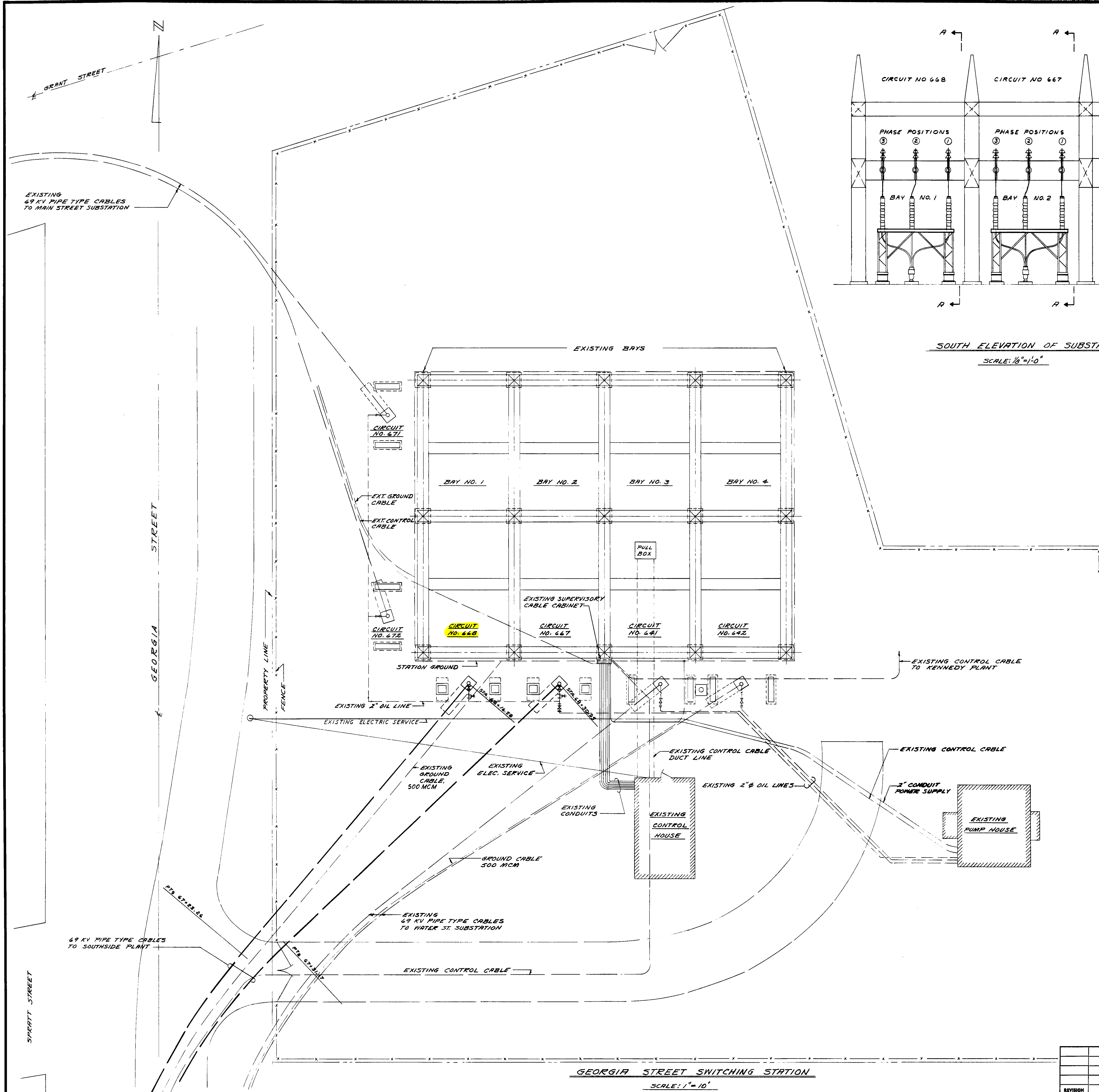
PROJECT NO. 59111-108 CITY W.O. 59111-108
REYNOLDS, SMITH AND HILLS
 ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA
 DEPARTMENT OF ELECTRIC & WATER UTILITIES
CITY OF JACKSONVILLE, FLORIDA
 69 KV TRANSMISSION CABLES
 SOUTHSIDE PLANT TO GEORGIA STREET
 GENERAL ARRANGEMENT OF
 69KV CABLE SYSTEM
 DATE: 3-26-63
 APPROVED FOR REYNOLDS, SMITH AND HILLS
 FOR THE CITY OF JACKSONVILLE
 DEPARTMENT HEAD
 ENGINEER MANAGER
 DRAWING NO.
 59111
 D5726
 SHEET 2 OF 10

REVISION	DESCRIPTION	DATE	BY	APPROVED	DEPARTMENT HEAD

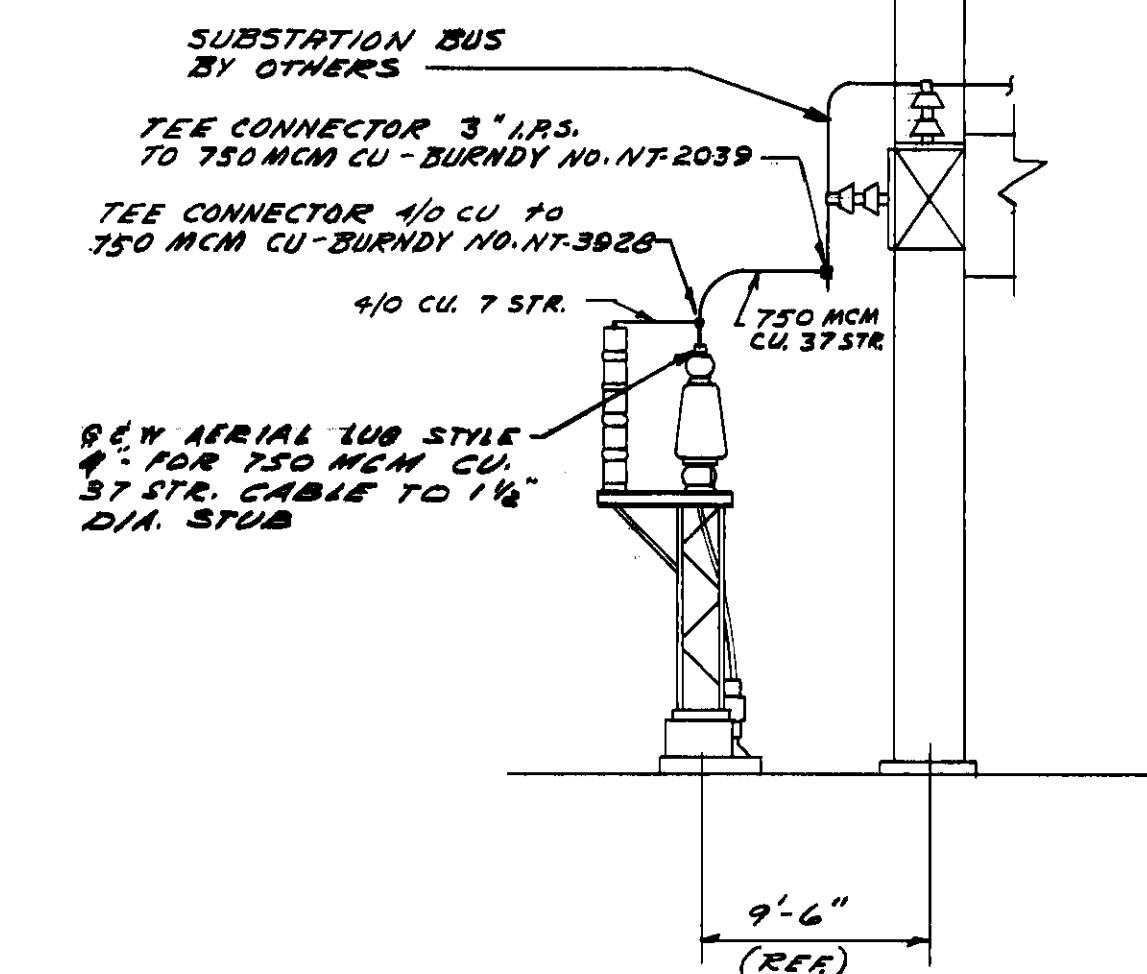


PROJECT NO 59111-108		CITY W.O. 59111-108.1	
REYNOLDS, SMITH AND HILLS			
ARCHITECTS & ENGINEERS		JACKSONVILLE, FLORIDA	
DRAWN <i>R.H.L.</i> TRACED <i>R.H.L.</i> CHECKED <i>M.G.</i> SCALE <i>SHOWN</i> DATE <i>3-26-63</i>	DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69 KV TRANSMISSION CABLES SOUTHSIDE PLANT TO GEORGIA STREET ROUTE OF CABLES REFERENCE LOCATION 6		
APPROVED FOR REYNOLDS, SMITH AND HILLS			
<i>Stephen M. Smith</i>		<i>R.C. Slattery</i>	
FOR THE CITY OF JACKSONVILLE		DRAWING NO. 59111 D5730	
DEPARTMENT HEAD	<i>C. H. Williams</i>		
	ENGINEERING DEPARTMENT		
	<i>R. H. Smith</i>		
DEPARTMENT HEAD	ENGINEER IN CHARGE		
BY			SHEET 6 OF 10

					FOR THE CITY OF JACKSONVILLE		DRAWING NO.	
					C. Phillips		59111	
					ENGINEERING DEPARTMENT		05730	
					DEPARTMENT HEAD			
					ENGINEER MANAGER		SHEET 6 OF 10	
REVISION	DESCRIPTION	DATE	BY	APPROVED	DEPARTMENT HEAD	ENGINEER MANAGER		

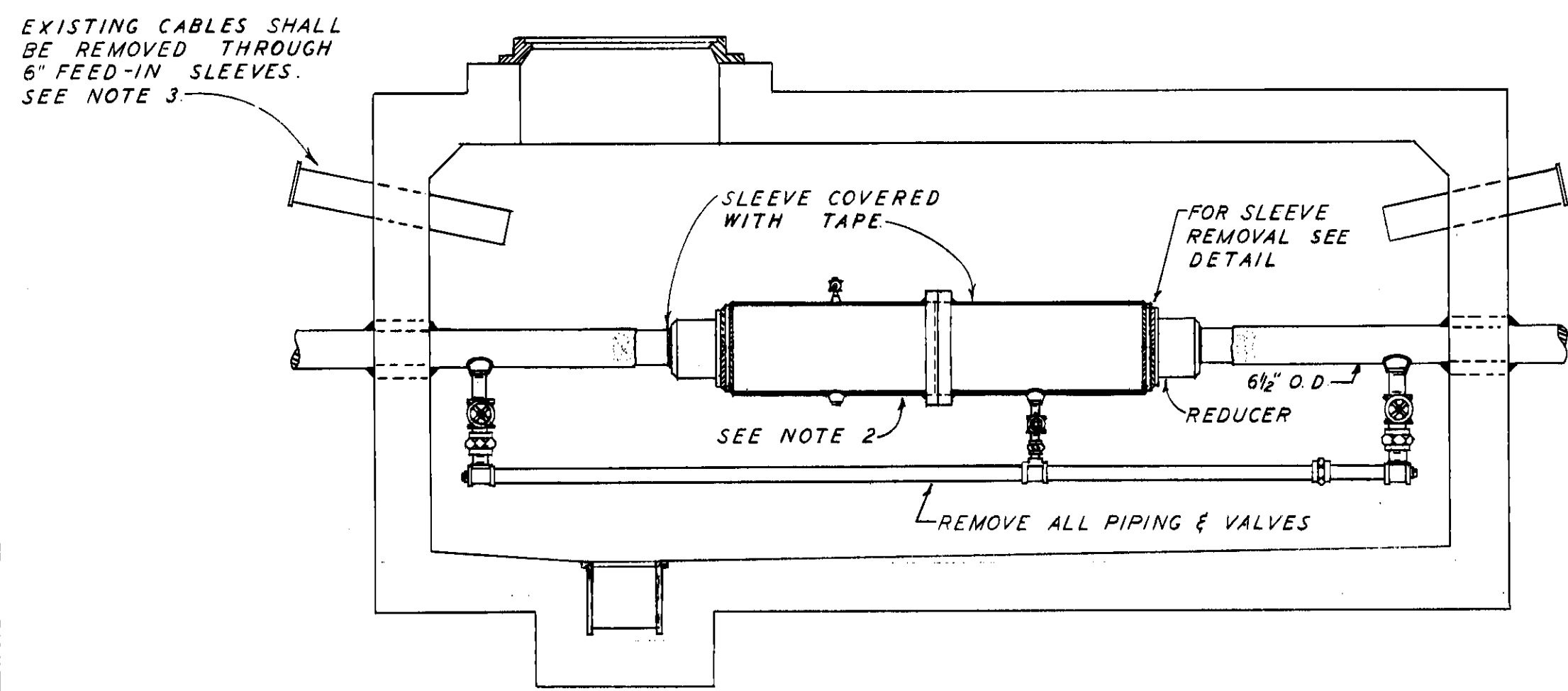


SOUTH ELEVATION OF SUBSTATION
SCALE: 1/8"=1'-0"

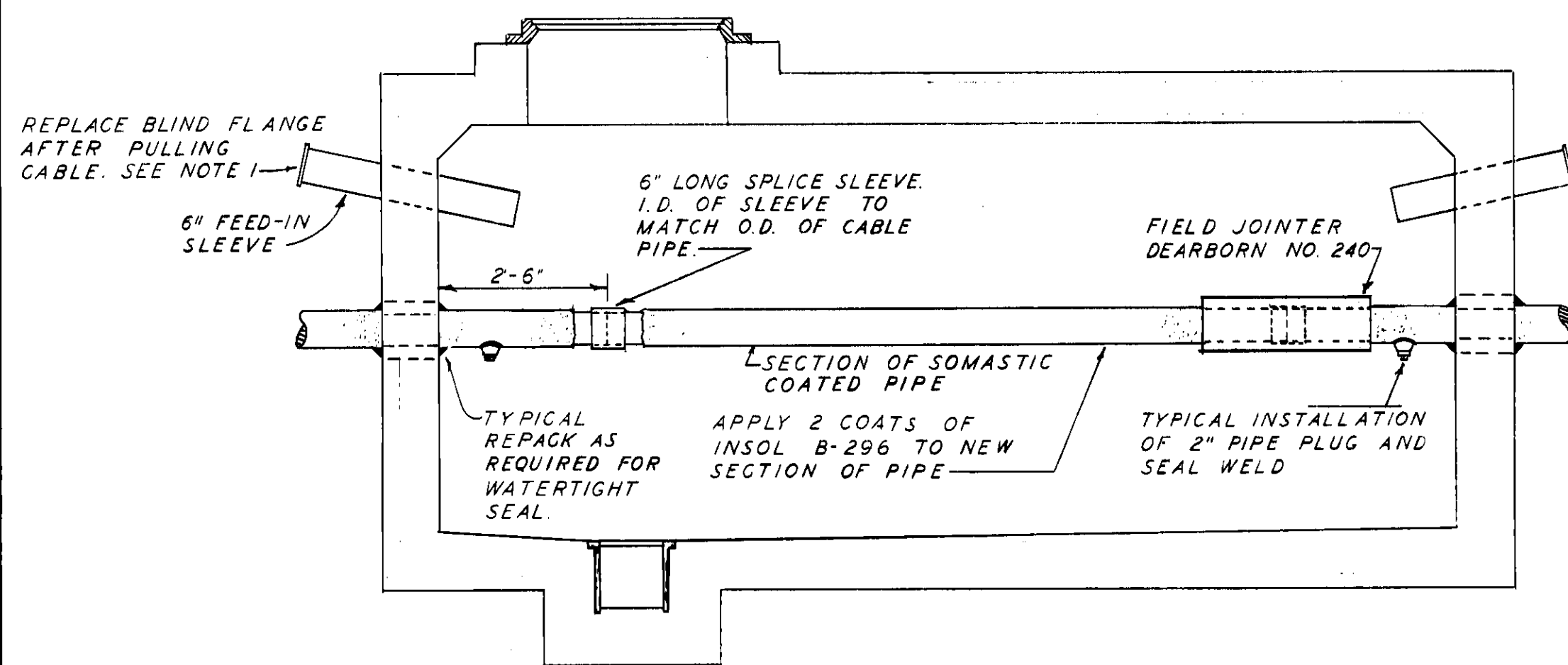


SECTION A-A
SCALE: 1/8"=1'-0"

PROJECT NO. 59111-108		CITY W.D. 59111-108.1	
ARCHITECTS & ENGINEERS			
REYNOLDS, SMITH AND HILLS			
JACKSONVILLE, FLORIDA			
DEPARTMENT OF ELECTRIC & WATER UTILITIES			
CITY OF JACKSONVILLE, FLORIDA			
69 KV TRANSMISSION CABLES			
SOUTHSIDE PLANT TO GEORGIA STREET			
CABLE TERMINATION			
GEORGIA ST. SWITCHING STATION			
APPROVED FOR REYNOLDS, SMITH AND HILLS			
FOR THE CITY OF JACKSONVILLE		DRAWING NO. 59111 D5732	
DEPARTMENT HEAD		ENGINEER	
DEPARTMENT HEAD		ENGINEER	
REVISION		DESCRIPTION	
DATE		BY	
APPROVED		APPROVED	
DEPARTMENT HEAD		ENGINEER	
REVISION		DESCRIPTION	
DATE		BY	
APPROVED		APPROVED	
DEPARTMENT HEAD		ENGINEER	
REVISION		DESCRIPTION	
DATE		BY	
APPROVED		APPROVED	
DEPARTMENT HEAD		ENGINEER	



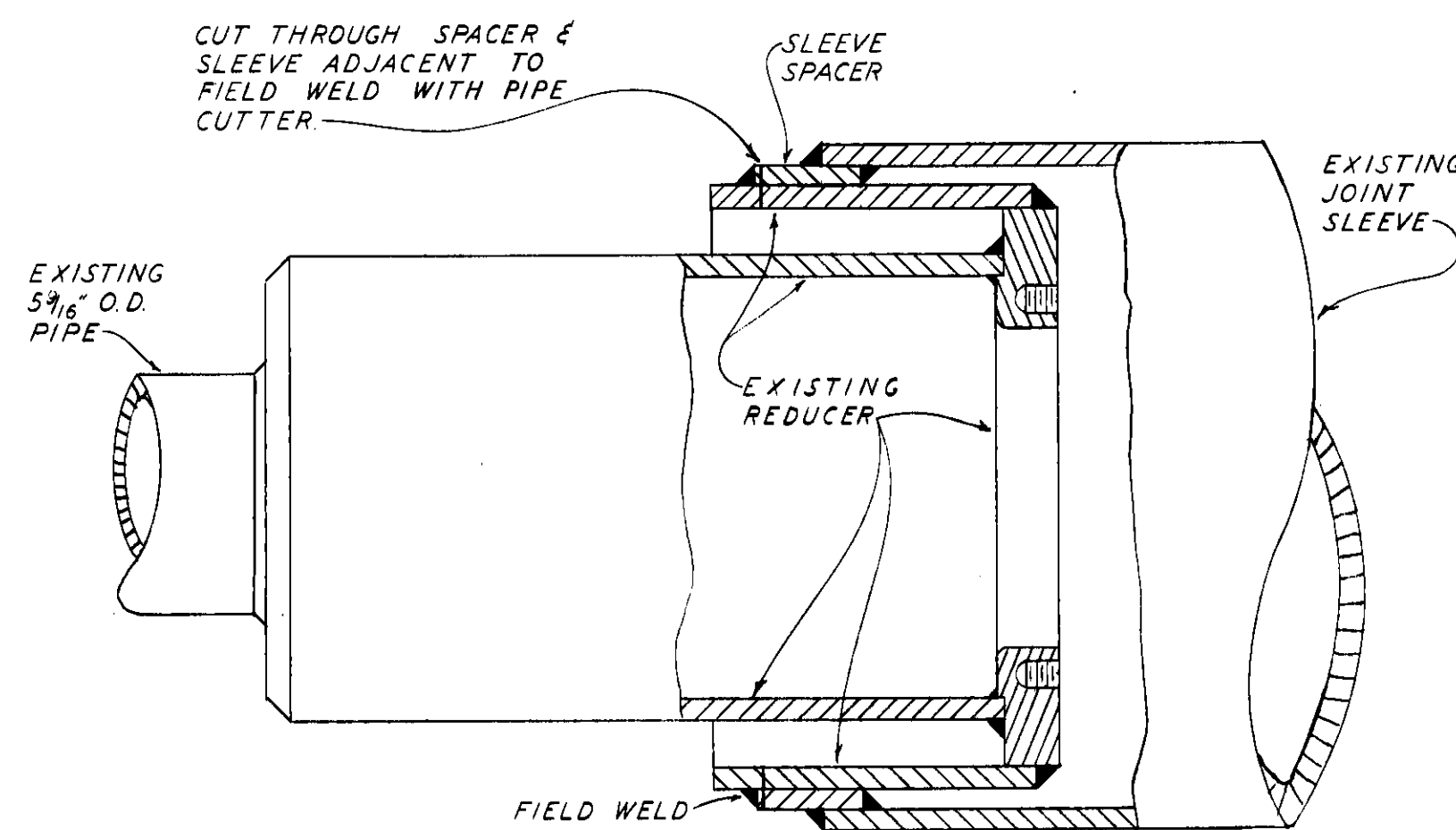
EXISTING JOINT CASINGS
MANHOLES 1-3
SCALE 1/2" = 1'-0"



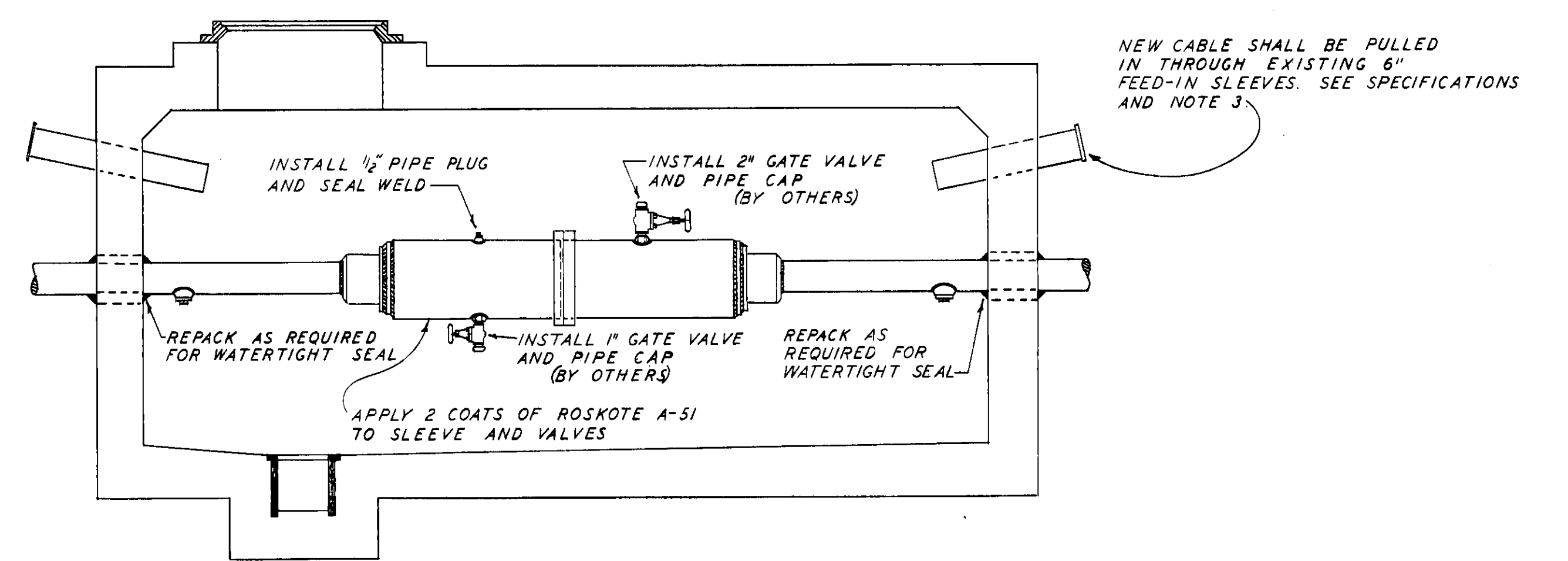
SPLICING OF CABLE PIPE
MANHOLE 3
SCALE 1/2" = 1'-0"

NOTES

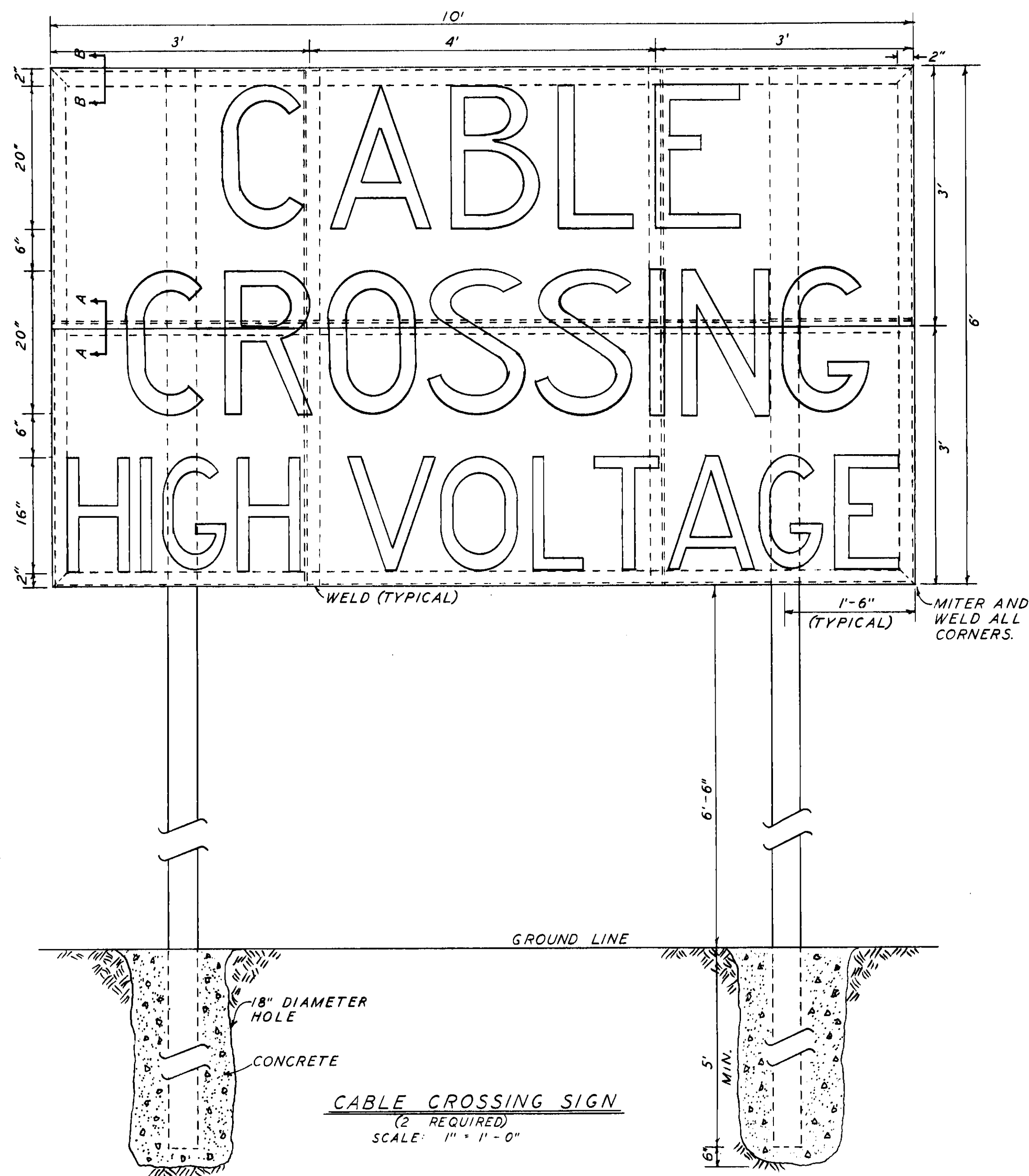
1. CLEAN THE EXTERIOR OF ALL 6" PULL-IN SLEEVES, BLIND FLANGES AND APPLY TWO COATS OF ASPHALTIC PAINT BEFORE BOLTING ON FLANGE. USE NEW GALVANIZED BOLTS.
2. EXISTING JOINT SLEEVES SHALL BE RE-USED ON THIS PROJECT SEE SECTION NO. 13 OF SPECIFICATIONS FOR DETAIL OF REMOVAL.
3. INTERIOR OF 6" FEED-IN SLEEVE SHALL BE THOROUGHLY CLEANED OF ALL RUST, GREASE, ETC. BEFORE REMOVING CABLE AND IMMEDIATELY BEFORE PULLING IN NEW CABLE.



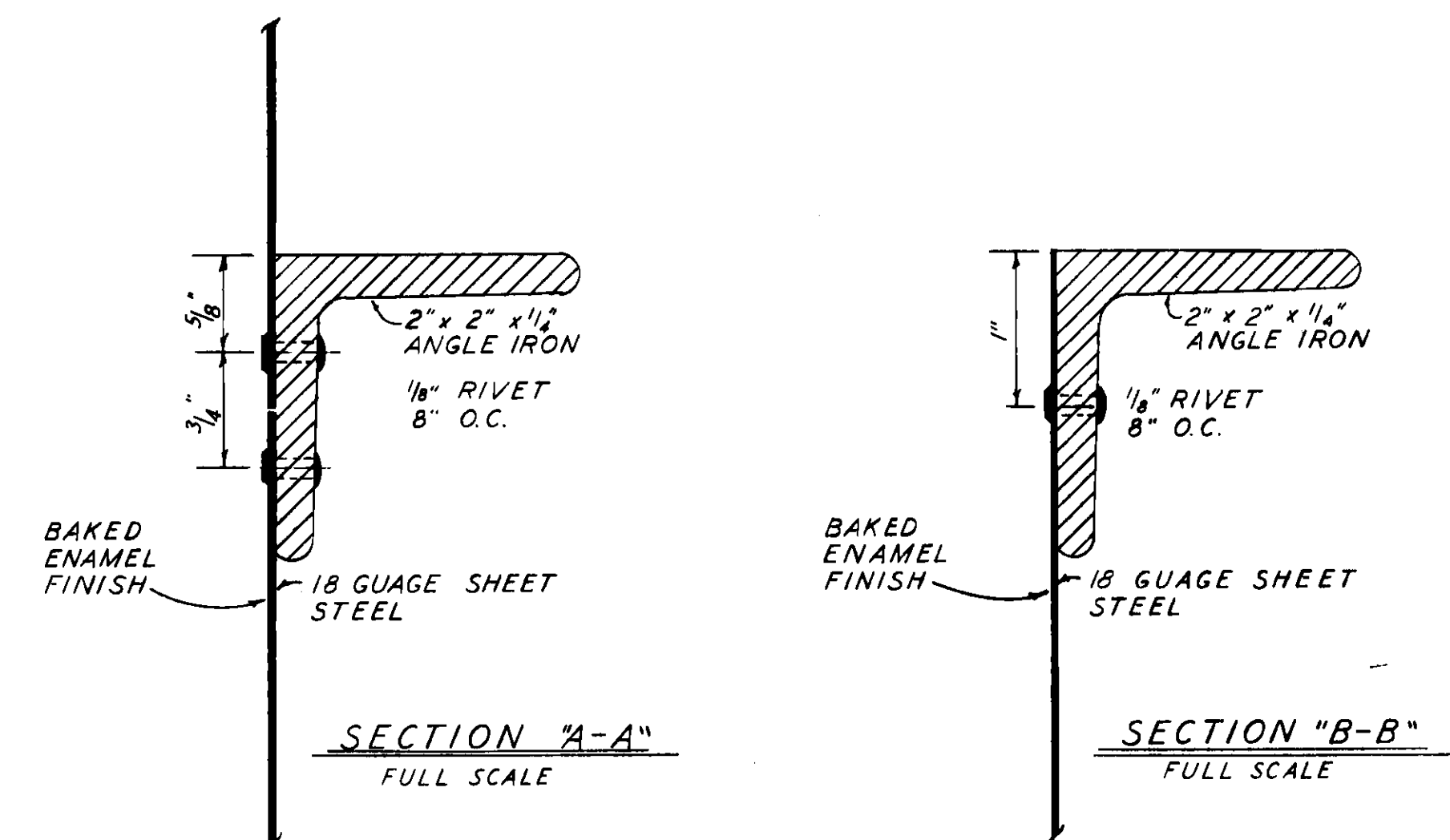
DETAIL OF
JOINT SLEEVE REMOVAL
SCALE 1/4" = 1'



MODIFICATIONS TO JOINT CASINGS
MANHOLES 1 & 2
SCALE 1/2" = 1'-0"



CABLE CROSSING SIGN
(2 REQUIRED)
SCALE 1" = 1'-0"



NOTES

- SIGNS SHALL BE ROYAL BLUE WITH WHITE LETTERS BAKED ENAMEL FINISH.
- SIGN SHALL BE FABRICATED FROM 2'-36" X 120" 18 GAUGE 64.7 LBS SHEET - PAINT GRIP STEEL - ROLLER LEVELLED.
- SIGN SHALL BE FRAMED WITH 2"x2"x1/4" ANGLE IRON GALVANIZE AFTER FABRICATION.
- SIGN SHALL BE MOUNTED ON 4" GALVANIZED PIPE - SCHEDULE 40.
- PAINTING AND BAKING SHALL BE DONE AFTER FABRICATION OF FRAME AND SIGN.
- SUBMIT SHOP DRAWINGS.

