TM 5-302-1

TECHNICAL MANUAL

ARMY FACILITIES COMPONENTS SYSTEM—DESIGNS

HEADQUARTERS, DEPARTMENT OF THE ARMY
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HEADQUARTERS
DEPARTMENT OF THE ARMY
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ARMY FACILITIES COMPONENTS SYSTEM—DESIGNS

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* This manual supersedes TM 5–302, dated 15 December 1969, including all changes.

TM 5-302-1

THIS IS VOLUME 1 OF 2

CHAPTER 7 DRAWINGS 52-05 THRU 99-98 AND APPENDIX "A" AND APPENDIX "B" ARE IN VOLUME 2 OF 2 (TM 5-302-2)

CHAPTER 1

INTRODUCTION

1–1. Purpose.

The purpose of this manual is to provide construction drawings for use by units in a theater of operations. The manual is part of the Army Facilities Components System (AFCS) and is intended for use by:

a. Base development planners in determining facilities required to support Army functions.

b. Engineer commands or units in preparing and issuing construction drawings.

c. Construction personnel in the requisitioning of materials and the actual construction of facilities.

d. Supply personnel in identifying and supplying construction materials.

1–2. Scope.

The manual contains installation layouts, facility plans, construction details, and material lists contained in the AFCS. The AFCS is under continuous review in response to the changing concepts in warfare and technological advances. New designs are added and obsolete designs are revised as required to meet the construction needs of the Army. The drawings under revision as of May 1973 are so indicated on each drawing. Drawings stamped "Under Revision Do Not Use" should not be used for construction or planning purposes. However, drawings stamped "Under Revision" may be used for planning purposes. Contents of this manual are applicable to nuclear and nonnuclear warfare.

1–3. Related Publications.

The AFCS consists of a series of three Department of the Army technical manuals; this manual and two accompanying publications indicated as follows:

a. TM 5–301, "Army Facilities Components System—Planning." This manual, which is generally used by military planners, contains installation, facility, and Prepackaged Expendable Contingency Supply (PECS) summaries. TM 5–301-series is published in four volumes, each addressing a separate climatic zone. The summaries appearing in the four volumes include cost, shipping weight, and volume of material; estimated man-hours to construct each facility and installation; and the cost, weight, and volume of the PECS kits. This manual may be used by planners at higher levels without referring to TM 5–302 and TM 5–303.

b. TM 5–303, "Army Facilities Components System—Logistic Data and Bills of Materials." This manual is generally used by planners, builders and suppliers in the identification of items contained in the bills of materials. Each item in a facility or PECS list is identified by a Federal Stock Number, abbreviated description and the unit of issue. The materials cost, shipping weight, volume and estimated construction effort in man-hours are also shown in the description of each facility and PECS.

1–4. Definitions.

a. Army Facilities Components System. A tool to assist military planners, supply agencies, and construction personnel at all levels that have a role in Army construction in theaters of operations. The AFCS uses a building block concept to permit maximum flexibility. The building blocks are items, subfacilities, facilities and installations.

b. Planning Table. A tabulation of facilities, logistical data, cost data, and engineering construction data pertaining to an AFCS installation.

c. Item. An item is any construction material or equipment that goes into the making of a larger product. Each item has an associated Federal Stock Number (11 digits), description, unit of issue, unit shipping weight, unit shopping volume and cost. All items in the AFCS are packaged for overseas shipment. Examples are: 40d common steel wire nails (FSN 5315–101–4666); 94 lb bag of portland cement (FSN 5610–250–4676); and a 1400 gpm POL pump (FSN 4320–203–0830). TM 5–303 contains tabulations of the items used in the AFCS.

d. Facility and Subfacility. A facility or subfacility is a group of items designed to provide a service or a basic component part such as a Tank, POL, 1000 BBL w/4 inch Pipe and Fittings to the Tank Berm and Berm Drain Assy (Facility Number 123406); a fluorescent lighting kit (Facility Number 814101); or a mile of 8″ grooved lightweight tubing (Facility Number 125008). Each facility has an associated facility number (six digits), description, unit of issue (always each), shipping volume, shipping weight and cost. Facilities are requisitioned, packaged and shipped as explained in chapter 6, TM 5–301. Utility requirements are also expressed for each facility when they are necessary for the facility to function. A tabulation of the AFCS facilities is contained in chapter 10, TM 5–301-series. The construction drawings applicable to the facilities are shown in chapter 7, and the items included in each facility are tabulated in TM 5–303. A subfacility differs from a facility only in its use in TM 5–303. That is, the purpose of a subfacility is to reduce the repetitive listing of construction materials in a facility. Subfacilities often appear in facilities in TM 5–303. When a facility is used as a subfacility, the entire facility is treated as an item. The subfacility and a short description thereof will appear in lieu of the FSN and nomenclature for purposes of computing the cost, shipping weight and shipping volume by general purpose digital computers. The POL Tank facility, fluorescent lighting facility, and the 8″ POL pipeline facility identified above would appear in TM 5–303 as 123406, 814101, and 125008, respectively when used as subfacilities.

e. Installations. An installation is a group of facilities designed to provide a specific service or support to some military function is a theater of operations. Each installation has an associated number (two alpha characters plus four digits), description, unit of issue (always each), shipping volume, shipping weight and cost. Examples of installations in a temperate zone are: a 100 bed hospital (installation number GH 0161), a 4,000 man PW camp (installation number PW 0181), and a 200,000 barrel POL marine terminal (installation number QA 1145). Refer to TM 5–301-series for a complete listing of AFCS installations. Refer to chapter 7 for site and utility drawings of each installation.

1–5. Comments and Requests for Drawings.

a. Users of this manual are encouraged **to submit comments or recommendations** for improvement or revision **direct to HQDA (DAEN–MEF) Washington, DC 20314.** Comments should make reference to the specific drawing, facility, or installation. The reason for each comment or recommendation should be given to insure proper understanding and evaluation.

b. The data in this manual are maintained by the Office of the Chief of Engineers on magnetic tapes for use in general purpose digital computer systems. Magnetic tape files, punched cards or printouts of the current data will be furnished upon request. Software programs also exist for making special computational runs for base development planning purposes. The drawings in this manual are on 105mm film. Upon request, the user will be supplied full size (28″x40″) or half size (14″x20″) reproducible drawings or blue line prints for use in the field.

c. All correspondence and requests for technical assistance and information regarding this manual should be sent to the address appearing in paragraph 1–5*a* above. Requests for copies of these manuals should be sent through normal publication/distribution channels.

1–6. Responsibilities

The Chief of Engineers is responsible for the continuous review and updating of this publication to include coordination with DA staff agencies, overseas commands and other users that are affected by construction for contingency operations. Responsibilities of the Chief of Engineers and other agencies or commands are more specifically stated in AR 415–16.

CHAPTER 2

ORGANIZATION OF THE MANUAL

2–1. Drawings.

a. General. The facility and installation drawings are identified by four-digit numbers, arranged in numerical sequence; drawings may consist of more than one sheet.

b. Symbols. Architectural, electrical, mechanical and other symbols used in this manual are identified on the drawing symbols sheet.

c. Installations. Installation drawings indicate the general layout and arrangement of facilities that are part of each installation. The installation layouts are shown as if construction is on a horizontal plane, and all material estimates are based on these layout. Although material estimates include additional material for wastage and loss, the user is cautioned to adjust these estimates when the actual physical layouts differ from the drawing because of terrain or site adjustments. The minimum site area (in acres) required for each installation is shown in the schedule of facilities. This is the area contained within the installation boundary lines assuming that the construction site is a horizontal plane.

d. Facilities. The facility drawings in this manual are plans, elevations, and construction details of military facilities that provide a service or a basic component part. All construction drawings necessary to construct a facility are identified in the schedule of drawings affixed to the title block. The first four digits of a facility number indicate the construction drawing number in chapter 7.

The facility drawings identify the electrical connected load for lighting, receptacles, and connected equipment. TOE or special equipment required by the using or operating personnel is identified in a schedule of equipment on the drawing. The items identified in the schedule of equipment are not included in bills of materials of the AFCS components, and are not shipped with facility construction materials.

e. Standard Construction Details. Construction details that are common to two or more facilities are shown on drawing 99–98. These construction details are identified by a circled symbol consisting of a numeric digit followed by a single or double alpha-character. An example of the construction detail code is 2-H, located on sheet 2 of drawing number 99–98 which shows details of a 3-foot wide batten door.

2–2. Allowances for Material Wastage and Loss.

Many construction materials are subject to waste and loss through handling, fitting, breakage and storage. Therefore, material listings shown in TM 5–303 have been adjusted to include average loss and wastes resulting from factors as mentioned above. Those items which carry no loss or waste are as follows:

a. Equipment.
b. Fixtures.
c. Shaped structural steel.

2–3. Construction Standards.

Standards of construction are identified for the purpose of managing construction resources. The availability of resources, the operational plans and the using unit's mission will dictate the standards of construction to be used in theaters of operation. JCS Pub 3 sets forth the standards of construction that are applicable in a theater of operation. The standards are based primarily on the duration of the contingency and are as follows: initial (INT)—0 to 6 months, intermediate (ITR)—6 to 24 months, and temporary (TPR)—24 months to 5 years. Facilities listed in the AFCS are identified by a corresponding construction standard. In most cases, facilities contained in the AFCS fall into the intermediate and temporary standards. The nature of materials used in construction of the AFCS facilities and the structural aspects of the designs are such that the life of facilities will normally exceed 5 years when appropriate maintenance is performed.

2–4. Building Structures.

The AFCS views building structures as being composed of three basic types: disposable (wood-frame, block, concrete or any other construction material that is formed on the site, and which has little or no salvage value), pre-engineered relocatable (panelized buildings, tents or any other structure that has an 85 percent recoverability), and mobile (containerized buildings or any other structure that can be moved and erected frequently with little construction effort required; for example, the MUST Hospital). The AFCS allows for the range of these basic types to permit commanders the option of selecting the facility that best suits available construction effort, mission requirements and availability of materials. More detailed descriptions of facilities are contained in TM 5–303.

2–5. Design Criteria.

a. Design criteria are shown on the construction drawings in chapter 7 when considered beneficial in adapting AFCS designs to actual site conditions. Safety factors used in the designs are minimum for the facilities to function and operate. Higher safety factors normally applied in civilian practice cannot always be achieved because of the short design life and rapid construction required in support of military operations. The design life for components in this manual is approximately 5 years.

b. The facilities in the system are designed to operate in one or more of four climatic zones. The four climatic zones are:

(1) *Temperate Zone*—The geographical areas in which mean annual temperatures are between +30°F and +70°F as identified by isothermal lines.

(2) *Frigid Zone*—The geographical areas in which mean annual temperatures are lower than +30°F as identified by isothermal lines.

(3) *Tropical Zone*—The geographical areas in which mean annual temperatures are higher than +70°F as identified by isothermal lines.

(4) *Desert Zone*—The geographical areas which are arid and without vegetation.

c. The drawings and bills of materials in chapter 7 and TM 5–303 involving electrical power are based on 60 hertz (cycles per second) electrical supply systems in which the secondary line-to-neutral voltage is a nominal 120 volts. The line-to-line voltage, in the case of three-wire services, is either 208 volts in "V" phase or 240 volts if the supply circuit is single phase. The four-wire services are at 208 volts (except where otherwise noted). Where the supply system has characteristics other than those indicated above, transformers should be provided to change the supply voltage for the load involved.

Transformers listed for distribution systems are for operation on primary voltages of 2400, 4160Y/2400, 4800, or 8320Y/4800.

Fluorescent lighting fixtures with ballasts designed for 60 hertz supply will not operate satisfactorily at 50 hertz. Therefore, when 380, 400 or 416 volt, 50 hertz supplies are transformed to provide 120 volt circuits, any fluorescent lighting involved in the plans should be changed to incandescent lighting. This generally requires an increase in the number of circuits and the total power requirements.

The generating units in the AFCS that are 100 KW and smaller have outputs at 60 hertz connectable at 208Y/120 volts or 416Y/240 volts, and at 50 hertz with a reduction in capacity, 416Y/240 volts. The stationary units have outputs at 50 and 60 hertz 2400 volts, connectable in wye or delta. For additional information on voltage and frequency characteristics, refer to chapter 19 of TM 5–765.

2–6. Construction Effort.

The construction effort in man-hours required to erect or construct each facility and installation has been estimated and is shown in TM 5–301-series. The construction estimates are based on using standard construction practices. The estimates do not include effort of administration, mobilization, planning, nor effort lost because of weather delays. They are estimates of actual working time required for the task by skilled personnel in the temperate zone. If estimates are desired for other climatic zones, adjust the given estimates by the following multiplying factors:

For climate	*Multiply temperate manhours by*
Tropical	2.0
Desert	1.5
Frigid	3.0

Other adjustments are necessary if the personnel are untrained. A unit's actual production capability, based on operating experience, should be used when available. The construction estimates for facilities and installations are subdivided into vertical, horizontal and general construction labor. The skills that are included in the subdivisions are shown below:

a. Vertical Labor:
Apprentices
Carpenters
Combat engineers
Divers
Electricians
Heating and ventilation specialists
Helpers
Marine engineers
Masons
Pioneers
Pipeline specialists
Plumbers
Structure specialists
Surveyors
Welders

b. Horizontal Labor:
ADM specialists
Asphalt distribution operators
Asphalt plant operators
Asphalt surfacer operators
Bucket loader operators
Concrete mixer operator
Crane shovel operators
Crusher/quarry operators and specialists
Ditching machine operators
Dump truck operators
Grader operators
Pneumatic compressor operators
Power bent operators
Power roller operators
Rotary tiller operators
Scraper operators
Tractor-dozer operators
Washing and screening plant operators
Water distribution operators

c. General Construction Labor. General construction labor includes all unskilled effort used to assist horizontal or vertical laborers or perform construction tasks requiring no prior training, skill, or use of electrical/mechanical equipment.

d. Engineer Unit Capabilities. The productive capabilities of various engineer units in terms of man-hours per month were estimates by the Engineer Strategic Studies Group, Office of the Chief of Engineers, and appear in an unpublished study, entitled, "Planning Data Development, 1969". The information from this study is reproduced in table 2–1. The productive capabilities were derived by deducting administrative personnel, maintenance personnel, mess personnel, communication personnel, medical personnel, and operators of administrative vehicles; and by degradation for enemy actions and movement factors as shown in AR 570–2. The work period for all units is assumed to be 12 hours per day, 7 days per week and 365 days per year. The functional skill groups listed in table 2–1 should not be interpreted as the sum total of skills available in the unit, but only as an indicator of unit capabilities. Certain skill groups are roll-ups of total skills needed to perform a function, e.g., crusher/quarry operators and specialists. Therefore, certain skills such as tractor/dozer operators are carried under more than one functional group, i.e., tractor-dozer operator—scraper operator—crusher/quarry operator.

e. Other Reductions in Productive Capabilities. The productive capabilities indicated in the preceding paragraphs do not consider acclimation, changes in altitude and processing equipment. Additional reductions in the productive capabilities of engineer units are necessary for acclimation of troops because of a change in climate, significant changes in altitude, processing of equipment following debarkation, area orientation and job organization. A 70 percent reduction in productivity should be made during the first 30 days when acclimation, processing of equipment, area orientation and job orientation are involved. When acclimation is not a factor, the productivity should be reduced 50 percent during the first 30 days.

TOE	CATEGORY I UNITS UNIT	STRENGTH	UNIT MH/MONTH BY SELECTED FUNCTIONAL SKILL GROUPS UNIT MH/MONTH*		Combat Engineers, Pioneers, Apprentices & Helpers	Surveyor	Carpenter	Electrician	Plumber	Mason	Structure Specialist	Heating & Ventilation Specialist	Diver	Welder	Pipeline	Marine Engineer	Crane Shovel Operators	Loader Operators	Tractor/Dozer Operators	Compressor Operators	Dump Truck Operators	Concrete Machine Operators	Grader Operators	Crusher/Quarry Operators & Specialists	Ditching Machine Operators	Asphalt Distributor/Plant Surfacers Operators	Power Roller Operators	Water Distributor Operators	Wash & Screening Plant Operators	Atomic Demolitions	Power Boat	Rotary Tiller	Scraper
			VERT	HORZ																													
5-25G	Engr Bn, Abn Div	578	40352	8112	39936	416	0	0	0	0	0	0	0	208	0	0	0	832	1248	416	3952	0	1664	0	0	0	0	0	0	0	0	0	0
5-27G	Engr Co, Engr Bn, Abn Div	131	13312	624	13312	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	624	0	0	0	0	0	0	0	0	0	0	0	0
5-35G	Engr Cbt Bn, Army or Corps	836	59696	24960	59625	450	1350	225	1575	1350	0	0	0	208	0	0	1350	6850	4500	1125	12150	225	1800	0	0	0	0	0	0	0	0	0	0
5-37G	Engr Cbt Bn, Army or Corps	153	13728	4992	2850	0	0	0	0	0	0	0	0	0	0	0	0	1350	900	225	2925	0	0	0	0	0	0	0	0	0	0	0	0
5-107G	Engr Co Sep Inf Bde																																
	equipped w/MAB	247	13728	5616	13728	0	0	0	0	0	0	0	0	208	0	0	416	1248	832	208	2704	0	208	0	0	0	0	0	0	0	0	0	0
	equipped w/M4T6	260	13728	5824	13728	0	0	0	0	0	0	0	0	208	0	0	416	1248	832	416	2704	0	208	0	0	0	0	0	0	0	832	0	0
5-127G	Engr Co Sep Armored Bde or Sep Inf Bde (Mech)																																
	equipped with MAB	260	13728	4160	13728	0	0	0	0	0	0	0	0	208	0	0	416	1248	832	208	1248	0	208	0	0	0	0	0	0	0	0	0	0
	equipped w/M4T6	263	13728	3952	13728	0	0	0	0	0	0	0	0	208	0	0	416	1248	832	416	832	0	208	0	0	0	0	0	0	0	832	0	0
5-137G	Engr Co, Sep Abn Bde	156	13520	2704	13520	0	0	0	0	0	0	0	0	208	0	0	0	208	416	0	1248	0	832	0	0	0	0	0	0	0	0	0	0
5-145G	Engr Bn, Armored Div of Inf Div (Mech)																																
	equipped w/MAB	1017	55328	15184	54912	416	0	0	0	0	0	0	0	208	0		832	4992	2912	1040	4576	0	832	0	0	0	0	0	0	2080	0	0	0
	equipped w/M4T6	1019	55328	15184	54912	416	0	0	0	0	0	0	0	208	0												0	0	0	2080	1664	0	0
5-147G	Cbt Engr Co, Engr Bn Armored Div or Inf Div (Mech)	157	13728	2704	13728	0	0	0	0	0	0	0	0	0	0	0	0	1248	832	208	2704	0	0	0	0	0	0	0	0	0	0	0	0
5-155G	Engr Bn, Inf Div																																
	equipped w/MAB	997	55328	24336	54912	416	0	0	0	0	0	0	0	208	0		832	4992	4576	1040	10816	0	832	0	0	0	0	0	0	2080	0	0	0
	equipped w/M4T6	999	55328	24336	54912	416	0	0	0	0	0	0	0	208	0												0	0	0	2080	1664	0	0
5-157G	Engr Co, Engr Bn, Inf Div	154	13728	4992	13728	0	0	0	0	0	0	0	0	0	0	0	0	1248	832	208	2704	0	0	0	0	0	0	0	0	0	0	0	0
5-195G	Engr Cbt Bn, Airborne	694	32032	38064	27872	1248	1040	1040	416	0	0	0	0	416	0	0	832	4992	7488	2496	17640	208	3328	416	0	832	0	0	0	0	0	0	0
5-198G	Engr Cbt Co, Engr Cbt Bn Abn	147	13104	5408	13104	0	0	0	0	0	0	0	0	0	0	0	0	1248	832	0	2912	0	0	0	0	0	0	0	0	0	0	0	0

*Multiply by 1.082 when unit is employed as category II unit, and by 1.24 when unit is employed as category III unit.

Table 2-1 (a).

TOE	CATEGORY II UNITS																																
		UNIT MH/MONTH BY SELECTED FUNCTIONAL SKILL GROUPS																															
	UNIT	STRENGTH	UNIT MH/MONTH* VERT	UNIT MH/MONTH* HORZ	Combat Engineers, Pioneers, Apprentices & Helpers	Surveyor	Carpenter	Electrician	Plumber	Mason	Structure Specialist	Refrigeration Specialist	Diver	Welder	Pipeline	Marine Engineer	Marine Engineer	Crane Shovel Operator	Loader Operator	Tractor/Dozer Operator	Compressor Operator	Dump Truck Operator	Concrete Machine Operator	Grader Operator	Crusher/Quarry Operator	Ditching Machine Operator	Asphalt Distributor	Power Roller Operator	Water Distributor	Wash & Screening Plant	Atomic Demolition	Power Boat Operator	Rotary Tiller Operator	Scraper Operator
5-54G	Engr LT Equip Co, Abn	214	0	29475	0	0	0	0	0	0	0	0	0	208	0					1800	900	4500	225	4050	2700	675	900	225	675	0	0	0	0	4050
5-58G	Engr LT Equip Co	212	900	24300	0	0	0	0	0	0	0	0	0	208	0	0	0	2700	1800	1800	900	4500	225	4050	2700	675	900	225	675	0	0	0	0	4050
5-77G	Engr Panel Bridge Co**	129	13725	1350	13725	0	0	0	0	0	0	0	0	208	0	0	0	2700	1800	0	450	0	6032	0	0	0	0	0	0	0	0	0	0	0
5-114G	Engr Const Spt Co	166	1350	18675	0	0	0	0	0	0	0	0	0	208	0	0	0	900	0	2250	0	1800	1350	1800	0	0	3600	675	0	1350	0	0	0	0
5-115G	Engr Const Bn	935	49725	58275	4725	1800	20250	8325	8775	2700	1350	675	0	2080	450	0	0	3600	4050	3600	4050	10350	3375	17760	1350	4050	1800	1575	1350	0	0	0	225	5400
5-118G	Engr Const Co, Engr Const Bn	207	14850	14400	1350	0	6750	2700	2700	900	450	0	0	208	0	0	0	900	900	900	900	3150	900	4050	450	1350	0	450	450	0	0	0	0	1800
5-124G	Engr Dump Truck Co	114	0	0	0	0	0	0	0	0	0	0	0	208	0	0	0	0	0	0	0	0	0	14850	0	0	0	0	0	0	0	0	0	0
5-117G	Engr Pipeline Const Spt Co	187	25542	4128	0	0	2025	0	0	0	4050	0	0	4050	12150	0	0	1125	450	1125	450	450	225	0	0	0	0	0	0	0	0	0	0	0

*Multiply by 0.924 when unit is employed as Category I unit.
**When used as a dump truck company, multiply total manhours by 0.60 and list under "horizontal"

Table 2–1 (b).

TOE	CATEGORY III UNITS	UNIT MH/MONTH BY SELECTED FUNCTIONAL SKILL GROUPS																														
	UNIT	STRENGTH	UNIT MH/MONTH*		Combat Engineers, Pioneers, Apprentices and Helpers	Surveyor	Carpenter	Electrician	Plumber	Mason	Structure Specialist	Refrigeration Specialist	Diver	Welder	Pipeline	Marine Engineer	Crane Shovel Operator	Loader Operator	Tractor/Dozer Operator	Compressor Operator	Dump Truck Operator	Concrete Machine Operator	Grader Operator	Crusher/Quarry Operator	Ditching Machine Operator	Asphalt Distributor	Power Roller Operator	Water Distributor	Wash & Screening Plant	Atomic Demolition	Power Boat Operator	Rotary Tiller Operator	Scraper Operator
			VERT	HORZ																													
5-129	Engr Co, Port Const	239	19608	15996	900	900	3150	900	450	450	3150	0	2700	2250	1350	1350	4050	450	1350	1575	3825	450	0	0	0	0	0	0	0	0	450	0	0

*Multiply by 0.806 when unit is employed as a category I unit.

Table 2–1 (c).

CHAPTER 3

PREPACKAGED EXPENDABLE CONTINGENCY SUPPLIES (PECS)

3–1. Purpose.

To assist engineer units in the planning and implementation of contingency plans, a series of cargo containers loaded with stylized engineer supplies were developed to meet normal mission requirements for limited periods or for minor repairs for extended periods when supplies are replaced based on demand experience.

3–2. Description and Use.

Each container is reflected as a separate facility within the AFCS, which allows its requisition as an independent supply kit and permits the requester to obtain as many kits as meet the assigned requirements. The unit commander can also procure a set of kits/facilities, reflected as installations in the AFCS, that are designed to provide minimum expendable materials to accomplish the specific engineer tasks. Again, the commander has the option of requesting the number of installations that he requires. It should be noted that the containers are an integral portion of the kits and serve as covered storage facilities when the unit is operating in the field. Items consumed from the container can be requisitioned and replaced as separate items since each carries its own FSN. When requisitioning a facility or installation, commanders/requesters should check the size of the shipping/storage container ordered to insure that proper transportation is available upon delivery of the kits. There are two sizes of containers: 8′x8′x6⅔′ and 8′x8′x20′. The containers are equipped with standard shipping fittings which allow lifting by a variety of material handling equipment. Maximum gross weight of the loaded 8′x8′x20′ container is 45,000 pounds. The weight of each facility can be found in TM 5–303.

CHAPTER 4

SUPPLY PROCEDURES

4–1. General.

The Army Materiel Command (AMC) is responsible for developing supply procedures, policies and command guidance necessary to fund, procure, store and ship materiel listed in the Army Facilities Components System. A chart depicting the supply process is shown in figure 4–1. AMC responsibility is set forth in AR 415–16. The focal points within AMC for the Army Facilities Components System and their responsibilities are briefly explained in paragraphs 4–2 and 4–3 below.

4–2. Construction Materiel Coordinator.

The Construction Materiel Coordinator, Headquarters, US Army Materiel Command (ATTN: AMCRP–GM), Alexandria, VA 22304, is responsible for coordinating AMC activities and interests pertaining to the AFCS. This coordination embraces materiel development, procurement policies, employment support and other related matters. The Construction Materiel Coordinator insures that AMC can support the demands for construction materiel at the onset of an emergency and thereafter as required.

4–3. US Army Troop Support Command (USATROSCOM)

The Commander, USATROSCOM, (ATTN: AMSTS–SDP), 4300 Goodfellow Boulevard, St. Louis, MO is the central point within the Continental United States (CONUS) for the inclusion of items in the Federal Supply System and the acquisition and supply of items in the AFCS. USATROSCOM's responsibilities include the following:

a. Provide magnetic tape containing AFCS data to Worldwide Inventory Control Points and to Army class manager activities for Defense Supply Agency/General Services Administration supply sources.

b. Develop, upon receipt of *message* requisitions, bills of materials for requested AFCS facilities and installations, and request project code from AMC.

c. Prepare requisitions to require 100 percent supply shipment status in accordance with AR 725–50 for all items required to satisfy the demand.

d. Furnish to responsible item managers a copy of the bill of materials in accordance with AR 710–1, to include submissions of special program requirements data together with appropriate requisitions.

e. Maintain detailed follow-up and status of requisitions to insure timely supply, furnish AMC with a monthly summary of major actions which pertain to AFCS facilities or installations, advise the consignee of status of shipment and provide a quarterly recapitulation.

f. Coordinate the acceptability of substitute items with the Office of the Chief of Engineers (ATTN: DAEN–MEF), WASH DC 20314, and revise bills of materials as required for the affected facilities/installations.

g. Insure that consumer funds are available prior to supplying items contained in the AFCS.

h. Make necessary arrangements through the appropriate logistic control office for Military Traffic Management and Terminal Service to furnish lift information for each project code.

4–4. Requisitioning.

Supply procedures within a theater of operations are generally established by the theater commander and may vary depending upon the local circumstances. The procedures explained in this manual are not intended to dictate or establish policies that will be used in a particular theater. The procedure that has been established and can be used for requisitioning construction materiel from CONUS by AFCS Facility or installation codes is set forth below:

The AFCS facilities and installations can be requisitioned by facility numbers (such as 441101) and installation numbers (such as NP 8200) by message through channels to USATROSCOM.

The AFCS facilities and installations can be requisitioned plus or minus facilities, subfacilities and individual items. The message should include as a minimum, the following:

a. Funding Authority.

b. Priority.

c. Destination of materiel shipment (port, construction site, depot, and "Mark for—Ship to" information).

d. The date when the construction materials are required in the theater of operations.

e. A tabulation of the AFCS components to include facility and installation codes, abbreviated descriptions, additions and/or deletions, and the quantities required.

The forms and procedures used to requisition by the Military Standard Requisitioning and Issue Procedure (MILSTRIP) method cannot be used to requisition by AFCS facility or installation number.

4–5. Method of Shipment.

The construction material in the AFCS is packaged for overseas shipment and will be shipped from the assembly depot. This method requires that an assembly depot be established by AMC to package and/or identify all listed items on bills of materials. Shipment is delayed until 100 percent or some lesser percentage (as specified by requestor) is ready for shipment. All items are then shipped at the same time. This shipment method requires more lead-time than the average MILSTRIP requisition and restricts initiation of construction project to the item with the longest lead-time. However, this method does reduce the risk of items being incorrectly identified or used on some other project.

4–6. Procurement From Foreign Sources.

The supply procedures and construction materiel identified in this manual are applicable when requisitioning AFCS construction materiel from CONUS; however, the supply procedures are not applicable for foreign source procurement. The user is further cautioned to perform engineering design checks to determine if foreign construction materiel is compatible with US components prior to procurement.

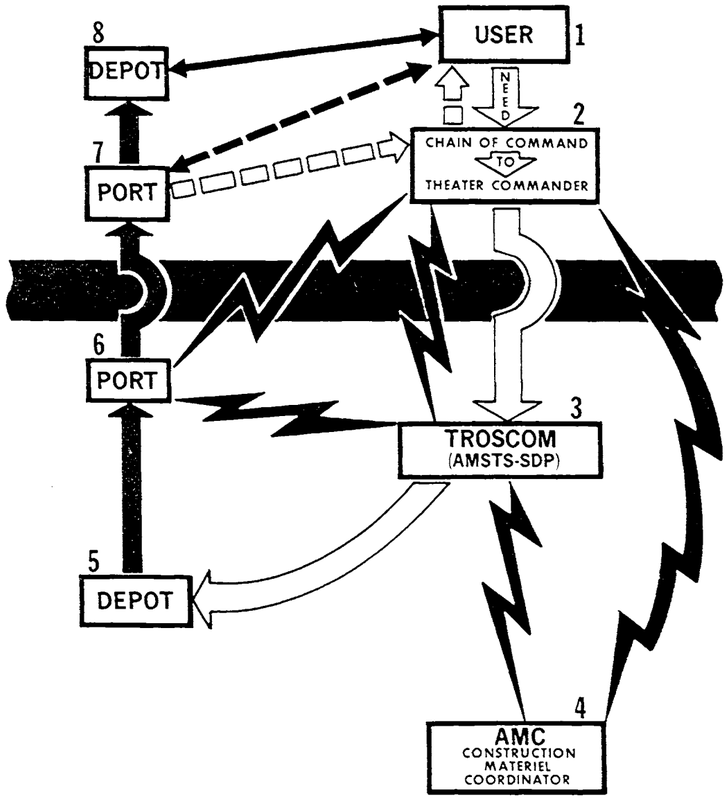


Figure 4–1.

1. *SUBMITS REQUISITION

2. *VALIDATE REQUIREMENT
   *INITIATE TWX TO MECOM FOR INSTALLATION FACILITY
   *INFO COPY OF TWX TO AMC CONSTRUCTION MATERIEL COORD'
   *IDENTIFY PRIORITY
   *DECLARE PORT OF ENTRY, DEPOT & REQUESTOR
   *INFORM AMC OF UNSATISFACTORY PRODUCT PERFORMANCE
   *WORK DIRECTLY WITH AFCS OFFICE ON NEW REQUIREMENTS
   *INFORM AMC OF ERRORS IN SHIPMENT
   *FORECAST OF REQUIREMENTS TO AMC

3. *ASSIGN PROJECT CODE TO REQUISITION
   *ACKNOWLEDGE RECEIPT OF TWX & PROVIDE PROJECT CODE FOR INFOR PURPOSES
   *PREPARE & PROCESS BOM
   *ISSUE FROM STOCK OR PRODUCE BOM
   *DESIGNATE ASSEMBLY DEPOTS
   *ARRANGE TRANSPORTATION IN ACCORDANCE WITH PRIORITY
   *PROVIDE THEATER CMDR WITH ADVANCE SHIPPING INFORMATION (INFO ALSO GIVEN TO AMC)
   *PROVIDE STATUS REPORTS TO THEATER COMMANDER & AMC
   *PROVIDE COMPUTER PROGRAMS FOR AFCS & BDP's
   *PROVIDE THEATER COMMANDER WITH MONTHLY RECAPITULATION

4. *MONITOR STATUS OF REQUISITIONS
   *PROVIDE NECESSARY POLICY GUIDANCE TO MECOM WHEN APPLICABLE
   *COORDINATE WITH AFCS OFFICE ON MATTERS DEALING WITH REQUISITIONS REQUIRING SPECIAL MODIFICATIONS
   *CONFER WITH THEATER COMMAND ON DELAYS, MODIFICATIONS, OR LACK OF ABILITY TO FILL SPECIFIC REQUESTS

5. *APPOINT A FULL TIME PROJECT MANAGER
   *INSURE REQUISITIONS ARE PACKED AND SHIPPED IN DISCRETE PACKAGES
   *INFORM TROSCOM OF ANY PROBLEMS RESULTING IN DELAYS OR INABILITY TO COMPLETELY FILL REQUISITIONS
   *INFORM TRANSPORTATION WHEN MATERIEL IS READY FOR PICKUP
   *INSURE THAT SHIPMENTS ARE PROPERLY IDENTIFIED WITH PROJECT CODE & "MARKED FOR–SHIP TO" INFORMATION

6. *PROVIDE FINAL SHIPPING DATA INFO TO TROSCOM & THEATER COMMANDER
   *INSURE THAT SHIPMENT IS TRANSPORTED ALL TOGETHER (AS A COMPLETE PACKAGE)

7. *INFORM THEATER COMMANDER OF ARRIVAL OF SHIPMENT
   *CONTACT UNIT OF ARRIVAL OF INSTALLATION FACILITY PACKAGE AND ASCERTAIN IF UNIT PICKUP AT PORT IS DESIRED
   *IF UNIT PICKUP IS NOT REQUESTED THEN INFORM UNIT OF RECEIVING DEPOT AND ETA AT DEPOT
   *WHEN A UNIT PICKUP TAKES PLACE INFORM THEATER COMMAND OF ISSUE

8. *CONTACT UNIT & DETERMINE METHOD OF DELIVERY
   *NOTIFY THEATER COMMAND OF DATE OF ISSUE

CHAPTER 5

CAMOUFLAGE

5–1. Treatment of Camouflage in the AFCS.

The AFCS does not include a separate camouflage facility for each structure. Rather, descriptive information and tables are included which will allow the planner to extract the necessary materials for his particular task. However, in accomplishing a camouflage requirement, it should be noted that successful camouflage techniques require imaginative use of not only the issued materials but also such artificial and natural materials as are locally available. These would include such items as cut foliage, earth, wire screening and other disrupters. The proper siting and dispersal of facilities with respect to existing natural or man-made terrain patterns will lessen the need for artificial camouflage. The material presented in this chapter does not represent a complete coverage of camouflage techniques; the doctrine and techniques of camouflage practice are contained in FM 5–20, Camouflage, and TM 5–200, Camouflage Materials. This chapter will permit the user to determine his requirements for the issued materials available. At this printing, the development of the new camouflage paint is not yet complete, but will be included in succeeding editions.

5–2. The Modular Lightweight Camouflage Screening System.

The new camouflage screening system consists of a standardized set of two nets (a hexagon and a diamond) and supporting equipment. The two nets and supporting equipment as a set are termed a module. By connecting modules to one another in various configurations, the desired size of net cover can be obtained. The available module types are shown below in paragraph 5–4. Figure 5–1 depicts various module configurations.

5–3. Computation of Required Number of Modules.

The standard computation for net coverage is contained in TM 5–200. The required net width is determined by summing twice the height of the structure to be covered, the width of the structure, and an additional 5 feet. A similar computation is performed to determine the required length of the net. Thus,

$$A=2H+W+5$$
$$B=2H+L+5,$$

where A, B are the net width and length in feet respectively, and H, W, L are the structure height, width, and length respectively. Based on the single module coverage of 898 square feet, the graph in figure 5–2 allows the planner to compute the required number of modules.

EXAMPLE: Facility number 340331, a wood frame barracks, measures 30 feet wide by 40 feet long, and is 13'9" (or 14') in height (chapter 7). To compute the number of modules necessary to provide complete coverage of this building, first compute A and B as follows:

A=(2×14) + (30) + (5) = 63 feet.
B=(2×14) + (40) + (5) = 73 feet.

Enter the graph at the values of A and B and read the number of modules for coverage. This facility requires six modules.

NOTE

The planner should recognize that if the facility in this example is to be located in an area of natural cover, less modules may be required. For example, if the facility is located next to or within a stand of trees, the camouflage nets can be tied into the trees and thus reduce the total net requirement.

5–4. Available Facilities.

(See also TM 5–303).

Facility Number	*Climate*	*Description*
031010	Temperate, Tropical	Camouflage, Woodland Radar Scattering system and screen support system.
031011	Temperate, Tropical	Camouflage, Woodland Radar Transparent system and screen support system.
031019	Frigid	Camouflage, Snow Radar Scattering system and screen support system.
031030	Frigid	Camouflage, Snow Radar Transparent system and screen support system.
031031	Desert	Camouflage, Desert Radar Scattering system and screen support system.
031039	Desert	Camouflage, Desert Radar Transparent system and screen support system.

5–5. Construction.

a. Man-hours. Field testing of the new net system at the time of this publication indicates that one man-hour per module is required in a temperate zone and under reasonable terrain and weather conditions.

b. Additional Equipment. All necessary equipment is contained in the module and support system for erection of the nets except sledge hammers and gloves (cold weather only).

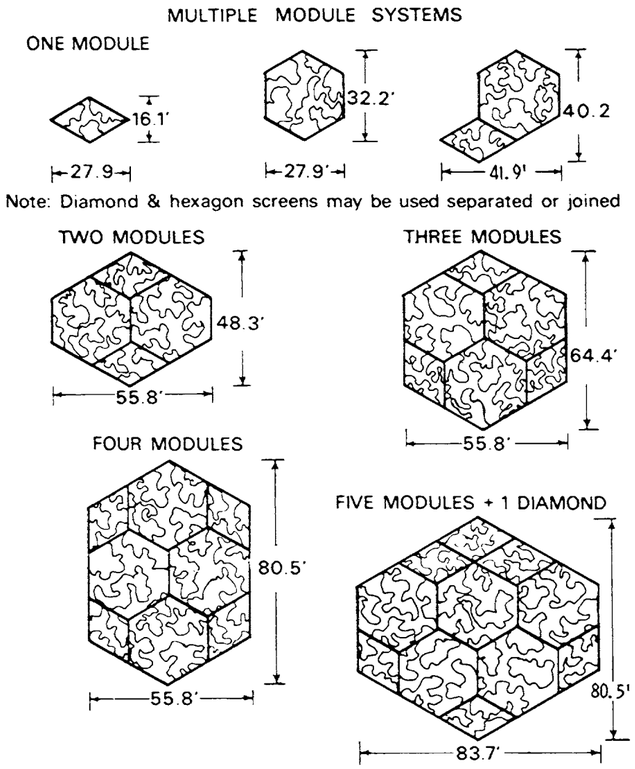


Figure 5–1.

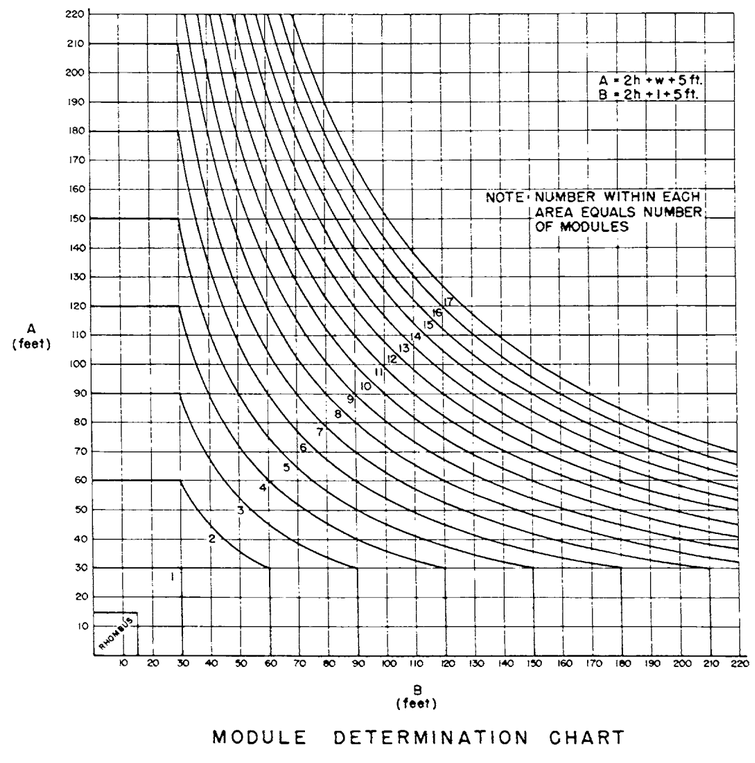


Figure 5–2.

CHAPTER 6

USING TM 5–302

6–1. Hypothetical Problem. (UNDER REVISION)

CHAPTER 7

INSTALLATION, FACILITY AND STANDARD DETAIL DRAWINGS

7–1. Index of Drawings.

	DWG No.
Administration 20'x30', 20'x50' and 40'x100'	61–11
Administration 1, 2 and 3, 30'x110', 30'x90' and 30'x80' hospital	51–11*
Administration hdqtrs.—E Shape, 10,000 SF	61–11
Administration hdqtrs.—U Shape, 5,000 SF	61–11
Administration post office, 40'x50', 40'x70' and 40'x90'	61–21
Administration, admission and disposition 1, 30'x110' hospital	51–11*
Admission and disposition, 1, 2 and 3, 40'x120' 40'x110' and 40'x90' hospital	51–12*
Admission and disposition, 4, 30'x90' hospital	51–13*
Administration Facilities:	
Administration 20'x30', 20'x50' and 40'x100'	61–11
Administration hdqtrs. E Shape, 10,000 SF, U Shape, 5,000 SF	61–11
Administration post office	61–21
Administration 1, 2 and 3, 30'x110', 30'x90' and 30'x80' hospital	51–11*
Administration, admission and disposition, 1, 30'x110' hospital	51–11*
Army post office	61–22
Base post office w/storeroom and sorting area	61–21
Headquarters and unit supply, 20'x40' and 20'x100'	61–11
Administration Installations:	
Administration 10,000 SF standards 3, 4 and 6	60–05
Administration 25,000 SF standards 3, 4 and 6	60–05
Administration 50,000 SF standards 3, 4 and 6	60–05
Base post office	60–28
Air Conditioning—hospital buildings:	
Centralized materiel section 1 and 2	52–09*
Surgery 1 and surgery 2	52–05*
Surgery CMS	52–09*
Ward, acute and standard	52–12*
X-ray 1 and X-ray 2	52–01*
X-ray, lab and dental, X-ray physical therapy	52–03*
Amphibious fueling—6-inch buoyant system	12–24
Approach trestle, railroad, 90' width	15–07
Army exchange, 5,000 man for tent, 40'x80' and building 40'x100'	74–22
Army exchange, 10,000 man 80'x120'	74–23
Artillery and fire control 180'x320' ordnance	21–51
Athletic court, combination, 60'x120'	75–21
Automotive armament rebuild 80'x180' ordnance	21–43
Automotive maintenance shop 80'x240'	21–41
Bakery, 10,800 lbs/10 hrs., 60'x140' w/20'x60' lean-to	72–71
Barracks prefab panel T–5 (20'x48') frigid climate	34–22
Barracks butlerhut 20'x48' and 20'x96'	35–23
Barracks type prefab 20'x48' round arch and arch rib for frigid climate	35–22
Barracks 1 and 2, 30'x100' and 30'x60' hospital	51–71*
Barracks 50 man, 20'x100'	72–21*
Barracks close confinement 25 man, 20'x50'	72–21*
Barracks type—wood frame bldg.—panel construction or built-in place const.	34–03
Barracks type steel frame building	35–21
Bathhouse tip tray 100, 250 and 500 man 20'x20', 20'x30' and 29'x59'	72–31
Bathhouse water borne 160 man or 80 officers 20'x20'	72–32
Bathhouse water borne 250 or 500 man, 20'x40' and 20'x50'	72–32
Bathhouse water borne 720 man, 20'x50'	72–35
Bathhouse and latrine, tip tray 100, 250, 500 man, 20'x30', 20'x50' and 20'x80'	72–31
Bathhouse and latrine, water borne 160 man or 80 officers 20'x30'	72–32
Bathhouse and latrine, water borne 250 and 500 man, 20'x60' and 20'x80'	72–32
Bathhouse and latrine, water borne 720 man and 20'x100'	72–35
Bills of construction materials (see Field requisition lists).	
Boiler house drycleaning plant 1,000, 2,500 and 5,000 man	82–11
Boiler house laundry, 2,500, 5000 and 10,000 man	82–11
Boiler house laundry, 500 and 1,000 bed hospital	82–11
Boiler house laundry, 60'x100' 27, 180 lb/hr	82–12
Boiler houses for messes, SURG-CMS and utility bldg No. 9	82–21
Booster station—1,400, 2,800 and 7,000 BPH, POL	12–31
Bridges—pipeline suspension 200'—400' Span for 8" Pipe	12–53*
Bridges, railroad E-45 loading:	
Substructures:	
Single track, timber and steel towers, various spans	86–15*
Single track, abutments, bents, piers and foundations	86–17*
Single track, bents and piers, concrete and timber foundations	86–18*
Substructures and superstructures:	
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Superstructures:	
Beam and girder construction types for various spans	86–02*
Deck and through truss construction details	86–19*
Walkway, refuge bay, crossing and stock bridge sets	86–21
Bridges, roads and railroads:	
Substructures:	
Steel, timber and concrete foundations for towers and piers	86–14*
Substructures and superstructures:	
Design criteria and selection tables	85–02*
Superstructures:	
Beam and girder details; narrow and wide gage	86–16*
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Substructure:	
Double lane abutments, bents and piers for various spans	85–22*
Double lane, concrete abutments and piers, various spans class 60	85–24*
Single lane abutments, bents and piers for timber and steel spans	85–11*
Single lane steel towers, 180' max combined steel spans	85–13*
Single and double lane timber and steel towers, class 25, 50, and 60	85–23*
Timber pile foundation for timber towers, all classes	85–26*
Substructures and superstructures:	
Schedule of facilities and various combinations, class 25, 50 and 60	85–01*
Superstructures:	
Double lane, various beams and girder structures, class 60	85–21*
Double lane, bailey, deck type, various spans and classes	85–41*
Single lane, 30' and 60' 1-Beam Spans, class 50 sections and details	85–15*
Single and Double lane, timber and steel spans, various classes	85–25*
Single and double lane, various depth beams and girder details	85–28*
Walkway, steel spans	85–21*
Walkway, wood spans	85–25*
Buildings—Steel Frame, metal roof:	
Barracks type, 8' min. clearance, basic bldg 20'x50' (length variable in 10' Increments)	35–21
Widening kit 10'x50'x8' min clearance for barracks type building	35–21
Warehouse type, 12' min clearance, basic bldg 40'x100' (length variable in 20' Increments)	35–36
Shop type, 20' min clearance, basic bldg 40'x100' (length variable in 10' increments)	35–46
Buildings—Wood Frame, wood and felt or corr metal roof:	
General purpose	34–05
Barracks type 8' min clearance, basic bldg 20'x20', 30'x40' and 40'x50'	34–03
Additional 10' bays x 20', 30' and 40' widths	34–03
Warehouse type 8' min clearance for personnel use, basic bldg 32'x32', 48'x32', 64'x32', 80'x32' and 96'x32'	34–11
Additional 10' bays x 32', 48', 64', 80' and 96' widths	34-11
Warehouse type 13'9" min clearance, basic bldg 32'x32', 48'x32', 64'x32', 80'x32' and 96'x32'	34–04
Additional 10' bays x 32', 48', 64', 80' and 96' widths	34–04
Shop type, 20' min clearance, basic bldg 40'x40', 60'x60', 80'x80', 100'x100' 140'x140'	34–19
Additional 20' bays x 40', 60', 80', 100', and 140' widths	34–19
Lean-to 15' min clearance, basic bldg 20'x40' and 40'x40'	34–19
Additional bay for lean-to 20'x20' and 40'x20'	34–19
Barracks prefab panel T–5 (20'x48') frigid climate	34–22
Barracks butlerhut 20'x48' and 20'x96'	35–23
Barracks type prefab 20'x48' round arch and arch rib for frigid climate	35–22
Bunkers, fighting (see Shelters—protective).	
Camp exchange, 20'x30', 20'x50' and 20'x80'	74–17
Camp exchange, 20'x100'	74–13
Camp exchange and recreation, 20'x60'	74–13
Camps (see Housing installations or site and utility layout).	
Car repair shop, railroad 60'x300'	86–31
Carpenter shop, window, door and wood panel work	34–01
Carrier and repeater communication building—intermediate station, 20'x40'	13–12
Carrier and repeater communication building terminal station, 40'x40'	13–12
Casualty receiving, holding treatment, 40'x260' hospital	51–15*
Cell block, occidental, 37 cells 40'x100'	71–01*
Cell block, oriental, 27 cells 22'x100'	71–01*
Centralized materiel section 1, 40'x120' hospital	51–45*
Centralized materiel section 2, 40'x100' hospital	51–46*
Centralized materiel surgery, 40'x100' hospital	51–44*
Chapel, 60, 100, 150 and 300 seats	74–47
Chlorine contact chamber, sewage disposal 30,000 GPD	83–13*
Chlorine contact chamber, sewage disposal 100,000 GPD	83–14*
Clinic, dental, 20,000 man 30'x130'	54–11*
Clinic, dental, 10,000 man 30'x90'	54–12*
Clinic, dental, 5,000 man 30'x40'	54–13*
Coal discharging trestle, railroad, 16'x156'	86–12
Coal loading platform, railroad, 12'x84'	86–11
Cold storage facilities (see Refrigerated warehouses and refrigerators).	
Communications facilities:	
Carrier and repeater bldg, intermediate station 20'x40'	13–12
Carrier and repeater bldg, terminal station 40'x40'	13–12
Signal maintenance shops 80'x200'	13–23
Radio receiver 40'x60'	13–21
Radio transmitter 4,800 SF	13–19
Relay station, 40'x80' and 40'x140'	13–11
Telephone, dial office, 40'x40' and 40'x60'	13–15
Telephone, long distance, manual, 40'x40' and 40'x60'	13–14
Telephone, manual, 20'x40'	13–15
Terminal station, 40'x60'	13–12
Construction Details for Facilities	99–98
Crafts shop, 5,000 man for tent 40'x80'	74–41
Crafts shop, 5,000 man 40'x100'	74–36
Crafts shop, 10,000 man 80'x120'	74–37
Day room, 40'x60'	74–13
Dental clinic, 20,000 man 30'x130'	54–11*
Dental clinic, 10,000 man 30'x90'	54–12*
Dental clinic, 5,000 man 30'x60'	54–13*
Dental and lab 1 and 2, 40'x120' and 40'x110' hospital	51–34
Dental and lab 3, 30'x110' hosptial	51–35*
Dental and lab, X-ray, 40'x110'	51–33*
Dispensary 1, 2 and 3, 30'x90', 30'x80' and 30'x70' hospital	51–23*
Dispensary (with 6 and 10 beds) 20'x70' and 20'x100'	55–12*
Dispensary, troop, 20'x60' and 20'x80'	55–11*
Distribution manifold—POL drum and can, tank car and truck loading	12–32
Dry cleaning plant, 1,000, 2,500 and 5,000 man	73–38
Drain field, sewage disposal, 10,000 GPD	83–11*
Drum washing, repairing and testing—POL	12–55
EE and pharmacy 2, 30'x60', EENT and pharmacy 1, 30'x70' hospital	51–21*
Education building, 20'x30' and 20'x50'	74–13
Electrical kits	81–41
Electric distribution, floodlighting details	81–24*
Electric distribution, line primary	81–21*
Electric distribution line secondary	81–23*
Electric distribution transformer installation	81–22*
Electric generating plants (see Engineering service facilities).	
Emplacement covers (see Shelters—protective).	
Engine house, 2 and 6 stall, railroad, 60'x80' and 60'x220'	86–32
Engineer Service Facilities:	
Electric distribution line primary	81–21*
Electric distribution line secondary	81–23*
Electric distribution, transformer installation	81–22*
Electric generating plants:	
2 or 3—15 KW units and 2 or 3—30 KW units	81–11*
2 or 3—60 KW units and 2 or 3—100 KW units	81–13*
3—300 KW units and 3—500 KW units	81–16*
3—625 and 1—375 KVA units	81–17
Sewage Disposal:	
Chlorine contact chamber, 30,000 GPD	83–13*
Chlorine contact chamber, 100,000 GPD	83–14*
Drainfield, 10,000 GPD	83–11*
Final settling tank 30,000 GPD	83–13*
Final settling tank 100,000 GPD	83–14*
Imhoff Tank—metal or wood 30,000 GPD	83–13*
Imhoff Tank—metal or wood 100,000 GPD	83–14*
Siphon chamber 10,000 GPD	83–11*
Siphon chamber 30,000 GPD	83–13*

See footnote at end of paragraph.
* Indicates drawing under revision.

Engineer Service Facilities—(*Continued*)	DWG No.
Siphon chamber 100,000 GPD	83–14*
Sludge drying beds	83–15*
Trickling filter, 30,000 GPD	83–13*
Trickling filter, 100,000 GPD	83–14*
Water purification:	
Erdlator and chemical storage, 60,000 and 120,000 GPD	84–17
Water supply:	
Deep well 20 GPM and 75 GPM	84–21
Engineer Service Installations:	
Sewage disposal plant, 10,000 GPD primary and complete treatment	80–01*
Sewage disposal plant, 30,000 GPD primary and complete treatment	80–02*
Sewage disposal plant, 100,000 GPD primary and complete treatment	80–03*
Water distribution, chlorination and storage details	84–21
Water purification, site layout 60,000 and 120,000 GPD	84–04
Fence, security, type W, X, Y and vehicle and man gate	71–09*
Field maintenance shop 80'x240' ordnance	21–42
Fighting bunkers, shelters, holes (see Shelters—protective)	
Film equipment and exchange facilities	
Motion picture laboratory 40'x100'	75–14
Class A, B and C 100'x200', 40'x100', 40'x50'	75–15
Final settling tank sewage disposal, 30,000 GPD	83–13*
Final settling tank sewage disposal, 100,000 GPD	83–14*
Finance office 15,000 man 40'x70'	61–27
Firehouse 1,600 SF	74–13
Fire protection sump, 2,000 and 10,000 GAL	84–21
Floodlighting details	81–24*
Flood pump and manifold 785 and 1355 BPH—POL	12–32
Footwear repair shops 5,000, 10,000, 15,000 and 20,000 man	73–51
Fuel unloading tank Car, 2 products 5 stations	12–47
Fuel supply pump station—POL 2 and 4 pumps	12–42
Air transportable hydrant refueling system	12–10
General purpose rebuild 120'x240' ordnance	21–82
Guardhouse 20'x60'	74–13
Guard tower 11'x11'	71–11*
Guard tower 16'x16'	71–12*
Guard tower 16'x24'	71–13*
Headquarters and unit supply, 20'x40' and 20'x100'	61–11
Hospital and Medical Facilities:	
Administration 1, 2 and 3, 30'x110', 30'x90' and 30'x80'	51–11*
Administration, admission and disposal 1, 30'x110'	51–11*
Admission and disposition 1, 2 and 3 40'x120', 40'x110' and 40'x90'	51–12*
Admission and disposition 4, 30'x90'	51–13*
Barracks 1 and 2, 30'x100' and 30'x60'	51–71*
Boiler house for messes, SURG-CMS and utility bldg No. 9	82–21
Casualty receiving, holding, treatment, 40'x260'	51–15*
Centralized materiel section 1, 40'x120'	51–45*
Centralized materiel section 2, 40'x100'	51–46*
Clinic dental, 5,000 man 30'x60'	54–13*
Clinic dental, 10,000 man 30'x90'	54–12*
Clinic dental, 20,000 man 30'x130'	54–11*
Dispensary 1, 2 and 3, 30'x90', 30'x80' and 30'x70'	51–23*
Dispensary troop, 20'x60' and 20'x80'	55–11*
Dispensary with 6 and 10 beds, 20'x70' and 20'x100'	55–12*
EE and pharmacy 2, 30'x60' and EENT and pharmacy 1, 30'x70'	51–21*
Laboratory and dental 1 and 2, 40'x140' and 40'x110'	51–34*
Laboratory and dental 3, 30'x110'	51–35*
Linen exchange 1 and 2, 30'x50' and 30'x40'	51–56*
Linen exchange and supply 1 and 2, 30'x110' and 30'x90'	51–56*
Mess 1—16,000 SF	51–63*
Mess 2—10,000 SF	51–64*
Mess 3—8,200 SF	51–65*
Mess 4—4,400 SF	51–66*
Physical medicine, PTOT—2, 30'x80'	51–36*
Physical and occupational therapy, PTOT—1, 40'x90'	51–36*
Professional services bldg 30'x100'	51–13*
Quarters, 13 female officers, 30'x60'	51–71*
Quarters, 23 female officers, 30'x100'	51–71*
Quarters, 14 male officers, 30'x60'	51–71*
Quarters, 24 male officers, 30'x100'	51–71*
Recreation building 1 and 2, 30'x60' and 30'x40'	51–91*
Special services A1 and A2, 40'x90' and 40'x70'	51–91*
Special services A3, B1 and B2, 40'x70', 30'x60' and 30'x60'	51–93*
Supply Storehouse 1, 2, 3 and 4, 30'x90', 30'x110', 30'x70' and 30'x100'	51–54*
Surgery 1, 40'x150'	51–41*
Surgery 2, 40'x110'	51–42*
Surgery, centralized materiel, 40'x100'	51–44*
Utility building 1 and 2, 40'x60' and 30'x60'	51–81*
Utility building 3, 4 and 5, 30'x60'	51–83*
Utility building 6, 7 and 8, 30'x60'	51–85*
Utility building 9 and 10, 30'x50' and 30'x40'	51–87*
Utility building for dental clinic, 30'x40'	54–13*
Walk-covered for hospitals—details	51–97*
Ward 1, standard, 30'x100' and ward 2, acute 30'x100'	51–51*
X-ray, 1 and 2, 40'x90' and 40'x80'	51–31*
X-ray, laboratory, dental, 40'x110'	51–33*
X-ray, physical therapy, 40'x90'	51–32*
Hospital and Medical Installations:	
Hospital—100 bed standards 2, 3, 4 and 6	50–03*
Hospital—100 bed standard 6 air conditioned	50–03*
Hospital—200 bed standards 2, 3, 4 and 6	50–04*
Hospital—200 bed standard 6 air conditioned	50–04*
Hospital—300 bed standards 2, 3, 4 and 6	50–05*
Hospital—300 bed standard 6 air conditioned	50–05*
Hospital—500 bed standards 2, 3, 4 and 6	50–06*
Hospital—500 bed standard 6 air conditioned	50–06*
Hospital—750 bed standards 2, 3, 4 and 6	50–07*
Hospital—750 bed standard 6 air conditioned	50–07*
Hospital—1,000 bed standards 2, 3, 4 and 6	50–08*
Hospital—1,000 bed standard 6 air conditioned	50–08*
Hospital—1,000 bed alternate, standard 6	50–08*
Hospital—1,000 bed alternate, standard 6 air Conditioned	50–08*
Housing Facilities:	
Barracks, 50 man, 20'x96' butlerhut, steel frame	35–23
Barracks type—wood frame 20', 30' and 40' widths various lengths	34–03
Barracks type steel frame bldg 20'x50' and 10'x50' widening kit	35–21
Barracks, 25 man, 20'x48' butlerhut, steel frame	72–53*
Barracks, 50 man, 20'x100'	72–21*
Barracks, close confinement, 25 man, 20'x50'	72–21*
Quarters, female employees, 20'x30' and 20'x40'	72–21*
Quarters, officers 16'x24', 20'x70' and 20'x100'	72–21*
Quarters, officers, female 1 and 2, 30'x100' and 30'x60' for hospital	51–71*
Quarters, officers, male, 1 and 2, 30'x100' and 30'x60' for hospital	51–71*
Shop type buildings (see Buildings).	
Tent floors and frames, 16'x32'	72–51
Warehouse type buildings (see Buildings).	
Housing Installations:	
Military prisoner stockade 250 man standards 2, 3, 4 and 5	70–21*
POW camp 250 man standard 2	70–31*
POW camp 500 man standards 2, 3, 4 and 5	70–31*
POW camp 1,000 man standards 3, 4 and 5	70–32*
POW camp 2,000 man standards 2, 3, 4 and 5	70–33*
POW Camp 4,000 man occidentals standards 3, 4 and 5	70–35*
Troop camp 250 man standards 3, 4, 5 and 6	70–01
Troop camp 500 man standards 3, 4, 5 and 6	70–02
Troop camp 1,000 man standards 3, 4, 5 and 6	70–03
Troop camp 1,500 man standards 3, 4, 5 and 6	70–04
Troop camp 3,000 man standards 3, 4, 5 and 6	70–05
Ice plant 1 ton	43–21
Ice plant 15 ton	43–23
Imhoff tank, sewage disposal—metal or wood, 30,000 GPD	83–13*
Imhoff tank, sewage disposal—metal or wood, 100,000 GPD	83–14*
Jetty w/40'x70' wharf—1,000'	12–57
Kitchen and mess hall, 200 man	72–61
Kitchen and mess hall, 500 man	72–62
Laboratory, petroleum base POL	12–35
Laboratory and dental, 1 and 2, 40'x120' and 40'x110' hospital	51–34*
Lab and dental, 3, 30'x110' hospital	51–35*
Lab, X-ray dental 40'x110' hospital	51–33*
Latrine, bucket type, 12 seats, 10'x30'	72–36
Latrine, pit type, 8 seats, 10'x20' and female 2 seats, 10'x10'	72–36
Latrine, water borne, 160 man or 80 officers, 10'x20'	72–35
Latrine and Bathhouse, tip tray, 100, 250 and 500 man, 20'x30', 20'x50' and 20'x80'	72–31
Latrine and Bathhouse, water borne, 160 man or 80 officers, 20'x30'	72–32
Latrine and bathhouse, water borne, 250 and 500 man, 20'x60' and 20'x80'	72–32
Latrine and bathhouse, water borne, 720 man, 20'x100'	72–35
Laundry, 2,500 man	73–34
Laundry, 5,000 man	73–35
Laundry, 10,000 man	73–36
Laundry, 500 and 1,000 bed hospital	73–37
Laundry, special details	73–39
Library, 5,000 man for tent 40'x80' and bldg 40'x100'	74–41
Library, 10,000 man, 80'x100'	74–43
Lighterage—wharf—35'x500'	15–26
Lighterage—wharf—rehab 35'x500' plans	15–24
Lighterage—wharf—rehab scheme I 35'x500'	15–25
Linen Exchange 1 and 2, 30'x50' and 30'x40' hospital	15–56*
Linen Exchange and supply 1 and 2, 30'x110' and 30'x90' hospital	51–56*
Liner and installation details	35–21
Loading pump and manifold, 700–1, 400 and 2,000–2,500 BPH—POL	12–31
Loading station, POL tank truck and tank car	12–32
Loading station, POL tank truck 2 sta, 5 and 10 station tank car	12–43*
Lubrication rack, 12'x56'	21–97
Machine shop, railroad, 80'x300'	86–31
Magazine—steel arch, 16' and 25' widths	42–14
Manifold, distribution—POL drum and can, tank car and truck loading	12–32
Manifold, switching—POL—4", 6", 8" and 12"	12–32
Marine Railway—1,800 and 500 ton	15–33
Marine railway repair	15–31
Marine shops, 40'x100' and 60'x180'	15–32
Mechanical Ventilation—hospital buildings:	
Barracks 1 and 2, 30'x100', 30'x60'	53–05*
Dispensary 1, 2 and 3, 30'x90', 30'x80' and 30'x70'	53–01*
EE and pharmacy 1 and 2, 30'x70' and 30'x60'	53–03*
Fan housing	99–98*
Lab and dental 1, 2 and 3, 40'x120', 40'x110' and 30'x110'	53–01*
Physical medicine PTOT—2, 30'x80'	53–03*
Physical and occupational therapy, PTOT—1, 40'x90'	53–03*
Quarters, female officers 1 and 2, 30'x100' and 30'x60'	53–05*
Quarters, male officers, 1 and 2, 30'x100' and 30'x60'	53–05*
Ward 1 and 2, standard and acute, 30'x100' and 30'x100'	53–03*
Mess 1—16,000 SF—hospital	51–63*
Mess 2—10,000 SF—hospital	51–64*
Mess 3—8,200 SF—hospital	51–65*
Mess 4—4,400 SF—hospital	51–66*
Mess hall and kitchen, 180, 250 man 20'x100' and 20'x130'	72–61
Mess hall and kitchen, 500 man 40'x140' and 70 officers 20'x80'	72–62
Military prisoner stockade (see Housing instal or site util layout).	
Mooring, tanker, POL 60', 90' and 120' Depth 3, 5 and 7 Leg	12–21
Motion picture lab, 40'x100'	75–14
Motor repair shop, 40'x40' and 40'x60'	21–41
Motor vehicle assembly shop, 120'x200' ordnance	22–41
Occupational and physical therapy, 40'x90' hospital	51–36*
Open areas—floodlighting details	81–24*
Ordnance Shops:	
Automotive armament rebuild, 80'x180'	21–43*
Artillery and fire control, 180'x320'	21–51
Field maintenance 80'x240'	21–42
General purpose rebuild, 120'x240'	21–82
Motor vehicle assembly, 120'x200'	22–41
Park company, 120'x160'	21–81
Lubrication rack	21–97
Park company shop, 120'x160'—ordnance	21–81
Personnel Services:	
Dryceaning plant 1,000 and 2,500 and 5,000 man	73–38
Footwear repair shop—5,000, 10,000, 15,000 and 20,000 man	73–51
Laundry, 2,500 man—64'x144'	73–34
Laundry, 5,000 man 64'x208'	73–35
Laundry, 10,000 man 128'x224'	73–36
Petroleum base laboratory	12–35
Physical medicine, 30'x80' hospital	51–36*
Physical and occupational therapy, 40'x90' hospital	51–36*
Physical therapy X-ray 40'x90' hospital	51–32*
Pier (see Ports).	
Pipeline pump station—POL	12–52
Pipeline submarine—6", 8" and 12"; 60', 90' and 120' Depth—POL	12–22
Pipeline submarine—8", 12", 16" and 20"; 60', 90' and 120' depths	12–23
Pipeline submarine—6"—1,000' long—25' depth	12–04
POL Facilities:	
Fuel drum cleaning filling and storage installation	12–13
Supplementary fittings and valve for reversing pumpings from collapsible storage tank farm (100,000, 50,000 and 40,000 gal)	12–04
Reversing manifold for booster pumps for loading shore to ship 6"—8" and 12" lines	12–04
Tanks, collapsible w/equipment, 4–10,000 gallon storage capacity	12–04
Mooring for barge or small vessel in shallow water, 25' depth	12–04
Tactical marine terminal 50,000 bbl w/6" submarine pipeline and 6" buoyant hoseline	12–12
Tanker, mooring, 3–5–7 leg, 60', 90', 120' depths	12–21
Pipeline, submarine, 1,000' long 25' depth 6"	12–04
Pipeline, submarine, 6", 8" and 12", 2750' long, 60, 90 and 120' depths	12–22
Pipeline, submarine, 1,000' long 25' depth 6"	12–04
Pipeline, submarine, 8", 12", 16" and 20", 5300' long, 60, 90 and 120' depth	12–23
Booster stations, 1400–2800–7000 BPH	12–31
Loading pump and manifold for 2—tank trucks, 5 and 10 railroad cars, drum and can	12–31
Manifold switching 4", 6", 8" and 12" lines	12–32
Flood pumps, 785 and 1355 BPH with 6", 8" and 12" manifolds	12–32
Tank pumps, 700–1400–2800 BPH with 6", 8" and 12" manifolds	12–32
Distribution manifold for can and drum and 10 tank car loading 6" and 8"	12–32

* Indicates drawing under revision.

POL Facilities—(*Continued*)	DWG No.
Transfer pumps, 700–1400–2800 BPH w/6", 8" and 12" manifolds	12–33
Tanks, w/pipe and fittings, 100, 250, 500, 1,000, 3,000, 10,000 and 50,000 BBL, 4", 6", 8" and 12" lines	12–34
Base petroleum laboratory building with interior	12–35
Pump station fuel supply for 2 and 4 pumps	12–42
Loading for 2—tank trucks, 5 and 10 tank car	12–43*
Tanks, collapsible 50,000–100,000 gallons storage capacity	12–45
Tank car unloading, 5 stations, 2 products	12–47
Pump stations, 385, 785–1355 BPH, with 4", 6" and 8" manifolds	12–52
Pipeline suspension cable bridge, 200'–400' span for 8" pipe	12–53*
Drum washing, repairing and testing building w/equipment	12–55
Jetty, POL w/40'x70' wharf, 1,000' from shore/hose derricks and tanker watering service facilities	12–57
Pipe and accessories for existing dock, 4", 6", 8", 12" and 16"	12–58
Cleaning, testing and repairing for collapsible drums and tanks; 50–500 gal drums and 2 each 3,000–10,000–50,000 gal tanks per 10 hr day	12–48*
Support area fuel supply for rotary wing and fixed wing A/C refueling	12–46
POL Installations:	
Tank car loading, 5 and 10 car stations	12–02*
Tank truck loading, 5 stations, 2 products	12–47
Tank truck loading, 2 stations, 2 miles removed from Tank Farm	12–03*
Tank truck loading, 2 stations, at tank farm	12–07
Barge or small vessel unloading, loading in shallow water and tank farms, 300,000 and tank farms, 300,000 and 600,000 gal capacity	12–04
Pipeline pump stations 385–785–1355 BPH w/4", 6" and 8" lines	12–06
Tank farms, 50,000, 100,000, 150,000, 200,000 and 250,000 bbls storage capacities w/6", 8" and 12" pipelines	12–07
Tank farm complexes, 400,000, 600,000 800,000 and 1,000,000 BBL storage capacity w/6", 8" and 12" pipelines	12–08
Marine terminal with existing dock, 200,000, 400,000 and 1,000,000 BBL storage capacity	12–09
Marine terminal with 1,000' jetty and 40'x70' wharf, 200,000, 400,000 and 1,000,000 BBL storage capacity	12–09
Marine terminal with 12" submarine pipeline, 200,000, 400,000, 1,000,000 BBL storage capacity	12–09
Tactical marine terminal 50,000 BBL storage capacity with 6" submarine pipeline and 6" buoyant hoseline	12–12
Tank farm portable 50,000 and 100,000 gal storage capacity	12–45
Fuel drum cleaning, filling and storage installation	12–13
Ports, dry cargo:	
Rehab pier or wharf, scheme I, section and details	15–01
Rehab pier or wharf, scheme II, section and details	15–02
Rehab pier or wharf, scheme IIII, sections and details	15–03
Rehab pier or wharf, scheme IV, sections and details	15–04
Rehab pier or wharf, scheme V, sections and details	15–05
Rehab wharf—Lighterage 35'x500' plans and details	15–24
Rehab wharf—Lighterage 35'x500' scheme I	15–25
Pier, timber, 90'x500' with railroad approach trestle	15–06
Pier, timber, 90'x500' railroad approach trestle	15–07
Wharf, timber 60'x500', pile framing and deck plans	15–21
Wharf, timber 60'x500' railroad approach trestle, 100 LF	15–22
Wharf, timber 60'x500' road approach trestle, 100 LF	15–23
Wharf, lighterage 35'x500', sections elev and details	15–25
1440 tons/day, std 5, site and utility layout	15–08
Post office, army, 40'x60' and 40'x100'	61–22
Post office, base, 80'x240', 80'x200' and 80'x140'	61–21
Post office admin 1, 2 and 3, 40'x90', 40'x70' and 40'x50'	61–21
POW camps (see Housing installations or Site and utility layouts).	
Professional services building 1, 30'x100' hospital	51–13*
Protective bunkers, shelters (see Shelters—protective).	
Pump and manifold POL:	
Flood, 785 and 1,355 BPH	12–32
Loading, 700–1, 400 and 2,000–2,500 BPH	12–31
Tank, 700, 1,400 and 2,800 BPH	12–32
Transfer, 700, 1,400 and 2,800 BPH	12–33
Pump station—POL	
Fuel supply, 2 and 4 pumps	12–42
Pipeline, 385, 785, 1,355 BPH	12–52
Quarters, female employees 20'x30' and 20'x40'	72–21*
Quarters, officers, 16 and 24, 20'x70' and 20'x100'	72–21*
Quarters, officers, female 1 and 2, 30'x100' and 30'x60' hospital	51–71*
Quarters, officers, male 1 and 2, 30'x100' and 30'x60' hospital	51–71*
Radio receiver building, 40'x40', 40'x60' and 40'x80'	13–21
Radio transmitter buildings:	
4,800 SF	13–19
Railroad bridges (see Bridges).	
Railroad Facilities:	
Approach trestle, 90' width	15–07
Bridges (see Railroad bridge spans).	
Car repair shop, 60'x300'	86–31
Coal discharging trestle, 16'x156'	86–12
Coal loading platform, 12'x84'	86–11
Engine house, 2 stall and 6 stall, 60'x80' and 60'x220'	86–32
Machine shop	86–31
Turnout, track No. 8	86–13
Unloading platform 32'x172'	86–09
Water storage and tower, low, 21,000 gal and 42,000 gal	86–24
Water storage and tower, high, 21,000 gal	86–22
Water storage and tower, high, 126,000 gal.	86–23
Diesel oil, POL, storage and tower, low, 2–42,000 gal tanks	86–04
Railroad Installations:	
Railroad terminal, 20 trains per day	86–04
Railroad regulating station, 20 trains per day	86–05
Recreation building 1 and 2, 30'x60' and 30'x40' hospital	51–91*
Recreation and camp exchange, 20'x60'	74–13
Recreational Facilities:	
Army exchange, 5,000 man for tent, 40'x80' and building 40'x100'	74–22
Army exchange, 10,000 man, 80'x120'	74–23
Athletic court, combination, 60'x120'	75–21
Camp exchange, 20'x30', 20'x50' and 20'x80'	74–17
Camp exchange, 20'x100'	74–13
Camp exchange and recreation, 20'x60'	74–13
Chapel, 20'x30' and 20'x50'	74–47
Chapel, 300 seats and 150 seats, 40'x80' and 30'x60'	74–47
Crafts shop, 5,000 man, 40'x100'	74–36
Crafts shop, 10,000 man, 80'x120'	74–37
Day room, 40'x60'	74–13
Educational building, 20'x30' and 20'x50'	74–13
Library, 5,000 man for tent, 40'x80' and building 40'x100'	74–41
Library, 10,000 man 80'x100'	74–43
Recreation building 1 and 2, 30'x60' and 30'x40' hospital	51–91*
Service club, 5,000 man for tent, 40'x100'	74–17
Snack bar in tent, 16'x32'	74–17
Snack bar kitchen tent, 12'x18'	74–17
Special activities, 5,000 man 60'x160'	74–31
Special activities, 10,000 man 60'x260'	74–32
Special services A1 and A2, 40'x90' and 40'x70', rec 1 and 2, 30'x60' and 30'x40'—hospital	51–91*
Special services A3, B1 and B2, 40'x70' and 30'x60' hospital	51–93*
Theater, motion picture, 750 seats, 60'x140'	74–46
Theater, motion picture, 350 seats for tent, 40'x100'	74–45
Theater, outdoor, 750 and 1500 seats	75–11
Recreation Installations:	
Recreation center 5,000 man standards 2, 3, 4 and 5	60–22
Recreation center 10,000 man standards 4 and 5	60–22
Refrigerated warehouse 32'x40' and 40'x60'	43–15
Refrigerated warehouse 80'x220'	43–16
Refrigerated, prefab 600, 1,200, 1,800 and 4,000 cf	43–17
Rehabilitation facilities:	
Lighterage, wharf 35'x500'	15–24
Lighterage, wharf, scheme I—1,000'	15–25
Pier or wharf, scheme I—30'x502'	15–01
Pier or wharf, scheme II—31'x502'	15–02
Pier or wharf, scheme III—36'x510'	15–03
Pier or wharf, scheme IV—37'x508'	15–04
Pier or wharf, scheme V—19'x502'	15–05
Relay communication station 40'x80' and 40'x140'	13–11
Roads—single and double lane and hardstands—Typical details	85–31*
Road Bridges (see Bridges).	
Security Facilities:	
Barracks, close confinement, 25 man, 20'x50'	72–21*
Cell block, Occidental, 37 cells, 40'x100'	71–01*
Cell block, Oriental, 2 7 cells, 22'x100'	71–01*
Fence, security, type W, X, Y and vehicle and man gate	71–09*
Guard tower 11'x11'	71–11*
Security Facilities—Continued	
Guard tower, 16'x16'	71–12*
Guard tower, 16'x24'	71–13*
Septic tank, 500 gallon	83–11*
Septic tank sewage disposal, 10,000 GPD	83–11*
Service club, 5,000 man for tent 40'x100'	74–17
Sewage disposal:	
Chlorine contact chamber, 30,000 GPD	83–13*
Chlorine contact chamber, 100,000 GPD	83–14*
Drainfield, 10,000 GPD	83–11*
Final settling tank, 30,000 GPD	83–13*
Final settling tank, 100,000 GPD	83–14*
Imhoff tank—metal or wood, 30,000 GPD	83–13*
Imhoff tank—metal or wood, 100,000 GPD	83–14*
Siphon chamber 10,000 GPD	83–11*
Siphon chamber 30,000 GPD	83–13*
Siphon chamber 100,000 GPD	83–14*
Sludge drying beds	83–15*
Trickling filter, 30,000 GPD	83–13*
Trickling filter, 100,000 GPD	83–14*
Shelters—Protective:	
Concrete arch	04–01
Steel multiplate arch	04–02
Concrete log bunker	04–03
Concrete arch bunker and corrugated steel pipe fighting hole	04–04
Timber frame fighting hole	04–05
Precast concrete parts yard for bunkers and shelters	04–06
Shop Facilities:	
Automotive maintenance, 80'x240'	21–41
Car repair shop, railroad, 60'x300'	86–31
Carpenter shop, windows and doors, 48'x96', work panel work 48'x112'	34–01
Footwear repair	73–51
Lubrication rack	21–97
Machine shop, railroad, 80'x300'	86–31*
Motor repair shop, 40'x40' and 40'x60'	21–41
Ordnance, artillery and fire control, 180'x320'	21–51
Ordnance, automotive armament rebuild, 80'x180'	21–43
Ordnance, field maintenance, 80'x240'	21–42
Ordnance, general purpose rebuild, 120'x240'	21–82
Ordnance, motor vehicle assembly, 120'x200'	22–41
Ordnance, park company, 120'x160'	21–81
Signal maintenance, 80'x200', 80'x100' and 40'x100'	13–23
Shop Installations:	
Base Ordnance park	20–04
Marine railway repair	15–31
Ordnance, armament rebuild	20–05
Ordnance, automotive rebuild	20–06
Ordnance, collecting point	20–03
Shop, heavy duty, wood frame bldg various widths (see Buildings)	34–19
Shop, steel frame bldg (see Buildings)	35–46
Shop, marine, 40'x100' and 60' and 180'	15–32
Signal maintenance shop, 80'x200', 80'x100' and 40'x100'	13–23
Siphon chamber, sewage disposal, 10,000 GPD	83–11*
Siphon chamber, sewage disposal, 30,000 GPD	83–13*
Siphon chamber, sewage disposal, 100,000 GPD	83–14*
Site and Utility Layouts:	
Administration—10,000 SF standards 4 and 6	60–05
Administration—25,000 SF standards 4 and 6	60–05
Administration—50,000 SF standards 4 and 6	60–05
Army airfields (see Airfield installations)	
Base ordnance park	20–04
Base post office	60–28
Hospital—100 bed standards 2, 3, 4 and 6	50–03*
Hospital—100 bed standard 6 air conditioned	50–03*
Hospital—200 bed standards 2, 3, 4 and 6	50–04*
Hospital—200 bed standard 6 air conditioned	50–04*
Hospital—300 bed standards 2, 3, 4 and 6	50–05*
Hospital—300 bed standard 6 air conditioned	50–05*
Hospital—500 bed standards 2, 3, 4 and 6	50–06*
Hospital—500 bed standard 6 air conditioned	50–06*
Hospital—750 bed standards 2, 3 4 and 6	50–07*
Hospital—750 bed standard 6 air conditioned	50–07*
Hospital—1,000 bed standards 2, 3, 4 and 6	50–08*
Hospital—1,000 bed standard 6 air conditioned	50–08*
Hospital—1,000 bed alternate—standard 6	50–08*
Hospital—1,000 bed alternate—standard 6 air conditioned	50–08*
Marine POL terminal (tactical) 50,000 BBL storage	12–12
Marine POL terminal 200,000, 400,000 and 1,000,000 Bbl storage	12–09
Marine railway repair	15–31
Marine shop 40'x100' and 60'x180'	15–32
Military prisoner stockade—250 man standards 2, 3, 4 and 5	70–21*
Military prisoner stockade—500 man standards 3, 4 and 5	70–22*
Ordnance, armament rebuild	20–05
Ordnance, automotive rebuild	20–06
Ordnance, collecting point	20–03
Pump stations w/4", 6" and 8" lines	12–06
Port 1,440 tons per day standard 5	15–08
POW camp 250 man standard 2	70–31*
POW camp 500 man standards 2, 3, 4 and 5	70–31*
POW camp 1,000 man standards 2, 3, 4 and 5	70–32*
POW camp 2,000 man standards 2, 3, 4 and 5	70–33*
POW camp 4,000 man occidentals—standards 2, 3, 4 and 5	70–35*
POW camp 4,000 man orientals—standards 2, 3, 4 and 5	70–34*
Railroad terminal—20 trans per day	86–04
Railroad regulating station—20 trains per day	86–05
Recreation center—5,000 man—standards 2, 3, 4 and 5	60–22
Recreation center—10,000 man—standards 4 and 5	60–22
Sewage disposal plant—10,000 GPD—primary and complete treatment	80–01*
Sewage disposal plant—30,000 GPD—primary and complete treatment	80–02*
Sewage disposal plant—100,000 GPD—primary and complete treatment	80–03*

* Indicates drawing under revision.

Site and Utility Layouts—(*Continued*)	DWG No.
Tank car loading, 5 and 10 rack, POL	12–02*
Tank farm—50,000, 100,000, 150,000, 200,000 and 250,000 Bbl storage—POL	12–07
Tank farm complex—400,000, 600,000 800,000 and 1,000,000 Bbl storage POL	12–08
Tank farm portable—50,000 and 100,000 gallon storage—POL	12–45
Tank truck loading, 2 station POL	12–03*
Troop camp 250 man standards 3, 4, 5 and 6	70–01*
Troop camp 500 man standards 3, 4, 5 and 6	70–02
Troop camp 1,000 man standards 3, 4, 5 and 6	70–03
Troop camp 1,500 man standards 3, 4, 5 and 6	70–04
Site and Utility Layouts—Continued	
Troop camp 3,000 man standards 3, 4, 5 and 6	70–05
Sludge drying bed, sewage disposal	83–15*
Snack bar kitchen tent, 12'x16'	74–17
Special activities, 5,000 man 60'x160'	74–31
Special activities, 10,000 man 60'x260'	74–32
Special services A1 and A2, 40'x90' and 40'x70', hospital	51–91*
Special services A3, B1 and B2, 40'x70' and 30'x60', hospital	51–93*
Water purification, 60,000 and 120,000 GPD	84–04
Standard details	99–98
Steel frame buildings (see Buildings).	
Stockade (see Housing installations or site and utility layouts).	
Storage Facilities:	
Ice plant—1 ton	43–21
Ice plant—15 ton	43–23
Refrigerators, prefabricated, 600, 1,200, 1,800 and 4,000 cubic feet	43–17
Magazine, steel arch 16' and 25' wide—variable lengths	42–14
Refrigerated warehouse—32'x40' and 40'x60'	43–15
Refrigerated warehouse—80'x220'	43–16
Storehouse, 20'x20', 20'x30', 20'x50' and 20'x100'	44–11
Supply storehouse 1 and 2, 30'x90' and 30'x110' hospital	51–54*
Supply storehouse 3 and 4, 30'x70' and 30'x100' hospital	51–54*
Unit supply and hdqtrs., 20'x40' and 20'x100'	61–11
Warehouse, closed, 40'x100' and 80'x220'	44–11
Warehouse storage and tower, low railroad, 21,000 and 42,000 gal.	86–24
Water storage and tower, high railroad, 21,000 gal	86–22
Water storage and tower, high railroad, 126,000 gal	86–23
Storage Installations:	
Ammunition 5,000 and 15,000 tons	40–01
Dry cargo-covered 12,000, 25,000, 50,000 and 100,000 SF	40–11
Dry—cargo—open 15,000, 100,000, 200,000 SF	40–12
Tank farm 50,000, 100,000, 150,000, 200,000 and 250,000 Bbl storage POL	12–07
Tank farm complex 400,000, 600,000 and 800,000 Bbl storage POL	12–08
Tank farm complex 1,000,000 Bbl storage POL	12–08
Tank farm portable 50,000 and 100,000 gallon storage POL	12–45
Tactical marine terminal 50,000 Bbl	12–12
Storehouse, 20'x20', 20'x30', 20'x50' and 20'x100'	44–11
Storehouse, whse, type bldg., 40'x100' and 80'x220'	44–11
Submarine pipeline, 6", 8" and 12", 60', 90' and 120' depths POL	12–22
Submarine pipeline, 6"	12–04
Submarine pipeline 8", 12", 16" and 20"	12–23
Sump, fire protection, 2,000 and 10,000 gal	84–21
Supply and linen exchange 1 and 2, 30'x110' and 30'x90' hospital	51–56*
Supply storehouse 1, 2, 3 and 4—30'x90', 30'x110', 30'x70' and 30'x100'	51–54*

* Indicates drawing under revision.

	DWG No.
Surgery 1, 40'x150' hospital	51–41*
Surgery 2, 40'x110' hospital	51–42*
Surgery, centralized materiel, 40'x100' hospital	51–44*
Switching manifold 4", 6", 8" and 12" POL	12–32
Tank, w/4", 6" and 12" Line—100, 250, 500, 1,000, 3,000, 10,000 and 50,000 Bbl	12–24
Tank pump and manifold, 700, 1,400 and 2,800 BPH—POL	12–32
Tanker mooring, 60', 90' and 120' depths—POL, 3, 5, 7 leg	12–21
Tanker unloading, POL, existing dock, 4", 6", 8" and 12" lines	12–58
Telephone, dial tel. bldgs, 40'x40', 40'x60' and manual tel bldgs 20'x40'	13–15
Telephone, long distance, manual, 40'x40', 40'x60'	13–14
Tent floors and frames, officers 16'x32' tent	72–51
Tent (Jamesway), frigid climate 16'x48'	72–55
Terminal station, 40'x60', communications	13–12
Theater, motion picture, 750 seats 60'x140'	74–46
Theater, motion picture, 350 seats for tent, 40'x100'	74–45
Theater, outdoor, 750 seats	75–11
Theater, outdoor, 1,500 and 1500 seats	75–12
Transfer pump and manifold, 700, 1,400 and 2,800 BPH—POL	12–33
Trickling filter, sewage disposal, 30,000 GPD	83–13*
Trickling filter, sewage disposal, 100,000 GPD	83–14*
Troop camps (see Housing installations or site and utility layouts).	
Turnout, No. 8, railroad track	86–13
Unloading platform, 32'x172'	86–09
Utilities, exterior (see Specific area—electric, water, etc.).	
Utility building 1 and 2, 40'x60' and 30'x60'—hospital	51–81*
Utility building 3, 4 and 5, 30'x60'—hospital	51–83*
Utility buildnig 6, 7 and 8, 30'x60'—hospital	51–85*
Utility building 9 and 10, 30'x50', 30'x40'—hospital	51–87*
Utility building for dental clinic, 30'x40'	54–13*
Walk-cover for hospitals—details	51–97*
Ward 1, standard, 30'x100' and ward 2, acute, 30'x100'	51–51*
Warehouse, closed, 40'x100' and 80'x220'	44–11
Warehouse, refrigerated, 32'x40' and 40'x60'	43–15
Warehouse, refrigerated, 80'x220'	43–16
Warehouse type building (see Buildings).	
Water chlorination and storage details	84–21
Water purification:	
Erdlator and chemical storage, 60,000 and 120,000 GPD	84–17
Installation, site layout, 60,000 and 120,000 GPD	84–04
Water tank and tower, sump—Fire protection	84–21
Water storage and tower, low railroad, 21,000 gal and 42,000 gal	86–24
Water storage and tower, high railroad, 21,000 gal	86–22
Water storage and tower, high railroad, 126,000 gal	86–23
Water supply	
Deepwell 20 GPM and 75 GPM	84–21
Wharf—(see Ports).	
Jetty w/40'x70' wharf, 1,000 LF	12–57
Lighterage—35'x500'	15–26
Lighterage—rehab 35'x500', plans	15–24
Lighterage—rehab scheme 1—35'x500'	15–25
Railroad approach trestle, 100 LF	15–22
Road approach—100 LF	15–23
Timber, 60'x500', 5', 15' and 25' tides	15–21
Wood frame buildings (see Buildings).	
X-ray 1 and 2, 40'x90' and 40'x80' hospital	51–31*
X-ray, laboratory, dental 40'x110' hospital	51–33*
X-ray, physical therapy—40'x90' hospital	51–32*

DRAWING SYMBOLS

BUILDING MATERIALS

- FINISH LUMBER
- FRAMING LUMBER
- EARTH
- CONCRETE
- CONCRETE W/REINFORCEMENT
- GROUT
- REFLECTIVE INSULATION
- MINERAL WOOL INSULATION
  GRANULAR INSULATION
  LOAD BEARING INSULATION
- GRAVEL
- STEEL

ELECTRICAL

- SURFACE OR PENDANT INCANDESCENT FIXTURE
- DROP LIGHT
- EMERGENCY LIGHTING FIXTURE
- SURFACE OR PENDANT FLUORESCENT FIXTURE
- FLOODLIGHT ON UTILITY POLE
- JUNCTION BOX
- SINGLE RECEPTACLE OUTLET
- DUPLEX RECEPTACLE OUTLET
- SPECIAL PURPOSE RECEPTACLE OUTLET (SUBSCRIPT TO INDICATE FUNCTION)
- SINGLE RECEPTACLE OUTLET FOR 220 V

ELECTRICAL (CONT)

- S — SINGLE POLE SWITCH
- S_2 — DOUBLE POLE SWITCH
- S_3 — THREE-WAY SWITCH
- S_4 — FOUR-WAY SWITCH
- SURFACE-MOUNTED LIGHTING PANELBOARD
- SURFACE-MOUNTED POWER OR DISTRIBUTION PANELBOARD
- EXTERNALLY OPERATED DISCONNECT SWITCH
- M — MOTOR W/CONTROLLER & OVERLOAD PROTECTION
- GROUND
- SERVICE ENTRANCE
- ELECTRICAL WIRING EXPOSED 2 WIRE
- ELECTRICAL WIRING CONCEALED 2 WIRE
- ELECTRICAL WIRING UNDERGROUND 2 WIRE
- A1 A2 — HOMERUN ARROWS W/CIRCUIT NUMBER
- THREE WIRE CIRCUITS
- FOUR WIRE CIRCUITS
- UTILITY POLE
- ANCHORED GUY
- TRANSFORMER

PLUMBING & HEATING

- SANITARY SEWER
- D — DRAINLINE
- RD — REFRIGERANT DISCHARGE
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- A — COMPRESSED AIR
- FEEDWATER PUMP DISCHARGE

PLUMBING & HEATING (CONT)

- FOF — FUEL-OIL FLOW
- FOR — FUEL-OIL RETURN
- HIGH PRESSURE RETURN
- HIGH PRESSURE STEAM
- MEDIUM PRESSURE RETURN
- MEDIUM PRESSURE STEAM
- LOW PRESSURE RETURN
- LOW PRESSURE STEAM
- COLD WATER
- HOT WATER
- PA — PIPE ANCHOR
- H — HANGER OR SUPPORT
- TRAP FLOAT
- FLOAT & THERMOSTATIC TRAP
- THERMOSTATIC TRAP
- UNIT HEATER
- CHECK VALVE
- SAFETY VALVE
- GATE VALVE - SCREWED
- GATE VALVE --FLANGED
- GLOBE VALVE - SCREWED
- GLOBE VALVE - FLANGED
- FVS — FLOAT VALVE - SCREWED
- FVF — FLOAT VALVE - FLANGED
- ELBOW, 90°
- ELBOW, 90° TURNED UP
- ELBOW, 90° TURNED DOWN
- ELBOW, 45°
- ELBOW, 45° TURNED DOWN
- ELBOW, 45° TURNED UP
- TEE
- TEE, OUTLET TURNED UP
- TEE, OUTLET TURNED DOWN
- STRAINER

PLUMBING & HEATING (CONT)

- BLIND FLANGE
- CAP
- PLUG
- REDUCER, ECCENTRIC
- UNION
- BUSHING
- GREASE INTERCEPTOR
- FLEXIBLE CONNECTION
- PRESSURE RELIEF VALVE
- PRESSURE REDUCING VALVE
- T — THERMOSTAT
- FD — FLOOR DRAIN
- CO — CLEAN OUT
- PRESSURE GAUGE
- T — TEMPERATURE GAUGE
- LATERAL, Y
- VTR — VENT THRU ROOF

DUCTWORK FOR AIR CONDITIONING

- 12x20 — DUCTWORK (1ST FIG. SIDE SHOWN, 2ND SIDE NOT SHOWN)
- GRILLE OR REGISTER SHOWING DIRECTION OF AIR FLOW
- DUCT SECTION, EXHAUST OR RETURN
- DUCT SECTION, SUPPLY
- FLEXIBLE DUCT CONNECTION
- 90° BEND W/TURNING VANES

DUCTWORK (CONT)

- DUCT TRANSITION
- DUCT TRANSITION, RECTANGULAR TO ROUND

RIVET SYMBOLS

PLAN	SECTION	
		SHOP RIVETS
○		TWO FULL HEADS
⌑		COUNTERSUNK & CHIPPED NS
⊗		COUNTERSUNK & CHIPPED FS
⊠		COUNTERSUNK & CHIPPED BS
⌀		COUNTERSUNK, NOT OVER 1/8 INCH HIGH NS
⊘		COUNTERSUNK, NOT OVER 1/8 INCH HIGH FS
⌀		COUNTERSUNK, NOT OVER 1/8 INCH HIGH BS
⌀		FLATTENED TO 1/4 INCH FOR 1/2 & 5/8 RIVETS NS
⊘		FLATTENED TO 1/4 INCH FOR 1/2 & 5/8 RIVETS FS
⌀		FLATTENED TO 1/4 INCH FOR 1/2 & 5/8 RIVETS BS
⌀		FLATTENED TO 3/8 INCH FOR 3/4 & OVER RIVETS NS
⊘		FLATTENED TO 3/8 INCH FOR 3/4 & OVER RIVETS FS
⌀		FLATTENED TO 3/8 INCH FOR 3/4 & OVER RIVETS BS
		FIELD RIVETS
•		TWO FULL HEADS
⊙		COUNTERSUNK NS
⊗		COUNTERSUNK FS
⊠		COUNTERSUNK BS

WELDING SYMBOLS

- FIELD WELD
- WELD ALL AROUND
- FILLET WELD
- SQUARE GROOVE WELD
- PLUG OR SLOT WELD
- BEVEL WELD

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES

NONE

HAYES, SEAY, MATTERN & MATTERN
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DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY: ILIEFF
CHECKED BY: HOLLOWAY
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS

DRAWING SYMBOLS

APPROVED: H. M. Williams — DATE: 19 MAY 55
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: _____ DATE: _____

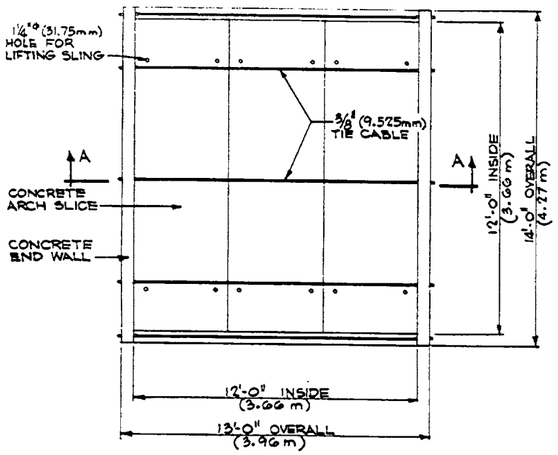
CHIEF, ENGINEERING BRANCH

SCALE: NONE

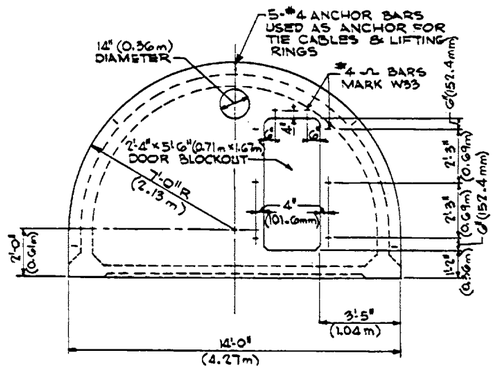
SPEC. NO.

DRAWING NUMBER: 01-01

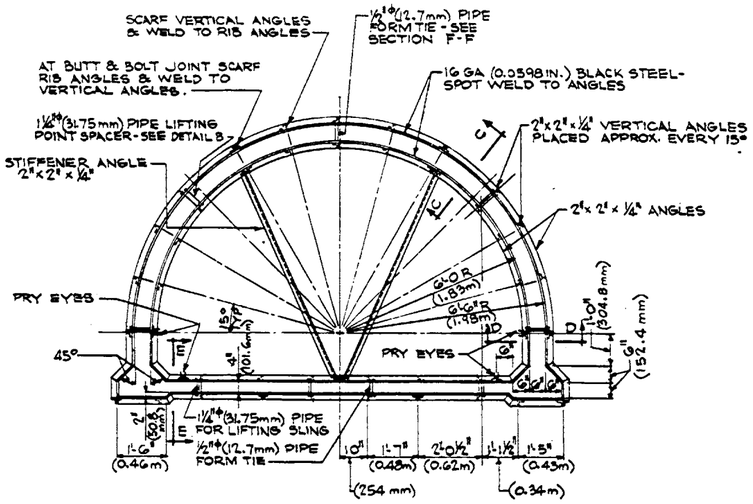
SHEET 1 OF 1



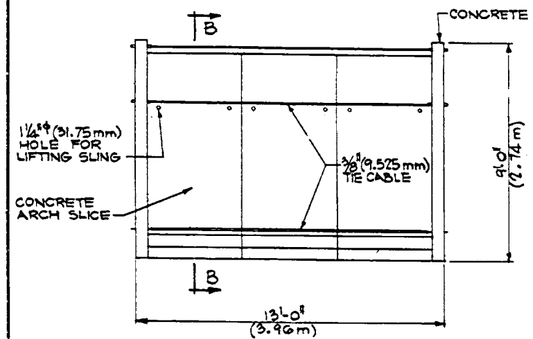
TOP VIEW
SCALE NO. 3



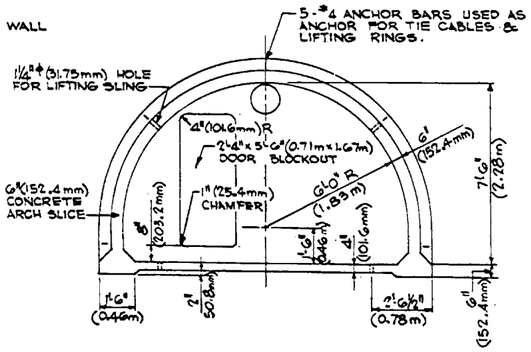
EXTERIOR END WALL ELEVATION
SCALE NO.3



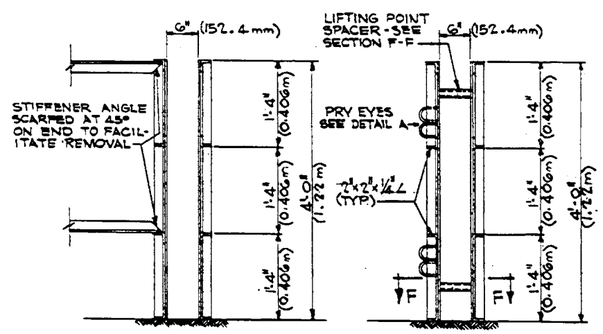
FORM ASSEMBLY - TOP
SCALE NO. 4
FACILITY NO. 040102



SIDE ELEVATION
SCALE NO.3

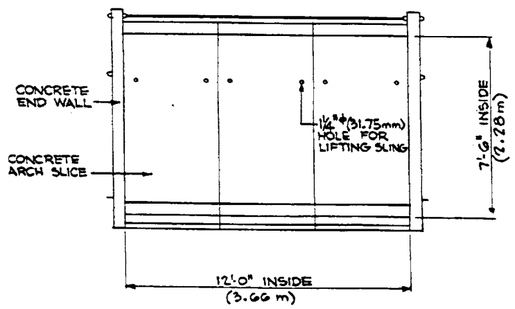


INTERIOR END WALL ELEVATION
SCALE NO.3

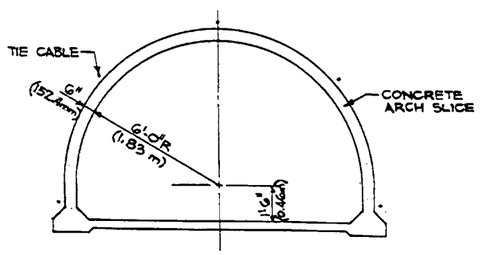


SECTION C-C
SCALE NO. 6

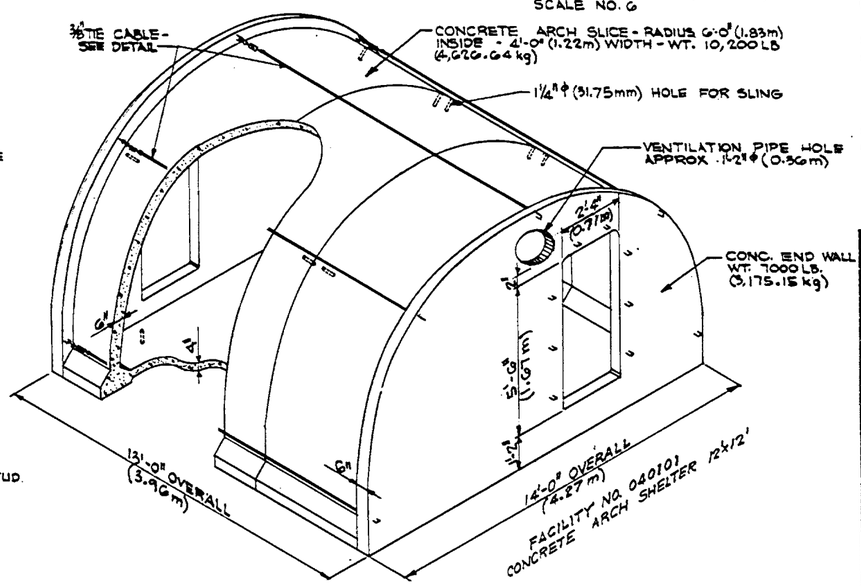
SECTION D-D
SECTION E-E (SIMILAR)
SCALE NO. 6



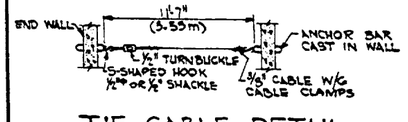
SECTION A-A
SCALE NO. 3



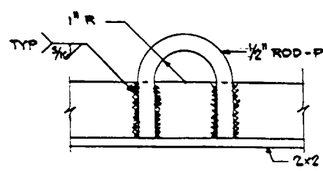
SECTION B-B
SCALE NO. 3



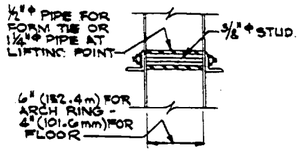
ISOMETRIC
NO SCALE



TIE CABLE DETAIL
NO SCALE



DETAIL A
NO SCALE



SECTION F-F
NO SCALE

GENERAL NOTES

1. MATERIAL SPECIFICATIONS:
   CONCRETE: PORTLAND CEMENT, SAND & COARSE AGGREGATE 3/4" MAX MIXED TO PROPORTIONS FOR 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS.
   CONCRETE REINFORCING STEEL: INTERMEDIATE GRADE 40,000 PSI TENSILE STRENGTH
   MISCELLANEOUS FASTENERS: GRADE AS AVAILABLE
2. DESIGN LOADING: 8' EARTH COVER AT CROWN
3. GROUND WATER SEEPAGE: ALL EXTERIOR SURFACES OF SHELTER & ENTRANCE WAY MUST BE COVERED W/WATERPROOFING MEMBRANE TO PREVENT GROUND WATER SEEPAGE.
4. FLOOR: SOLID CONCRETE FLOOR PROVIDED
5. OCCUPANCY: 12'x12' BASIC SHELTER DESIGNED FOR 10 MEN, ASSUMING ONE BUNK PER MAN
6. EQUIPMENT PROVIDED: BASIC SHELTER PROVIDES ONLY STRUCTURAL COMPONENTS AND ASSEMBLIES. ALL EQUIPMENT MUST BE PROVIDED SEPARATELY.
7. EMERGENCY EXIT: USE ONE OF DOOR OPENINGS AS EMERGENCY EXIT
8. BUNK INSTALLATION: TO BE SUSPENDED FROM EACH ARCH SECTION BY SCREW ANCHORS.
9. TRANSPORTABILITY: 4' ARCH WIDTH - 10,200 LB, ENDWALL 7,000 LB
   3' ARCH WIDTH (ALTERNATE) - 7,700 LB
10. FOR ADDITIONAL GUIDANCE AND INFORMATION SEE TECHNICAL BULLETIN TB-5-15-1.

FORM ASSEMBLY

INSIDE FORMS:
1. USE LEVEL SURFACE FOR FORM ASSEMBLY.
2. BUTT AND BOLT ARCH SECTIONS WITH EITHER 1/2" CAP SCREWS (FURNISHED) OR 1/2" KEY BOLTS (FURNISHED).
3. ATTACH CORNER AND FLOOR SECTIONS.
4. INSTALL FOUR ANGLE STIFFENERS BETWEEN FLOOR AND ARCH SECTIONS.
5. APPLY FORM OIL (USED 30 W OIL MAY BE SUBSTITUTED)

REINFORCING STEEL:
1. TEMPORARILY ATTACH WOOD SPACERS WITH "C" CLAMPS (FURNISHED) TO FACE OF INSIDE FORM (SEE WOOD SPACER SCHEDULE).
2. DRIVE NAILS IN WOOD SPACERS TO SUPPORT AND SPACE HORIZONTAL STEEL BARS.
3. ASSEMBLE FOOTING REINFORCING CAGES.
   a. TEMPORARILY FASTEN HOOKED BAR ASSEMBLIES TO NAILS WITH WIRE.
   b. PLACE VERTICAL BARS AND WIRE TO HOOKED BAR ASSEMBLIES.
   c. REMOVE TEMPORARY WIRES.
4. ASSEMBLE HORIZONTAL AND VERTICAL FLOOR REINFORCING.
5. INSTALL FLOOR LIFTING REINFORCING.
6. INSTALL ARCH REINFORCING.
   a. BEND LONGER BAR FROM FOOTING REINFORCING INWARD.
   b. STARTING AT LEFT FOOTING, TIE AND BEND 20' LONG BAR AROUND INSIDE FORM TO RIGHT FOOTING AND TIE.
   c. THEN START AT RIGHT FOOTING AND BEND BAR TO LEFT FOOTING.
   d. CONTINUE TO ALTERNATE STARTING POINT FOR REMAINING HORIZONTAL BARS.
   e. PLACE AND SECURE VERTICAL BARS.
7. INSTALL ARCH LIFTING REINFORCING.
8. INSTALL STEEL REINFORCING STANDOFFS (HEAVY UP IN ARCH CROWN AND HAUNCH AREAS)
9. REMOVE WOOD SPACERS.
10. INSTALL 1/2" PIPE TIES.

OUTSIDE FORMS:
1. APPLY FORM OIL.
2. INSTALL FLOOR AND CORNER SECTIONS.
3. INSTALL ARCH SECTIONS.
4. SECURE PIPE TIES AND LIFTING POINT SPACERS.
5. THE APPLICATION OF A LOW VISCOSITY OIL (DIESEL OIL) TO THE OUTSIDE OF THE FORMS WILL FACILITATE CLEANING.

FORM REMOVAL

OUTSIDE FORMS:
1. REMOVE ALL CAP SCREWS AND TIES.
2. REMOVE ARCH SECTIONS.
3. REMOVE FLOOR AND CORNER SECTIONS.