PROJECT NO 59111-108		CITY W.O 59111-108.1	
REYNOLDS, SMITH AND HILLS		JACKSONVILLE, FLORIDA	
ARCHITECTS & ENGINEERS		DEPARTMENT OF ELECTRIC & WATER UTILITIES	
DRAWN <i>R.L.L.</i>		CITY OF JACKSONVILLE, FLORIDA	
TRACED <i>R.L.L.</i>		69KV TRANSMISSION CABLES	
CHECKED <i>G.M.C.</i>		SOUTHSIDE PLANT TO GEORGIA STREET	
SCALE <i>SHOWN</i>		PIPE JOINTS & DETAILS	
DATE <i>3-26-63</i>		APPROVED FOR REYNOLDS, SMITH AND HILLS	
FOR THE CITY OF JACKSONVILLE		<i>R.C. Blain</i>	
DEPARTMENT HEAD		ENGINEER	
DRAWING NO. 59111		D5734	
SHEET 10 OF 10		12544-3	

PLANS FOR

69 K V TRANSMISSION CABLES

GEORGIA ST. TO MAIN ST.

CITY OF JACKSONVILLE

JACKSONVILLE, FLORIDA

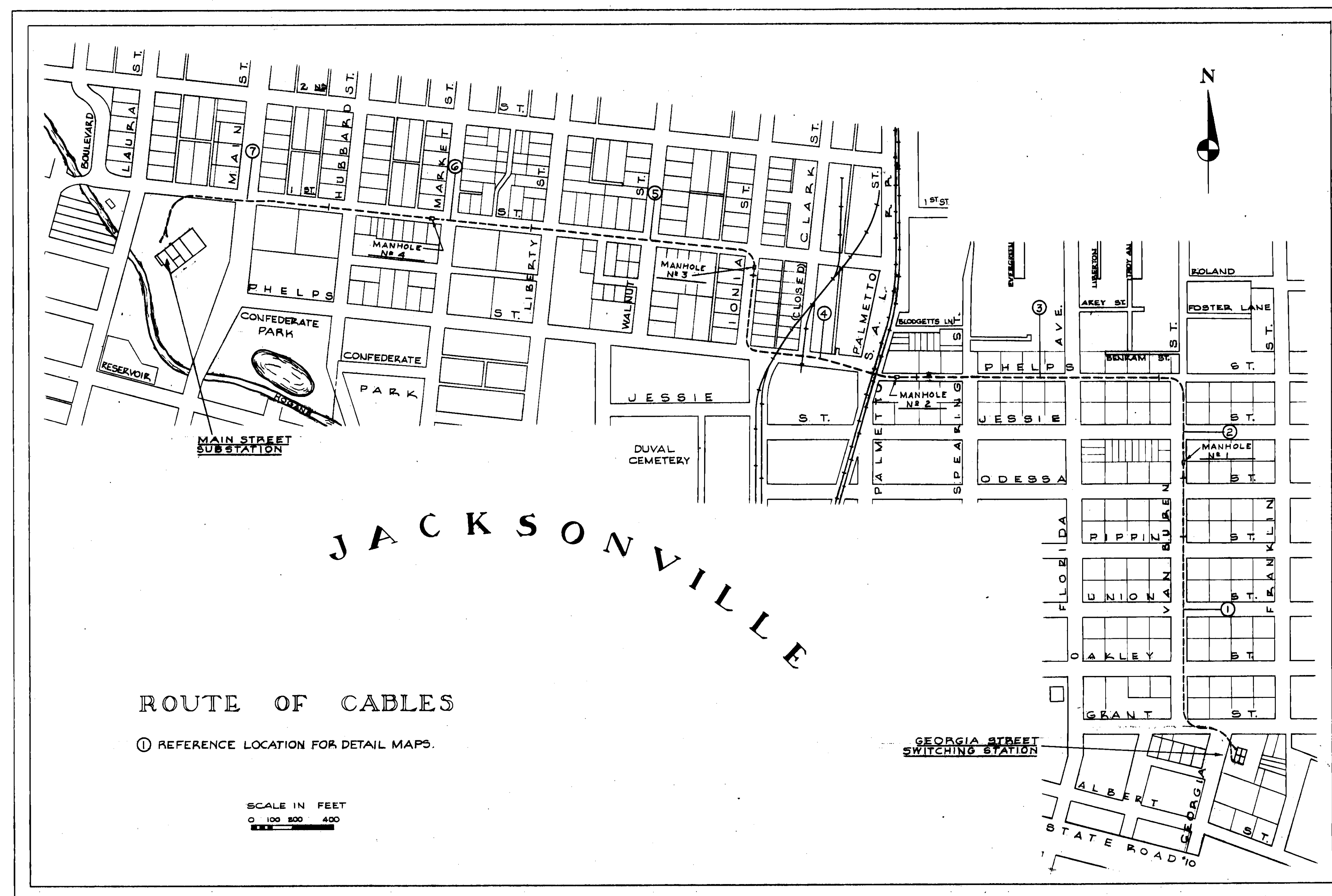
REYNOLDS, SMITH AND HILLS

ARCHITECTS AND ENGINEERS

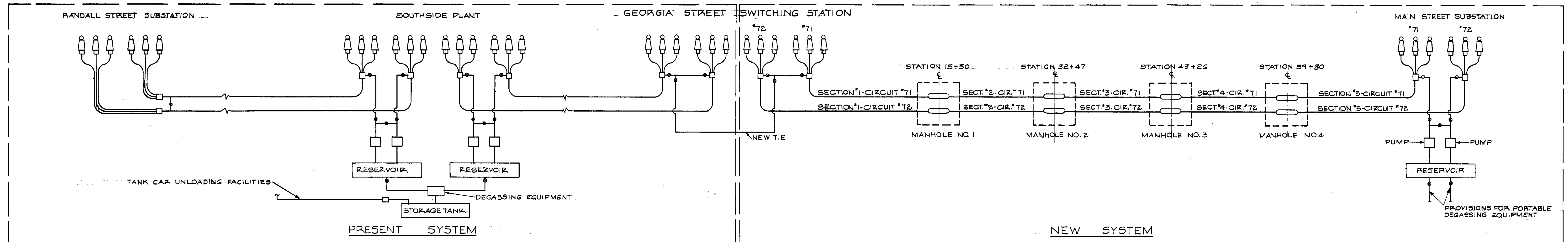
PROJECT NO. 4543-126

JACKSONVILLE, FLORIDA

CITY W.O. NO. 1480-126-1947 CCN



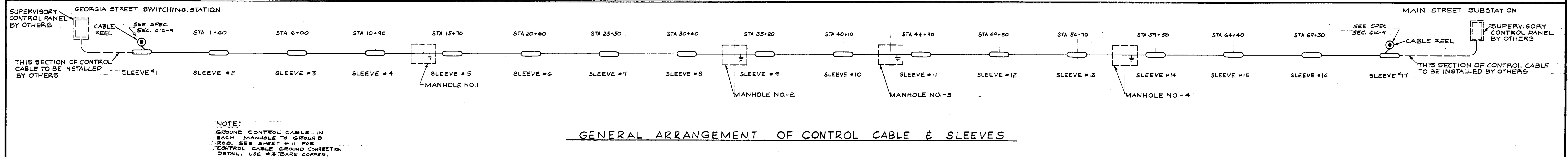
DRAWING NO. 4543-126 - D-567	GENERAL ROUTE OF CABLES	SHEET NO. 1	DRAWING NO. 4543-126 - D-575	TERMINATION STRUCTURE & DETAILS	SHEET NO. 4
4543-126 - D-568	SCHEMATIC DRAWING OF SYSTEM	2	4543-126 - D-576	PUMPING AND CONTROL EQUIPMENT	12
4543-126 - D-569	ROUTE OF CABLES: REFERENCE LOCATIONS ① & ②	3	4543-126 - D-577	SPLICE AND JOINT DETAILS	13
4543-126 - D-570	ROUTE OF CABLES: REFERENCE LOCATIONS ③ & ④	4	4543-126 - D-578	MANHOLE & ANCHOR DETAILS	14
4543-126 - D-571	ROUTE OF CABLES: REFERENCE LOCATIONS ⑤ & ⑥	5	4543-126 - D-579	PUMP HOUSE & DETAILS - ARCHITECTURAL	15
4543-126 - D-572	ROUTE OF CABLES: REFERENCE LOCATION ⑦	6	4543-126 - D-580	PUMP HOUSE - ELECTRICAL	16
4543-126 - D-573	CABLE TERMINATION - GEORGIA STREET SWITCHING STATION	7			
4543-126 - D-574	CABLE TERMINATION - MAIN STREET SUBSTATION	8			



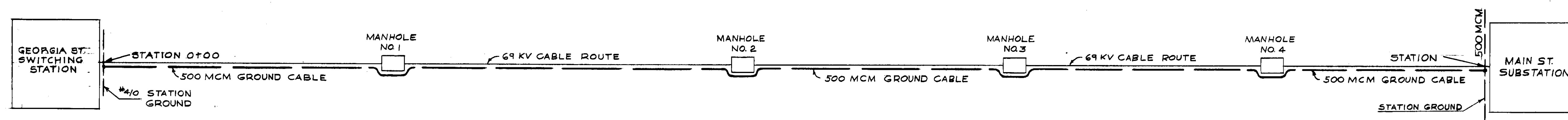
GENERAL ARRANGEMENT OF COMPLETE PIPE-TYPE CABLE SYSTEM & ASSOCIATED EQUIPMENT

DESIGN DATA										
CIRCUIT NO. 71										
SECTION NOTATION FOR CABLE	TERMINATION GEORGIA ST.	MANHOLE NO. 1	MANHOLE NO. 2	MANHOLE NO. 3	MANHOLE NO. 4	TERMINATION MAIN ST.	REMARKS			
CENTERLINE DISTANCE OF SECTION - FEET	71-1	71-2	71-3	71-4	71-5		TOTAL DISTANCE 7,339.48 FT.			
LENGTH OF CABLE REQUIRED - FEET - 1/2 (ESTIMATED)	1,507.41	1,717.0	1,079.0	1,604.0	1,432.07		TOTAL LENGTH 22,395.00 FT.			
LENGTH OF CABLE FURNISHED - FEET - 1/2	4,550.0	5,190.0	3,276.0	4,851.0	4,428.0		TOTAL LENGTH 22,695.00 FT.			
MINIMUM RESISTANCE OF PIPE INSULATION	4,710.0	5,250.0	3,336.0	4,911.0	4,408.0					
OIL CAPACITY OF SECTION - GALLONS	670.8	764.0	480.2	713.8	637.2		TOTAL 3,266.0 GALS. - CALCULATED USING .445 GAL./LIN. FT. OF PIPE			
CIRCUIT NO. 72										
SECTION NOTATION FOR CABLE	TERMINATION GEORGIA ST.	MANHOLE NO. 1	MANHOLE NO. 2	MANHOLE NO. 3	MANHOLE NO. 4	TERMINATION MAIN ST.	REMARKS			
CENTERLINE DISTANCE OF SECTION - FEET	72-1	72-2	72-3	72-4	72-5		TOTAL DISTANCE 7,360.40 FT.			
LENGTH OF CABLE REQUIRED - FEET - 1/2 (ESTIMATED)	1,554.72	1,717.0	1,079.0	1,604.0	1,405.68		TOTAL LENGTH 22,461.00 FT.			
LENGTH OF CABLE FURNISHED - FEET - 1/2	4,794.0	5,190.0	3,276.0	4,851.0	4,350.0		TOTAL LENGTH 22,761.00 FT.			
MINIMUM RESISTANCE OF PIPE INSULATION	4,854.0	5,250.0	3,336.0	4,911.0	4,410.0					
OIL CAPACITY OF SECTION - GALLONS	691.9	764.0	480.0	713.8	625.5		TOTAL 3,275.4 GALS. - CALCULATED USING .445 GAL./LIN. FT. OF PIPE			

AS CONSTRUCTED DATA										
CIRCUIT NO. 71										
SECTION NOTATION FOR CABLE	TERMINATION GEORGIA ST.	MANHOLE NO. 1	MANHOLE NO. 2	MANHOLE NO. 3	MANHOLE NO. 4	TERMINATION MAIN ST.	REMARKS			
CENTERLINE DISTANCE OF SECTION - FEET	71-1	71-2	71-3	71-4	71-5					
LENGTH OF CABLE INSTALLED - FEET										
DIRECTION OF PULL										
MAXIMUM PULLING TENSION - POUNDS										
TIME REQUIRED FOR PULL										
DATE OF PULL										
RESISTANCE OF PIPE INSULATION										
CIRCUIT NO. 72										
SECTION NOTATION FOR CABLE	TERMINATION GEORGIA ST.	MANHOLE NO. 1	MANHOLE NO. 2	MANHOLE NO. 3	MANHOLE NO. 4	TERMINATION MAIN ST.	REMARKS			
CENTERLINE DISTANCE OF SECTION - FEET	72-1	72-2	72-3	72-4	72-5					
LENGTH OF CABLE INSTALLED - FEET										
DIRECTION OF PULL										
MAXIMUM PULLING TENSION - POUNDS										
TIME REQUIRED FOR PULL										
DATE OF PULL										
RESISTANCE OF PIPE INSULATION										



DESIGN DATA																			
CONTROL CABLE																			
TERMINATION GEORGIA ST.	SLEEVE #1	SLEEVE #2	SLEEVE #3	SLEEVE #4	SLEEVE #5	SLEEVE #6	SLEEVE #7	SLEEVE #8	SLEEVE #9	SLEEVE #10	SLEEVE #11	SLEEVE #12	SLEEVE #13	SLEEVE #14	SLEEVE #15	SLEEVE #16	SLEEVE #17	TERMINATION MAIN ST.	REMARKS
CENTER LINE DISTANCE	255 FT.	440 FT.	490 FT.	480 FT.	490 FT.	490 FT.	490 FT.	490 FT.	490 FT.	490 FT.	490 FT.	490 FT.	490 FT.	490 FT.	490 FT.	490 FT.	415 FT.		
LENGTH OF CABLE FURNISHED	1000 FT.			1000 FT.		1000 FT.		1000 FT.		1000 FT.		1000 FT.		1000 FT.		1000 FT.			
AS CONSTRUCTED DATA																			



GENERAL ARRANGEMENT OF GROUND CABLE

PROJECT NO. 4543-126 I.W.O. NO. 1480-126-1947-CCN

REYNOLDS, SMITH AND HILLS
ARCHITECTS & ENGINEERS
JACKSONVILLE, FLORIDA

DEPARTMENT OF ELECTRIC & WATER UTILITIES
CITY OF JACKSONVILLE, FLORIDA
69 KV TRANSMISSION CABLES
GEORGIA ST. TO MAIN ST.

DATE JAN. 31, 58

SCHEMATIC DRAWING OF SYSTEM

APPROVED FOR REYNOLDS, SMITH AND HILLS

FOR THE CITY OF JACKSONVILLE

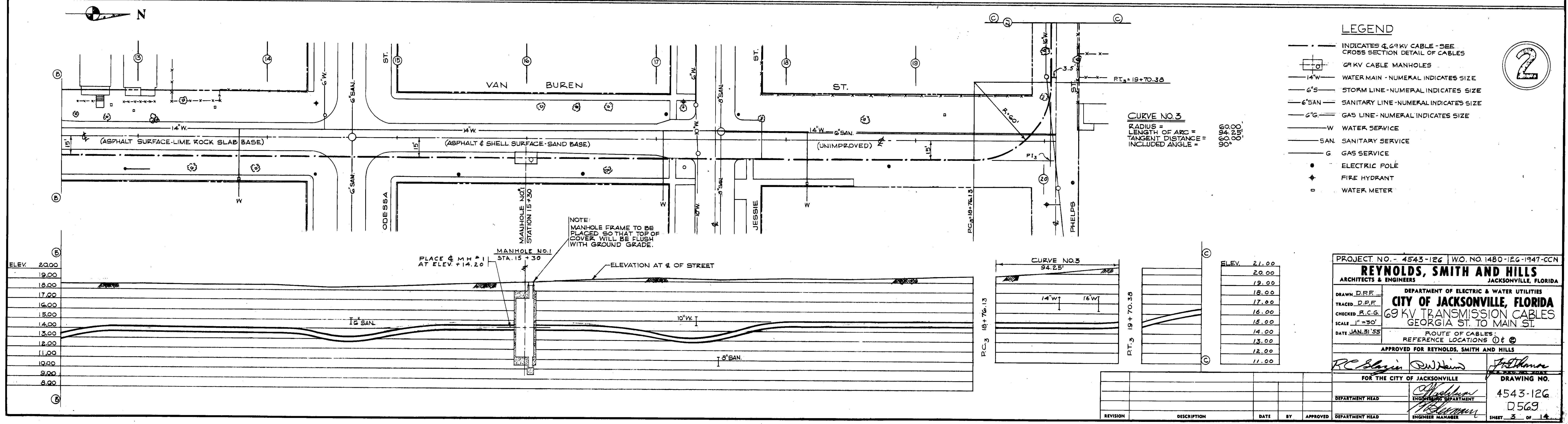
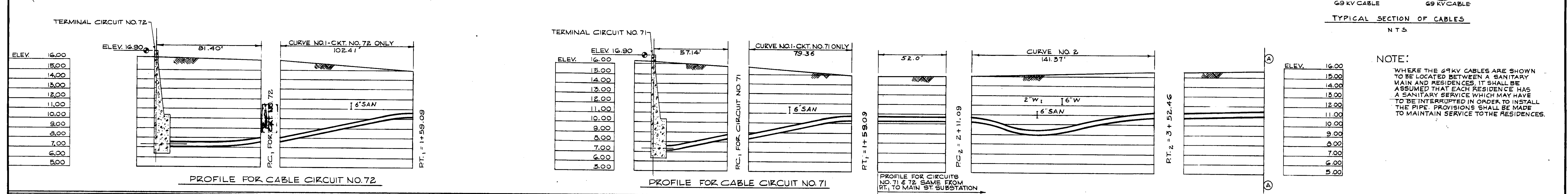
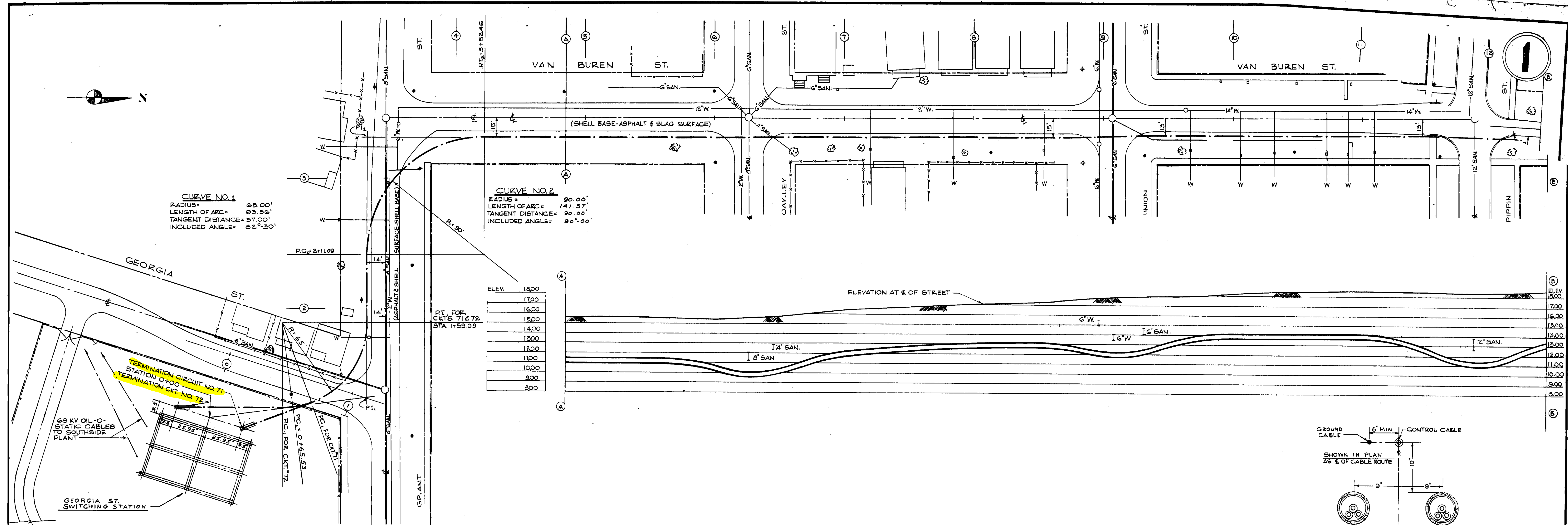
DEPARTMENT HEAD

ENGINEER

DRAWING NO. 4543-126 D568

SHEET 2 OF 14

25268



PROJECT NO. - 4543-126 | WO. NO. 1480-126-1947-CCN

REYNOLDS, SMITH AND HILLS
ARCHITECTS & ENGINEERS
JACKSONVILLE, FLORIDA

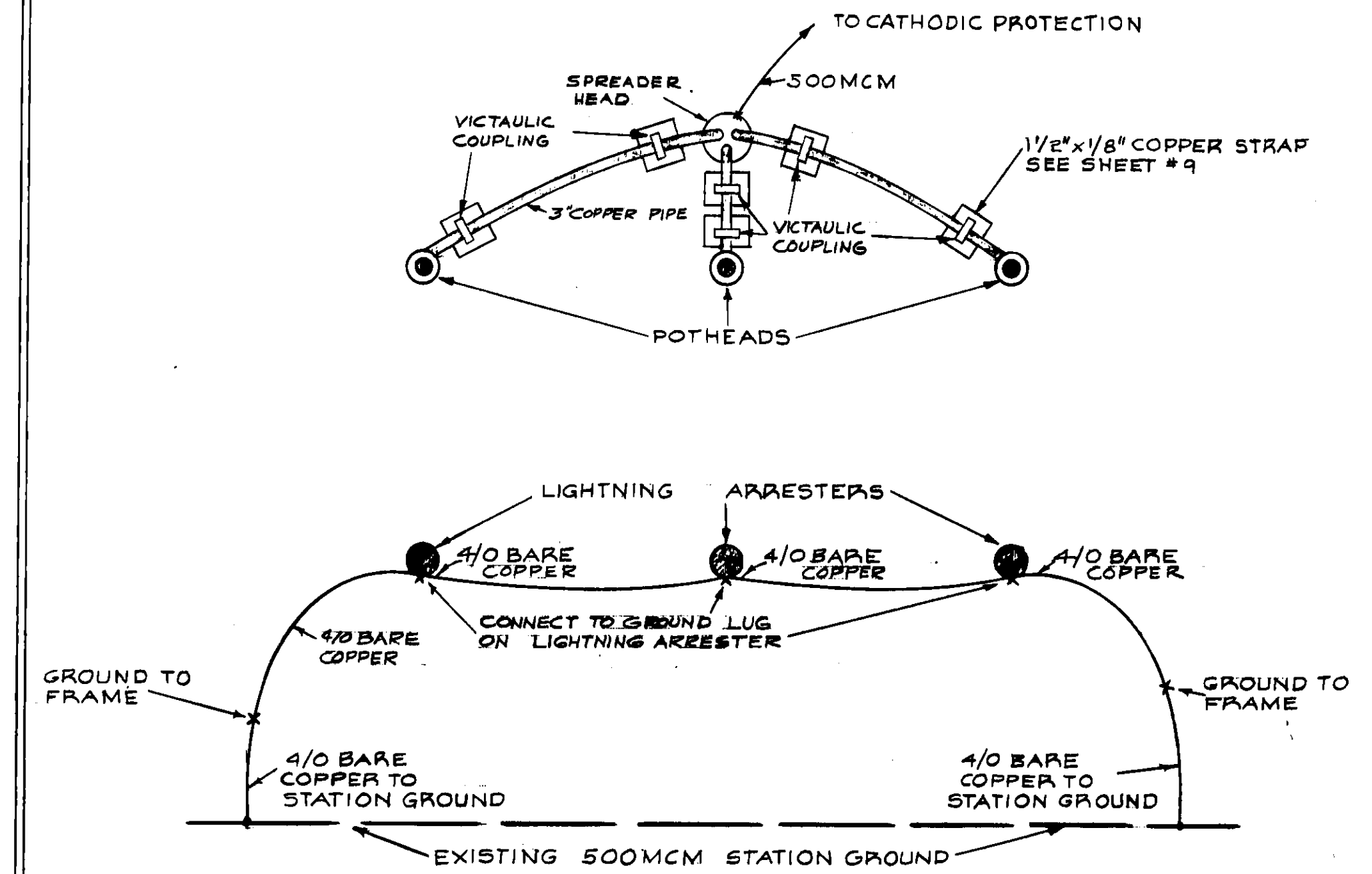
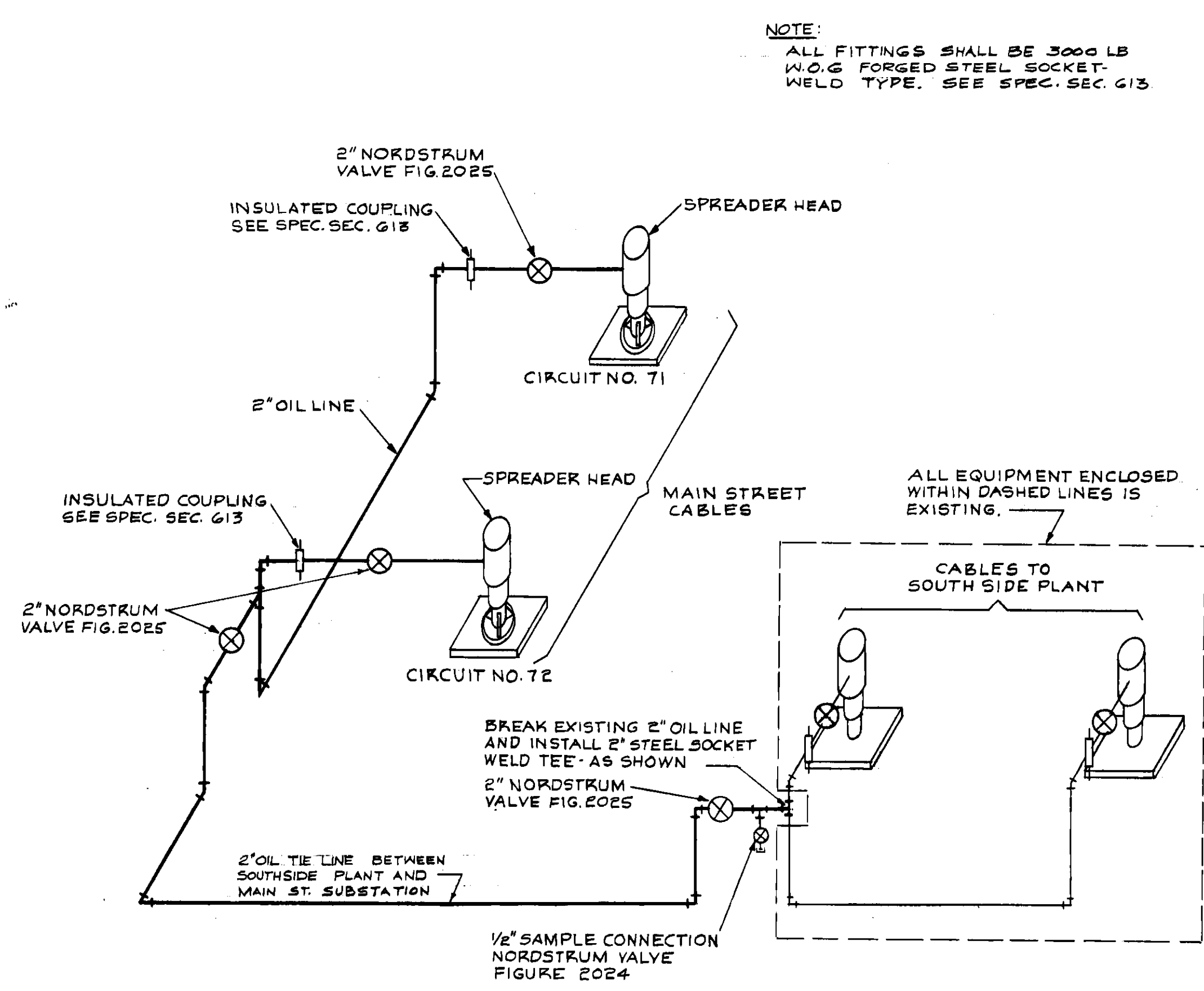
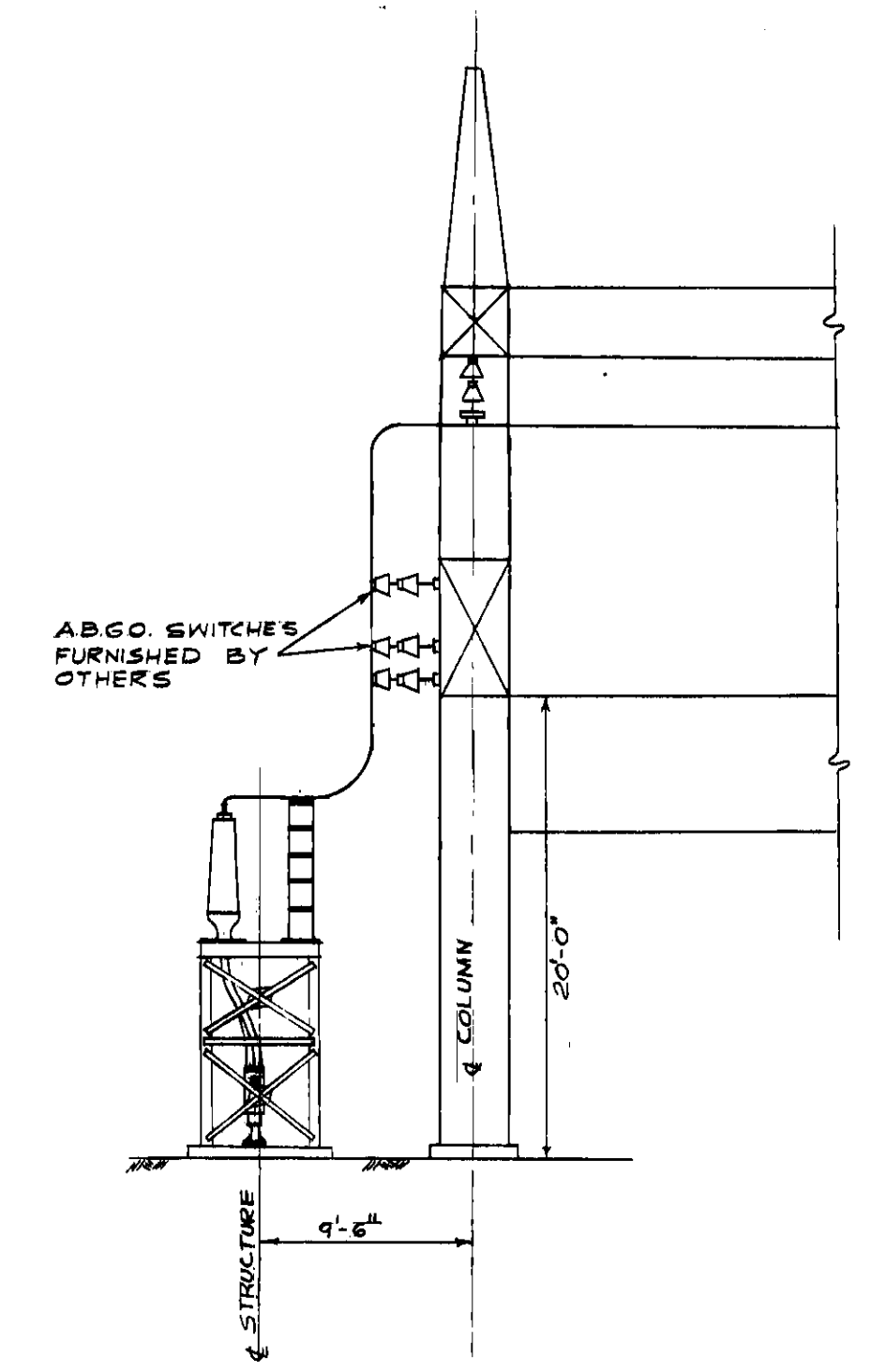
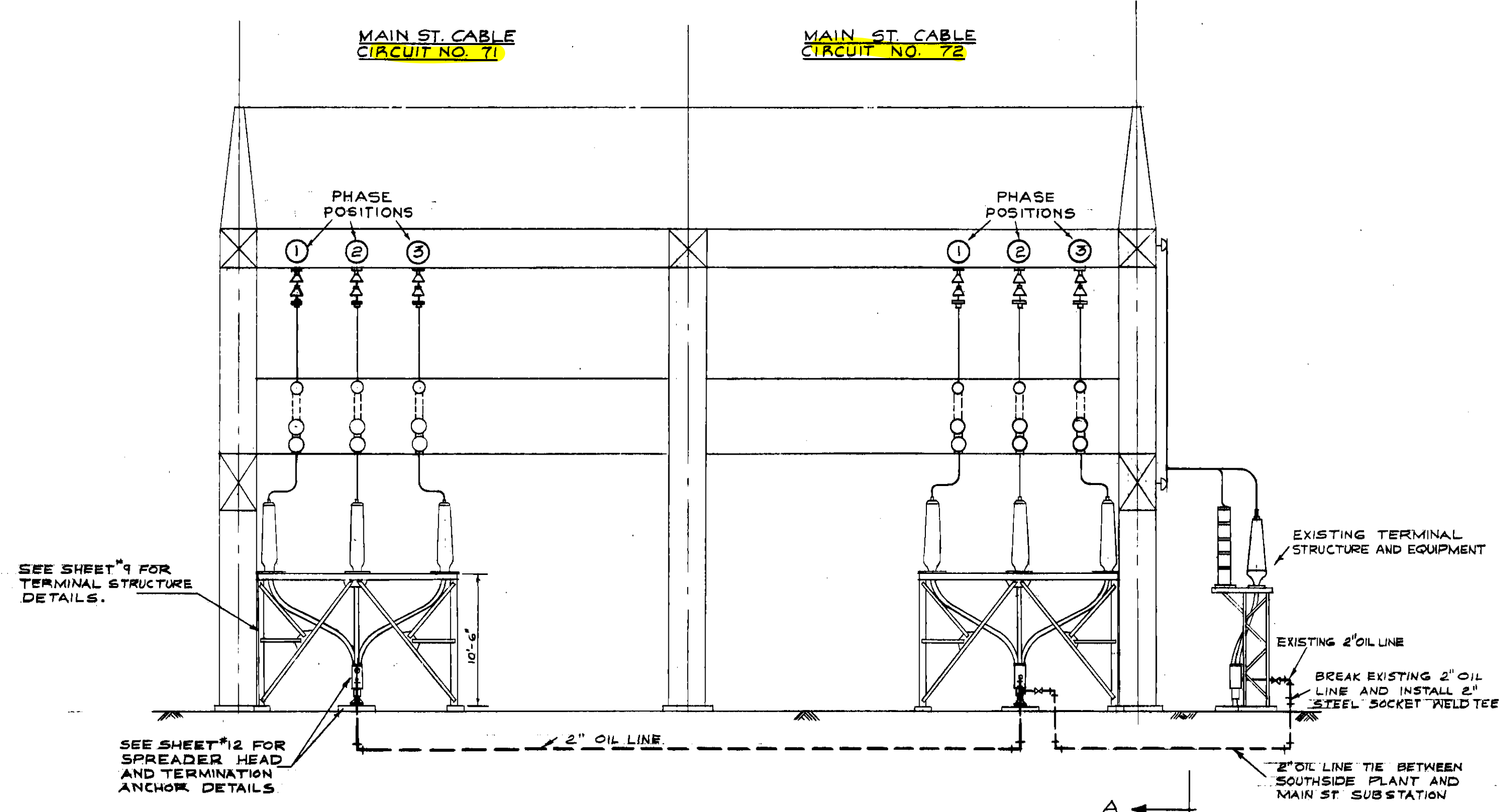
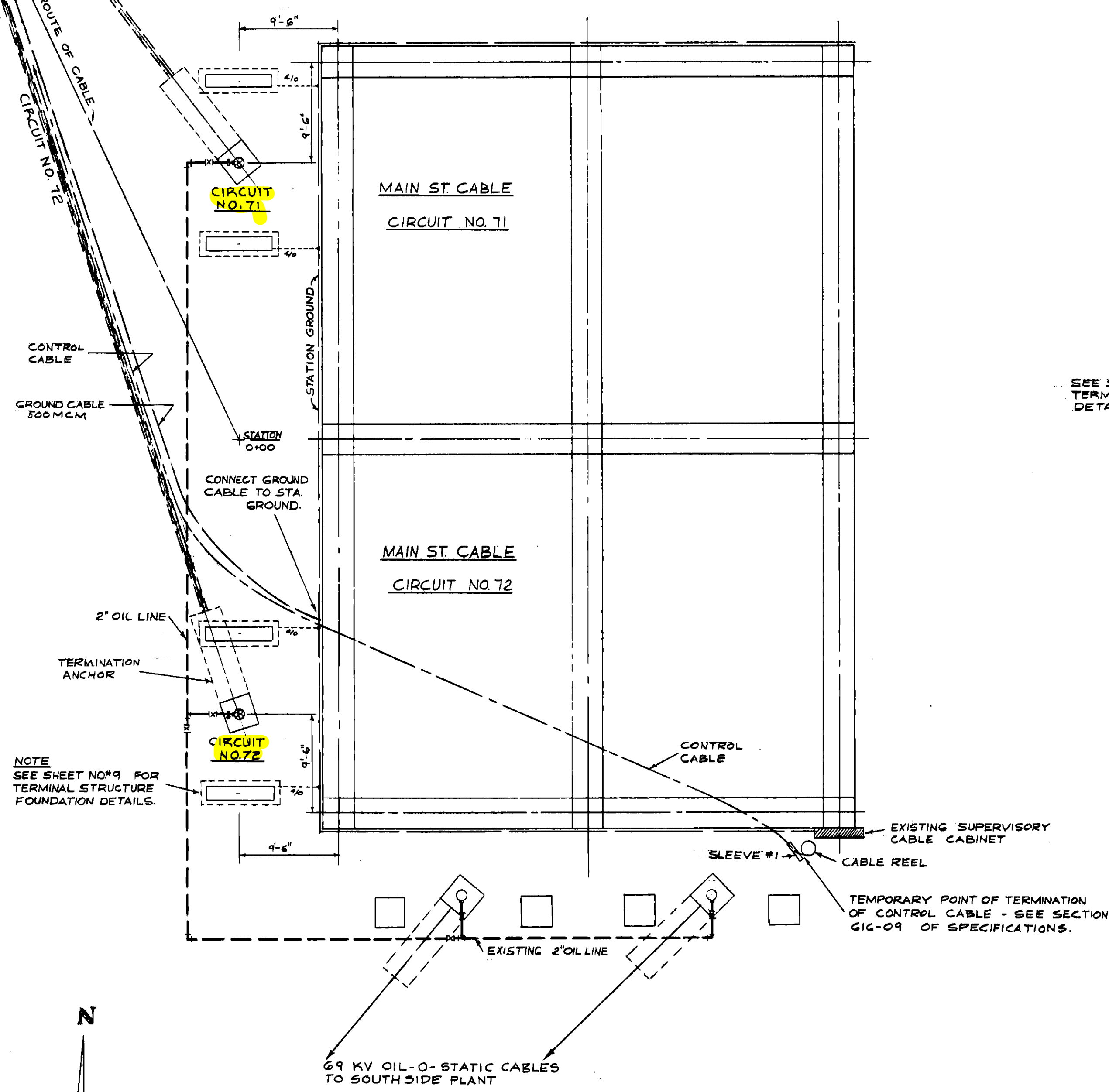
DRAWN D.F.F.
TRACED D.F.F.
CHECKED R.C.G.
SCALE 1"=30'
DATE JAN. 31 '55

DEPARTMENT OF ELECTRIC & WATER UTILITIES
CITY OF JACKSONVILLE, FLORIDA
69 KV TRANSMISSION CABLES
GEORGIA ST. TO MAIN ST.

ROUTE OF CABLES
REFERENCE LOCATIONS 0 & 2

APPROVED FOR REYNOLDS, SMITH AND HILLS
FOR THE CITY OF JACKSONVILLE
DEPARTMENT HEAD
ENGINEER

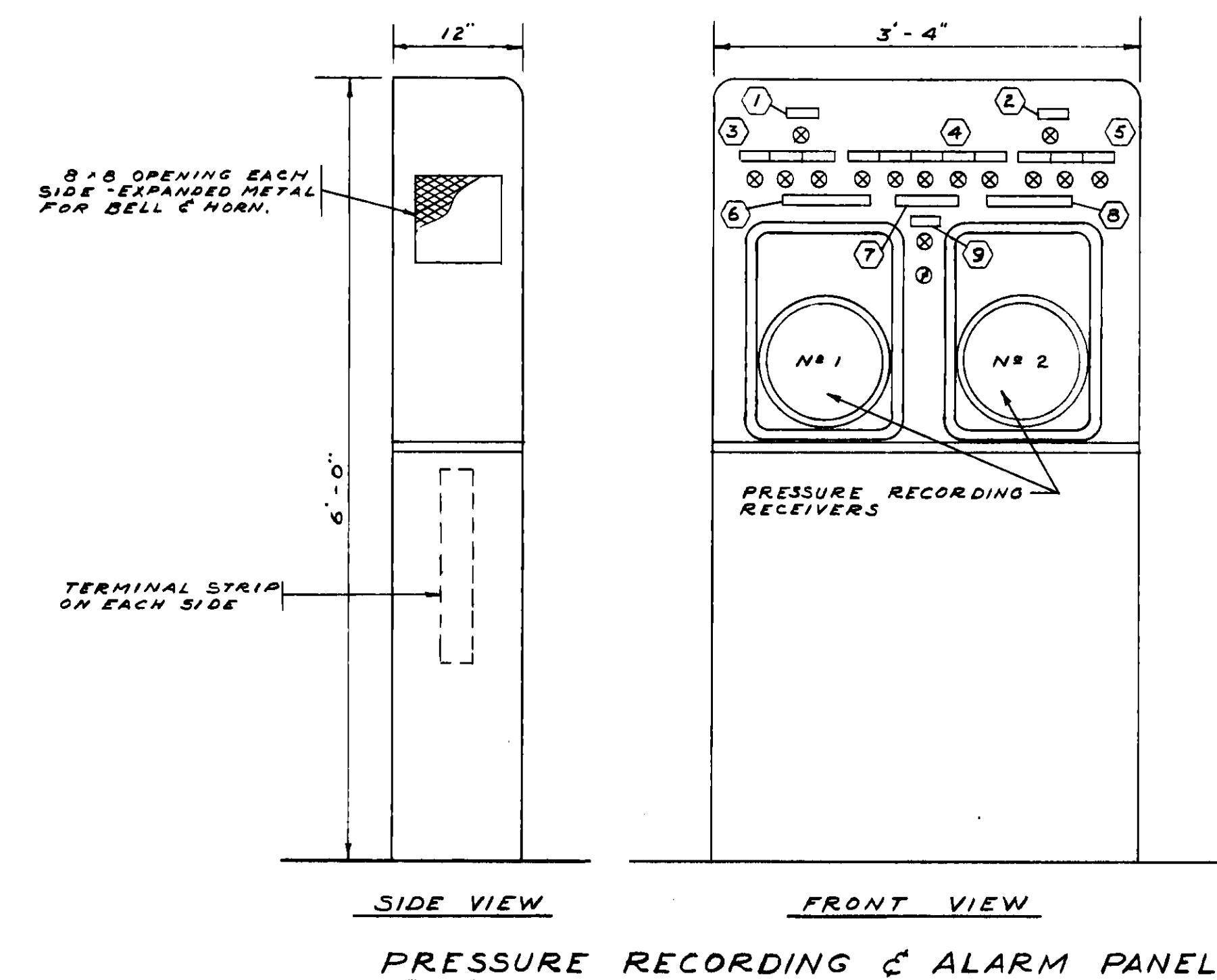
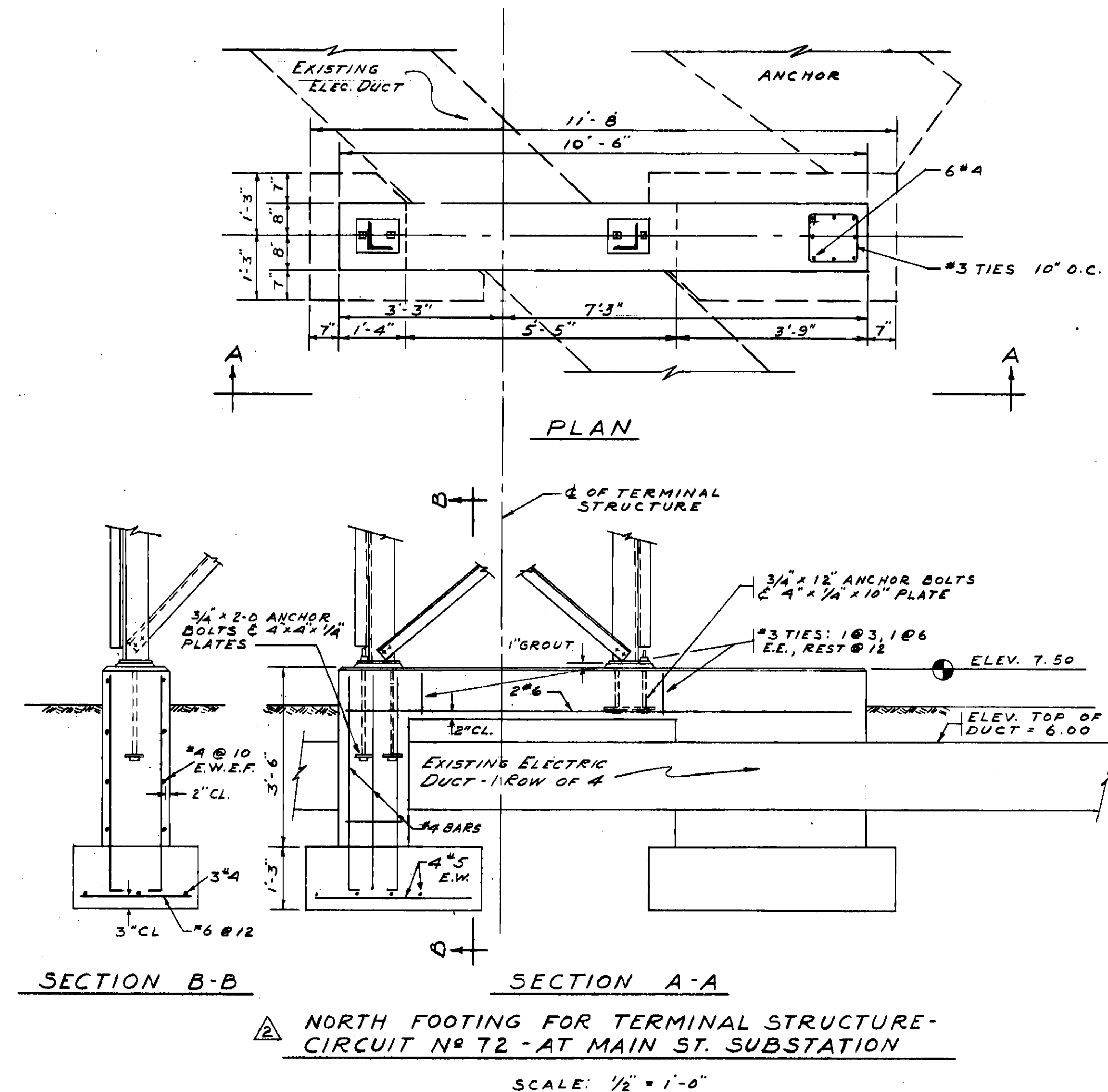
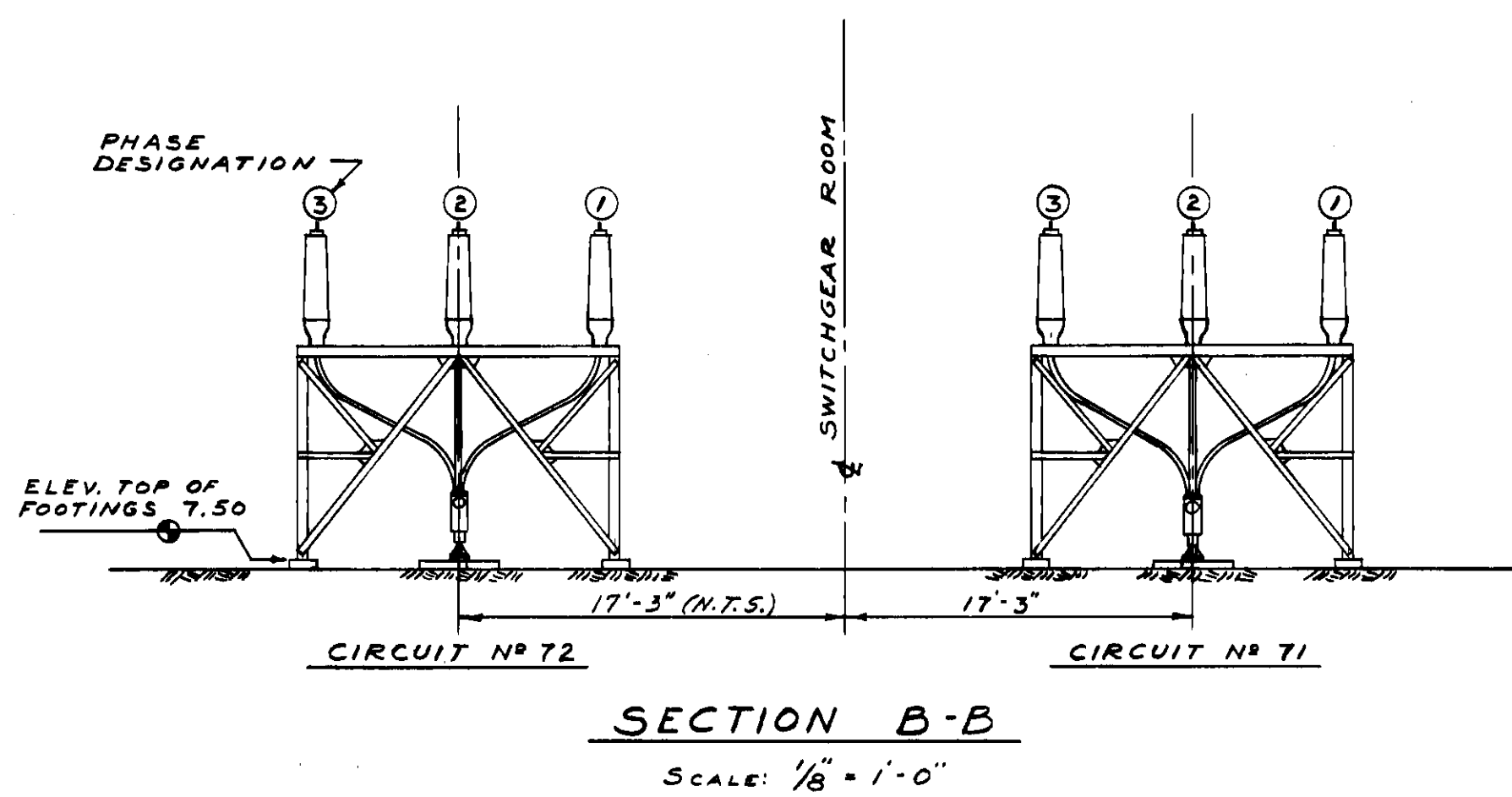
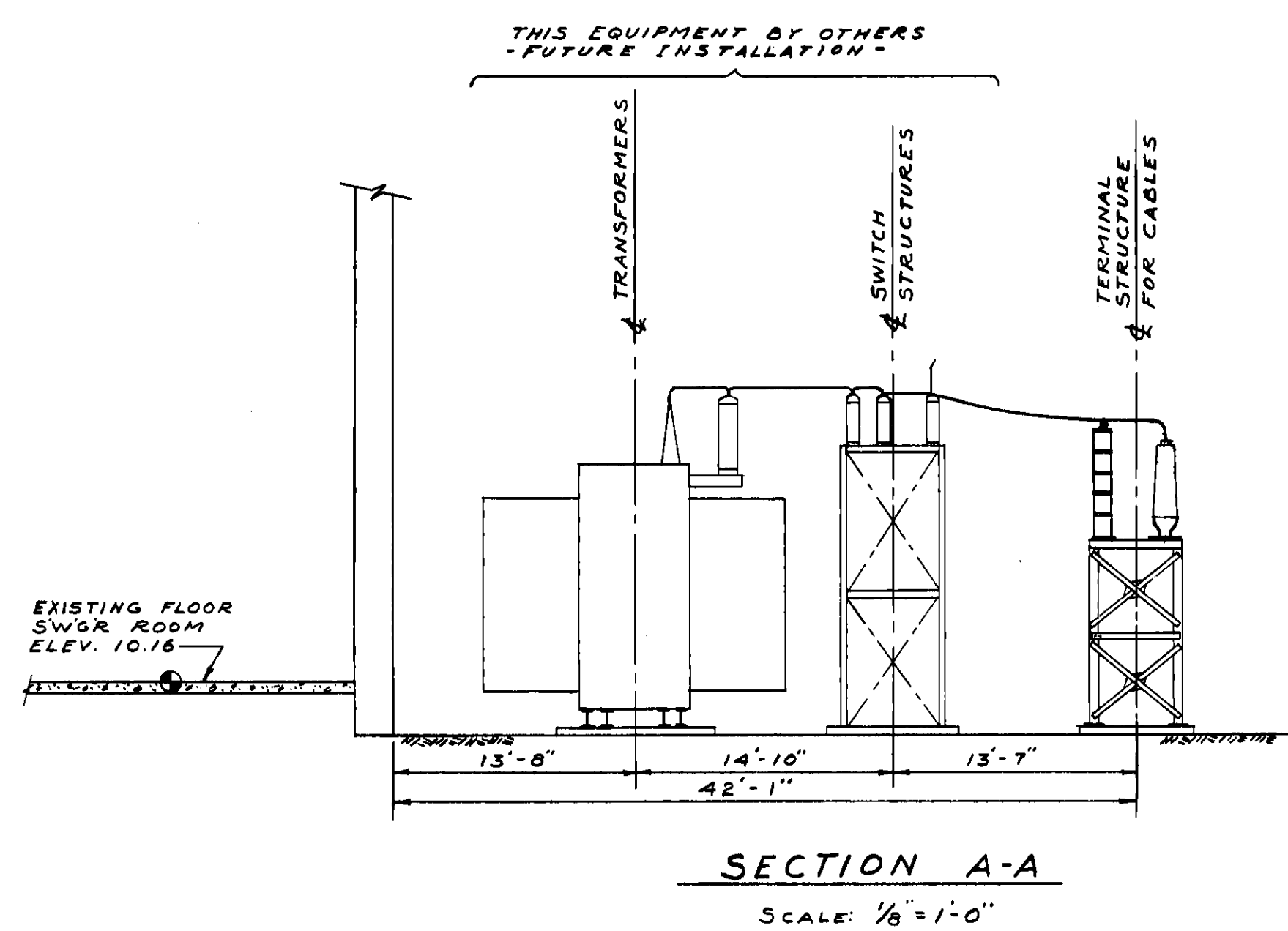
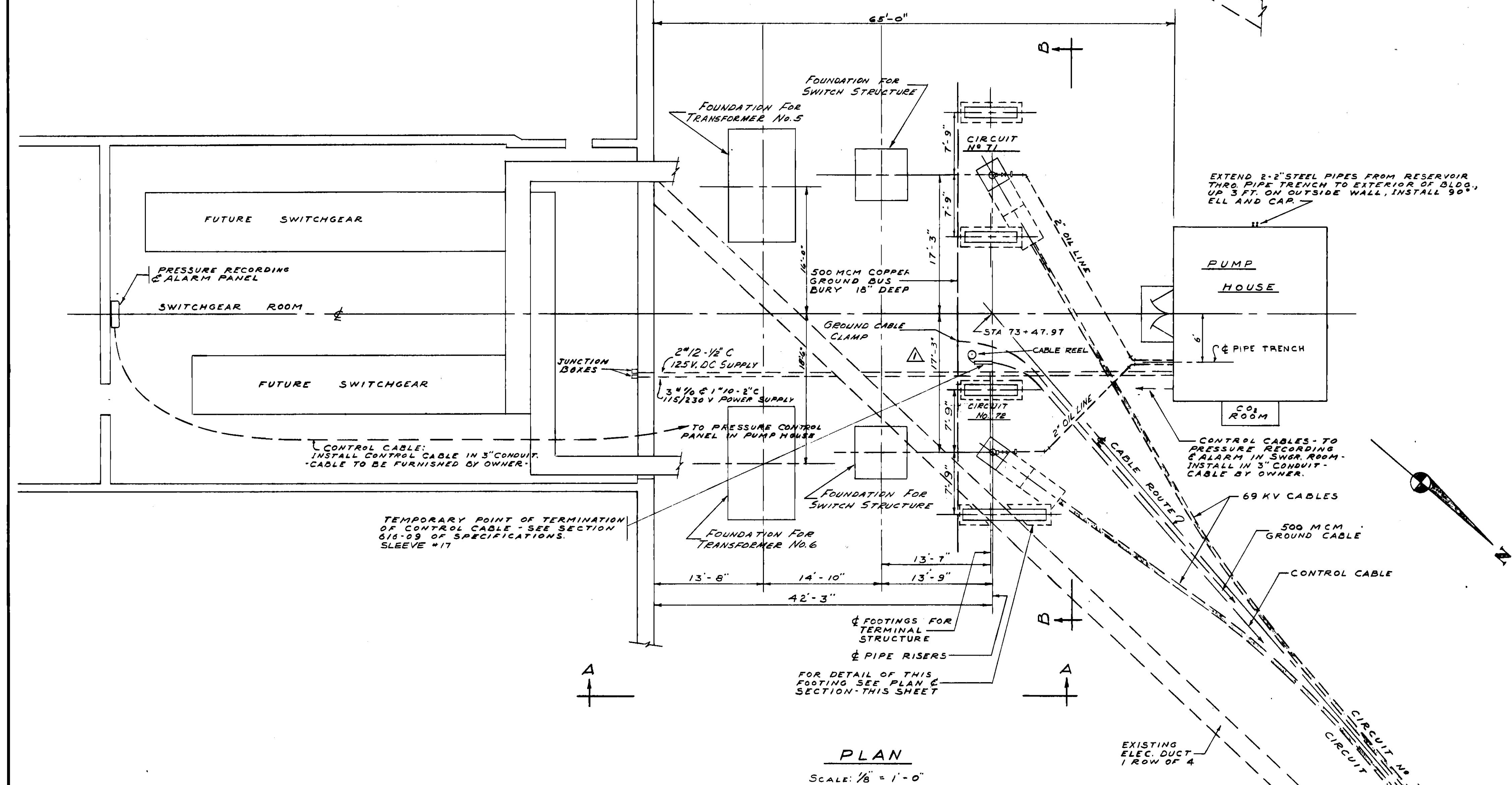
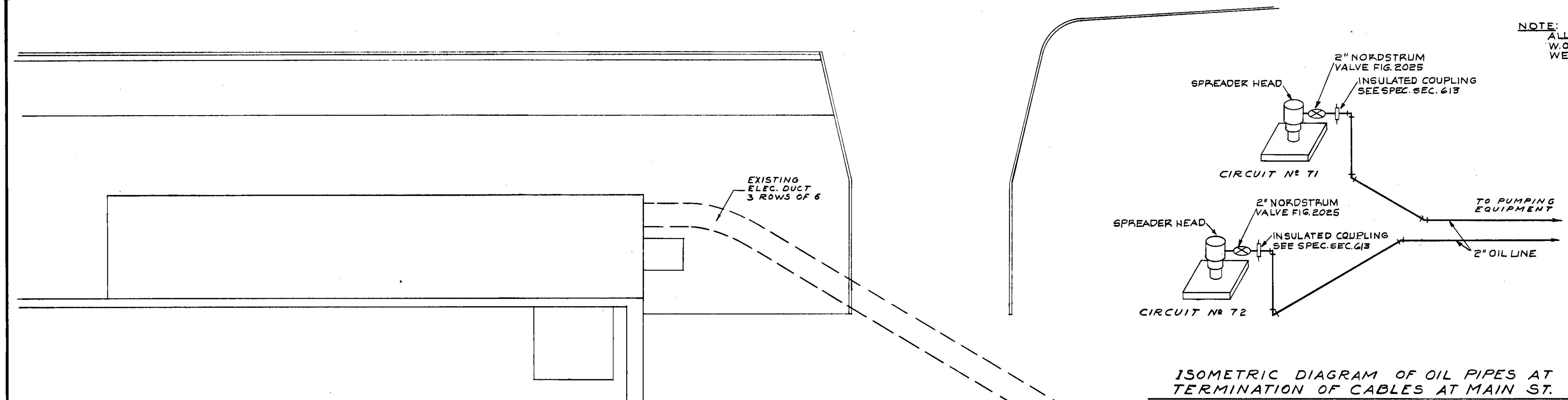
DRAWING NO.
4543-126
D569
SHEET 3 OF 14



PROJECT NO. 4543-126 W.O. NO. 1480-126-1947-CCN	
REYNOLDS, SMITH AND HILLS ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA	
DRAWN: R.N.L. CHECKED: R.N.L. SCALE: SHOWN DATE: JAN. 1955	DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69 KV TRANSMISSION CABLES GEORGIA ST. TO MAIN ST. CABLE TERMINATION - GEORGIA STREET SWITCHING STATION
APPROVED FOR REYNOLDS, SMITH AND HILLS	
FOR THE CITY OF JACKSONVILLE DEPARTMENT HEAD ENGINEERING DEPARTMENT ENGINEER MANAGER	DRAWING NO. 4543-126 D573 SHEET 7 OF 14

REVISION	DESCRIPTION	DATE	BY	APPROVED

25266



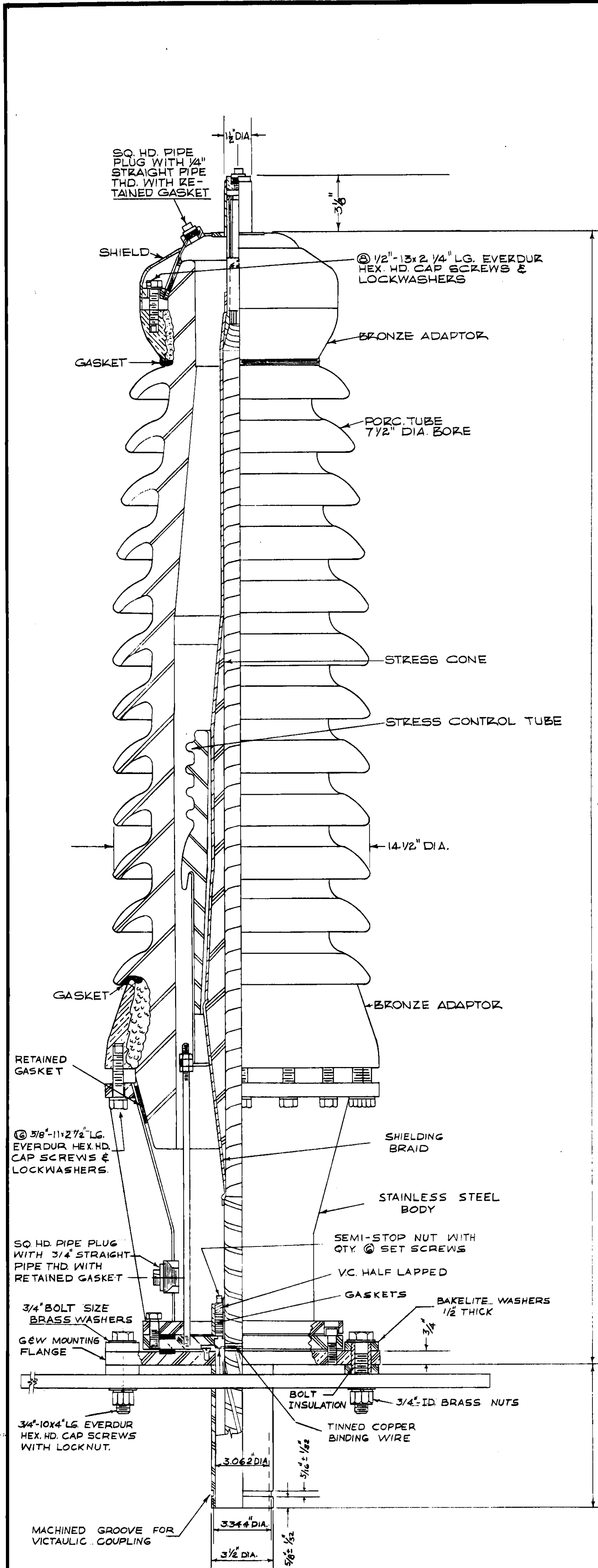
- NAMEPLATE MARKINGS
- | ITEM NO. | DESCRIPTION |
|----------|---|
| 1 | FIRE ALARM |
| 2 | ABNORMAL TEMPERATURE |
| 3 | HIGH PRESSURE - LOW PRESSURE - EXCESSIVE OIL FLOW |
| 4 | HIGH NITROGEN PRESSURE - LOW NITROGEN PRESSURE - POWER FAILURE - LOW OIL RESERVOIR - HIGH OIL RESERVOIR |
| 5 | HIGH PRESSURE - LOW PRESSURE - EXCESSIVE OIL FLOW |
| 6 | MAIN STREET CABLE NO. 1 |
| 7 | RESERVOIR NO. 1 |
| 8 | MAIN STREET CABLE NO. 2 |
| 9 | ALARM |