INSIDE FORMS:
1. REMOVE ANGLE STIFFENERS.
2. REMOVE FLOOR SECTIONS (USE PRY EYES)
3. REMOVE CORNER SECTIONS (USE PRY EYES)
4. REMOVE ARCH SECTIONS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO.3: 0 1' 2' 3' 4' 5'
NO.4: 0 1' 2' 3' 4'
NO.6: 0 1' 2'

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

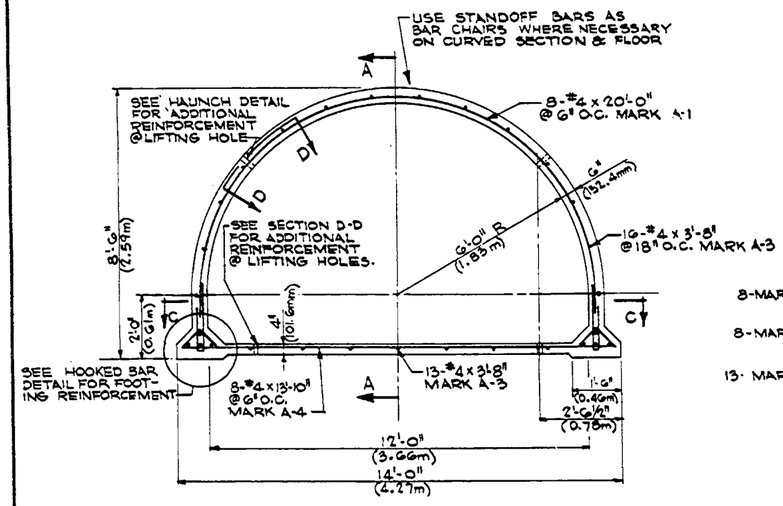
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: SHAFFER
SUBMITTED BY: C. E. STEICHMANN
APPROVED: CHIEF, STRUCTURES BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 17 FEB 1971
APPROVED FOR PROPONENT AGENCY:
DATE:

THEATER OF OPERATIONS

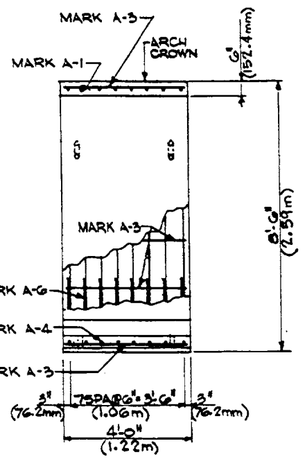
COMBAT ZONE FACILITIES
CONCRETE ARCH SHELTER

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 04-01
SHEET 1 OF 2



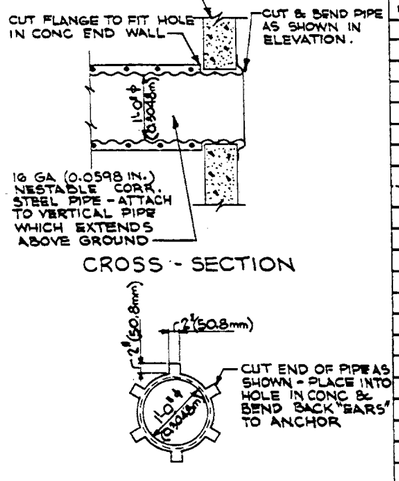
ARCH SLICE CROSS-SECTION

SCALE NO. 4



SECTION A-A

SCALE NO. 4



CROSS - SECTION

ELEVATION

VENTILATION PIPE DETAIL

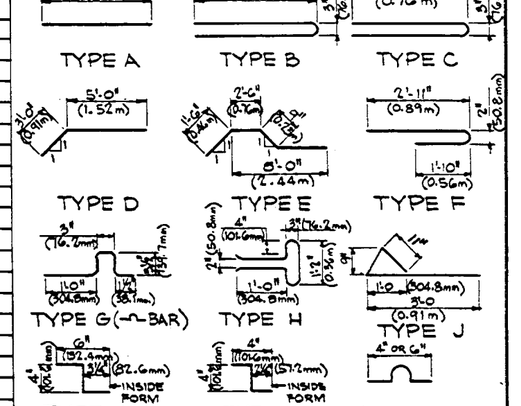
SCALE NO. 6

NOTE: ALTERNATE METHOD - SHORT SECTION OF PIPE CAN BE PLACED AT TIME OF CASTING CONCRETE END WALL TO ELIMINATE CUT AND BENDING

BAR SCHEDULE

ONE END WALL (2 REQ'D PER SHELTER)

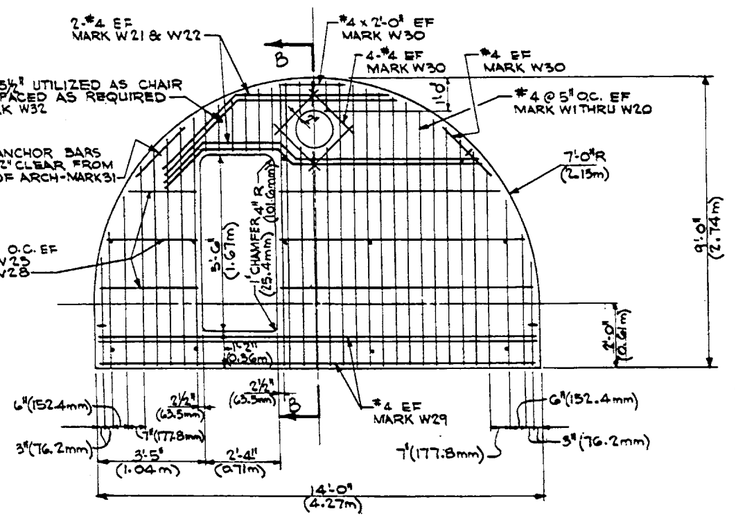
MARK	QUANTITY	SIZE	LENGTH BRITISH	LENGTH METRIC	TYPE	LINEAL FT	REMARKS
W1	2	#4	3'-6"	1.07m	B	16'	
W2	2	#4	4'-4"	1.32m	B	18'	
W3	2	#4	5'-5"	1.65m	B	22'	
W4	2	#4	6'-3"	1.91m	B	25'	
W5	2	#4	6'-8"	2.03m	B	27'	
W6	2	#4	7'-2"	2.18m	B	29'	
W7	2	#4	7'-6"	2.29m	B	30'	
W8	2	#4	7'-9"	2.36m	B	31'	
W9	1	#4	8'-0"	2.44m	B	16'	
W10	1	#4	8'-2"	2.49m	B	17'	
W11	1	#4	8'-5"	2.54m	B	17'	
W12	1	#4	8'-6"	2.59m	B	17'	
W13	1	#4	8'-8"	2.64m	B	18'	
W14	1	#4	8'-9"	2.67m	B	18'	
W15	6	#4	8'-10"	2.69m	B	106'	
W16	2	#4	2'-0"	0.61m	B	8'	
W17	1	#4	1'-10"	0.56m	B	6'	
W18	1	#4	1'-8"	0.51m	B	6'	
W19	1	#4	1'-6"	0.46m	B	3'	
W20	1	#4	1'-5"	0.43m	B	3'	
W21	4	#4	8'-0"	2.44m	D	32'	
W22	4	#4	9'-6"	2.90m	E	38'	
W23	2	#4	2'-4"	0.71m	A	5'	
W24	2	#4	3'-1"	0.94m	A	7'	
W25	2	#4	3'-4"	1.02m	A	7'	
W26	2	#4	7'-0"	2.13m	A	15'	
W27	2	#4	7'-7"	2.31m	A	16'	
W28	2	#4	7'-10"	2.39m	A	16'	
W29	6	#4	13'-10"	4.22m	A	83'	
W30	11	#4	2'-0"	0.61m	A	22'	
W31	10	#4	5'-0"	1.52m	H	50'	
W32	14	#4	0'-5 1/2"	0.14m	A	7'	
W33	8	#4	2'-4"	0.71m	G	19'	
						37-20' BARS	75-20' BARS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. FOR TYPE B BARS DOUBLE DIMENSION SHOWN UNDER LENGTH FOR LINEAL FT.

ONE ARCH SLICE (3 REQ'D PER SHELTER)

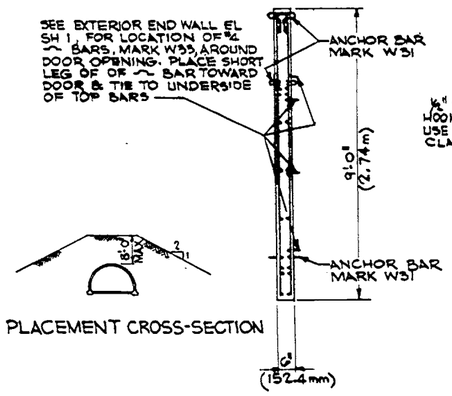
MARK	QUANTITY	SIZE	LENGTH BRITISH	LENGTH METRIC	TYPE	LINEAL FT	REMARKS
A1	8	#4	20'-0"	6.10m	A	160'	
A2	32	#4	3'-0"	0.91m	A	96'	
A3	29	#4	4'-0"	1.22m	A	116'	
A4	8	#4	13'-10"	4.22m	A	112'	
A5	15	#4	1'-1"	0.33m	K	20'	
A6	16	#4	5'-0"	1.52m	F	90'	
A7	16	#4	5'-0"	1.52m	J	90'	
A8	16	#4	5'-6"	1.67m	C	98'	
A9	12	#4	0'-10 1/2"	0.27m	L	2'	
						60-20' BARS	= 195-20' BARS



REINFORCING DETAIL - END WALL

SCALE NO. 4

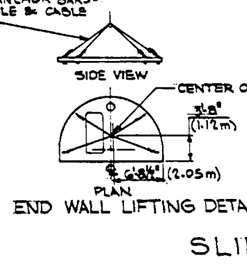
FORMING FACILITY NO. 040103



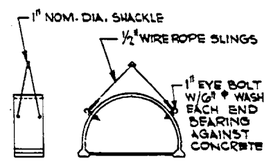
PLACEMENT CROSS-SECTION

SECTION B-B

SCALE NO. 4



END WALL LIFTING DETAIL



ARCH SLICE (VERT) LIFTING DETAIL

SLING DETAILS

NO SCALE

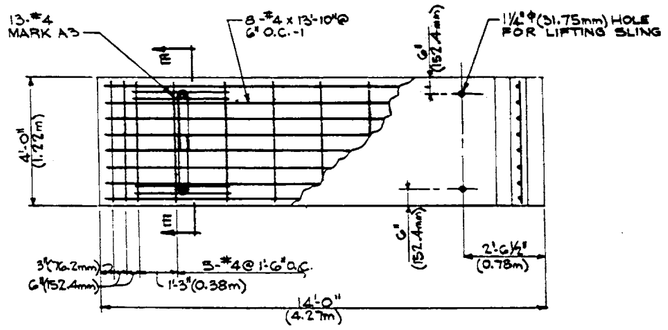
NOTE:
REBARS MARKED W1-W20 CAN BE REPLACED W/66-8'-10" STRAIGHT REBAR & REBARS MARKED W23-W28 CAN BE REPLACED W/6-13'-10" STRAIGHT REBAR. AFTER ASSEMBLING TOP & BOTTOM REBAR MATS CUT REBARS TO FIT ARCH CURVE & DOOR OPENING.

ERECTION PROCEDURES

1. LEVEL SITE
2. PLACE WATERPROOFING MEMBRANE ON GROUND BELOW SHELTER.
3. PLACE REAR ARCH SECTION.
4. PLACE REAR END WALL AND BRACE TEMPORARILY.
5. PLACE REMAINING ARCH SECTIONS.
6. PLACE AND TEMPORARILY BRACE FRONT END WALL.
7. CONNECT, TIGHTEN, AND CLAMP CABLES FROM END WALL TO END WALL (SEE CABLE DETAIL).
8. PLACE AND CONNECT ENTRANCEWAY TO SHELTER (ENTRANCEWAY NOT INCLUDED IN THIS SET OF DRAWINGS).
9. PLACE WATERPROOFING MEMBRANE OVER SHELTER AND ENTRANCEWAY.
10. BACKFILL SHELTER TO DESIRED EARTH COVER BEING CAREFUL TO RAISE AND PACK EARTH FILL IN UNIFORM LIFTS OF EQUAL DEPTH ON OPPOSITE SIDES OF ARCH SECTIONS AND END WALL SECTIONS.

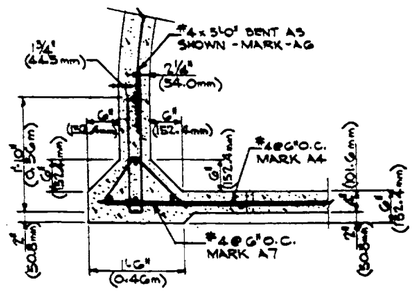
WOOD SPACER SCHEDULE

1. FOR FLOOR - 5 SPACES - 1 1/2" THICK
2. FOR FLAT AREA OF ARCH - 2 SPACES EACH SIDE - 2" THICK
3. FOR CURVED AREA OF ARCH - 11 SPACES - 2 3/8" THICK



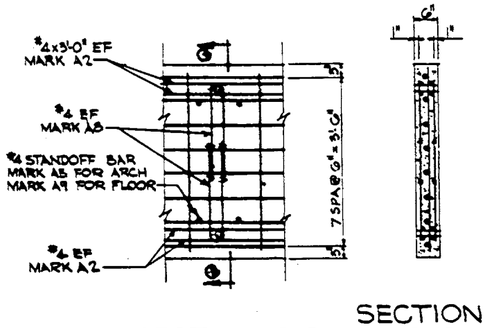
SECTION C-C

SCALE NO. 4



HOOKED BAR DETAIL

SCALE NO. 6



HAUNCH DETAIL

SCALE NO. 5

SCHEDULE OF FACILITIES

FACILITY NO.	DESCRIPTION
040101	CONCRETE ARCH SHELTER - COMPLETE
040102	STEEL FORMS FOR CONC. ARCH
040103	STEEL FORMS FOR CONC. END WALL

REFER TO DRAWING NO. 04-06, SHT 1 OF 1, PRECAST PARTS YARD

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 1' 2' 3' 4' NO. 4 | 0 1' 2' 3' NO. 5 | 0 1' 2' NO. 6

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

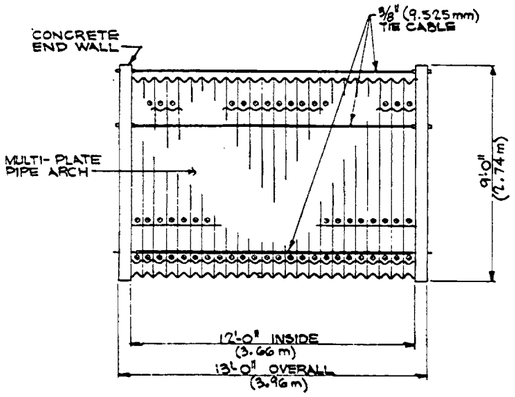
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: SHAFFER
SUBMITTED BY:
RECOMMENDED: C. F. BEICHMANN, CHIEF, STRUCTURES BRANCH

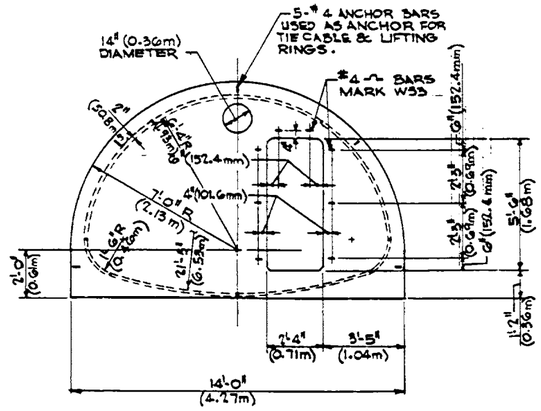
THEATER OF OPERATIONS

COMBAT ZONE FACILITIES
CONCRETE ARCH SHELTER

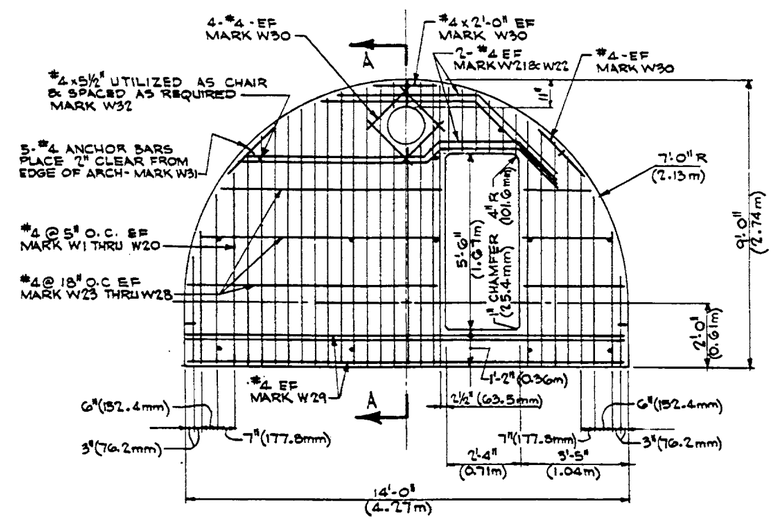
APPROVED: [signature], CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 17 FEB [illegible]
APPROVED FOR PROPONENT AGENCY:
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 04-01
DATE
SHEET 2 OF 2



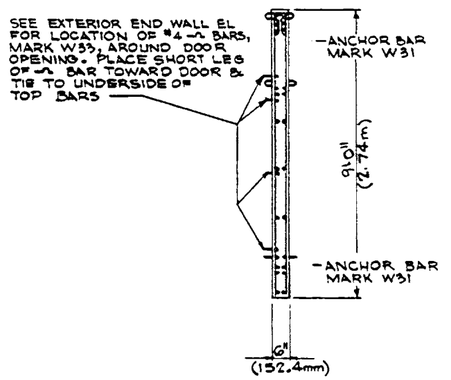
SIDE VIEW
SCALE NO. 3



EXTERIOR END WALL ELEVATION
SCALE NO. 3



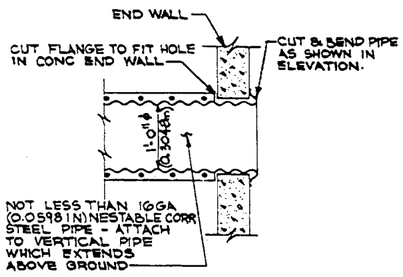
REINFORCING DETAIL- END WALL
SCALE NO. 4



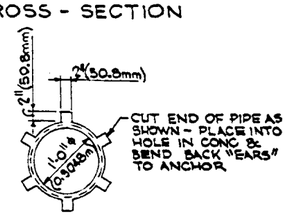
SECTION A-A
SCALE NO. 4

SCHEDULE OF FACILITIES

FACILITY NO.	DESCRIPTION
040201	MULTIPLATE PIPE ARCH SHELTER - COMPLETE
040103	STEEL FORMS FOR END WALL SECTION



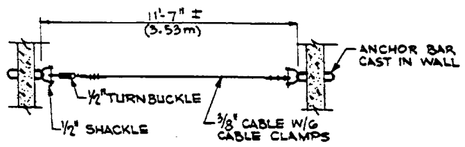
CROSS - SECTION



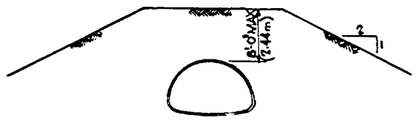
ELEVATION

VENTILATION PIPE DETAIL
SCALE NO. 6

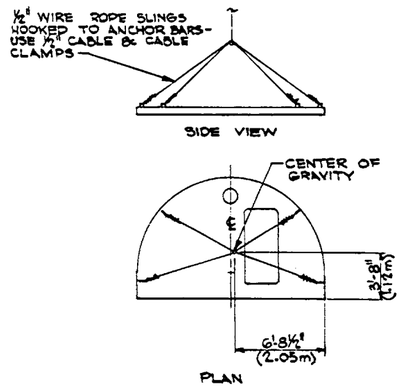
NOTE: ALTERNATE METHOD - SHORT SECTION OF PIPE CAN BE PLACED AT TIME OF CASTING CONCRETE END WALL TO ELIMINATE CUT AND BENDING.



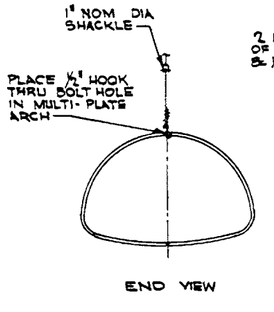
TIE CABLE DETAIL
NO SCALE

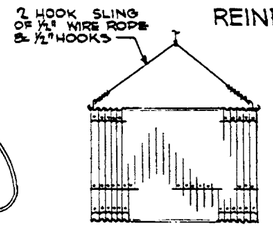


PLACEMENT CROSS - SECTION
NO SCALE



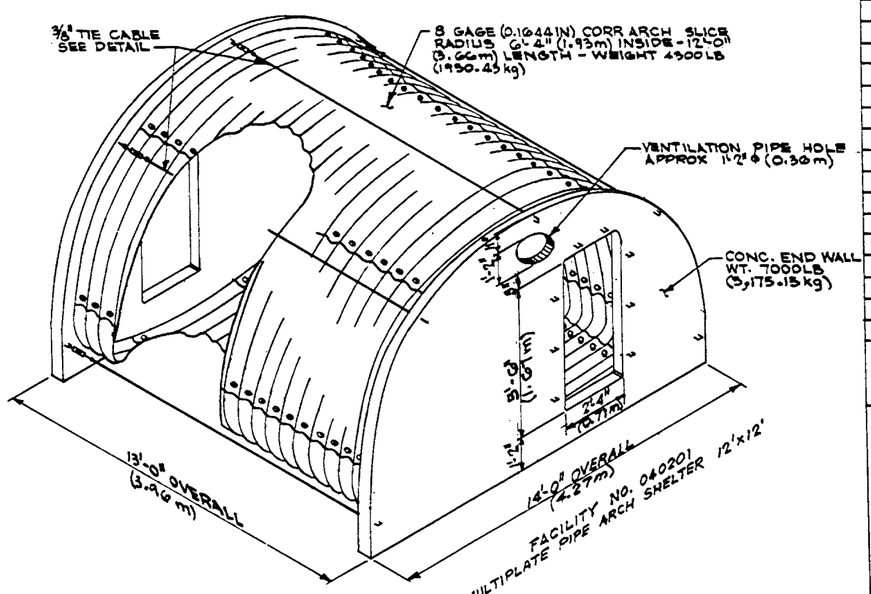
END WALL LIFTING DETAIL





ARCH LIFTING DETAIL

SLING DETAILS
NO SCALE



ISOMETRIC
NO SCALE

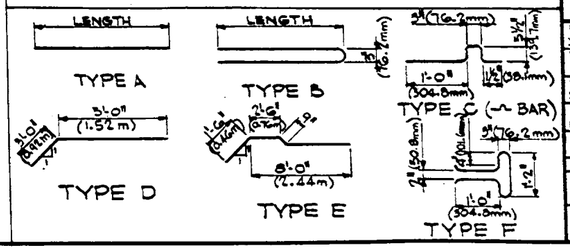
REFER TO DRAWING NO. 04-06, SHT 1 OF 1, PRECAST PARTS YARD.

BAR SCHEDULE

ONE END WALL (2 REQD PER SHELTER)

MARK	QUANTITY	SIZE	LENGTH BRITISH	LENGTH METRIC	TYPE	LINEAL FT	REMARKS
W1	2	#4	3'-6"	1.07m	B	15'	
W2	2	#4	4'-4"	1.32m	B	18'	
W3	2	#4	5'-5"	1.65m	B	22'	
W4	2	#4	6'-3"	1.91m	B	25'	
W5	2	#4	6'-8"	2.03m	B	27'	
W6	2	#4	7'-2"	2.18m	B	29'	
W7	2	#4	7'-6"	2.29m	B	30'	
W8	2	#4	7'-9"	2.36m	B	31'	
W9	1	#4	8'-0"	2.44m	B	16'	
W10	1	#4	8'-2"	2.49m	B	17'	
W11	1	#4	8'-4"	2.54m	B	17'	
W12	1	#4	8'-6"	2.59m	B	17'	
W13	1	#4	8'-8"	2.64m	B	18'	
W14	1	#4	8'-9"	2.67m	B	18'	
W15	6	#4	8'-10"	2.69m	B	106'	
W16	2	#4	2'-0"	0.61m	B	8'	
W17	1	#4	1'-10"	0.56m	B	4'	
W18	1	#4	1'-8"	0.51m	B	4'	
W19	1	#4	1'-6"	0.46m	B	3'	
W20	1	#4	1'-4"	0.41m	B	3'	
W21	4	#4	8'-0"	2.44m	D	32'	
W22	4	#4	9'-6"	2.90m	E	38'	
W23	2	#4	2'-4"	0.71m	A	5'	
W24	2	#4	3'-1"	0.94m	A	7'	
W25	2	#4	3'-4"	1.02m	A	7'	
W26	2	#4	7'-0"	2.13m	A	15'	
W27	2	#4	7'-7"	2.31m	A	16'	
W28	2	#4	7'-10"	2.39m	A	16'	
W29	6	#4	13'-10"	4.22m	A	83'	
W30	11	#4	2'-0"	0.61m	A	22'	
W31	10	#4	5'-0"	1.52m	F	50'	
W32	14	#4	0'-5½"	0.14m	A	7'	
W33	8	#4	2'-4"	0.71m	C	19'	
						37-20' BARS	75-20' BARS

NOTE:
REBARS MARKED W1-W20 CAN BE REPLACED W/66-8'-10" STRAIGHT REBAR & REBARS MARKED W23-W28 CAN BE REPLACED W/6-13'-10" STRAIGHT REBAR. AFTER ASSEMBLING TOP & BOTTOM REBAR MATS, CUT REBARS TO FIT ARCH CURVE & DOOR OPENING.



GENERAL NOTES

1. MATERIAL SPECIFICATIONS:
   CONCRETE: PORTLAND CEM. T. SAND & COARSE AGGREGATE 3/4" MAX. MIXED TO PROPORTIONS FOR 1000 PSI COMPRESSIVE STRENGTH IN 28 DAYS.
   CONCRETE REINFORCING STEEL: INTERMEDIATE GRADE 40,000 PSI TENSILE STRENGTH.
   MULTIPLATE PIPE ARCH: 8-GAGE (0.1644 IN.) CORRUGATED-STEEL, 6"X2" CORRUGATIONS, GALVANIZED.
   MISCELLANEOUS FASTENERS: GRADE AS AVAILABLE.
2. DESIGN LOADING: 8' EARTH COVER AT CROWN.
3. GROUND WATER SEEPAGE: ALL EXTERIOR SURFACES OF SHELTER & ENTRANCE WAY MUST BE COVERED WITH WATERPROOFING MEMBRANE TO PREVENT GROUND WATER SEEPAGE.
4. FLOOR: CORRUGATED-STEEL FLOOR PROVIDED.
5. OCCUPANCY: 12'X12' BASIC SHELTER DESIGNED FOR 10 MEN ASSUMING ONE SLEEPING BUNK PER MAN.
6. EQUIPMENT PROVIDED: BASIC SHELTER PROVIDES ONLY STRUCTURAL COMPONENTS AND ASSEMBLIES. ALL EQUIPMENT MUST BE PROVIDED SEPARATELY.
7. EMERGENCY EXIT: USE ONE OF DOOR OPENINGS AS EMERGENCY EXIT.
8. BUNK INSTALLATION: TO BE SUSPENDED FROM ARCH SECTION BY ANCHOR HOOKS.
9. TRANSPORTABILITY: ARCH SECTION 4300 LB, ENDWALL 7000 LB.
10. FOR ADDITIONAL GUIDANCE AND INFORMATION SEE TECHNICAL BULLETIN TB 5-15-1.

ERECTION PROCEDURES

1. LEVEL SITE.
2. PLACE WATERPROOFING MEMBRANE ON GROUND BELOW SHELTER.
3. PLACE ARCH SECTION.
4. PLACE REAR END WALL AND BRACE TEMPORARILY.
5. PLACE AND TEMPORARILY BRACE FRONT END WALL.
6. CONNECT, TIGHTEN, TIE CABLES FROM END WALL TO END WALL (SEE CABLE DETAIL).
7. PLACE AND CONNECT ENTRANCE WAY TO SHELTER (ENTRANCE WAY NOT INCLUDED IN THIS SET OF DRAWINGS).
8. PLACE WATERPROOFING MEMBRANE OVER SHELTER AND ENTRANCE WAY.
9. BACKFILL SHELTER TO DESIRED EARTH COVER BEING CAREFUL TO RAISE AND PACK EARTH FILL IN UNIFORM LIFTS OF EQUAL DEPTH ON OPPOSITE SIDES OF ARCH SECTIONS AND END WALL SECTIONS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO.3 (0 1' 2' 3' 4' 5')
NO.4 (0 1' 2' 3' 4')
NO.5 (0 1' 2')

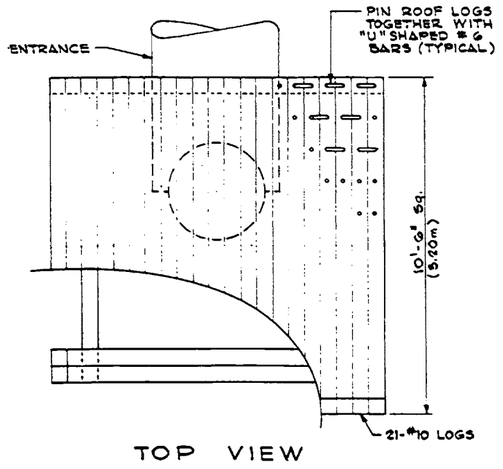
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

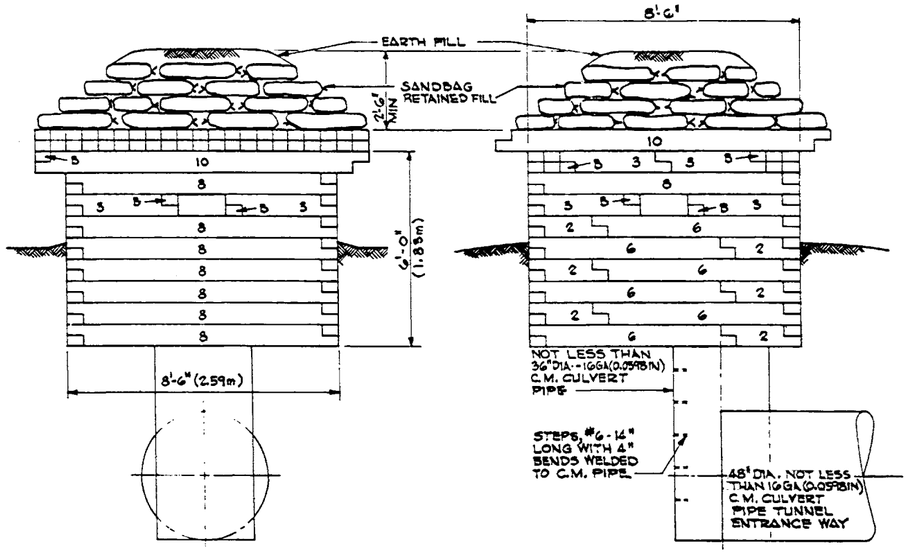
DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: SHAFFER
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature]
CHIEF, STRUCTURES BRANCH
APPROVED: [signature] DATE: 27 FEB 1970
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS
CONUS ZONE FACILITIES
MULTIPLATE PIPE ARCH SHELTER

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 04-02
SHEET 1 OF 1

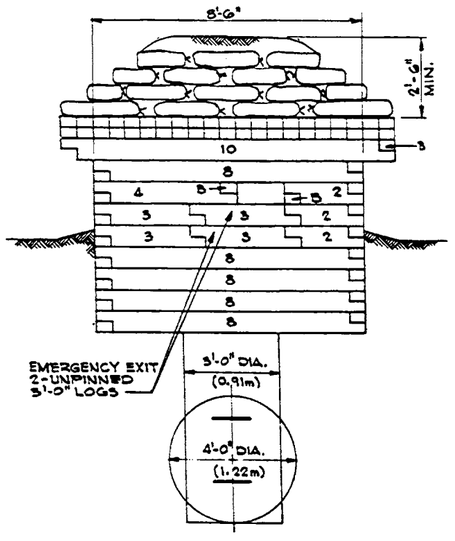


TOP VIEW



FRONT VIEW

SIDE VIEW



REAR VIEW

CONCRETE LOG BUNKER
SCALE NO. 4
FACILITY NO. 040301

SCHEDULE OF FACILITIES

FACILITY NO.	DESCRIPTION
040302	FORM ASSEMBLY-CONC. LOGS & BLOCKS
040301	CONC. LOG BUNKER-COMPLETE IN PLACE

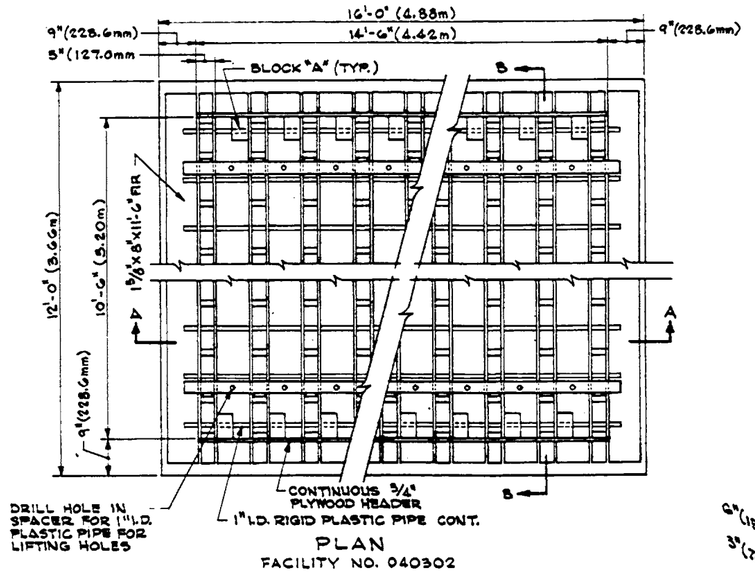
MATERIAL REQUIRED FOR DESCRIBED LOG BUNKER

MARK	CONCRETE LOG (LENGTH-L (FT)	REBAR LENGTH X(FT) (IN)	NO. REQUIRED
2	2	2-2	9
3	3	3-2	14
4	4	4-2	1
6	6	6-2	6
8	8	8-2	20
10	10	10-2	25
B	BLOCK 6"x4"x6"	NONE	16
		TOTAL	91 30-20' BARS

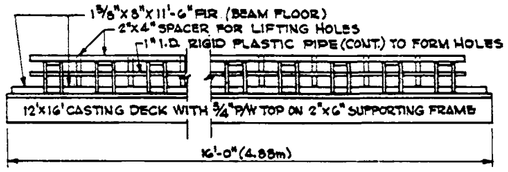
BILL OF MATERIAL

CONCRETE	6.5 CY
REINFORCING STEEL #4 x 20'	99 BARS
VERTICAL RODS, #9 x 20'	11 BARS
"U" SHAPED ROOF PINS, #6 x 20'	11 BARS

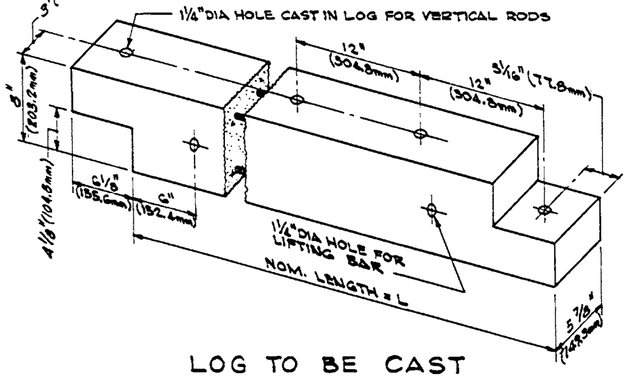
NOTE: 3/4" PIPE MAY BE USED FOR VERTICAL RODS.



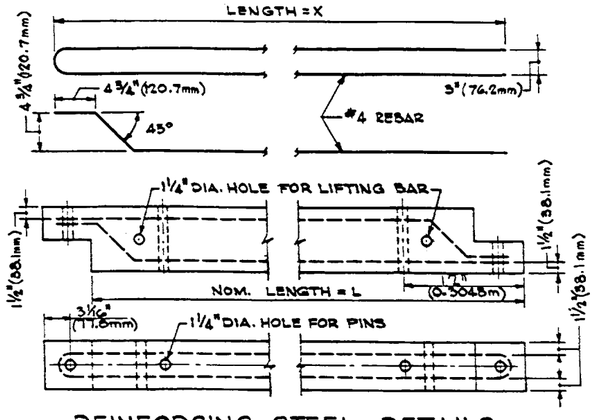
PLAN
FACILITY NO. 040302



SECTION A-A
CONCRETE FORMING DETAILS
SCALE NO. 5

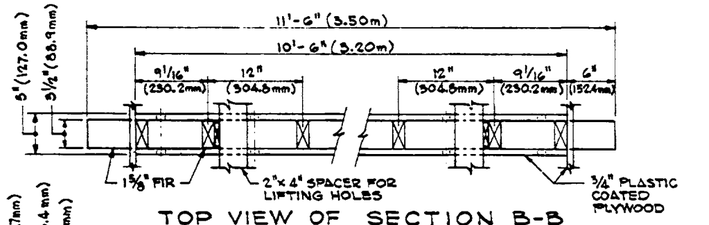


LOG TO BE CAST
TYPICAL DIMENSIONS

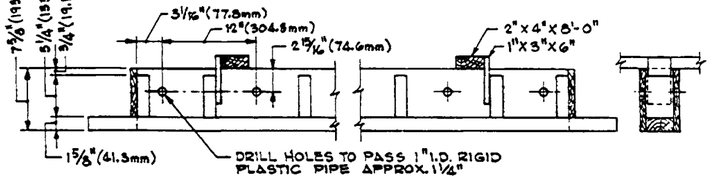


REINFORCING STEEL DETAILS
SCALE NO. 7

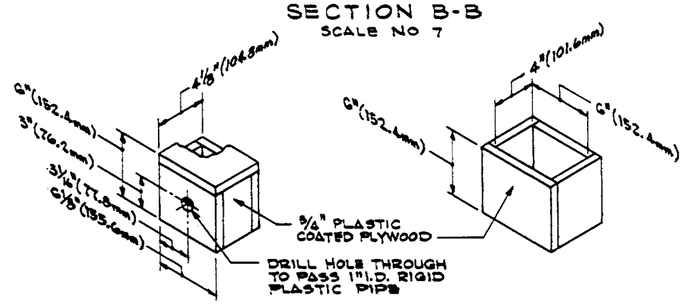
REFER TO DRAWING NO. 04-06, SHT 2 OF 3, PRECAST PARTS YARD



TOP VIEW OF SECTION B-B



SECTION B-B
SCALE NO 7



FORM BLOCK "A"
NO SCALE
FACILITY NO. 040302

FORM BLOCK "B"
NO SCALE
FACILITY NO. 040302

GENERAL NOTES:

1. MATERIAL SPECIFICATIONS:
   CONCRETE: PORTLAND CEMENT, SAND AND COARSE AGGREGATE 3/4 IN. MAXIMUM, MIXED TO PROPORTIONS FOR 3000 PSI COMPRESSIVE STRENGTH IN 28 DAYS.
   CONCRETE REINFORCING STEEL: INTERMEDIATE GRADE, 40,000 PSI TENSILE STRENGTH
   CONCRETE LOG PINS: 3/4 IN. (NOMINAL) DIA STEEL PIPE OR #6 REBAR
2. FLOOR: EARTH - IF ADDITIONAL HEADROOM IS DESIRED, FLOOR CAN BE EXCAVATED BELOW BOTTOM LOGS OR ADDITIONAL LOGS CAN BE ADDED TO SIDES.
3. BUNKS: TWO COLLAPSIBLE BUNKS CAN BE ATTACHED TO REAR WALL.
4. CONNECTIONS: ALL LOGS ARE VERTICALLY PINNED 12 IN. ON CENTER ALONG EACH WALL; ROOF PINNED AS SHOWN IN TOP VIEW.
5. BUNKER DESCRIBED HERE IS AS CONSTRUCTED FOR FORT BENNING TESTS. IT IS SUGGESTED THAT COMMANDERS OBTAIN WOODEN MODEL LOGS AND DESIGN LOG BUNKERS TO SUIT THEIR SPECIFIC REQUIREMENTS.
6. RIGHT SIDE VIEW COULD BE CONSTRUCTED FROM 8-FT LOGS INSTEAD OF THE 2- AND 6-FT COMBINATION SHOWN. RIGHT SIDE WAS CONSTRUCTED AS SHOWN TO EMPHASIZE IMPORTANCE OF STAGGERING LOG BUTT-JOINTS.
7. LOGS CAST ON SIDE TO FORM VERT ROD HOLES EASIER.
8. FOR ADDITIONAL GUIDANCE AND INFORMATION SEE TECHNICAL BULLETIN TB 5-15-1.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 1' 2' 3' 4' | 0 1' 2' 3' | 0 3" 6" 9" 1' 2'
NO.4 NO.5 NO.7

MAYER, BRAY, MATTERN & MATTERN — ARCHITECTS - ENGINEERS — ROANOKE, VIRGINIA — WASHINGTON, D. C.

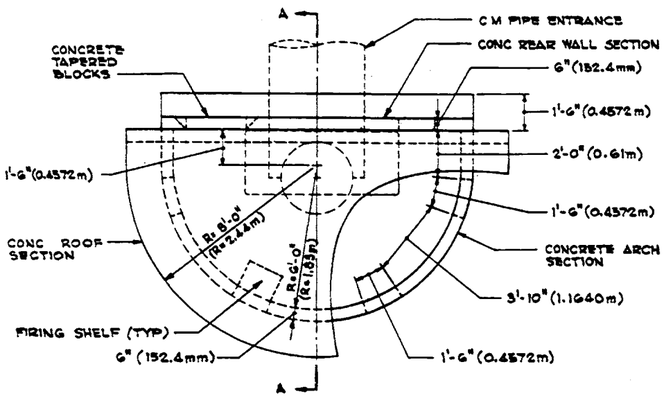
DEPARTMENT OF THE ARMY — OFFICE OF THE CHIEF OF ENGINEERS — MILITARY CONSTRUCTION - ENGINEERING DIVISION — WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C. E. DEICHMANN
APPROVED: [signature]
CHIEF, STRUCTURES BRANCH

THEATER OF OPERATIONS
COMBAT ZONE FACILITIES
CONCRETE LOG BUNKER

APPROVED: [signature]
DATE: 17 FEB 1971
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 04-03
SHEET 1 OF 1



TOP VIEW
SCALE NO. 3

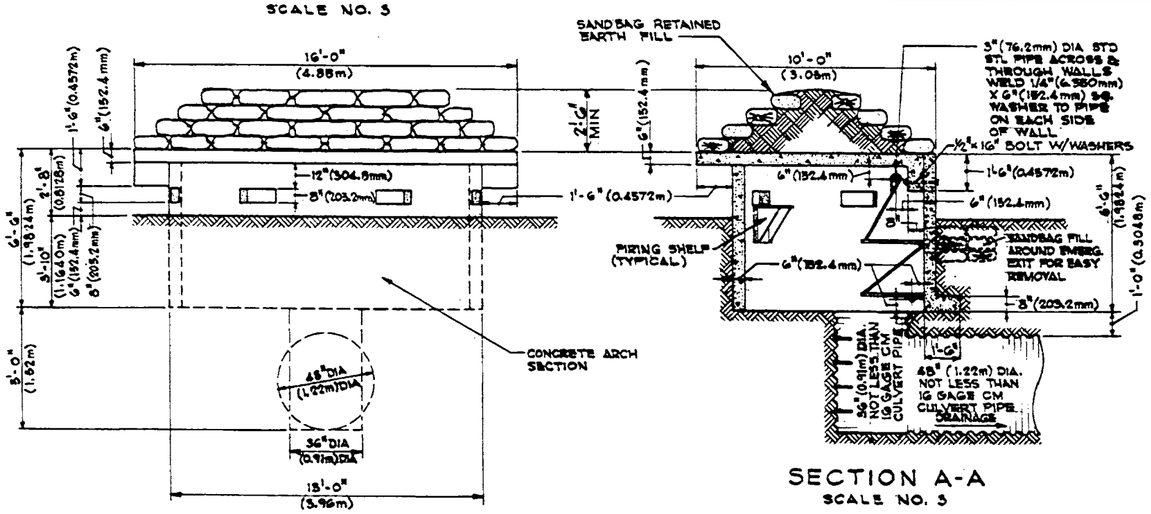
GENERAL NOTES

FOR CONCRETE ARCH BUNKER

1. FORMING AND REINFORCING STEEL DETAILS ARE DESCRIBED FOR THE WES CONCRETE ARCH PROTECTIVE SHELTER DETAILED ON DRAWING 04-01.

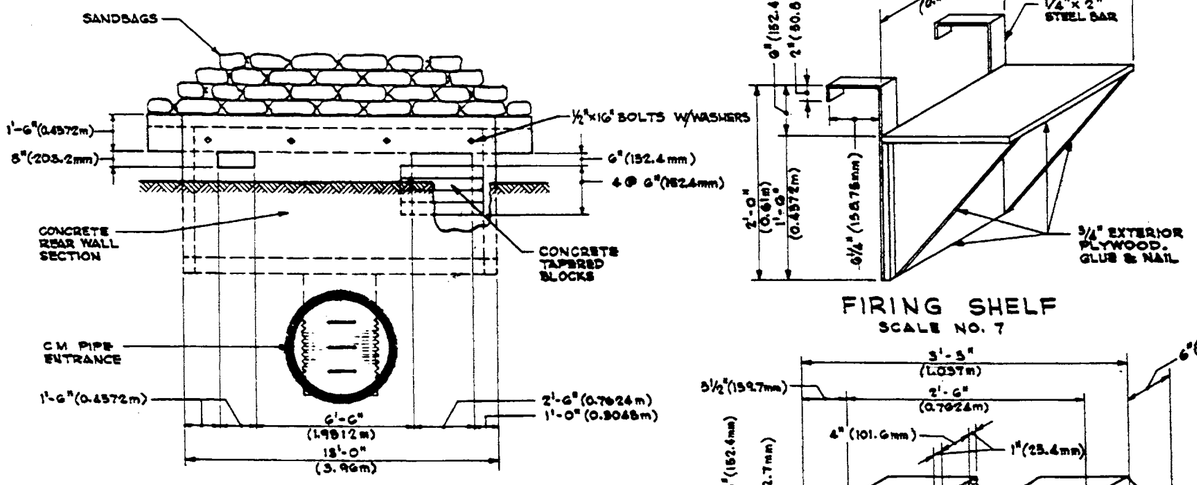
2. THIS DESIGN MAY BE MODIFIED IN THE FIELD AS REQUIRED TO SUIT FABRICATION AND TRANSPORTATION CAPABILITIES. ONE SUCH MODIFICATION WOULD INCLUDE USING THE COMPLETE ARCH SECTION DESIGN OF THE WES CONCRETE ARCH SHELTER WITH INTERNAL FLOOR. THE FLOOR WOULD BECOME THE BACK WALL OF THE BUNKER WHEN THE ARCH SECTIONS ARE POSITIONED (STACKED) ON THEIR SIDES. THIS MODIFICATION WOULD BE USE TWO 9-FOOT SECTIONS OF THE ARCH: THE BOTTOM SECTION BEING THE SAME CAST AS USED FOR THE SHELTER EXCEPT 3 FEET HIGH (LONG) INSTEAD OF 4-FEET HIGH, AND THE TOP SECTION BEING CAST WITH OPENINGS FOR THE FOUR 8- BY 18-INCH FIRING PORTS IN THE CURVED FACE. THE 8- BY 18-INCH FIRING PORT ON THE BACK FACE, AND THE 30- BY 30-INCH EMERGENCY EXIT. WITH SUCH A MODIFICATION THE SEPARATE BULKHEAD BEAM OF THE TOP CAN BE ELIMINATED AND THE WEIGHTS OF THE THREE NEW ELEMENTS FOR TRANSPORTATION PURPOSES BECOME 7,600, 6,800, AND 9,300 POUNDS, RESPECTIVELY.

SCHEDULE OF FACILITIES	
FACILITY NO.	DESCRIPTIOIN
040401	FORM ASSEMBLY FOR CONC. ARCH WALL SECT., CONC. BACK WALL SECT. AND CONC. ROOF SLAB
040402	CONCRETE ARCH BUNKER - COMPLETE IN PLACE
040403	NESTABLE CORR. STEEL PIPE FIGHTING HOLE W/COVER
040404	STRUCT. PL. CORR. STEEL PIPE FIGHTING HOLE W/COVER



FRONT VIEW
SCALE NO. 3

SECTION A-A
SCALE NO. 3

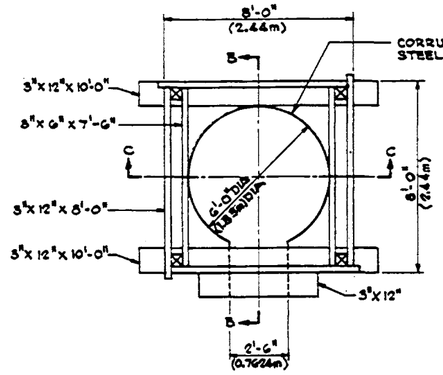


BACK VIEW
SCALE NO. 3

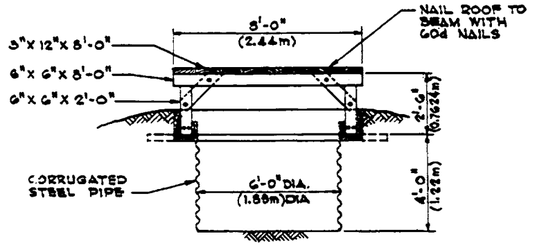
BUILD IN PLACE
CONCRETE ARCH BUNKER
FACILITY NO. 040402

FIRING SHELF
SCALE NO. 7

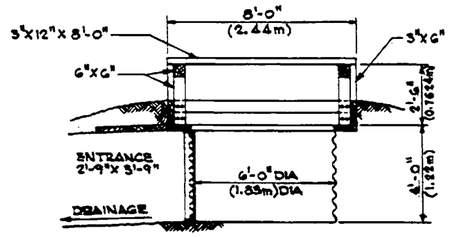
EMERGENCY EXIT TAPERED BLOCK
SCALE NO. 7



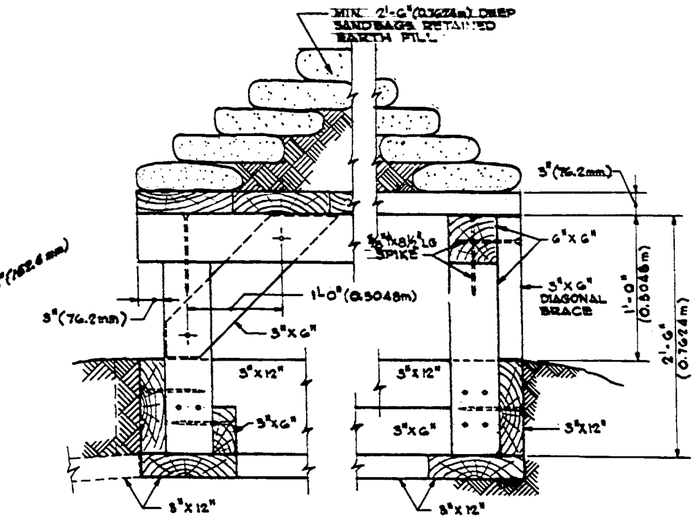
ROOF & BRACES REMOVED
PLAN
SCALE NO. 3



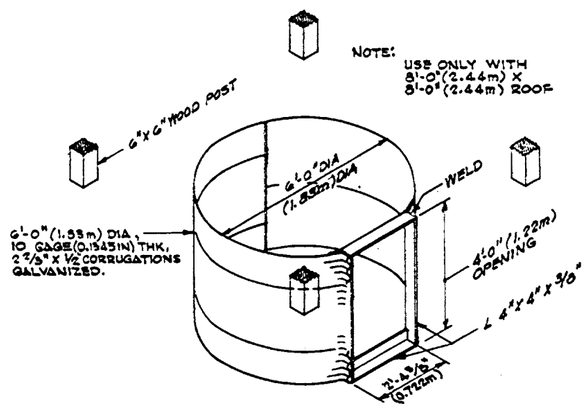
SECTION C-C
SCALE NO. 3



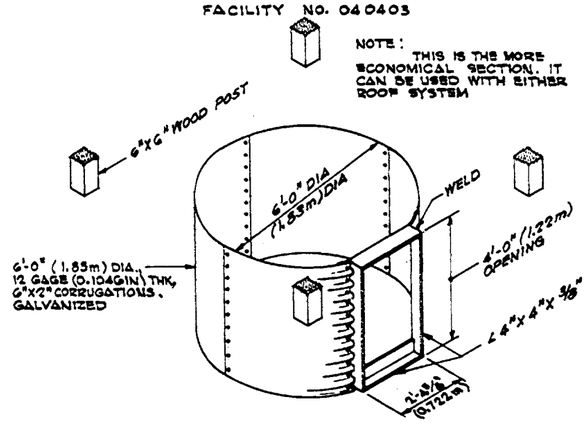
SECTION B-B
SCALE NO. 3



CORNER DETAIL
SCALE NO. 7



NESTABLE
CORRUGATED STEEL PIPE
NO SCALE
FACILITY NO. 040403



STRUCTURAL PLATE
CORRUGATED STEEL PIPE
NO SCALE
FACILITY NO. 040404

GENERAL NOTES

CORRUGATED STEEL PIPE 2 - MAN FIGHTING HOLE

ALTERNATE - USE OF 10'x10' ROOF

1. LINE HOLE WITH STRUCTURAL PLATE PIPE 6'-0" DIA., 12 GAGE (0.1046 IN.) THICKNESS, 6"x2" CORRUGATIONS, DO NOT USE 2 2/3"x1/2" CORRUGATED NESTABLE PIPE.
2. EXTEND ROOF BEAMS 12" ON EACH END TO 10'-0" LONG.
3. EXTEND ROOF PLANKS 12" ON EACH END TO 10'-0" LONG.
4. FOR ADDITIONAL GUIDANCE AND INFORMATION SEE TECHNICAL BULLETIN TB 5-15-1.

REFER TO DRAWING NO. 04-06, SHT 1 OF 1, PRECAST PARTS YARD

SYMBOL	DESCRIPTION	DATE	APPROVAL

DRAWING SCALES
0 1' 2' 3' 4' 5' NO.3
0 3" 6" 9" 1' 2' NO.7

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

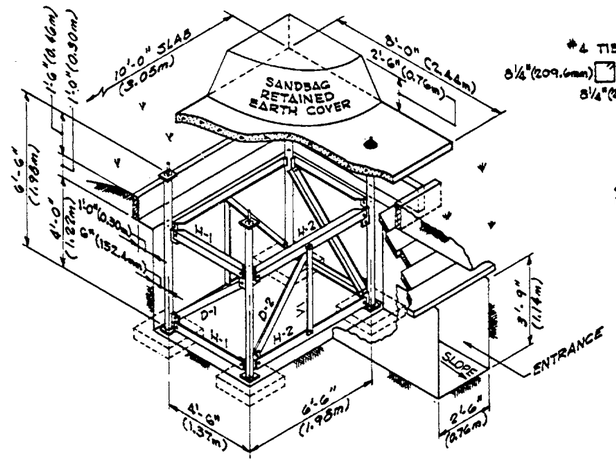
DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C. F. DELLMANN
APPROVED:
CHIEF, STRUCTURES BRANCH

THEATER OF OPERATIONS
COMBAT ZONE FACILITIES
CONCRETE ARCH BUNKER
CORRUGATED STEEL PIPE FIGHTING HOLE

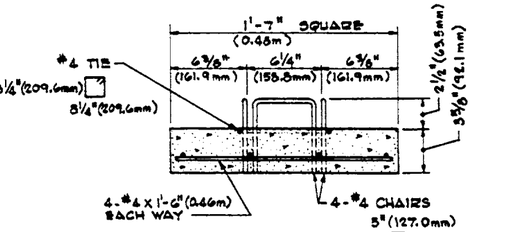
APPROVED:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 17 FEB 1971

APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 04-04
SHEET 1 OF 1

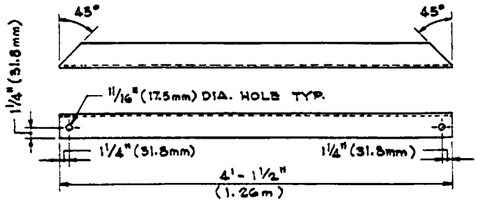


ISOMETRIC
NO SCALE

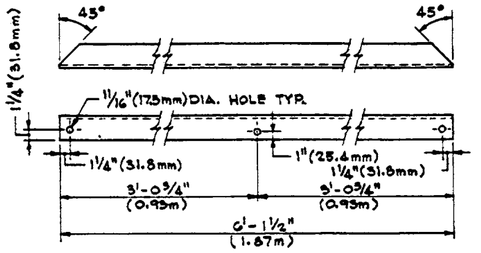


CROSS - SECTIONAL VIEW

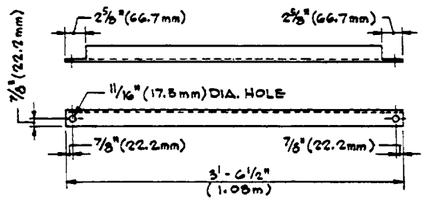
FOOTING DETAIL
NO SCALE
TOTAL WT. 114# (517.1 Kg)



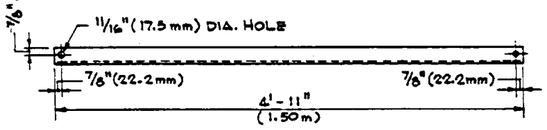
H-1 3" X 3" X ¼" ∠
MAKE 4



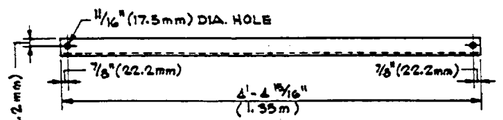
H-2 3" X 3" X ¼" ∠
MAKE 4



V-1 2" X 2" X ¼" ∠
MAKE 4

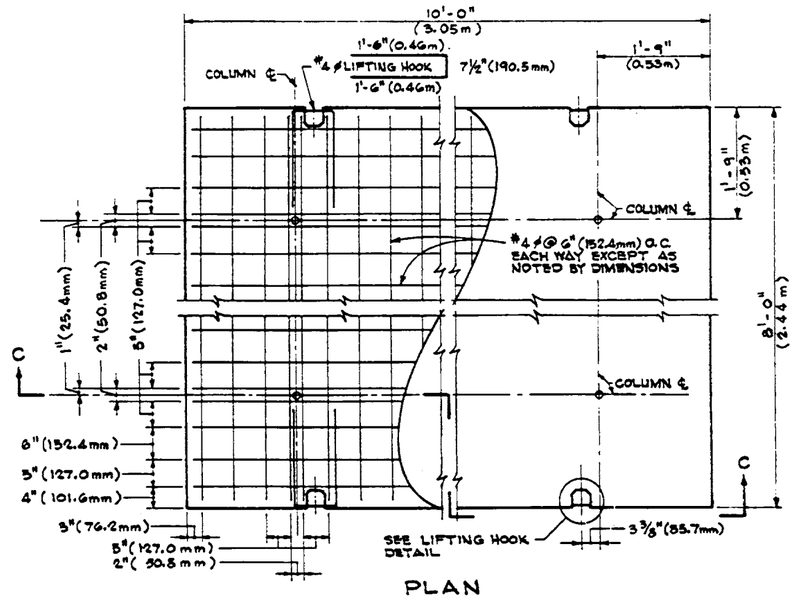


D-1 2" X 2" X ¼" ∠
MAKE 2

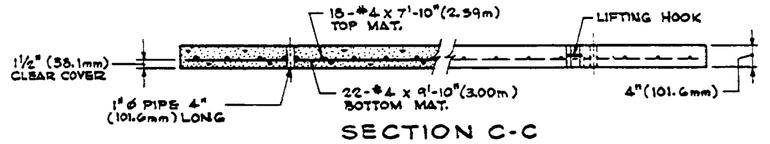


D-2 2" X 2" X ¼" ∠
MAKE 2

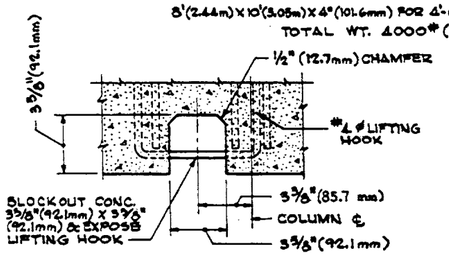
STEEL FRAME DETAILS
SCALE NO. 7



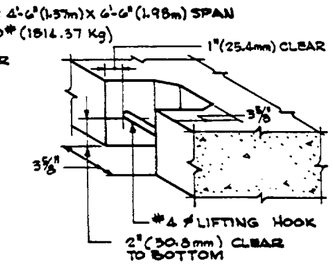
PLAN



SECTION C-C
CONCRETE ROOF SLAB
SCALE NO 6
8'(2.44m) X 10'(3.05m) X 4" (101.6mm) FOR 4'-6" (1.37m) X 6'-6" (1.98m) SPAN
TOTAL WT. 4000# (1814.37 Kg)

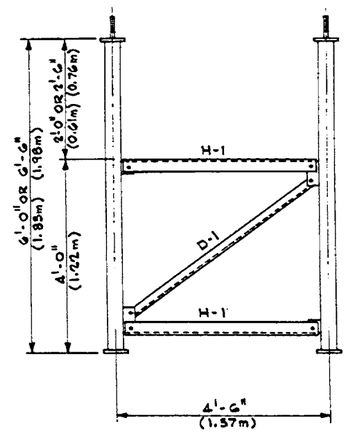


PLAN

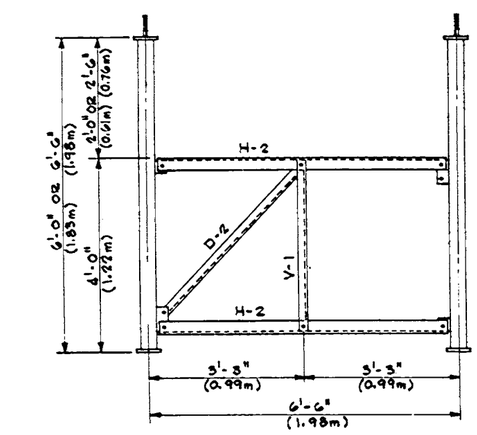


SIDE VIEW

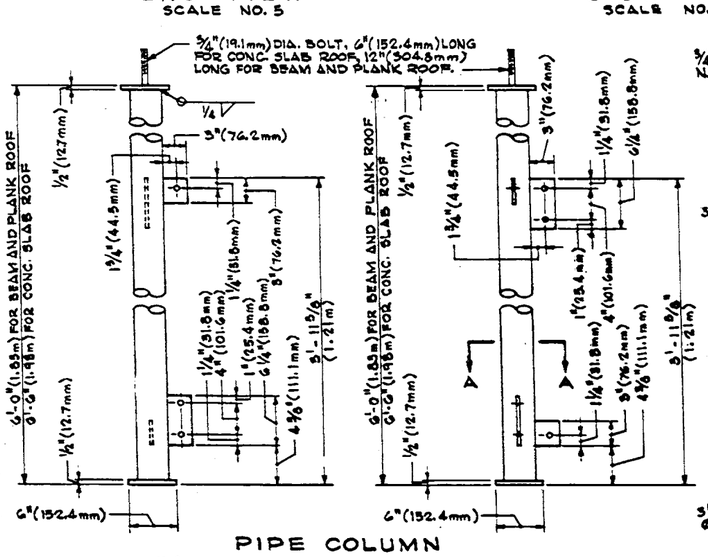
LIFTING HOOK DETAIL
NO SCALE



END VIEW
SCALE NO. 5

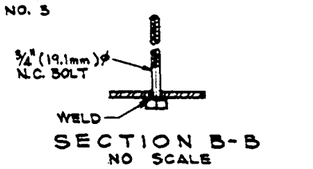


SIDE VIEW
SCALE NO. 5

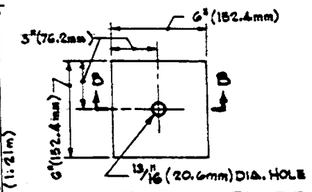


PIPE COLUMN
3" (76.2mm) DIA. STD. STEEL PIPE
SCALE NO. 7
MAKE 4

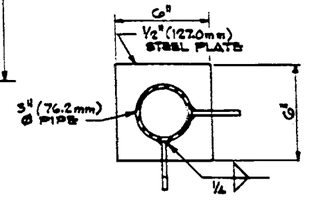
STEEL FRAME FIGHTING HOLE
SCALE AS NOTED



SECTION B-B
NO SCALE



TOP BEARING PLATE
NO SCALE



SECTION A-A
NO SCALE

SCHEDULE OF FACILITIES	
FACILITY NO.	DESCRIPTION
040501	FORMS FOR CONCRETE ROOF SLAB, FOOTINGS AND BEAMS & PLANKS
040502	STEEL FRAME FIGHTING HOLE W/CONC. SLAB COVER - COMPLETE
040503	STEEL FRAME FIGHTING HOLE W/CONC. BEAM & PLANK COVER - COMPLETE
040504	STEEL FRAME FIGHTING HOLE W/TIMBER BEAM & PLANK COVER - COMPLETE
040505	TIMBER FRAME FIGHTING HOLE W/ CONC. SLAB COVER - COMPLETE
040506	TIMBER FRAME FIGHTING HOLE W/CONC BEAM & PLANK COVER - COMPLETE
040507	TIMBER FRAME FIGHTING HOLE W/TIMBER BEAM & PLANK COVER - COMPLETE

REFER TO DRAWING NO. 04-06, SHT 1 OF 1, PRECAST PARTS YARD

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3'0 1' 2'0 3" 6" 9" 1' 2'
NO.5 NO.6 NO.7

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

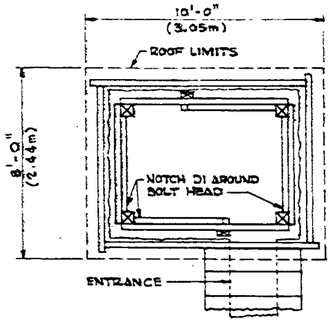
DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C. F. DIETZMANN
APPROVED: [signature]
CHIEF, ARCHITECTURAL DIVISION

THEATER OF OPERATIONS
COMBAT ZONE FACILITIES
STEEL FRAME FIGHTING HOLE WITH CONCRETE SLAB COVER

APPROVED: [signature] DATE: 17 FEB 1971
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

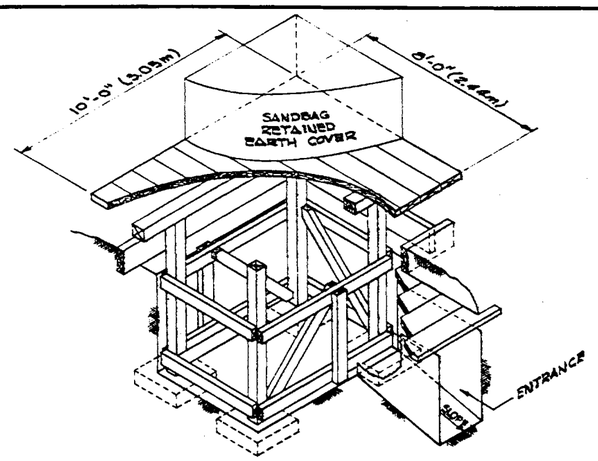
APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 04-05
SHEET 1 OF 2



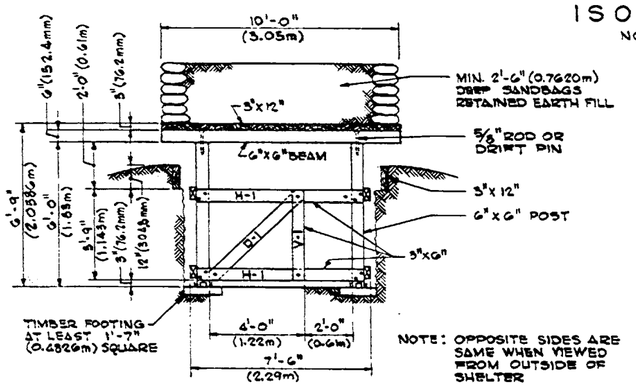
WITH ROOF REMOVED

TOP VIEW



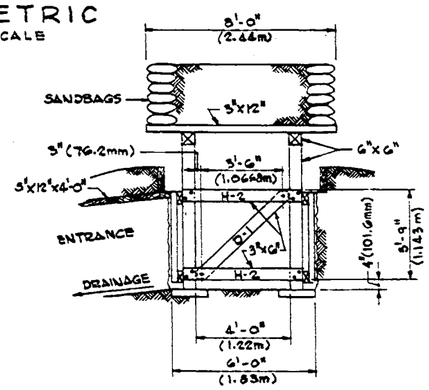
ISOMETRIC

NO SCALE



NOTE: OPPOSITE SIDES ARE SAME WHEN VIEWED FROM OUTSIDE OF SHELTER

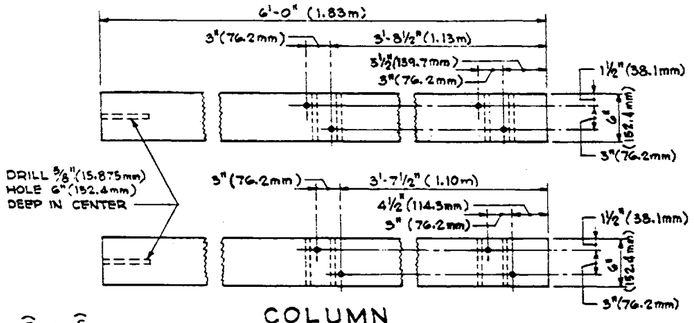
FRONT VIEW



SIDE VIEW

TIMBER FRAME FIGHTING HOLE

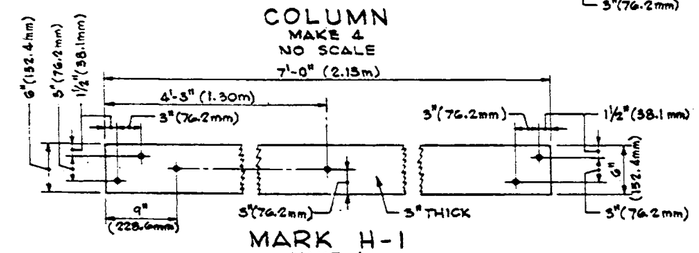
SCALE NO 3



COLUMN

MAKE 4

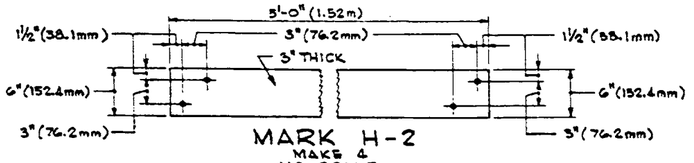
NO SCALE



MARK H-1

MAKE 4

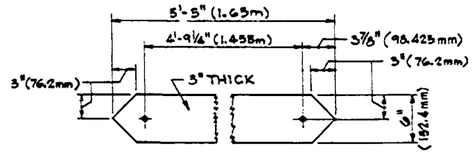
NO SCALE



MARK H-2

MAKE 4

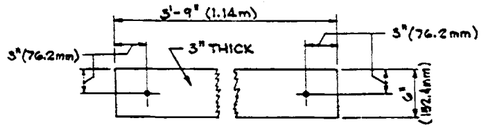
NO SCALE



MARK D-1

MAKE 4

NO SCALE



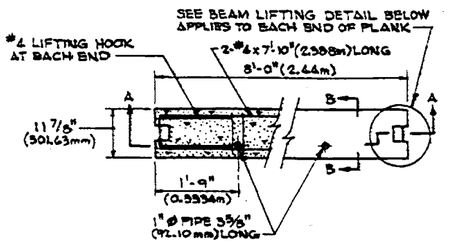
MARK V-1

MAKE 2

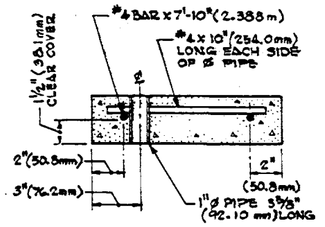
NO SCALE

GENERAL NOTES

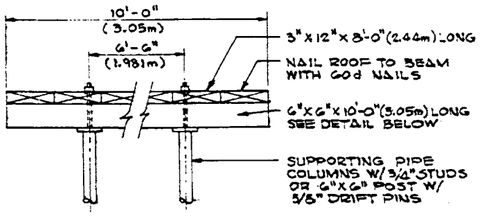
1. DRILL CONNECTION HOLES 3/4" DIA. UNLESS OTHERWISE NOTED.
2. BOLT ALL FRAME JOINTS WITH 5/8" NC BOLTS AND WASHERS. PLACE BOLT HEAD ON THE INSIDE OF STRUCTURE.
3. FOR ADDITIONAL GUIDANCE AND INFORMATION SEE TECHNICAL BULLETIN TB 5-15-1.



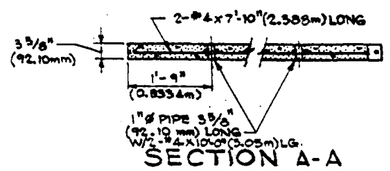
PLAN VIEW



SECTION B-B



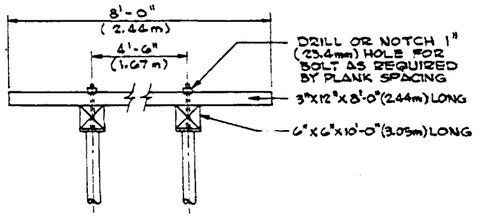
SIDE VIEW



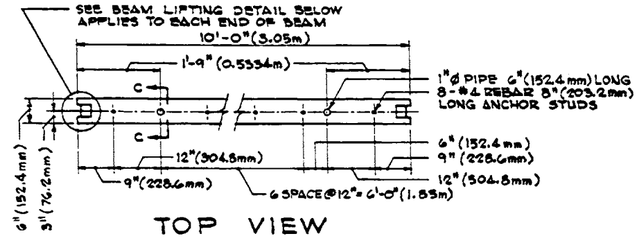
SECTION A-A

PLANK DETAIL

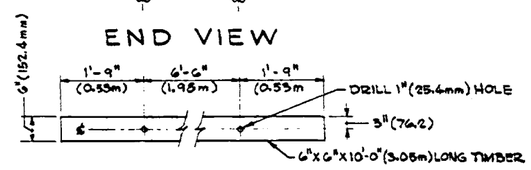
NO SCALE



END VIEW



TOP VIEW



BEAM DETAIL

TIMBER BEAM & PLANK COVER DETAIL

NO SCALE

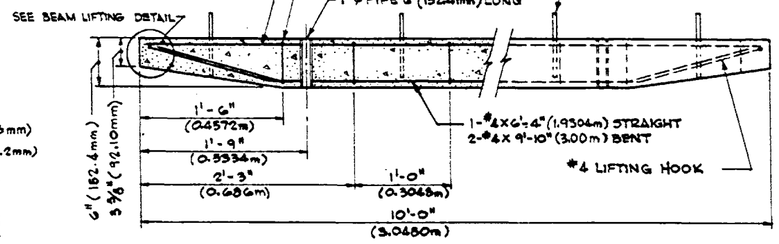
NOTE:

ASSUME TIMBER WT. OF 50 LB/Cu.Ft.

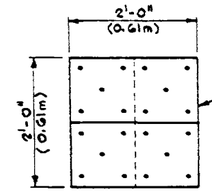
3"X12" PLANK = WT. 100# (45.36Kg) X 10 = 1000# (453.6Kg)

6"X 6" BEAM = WT. 125# (56.70Kg) X 2 = 250# (113.4Kg)

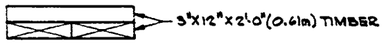
TOTAL 1250# (567.0Kg)



BEAM DETAIL



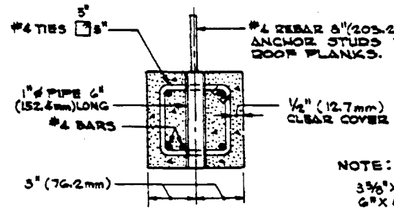
PLAN



SIDE VIEW

TIMBER FOOTING DETAIL

NO SCALE



SECTION C-C

NOTE:

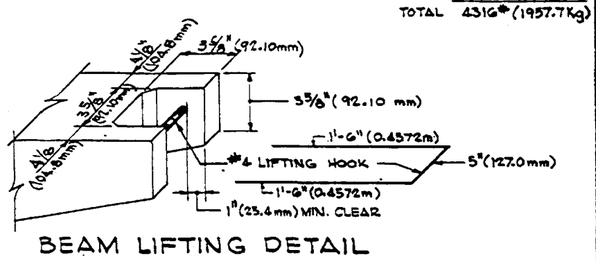
3 5/8" X 11 7/8" PLANK, WT. 362# (164.2Kg)

6"X 6" BEAM, WT. 348# (157.9Kg)

10 PLANKS WT. 3620# (1642.0Kg)

2 BEAMS WT. 696# (315.7Kg)

TOTAL 4316# (1957.7Kg)



BEAM LIFTING DETAIL

CONCRETE BEAM & PLANK COVER DETAIL

NO SCALE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

DRAWING SCALES

0 1' 2' 3' 4' 5'

NO.3

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: J.OHNSON
QUANTITIES BY: C.V. DEICHMANN
APPROVED: [signature]
DATE: 17 FEB
CHIEF, STRUCTURES BRANCH
APPROVED: [signature]
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

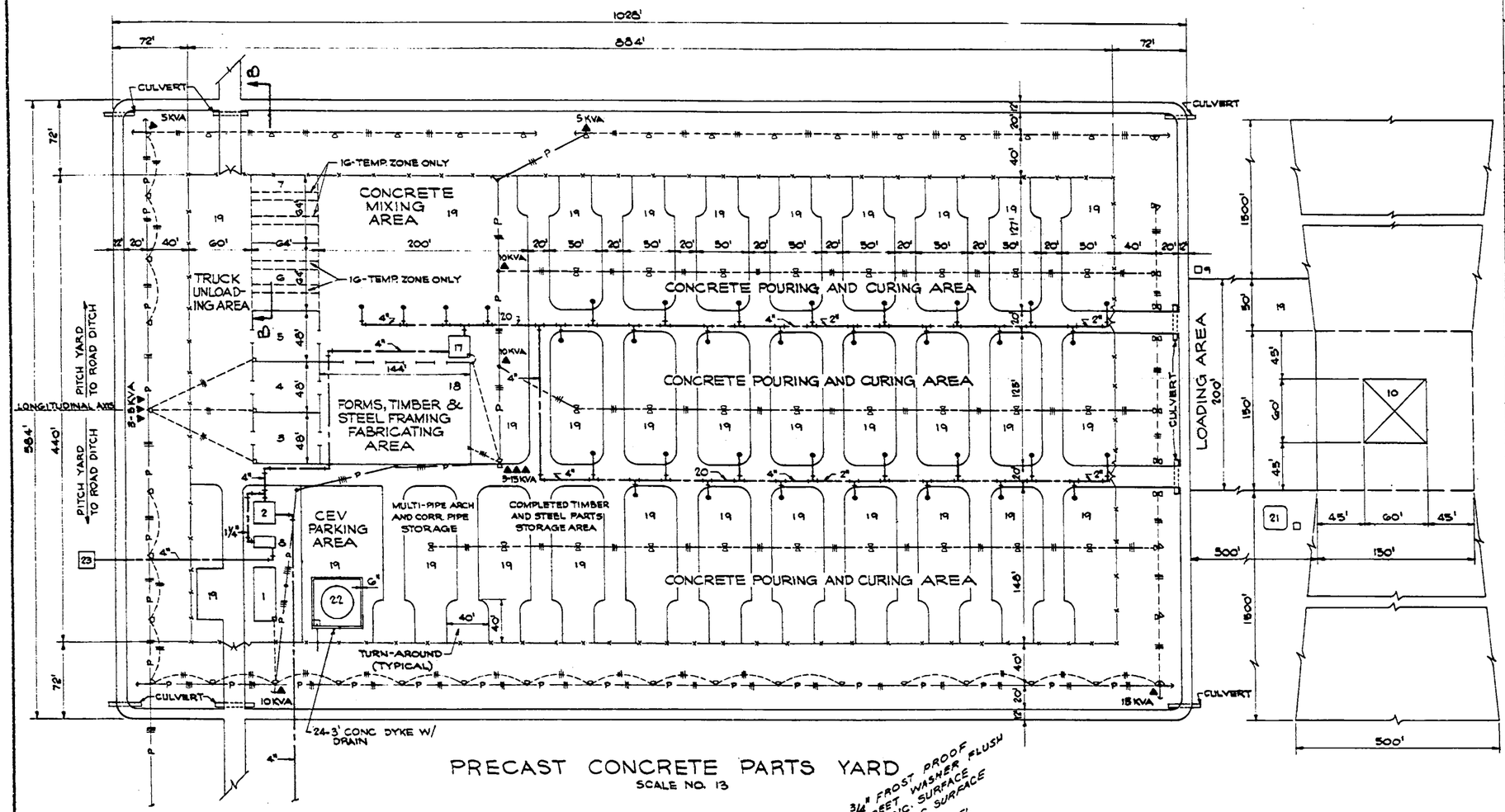
THEATER OF OPERATIONS

COMBAT ZONE FACILITIES
TIMBER FRAME FIGHTING HOLE
WITH TIMBER BEAM AND PLANK COVER
CONCRETE BEAM AND PLANK COVER DETAIL

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 04-05
SHEET 2 OF 2

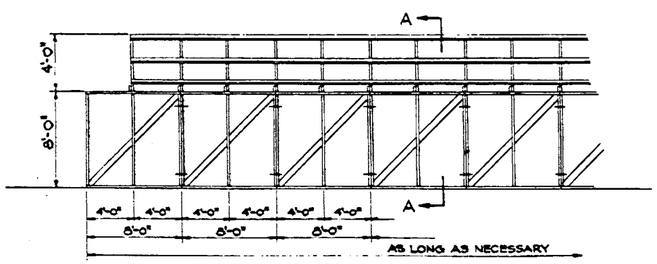
CORPS OF ENGINEERS

U. S. ARMY

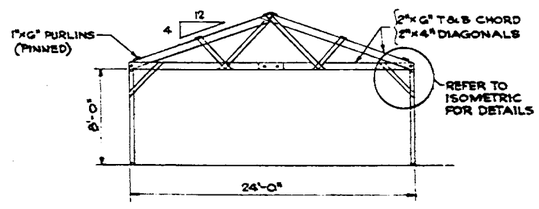


PRECAST CONCRETE PARTS YARD

SCALE NO. 13



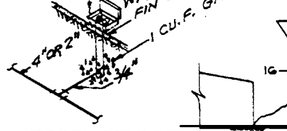
PART ELEVATION



SECTION A-A

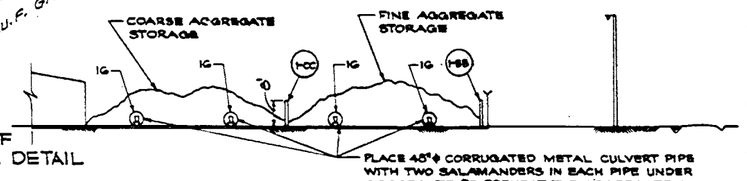
TYPICAL FRAME FOR SUPPORTING TARPAULIN

SCALE NO. 24

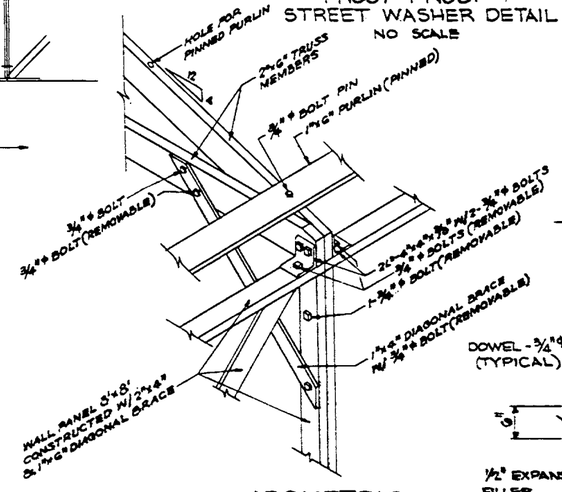


FROST PROOF STREET WASHER DETAIL

NO SCALE



PLACE 48"ϕ CORRUGATED METAL CULVERT PIPE WITH TWO SALAMANDERS IN EACH PIPE UNDER AGGREGATE TO PREHEAT THE AGGREGATE IN TEMPERATE ZONE.

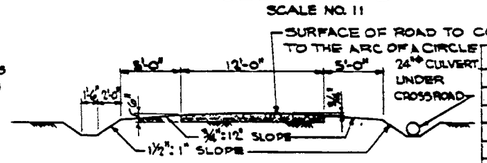


ISOMETRIC

NO SCALE

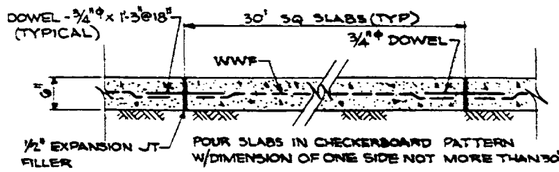
SECTION B-B

SCALE NO. 11



SINGLE LANE ROAD DETAIL

NO SCALE



TYPICAL SLAB ON GRADE DETAIL

NO SCALE

SCHEDULE OF FACILITIES

ITEM NO.	FACILITY	TEMPERATE ZONE INSTL NO. ZE-1.571 QTY	TEMPERATE ZONE INSTL NO. ZE-1.571 SIZE OR UNIT	TEMPERATE ZONE INSTL NO. ZE-1.571 DWG NO.	TROPICAL ZONE INSTL NO. ZE-1.572 QTY	TROPICAL ZONE INSTL NO. ZE-1.572 SIZE OR UNIT	TROPICAL ZONE INSTL NO. ZE-1.572 DWG NO.	DESERT ZONE INSTL NO. ZE-1.574 QTY	DESERT ZONE INSTL NO. ZE-1.574 SIZE OR UNIT	DESERT ZONE INSTL NO. ZE-1.574 DWG NO.
1	ADMINISTRATION BLDG	1	20x50	81-11	1	20x50	81-11	1	20x50	81-11
2	WATER TANK & TOWER	1	500 BBL	84-21	1	500 BBL	84-21	1	500 BBL	84-21
3	STEEL AND METAL PARTS STORAGE	1	48x64	34-04	1	48x64	34-04	1	48x64	34-04
4	LUMBER STORAGE	1	48x64	34-04	1	48x64	34-04	1	48x64	34-04
5	CEMENT STORAGE	1	48x64	34-04	1	48x64	34-04	1	48x64	34-04
6	COARSE AGGREGATE STORAGE	1	64x64	---	1	64x64	---	1	64x64	---
7	FINE AGGREGATE STORAGE	1	64x64	---	1	64x64	---	1	64x64	---
8	LATRINE, WATER BORNE	1	10x20	72-35	1	10x20	72-35	1	10x20	72-35
9	LATRINE, 2 MAN	1	4x5	72-36	1	4x5	72-36	1	4x5	72-36
10	HELIPAD, CH54, REAR AREA	1	---	11-01	1	---	11-01	1	---	11-01
16	AGGREGATE HEATER	2	---	04-06	---	---	---	---	---	---
17	WATER HEATER - BLDG	1	20x20	34-03	---	---	---	---	---	---
18	CARPENTRY SHOP	1	96x144	34-04	1	96x144	34-04	1	96x144	34-04
20	PRECAST CONC YARD UTILITIES	1	---	04-06	1	---	04-06	1	---	04-06
21	HELICOPTER REFUELING	1	10000 GAL	12-46	1	10000 GAL	12-46	1	10000 GAL	12-46
22	POL STORAGE TANK-HEATING OIL	1	1000 BBL	12-34	---	---	---	---	---	---
24	DYKE-8" CONC WALL-45'X45'X3'	1	---	04-06	---	---	---	---	---	---
	OTHER CONSTRUCTION									
11	FENCE, SECURITY, TYPE Y	2.8	1000 FT	71-09	2.8	1000 FT	71-09	2.8	1000 FT	71-09
12	GATE, VEHICLE & MAN	4	EA	71-09	4	EA	71-09	4	EA	71-09
14	ROAD, 1 LANE-8"CONC W/WIRE MESH	0.8	MILE	04-06	0.8	MILE	04-06	0.8	MILE	04-06
15	ROAD, 2 LANE-8"CONC W/WIRE MESH	0.1	MILE	04-06	0.1	MILE	04-06	0.1	MILE	04-06
19	HARDSTAND - 8"CONC W/WIRE MESH	54	1000 SY	04-06	54	1000 SY	04-06	54	1000 SY	04-06
23	SEPTIC TANK	1	500 GPD	83-11	1	500 GPD	83-11	1	500 GPD	83-11

UTILITIES

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO. TEMP ZONE	FACILITY NO. TROP ZONE	FACILITY NO. DESERT ZONE	DWG NO.
WATER DISTRIBUTION	21,000 GPD	040810	040810	040810	84-21
SEWAGE	500 GPD	040811	040811	040811	83-15
ELECTRICAL DISTRIBUTION	110 KVA	040812	040812	040812	81-21 81-22 81-23 81-24

GENERAL NOTES

1. EACH INSTALLATION CAN SUPPLY ENOUGH CONCRETE SHELTER, TIMBERSHELTER AND STEEL SHELTER PARTS FOR AN INFANTRY COMBAT BATTALION OF 850 MEN WITHIN 90 DAYS USING A 20 HOUR WORK DAY, 7 DAYS A WEEK OPERATION.
2. TARPAULINS OR POLYETHYLENE PLASTIC SHEETS SHALL BE STRETCHED OVER WOOD FRAMES AND THE AREA HEATED WITH OIL FIRED SPACE HEATERS IN THE POURING AND CURING AREAS OF THE TEMPERATE ZONE INSTALLATION. THE WOOD FRAMES SHALL BE EASILY DISMANTLED AND REASSEMBLED TO ALLOW CRANES TO REMOVE THE CURED CASTINGS TO THE LOADING AREA.
3. CONCRETE FLOORS IN STORAGE BUILDINGS AND AGGREGATE STORAGE AREAS TO BE 6" THICK (MINIMUM).
4. 3/8" F.P. STREET WASHERS TO BE USED IN CONCRETE POURING & CURING AREAS (3/8" thick) SEE DETAIL.
5. THE PAVED AREAS SHALL BE PITCHED FROM THE LONGITUDINAL AXIS OF THE PRECAST PARTS YARD TO PROVIDE SURFACE DRAINAGE TO THE LONGITUDINAL ROAD DITCHES.

ELECTRICAL NOTES

1. ALL OUTDOOR FLOOD LIGHTING TO BE 500 W INCANDESCENT LAMPS AND MOUNTED ON 35' POLES.
2. PRIMARY AND OVERHEAD CONDUCTORS SHALL BE AS SHOWN ON DWGS 81-21 & 81-23. UNDERGROUND CABLE SHALL BE 3/C NO.6-7 STR RHW, LEAD SHEATHED. OVERHEAD PRIMARY AND SECONDARY CONDUCTORS TO BE #6.
3. PRIMARY CIRCUIT
   SECONDARY CIRCUIT (OVERHEAD)
   SECONDARY CIRCUIT (UNDERGROUND)
   TRANSFORMER
4. STORAGE BUILDINGS, 48'x48', SHALL EACH BE PROVIDED WITH SIX LIGHTING KITS, FACILITY NO.819103, "ELECTRICAL KIT, INCANDESCENT LIGHTING AND RECEPTACLE OUTLETS, 10 FOOTCANDLES, 480 SQUARE FEET, 8 TO 14 FEET MOUNTING HEIGHT"; ONE KIT FACILITY NO.815001, "ELECTRICAL KIT, BUILDING SERVICE ENTRANCE AND EQUIPMENT, 3 WIRE 10 KVA MAXIMUM"; AND ONE KIT FACILITY NO.816001, "ELECTRICAL KIT, BUILDING FEEDER ASSEMBLY, 90 AMP, 3 WIRE." EACH KIT IS ALSO ASSIGNED A FSN.
5. THE CARPENTRY SHOP, 96'x144', SHALL BE PROVIDED WITH 28 LIGHTING KITS, FACILITY NO.819102, "ELECTRICAL KIT, FLUORESCENT LIGHTING AND RECEPTACLE OUTLETS, 20 FOOTCANDLES, 480 SQUARE FEET, 8 TO 14 FEET MOUNTING HEIGHT"; ONE KIT, FACILITY NO.815003, "ELECTRICAL KIT, BUILDING SERVICE ENTRANCE AND EQUIPMENT, 3 PHASE, 4 WIRE, 50 KVA MAXIMUM"; FOUR KITS, FACILITY NO.816023, "ELECTRICAL KIT, BUILDING FEEDER ASSEMBLY, 100 AMP, 4 WIRE"; AND EIGHT KITS, FACILITY NO.816001, "ELECTRICAL KIT, BUILDING FEEDER ASSEMBLY, 90 AMP, 3 WIRE."
6. LIGHTING KITS INCLUDE A NUMBER OF 20 AMP TOGGLE SWITCHES WHICH WILL BE SURPLUS, IN THIS INSTANCE, TO THE INTERIOR REQUIREMENTS. THESE SWITCHES SHALL BE USED WHERE REQUIRED FOR CONTROL OF OUTDOOR LIGHTING, IN WEATHERPROOF HOUSING AS DETAILED ON DWG 81-24, IN LIEU OF THE SWITCHES SHOWN THEREON.
7. TEMPORARY CONSTRUCTION LIGHTING SETS WILL BE PROVIDED FOR USE DURING THE TIMES POURING AND CURING AREAS ARE COVERED BY TARPS OR OTHER OPAQUE SHELTERS. THE BILL OF MATERIAL WILL PROVIDE TWO SETS, FSN 6230-299-5692 (L.I.233210), EACH INCLUDING 6 FLOODLIGHTS, MOUNTABLE ON TWO PORTABLE MASTS IN EACH SET, OR ON ANY FLAT WOOD SURFACE; AND ONE SET, FSN 6230-289-7077 (L.I.163998), INCLUDES 32 INCANDESCENT LIGHTS WITH REFLECTORS, 1200 FEET OF WEATHERPROOF CABLE, CAPS AND CONNECTORS.
8. ESTIMATED PEAK DEMAND 110 KVA.
9. THE WATER HEATING BUILDING, 20'x20', SHALL BE PROVIDED WITH ONE KIT, FACILITY NO.815001, "ELECTRICAL KIT, BUILDING SERVICE ENTRANCE AND EQUIPMENT, 3 WIRE, 10 KVA MAXIMUM"; AND ONE KIT, FACILITY NO.819103, "ELECTRICAL KIT, INCANDESCENT LIGHTING AND RECEPTACLE OUTLETS, 10 FOOTCANDLES, 480 SQUARE FEET, 8 TO 14 FEET MOUNTING HEIGHT."

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SH NO.
11-01	HELIPADS	1-3 OF 3
12-34	P.O.L. TANK	1 OF 1
12-46	HELICOPTER REFUELING	1 OF 3
34-03	BARRACKS TYPE BLDG	1-7 OF 7
34-04	WAREHOUSE TYPE BLDG	1-3 OF 3
61-11	ADMINISTRATION BLDG	1 OF 1
71-09	FENCE DETAILS	1 OF 1
72-35	LATRINE DETAILS	1 OF 1
72-36	LATRINE DETAILS	1 OF 1
80-01	DRAIN FIELD	1 OF 1
81-21	ELECTRIC DISTRIBUTION	1 OF 1
81-22	ELECTRIC DISTRIBUTION	1 OF 1
81-23	ELECTRIC DISTRIBUTION	1 OF 1
81-24	ELECTRIC DISTRIBUTION	1 OF 1
81-41	TYPICAL LIGHTING LAYOUT	1 OF 1
83-11	SEPTIC TANK	1 OF 1
83-15	SEWAGE PIPING	1 OF 1
84-21	WATER TANK & TOWER	1 OF 1
11-03	REVETMENT DETAILS	2-3 OF 3
99-98	STANDARD DETAILS	1 THRU 19

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 10' 20' 30' 40' NO.11 | 0 50' 100' NO.13 | 0 5' 10' NO.24

HAYES, SEAY, MATTERN & MATTERN — ARCHITECTS - ENGINEERS — ROANOKE, VIRGINIA — WASHINGTON, D. C.

DEPARTMENT OF THE ARMY — OFFICE OF THE CHIEF OF ENGINEERS — MILITARY CONSTRUCTION - ENGINEERING DIVISION — WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY: GREGORY
CHECKED BY: WADE
QUANTITIES BY: C.V. DEICHMANN

THEATER OF OPERATIONS

COMBAT ZONE FACILITIES
PRECAST CONCRETE. TIMBER AND STEEL PARTS YARD FOR PREFABRICATED SHELTERS. BUNKERS. EMPLACEMENT COVERS AND OTHER PRECAST CONCRETE PARTS

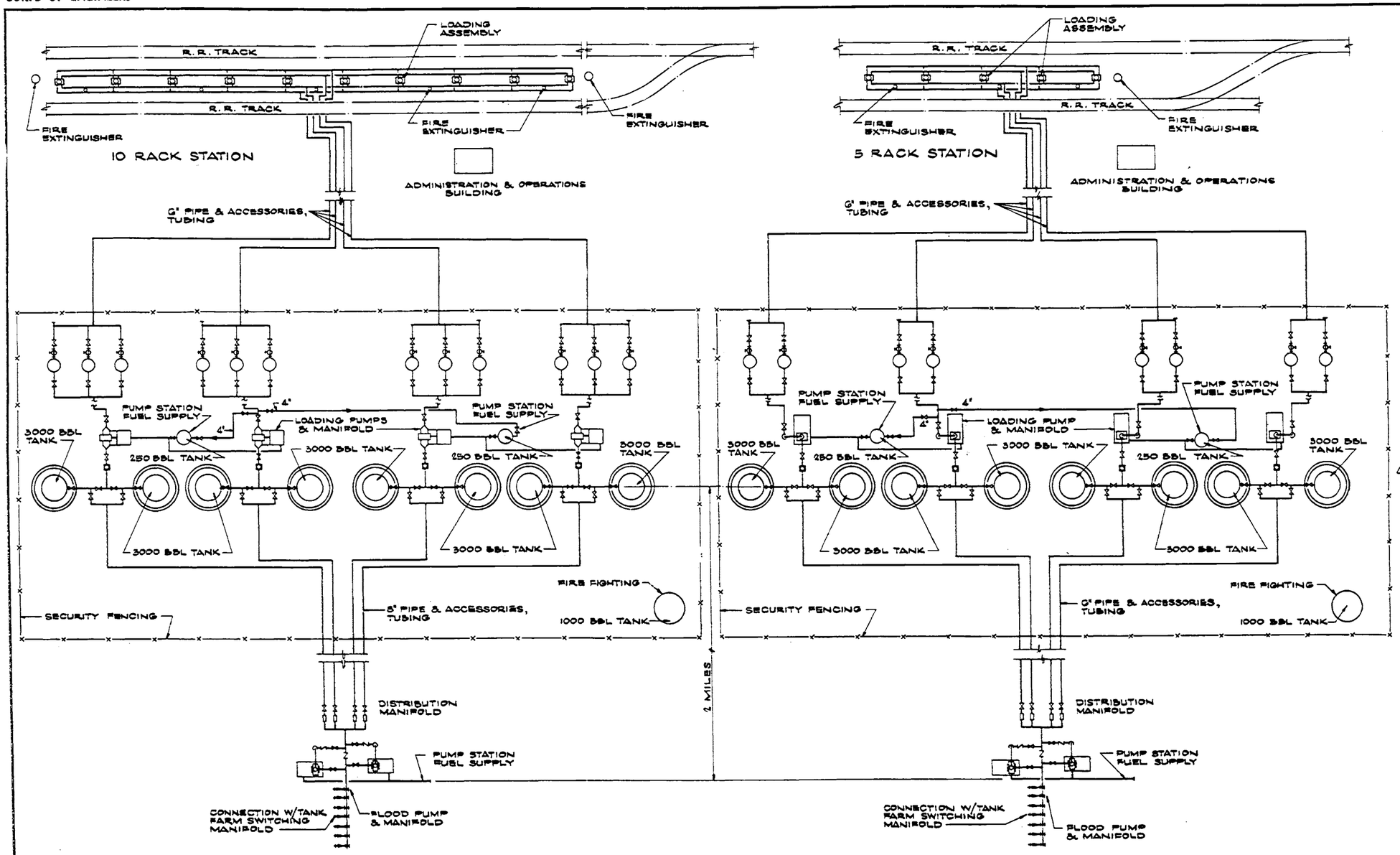
APPROVED: M. Graham — DATE: 17 FEB 1971

CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

CHIEF, STRUCTURES BRANCH

APPROVED FOR PROPONENT AGENCY: _____ DATE: _____

SCALE: AS NOTED — SPEC. NO. — DRAWING NUMBER: 04-06 — SHEET 1 OF 1



TANK CAR LOADING - 10 CAR STATION
INSTALLATION NO. QE 1039

TANK CAR LOADING - 5 CAR STATION
INSTALLATION NO. QE 1029

TANK CAR LOADING INSTALLATION
4 PRODUCTS

DESCRIPTION	QUANTITY INST. NO. QE 1029 5 CARS	QUANTITY INST. NO. QE 1039 10 CARS	FACILITY NO.
ADMIN. & OPERATIONS BLDG. (20'X40')	1	1	611114
TANK FACILITY, 3000 BBL., 6 INCH	5	-	123403
TANK FACILITY, 1000 BBL., 4 INCH	1	1	123406
ROAD, 1 LANE, 4' EARTH	0.5	0.5	853111
TANK FACILITY, 250 BBL., 4 INCH	2	2	123402
FENCE, SECURITY, TYPE Y, 1000 FT.	2.75	2.75	710903
FENCE, SECURITY, VEH. & MAN GATE	2	2	710904
DISTRIBUTION MANIFOLD ASSY., 6 IN.	1	-	123251
DISTRIBUTION MANIFOLD ASSY., 8 IN.	-	1	123252
PIPE & ACCESS., GRVD., 1000 FT., 8 IN.	-	0.5	125018
PIPE & ACCESS., GRVD., 1000 FT., 6 IN.	2	2	125017
PIPE & ACCESS., TUBING, 1000 FT., 4 IN.	1	1	125001
PIPE & ACCESS., 1-MILE, 8 IN. TUB.	-	8	125008
PIPE & ACCESS., 1-MILE, 6 IN. TUB.	8	-	125007
LOADING STATION, 5 CARS	1	-	124304
LOADING STATION, 10 CARS	-	1	124306
TANK FACILITY, 3000 BBL., 8 INCH	-	8	123409
FLOOD PUMP & MANIFOLD, 785 BPH	1	-	123211
FLOOD PUMP & MANIFOLD, 1855 BPH	-	1	123212
LOADING PUMP & MANF., 700-1400 BPH	4	-	123104
LOADING PUMP & MANF., 2000-2500 BPH	-	4	123105
PUMP STATION FUEL SUPPLY, 2 PUMPS	2	2	124201

△ PIPELINE WELDING NOTE

WELDED POL PIPELINE SHALL BE USED FOR ALL BURIED PORTIONS UNDER BERMS, ROADWAYS AND FOR MAKING CLOSURES; AND SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-363.

GENERAL NOTES

1. SIZE AND NUMBER OF TANK FACILITIES PER PRODUCT ARE BASED ON THREE LOADING RACK SWITCHES PER DAY.
2. ASSUME 10 000 GALLON TANK CARS ARE BEING USED. AT LEAST TWO TANKS PER PRODUCT WILL BE PROVIDED.
3. ACCESS ROADWAYS ARE REQUIRED WITHIN LOADING INSTALLATION TO PERMIT APPROACHING EACH TANK FROM NOT LESS THAN TWO DIRECTIONS.
4. THE SUPPLY OF FRESH WATER FOR FIREFIGHTING BY ANY MEANS IS A LOCAL PROBLEM.
5. LAYOUT IS SCHEMATIC ONLY. ACTUAL LAYOUT WILL BE GOVERNED BY TERRAIN.
6. LINE PIPE TO BE USED FOR ALL BURIED PORTIONS UNDER BERMS AND ROADWAYS AND FOR MAKING CLOSURES.
7. WHEN FIRE FIGHTING EQUIPMENT IS AUTHORIZED A HYDRO-X HIGH EXPANSION FOAM SYSTEM WILL BE SUPPLIED.

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS

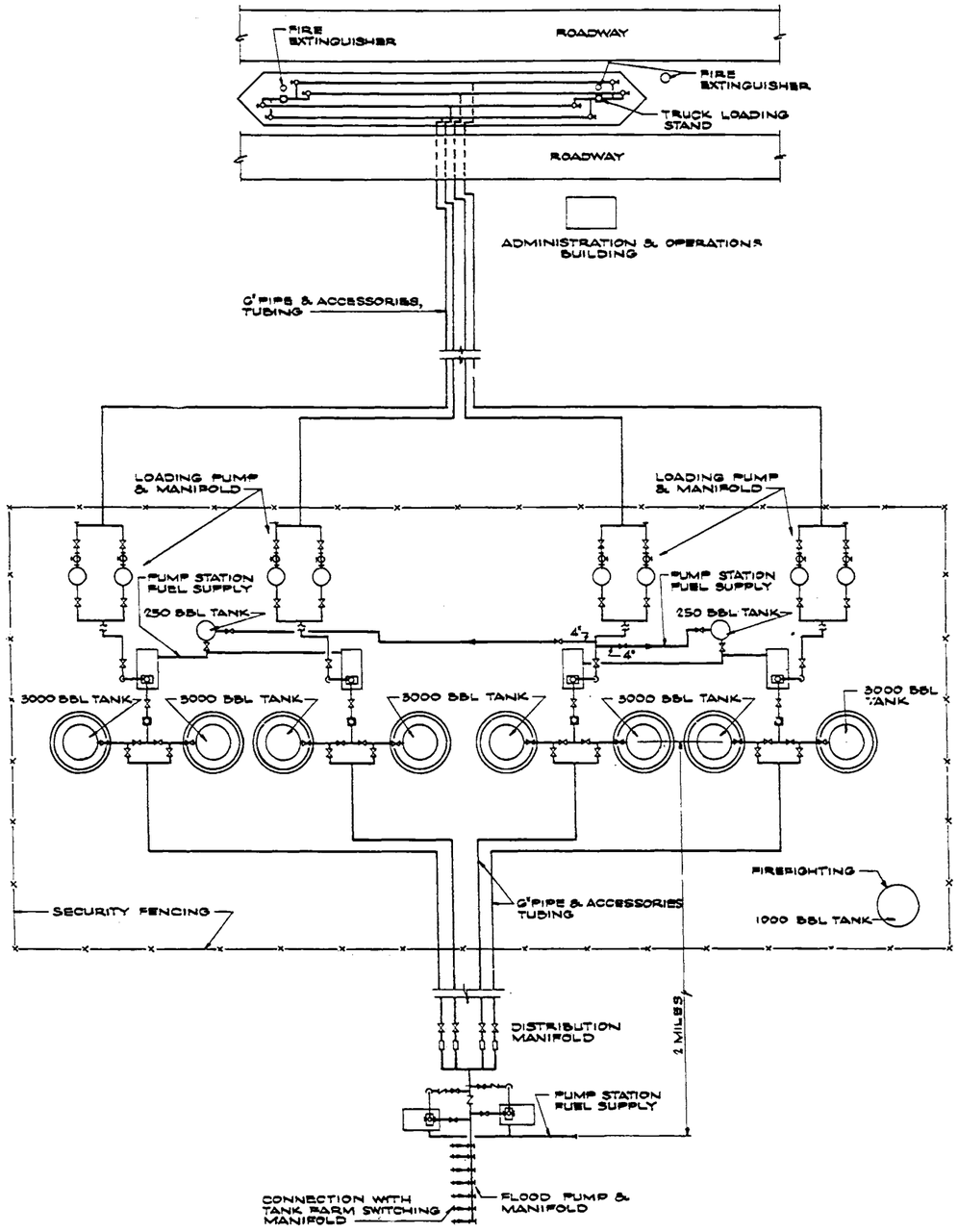
UNDER REVISION

TANK CAR LOADING 5 & 10 STATIONS

APPROVED: [signature] CHIEF, ENGINEERING DIVISION
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 29 MAR 1960

APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-02
SHEET 1 OF 1



TANK TRUCK LOADING INSTALLATION
INSTALLATION NO. QE1019

TANK TRUCK LOADING INSTALLATION
4 PRODUCTS

DESCRIPTION	QTY. INST. NO. QE 1019	FACILITY NO.
FLOOD PUMP & MANIFOLD, 785 BPH	1	123211
PUMP STATION FUEL SUPPLY, 2 PUMPS	2	124201
ADMIN. & OPERATIONS BLDG. (20' X 40')	1	611114
DISTRIBUTION MANIFOLD ASSY. 6 INCH	1	123251
PIPE & ACCESS., TUBING, 1-MILE, 6 INCH	5	125007
PIPE & ACCESS., GRVD., 1000 FT., 6 INCH	2	125017
TANK FACILITY, 3000 BBL., 6 INCH	8	123405
TANK FACILITY, 1000 BBL., 4 INCH	1	123406
TANK FACILITY, 250 BBL., 4 INCH	2	123402
LOADING PUMP & MANIFOLD, 700 TO 1400 BPH	4	123104
ROAD, 1-LANE, 4" EARTH	0.50	855111
FENCE, SECURITY, VEHICLE & MAN GATE	2	710904
FENCE, SECURITY, TYPE Y, 1000 FT	2.75	710903
LOADING STAND, TRUCK, 2 STATION, GIN.	1	124302
PIPE AND ACCESS. TUBING, GRVD, 1000 FT, 4 IN	1	125001

△ PIPELINE WELDING NOTE

WELDED POL PIPELINE SHALL BE USED FOR ALL BURIED PORTIONS UNDER BERMS, ROADWAYS AND FOR MAKING CLOSURES; AND SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-363.

GENERAL NOTES

1. TRUCK LOADING STAND FACILITIES MAY BE EXPANDED TO PROVIDE FOUR LOADING STANDS WITHOUT MODIFICATION TO REMAINING FACILITIES.
2. ACCESS ROADWAYS ARE REQUIRED WITHIN LOADING INSTALLATION TO PERMIT APPROACHING EACH TANK FROM NOT LESS THAN TWO DIRECTIONS.
3. THE SUPPLY OF FRESH WATER FOR FIREFIGHTING BY ANY MEANS IS A LOCAL PROBLEM.
4. LAYOUT IS SCHEMATIC ONLY. ACTUAL LAYOUT WILL BE GOVERNED BY TERRAIN.
5. LINE PIPE TO BE USED FOR ALL BURIED PORTIONS UNDER BERMS & ROADWAYS AND FOR MAKING CLOSURES.
6. REFER TO DWG. NO. 12-02 SH. 1 OR 1 FOR FIREFIGHTING, NOTE 7. (IF AUTHORIZED)

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

GRAPHIC SCALES: NO SCALE

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.F. DEICHMANN

THEATER OF OPERATIONS
POL
TANK TRUCK LOADING
2 STATION

UNDER REVISION

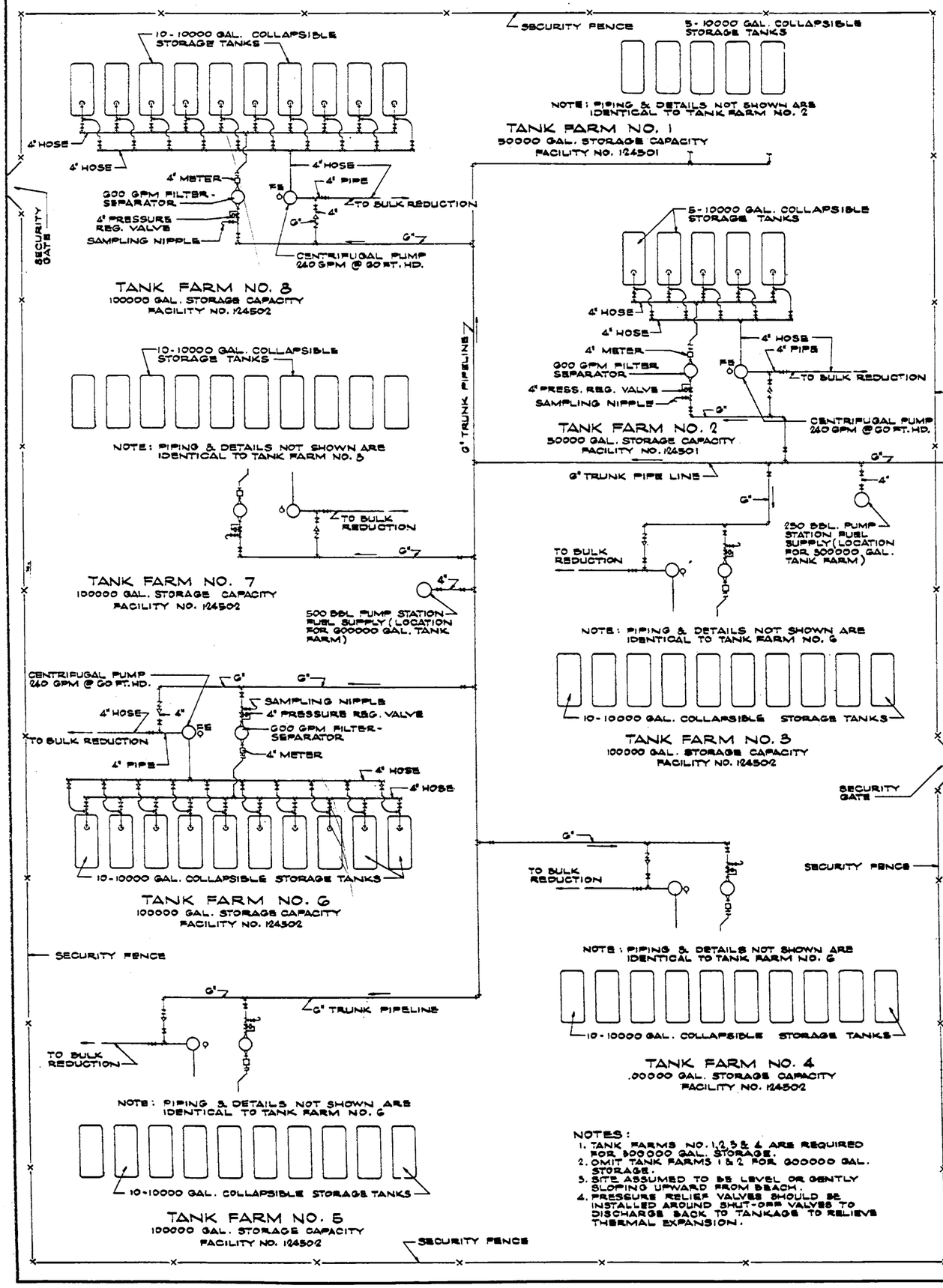
APPROVED: [signature] DATE: 19 MAR 1963
CHIEF, STANDARDS BRANCH | CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE: 13 Sept 62

SCALE: NONE SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1 12-03

CORPS OF ENGINEERS

U. S. ARMY



SCHEDULE OF FACILITIES

FOR BARGE (4160 BBL) & SMALL VESSEL (11,500 BBL) UNLOADING & LOADING INSTALLATIONS FOR SHALLOW DEPTH WATER

DESCRIPTION	INST. NO. GA1160 300000 GAL	INST. NO. GA1205 600000 GAL	FACILITY NO.
PUMP STATION FUEL SUPPLY - 4 UNIT	3	3	124202
PORTABLE COLLAPSIBLE TANK SET-50,000G	2	-	124501
PORTABLE COLLAPSIBLE TANK SET-100,000G	2	6	124502
6" TUBING (1 MILE) GRV	4.5	5.0	125007
6" API PIPE (1 MILE) GRV	0.5	0.5	125022
MOORING SET	1	1	120413
6" SUBMARINE PIPELINE	1	1	120426
6" REVERSING MANIFOLD	2	2	120411
SUP. FITTINGS & VALVES FOR REVERSING PUMPING FROM COLLAPSIBLE STORAGE TANK FARM (100000, 50000 OR 40000 GAL.)	5	7	120410
BOOSTER STA - 6" - 1400 BBLS/HR.	2	2	123101
TANK, POL, W/4" LINE, 250 BBLS	1	-	123402
TANK, POL, W/4" LINE, 500 BBLS	2	3	123403
FENCE, SECURITY, TYPE Y (1000 FT)	3.0	3.5	710905
FENCE, SECURITY, MAN & VEHICLE GATE-EA	8	8	710904
COLLAPSIBLE SLOP TANK FARM (40000 GAL.) W/ BULK REDUCTION	1	1	120412

MOORING NOTES

1. BARGE OR SMALL VESSEL TO BE MOORED W/ BOW ORIENTED INTO PREVAILING CURRENT, WIND & WAVES. CURRENT SHOULD BE PRIMARY CONCERN IF PRACTICAL. BOW SHOULD BE POINTED SEAWARD.
2. NORMALLY, MOORING SHOULD BE INSTALLED & TESTED PRIOR TO INSTALLATION OF PIPELINE.
3. MOORING & SUBMERGED PIPELINE MUST BE LAID OUT SO THAT NEITHER THE PIPELINE OR ANY MOORING LEG INTERFERES WITH THE OTHER.

△ PIPELINE WELDING NOTE

WELDED SUBMARINE PIPELINES SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-363.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
12 - 22	SUBMARINE PIPELINE	1 OF 1
12 - 91	BOOSTER STATION	1 OF 1

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

DRAWING SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN, ARCHITECTS - ENGINEERS, ROANOKE, VIRGINIA, WASHINGTON, D. C.

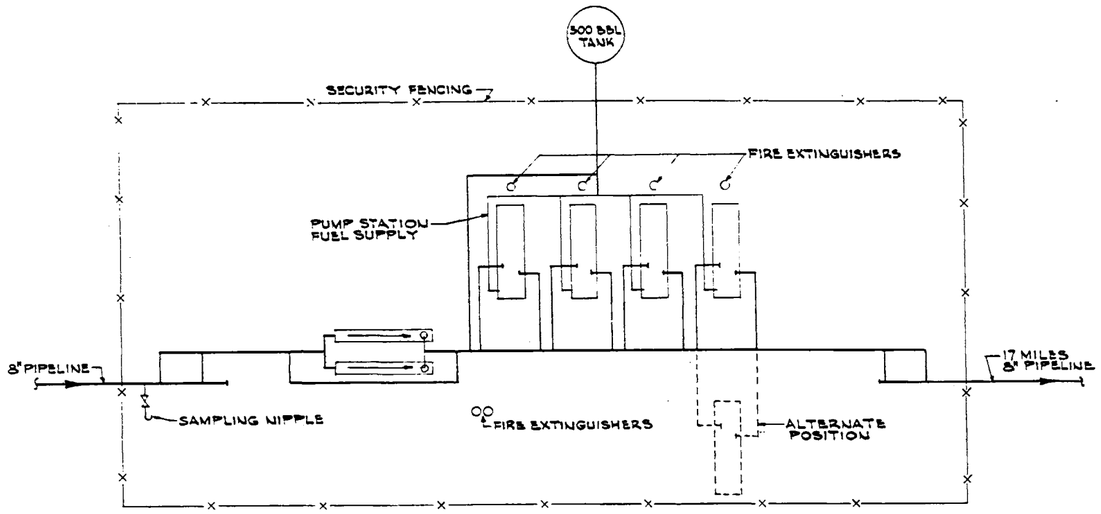
DEPARTMENT OF THE ARMY, OFFICE OF THE CHIEF OF ENGINEERS, MILITARY CONSTRUCTION - ENGINEERING DIVISION, WASHINGTON, D. C.

DRAWN BY: MELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature]
CHIEF, ENGINEERING BRANCH
APPROVED: [signature] DATE: 1 9 MAY
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

THEATER OF OPERATIONS

P.O.L.
BARGE (4160 BBL) & SMALL VESSEL (11500 BBL) UNLOADING & LOADING INSTALLATION FOR SHALLOW DEPTH WATER
300000 GAL. & 600000 GAL. STGE. CAPACITY

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-04
SHEET 1 OF 1



PLAN

8 INCH PIPELINE PUMP STATION (1355 BPH, 1000 FT. HD.)

NO SCALE

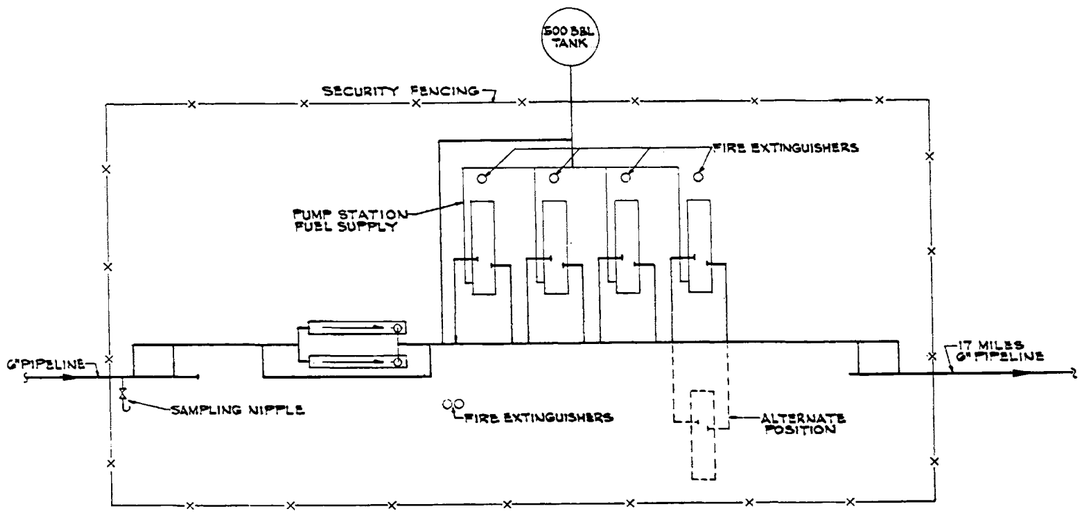
INSTALLATION NO. QD 1039

SCHEDULE OF POL PIPELINE PUMP STATION INSTALLATIONS

WITH 4" PIPELINE — INSTALLATION NO. QD 1019
WITH 6" PIPELINE — INSTALLATION NO. QD 1029
WITH 8" PIPELINE — INSTALLATION NO. QD 1039

DESCRIPTION	SUPPLY LINE SIZE QUANTITY 4"	6"	8"	FACILITY NO. 4"	FACILITY NO. 6"	FACILITY NO. 8"
PIPE & ACCESSORIES FACILITY, TUBING, 5 MILES	1	3	3	125011	125012	125013
PIPE & ACCESSORIES FACILITY, GROOVED, 1 MILE	3	2	2	125021	125022	125023
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	1	-	-	124201	-	-
PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	-	1	1	-	124202	124202
TANK FACILITY, 500 BBL., W/4" LINE	-	1	1	-	123403	123403
TANK FACILITY, 250 BBL., W/4" LINE	1	-	-	123402	-	-
PUMP STATION, PIPELINE, 355 BPH, 2 PUMPS	1	-	-	125201	-	-
PUMP STATION, PIPELINE, 785 BPH, 4 PUMPS	-	1	-	-	125202	-
PUMP STATION, PIPELINE, 1355 BPH, 4 PUMPS	-	-	1	-	-	125203
FENCE, SECURITY, TYPE Y, 1000 FT.	0.3	0.4	0.4	710903	710903	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	1	1	1	710904	710904	710904

NOTE: TERRAIN ASSUMED TO BE LEVEL.

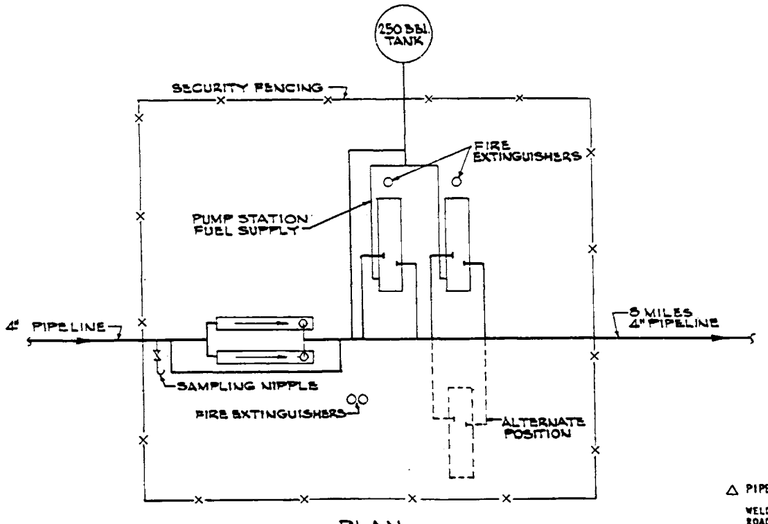


PLAN

6 INCH PIPELINE PUMP STATION (785 BPH, 1400 FT. HD.)

NO SCALE

INSTALLATION NO. QD 1029



PLAN

4 INCH PIPELINE PUMP STATION (355 BPH, 1100 FT. HD.)

NO SCALE

INSTALLATION NO. QD 1019

△ PIPELINE WELDING NOTE

WELDED POL PIPELINE SHALL BE USED FOR ALL BURIED PORTIONS UNDER BERMS, ROADWAYS AND FOR MAKING CLOSURES; AND SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN addition TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-343.

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEITCHMANN
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C.B. DEITCHMANN

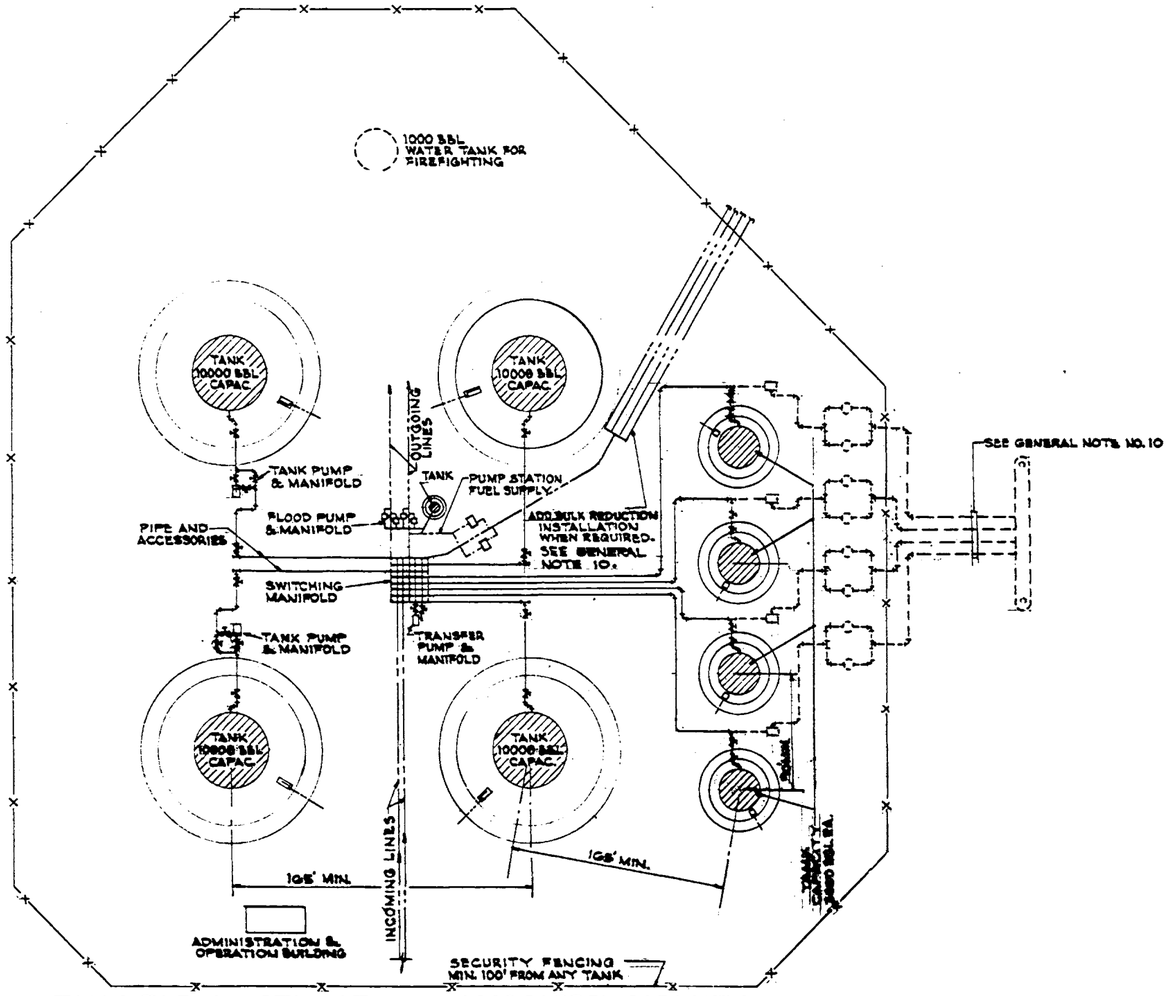
THEATER OF OPERATIONS

P.O.L.
PIPELINE PUMP STATIONS
4, 6 & 8 INCH LINES

APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-06
SHEET 1 OF 1



TANK FARM INSTALLATION - 50000 BARREL CAPACITY
ALL BOLTED STEEL TANKS
NO SCALE

GENERAL NOTES

BASIS OF LAYOUT

1. ACCESS ROADWAYS ARE REQUIRED WITHIN TANK FARM INSTALLATION TO PERMIT APPROACHING EACH TANK FROM NOT LESS THAN TWO DIRECTIONS.
2. THE TANK FARM IS SUPPLIED BY TWO INCOMING LINES. IT IS ASSUMED THAT THERE IS ADEQUATE LINE PRESSURE TO CARRY PRODUCTS THROUGH THE SWITCHING MANIFOLD TO STORAGE. THIS MANIFOLD IS ALSO SUPPLIED WITH A TRANSFER PUMPING FACILITY SO THAT TRANSFERRING OF PRODUCTS BETWEEN TANKS IS POSSIBLE.
3. THE SUPPLY OF FRESH WATER FOR FIREFIGHTING BY ANY MEANS IS A LOCAL PROBLEM.
4. BULK REDUCTION LINES ARE USED TO RESUPPLY READY STORAGE AT BULK REDUCTION AND DISPENSING FACILITIES.
5. THE SIZES OF THE PIPELINES GIVEN ARE COMMENSURATE WITH THE CAPACITY OF THE TANK FARM.
6. TRUNK PIPELINES NORMALLY ORIGINATE AT EACH TANK FARM INSTALLATION. SIZE OF TRUNK PIPELINES ORIGINATING FROM TANK FARM INSTALLATIONS WILL DEPEND UPON LOGISTICAL REQUIREMENTS FOR CAPACITY.
7. NO PROVISION IS MADE FOR OUTLOADING TO VESSELS FROM TANK FARM INSTALLATIONS.
8. LAYOUT IS SCHEMATIC ONLY. ACTUAL LAYOUT WILL BE GOVERNED BY TERRAIN.
9. LINE PIPE TO BE USED FOR ALL BURIED PORTIONS UNDER BERMS AND ROADWAYS AND FOR MAKING CLOSURES.
10. WHEN TANK TRUCK LOADING IS TO PERFORMED AT THE TANK FARM, THE INSTALLATION QE 1059 SHALL BE ADDED TO THE TANK FARM SCHEDULE OF FACILITIES.

FIREFIGHTING (IF AUTHORIZED)

1. WHEN FIRE FIGHTING EQUIPMENT IS AUTHORIZED A HYDRO-X HIGH EXPANSION FOAM SYSTEM WILL BE SUPPLIED.

SCHEDULE OF FACILITIES FOR 50000 BARREL TANK FARM INSTALLATION

DESCRIPTION	QUANTITY INST. NO. QE 1059 6" LINE	QUANTITY INST. NO. QE 1059 8" LINE	FACILITY NO.
TANK FACILITY, 10000 BBL. W/8" LINE	–	4	123412
TANK FACILITY, 10000 BBL. W/6" LINE	4	–	123411
TANK FACILITY, 3000 BBL. W/8" LINE	–	4	123409
TANK FACILITY, 3000 BBL W/6" LINE	4	–	123408
TANK FACILITY, WATER, 1000 BBL. W/4" LINE	1	1	123406
TANK FACILITY, 250 BBL. W/4" LINE	1	1	123402
POL SWITCHING MANIFOLD FACILITY, 8"	–	1	123203
POL SWITCHING MANIFOLD FACILITY, 6"	1	–	123202
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	2	2	124201
FLOOD PUMP & MANIFOLD FACILITY, 735 GPH, 6" MFD.	2	–	123211
FLOOD PUMP & MANIFOLD FACILITY, 1355 GPH, 8" MFD.	–	2	123212
TANK PUMP & MANIFOLD FACILITY, 700 GPH, 6" MFD.	2	–	123221
TANK PUMP & MANIFOLD FACILITY, 1400 GPH, 8" MFD.	–	2	123222
TRANSFER PUMP & MANIFOLD FACILITY, 700 GPH, 6" MFD.	1	–	123301
TRANSFER PUMP & MANIFOLD FACILITY, 1400 GPH, 8" MFD.	–	1	123302
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 6"	1.6	–	125017
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 8"	–	1.6	125018
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 6"	1	–	125002
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 8"	–	1	125003
ADMINISTRATION & OPERATIONS BUILDING, 20'x40'	1	1	611114
FENCE, SECURITY, TYPE Y, 1000 FT.	3.4	3.4	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	2	2	710904

SCHEDULE OF FACILITIES FOR TANK FARM TANK TRUCK LOADING, 2 STATION (INST QE 1059)

DESCRIPTION	QUAN.	FACILITY NO.
TANK TRUCK LOADING, 2 STATION	1	124302
LOADING PUMP & MANIFOLD, 700-1400 GPH, 6" MFD.	4	123104
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 6"	2	125017
PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	2	124202

△ PIPELINE WELDING NOTE

WELDED POL PIPELINE SHALL BE USED FOR ALL BURIED PORTIONS UNDER BERMS, ROADWAYS AND FOR MAKING CLOSURES; AND SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-349.

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

GRAPHIC SCALES: NO SCALE

MAYER, BRAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. B. DE ICHMANN
APPROVED: [signature]

THEATER OF OPERATIONS

P.O.L.
50000 BARREL TANK FARM
ALL BOLTED STEEL TANKS

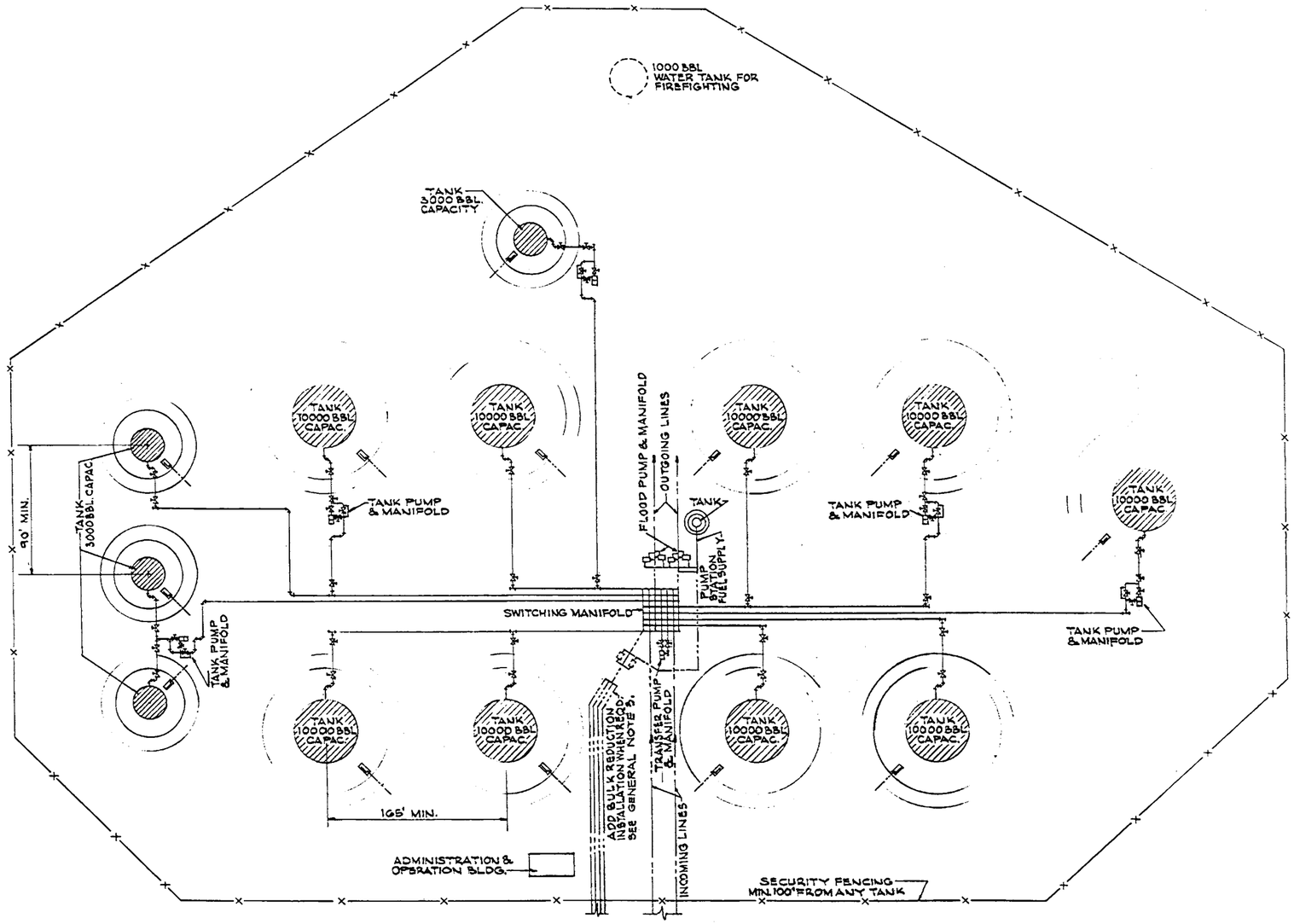
APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, CONSTRUCTION BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

SUBMITTED FOR PROPONENT AGENCY: [signature]
DATE: 13 Sep 68

GOALS: NONE SPEC. NO.

DRAWING NUMBER: 12-07

SHEET 1 OF 8



TANK FARM INSTALLATION - 100000 BARREL CAPACITY
ALL BOLTED STEEL TANKS
NO SCALE

SCHEDULE OF FACILITIES FOR 100000 BARREL TANK FARM INSTALLATION

DESCRIPTION	QUANTITY INST. NO. 08 1089 6" LINE	QUANTITY INST. NO. 08 1092 8" LINE	FACILITY NO.
TANK FACILITY, 10000 BBL. W/8" LINE	–	9	123412
TANK FACILITY, 10000 BBL. W/6" LINE	9	–	123411
TANK FACILITY, 3000 BBL. W/8" LINE		4	123409
TANK FACILITY, 3000 BBL. W/6" LINE	4	–	123408
TANK FACILITY, WATER, 1000 BBL. W/4" LINE	1	1	123406
TANK FACILITY, 250 BBL. W/4" LINE	1	1	123402
POL SWITCHING MANIFOLD FACILITY, 8"	–	1	123203
POL SWITCHING MANIFOLD FACILITY, 6"	1	–	123202
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	2	2	124201
FLOOD PUMP & MANIFOLD FACILITY, 785 BPH, 6" MFD.	2	–	123211
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 8" MFD.	–	2	123212
TANK PUMP & MANIFOLD FACILITY, 700 BPH, 6" MFD.	5	–	123221
TANK PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	–	5	123222
TRANSFER PUMP & MANIFOLD FACILITY, 700 BPH, 6" MFD.	1	–	123301
TRANSFER PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	–	1	123302
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 6"	3	–	125017
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 8"	–	3	125018
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 6"	2	–	125002
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 8"	–	2	125003
ADMINISTRATION & OPERATIONS BUILDING, 20'x40'	1	1	611114
FENCE, SECURITY, TYPE Y, 1000 FT.	4.2	4.2	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	2	2	710904

GENERAL NOTES

1. "BASIS OF LAYOUT" - REFER TO DWG. NO. 12-07, SHEET 1 OF 8.
2. "FIREFIGHTING" (IF AUTHORIZED) REFER TO DWG. NO. 12-07 SHEET 1 OF 8, NOTE 1.
3. SEE GENERAL NOTE NO. 10 DWG. NO. 12-07, SHEET 1 OF 8

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

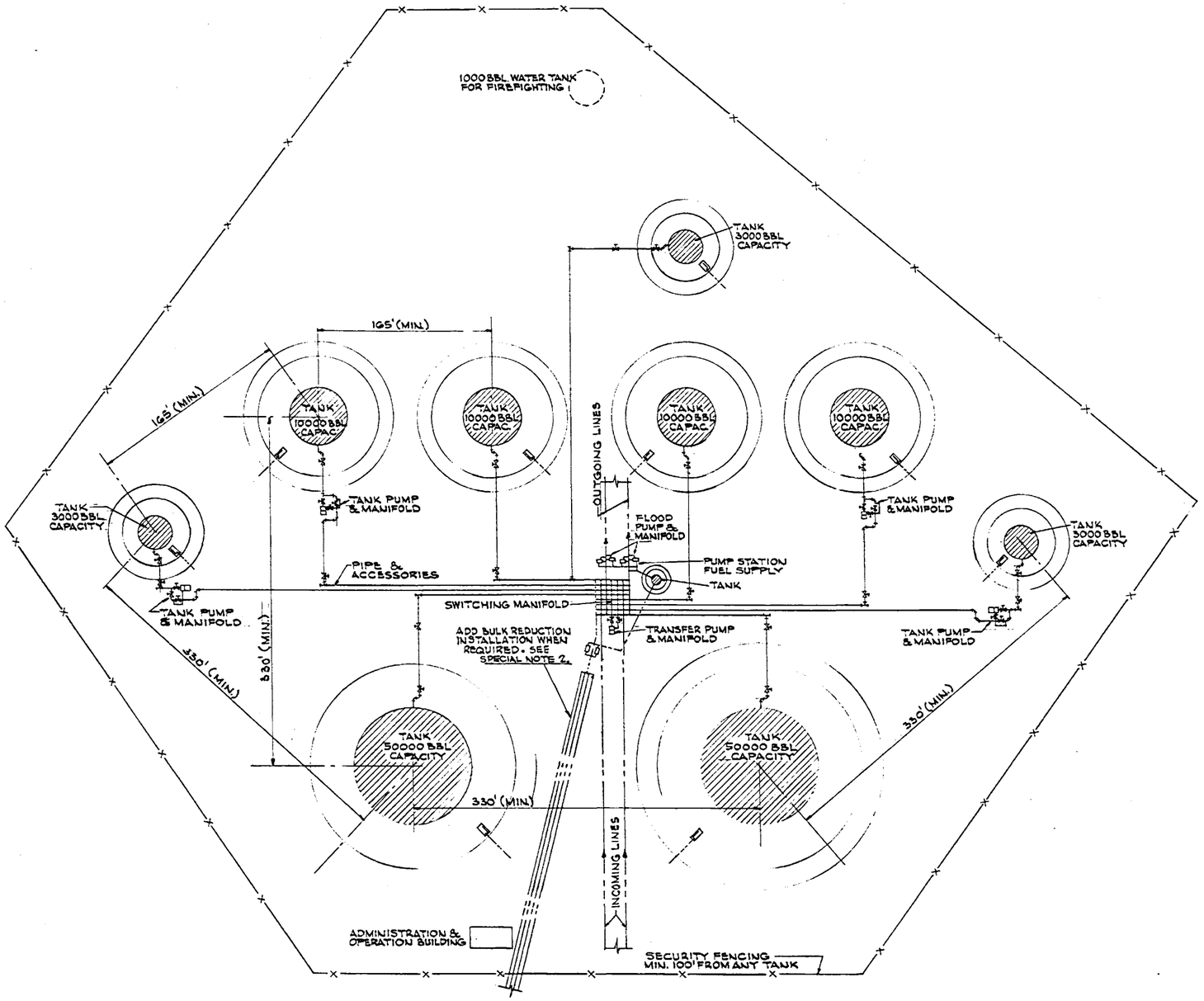
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] DATE: 19 MAR 1969 CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS

P. O. L.
100000 BARREL TANK FARM
ALL BOLTED STEEL TANKS

SCALE: NONE
SPEC. NO.
DRAWING NUMBER 12-07
SHEET 2 OF 8



TANK FARM INSTALLATION - 150000 BARREL CAPACITY
WELDED & BOLTED STEEL TANKS
NO SCALE

SCHEDULE OF FACILITIES FOR 150000 BARREL TANK FARM INSTALLATION

DESCRIPTION	QTY. INST. NO 8" TO 19 8" LINE	FACILITY NO.
TANK FACILITY, 50000 BBL. W/8" LINE	2	123416
TANK FACILITY, 10000 BBL. W/8" LINE	4	123412
TANK FACILITY, 3000 BBL. W/8" LINE	3	123409
TANK FACILITY, WATER, 1000 BBL W/4" LINE	1	123406
TANK FACILITY, 250 BBL. W/4" LINE	1	123402
POL SWITCHING MANIFOLD FACILITY, 8"	1	123203
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	2	124201
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 8" MFD.	2	123212
TANK PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	4	123222
TRANSFER PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	1	123302
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 8"	3	125018
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 8"	1	125003
ADMINISTRATION & OPERATIONS BUILDING, 20'x 40'	1	611114
FENCE, SECURITY, TYPE Y, 1000 FT.	3.4	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	2	710904

GENERAL NOTES

1. "BASIS OF LAYOUT" - REFER TO DWG. NO. 12-07, SHEET 1 OF 8.
2. "FIREFIGHTING" (IF AUTHORIZED) REFER TO DWG. NO. 12-07, SHEET 1 OF 8, NOTE 1.

SPECIAL NOTES

1. 50000 BARREL WELDED STEEL TANKS ARE NOT PLANNED FOR INLAND TANK FARMS. WHEN APPROVED FOR MARINE TERMINALS, CONSTRUCTION SHOULD BE BY CIVILIAN CONTRACTOR.
2. SEE GENERAL NOTE NO. 10 DWG. NO. 12-07, SHEET 1 OF 8

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

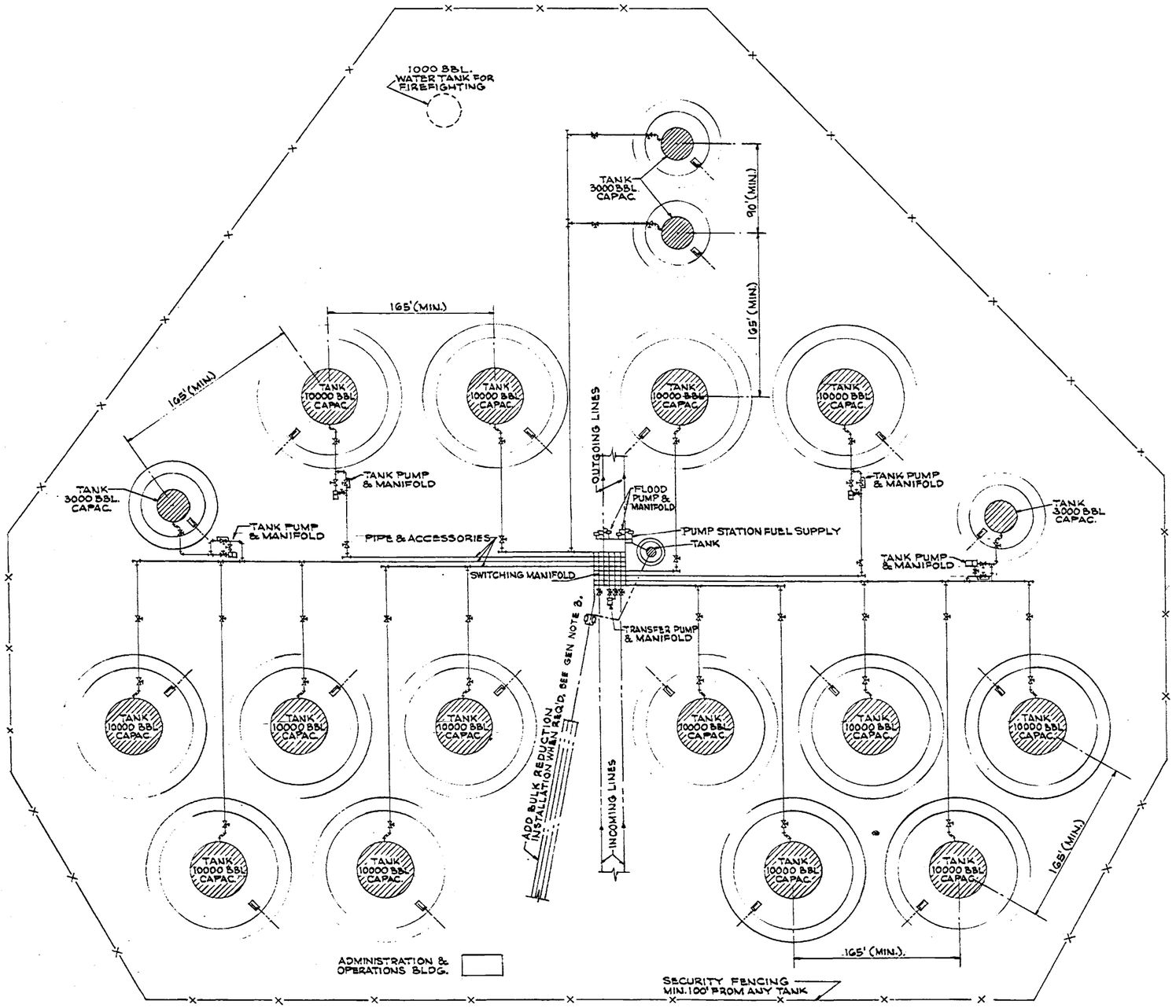
DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS
P.O.L.
150000 BARREL TANK FARM
WELDED & BOLTED STEEL TANKS

APPROVED: [signature] CHIEF, ARCHITECT BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959

APPROVED FOR PROPONENT AGENCY:
DATE: 3 Sept 65

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-07
SHEET 3 OF 8



TANK FARM INSTALLATION - 150000 BARREL CAPACITY
ALL BOLTED STEEL TANKS
NO SCALE

SCHEDULE OF FACILITIES FOR 150000 BARREL TANK FARM INSTALLATION

DESCRIPTION	QTY. INSTALLED ON 8" LINE	FACILITY NO.
TANK FACILITY, 10000 BBL. W/8" LINE	14	123412
TANK FACILITY, 3000 BBL. W/8" LINE	4	123409
TANK FACILITY, WATER, 1000 BBL W/4" LINE	1	123406
TANK FACILITY, 250 BBL. W/4" LINE	1	123402
POL SWITCHING MANIFOLD FACILITY, 8"	1	123203
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	2	124201
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 8" MFD.	2	123212
TANK PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	4	123222
TRANSFER PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	1	123302
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 8"	4	125018
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 8"	3	125003
ADMINISTRATION & OPERATIONS BUILDING, 20'x40'	1	611114
FENCE, SECURITY, TYPE Y, 1000 FT.	4.5	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	2	710904

GENERAL NOTES

1. "BASIS OF LAYOUT" - REFER TO DWG. NO. 12-07 SHEET 1 OF 8
2. "FIREFIGHTING" (IF AUTHORIZED) REFER TO DWG. NO. 12-07 SHEET 1 OF 8, NOTE 1.
3. SEE GENERAL NOTE NO. 10 DWG. NO. 12-07, SHEET 1 OF 8

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

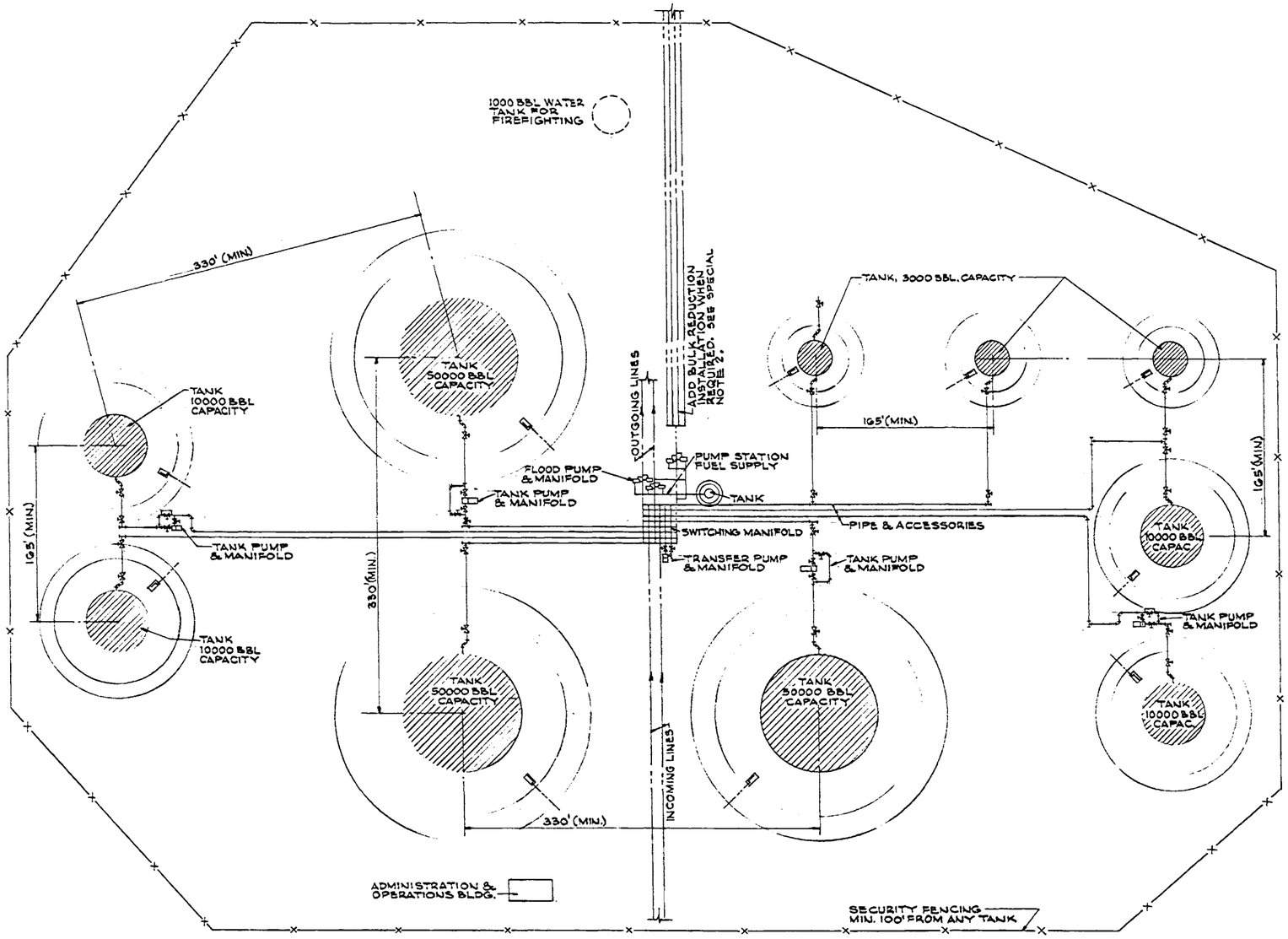
THEATER OF OPERATIONS

P. O. L.
150000 BARREL TANK FARM
ALL BOLTED STEEL TANKS

APPROVED: DATE: 29 MAR 1969
CHIEF, ENGINEERING BRANCH
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: NONE SPEC. NO.
DRAWING NUMBER: 12-07
SHEET 4 OF 8



TANK FARM INSTALLATION - 200000 BARREL CAPACITY
WELDED & BOLTED STEEL TANKS
NO SCALE

SCHEDULE OF FACILITIES FOR 200000 BARREL TANK FARM INSTALLATION

DESCRIPTION	QUANTITY INST. NO. 98-102 8" LINE	QUANTITY INST. NO. 98-102 12" LINE	FACILITY NO.
TANK FACILITY, 50000 BBL. W/8" LINE	3	–	123416
TANK FACILITY, 50000 BBL. W/12" LINE	–	3	123417
TANK FACILITY, 10000 BBL. W/8" LINE	4	–	123412
TANK FACILITY, 10000 BBL. W/12" LINE	–	4	123413
TANK FACILITY, 3000 BBL. W/8" LINE	3	3	123409
TANK FACILITY, WATER, 1000 BBL. W/4" LINE	1	1	123406
TANK FACILITY, 250 BBL. W/4" LINE	1	1	123402
POL SWITCHING MANIFOLD FACILITY, 8"	1	–	123203
POL SWITCHING MANIFOLD FACILITY, 12"	–	1	123204
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	2	2	124201
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 8" MFD.	2	–	123212
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 12" MFD.	–	2	123213
TANK PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	4	–	123222
TANK PUMP & MANIFOLD FACILITY, 2800 BPH, 12" MFD.	–	4	123223
TRANSFER PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	1	–	123302
TRANSFER PUMP & MANIFOLD FACILITY, 2800 BPH, 12" MFD.	–	1	123303
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT. - 8"	4	–	125018
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT. - 12"	–	4	125019
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT. - 8"	1	–	125003
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT. - 12"	–	1	125004
ADMINISTRATION & OPERATIONS BUILDING, 20'x 40'	1	1	611114
FENCE, SECURITY, TYPE Y, 1000 FT.	3.6	3.6	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	2	2	710904

GENERAL NOTES

1. "BASIS OF LAYOUT" - REFER TO DWG. NO. 12-07, SHEET 1 OF 8.
2. "FIREFIGHTING" (IF AUTHORIZED) REFER TO DWG. NO. 12-07, SHEET 1 OF 8, NOTE 1.

SPECIAL NOTES

1. 50000 BARREL WELDED STEEL TANKS ARE NOT PLANNED FOR INLAND TANK FARMS. WHEN APPROVED FOR MARINE TERMINALS, CONSTRUCTION SHOULD BE BY CIVILIAN CONTRACTOR.
2. SEE GENERAL NOTE NO. 10 DWG. NO. 12-07, SHEET 1 OF 8

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

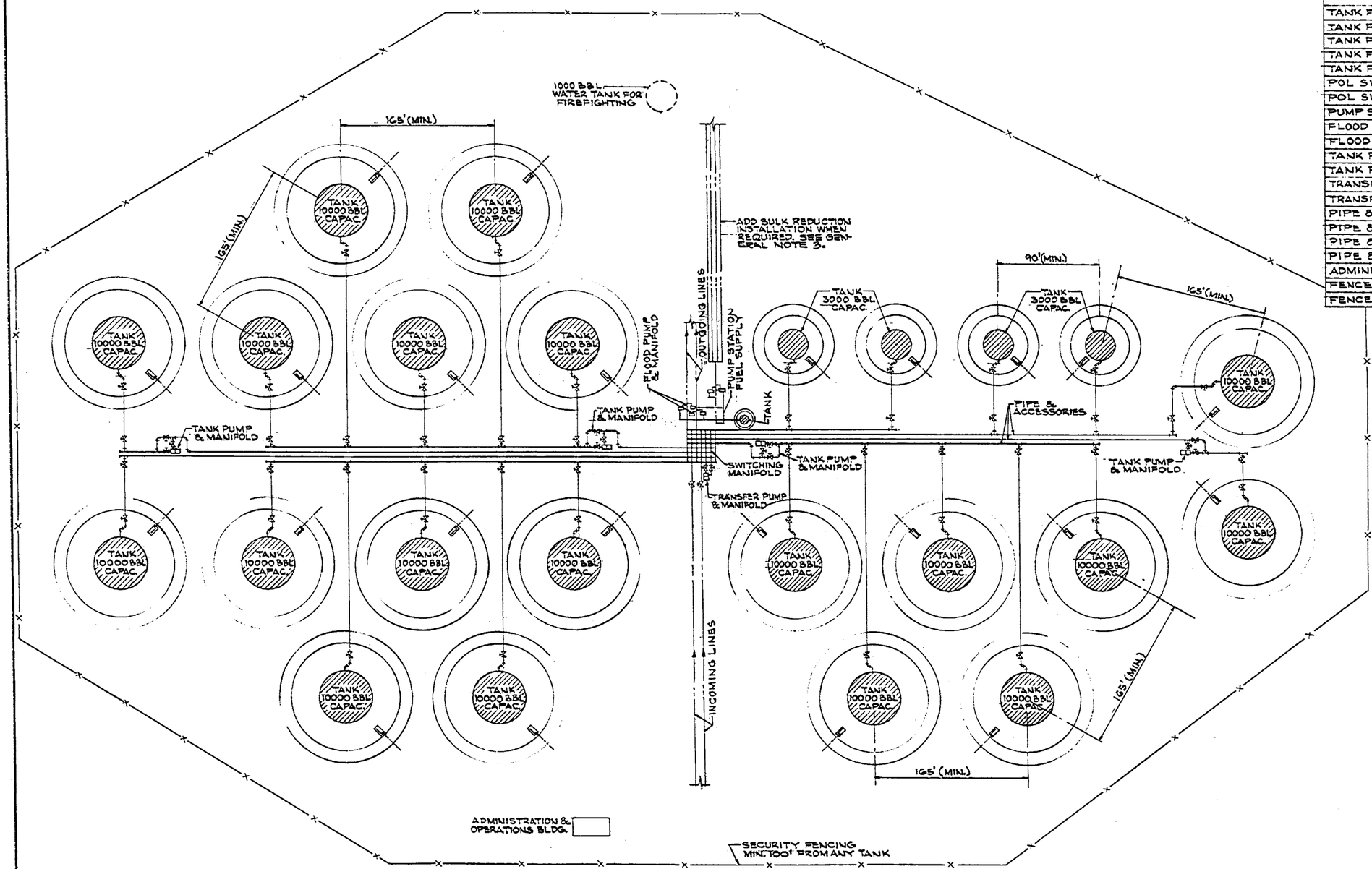
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DE ICHMANN

THEATER OF OPERATIONS

P.O.L.
200000 BARREL TANK FARM
WELDED & BOLTED STEEL TANKS

APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959
APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-07
SHEET 5 OF 8



TANK FARM INSTALLATION – 200000 BARREL CAPACITY
ALL BOLTED STEEL TANKS
NO SCALE

SCHEDULE OF FACILITIES FOR 200000 BARREL TANK FARM INSTALLATION

DESCRIPTION	QUANTITY INST. NO. QB 1128 8" LINE	QUANTITY INST. NO. QB 1129 12" LINE	FACILITY NO.
TANK FACILITY, 10000 BBL. W/8" LINE	19	–	123412
TANK FACILITY, 10000 BBL. W/12" LINE	–	19	123413
TANK FACILITY, 3000 BBL. W/8" LINE	4	4	123409
TANK FACILITY, WATER, 1000 BBL. W/4" LINE	1	1	123406
TANK FACILITY, 250 BBL. W/4" LINE	1	1	123402
POL SWITCHING MANIFOLD FACILITY, 8"	1	–	123203
POL SWITCHING MANIFOLD FACILITY, 12"	–	1	123204
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	2	2	124201
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 8" MFD.	2	–	123212
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 12" MFD.	–	2	123213
TANK PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	4	–	123222
TANK PUMP & MANIFOLD FACILITY, 2800 BPH, 12" MFD.	–	4	123223
TRANSFER PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFR.	1	–	123302
TRANSFER PUMP & MANIFOLD FACILITY, 2800 BPH, 12" MFR.	–	1	123303
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 8"	6	0.2	125018
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 12"	–	6	125019
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 8"	1	–	125003
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 12"	–	1	125004
ADMINISTRATION & OPERATIONS BUILDING, 20'x40'	1	1	611114
FENCE, SECURITY, TYPE Y, 1000 FT.	5	5	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	2	2	710904

GENERAL NOTES

1. "BASIS OF LAYOUT" – REFER TO DWG. NO. 12-07, SHEET 1 OF 8.
2. "FIREFIGHTING" (IF AUTHORIZED) REFER TO DWG. NO. 12-07, SHEET 1 OF 8, NOTE 1.
3. SEE GENERAL NOTE NO. 10 DWG. NO. 12-07, SHEET 1 OF 8.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C.W. DE ICHMANN

THEATER OF OPERATIONS
P.O.L.
200000 BARREL TANK FARM
ALL BOLTED STEEL TANKS

APPROVED: [signature] CHIEF, PLANS AND DESIGN BRANCH

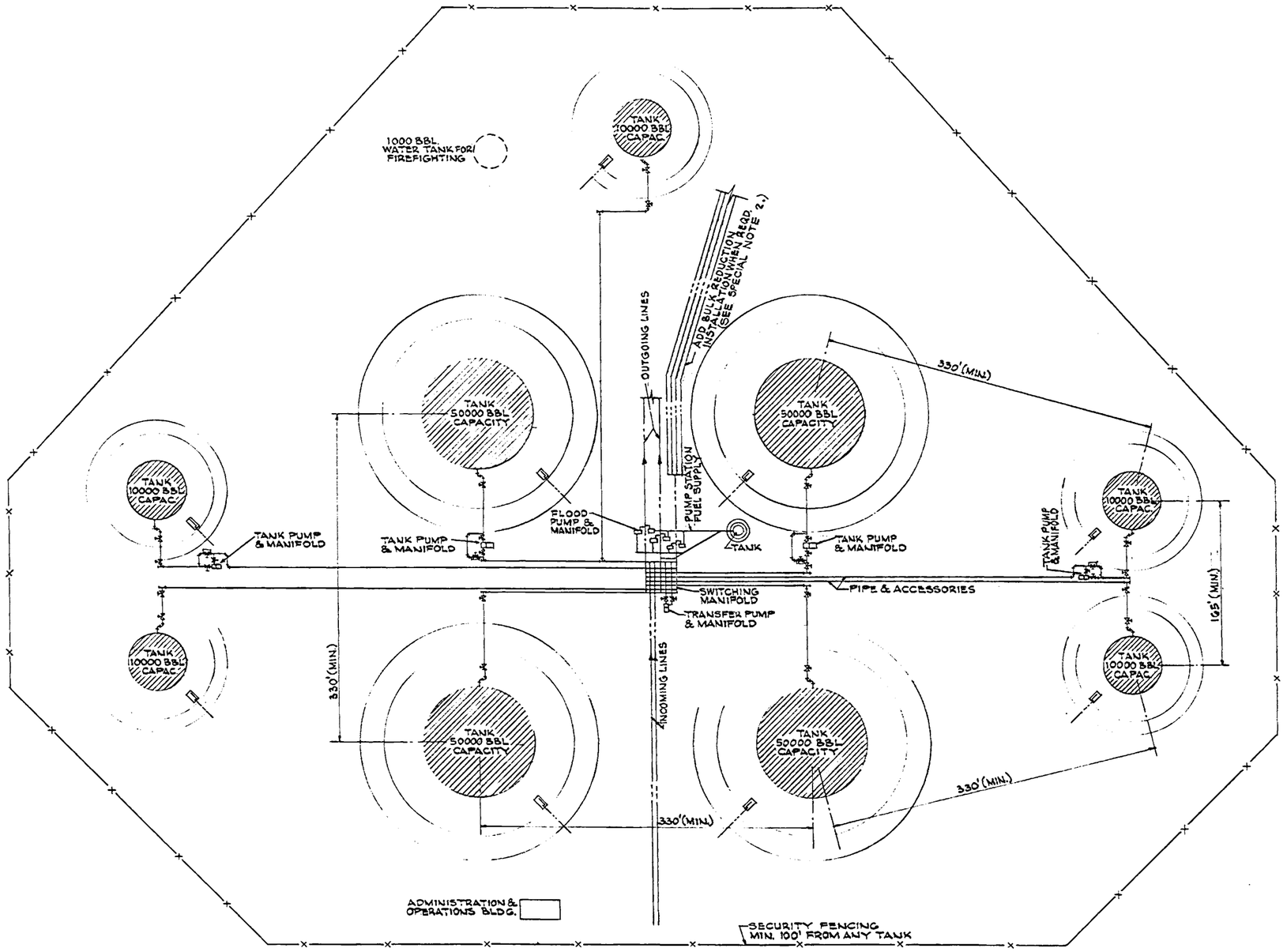
APPROVED: [signature] DATE: 19 MAR 1962
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: [signature] DATE: 3 Sept 62

SCALE: NONE SPEC. NO.

DRAWING NUMBER: 12-07

SHEET 8 OF 8



TANK FARM INSTALLATION -250000 BARREL CAPACITY
WELDED & BOLTED STEEL TANKS
NO SCALE

SCHEDULE OF FACILITIES FOR 250000 BARREL TANK FARM INSTALLATION

DESCRIPTION	QUANTITY INST. NO. QB 1045 8" LINE	QUANTITY INST. NO. QB 1059 12" LINE	FACILITY NO.
TANK FACILITY, 50000 BBL. W/8" LINE	4	–	123416
TANK FACILITY, 50000 BBL. W/12" LINE	–	4	123417
TANK FACILITY, 10000 BBL. W/8" LINE	5	–	123412
TANK FACILITY, 10000 BBL. W/12" LINE	–	5	123413
TANK FACILITY, WATER, 1000 BBL. W/4" LINE	1	1	123406
TANK FACILITY, 250 BBL. W/4" LINE	1	1	123402
POL SWITCHING MANIFOLD FACILITY, 8"	1	–	123203
POL SWITCHING MANIFOLD FACILITY, 12"	–	1	123204
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	2	2	124201
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 8" MFD.	2	–	123212
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 12" MFD.	–	2	123213
TANK PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	4	–	123222
TANK PUMP & MANIFOLD FACILITY, 2800 BPH, 12" MFD	–	4	123223
TRANSFER PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	1	–	123302
TRANSFER PUMP & MANIFOLD FACILITY, 2800 BPH, 12" MF	–	1	123303
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 8"	6	–	125018
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 12"	–	6	125019
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 8"	1	–	125003
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 12"	–	1	125004
ADMINISTRATION & OPERATIONS BUILDING, 20'x 40'	1	1	611114
FENCE, SECURITY, TYPE Y, 1000 FT.	4	4	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	2	2	710904

GENERAL NOTES

1. "BASIS OF LAYOUT"- REFER TO DWG. NO. 12-07, SHEET 1 OF 8.
2. "FIREFIGHTING" (IF AUTHORIZED) REFER TO DWG. NO. 12-07, SHEET 1 OF 8, NOTE 1.

SPECIAL NOTES

1. 50000 BARREL WELDED STEEL TANKS ARE NOT PLANNED FOR INLAND TANK FARMS. WHEN APPROVED FOR MARINE TERMINALS, CONSTRUCTION SHOULD BE BY CIVILIAN CONTRACTOR.
2. SEE GENERAL NOTE NO. 10 DWG. NO. 12-07, SHEET 1 OF 8

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO SCALE

MAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C. W. DEICHMANN

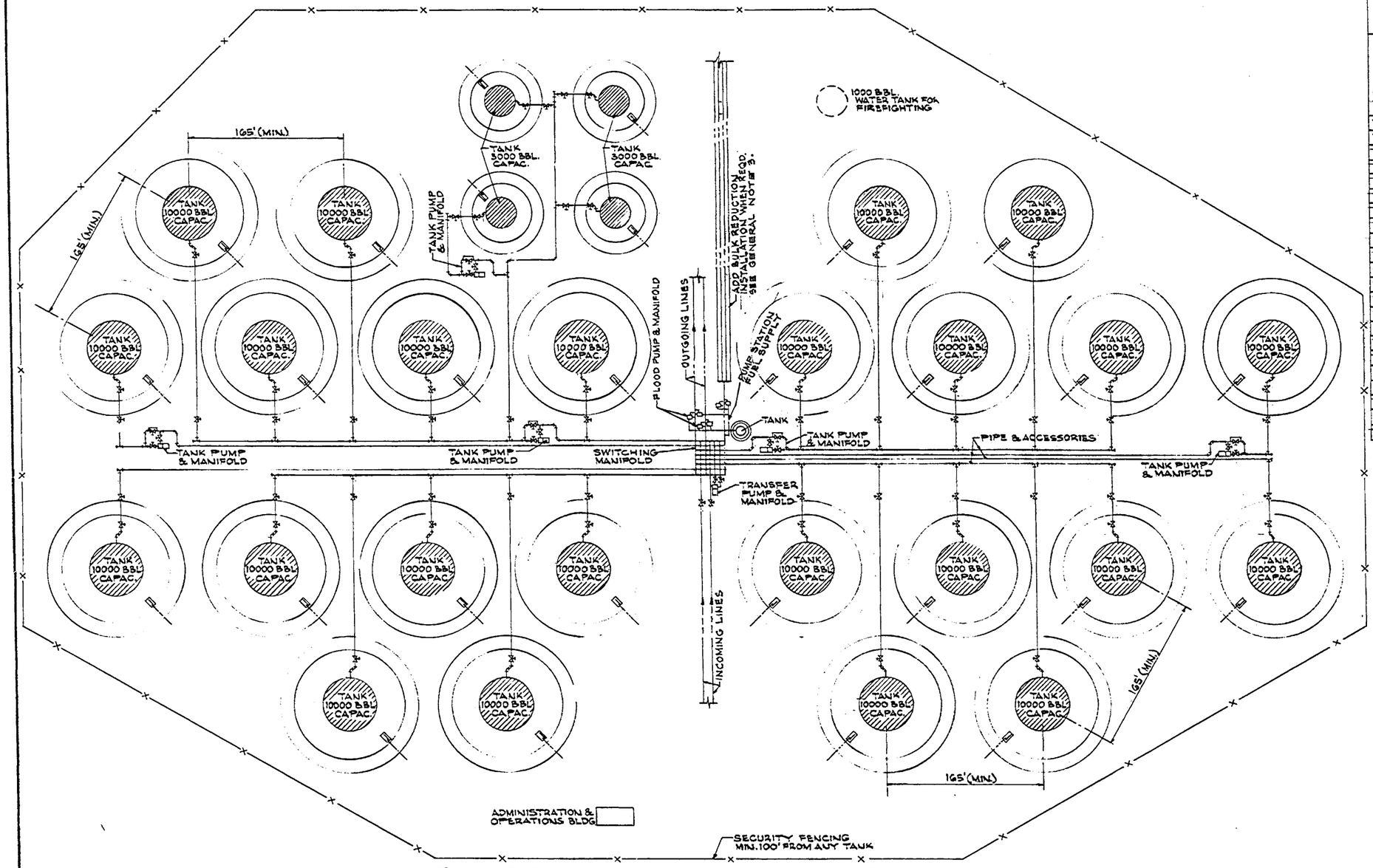
THEATER OF OPERATIONS

P. O. L.
250000 BARREL TANK FARM
WELDED & BOLTED STEEL TANKS

APPROVED: Chief, Engineering Branch
APPROVED: Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-07
SHEET 7 OF 8



TANK FARM INSTALLATION - 250000 BARREL CAPACITY
ALL BOLTED STEEL TANKS
NO SCALE

SCHEDULE OF FACILITIES FOR 250000 BARREL TANK FARM INSTALLATION

DESCRIPTION	QUANTITY INST. NO. QB1139 8" LINE	QUANTITY INST. NO. QB1140 12" LINE	FACILITY NO.
TANK FACILITY, 10000 BBL. W/8" LINE	24	—	123412
TANK FACILITY, 10000 BBL. W/12" LINE	—	24	123413
TANK FACILITY, 3000 BBL. W/8" LINE	4	4	123409
TANK FACILITY, WATER, 1000 BBL. W/4" LINE	1	1	123406
TANK FACILITY, 250 BBL. W/4" LINE	1	1	123402
POL SWITCHING MANIFOLD FACILITY, 8"	1	—	123203
POL SWITCHING MANIFOLD FACILITY, 12"	—	1	123204
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	2	2	124201
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 8" MFD.	2	—	123212
FLOOD PUMP & MANIFOLD FACILITY, 1355 BPH, 12" MFD.	—	2	123213
TANK PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MFD.	5	—	123222
TANK PUMP & MANIFOLD FACILITY, 2800 BPH, 12" MFD.	—	5	123223
TRANSFER PUMP & MANIFOLD FACILITY, 1400 BPH, 8" MF	1	—	123302
TRANSFER PUMP & MANIFOLD FACILITY, 2800 BPH, 12" MF	—	1	123303
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 8"	7	—	125018
PIPE & ACCESSORIES FACILITY, GROOVED, 1000 FT., 12"	—	7	125019
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 8"	2	—	125003
PIPE & ACCESSORIES FACILITY, TUBING, 1000 FT., 12"	—	2	125004
ADMINISTRATION & OPERATIONS BUILDING, 20'x40'	1	1	611114
FENCE, SECURITY, TYPE Y, 1000 FT.	5	5	710903
FENCE, SECURITY, VEHICLE & MAN GATE, EACH	2	2	710904

GENERAL NOTES

1. "BASIS OF LAYOUT" - REFER TO DWG. NO. 12-07, SHEET 1 OF 8.
2. "FIREFIGHTING" (IF AUTHORIZED) REFER TO DWG. NO. 12-07, SHEET 1 OF 8, NOTE 1.
3. SEE GENERAL NOTE NO. 10 DWG. NO. 12-07, SHEET 1 OF 8

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO SCALE

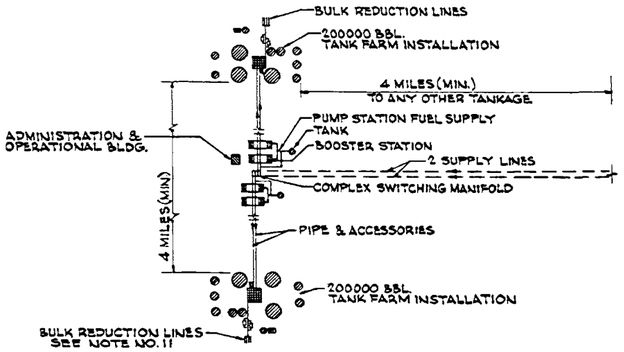
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

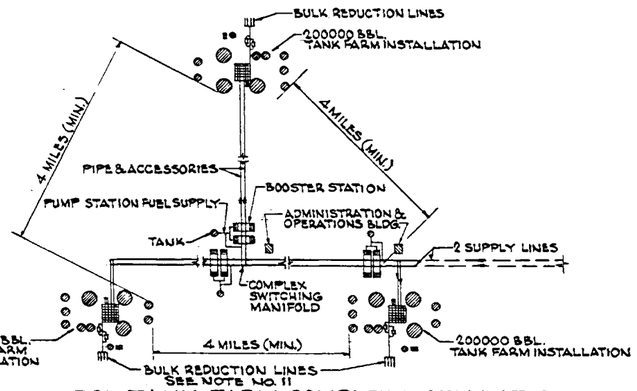
DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DE ICHMANN
APPROVED: [signature] CHIEF, ETMC BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE: 29 [illegible]

THEATER OF OPERATIONS
P. O. L.
250000 BARREL TANK FARM
ALL BOLTED STEEL TANKS

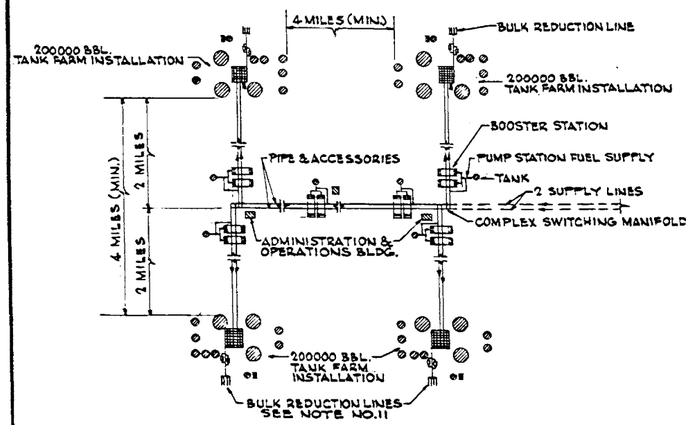
SCALE: NONE SPEC. NO.
DRAWING NUMBER: 12-07
SHEET 8 OF 8



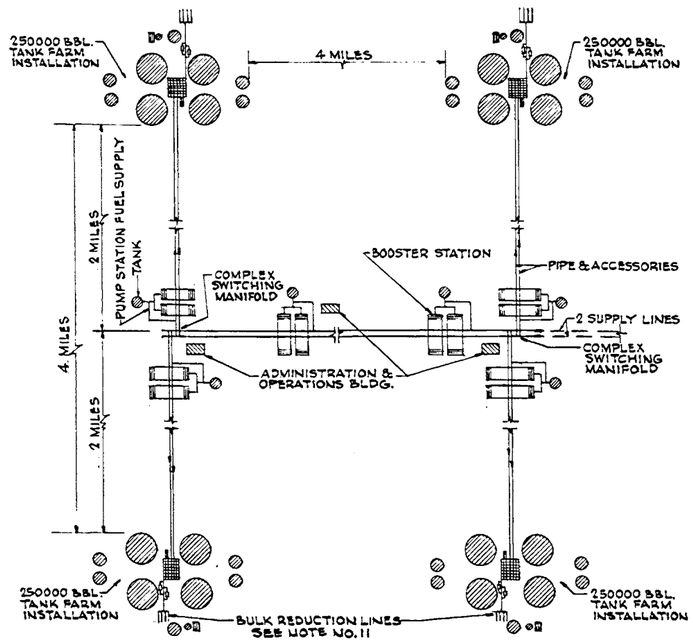
POL TANK FARM COMPLEX INSTALLATION
400000 BBLS. TOTAL CAPACITY
2- 200000 BBL CAPACITY TANK FARMS



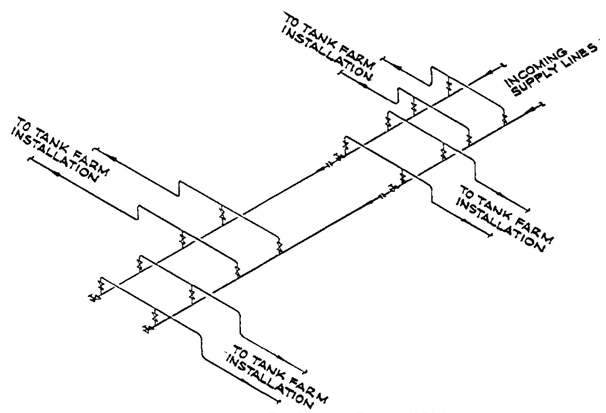
POL TANK FARM COMPLEX INSTALLATION
600000 BBLS. TOTAL CAPACITY
3- 200000 BBL. CAPACITY TANK FARMS



POL TANK FARM COMPLEX INSTALLATION
800000 BBLS. TOTAL CAPACITY
4-200000 BBL. CAPACITY TANK FARMS



POL TANK FARM COMPLEX INSTALLATION
1000000 BBLS. TOTAL CAPACITY
4-250000 BBL. CAPACITY TANK FARMS



TYPICAL DIAGRAM
POL TANK FARM COMPLEX CENTRAL MANIFOLD

SCHEDULE FOR 400000 BBL. COMPLEX INSTALLATION
WITH 6" SUPPLY LINE – INSTALLATION NO. QC1019
WITH 8" SUPPLY LINE – INSTALLATION NO. QC1029
WITH 12" SUPPLY LINE – INSTALLATION NO. QC1039

DESCRIPTION	SUPPLY LINE SIZE 6" (QUANTITY)	8" (QUANTITY)	12" (QUANTITY)	INST. OR FACIL. NO. 6"	INST. OR FACIL. NO. 8"	INST. OR FACIL. NO. 12"
TANK FARM INSTALLATION, 200000 BBLS. BULK STORAGE OF 4 PRODUCTS OR LESS	2	2	2	QB-1029	QB-1029	QB-1039
POL SWITCHING MANIFOLD FACILITY	1	1	1	123202	123203	123204
PIPE & ACCESSORIES FACILITY, TUBING, 1 MILE	8	8	8	125007	125008	125009
BOOSTER STATION FACILITY, 1400 BPH	4	–	–	123101	—	—
BOOSTER STATION FACILITY, 2800 BPH	–	8	–	—	123102	—
BOOSTER STATION FACILITY, 7000 BPH	–	–	8	—	—	123103
PUMP STATION FUEL SUPPLY FACILITY, 2 UNIT	8	8	–	124201	124201	—
PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	–	–	8	—	—	124202
TANK FACILITY, 250 BBL., W/4" LINE	2	2	2	123402	123402	123402
ADMIN. & OPERATIONS BLDG., 20'x40'	1	1	1	G11114	G11114	G11114

SCHEDULE FOR 600000 BBL. COMPLEX INSTALLATION
WITH 8" SUPPLY LINE – INSTALLATION NO. QC1049
WITH 12" SUPPLY LINE – INSTALLATION NO. QC1059

DESCRIPTION	SUPPLY LINE SIZE 8" (QUANTITY)	12" (QUANTITY)	INST. OR FACIL. NO. 8"	INST. OR FACIL. NO. 12"
TANK FARM INSTALLATION, 200000 BBLS. BULK STORAGE OF 4 PRODUCTS OR LESS	3	3	QB1029	QB1039
POL SWITCHING MANIFOLD FACILITY	1	1	123203	123204
PIPE & ACCESSORIES FACILITY, TUBING, 1 MILE	18	18	125008	125009
BOOSTER STATION FACILITY, 2800 BPH	12	–	123102	—
BOOSTER STATION FACILITY, 7000 BPH	–	12	—	123103
PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	6	12	124202	124202
TANK FACILITY, 250 BBL., W/4" LINE	3	3	123402	123402
ADMIN. & OPERATIONS BLDG., 20'x40'	2	2	G11114	G11114

SCHEDULE FOR 800000 BBL. COMPLEX INSTALLATION
WITH 8" SUPPLY LINE – INSTALLATION NO. QC1069
WITH 12" SUPPLY LINE – INSTALLATION NO. QC1079

DESCRIPTION	SUPPLY LINE SIZE 8" (QUANTITY)	12" (QUANTITY)	INST. OR FACIL. NO. 8"	INST. OR FACIL. NO. 12"
TANK FARM INSTALLATION, 200000 BBLS. BULK STORAGE OF 4 PRODUCTS OR LESS	4	4	QB1029	QB1039
POL SWITCHING MANIFOLD FACILITY	1	1	123203	123204
PIPE & ACCESSORIES FACILITY, TUBING, 1 MILE	24	24	125008	125009
BOOSTER STATION FACILITY, 2800 BPH	24	–	123102	—
BOOSTER STATION FACILITY, 7000 BPH	–	24	—	123103
PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	12	24	124202	124202
TANK FACILITY, 250 BBL., W/4" LINE	6	6	123402	123402
ADMIN. & OPERATIONS BLDG., 20'x40'	3	3	G11114	G11114

SCHEDULE FOR 1000000 BBL. COMPLEX INSTALLATION
WITH 8" SUPPLY LINE – INSTALLATION NO. QC1089
WITH 12" SUPPLY LINE – INSTALLATION NO. QC1099

DESCRIPTION	SUPPLY LINE SIZE 8" (QUANTITY)	12" (QUANTITY)	INST. OR FACIL. NO. 8"	INST. OR FACIL. NO. 12"
TANK FARM INSTALLATION, 250000 BBLS. BULK STORAGE OF 4 PRODUCTS OR LESS	4	4	QB-5.04G	QB-5.05G
POL SWITCHING MANIFOLD FACILITY	1	1	123203	123204
PIPE & ACCESSORIES FACILITY, TUBING, 1 MILE	24	24	125008	125009
BOOSTER STATION FACILITY, 2800 BPH	24	–	123102	—
BOOSTER STATION FACILITY, 7000 BPH	–	24	—	123103
PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	12	24	124202	124202
TANK FACILITY, 250 BBL., W/4" LINE	6	6	123402	123402
ADMIN. & OPERATIONS BLDG., 20'x40'	3	3	G11114	G11114

BASIS OF LAYOUTS

1. THE TANK FARMS ARE SUPPLIED BY TWO INCOMING TRUNK PIPE LINES. TWO BRANCHES ARE MANIFOLDED TO EACH TANK FARM INSTALLATION THEN THROUGH A BOOSTER FACILITY AND DISTRIBUTION LINES TO THE TANK FARM INSTALLATION SWITCHING MANIFOLD. IT IS ASSUMED THAT SUPPLY LINE PRESSURE TRANSMITS PRODUCTS THROUGH THE SWITCHING MANIFOLDS TO THE STORAGE TANKS.
2. THE TANK FARMS ARE SPACED A MINIMUM DISTANCE OF 4 MILES APART BETWEEN TANKS. THIS DISTANCE MAY BE GREATER DUE TO THE TOPOGRAPHY OF THE SELECTED SITES.
3. THE SUPPLY OF WATER IS A LOCAL PROBLEM.
4. BULK REDUCTION LINES ARE USED TO RESUPPLY READY STORAGE AT BULK REDUCTION AND DISPENSING FACILITIES.
5. TRUNK PIPELINES NORMALLY ORIGINATE AT EACH TANK FARM INSTALLATION.
6. TRUNK PIPELINES MAY ORIGINATE FROM ONE OR MORE TANK FARM INSTALLATIONS.
7. MORE THAN ONE TRUNK PIPELINE SYSTEM, FOLLOWING DIFFERENT ROUTES, MAY ORIGINATE FROM ANY TANK FARM COMPLEX INSTALLATION.
8. SIZE OF TRUNK PIPELINE ORIGINATING FROM TANK FARM INSTALLATIONS WILL DEPEND UPON LOGISTICAL REQUIREMENTS FOR CAPACITY.
9. NO PROVISION IS MADE FOR THE TRANSFER OF PRODUCTS BETWEEN TANK FARM INSTALLATIONS WITH THE TANK FARM COMPLEX.
10. NO PROVISION IS MADE FOR OUTLOADING TO VESSELS FROM TANK FARM INSTALLATIONS OR COMPLEX INSTALLATIONS.
11. SEE GENERAL NOTE NO. 10, DWG. NO 12-07, SHEET 1 OF 8.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DE ICHMANN

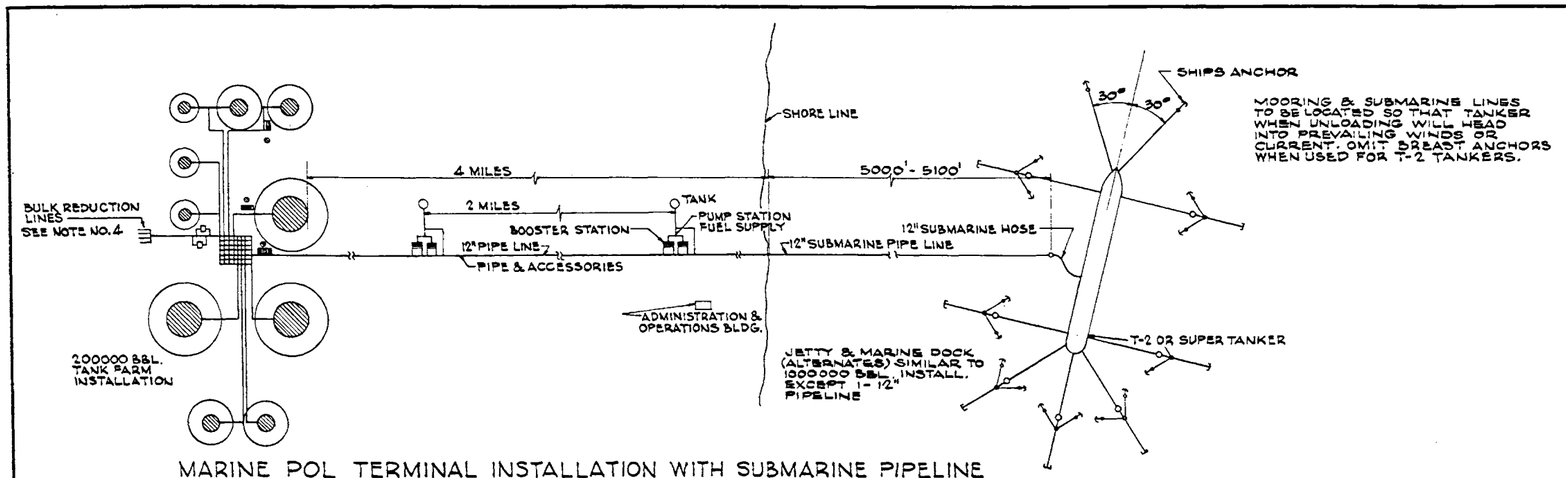
THEATER OF OPERATIONS

P. O. L.
TANK FARM COMPLEX
400000. 600000. 800000 & 1000000 BARREL

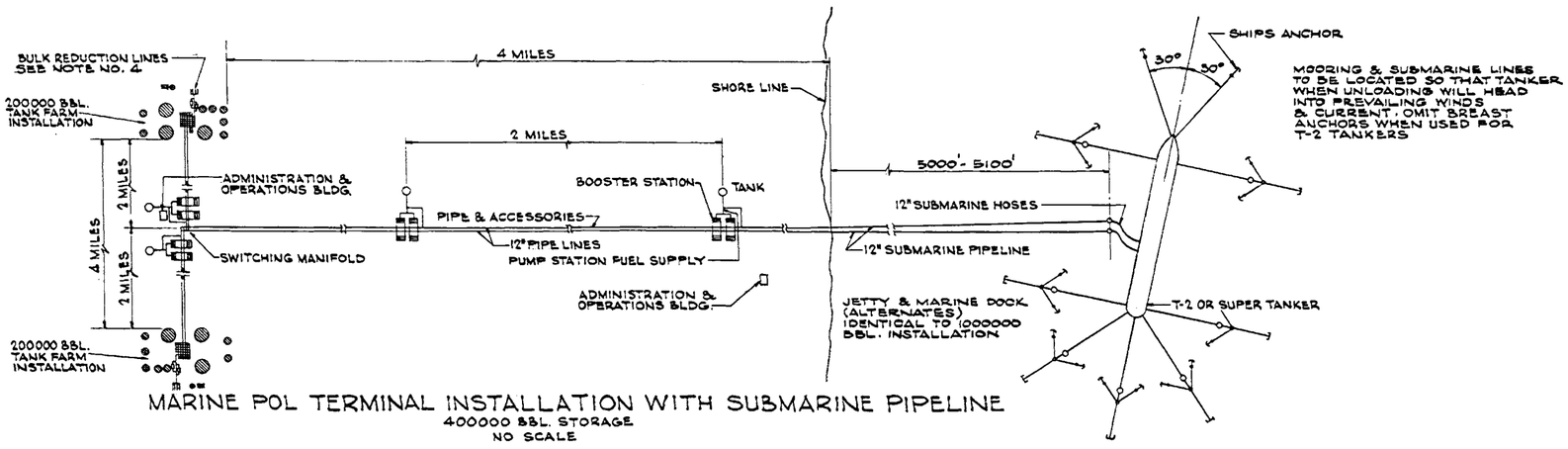
APPROVED: [signature] CHIEF, ARCHITECTURAL BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959

APPROVED FOR PROPONENT AGENCY: [signature]
DATE 13 Sep 58

SCALE: NONE SPEC. NO.
DRAWING NUMBER 12-08
SHEET 1 OF 1



MARINE POL TERMINAL INSTALLATION WITH SUBMARINE PIPELINE
200000 BBL STORAGE
NO SCALE



MARINE POL TERMINAL INSTALLATION WITH SUBMARINE PIPELINE
400000 BBL. STORAGE
NO SCALE

SCHEDULE FOR 200000 BBL. POL MARINE TERMINAL

WITH (BASIC) MOORING & 12" SUBMARINE PIPELINE - 60 FT. DEPTH — INSTALLATION NO. QA 1145
WITH (ALT. #1) POL JETTY & 12" PIPELINE — INSTALLATION NO. QA 1095
WITH (ALT. #2) EXISTING POL DOCK & 12" PIPELINE — INSTALLATION NO. QA 1015

SHIP TO SHORE FACILITY	DESCRIPTION	QUANTITY	INST. OR FACIL. NO.
BASIC CONSTRUCTION	MOORING FACILITY - 60 FT. DEPTH (BASED ON SHELTERED WATERS)	1	122107
	SUBMARINE PIPELINE FACILITY, 12 INCH, 60 FT. DEPTH	1	122517
ALTERNATE #1 CONSTRUCTION	POL JETTY FACILITY	1	125701
	MARINE DOCK, 12 INCH PIPELINE FACILITY	1	125804
ALT. #2 CONSTR.	MARINE DOCK, 12 INCH PIPELINE FACILITY	1	125804
FACILITIES COMMON TO BASIC AND ALTERNATE CONSTRUCTION	BOOSTER STATION FACILITY, 7000 BPH	4	123103
	PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	4	124202
	PIPE & ACCESSORIES FACILITY, TUBING, 12 INCH, 1 MILE	4	125009
	ADMINISTRATION & OPERATIONS BLDG, 20'x40'	1	G11114
	TANK FACILITY, 250 BBL., 4 INCH PIPE	2	123402
	TANK FARM INSTALLATION, 200000 BBL.	1	QB-1039

SCHEDULE FOR 400000 BBL. POL MARINE TERMINAL

WITH (BASIC) MOORING & 12" SUBMARINE PIPELINE - 60 FT. DEPTH — INSTALLATION NO. QA 1165
WITH (ALT. #1) POL JETTY & 12" PIPELINE — INSTALLATION NO. QA 1115
WITH (ALT. #2) EXISTING POL DOCK & 12" PIPELINE — INSTALLATION NO. QA 1035

SHIP TO SHORE FACILITY	DESCRIPTION	QUANTITY PHASE 1	QUANTITY PHASE 2	INST. OR FACIL. NO.
BASIC CONSTRUCTION	MOORING FACILITY - 60 FT. DEPTH	1	1	122110
	SUBMARINE PIPELINE FACILITY, 12 INCH, 60 FT. DEPTH	1	2	122517
ALTERNATE #1 CONSTRUCTION	POL JETTY FACILITY	1	1	125701
	MARINE DOCK, 12 INCH PIPELINE FACILITY	1	2	125804
ALT. #2 CONSTR.	MARINE DOCK, 12 INCH PIPELINE FACILITY	1	2	125804
FACILITIES COMMON TO BASIC AND ALTERNATE CONSTRUCTION	BOOSTER STATION FACILITY, 7000 BPH	4	8	123103
	PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	4	8	124202
	PIPE & ACCESSORIES FACILITY, TUBING, 12 INCH, 1 MILE	4	8	125009
	ADMINISTRATION & OPERATIONS BLDG, 20'x40'	1	1	G11114
	TANK FACILITY, 500 BBL., 4 INCH PIPE	2	2	123403
	TANK FARM COMPLEX INSTALLATION, 400000 BBL.	1	1	QC-1038

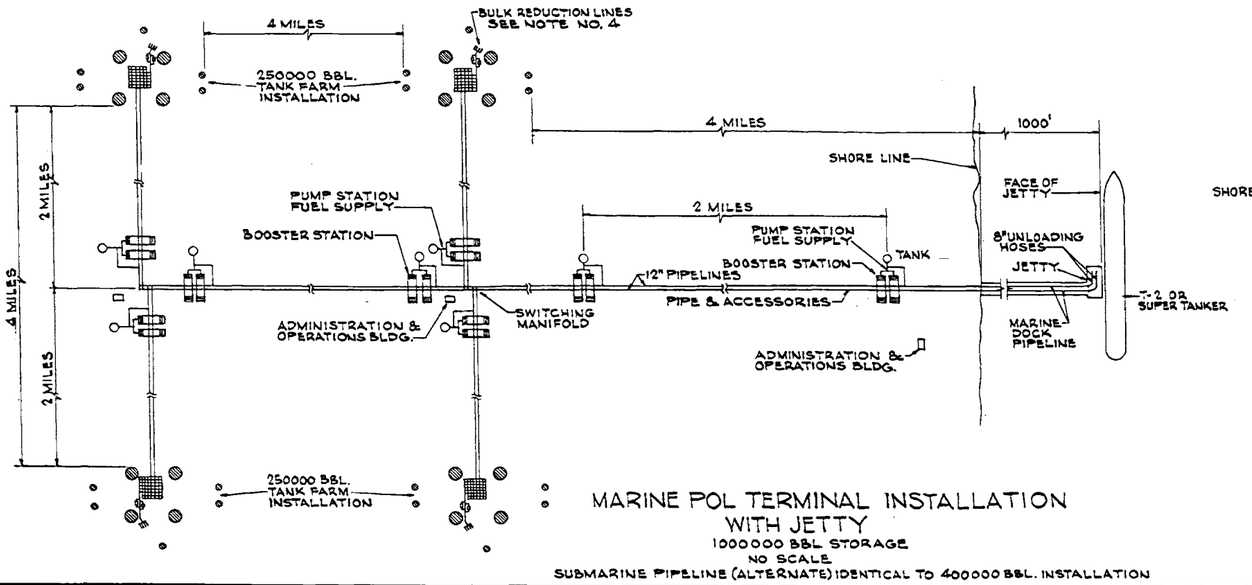
SCHEDULE FOR 1000000 BBL. POL MARINE TERMINAL

WITH (BASIC) MOORING & 12" SUBMARINE PIPELINE - 60 FT. DEPTH — INSTALLATION NO. QA 1185
WITH (ALT. #1) POL JETTY & 12" PIPELINE — INSTALLATION NO. QA 1135
WITH (ALT. #2) EXISTING POL DOCK & 12" PIPELINE — INSTALLATION NO. QA 1075

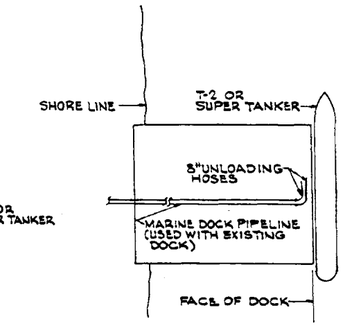
SHIP TO SHORE FACILITY	DESCRIPTION	QUANTITY PHASE 1	QUANTITY PHASE 2	INST. OR FACIL. NO.
BASIC CONSTRUCTION	MOORING FACILITY - 60 FT. DEPTH	1	1	122110
	SUBMARINE PIPELINE FACILITY, 12 INCH, 60 FT. DEPTH	1	2	122517
ALTERNATE #1 CONSTRUCTION	POL JETTY FACILITY	1	1	125701
	MARINE DOCK, 12 INCH PIPELINE FACILITY	1	2	125804
ALT. #2 CONSTR.	MARINE DOCK, 12 INCH PIPELINE FACILITY	1	2	125804
FACILITIES COMMON TO BASIC AND ALTERNATE CONSTRUCTION	BOOSTER STATION FACILITY, 7000 BPH	4	8	123103
	PUMP STATION FUEL SUPPLY FACILITY, 4 UNIT	4	8	124202
	PIPE & ACCESSORIES FACILITY, TUBING, 12 INCH, 1 MILE	4	8	125009
	ADMINISTRATION & OPERATIONS BLDG., 20'x40'	1	1	G11114
	TANK FACILITY, 500 BBL., 4 INCH PIPE	2	2	123403
	TANK FARM COMPLEX INSTALLATION, 1000000 BBL.	1	1	QC1099

GENERAL NOTES

1. EACH BOOSTER STATION INSTALLATION ON A SINGLE LINE CONSISTS OF TWO, FOUR-PUMP BOOSTER FACILITIES USED IN SERIES TO OBTAIN A STATION CAPACITY OF 7000 BBLS/HR. AT 424 FT. HEAD EXCEPT WHERE FINAL DISTANCE TO BE PUMPED DOES NOT WARRANT, IN WHICH CASE A SINGLE FACILITY IS TO BE USED.
2. TERRAIN ASSUMED TO BE LEVEL OR GENTLY SLOPING UPWARD FROM THE BEACH. TERRAIN IN TANK FARM ASSUMED TO BE LEVEL OR GENTLY SLOPING TOWARD SWITCHING MANIFOLD. BOOSTER STATIONS ARE LOCATED FOR LEVEL TERRAIN, AND SPACING WILL DECREASE WITH INCREASE IN STATIC HEAD. PIPE LINES ON TANK SIDE OF TANK FARM MANIFOLD ARE SEPARATE PRODUCT LINES. ALL OTHERS ARE MULTI-PRODUCT LINES. A MULTI-PRODUCT LINE SHALL CONTAIN ONLY ONE PRODUCT WHEN PUMPING IS STOPPED AT THE END OF A RUN.
3. PRESSURE RELIEF VALVES SHOULD BE INSTALLED AROUND SHUT-OFF VALVES TO DISCHARGE BACK TO TANKAGE, TO RELIEVE THERMAL EXPANSION. THE MINIMUM DISTANCE BETWEEN THE NEAREST TANK OF ADJACENT TANK FARMS SHALL BE 4 MILES. THIS LAYOUT IS DEVELOPED ON A PHASED BASIS SO THAT INITIAL MOORING FACILITIES AND SHIP-TO-SHORE FACILITIES WILL PROVIDE ONLY ONE 12-INCH LINE IN PHASE NO. 1. IN PHASE NO. 2 THESE FACILITIES ARE EXPANDED TO PROVIDE A SECOND 12-INCH LINE.
4. SEE GENERAL NOTE NO. 10, DWG. NO. 12-07, SHEET 1 OF 8.



MARINE POL TERMINAL INSTALLATION WITH JETTY
1000000 BBL STORAGE
NO SCALE
SUBMARINE PIPELINE (ALTERNATE) IDENTICAL TO 400000 BBL. INSTALLATION



MARINE DOCK (ALTERNATE)

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN — ARCHITECTS - ENGINEERS — ROANOKE, VIRGINIA — WASHINGTON, D. C.

DEPARTMENT OF THE ARMY — OFFICE OF THE CHIEF OF ENGINEERS — MILITARY CONSTRUCTION - ENGINEERING DIVISION — WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C. W. DE ICHMANN
APPROVED:
CHIEF, ENGINEERING BRANCH

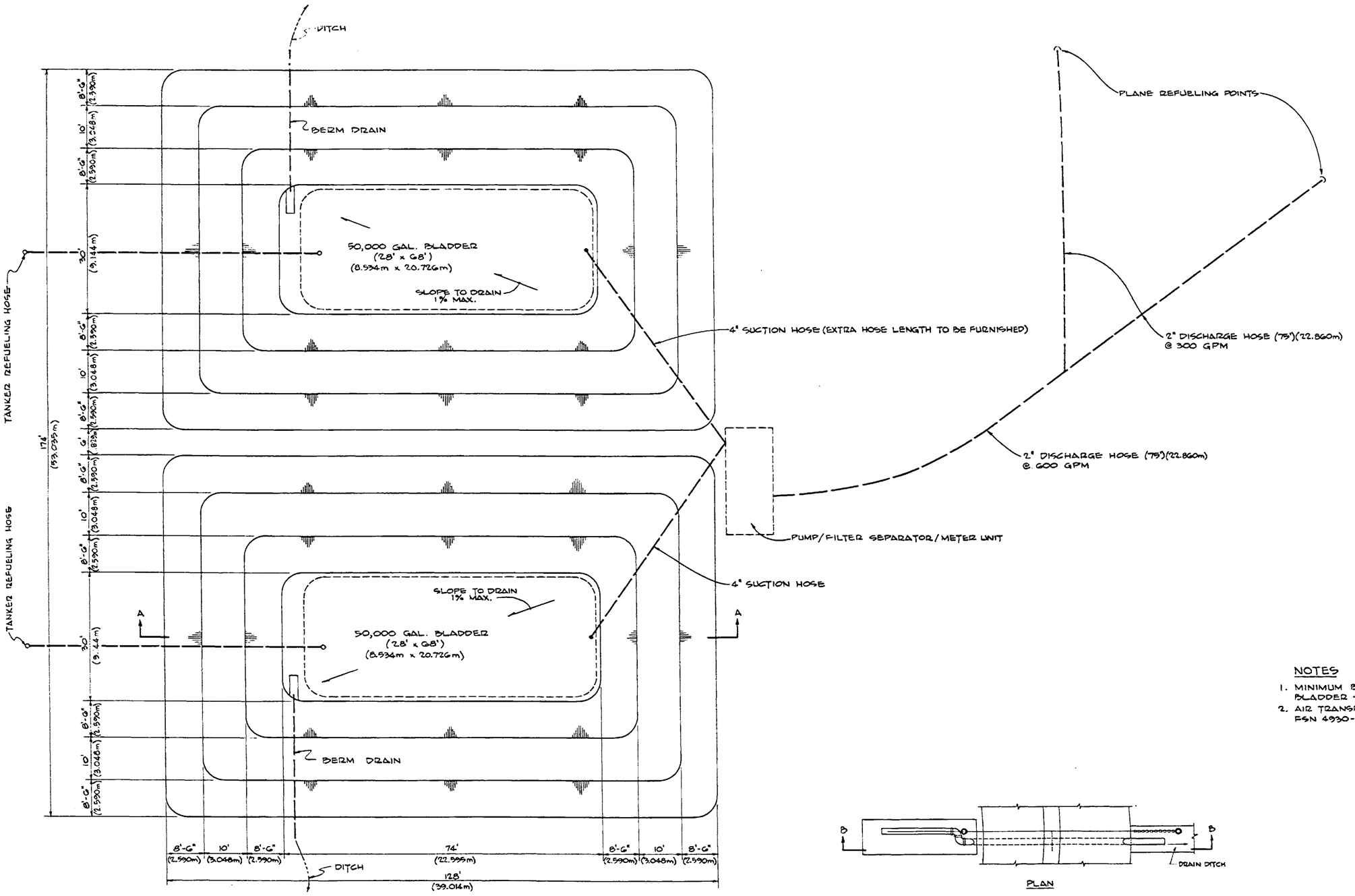
THEATER OF OPERATIONS

P. O. L.
MARINE TERMINAL
200000, 400000 & 1000000 BARREL

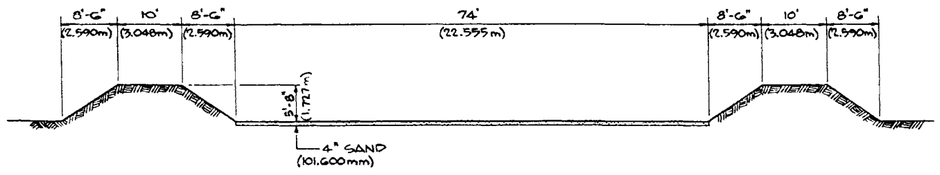
APPROVED:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1909

APPROVED FOR PROPONENT AGENCY:
DATE: 12 Jan 45

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-09
SHEET 1 OF 1

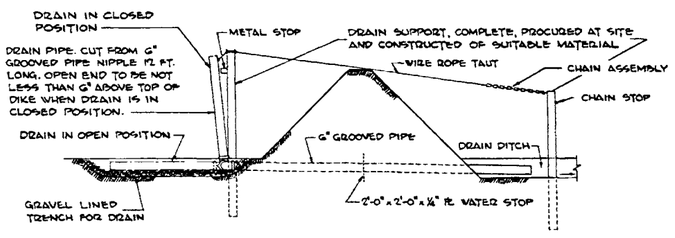


PLAN
SCALE NO. 10
(FACILITY NO. 121000



SECTION A-A
SCALE NO. 10

PLAN



SECTION B-B

BERM DRAIN ASSEMBLY
(2 REQUIRED)
NO SCALE

NOTES

1. MINIMUM BERM INTERIOR CAPACITY - 100% BLADDER + 10 % + 1'-0" FREEBOARD.
2. AIR TRANSPORTABLE HYDRANT REFUELING EQUIPMENT FSN 4930-112-2432 IS SUPPLIED BY USAF.

GRAPHIC SCALES
0 10' 20'
0 3m 6m
NO. 10

DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
NORFOLK, VA.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: D. G. V.
TRACED BY:
CHECKED BY: B. O. T.
SUBMITTED BY: H. W. Tamm
CHIEF, ENGINEERING DIVISION

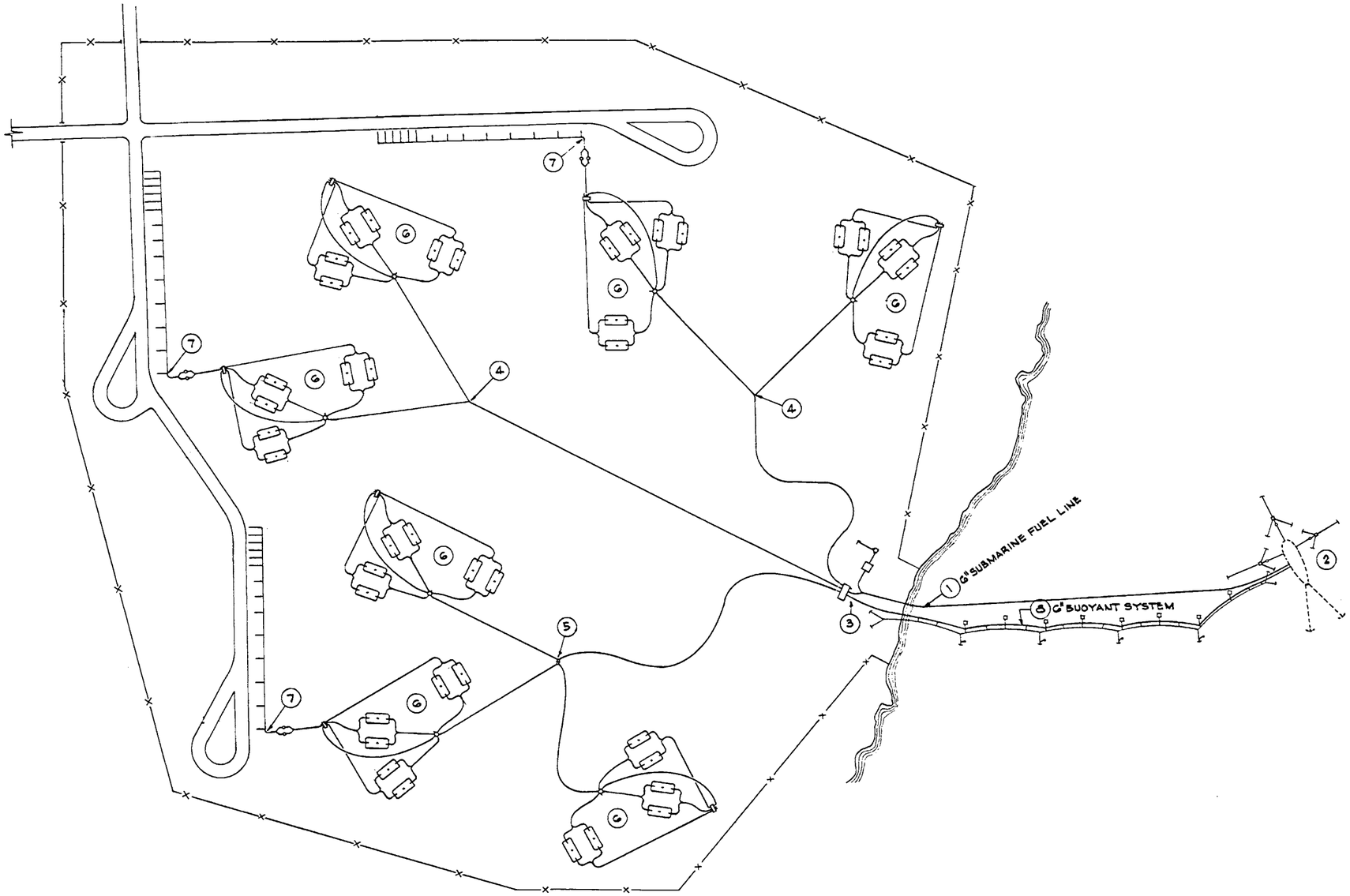
ARMY FACILITIES COMPONENTS SYSTEM

SITE PLAN
FOR
AIR TRANSPORTABLE HYDRANT REFUELING SYSTEM

APPROVED: DATE:
CHIEF, APOE OFFICE, MILITARY ENGINEERING, OCE.