- SYMBOLS
- | | |
|---|------------------------|
| ⊗ | INDICATING LIGHT - RED |
| ⊙ | ALARM ON-OFF SWITCH |

PROJECT NO. 4543-126 W.O. NO. 1480-126-1947-CCN
REYNOLDS, SMITH AND HILLS
 ARCHITECTS & ENGINEERS
 JACKSONVILLE, FLORIDA
 DEPARTMENT OF ELECTRIC & WATER UTILITIES
CITY OF JACKSONVILLE, FLORIDA
 69 KV TRANSMISSION CABLES
 GEORGIA ST. TO MAIN ST.
 SCALE SHOWN
 DATE JAN. 8/55
 CABLE TERMINATION - MAIN STREET SUBSTATION
 APPROVED FOR REYNOLDS, SMITH AND HILLS
 FOR THE CITY OF JACKSONVILLE
 DRAWING NO. 4543-126 D574
 SHEET 8 OF 14

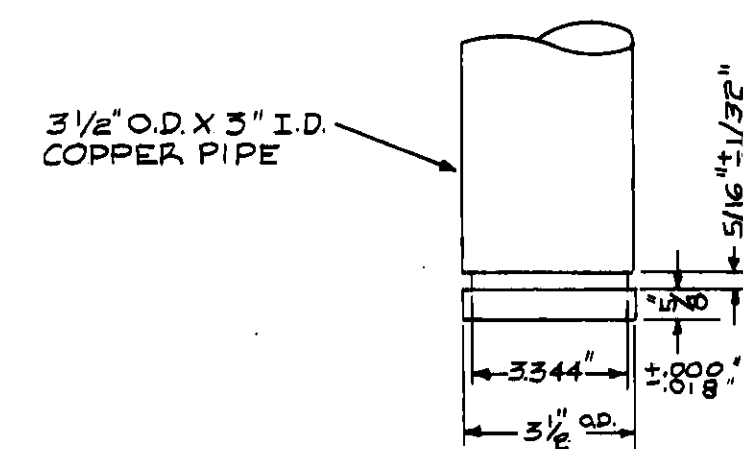
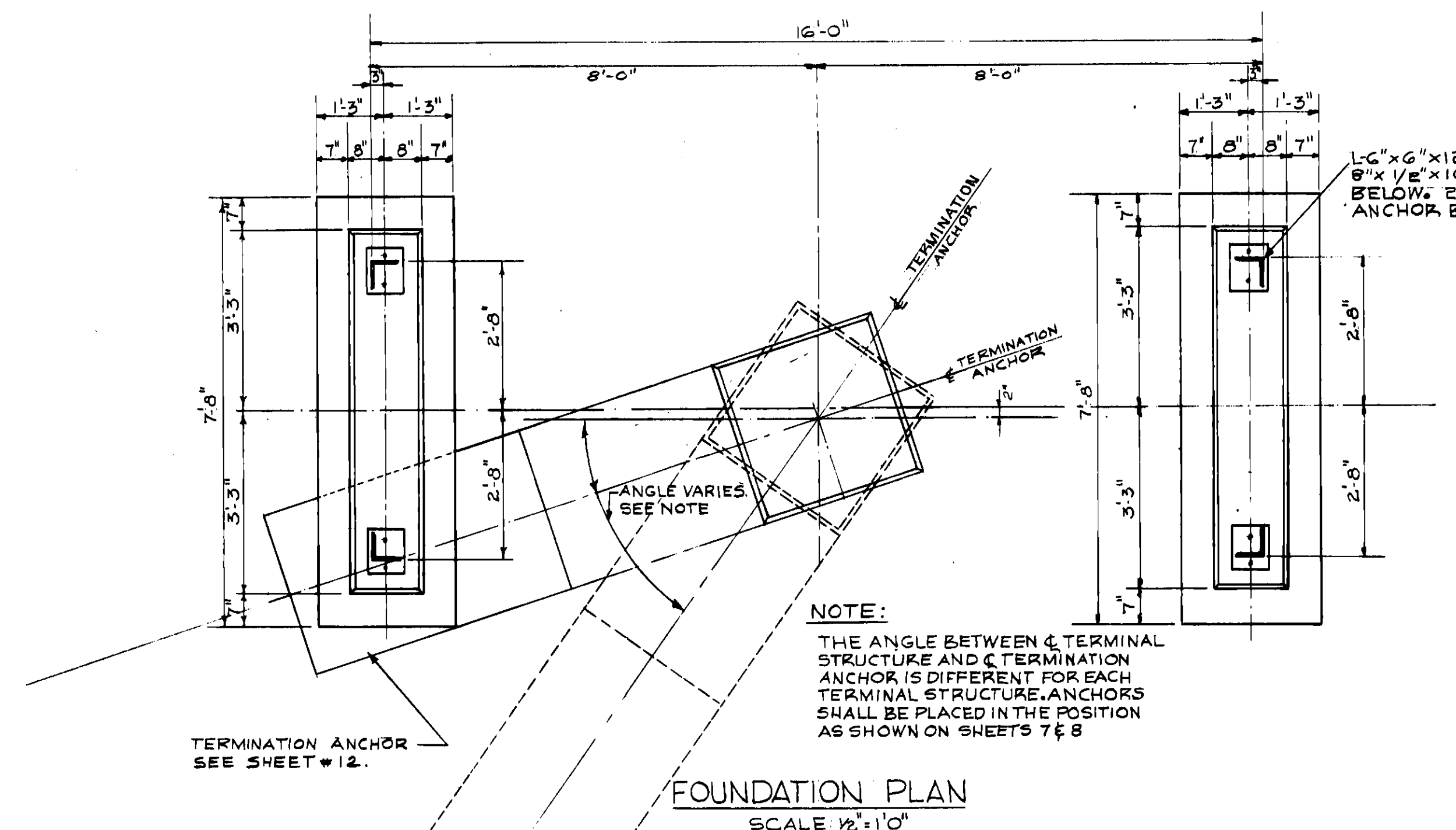
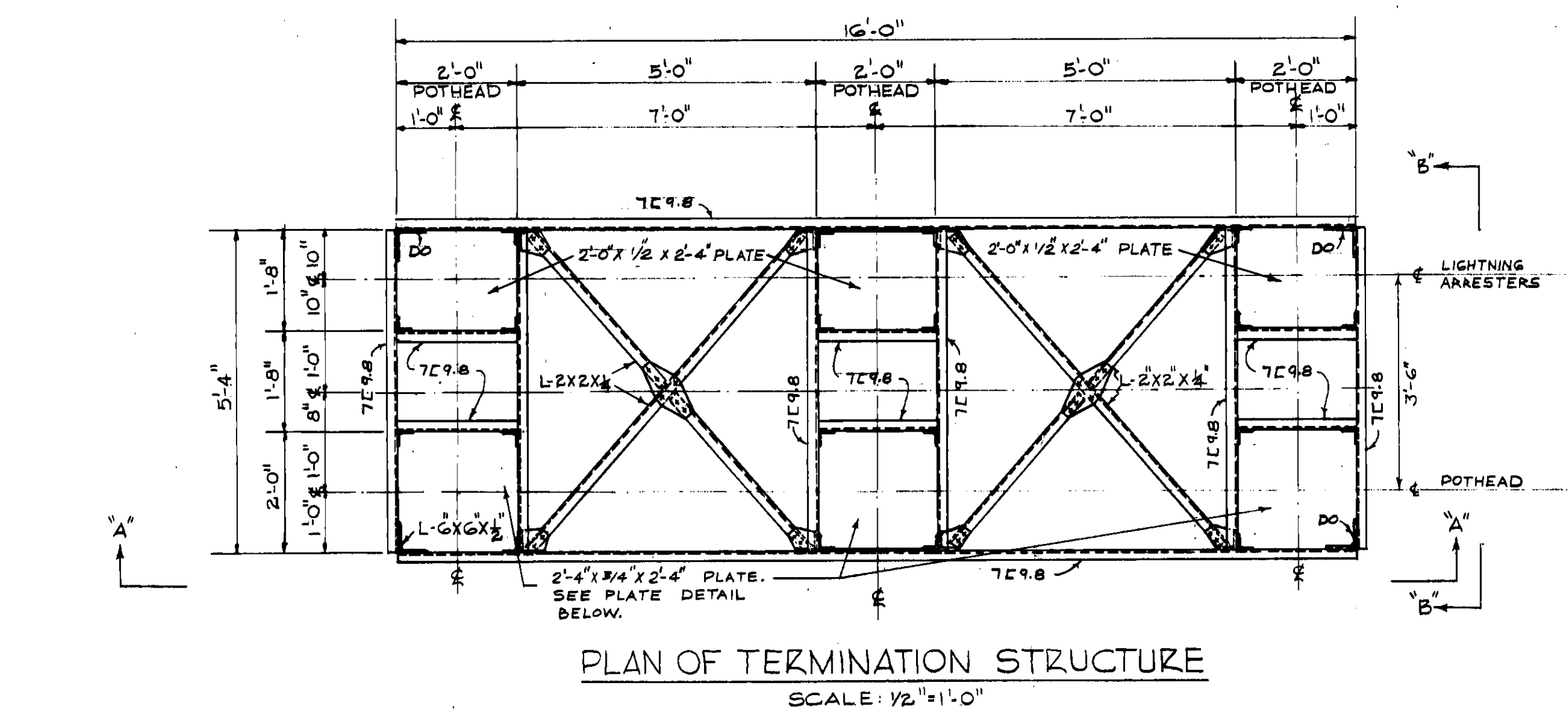
REVISION	DESCRIPTION	DATE	BY	APPROVED	DEPARTMENT HEAD	ENGINEER
1	NORTH FOOTING FOR TERMINAL STR. FOR CIRCUIT NO. 72 CHANGED FROM 10'-0" TO 17'-3" FROM 6" SWG. ROOM	5-23-55	R.C.G.	J.D.T.		
2	TERMINATION FOR CIRCUIT NO. 72 CHANGED FROM 10'-0" TO 17'-3" FROM 6" SWG. ROOM	5-23-55	R.C.G.	J.D.T.		

25264



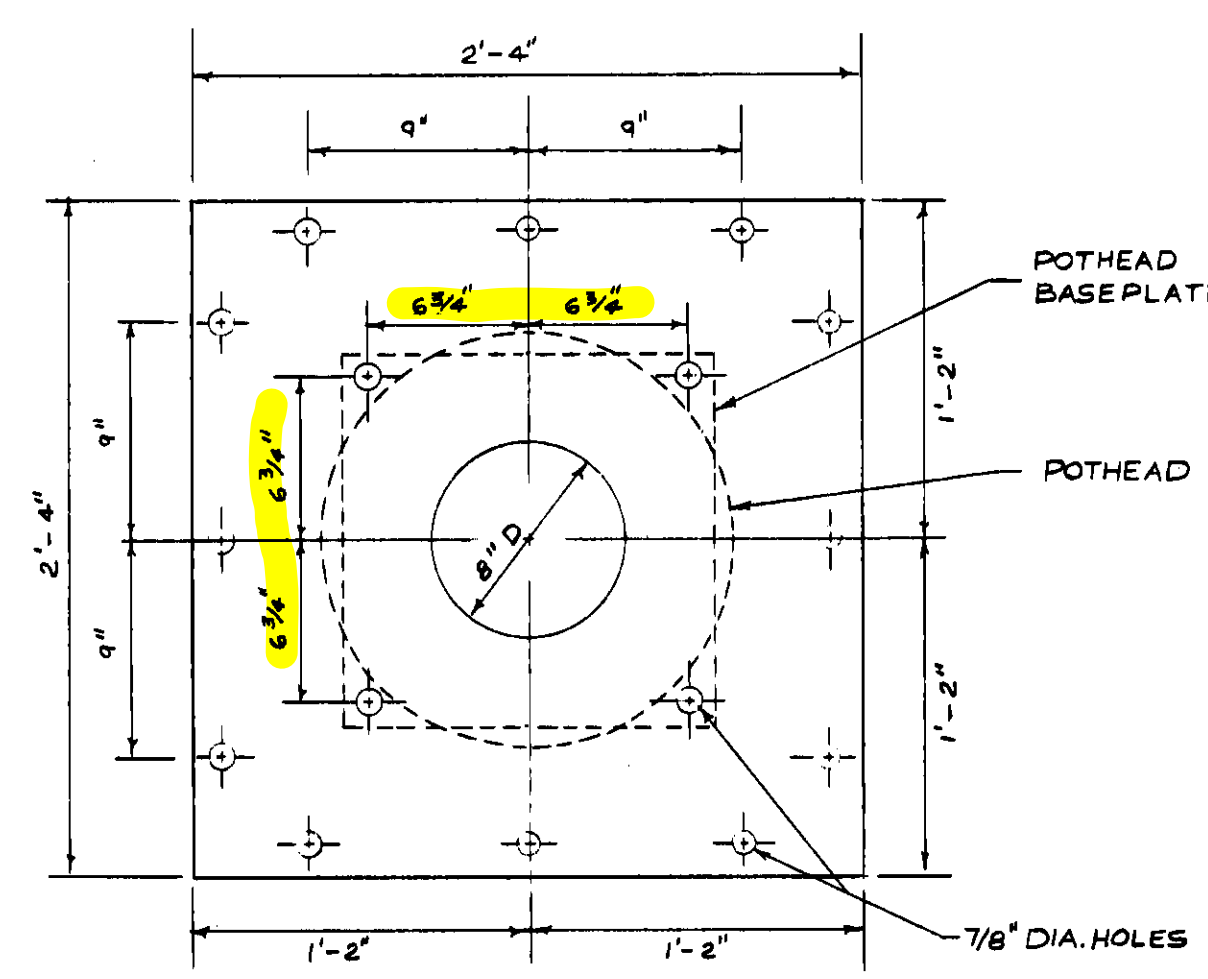
DETAIL OF POTHEAD

SCALE: 3/4" = 1'-0"



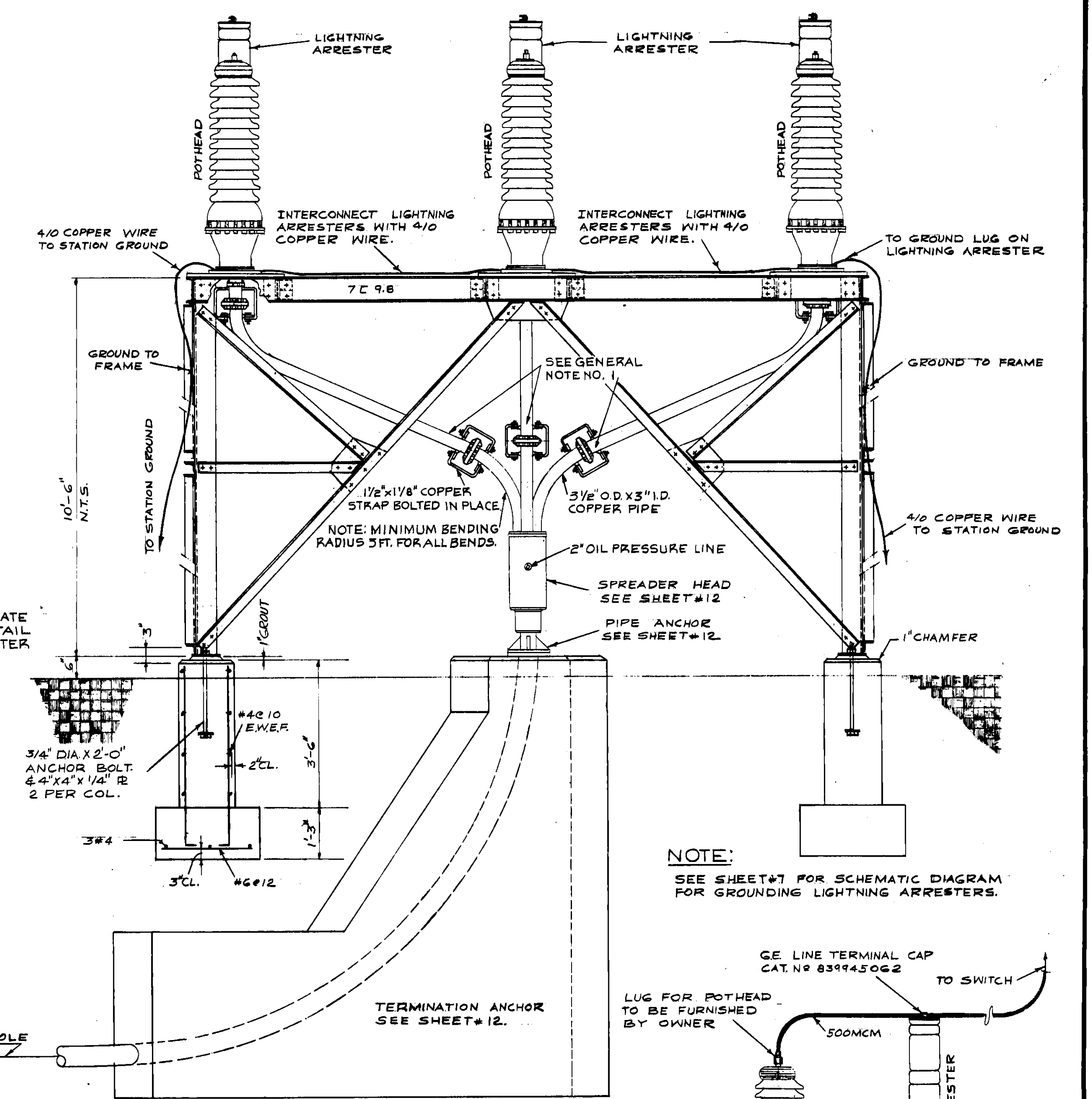
DETAIL OF VICTAULIC GROOVE

SCALE: 3/4" = 1'-0"



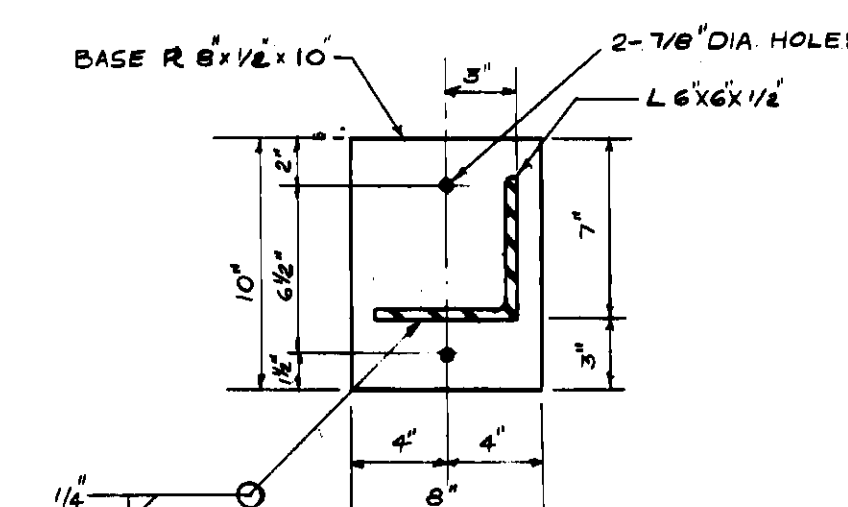
DETAILS OF STEEL PLATE 3/4" THICK

SCALE: 1/2" = 1'-0"



SECTION "A-A"

SCALE: 1/2" = 1'-0"

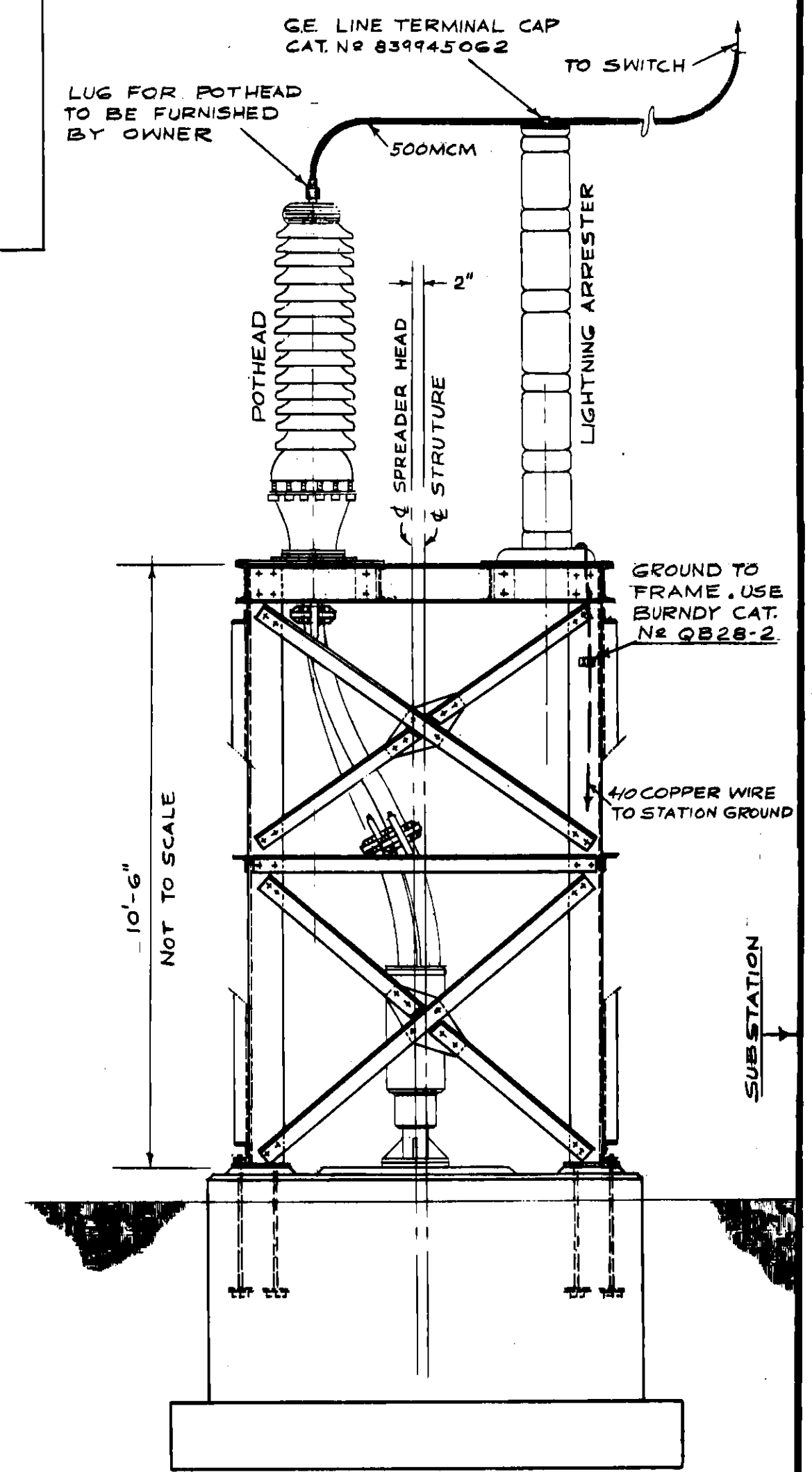


DETAIL OF BASE PLATE

SCALE: 1/2" = 1'-0"

GENERAL NOTES:

1. THESE PIPE BENDS WILL BE SHIPPED 6" LONGER THAN REQUIRED ON THE END INDICATED TO ALLOW FOR FIELD VARIATIONS. THE PIPES WILL HAVE TO BE CHECKED & SOME POSSIBLE FIELD ADJUSTMENT MADE. THEY CAN THEN BE CUT & THE END GROOVED AS SHOWN ON DETAIL OF VICTAULIC GROOVE. VICTAULIC TOOL WILL BE FURNISHED BY OXONITE CO.
2. ALL CONNECTIONS SHALL BE BOLTED.
3. ALL BOLTS TO BE 3/4" DIA. UNLESS OTHERWISE NOTED.
4. ON BOLTED CONNECTIONS SPLIT LOCK WASHERS SHALL BE USED THROUGHOUT THE STRUCTURE.
5. BACKFILL SHALL BE OF EARTH ONLY. NO FOREIGN MATTER SHALL BE INCLUDED. BEFORE PLACING STRUCTURE FOUNDATIONS ALL BACKFILL AND DISTURBED SOIL SHALL BE COMPACTED BY VIBRATORY METHODS.
6. ALL L'S 3" X 3" X 1/2" UNLESS OTHERWISE NOTED. ALL GUSSETS TO BE 3/8" PLATE.

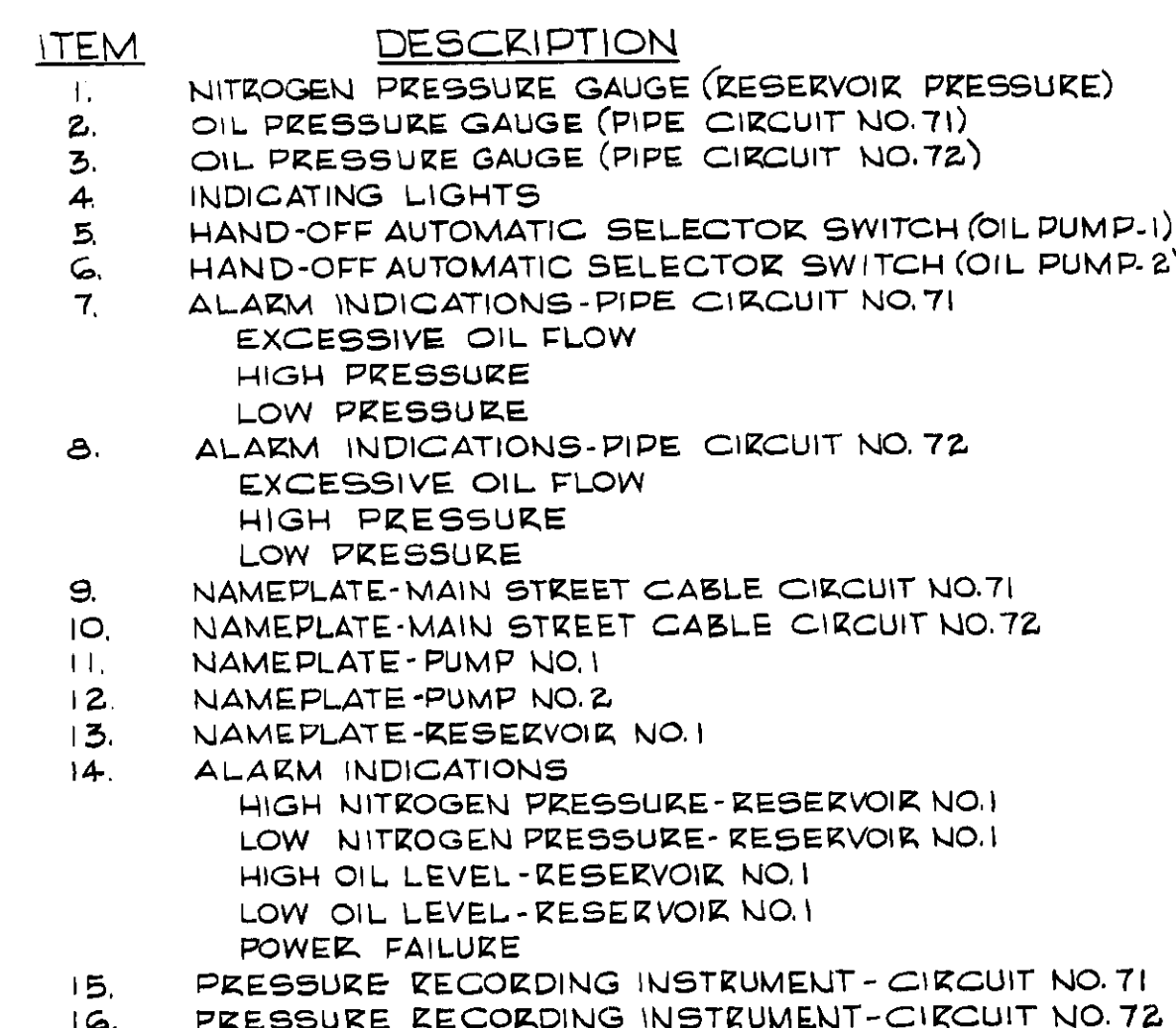


SECTION "B-B"

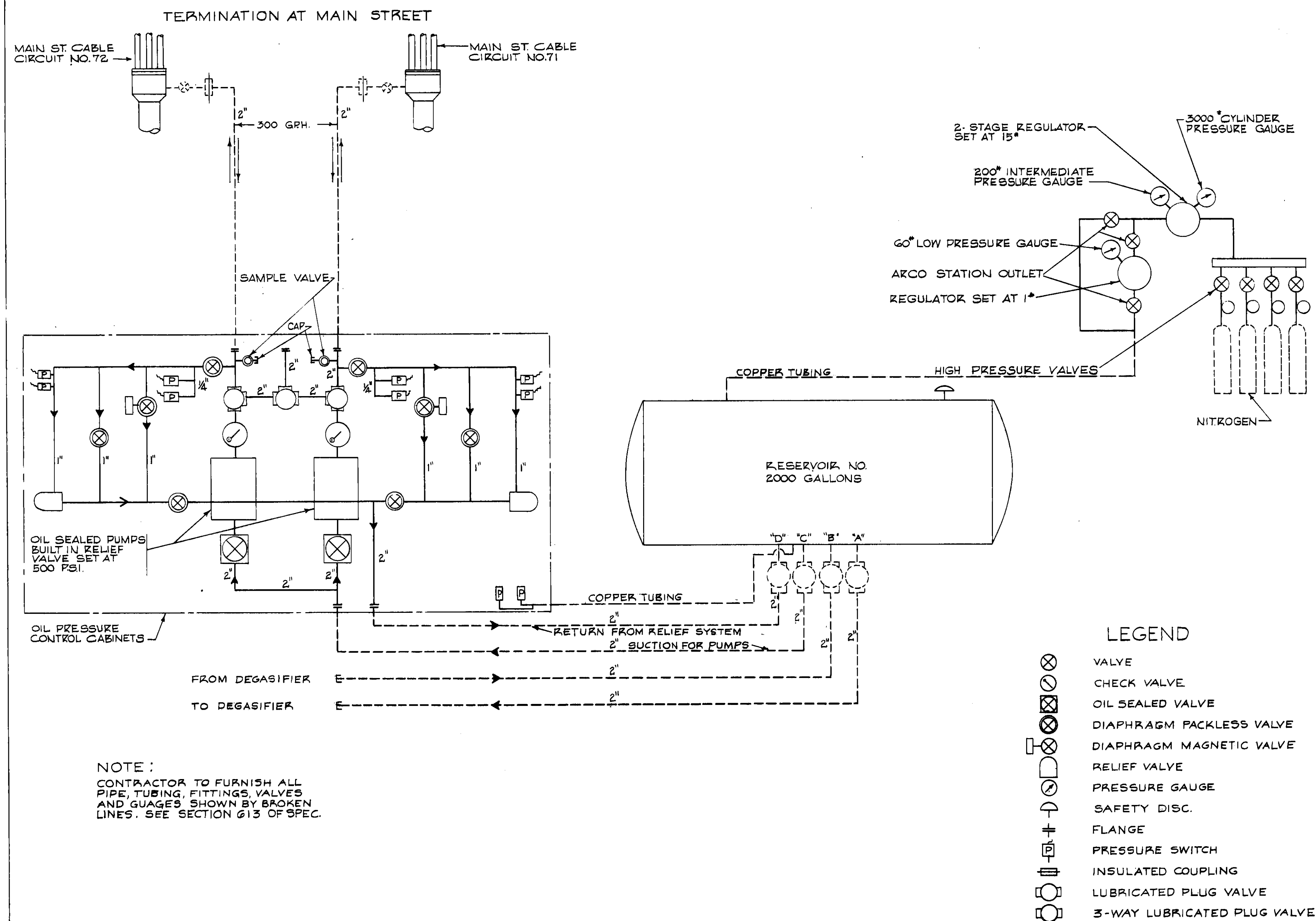
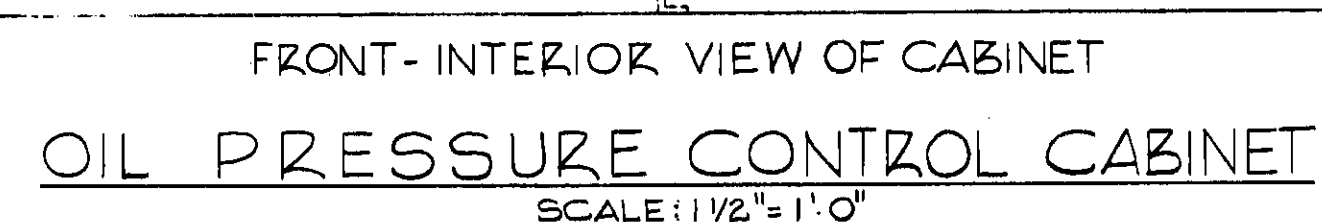
SCALE: 1/2" = 1'-0"