APPROVED FOR PROCUREMENT AGENCY: USAMC
DATE: 21 May 73

SCALE: AS NOTED
SPEC NO.
DRAWING NUMBER
SHEET 1 OF 1
12-10



SITE LAYOUT
50,000 BBL TACTICAL MARINE TERMINAL
INSTALLATION NO. QS 1015
NO SCALE

SCHEDULE OF FACILITIES
FOR
50,000 BBL. TACTICAL MARINE TERMINAL
INSTALLATION NO. QS 1015

DESCRIPTION	QUANTITY	FACILITY NO.
TACTICAL MARINE TERMINAL, 50,000 BBL.	1	121201
CLEARING & GRUBBING, ACRE	160	111001
ROAD, BEACH, 2 LANE, PTBL MAT SURF, 1 MILE	0.50	012001
TRIPLE STD. CONCERTINA FENCE, 100 YD.	20	052009

SCHEDULE OF ITEMS
50,000 BBL. TACTICAL MARINE TERMINAL
FACILITY NO. 121201

ITEM	DESCRIPTION	QUAN.	REMARKS
1	SUBMARINE FUEL LINE, 6", 5000 FT. LONG	1	SEE NOTE #1
2	AMPHIBIOUS FUELING FACILITY, TANKER MOORING, MULTI-LEG	1	SEE NOTE #2
3	PUMP STATION ASSEMBLY	1	
4	HOSELINE DISTRIBUTION ASSEMBLY-A	2	
5	HOSELINE DISTRIBUTION ASSEMBLY-B	1	
6	FUEL TANK MODULE ASSEMBLY, 300,000 GALLONS	7	
7	FUEL DISPENSING ASSEMBLY	3	SEE NOTE #3
8	FUELING FACILITY, 6" BUOYANT SYSTEM	1	SEE NOTE #4

NOTES:

1. SUBMARINE FUEL LINE SHALL BE IN ACCORDANCE WITH NAVY FACILITY DWG. 889780, ASSEMBLY 5255 (OMIT ASSY. 5351) PER NAVDOCKS P 103.
2. MOORING SYSTEM SHALL BE IN ACCORDANCE WITH NAVY FACILITY DWG. 1040088, ASSEMBLY 5201, WHICH INCLUDES 3-EACH OF ASSEMBLY 5283 AND 1-EACH OF ASSEMBLY 5202.
3. FUEL DISPENSING ASSEMBLY SHALL BE IN ACCORDANCE WITH NATICK DWG. 5-14-585, INCLUSIVE OF ALL ITEMS AS SHOWN ON DISCHARGE SIDE OF PUMP, EXCEPT THE 6, 2-INCH LOADING STANDARDS ARE DELETED, THE 3-INCH HOSES FORMALLY CONNECTED TO THE LOADING STANDARDS SHALL BE UTILIZED TO BOTTOM FILL TANK TRUCKS. DUST CAPS AND PLUGS FOR THESE 3-INCH HOSES ARE INCLUDED PLUS ONE REDUCING COUPLER, QUICK DISCONNECT, CAM-LOCKING TYPE, 6-INCH FEMALE TO 4-INCH MALE (OPW 633-BA OR EQUAL).
4. AMPHIBIOUS FUELING FACILITY SHALL BE IN ACCORDANCE WITH NAVY FACILITY DWG. 889846, ASSEMBLY 5414 (OMIT SECT. 3, ELECTRICAL, IN ITS ENTIRETY; OMIT ASSEMBLIES 5351 AND 5395 IN SECT. 5, WATER FRONT AND HARBOR EQUIP.) PER NAVDOCKS P108.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, DESIGN/MISC BRANCH

THEATER OF OPERATIONS

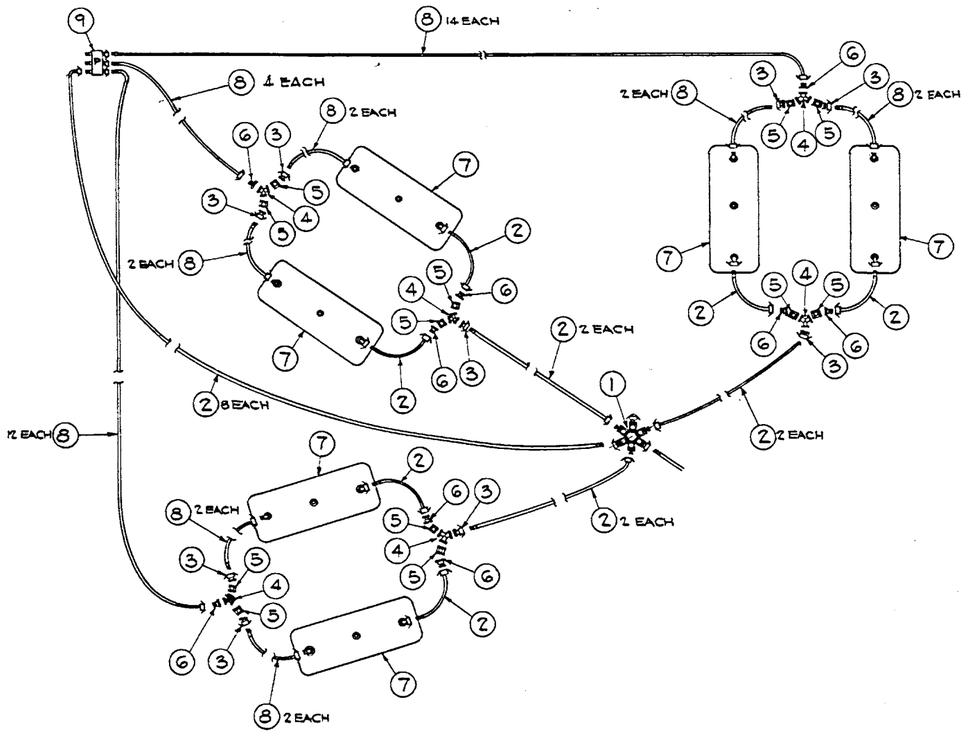
TACTICAL MARINE TERMINAL
50000 BARREL

SITE PLAN

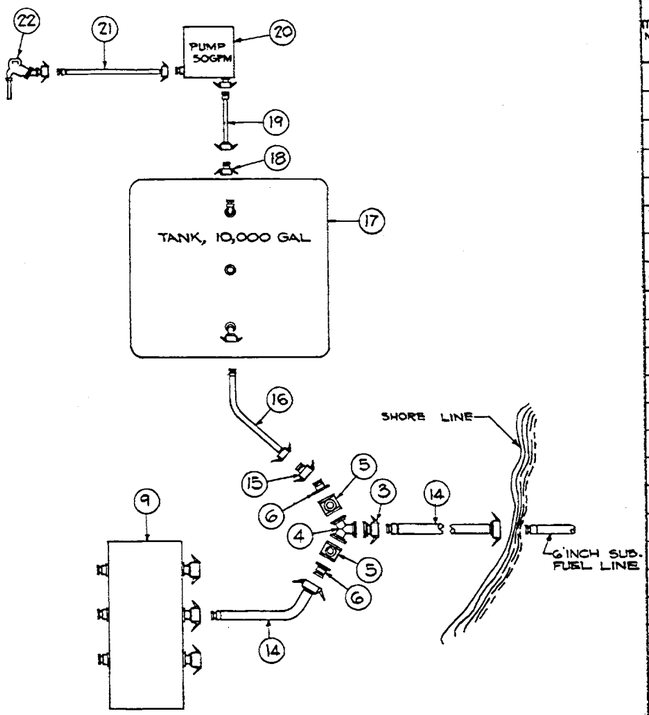
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959

APPROVED FOR PROPONENT AGENCY:
DATE 15 Sep 65

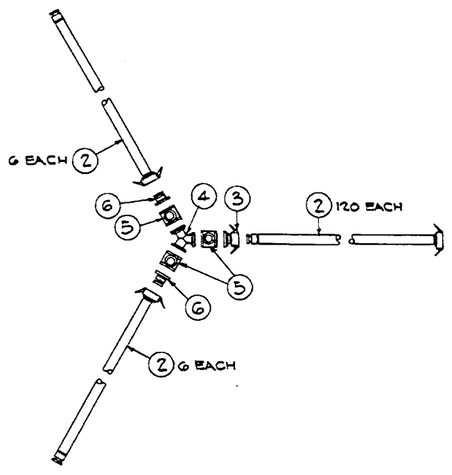
SCALE: NONE
SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 3
12-12



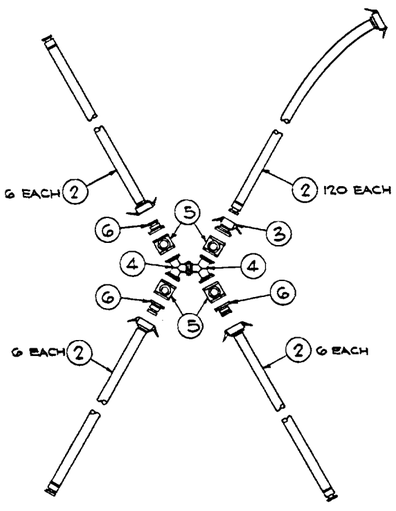
FUEL TANK MODULE ASSEMBLY
NO SCALE



PUMPING STATION ASSEMBLY
NO SCALE



ASSEMBLY - A



ASSEMBLY - B

HOSELINE DISTRIBUTION ASSEMBLIES
NO SCALE

SCHEDULE OF ITEMS

ITEM NO.	DESCRIPTION	QUANTITIES: FUEL TANK MODULE ASSEMBLY	HOSELINE DISTRIBUTION ASSEMBLY-A	HOSELINE DISTRIBUTION ASSEMBLY-B	PUMPING STATION ASSEMBLY
1	MANIFOLD ASSEMBLY, GATED, QUICK DISCONNECT, CAM-LOCKING COUPLINGS. 6 INCH.	1	—	—	—
2	HOSE ASSEMBLY, RUBBER: DISCHARGE, 6 INCH LENGTH - 50 FEET	20	132	138	—
3	COUPLING HALF, QK. DIS., CAM-LOCKING 6" TYPE, FEMALE FLANGED, ALUMINUM.	9 SEE NOTE 2	1	1	1
4	WYE: FLANGED ENDS, 6 INCH, ALUMINUM	6 SEE NOTE 1	1	2	1
5	VALVE GATE: FLANGED ENDS ; 6 INCH, ALUMINUM	12	3	4	2
6	COUPLING HALF, QK. DIS., CAM-LOCKING TYPE. MALE 6" FLANGED, ALUMINUM.	9 SEE NOTE 2	2	3	2
7	TANK, FABRIC, COLLAPSIBLE: POLYURETHANE, PETRL. 50,000 GALLONS.	6	—	—	—
8	HOSE ASSEMBLY, RUBBER: NON-COLLAPSIBLE, 6 INCH I.D. LENGTH - 25 FT.	42	—	—	—
9	PUMP ASSEMBLY: GORMAN-RUPP MODEL NO. 6G4 OR EQUAL	1 SEE NOTE 3	—	—	1 SEE NOTE 3
10	GASKET: 6 INCH I.D., 8 1/8 INCH O.D. - 12-7/16 INCH DIA. HOLES ON 8 1/8 INCH B.C. CLASS 1 (MED)	30	6	9	5
11	SCREW, CAP, HEX HEAD, CADMIUM PLATED, MED. CARBON STEEL, 1 1/2 IN. LG., 5/8 IN. DIA., 5/8-16 UNC THD.	360	72	108	60
12	NUT, PLAIN, HEX., CADMIUM PLATED, CARBON STEEL, 5/8-16 UNC THD.	360	72	108	60
13	WASHER, FLAT, ROUND, GENERAL PURPOSE, 5/8 IN. I.D. CADMIUM PLATED, STEEL.	360	72	108	60
14	HOSE ASSEMBLY, RUBBER: SUCTION, 6 IN, LENGTH-10 FT.	—	—	—	2
15	COUPLING HALF, QK. DIS. CAM-LOCKING TYPE, REDUCER-6 IN. FEM BY 4 IN. MALE. ALUMINUM.	—	—	—	1
16	HOSE ASSEMBLY, RUBBER: DISCHARGE, 4 INCH, LENGTH-25 FEET.	—	—	—	1
17	TANK, FABRIC, COLLAPSIBLE: PETROLEUM PRODUCTS, POLYURETHANE, 22 FT. BY 22 FT., 10,000 GAL.	—	—	—	1 SEE NOTE 8
18	COUPLING HALF, QK. DIS. CAM-LOCKING TYPE, REDUCER ALUMINUM, 4 IN. MALE BY 2 IN. FEM	—	—	—	1
19	HOSE ASSEMBLY, RUBBER: SUCTION, 2 IN. I.D., LENGTH-10 FT.	—	—	—	1
20	PUMP, CENTRIFUGAL : 50 GPM - 100 FT HEAD. GASOLINE ENGINE DRIVEN	—	—	—	1 SEE NOTE 5
21	HOSE ASSEMBLY, RUBBER: DISCHARGE, 2 IN. LENGTH - 25 FT.	—	—	—	1
22	NOZZLE, FUEL DISPENSING, NONAUTOMATIC, COMPLETE WITH GROUNDING CABLE AND EQUIPPED WITH REDUCER 1 1/4" EXTERNAL PIPE THREAD BY 2" FEMALE QD CAM LOCKING.	—	—	—	1

NOTES:

1. ITEM NO. 4: DISREGARD NOTE 3 ON MC. DWG. 5136-10.
2. ITEM NO. 3 AND 6: ITEMS SHALL BE FURNISHED WITH 6 INCH STANDARD ROUND TANK TRUCK FLANGE.
3. PUMP ASSEMBLY, ITEM NO. 9, TO BE IN ACCORDANCE WITH MC. DWG. 5136-19, EXCEPT AS FOLLOWS:
   SUCTION SIDE OF PUMP SHALL HAVE THREE 6" GATE VALVES AND QUICK DISCONNECT 6-INCH FEMALE ADAPTORS AND 6" DUST PLUGS.
   DISCHARGE SIDE OF PUMP SHALL HAVE THREE 6-INCH GATE VALVES AND 6-INCH QUICK DISCONNECT MALE ADAPTORS AND 6-INCH DUST CAPS.
4. ITEM NOS. 10, 11, 12 AND 13 ARE REQUIRED FOR FLANGED COMPONENTS.
5. PUMP, CENTRIFUGAL, ITEM NO. 20, TO BE FURNISHED WITHOUT SUCTION HOSE, DISCHARGE HOSE, NOZZLES, HOSE AND FITTING KIT, AND DOA ASSEMBLY. THE INTAKE OPENING OF PUMP SHALL HAVE A SCREWED-IN 2-INCH FEMALE COUPLING HALF, CONFORMING TO MIL-C-27487, TYPE VII. THE DISCHARGE OPENING OF PUMP SHALL HAVE A SCREWED-IN 2-INCH MALE COUPLING HALF CONFORMING TO MIL-C-27487, TYPE III.
6. THE SUCTION MANIFOLD AND DISCHARGE MANIFOLD FOR EACH PAIR OF TANKS IN THE FUEL TANK MODULE ASSEMBLY ARE FURNISHED ASSEMBLED.
7. THE SUCTION MANIFOLD AND DISCHARGE MANIFOLD FOR EACH HOSELINE ASSEMBLY-A, HOSELINE ASSEMBLY-B AND PUMP STATION ASSEMBLY ARE FURNISHED ASSEMBLED.
8. ITEM NO. 17 TO BE FURNISHED WITH ADDITIONAL INSTALLED DISCHARGE FLANGE ADAPTER FITTING, COMPLETE WITH 4-INCH FEMALE QUICK DISCONNECT CAM LOCKING TYPE ELBOW AND ATTACHED DUST CAP.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

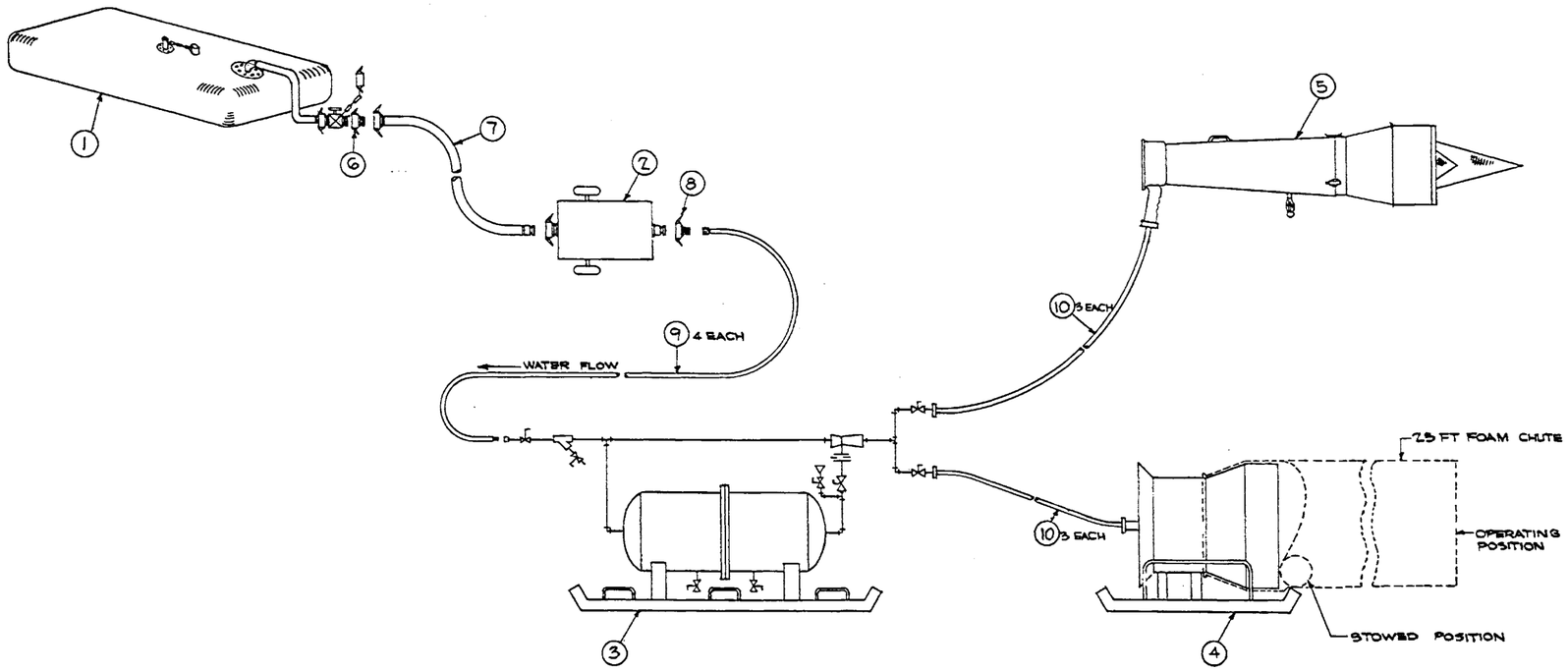
DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, ARCHITECT BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959

THEATER OF OPERATIONS

TACTICAL MARINE TERMINAL
50000 BARREL

DETAILS

APPROVED FOR PROPONENT AGENCY:
DATE 13 Sept 68
SCALE: NONE
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 3
12-12



FIRE SUPPRESSION EQUIPMENT ASSEMBLY
NO SCALE

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QTY	REMARKS
1	TANK, 3000 GAL COLLAPSIBLE W/HOSE AND VALVE	1	
2	350 GPM PUMP	1	
3	50 GAL FOAM TANK WITH PROPORTIONER & VALVE MANIFOLD - SKID MOUNTED	1	
4	FOAM GENERATOR W/25 FT FOAM CHUTE SKID MOUNTED	1	W/1½" NH HOSE CONNECTION
5	FOAM NOZZLE W/ FOAM PRODUCING NETTING	1	W/1½" NH SWIVEL CONNECTION
6	COUPLING HALF, QK DIS; REDUCER - 3" FEMALE TO 4" MALE	1	
7	HOSE ASSEMBLY, 4IN DIA W/QK DIS COUPLINGS - 10 FT LONG.	1	
8	COUPLING HALF; REDUCER; 4" QK DIS FEMALE TO 2½" SCREW MALE	1	
9	HOSE ASSEMBLY, 2½" DIA x 50' LONG W/SCREW TYPE CONNECTIONS	4	
10	HOSE ASSEMBLY, 1½" DIA x 50' LONG W/SCREW TYPE CONNECTIONS	6	

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, ARCHITECT BRANCH

THEATER OF OPERATIONS

TACTICAL MARINE TERMINAL
50000 BARREL

FIRE SUPPRESSION EQUIPMENT

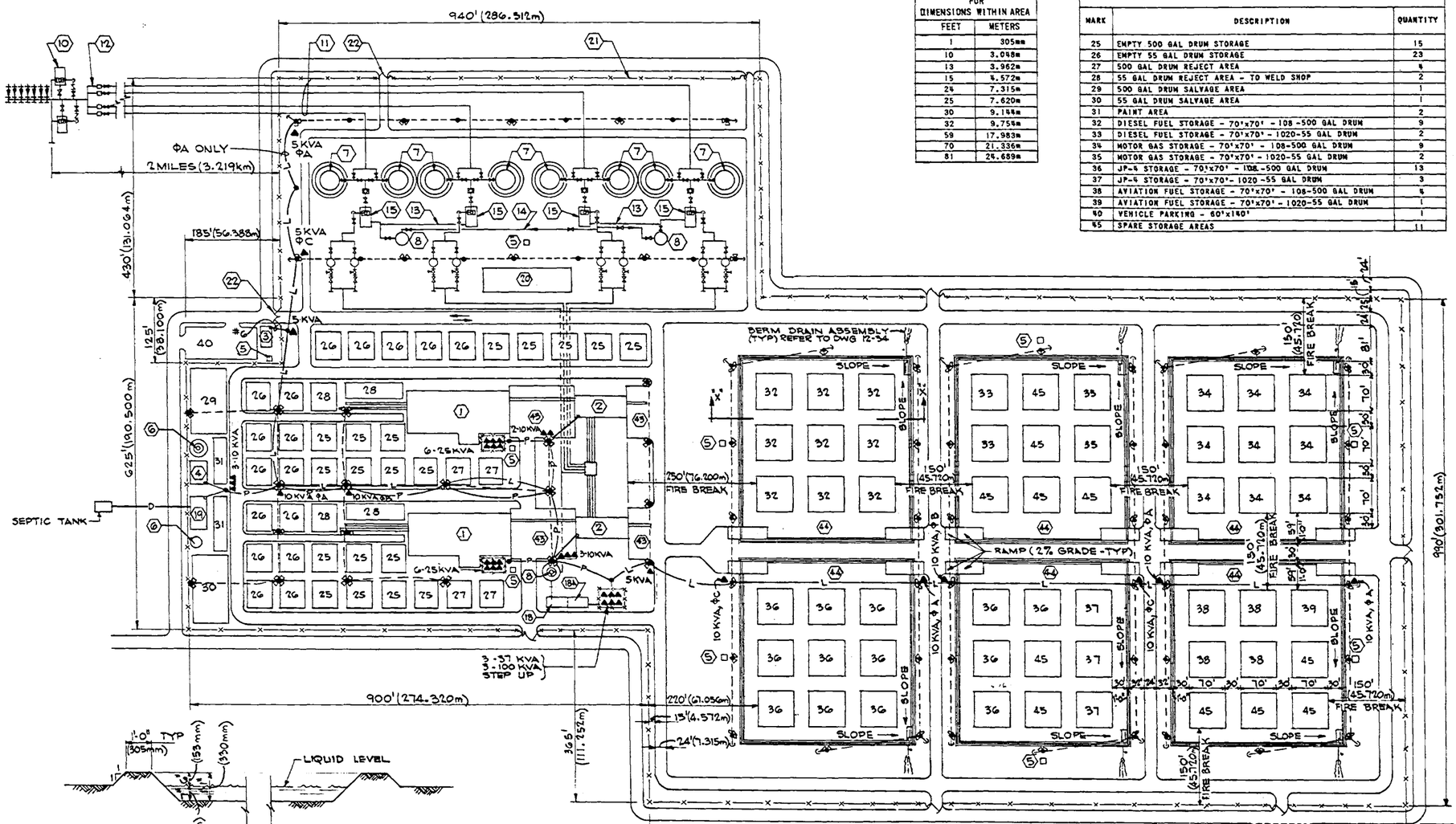
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: For Director by USAVK
DATE: 13 Sep 1968

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-12
SHEET 3 OF 3

CORPS OF ENGINEERS

U. S. ARMY

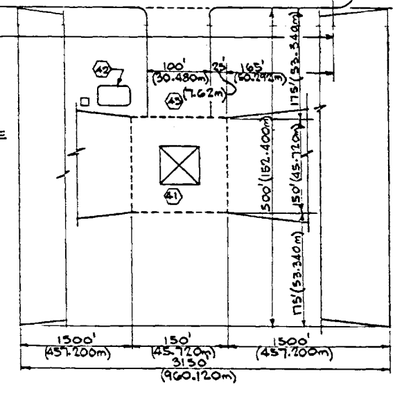


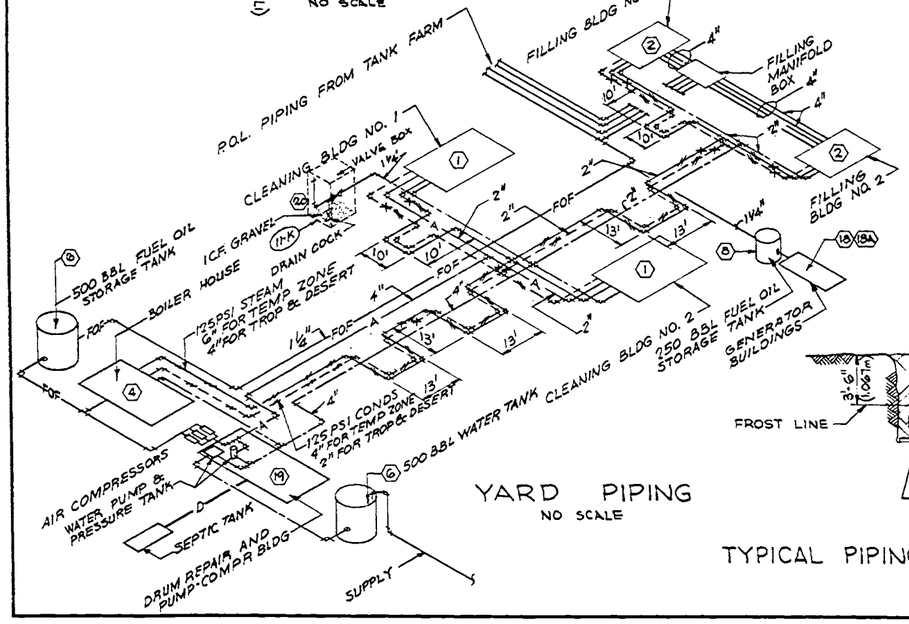
SECTION "X-X"
NO SCALE

SITE AND UTILITY LAYOUT

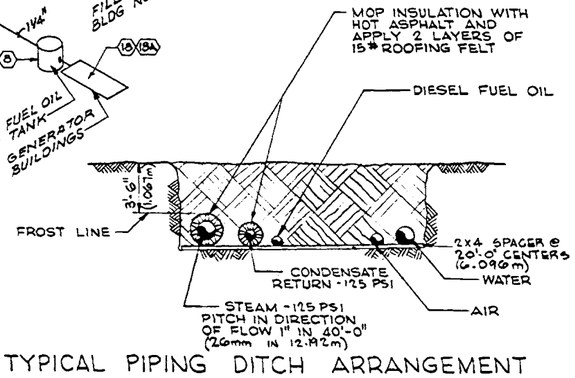
SCALE NO. 15

INSTALLATION QB-1361 FOR USE IN TEMPERATE ZONE
INSTALLATION QB-1362 FOR USE IN TROPICAL ZONE
INSTALLATION QB-1364 FOR USE IN DESERT ZONE





YARD PIPING
NO SCALE



TYPICAL PIPING DITCH ARRANGEMENT
NO SCALE

METRIC CONVERSIONS FOR DIMENSIONS WITHIN AREA	
FEET	METERS
1	305mm
10	3.048m
13	3.962m
15	4.572m
24	7.315m
25	7.620m
30	9.144m
32	9.754m
58	17.983m
70	21.336m
81	24.689m

SCHEDULE OF INSTALLATION SPACE UTILIZATION

MARK	DESCRIPTION	QUANTITY
25	EMPTY 500 GAL DRUM STORAGE	15
26	EMPTY 55 GAL DRUM STORAGE	23
27	500 GAL DRUM REJECT AREA	¼
28	55 GAL DRUM REJECT AREA - TO WELD SHOP	2
29	500 GAL DRUM SALVAGE AREA	1
30	55 GAL DRUM SALVAGE AREA	1
31	PAINT AREA	2
32	DIESEL FUEL STORAGE - 70'x70' - 108-500 GAL DRUM	9
33	DIESEL FUEL STORAGE - 70'x70' - 1020-55 GAL DRUM	2
34	MOTOR GAS STORAGE - 70'x70' - 108-500 GAL DRUM	9
35	MOTOR GAS STORAGE - 70'x70' - 1020-55 GAL DRUM	2
36	JP-4 STORAGE - 70'x70' - 108-500 GAL DRUM	13
37	JP-4 STORAGE - 70'x70'- 1020-55 GAL DRUM	3
38	AVIATION FUEL STORAGE - 70'x70' - 108-500 GAL DRUM	¼
39	AVIATION FUEL STORAGE - 70'x70' - 1020-55 GAL DRUM	1
40	VEHICLE PARKING - 60'x180'	1
45	SPARE STORAGE AREAS	11

SCHEDULE OF INSTALLATION FACILITIES

MARK	DESCRIPTION	QUANTITY	FACILITY NO. TEMPERATE	TROPIC	DESERT
1	CLEANING BUILDING - 83'-6"X200' W/INTERIOR	2	121313	121314	121315
2	FILLING BUILDING - 60'X100' W/INTERIOR	2	121316	121317	121318
3	ADMINISTRATION BUILDING - 20'x40'	1	611114	611114	611114
4	BOILER HOUSE - W/O WATER SOFTENER EQUIP	1	821129	821120	821120
5	LATRINE - 4'X5'	10	723621	723621	723621
6	STORAGE TANK - 500 BBL	2	123403	123403	123403
7	TANK - 3000 BBL	8	123408	123408	123408
8	TANK - 250 BBL	3	123402	123402	123402
10	FLOOD PUMP & MANIFOLD	2	123211	123211	123211
11	6" TUBING - 1 MILE	8	125007	125007	125007
12	DISTRIBUTION MANIFOLD 6 INCH	1	123231	123231	123231
13	FUEL SUPPLY - TWO UNIT	2	124201	124201	124201
14	PIPE & ACCESS - API - 1000 FT. 6 IN.	1	125001	125001	125001
15	LOADING PUMP & MANIFOLD	¼	123104	123104	123104
16	PIPE & ACCESS - API - 1000 FT. 6 IN.	2	125017	125017	125017
17	YARD PIPING - INCLUDING SEPTIC TANK	1	121321	121322	121322
18	GENERATING PLANT - W/2-100 KW GEN.	1	811316	811316	811316
19	DRUM REPAIR & PUMP - COMPR. BLDG.	1	121310	121311	121312
20	FOAM FIRE FIGHTING EQUIPMENT	1	125207	125207	125207
18A	GENERATING PLANT - W/3 - 100KW GEN.	1	811317	811317	811317
	ELECTRICAL DISTRIBUTION	1	121323	121323	121323
21	FENCE - SECURITY TYPE "E" (1000 FT)	9	710903	710903	710903
22	FENCE - SECURITY - VEHICLE & MAN GATE TYPE "E"	8	710904	710904	710904
23	ROAD - 1 LANE - 6" STAB EARTH OR STONE (1 MILE)	0.5	853111	853111	853111
24	ROAD - 2 LANE - 6" STAB EARTH OR STONE (1 MILE)	3.8	853121	853121	853121
41	HELIPAD, CM54 - REAR AREA	1	110112	110112	110112
42	HELICRAFT REFUELING	1	124602	124602	124602
43	HARDSTAND	6900SY	853134	853134	853134
44	HARDSTAND	81,400SY	853131	853131	853131

GENERAL NOTES

1. THIS IS A TYPICAL INSTALLATION WHICH WILL REQUIRE VARIATIONS IN DESIGN DEPENDING ON GEOGRAPHICAL LOCATIONS.
2. DUNNAGE FOR DRUM STORAGE SHALL BE DEVELOPED IN ACCORDANCE WITH THE "STORING AND ISSUE PACKAGED PRODUCTS" CRITERIA SET FORTH IN TM 10-1101.
3. NO HEATING OR VENTILATION REQUIRED IN BUILDINGS IN THE TROPICAL ZONE WHERE OPEN SIDE BUILDINGS ARE USED AND NO HEATING IS REQUIRED FOR THE DESERT ZONE.
4. FEEDERS FROM THE GENERATOR PLANT TO THE STEP-UP TRANSFORMER BANK SHALL CONSIST OF 2 x (4-1/C #350 MCM WP WIRE) & 4-1/C #6/0 WP WIRE.
5. ALL ELECTRICAL MATERIALS AND EQUIPMENT IN THE CLEANING AND FILLING BUILDINGS SHALL BE APPROVED FOR USE IN N.E.C., CLASS I, DIVISION I, HAZARDOUS LOCATIONS AND GROUP D ATMOSPHERES; AND ELECTRICAL WORK DONE TO CONFORM.
6. PIPE ANCHORS ON STEAM LINES SHALL BE A CONCRETE BLOCK LARGE ENOUGH TO KEEP PIPE FROM MOVING.
7. A 375 AMP, 3 POLE, 480 VOLT BREAKER SHALL BE PROVIDED IN THE POWER PLANT FOR AREA LIGHTING SERVICE (L) CIRCUIT.
8. A 1000 AMP, 3 POLE, 480 VOLT BREAKER SHALL BE PROVIDED IN THE POWER PLANT FOR POWER SERVICE (P) CIRCUIT.
9. ALL CONDUCTORS OF THE 4160 VOLT SYSTEM SHALL BE #6 AWG BARE STRANDED.
10. ALL SECONDARY LIGHTING CONDUCTORS SHALL BE #6 WP UNLESS OTHERWISE NOTED.
11. AREA LIGHTING TRANSFORMERS SHALL HAVE SINGLE PHASE 2400 V PRIMARY & 240/120 V SECONDARY RATINGS.
12. GENERATING CAPACITY SHALL BE 900 KW DERIVED FROM 5-100KW UNITS OPERATING AT 208Y/120 VOLTS, 3 PHASE, 60 HERTZ.
13. POWER SUPPLY TRANSFORMERS IN BANKS SHALL BE RATED 4160Y/2400-208Y/120% BUILDING #3 SHALL BE CONNECTED 2400-120/240 1 PHASE.
14. FLOODLIGHTS SHALL HAVE 500 W LAMPS AND MOUNTING HEIGHT SHALL BE 25 FT.
15. THE STORAGE AREA HAS A CAPACITY OF AT LEAST 7 DAYS SUPPLY OF FUEL BASED ON THE 4160 RATE EQUAL TO THAT OF THE CLEANING AND FILLING RATE OF 500-500 GALLON COLLAPSIBLE DRUMS AND 1000-55 GALLON STEEL DRUMS PER 20 HOUR DAY.
16. LINE PIPE TO BE USED FOR ALL BURIED PORTIONS UNDER BERMS AND ROADWAYS AND FOR MAKING CLOSURES.

LEGEND

- (1) MARK NUMBER THAT DESIGNATES A FACILITY.
- L / P — PRIMARY CIRCUIT, 4160 V, 3Φ, 4 WIRE, L-DENOTES LIGHTING, P-DENOTES POWER
- ---- SECONDARY CIRCUIT, 1Φ, 3 WIRE, 120/240 V, LIGHTING
- ═══ SECONDARY CIRCUIT, POWER OR SERVICE DROP
- ▲▲▲ TRANSFORMERS IN BANK (SEE NOTE 13)

REFER TO DRAWING SYMBOL SHEET FOR OTHER STANDARD SYMBOLS.

INSTALLATION SERVICE REQUIREMENTS

ITEM	RATED CAPACITY ON 30 MIN CYCLE
COLD WATER IN ALL ZONES	265 GPM
STEAM @ 125 PSIG FOR HEAT IN TEMP ZONES	7170 #/HR
STEAM @ 125 PSIG FOR EQUIP IN ALL ZONES	3290 #/HR
ELECTRIC LOAD IN ALL ZONES	462 KVA
AIR @ 100 PSIG IN ALL ZONES	621 CFM
SEWAGE IN ALL ZONES	260 GPM

ESTIMATED ELECTRICAL LOAD

QUANTITY	FACILITY	PEAK DEMAND UNIT	PEAK DEMAND TOTAL
		KVA	
2	121313	188	376
2	121316	25	50
1	121310	28	28
1	611114	0.4	0.4
1	811316 & 811317	1.8	1.8
1	821129	21.2	21.2
1	FLOODLIGHTS	100	100
	SUM OF NON-COINCIDENT DEMAND		578
	COINCIDENCE FACTOR		80%
	NET TOTAL		462

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET
81-21	ELEC DISTR PRIMARY LINE	1 OF 1
81-22	ELEC DISTR TRANSF. INST	1 OF 1
81-23	ELEC DISTR SEC. LINE	1 OF 1
81-24	ELEC DISTR FLOODLIGHT DETAIL	1 OF 1
12-34	BERM DRAINAGE	1 OF 1
99-98	STANDARD DETAILS	---
	REFER TO SCHEDULE OF FACILITIES FOR ADDITIONAL REFERENCE DRAWINGS.	

GRAPHIC SCALES
0 50' 100' 200'
0 20m 40m 60m
NO. 15

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DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: JOHNSON
TRACED BY:
WADE
CHECKED BY:
DEICHMANN
SUBMITTED BY:
C. W. DEICHMANN

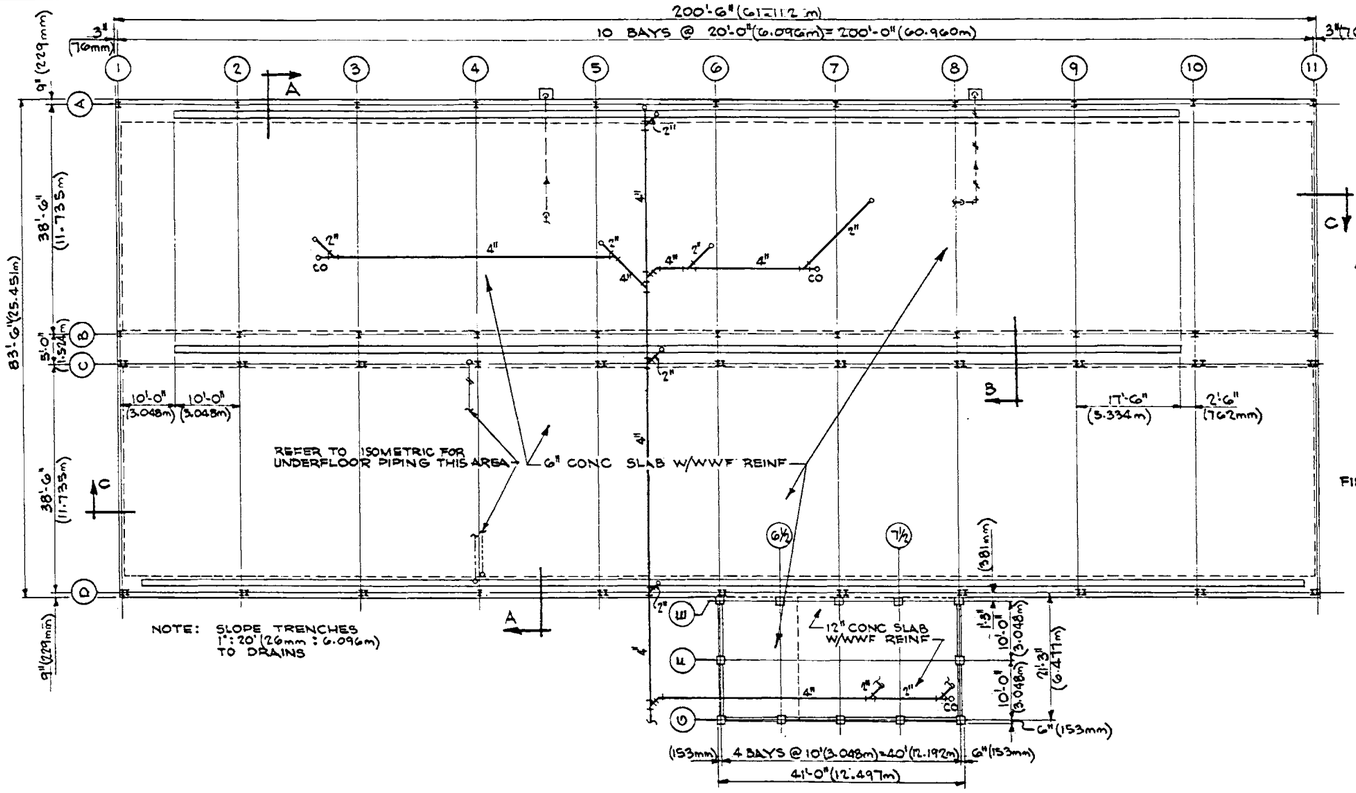
ARMY FACILITIES COMPONENTS SYSTEM

P.O.L.
FUEL DRUM CLEANING, FILLING AND STORAGE INSTALLATION
SITE PLAN

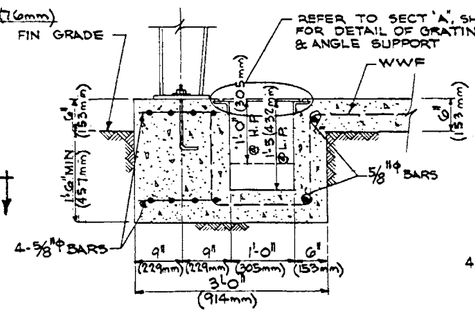
APPROVED: Edwin D. Patterson, Lt Col CE
CHIEF, AFCS OFFICE, MILITARY ENGINEERING, OCE.
DATE: 23 May 73

APPROVED FOR PROPONENT AGENCY:
DATE 21 May 1973

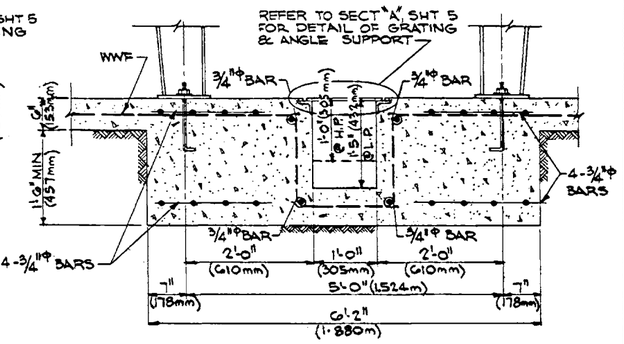
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
12-13
SHEET 1 OF 5



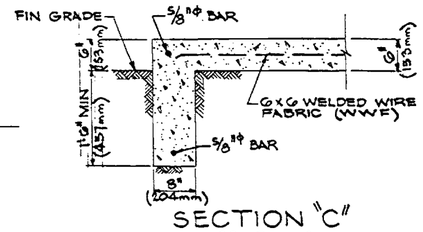
FOUNDATION PLAN - CLEANING BLDG
SCALE NO. 17



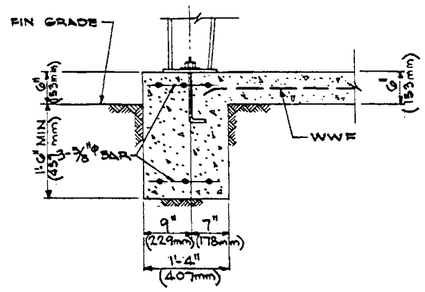
SECTION "A"
SCALE NO. 6



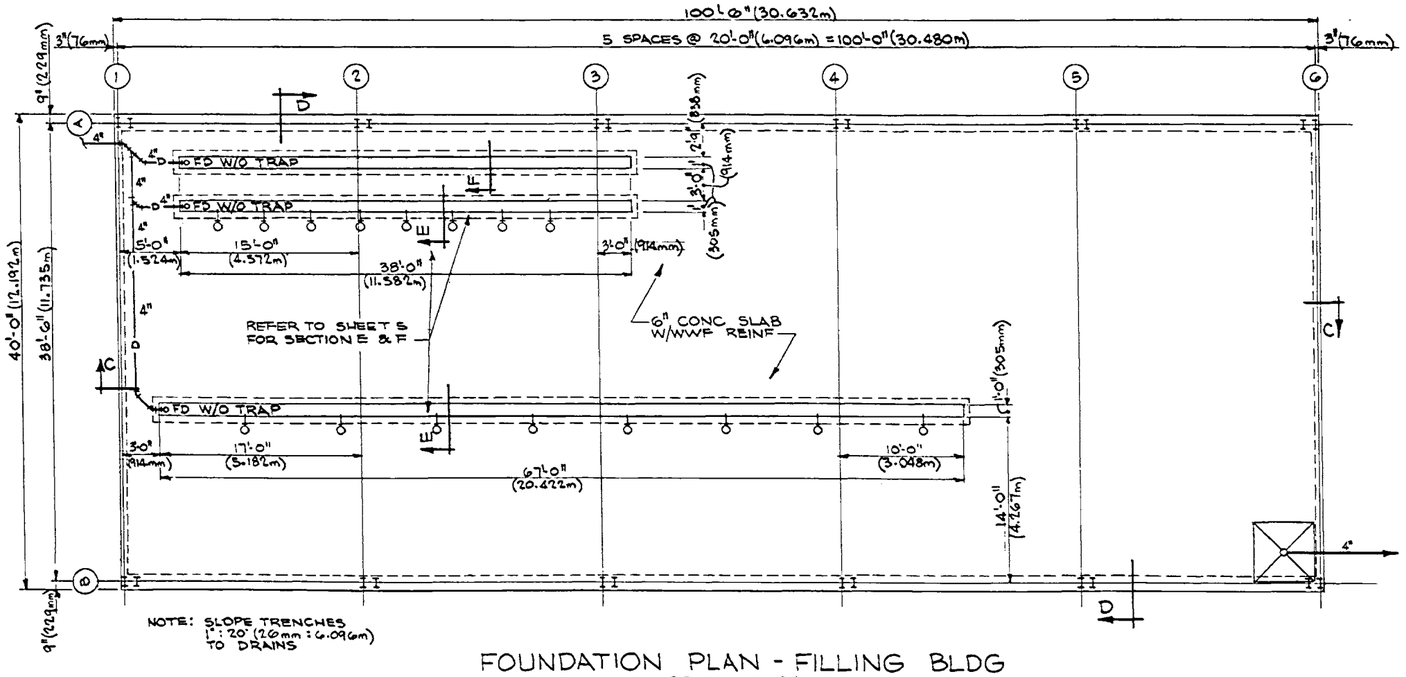
SECTION "B"
SCALE NO. 6



SECTION "C"
SCALE NO. 6



SECTION 'D'
SCALE NO. 6



FOUNDATION PLAN - FILLING BLDG
SCALE NO. 24

NOTES:

1. BUILDING SHELL ANCHOR BOLTS ARE FURNISHED WITH THE BUILDING FEDERAL STOCK NUMBER PACKAGE.
2. REFER TO SHEET 5 FOR DETAILS OF UNDERFLOOR GROUNDING SYSTEM TO BE PROVIDED FOR CONVEYOR SYSTEM.

GRAPHIC SCALES
NO. 6 (0, 1", 2" / 0, 300mm, 600mm)
NO. 17 (0, 5', 10', 20' / 0, 5m)
NO. 24 (0, 2', 4', 6', 8', 10' / 0, 1m, 2m, 3m)

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: GREGORY
SUBMITTED BY: C. W. DEACHMANN

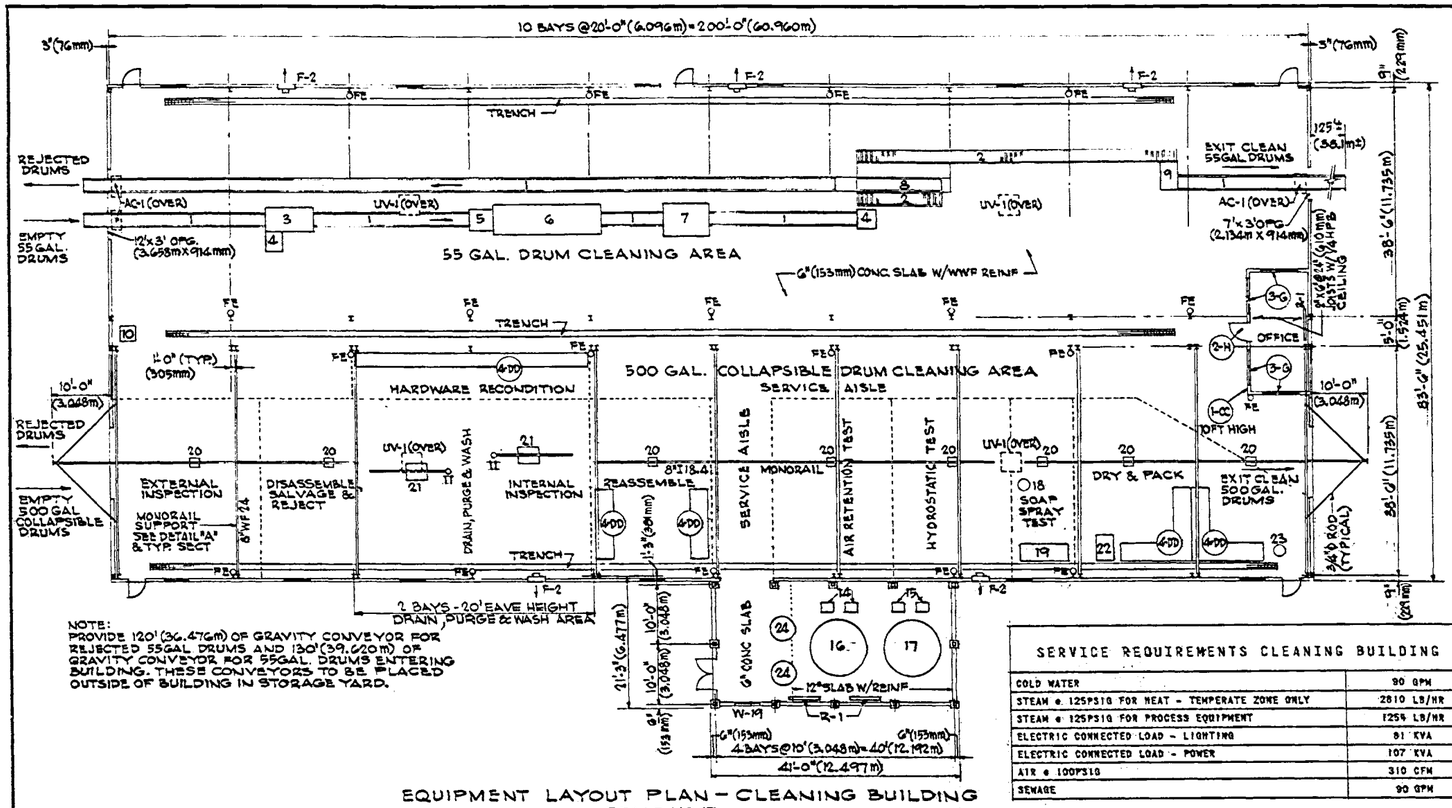
ARMY FACILITIES COMPONENTS SYSTEM

P.O.L.
FUEL DRUM CLEANING, FILLING AND STORAGE INSTALLATION
FOUNDATION PLANS
CLEANING & FILLING BLDGS

APPROVED: Edwin A. Patterson, Col CE — DATE: 23 May 73
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE.

APPROVED FOR PROPONENT AGENCY: Thomas Riley Jr, USARC
DATE: 21 May 73

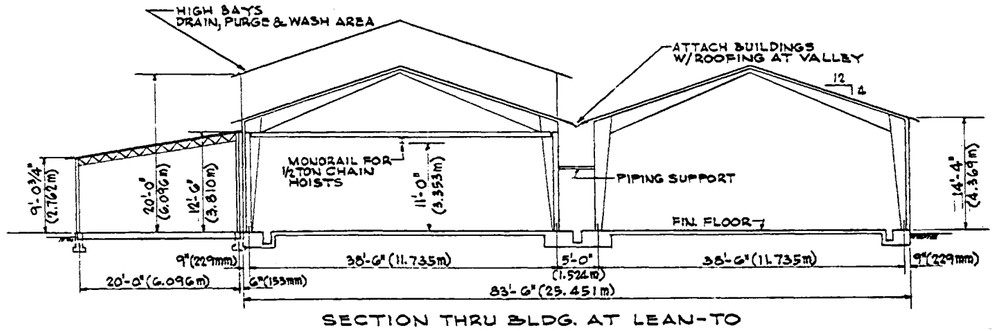
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-13
SHEET 2 OF 6



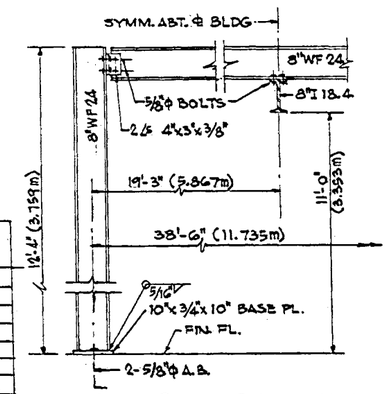
NOTE:
PROVIDE 120' (36.476m) OF GRAVITY CONVEYOR FOR REJECTED 55GAL DRUMS AND 130' (39.620m) OF GRAVITY CONVEYOR FOR 55GAL. DRUMS ENTERING BUILDING. THESE CONVEYORS TO BE PLACED OUTSIDE OF BUILDING IN STORAGE YARD.

EQUIPMENT LAYOUT PLAN - CLEANING BUILDING
SCALE NO. 17

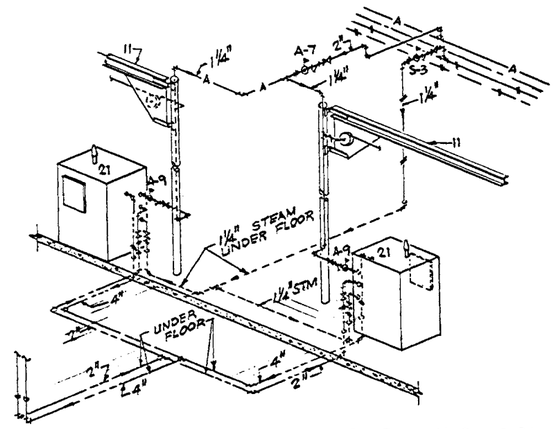
SERVICE REQUIREMENTS CLEANING BUILDING	
COLD WATER	90 GPM
STEAM @ 125PSIG FOR HEAT - TEMPERATE ZONE ONLY	2810 LB/HR
STEAM @ 125PSIG FOR PROCESS EQUIPMENT	1254 LB/HR
ELECTRIC CONNECTED LOAD - LIGHTING	81 KVA
ELECTRIC CONNECTED LOAD - POWER	107 KVA
AIR @ 100PSIG	310 CFM
SEWAGE	90 GPM



SECTION THRU BLDG. AT LEAN-TO
SCALE NO. 1

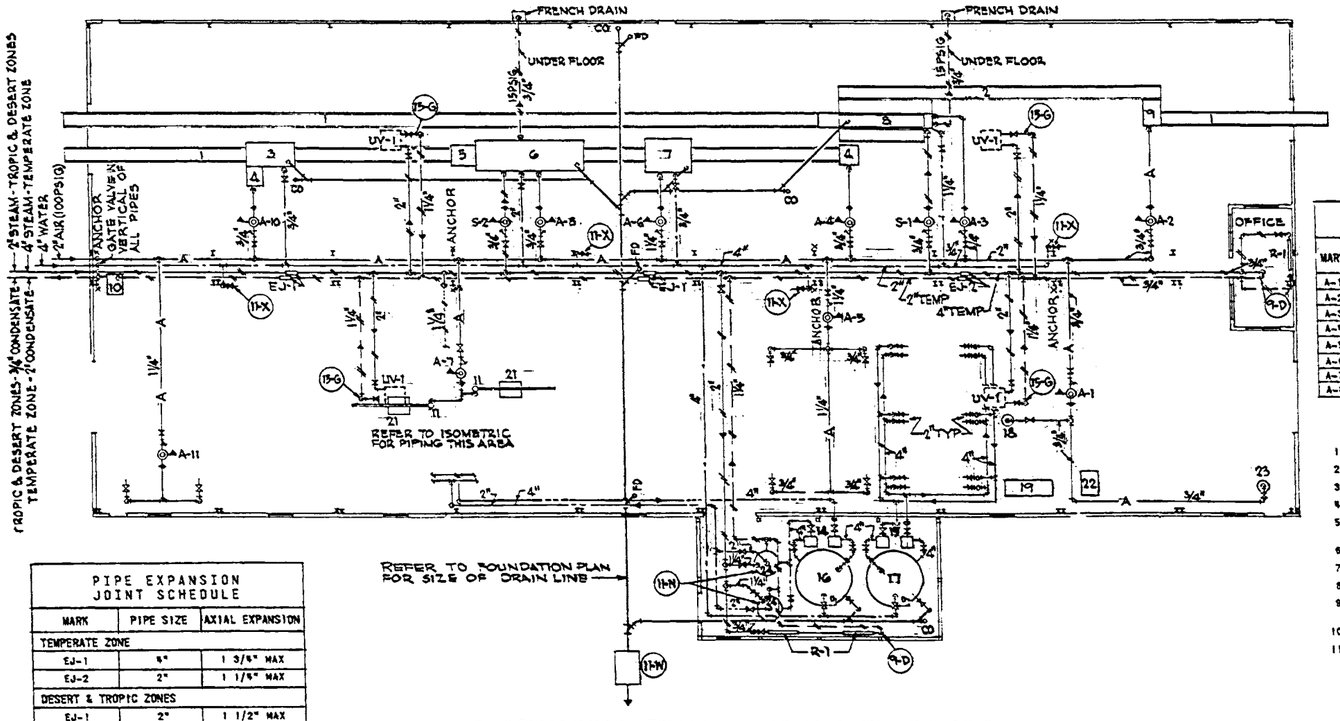


MONORAIL SUPPORT DETAIL
SCALE NO. 5



PIPING ISOMETRIC FOR ITEMS NO. 11 & NO. 21
NOT TO SCALE

FACILITY NO. 121313 STEEL FRAME BLDG W/METAL CLADDING, INTERIOR & HEATING - TEMPERATE ZONE (-20°F)
FACILITY NO. 121314 STEEL FRAME BLDG W/O WALL CLADDING W/INTERIOR ONLY - TROPICAL ZONE
FACILITY NO. 121315 STEEL FRAME BLDG W/METAL CLADDING, INTERIOR & VENTILATION - DESERT ZONE



MECHANICAL PLAN - CLEANING BUILDING
SCALE NO. 17

PIPE EXPANSION JOINT SCHEDULE		
MARK	PIPE SIZE	AXIAL EXPANSION
TEMPERATE ZONE		
EJ-1	4"	1 3/4" MAX
EJ-2	2"	1 1/4" MAX
DESERT & TROPIC ZONES		
EJ-1	2"	1 1/2" MAX
EJ-2	3/4"	1" MAX

SCHEDULE OF EQUIPMENT FURNISHED BY USING AGENCY

ITEM NO.	QUAN.	DESCRIPTION	VOLT	H.P.	K.W.	STEAM LBS/HR	COMP AIR ACFM	COMP AIR PSIG
11	2	AIR HOIST W/MAST & 13' BOOM	---	---	---	---	75	60
14	2	PUMPS, FLUSH WATER 210GPM@50PSI	208/416	10	---	---	---	---
15	2	PUMPS, TEST WATER 250GPM@30PSI	208/416	7 1/2	---	---	---	---
18	1	SPRAY GUN (SOAP)	---	---	---	---	7	40
19	1	TEST STAND	---	---	---	---	---	---
21	2	COLPS DRUM, WASHING & DRYING UNIT	120-1ϕ	1/2	---	360	200	30
22	1	BLOWER W/HEATER	230-1ϕ	1/2	6.0	---	---	---
23	1	SPRAY GUN (OIL)	---	---	---	---	7	40

SCHEDULE OF PRESSURE REDUCING VALVES (PRV)

MARK	QUAN.	PROCESS	PRESSURE PSIG INLET	PRESSURE PSIG OUTLET	FLOW	MARK	QUAN.	PROCESS	PRESSURE PSIG INLET	PRESSURE PSIG OUTLET	FLOW
A-1	1	AIR	100	40	7 ACFM	A-9	2	AIR	60	30	200 ACFM
A-2	1	AIR	100	85	3 ACFM	A-10	1	AIR	100	85	3 ACFM
A-3	1	AIR	100	15	1 ACFM	A-11	1	AIR	100	6	130 ACFM
A-4	1	AIR	100	85	3 ACFM	S-1	1	STEAM	125	15	69 LB/HR
A-5	1	AIR	100	5	68 ACFM	S-2	1	STEAM	125	15	104 LB/HR
A-6	1	AIR	100	80	85 ACFM	S-3	1	STEAM	125	30	720 LB/HR
A-7	1	AIR	100	60	220 ACFM						
A-8	1	AIR	100	85	2 ACFM						

SCHEDULE OF EQUIPMENT FURNISHED BY AFCS

ITEM NO.	QUAN.	DESCRIPTION	VOLT	H.P.	K.W.	STEAM LBS/HR	COMP AIR ACFM	COMP AIR PSIG
1	362LF	INCLINED RAILS	---	---	---	---	---	---
2	318LF	CONVEYOR (GRAVITY)	---	---	---	---	---	---
3	1	SUMP	---	---	---	---	---	---
4	2	21" UP ENDER (AIR OPER)	---	---	---	---	3	85
5	1	ROTARY LOADER	220-3ϕ	1 1/2	---	---	---	---
6	1	DRUM WASHER (OUTSIDE)	220-3ϕ	15	---	104	2	85
7	1	WATER BATH LEAK DETECTOR	110-1ϕ	---	0.5	---	85	80
8	1	INSIDE FLUSH UNIT W/SYPHON	220-3ϕ	e	---	69	1	85
9	1	DOWN ENDER	---	---	---	---	3	85
10	1	CONDENSATE PUMP (125PSIG SYSTEM)	220-3ϕ	2	---	---	---	---
16	1	FLUSH WATER STGE. TANK 4200 GAL.	---	---	---	---	---	---
17	1	TEST WATER STGE. TANK 4200 GAL.	---	---	---	---	---	---
20	1	MONORAIL ASSEM W/8, 1/2T HOISTS	---	---	---	---	---	---
24	2	H.W. GENERATOR 750 GAL @ 150°F	---	---	---	720	---	---
R-1	2	CONVECTORS - 5FT LG, 19,175 BTU/HR	---	---	---	22	---	---
UV-1	4	UNIT VENTILATOR-9800CFM; 753,600 BTU/HR	220-3ϕ	1 1/2	---	865	---	---
F-2	5	EXHAUST FANS-6800CFM	220-3ϕ	1	---	---	---	---
AC-1	3	AIR CURTAIN 25000CFM	115-1ϕ	1/3	---	---	---	---

*3-10HP & 1-1/3HP

GENERAL NOTES

1. FOR FSN BILL OF MATERIALS REFER TO TM 5-303 BY FACILITY NUMBER.
2. FLOOR IS UNIFORMLY SLOPED TO TRENCHES WHICH ARE SET 1" BELOW FINISHED FLOOR LINE.
3. ALL FIRE EXTINGUISHERS TO BE 20BC DRY CHEMICAL TYPE.
4. EXHAUST FANS TO BE MOUNTED 3'-6" ABOVE FLOOR LINE.
5. ALL INTERIOR PROCESS PIPING, EXCEPT WHERE OTHERWISE NOTED, TO BE HUNG FROM STRUCTURAL STEEL WITH SERVICE DROPS TO EQUIPMENT.
6. INSULATE INTERIOR HOT WATER GENERATORS, HOT & COLD WATER AND STEAM & CONDENSATE LINE.
7. NO HEATING OR VENTILATION REQUIRED IN TROPICAL ZONE.
8. VENTILATION ONLY REQUIRED IN DESERT ZONE.
9. HEATING IN TEMPERATE ZONE (-20°F) DESIGNED TO MAINTAIN 50°F INSIDE TEMPERATURE IN WORK AREAS AND 70°F IN OFFICE.
10. REFER TO SHEET 2 OF 6 FOR ADDITIONAL DETAILS.
11. THIS FACILITY IS CAPABLE OF CLEANING & TESTING 250-500 GAL. COLLAPSIBLE DRUMS AND 500-55 GAL. DRUMS PER 20 HOUR WORK DAY.

GRAPHIC SCALES: NO. 1 (0, 5', 10', 15' / 0, 1m, 5m) NO. 5 (0, 1', 2', 3' / 0, 1m) NO. 17 (0, 5', 10', 20' / 0, 5m)

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: GREGORY
SUBMITTED BY: C.W. DEICHMANN

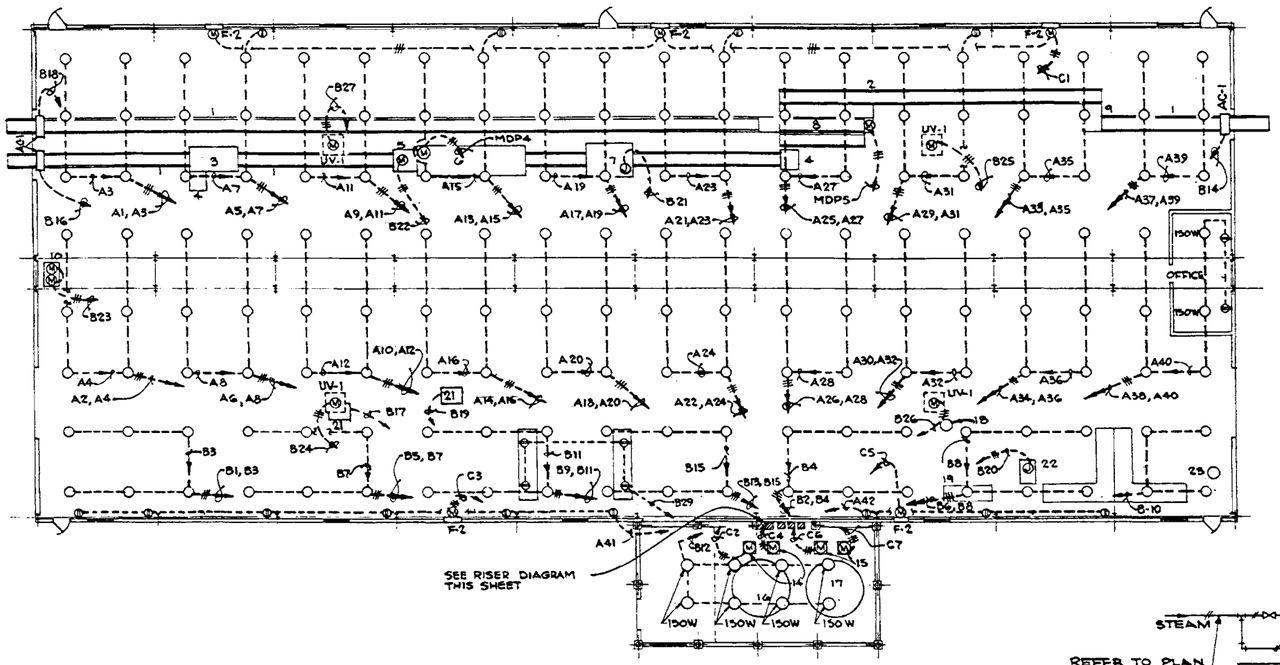
ARMY FACILITIES COMPONENTS SYSTEM

P.O.L.
FUEL DRUM CLEANING, FILLING AND STORAGE INSTALLATION
DRUM CLEANING BUILDING 83'-6"X200'
EQUIPMENT LAYOUT AND MECHANICAL PLAN

APPROVED: Edwin D. Patterson, Lt Col CE
CHIEF, AFCS OFFICE, MILITARY ENGINEERING, OCE.
DATE: 23 May 73

APPROVED FOR PROPONENT AGENCY:
DATE: 21 May 1973

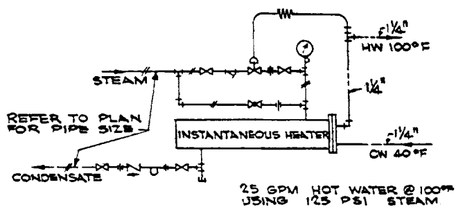
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-13
SHEET 3 OF 6



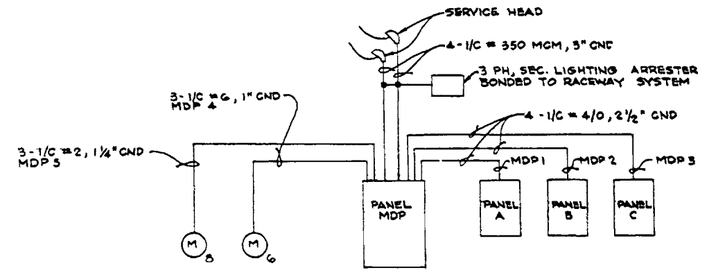
ELECTRICAL PLAN - CLEANING BLDG.
SCALE NO. 17

PANELBOARD SCHEDULE - CLEANING BUILDING

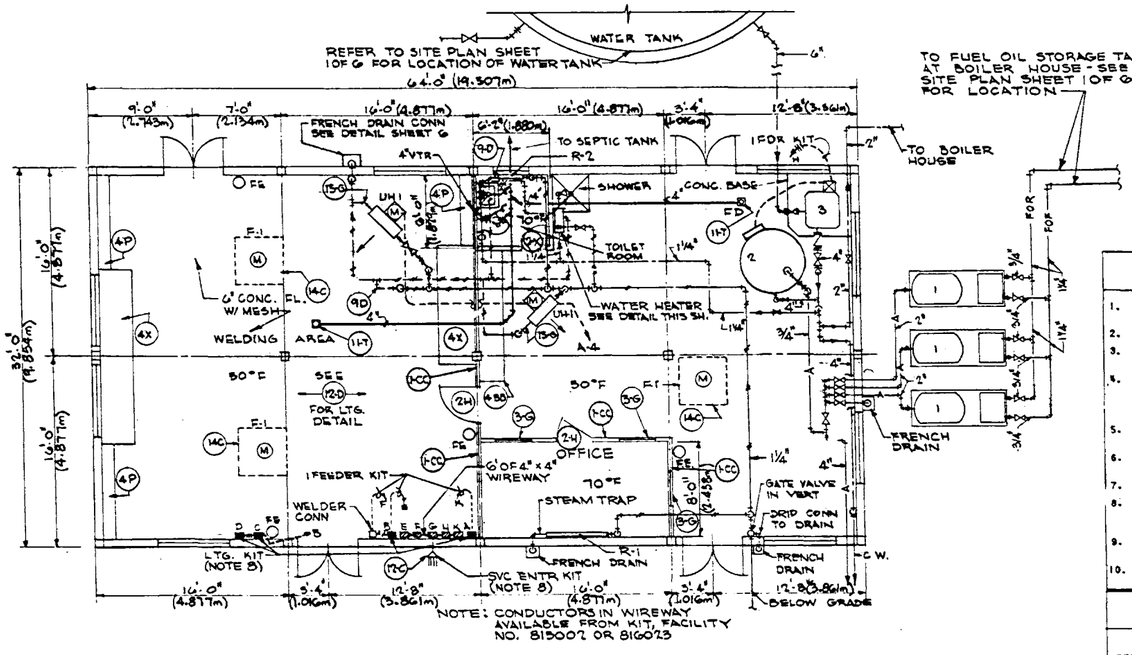
PANEL VOLTAGE MAINS	BREAKER CKT NO.	BREAKER POLES	BREAKER AMPS	GND	NON AGTIVE CKT NO'S. SPARE	NON AGTIVE CKT NO'S. SPACE ONLY	WIRE SIZE OTHER THAN NO.12	REMARKS
MDP 208Y/120V, 3 PH, 4 WIRE, 600A MAIN LUGS ONLY	1,2,3,6	3	225	SEE RISER DIAGRAM		6	SEE RISER DIAGRAM	SURFACE MOUNTED
	5	3	125					
	4	3	100					
A 208Y/120V, 3PH, 4 WIRE, 225A MAIN LUGS ONLY	1 THRU 42	1	20	1/2"				SURFACE MOUNTED
B 208Y/120V, 3PH, 4 WIRE 225 A MAIN LUGS ONLY	1 THRU 19	1	20	1/2"			3=8	SURFACE MOUNTED
	20	2	30	3/4"				
	21,28,29	1	20	1/2"	28			
	22	3	15	1/2"				
	23	3	20	1/2"				
	24 THRU 27	3	15	1/2"				
C 208Y/120V, 3PH, 4 WIRE 225 A MAIN LUGS ONLY	1	3	80	1/2"			3=8	SURFACE MOUNTED
	2,4	3	30	3/4"			3=8	
	3,5	3	20	1/2"				
	6,7	3	50	3/4"				
	8 THRU 14	3	50		8,9,10	11 THRU 14		



INSTANTANEOUS HOTWATER HEATER HOOK UP
NO SCALE



POWER RISER DIAGRAM - CLEANING BUILDING
NO SCALE



DRUM REPAIR & PUMP-COMPRESSOR BLDG.
SCALE NO. 24

FACILITY NO. 121310 - WOOD FRAME BLDG W/METAL CLADDING, INTERIOR & HEAT - TEMPERATE ZONE (-20°F)
FACILITY NO. 121311 - WOOD FRAME BLDG W/INTERIOR ONLY - TROPICAL ZONE
FACILITY NO. 121312 - WOOD FRAME BLDG W/METAL CLADDING & INTERIOR & VENTILATING - DESERT ZONE

GENERAL NOTES FOR DRUM REPAIR & PUMP - COMPRESSOR BLDG.

1. FOR FSN BILL OF MATERIALS REFER TO TM 5-303 BY FACILITY NUMBER.
2. ALL FIRE EXTINGUISHERS TO BE 20BC DRY CHEMICAL TYPE.
3. ALL INTERIOR PIPING TO BE HUNG FROM ROOF MEMBERS WITH SERVICE DROPS TO EQUIPMENT.
4. THE WATER PUMP SHALL BE ACTUATED BY A PRESSURE SWITCH LOCATED ON THE PRESSURE TANK TO START THE PUMP WHEN THE PRESSURE FALLS BELOW 165 FOOT HEAD AND STOP THE PUMP WHEN THE WATER PRESSURE REACHES 185 FOOT HEAD.
5. INSULATE INTERIOR HOT WATER GENERATORS, HOT & COLD WATER AND STEAM & CONDENSATE LINES.
6. OMIT UNIT HEATERS AND RADIATORS WITH CONNECTING PIPING IN DESERT & TROPIC ZONES.
7. REFER TO SHEET 6 OF 6 FOR ADDITIONAL DETAILS.
8. FOR TYPICAL LAYOUT OF ELECTRICAL WIRING, LIGHTING, AND SVC. ENTR KITS, AND VENTILATION SETS SHOWN IN SCHEDULE, REFER TO DWG. NO. 81-61.
9. VENTILATION SETS NOT REQUIRED FOR TROPIC ZONE, BLDG W/O CLADDING.
10. UNLESS OTHERWISE NOTED ALL INTERIOR PIPING TO BE 3/4" DIA.

SCHEDULE OF ELECTRICAL KITS DRUM REPAIR & PUMP-COMPR BLDG.

CKT DESIGNATION	QUAN.	FAC. NO.	TYPE OF KIT
A, B, C, D	4	816102	FLUOR. LTG. & CONV. OUTLETS, 20 F.C., W/FAN WIRING
E, H	2	816022	FEEDER, 70A
F	1	816023	FEEDER 100A
G	1	815002	SVC. ENTR. & EQUIP., 30KVA
K	1	816001	FEEDER, 40A

EQUIPMENT SCHEDULE FOR DRUM REPAIR & PUMP - COMPRESSOR BLDG.

ITEM NO.	QUAN.	DESCRIPTION	VOLT	H.P.
1	3	AIR COMPRESSORS-250CFM@100PSIG	---	---
2	1	PRESSURE TANK	---	---
3	1	WATER PUMP-250GPM@71PSI	208/1Ø	10
F-1	1	SET, FACILITY NO. 900001, W/3 16" FANS 1680 CFM EACH (NOTE 8)	120-1Ø	V4

UNIT HEATER SCHEDULE FOR DRUM REPAIR & PUMP - COMPRESSOR BLDG.

MARK	QUAN.	BTU/HR W/125 PSIG STEAM	VOLT	H.P.
UH-1	2	85,400 W/EAT 50°F	110	1/6

RADIATOR SCHEDULE DRUM REPAIR & PUMP-COMPRESSOR BLDG

MARK	QUAN.	LENGTH	BTU/HR	E.A.T.
R-1	1	5 FT	14,710	70°F
R-2	1	2 FT	5,880	70°F

GRAPHIC SCALES
0 5' 10' 20' 30'
0 5m 10m
NO. 17
0 2' 4' 8' 8' 10'
0 1m 2m 3m
NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: JOHNSON
TRACED BY: WITT
CHECKED BY: GREGORY
SUBMITTED BY: C. W. OELSCHLAEGER

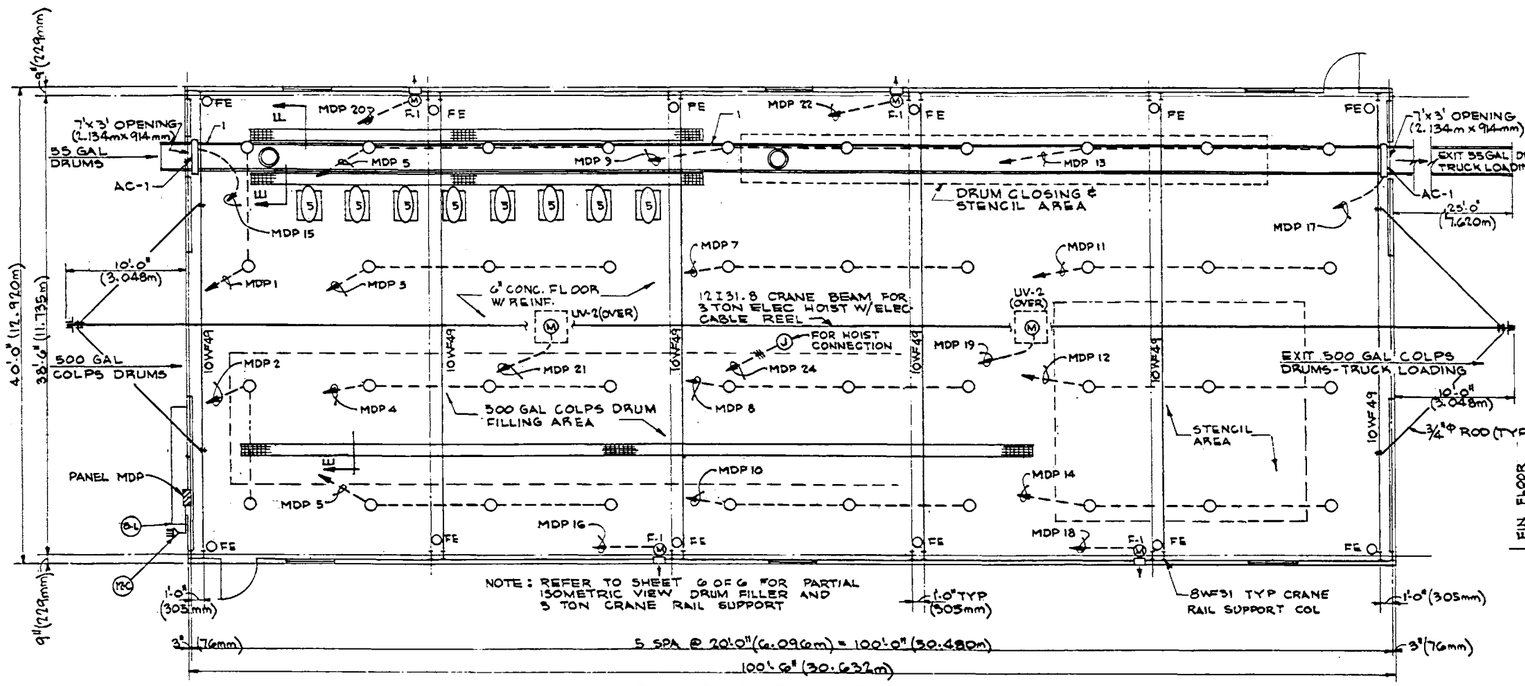
ARMY FACILITIES COMPONENTS SYSTEM

P.O.L.
FUEL DRUM CLEANING, FILLING AND STORAGE INSTALLATION
CLEANING BLDG. - ELECTRICAL PLAN
DRUM REPAIR & PUMP - COMPRESSOR BLDG. 32'X64'

APPROVED: Edwin A. Patterson, Col CE DATE: 23 May 73
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE.

APPROVED FOR PROPONENT AGENCY:
DATE 21 May 1973

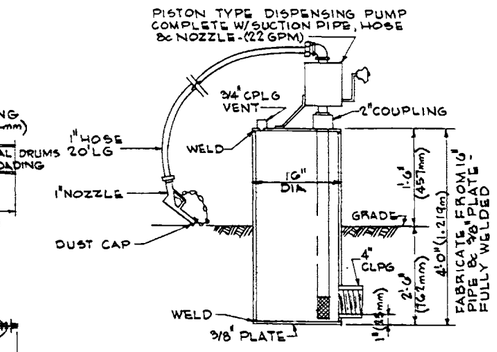
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 4 OF 8
12-13



EQUIPMENT LAYOUT PLAN AND ELECTRICAL PLAN - FILLING BUILDING

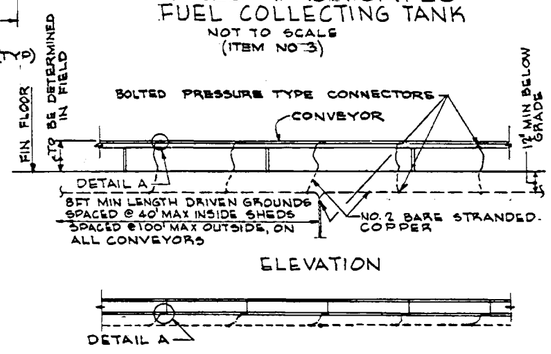
SCALE NO. 24

FACILITY NO. 121316 STEEL FRAME BLDG W/METAL CLADDING, INTERIOR & HEATING - TEMPERATE ZONE (-20°F)
FACILITY NO. 121317 STEEL FRAME BLDG W/O CLADDING W/INTERIOR ONLY - TROPICAL ZONE
FACILITY NO. 121318 STEEL FRAME BLDG W/METAL CLADDING, INTERIOR & VENTILATION - DESERT ZONE



FIELD FABRICATED FUEL COLLECTING TANK

NOT TO SCALE
(ITEM NO 3)



ELEVATION

PLAN

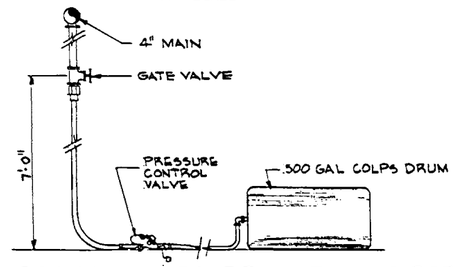
CONVEYOR SYSTEM STATIC GROUNDING

NO SCALE



DETAIL A

NO SCALE



500 GAL COLPS DRUM FILLING DETAIL

NO SCALE

SCHEDULE OF EQUIPMENT

ITEM NO.	QUAN.	DESCRIPTION	VOLT	H.P.	STEAM LBS/HR	STEAM PSIG
*1	130LF	CONVEYOR (GRAVITY)	---	---	---	---
UV-2	2	UNIT VENT, 3700 CFM, 326200 BTU/HR	---	1/2	975	---
AC-1	2	AIR CURTAIN, 2500 CFM	115-1ø	1/3	---	---
*4	7	PRESSURE CONTROL VALVE W/HOSE	---	---	---	---
*5	7	DRUM FILLER, 53 GAL.	---	---	---	---
6	1	INST. H.W. HEATER	---	---	---	---
F-1	4	16" FAN, 1680 CFM	120-1ø	1/4	---	---

*FURNISHED BY USING AGENCY

SERVICE REQUIREMENTS

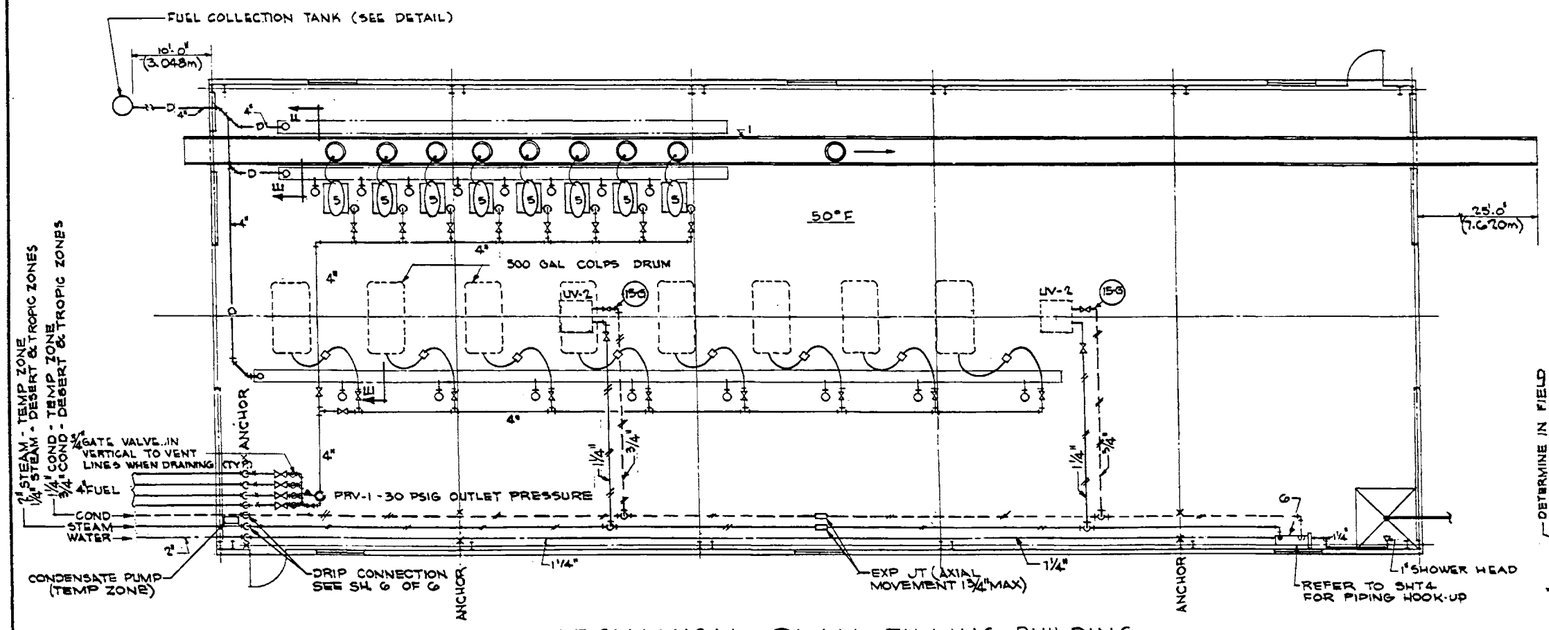
STEAM @ 125 PSI FOR HEATING	750 LBS/HR
STEAM @ 125 PSI FOR H.W. GEN.	280 LBS/HR
COLD WATER	17 GPM
ELECTRIC LOAD - LIGHTING	20 KVA
ELECTRIC LOAD - POWER	5 KVA

ELECTRICAL NOTES

1. ALL ELECTRICAL WIRING SHALL BE RUN IN RIGID GALVANIZED STEEL CONDUIT.
2. ALL CONDUCTORS SHALL BE NO. 12 EXCEPT WHERE OTHERWISE NOTED.
3. THE ENTIRE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE FOR HAZARDOUS LOCATIONS, CLASS I DIVISION 1.
4. ALL ELECTRICAL EQUIPMENT INCLUDING LTG FIXTURES, UNIT HEATERS, ETC., SHALL BE SUITABLE FOR NEC GROUP D ATMOSPHERES.
5. APPLY STATIC GROUNDING TO ALL CONVEYORS. SEE DETAIL.
6. SYMBOL (M) INDICATES MOTOR CONTROLLER AND OVERLOAD PROTECTION FURNISHED WITH EQUIPMENT. EACH EXPLOSION-PROOF MOTOR SHALL BE EQUIPPED WITH COMBINATION CONTROLLER AND DISCONNECTING MEANS.
7. INTERIOR LIGHT FIXTURES SHALL BE PENDANT TYPE WITH 500 W. MOGUL BASE LAMPS AND SHALL BE MOUNTED AS NEARLY AS PRACTICABLE AT A UNIFORM HEIGHT PROVIDING AS MUCH CLEARANCE AS THE ROOF FRAMING ALLOWS.

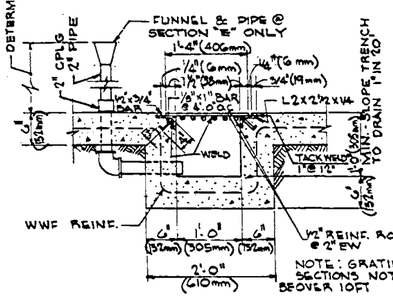
GENERAL NOTES

1. THE EMERGENCY SAFETY SHOWER HEAD IS TO BE ACTIVATED WITH A FLOOR CONNECTED CHAIN.
2. THE INSTANTANEOUS HOT WATER GENERATOR SHOULD BE COMPLETE WITH STRAINER, UNION AND 3/8" STEAM REGULATING VALVE CAPABLE OF TEMPERING 25 GPM OF 40°F WATER TO 100°F WATER TO PREVENT BODY SHOCK. SEE DETAIL SHEET 4.
3. REFER TO CLEANING BUILDING SHEET 3 OF 6 FOR ADDITIONAL GENERAL NOTES.
4. THIS FACILITY IS CAPABLE OF FILLING 250-500 GAL COLLAPSIBLE DRUMS AND 500-55 GAL DRUMS PER 20 HOUR DAY.



MECHANICAL PLAN - FILLING BUILDING

SCALE NO. 24



SECTION "E" & "F"

SCALE NO. 6

PANELBOARD SCHEDULE - FILLING BUILDING

PANEL VOLTAGE MAINS	RATING POLES	RATING AMPS	BRANCH CIRCUIT BREAKERS ACTIVE & SPARE CKT NOS.	BRANCH CIRCUIT BREAKERS SPARE CKT NO'S.	GND	WIRE SIZE OTHER THAN NO. 12 SIZE	WIRE SIZE OTHER THAN NO. 12 CKT	REMARKS
MDP	1	20	1 THRU 15, 17, 19, 21		1/2"			SURFACE MOUNTED
208Y/120V, 3PH, 4 WIRE	1	20	23, 25, THRU 30		1/2"			
225A MAINS	1	15	16, 18, 20, 22		1/2"			
	3	20	24		#10		24	

GRAPHIC SCALES
0 1' 2' 0 300mm 600mm NO. 6
0 2' 4' 6' 8' 10' 0 1m 2m 3m NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

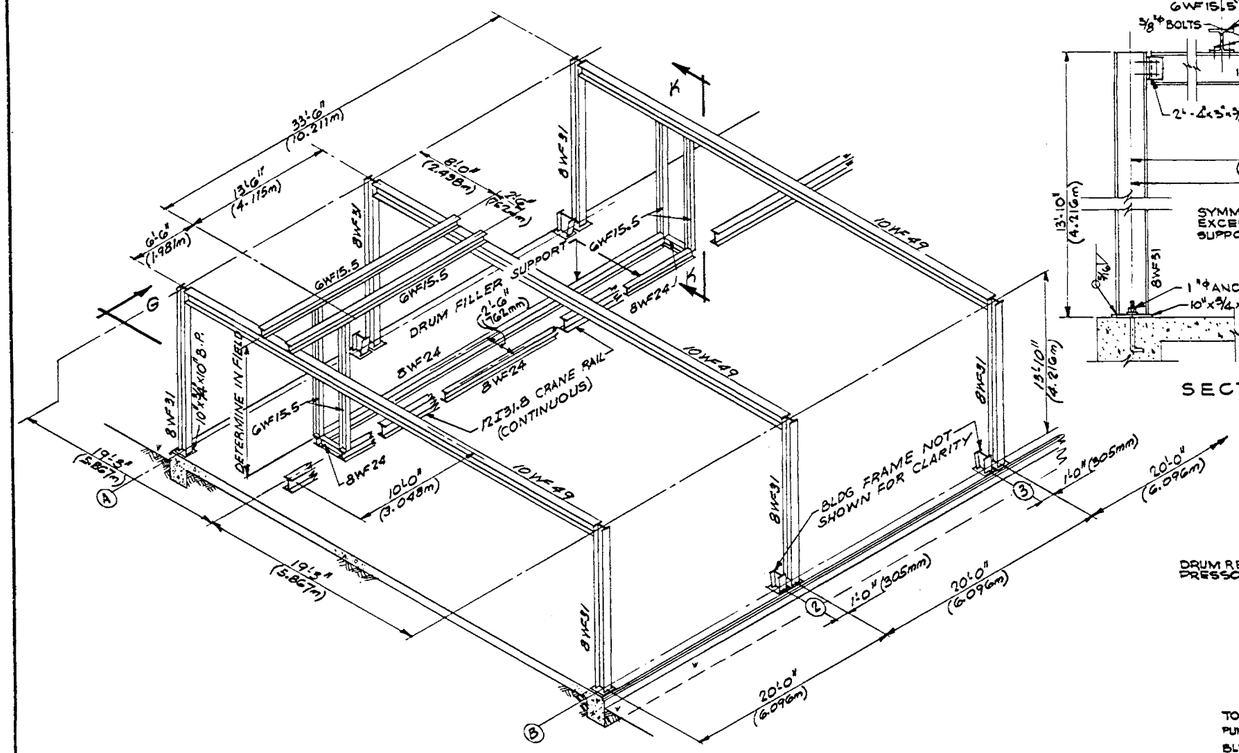
DEPARTMENT OF THE ARMY
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DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: JOHNSON
TRACED BY: WITT
CHECKED BY: GREGORY
SUBMITTED BY: C.W. DEICHMANN, CHIEF, APOS OFFICE, MILITARY ENGINEERING, OCE.

ARMY FACILITIES COMPONENTS SYSTEM
P.O.L.
FUEL DRUM CLEANING, FILLING AND STORAGE INSTALLATION
FILLING BUILDING 40'X100'

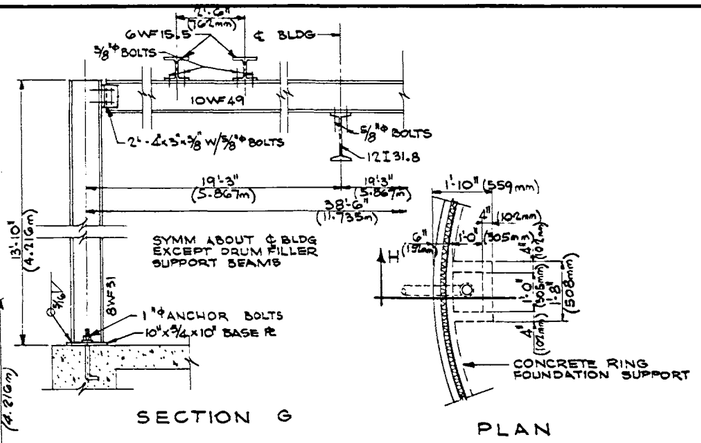
APPROVED: Edwin D. Patterson, Colle DATE: 23 May 73

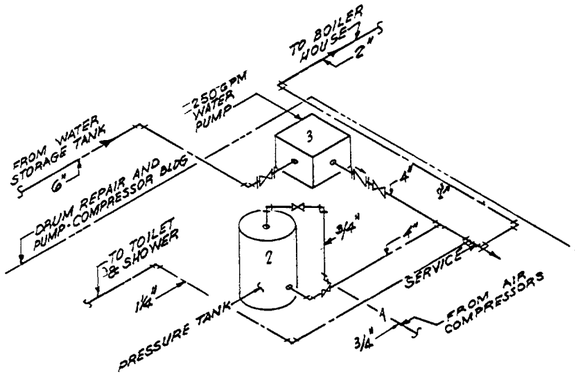
APPROVED FOR PROPONENT AGENCY: DATE 21 May 1973
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-13
SHEET 5 OF 8



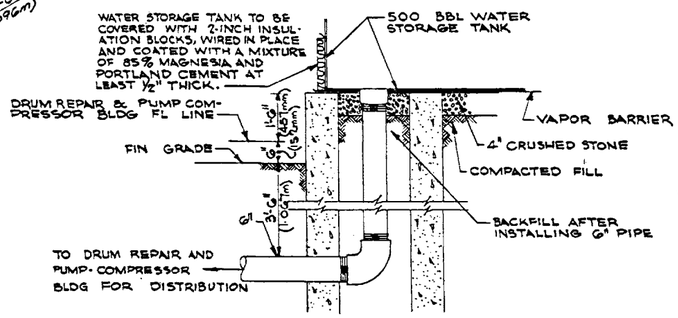
PARTIAL ISOMETRIC OF DRUM FILLER & CRANE RAIL SUPPORT
FILLING BUILDING
NO SCALE

NOTE: REFER TO EQUIPMENT LAYOUT PLAN FOR DIMENSIONS & ITEMS NOT SHOWN

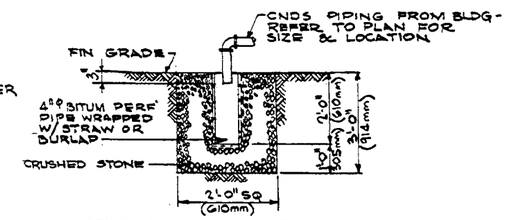




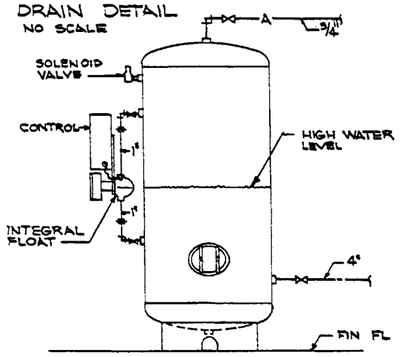
ISOMETRIC OF WATER PUMP & PRESSURE TANK
NO SCALE



SECTION H
OUTLET OF WATER STORAGE TANK
NO SCALE

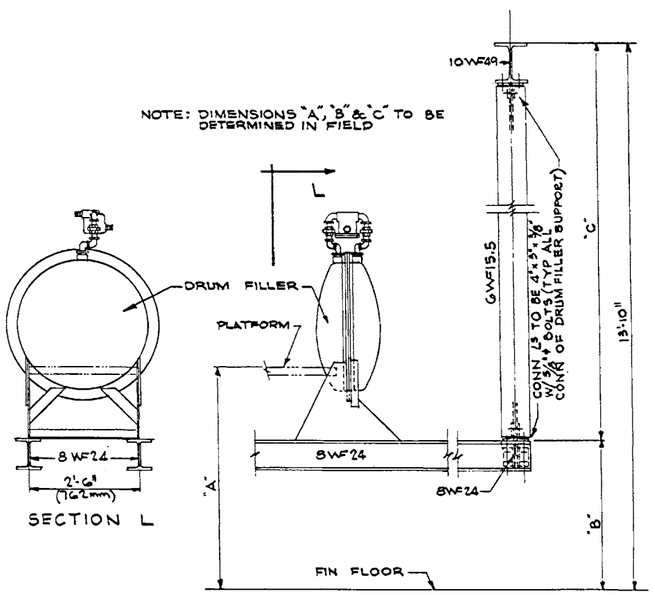


FRENCH DRAIN DETAIL
NO SCALE



PRESSURE TANK DETAIL
NO SCALE

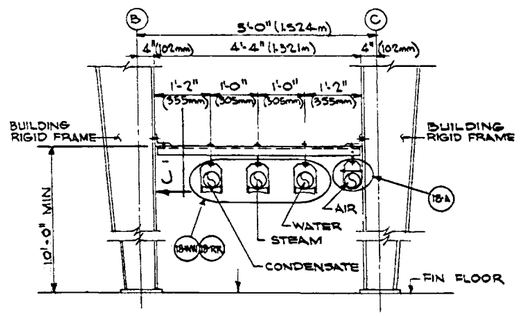
NOTE: THE PRESSURE TANK SHALL HAVE A CAPACITY OF 300 GAL AND MEET ASTM SPECS FOR STORAGE OF AIR AT 125 PSI. THE PRESSURE TANK CONTROLS SHALL OPERATE WATER PUMP AND SOLENOID VALVES TO ACCURATELY AND AUTOMATICALLY MAINTAIN THE CORRECT AIR/WATER RATIO IN TANK AT ALL TIMES. PUMP WILL THEN BE STOPPED BY INTEGRAL FLOAT SWITCH. CONTROL WILL BALANCE AIR PRESSURE BY OPERATING SOLENOID VALVES EITHER VENTING OR ADDING AIR.



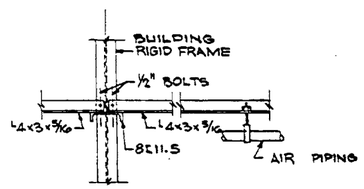
SECTION L

ELEVATION K-K

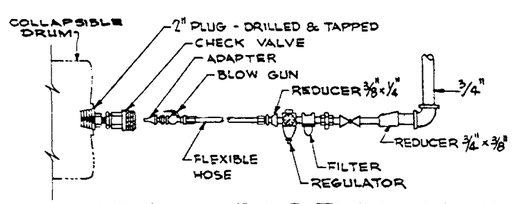
DRUM FILLER SUPPORT DETAIL
NO SCALE



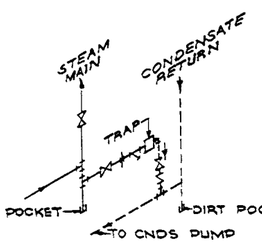
PIPE SUPPORT DETAIL
CLEANING BUILDING
NO SCALE



SECTION J



DETAIL OF AIR TESTING HOSE
(FURNISHED BY USING AGENCY)
CLEANING BUILDING
NO SCALE



ISOMETRIC OF TYPICAL STEAM/CONDENSATE DRIP CONNECTION AT BUILDING ENTRY
NO SCALE

GRAPHIC SCALES
NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: GREGORY
SUBMITTED BY: C.W. DELCHMANN

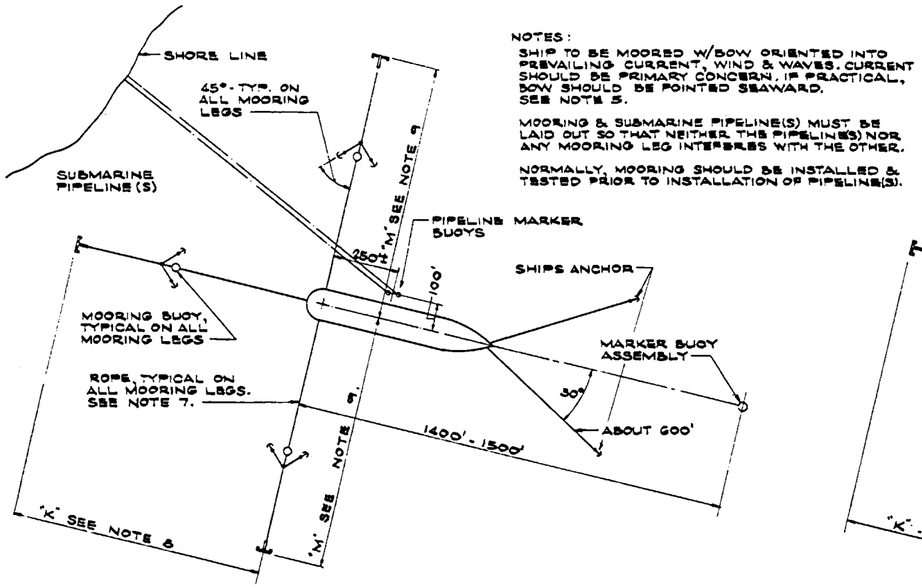
ARMY FACILITIES COMPONENTS SYSTEM

P.O.L.
FUEL DRUM CLEANING, FILLING AND STORAGE INSTALLATION DETAILS

APPROVED: Edwin A. Patterson, Col CE
DATE: 23 May 73
CHIEF, APCR OFFICE, MILITARY ENGINEERING, OCE

APPROVED FOR ADOPTION AGENCY: USAMC
DATE 24 May 73

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 8 OF 8
12-13

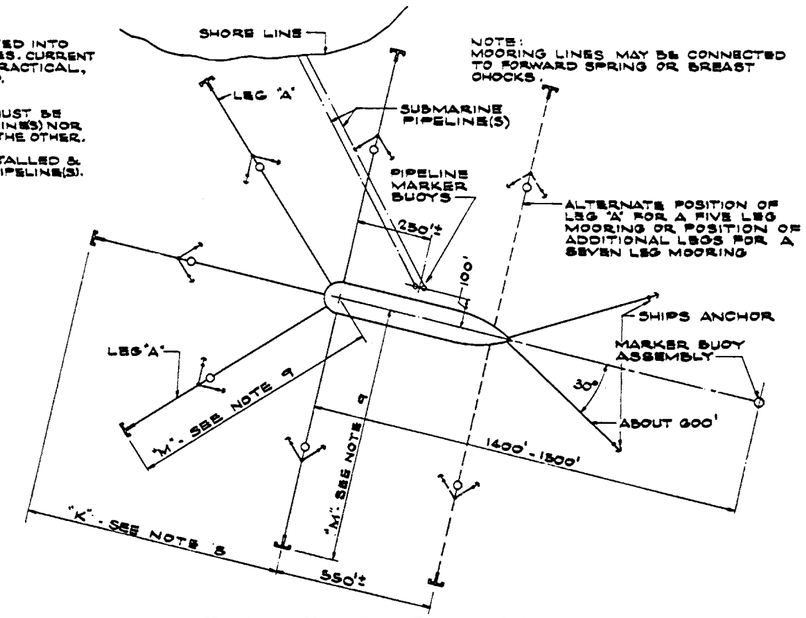


NOTES:
SHIP TO BE MOORED W/BOW ORIENTED INTO PREVAILING CURRENT, WIND & WAVES. CURRENT SHOULD BE PRIMARY CONCERN, IF PRACTICAL, BOW SHOULD BE POINTED SEAWARD. SEE NOTE 5.

MOORING & SUBMARINE PIPELINE(S) MUST BE LAID OUT SO THAT NEITHER THE PIPELINE(S) NOR ANY MOORING LEG INTERFERES WITH THE OTHER.

NORMALLY, MOORING SHOULD BE INSTALLED & TESTED PRIOR TO INSTALLATION OF PIPELINE(S).

PLAN OF SHIPS MOORING
THREE LEG TYPE
SEE NOTE 10



NOTE:
MOORING LINES MAY BE CONNECTED TO FORWARD SPRING OR BREAST CHOCKS.

PLAN OF SHIPS MOORING
FIVE LEG OR SEVEN LEG TYPE
SEE NOTE 10

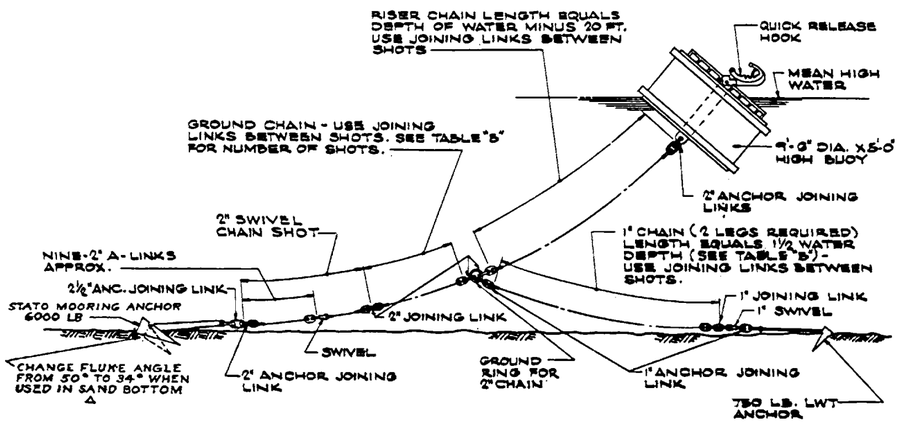
TABLE "A"
LIMITING CONDITIONS DURING MOORING

TANKER SIZE	SEE NOTE	CURRENT ONLY AHEAD	CURRENT ONLY ABEAM	COMBINED FORCES AHEAD	SEE NOTE	COMBINED FORCES ABEAM	SEE NOTE
T-2 (16,500 DWT)	1	6 KNOTS	1 KNOT	4 KNOT CURRENT 40 KNOT WIND 6 FT. WAVES	2	1 KNOT CURRENT 30 KNOT WIND 5 FT. WAVES	3
T-5 (22,500 DWT)	4	6 KNOTS	1 KNOT	5 KNOT CURRENT 40 KNOT WIND 6 FT. WAVES	–	1 KNOT CURRENT 30 KNOT WIND 5 FT. WAVES	3
40,000 DWT	5	6 KNOTS	1 KNOT	3 KNOT CURRENT 40 KNOT WIND 6 FT. WAVES	–	1 KNOT CURRENT 20 KNOT WIND 4 FT. WAVES	3
47,000 DWT	5	6 KNOTS	1 KNOT	3 KNOT CURRENT 40 KNOT WIND 6 FT. WAVES	–	½ KNOT CURRENT 20 KNOT WIND 3 FT. WAVES	3

NOTE 1 - IN THREE LEG MOORING.
NOTE 2 - DIRECTION OF ALL FORCES IS PARALLEL TO LONG AXIS OF THE TANKER.
NOTE 3 - WIND & WAVES BROADSIDE TO TANKER. CURRENT 45° OFF OF BOW. IF CURRENT IS BROADSIDE, ALL VALUES WILL BE LOWER BY APPROXIMATELY ½.
NOTE 4 - IN FIVE LEG MOORING.
NOTE 5 - IN SEVEN LEG MOORING.

GENERAL NOTES

1. 3 LEG TYPE MOORING IS USED FOR TANKERS UP TO T-2 SIZE IN SHELTERED WATERS. SEE TABLE "A".
2. 5 LEG TYPE MOORING (W/BUOY LEGS "A" AT STERN QUARTERS) IS USED FOR T-2 IN OPEN WATERS WHEN WIND & CURRENT ARE PREVAILING FROM SAME QUARTER, AND FOR TANKERS UP TO T-5 SIZE IN SHELTERED WATERS. SEE TABLE "A".
3. 5 LEG TYPE MOORING (W/FORWARD BREAST LEGS) IS USED FOR T-2 WHEN WIND & CURRENT ARE PREVAILING FROM DIFFERENT QUARTERS, AND FOR TANKERS UP TO T-5 SIZE IN SHELTERED WATERS. SEE TABLE "A".
4. 7 LEG TYPE MOORING IS USED FOR TANKERS FROM T-5 TO 47,000 DWT SIZE IN SHELTERED WATERS. SEE TABLE "A".
5. MOORING SITE SHOULD BE AT LEAST ½ MILE FROM MINIMUM WATER DEPTH FOR GREATEST DRAFT TANKER EXPECTED IN THE MOORING & FROM OTHER MARKED UNDERWATER OBSTACLES SUCH AS WRECKS OR PIERS.
6. MOORING BUOYS SHALL BE LIGHTED & MARKED IN ACCORDANCE W/APPLICABLE MILITARY & CIVIL REGULATIONS.
7. NYLON ROPE IS FURNISHED TO AUGMENT SHIPS MOORING LINES.
8. K = 340' + D + G, WHERE:
   K = FINAL POSITION OF ANCHOR AFTER SETTING (ALLOW 25'-50' FOR SETTING)
   D = DEPTH OF WATER
   G = LENGTH OF GROUND CHAIN AT DEPTH "D" (SEE TABLE "B")
9. M = 400' + D + G, WHERE:
   M = FINAL POSITION OF ANCHOR AFTER SETTING (ALLOW 25'-50' FOR SETTING)
   D = DEPTH OF WATER
   G = LENGTH OF GROUND CHAIN AT DEPTH "D" (SEE TABLE "B")
10. 3 LEG TYPE MOORING REQUIRES THREE COMPLETE LEGS. 5 LEG TYPE MOORING REQUIRES FIVE COMPLETE LEGS. 7 LEG TYPE MOORING REQUIRES SEVEN COMPLETE LEGS. ALL TYPES REQUIRE ONE MARKER BUOY.
11. SINKER WILL BE MADE-UP AT LAUNCHING SITE USING SAIL, CEMENT AND LOCAL AGGREGATE. CONCRETE MIX WILL BE 1:2:4, WITH A MINIMUM OF 7 SACKS OF CEMENT/CU.YD. OF CONCRETE. SINKER WILL HAVE AN APPROX. CUBAGE OF 36 CU. FT. & WILL WEIGH APPROX. 8,200 LBS.
12. ONE SHOT OF CHAIN EQUALS 90 FEET.



ELEVATION - FUEL LOADING TYPE MOORING

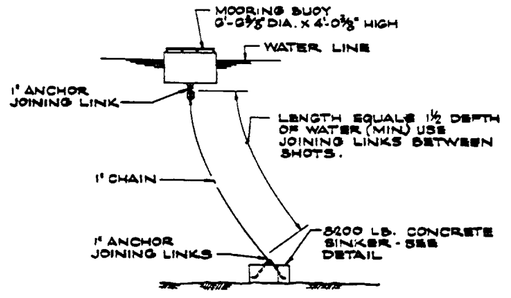
TABLE "B"

DEPTH OF WATER TO FIRM BOTTOM (FEET)	1" CHAIN (SHOTS)	2" CHAIN (SHOTS)
0 – 70	1	6
70 – 80	1½	7
80 – 90	1½	7½
90 – 100	2	8
100 – 120	2	8½
120 – 140	2½	9

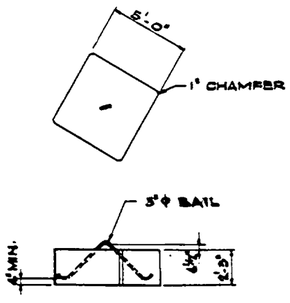
SCHEDULE OF FACILITIES

FACIL. NO.	DESCRIPTION	WATER DEPTH
122104	3 LEG	60 FT.
122105	3 LEG	90 FT.
122106	3 LEG	120 FT.
122107	5 LEG	60 FT.
122108	5 LEG	90 FT.
122109	5 LEG	120 FT.
122110	7 LEG	60 FT.
122111	7 LEG	90 FT.
122112	7 LEG	120 FT.

NOTES:
1. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.



DETAIL - MARKER BUOY ASSEMBLY



DETAIL OF SINKER
SEE NOTE 11

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	CHANGED ANCHOR	JAN 71	RAR

REVISIONS

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: NELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN

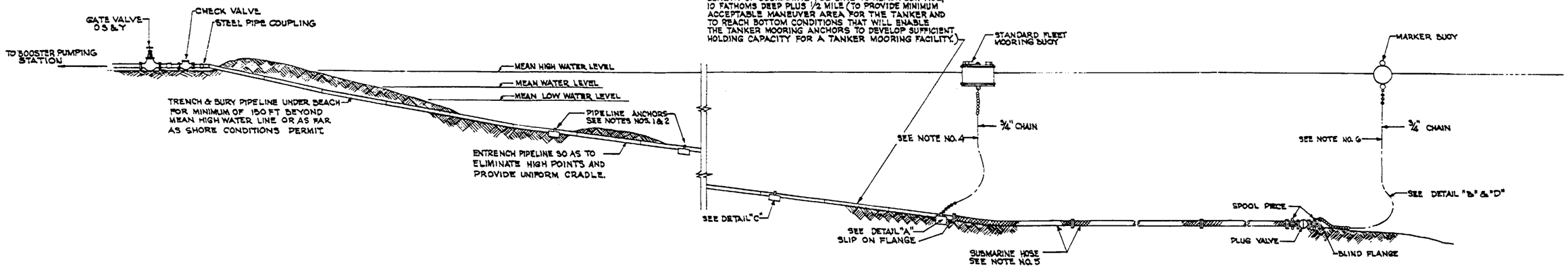
THEATER OF OPERATIONS

P.O.L.
SHIP MOORING-3, 5 & 7 LEGS
60, 90 & 120FT. WATER DEPTHS

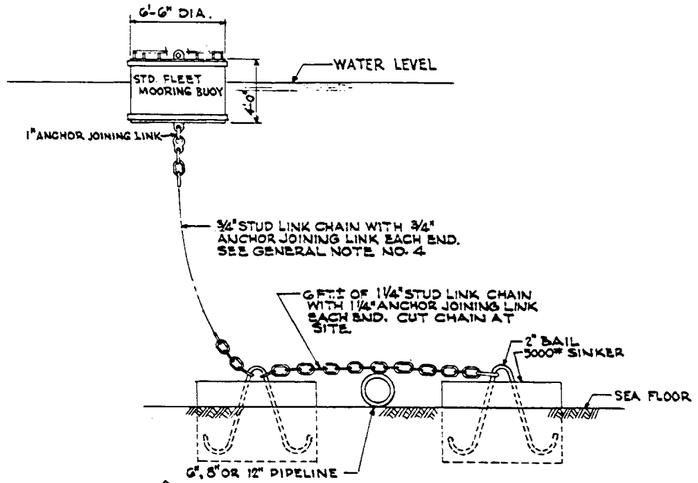
APPROVED: [signature] DATE: 19 MAR 1970
CHIEF, DESIGNERS' BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR RESPONDENT AGENCY: [signature]
DATE 13 SEP 69

SCALE: NONE SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1 12-21

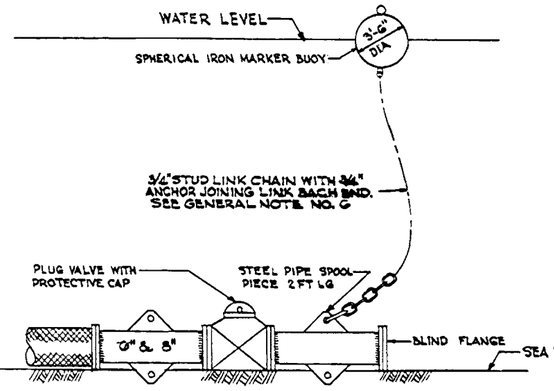
NOTE:
A FIELD SOUNDING CHECK SHOULD BE MADE BEFORE ORDERING PIPING MATERIALS TO INSURE ADEQUATE LENGTH OF SUBMARINE POL LINE TO REACH LOW TIDE, 10 FATHOMS DEEP PLUS 1/2 MILE (TO PROVIDE MINIMUM ACCEPTABLE MANEUVER AREA FOR THE TANKER AND TO REACH BOTTOM CONDITIONS THAT WILL ENABLE THE TANKER MOORING ANCHORS TO DEVELOP SUFFICIENT HOLDING CAPACITY FOR A TANKER MOORING FACILITY.)



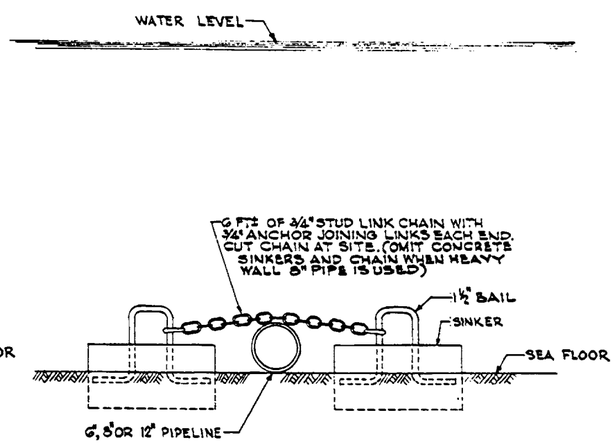
SUBMERGED SEA LOADING LINE
NO SCALE



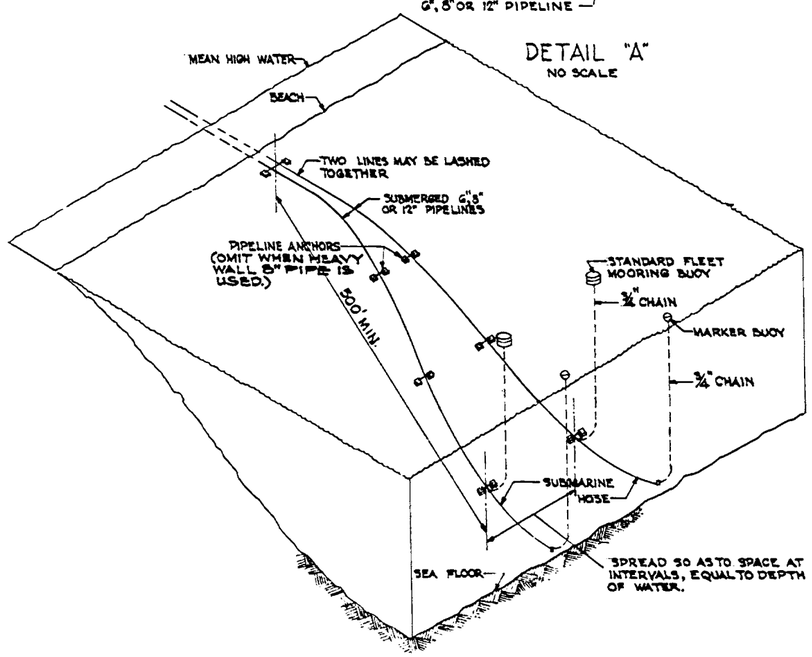
DETAIL "A"
NO SCALE



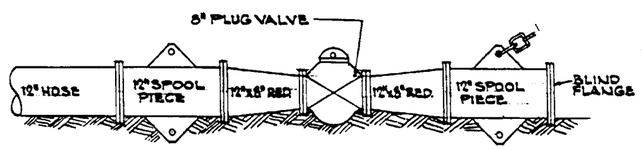
DETAIL "B"
NO SCALE



DETAIL "C"
NO SCALE



ARRANGEMENT OF SUBMERGED LINES
NO SCALE



DETAIL "D"
NO SCALE

MARKER & MOORING BUOY CHAIN		
M. H.W. DEPTH	CHAIN LENGTH SHOT (90')	HALF SHOT (45')
60'	1	—
90'	1	1
120'	1	2

△ PIPELINE WELDING NOTE

WELDED SUBMARINE PIPELINES SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-343.