PROJECT NO. 4543-126		WO. NO. 1480-126-1947-CCN	
REYNOLDS, SMITH AND HILLS			
ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA			
DRAWN: DPE		DEPARTMENT OF ELECTRIC & WATER UTILITIES	
CHECKED: EWH		CITY OF JACKSONVILLE, FLORIDA	
DATE: JAN. 31, 55		69 KV TRANSMISSION CABLES	
		GEORGIA ST. TO MAIN ST.	
TERMINAL STRUCTURE & DETAILS			
APPROVED FOR REYNOLDS, SMITH AND HILLS			
FOR THE CITY OF JACKSONVILLE		DRAWING NO.	
DEPARTMENT HEAD		4543-126	
ENGINEER MANAGER		D575	
		SHEET 9 OF 14	

REVISION	DESCRIPTION	DATE	BY	APPROVED

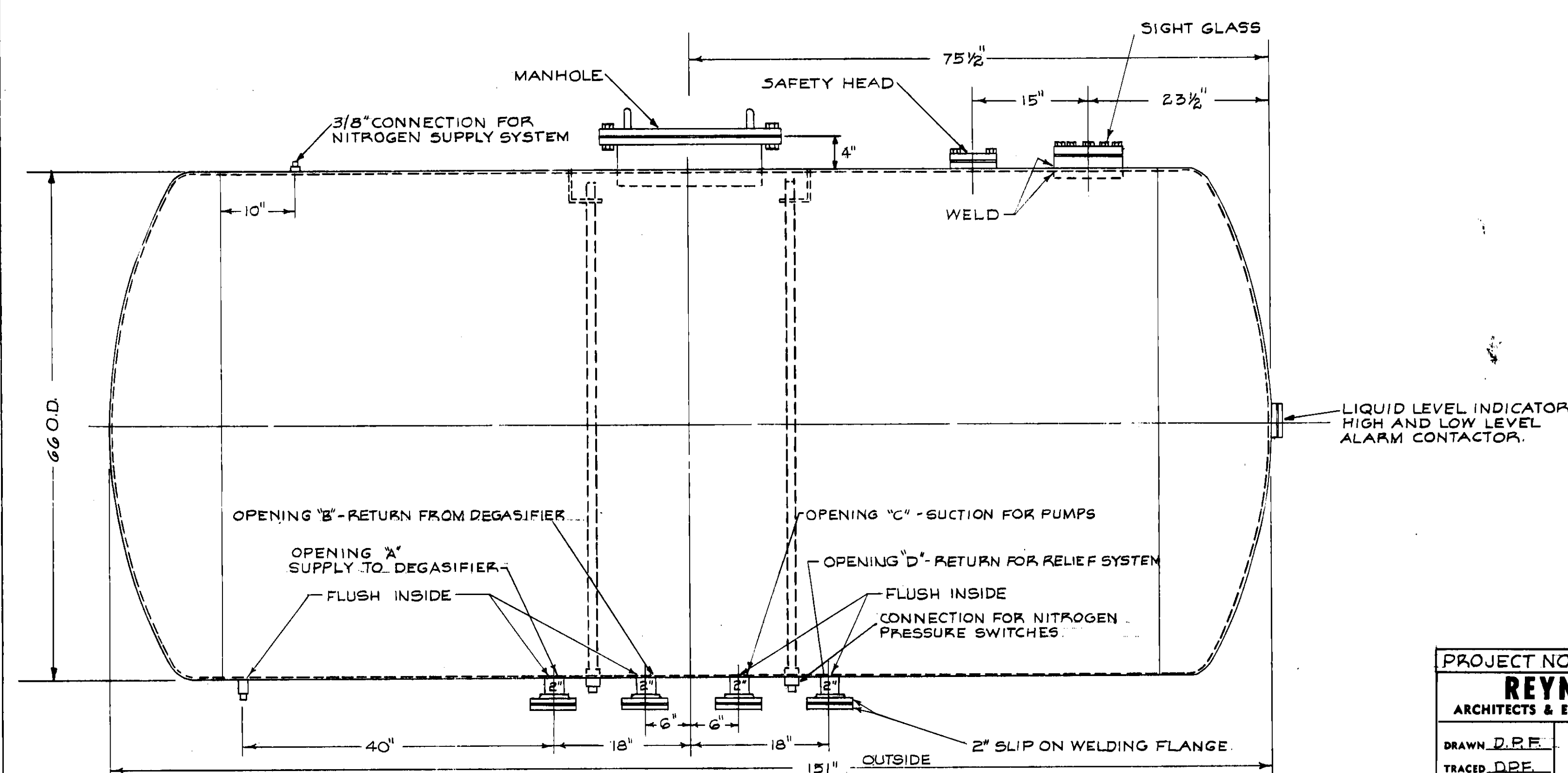
[illegible]

BASE OF CABINET



SCHEMATIC DIAGRAM - OIL PRESSURE CONTROL SYSTEM

SCALE NONE

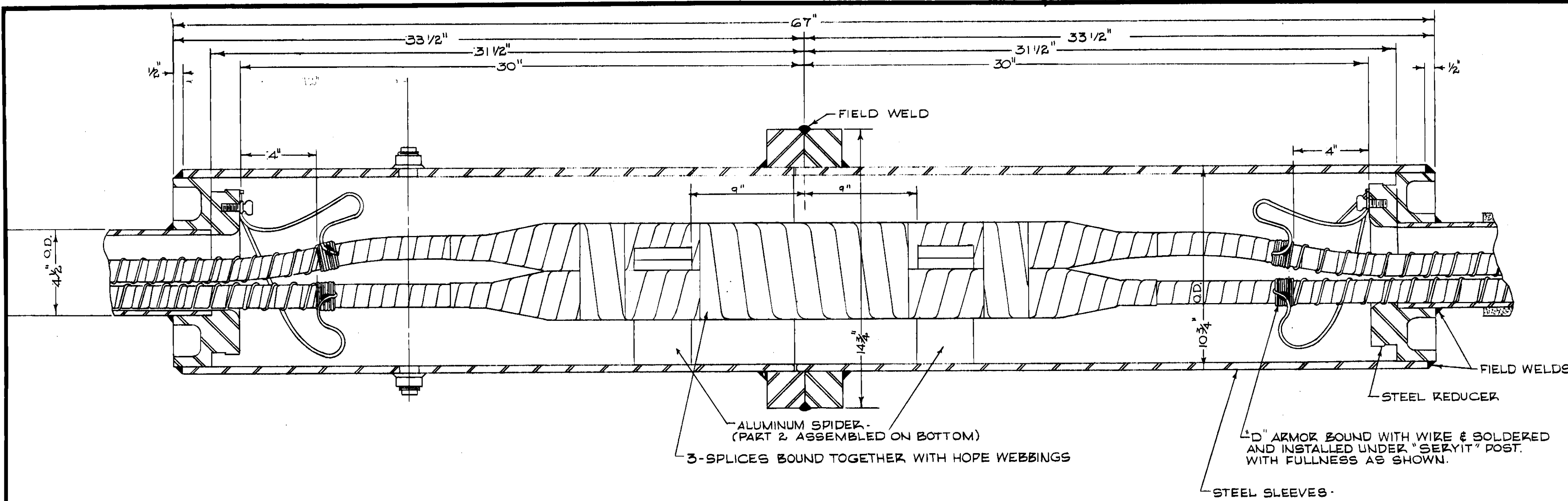


OIL RESERVOIR

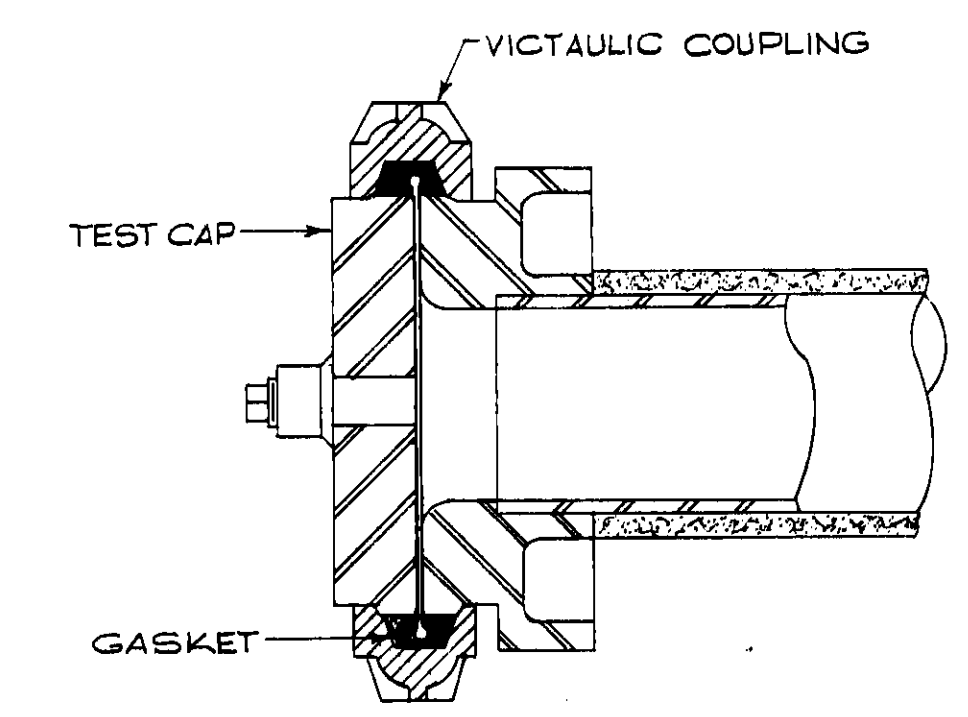
SCALE: 1" = 1' - 0"

PROJECT NO. 4543 -126		WO. NO. 1480-126-1947-CCN	
REYNOLDS, SMITH AND HILLS ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA			
DRAWN <u>D.F.F.</u> TRACED <u>D.F.F.</u> CHECKED <u>D.W.H.</u> SCALE <u>SHOWN</u> DATE <u>JAN 31, 65</u>	DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA 69 KV TRANSMISSION CABLES GEORGIA ST. TO MAIN ST. PUMPING & CONTROL EQUIPMENT		
APPROVED FOR REYNOLDS, SMITH AND HILLS			
<i>RC Blaylock</i>	<i>W.H. Klein</i>	<i>W.H. Klein</i>	
FOR THE CITY OF JACKSONVILLE		DRAWING NO.	
DEPARTMENT HEAD	<i>W.H. Klein</i> ENGINEERING DEPARTMENT	4543-126	
	<i>W.H. Klein</i> ENGINEER MANAGER	D576	
DEPARTMENT HEAD		SHEET 10 OF 14	

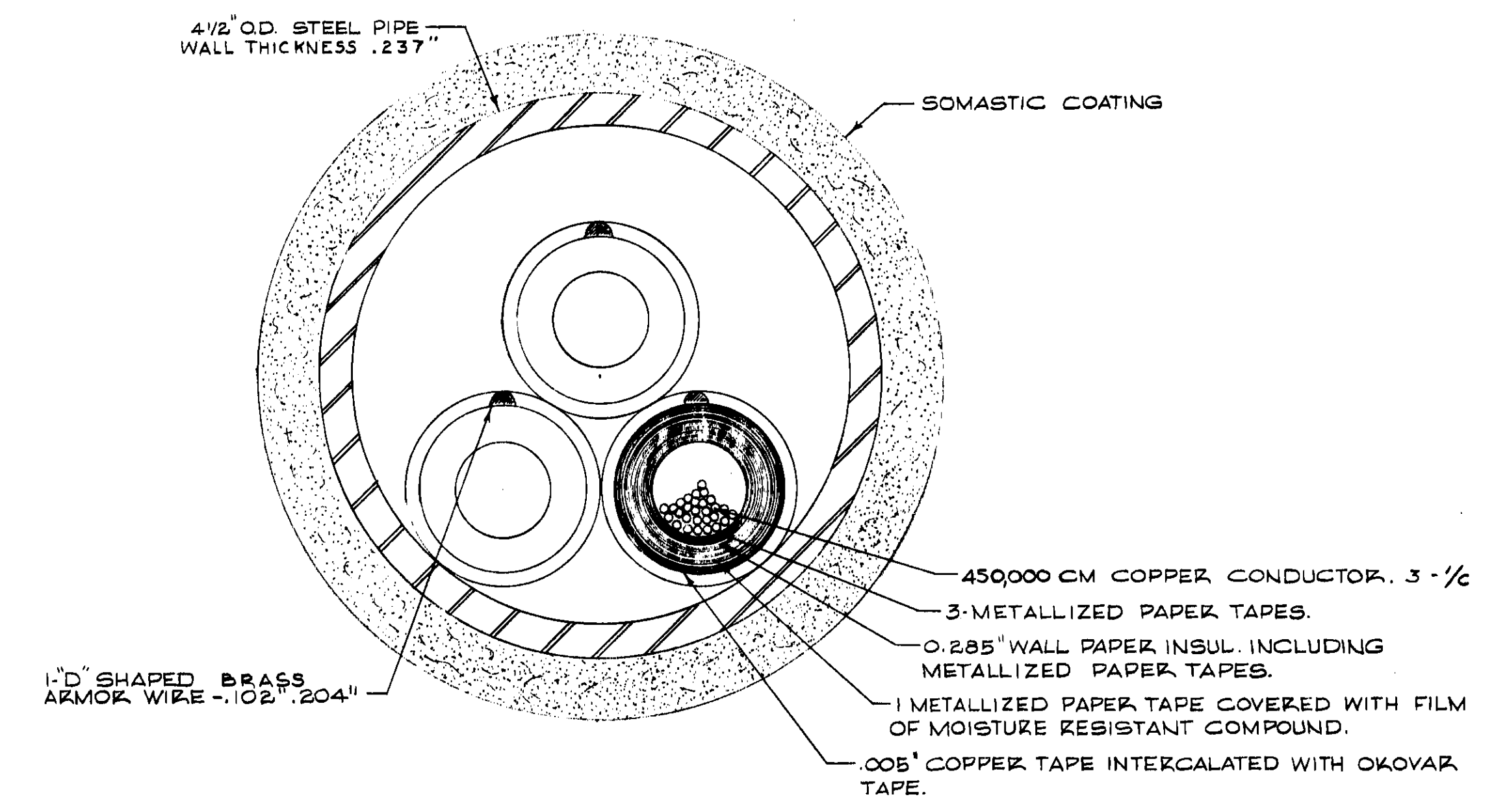
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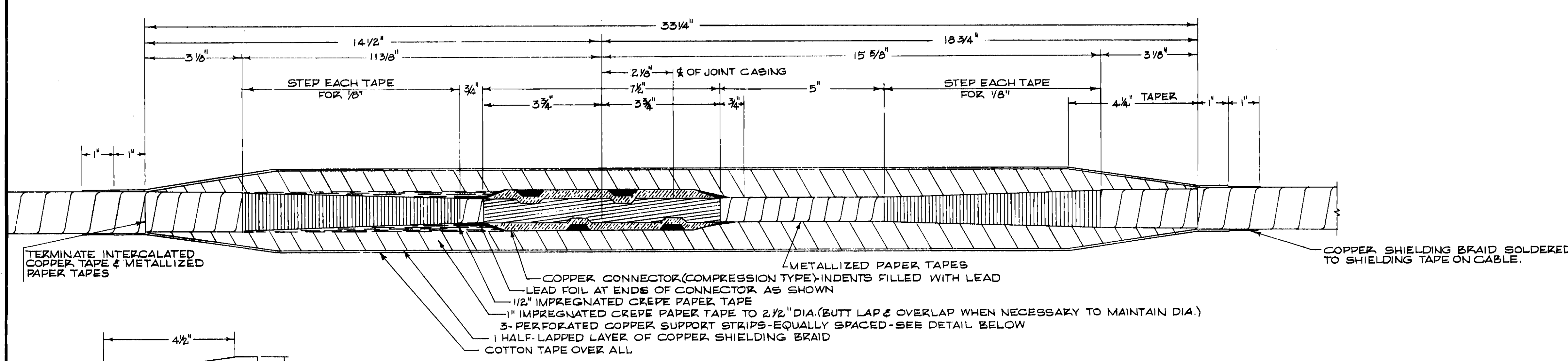
ASSEMBLY OF STRAIGHT JOINT
SCALE 3\"/>



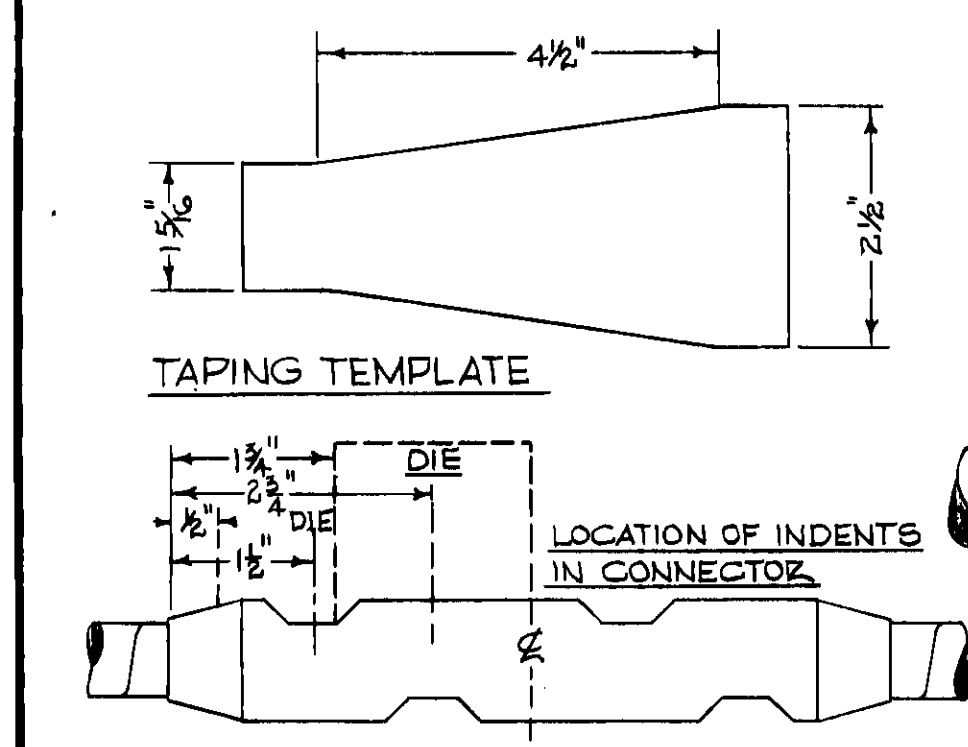
HIGH PRESSURE TEST ON LINE PIPE



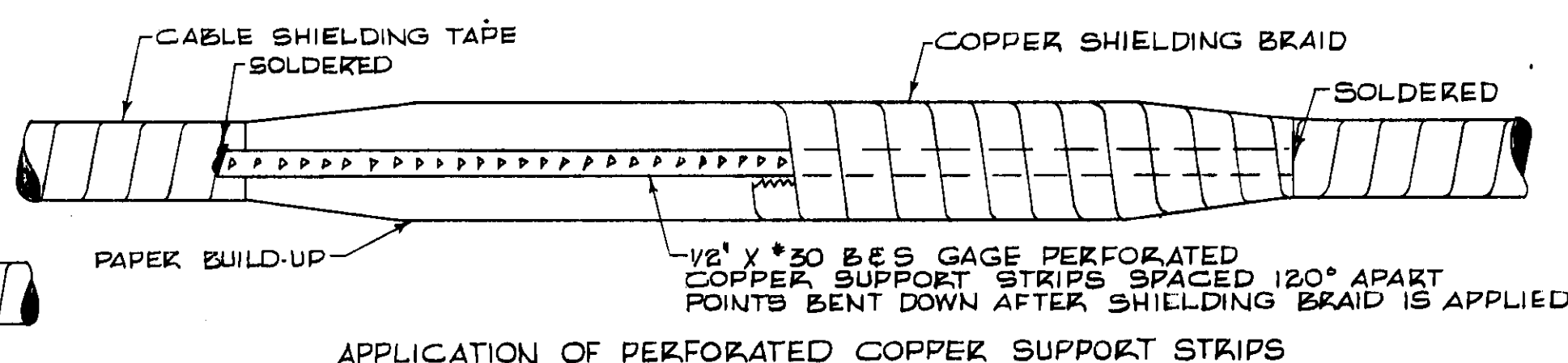
CROSS SECTION OF PIPE AND CABLE
NON-LEADED CONSTRUCTION
SCALE 1\"/>



SPLICE FOR 69 KV CABLE
SCALE 1/2\"/>

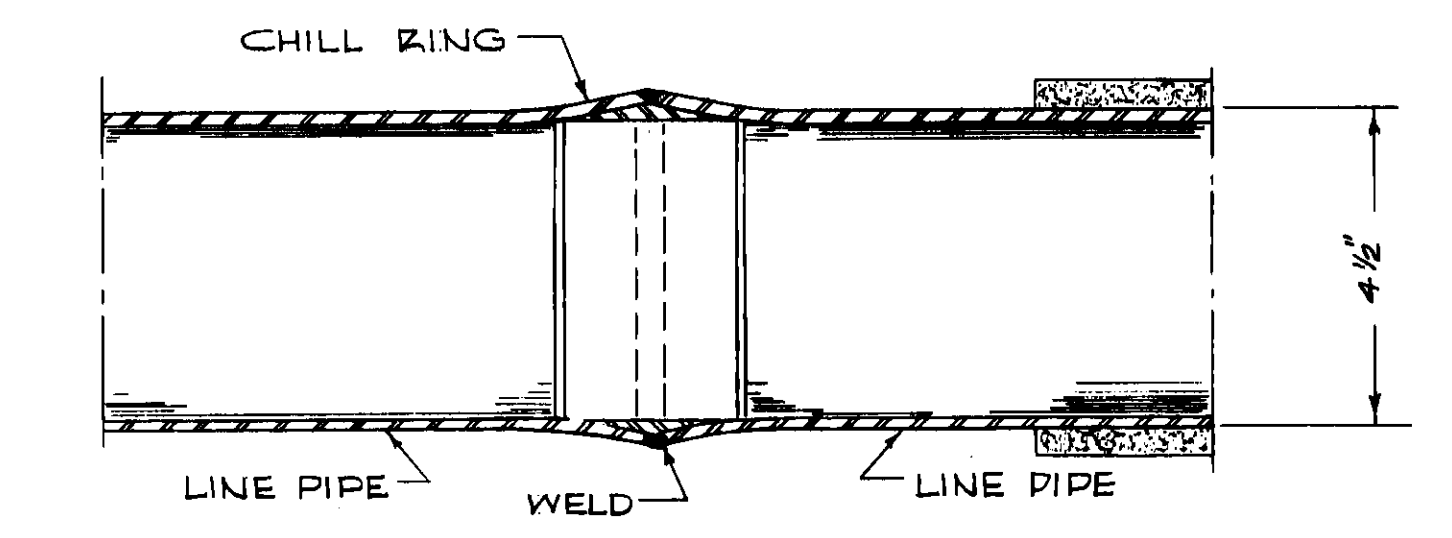


TAPING TEMPLATE

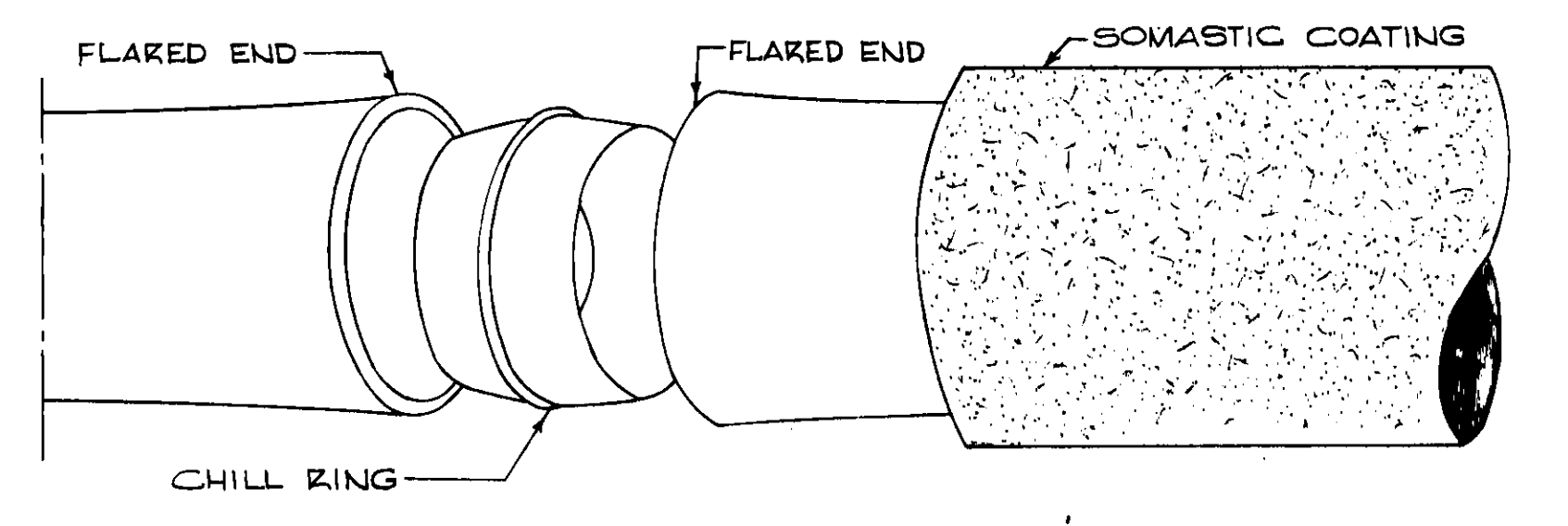


APPLICATION OF PERFORATED COPPER SUPPORT STRIPS

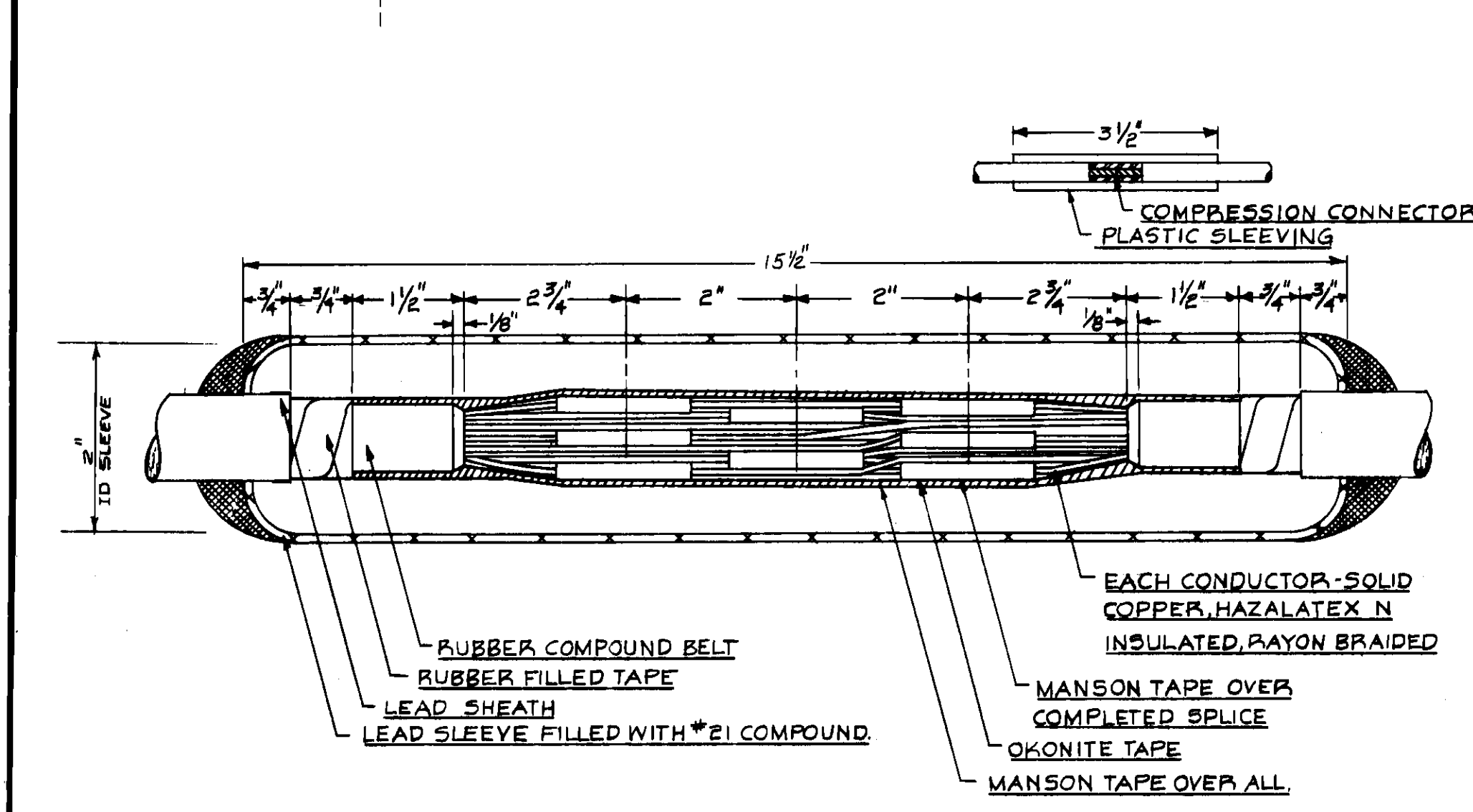
NOTE:
CENTER PUNCH HOLES ON CONNECTOR
INDENTS FOR LEAD FILLING PLUGS.