GENERAL NOTES

1. SOFT BOTTOM CONDITIONS:- DO NOT PROVIDE NEGATIVE BUOYANCE IN EXCESS OF 140#.
2. HARD BOTTOM & STRONG CURRENT CONDITIONS:- PROVIDE ANCHORAGE. INCREASE NEGATIVE BUOYANCE BY USE OF ANCHORS.
3. IF MORE THAN ONE SUBMERGED PIPELINE IS LAID AT THE SAME SITE THE LINES MAY BE ANCHORED TOGETHER TO A POINT APPROX. 500' FROM THE SEA END OF THE PIPE. SPACING OF LINES SHOULD BE EQUAL TO WATER DEPTH TO REDUCE FOULING TENDENCY.
4. LENGTH OF CHAIN FOR FLEET MOORING BUOY WILL BE EQUAL TO DEPTH OF WATER AT MEAN HIGH WATER PLUS TWICE THE HIGHEST SWELL.
5. HOSE LINE SHALL BE ASSEMBLED FROM 25 FT SECTIONS AND LENGTH WILL AT LEAST 2.5 TIMES WATER DEPTH AT MEAN HIGH WATER.
6. LENGTH OF CHAIN FOR MARKER BUOY WILL BE EQUAL TO DEPTH OF WATER AT MEAN HIGH WATER PLUS TWICE THE HIGHEST SWELL.
7. ANCHOR BLOCKS WILL BE MADE UP AT LAUNCHING SITE USING STIRRUPS AND CEMENT. CONCRETE MIX WILL BE 1:2:4 WITH A MINIMUM OF 7 SACKS OF CEMENT PER CU YD OF CONCRETE.
8. DIMENSIONS OF THE MOORING BUOY ANCHOR BLOCK WILL BE 4'-0" LONG X 4'-0" WIDE X 2'-6" HIGH. THIS BLOCK WILL HAVE A CUBAGE OF ±40 CU. FT. AND WILL WEIGH APPROXIMATELY 9000 LBS.
9. DIMENSIONS OF THE 6", 8" PIPELINE ANCHOR BLOCKS WILL BE 5'-0" LONG X 2'-0" WIDE X 1'-0" HIGH. EACH BLOCK WILL HAVE A CUBAGE OF 4 CU. FT. AND WILL WEIGH APPROXIMATELY 800 LBS.
10. DIMENSIONS OF THE 12" PIPELINE ANCHOR BLOCKS WILL BE 5'-6" LONG X 5'-6" WIDE X 1'-6" HIGH. THIS BLOCK WILL HAVE A CUBAGE OF 12 CU. FT. AND WILL WEIGH APPROX. 1800 LBS.
11. REDUCERS WILL BE PROVIDED AS EXTRA ITEMS FOR MAKING CONNECTIONS WITH TANKERS NOT EQUIPPED WITH PROPER SIZE CONNECTIONS.

NOTE:
1. FOR FSN BILL OF MATERIALS - REFER TO TM 5-303 BY FACILITY NUMBER.

FACILITY NUMBERS		
NO.	DESCRIPTION PIPELINE	DESCRIPTION DEPTH
122201	6 IN	60 FT
122202	6 IN	90 FT
122203	6 IN	120 FT
122206	8 IN	60 FT
122207	8 IN	90 FT
122208	8 IN	120 FT
122211	12 IN	60 FT
122212	12 IN	90 FT
122213	12 IN	120 FT

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '79	CWD

REVISIONS

GRAPHIC SCALES
NO SCALE

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

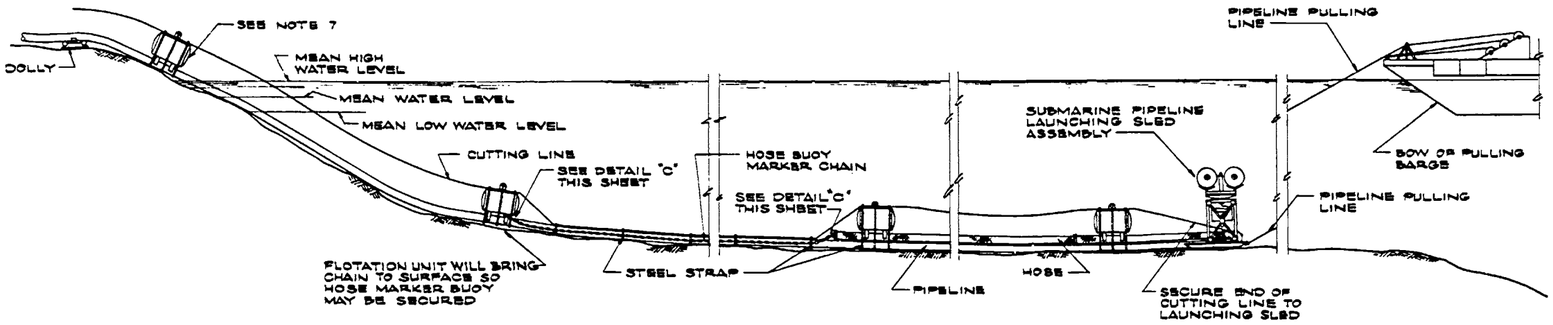
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ILYUS
TRACED BY:
CHECKED BY: EDWARDS
SUBMITTED BY: C.W DEICHMANN
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1980
APPROVED FOR PROPONENT AGENCY: [signature] DATE: 13 Sept 80

THEATER OF OPERATIONS

P.O.L.
SUBMARINE PIPELINE
6, 8 & 12 INCH LINES
60, 90, 120 FT. WATER DEPTH

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-22
SHEET 1 OF 1



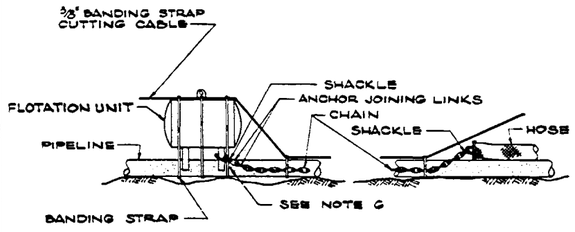
SUBMARINE SEA LOADING PIPELINE
LAUNCHING PHASE
NO SCALE

ESTIMATED FLOTATION UNIT REQUIREMENTS & SPACING*		
PIPE SIZE	NO. REQUIRED PER MILE OF PIPE	APPROX. SPACING
12 IN.	54	99'-6"
16 IN.	87	61'-3"
20 IN.	166	32'-9"

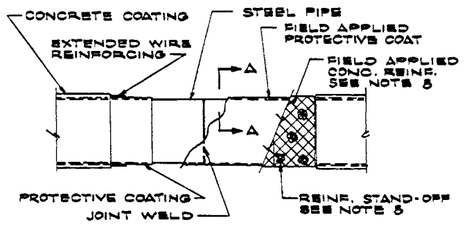
* NOTE:
AN ADDITIONAL 4 FLOTATION UNITS ARE REQUIRED FOR THE SUBMARINE PIPELINE ANCHOR RACKS.

SCHEDULE OF FACILITIES		
PIPELINE SIZE	WATER DEPTH	FACILITY NO.
8 INCH	60 FT	122514
8 INCH	90 FT	122515
8 INCH	120 FT	122516
12 INCH	90 FT	122517
12 INCH	90 FT	122518
12 INCH	120 FT	122519
16 INCH	60 FT	122520
16 INCH	90 FT	122521
16 INCH	120 FT	122522
20 INCH	60 FT	122523
20 INCH	90 FT	122524
20 INCH	120 FT	122525

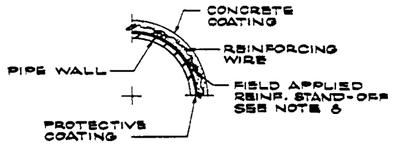
NOTE:
1. FOR FSN BILL OF MATERIALS, REFER TO TMS-303 BY FACILITY NUMBER.



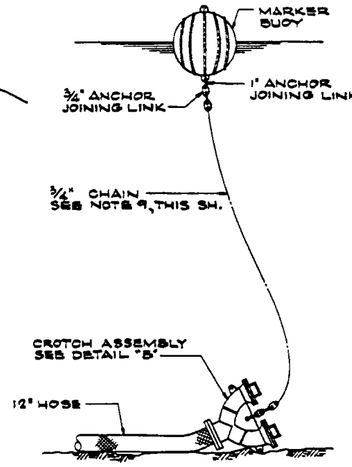
DETAIL "C"
TEMPORARY TIE-DOWN FOR HOSE MARKER BUOY CHAIN



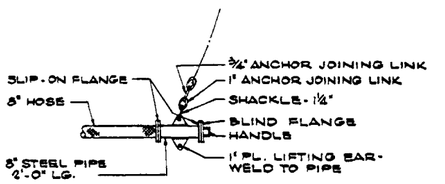
DETAIL "D"
PROTECTIVE COATING AT PIPE JOINT FOR 12, 16 & 20 IN. PIPE



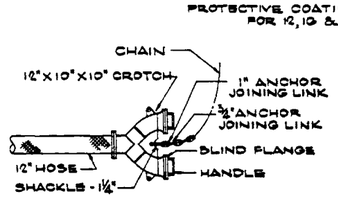
SECTION A-A



DETAIL "E"
HOSE MARKER BUOY
NO SCALE

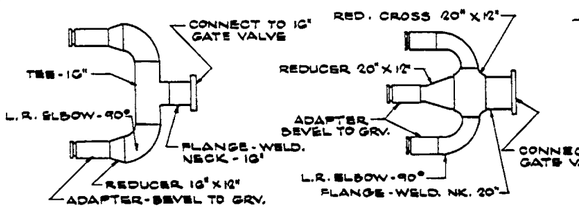


8" PIPELINE



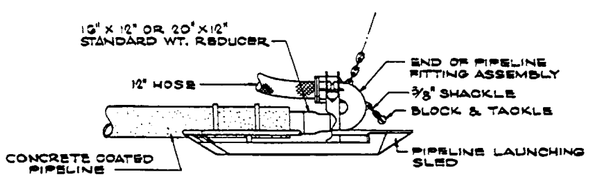
12, 16 & 20 INCH PIPELINES

DETAIL "B" - HOSE TERMINAL ASSEMBLY

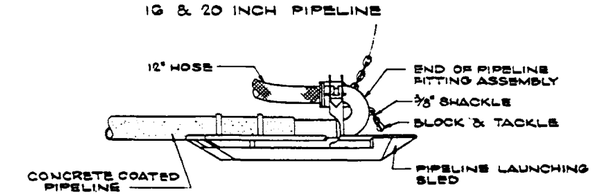


16" PIPELINE 20" PIPELINE

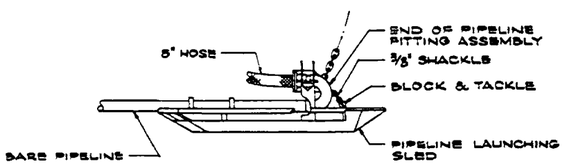
DETAIL "F"
SHORE TERMINAL ASSEMBLY
NO SCALE



16 & 20 INCH PIPELINE

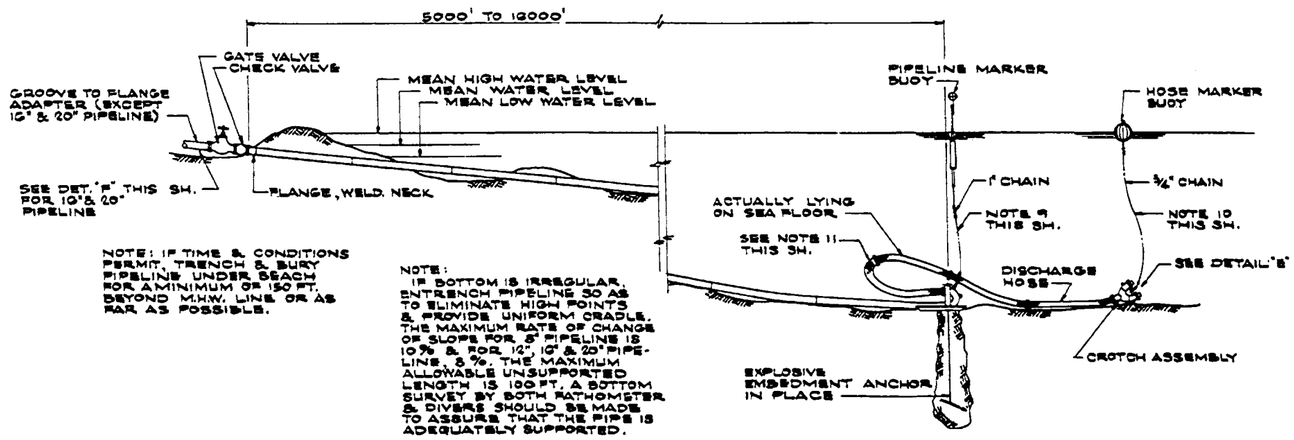


12 INCH PIPELINE



8 INCH PIPELINE

DETAIL "A"
PIPELINE TERMINAL ASSEMBLY



NOTE: IF TIME & CONDITIONS PERMIT, TRENCH & BURY PIPELINE UNDER BEACH FOR A MINIMUM OF 150 FT. BEYOND M.H.W. LINE OR AS FAR AS POSSIBLE.

NOTE:
IF BOTTOM IS IRREGULAR, ENTRENCH PIPELINE SO AS TO ELIMINATE HIGH POINTS & PROVIDE UNIFORM CRADLE. THE MAXIMUM RATE OF CHANGE OF SLOPE FOR 8" PIPELINE IS 10% & FOR 12", 16" & 20" PIPELINES, 5%. THE MAXIMUM ALLOWABLE UNSUPPORTED LENGTH IS 100 FT. A BOTTOM SURVEY BY BOTH RATHOMSTER & DIVERS SHOULD BE MADE TO ASSURE THAT THE PIPE IS ADEQUATELY SUPPORTED.

SUBMARINE SEA LOADING PIPELINE
NO SCALE

NOTES
1. THE 8" PIPELINE WILL BE LAUNCHED BARE. THE 12", 16" & 20" PIPELINE WILL BE LAUNCHED COATED WITH A CORROSION RESISTANT COATING & CONCRETE AFTER THE PIPELINE TERMINAL ASSEMBLY IS WELDED TO COATED PIPELINE. THE BARE METAL SHALL BE COAL TAR ENAMEL COATED.
2. A COMPLETE INVESTIGATION OF THE ENTIRE PIPELINE SYSTEM WILL BE MADE PRIOR TO FIRING THE ANCHORS, TO INSURE NO DAMAGE HAS OCCURED DURING LAUNCHING & THAT ALL PARTS ARE ALIGNED PROPERLY.
3. AFTER THE ANCHORS ARE FIRED, EACH ANCHOR SHALL BE TESTED TO 25000 LBS. THE RISER OF EACH SHALL THEN BE ATTACHED TO THE CABLE GRIPS ON THE PIPELINE TERMINAL ASSEMBLY.
4. THE STRAPS SECURING THE FLOTATION UNITS & HOSE MARKER BUOY CHAINS ARE THEN CUT BY PULLING THE CUTTING LINE STARTING AT THE SHORE. THE MARKER BUOY WILL BE SECURED WHEN THE CHAIN IS BROUGHT TO THE SURFACE.
5. WHEN HOSE MARKER BUOY IS ATTACHED, THE CUTTING LINE WILL BE RELEASED.
6. THE HOSE MARKER BUOY CHAIN IS ATTACHED TO THE FLOTATION UNIT SADDLE BY LOOPING 2 FEET OF ½" WIRE ROPE AROUND THE SADDLE, USING 3 - ½" WIRE ROPE CLIPS & CONNECTING TO THE 1½" SHACKLE.
7. FLOTATION UNITS MUST BE ATTACHED TO WEIGHT COATED PIPELINE TO PROVIDE A NEGATIVE BUOYANCY OF APPROX. 5 LBS/FT. DURING INSTALLATION.
8. REINFORCING STAND-OFF'S SHALL BE MADE FROM A PIECE OF REINFORCING WIRE (CHICKEN WIRE) APPROX. 20 TO 30 SQ. IN. BALLED-UP WITH THICKNESS OF HALF THE CONCRETE THICKNESS. SMALL PIECES OF THE WIRE SHALL BE USED TO TIE THE "BUNDLES" TO THE REINFORCING WIRE.
9. CHAIN LENGTH FOR PIPELINE MARKER BUOY IS SHOWN IN TABLE "A" ON DWG. NO. 12-23, SHEET 2.
10. CHAIN LENGTH FOR HOSE LINE MARKER BUOY IS EQUAL TO DEPTH OF WATER (MHW) PLUS TWICE THE HIGHEST SWELL.
11. HOSE LINE IS ASSEMBLED FROM 45 FT. SECTIONS & HAS A MINIMUM LENGTH EQUAL TO 2½ TIMES THE WATER DEPTH PLUS 50 FT. FOR USE AS THE TURN-AROUND SECTION. ADDITIONAL HOSE MAY BE REQUIRED DUE TO LOCAL CONDITIONS.
12. WHEN 12", 16" & 20" PIPELINES ARE USED, SECTIONS OF 10" HOSE ARE PROVIDED TO MAKE CONNECTION BETWEEN THE 12"X10"X10" CROTCH & THE TANKER MANIFOLD.
13. THE PIPELINE LENGTH WILL DEPEND ON THE LOCATION OF THE TANKER MOORING.
14. REDUCERS ARE PROVIDED AS EXTRA ITEMS FOR MAKING CONNECTIONS W/TANKERS EQUIPPED W/ FLANGES DIFFERENT FROM DISCHARGE HOSE.
15. WRENCHES FOR ALL SIZES OF NUTS & BOLTS MUST BE AVAILABLE ON THE TERMINAL TENDER.

△ PIPELINE WELDING NOTE

WELDED SUBMARINE PIPELINES SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-303.

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS
GRAPHIC SCALES
NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

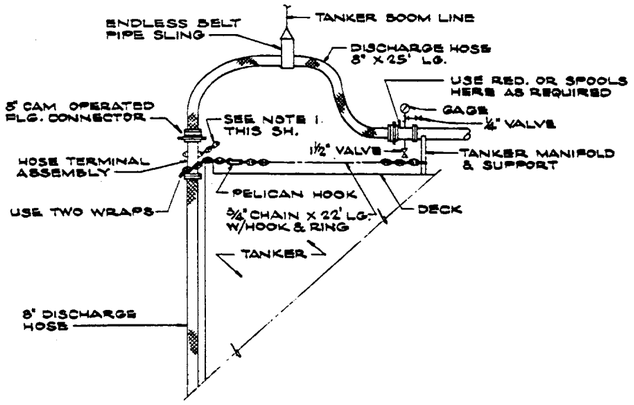
DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS

P.O.L.
SUBMARINE PIPELINE
8, 12, 16 & 20 INCH LINES FOR 60, 90 & 120 FT. WATER DEPTHS

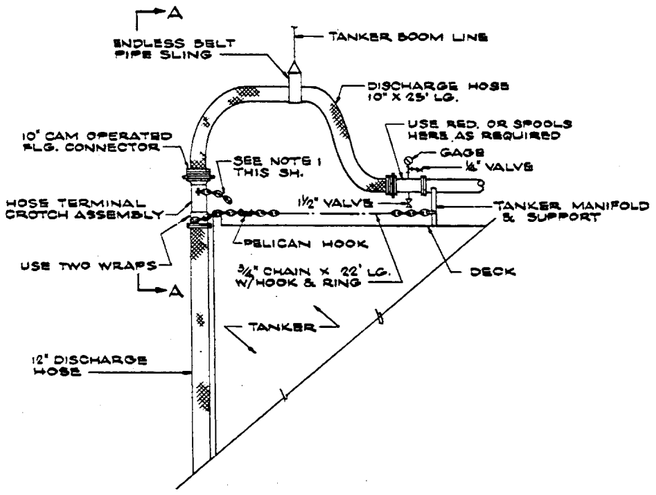
APPROVED: DATE:
CHIEF, DESIGN BRANCH
APPROVED: DATE: 19
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-23
SHEET 1 OF 2



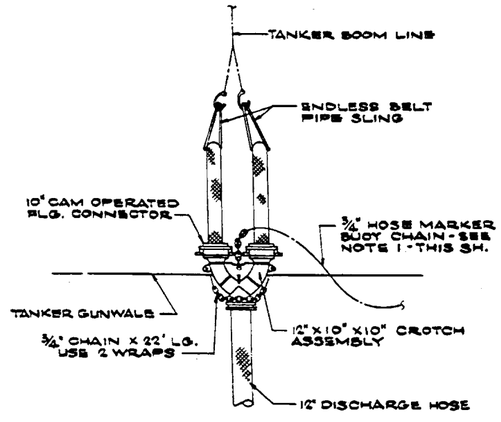
DETAIL - TANKER HOSE HOOK-UP & SECURING - 8" PIPELINES

NO SCALE



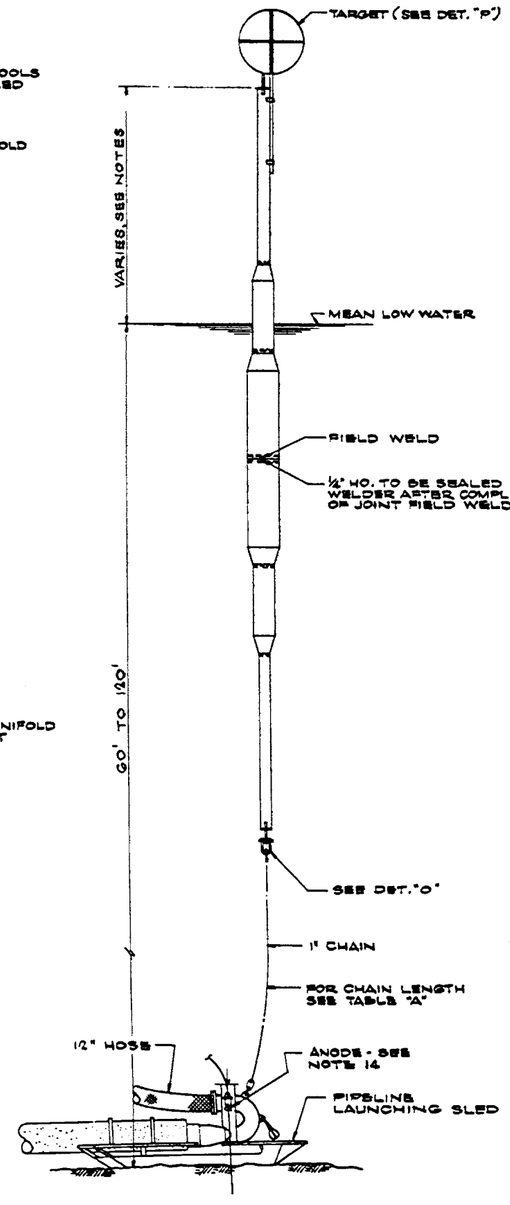
DETAIL - TANKER HOSE HOOK-UP & SECURING - FOR 12", 16" & 20" PIPELINES

NO SCALE



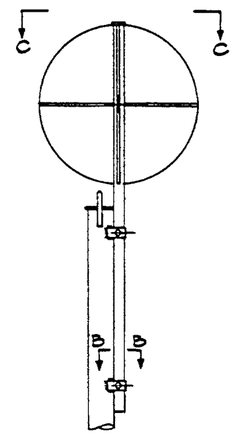
ELEVATION AT A-A

NO SCALE



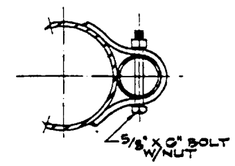
DETAIL - PIPELINE MARKER BUOY

NO SCALE



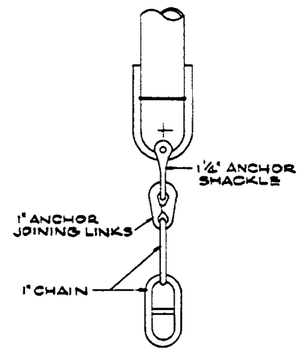
DETAIL "P" - TARGET

NO SCALE



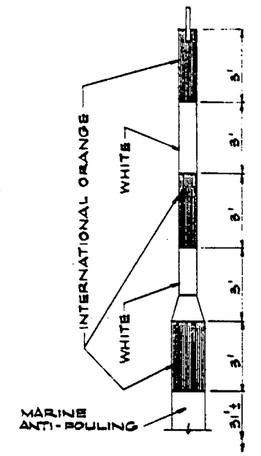
SECTION B-B

NO SCALE

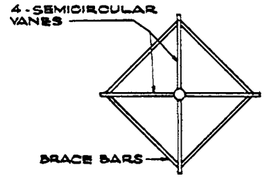


DETAIL "O"

NO SCALE

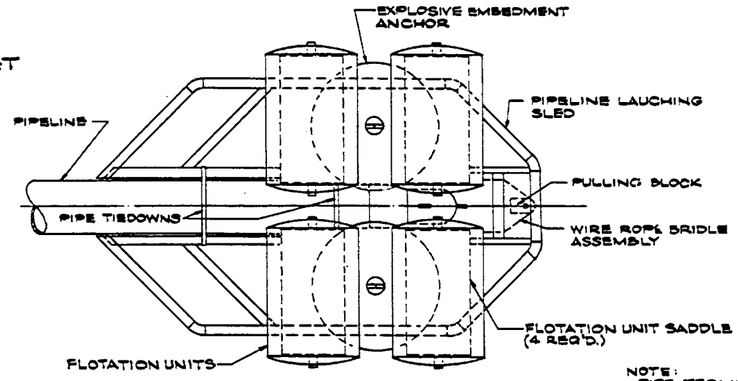


BUOY PAINTING SCHEDULE



PLAN C-C

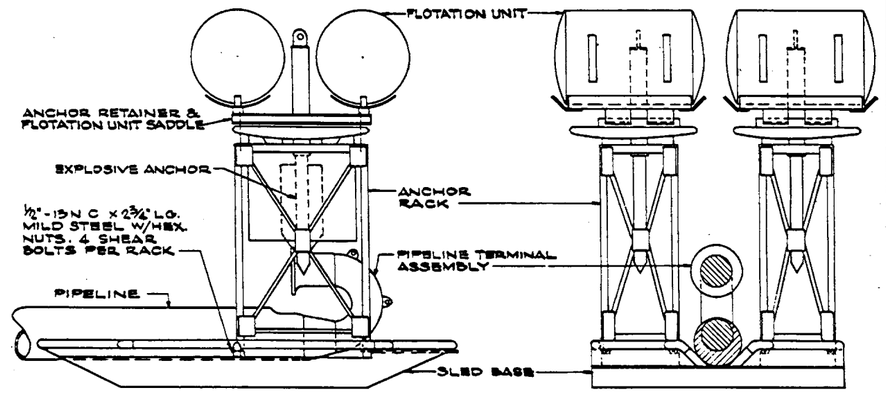
NO SCALE



PLAN

NOTE:
PIPE TERMINAL ASSEMBLY MAY BE MOVED FORWARD ON THE SLED SO AS TO CONNECT THE BRIDLE.

TABLE "A" BASIC CHAIN LENGTH		
WATER DEPTH (FT.)	HEIGHT OF BUOY ABOVE WATER LEVEL	LENGTH OF CHAIN (FT.)
60	16	26
65	16	31
70	16	36
75	16	41
79	16	45
80	14	44
85	14	49
90	14	54
95	14	59
99	14	63
100	12	62
105	12	67
110	12	72
115	12	77
120	12	82



ELEVATION REAR VIEW

SUBMARINE PIPELINE LAUNCHING SLED ASSEMBLY

NO SCALE

GENERAL NOTES

1. AFTER HOSE IS SECURED TO TANKER GUNWALE & BEFORE HOSE HOOK-UP DRAPE ¾" CHAIN & MARKER BUOY OVER THE SIDE OF TANKER & TIE OFF W/SOFT LINE.
2. THE CROTCH ASSEMBLY WILL BE ATTACHED TO THE DISCHARGE HOSE BEFORE THE UNLOADING OF THE INITIAL TANKER.
3. THE DECK CONNECTING HOSE SHOULD BE LIFTED SO PERSONNEL CAN WALK UNDER IT.
4. TWO SECTIONS OF BUOY SHALL BE WELDED TOGETHER PRIOR TO APPLICATION OF THE FINAL COAT OF RED LEAD PAINT.
5. TWO WEEKS PRIOR TO INSTALLATION, IF TIME PERMITS, THE BUOY SHALL BE GIVEN AN ADDITIONAL HEAVY COAT OF RED LEAD PAINT.
6. PAINT BUOY TARGET WHITE, PRIOR TO INSTALLATION.
7. PRIOR TO INSTALLATION, THE PORTION OF THE BUOY ABOVE THE WATERLINE SHALL BE PAINTED ACCORDING TO THE BUOY PAINT SCHEDULE, THE PORTION BELOW THE WATERLINE SHALL BE GIVEN A COAT OF MARINE ANTI-FOULING PAINT IMMEDIATELY BEFORE THE BUOY IS PLACED IN POSITION.
8. DURING ACTUAL INSTALLATION OF THE BUOY, A DIVER SHALL ATTACH A ROPE FROM THE WORKING BARGE THRU THE TACKLE BLOCK INSTALLED ON THE PIPELINE TERMINAL ASSEMBLY, TO A POINT 5 TO 10 FEET FROM THE END OF THE CHAIN. THE CHAIN SHALL BE PULLED DOWN SO THAT THE DIVER CAN ATTACH THE ANCHOR SHACKLE ON THE CHAIN TO THE PAD EYE ON THE PIPELINE TERMINAL ASSEMBLY.
9. MEAN LOW WATER SHALL BE IN ACCORDANCE WITH LOCAL CHART DATUM.
10. CHAIN LENGTH SHALL BE VARIED FOR OTHER DEPTHS WITHIN THE BASIC LENGTHS GIVEN IN TABLE "A".
11. LENGTH OF CHAIN FOR BUOY IN 60' TO 79' DEPTH SHOULD BE FIXED SO THAT AT MEAN LOW WATER, THE WATER LEVEL IS APPROXIMATELY 6' ABOVE THE 24" X 16" TAPER, OR 10 FT. FROM TOP OF BUOY.
12. LENGTH OF CHAIN FOR BUOY IN 80' TO 99' DEPTH SHOULD BE FIXED SO THAT AT MEAN LOW WATER, THE WATER LEVEL IS APPROXIMATELY 2 FT. BELOW THE BOTTOM OF THE UPPER TAPER (16" X 8"), OR 14 FT. FROM THE TOP OF BUOY.
13. LENGTH OF CHAIN FOR BUOY IN 100' TO 120' DEPTH SHOULD BE FIXED SO THAT AT MEAN LOW WATER, THE WATER LEVEL IS ESSENTIALLY EVEN WITH THE BOTTOM OF THE UPPER TAPER (12" X 8"), OR 12 FT. FROM THE TOP OF BUOY.
14. ONE ANODE WILL BE PLACED ON EACH OF THE 50K ANCHOR RISERS BETWEEN THE RISER GRIPS & THE SEA BOTTOM AT THE TIME THE DIVERS SECURE THE RISERS IN THE RISER GRIPS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

NO SCALE

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED BY:
CHIEF, CONSTRUCTION BRANCH

THEATER OF OPERATIONS

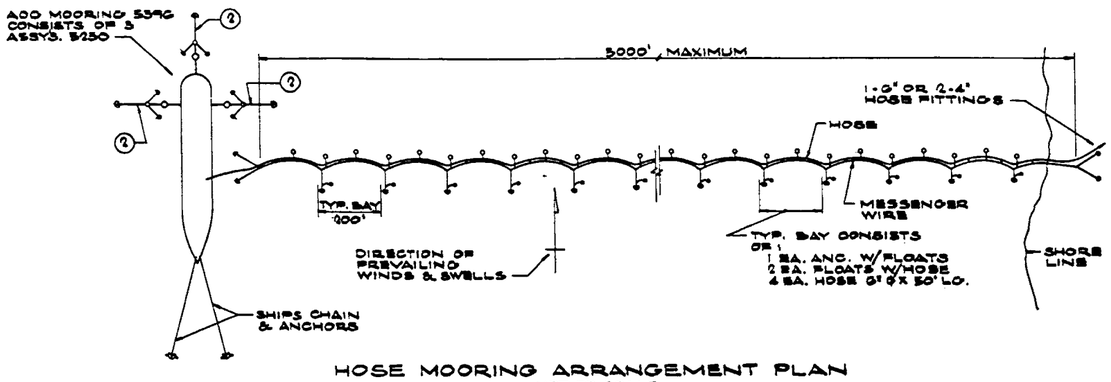
P.O.L.
SUBMARINE PIPELINE
8, 12, 16 & 20 INCH LINES FOR
60, 90 & 120 FT. WATER DEPTHS

APPROVED:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE:

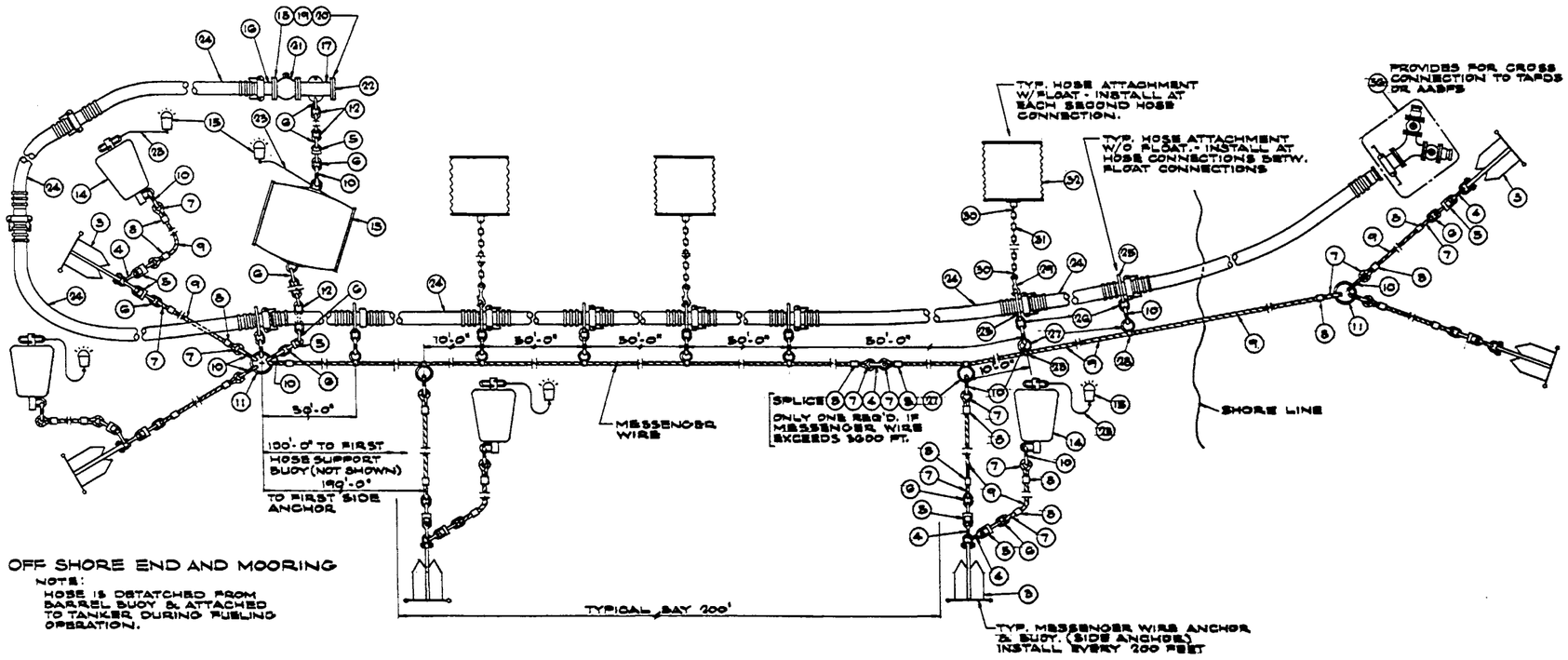
APPROVED FOR PROPONENT AGENCY:
DATE 12 Dec 52

SCALE: NONE
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 2
12-23

TABLE I	
LENGTH OF HOSE MOORING CABLE REQ'D. FOR VARIOUS WATER DEPTHS W/ANCHOR IN FIRM SAND BOTTOM	
DEPTH AT MHW IN FEET	LENGTH OF CABLE IN FEET 4 KNOT CURRENT
20	25
35	50
50	75



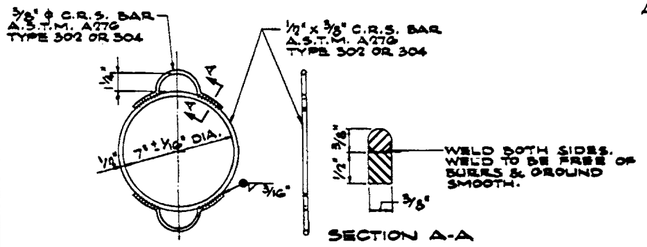
HOSE MOORING ARRANGEMENT PLAN
NOT TO SCALE



OFF SHORE END AND MOORING

NOTE:
HOSE IS DETATCHED FROM BARREL BUOY & ATTACHED TO TANKER DURING FUELING OPERATION.

DEPARTMENT OF NAVY, FUNCTIONAL COMPONENT
ASSEMBLY 5414
NOT TO SCALE



ITEM 25: RING, HOSE SUPPORT
MARK NO. RHS-2
NOT TO SCALE

BILL OF MATERIAL

ITEM	DESCRIPTION	UNIT	ASSY.	QUAN.
1	SUBMARINE FUEL LINE, TEST - PURGE		5413	1
2	AMPHIBIOUS FUELING MOORING F/ADD		5396	1
3	ANCHOR STATO MOORING 700 LB.	EA		29
4	SHACKLE, ANCHOR 5/8	EA		65
5	SWIVEL, LINK & LINK 1/2	EA		70
6	LINK, CHN CONN 5/8	EA		70
7	THIMBLE, WIRE 1/2	EA		125
8	COLLAR, WIRE SPLICING 1/2	EA		130
9	WIRE ROPE, 1/2 IPS PF 6 X 19 FC GALV	FT		10 800
10	HOOK, SNAP, 1¼ EYE 1⅛ THROAT G 1/2	EA		175
11	RING, SLING OLV 3/4 X 5 5/4	EA		2
12	CHAIN, WELDED 3/8	LB		15
13	BUOY, MOORING, BARREL TYPE 45 X 48	EA		1
14	BUOY, FLOAT, WD 24 X 20	EA		27
15	LIGHT, MARKER	EA		30
16	COUPLING, QUICK, 6 M X STD FLG	EA		1
17	SPOOL PIECE, 6 IN	EA		1
18	GASKET, ASB-RBR 1/16 X 6 I.D.	EA		10
19	SCREW CAP 5/4 X 3	EA		125
20	NUT, HEX NC 3/4	EA		125
21	VALVE, PLUG FLG 150 LB 6 INCH	EA		1
22	FLANGE PP BLIND 8" IPS	EA		1
23	ROPE, NYLON 5/8 CIR. 3/16 DIA. 100 FT	EA		2
24	HOSE, DISC. 6 X 50 FT QUICK CPL	EA		105
25	RING, HOSE SUPPORT, 6 IN MK. RHS-2	EA		110
26	LINK, CHN CONN 1/2 IN	EA		110
27	RING, CONN RND 1/2 X 2 1/2	EA		135
28	CLIP, WR-RP DBL SADDLE 1/2 IN GALV	EA		150
29	SNAP HOOK, SLD BOLT CAD PL	EA		55
30	LINK, CHN CONN 3/8 OLV	EA		110
31	CHAIN, WELDED 1/4	LB		125
32	BUOY, HOSE SUPPORT CLAPSBL	EA		32
33	REDUCER PP FBE 8" X 6" IPS	EA		1
34	FLANGE PP BLIND 8" IPS C.I.	EA		1
35	GASKET ASB-RBR	EA		3
36	MANIFOLD 6F X 4M X 4M Y 3WAY	EA		1

NOTES:
1. SPOT WELD ENDS OF CONNECTING LINKS AFTER ASSEMBLY.
2. MALE CONNECTIONS ARE AT INSHORE ENDS OF HOSE.
3. LENGTH OF 1/2" WIRE ROPE IS GIVEN FOR MAXIMUM CONDITIONS & SHOULD BE MODIFIED TO SUIT SITE & TABLE 1.
4. FOR TANKERS LARGER THAN ADD, DELETE ASSY. 5396 & REPLACE WITH ASSY. 5351.

SCHEDULE OF DRAWINGS
REFERENCE DWGS.- BUREAU OF YARDS & DOCKS

DWG. NO.	DESCRIPTION	SHEET NO.
889793	AMPHIBIOUS FUELING FACILITY, TANKER MOORING	1 OF 1
889780	SUBMARINE FUEL LINE, TESTING & PURGING DETAILS	1 OF 1
889724	BUOY, HOSE SUPPORT, COLLAPSIBLE FOR AMPHIBIOUS FUELING FACIL.	1 OF 1
889846	AMPHIBIOUS FUELING FACIL.-6 IN. BUOYANT SYSTEM (ASSY. NO. 5414)	1 OF 1
896129	STD. FUEL LOADING TYPE MOORING	1 OF 1

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES: NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN

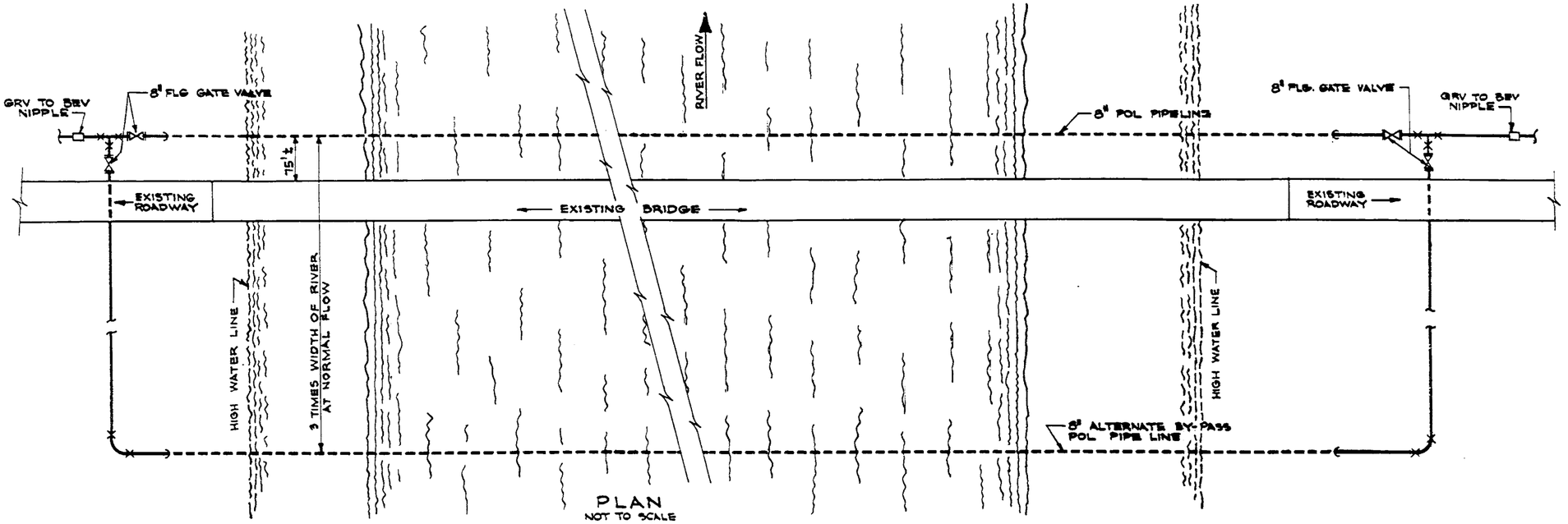
THEATER OF OPERATIONS

P.O.L.
AMPHIBIOUS FUELING FACILITY
6 INCH BUOYANT SYSTEM
DEPT. OF NAVY, FUNCTIONAL COMPONENT
(ASSEMBLY NO. 5414)

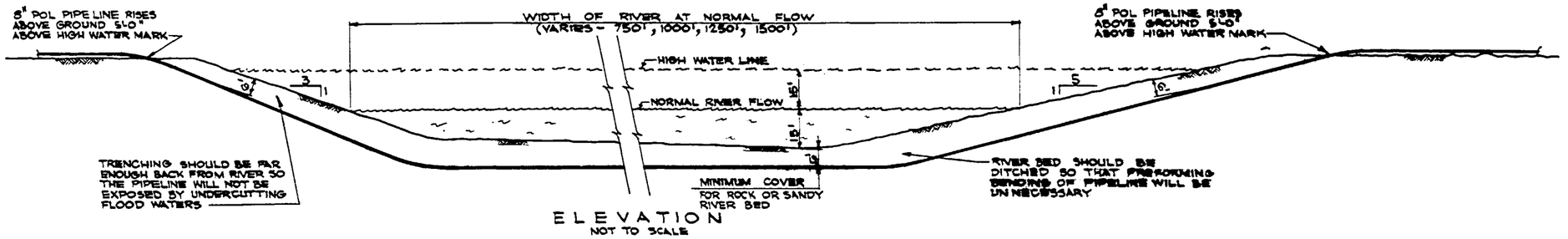
APPROVED: DATE: 29 MARCH 1955
CHIEF, ENGINEERING BRANCH — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROCUREMENT AGENCY:
DATE:

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-24
SHEET 1 OF 1



PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE

WELDED PIPELINE RIVER BED CROSSING WITH ALTERNATE BY-PASS PIPELINE

FACILITY NO. FOR 750' CROSSING - 122501
FACILITY NO. FOR 1000' CROSSING - 122502
FACILITY NO. FOR 1250' CROSSING - 122503
FACILITY NO. FOR 1500' CROSSING - 122504

DESIGN ASSUMPTIONS

1. RIVER BED ASSUMED TO HAVE 20'-0" BANK HEIGHT ONE SIDE AND LOW "BOTTOM LAND" AREA OTHER SIDE. RIVER BANKS ASSUMED TO HAVE 3 TO 1 AND 5 TO 1 SLOPES.
2. HIGH WATER ASSUMED TO BE 15'-0" ABOVE NORMAL FLOW.
3. WATER DEPTH ASSUMED TO BE 15'-0" ON DEEP SIDE.
4. RIVER BED ASSUMED TO BE SANDY.

GENERAL NOTES

1. THE METHOD OF EXCAVATING THE DITCH FOR A RIVER CROSSING WILL DEPEND UPON THE SOIL CONDITIONS. SAND MAY BE WET-EXCAVATED BY MEANS OF A DREDGE OR DRAGLINE, OR IT MAY BE DEWATERED WITH WELL-POINTS AND DRY-EXCAVATED WITH A DRAGLINE. ROCK AND OCCASIONALLY MUD, CAN BE REMOVED BY DRILLING AND SHOOTING THROUGH WATER IF NECESSARY.
2. SUFFICIENT EXCAVATION SHOULD BE MADE ON THE BANKS SO THAT SAG OR OVERBENDS WILL NOT BE NEEDED.
3. THE LINE SHOULD BE BURIED IN THE STREAM BANKS SUFFICIENTLY DEEP AND FAR BACK FROM THE WATER'S EDGE THAT FAST FLOWING FLOOD WATERS WILL NOT UNCOVER AND DAMAGE THE LINE.
4. THE 8" POL PIPE LINE SHALL HAVE AT LEAST 6 FT. COVER. MEASURE THE COVER BELOW THE LOWEST POINT IN THE STREAMBED.
5. PLACE THE LINE BELOW SCOUR DEPTH ALL THE WAY ACROSS THE AREA SUBJECT TO HIGH WATER.
6. LAY THE LINE FLAT ACROSS THE RIVER FROM THE FIXED LOW POINT SO THAT FUTURE CHANNEL CHANGES AND SCOURING WILL NOT AFFECT THE CROSSING.
7. ONLY HEAVYWEIGHT (3/8" WALL THICKNESS) SUBMARINE LINE PIPE MAY BE USED FOR SUBMERGED PIPELINE RIVER CROSSINGS.
8. CONNECT THIS ALTERNATE CROSSING LINE TO THE MAIN CROSSING AT A POINT WELL BACK FROM ANY POSSIBLE FLOOD ZONE SO THAT THE BLOCK VALVES CAN BE LOCATED AND SAFELY REACHED IF NECESSARY.
9. PLACE GATE VALVES ABOVE THE HIGHEST WATER MARK ON EACH SIDE OF THE RIVER. GATE VALVES SHALL BE STEEL, FLANGED, CLASS 300.
10. A TRIPLE-DRUM (PULLING) WINCH AND THE HOLDBACK WINCH SHOULD BE USED TO LAUNCH PIPELINE. PLACE THE PULLING WINCH ON THE FAR SIDE AND THE HOLDBACK WINCH ON THE NEAR SIDE. USE TRACTOR OR TRUCK WINCHES FOR SMALLER CROSSINGS. AS SOON AS THE PIPELINE HAS BEEN PULLED INTO PLACE, PUMP IT FULL OF WATER TO DISPLACE THE AIR IN THE PIPE AND INCREASE THE LINE'S IN-PLACE WEIGHT.
11. WELDED POL RIVER BED CROSSINGS SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-343.
12. THE BACKFILL ON THE BANKS OF STREAMS MUST BE TAMPED FIRMLY AND REINFORCED, IF NECESSARY, WITH SACKED EARTH, RIPRAP, OR OTHER SIMILAR MEANS.
13. THE STREAMBED DITCH SHOULD BE BACKFILLED WITH CRUSHED ROCK IF PRACTICABLE BUT IF EARTH IS USED IT SHOULD BE LOWERED INTO THE BOTTOM OF THE DITCH WITH A CLAMSHELL. THE CLAMSHELL SHOULD BE QUICKLY LOWERED TO BOTTOM AND OPENED QUICKLY TO MINIMIZE MIXING OF THE EARTH AND WATER. THE DRIER THE BACKFILL, THE BETTER.
14. REFER TO TECHNICAL MANUAL TM 5-343 FOR ADDITIONAL CONSTRUCTION GUIDANCE.

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS
DRAFTING SCALES
NONE

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, ENGINEERING DIVISION

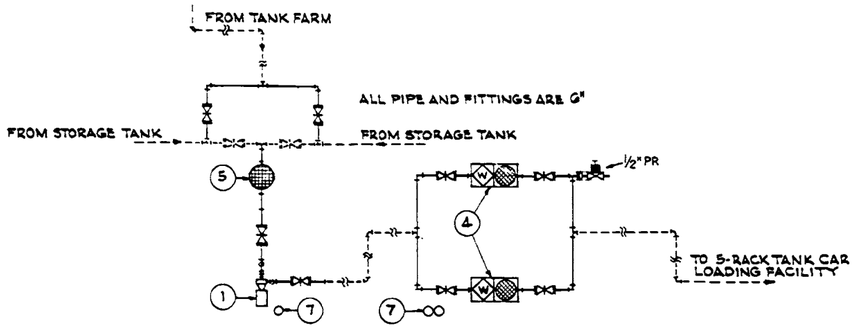
THEATER OF OPERATIONS
P.O.L.
WELDED PIPELINE RIVER BED CROSSING
WITH AN ALTERNATE BY-PASS PIPELINE
FOR 750', 1000', 1250' & 1500' CROSSINGS

APPROVED: DATE: 17 FEB 1971
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PRESIDENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-25
SHEET 1 OF 1

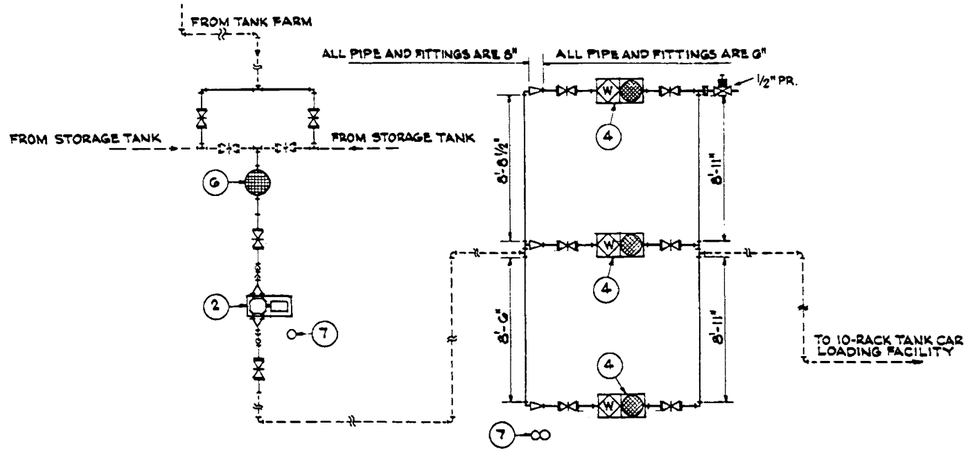
IDENTIFICATION OF PARTS	
ITEM	DESCRIPTION
1	PUMP, CENTRIFUGAL, 6" SINGLE STAGE
2	PUMP, CENTRIFUGAL, 6" 2-STAGE, Y CONNECTION
3	PUMP, CENTRIFUGAL, 6" 2-STAGE, CROSSOVER
4	SEPARATOR-FILTER, 6", 600 GPM
5	STRAINER, SEDIMENT, 6" BASKET TYPE, 36" LG.
6	STRAINER, SEDIMENT, 8" BASKET TYPE, 48" LG.
7	EXTINGUISHER, FIRE



700-1400 BPH LOADING PUMP & MANIFOLD

FACILITY NO. 123104

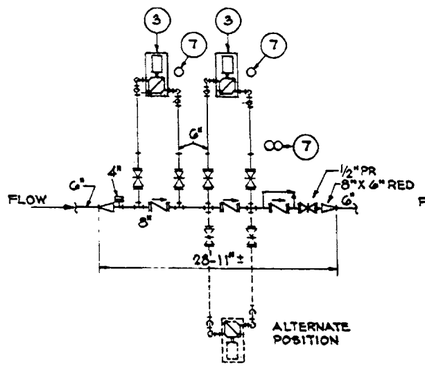
THIS FACILITY IS TO BE USED WITH 5-RACK TANK CAR LOADING FACILITY, TWO STATION TANK TRUCK LOADING FACILITY AND DRUM & CAN LOADING FACILITY.



2000-2500 BPH LOADING PUMP & MANIFOLD

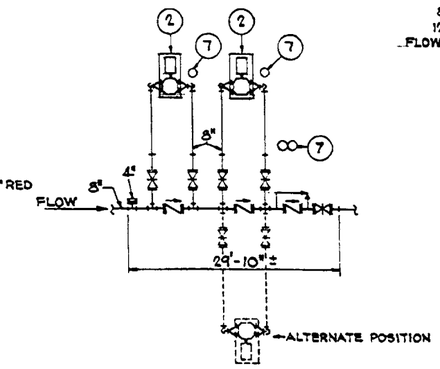
FACILITY NO. 123105

THIS FACILITY IS TO BE USED WITH 10-RACK TANK CAR LOADING FACILITY



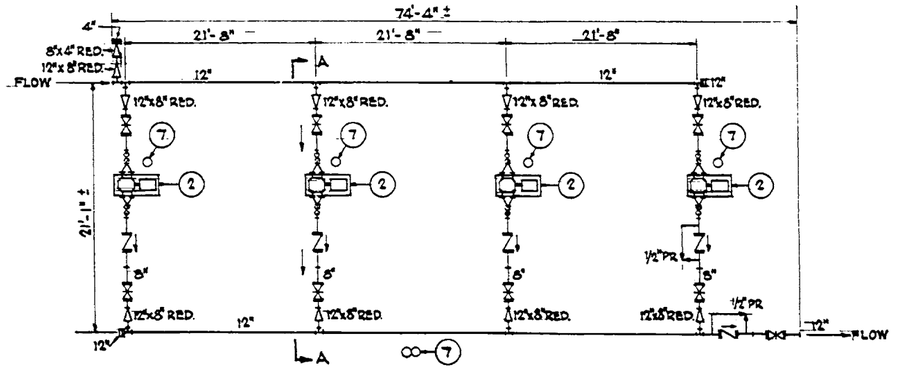
1400 BPH BOOSTER STATION

FACILITY NO. 123101



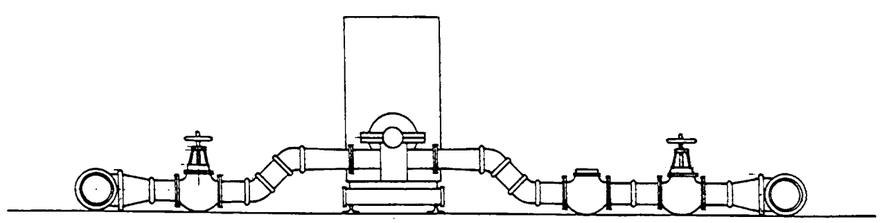
2800 BPH BOOSTER STATION

FACILITY NO. 123102



7000 BPH BOOSTER STATION

FACILITY NO. 123103



SECTION A-A

NOTE:
FOR RSN BILL OF MATERIALS - REFER TO TM5-805 BY FACILITY NUMBER.

GENERAL NOTES

1. ALL FITTINGS ARE FULL FLOW. NO MITRE WELDED FITTINGS SHALL BE USED.
2. ALL PIPE COUPLINGS, NIPPLES AND FITTINGS SHALL BE GROOVED TYPE.
3. ALL GATE AND CHECK VALVES ARE FLANGED END TYPE.
4. DESIGN SPACE BETWEEN GROOVED ENDS WITHIN COUPLINGS IS 1/8", WITH TOLERANCE OF ± 1/8" FOR FLEXIBILITY AND EXPANSION OR CONTRACTION.
5. TOLERANCE ON ALL NIPPLE AND VALVE SECTION LENGTHS IS ± 1/8".
6. OVERALL DIMENSIONS ARE FOR REFERENCE.
7. PIPE OR TUBING SECTIONS SHOWN IN PHANTOM ON "LOADING PUMP & MANIFOLD" LAYOUTS TO BE PROVIDED FROM "PIPE AND ACCESSORIES" FACILITIES.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

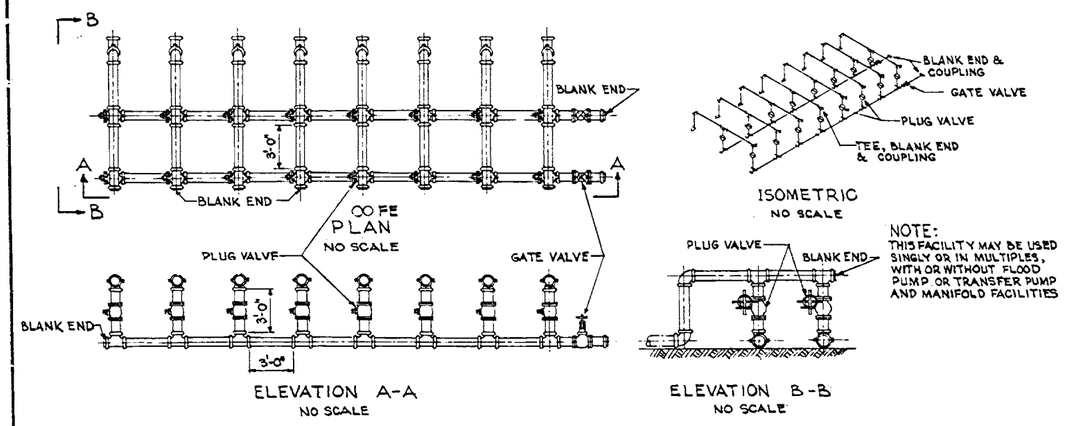
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DE ICHMANN
APPROVED:
APPROVED:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:

THEATER OF OPERATIONS

P.O.L.
LOADING PUMPS & MANIFOLDS
BOOSTER STATIONS

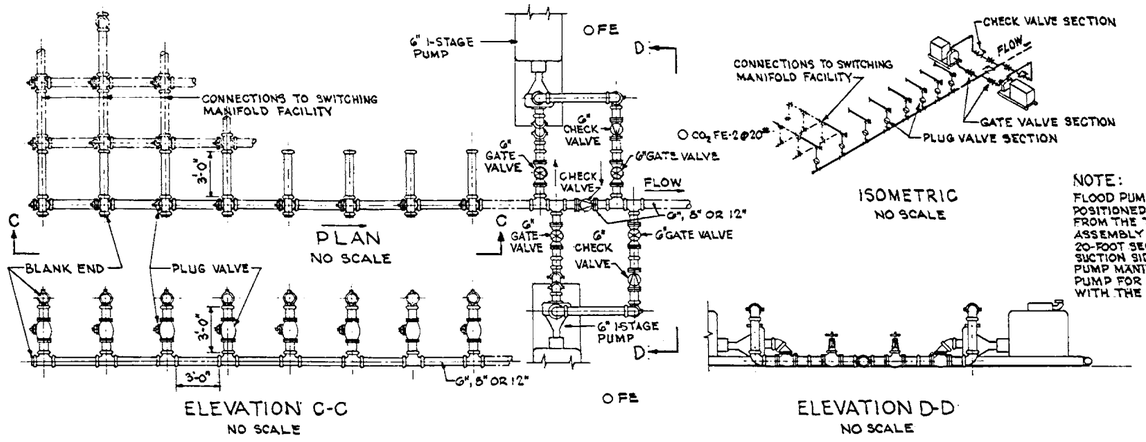
SCALE: NONE
SPEC. NO.
DRAWING NUMBER
12-31
SHEET 1 OF 1



NOTE:
THIS FACILITY MAY BE USED SINGLY OR IN MULTIPLES, WITH OR WITHOUT FLOOD PUMP OR TRANSFER PUMP AND MANIFOLD FACILITIES

SWITCHING MANIFOLD
FACILITY NUMBERS

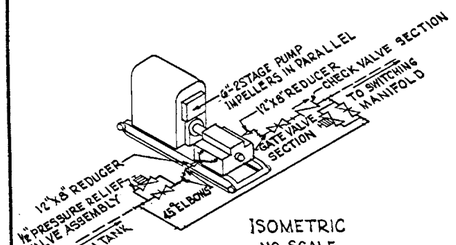
NO.	DESCRIPTION
123201	4" PIPELINE
123202	6" PIPELINE
123203	8" PIPELINE
123204	12" PIPELINE

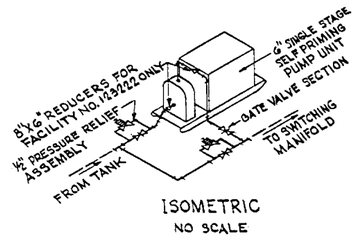


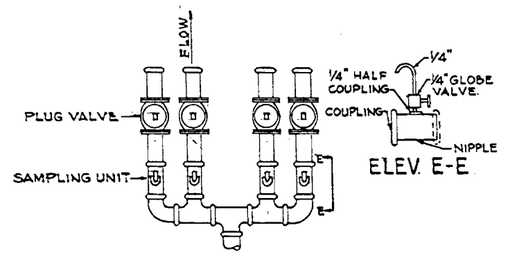
NOTE:
FLOOD PUMPASSEMBLY MAY BE POSITIONED ANY DESIRED DISTANCE FROM THE TANK FARM CONNECTION ASSEMBLY BY THE ADDITION OF 20-FOOT SECTIONS OF TUBING ON THE SUCTION SIDE OF THE PUMP HEADER. PUMP MANIFOLD ALLOWS USE OF ONE PUMP FOR CONTINUOUS OPERATION WITH THE OTHER AS STANDBY.

FLOOD PUMP & MANIFOLD
FACILITY NUMBERS

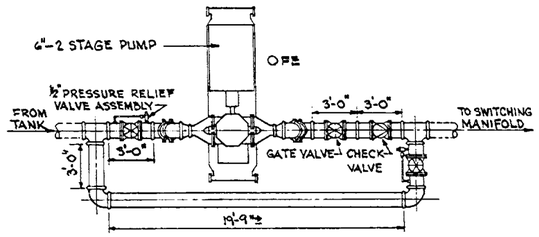
NO.	DESCRIPTION	
	FLOOD PUMP	MANIFOLD
123211	785 BPH	6 IN
123212	1355 BPH	8 IN
123213	1355 BPH	12 IN



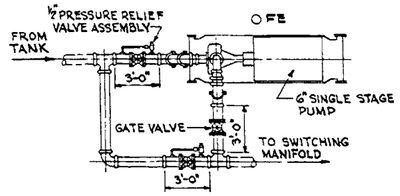




DISTRIBUTION MANIFOLD ASSEMBLY
NO SCALE
FACILITY NO. 123231 - 6 INCH ASSY.
FACILITY NO. 123232 - 8 INCH ASSY.



PLAN-2800 BPH TANK PUMP AND MANIFOLD (12 INCH)
FACILITY NO. 123223
NO SCALE



PLAN-1400 BPH TANK PUMP AND MANIFOLD (8 INCH)
FACILITY NO. 123222
NO SCALE

PLAN-700 BPH TANK PUMP AND MANIFOLD (6 INCH)
FACILITY NO. 123221
NO SCALE

NOTE:
PRESSURE RELIEF VALVE ASSEMBLIES ARE PROVIDED ON CLOSED SECTIONS OF MANIFOLDS AND PIPELINES TO ALLOW FOR THERMAL EXPANSION OF PRODUCTS BACK TO STORAGE TANKS.

GENERAL NOTES

1. ALL FITTINGS ARE FULL FLOW. NO MITRE WELDED FITTINGS ACCEPTABLE.
2. ALL GATE AND CHECK VALVES ARE FLANGED END TYPE. EACH 36" UNIT WILL CONSIST OF A VALVE AND 2 EQUAL ADAPTERS WITH GROOVED ENDS.
3. OVERALL DIMENSIONS ARE FOR REFERENCE ONLY.
4. DESIGN SPACE BETWEEN GROOVED ENDS WITHIN COUPLINGS IS 1/8" WIDE. THIS SPACE MAY VARY ± 1/8" FOR FLEXIBILITY AND EXPANSION OR CONTRACTION. TOLERANCE ON ALL NIPPLE AND VALVE SECTION LENGTHS IS ± 1/8"
5. REFER TO DWG. 12-99, SH. 4 OF 7 FOR FIELD REQUISITION LIST.
6. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NO.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO SCALE

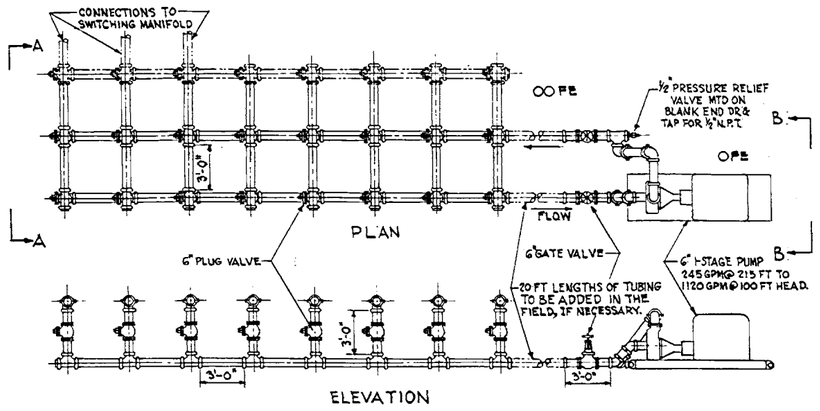
MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

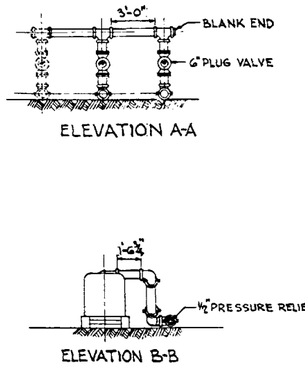
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

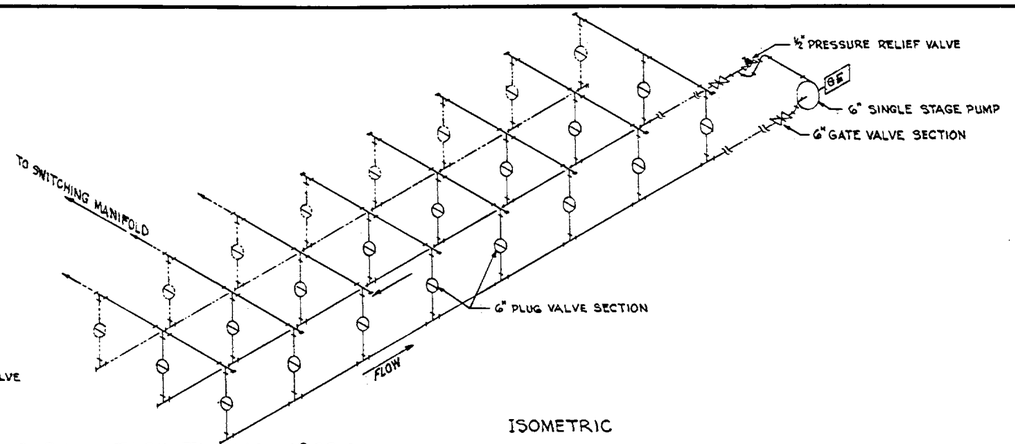
DRAWN BY: I LYUS
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED: DATE: 19 MAR 51
CHIEF, STRUCTURES BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS
P.O.L.
DISTRIBUTION MANIFOLD ASSEMBLY
SWITCHING MANIFOLD
TANK & FLOOD PUMPS AND MANIFOLDS

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-32
SHEET 1 OF 1

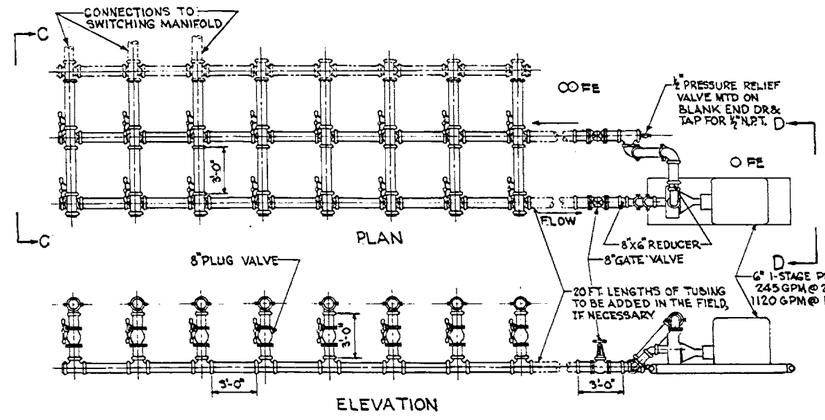


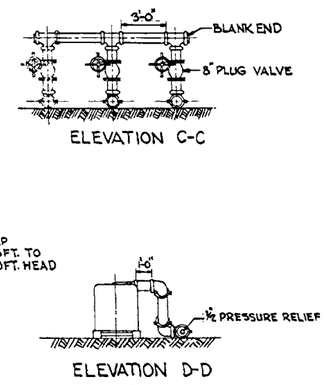


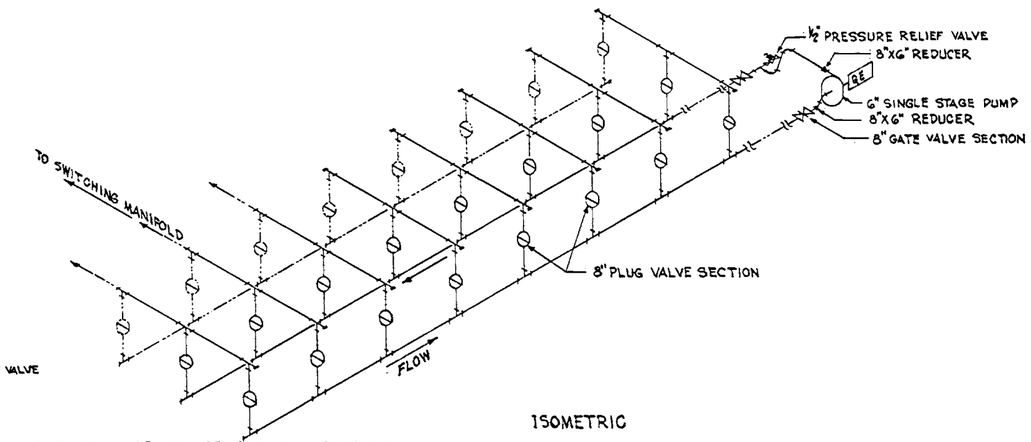


TRANSFER PUMP AND 6" MANIFOLD- 700 B.P.H. - FACILITY NO. 123301

NO SCALE

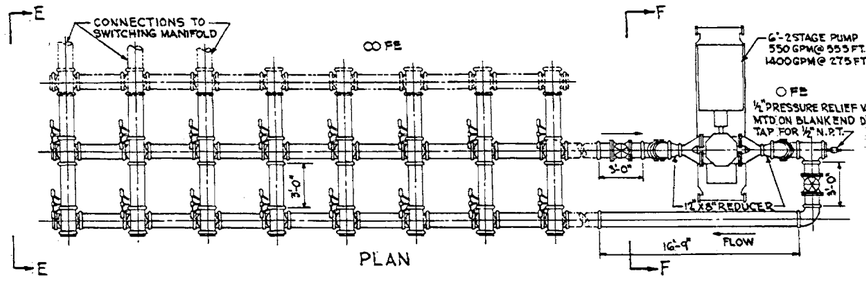


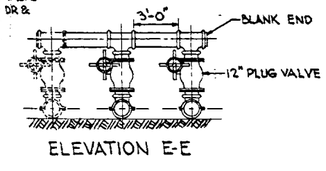


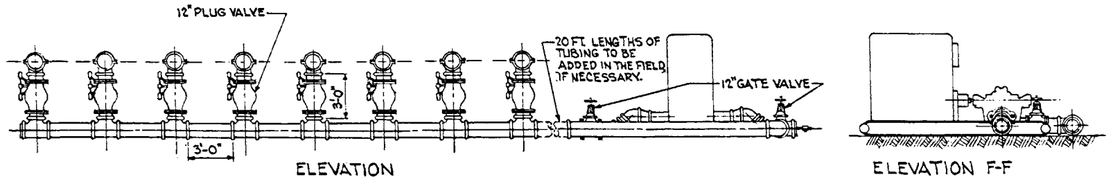


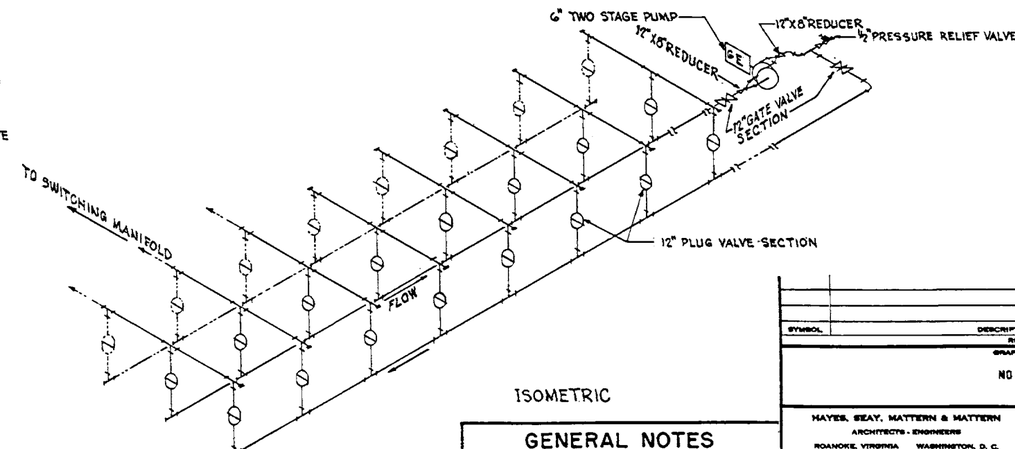
TRANSFER PUMP AND 8" MANIFOLD- 1400 B.P.H.- FACILITY NO. 123302

NO SCALE









TRANSFER PUMP AND 12" MANIFOLD- 2800 B.P.H.- FACILITY NO. 123303

NO SCALE

GENERAL NOTES

1. ALL FITTINGS ARE FULL FLOW. NO MITRE WELDED FITTINGS ACCEPTABLE.
2. ALL PIPE COUPLINGS, NIPPLES AND FITTINGS ARE GROOVED TYPE.
3. ALL PLUG AND GATE VALVES ARE FLANGED END TYPE AND CONSISTS OF A VALVE AND TWO EQUAL ADAPTER WITH GROOVED ENDS.
4. DESIGN SPACE BETWEEN GROOVED ENDS WITHIN COUPLINGS IS ⅛" WIDE. THIS SPACE MAY VARY ±⅛" FOR FLEXIBILITY AND EXPANSION OR CONTRACTION.
5. TOLERANCE ON ALL NIPPLE AND VALVE SECTION LENGTHS IS ±⅛".
6. REFER TO DWG. 12-99, SH. 4 OF 7 FOR FIELD REQUISITION LIST.
7. FOR FSN BILL OF MATERIALS- REFER TO TM5-303 BY FACILITY NO.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: I.LYUS
TRACED BY:
CHECKED BY: EDWARDS
SUBMITTED BY: C.W. DEICHMANN

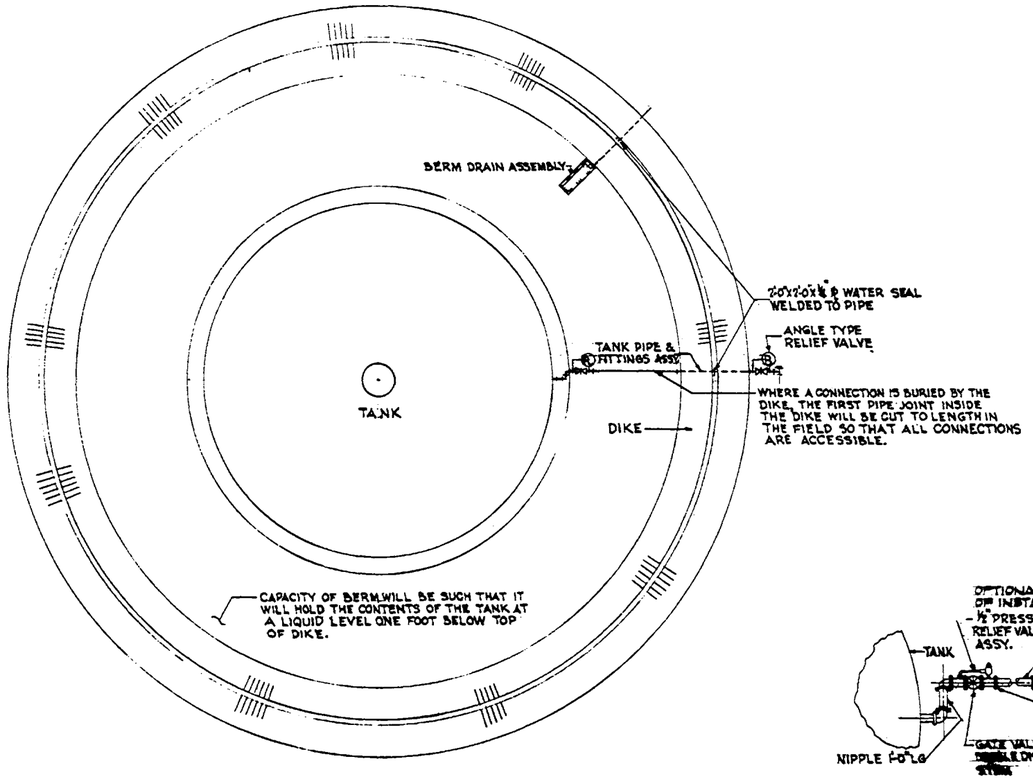
THEATER OF OPERATIONS

P.O.L.
MANIFOLD FOR TRANSFER PUMP
700, 1400 & 2800 BPH

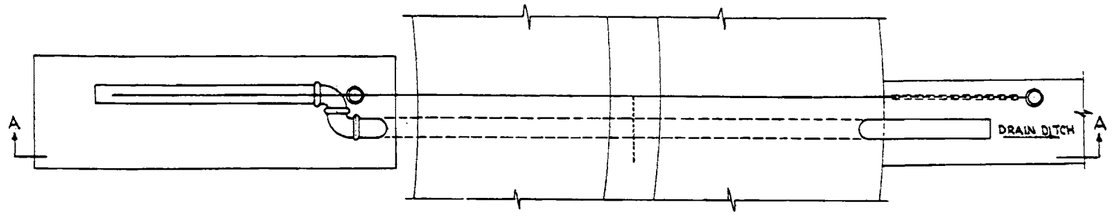
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959

APPROVED FOR PROPONENT AGENCY:
DATE

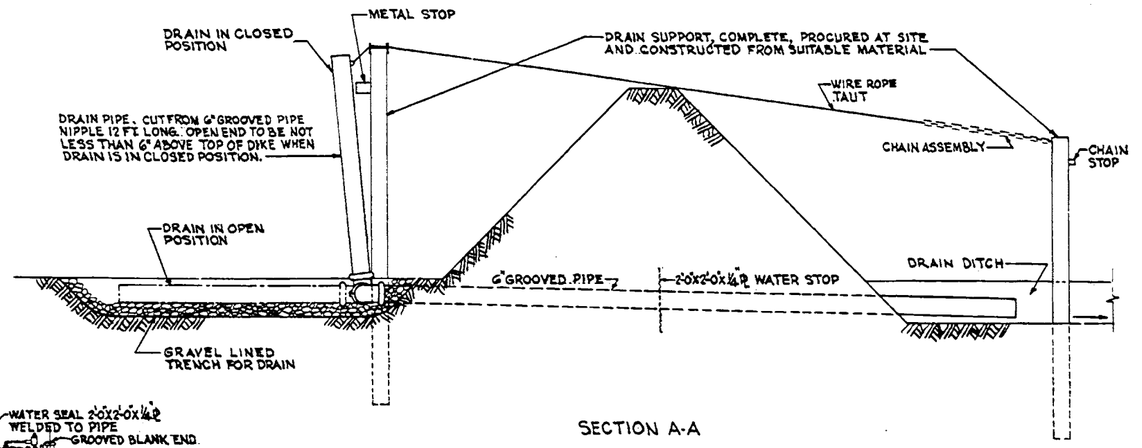
SCALE: NONE
SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1
12-33



PLAN

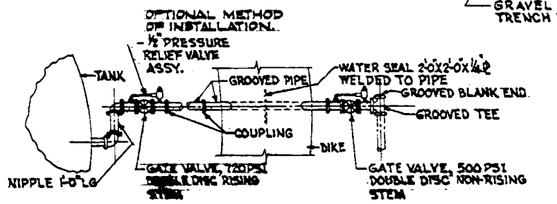


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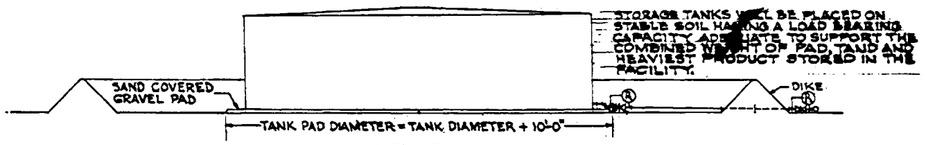


SECTION A-A

BERM DRAIN ASSEMBLY
NO SCALE

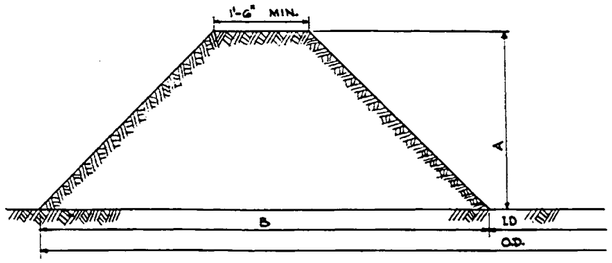


TANK, PIPE & FITTINGS ASSEMBLY
NO SCALE



ELEVATION

TYPICAL STORAGE TANK CONDITION
NO SCALE



CROSS SECTION OF BERM
NO SCALE

BERM DIMENSIONS

TANK SIZE (BBL)	I.D.	O.D.	A	B	SLOPE
50,000	191 FT.	234 FT.	10 FT.	21½ FT.	1 TO 1
10,000	115 FT.	142 FT.	6 FT.	13½ FT.	1 TO 1
3,000	61 FT.	88 FT.	6 FT.	13½ FT.	1 TO 1
1,000	46 FT.	63 FT.	4 FT.	9½ FT.	1 TO 1
500	35½ FT.	52½ FT.	3½ FT.	8½ FT.	1 TO 1
250	28 FT.	43 FT.	3 FT.	7½ FT.	1 TO 1
100	18 FT.	33 FT.	3 FT.	7½ FT.	1 TO 1

NOTE:
FOR ITEM BILL OF MATERIALS, REFER TO THIS JOB BY FACILITY NUMBER.

FACILITY NUMBERS

NO.	TANK CAPACITY	PIPE SIZE
125401	100 BBL	4"
125402	250 BBL	4"
125403	500 BBL	4"
125404	500 BBL	6"
125406	1000 BBL	4"
125407	1000 BBL	6"
125408	3000 BBL	6"
125409	3000 BBL	8"
125411	10,000 BBL	8"
125412	10,000 BBL	8"
125413	10,000 BBL	12"
125416	50,000 BBL	8"
125417	50,000 BBL	12"

△ PIPELINE WELDING NOTE

WELDED POL PIPELINE SHALL BE USED FOR ALL BURIED PORTIONS UNDER BERMS, ROADWAYS AND FOR MAKING CLOSURES; AND SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-353.

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

GRAPHIC SCALES: NO SCALE

MAYER, BRAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

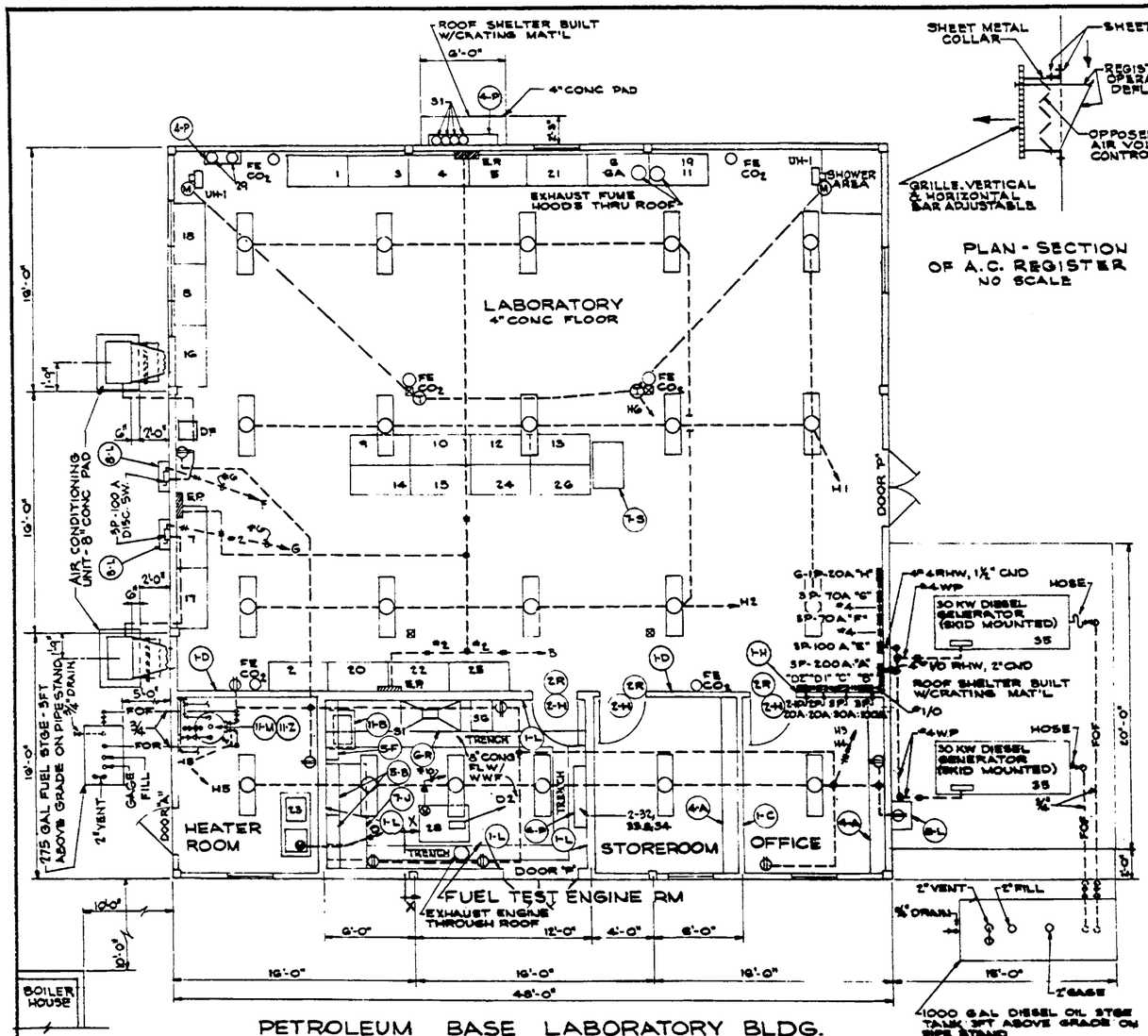
DRAWN BY: MLYUS
TRACED BY:
CHECKED BY: EDWARDS
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS

P.O.L.
TANKS
100. 250. 500. 1000. 3000. 10. 000 & 50. 000 BBL
¾. 6. 8 & 12 INCH LINES

APPROVED: [signature] DATE: 19 MAR 71
CHIEF, ENGINEERING DIVISION
APPROVED: [signature] DATE: 13 Sep 71
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROCUREMENT AGENCY:

SCALE: NONE SPEC. NO.
DRAWING NUMBER: 12-34
SHEET 1 OF 1

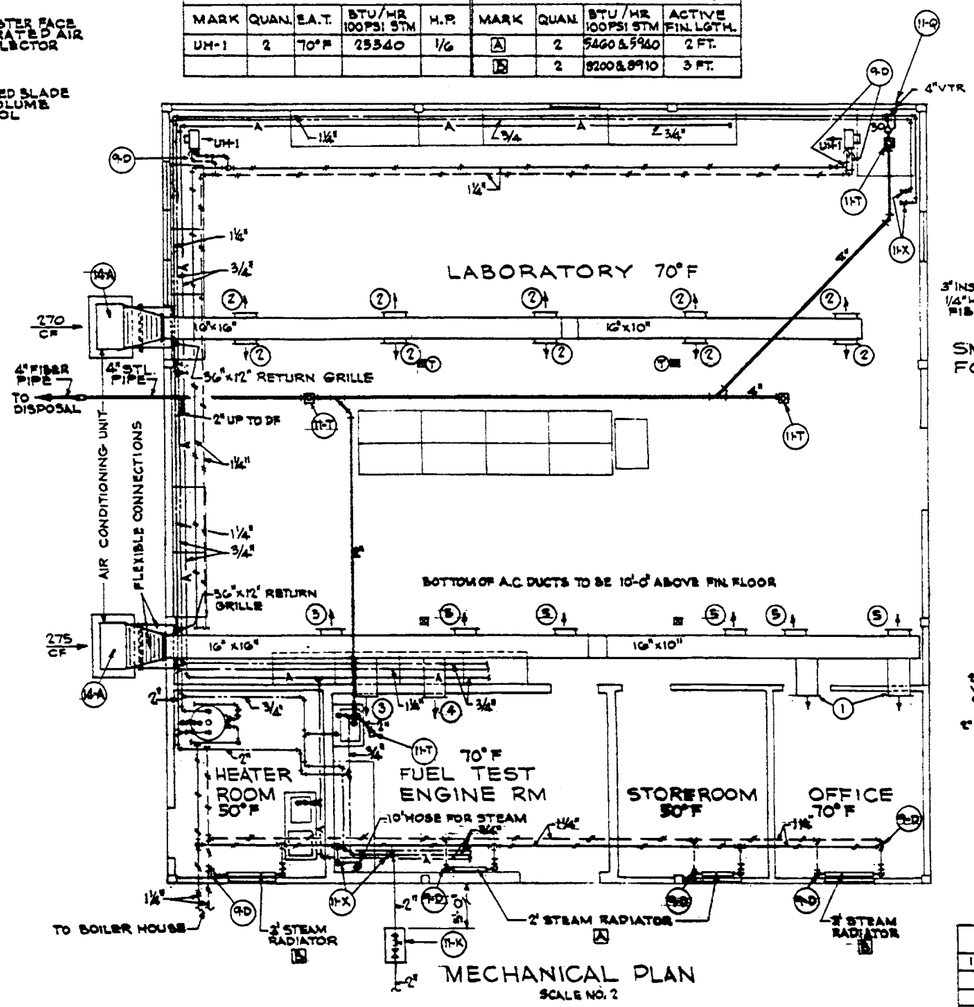


PETROLEUM BASE LABORATORY BLDG.
SCALE NO. 2

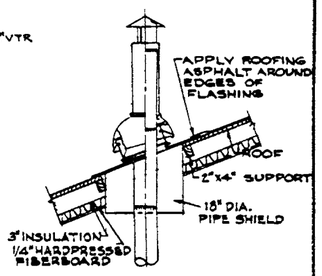
PLAN - SECTION OF A.C. REGISTER
NO SCALE

STEAM HEATING SCHEDULE

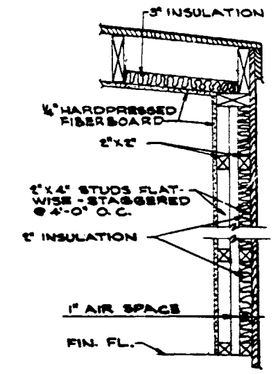
UNIT HEATERS					MULTIFIN TYPE RADIATORS			
MARK	QUAN.	E.A.T.	BTU/HR 100PSI STM	H.P.	MARK	QUAN	BTU/HR 100PSI STM	ACTIVE FIN. LGTH.
UH-1	2	70°F	25340	1/6	A	2	5460 & 5940	2 FT.
					B	2	8200 & 8910	3 FT.



MECHANICAL PLAN
SCALE NO. 2



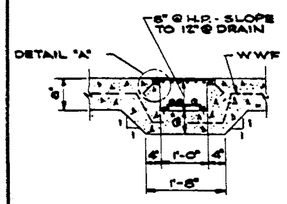
SMOKE JACK ASSEMBLY FOR FUME HOODS AND WATER HEATER
NO SCALE



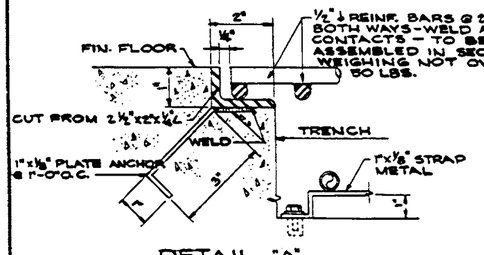
SECTION "X-X"
NO SCALE

SCHEDULE FOR A.C. REGISTERS

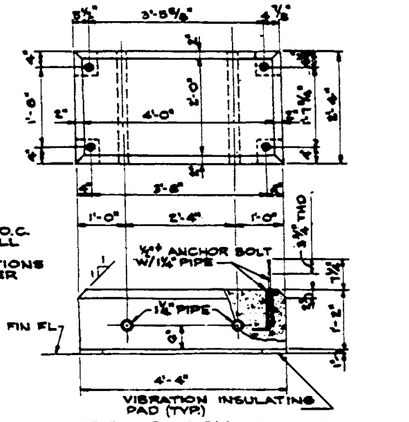
ITEM NO.	GRILLE SIZE	CFM
1	16"x8"	150
2	16"x8"	190
3	16"x8"	165
4	16"x8"	170
5	16"x8"	195



TYPICAL TRENCH DETAIL
SCALE NO. 5



DETAIL "A"
NO SCALE



ISOLATED BLOCK FOUNDATION FOR FUEL TEST ENGINE
SCALE NO. 5

SCHEDULE OF EQUIPMENT (FURNISHED BY OTHERS)

ITEM	QTY	DESCRIPTION
1	1	CONSTANT-TEMPERATURE WATER-BATH AND ELECTRIC-OVEN CABINET
2	1	SAYBOLT VISCOSIMETER CABINET
3	1	DOUBLE DISTILLATION APPARATUS CABINET
4	1	SINGLE DISTILLATION APPARATUS CABINET
5	1	RUFFLE-FURNACE AND PENETROMETER CABINET
6	1	GUM-STABILITY APPARATUS CABINET; BASE FOR FUME HOOD (6A)
6A	1	FUME HOOD
7	1	WATER-STILL CABINET
8	1	TETRAETHYLLEAD APPARATUS AND SULFUR DETERMINATION (LAMP) APPARATUS CABINET
9	1	GLASS STORAGE CABINET
10	1	GLASS STORAGE CABINET
11	1	GLASS STORAGE CABINET; BASE FOR FUME HOOD (12)
12	1	GLASS STORAGE CABINET
13	1	GLASS STORAGE CABINET
14	1	GLASS STORAGE CABINET
15	1	CHEMICAL STORAGE CABINET
16	1	BALANCE CABINET OR TABLE
17	1	SINK CABINET
18	1	OXIDATION-STABILITY APPARATUS CABINET
19	1	FUME HOOD
20	1	KINEMATIC VISCOSIMETER CABINET
21	1	REFRIGERATOR CABINET
22	1	CLOUD-AND-POUR-POINT APPARATUS CABINET
23	1	AIR COMPRESSOR, END, W/RECEIVER
24	1	GLASS STORAGE CABINET
25	1	CENTRIFUGE CABINET
26	1	GLASS STORAGE CABINET
27	1	VAPOR-PRESSURE BATH
28	1	FUEL TEST ENGINE
29	2	OXYGEN CYLINDERS, 240 CF EACH
30	1	SHOWER HEAD, 1"
31	4	PROPANE CYLINDERS, 100 POUNDS EACH
32	2	CARBON DIOXIDE, CO_2 CYL. 50 POUNDS EACH
33	1	R-12 REFRIGERANT, CYLINDER, 50 POUNDS
34	1	R-22 REFRIGERANT, CYLINDER, 15 POUNDS
35	2	30 KW DED GENERATORS, SKID MOUNTED
36	1	CYLINDER WORK STAND

ELECTRICAL NOTES

SUMMARY OF ELECTRICAL POWER REQUIREMENT		KVA
CONNECTED LOAD (EST. FOR CONV. OUTLETS)	LIGHTING	2.0
	RECP EST	1.1
	POWER	93.0
ESTIMATED MAX. DEMAND		96.1

1. ALL LIGHTING FIXTURES SHALL BE APP. CBM CERTIFIED, FLUORESCENT. INDUSTRIAL, UN-SHIELDED, ENAMELED OR PORCELAIN STEEL, REFLECTOR TYPE, FOR 2-40W T-12 RS LAMPS, CEILING SURFACE MOUNTING TYPE, AND SHALL BE MOUNTED AT APPROXIMATELY 8 FT ABOVE FLOOR.
2. RUN SEPARATE EQUIPMENT GROUNDING CONDUCTOR, AS IN NMC OR MC, FROM ALL POWERED METAL-CLAD EQUIPMENT AND ALL CONDUCTOR ENCLOSURES TO GROUNDED CIRCUIT CONDUCTOR ON SUPPLY SIDE OF MAIN SERVICE DISCONNECTS. NEUTRAL CONDUCTORS SHALL NOT BE GROUNDED ON LOAD SIDE OF SERVICE DISCONNECT.
3. ALL WIRING NOT OTHERWISE DESIGNATED SHALL BE TYPE NMC CABLE, 2-NO.12 W/GND, OR 3-NO. 12 W/GND WHERE TWO CIRCUITS ARE INDICATED.
4. ALL CONDUCTORS NOT OTHERWISE DESIGNATED AS TO TYPE, AND NOT LARGER THAN NO.2, SHALL BE NMC W/GND; OR IF LARGER THAN NO.2, SHALL BE R/C TYPE MC W/GND. IN ALL CIRCUITS THERE SHALL BE A GROUNDING CONDUCTOR (OR RIGID CONDUIT SERVING AS SAME) IN ADDITION TO THE CONDUCTORS SHOWN BY SYMBOL.
5. IF ALUMINUM CONDUCTOR IS SUPPLIED IT SHALL BE TWO NUMBERS LOWER IN GAGE THAN SHOWN (OR NEXT LARGER SIZE IN EVEN NUMBERS).
6. GROUND EACH MOTOR CONTROL, DISCONNECT SWITCH AND CIRCUIT BREAKER W/NO WIRE (NOT INDICATED).

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS REFER TO TM5-303 BY FACILITY NUMBER.
3. WATER & SEWAGE REQUIREMENTS - 500 GPD.
4. FLOORS ARE UNIFORMLY SLOPED TO FLOOR AND SHOWER DRAINS WHICH ARE SET 1" BELOW FINISHED FLOOR LINE.
5. INSULATE ALL COLD AND HOT WATER, STEAM & CONDENSATE LINES.
6. PAINT THE WALLS AND CEILING OF THE FUEL TEST ENGINE ROOM WHITE.
7. ALL FLOOR DRAINS TO HAVE P-TRAPS.
8. ALL WINDOWS THIS BLDG TO BE WB (FIXED) - SEE DWG 24-18 SH 2 OF 2. AND SHALL BE 4'-6" FROM FINISH FLOOR TO SILL.
9. THE ASBESTOS FLEXIBLE CLOTH CONNECTIONS FOR THE SUPPLY AND RETURN OF THE AIR CONDITIONING UNITS SHALL BE WATERPROOFED WITH LAYERS OF 15 LB ROOFING FELT COVERING ONE (1) LAYER OF 2" INSULATION MAT.
10. STEAM REQUIREMENTS - 200 LB/HR @ 100 PSI.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
12-35	PLANS	1 OF 1
99-98	STANDARD DETAILS	
24-04	WOOD FRAME CONST. WAREHOUSE TYPE BLDG.	1-3 OF 3

FACILITY NO. 12850 - INTERIOR ONLY, TROPICAL & DESERT ZONE
FACILITY NO. 12851 - STEEL FRAME BLDG W/INTERIOR, TROP & DESERT ZONE
FACILITY NO. 12852 - WOOD FRAME W/INTERIOR, TROP. & DESERT ZONE
FACILITY NO. 12852 - INTERIOR ONLY, TEMPERATE ZONE (-20°F)
FACILITY NO. 12852 - STEEL FRAME BLDG W/INTERIOR, TEMPERATE ZONE (-20°F)
FACILITY NO. 12852 - WOOD FRAME W/INTERIOR, TEMPERATE ZONE (-20°F)

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10'
NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON, COX
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. E. DEICHMANN

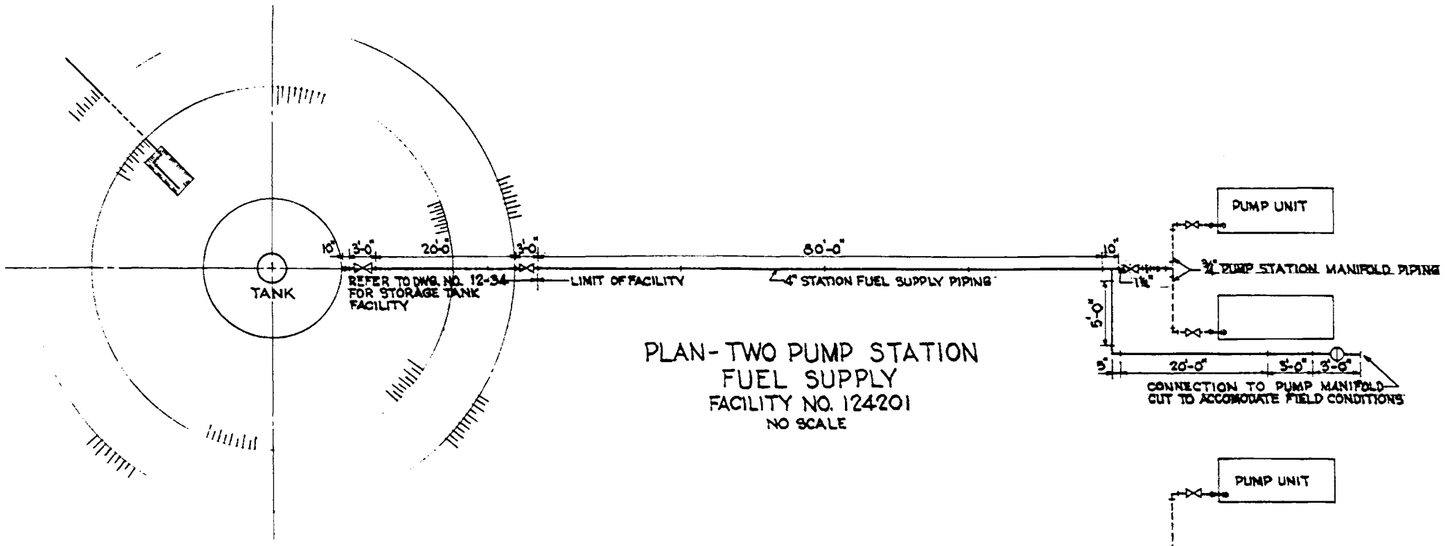
THEATER OF OPERATIONS

P.O.L.
PETROLEUM BASE LABORATORY
48'X48' BLDG.

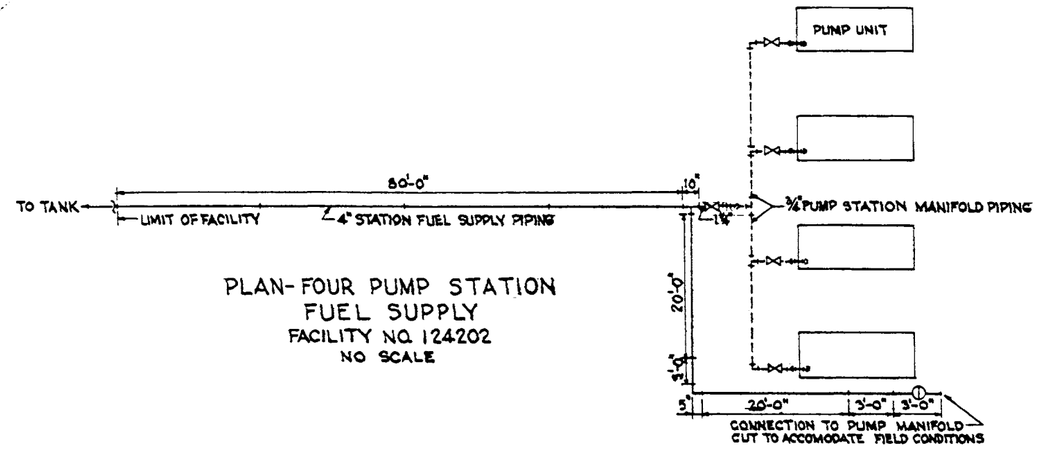
APPROVED: DATE: 17 FEB 1971
CHIEF, STRUCTURES BRANCH
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., OCE.

APPROVED FOR PRESENT AGENCY:
DATE 3 Feb 1971

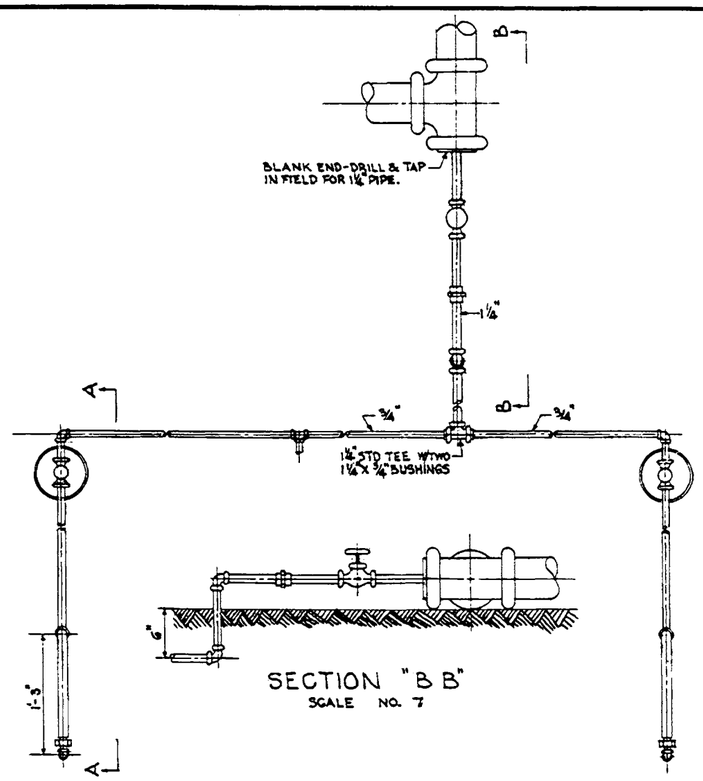
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-35
SHEET 1 OF 1



PLAN - TWO PUMP STATION
FUEL SUPPLY
FACILITY NO. 124201
NO SCALE



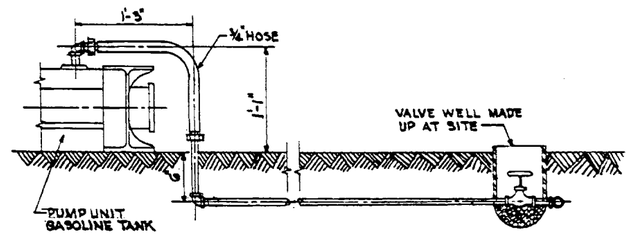
PLAN - FOUR PUMP STATION
FUEL SUPPLY
FACILITY NO. 124202
NO SCALE



SECTION "B B"
SCALE NO. 7

HALF PLAN
4 PUMP MANIFOLDING
SCALE NO. 7

HALF PLAN
2 PUMP MANIFOLDING
SCALE NO. 7



SECTION "AA"
SCALE NO. 7

GENERAL NOTES

1. ALL 4" FITTINGS ARE FULL FLOW. NO MITRE WELDED FITTINGS ARE ACCEPTABLE.
2. ALL PIPE COUPLINGS, NIPPLES & FITTINGS ARE GROOVED TYPE EXCEPT PUMP UNIT FUEL SUPPLY LINE WHICH ARE SCREW TYPE.
3. ALL 4" PLUG VALVES WILL BE FURNISHED WITH HANDLES. EACH 3" UNIT WILL CONSIST OF A VALVE AND 2 EQUAL ADAPTERS WITH GROOVED ENDS.
4. RECOMMENDED STORAGE TANK FOR 4 PUMP FACILITY: 1000 BBL MAX TO 2 150 BBL MIN. 2 PUMP FACILITY: 250 BBL MAX. TO 100 BBL MIN.
5. PLUG VALVE MUST BE TURNED 45° ON ITS AXIS WHEN PUMP UNITS AND SANDTRAP BYPASS LINE ARE POSITIONED ON SAME SIDE OF MAIN HEADER OF PIPELINE STATION MANIFOLDS.
6. QUANTITIES ARE FOR MAX. FIELD CONDITIONS.
7. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 3" 6" 9" 1' 2'
NO. 7

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: I LYUS
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DE ICHMANN
APPROVED: Chief, Structural Branch
APPROVED: Chief, Engineering Division, Mil. Constr., O.C.E. 6 MAR 42
APPROVED FOR PROCUREMENT AGENCY:
DATE 13 Feb 1942

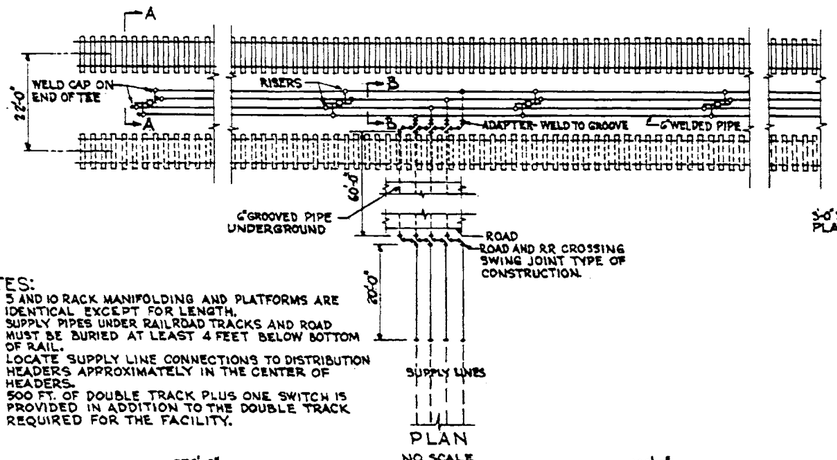
THEATER OF OPERATIONS

P.O.L.
PUMP STATION-FUEL SUPPLY
2 PUMPS & 4 PUMPS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-42
SHEET 1 OF 1

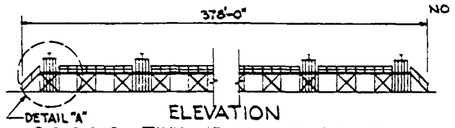
CORPS OF ENGINEERS

U. S. ARMY

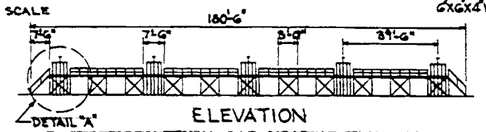


NOTES:
1. 5 AND 10 RACK MANIFOLDING AND PLATFORMS ARE IDENTICAL EXCEPT FOR LENGTH.
2. SUPPLY PIPES UNDER RAILROAD TRACKS AND ROAD MUST BE BURIED AT LEAST 4 FEET BELOW BOTTOM OF RAIL.
3. LOCATE SUPPLY LINE CONNECTIONS TO DISTRIBUTION HEADERS APPROXIMATELY IN THE CENTER OF HEADERS.
4. 500 FT. OF DOUBLE TRACK PLUS ONE SWITCH IS PROVIDED IN ADDITION TO THE DOUBLE TRACK REQUIRED FOR THE FACILITY.

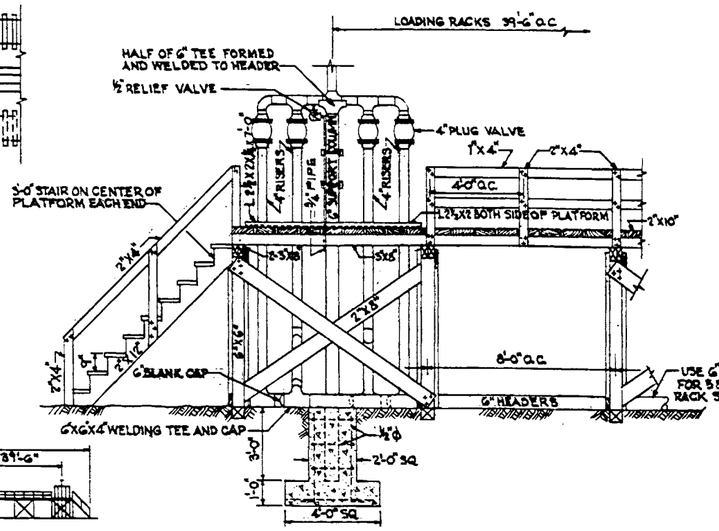
PLAN
NO SCALE



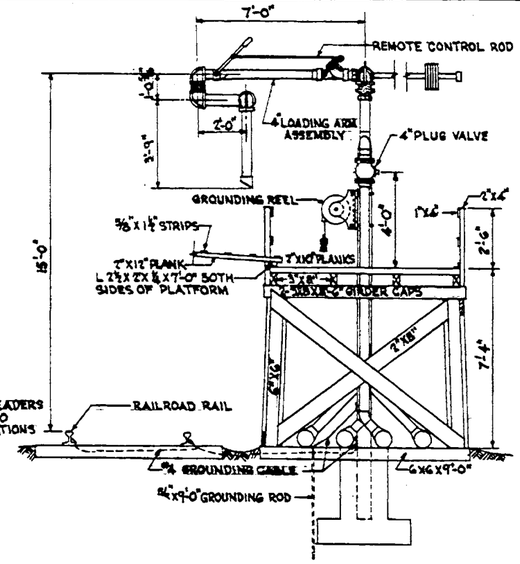
ELEVATION
10 STATION TANK CAR LOADING FACILITY
FACILITY NO. 124306
NO SCALE



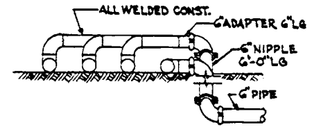
ELEVATION
5 STATION TANK CAR LOADING FACILITY
FACILITY NO. 124304
NO SCALE



DETAIL "A"
SCALE NO. 3



SECTION A-A
SCALE NO. 3



SECTION B-B
SCALE NO. 3

TANK-CAR LOADING

TWO STATION TANK TRUCK LOADING FACILITY
FACILITY NO. 124302
NO SCALE

ELEVATION C-C
SCALE NO. 3

DETAIL B
LOADING STAND DRAIN HOSE ASSEMBLY
NO SCALE

SECTION D-D
SCALE NO. 3

SECTION E-E
SCALE NO. 3

NOTE:
1. FOR R&H BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

△ PIPELINE WELDING NOTE

WELDED POL PIPELINES SHALL BE USED FOR ALL BURIED PORTIONS UNDER BERMS, ROADWAYS, FOR MAKING CLOSURES AND ABOVE GROUND POL PIPELINES SHOWN AS WELDED. THE PIPELINES SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-303. THE POL NON-PRESSURE COLLECTING LINES WITH FIELD WELDS BELOW GROUND NEED NOT BE RADIOGRAPHIC INSPECTED.

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

DRAWING SCALES
0 1' 2' 3' 4' 5'
NO. 3

MAYER, BRAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

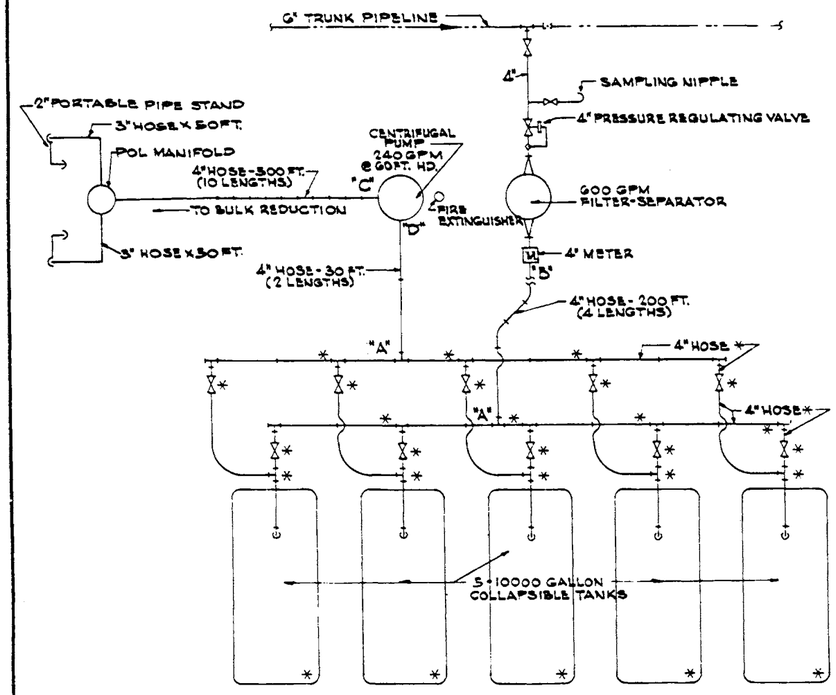
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: I LYUS
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] DATE: 19 MAR 1969
CHIEF STRUCTURES BRANCH
APPROVED: [signature] CHIEF ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: [signature]
DATE: 15 Sep 1969

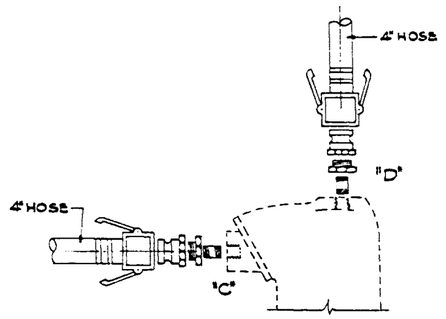
THEATER OF OPERATIONS
P.O.L. LOADING
FAC. CAP 5-2-10 STATION
TANK TRUCK-2 STATION

UNDER REVISION

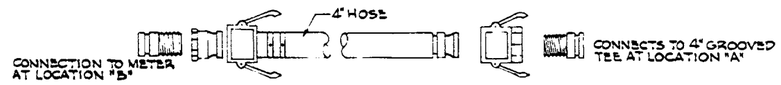
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-413
SHEET 1 OF 1



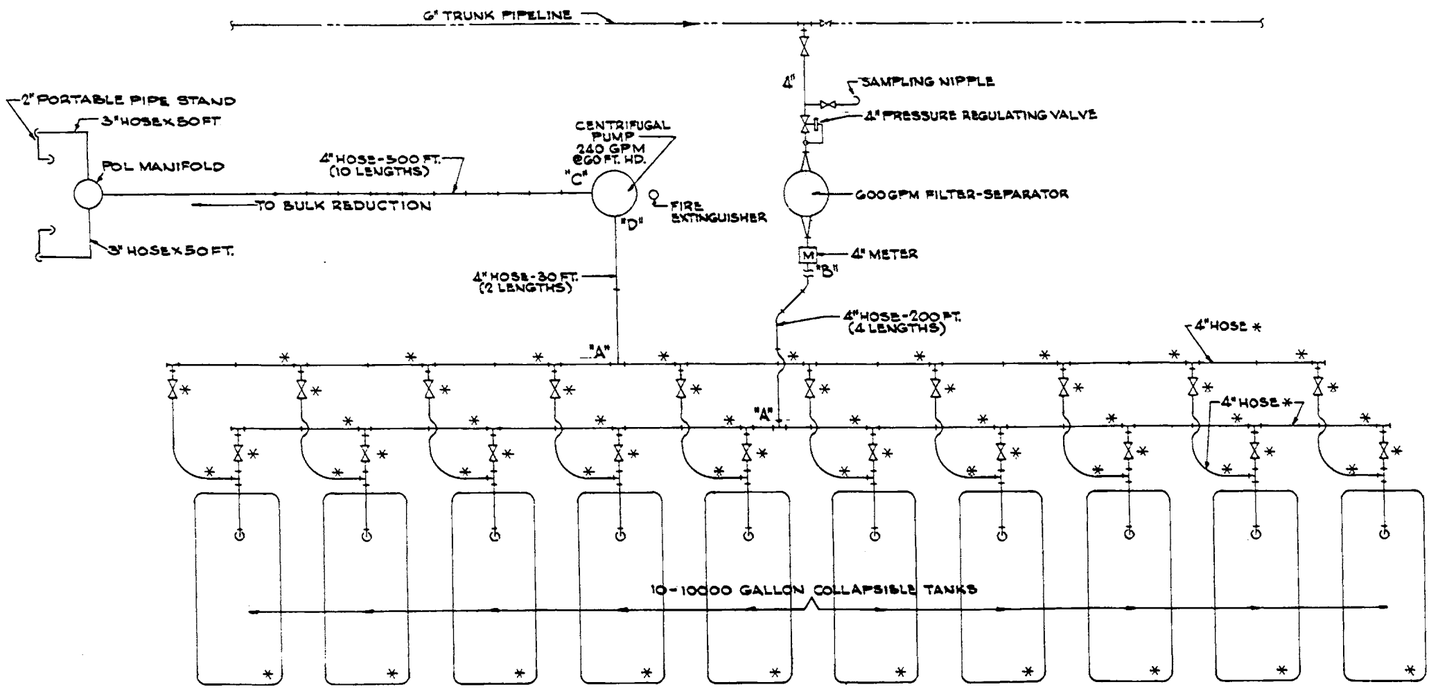
5 PORTABLE COLLAPSIBLE TANK ASSEMBLIES
50000 GALLON STORAGE CAPACITY
NO SCALE
FACILITY NO. 124501



PUMP CONNECTION DETAILS
NO SCALE



HOSE COUPLING DETAILS
NO SCALE



10 PORTABLE COLLAPSIBLE TANK ASSEMBLIES
100000 GALLON STORAGE CAPACITY
NO SCALE
FACILITY NO. 124502

NOTES:

1. FOR FSN BILL OF MATERIALS - REFER TO TMS-303 BY FACILITY NUMBER.

NOTE:
ITEMS MARKED WITH * ARE PART OF THE COLLAPSIBLE TANK ASSEMBLY AND ARE STOCKED AS PART OF THE ASSEMBLY.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO SCALE

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, ARCHITECTS' BRANCH

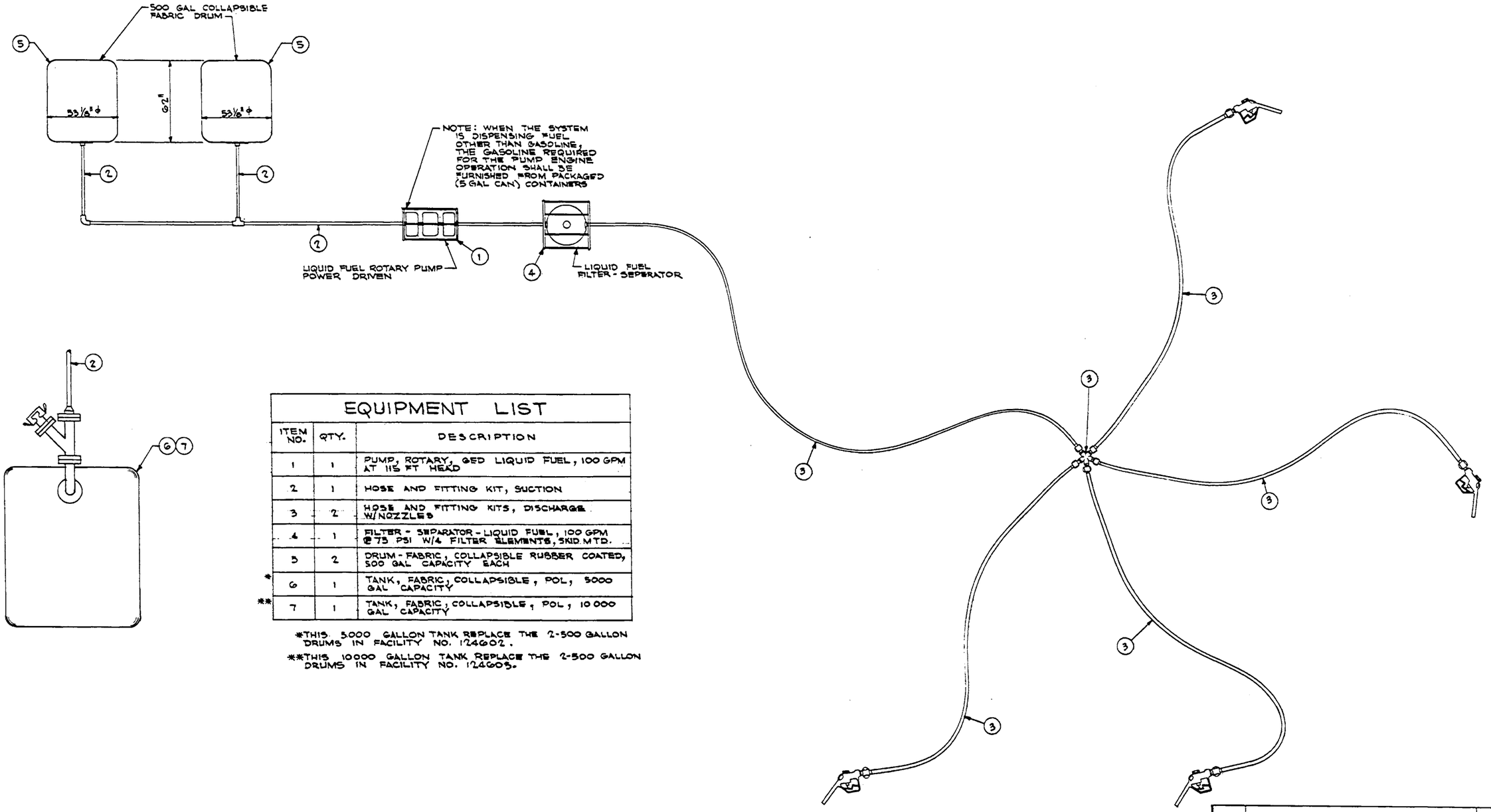
THEATER OF OPERATIONS

P.O.L.
PORTABLE COLLAPSIBLE TANKS
50000 & 100000 GAL. STORAGE CAPACITY

APPROVED: DATE: 19
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PERMANENT AGENCY:
DATE

SCALE: NONE SPEC. NO.
DRAWING NUMBER: 12-45
SHEET 1 OF 1



EQUIPMENT LIST

	ITEM NO.	QTY.	DESCRIPTION
	1	1	PUMP, ROTARY, GED LIQUID FUEL, 100 GPM AT 115 FT HEAD
	2	1	HOSE AND FITTING KIT, SUCTION
	3	2	HOSE AND FITTING KITS, DISCHARGE W/NOZZLES
	4	1	FILTER - SEPARATOR - LIQUID FUEL, 100 GPM @ 75 PSI W/4 FILTER ELEMENTS, SKID MTD.
	5	2	DRUM - FABRIC, COLLAPSIBLE RUBBER COATED, 500 GAL CAPACITY EACH
*	6	1	TANK, FABRIC, COLLAPSIBLE, POL, 5000 GAL CAPACITY
**	7	1	TANK, FABRIC, COLLAPSIBLE, POL, 10 000 GAL CAPACITY

*THIS 5000 GALLON TANK REPLACE THE 2-500 GALLON DRUMS IN FACILITY NO. 124602.

**THIS 10000 GALLON TANK REPLACE THE 2-500 GALLON DRUMS IN FACILITY NO. 124603.

FORWARD AREA REFUELING EQUIPMENT SYSTEM (FARE) WITH TANKAGE

NO SCALE

1000 GALLON STORAGE CAPACITY - FACILITY NO. 124601
5000 GALLON STORAGE CAPACITY - FACILITY NO. 124602
10000 GALLON STORAGE CAPACITY - FACILITY NO. 124603

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NONE

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS

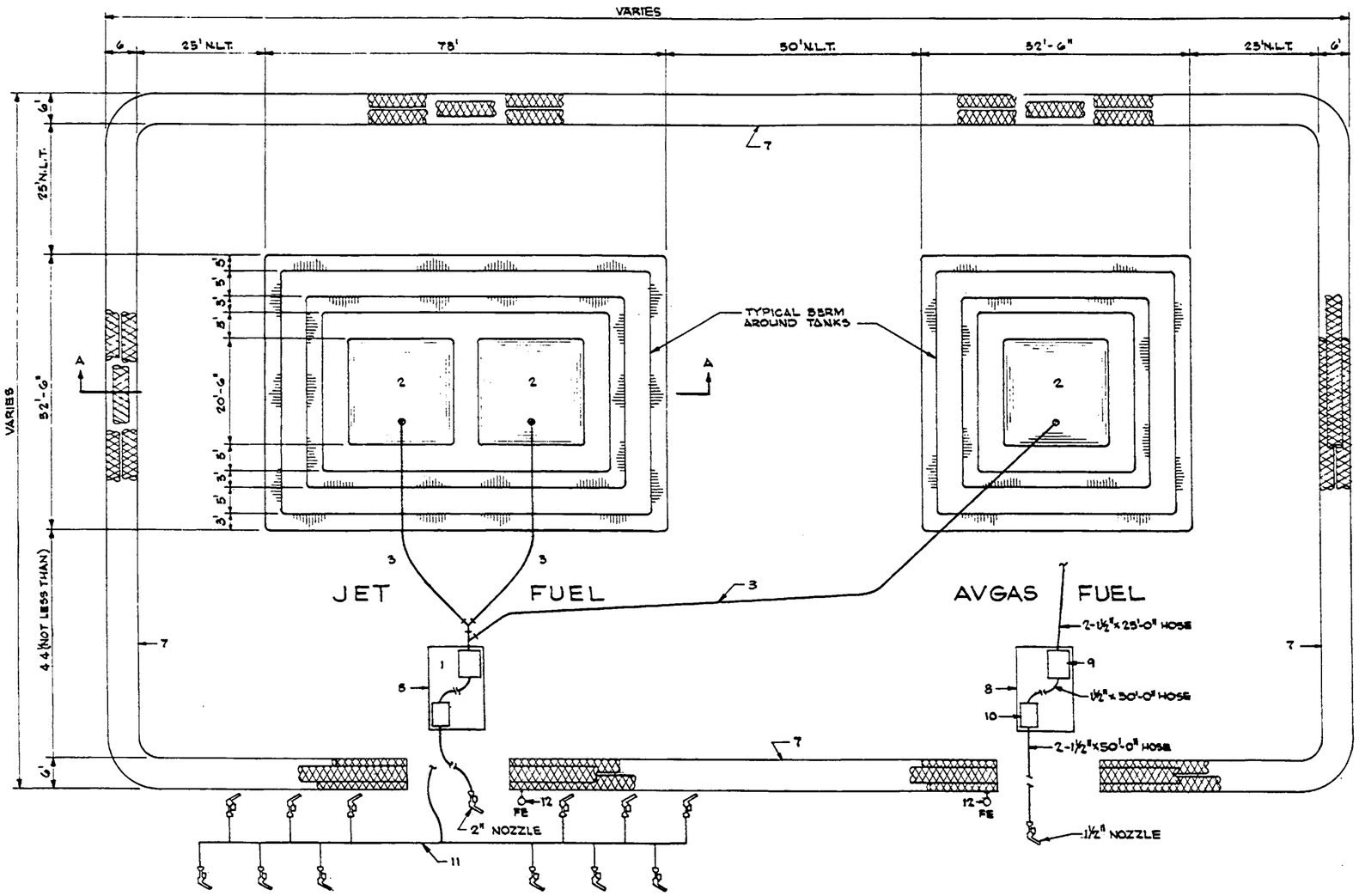
POL FACILITIES
BATTLE - FORWARD AREA FUEL SYSTEM SUPPLY POINT FOR ROTARY & FIXED WING AIRCRAFT REFUELING

APPROVED: DATE: 17 FEB 1971
CHIEF, STRUCTURES BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: USAMC

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-46
SHEET 1 OF 3

DATE

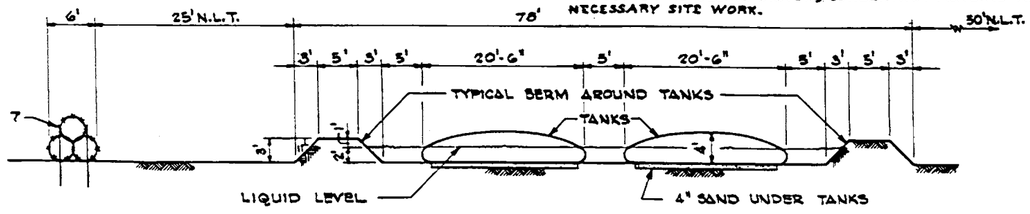


SUPPORT AREA REFUELING SYSTEM 30,000 GALLONS

SCALE NO. 17

FACILITY NO. 124604

NOTES:
1. THE STORAGE CAPACITY OF THE SYSTEM CAN BE INCREASED IN INCREMENTS OF 50,000 GALLONS BY ADDING THE REQUIRED NUMBER OF FACILITIES NO. 124605 TO THE SYSTEM. FACILITY NO. 124605 CONSIST OF 1- 50,000 GAL. COLLAPSIBLE STORAGE TANK, CONNECTING HOSE AND FITTINGS, CONCERTINA FENCING AND THE NECESSARY SITE WORK.
2. ITEM NO. 9 - PUMP UNIT, ITEM NO. 10 - FILTERING UNIT AND ITEM NO. 11 - FLIGHT LINE MANIFOLD SET TO BE INCLUDED IN FACILITY NO. 124607 ONLY.
3. FACILITY NO. 124609 CONSISTS OF 1-50000 GAL. COLLAPSIBLE STORAGE TANK, CONNECTING HOSE AND FITTINGS, 350 GPM FILTER-SEPARATOR UNIT, 350 GPM @ 190 FT. HEAD TRAILER MOUNTED PUMP UNIT, 12-POINT HELICOPTER REFUELING SYSTEM, CONCERTINA FENCING AND THE NECESSARY SITE WORK.



SECTION "A-A"

SCALE NO. 1

SCHEDULE OF EQUIPMENT

ITEM	QTY	DESCRIPTION
1	1	PUMP UNIT W/METER-FILTER @ 300 GPM @ 50 PSI
2		TANK, COLLAPSIBLE, 10,000 GAL., POLYURETHANE
3		HOSE, 4" SUCTION
4		HOSE, 4" PRESSURE
5		HOSE REEL, 2 REEL EACH
6		HOSE, 2½" PRESSURE W/2" NOZZLES & FLOW RATE CONTROLLER
* 7		SECURITY FENCE, TYPE C, CONCERTINA
8		6" THK STABILIZED GRAVEL PADS
9	1	PUMP UNIT W/1½" SUCTION & DISCHARGE HOSE, 50 GPM @ 100'T HEAD (FACILITY 124607 ONLY)
10	1	FILTER-SEPERATOR UNIT 50 GPM (FACIL. 124607 ONLY)
11	1	FLIGHT LINE MANIFOLD SET, 12 POINTS @ 25 GPM EACH (FACILITY 124607 ONLY)
12	2	FIRE EXTINGUISHER MTD ON VERT STAND-20# CO_2 (FACIL. NO. 124604)

FACILITY NO. 124604

* FOR DETAILS SEE DWG. NO. 71-09, SH 1 OF 2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 15' NO. 1

0 5' 10' 15' 20' NO. 17

MAYER, BRAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: R. DE LAMBERT

THEATER OF OPERATIONS

POL FACILITIES
SUPPORT AREA FUEL SUPPLY POINT
FOR ROTARY WING AND FIXED WING AIRCRAFT REFUELING

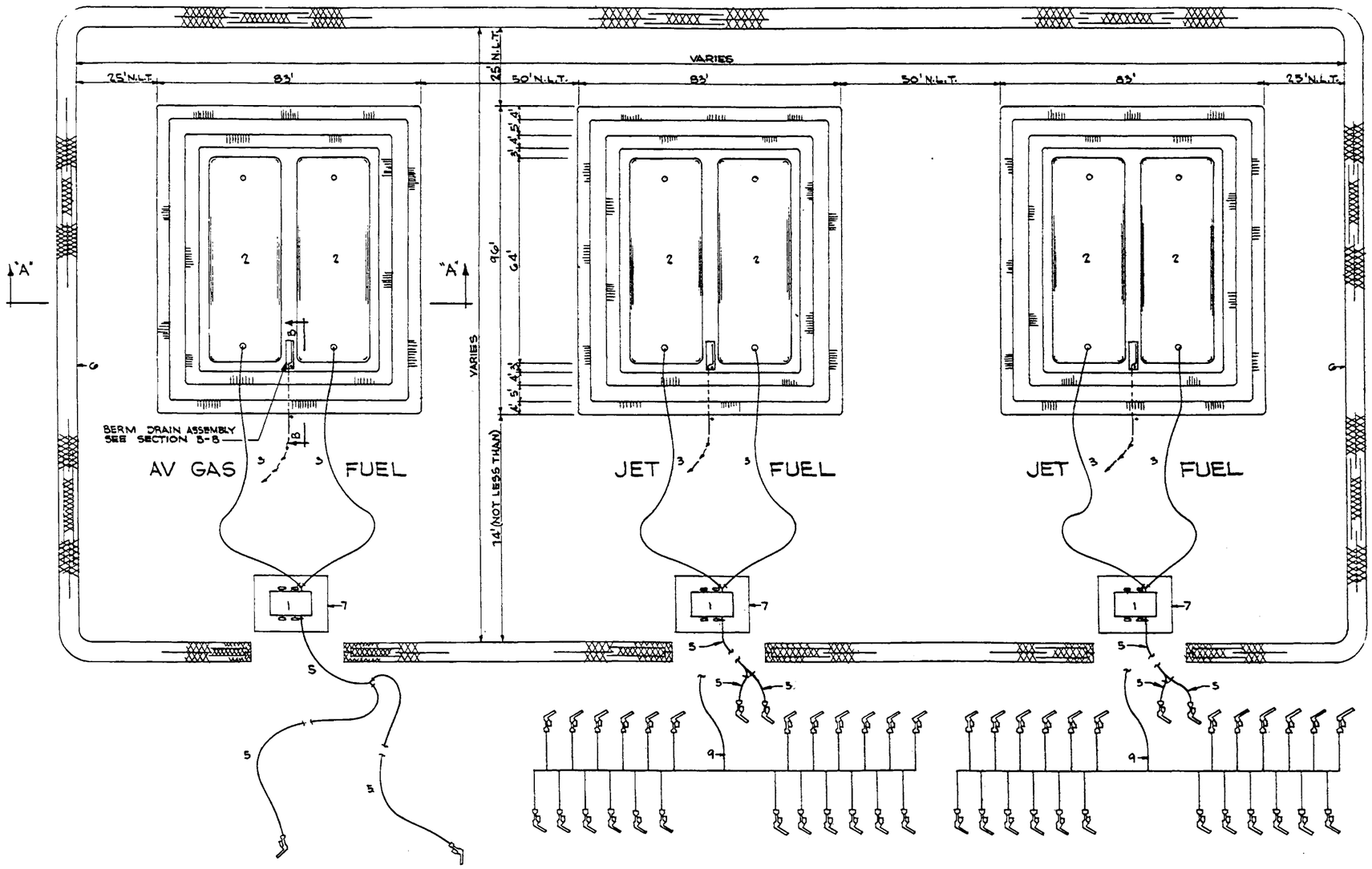
APPROVED: [signature] DATE: 17 FEB ''
CHIEF, STRUCTURES BRANCH

APPROVED: [signature]
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR USING AGENCY: [signature] USAAC
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 3
12-46

SCHEDULE OF EQUIPMENT		
ITEM	QTY	DESCRIPTION
1	3	MOBILE PUMP UNIT, 600 GPM @ 50 PSI
2	6	TANK, COLLAPSIBLE, 50,000 GAL, POLYURETHANE
3		HOSE, 4", SUCTION
4		HOSE, 3", SUCTION-TO FILL TANKS FROM PLANE
5		HOSE, 2", PRESSURE W/NOZZLE
6		SECURITY FENCE, TYPE C, CONCERTINA
7	3	8"THK STABILIZED GRAVEL PAD
8	1	FIREFIGHTING EQUIP.
9	2	MULTIPLE AIRCRAFT FUELING MANIFOLD, 24 POINTS @ 25 GPM EACH (FACIL# 124606 ONLY)

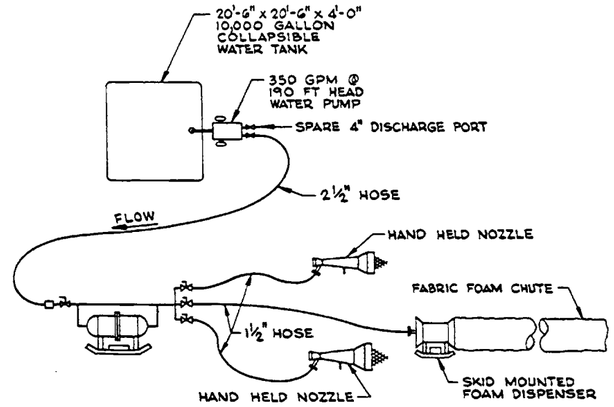


REAR BASE FUELING SYSTEM WITH 300,000 GALLON STORAGE CAPACITY

SCALE NO. 9

FACILITY NO. 124606

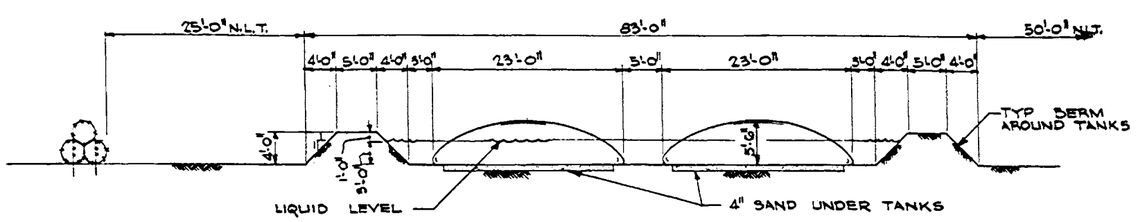
NOTES:
1. THE STORAGE CAPACITY OF THE SYSTEM CAN BE INCREASED IN INCREMENTS OF 50,000 GALLONS BY ADDING THE REQUIRED NUMBER OF FACILITIES NO. 124605 TO THE SYSTEM. FACILITY NO. 124605 CONSISTS OF 1 - 50,000 GALLON COLLAPSIBLE STORAGE TANK, CONNECTING HOSE AND FITTINGS, CONCERTINA FENCING AND THE NECESSARY SITE WORK.
2. ITEM NO. 9, MULTIPLE AIRCRAFT FUELING MANIFOLD TO BE INCLUDED FACILITY NO. 124608 ONLY.



FIREFIGHTING SYSTEM EQUIPMENT

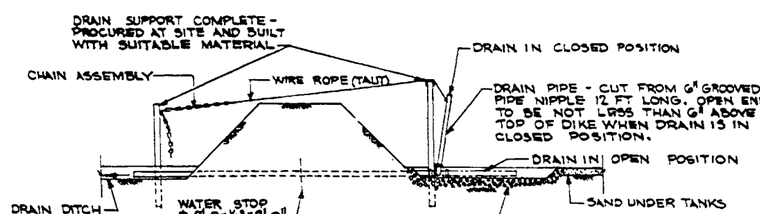
NO SCALE

FACILITY NO. 125207



SECTION "A-A"

SCALE NO. 1



SECTION "B-B"

SCALE NO. 2

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES

0 5' 10' 15' NO. 1 | 0 5' 10' NO. 2 | 0 10' 20' 30' NO. 9

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: SHAFFER
SUBMITTED BY: C. E. DEITCHMANN
APPROVED: CHIEF, STRUCTURES BRANCH
APPROVED: DATE 17 FEB 1[illegible]
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

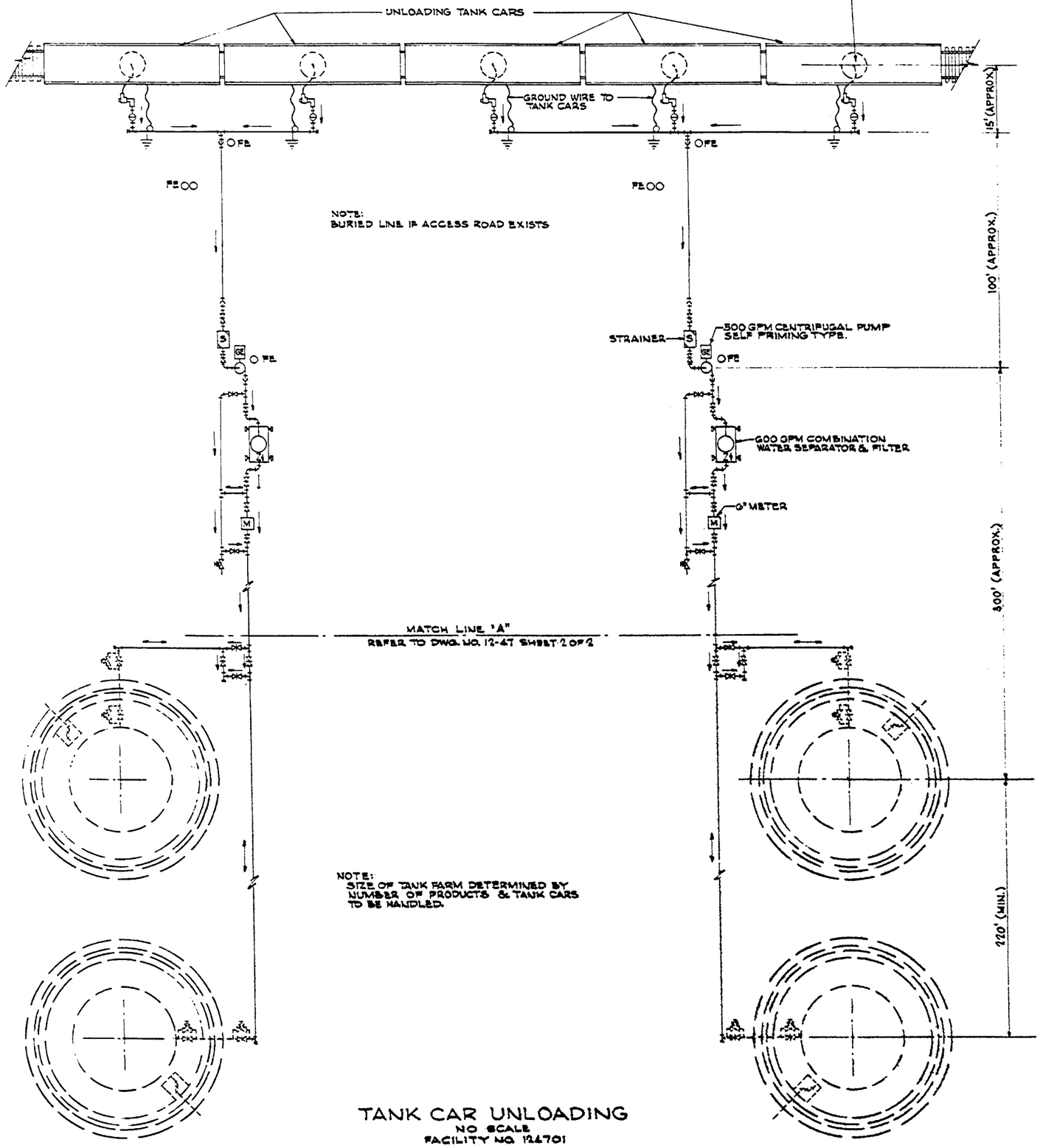
THEATER OF OPERATIONS

POL FACILITIES
REAR AREA FUEL SYSTEM SUPPLY POINT
FOR ROTARY & FIXED WING AIRCRAFT REFUELING

APPROVED FOR COMPONENT AGENCY: USAFE
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-46
SHEET 3 OF 3

NOTE:
1. TO ADAPT THE PUMP SUCTION LINE TO TANK CARS WITH OTHER THAN 5" OUTLET PROVIDE A FIELD FABRICATED ADAPTER BETWEEN ELBOW ASSEMBLY AND TANK CAR OUTLET.
2. TOP UNLOADING DROP PIPE ASSEMBLY TO BE USED FOR TANK CARS WITHOUT BOTTOM OUTLETS.



NOTE:
SIZE OF TANK FARM DETERMINED BY NUMBER OF PRODUCTS & TANK CARS TO BE HANDLED.

NOTES:

1. FOR P&N BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

TANK CAR UNLOADING INSTALLATION
2 PRODUCTS — 5 STATIONS

DESCRIPTION	QTY. INST. NO. REQ'D	FACILITY NO.
UNLOADING STATION, TANK CAR	1	124701
FENCE, SECURITY, VEHICLE & MAN GATE	2	710904
FENCE, SECURITY, TYPE Y, 1000 FT.	1	710903
TURNOUT, RAILROAD	2	861301
TRACK, SINGLE, RAILROAD	0.56	861001

TANK CAR UNLOADING
NO SCALE
FACILITY NO. 124701

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO SCALE

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ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

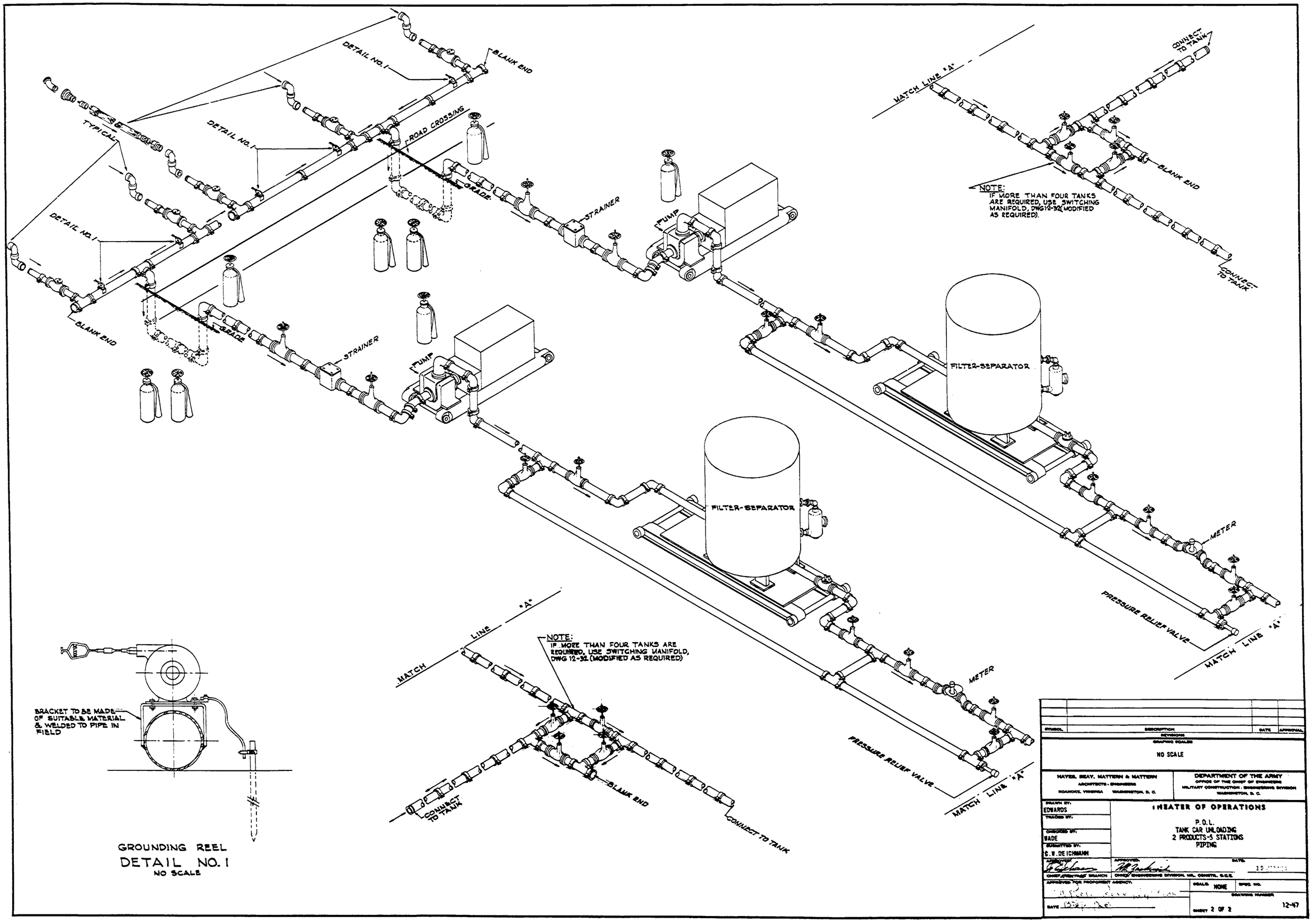
DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: BADE
DESIGNED BY: C. W. DEICHMANN

THEATER OF OPERATIONS

P. O. L.
TANK CAR UNLOADING
2 PRODUCTS-5 STATIONS

APPROVED: [signature] DATE:
CHIEF ENGINEERING DIVISION
APPROVED: [signature] DATE:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR RESIDENT ARCHITECT:
DATE:

SCALE: NONE
SPEC. NO.
DRAWING NUMBER: 12-47
SHEET 1 OF 2



GROUNDING REEL
DETAIL NO. 1
NO SCALE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO SCALE

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ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: MADE
SUBMITTED BY: C. W. DE ICHMANN

THEATER OF OPERATIONS

P.O.L.
TANK CAR UNLOADING
2 PRODUCTS-5 STATIONS
PIPING

APPROVED: DATE: 19
CHIEF, OPERATIONS BRANCH | CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: NONE SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 2 12-47

BUILDING SHELL REQUIREMENTS

1. BASIC BUILDING IS 80'-0" WIDE (NOMINAL) AND 200'-0" LONG (NOMINAL) WITH 10 BAYS AT 20'-0" CENTERS WITH A CLEAR CEILING HEIGHT OF 17'-9 3/4" EXCLUSIVE OF KNEE BRACING. COMPLETE SHOP DRAWINGS OF THE BUILDING WITH ALL APPURTENANCES SHALL BE FURNISHED.
2. ONE LEAN-TO 24'-0" WIDE X 40'-0" LONG WITH THREE OPEN SIDES IS REQUIRED WITH BASIC BUILDING IN THE TROPICAL AND DESERT CLIMATIC ZONES.
3. ONE LEAN-TO 24'-0" WIDE X 40'-0" LONG, FULLY ENCLOSED WITH SLIDING EXTERIOR DOORS, IS REQUIRED WITH THE BASIC BUILDING IN THE TEMPERATE AND FRIGID CLIMATIC ZONES.
4. THE BASIC BUILDING WITH LEAN-TO SHALL BE PRE-ENGINEERED AND PREFABRICATED BOLTED RIGID FRAME OR TRUSS AND COLUMN METAL BUILDING CAPABLE OF BEING DISMANTLED AND RE-ERECTED AT A NEW SITE. SUFFICIENT REPLACEMENT MATERIALS SHALL BE FURNISHED FOR THIS RE-ERECTION. STRUCTURAL STEEL ITEMS SHALL NOT BE GREATER THAN 40'-0" IN LENGTH.
5. DESIGN REQUIREMENTS FOR BASIC BUILDING AND LEAN-TO ARE ACCORDING TO THE RECOMMENDED DESIGN PRACTICES MANUAL AS PUBLISHED BY THE METAL BUILDING MANUFACTURERS EXCEPT WHERE MODIFIED HEREAFTER:
   (a). 5 PSF LIVE LOAD HUNG FROM ROOF PURLINS PLUS INCREASE FOR 3 VENTILATING FANS FOR TROPICAL AND DESERT CLIMATIC ZONES.
   (b). 5 PSF LIVE LOAD HUNG FROM ROOF PURLINS PLUS INCREASE FOR 3 STEAM UNIT HEATERS AND STEAM PIPING FOR THE TEMPERATE AND FRIGID CLIMATIC ZONES.
   (c). 20 PSF LIVE LOAD ON ROOF PLUS INCREASE FOR ONE (1) ROOF VENTILATOR, 3 AIR INTAKE VENTILATORS FOR VENTILATION FOR THE TROPICAL AND DESERT CLIMATIC ZONES.
   (d). 40 PSF LIVE LOAD ON ROOF PLUS INCREASE FOR ONE (1) ROOF VENTILATOR, 3 AIR INTAKE VENTILATORS FOR THE STEAM UNIT HEATERS, FOR THE TEMPERATE AND FRIGID CLIMATIC ZONES.
   (e). 110 MPH WIND LOAD FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
   (f). 4:12 ROOF PITCH, GABLE TYPE FOR BASIC BUILDING AND 4:12 FLAT ROOF PITCH FOR LEAN-TO FOR TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
   (g). ROOF PURLINS OF THE BASIC BUILDING AND LEAN-TO SUPPORTING ROOF VENTILATOR, STEAM UNIT HEATERS, VENTILATING FANS, AIR INTAKE FOR STEAM UNIT HEATERS, STEAM AND CONDENSATE PIPING AND MONORAILS SHALL BE STRUCTURAL STEEL SHAPES OF ADEQUATE STRENGTH TO RESIST THE STATIC AND DYNAMIC LOADING.
   (h). THE MAIN ROOF BEAMS AND/OR TRUSSES SHALL BE CAPABLE OF SUPPORTING ALL THE ROOF AND CEILING LOADS HERETOFORE SPECIFIED AND THE ADDITIONAL STATIC AND DYNAMIC LOADS OF THE MONORAIL SYSTEMS WITH APRON EXTENSIONS AS SHOWN ON THE DRAWINGS.
6. WALL COVERING FOR THE TROPICAL AND DESERT CLIMATIC ZONES SHALL BE MADE FROM HOT DIPPED GALVANIZED SHEETS NOT LESS THAN 26 GAGE, WEATHERTIGHT. PANEL TYPE STANDARD WITH MANUFACTURER WITH CONTINUOUS HOODED AND GALVANIZED SCREENED VENTILATION OPENING APPROXIMATELY 2'-2" HIGH ALONG ALL EXTERIOR WALLS NEAR FLOOR LINE, EXCEPT THAT PORTION THAT SEPARATES THE LEAN-TO AND THE PORTIONS UNDER THE SLIDING DOORS IN THE OPEN POSITION AND DOOR OPENINGS.
7. WALL COVERING FOR THE TEMPERATE AND FRIGID CLIMATIC ZONES SHALL BE MADE FROM HOT DIPPED GALVANIZED SHEETS NOT LESS THAN 26 GA WITH 2-INCH FACTORY FOAMED IN PLACE POLYURETHANE BETWEEN THE DOUBLE SHEETS. THE WALL PANELS SHALL BE DESIGNED FOR WEATHER TIGHTNESS AND HAVE A "U" FACTOR OF 0.073. THE WALL PANELS SHALL BE STANDARD WITH THE MANUFACTURER WITH CONTINUOUS HOODED AND GALVANIZED SCREENED VENTILATION OPENING APPROXIMATELY 2'-2" HIGH ALONG ALL EXTERIOR WALLS NEAR FLOOR LINE EXCEPT THAT PORTION THAT SEPARATES THE LEAN-TO AND THE PORTIONS UNDER THE SLIDING DOORS AND DOOR OPENINGS.
8. ROOF COVERING SHALL BE MADE FROM HOT DIPPED DOUBLE GALVANIZED SHEETS NOT LESS THAN 26 GA WITH 1 3/4 INCH FACTORY FOAMED IN PLACE POLYURETHANE BETWEEN THE DOUBLE SHEETS. THE ROOF PANELS SHALL BE DESIGNED FOR WEATHER TIGHTNESS AND HAVE A "U" FACTOR OF 0.10 FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
9. ALL ROOF AND WALL PANELS, EAVE TRIM, FLASHING, CLOSURE STRIPS AND OTHER TRIM SHALL BE GALVANIZED AND FACTORY PAINTED (4 COAT PROTECTION BOTH SIDES).
   (a). THE ROOF PANELS AND TRIM SHALL BE FROST WHITE OUTSIDE AND GRAYISH OFF-WHITE INSIDE.
   (b). THE WALL PANELS AND TRIM SHALL BE CACTUS GREEN OUTSIDE AND GRAYISH OFF-WHITE INSIDE.
   (c). THE ROOF VENTILATOR AND ROOF FRESH AIR INTAKE VENTILATOR SHALL BE PAINTED IN THE SAME COLOR AND MANNER AS THE ROOF PANELS.
   (d). THE SIDE WALL VENTILATORS SHALL BE PAINTED IN THE SAME COLOR AND MANNER AS THE WALL PANELS.
10. THE STRUCTURAL FRAMES SHALL BE COATED WITH RED OXIDE. THE PERSONNEL, PERSONNEL SCREEN AND SLIDING DOORS SHALL BE FACTORY PAINTED GRAY (4 COAT PROTECTION BOTH SIDES).
11. THE WALL COVERING FOR THE BASIC BUILDING SHALL BE PROVIDED WITH A STRUCTURAL FRAMED OPENING 7'-0" WIDE X 7'-0" HIGH WITH 15-INCH WIDE CLOSURE STRIPS WITH GASKETS TO PROVIDE A GAS TIGHT SPACE FOR INSERTION OF A WALK-IN REFRIGERATOR FROM THE LEAN-TO.
12. THE ALUMINUM WINDOWS WITH PLASTIC GLAZING AND REMOVABLE PLASTIC SCREEN W/ALUMINUM FRAMES AND HARDWARE SHALL BE OF THE SIZE AND NUMBER SHOWN ON THE DRAWINGS. THE PLASTIC GLAZING AND SCREEN MATERIALS WILL BE GOVERNMENT FURNISHED.
13. THE PERSONNEL, PERSONNEL SCREEN AND SLIDING STEEL DOORS AND HARDWARE SHALL BE OF THE SIZE AND NUMBER SHOWN ON THE DRAWINGS. THE END SLIDING DOORS SHALL BE NOTCHED TO PROVIDE SPACE FOR THE EXTENSION OF THE 3 TON MONORAIL OVER THE CONCRETE APRONS. PROVIDE SUITABLE FLEXIBLE CLOSURES ON THE SLIDING DOORS AROUND THE MONORAIL TO MINIMIZE AIR LEAKAGE.
14. ONE (1) 3-TON ELECTRIC HOIST WITH TROLLEY FOR 8 FEET PER MINUTE LIFTING SPEED AND 25 FEET LIFT, 1 HP 50/60 HERTZ, 208/416 VOLT (DUAL VOLTAGE), MOTOR WITH MAGNETIC STARTER AND PISTOL GRIP PUSH BUTTON CONTROL STATION AND SUFFICIENT OPERATING CABLE FOR 130 FEET TRAVEL EITHER WAY FROM THE CENTER COMPLETE WITH A STRUCTURAL STEEL MONORAIL AND SUPPORTS WITH BOTTOM OF THE MONORAIL 20 FEET ABOVE THE FLOOR LINE SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
15. ONE (1) STRUCTURAL STEEL MONORAIL AND SUPPORTS COMPLETE WITH EIGHT (8) 1/2 TON, SPUR GEAR TYPE, CHAIN FALLS WITH TROLLEYS AND 255 FEET LONG CONTINUOUS LOOP OPERATING CHAIN AND THE BOTTOM OF THE MONORAIL 16 FEET ABOVE THE FLOOR LINE SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
16. ONE (1) CENTRALLY LOCATED BLACK-OUT TYPE POWER ROOF VENTILATION FAN MEETING MILITARY SPECIFICATION MIL-F-16081, TYPE II, CLASS 1, STYLE B, FIGURE 2 WITH INTEGRAL CEILING BACKDRAFT DAMPER, SIZE 16-INCH DIAMETER, 1600 CFM FREE AIR CAPACITY COMPLETE WITH 1/8 HP, 115/230 VOLT, 50/60 HERTZ MOTOR WITH MANUAL STARTER SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
17. EIGHT (8) WALL MOUNTED VENTILATION FANS MEETING MILITARY SPECIFICATION MIL-F-16081, TYPE II, CLASS 1, STYLE A, WITH INTEGRAL GRAVITY BACKDRAFT LOUVERS, SIZE 24-INCH DIAMETER, 4700 CFM FREE AIR CAPACITY COMPLETE WITH 1/4 HP, 115/230 VOLT, 50/60 HERTZ MOTOR WITH MANUAL STARTER SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES. THE INVERT OF THE FAN HOUSING SHOULD BE NOT MORE THAN 2'-6" ABOVE FINISHED FLOOR LINE. A HEAVY METAL GUARD SHALL BE PROVIDED FOR EACH FAN.
18. ONE (1) WALL MOUNTED VENTILATION FAN MEETING MILITARY SPECIFICATION MIL-F-16081 REQUIREMENTS FOR TYPE II, CLASS 1, STYLE A, WITH INTEGRAL GRAVITY BACKDRAFT LOUVER, SIZE 16-INCH DIAMETER, 1600 CFM FREE AIR CAPACITY COMPLETE WITH 1/8 HP, 115/230 VOLT, 50/60 HERTZ MOTOR WITH MANUAL STARTER SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES. INVERT OF THE FAN HOUSING SHALL BE NOT MORE THAN 2'-6" ABOVE THE FINISHED FLOOR LINE. A HEAVY METAL GUARD SHALL BE PROVIDED FOR THE FAN.
19. THREE (3) PURLIN HUNG STEAM UNIT VENTILATORS SHALL BE SPACED AT 1/6 POINTS AND CENTER OF BUILDING. THE VENTILATORS SHALL HAVE ROTATING DISCHARGE NOZZLES SO SIZED TO BREAK UP POCKETS OF EXPLOSIVE GASES AT THE FLOOR LEVEL. EACH STEAM UNIT VENTILATOR SHALL BE PROVIDED WITH A NON-FREEZE STEAM HEATING COIL AND CONNECTED TO A ROOF MOUNTED, MUSHROOM TYPE, HINGED AIR INTAKE VENTILATOR WITH BIRD SCREEN COVERED OPENINGS BY MEANS OF A 16 GAGE GALVANIZED DUCT WITH A FLEXIBLE CONNECTION. THE CONNECTING DUCT SHALL BE PROVIDED WITH A BY-PASS DAMPER ARRANGEMENT. NORMALLY 100 PERCENT OPEN TO THE FRESH AIR INTAKE. THE BY-PASS DAMPER SHALL BE ACTUATED BY 2 THERMOSTATS MOUNTED ON THE INTERIOR THROAT OF THE ROOF VENTILATOR IN THE PATH OF THE FRESH AIR STREAM. THE PRIMARY

BUILDING SHELL REQUIREMENTS - CONTINUED

THERMOSTAT WILL ENERGIZE THE ELECTRICAL CIRCUIT TO THE SECONDARY TREATMENT WHEN THE AMBIENT TEMPERATURE FALLS BELOW ZERO DEGREES F AND DE-ENERGIZE THE CIRCUIT WHEN THE AMBIENT TEMPERATURE RISES ABOVE ZERO DEGREES F. THE SECONDARY THERMOSTAT WILL BE LOCATED ADJACENT TO THE PRIMARY THERMOSTAT AND WILL HAVE AN INSERTION BULB SENSING ELEMENT EXTENDING DOWN INTO THE MIXED AIR TO THE STEAM UNIT VENTILATOR SUCTION AND WILL ACTUATE THE DAMPER MOTOR TO MAINTAIN THE MIXED SUPPLY AIR TO THE COIL AT ZERO DEGREES F. THE DAMPER MOTOR SHALL BE 50/60 HERTZ, 115 VOLT, MODULATING TYPE, SPRING ACTUATED TO FULLY CLOSE THE ROOM AIR SUPPLY ON THE LOSS OF ELECTRIC POWER. A LOW VOLTAGE DAMPER MOTOR MAY BE SUBSTITUTED PROVIDED A SUITABLE TRANSFORMER IS FURNISHED. THE BY-PASS DAMPER SHALL BE LOCATED IN THE THROAT OF THE FRESH AIR INTAKE VENTILATOR WITH THE MODULATING MOTOR MOUNTED ON THE EXTERIOR OF THE THROAT IN A WEATHERTIGHT ACCESSIBLE HOUSING, ALL ABOVE THE ROOF LINE AND OUT OF THE EXPLOSIVE GAS AREA. THE ROOF AIR INTAKE VENTILATOR SHALL HAVE A FRESH AIR OUTLET DUCT CONNECTING TO THE STEAM UNIT VENTILATOR AND A RECIRCULATING DUCT FROM THE ROOM SPACE, ALL HOUSED IN ONE SHELL. EACH STEAM UNIT VENTILATOR SHALL HAVE A HEATING OUTPUT OF 1,896,000 BTU/HR WHEN HEATING 15,800 CFM OF ZERO DEGREE F INLET AIR TO NOT MORE THAN 120 DEGREE F OUTLET TEMPERATURE TO MAINTAIN A SPACE TEMPERATURE OF 70 DEGREES F, WITH AMBIENT AIR TEMPERATURE OF MINUS 20 DEGREES F WHEN USING 125 PSIG SATURATED STEAM. EACH STEAM UNIT VENTILATOR SHALL BE COMPLETE WITH 3 HP, 208/416 VOLT (DUAL VOLTAGE), 50/60 HERTZ MOTOR WITH MAGNETIC STARTER WITH REMOTE PUSH BUTTON. THE STEAM UNIT VENTILATOR SHALL OPERATE CONTINUOUSLY, TO PROVIDE HEATING AND VENTILATION FOR THE WINTER MONTHS AND VENTILATION ONLY IN THE OFF-SEASON AND SUMMER MONTHS. THE STEAM UNIT VENTILATORS WITH CONTROLS AND AIR INTAKE VENTILATORS WITH CONNECTING DUCTWORK SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TEMPERATE CLIMATIC ZONES.

20. THREE (3) STEAM UNIT VENTILATORS CONTROLLED AND SPACED AS DESCRIBED ABOVE. EACH STEAM UNIT VENTILATOR SHALL HAVE A HEATING OUTPUT OF 1,989,000 BTU/HR WHEN HEATING 15,800 CFM OF ZERO DEGREES F INLET AIR TO NOT MORE THAN 120 DEGREES F OUTLET TEMPERATURE TO MAINTAIN A SPACE TEMPERATURE OF 70 DEGREES F WITH AMBIENT AIR OF MINUS 40 DEGREES F WHEN USING 125 PSIG SATURATED STEAM. EACH STEAM UNIT VENTILATOR SHALL BE COMPLETE WITH 3 HP, 208/416 VOLT (DUAL VOLTAGE), 50/60 HERTZ MOTOR WITH MAGNETIC STARTER WITH REMOTE PUSH BUTTON. THE STEAM UNIT VENTILATORS WITH CONTROLS AND AIR INTAKE VENTILATORS WITH CONNECTING DUCTWORK SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE FRIGID CLIMATIC ZONE.
21. THREE (3) PURLIN HUNG VENTILATING FANS SPACED AT 1/6 POINTS AND CENTER OF BUILDING. EACH FAN SHALL HAVE A MUSHROOM TYPE, ROOF MOUNTED FRESH AIR INLET VENTILATOR WITH BIRD SCREEN AND SHALL HAVE ROTATING DISCHARGE NOZZLES SO SIZED TO BREAK UP POCKETS OF EXPLOSIVE GASES AT THE FLOOR LEVEL. EACH VENTILATING FAN SHALL HAVE A 15,800 CFM OF AIR OUTPUT AND SHALL BE COMPLETE WITH 3 HP, 208/416 VOLT (DUAL VOLTAGE), 50/60 HERTZ MOTOR WITH MAGNETIC STARTER AND REMOTE PUSH BUTTON. THE VENTILATORS WITH CONTROLS SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL AND DESERT CLIMATIC ZONES.
22. THE STEAM UNIT VENTILATOR AND PURLIN HUNG VENTILATING FAN BIRD SCREEN SHALL CONFORM TO FEDERAL SPECIFICATION RR-W-360, TYPE I, CLASS 1, WITH 2x2 MESH, 0.063 INCH DIAMETER ALUMINUM WIRE OR 0.031 INCH DIAMETER STAINLESS STEEL WIRE.
23. THE FLEXIBLE NON-COMBUSTIBLE DUCT CONNECTOR SHALL BE CLASS B, UNDERWRITERS GRADE, WOVEN ASBESTOS CLOTH WEIGHING NOT LESS THAN 15-OUNCE PER SQUARE YARD AND CONFORMING TO THE REQUIREMENTS OF ASTM SPECIFICATION D 1671.
24. ONE (1) 4" ELECTRIC MOTORIZED MODULATING, MAIN SPACE STEAM, CONTROL VALVE WITH STRAINER HAVING NOT MORE THAN 3/32-INCH MESH OPENINGS. THE VALVE SHALL BE SPRING ACTUATED TO OPEN FULLY ON LOSS OF ELECTRIC POWER. THE VALVE SHALL BE FOR 120 VOLT, SINGLE PHASE 50/60 HERTZ SERVICE, HOWEVER, THE VALVE MAY BE FURNISHED FOR LOW VOLTAGE PROVIDED AN ADEQUATE TRANSFORMER IS PROVIDED. THE VALVE SHALL BE CONTROLLED BY AN INSERTION BULB SENSING ELEMENT EXTENDING INTO THE MAIN BUILDING SPACE TO MAINTAIN A ROOM TEMPERATURE OF 70 DEGREES F. THE VALVE SHALL BE LOCATED IN THE LEAN-TO AREA AND ADJACENT TO THE WALL OF THE MAIN SPACE.
25. ONE (1) 3/4" ELECTRIC MOTORIZED MODULATING, LEAN-TO STEAM LINE, CONTROL VALVE WITH STRAINER, SPRING ACTUATED AND ELECTRIC SERVICE AS DESCRIBED ABOVE. THE VALVE SHALL BE CONTROLLED BY A SURFACE MOUNTED ROOM THERMOSTAT IN THE LEAN-TO AREA TO MAINTAIN THE SPACE TEMPERATURE AT 50 DEGREES F.
26. TWO (2) CENTRIFUGAL PUMPS, SELF-PRIMING, SCREWED INLET AND OUTLET FOR TANK AND DRUM FLUSHING WATER USING FLOODED SUCTION RATED AT 210 GPM @ 50 PSI DISCHARGE HEAD W/DIRECT CONNECTED 10 HP SPLASHPROOF MOTORS, 208/416 VOLTAGE, 50/60 HERTZ WITH MAGNETIC STARTER SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
27. TWO (2) CENTRIFUGAL PUMPS, SELF-PRIMING, SCREWED INLET AND OUTLET FOR HYDROSTATIC TESTING WATER USING FLOODED SUCTION, RATED AT 250 GPM AGAINST 30 PSIG DISCHARGE HEAD WITH DIRECT CONNECTED 7 1/2 HP SPLASHPROOF MOTORS, 208/416 VOLTAGE, 50/60 HERTZ WITH MAGNETIC STARTER SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
28. ONE (1) DESIGN 5, CONDENSATE PUMPING UNIT MEETING THE REQUIREMENTS OF MILITARY SPECIFICATION MIL-P-17749, TYPE I, STYLE B, SIZE 30, 150 PSIG DISCHARGE HEAD AS MODIFIED. THE MOTORS SHALL BE 15.0 HP SPLASHPROOF, 208/416 VOLT (DUAL VOLTAGE), 50/60 HERTZ, WITH MAGNETIC STARTERS AND REMOTE PUSH BUTTONS SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TEMPERATE AND FRIGID CLIMATIC ZONES. USE SIZE 15 PUMPING UNIT, SAME AS HERETOFORE W/2-10 HP MOTORS FOR TROPICAL & DESERT ZONES.
29. ALL REMOTE PUSHBUTTONS FOR THE STEAM UNIT VENTILATORS, PURLIN HUNG VENTILATING FANS, WATER AND CONDENSATE PUMPS SHALL HAVE PILOT LIGHTS AND MAGNETIC STARTERS FOR THE ABOVE EQUIPMENT AND SHALL BE COMBINATION MAGNETIC STARTERS WITH DISCONNECT SWITCH.
30. ONE (1) ENAMELED SHEET STEEL NEMA TYPE I PUSH BUTTON UNIT ENCLOSURE FOR WALL MOUNTING IN THE LEAN-TO, WITH ENGRAVED METAL PLATES IDENTIFYING THE SET OF CONTROLS FOR EACH PIECE OF EQUIPMENT SHALL BE INCLUDED IN THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES. IT SHALL CONTAIN ALL PUSH BUTTON UNITS HEREINBEFORE SPECIFIED EXCEPT THAT FOR THE ELECTRICAL HOIST.
31. THE ELECTRICAL POWER AND LIGHTING PANELS, PUSH BUTTON UNIT, THE ELECTRICAL SERVICE ENTRANCE AND CIRCUIT BREAKERS SHALL BE LOCATED IN THE NON-EXPLOSIVE AREA OF THE LEAN-TO. SEAL FITTINGS WITH COMPOUND SHALL BE FURNISHED FOR ISOLATING ALL CONDUIT ATMOSPHERE AT THE INTERIOR WALL.
32. ALL STEAM, CONDENSATE, AIR AND WATER LINE PIPING, FITTINGS, VALVES, STEAM TRAPS, HANGERS, INSULATION, ETC., COMPLYING WITH ALL THE REQUIREMENTS SET FORTH IN THE MECHANICAL NOTES SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES WHERE APPLICABLE. THE HEATING REQUIREMENTS APPLY ONLY TO THE TEMPERATE AND FRIGID CLIMATIC ZONES.
33. ALL ELECTRIC POWER AND LIGHTING MATERIALS AND FIXTURES COMPLYING WITH ALL THE ELECTRICAL REQUIREMENTS SET FORTH IN THE ELECTRICAL NOTES SHALL BE INCLUDED WITH THE BASIC BUILDING FOR THE TROPICAL, DESERT, TEMPERATE AND FRIGID CLIMATIC ZONES.
34. ALL CAPACITIES SPECIFIED FOR THE FANS, STEAM UNIT VENTILATORS, PUMPS AND ELECTRIC HOIST MOTORS ARE BASED ON USING 60 HERTZ ELECTRIC POWER.
35. ALL MECHANICAL AND ELECTRICAL REQUIREMENTS AS SHOWN SEPARATELY SHALL GOVERN THE QUALITY AND QUANTITY OF MATERIALS AND METHODS OF INSTALLATION THAT THE BUILDING SHELL MANUFACTURER SHALL OBSERVE WHEN FURNISHING THE BUILDING SHELL MATERIALS SO THAT A FUNCTIONAL INSTALLATION CAN BE OBTAINED.
36. ALL STRUCTURAL STEEL BUILDING ANCHORS AND HORIZONTAL BUILDING TIES SHALL BE INCLUDED WITH THE BASIC BUILDING AND LEAN-TO.

DOOR SCHEDULE

MARK	NO.	OPENING SIZE	THK.	TYPE OF DOOR	SCREENING**
EXTERIOR DOORS FURNISHED BY BUILDING SHELL MFGR.					
ED-1	2	14'-0"X21'-0"	MFGR	DOUBLE SLIDING W/3068 PILOT DOOR	NONE*
ED-2	4	10'-0"X13'-9"	MFGR	DOUBLE SLIDING DOOR	NONE
ED-3	1	10'-0"X13'-9"	MFGR	SINGLE SLIDING W/3068 PILOT DOOR	NONE*
ED-4	7	3'-0"X 6'-8"	1 3/8	METAL - FLUSH W/DOOR CLOSURES	PLASTIC****
INTERIOR DOORS FURNISHED BY EFCS.					
2-W	1	3'-0"X6'-10"	1 1/2	DUTCH DOOR	NONE
2-F	1	3'-0"X6'-10"	1 3/8	5 PANEL	NONE

WINDOW SCHEDULE

MARK	NO.	OPENING SIZE	SILL HGT.	STYLE	GLAZING***	SCREENING***
WINDOWS W/SCREENS FURNISHED BY BUILDING SHELL MFGR.						
W-1	28	5'-0"X3'-6"	3'-6"±	AL. ROLLING	PLASTIC	PLASTIC
W-2	6	3'-0"X3'-6"	3'-6"±	AL. ROLLING	PLASTIC	PLASTIC

*SCREEN DOOR NOT REQUIRED FOR PILOT DOOR.
**PLASTIC SCREENING FURNISHED BY EFCS.
***PLASTIC GLAZING AND SCREENING FURNISHED BY EFCS.
****OMIT SCREEN DOOR BETWEEN MAIN BUILDING AND LEAN-TO IN TEMP AND FRIGID ZONES.

MECHANICAL NOTES

1. ALL PIPING SHALL BE 3/4", 1 1/4", 2", 4" OR 6" EXCEPT FOR THE LAST FEW INCHES CONNECTING TO THE EQUIPMENT. THE CONNECTING PIPING SHALL BE SIZED ACCORDING TO THE MANUFACTURERS PIPE OPENINGS ON THE EQUIPMENT. THE PIPE REDUCTION IN SIZE SHALL BE MADE BY REDUCING FITTINGS AND NIPPLES.
2. ALL PIPING SHALL BE SCHEDULE 40, GALV. STEEL ACCORDING TO THE REQUIREMENTS OF API STD 5L, GRADE B.
3. ALL PIPING SHALL BE GRADED 1 INCH IN 40 FEET IN THE DIRECTION OF THE FLOW.
4. ALL AIR LINES SHALL BE PITCHED TO LOW POINTS AND PROVIDED WITH DRAIN VALVES AT EVERY LOW POINT.
5. THREADED TYPE FITTINGS WITH ANY OUTLET LESS THAN 2 INCHES SHALL BE MALLEABLE IRON. THREADED TYPE FITTINGS OF SIZE 2 THROUGH 6 INCHES MAY BE EITHER MALLEABLE IRON OR CAST IRON, UNLESS SPECIFIED HEREINAFTER AS WELDED TYPE. ALL FITTINGS FOR 8 INCH AND 12 INCH PIPE SHALL BE WELDED TYPE. ALL THD FITTINGS GALV.
6. ANY FITTING 6" AND LARGER SUBJECTED TO EXPANSION BENDING STRESSES SHALL BE WELDED TYPE.
7. EXPANSION LOOPS OR BENDS FOR 2 INCH PIPE AND UNDER IN DIAMETER SHALL BE FIELD BENT TO DESIRED CONFIGURATION IN LIEU OF USING FITTINGS.
8. ECCENTRIC THREADED SWAGED NIPPLES OR ECCENTRIC WELD TYPE REDUCING FITTINGS SHALL BE USED FOR CHANGING STEAM AND AIR PIPE SIZES.
9. ALL PIPING SHALL BE HYDROSTATICALLY TESTED TO 150% OF WORKING PRESSURE. INSULATION SHALL NOT BE INSTALLED UNTIL AFTER THE HYDROSTATIC TESTS HAVE BEEN MADE.
10. 3/4" HOSE BIBBS SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS.
11. ALL EQUIPMENT PIPING SHALL BE PROVIDED WITH SECTIONALIZING VALVES AND UNIONS.
12. STEAM PIPING IS SIZED ON A PRESSURE DROP OF 15/100' AND CONDENSATE PIPING IS SIZED ON A PRESSURE DROP OF 3/55/100'.
13. AIR PIPING IS SIZED ON A PRESSURE DROP OF 1.56/100'.
14. THE FINNED RADIATORS SHALL HAVE 2-INCH CORE AND CONFORM TO THE REQUIREMENTS OF MILITARY SPECIFICATION MIL-R-11723.
15. ALL PIPE HANGERS AND HANGERS RODS SHALL CONFORM TO FEDERAL SPECIFICATION WW-H-171. THE HANGER SPACING SHALL ALSO CONFORM TO THE ABOVE SPECIFICATION REQUIREMENTS. ADJUSTABLE PIPE HANGERS SHALL BE TYPE 1 AND THE BEAM ATTACHMENTS TO THE ROOF PURLINS AND BEAMS SHALL BE TYPE 20 OR 29. THE PURLIN HUNG STEAM UNIT VENTILATORS AND VENTILATING FANS SHALL BE SUPPORTED OR HUNG AS REQUIRED TO MEET THE BUILDING SHELL MANUFACTURERS SPECIFIC REQUIREMENTS.
16. THE PIPING INSULATION SHALL BE MOULDED AND IN 3'-0" LENGTHS. FITTINGS SHALL BE COVERED WITH A MIXTURE OF 85 PERCENT MAGNESIA AND PORTLAND CEMENT. THE CONDENSATE RECEIVER, FLUSH WATER TANK AND HOT WATER GENERATORS SHALL BE COVERED WITH 2-INCH BLOCKS WIRED IN PLACE AND COATED WITH A PORTLAND CEMENT AND MAGNESIA HARD COAT AT LEAST 1/2" THICK. THE INSULATION SHALL CONFORM TO THE REQUIREMENTS OF FEDERAL SPECIFICATION HH-I-558. THE FLUSH WATER TANK SHALL HAVE 2" LUMBER PLACED UNDER ENTIRE BOTTOM OF TANK FOR INSULATION PURPOSES.
17. OUTSIDE AIR LINES, ALL STEAM & CONDENSATE LINES AND HOT WATER LINES SHALL BE INSULATED. ALL OUTSIDE INSULATED LINES ARE TO BE WRAPPED WITH 2 LAYERS OF 15# FELT ROOFING AND COVERED WITH 20 GA GALVANIZED SHEET METAL COVERING.
18. BOTH WATER AND AIR, 5 1/2" DIAMETER PRESSURE GAGES SHALL BE INSTALLED ON EACH BRANCH AND MAIN WATER OR AIR LINE NEAR THE POINT OF USE.
19. TEN (10) AIR PRESSURE REGULATORS, 3-1/2", AND 2-2" INLET AND OUTLET, COMPLETE WITH STRAINERS, AND REGULATING SPRINGS AND DIAPHRAGMS REQUIRED TO ALLOW REGULATION OF 100 PSIG AIR INLET PRESSURE TO OUTLET PRESSURES BETWEEN 30 TO 90 PSIG. THE REGULATORS SHOULD BE INSTALLED NEAR VULCANIZING PRESSES AND SPRAY GUNS AND AS OTHERWISE DIRECTED BY THE CONTRACTING OFFICER.
20. ALL CONDENSATE TRAPS FOR THE STEAM UNIT VENTILATORS WITH NON-FREEZE COILS SHALL BE SIZED FOR TWO AND ONE-HALF TIMES THE CONDENSATE RATE. THE TRAPS SHALL BE BUCKET WITH FLOAT. EACH UNIT VENTILATOR SHALL BE EQUIPPED WITH 1/2-INCH CHECK VALVES FOR VACUUM BREAKER SERVICE ON THE RETURN SIDE BETWEEN COIL AND TRAP AND

EQUIPMENT FURNISHED BY EFCS

ITEM NO.	NO. REQD.	DESCRIPTION	VOLT	HP	KVA	COMP. AIR CFM	COMP. AIR PSIG	STEAM #/HR
1	3	AIR COMPRESSOR, DIESEL - 600 CFM @ FREE AIR	---	---	---	---	---	---
2	1	FUEL STORAGE TANK, 275 GAL.	---	---	---	---	---	---
3	1	WALK-IN REFRIGERATOR, 150 CF	208-36	5	---	---	---	---
4	1	FLUSH WATER STORAGE TANK, 4200 GAL (BOLTED)	---	---	---	---	---	---
5	1	TEST WATER STORAGE TANK, 4200 GAL (BOLTED)	---	---	---	---	---	---
6	21	FIRE EXTINGUISHERS, 20 BC DRY CHEM TYPE	---	---	---	---	---	---
24	2	HOT WATER GENERATOR - 750 GAL @ 150°F	---	---	---	---	---	3052

EQUIPMENT FURNISHED BY USING AGENCY

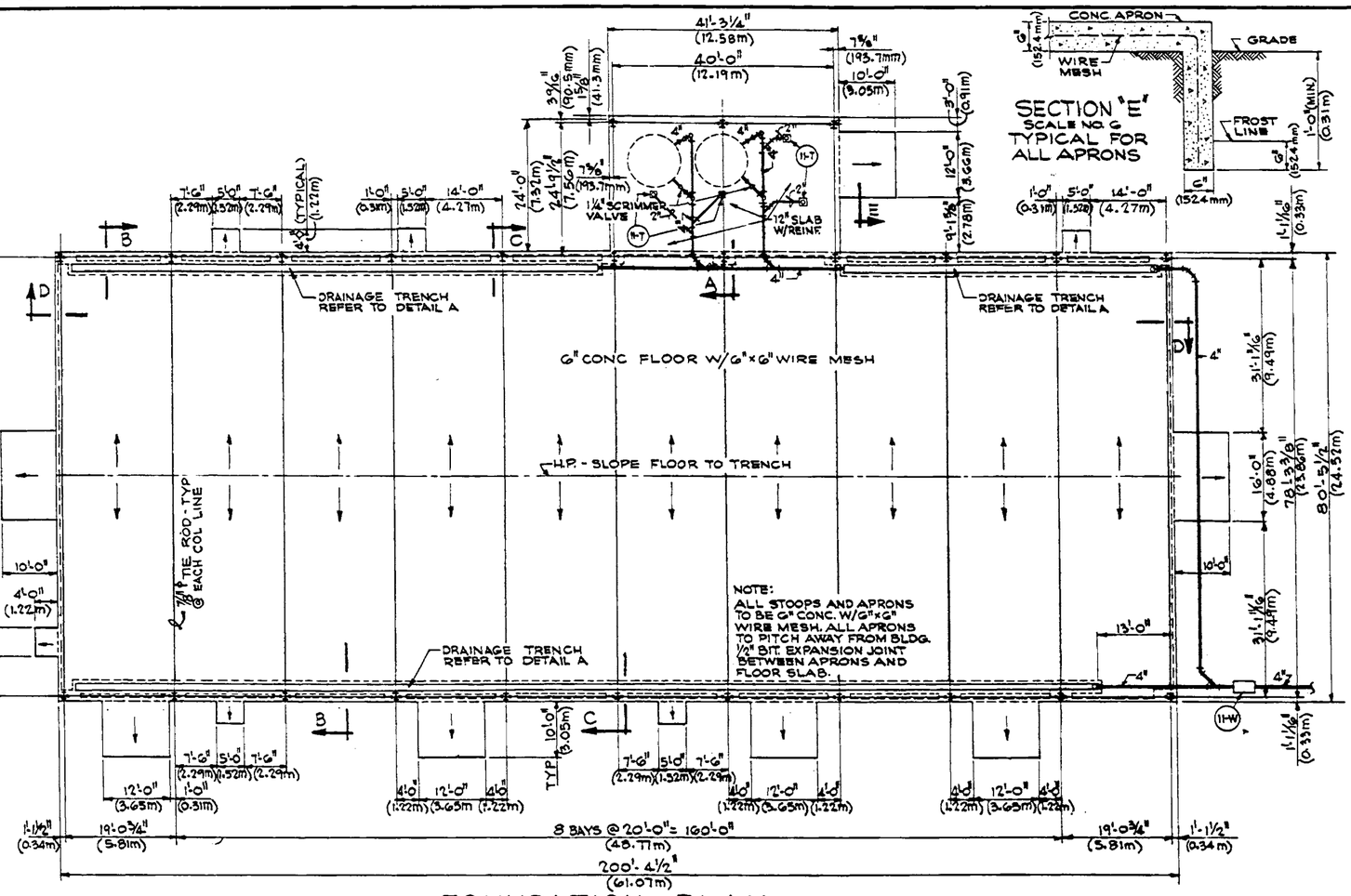
ITEM NO.	NO. REQD.	DESCRIPTION	VOLT	HP	KVA	COMP. AIR CFM	COMP. AIR PSIG	STEAM #/HR	STEAM PSIG
7	3	TURBO - COMPRESSOR W/HOSE	208-36	7 1/2	---	130	5	---	---
8	6	AIR HOIST W/BOOM, MAST & AIR HOSE REEL	---	---	---	14.7	60	---	---
9	2	DRUM WASHING & DRYING UNIT	120-16	1/2	8.0 AMP	200	30	360	30
10	5	BLOWER - W/EXPL PROOF MOTOR, 175 CFM	115-16	1/2	8.3 AMP	---	---	---	---
11	4	VULCANIZING PRESS (PD-101)	220-16	---	0.5	0.5	90	---	---
12	5	VULCANIZING PRESS (PD-102)	220-16	---	0.5	0.5	90	---	---
13	3	VULCANIZING PRESS (PD-103)	220-16	---	0.5	0.5	90	---	---
14	1	TEST STAND	---	---	---	---	---	---	---
15	1	SPRAY GUN (SOAP)	---	---	---	3	40	---	---
16	1	SPRAY GUN (OIL)	---	---	---	3	40	---	---
17	1	BLOWER W/EXPL PROOF MOTOR - HEATER - 175 CFM	230-36	1/2	6.0 KW	---	---	---	---

EQUIPMENT FURNISHED WITH BASIC BUILDING*

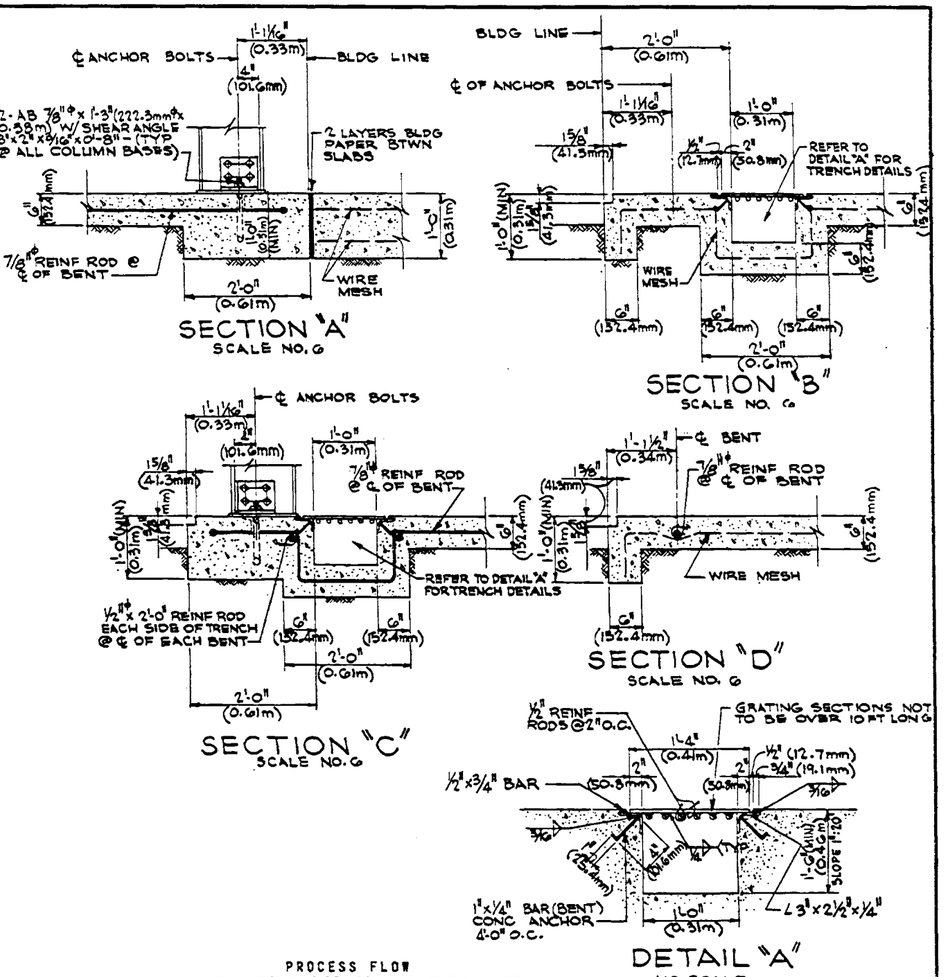
| ITEM NO. | NO. REQD

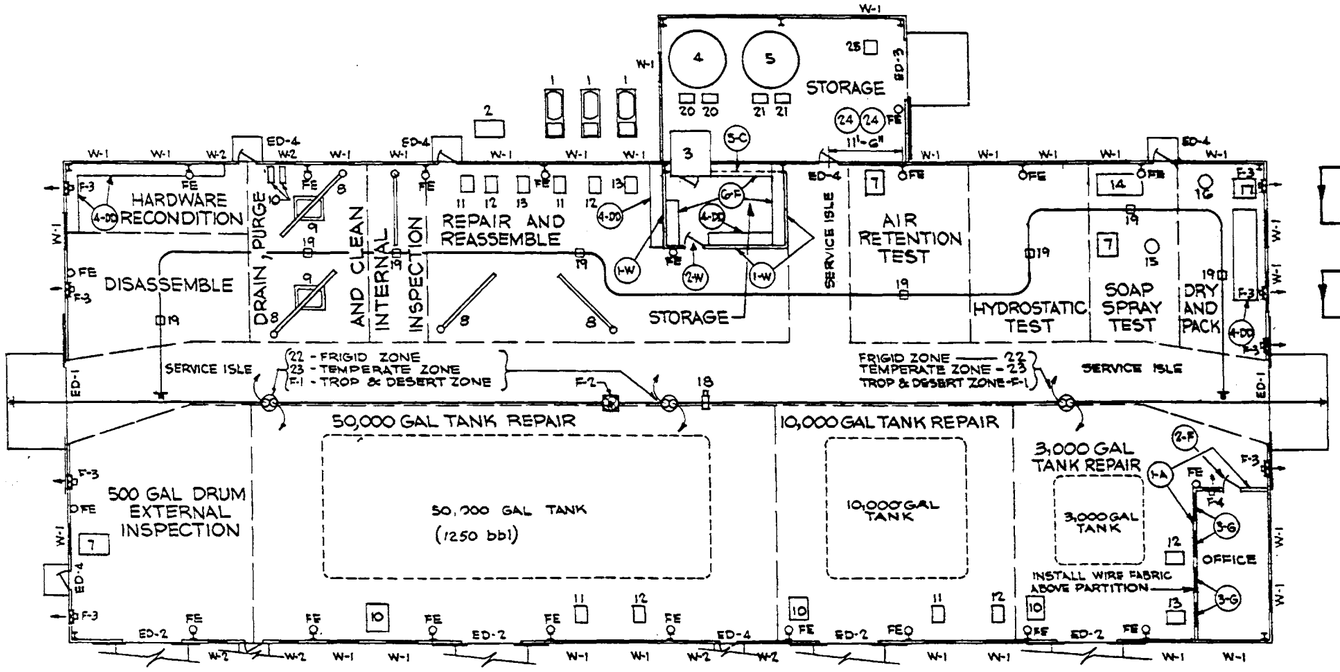
CORPS OF ENGINEERS

U. S. ARMY



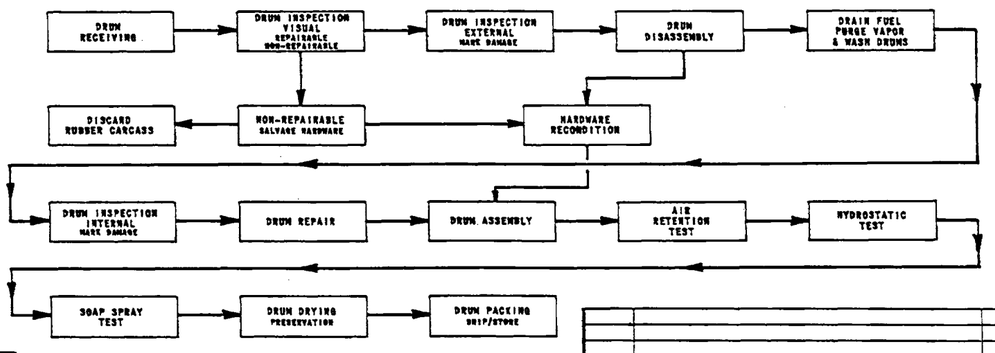
FOUNDATION PLAN
SCALE NO. 17





EQUIPMENT LAYOUT PLAN
SCALE NO. 17

PROCESS FLOW
500 GAL DRUM REPAIR & MAINTENANCE



FACILITY NUMBERS		
BUILDING	CLIMATE	FACILITY NO.
PRE-ENGINEERED BLDG WITH INSULATED CLADDING* & HEAT	FRIGID ZONE (-40°F)	126812
PRE-ENGINEERED BLDG WITH INSULATED CLADDING* & HEAT	TEMPERATE ZONE (-20°F)	126813
PRE-ENGINEERED BLDG WITH GALVANIZED CLADDING* & VENTILATION	TROPICAL ZONE	126814
PRE-ENGINEERED BLDG WITH GALVANIZED CLADDING* & VENTILATION	DESERT ZONE	126815

*SEE BUILDING SHELL REQUIREMENTS SHEET 1 DRAWING 12-48

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' 15' 20' NO.17 | 0 1' 2' NO.8 | 0 8" 1'-0" NO.7

HAYES, SEAY, MATTERN & MATTERN — ARCHITECTS - ENGINEERS — ROANOKE, VIRGINIA — WASHINGTON, D. C.

DEPARTMENT OF THE ARMY — OFFICE OF THE CHIEF OF ENGINEERS — MILITARY CONSTRUCTION - ENGINEERING DIVISION — WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEJCHMANN
APPROVED:
CHIEF, DIVISION BRANCH

THEATER OF OPERATIONS

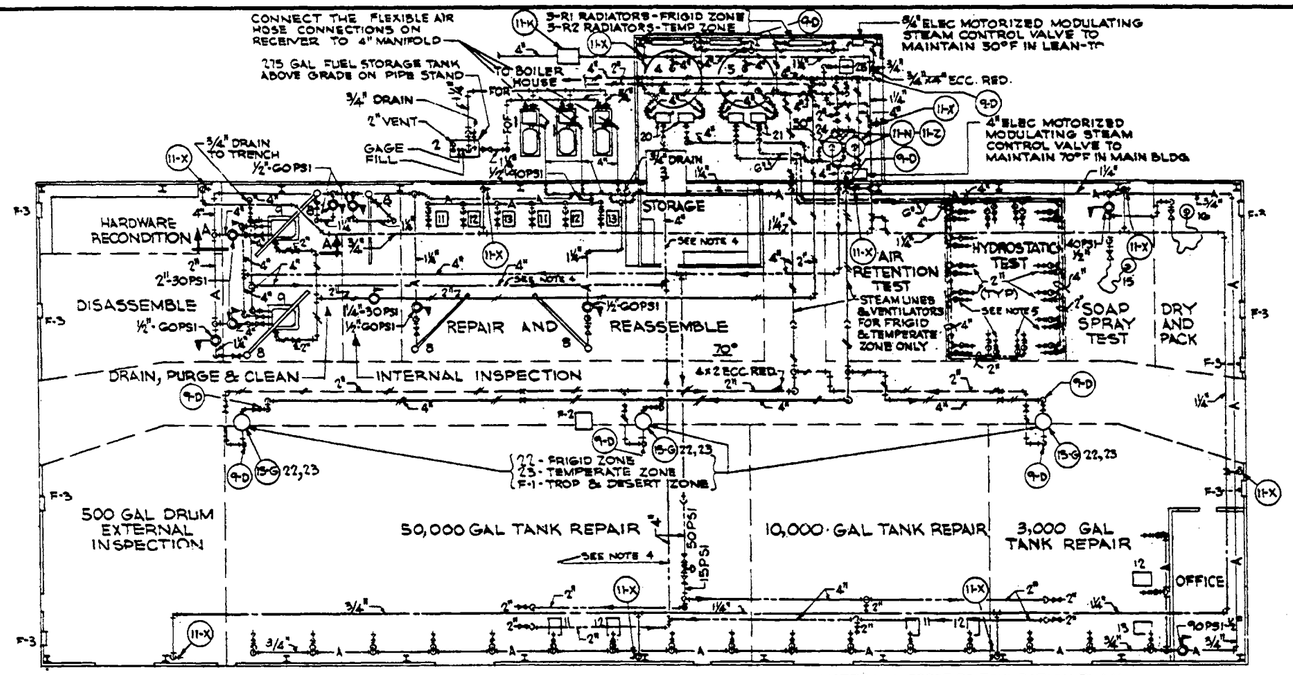
COLLAPSIBLE FUEL DRUM AND TANK CLEANING, TESTING AND REPAIRING FACILITIES FOUNDATION AND EQUIPMENT LAYOUT PLANS

UNDER REVISION

APPROVED: DATE: 18 FEB 1971
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROCUREMENT AGENCY:
18 FEB 1971

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-48
SHEET 2 OF 3

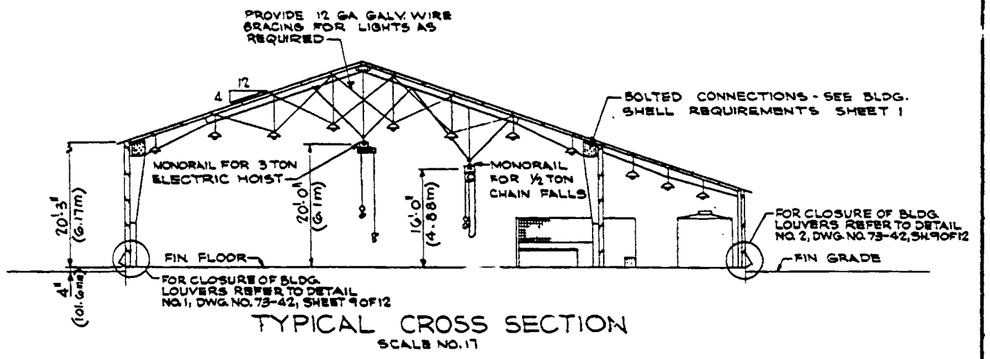


MECHANICAL PLAN
SCALE NO. 17

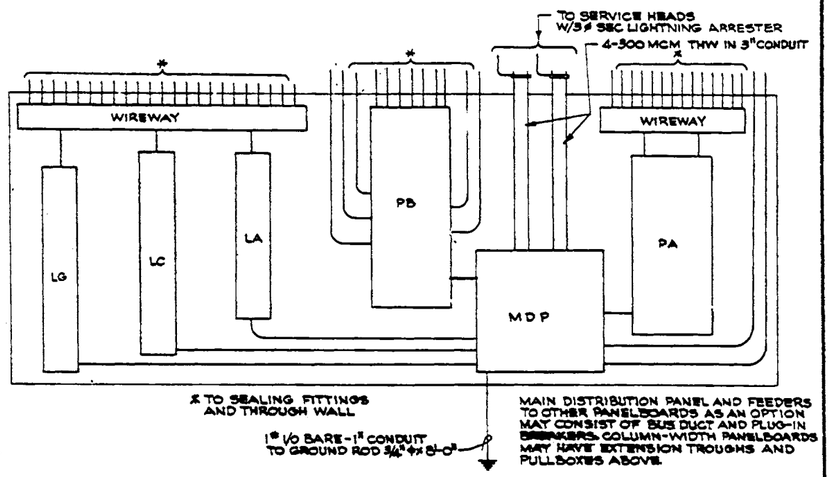
NOTES:
1. REFER TO FOUNDATION PLAN FOR UNDERFLOOR PIPING.
2. ALL AIR VALVES W/CHUCKS TO BE 3/4" AND ALL WATER VALVES W/ CHUCKS TO BE 2".
3. ALL OTHER PIPE SIZES NOT SHOWN TO BE 3/4".
4. THE INSULATED FLUSHING WATER RETURN LINES SHALL BE INSTALLED IN 12" COR. METL CULVERT OR TILE UNDER THE FLOOR SLAB.
5. EACH HYDOSTATIC TEST RETURN LINE SHALL BE EQUIPPED W/2" CHECK VA. ADJACENT TO EACH 2" GATE VALVE.

RADIATOR SCHEDULE

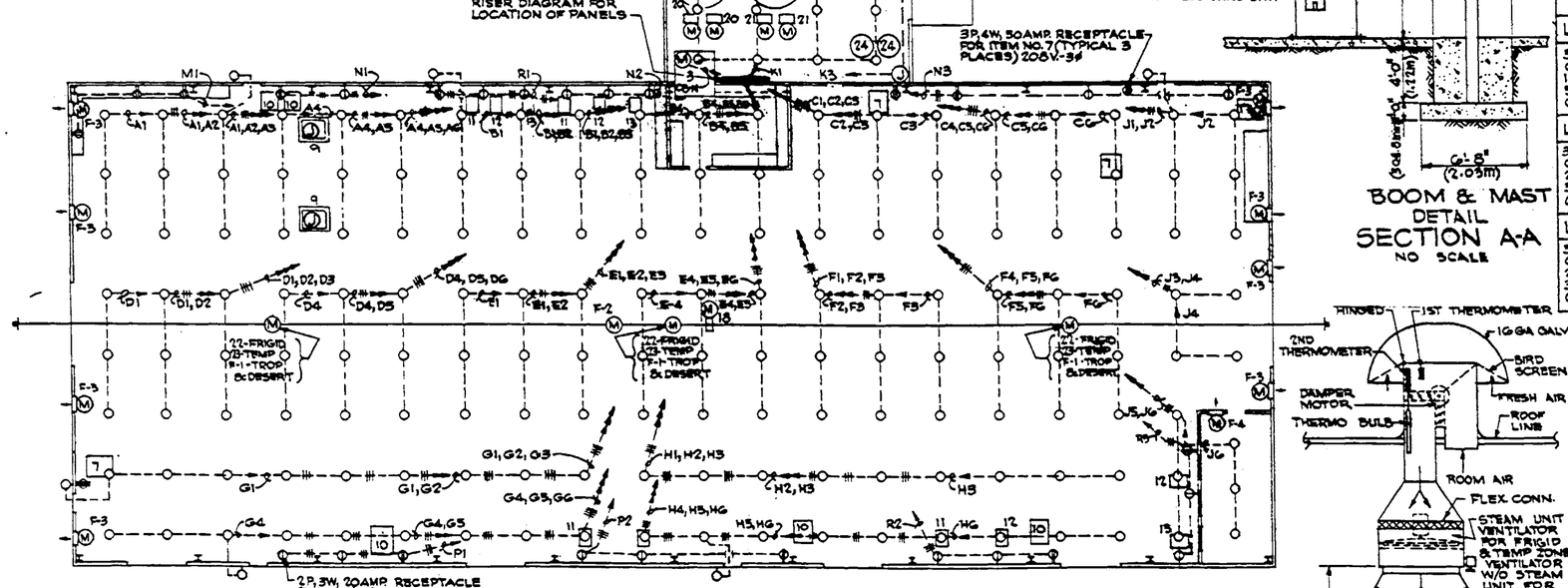
MARK	LENGTH OF RADIATOR	BTUH @ 50° F RM TEMP	TEMP ZONE	FRIGID ZONE	TROPIC ZONE	DESERT ZONE
R-1	6 FT	17,820	—	3	—	—
R-2	5 FT	14,850	3	—	—	—



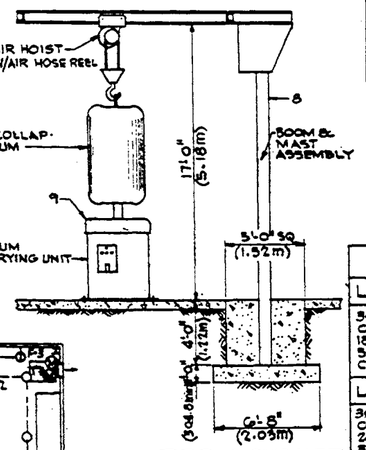
TYPICAL CROSS SECTION
SCALE NO. 17



POWER RISER DIAGRAM
NO SCALE



ELECTRICAL PLAN
SCALE NO. 17



BOOM & MAST DETAIL SECTION A-A
NO SCALE

FRESH AIR INTAKE FOR UNIT VENTILATOR
NO SCALE

SCHEDULE OF CIRCUIT BREAKERS AND PANELBOARDS

LA — 3⌀ 4W 480Y/277V 100A M.L.O. COLUMN WIDTH
18 SINGLE POLE 20A. BRKRS.
5 SPARES. FLOOR PLAN
CKTS. A1-A6; B1-B6; K1.

LC — 3⌀ 4W 480Y/277V 200A M.L.O. COLUMN WIDTH
24 SINGLE POLE 20A BRKRS.
3 SPARES. FLOOR PLAN
CKTS. C1-C6, D1-D6, E1-E6; F1, F2, F3.

LG — 3⌀ 4W 480Y/277V 200A M.L.O. COLUMN WIDTH
24 SINGLE POLE 20A BRKRS.
3 SPARES. FLOOR PLAN
CKTS. F4, F5, F6; G1-G6; H1-H6; J1-J6

PB — 3⌀ 4W 480Y/277V 225A M.L.O.

LOAD	CKT			CKT	LOAD
5#12 1/2"C	18	3	15	15	4 SPARE
3#12 1/2"C	22	9	20	20	10 24 3#12 1/2"C
5#12 1/2"C	22	15	20	20	14 17
				40	16 17 3#8 3/4"C
5#12 3/4"C	3	21	40	50	22 7 3#8 3/4"C
3#8 3/4"C	7	27	50	50	26 7 3#8 3/4"C
5#8 3/4"C	21	33	50	70	34 28 3#8 3/4"C
5#8 3/4"C	21	39	50	70	40 30 3#8 3/4"C

MDP — 3⌀ 4W 480Y/277V (OR 600V) 600A. MAIN BRKR.

LOAD CKT NO.		CKT NO.	LOAD
4#4/0 2 1/2"C	3	4	4#2 1 1/4"C
4#2 1 1/4"C	9	10	SPARE
4#3/0 2"C	15	16	3#6 1"C
4#3/0 2"C	21	22	3#6 1"C

PA — 3⌀ 4W 480Y/277V 100A M.L.O.

LOAD	CKT			CKT	LOAD
	1	20	20	2	SPARE
SPARE	3	20	20	4	SPARE
SPARE	5	20	20	6	G SPARE
5#12 1/2"C	7	20	20	8	5#12 1/2"C
3#12 1/2"C	11	20	20	12	3#12 1/2"C
5#12 1/2"C	15	20	20	16	5#12 1/2"C
5#12 1/2"C	19	20	20	20	5#12 1/2"C
SPARE	23	20	20	21	
	5	20	20	26	
	27	20	20	28	
	29	20	20	30	
SPARE	31	20	20	32	SPARE
SPARE	33	20	20	34	SPARE
SPARE	35	20	20	36	SPARE

ELECTRICAL NOTES

SUMMARY OF ELECTRICAL POWER REQUIREMENT		KVA
CONNECTED LOAD (EST. FOR CONV. OUTLETS)	LIGHTING	81.8
	RECEPTACLE EST.	0.7
	POWER (BLDG. UTIL)	12.6
	POWER (USERS EQPT)	81.9
	TOTAL CONNECTED	187.0
ESTIMATED MAX. DEMAND		186.0

1. ALL ELECTRICAL WIRING SHALL BE RUN IN RIGID GALVANIZED STEEL CONDUIT.
2. ALL CONDUIT SHALL CONTAIN 2 CONDUCTORS NO. 12 EXCEPT WHERE INDICATED BY NOTE OR BY NO. OF HASH MARKS, ON CONDUIT SYMBOL, ON PLAN.
3. SYMBOL (M) INDICATED MOTOR CONTROLLER AND OVERLOAD PROTECTION FURNISHED WITH EQUIPMENT. EACH EXPLOSION-PROOF MOTOR SHALL BE EQUIPPED WITH COMBINATION CONTROLLER AND DISCONNECTING MEANS.
4. GROUND EACH MOTOR CONTROL, DISCONNECT SWITCH AND CIRCUIT BREAKER W/#6 WIRE (NOT INDICATED).
5. FOR ADDITIONAL ELECTRICAL NOTES REFER TO SHEET 1.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' 20'
NO. 17

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

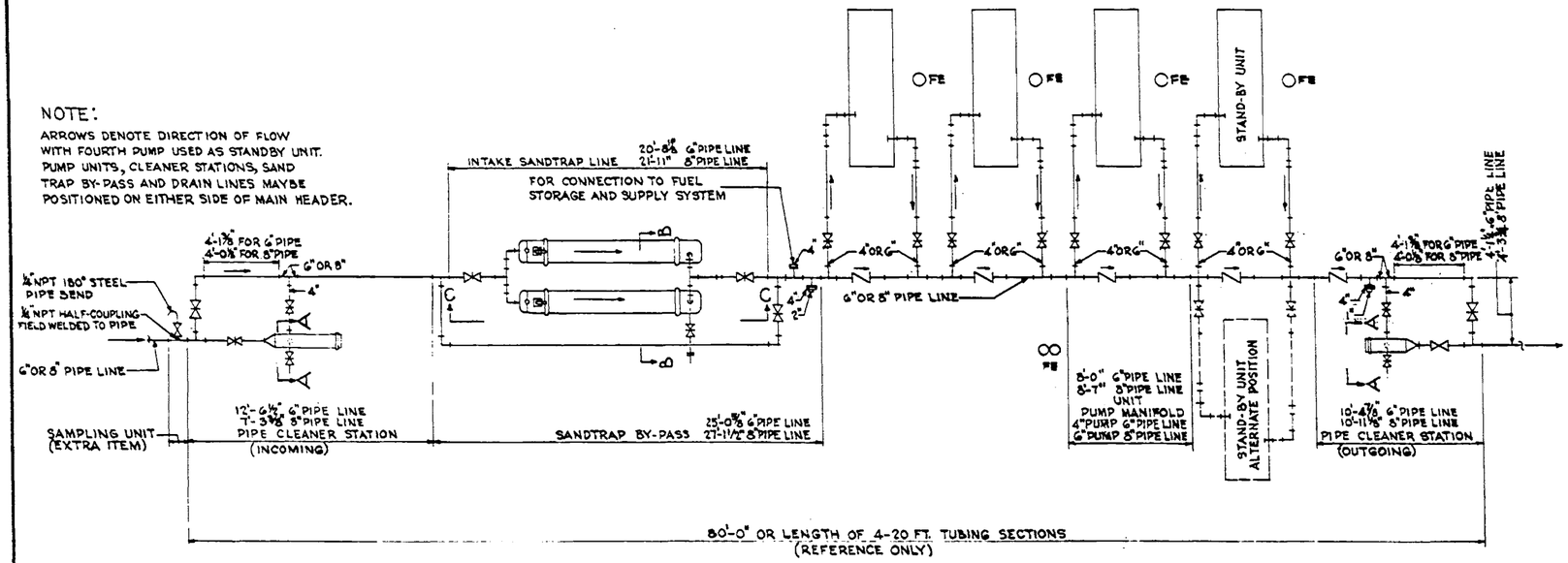
DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: A. W. DE LEHMANN
APPROVED: Col. C. Rains
CHIEF ATTACHE / ENGINEER
APPROVED: W. F. Gaines
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
THEATER FOR DEVELOPMENT AGENCY
APPROVED: J. D. Watts Brig Gen USAMC
DATE: 18 FEB 1971

THEATER OF OPERATIONS
COLLAPSIBLE FUEL DARAGANE TANK CLEANING, TESTING AND REPAIRING FACILITIES
MECHANICAL AND ELECTRICAL PLANS

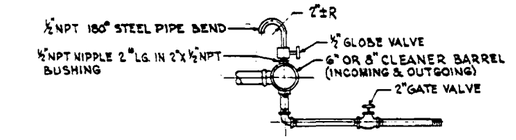
UNDER REVISION

DATE: 18 Feb 71
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-48
SHEET 3 OF 3

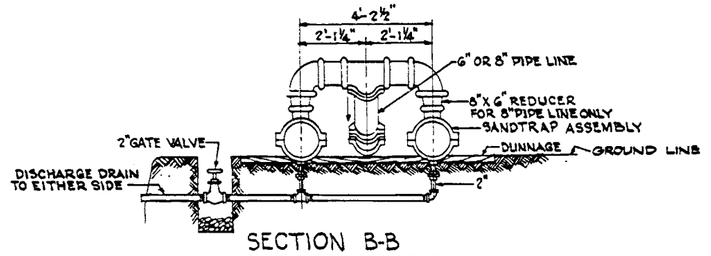
NOTE:
ARROWS DENOTE DIRECTION OF FLOW WITH FOURTH PUMP USED AS STANDBY UNIT. PUMP UNITS, CLEANER STATIONS, SAND TRAP BY-PASS AND DRAIN LINES MAYBE POSITIONED ON EITHER SIDE OF MAIN HEADER.