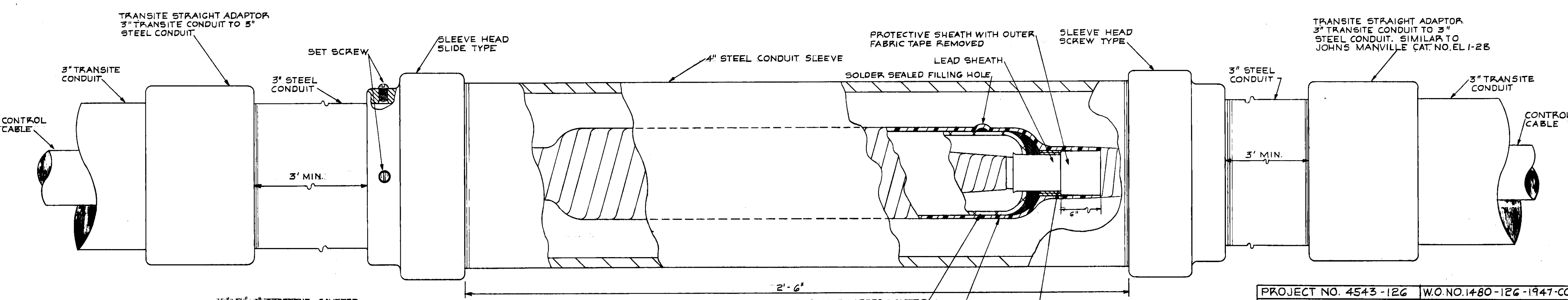
SECTION AT CENTER LINE



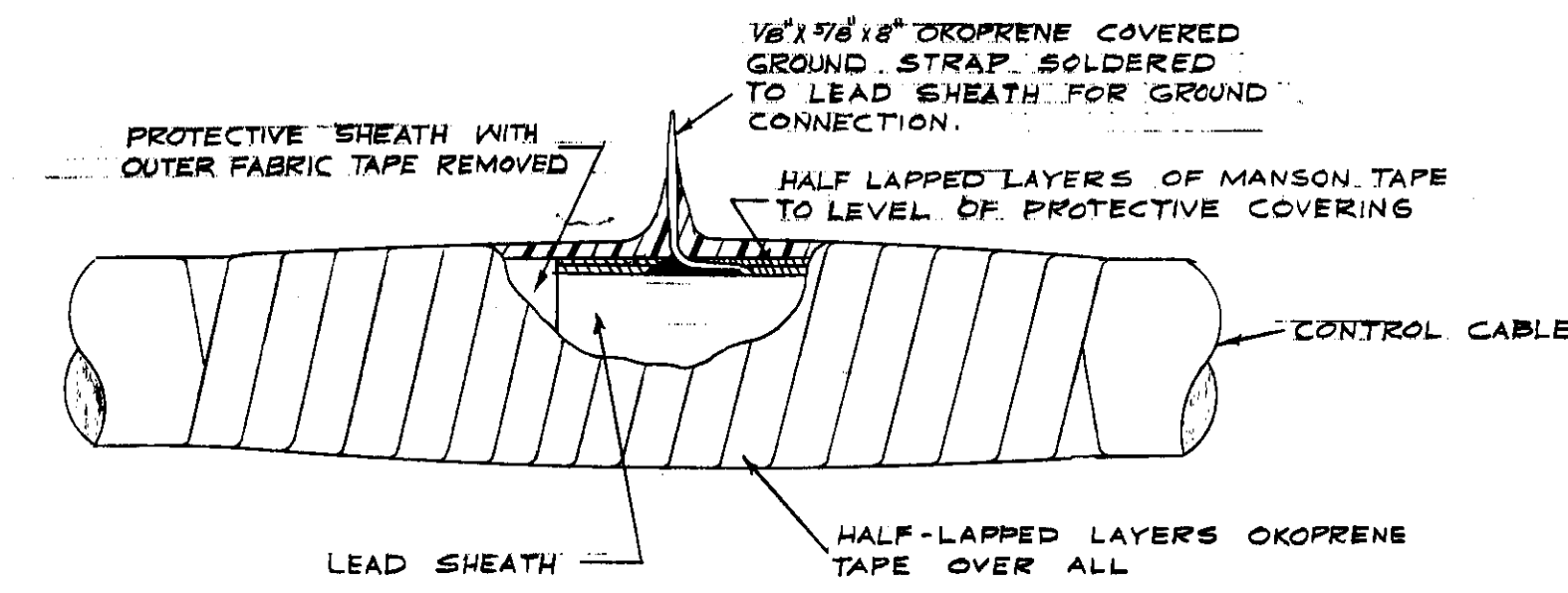
TYPICAL CHILL RING JOINT
SCALE NONE



SPLICE FOR CONTROL CABLE
SCALE: NONE



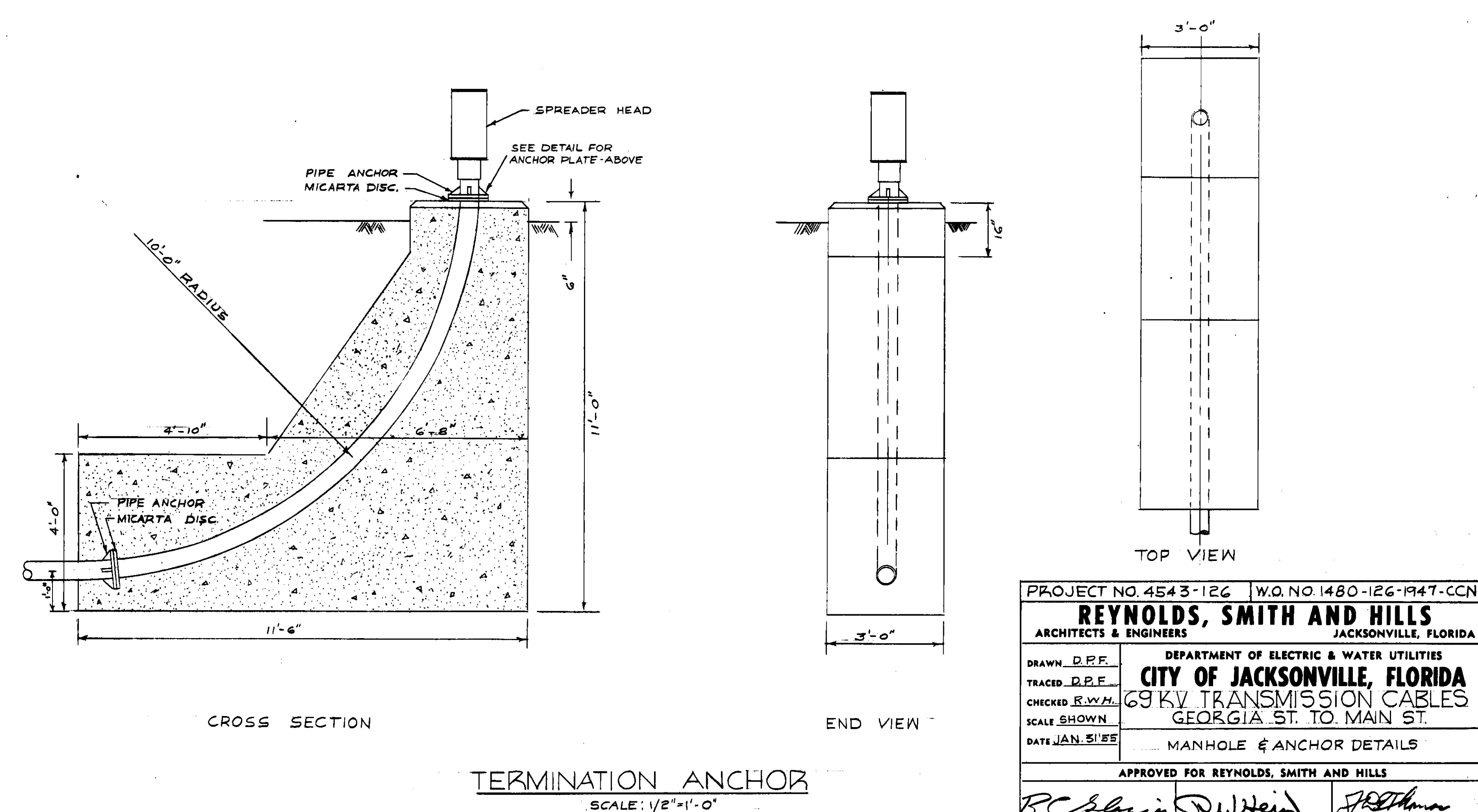
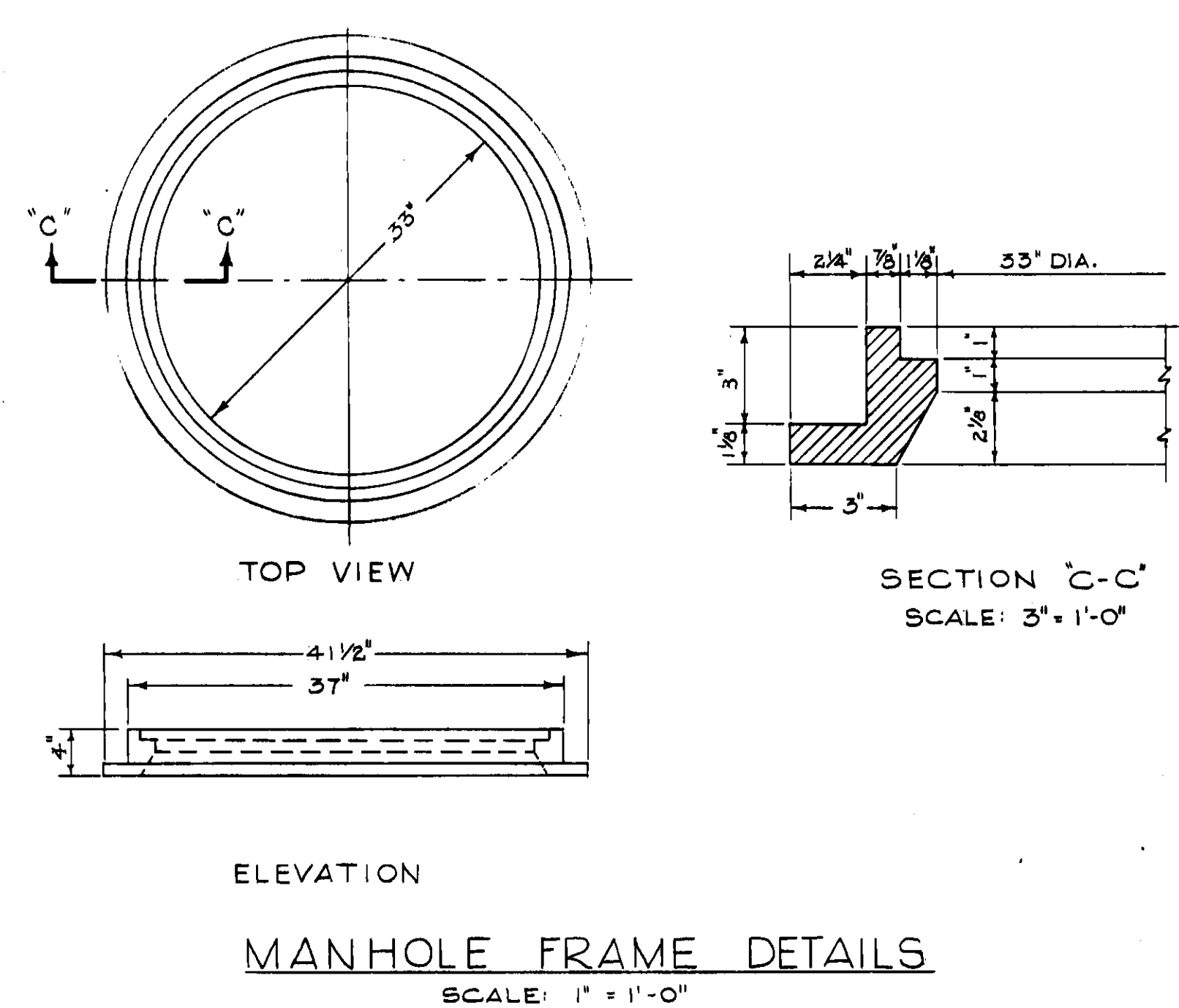
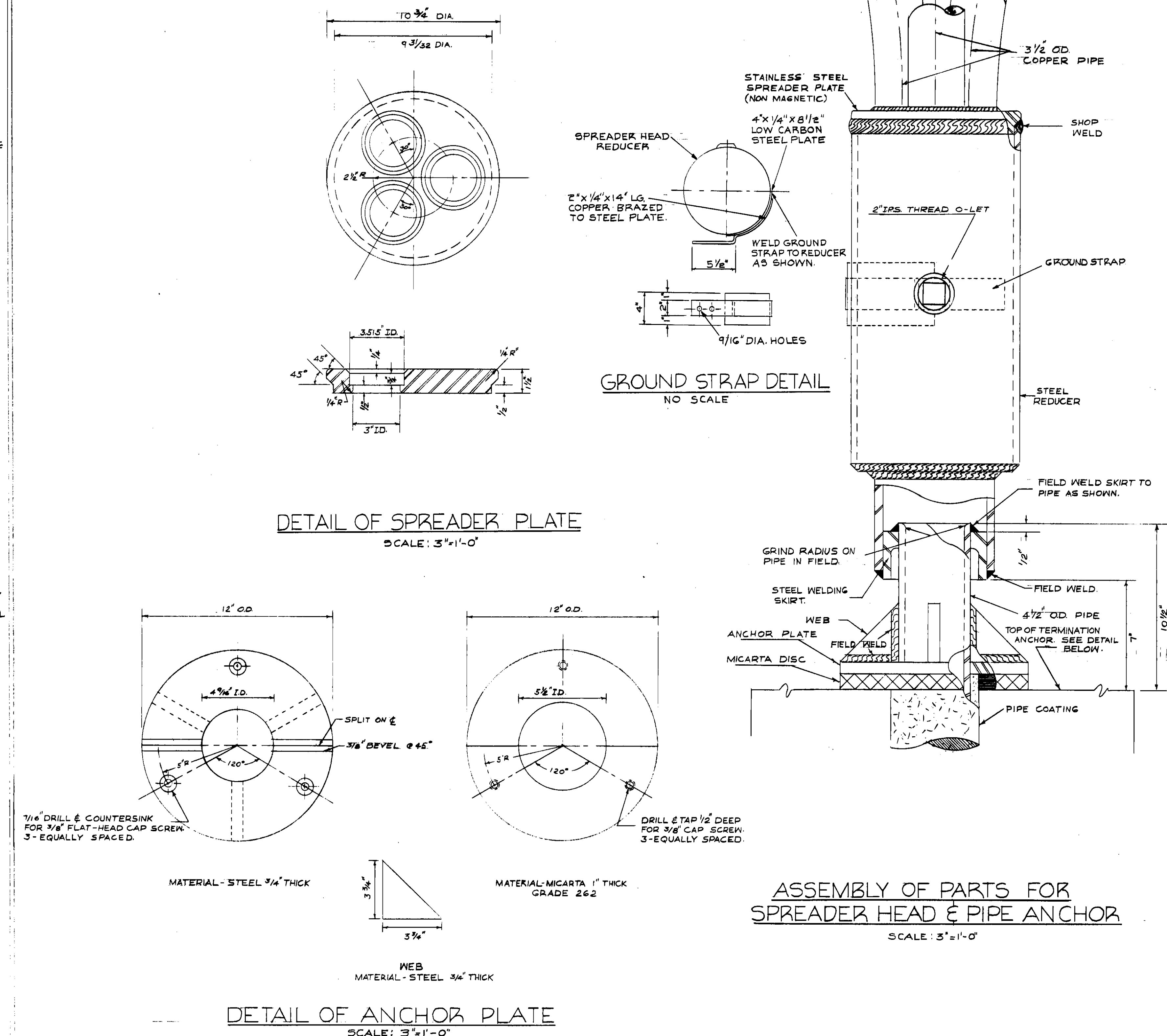
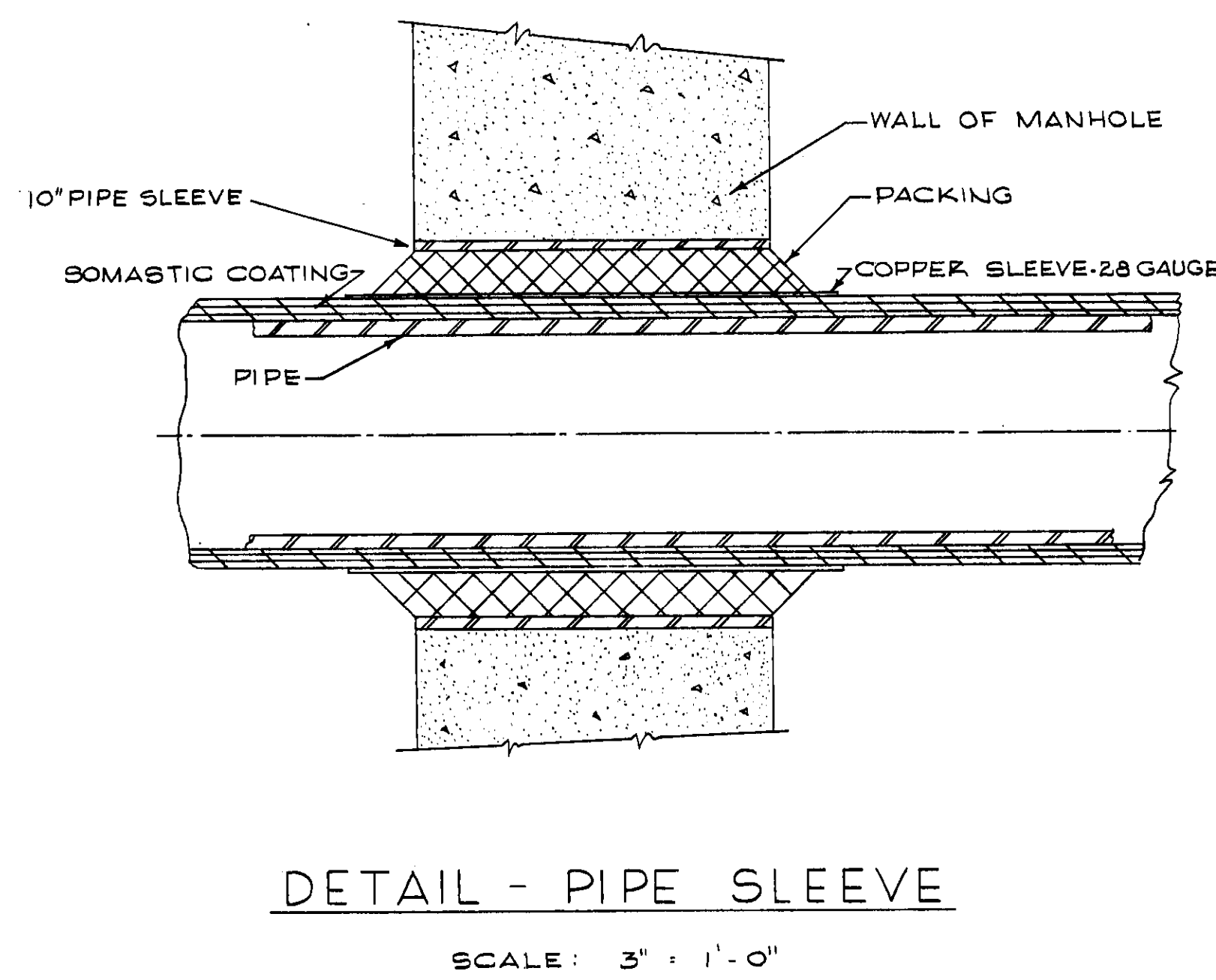
ASSEMBLY OF SPLICING SLEEVE
FOR CONTROL CABLE
SCALE: VERTICAL - 3/4\"/>



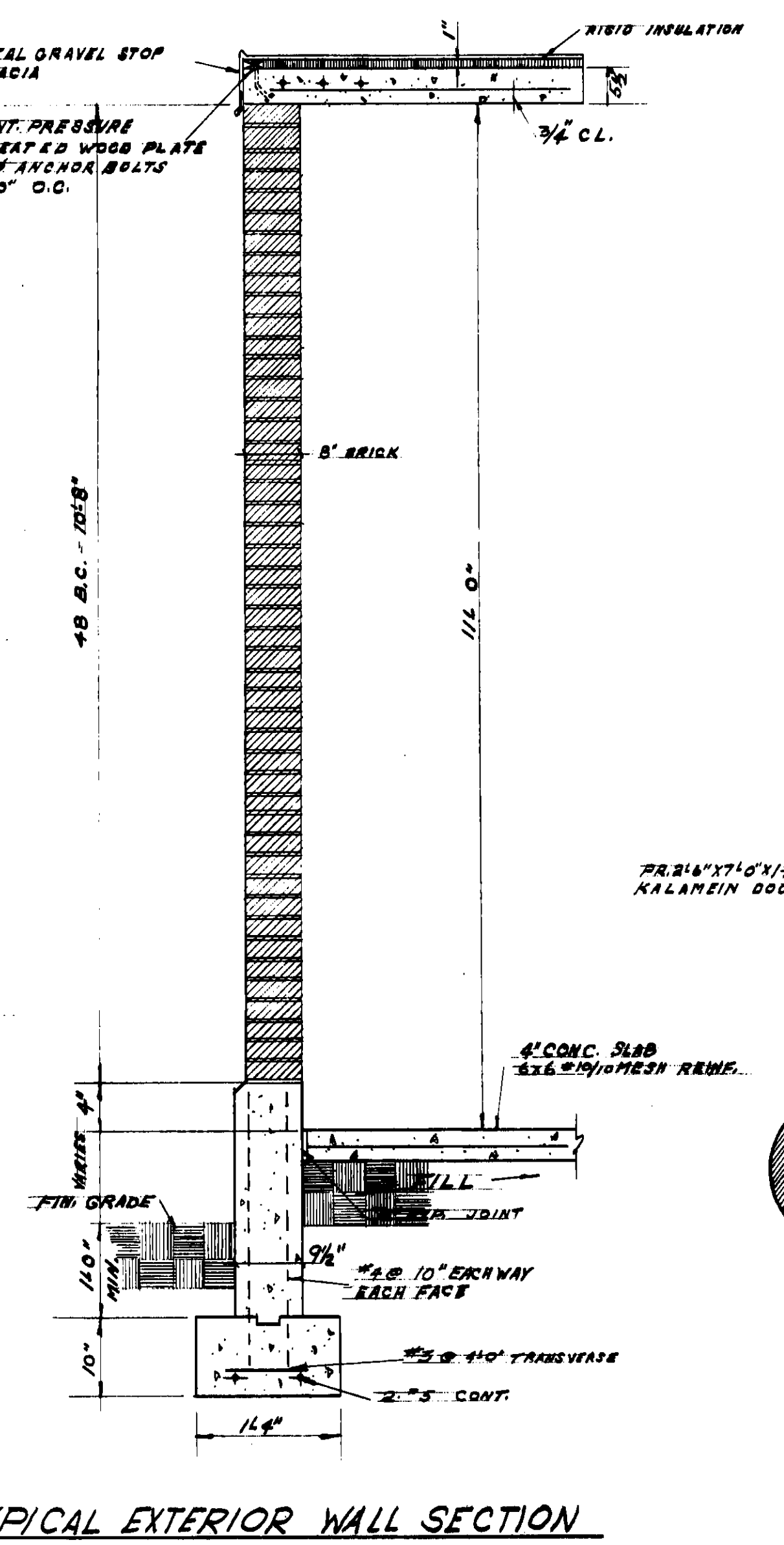
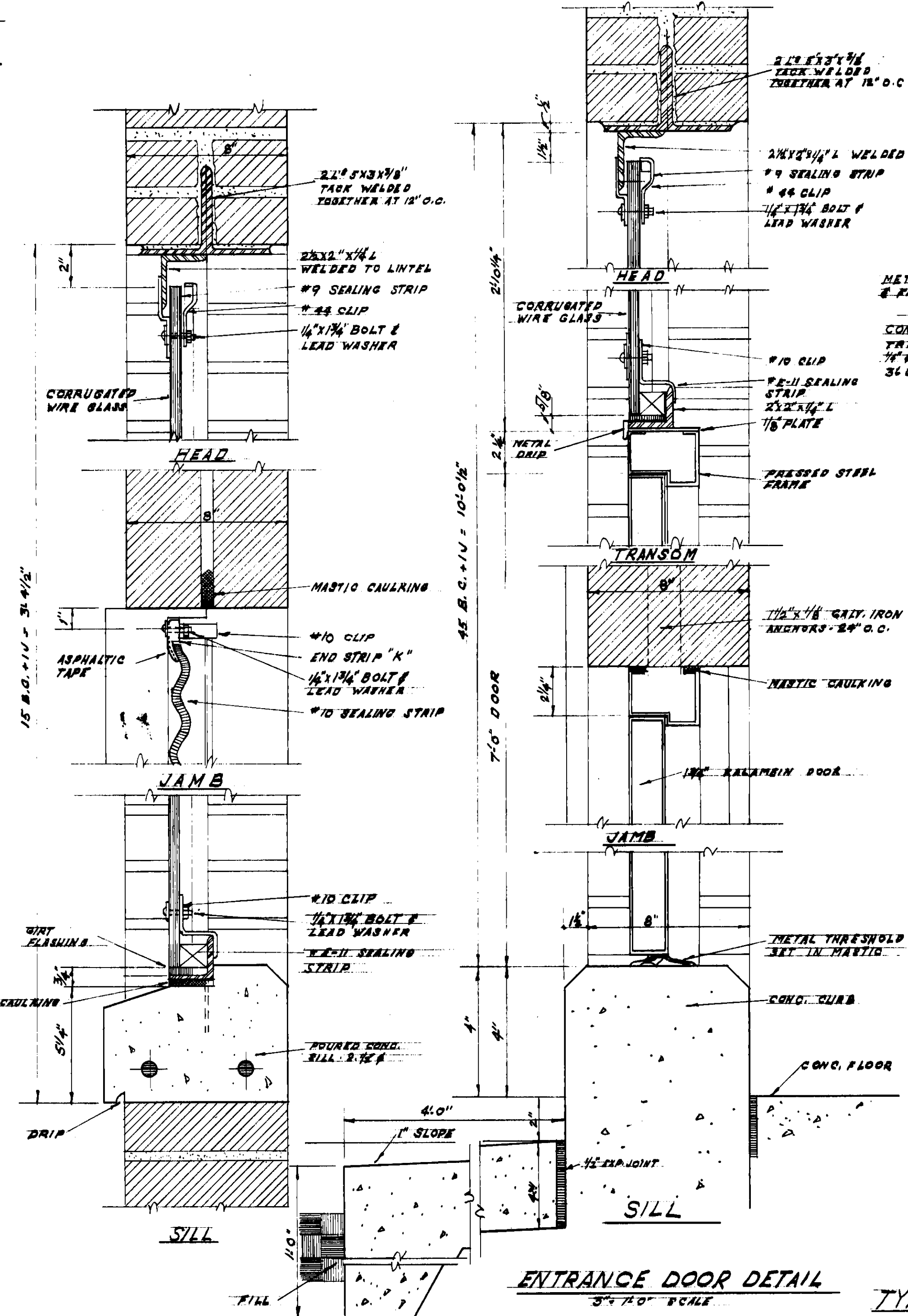
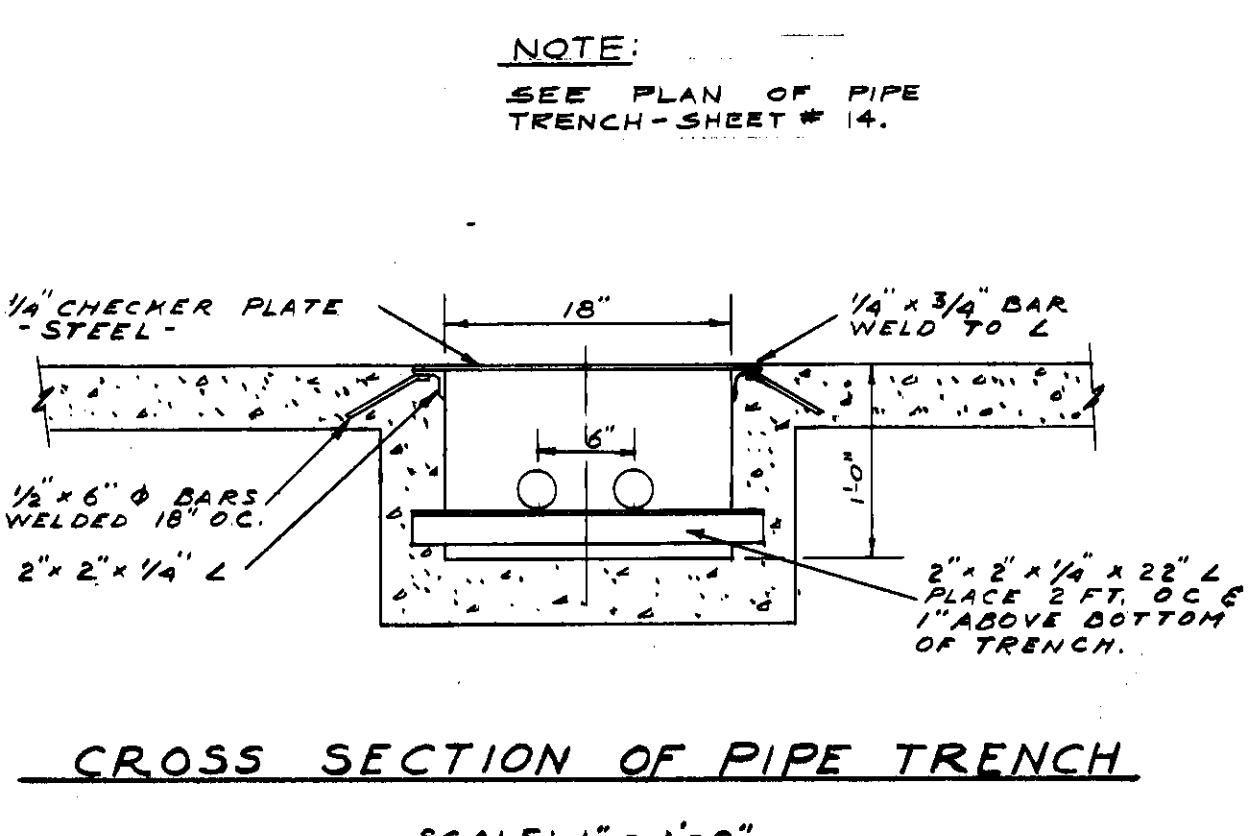
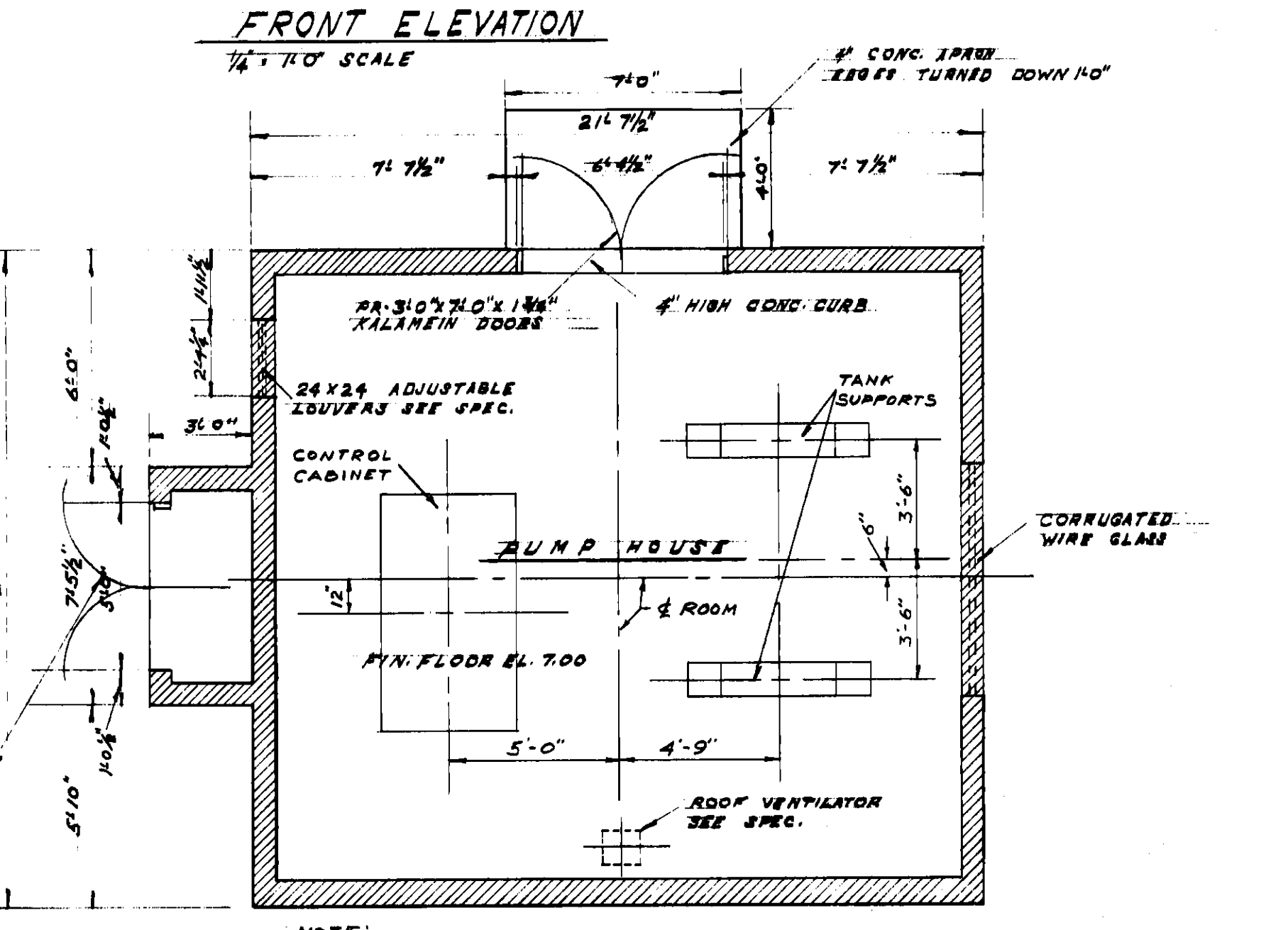
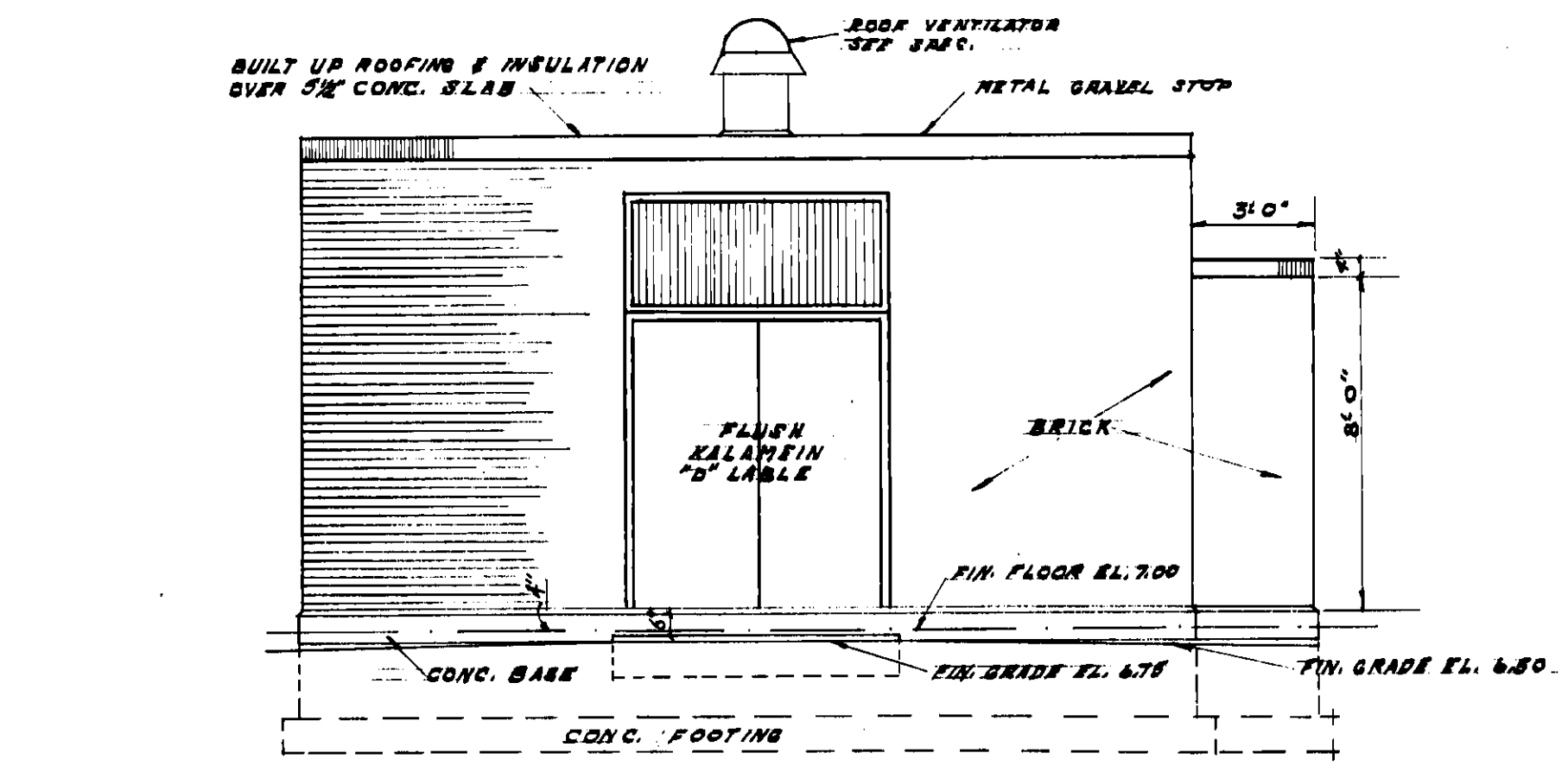
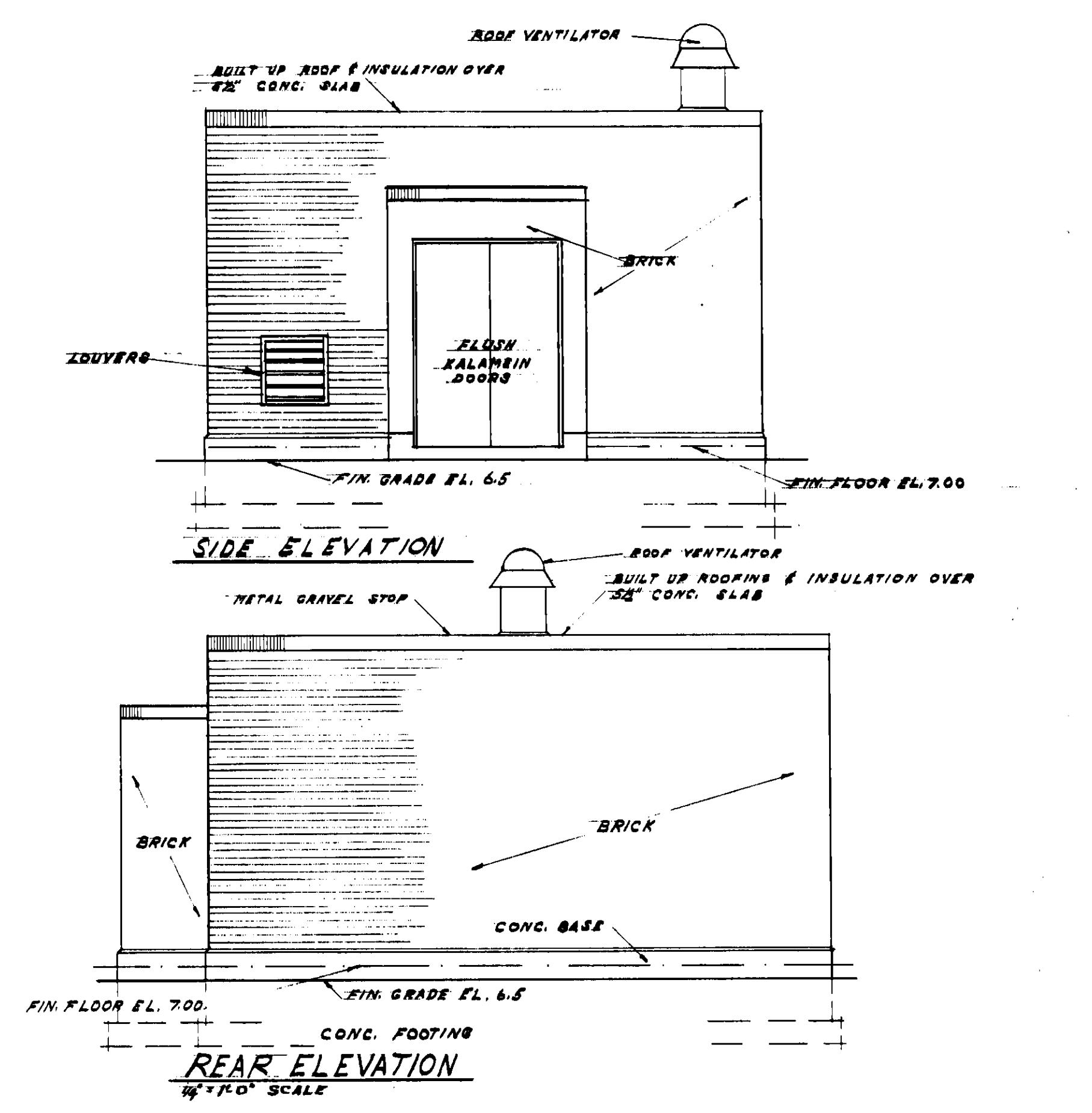
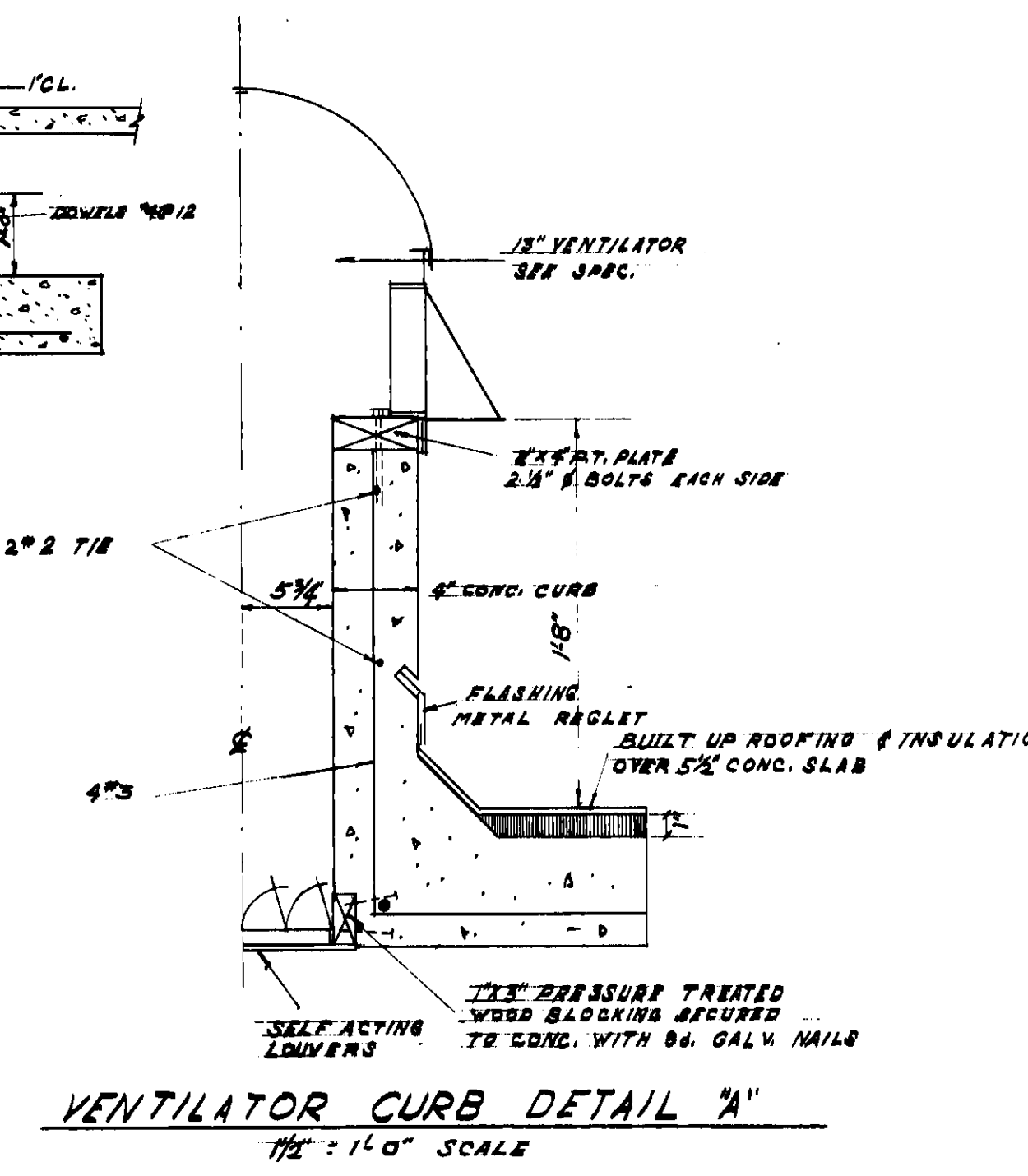
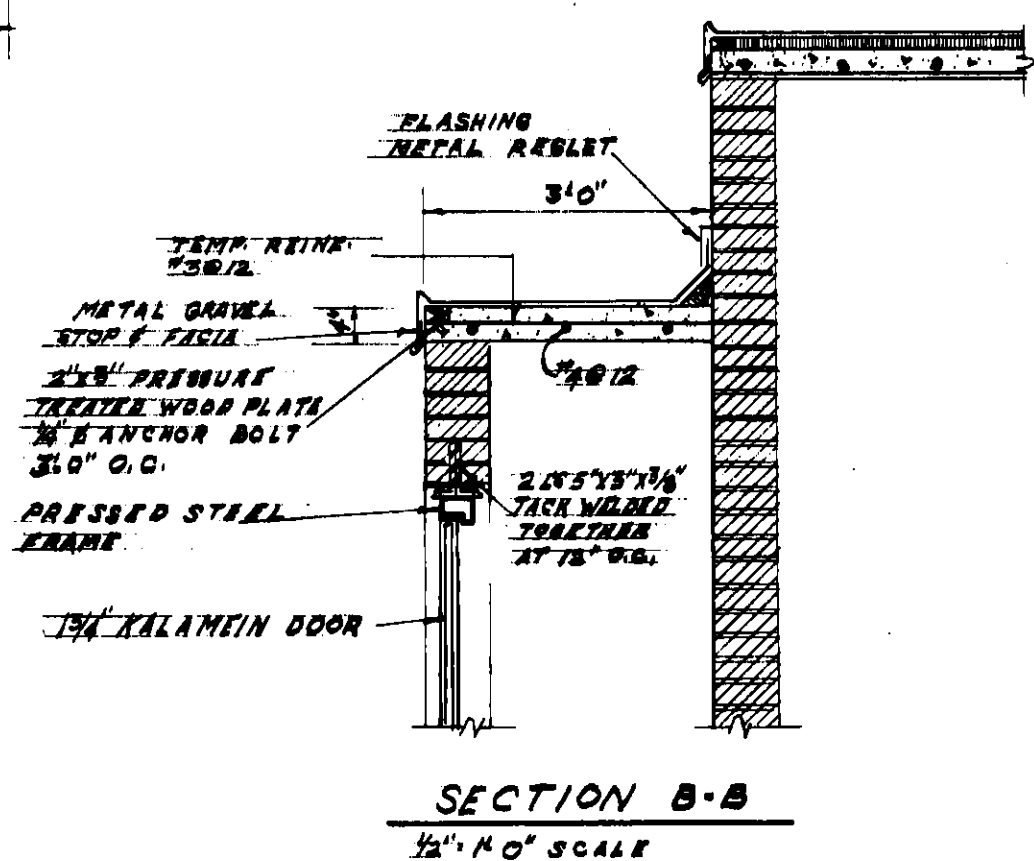
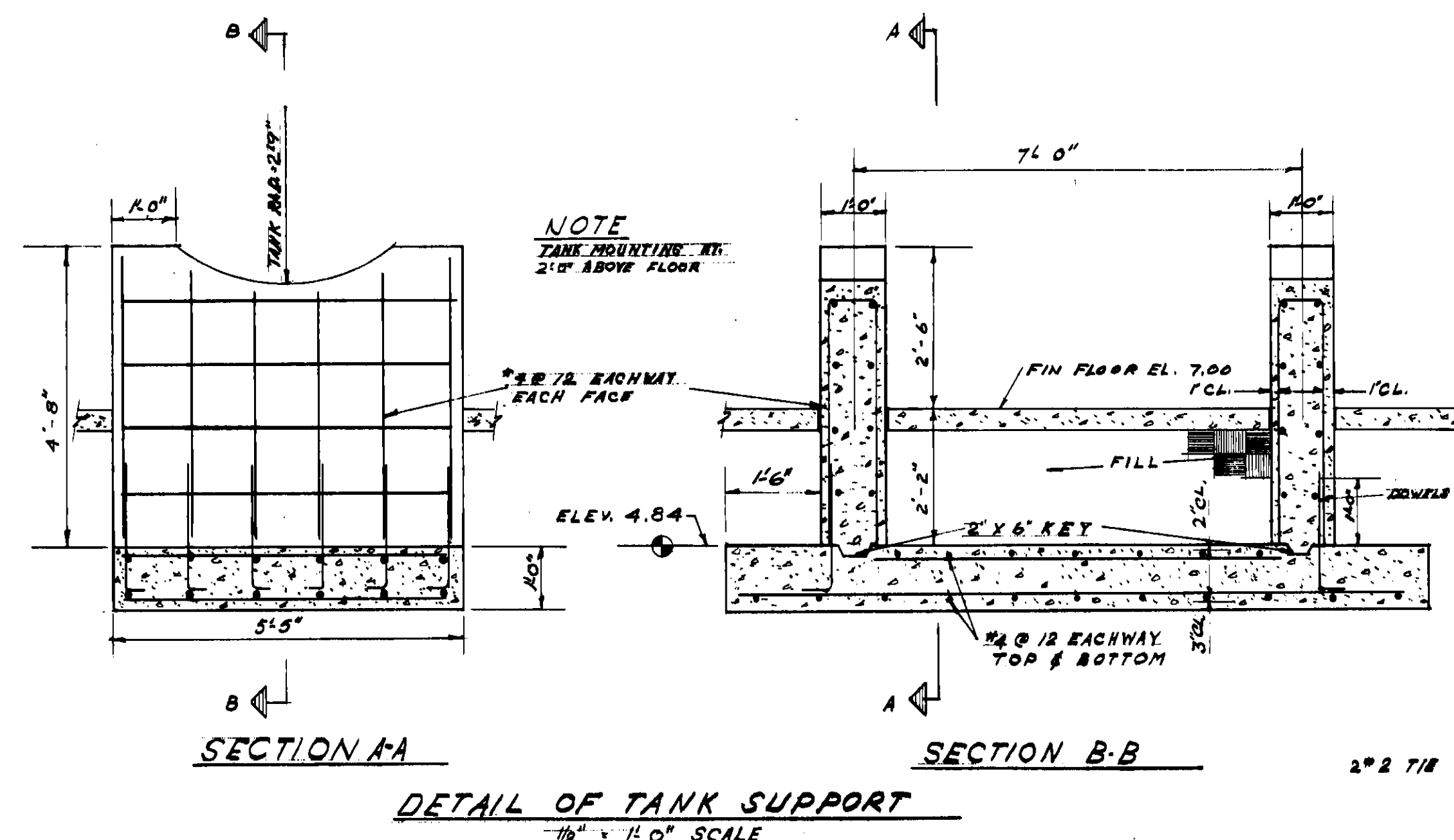
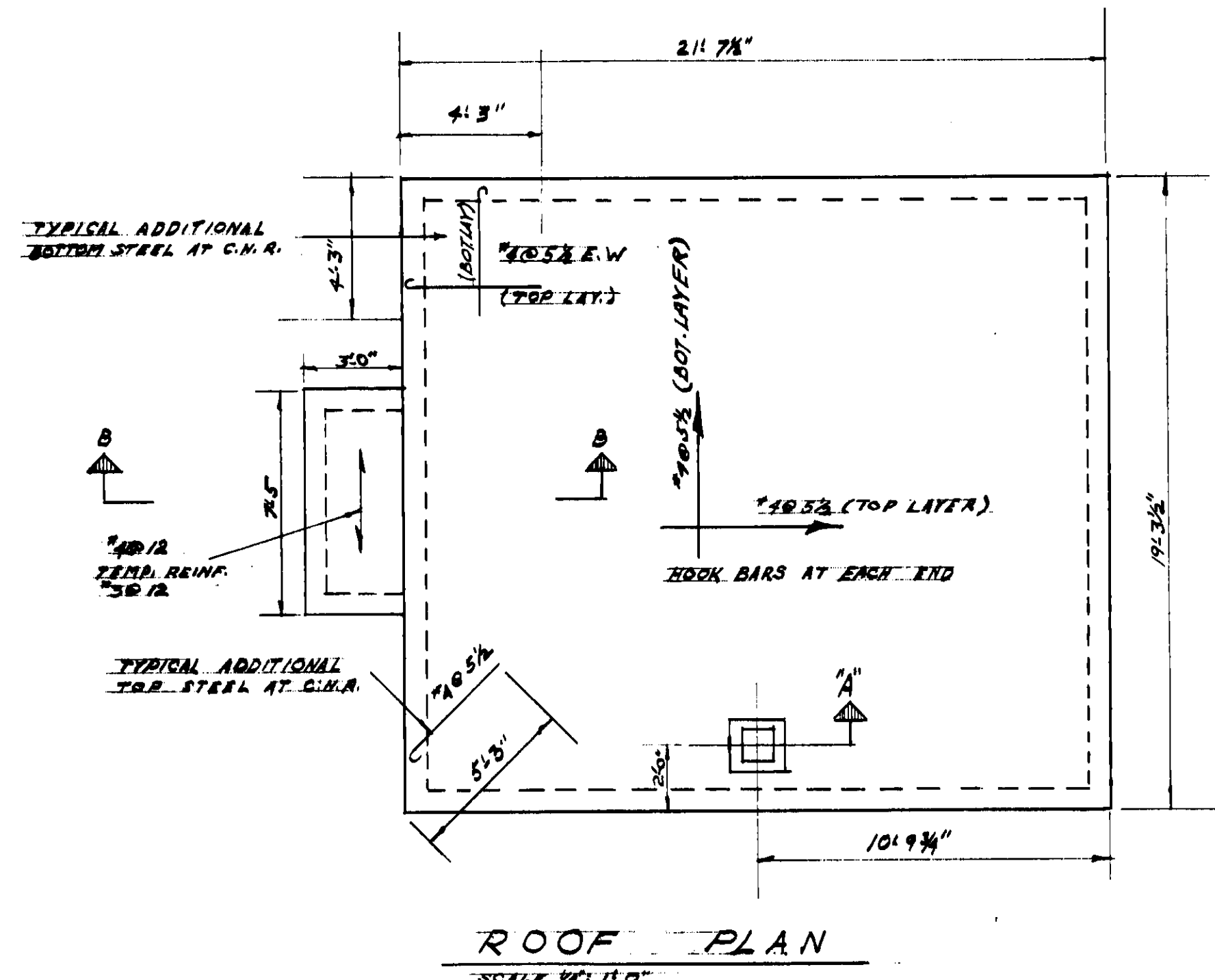
CONTROL CABLE GROUND
CONNECTION DETAIL

PROJECT NO. 4543-126		W.O. NO. 1480-126-1947-CN	
REYNOLDS, SMITH AND HILLS			
ARCHITECTS & ENGINEERS		JACKSONVILLE, FLORIDA	
DEPARTMENT OF ELECTRIC & WATER UTILITIES CITY OF JACKSONVILLE, FLORIDA			
69 KV TRANSMISSION CABLES GEORGIA ST. TO MAIN ST.			
DRAWN D.P.F.	CHECKED B.N.H.	SCALE SHOWN	DATE JAN. 31 '55
APPROVED FOR REYNOLDS, SMITH AND HILLS			
FOR THE CITY OF JACKSONVILLE		DRAWING NO.	
DEPARTMENT HEAD		4543-126	
ENGINEER		D577	
ENGINEER MANAGER		SHEET 11 OF 14	

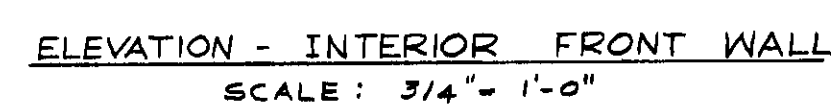
REVISION	DESCRIPTION	DATE	BY	APPROVED



					FOR THE CITY OF JACKSONVILLE		DRAWING NO.	
					DEPARTMENT HEAD		4543-126	
					<i>[Signature]</i> ENGINEERING DEPARTMENT		D578	
					DEPARTMENT HEAD		SHEET 12 OF 14	
REVISION		DESCRIPTION		DATE	BY	APPROVED	ENGINEER MANAGER	

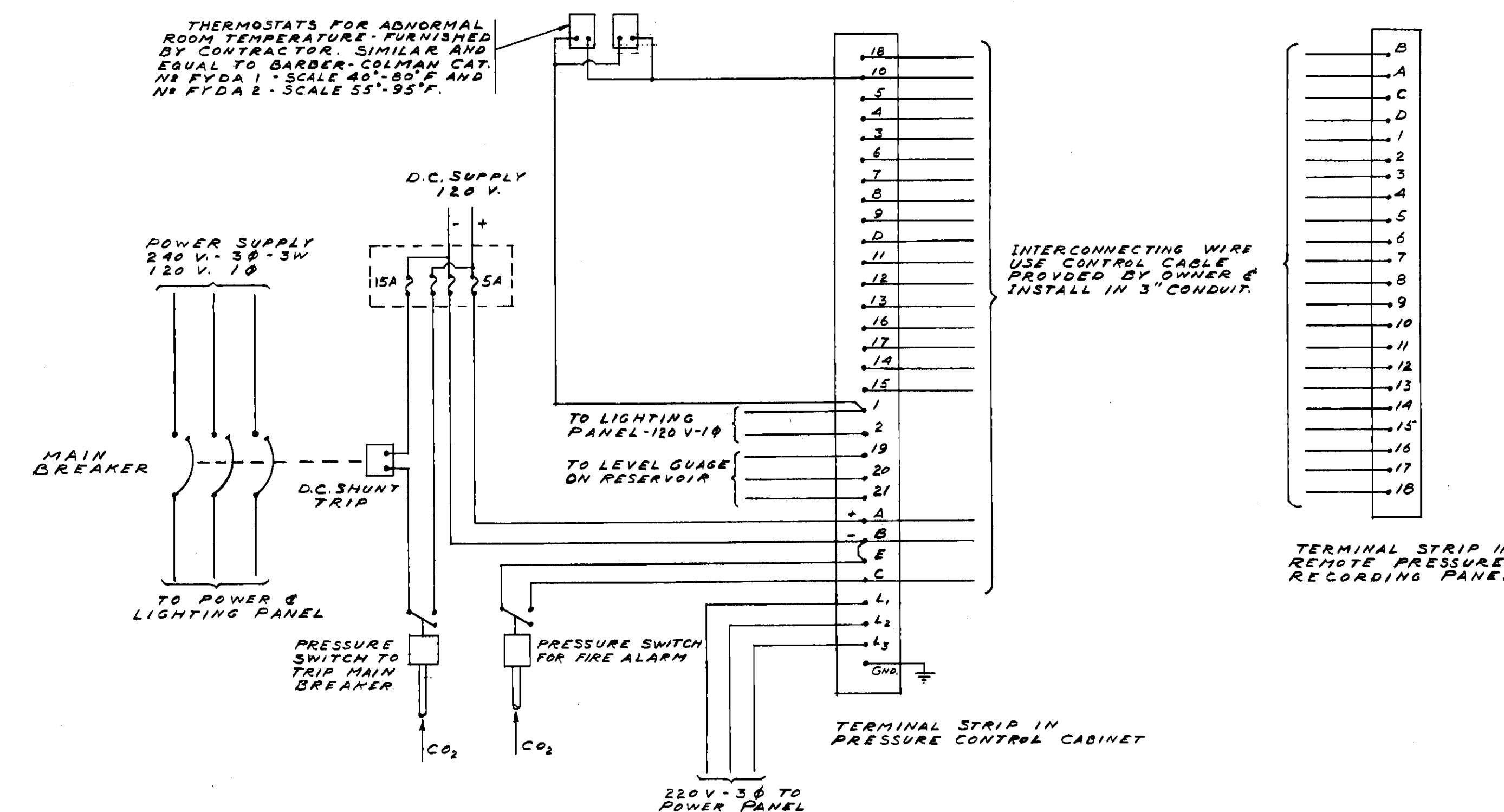


PROJECT NO. 4543-126		W.O. NO. 1480-126-1947-CCN	
REYNOLDS, SMITH AND HILLS		ARCHITECTS & ENGINEERS	
DRAWN E.E.		CHECKED R.P.D.	
DATE JAN 31 '55		SCALE SHOWN	
PUMP HOUSE & DETAILS - ARCHITECTURAL		APPROVED FOR REYNOLDS, SMITH AND HILLS	
FOR THE CITY OF JACKSONVILLE		DRAWING NO.	
DEPARTMENT HEAD		4543-126	
ENGINEER		D579	
ENGINEER		SHEET 13 OF 14	



GENERAL ARRANGEMENT OF DISTRIBUTION CENTER

<u>LIGHTING PANEL</u>			
TRUMBULL TYPE NAQ3			
125/250 V. 1.8 - 3 W. SW. SW			
50 AMP MAIN LUGS			
CIRCUIT NO.	NO. POLES	TRIP AMPS	SERVICES
1	1	15	UNIT HTR. FANS
2	1	15	ALARM CIRCUIT
3	1	20	LGT. CIRCUIT
4	1	20	LGT. CIRCUIT
5	1	20	RECEPTACLES
6	1	20	ROOF VENT FAN
7	1	20	SPARR
8	1	20	SPARR



SIMPLIFIED WIRING DIAGRAM OF POWER AND ALARM SYSTEM



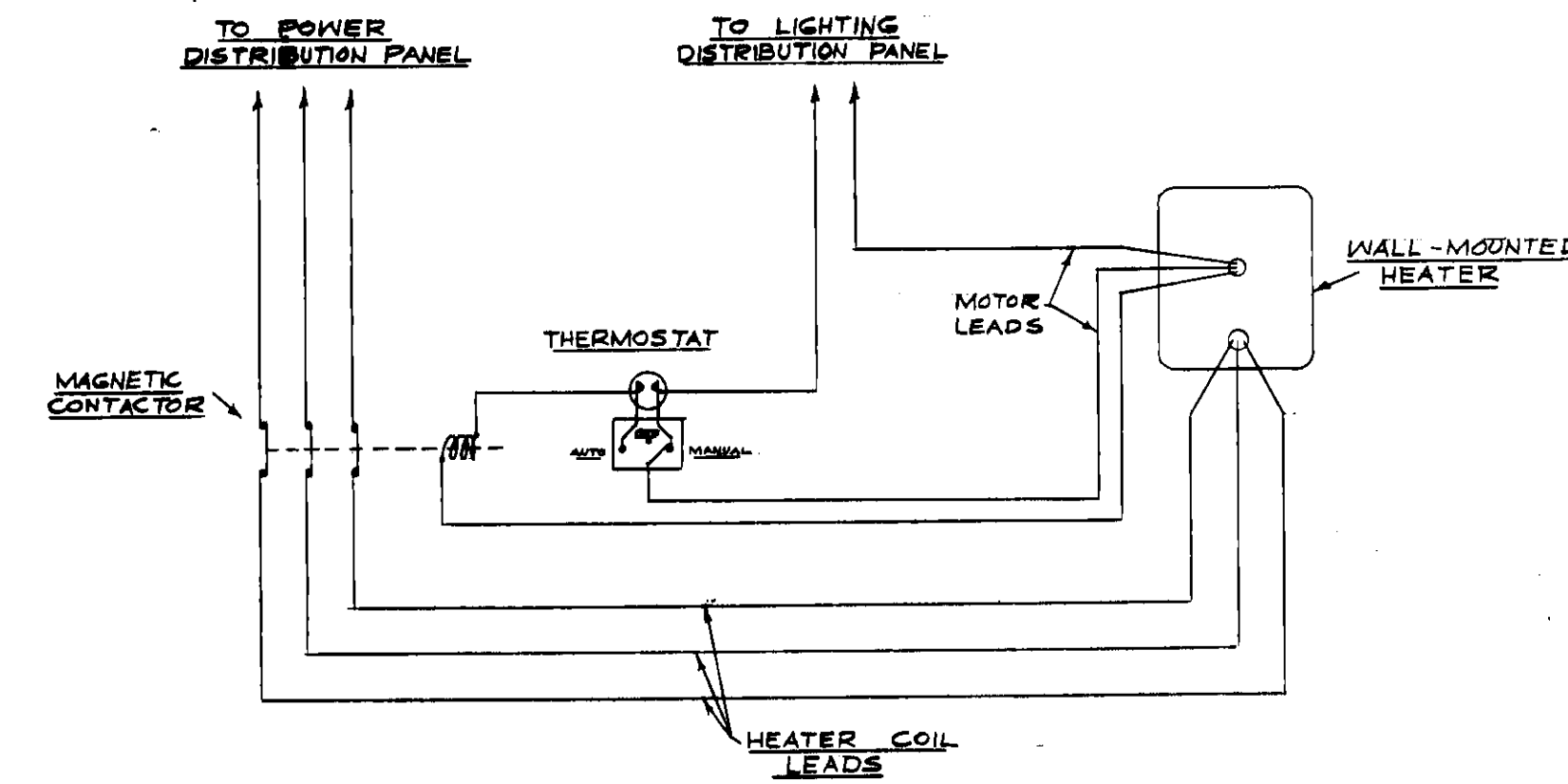
TO LIGHTING DISTRIBUTING PANEL

ROOF MOUNTED VENT FAN

THERMOSTAT

MANUAL START SWITCH

WIRING DIAGRAM FOR VENT FAN



TYPICAL WIRING DIAGRAM FOR ROOM
HEATERS - 2 REQ.