PLAN OF 8" OR 6" PIPELINE PUMP STATION
6" STATION - 785 B.P.H. - 1400 FT. HD. - FACILITY NO. 125202
8" STATION - 1355 B.P.H. - 1000 FT. HD. - FACILITY NO. 125203
NO SCALE

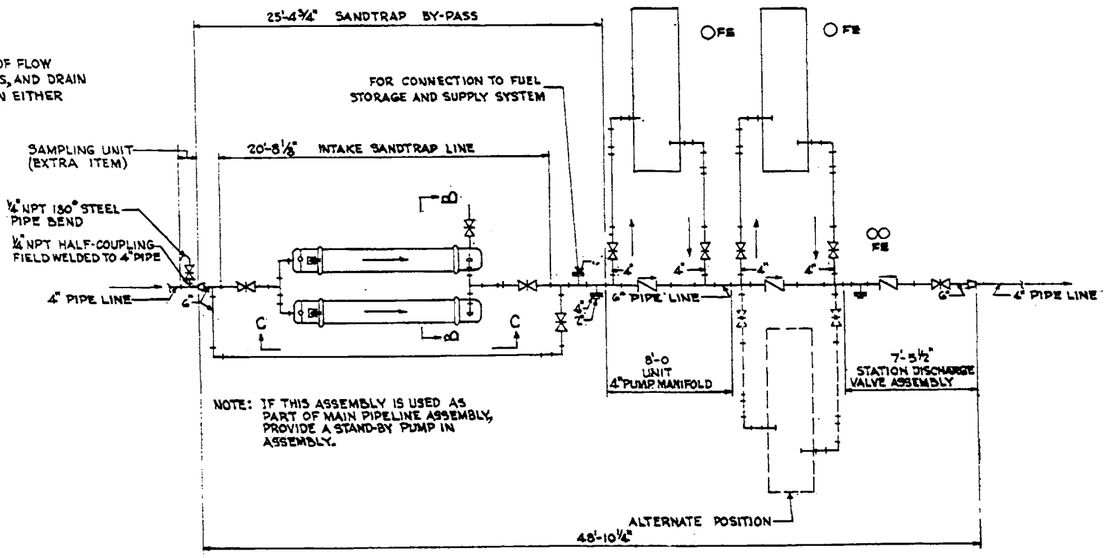


SECTION A-A
PIPE CLEANER STATION VENT & DRAIN
NO SCALE

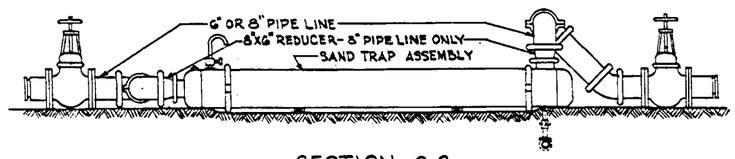


SECTION B-B
SANDTRAP DRAIN ASSEMBLY
NO SCALE

NOTE:
ARROWS DENOTE DIRECTION OF FLOW PUMP UNITS, SANDTRAP BY-PASS, AND DRAIN LINES MAY BE POSITIONED ON EITHER SIDE OF MAIN HEADER.



PLAN OF 4" BRANCH PIPELINE PUMP STATION
355 B.P.H. - 1100 FT. HD. - FACILITY NO. 125201
NO SCALE



SECTION C-C
SANDTRAP ASSEMBLY
NO SCALE

NOTES:
FOR ESN BILL OF MATERIALS - REFER TO TM5-803 BY FACILITY NUMBER.

GENERAL NOTES
1. ALL FITTINGS ARE FULL FLOW.
2. ALL PIPE, COUPLINGS, NIPPLES AND FITTINGS ARE GROOVED TYPE, EXCEPT AS NOTED FOR DRAIN PIPE, WHICH ARE SCREW TYPE.
3. NO MITER WELDED FITTINGS ACCEPTABLE.
4. ALL 8" & 6" GATE VALVES ARE FLANGED END TYPE.
5. EACH 8" UNIT WILL CONSIST OF 4 VALVE AND 2 EQUAL ADAPTERS WITH GROOVED ENDS.
6. SANDTRAP BARRELS TO BE SUPPORTED ON PIPE OR DUNNAGE SO THAT THEY MAY BE ROLLED TO THE SIDE FOR CLEANING.
7. DIMENSION SPACE BETWEEN GROOVED ENDS WITHIN COUPLINGS IS ⅜" WIDE. THIS SPACE MAY VARY ± ¼" FOR FLEXIBILITY AND EXPANSION OR CONTRACTION.
8. TOLERANCE ON ALL NIPPLE AND VALVE SECTION LENGTHS IS ± 1/16".
9. ALL OVERALL DIMENSIONS ARE FOR REFERENCE ONLY.

PUMP DETAILS

PIPELINE SIZE	PUMP	MOUNTING	DRIVE
4 INCH	4 INCH-4 STAGE CENTRIFUGAL	SKID	GASOLINE ENGINE
6 INCH	4 INCH-4 STAGE CENTRIFUGAL	SKID	GASOLINE ENGINE
8 INCH	6 INCH-2 STAGE CENTRIFUGAL	SKID	GASOLINE ENGINE

SYMBOL	DESCRIPTION	DATE	APPROVAL
Δ	CHANGED SHEET NUMBER.	OCT '70	RAR

REVISIONS
GRAPHIC SCALES
NO SCALE

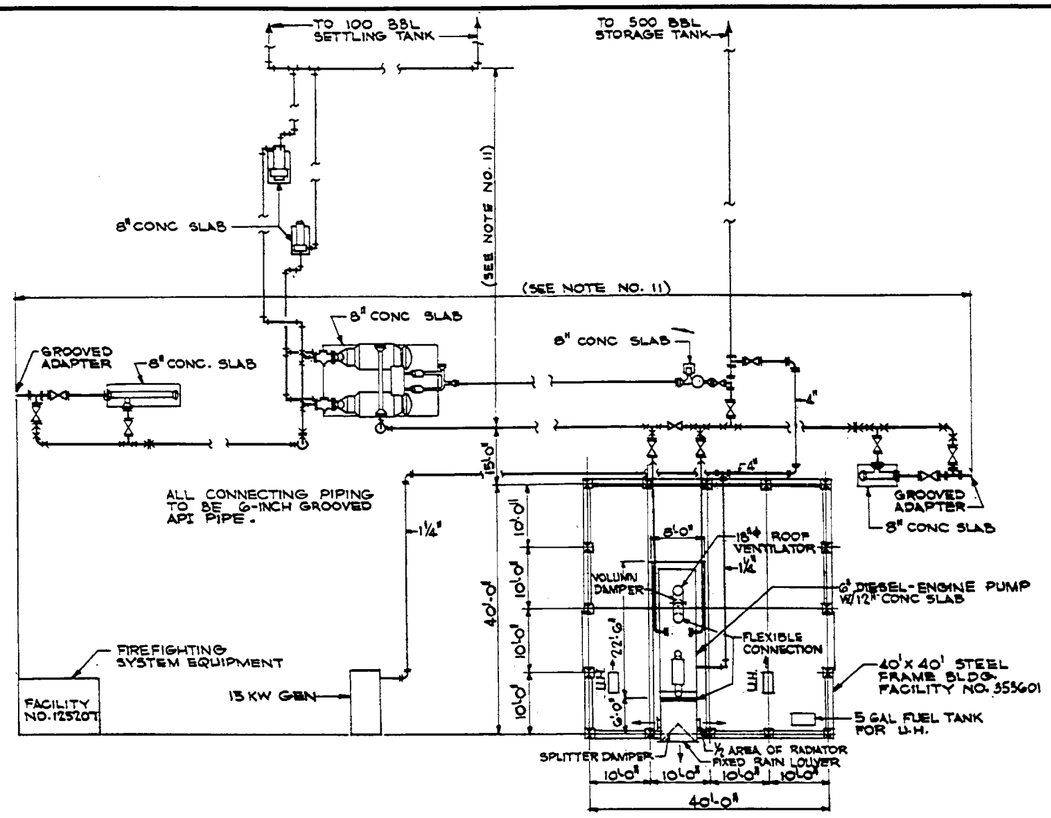
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ILYAS
TRACED BY:
CHECKED BY: SHAFFER
DESIGNED BY: C. V. DE LOHMANN

THEATER OF OPERATIONS
P.O.L.
PIPELINE PUMP STATION
385, 785 & 1355 BPH

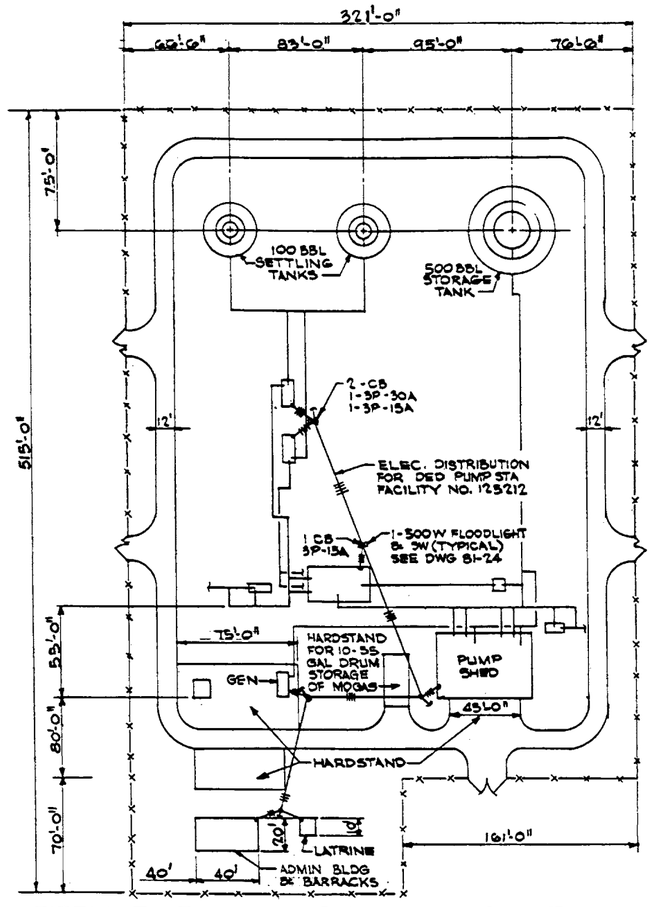
APPROVED: DATE: 19 MAR 1959
CHIEF, ENGINEERING BRANCH
CHIEF, CONSTRUCTION DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
SCALE: NONE SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 3 12-52



SIX-INCH DIESEL ENGINE DRIVEN PUMP STATION WITH SINGLE PUMP

FACILITY NO. 125204

SCALE NO. 17



PIPELINE, POL, 6-INCH x 19 MILES WITH 785BPH PUMP STATION HAVING 6-INCH DIESEL DRIVEN PUMP AND/OR PUMPS.

PUMP STATION WITH ONE PUMP

PUMP STATION WITH TWO PUMPS

SCALE NO. 27

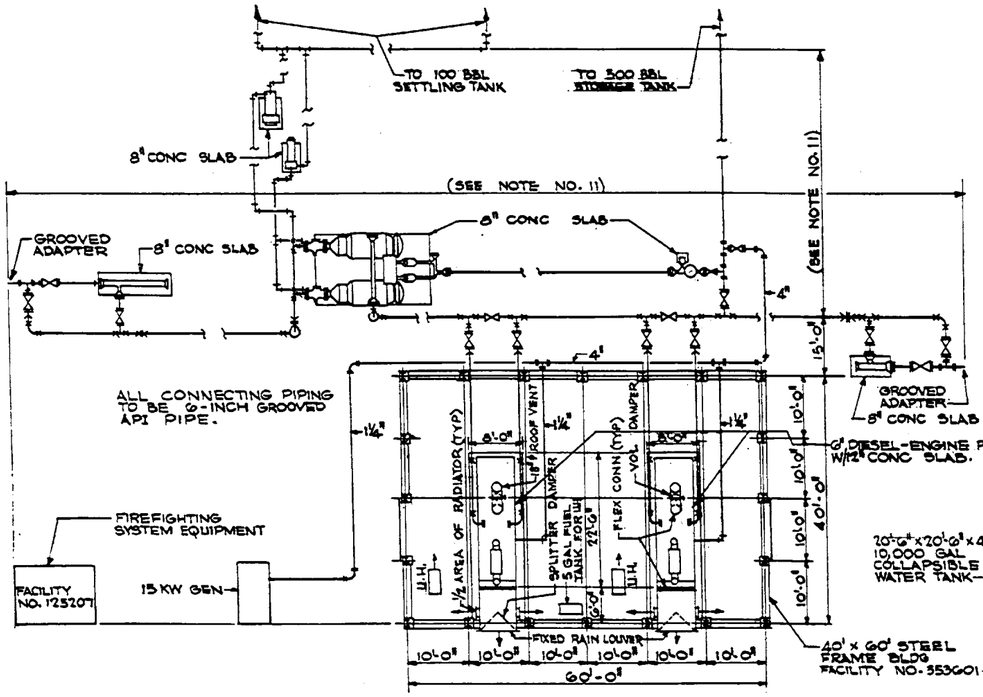
SCHEDULE OF FACILITIES

FOR PIPELINE, POL, 6-INCH X 19 MILES WITH 785 BPH PUMP STATION HAVING 6-INCH DIESEL DRIVEN PUMP AND/OR PUMPS.

DESCRIPTION	INSTALLATION NO. ONE - 6" DIESEL DRIVEN PUMP	INSTALLATION NO. TWO - 6" DIESEL DRIVEN PUMPS	FACILITY NO.
PUMP STATION W/1-DED PUMP, 785 BPH @ 1630 FT HEAD	1	-	125204
PUMP STATION W/2-DED PUMP, 785 BPH @ 1630 FT HEAD	-	1	125205
FIRE FIGHTING EQUIPMENT FOR TANK FARMS AND PUMP STATIONS	1	1	125207
ELECTRICAL DISTRIBUTION FOR DED PUMP STATION	1	1	125212
6" API PIPE (1-MILE) GROOVED	2	2	125022
6" TUBING (5-MILES) GROOVED	3	3	125012
6" TUBING (1-MILE) GROOVED	2	2	125007
PUMP STATION - FUEL SUPPLY - 2 UNIT	1	1	124201
PUMP STATION - FUEL SUPPLY - 4 UNIT	1	1	124202
TANK, POL-WATER, W/6" LINE, 100 BBL'S	2	2	123401
TANK, POL, W/6" LINE, 500 BBL'S	1	1	123403
SHED, STEEL, PHASE.1, 40'X100'	0.5	0.7	353601
ADMIN, OPERATIONS & BARRACKS BLDG 20'X40'	1	1	611114
LATRINE, PIT TYPE, FEMALE 2 SEAT 10'X10'	1	1	723622
FENCE, SECURITY, TYPE Y (1000 FT)	2.0	2.0	710903
FENCE, SECURITY, MAN & VEHICLE GATE (EA)	6	6	710904
ROAD, SINGLE LANE (1-MILE) 6" EARTH/STAB STONE	0.5	0.5	853111
WHEN THE AMBIENT TEMPERATURE FALLS BELOW 32°F THE FOLLOWING FACILITIES MUST BE ADDED TO INSTALLATIONS TO PROVIDE METAL CLADDING, INTERIOR LINERS AND HEATING FOR THE METAL SHED AND/OR SHEDS HOUSING THE DIESEL PUMP AND/OR PUMPS.			
CLADDING, INT LINER AND HEATING FOR SHED	1	1	125206

GENERAL NOTES

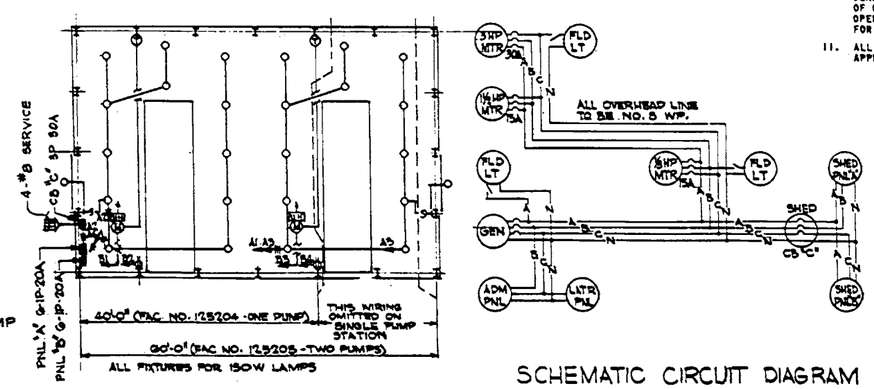
1. THE MUFFLER FROM THE DIESEL ENGINE SHOULD EXTEND THROUGH THE ROOF OF THE METAL BUILDING AND TERMINATE WITH A SUITABLE RAIN DEFLECTOR.
2. THE DED PUMP HAS PNEUMATIC TYPE CONTROLS, WHICH REGULATE THE ENGINE SPEED TO PRODUCE A PRE-SET PUMP DISCHARGE AND HAS SUFFICIENT HORSEPOWER RATING TO ALLOW PUMPING OF ALL TYPES OF FUELS AT FULL PUMP CAPACITY.
3. PUMP STATIONS AT BULK POL STORAGE FACILITIES AND EVERY THIRD PUMP STATION THEREAFTER SHALL BE PROVIDED WITH TWO PUMPS. ALL OTHER STATIONS WILL REQUIRE ONLY ONE PUMP.
4. FACILITY NO. 125206 INCLUDES FIELD FABRICATED 18" DIA ROOF AIR INLET VENTILATORS W/CONNECTING SHEET METAL DUCTS W/VOLUME DAMPERS, QUADRANTS AND FLEXIBLE CONNECTIONS TO DED PUMP HOUSINGS; SHEET METAL WARM AIR DISCHARGE DUCTS W/ FLEXIBLE CONNECTIONS FROM DED PUMP RADIATORS, FIXED SIDEWALL DUCT GRILLES (1/2 AREA OF RADIATOR), MANUAL OPERATED SPLITTER DAMPERS W/QUADRANTS AND FIXED DISCHARGE RAIN GRILLE FULL SIZE OF RADIATOR AND GASOLINE OPERATED UNIT HEATERS W/FIELD FABRICATED DISCHARGE DUCTS, AND 5-GALLON FUEL STORAGE TANK W/CONNECTING PIPING AND STRUCTURAL BRACKETING FOR UNIT HEATERS AND FUEL STORAGE TANKS.
5. 12" CONCRETE BASES REINFORCED WITH MESH SHOULD BE PROVIDED FOR DIESEL ENGINE DRIVER PUMPS AND 8" CONCRETE BASES REINFORCED WITH MESH FOR ALL EQUIPMENT CONNECTED TO THE PIPE MANIFOLD AND YARD PIPING.
6. THE TOP OF THE UNIT HEATERS AND FUEL STORAGE TANKS SHOULD BE 11'-0" ABOVE FLOOR LINE AND THEY SHOULD BE MOUNTED ON ANGLE FRAMING BRACKETED FROM SIDEWALL FRAMING.
7. THE MOGAS REQUIRED FOR UNIT HEATER, WATER PUMP AND AIR COMPRESSOR OPERATION SHALL BE SUPPLIED FROM PACKAGED 55 GALLON DRUMS STORED ON HARDSTAND AREA ADJACENT TO PUMP SHED.
8. REMOVABLE SIDEWALL CONSTRUCTION SHALL BE PROVIDED BETWEEN THE 10'-0" BAYS HOUSING THE RADIATOR AIR DISCHARGE TO ALLOW EASY INGRESS AND EGRESS OF THE DED PUMPS.
9. PUMP BUILDING FLOORS SHOULD BE STABILIZED EARTH.
10. A SPACE OF ONE FOOT MUST BE LEFT BETWEEN THE FLOOR AND THE BOTTOM OF THE CLADDING TO PREVENT ACCUMULATION OF FUEL VAPOR; HOWEVER, A REMOVABLE TYPE OF CLADDING PANEL SHOULD BE PROVIDED TO SEAL OFF THE 1'-0" VENTILATION OPENING WHEN THE ENGINE IS DOWN FOR REPAIRS TO PROVIDE COMFORT CONDITIONS FOR THE MAINTENANCE CREW.
11. ALL OVERALL ASSEMBLED MEASUREMENTS SHOULD BE OBTAINED FROM THE FABRICATORS APPROVED SHOP DRAWINGS FURNISHED WITH PIPING.



SIX-INCH DIESEL ENGINE DRIVEN PUMP STATION WITH TWO PUMPS

FACILITY NO. 125205

SCALE NO. 17

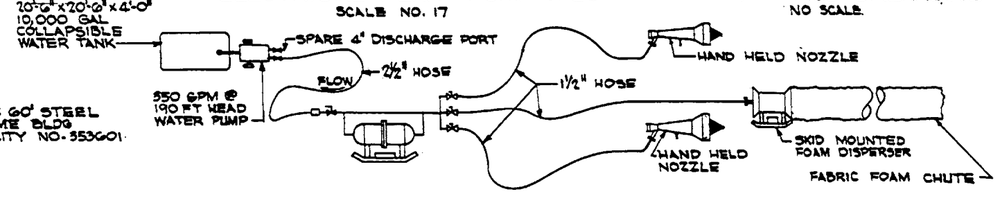


ELECTRICAL PLAN - PUMP SHED

SCALE NO. 17

SCHEMATIC CIRCUIT DIAGRAM FOR PHASE BALANCING

NO SCALE



FIREFIGHTING SYSTEM EQUIPMENT

NO SCALE

FACILITY NO. 125207

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES: 0 10' 20' — NO.17; 0 50' 100' — NO.27

MAYES, SEAY, MATTERN & MATTERN — ARCHITECTS - ENGINEERS — ROANOKE, VIRGINIA — WASHINGTON, D. C.

DEPARTMENT OF THE ARMY — OFFICE OF THE CHIEF OF ENGINEERS — MILITARY CONSTRUCTION - ENGINEERING DIVISION — WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: BEACHMANN
SUBMITTED BY: C. W. DE LONGCHAMPS
APPROVED:
CHIEF, STRUCTURES BRANCH

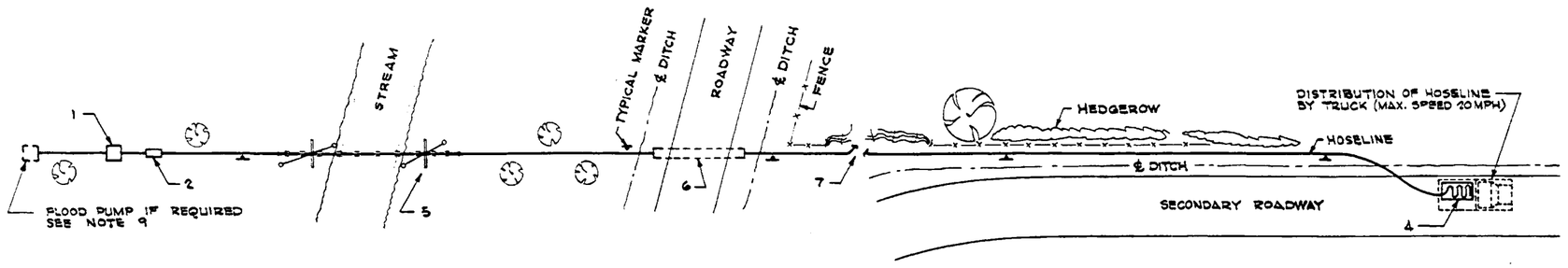
THEATER OF OPERATIONS

PIPELINE, POL
6" X 19 MILES WITH 785 BPH PUMP
STATION HAVING 6" DIESEL DRIVEN
PUMP AND/OR PUMPS

APPROVED:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 17 FEB 1971

APPROVED FOR PRESIDENT AGENCY:
Brig Gen USAF
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 3
12-52



TYPICAL PLAN - LAYING 2.5 MILES OF 4" COLLAPSIBLE ASSAULT HOSELINE

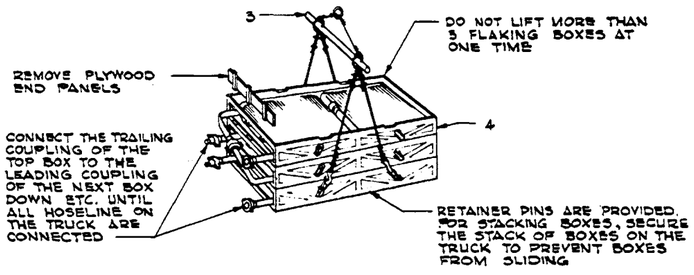
NO SCALE

FACILITY NO. 125208

SCHEDULE OF EQUIPMENT		
ITEM	QTY	DESCRIPTION
1	1	PUMP UNIT, 225 GPM @ 350 FOOT HEAD
2	1	FLOW CONTROL KIT
3	1	SLING, MULTIPLE LEG.
4	13	4" HOSE ASSEMBLY AND FLAKING BOX, 1000 FT.
5	1	SUSPENSION KIT, 4" HOSELINE
6	10	GUARD, ROADWAY CROSSING
7	1	REPAIR KIT, 4" HOSELINE
8	1	DISPLACEMENT AND EVACUATION KIT
9	1	PACKING KIT, 4" HOSELINE

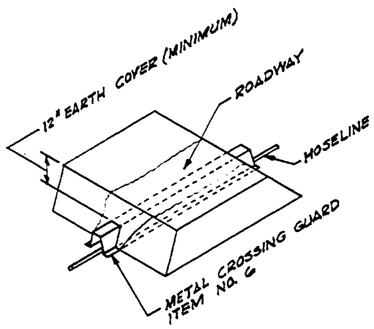
NOTE:

ABOVE QUANTITIES ARE FOR AN AVERAGE 2.5 MILE HOSELINE SYSTEM. THE ACTUAL QUANTITIES OF INDIVIDUAL COMPONENTS REQUIRED FOR A SPECIFIC HOSELINE SYSTEM WILL VARY DEPENDING ON THE LENGTH OF THE SYSTEM AND THE APPLICABLE GEOGRAPHICAL AREA AND TERRAIN CONDITIONS WHERE THE SYSTEM WILL BE CONSTRUCTED.



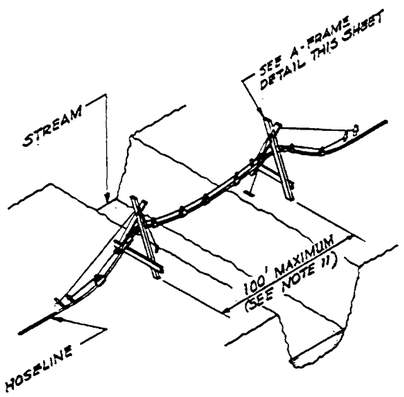
LIFTING SLING & FLAKING BOXES

NO SCALE



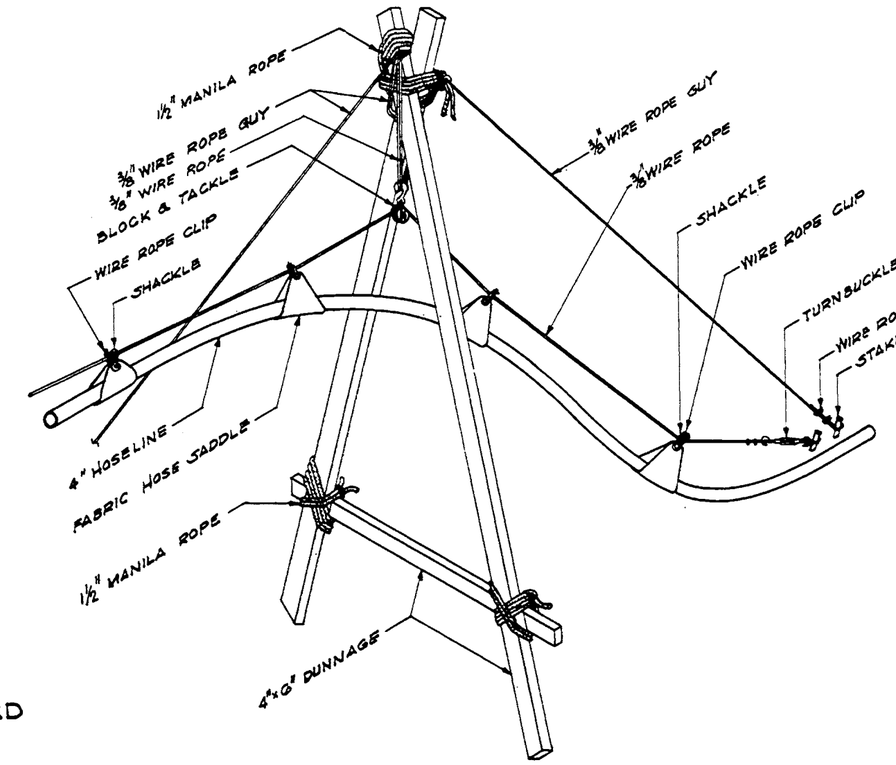
ROADWAY CROSSING GUARD

NO SCALE



HOSELINE SUSPENSION ASSEMBLY

NO SCALE



HOSELINE SUSPENSION
DETAIL - A-FRAME

NO SCALE

GENERAL NOTES

1. THE FUEL HANDLING HOSELINE OUTFIT SHOWN ON THIS DRAWING IS TO BE USED FOR RAPID PLACEMENT OF TEMPORARY FUEL SYSTEMS AND CONTAINS ALL THE MATERIALS NECESSARY TO CONSTRUCT A 13,000 FT. SYSTEM. THE QUANTITY OF COMPONENTS REQUIRED FOR THIS SYSTEM SHALL BE DETERMINED BY THE ACTUAL LENGTH OF HOSELINE TO BE CONSTRUCTED.
2. A TRUCK DISTRIBUTES THE HOSELINE AS IT MOVES FORWARD OVER THE HOSELINE ROUTE, THE HOSE AUTOMATICALLY PLAYING OUT FROM THE FLAKING BOXES WITH MINIMUM SLACK AND WITHOUT SHARP BENDS.
3. DO NOT LIFT FLAKING BOXES WITH A FORK-LIFT.
4. TAKE EVERY ADVANTAGE OF NATURAL COVER SUCH AS FENCE LINES, WOODS, AND HEDGEROWS: DISTURB NATURAL COVER AS LITTLE AS POSSIBLE.
5. HOSELINE SHALL BE CLEARLY MARKED WITH SIGNS WARNING CROSS-COUNTRY VEHICULAR TRAFFIC NOT TO CROSS.
6. WHEN CROSSING A STREAM OR STEEP GAP, USE EXISTING BRIDGES OR STRUCTURES WHERE POSSIBLE, WHEN NOT AVAILABLE USE A SUSPENSION CROSSING KIT.
7. WHEN CROSSING A ROADWAY OR RAILROAD USE EXISTING BRIDGES, CULVERTS OR STRUCTURES WHERE POSSIBLE, WHEN SUCH STRUCTURES ARE NOT AVAILABLE A METAL ROADWAY CROSSING GUARD SHOULD BE USED.
8. BEFORE PICKING UP HOSE AND REPACKING INTO THE FLAKING BOXES, DISPLACE ALL FUEL AND EVACUATE ALL VAPOR AND AIR SO THAT THE HOSE WILL BE FLAT FOR PACKING FOR FUTURE USE. REPAIR ALL LEAKS AND DAMAGED COUPLINGS.
9. IF THE FIRST PUMP IN THE HOSELINE SYSTEM DOES NOT HAVE SUFFICIENT SUCTION PRESSURE (20 PSI), A SELF PRIMING PUMP SHOULD BE USED, AND OPERATED AT A SPEED WHICH WILL PROVIDE A PRESSURE OF NOT LESS THAN 5 PSI NOR MORE THAN 20 PSI AT THE SUCTION OF THE HOSELINE PUMPING UNIT. REFER TO TM 5-343 FOR ADDITIONAL DETAILS OF THE HOSELINE SYSTEM.
10. THE GASOLINE REQUIRED FOR PUMP ENGINE (ITEM NO. 1) OPERATION SHALL BE FURNISHED FROM PACKAGED (5 GAL. CAN) CONTAINERS. THE FUEL TANK OF THE PUMP ENGINE HAS A STORAGE CAPACITY OF 13.6 GALLONS. THE ENGINE FUEL CONSUMPTION WHEN PUMPING GASOLINE IS 2.9 GALLONS PER HOUR.
11. FOR WIDE CROSSINGS (OVER 100 FT.) BUILD A SUSPENSION BRIDGE TO PROVIDE A FLAT DECK OR FLOOR TO SUPPORT THE HOSE ALL ALONG ITS LENGTH.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

DRAWING SCALES: NONE

MAYER, HEAVY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: COL REICHMANN

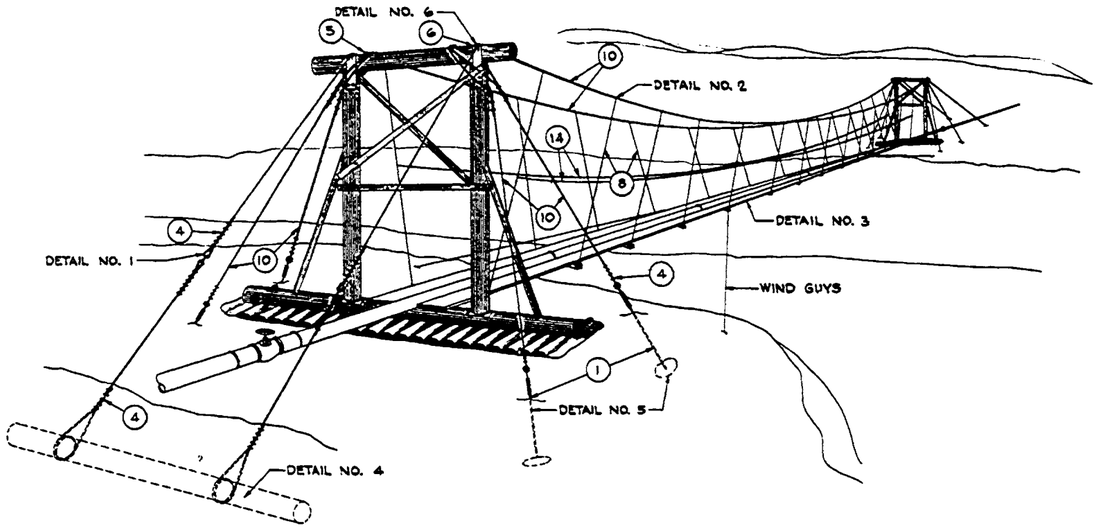
THEATER OF OPERATIONS

POL FACILITIES
4" - FUEL HANDLING ASSAULT HOSELINE OUTFIT
FOR A 2.5 MILE SYSTEM

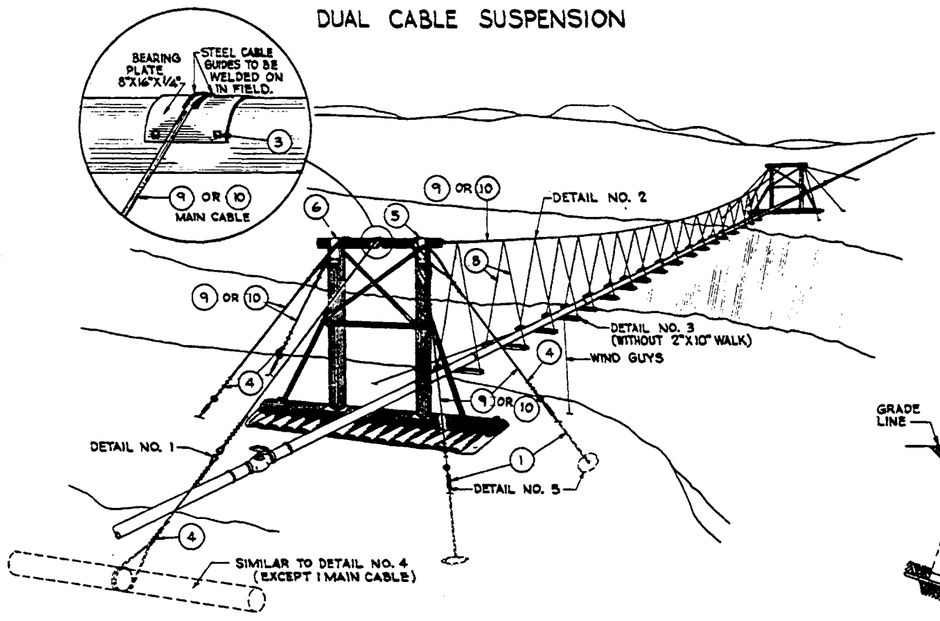
APPROVED: DATE: 17 FEB 1971
CHIEF, CONSTRUCTION BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROCUREMENT AGENCY:
DATE

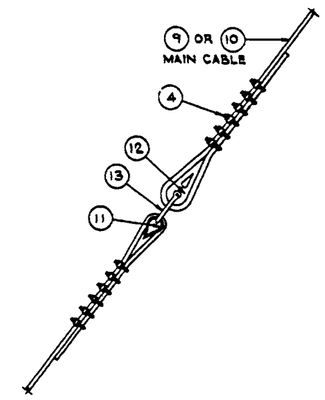
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 12-52
SHEET 3 OF 3



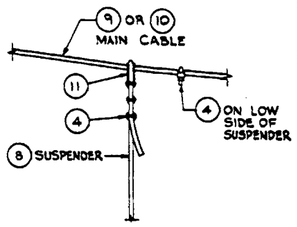
DUAL CABLE SUSPENSION



SINGLE CABLE SUSPENSION



DETAIL NO. 1



DETAIL NO. 2

SCHEDULE OF MATERIALS	
ITEM NO.	DESCRIPTION
1	ANCHOR, GUY, EXPANSION, W/TURNBUCKLE, 12" BODY OPENING.
2	BOLT, EYE.
3	SCREW, LAG, 1/2" DIA. X 6" LONG.
4	CLIP, WIRE ROPE, U-BOLT TYPE, SIZE AS REQUIRED.
5	HOOK, GUY, HALF OVAL, TWO BOLT.
6	PLATE, BEARING, 8"X1/4"X5'-0" DRILLED FOR 1/2" LAG SCREW.
7	WASHER, SQUARE, 3"X3"X1/4", DRILLED 13/16" ϕ.
8	CABLE, WIRE ROPE, 1/4" S-M.
9	CABLE, WIRE ROPE, 3/4" DIA. 6 X 19.
10	CABLE, WIRE ROPE, 1" DIA. 6 X 19.
11	THIMBLE, ROPE, SPLIT OVAL, SIZE AS REQUIRED.
12	THIMBLE, SOLID, SIZE AS REQUIRED.
13	SHACKLE, ANCHOR SCREW PIN, SIZE AS REQUIRED.
14	ROPE, MANILA, 1/2" DIA.-3 STRAND.

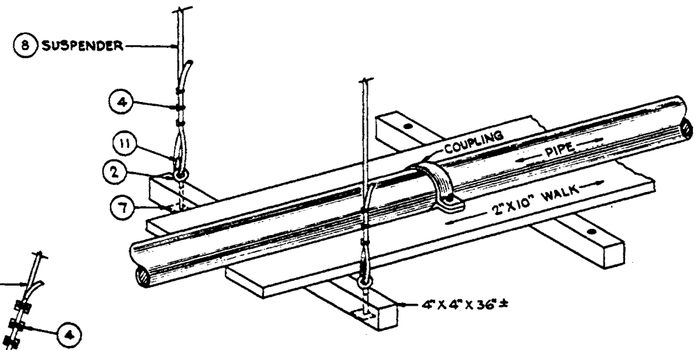
FACILITY NUMBERS

125301 SINGLE CABLE SUSPENSION, 200 FT. SPAN, FOR 8" PIPELINE.

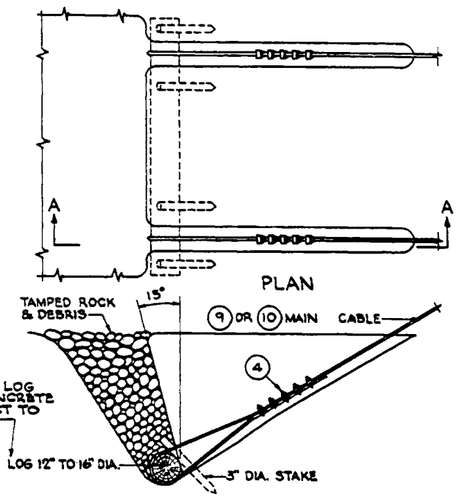
125302 DUAL CABLE SUSPENSION, 400 FT. SPAN, FOR 8" PIPELINE.

△ PIPELINE WELDING NOTE

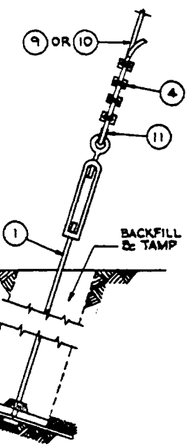
ONLY WELDED POL PIPELINES SHALL BE USED FOR ALL PORTIONS OF THE POL PIPELINES ON THE SUSPENSION BRIDGES AND THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD SHOULD HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-343.



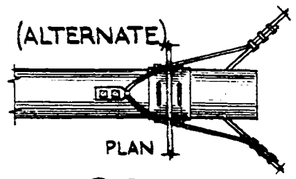
DETAIL NO. 3



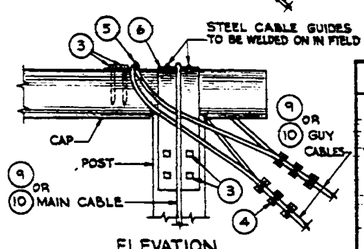
DETAIL NO. 4



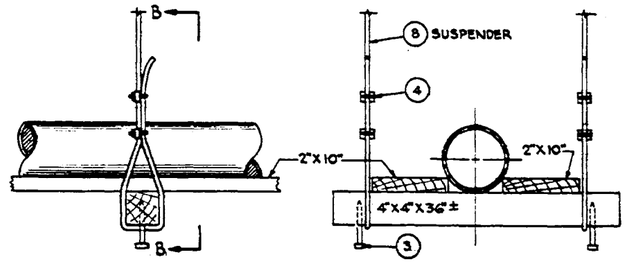
DETAIL NO. 5



(ALTERNATE)



DETAIL NO. 6



ALTERNATE METHOD OF SUSPENSION

TABLE OF SUSPENDER LENGTHS - DUAL SUSPENSION

PANEL POINT MEASURED IN FT FROM ℄	NO. REQ'D.	400 FT SPAN		200 FT SPAN	
		EFFECTIVE SUSPENDER LENGTH	CUT SUSPENDER LENGTH	EFFECTIVE SUSPENDER LENGTH	CUT SUSPENDER LENGTH
0	2	2'-0"	6'-0"	2'-0"	6'-0"
10	4	2'-0 7/8"	6'-0 7/8"	2'-1"	6'-1"
20	4	2'-3 3/8"	6'-3 3/8"	2'-7 3/4"	6'-7 3/4"
30	4	2'-7 1/2"	6'-7 1/2"	3'-5 1/4"	7'-5 1/4"
40	4	3'-1 1/2"	7'-1 1/2"	4'-6 3/4"	8'-6 3/4"
50	4	3'-9"	7'-9"	6'-0"	10'-0"
60	4	4'-6 1/4"	8'-6 1/4"	7'-9 1/8"	11'-9 1/8"
70	4	5'-5 1/8"	9'-5 1/8"	9'-10 1/8"	13'-10 1/8"
80	4	6'-5 3/4"	10'-5 3/4"	12'-2 7/8"	16'-2 7/8"
90	4	7'-8"	11'-8"	14'-11 1/2"	18'-11 1/2"
100	4	9'-0"	13'-0"		
110	4	10'-5 5/8"	14'-5 5/8"		
120	4	12'-1"	16'-1"		
130	4	13'-10"	17'-10"		
140	4	15'-8 5/8"	19'-8 5/8"		
150	4	17'-9"	21'-9"		
160	4	19'-11"	23'-11"		
170	4	22'-2 3/4"	26'-2 3/4"		
180	4	24'-8 1/8"	28'-8 1/8"		
190	4	27'-3 1/4"	31'-3 1/4"		

GENERAL NOTES

1. ON SINGLE CABLE SUSPENSION, SPAN LENGTH FOR 1" SUSPENSION CABLE SHALL NOT EXCEED 300 FEET AND SPAN LENGTH FOR 3/4" SUSPENSION CABLE SHALL NOT EXCEED 150 FEET.
2. TURNBUCKLES WILL BE USED FOR TAKE UP ON GUY LINES TO TREES WHEN GROUND ANCHORS EQUIPPED WITH TURNBUCKLES ARE NOT USED.
3. PARALLEL JAW GRIPS AND HAUL BACK BLOCKS ARE USED IN PLACING MAIN CABLES.
4. MANILA ROPE WILL BE USED IN THE ERECTION OF TOWERS AND FOR GUARD LINES ON THE COMPLETED SUSPENSION.
5. DOWELS ARE USED TO HOLD TOWER POSTS AND CAP IN PLACE UNTIL SECURED WITH NAILS AND DRIFT BOLTS.
6. DESIGN FEATURES OF THE SUSPENSIONS ARE AS FOLLOWS:

	200 FT	400 FT
SPAN LENGTH		
SUSPENDER INTERVAL	10 FT	10 FT
DIP IN MAIN CABLE	14 FT	28 FT
CAMBER OF SUSPENSION	2 FT	3 FT
HEIGHT OF TOWERS	19 FT	34 FT

7. EFFECTIVE SUSPENDER LENGTHS CAN BE OBTAINED FROM THE FOLLOWING FORMULA:

$$h = L + \left(\frac{n}{N}\right)^2 (c + d)$$

L = EFFECTIVE LENGTH OF CENTER SUSPENDER.
n = PANEL POINT OF SUSPENDER (AT CENTER).
N = PANEL POINT OF TOWER.
c = CAMBER OF SUSPENSION.
d = DIP OF MAIN CABLE.

8. SLOPE OF MAIN CABLE TO LOG ANCHORS WILL BE AT LEAST 1 TO 2.
9. EFFECTIVE CROSS-SECTIONAL AREA OF LOG ANCHORS BEARING SURFACE EQUALS THE DIAMETER OF THE LOG (FT) TIMES THE LENGTH OF BEARING IN UNDISTURBED SOIL (FT).
10. CAPACITY OF LOG ANCHORS IN ORDINARY SOIL WITH A CABLE SLOPE OF 1 TO 2 IS APPROXIMATELY AS FOLLOWS:
    5 FT DEPTH TO TOP OF LOG - 3500 LB/SQ FT
    6 FT DEPTH TO TOP OF LOG - 5000 LB/SQ FT
    7 FT DEPTH TO TOP OF LOG - 6500 LB/SQ FT
    8 FT DEPTH TO TOP OF LOG - 8000 LB/SQ FT
11. FOR FSN BILL OF MATERIALS - REFER TO TME-302 BY FACILITY NO.

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

GRAPHIC SCALES

NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING BRANCH
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C.W. DE ICHMANN
APPROVED: DATE:
CHIEF, PIPELINE BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

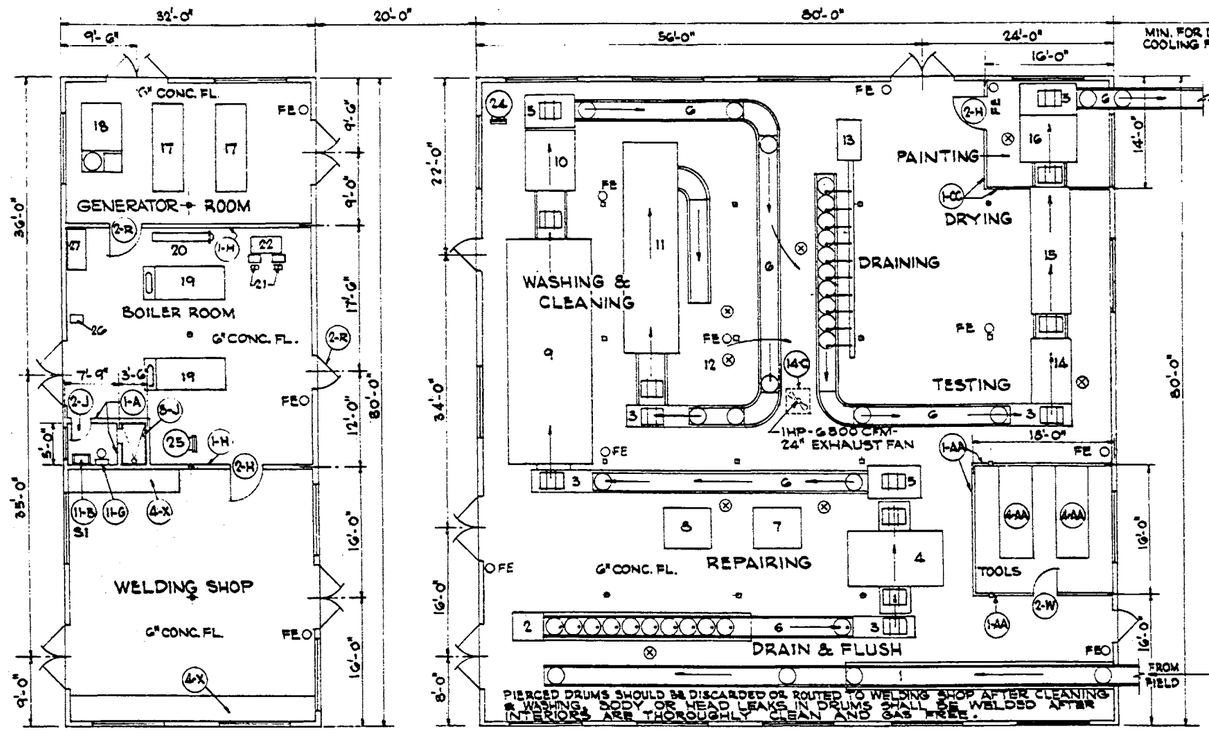
THEATER OF OPERATIONS
POL PIPELINE SUSPENSION
FOR 8 INCH OR SMALLER LINE
200 AND 400 FOOT SPANS

UNDER REVISION

SCALE: NONE SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1
12-53

CORPS OF ENGINEERS

U. S. ARMY



POWER PLANT

DRUM WASHING, REPAIRING & TESTING PLANT WITH 10'X20' BLDG.

FACIL. NO. 125502 - INTERIOR ONLY
FACIL. NO. 125522 - WOOD FRAME BLDG. W/INTERIOR
FACIL. NO. 125520 - WOOD FRAME BLDG. (FRAME, ROOF & FOUNDATION)

FACIL. NO. 125501 - INTERIOR ONLY
FACIL. NO. 125511 - STEEL FRAME BLDG. W/INTERIOR
FACIL. NO. 125521 - WOOD FRAME BLDG. W/INTERIOR

PLAN
SCALE NO. 1

NOTE:
⊗-INDICATES LOCATION OF EQUIPMENT OPERATOR

ELECTRICAL CONTROL

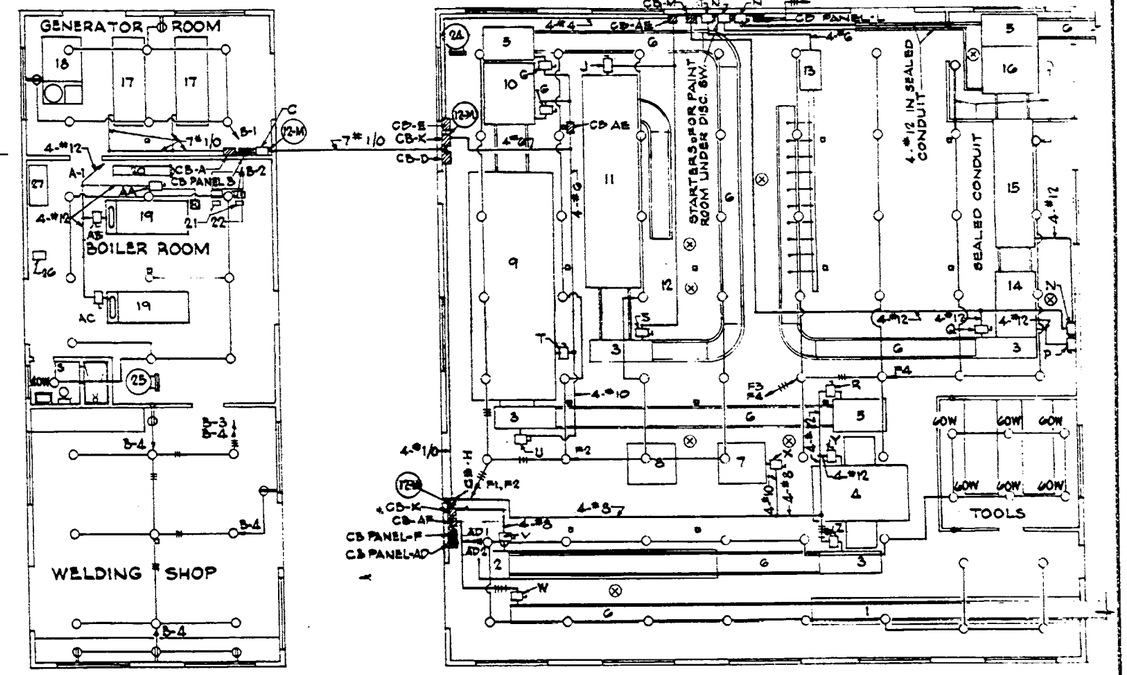
ITEM	CAPACITY
CB-A	3P, 30AMP
CB PANEL B	4 CIRCUITS, 15 AMP
DISC. SW. C	3P, 400AMP
CB-D	3P, 200AMP
CB-E	3P, 125 AMP
CB PANEL F	4 CIRCUITS, 15AMP
DISC. SW. G	3PST., 30AMP
CB-H	3P., 70AMP
DISC. SW. J	3 PST., 30AMP
CB-K	3P., 100AMP
CB PANEL L	2 CIRCUITS, 15 AMP
CB-M	3P., 35AMP
DISC. SW. N	3PST., 30AMP
DISC. SW. P	3PST., 30AMP
DISC. SW. Q	3PST., 30AMP
DISC. SW. R	3PST., 30AMP
DISC. SW. S	3PST., 30AMP
DISC. SW. T	3PST., 100AMP
DISC. SW. U	3PST., 30AMP
DISC. SW. V	3PST., 100AMP
DISC. SW. W	3PST., 30AMP
DISC. SW. X	3PST., 30AMP
DISC. SW. Y	3PST., 30AMP
DISC. SW. Z	3PST., 30AMP
DISC. SW. AA	3PST., 30AMP
DISC. SW AB	3PST., 30AMP
DISC. SW AC	3PST., 30AMP
CB PANEL AD	2 CIRCUITS, 30AMP
CB AE	3P, 30AMP
CB AF	3P, 15AMP

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION
1	DRAIN TANK WITH GRAVITY ROLLER CONVEYOR AND BUNG REMOVAL AREA
2	10 DRUM INSIDE FLUSHER WITH DRIVEN DOUBLE STRAND DRAG CONVEYOR.
3	DOWNENDER PROMOTER
4	DOUBLE END CHIME STRAIGHTENER
5	DESCENDING UPENDER
6	CHAIN DRIVEN LIVE ROLLER CONVEYOR
7	AUTOMATIC AIR DEDENTER
8	CHAIN STORAGE FOR INSERTION
9	AUTOMATIC STRIPPER
10	AUTOMATIC DRUM RINSER
11	5 TO 8 DRUM AUTOMATIC CHAINER
12	CHAIN REMOVAL AREA
13	10 DRUM SYPHON AND BUNG REPLACEMENT
14	AQUA TESTER
15	PREHEATER-STEAM HEATED
16	PAINT BOOTH
17	GENERATOR, ELEC., DIESEL, 60 KW
18	AIR COMPRESSOR DIESEL, 250 CFM F.A. @100PSI
19	BOILER, 100PSI, 1130#/HR STEAM CAP.
20	HEATER, FEED WATER, CLOSED TYPE, 20 SF
21	PUMP, FEED WATER.
22	TANK, SURGE, HORIZONTAL.
23	TANK, FUEL OIL, 4200 GAL.
24	GENERATOR, HOT WATER, 365 GAL.
25	GENERATOR, HOT WATER, 220 GAL.
26	FUEL OIL TRANSFER PUMP (MANUAL)
27	275 GAL. DAY TANK

SCHEDULE OF EQUIPMENT UTILITY USAGE

ITEM NO.	C.W. G.P.H.	H.W. G.P.H.	STEAM @ 100 PSI LB/HR	CFM OF FREE AIR
2	240	–	500	–
4	–	–	–	6
7	–	–	–	100
9	240	–	420	1.9
10	–	600	–	–
11	–	–	–	3.6
14	–	120	–	3.3
15	–	–	190	–
16	–	–	–	0.24



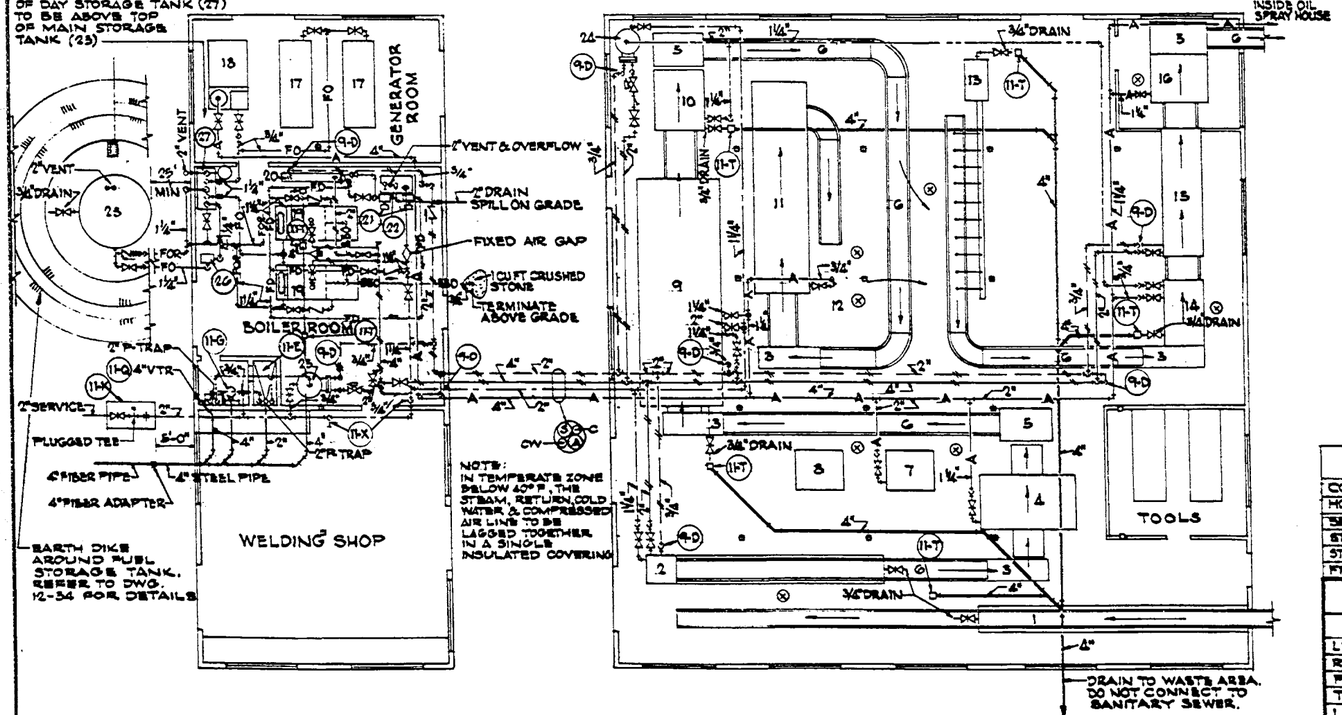
POWER PLANT

DRUM WASHING, REPAIRING & TESTING PLANT

ELECTRICAL PLAN
SCALE NO. 1

NOTE: THE PRODUCTION RATE OF 600 DRUMS PER DAY DEPENDS ON THE CONDITION OF THE DRUMS BEING REPAIRED. IF THE DRUMS ARE IN FAIRLY GOOD CONDITION THE PRODUCTION RATE COULD INCREASE TO 1200 DRUMS PER 10 HR DAY WITH THE PRESENT EQUIPMENT.

NOTE: INVERT ELEVATION OF DAY STORAGE TANK (27) TO BE ABOVE TOP OF MAIN STORAGE TANK (23)



POWER PLANT

DRUM WASHING, REPAIRING & TESTING PLANT

MECHANICAL PLAN
SCALE NO. 1

SERVICE REQUIRMENTS	
COLD WATER (BASED @ 40°F)	1287 GPH
HOT WATER (180°)	720 GPH
SEWAGE	1370 GPH
STEAM @ 100 PSI FOR EQUIP.	1401 LB/HR
STEAM @ 100 PSI FOR HEATING NO. 24	1071 LB/HR
FREE AIR FOR EQUIPMENT	175 CFM

GENERAL NOTES

1. REFER TO TM5-305 FOR BUILDING SHELL REQUIREMENTS.
2. FOR "SN B.M." REFER TO TM5-305 BY FACILITY NUMBER.
3. NORMAL STEAM WORKING PRESSURE-100 PSI.

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	9.1 KW
RECP EST	0.9 KW
POWER	90.0 KW
TOTAL	100.0 KW

1. ALL LAMPS TO BE 100W UNLESS OTHERWISE NOTED
2. ALL LAMPS TO HAVE 8" CONICAL SHADES.
3. MOTOR STARTERS FOR ITEM NO. 5, 6, 13, 14, 15 & 16 ARE TO BE MOUNTED UNDER DISCONNECT SWITCHES FOR PROTECTION IN HAZARDOUS PAINTING AREA.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
12-55	PLANS & DETAILS	1 OF 1
99-98	STANDARD DETAILS	
12-34	POL TANKS	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
34-04	WOOD FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4
35-36	STEEL FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15'
NO. 1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS

P.O.L.

DRUM WASHING, REPAIRING & TESTING PLANT
600 DRUMS PER 10-HOUR DAY
PLANS & DETAILS

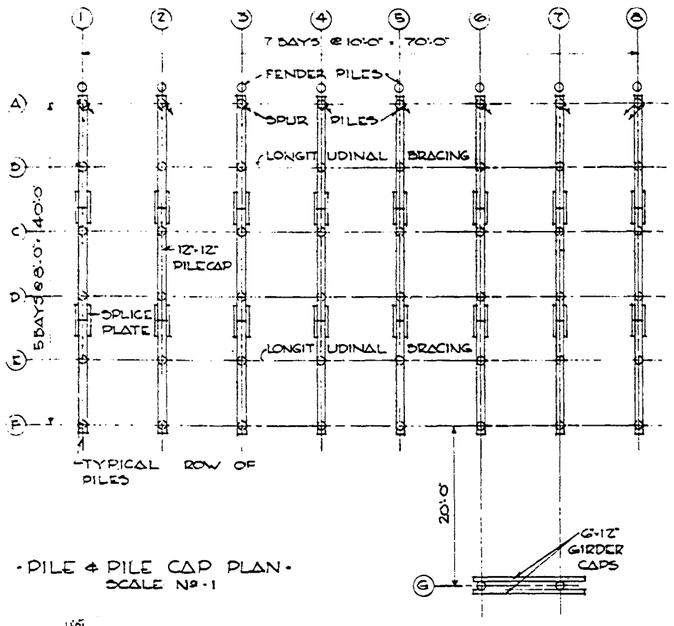
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CHIEF, ARCHITECTURAL BRANCH

APPROVED: DATE:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

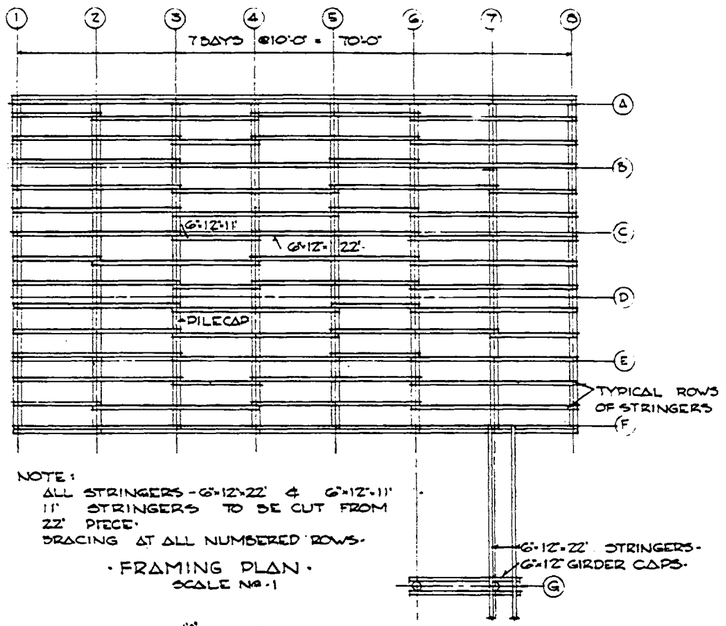
APPROVED FOR PROPONENT AGENCY:

DATE

SCALE AS NOTED SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1
12-55

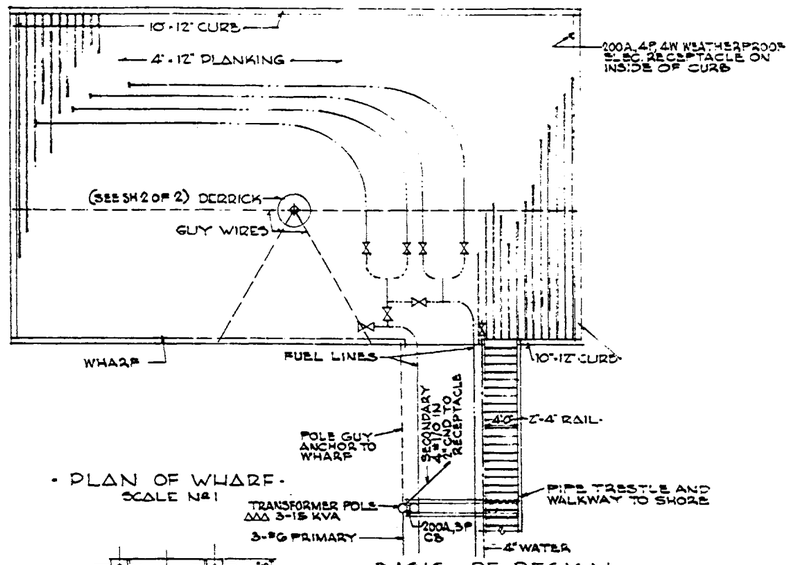


· PILE & PILE CAP PLAN ·
SCALE No. 1

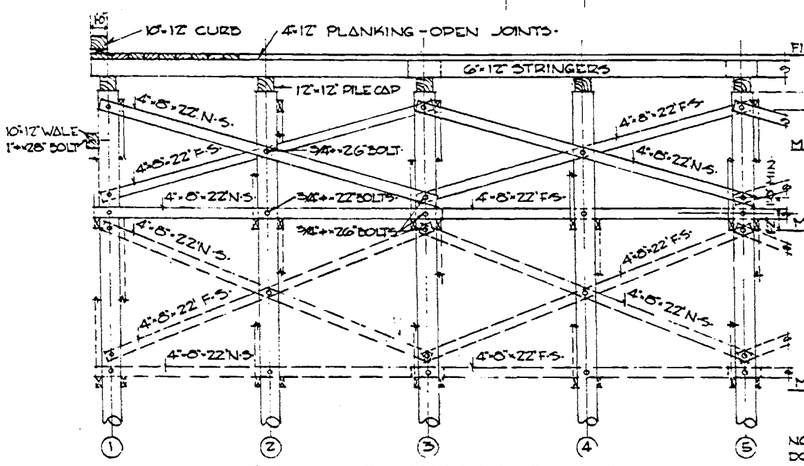


NOTE:
ALL STRINGERS - 6"-12"-22' & 6"-12"-11' 11' STRINGERS TO BE CUT FROM 22' PIECE.
BRACING AT ALL NUMBERED ROWS.

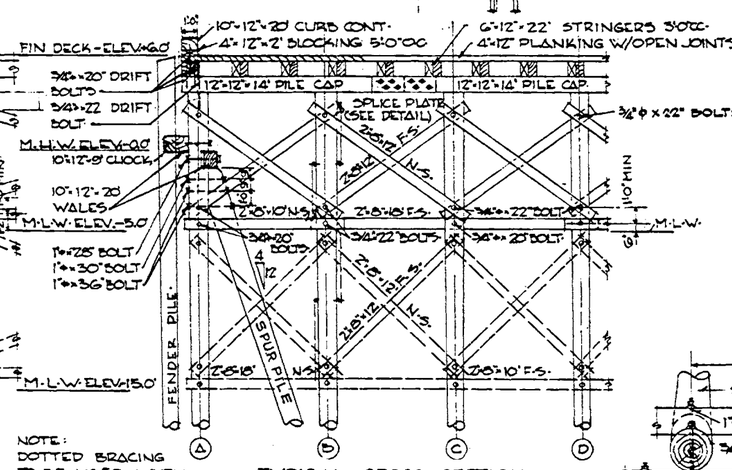
· FRAMING PLAN ·
SCALE No. 1



· PLAN OF WHARF ·
SCALE No. 1

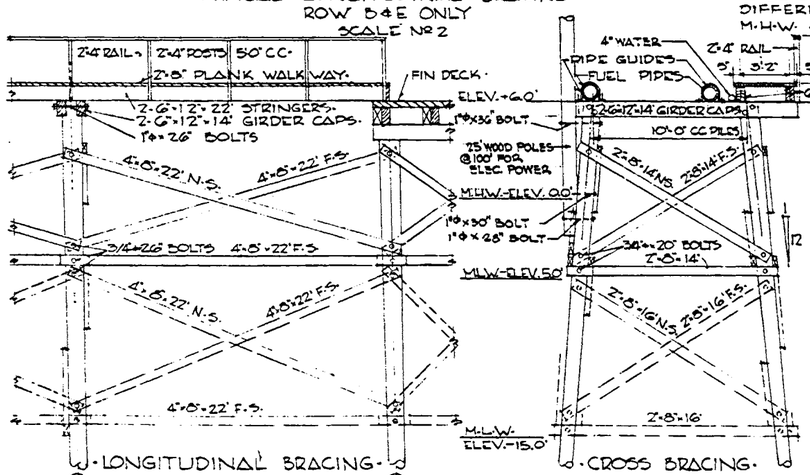


· TYPICAL LONGITUDINAL BRACING ·
ROW D & E ONLY
SCALE No. 2



· TYPICAL CROSS SECTION ·
SCALE No. 2

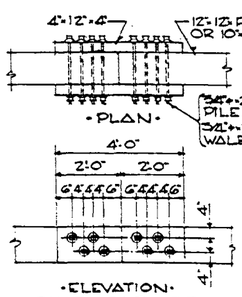
NOTE:
DOTTED BRACING TO BE USED WHEN DIFFERENCE BETWEEN M.H.W. & M.L.W. IS 15.0'+.



· LONGITUDINAL BRACING ·
(G) BRACING OCCURS AT THE 11TH, 14TH, 17TH, 20TH, 23RD, 25TH, 27TH, 29TH, 31ST, & 33RD TO 50TH DAYS FROM SHORE.

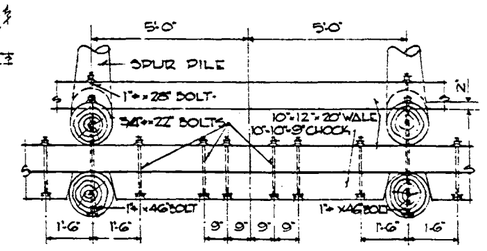
· CROSS BRACING ·
BRACING OCCURS AT 12TH TO 51ST PILE ROW FROM SHORE.

· PIPE TRESTLE AND WALKWAY ·
SCALE No. 2

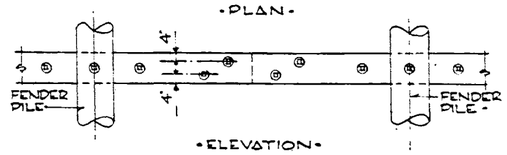


· PLAN ·

· ELEVATION ·
PILE CAP OR WALE SPLICE DETAIL
SCALE No. 4

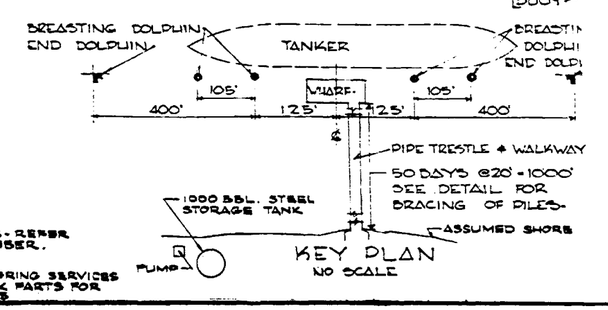


· PLAN ·



· ELEVATION ·

· WALE SPLICE & FENDER CHOCK DETAIL ·
SCALE No. 4



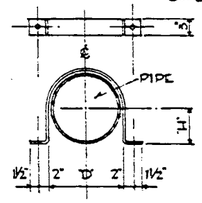
KEY PLAN
NO SCALE

NOTE:
1. FOR BSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

FACILITY NO. 125701 - JETTY, P.O.L.
FACILITY NO. 125702 - TANKER WATERING SERVICES
FACILITY NO. 125703 - HOSE DERRICK PARTS FOR P.O.L. WHARFS

BASIS OF DESIGN ·

1. UNIFORM LIVE LOAD = 300 P.S.F.
2. SAFE AXLE LOAD = 2000 LBS.
3. SIDE PRESSURE ON WHARF = 1000 LBS PER LIN FT.
4. PILE BEARING VALUE = 30,000 LBS.
5. EXTREME FIBER STRESS - WOOD = 1800 P.S.I.
6. COMPRESSION PARALLEL TO GRAIN - WOOD = 1500 P.S.I.
7. COMPRESSION PERPENDICULAR TO GRAIN - WD. 450 P.S.I.
8. HORIZONTAL SHEAR - WOOD = 150 P.S.I.
9. MODULUS OF ELASTICITY = 1,600,000.
10. BEARING PILE LENGTHS IN BILL OF MATERIALS INCLUDE PENETRATION OF 15'0". THE PENETRATION REQUIRED SHOULD BE DETERMINED BY DRIVING TESTS WHERE POSSIBLE AND THE LENGTH OF PILES ADJUSTED ACCORDINGLY. DOLPHIN PILES INCLUDE PENETRATION OF 10'0".



· PIPE GUIDE ·
NO SCALE

4" ID PIPE: D=4.5", H=12", 3"x3/8" L=2'-0" BAR.
12" ID PIPE: D=13", H=7", 3"x3/8" - 3'-3½" BAR.
16" OD PIPE: D=16½", H=8½", 3"x3/8" - 4'-2" BAR.
3/8" DIA HOLES FOR 1/2" ø LAG SCREWS.

GENERAL NOTES ·

1. PILE CUT-OFF ELEVATIONS IN APPROACH TRESTLE VARY TO PROVIDE DRAINAGE SHOREWARDS.
2. HOLES FOR DRIFT BOLTS SHALL BE 1/16" LESS THAN BOLT.
3. HOLES FOR THRU BOLTS SHALL HAVE DIAMETER OF BOLT.
4. NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
5. USE O.G. CAST IRON WASHERS WITH ALL BOLTS.
6. ALL PILES TO BE TREATED IF USED IN AREAS WHERE MARINE BORERS ARE ACTIVE.
7. TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
8. PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER NUTS HAVE BEEN DRAWN TIGHT.
9. FOR DETAILS OF ELECTRIC LINE AND TRANSFORMER INSTALLATION REFER TO DWGS NO. 8-1-21 & 8-1-22.

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10' 15' NO. 1 | 0 5' 10' NO. 2 | 0 1' 2' 3' 4' NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

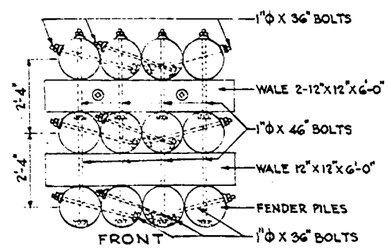
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HORNE
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED: APPROVED: DATE:
CHIEF, STRUCTURES BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:

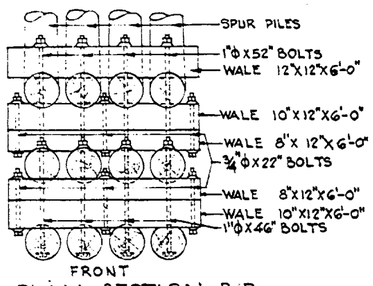
THEATER OF OPERATIONS

P.O.L.
JETTY
1000 FT.

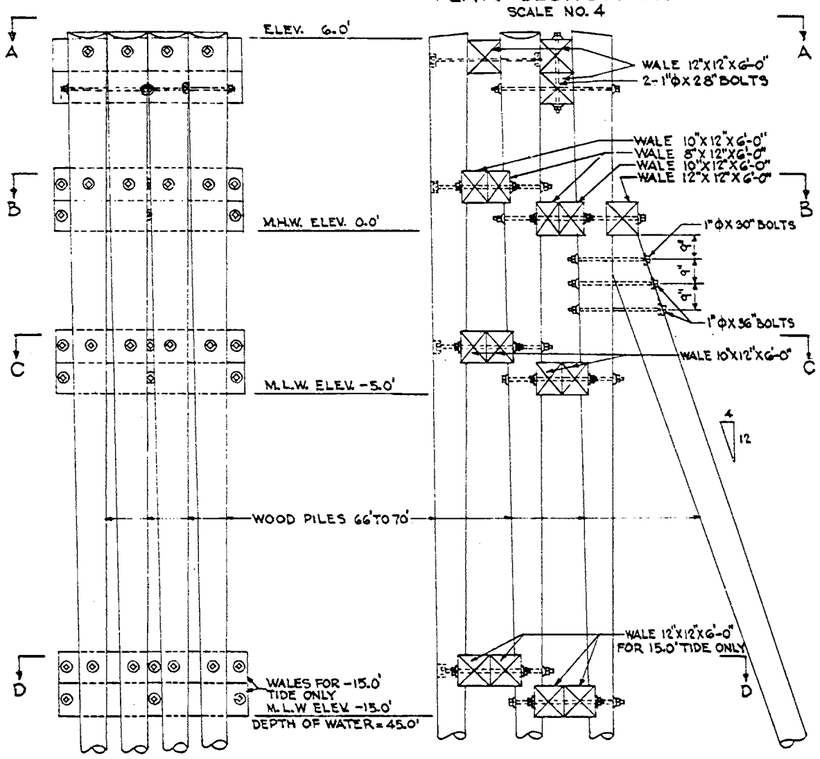
SCALE AS NOTED SPEC NO.
DRAWING NUMBER 12-57
DATE
SHEET 1 OF 2



PLAN AT A-A
SCALE NO. 4

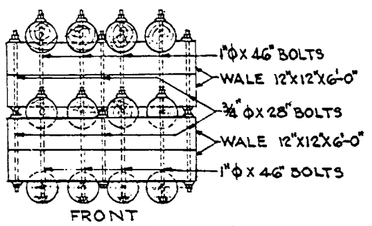


PLAN-SECTION B-B
SCALE NO. 4

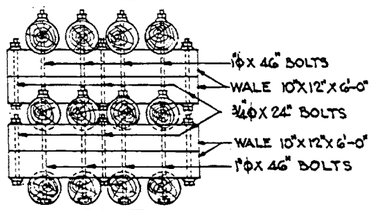


FRONT ELEVATION
SCALE NO. 4

SIDE ELEVATION
SCALE NO. 4

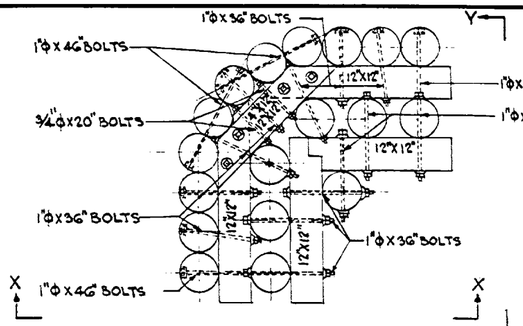


PLAN-SECTION D-D
(FOR 15' TIDE ONLY)
SCALE NO. 4

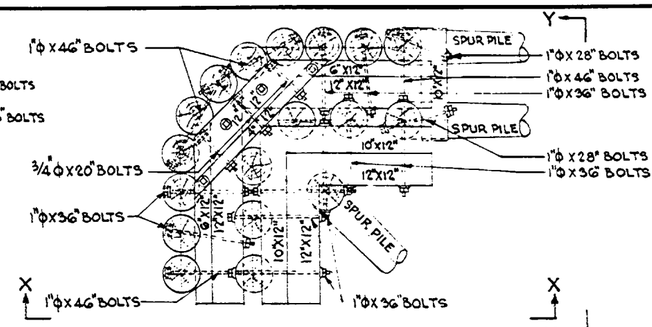


PLAN-SECTION C-C
SCALE NO. 4

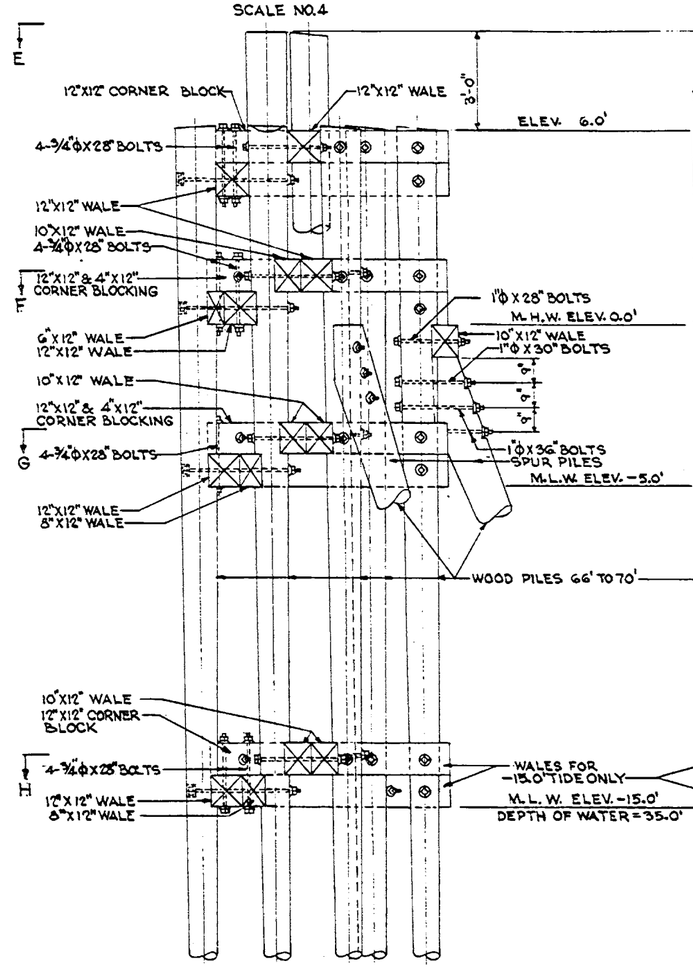
BREASTING DOLPHIN



PLAN AT E-E
SCALE NO.4

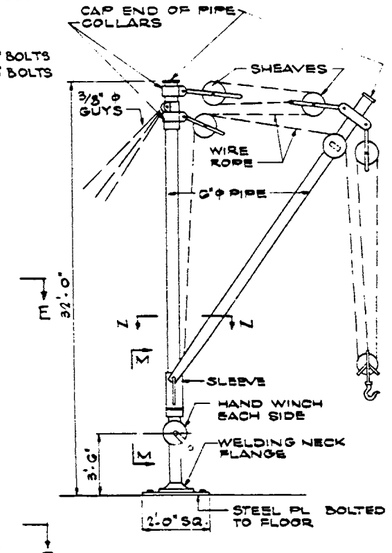


PLAN- SECTION F-F
SCALE NO.4

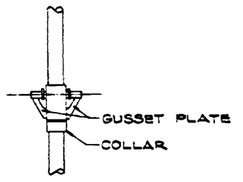


ELEVATION X-X
SCALE NO.4

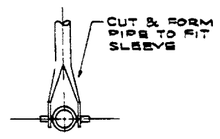
ELEVATION Y-Y
SCALE NO.4



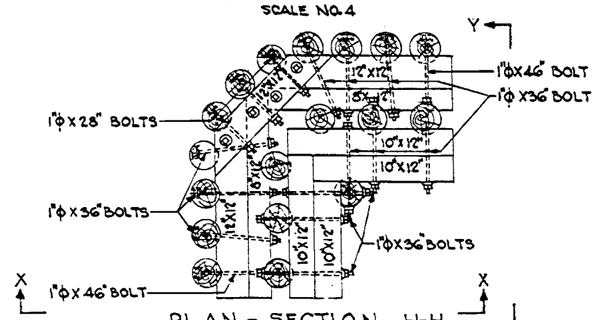
DETAIL - HOSE DERRICK
TO BE MOUNTED ON WHARF
NO SCALE



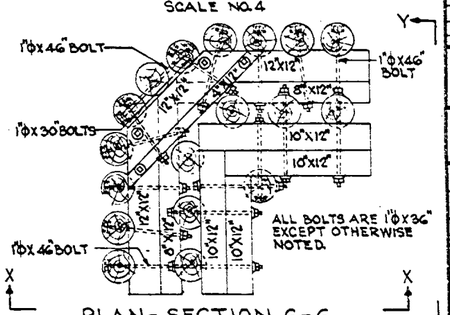
ELEVATION M-M
NO SCALE



SECTION N-N
NO SCALE



PLAN - SECTION H-H
(FOR 15.0' TIDE ONLY)
SCALE NO. 4



PLAN - SECTION G-G
SCALE NO. 4

END DOLPHIN

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES

0 1' 2' 3' 4'

NO 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

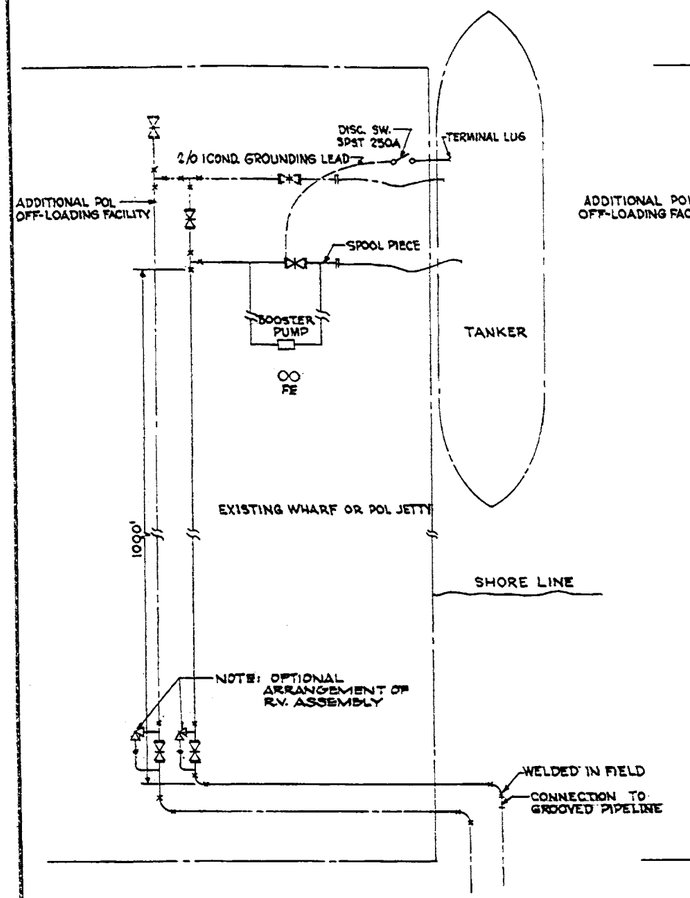
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HORNE
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED: W. E. Glass — CHIEF, ENGINEERING BRANCH
APPROVED: R. P. Bankhead — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

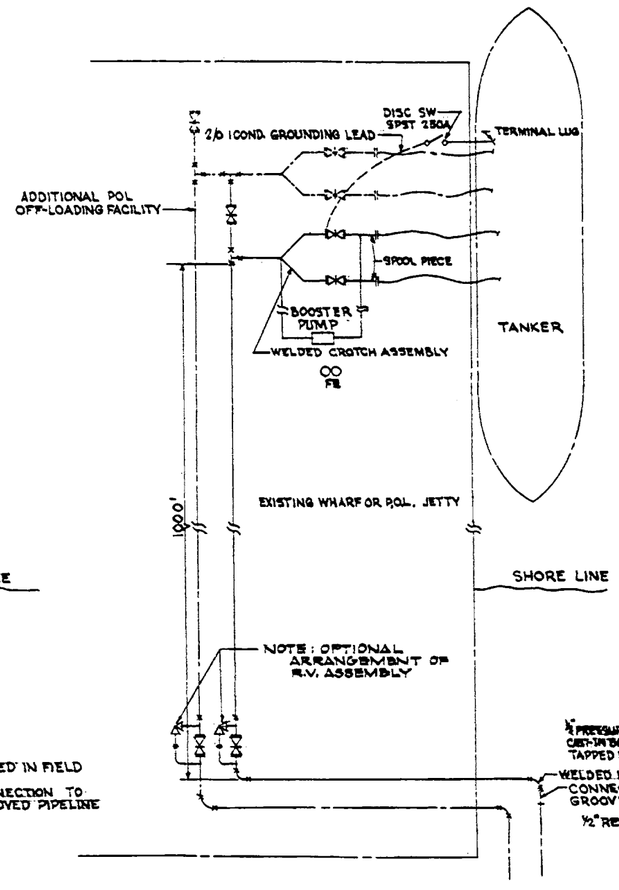
THEATER OF OPERATIONS

P.O.L.
JETTY
1000 FT.

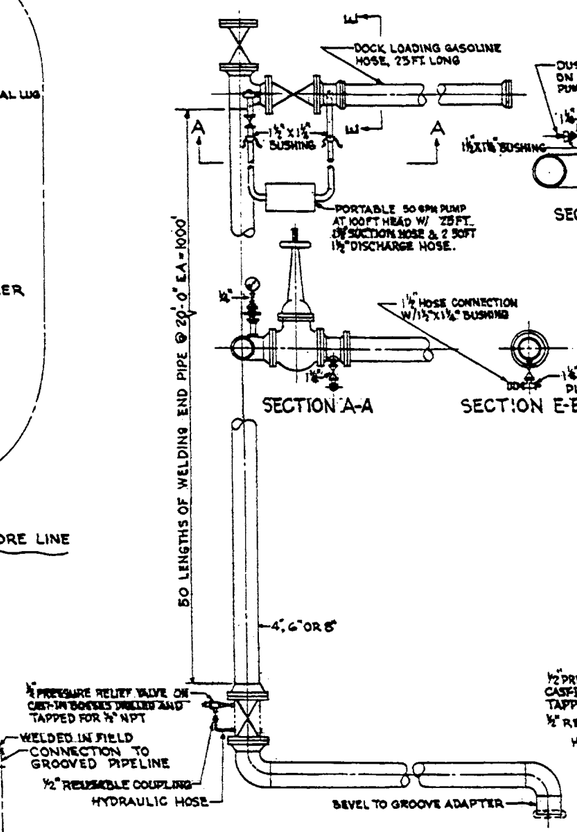
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 2
12-5*



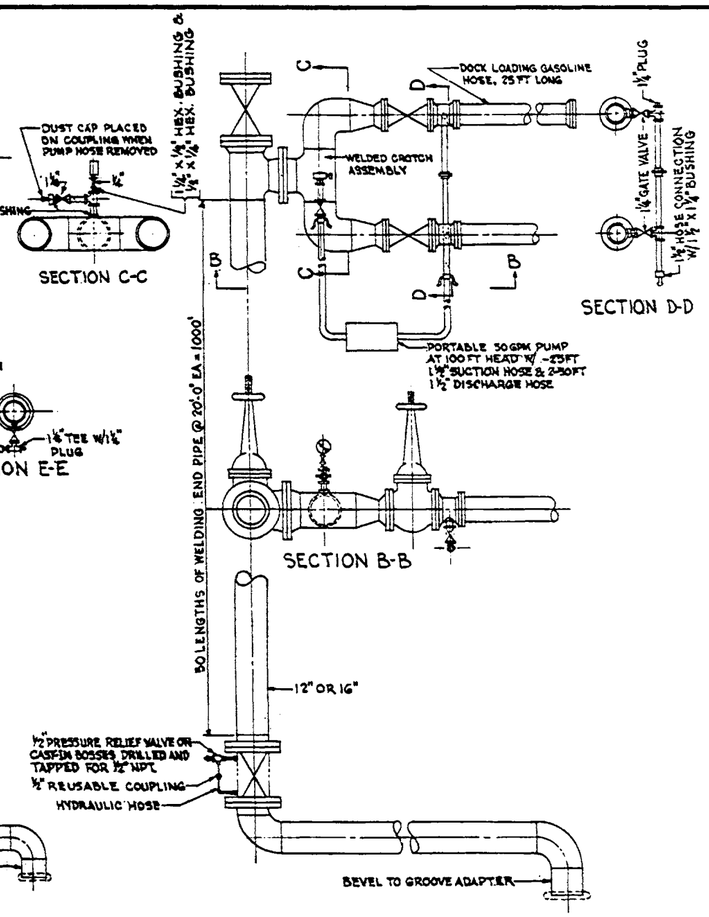
MARINE DOCK PIPING
(FOR 4", 6" AND 8" PIPE FACILITY)
NO SCALE



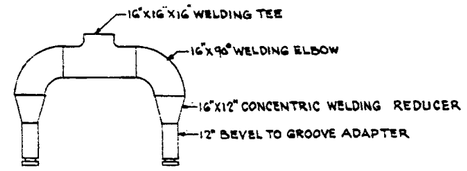
MARINE DOCK PIPING
(FOR 12" AND 16" PIPE FACILITY)
NO SCALE



DETAIL OF SINGLE HOSE CONNECTION
(4", 6" & 8" FACILITIES)
NO SCALE



DETAIL OF TWIN HOSE CONNECTION
(12" & 16" FACILITIES)
NO SCALE



SHORE TERMINAL ASSEMBLY
(16" FACILITY)
NO SCALE

FACILITY NUMBERS			
NUMBER	PIPE SIZE	CAPACITY	UNIT LENGTH
125801	4 IN.	250 BPH	1000 FT.
125802	6 IN.	680 BPH	1000 FT.
125803	8 IN.	950 BPH	1000 FT.
125804	12 IN.	980-2800 BPH	1000 FT.
125805	16 IN.	2800 BPH	1000 FT.

△ PIPELINE WELDING NOTE

WELDED POL PIPELINES SHALL BE USED FOR ALL PORTIONS OF THE DOCK AND JETTY UNLOADING LINES AND SHALL HAVE 100 PERCENT RADIOGRAPHIC WELD INSPECTION OF THE ENTIRE CIRCUMFERENCE OF EACH FIELD WELD UTILIZING THE ACCEPTANCE/REJECTION CRITERIA CONTAINED IN AMERICAN PETROLEUM INSTITUTE (API) STANDARD 1104, STANDARD FOR WELDING PIPELINES AND RELATED FACILITIES. THIS REQUIREMENT IS IN ADDITION TO THE STATIC FIELD TESTING DESCRIBED IN TM 5-353.

GENERAL NOTES

1. THIS IS A PIPELINE FACILITY TO BE USED WITH ANY WHARF OR FOR THE POL JETTY.
2. THE SINGLE LINE DIAGRAM INDICATES THE BASIC FACILITY. THE USE OF ADDITIONAL LINES IS RESTRICTED ONLY BY THE SIZE OF THE EXISTING WHARF OR POL JETTY.
3. SPARE FLANGE AND TEE ARE SUPPLIED WITH EACH FACILITY TO ALLOW THE EXPANSION INTO MULTIPLE LINES.
4. FOR BSN BILL OF MATERIALS - REFER TO TM5-305 BY FACILITY NUMBER.

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	ADDED WELDING NOTE	SEP '70	CWD

REVISIONS

GRAPHIC SCALES: NO SCALE

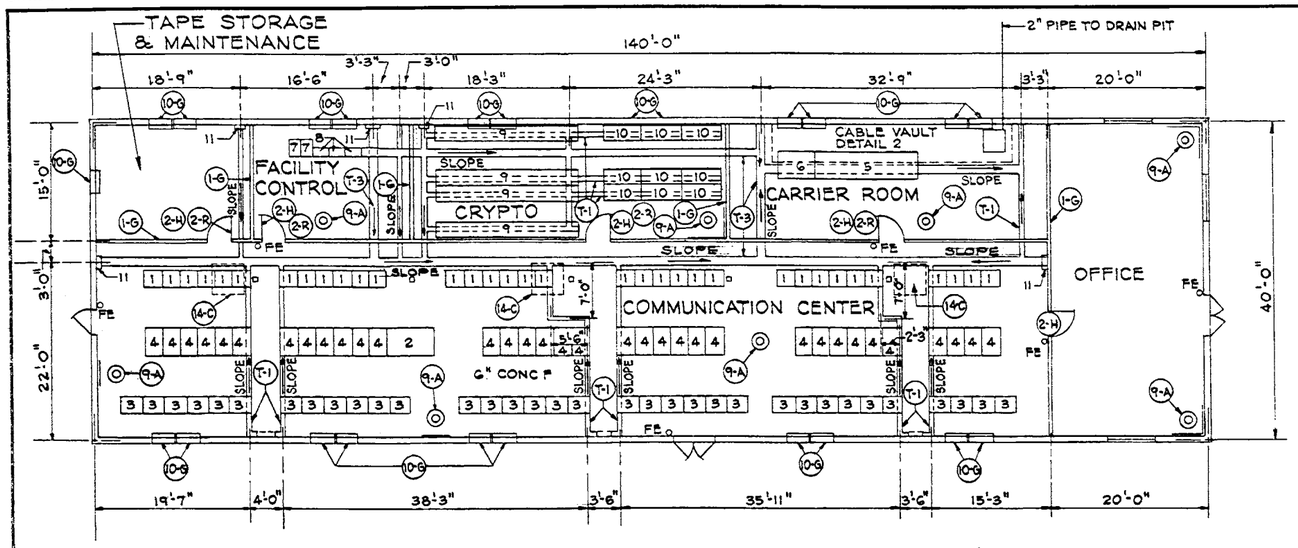
MAYER, BRAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

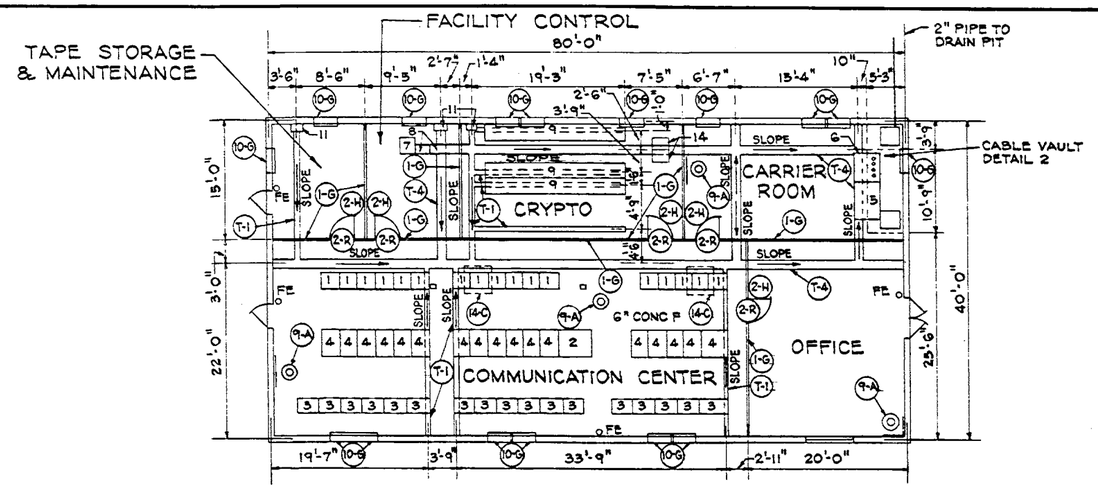
DRAWN BY: ILYUS
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, ARCHITECT BRANCH
APPROVED: [signature] DATE: 19 MAY 1971 CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE: 1 SEP 71

THEATER OF OPERATIONS
P. O. L.
MARINE DOCK
PIPE & ACCESSORIES-DOCK EXISTING
4, 6, 8, 12 & 16 INCH

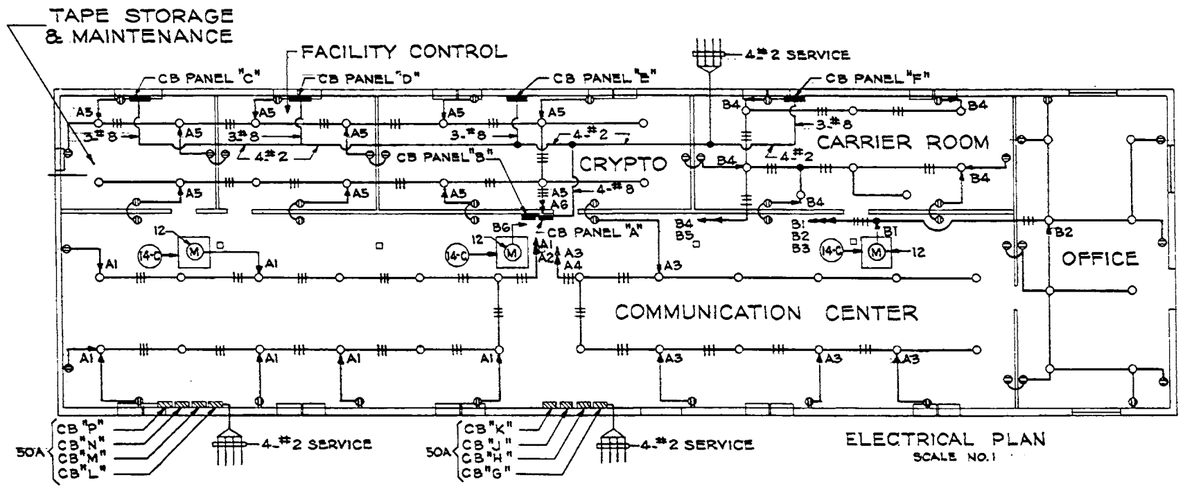
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DRAWING NUMBER: 12-58
SHEET 1 OF 1



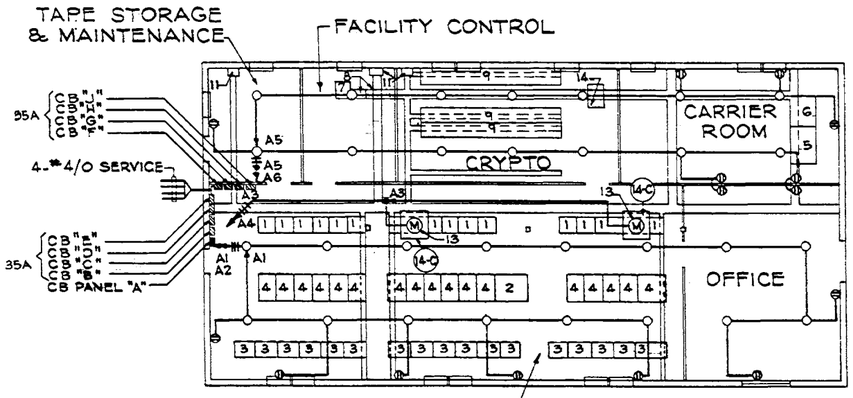
PLAN
SCALE NO. 1



PLAN
SCALE NO. 1



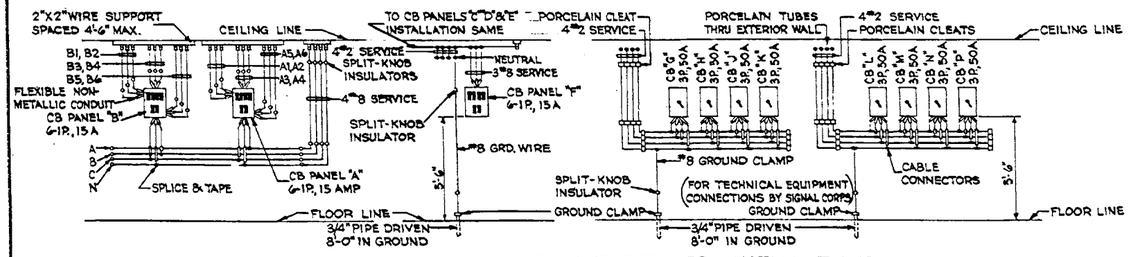
ELECTRICAL PLAN
SCALE NO. 1



ELECTRICAL PLAN
SCALE NO. 1

COMMUNICATION RELAY STATION BLDG- 40'x 140'

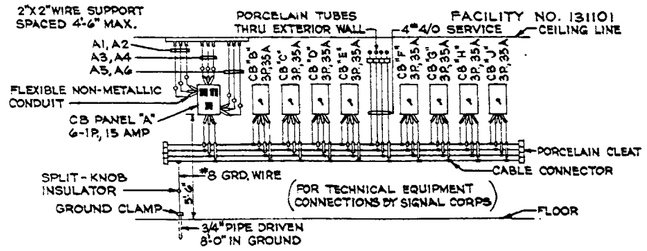
FACILITY NO. 131102 - INTERIOR ONLY
FACILITY NO. 131112 - STEEL FRAME W/INTERIOR FACILITY NO. 131122 - WOOD FRAME W/INTERIOR



CIRCUIT BREAKER INSTALLATIONS
NO SCALE
FACILITY NO. 131102

COMMUNICATION RELAY STATION BLDG. - 40' X 80'

FACILITY NO. 131101 - INTERIOR ONLY
FACILITY NO. 131111 - STEEL FRAME W/INTERIOR FACILITY NO. 131121 - WOOD FRAME W/INTERIOR



CIRCUIT BREAKER INSTALLATION
NO SCALE
FACILITY NO. 131101

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QUANTITIES 40'x 80'	40'x 140'
1	AN/FGC-38X-MONITOR	17	34
2	AN/FGC-38X-MULTIPLE ADDRESS EQUIP	1	1
3	AN/FGC-38X-RECEIVE	17	34
4	AN/FGC-38X-SEND	17	34
5	IDF	1	1
6	MDF	1	1
7	MISC CABINETS	1	2
8	SWITCHBOARD	2	4
9	AFSAX-500-16 LINES	3	4
10	AFSAX-22-4 LINES	-	9
11	1-26 PAIR TERMINAL MOUNTED IN 12"W x 24"HGT x 4"D SURFACE STEEL CABINET	3	5
12	36" EXHAUST FAN 10,000 CFM	-	3
13	30" EXHAUST FAN 7500 CFM	2	-
14	AFSAM-26-2 LINES RACK MTD	2	-

ELECTRICAL NOTES

CONNECTED LOAD - 40'x 140'	
LIGHTING	5.40 KW
RECP EST	4.40 KW
POWER	271.27 KW
TOTAL	281.07 KW

CONNECTED LOAD - 40'x 80'	
LIGHTING	3.00 KW
RECP EST	1.50 KW
POWER	140.35 KW
TOTAL	144.85 KW

1. ALL ELECTRIC LAMPS TO BE 100 W WITH 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.
3. SLOPE ALL TRENCHES 1/16" PER FT TOWARD CABLE VAULT FOR DRAINAGE.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
13-11	PLANS	1 OF 1
13-22	SPECIAL DETAILS	1 OF 1
99-98	STANDARD DETAILS	
34-04	WOOD FRAME CONSTRUCTION WAREHOUSE TYPE BLDGS.	1-3 OF 3
35-36	STEEL FRAME CONSTRUCTION WAREHOUSE TYPE BLDGS.	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	UNDER REVISION DO NOT USE		

GRAPHIC SCALES
0 5' 10' 15'
NO.1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

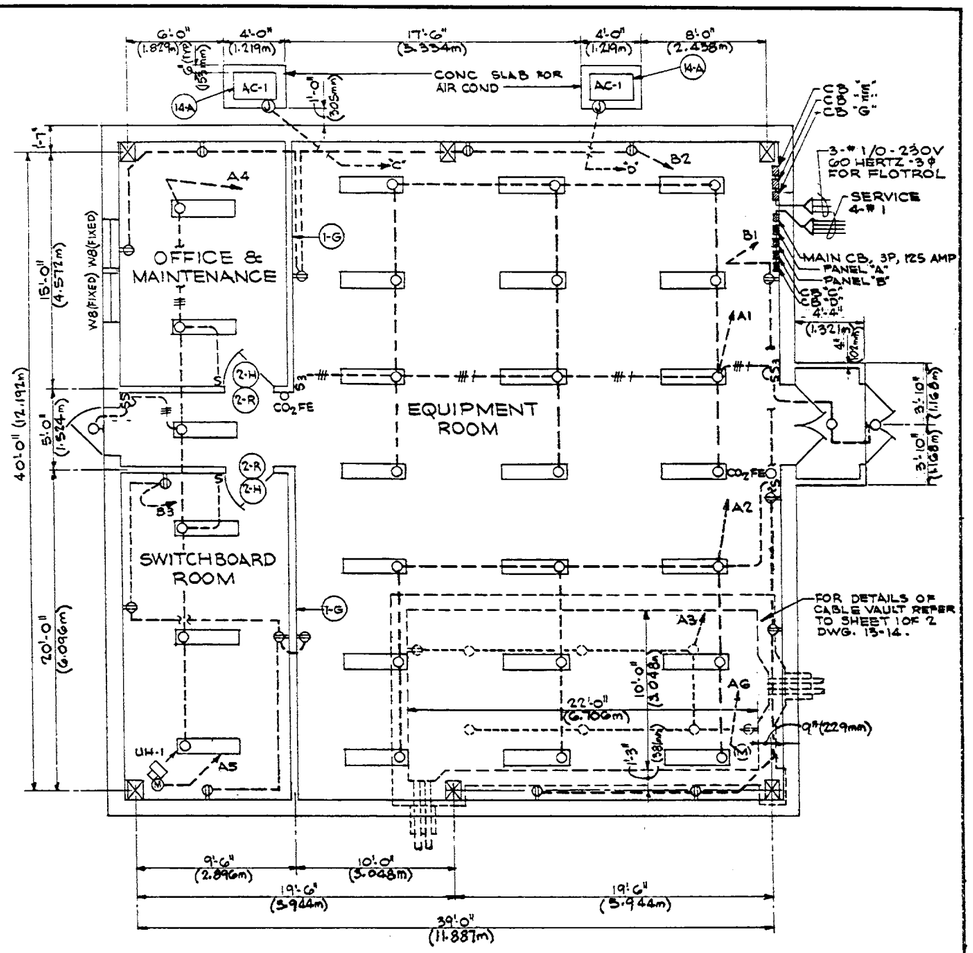
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LALL
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

THEATER OF OPERATIONS

COMMUNICATION RELAY STATION BLDG
40'X80'
40'X140'

APPROVED FOR PROPONENT AGENCY: for W. J. Costello, Jr. LTC, Inf
DATE: 24 September 1968
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-11
SHEET 1 OF 1

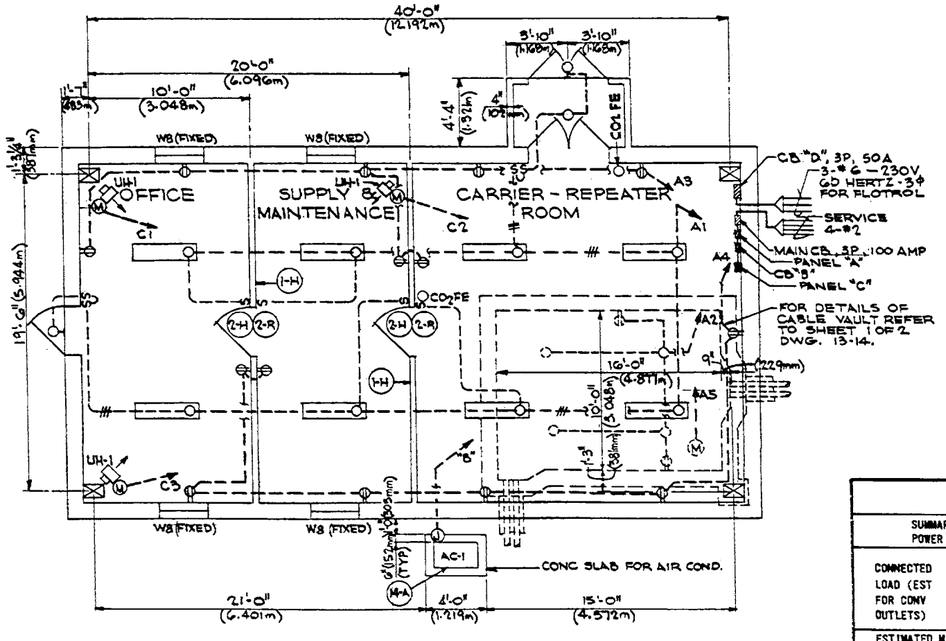


COMMUNICATION CARRIER & REPEATER 40' x 40'

SCALE NO. 2

FACILITY NO. 131203 - INTERIOR ONLY

FACILITY NO. 131213 - WOOD FRAME W/INTERIOR

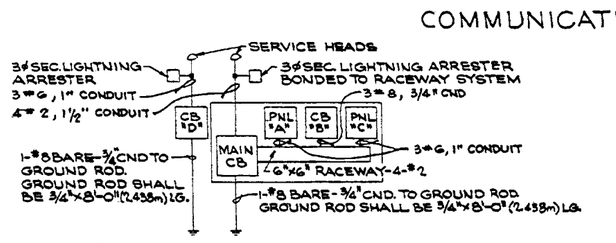


COMMUNICATION CARRIER & REPEATER 20' x 40'

SCALE NO. 2

FACILITY NO. 131202 - INTERIOR ONLY

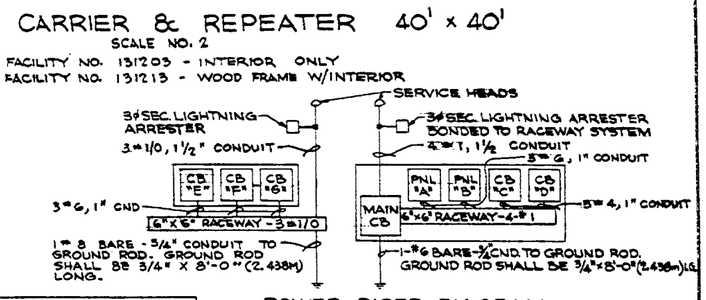
FACILITY NO. 131212 - WOOD FRAME W/INTERIOR



POWER RISER DIAGRAM

FACILITY NO. 131202

NO SCALE



POWER RISER DIAGRAM

FACILITY NO. 131203

NO SCALE

SCHEDULE OF CIRCUIT BREAKERS AND PANELBOARDS

PANEL OR BREAKER VOLTAGE MAINS	RATINGS POLES	RATINGS AMPS	BRANCH CIRCUIT BREAKER ACTIVE AND SPARE CKTS	BRANCH CIRCUIT BREAKER SPARE CIRCUITS	WIRE SIZE OTHER THAN #12
FACILITY NO. 131202					
PNL A 208Y/120, 1Φ, 3W	1	20	1 THRU 6	6	
PNL C 208Y/120, 1Φ, 3W	1	20	1 THRU 6	4 THRU 6	
CB - B 208Y	3	70			#8
CB - D 230Y	3	50			

SCHEDULE OF CIRCUIT BREAKERS AND PANELBOARDS

PANEL OR BREAKER VOLTAGE MAINS	RATINGS POLES	RATINGS AMPS	BRANCH CIRCUIT BREAKER ACTIVE AND SPARE CKTS	BRANCH CIRCUIT BREAKER SPARE CKTS	WIRE SIZE OTHER THAN #12
FACILITY NO. 131203					
PNL A 208Y/120, 1Φ, 3W	1	20	1 THRU 6	5&6	
PNL B 208Y/120, 1Φ, 3W	1	20	1 THRU 10	9&10	
CB - C&D 208Y	3	70			#8
CB - E, F&G 230Y	3	50			

ELECTRICAL NOTES

SUMMARY OF ELECTRICAL POWER REQUIREMENT (KVA)		FACILITY NUMBER 131201	131202	131203
CONNECTED LOAD (EST FOR CONV OUTLETS)	LIGHTING		1.5	3.7
	RECP EST		2.8	2.5
	POWER (BLDG UTIL)		1.0	31.8
	POWER (USERS EQPT)		8.0	11.2
	TOTAL CONNECTED		31.3	49.2
ESTIMATED MAX. DEMAND			25.0	39.4

1. ALL WIRING TO BE IN RIGID CONDUIT.
2. LIGHTING FIXTURES TO BE MOUNTED ON CEILING IN CABLE VAULT AND AT 13' (3.962m) ABOVE GROUND FLOOR, TYPES: 150 W PAR 38 W/ADJ BRACKET IN VAULTS; 2-40 W FLUORESCENT INDUSTRIAL IN GENERAL INTERIOR; WALL MOUNTED 100 W VAPOR-TIGHT EXTERIOR.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM 5-303 BY FACILITY NUMBER.
3. THE WOOD FRAME STRUCTURES ARE TO BE BASED ON STANDARD SHOP HEAVY DUTY BLDGS. THE COLUMN HEIGHTS ARE TO BE REDUCED SO THAT THE CLEAR HEIGHT IS 13'(3.962m) MIN BELOW DUCTWORK & FIXTURES EXCLUDING KNEEBRACING.
4. THE DESIGNS ARE FOR USE IN THE TROPICAL AND TEMPERATE CLIMATES.
5. ALL WINDOWS TO BE W-8 (FIXED). REFER TO DWG 34-18 SH 2 OF 2. SILL HEIGHT OF WINDOWS TO BE 4'-6" (1.372m) FROM FIN FL.