- # SYMBOLS
- CEILING OUTLET
DUPLEX CONVENIENCE OUTLET
SINGLE POLE SWITCH
LIGHTING PANEL
POWER PANEL
MAIN CIRCUIT BREAKER
MAGNETIC CONTACTOR
CONCEALED WIRING IN CEILING
CONCEALED WIRING IN FLOOR
EXPOSED WIRING
CEILING OUTLET - NUMERAL INDICATES
CIRCUIT NUMBER - INTERIOR LETTER
INDICATES SWITCHING CONTROL

PROJECT NO. 4543-126	W.O. NO. 1480-126-1947-CCN
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REYNOLDS, SMITH AND HILLS
ARCHITECTS & ENGINEERS JACKSONVILLE, FLORIDA

DRAWN R.N.L.
 TRACED R.N.L.

DEPARTMENT OF ELECTRIC & WATER UTILITIES
CITY OF JACKSONVILLE, FLORIDA

69 KV TRANSMISSION CABLES
GEORGIA ST TO MAIN ST.

DATE JAN. 31 '55 RUMB HOUSE - ELECTRICAL

APPROVED FOR REYNOLDS SMITH AND HILLS

APPROVED FOR KEYNOLDS, SMITH AND HILLS		
De	...	...

KC Blazius RW Heim

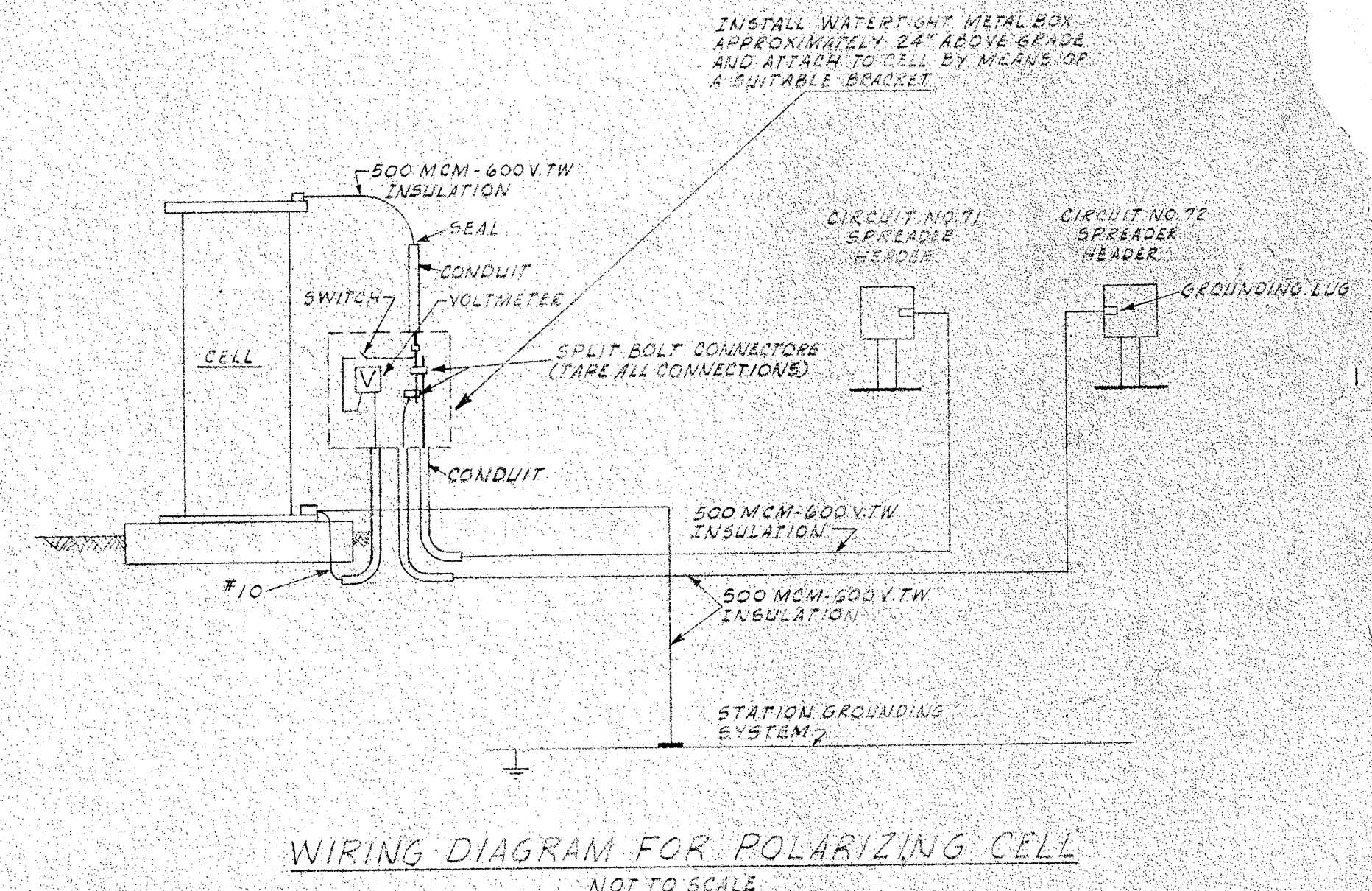
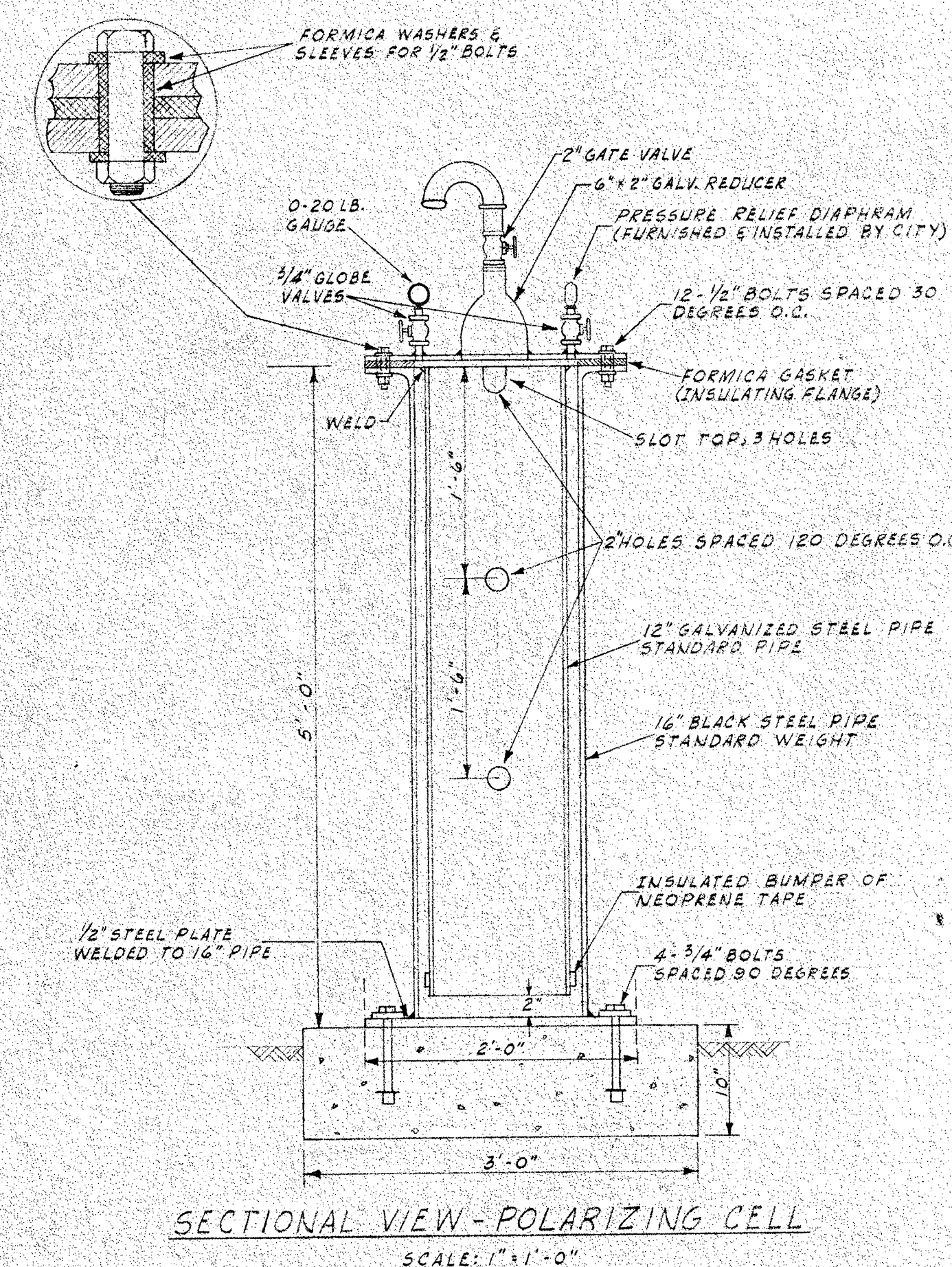
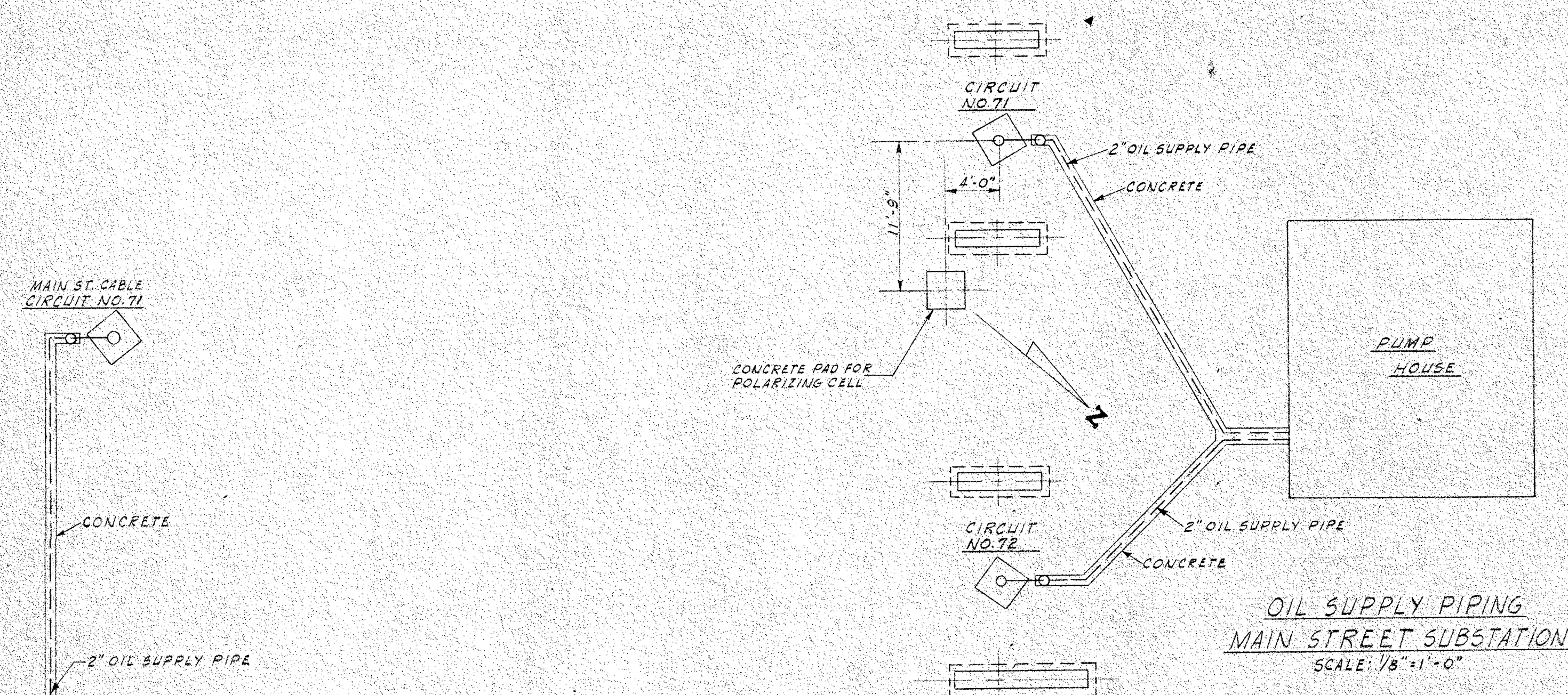
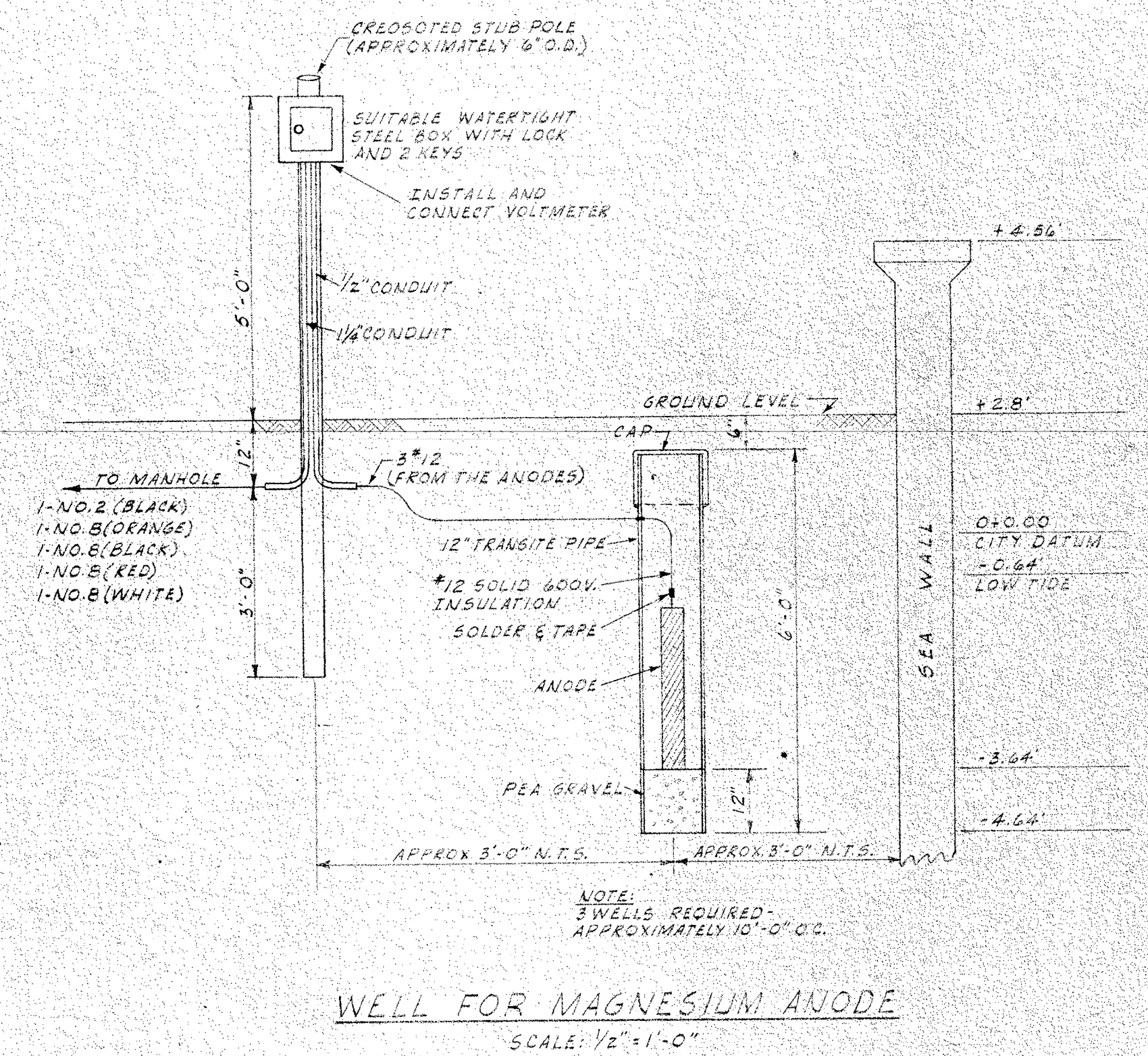
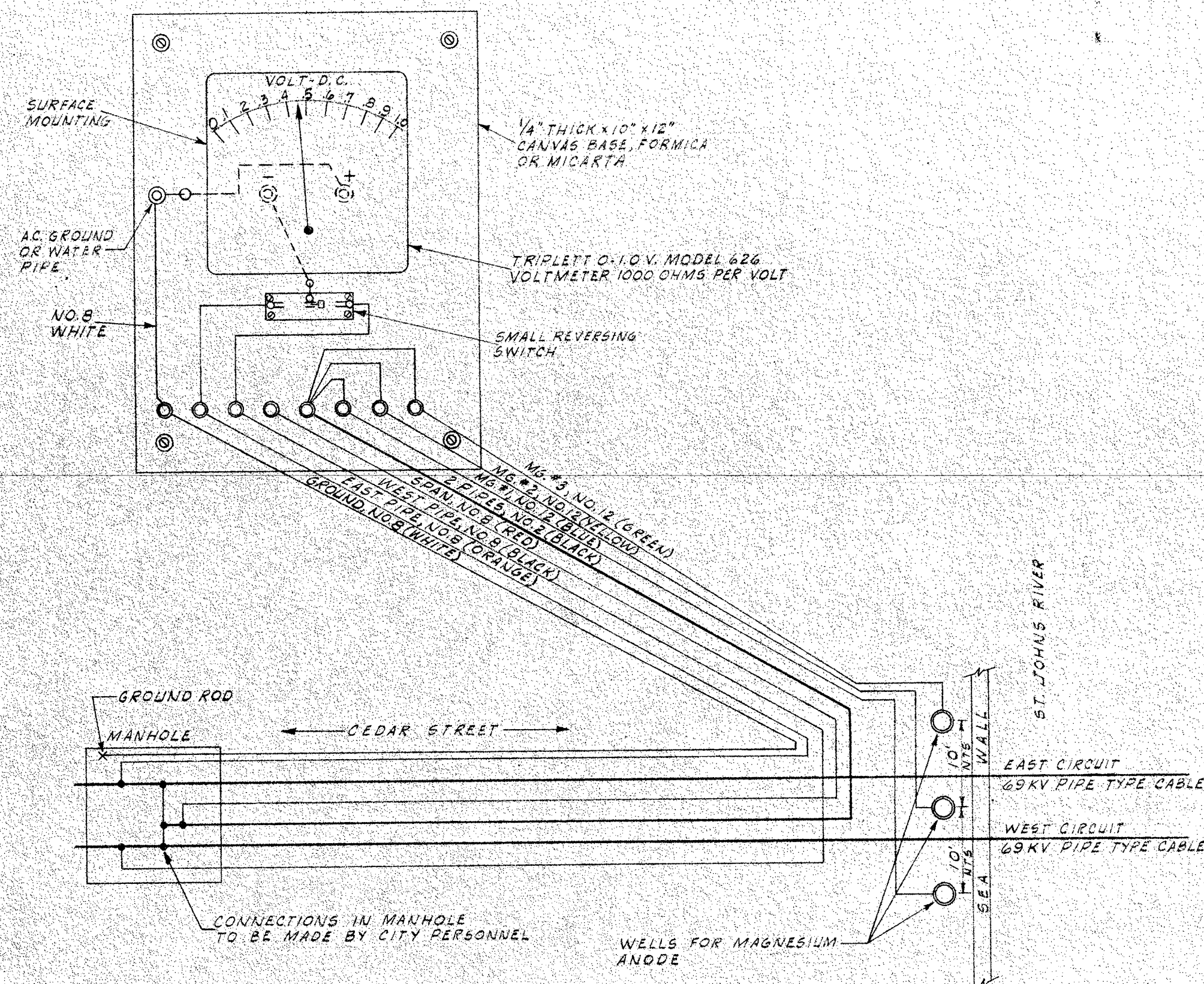
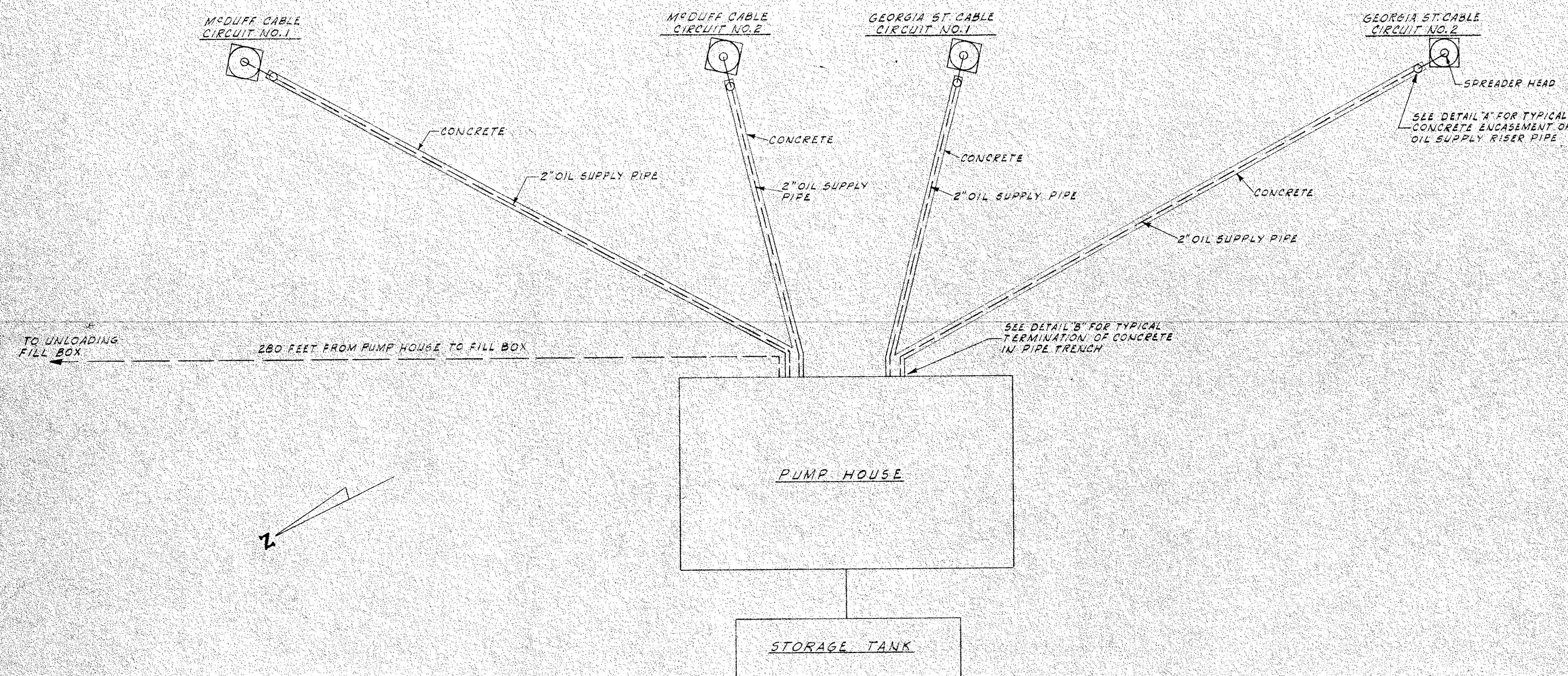
FOR THE CITY OF JACKSONVILLE	DRAWING NO.
------------------------------	-------------

4543-126

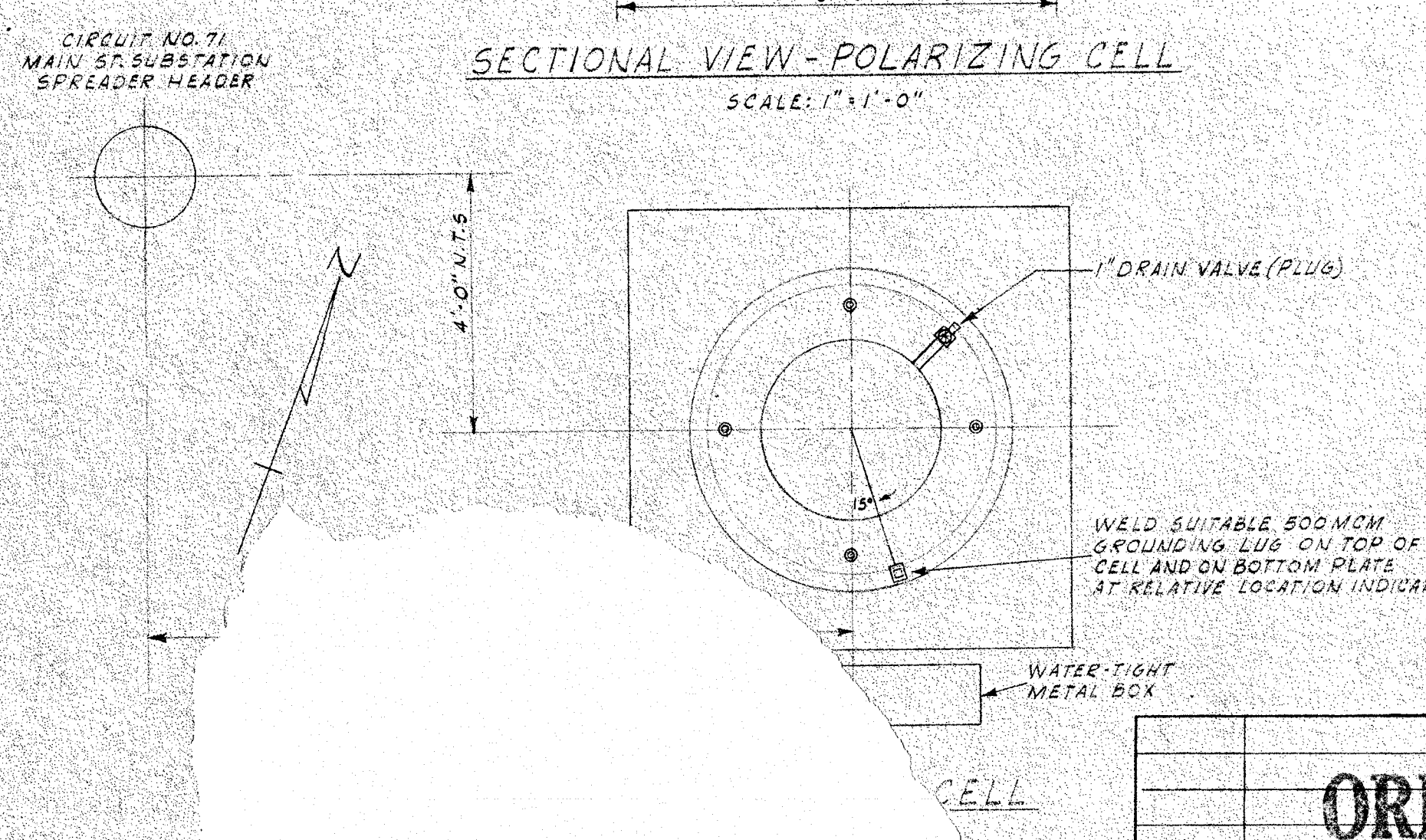
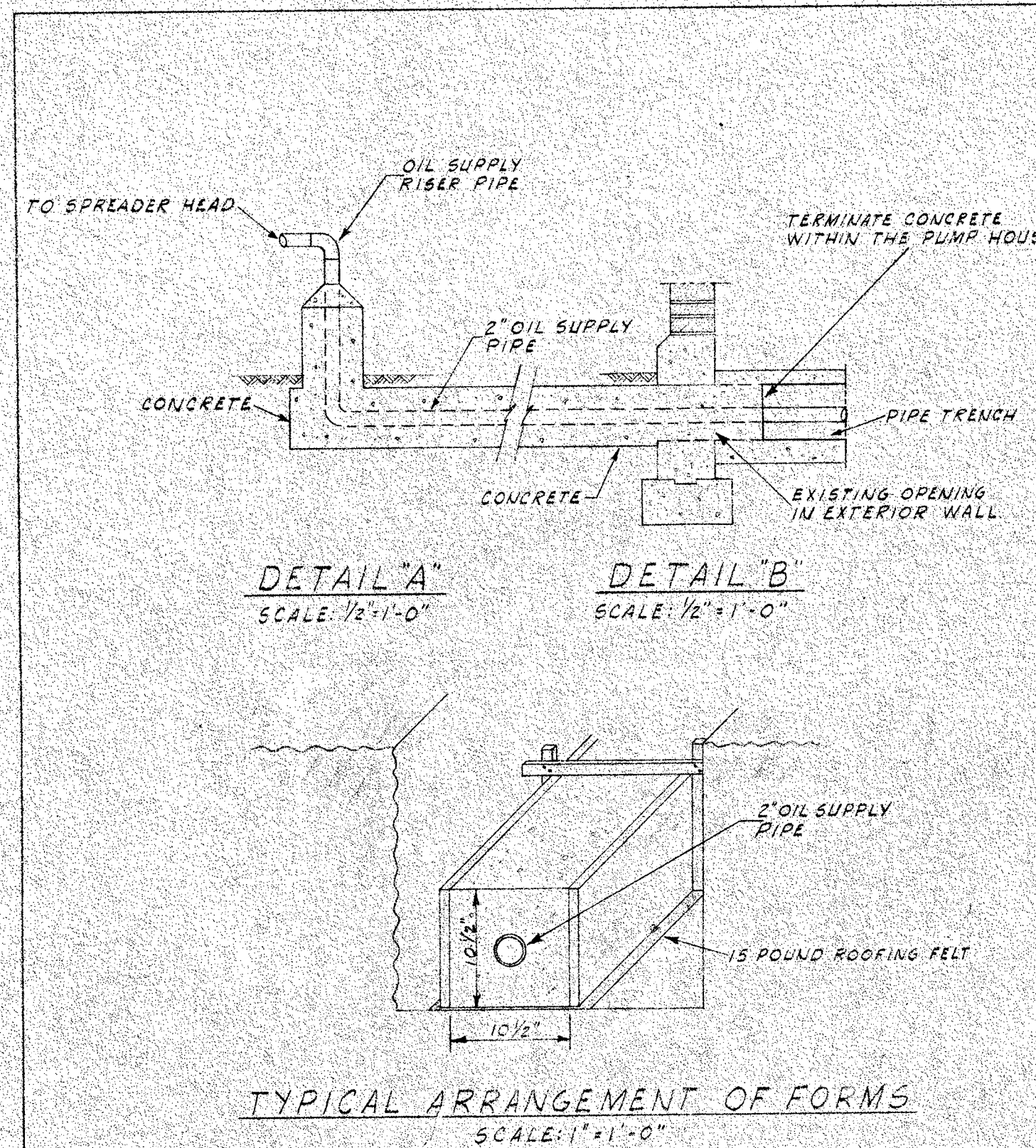
DEPARTMENT HEAD	ENGINEERING DEPARTMENT	D 580
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ED	DEPARTMENT HEAD	ENGINEER MANAGER	SHEET 14 OF 14
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RSZ.6N



**OIL SUPPLY PIPING
GEORGIA STREET SUBSTATION**
SCALE: 1/8" = 1'-0"



PROJECT NO. 4543-126	
REYNOLDS, SMITH AND HILLS	
ARCHITECTS & ENGINEERS	
JACKSONVILLE, FLORIDA	
DRAWN R.A.H.	
TRACED R.A.H.	
CHECKED R.W.H.	
SCALE SHOWN	
DATE MAR 11, 56	
CATHODIC PROTECTION EQUIPMENT	
APPROVED FOR REYNOLDS, SMITH AND HILLS	
FOR THE CITY OF JACKSONVILLE	
DEPARTMENT HEAD	
ENGINEERING DEPARTMENT	
ENGINEER MANAGER	
DRAWING NO.	
4543-126	
D561	
SHEET 15 OF	

ORIGINAL