SCHEDULE OF DRAWINGS

DWG NO.	DESCRIPTION	SHEET NO.
13-12	PLANS	1-2 OF 2
13-14	CABLE VAULT	1 OF 1
99-98	STANDARD DETAILS	
34-19	WOOD FRAME CONSTR SHOP - HEAVY DUTY	1-12 OF 12

UNDER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES

0 5' 10'

0 1m 2m 3m

NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED:

ARMY FACILITIES COMPONENTS SYSTEM

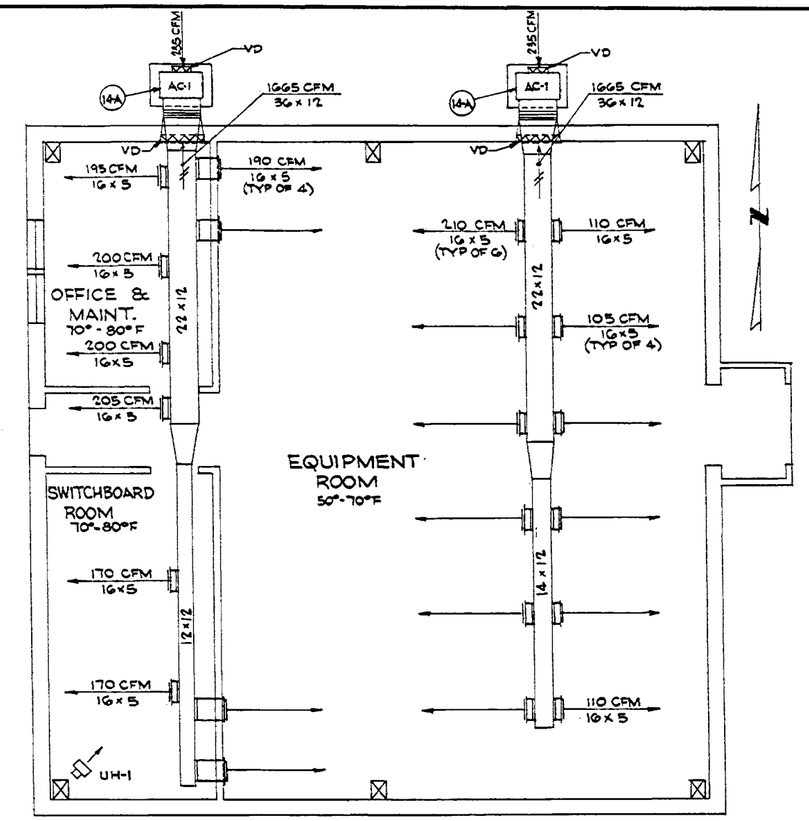
COMMUNICATION TERMINAL STATION 40'X60'
COMMUNICATION CARRIER & REPEATER 20'X40' & 40'X40'

APPROVED: Edwin D. Patterson, Col CE DATE: 23 February 1973
CHIEF, APOS OFFICE, MILITARY ENGINEERING, OCE

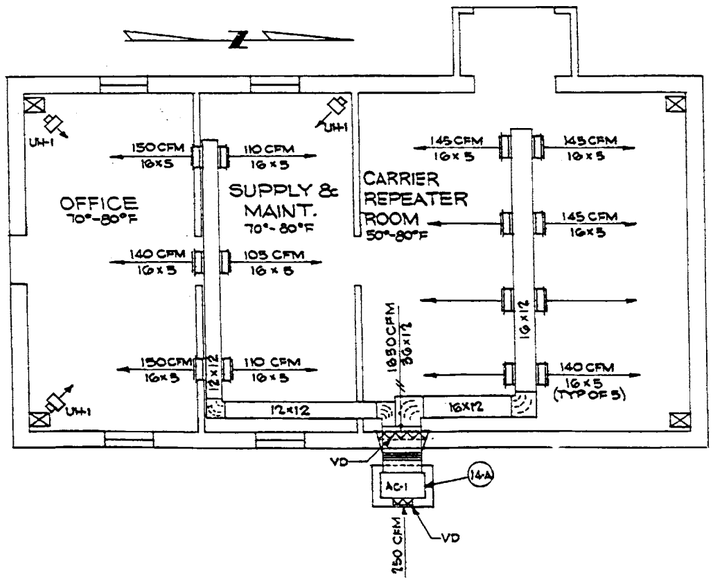
CHIEF, BRANCH

APPROVED FOR PROPONENT AGENCY:
COL, CE
DATE 1 DEC 72

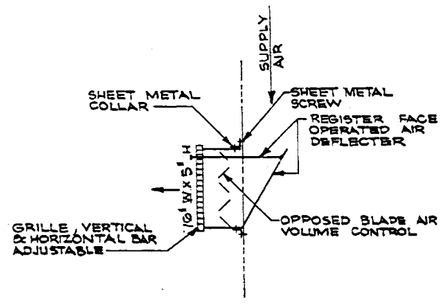
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 13-12
SHEET 1 OF 2



AIR CONDITIONING
COMMUNICATION CARRIER & REPEATER - 40'×40'
SCALE NO. 2



AIR CONDITIONING
COMMUNICATION CARRIER & REPEATER - 20' x 40'
SCALE NO. 2



PLAN-SECTION OF 16"×5"
A.C. REGISTER
NO SCALE

DUCT SIZES	
PLAN SIZING INCHES	METRIC CONVERSION MILLIMETERS
36 x 12	914 x 305
22 x 12	559 x 305
16 x 12	407 x 305
14 x 12	356 x 305
12 x 12	305 x 305
16 x 5	407 x 127

MECHANICAL NOTES

1. NORTH ARROW INDICATES ORIENTATION OF BUILDING FOR DESIGN OF COOLING PHASE OF AIR CONDITIONING IN LATITUDE 24° NORTH. OTHER ORIENTATION OF BUILDING MAY REQUIRE SLIGHT FIELD MODIFICATION.
2. INSIDE DESIGN CONDITIONS:
   50°F. TO 80°F. DRY BULB
   55% RELATIVE HUMIDITY
   OUTSIDE AMBIENT CONDITIONS:
   SUMMER: 110°F. DRY BULB
   81°F. WET BULB
   WINTER: -20°F. DRY BULB
3. AIR CONDITIONING UNITS (AC-1) SHALL HAVE A MIN. COOLING CAPACITY OF 58,000 BTU/HR, MIN. HEATING CAPACITY OF 47,000 BTU/HR, AND AIR FLOW OF 1900 CFM @ $\frac{1}{4}$" OF H_2O EXTERNAL STATIC PRESSURE (2000 CFM @ 0" S.P.). MAX. UNIT K.W. TO BE 14.4; UNIT TO BE COMPLETE WITH ALL CONTROLS AND A THERMOSTAT SENSING RETURN AIR TEMPERATURE.
4. BOTTOM OF DUCT WORK TO BE 13'-0" (3.962m) ABOVE FINISH FLOOR.
5. UNIT HEATERS (UH-1) TO BE 1.5 K.W., $\frac{1}{80}$ HORSEPOWER WITH BUILT-IN THERMOSTAT (40° TO 90°F. RANGE).
6. VD VOLUME DAMPER (OPPOSED BLADE)

UNDER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
0 1m NO. 2 2m 3m

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: RICKETS, LOW
SUBMITTED BY: C.W. DEICHMANN
APPROVED:

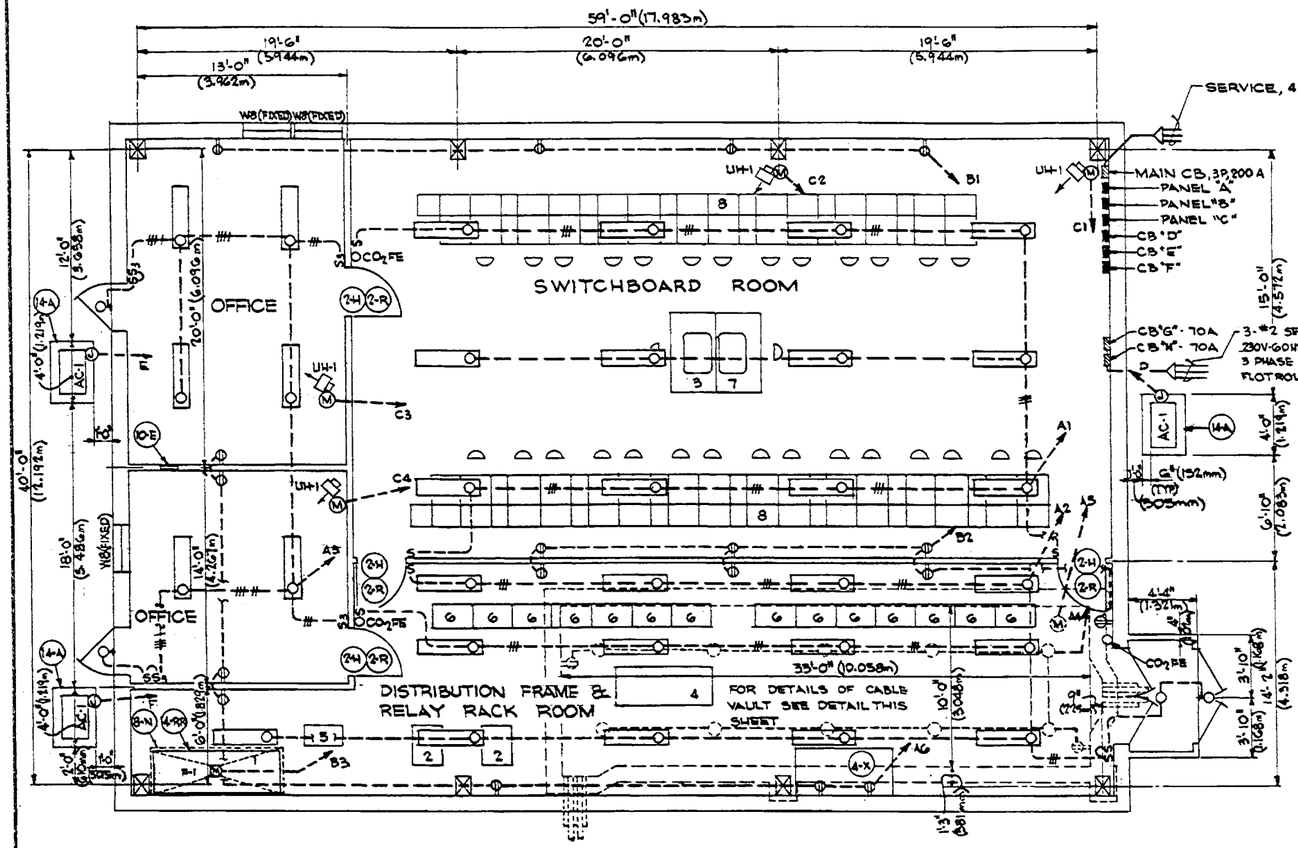
ARMY FACILITIES COMPONENTS SYSTEM

COMMUNICATION TERMINAL STATION 40'X40'
COMMUNICATION CARRIER & REPEATER 20'X40' & 40'X40'
AIR CONDITIONING PLANS & DETAILS

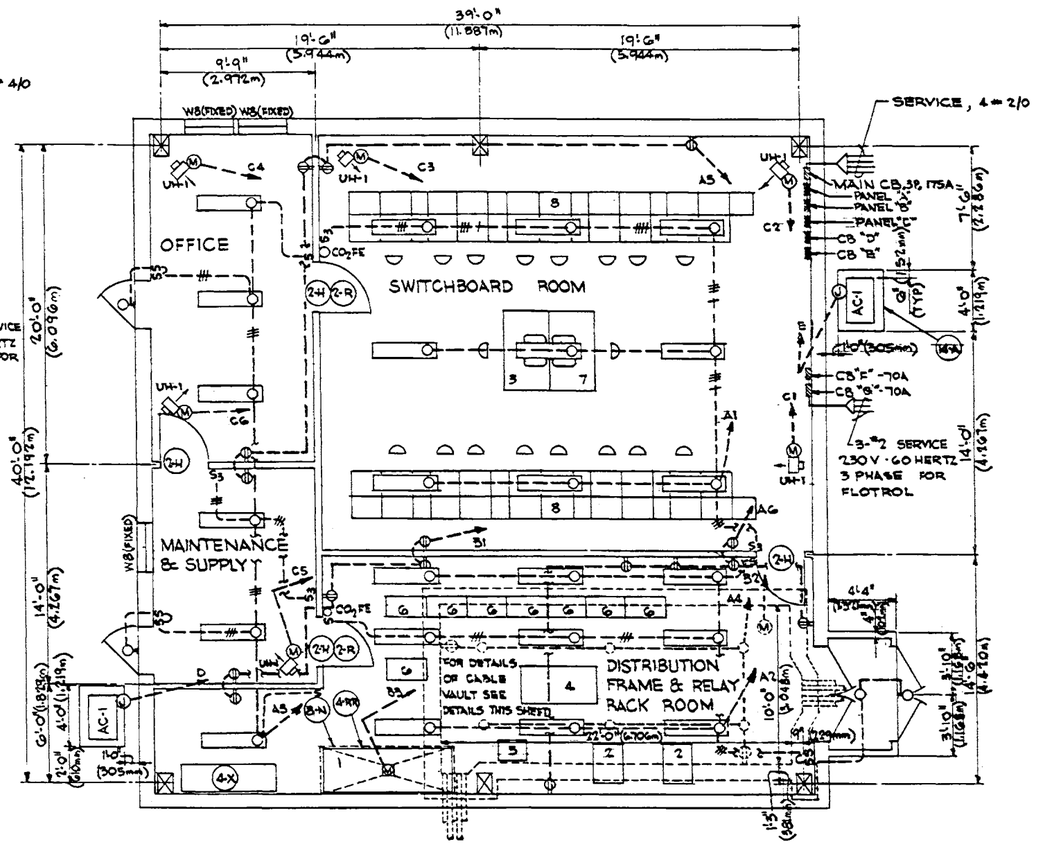
APPROVED: Edwin A. Pattison, Col CE DATE: 23 February 1973
CHIEF, BRANCH CHIEF, AFCS OFFICE, MILITARY ENGINEERING, OCE

APPROVED FOR PROPONENT AGENCY: John P. Stevens COL, CE
DATE: 1 DEC 72

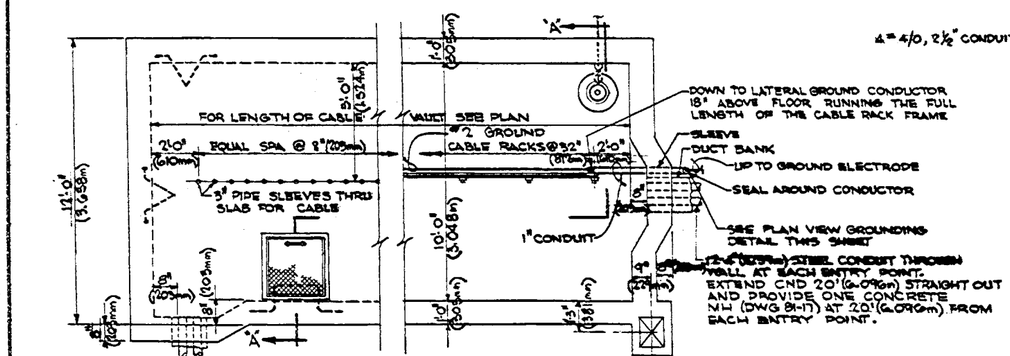
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-12
SHEET 2 OF 2



PLAN 40'×60'
SCALE NO. 2
FACILITY NO. 131402 - INTERIOR ONLY
FACILITY NO. 131412 - WOOD FRAME BLDG W/INTERIOR

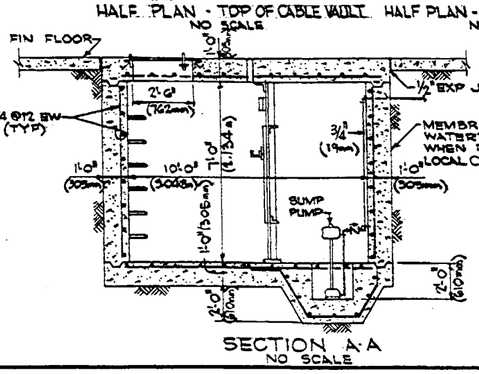


PLAN 40'×40'
SCALE NO. 2
FACILITY NO. 131401 - INTERIOR ONLY
FACILITY NO. 131411 - WOOD FRAME BLDG. W/INTERIOR

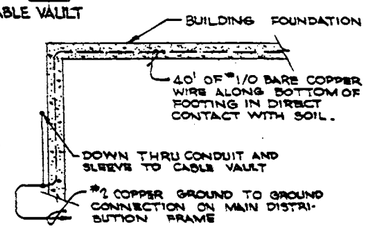


HALF PLAN - TOP OF CABLE VAULT
NO SCALE

HALF PLAN - FLOOR OF CABLE VAULT
NO SCALE

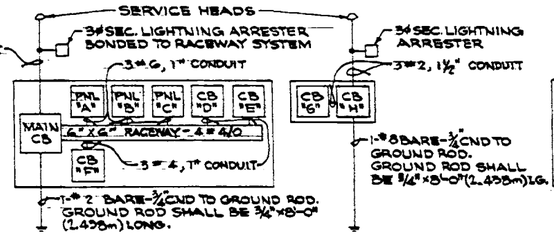


SECTION A-A
NO SCALE

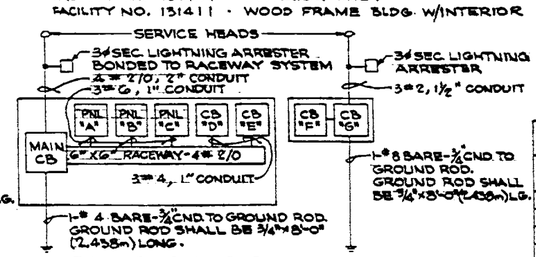


PLAN VIEW GROUNDING DETAIL
NO SCALE

NOTE: CONNECT GROUND ELECTRODE TO UNDERGROUND PIPING SYSTEM IF ONE IS PRESENT.



POWER RISER DIAGRAM
FACILITY NO. 131402
NO SCALE



POWER RISER DIAGRAM
FACILITY NO. 131401
NO SCALE

SCHEDULE OF CIRCUIT BREAKERS AND PANELBOARDS

PANEL OR BREAKER VOLTAGE MAINS	RATINGS POLES	RATINGS AMPS	BRANCH CIRCUIT BREAKER ACTIVE AND SPARE CKTS	BRANCH CIRCUIT BREAKER SPARE CIRCUITS	WIRE SIZE OTHER THAN #12
FACILITY NO. 131402					
PNL A 208Y/120V, 4, 3W	1	20	1 THRU 4		
PNL B 208Y/120V, 4, 3W	1	20	1 THRU 6	4 THRU 6	
PNL C 208Y/120V, 4, 3W	1	20	1 THRU 6	5&6	
CB - D, E, F, 3&4 208Y	3	70A			#8

SCHEDULE OF CIRCUIT BREAKERS AND PANELBOARDS

PANEL OR BREAKER VOLTAGE MAINS	RATINGS POLES	RATINGS AMPS	BRANCH CIRCUIT BREAKER ACTIVE AND SPARE CKTS	BRANCH CIRCUIT BREAKER SPARE CIRCUITS	WIRE SIZE OTHER THAN #12
FACILITY NO. 131401					
PNL A 208Y/120V, 4, 3W	1	20	1 THRU 6		
PNL B 208Y/120V, 4, 3W	1	20	1 THRU 6	4 THRU 6	
PNL C 208Y/120V, 4, 3W	1	20	1 THRU 6		
CB - D, E, F & G 208Y	3	70A			#8

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QUANTITIES 40'x40'	QUANTITIES 40'x60'
1	BATTERY	1	1
2	RECTIFIER	2	2
3	C.O. DESK	1	1
4	COMBINED MDF AND IDF	1	1
5	POWER BOARD	1	1
6	RELAY RACKS	8	14
7	ROUTE DESK	1	1
8	LONG DISTANCE SWITCHBOARD	2	2

ELECTRICAL NOTES

SUMMARY OF ELECTRICAL POWER REQUIREMENT (KVA)		FACILITY NO. 131402	FACILITY NO. 131401
CONNECTED LOAD (EST. FOR CONV. OUTLETS)	LIGHTING	5.0	4.2
	RECP EST.	3.5	3.0
	POWER (BLDG. UTIL)	50.0	37.0
	POWER (USERS EQPT)	25.0	25.0
	TOTAL CONNECTED	83.5	69.2
ESTIMATED MAX. DEMAND		68.8	55.4

1. ALL WIRING IS TO BE IN RIGID CONDUIT.
2. LIGHTING FIXTURES TO BE MOUNTED ON CEILING IN CABLE VAULT AND AT 13'-ABOVE GROUND FLOOR. TYPES: 150 W PAR 38 W/ADJ. BRACKET IN VAULTS 2-40 W FLUOR. INDUSTRIAL IN GENERAL INTERIOR; WALL MOUNTED 100 W VAPOR-TIGHT AT THE EXTERIOR DOORS.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.
3. THE WOOD FRAME STRUCTURES ARE TO BE BASED ON THE STANDARD SHOP HEAVY DUTY BUILDINGS. THE COLUMN HEIGHTS ARE TO BE REDUCED SO THAT THE CLEAR HEIGHT IS 13'(3.962 M) MIN BELOW DUCTWORK & FIXTURES EXCLUDING KNEEBRACING.
4. THE DESIGNS ARE FOR USE IN THE TROPICAL & TEMPERATE CLIMATES.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
13-14	PLAN	1-2 OF 2
81-17	MANHOLE DETAILS	1 OF 1
99-98	STANDARD DETAILS	
34-19	WOOD FRAME CONST. SHOP - HEAVY DUTY	1-12 OF 12

UNDER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5 10'
0 1m 2m 3m
NO. 2

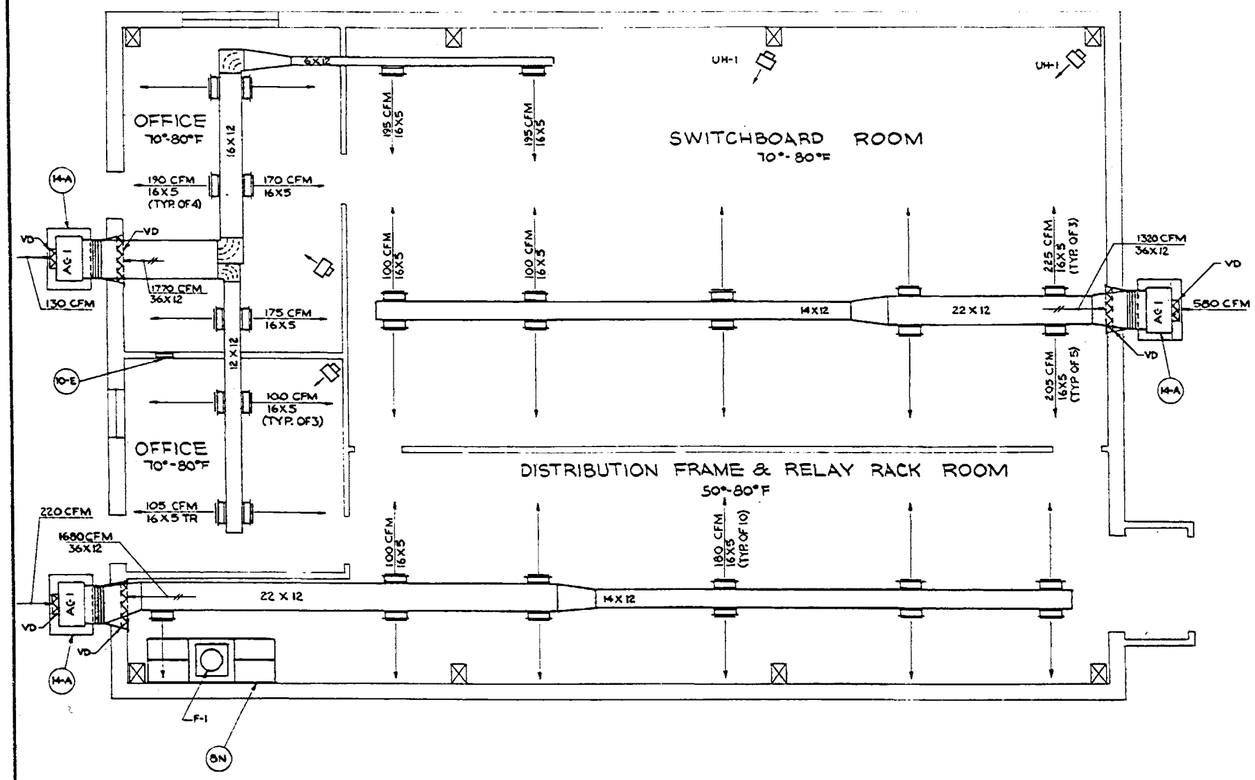
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY CONSTRUCTION
WASHINGTON, D. C.

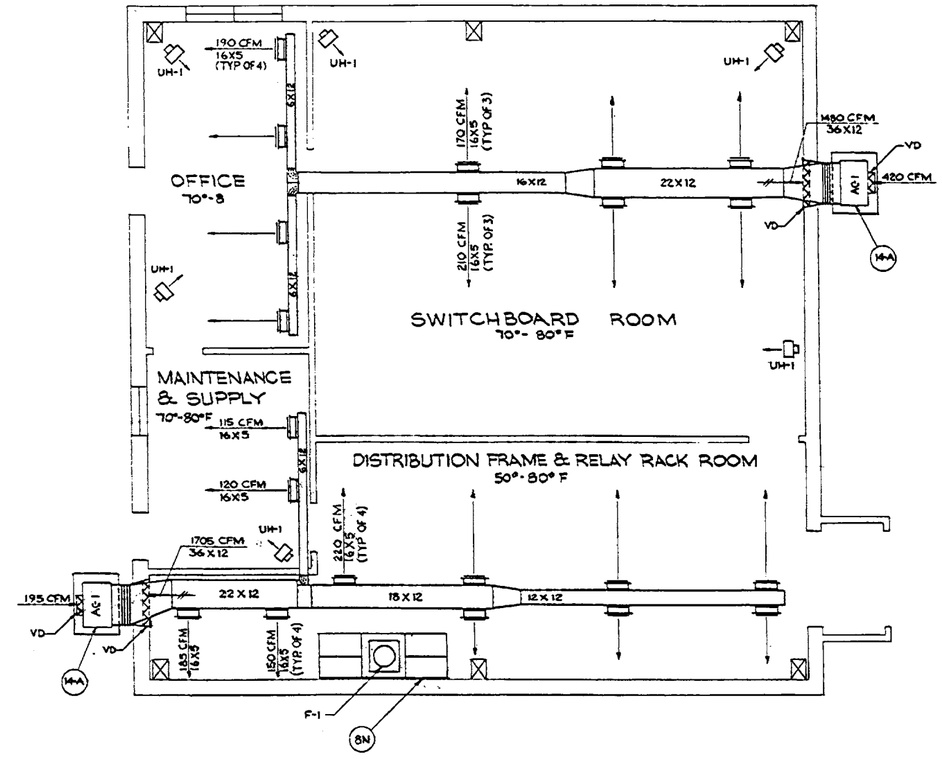
DRAWN BY: SNAFFER
TRACED BY:
DESIGNED BY: JOHNSON
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
APPROVED: Edwin D. Patterson, Col CE DATE: 23 February 1972
CHIEF, BRANCH CHIEF, APCS OFFICE, MILITARY CONSTRUCTION, COE
APPROVED FOR PROPONENT AGENCY:
COL, CE
DATE: 1 DEC 72

ARMY FACILITIES COMPONENTS SYSTEM
LONG DISTANCE MANUAL TELEPHONE CENTRAL OFFICE BLDGS.
40'X40' & 40'X60'

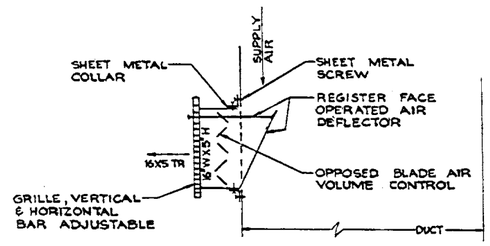
SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER 13-14
SHEET 1 OF 2



LONG DISTANCE MANUAL TELEPHONE
CENTRAL OFFICE BLDG 40'X 60'
SCALE NO 2



LONG DISTANCE MANUAL TELEPHONE
CENTRAL OFFICE BLDG 40'X 40'
SCALE NO 2



PLAN SECTION OF 16"X5" REGISTER
NO SCALE

DUCT SIZES	
PLAN SIZING INCHES	METRIC CONVERSION MILLIMETERS
36 X 12	914 x 305
22 X 12	559 x 305
18 X 12	457 x 305
16 X 12	407 x 305
14 X 12	356 x 305
12 X 12	305 x 305
6 X 12	153 x 305
16 X 5	407 x 127

MECHANICAL NOTES

1. NORTH ARROW INDICATES ORIENTATION OF BUILDING FOR DESIGN OF COOLING PHASE OF AIR CONDITIONING IN LATITUDE 26° NORTH. OTHER ORIENTATION OF BUILDING MAY REQUIRE SLIGHT FIELD MODIFICATION.
2. INSIDE DESIGN CONDITIONS: 50°F. TO 80°F. DRY BULB
   55% RELATIVE HUMIDITY
   OUTSIDE AMBIENT CONDITIONS: SUMMER: 110°F. DRY BULB
   81°F. WET BULB
   WINTER: -20°F. DRY BULB
3. AIR CONDITIONING UNITS (AC-1) SHALL HAVE A MIN. COOLING CAPACITY OF 58,000 BTU/HR, AND AIR FLOW OF 1900 CFM @ $\frac{1}{4}$" OF H_2O EXTERNAL STATIC PRESSURE (2000 CFM @ 0" S.P.). MAX. UNIT K.W. TO BE 14.4; UNIT TO BE COMPLETE WITH ALL CONTROLS AND A THERMOSTAT SENSING RETURN AIR TEMPERATURE.
4. BOTTOM OF DUCT WORK TO BE 14'-0" (4.267m) ABOVE FINISH FLOOR.
5. UNIT HEATERS (UH-1) TO BE 1.5 K.W., $\frac{1}{80}$ HORSEPOWER WITH BUILT-IN THERMOSTAT (40° TO 90°F. RANGE).
6. EXHAUST FANS (F-1) TO HAVE A CAPACITY OF 1000 CFM @ $\frac{1}{4}$ IN OF H_2O EXTERNAL STATIC PRESSURE WITH A $\frac{1}{20}$ HP. MOTOR.
7. VD = VOLUME DAMPER (OPPOSED BLADE).

"UNDER REVISION"

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

MAYER, BRAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: WINTER
TRACED BY:
CHECKED BY: RICKETTS, LOW
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
CHIEF, BRANCH

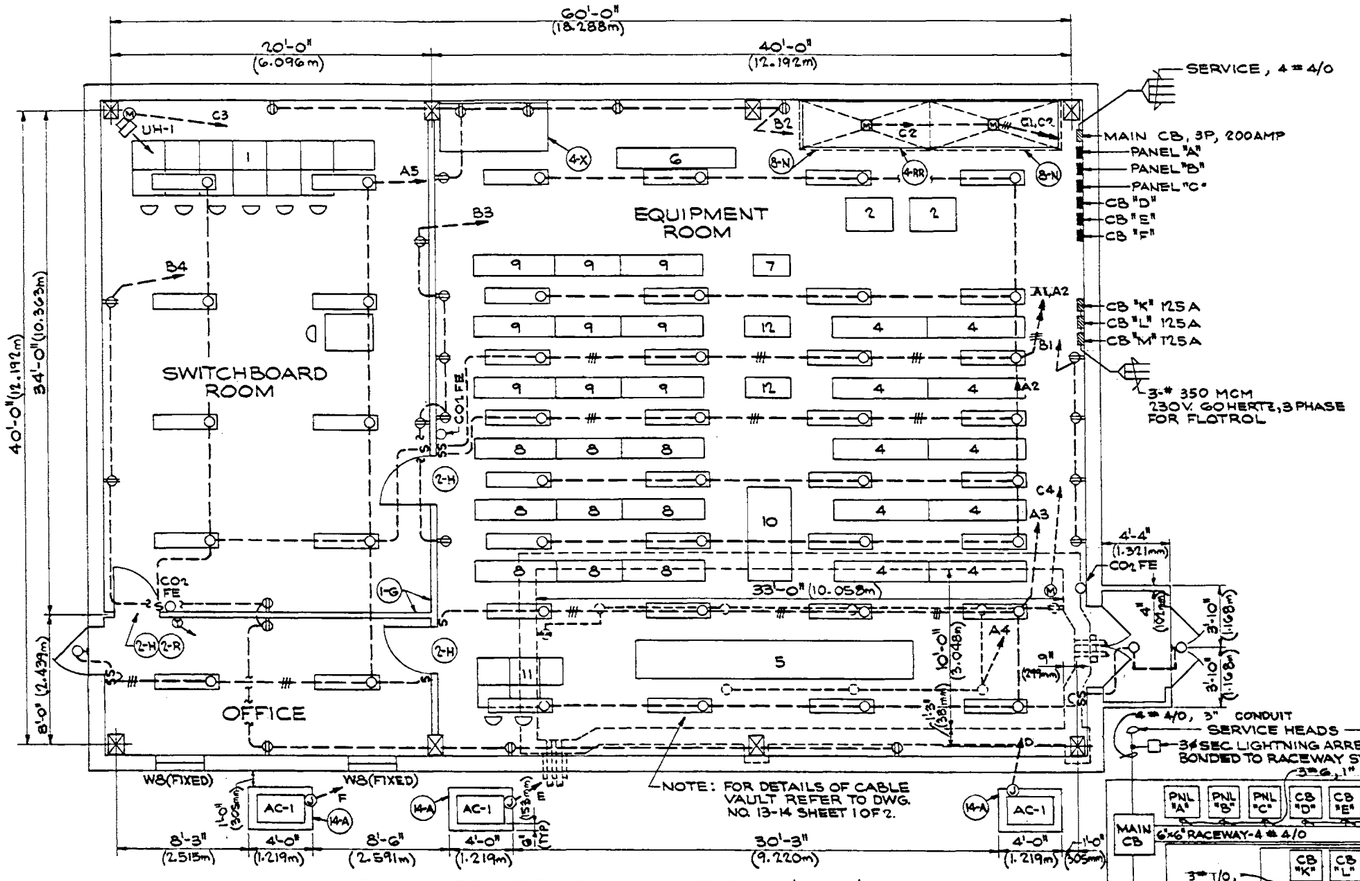
ARMY FACILITIES COMPONENTS SYSTEM

LONG DISTANCE MANUAL TELEPHONE
CENTRAL OFFICE BLDGS.
40'X40' & 40'X60'
AIR CONDITIONING PLANS & DETAILS

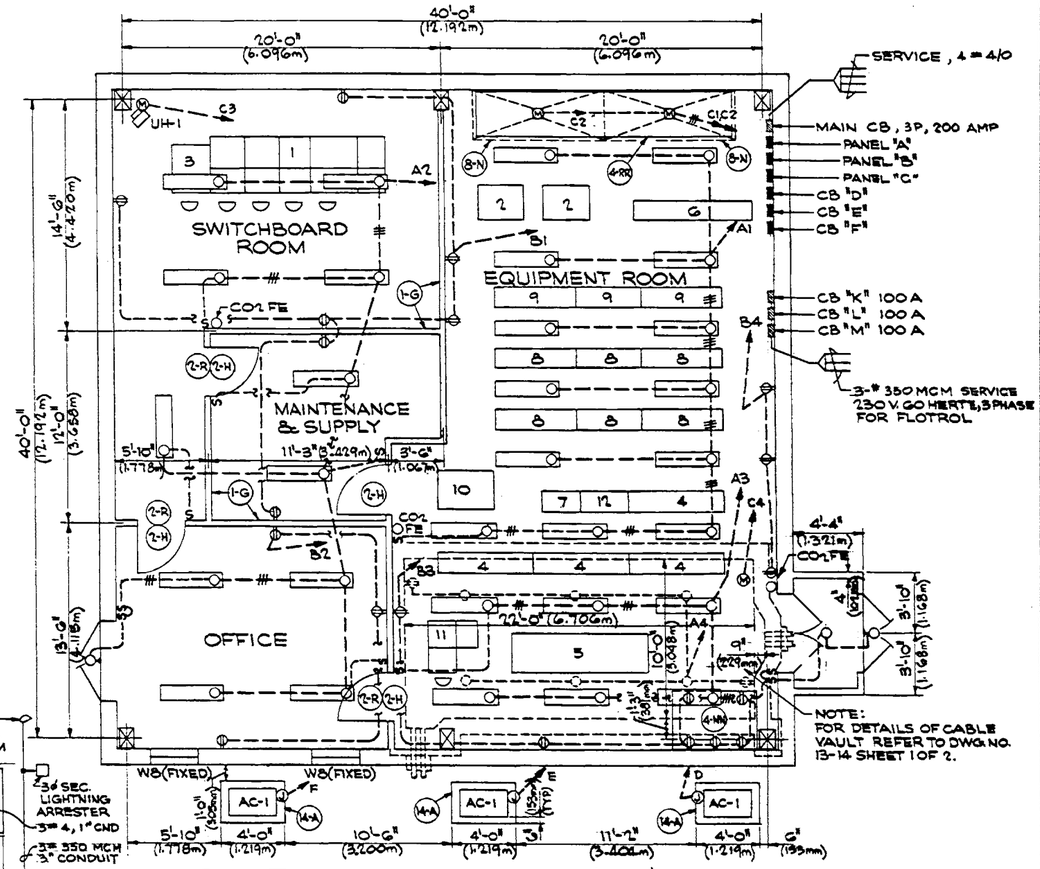
APPROVED: Edwin A. Patterson Col CE DATE: 23 February 1973
CHIEF, AFOSR OFFICE, MILITARY ENGINEERING, OCE

APPROVED FOR PROPONENT AGENCY: John D. Nelson COL, CE
DATE: 1 DEC 72

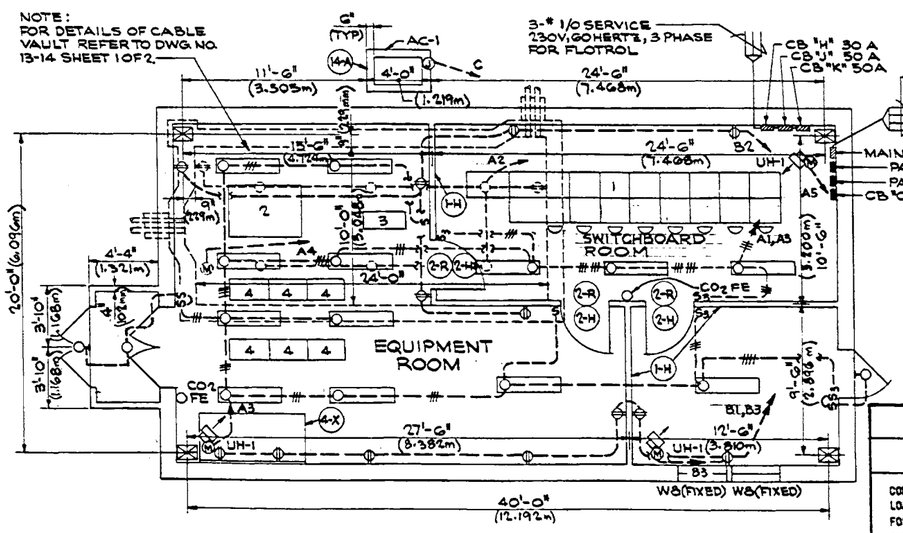
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-14
SHEET 2 OF 2



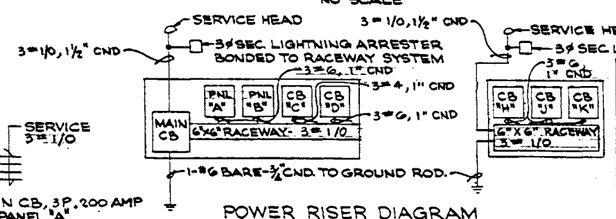
DIAL TELEPHONE BLDG-40'×60'
SCALE NO. 2
FACILITY NO. 131503 - INTERIOR ONLY
FACILITY NO. 131513 - WOOD FRAME W/INTERIOR



DIAL TELEPHONE BLDG-40'×40'
SCALE NO. 2
FACILITY NO. 131502-INTERIOR ONLY
FACILITY NO. 131512-WOOD FRAME W/ INTERIOR



MANUAL TELEPHONE BLDG-20'×40'
SCALE NO. 2
FACILITY NO. 131501- INTERIOR ONLY
FACILITY NO. 131511- WOOD FRAME W/ INTERIOR



POWER RISER DIAGRAM
FACILITY NO. 131501
NO SCALE

SCHEDULE OF CIRCUIT BRKRS AND PANELBOARDS

PANEL OR BREAKER VOLTAGE MAINS	RATING POLES	RATING AMPS	BRANCH CIRCUIT BREAKERS ACTIVE AND SPARE CKTS	BRANCH CIRCUIT BREAKERS SPARE CIRCUITS	WIRE SIZE OTHER THAN #12
FACILITY NO. 131501					
PNL A 120/240 V, 1¢, 3W	1	20	1 THRU 6	4 THRU 6	
PNL B 120/240 V, 1¢, 3W	1	20	1 THRU 6	3 THRU 6	
CB - C 208V	3	70			#8
CB - H 230V	3	30A			
CB - J & K 230V	3	50A			

SCHEDULE OF CIRCUIT BRKRS AND PANELBOARDS

PANEL OR BREAKER VOLTAGE MAINS	RATING POLES	RATING AMPS	BRANCH CIRCUIT BREAKERS ACTIVE AND SPARE CKTS	BRANCH CIRCUIT BREAKERS SPARE CIRCUITS	WIRE SIZE OTHER THAN #12
FACILITY NO. 131502					
PNL A 120/240V, 1¢, 3W	1	20	1 THRU 6	5&6	
PNL B 120/240V, 1¢, 3W	1	20	1 THRU 6	5&6	
PNL C 120/240V, 1¢, 3W	1	20	1 THRU 6	5&6	
CB - D, E & F 208V	3	70A			#8
CB - K, L & M 230V	3	100A			

SCHEDULE OF CIRCUIT BRKRS AND PANELBOARDS

PANEL OR BREAKER VOLTAGE MAINS	RATING POLES	RATING AMPS	BRANCH CIRCUIT BREAKERS ACTIVE AND SPARE CKTS	BRANCH CIRCUIT BREAKERS SPARE CIRCUITS	WIRE SIZE OTHER THAN #12
FACILITY NO. 131503					
PNL A 120/240 V, 1¢, 3W	1	20	1 THRU 6	6	
PNL B 120/240 V, 1¢, 3W	1	20	1 THRU 6	5&6	
PNL C 120/240 V, 1¢, 3W	1	20	1 THRU 6		
CB - D, E & F 208V	3	70			#8
CB - K, L & M 230V	3	125			

SCHEDULE OF EQUIPMENT
DIAL TELEPHONE BUILDINGS

ITEM NO.	DESCRIPTION	QUANTITIES 40'x40'	QUANTITIES 40'x60'
1	ATTENDANTS SWITCHBOARD	2	1
2	FLOTROL	2	2
3	INFORMATION DESK	1	1
4	LINE FINDER & CONNECTOR FRAME	4	10
5	MAIN DISTRIBUTION FRAME	2	1
6	POWERBOARD	2	1
7	RELAY RACK	4	1
8	FIRST SELECTORS	6	9
9	SECOND SELECTORS	3	9
10	TRUNK DISTRIBUTION FRAME	1	1
11	TEST DESK	1	2
12	TRUNK FRAME	1	2

UNDER REVISION

SYMBOL	DATE	APPROVAL

REVISIONS
GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

ELECTRICAL NOTES

SUMMARY OF ELECTRICAL POWER REQUIREMENT (KVA)		FACILITY NO. 131503	131502	131501
CONNECTED LOAD (EST FOR CONV OUTLETS)	LIGHTING	5.5	3.8	2.2
	RECP EST	4.2	4.0	2.7
	POWER (BLDG UTIL)	45.1	45.1	19.2
	POWER (USERS EQPT)	35.0	35.0	35.8
	TOTAL CONNECTED	89.8	87.9	59.1
ESTIMATED MAX DEMAND		71.8	70.4	47.3

1. ALL WIRING TO BE IN RIGID CONDUIT.
2. LIGHTING FIXTURES TO BE MOUNTED ON CEILING IN CABLE VAULT AND AT 13' ABOVE GROUND FLOOR. TYPES: 150W PAR 38 W/ADJ BRACKET IN VAULTS; 2-40 W FLOOR INDUSTRIAL IN GENERAL INTERIOR; WALL MOUNTED 100 W VAPOR-TIGHT AT EXTERIOR DOORS.
3. GROUND RODS SHALL BE 3/4"x8'-0" (19mmx2.438m).

GENERAL NOTES

1. REFER TO TM 5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM 5-303 BY FACILITY NUMBER.
3. THE WOOD FRAME STRUCTURES ARE TO BE BASED ON THE STANDARD SHOP HEAVY DUTY BUILDINGS. THE COLUMN HEIGHTS ARE TO BE REDUCED SO THAT THE CLEAR HEIGHT IS 13'(3.962M) MIN BELOW DUCTWORK AND FIXTURES EXCLUDING KNEEBRACING.
4. THE DESIGNS ARE FOR USE IN THE TROPICAL AND TEMPERATE CLIMATES.

SCHEDULE OF DRAWINGS

DWG NO.	DESCRIPTION	SHEET NO.
13-15	PLANS	1-2 OF 2
13-14	CABLE VAULT	1 OF 1
99-98	STANDARD DETAILS	
13-19	WOOD FRAME CONST SHOP-HEAVY DUTY	1-12 OF 12

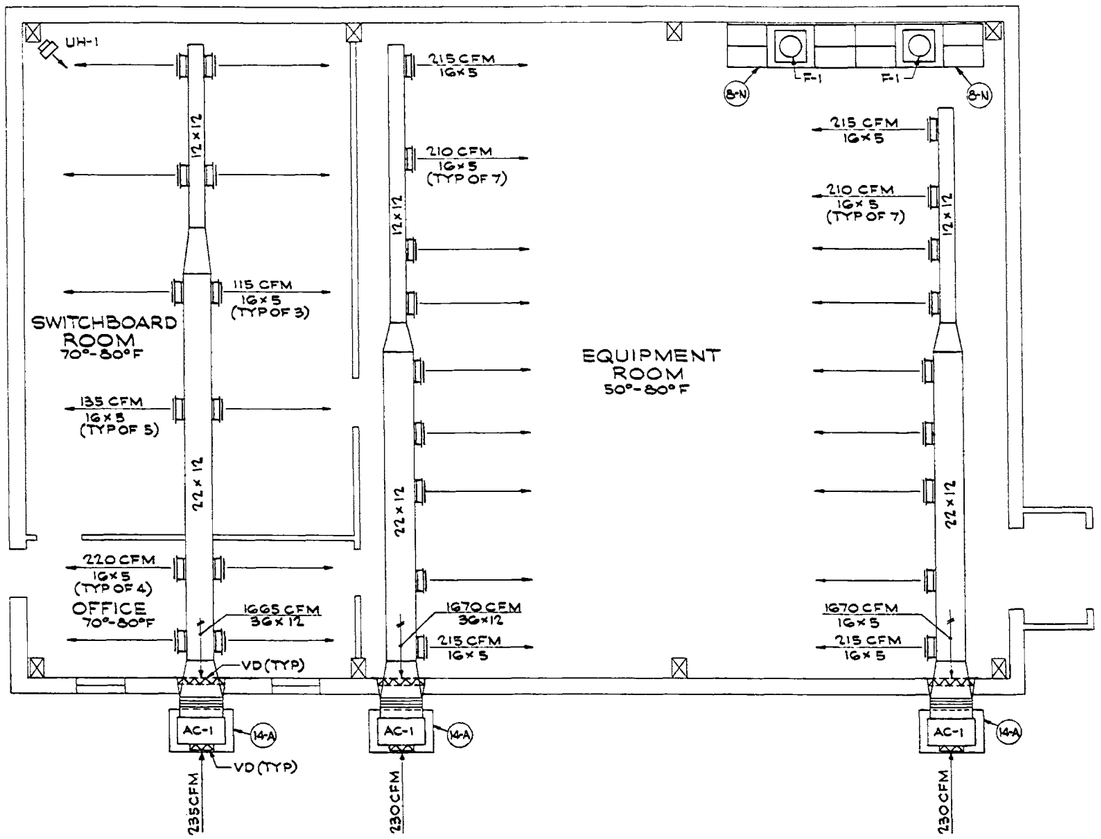
MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

ARMY FACILITIES COMPONENTS SYSTEM

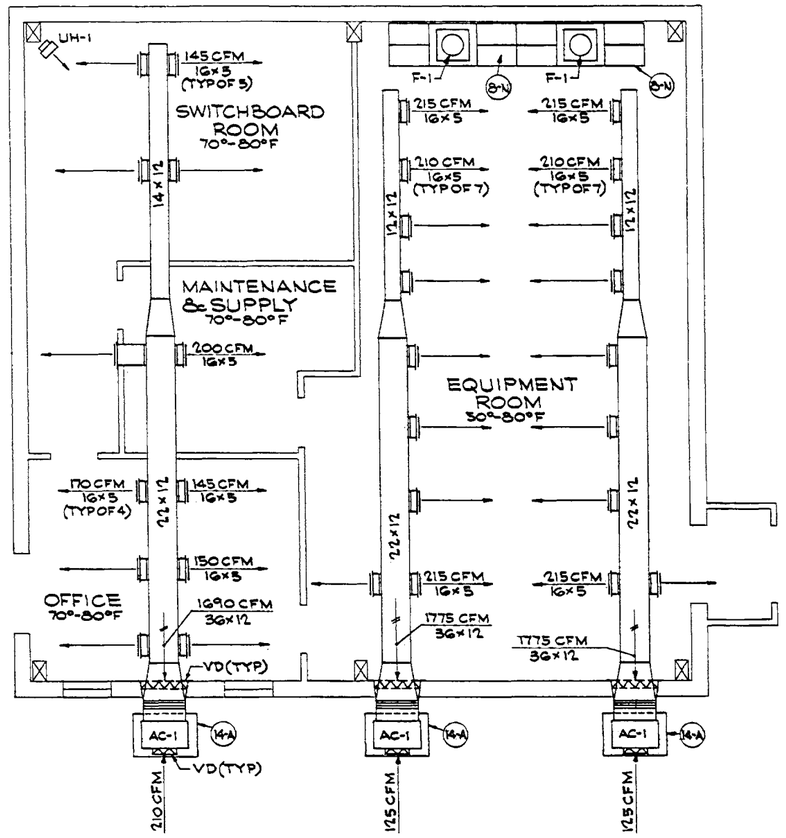
MANUAL TELEPHONE BLDG 20'X40'
DIAL TELEPHONE BLDG 40'X40'-40'X60'

DRAWN BY:	GREGORY
TRACED BY:	
CHECKED BY:	JOHNSON
SUBMITTED BY:	C.W. DEICHMANN
APPROVED:	Edwin A Patterson Col CE — 23 February 1972
CHIEF, BRANCH	CHIEF, APOS OFFICE, MILITARY ENGINEERING, OCE
APPROVED FOR PROPONENT AGENCY:	John P Coleman COL, CE
DATE:	1 DEC 72
SCALE:	AS NOTED
SPEC. NO.	
DRAWING NUMBER	13-15
SHEET	1 OF 2

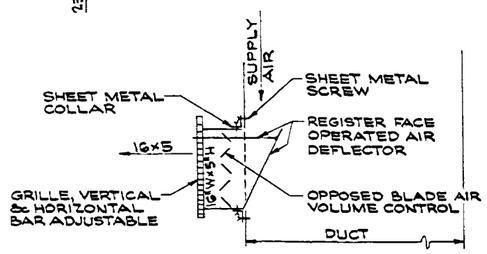


AIR CONDITIONING
DIAL TELEPHONE BLDG-40'×60'
SCALE NO. 2

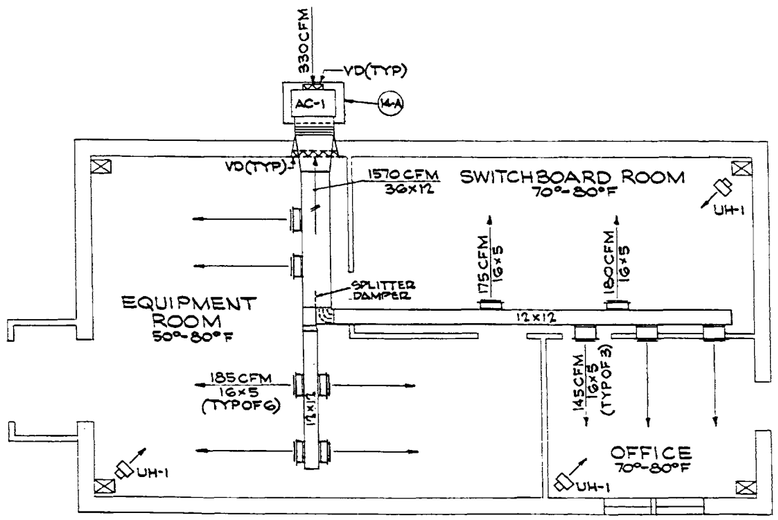
TYPICAL FOR ALL BUILDINGS THIS SHEET



AIR CONDITIONING
DIAL TELEPHONE BLDG- 40'×40'
SCALE NO. 2



PLAN-SECTION OF 16"×5" REGISTER
NO SCALE



AIR CONDITIONING
MANUAL TELEPHONE BLDG-20'×40'
SCALE NO. 2

DUCT SIZES	
PLAN SIZING INCHES	METRIC CONVERSION MILLIMETERS
36×12	914 × 305
22×12	559 × 305
18×12	457 × 305
14×12	356 × 305
12×12	305 × 305
6×12	153 × 305
16×5	407 × 127

MECHANICAL NOTES

1. NORTH ARROW INDICATES ORIENTATION OF BUILDING FOR DESIGN OF COOLING PHASE OF AIR CONDITIONING IN LATITUDE 24° NORTH. OTHER ORIENTATION OF BUILDING MAY REQUIRE SLIGHT FIELD MODIFICATION.
2. INSIDE DESIGN CONDITIONS: 50°F. TO 80°F. DRY BULB
   55% RELATIVE HUMIDITY
   OUTSIDE AMBIENT CONDITIONS: SUMMER: 110°F. DRY BULB
   81°F. WET BULB
   WINTER: -20°F. DRY BULB
3. AIR CONDITIONING UNITS (AC-1) SHALL HAVE A MIN. COOLING CAPACITY OF 58,000 BTU/HR, AND AIR FLOW OF 1900 CFM @ $\frac{1}{4}$" OF H_2O EXTERNAL STATIC PRESSURE (2000 CFM @ 0" S.P.) MAX. UNIT K.W. TO BE 14.4; UNIT TO BE COMPLETE WITH ALL CONTROLS AND A THERMOSTAT SENSING RETURN AIR TEMPERATURE.
4. BOTTOM OF DUCT WORK TO BE 14'-0" (4.287m) ABOVE FINISH FLOOR.
5. UNIT HEATERS (UH-1) TO BE 1.5 K.W.. $\frac{1}{20}$ HORSEPOWER WITH BUILT-IN THERMOSTAT (40° TO 90°F. RANGE).
6. EXHAUST FANS (F-1) TO HAVE A CAPACITY OF 1000 CFM @ $\frac{1}{4}$ IN OF H_2O EXTERNAL STATIC PRESSURE WITH A $\frac{1}{20}$ HP. MOTOR.
7. VD = VOLUME DAMPER (OPPOSED BLADE).

"UNDER REVISION"

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 3' 10'
0 1m 2m 3m
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: GREGORY
TRACED BY:
CHECKED BY: RICKETTS, LOW
SUBMITTED BY: C.W. DEICHMANN
APPROVED:

ARMY FACILITIES COMPONENTS SYSTEM

MANUAL TELEPHONE BLDG 20'X40'
&AL TELEPHONE BLDG 40'X40' & 40'X60'
. AIR CONDITIONING PLANS AND DETAILS

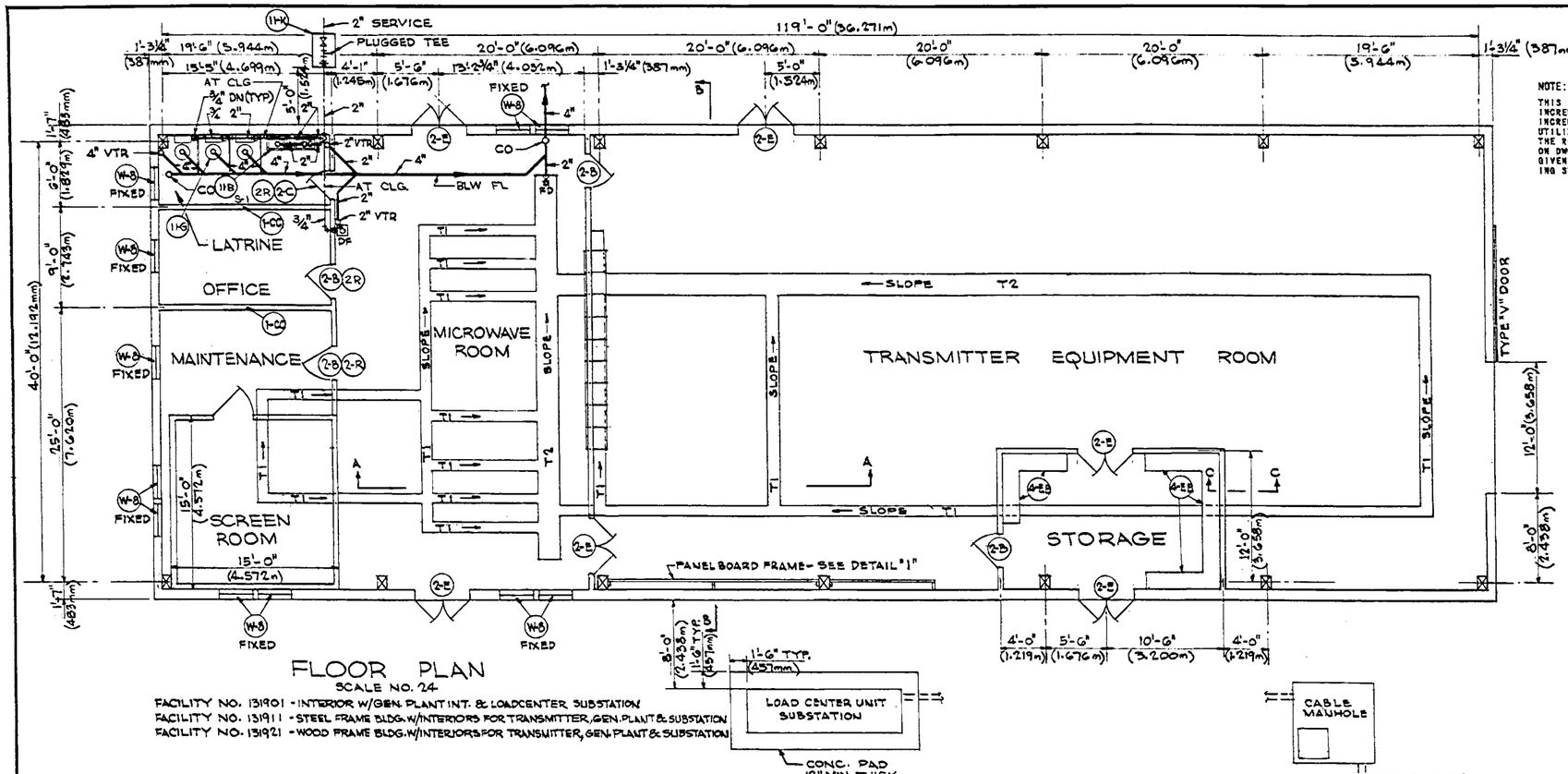
APPROVED: Edwin A. Patterson, Col CE DATE: 23 February 1972
CHIEF, BRANCH — CHIEF, APOS OFFICE, MILITARY ENGINEERING, OCE

APPROVED FOR PROPONENT AGENCY:
COL, CE
DATE 1 DEC 72

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-15
SHEET 2 OF 2

CORPS OF ENGINEERS

U. S. ARMY



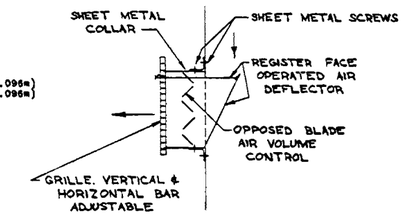
FLOOR PLAN

SCALE NO. 24

FACILITY NO. 131901 - INTERIOR W/GEN. PLANT INT. & LOADCENTER SUBSTATION
FACILITY NO. 131911 - STEEL FRAME BLDG. W/INTERIORS FOR TRANSMITTER, GEN. PLANT & SUBSTATION
FACILITY NO. 131921 - WOOD FRAME BLDG. W/INTERIORS FOR TRANSMITTER, GEN. PLANT & SUBSTATION

NOTE:

THIS BUILDING MAY BE EXPANDED AT THIS END IN 20'-0" (6.096m) INCREMENTS. IF THE BUILDING IS INCREASED IN 20'-0" (6.096m) INCREMENTS THE END WALL WOULD HAVE TO BE RELOCATED, UTILIZING THE EXISTING MATERIALS AS MUCH AS POSSIBLE. THE ROOF TRUSSES AND PURLINS SHOULD BE BRACED AS SHOWN ON DWG. NO. 34-19 SHEETS 9 & 10. CONSIDERATION SHOULD BE GIVEN TO THE ADDITIONAL LOAD ON THE LIGHTING AND HEATING SYSTEMS.



PLAN-SECTION OF A.C. REGISTER

NO SCALE

DUCT SIZES

PLAN SIZING INCHES	METRIC CONVERSION MILLIMETERS
36×12	914 x 305
30×10	762 x 254
26×10	660 x 254
24×8	610 x 204
18×8	457 x 204
16×5	407 x 127

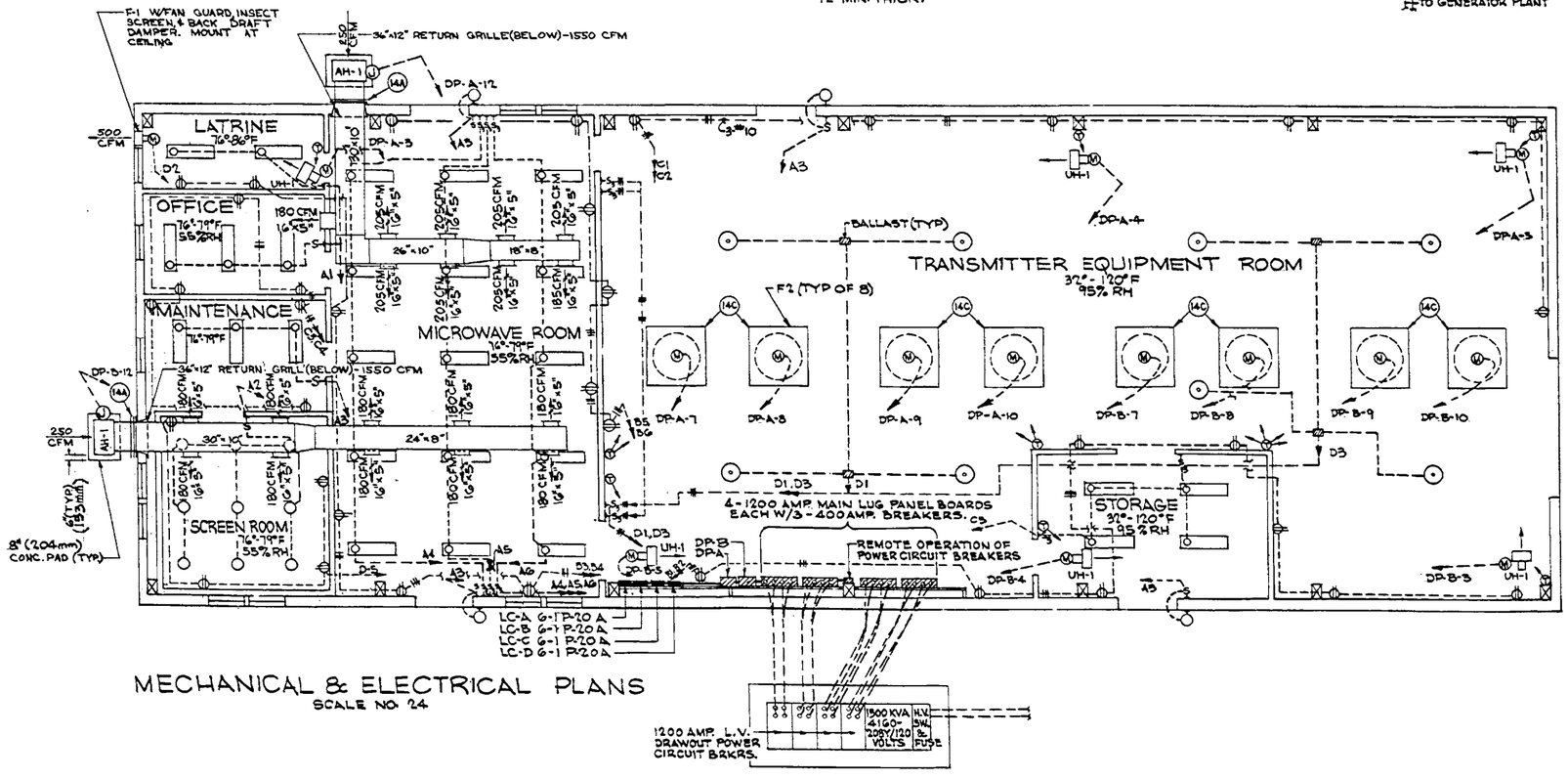
FAN SCHEDULE

MARK	CFM 0" S.P.	DIA	MIN HP
F-1	500	10"	---
F-2	30,000	48"	5

ELECTRICAL NOTES

SUMMARY OF ELECTRICAL POWER REQUIREMENT		KVA
CONNECTED LOAD (EST. FOR CONV. OUTLETS)	LIGHTING	8.3
	RECEPTACLE EST.	7.8
	POWER (BLDG. UTIL)	113.8
	POWER (USERS EQPT)	1000.0
	TOTAL CONNECTED	1129.9
ESTIMATED MAX. DEMAND		1100.0

1. SERVICE ENTRANCE CONDUCTORS SHALL BE TYPE THW SINGLE-CONDUCTOR COPPER CABLES IN HEAVY WALL GALVANIZED STEEL CONDUIT.
2. FEEDER CONDUCTORS NOT LARGER THAN NO.2 SHALL BE TYPE NM, NMC OR UF THREE-CONDUCTOR CABLE, WITH GROUND; OR NO.2 SHALL BE TYPE MC STRANDED ALUMINUM FOUR-CONDUCTOR STEEL ARMORED CABLE. AND THOSE LARGER THAN NO.2 SHALL BE TYPE MC STRANDED AL, 4-CONDUCTOR STEEL ARMORED CABLE.
3. BRANCH CIRCUIT CONDUCTORS SHALL BE NO.12 COPPER OR NO.10 ALUMINUM, TWO- OR THREE-WIRE TYPE NM, NMC OR UF CABLE W/GROUND.
4. MOTOR SYMBOL (M) DENOTES INCLUSION OF CONTROLLERS, OVERLOAD PROTECTION, AND REMOTE CONTACT DEVICES AS REQUIRED, WITH THE EQUIPMENT. FOR EACH MOTOR OR EQUIPMENT UNIT, A PROPERLY RATED SAFETY DISCONNECT SWITCH SHALL BE INSTALLED WITHIN SIGHT.
5. MOTORS IN OPEN FLOOR AREA SHALL BE CONNECTED FROM A JUNCTION BOX ON A SECURED VERTICAL WOOD 2"x4" WIRING SUPPORT, OR EQUIVALENT, BY MEANS OF A SHORT FLEXIBLE LEAD OF METAL ARMORED CABLE OR FLEXIBLE METAL CONDUIT.
8. ALL INCANDESCENT LAMPS TO BE 200 W WITH 14" CONICAL SHADES. FLUORESCENT LIGHTING TO BE 2-40 W T12 CW INDUSTRIAL TYPE. MERCURY VAPOR LIGHTING TO BE INDUSTRIAL TYPE, VENTILATED PORCELAIN ENAMELED REFLECTOR, HIGH BAY, PENDANT MOUNTED ON $\frac{1}{2}$" CONDUIT WITH H-33 400 W LAMP, SEPARATE 120V 2-LAMP BALLAST. EXTERIOR EXIT LIGHTS SHALL BE INCANDESCENT, EXTERIOR WALL MOUNTING, W.P. W/REFLECTOR-ONE 100 W LAMP.
7. INSTALLATION SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE.



MECHANICAL & ELECTRICAL PLANS

SCALE NO. 24

GENERAL NOTES

1. REFER TO TM 5-303 FOR BUILDING SHELL REQUIREMENTS.
2. SLOPE TRENCHES 0.4% GRADE TO CABLE VAULT.
3. THIS STRUCTURE IS BASED ON STD SHOP, HEAVY-DUTY BLDGS. THE COLUMN HEIGHTS ARE TO BE REDUCED IN AREA DESIGNATED BY SECTION A-A.
4. THE LINER FOR THIS BUILDING SHALL INCLUDE A POLYETHYLENE PLASTIC SHEET NAILED TO THE INSIDE OF THE GIRTS. ALL SIDES AND ENDS OF THE PLASTIC SHEET SHALL BE SEALED WITH PRESSURE SENSITIVE TAPE TO EXCLUDE INFILTRATION OF AIR FOR BOTH WINTER & SUMMER AND/OR TROPICAL CLIMATE.
5. ALL WALLS & PARTITIONS TO HAVE A 4'-(1.219m) WAINSCOT OF $\frac{1}{4}$" HARDPRESSED-FIBERBOARD. SEE DWG 13-19 SH 2 OF 2 FOR WALL & PARTITION DETAILS.

SCHEDULE OF DRAWINGS

DWG NO.	DESCRIPTION	SHEET NO.
13-21	PLAN	1 OF 2
13-21	CABLE VAULT	2 OF 2
81-17	GEN. PLANT	1 OF 1
88-98	STD. DETAILS	
34-19	WOOD FRAME CONST. SHOP HEAVY-DUTY	1-12 OF 12
35-48	PREFAB STEEL BUILD 20 FT HIGH BUILD	1-3 OF 3

MECHANICAL NOTES

1. AIR CONDITIONING UNITS (AC-1) SHALL HAVE A MIN. COOLING CAPACITY OF 58,000 BTU/HR, AND AIR FLOW OF 1800 CFM @ $\frac{1}{2}$" OF H_2O EXTERNAL STATIC PRESSURE (2000 CFM @ 0" S.P.). MAX. UNIT K.W. TO BE 14.4; UNIT TO BE COMPLETE WITH ALL CONTROLS AND A THERMOSTAT SENSING RETURN AIR TEMPERATURE.
2. UNIT HEATERS (UH-1) TO BE 7.5 K.W., 25,575 BTU/HR, $\frac{1}{40}$ HORSEPOWER WITH BUILT-IN THERMOSTAT (48° TO 90°F. RANGE).
3. BOTTOM OF UNIT HEATERS ARE TO BE 9'-(2.743m) ABOVE FLOOR.
4. BOTTOM OF A.C. DUCTS TO BE 9'-(2.743m) ABV FL.
5. PROVIDE DAMPERS IN RETURN DUCT AND FRESH AIR INLET ON A.C. UNIT.

UNDER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 2' 4' 6' 8' 10'

0 1m 2m 3m

NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: GREGORY
SUBMITTED BY: C.W. DEICHMANN
APPROVED:

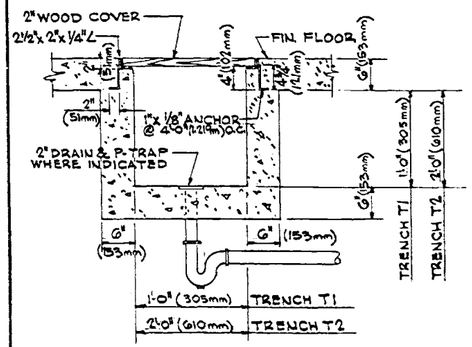
ARMY FACILITIES COMPONENTS SYSTEM

RADIO TRANSMITTER BUILDING
40'X120'
FLOOR PLAN
MECHANICAL & ELECTRICAL PLANS

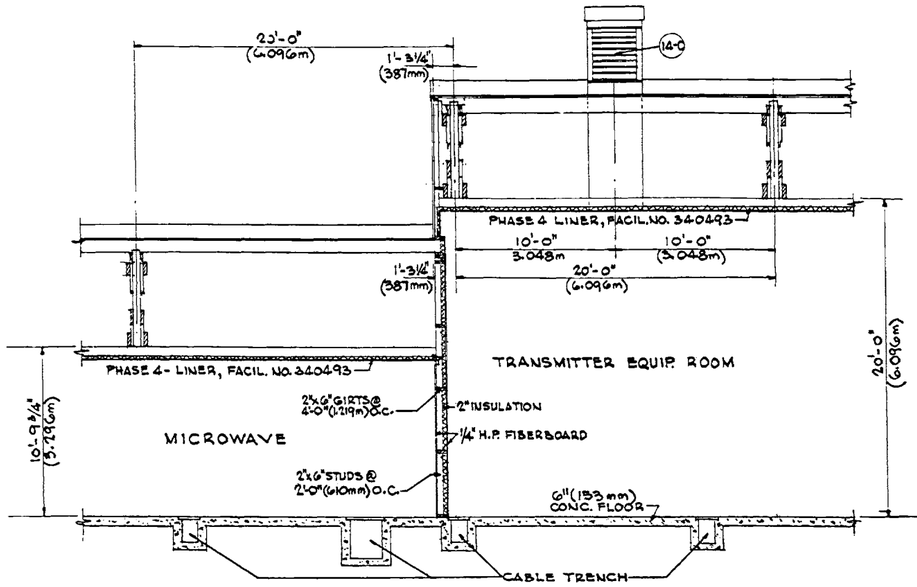
APPROVED: Edwin B. Patterson Col CE DATE: 23 February 1972
CHIEF, BRANCH — CHIEF, APOS OFFICE, MILITARY ENGINEERING, OCE

APPROVED FOR PROPONENT AGENCY: John P. Gibson COL, CE
DATE 1 DEC 72

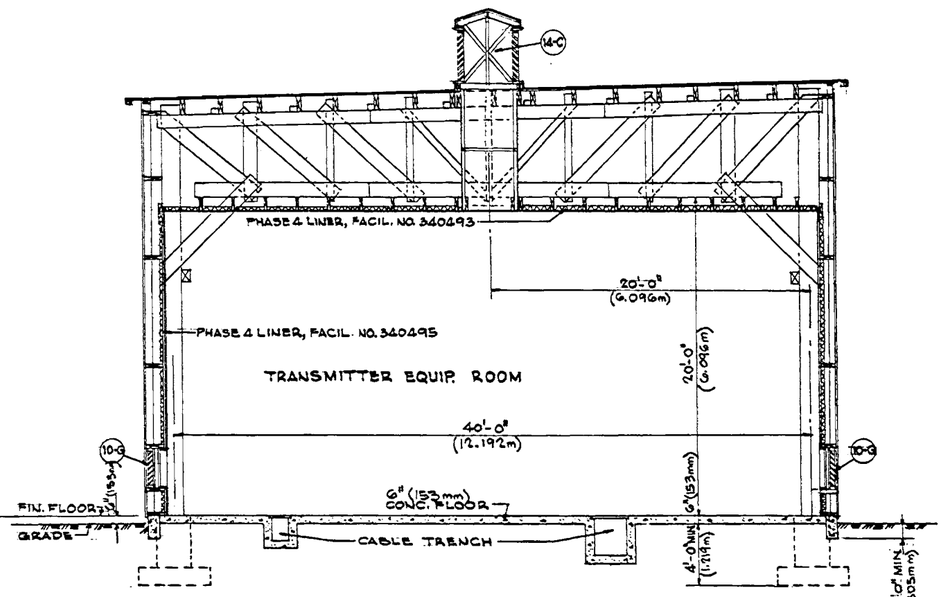
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-19
SHEET 1 OF 2



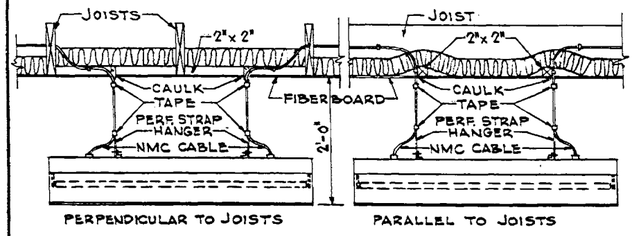
CABLE TRENCH DETAIL
NOT TO SCALE



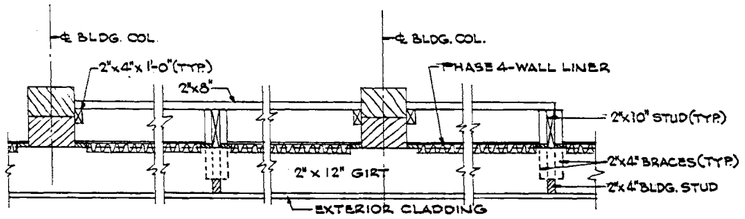
SECTION A-A
SCALE NO. 2



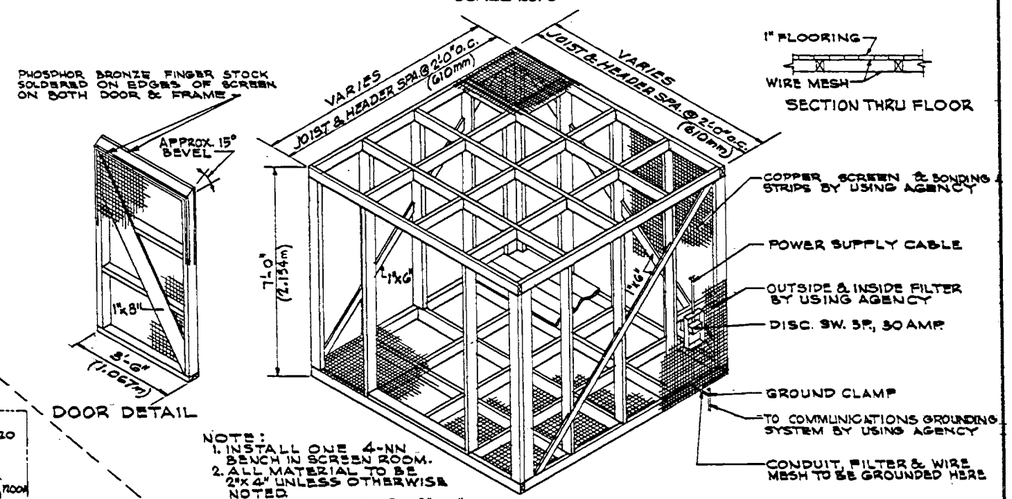
SECTION B-B
SCALE NO. 2



FLUORESCENT LIGHTING FIXTURES
TYPICAL SUPPORT & WIRING AT CEILING
NO SCALE

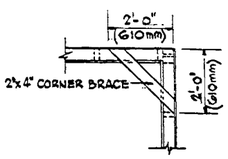


DETAIL "1" - PANELBOARD FRAME
NO SCALE

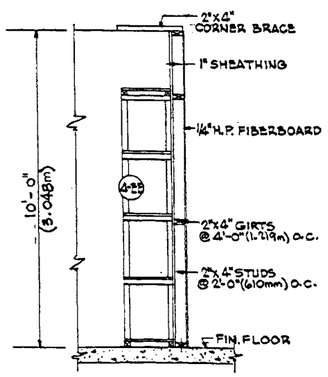


NOTE:
1. INSTALL ONE 4-NN BENCH IN SCREEN ROOM.
2. ALL MATERIAL TO BE 2"x 4" UNLESS OTHERWISE NOTED.
3. TOP FRAMING TO BE 2"x 6" WHERE SPAN EXCEEDS 8 FEET.

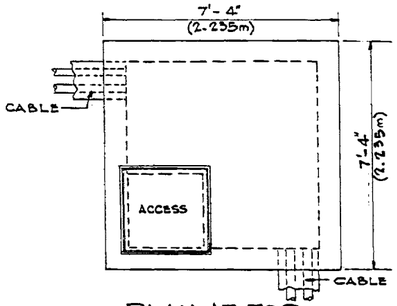
TYPICAL SCREEN ROOM DETAIL
NO SCALE



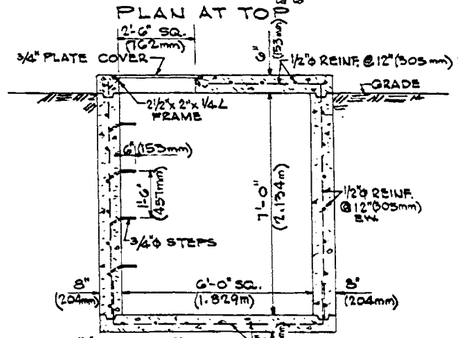
PLAN AT TOP



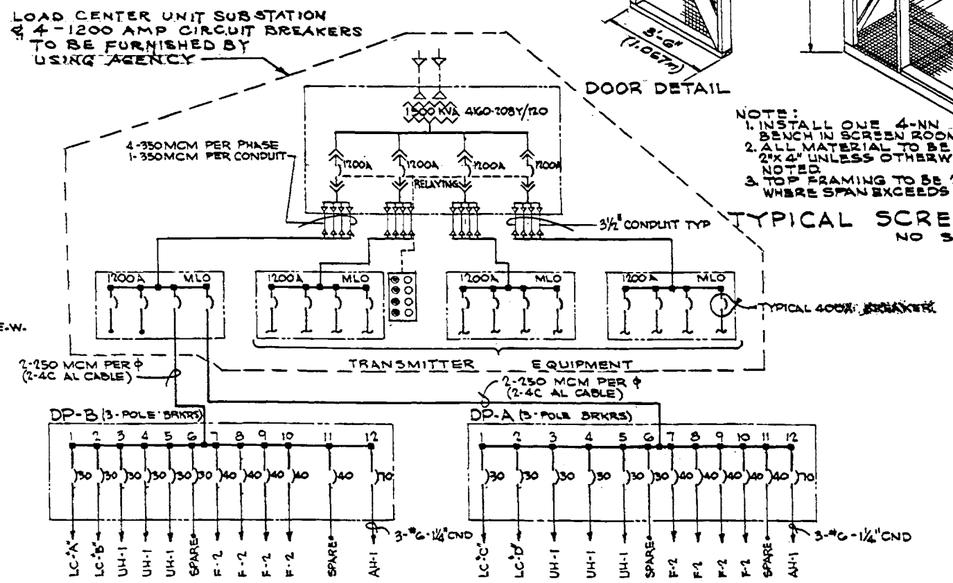
SECTION C-C
THRU STORAGE ROOM WALL
SCALE NO. 4



PLAN AT TOP



SECTION
CABLE MANHOLE
SCALE NO. 4



NOTE:
CONNECT LOAD CENTERS TO TWO POLES OF 3-POLE BRKR NORMALLY SUPPLIED

SINGLE-LINE DIAGRAM FOR ELECTRICAL DISTRIBUTION (NO SCALE)

"UNDER REVISION"

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 0 1' 2' 3' 4'
0 1m NO. 2 2m 3m 0 NO. 4. 1m

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: GREGORY
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C.W. DEICHMANN
APPROVED:

ARMY FACILITIES COMPONENTS SYSTEM

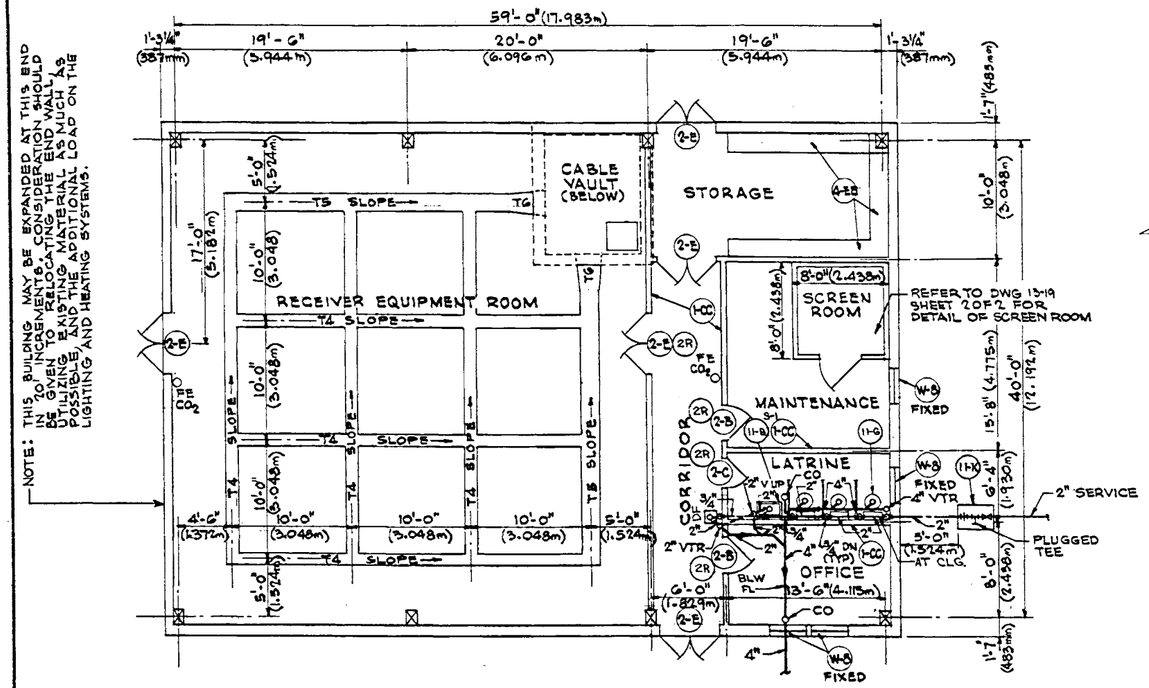
RADIO TRANSMITTER BUILDING
40'X120'
SECTIONS AND DETAILS

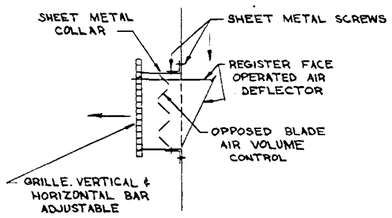
APPROVED: Edwin A. Patterson, Col CE DATE: 23 February 72
CHIEF, BRANCH CHIEF, AFCS OFFICE, MILITARY ENGINEERING, OCE

APPROVED FOR PROPONENT AGENCY:
COL, CE
DATE 1 DEC 72

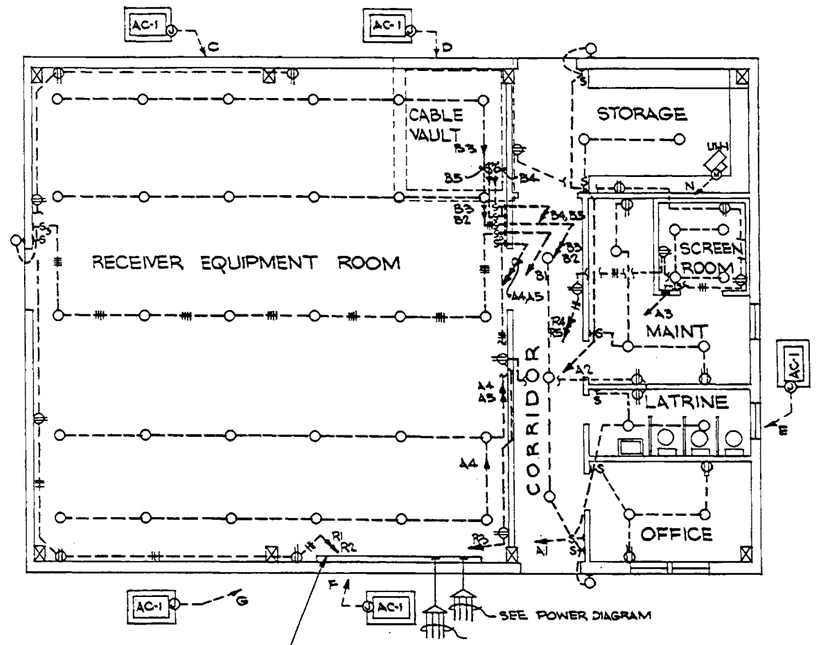
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 2 13-19

NOTE: THIS BUILDING MAY BE EXPANDED AT THIS END IN 20' INCREMENTS. CONSIDERATION SHOULD BE GIVEN TO RELOCATING THE END WALL AS UTILIZING EXISTING MATERIAL AS MUCH AS POSSIBLE) AND THE ADDITIONAL LOAD ON THE LIGHTING AND HEATING SYSTEMS.





PLAN – SECTION
OF A.C. REGISTER
NO SCALE

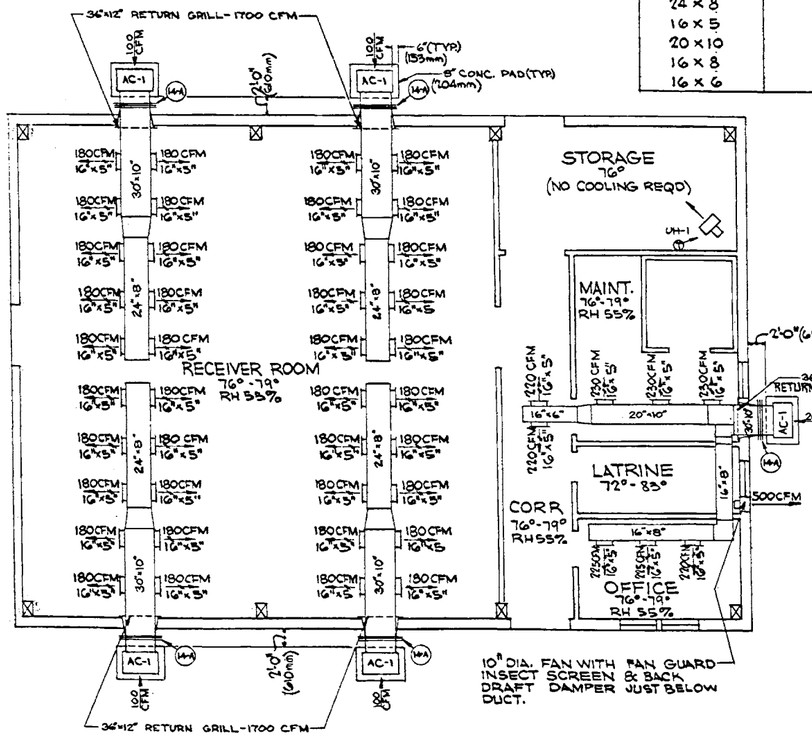


FLOOR PLAN
SCALE NO. 24

FACILITY NO. 132101 - INTERIOR ONLY
FACILITY NO. 132111 - STEEL FRAME BLDG. WITH INTERIOR
FACILITY NO. 132121 - WOOD FRAME BLDG. WITH INTERIOR

DUCT SIZES

PLAN SIZING INCHES	METRIC CONVERSION MILLIMETERS
36×12	914 × 305
30×10	762 × 254
24×8	610 × 204
16×5	407 × 127
20×10	508 × 254
16×8	407 × 204
16×6	407 × 153



MECHANICAL PLAN
SCALE NO. 24

SCHEDULE OF CIRCUIT BREAKERS

CIRCUIT BREAKER	RATINGS POLES	RATINGS AMPS	BRANCH CIRCUIT BREAKER ACTIVE AND SPARE CKT NO.	BRANCH CIRCUIT BREAKER SPARE CKT NO.	CONDUCTOR SIZE OTHER THAN NO.12	REMARKS
MAIN C.B. "P-1"	3	225				
LC "A" #A&B	1	20	1 THRU 6	5		
LC "B" #B&C	1	20	1 THRU 6	5		
LC "H" #C&A	1	20	1 THRU 6			FOR RECEIV EQUIP
LC "J" #A&B	1	20	1 THRU 6			FOR RECEIV EQUIP
LC "K" #B&C	1	20	1 THRU 6			FOR RECEIV EQUIP
LC "L" #C&A	1	20	1 THRU 6			FOR RECEIV EQUIP
LC "M" #A&B	1	20	1 THRU 6			FOR RECEIV EQUIP
CB "N" #B&C	3	30	1		4-#10	
MAIN C.B. "P-2"	3	300				
CB "C"	3		1		4-#6	
CB "D"	3		1		4-#6	
CB "E"	3		1		4-#6	
CB "F"	3		1		4-#6	
CB "G"	3		1		4-#6	
LC "I" #A&C	1	20	1 THRU 6			

GENERAL NOTES

1. REFER TO TM 5-303 FOR BUILDING SHELL REQUIREMENTS.
2. SLOPE TRENCHES 0.4% GRADE TO CABLE VAULT.
3. THIS STRUCTURE IS BASED ON STD SHOP, HEAVY-DUTY BLDGS. THE COLUMN HEIGHTS ARE TO BE REDUCED SO THAT THE CLEAR HEIGHT IS 13'-0" (3.982m)-MINIMUM - EXCLUDING KNEEBRACING.
4. THE LINER FOR THIS BUILDING SHALL INCLUDE A POLYETHYLENE PLASTIC SHEET NAILED TO THE INSIDE OF THE GIRTS. ALL SIDES AND ENDS OF THE PLASTIC SHEET SHALL BE SEALED WITH PRESSURE SENSITIVE TAPE.

SCHEDULE OF DRAWINGS

DWG.NO.	DESCRIPTION	SHEET NO.
13-21	PLAN	1 OF 2
13-21	CABLE VAULT	2 OF 2
81-17	GEN. PLANT	
99-98	STD. DETAILS	
34-19	WOOD FRAME CONSTRUCTION SHOP-HEAVY DUTY	1-12 OF 12
35-48	PREFABRICATED STEEL FRAME BLDG DETAILS FOR 20 FT HIGH BLDG	1-3 OF 3

ELECTRICAL NOTES

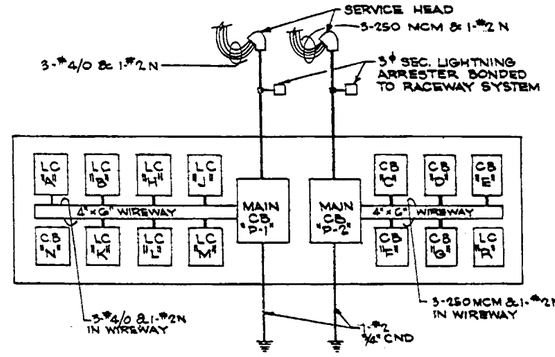
SUMMARY OF ELECTRICAL POWER REQUIREMENT		KVA
CONNECTED LOAD (EST. FOR CONV. OUTLETS)	LIGHTING	9.7
	RECEPTACLE EST.	3.6
	POWER (BLDG. UTIL)	79.5
	POWER (USERS EQPT)	40.0
	TOTAL CONNECTED	132.8
ESTIMATED MAX. DEMAND		120.0

1. SERVICE ENTRANCE CONDUCTORS SHALL BE TYPE THW SINGLE-CONDUCTOR COPPER CABLES IN HEAVY WALL GALVANIZED STEEL CONDUIT.
2. FEEDER CONDUCTORS NOT LARGER THAN NO.2 SHALL BE TYPE NM, NMC OR UF THREE-CONDUCTOR CABLE, WITH GROUND; OR NO.2 ALUMINUM TYPE MC FOUR CONDUCTOR CABLE, WITH GROUND; AND THOSE LARGER THAN NO.2 SHALL BE TYPE MC STRANDED ALUMINUM FOUR-CONDUCTOR STEEL ARMORED CABLE.
3. BRANCH CIRCUIT CONDUCTORS SHALL BE NO.12 COPPER OR NO.10 ALUMINUM, TWO- OR THREE-WIRE TYPE NM, NMC OR UF CABLE W/GROUND.
4. MOTOR SYMBOL (M) DENOTES INCLUSION OF CONTROLLERS, OVERLOAD PROTECTION, AND REMOTE CONTACT DEVICES AS REQUIRED, WITH THE EQUIPMENT. FOR EACH MOTOR OR EQUIPMENT UNIT, A PROPERLY RATED SAFETY DISCONNECT SWITCH SHALL BE INSTALLED WITHIN SIGHT.
5. MOTORS IN OPEN FLOOR AREA SHALL BE CONNECTED FROM A JUNCTION BOX ON A SECURED VERTICAL WOOD 2"x4" WIRING SUPPORT, OR EQUIVALENT, BY MEANS OF A SHORT FLEXIBLE LEAD OF METAL ARMORED CABLE OR FLEXIBLE METAL CONDUIT.
6. ALL LAMPS TO BE 150W WITH 14" CONICAL SHADES.
7. INSTALLATION SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE.

MECHANICAL NOTES

1. AIR CONDITIONING UNITS (AC-1) SHALL HAVE A MIN. COOLING CAPACITY OF 53,000 BTU/HR, AND AIR FLOW OF 1800 CFM @ ½" OF H_2O EXTERNAL STATIC PRESSURE (2000 CFM @ 0" S.P.). MAX. UNIT K.W. TO BE 14.4; UNIT TO BE COMPLETE WITH ALL CONTROLS AND A THERMOSTAT SENSING RETURN AIR TEMPERATURE.
2. COOLING CAPACITY SHALL BE OBTAINED AT 120°F AMBIENT AND 90°F DB EVAPORATOR AIR INLET.
3. UNIT HEATERS (UH-1) TO BE 7.5 K.W., 25,575 BTU/HR, ⅕₅ HORSEPOWER WITH BUILT-IN THERMOSTAT (40° TO 90°F. RANGE).
4. BOTTOM OF UNIT HEATERS ARE TO BE 9'(2.743m). ABOVE FLOOR.
5. BOTTOM OF A.C. DUCTS TO BE 9'(2.743m) ABV FL..
6. PROVIDE DAMPERS IN RETURN DUCT AND FRESH AIR INLET ON A.C. UNIT.

ELECTRICAL PLAN
SCALE NO. 24



POWER RISER DIAGRAM
NO SCALE

UNDER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 2' 4' 6' 8' 10'
0 1m 2m 3m
NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: GREGORY
SUBMITTED BY: C.W.DEICHMANN
APPROVED:

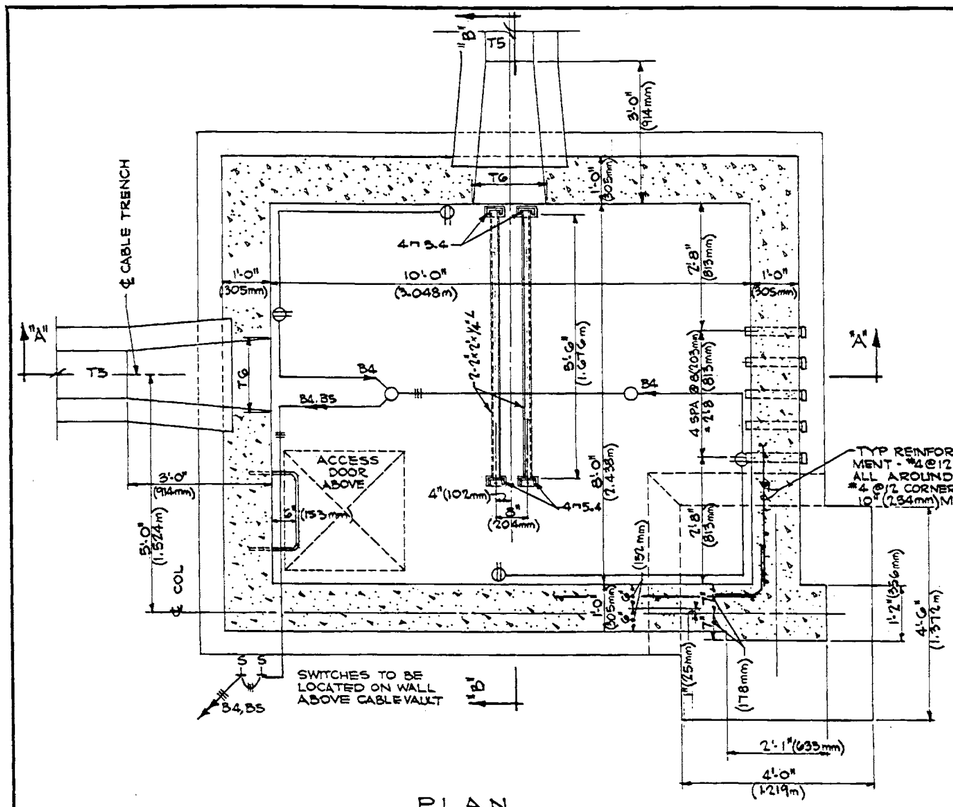
ARMY FACILITIES COMPONENTS SYSTEM

RADIO RECEIVER BUILDING
40'X60'

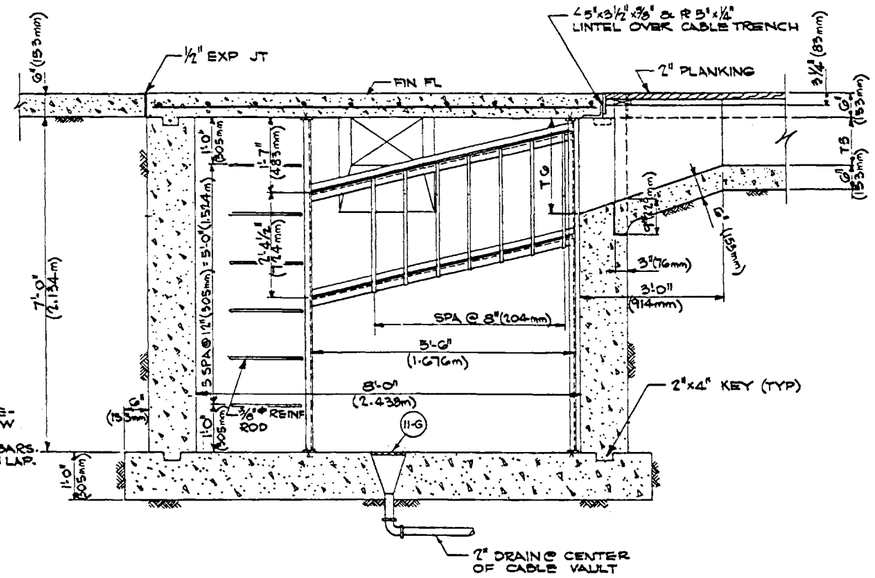
APPROVED: Edwin A. Patterson, Col CE DATE: 23 February 73
CHIEF, BRANCH — CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE

APPROVED FOR PROPONENT AGENCY: John A. Johnson COL, CE
DATE: 1 DEC 72

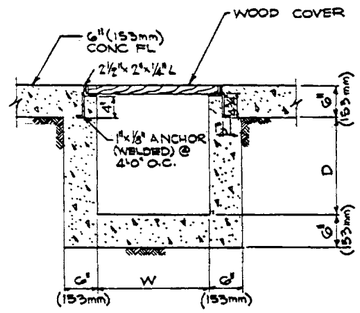
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-21
SHEET 1 OF 2



PLAN
SCALE NO. 5

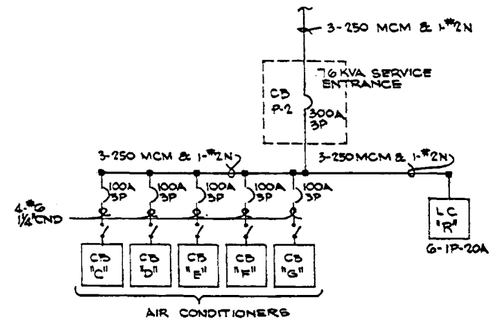


SECTION "B"-"B"
SCALE NO. 5

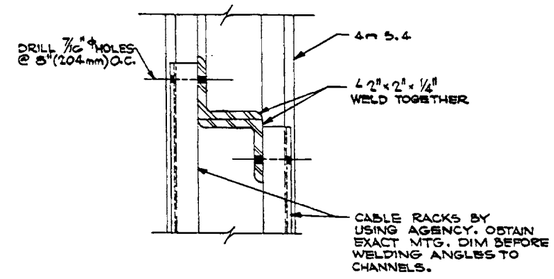


TRENCH SCHEDULE		
TRENCH	W	D
T-3	1'-6" (457mm)	1'-0" (305mm)
T-2	2'-0" (610mm)	2'-0" (610mm)
T-4	1'-0" (305mm)	0'-9" (229mm)

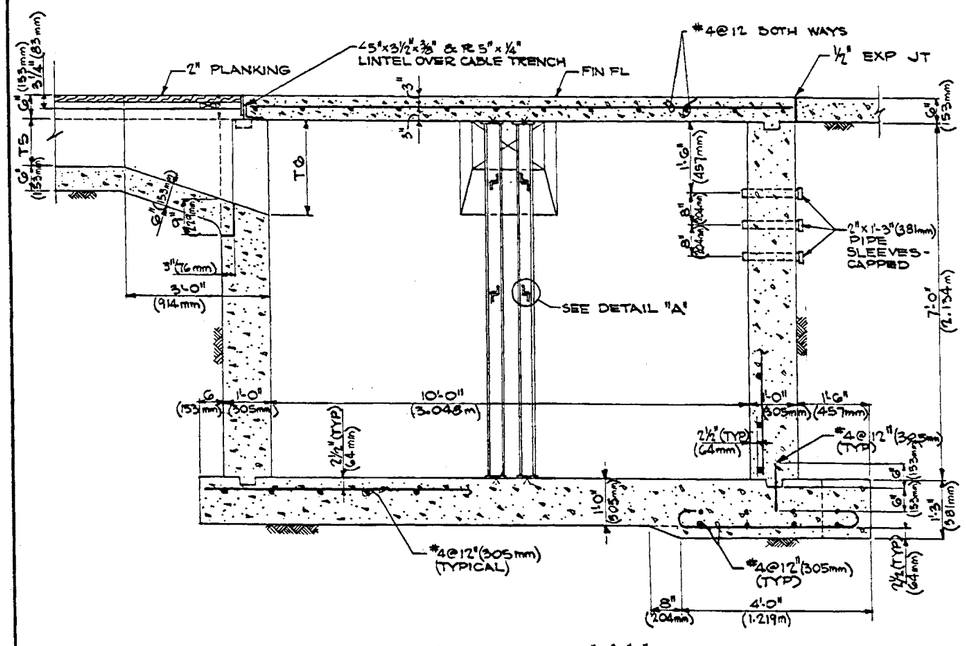
CABLE TRENCH DETAIL
NO SCALE



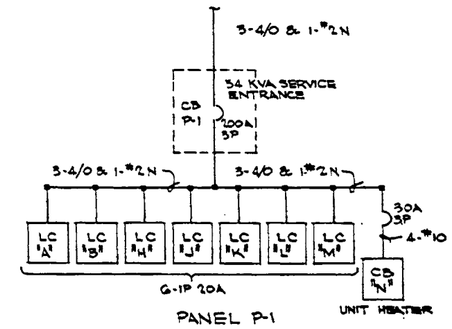
PANEL P-2



DETAIL "A"
SCALE



SECTION "A"-"A"
SCALE NO. 5



PANEL P-1

SINGLE-LINE DIAGRAM FOR ELECTRICAL DISTRIBUTION (NO SCALE)

"UNDER REVISION"

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3'
0 1M

WD:5.

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED:

ARMY FACILITIES COMPONENTS SYSTEM

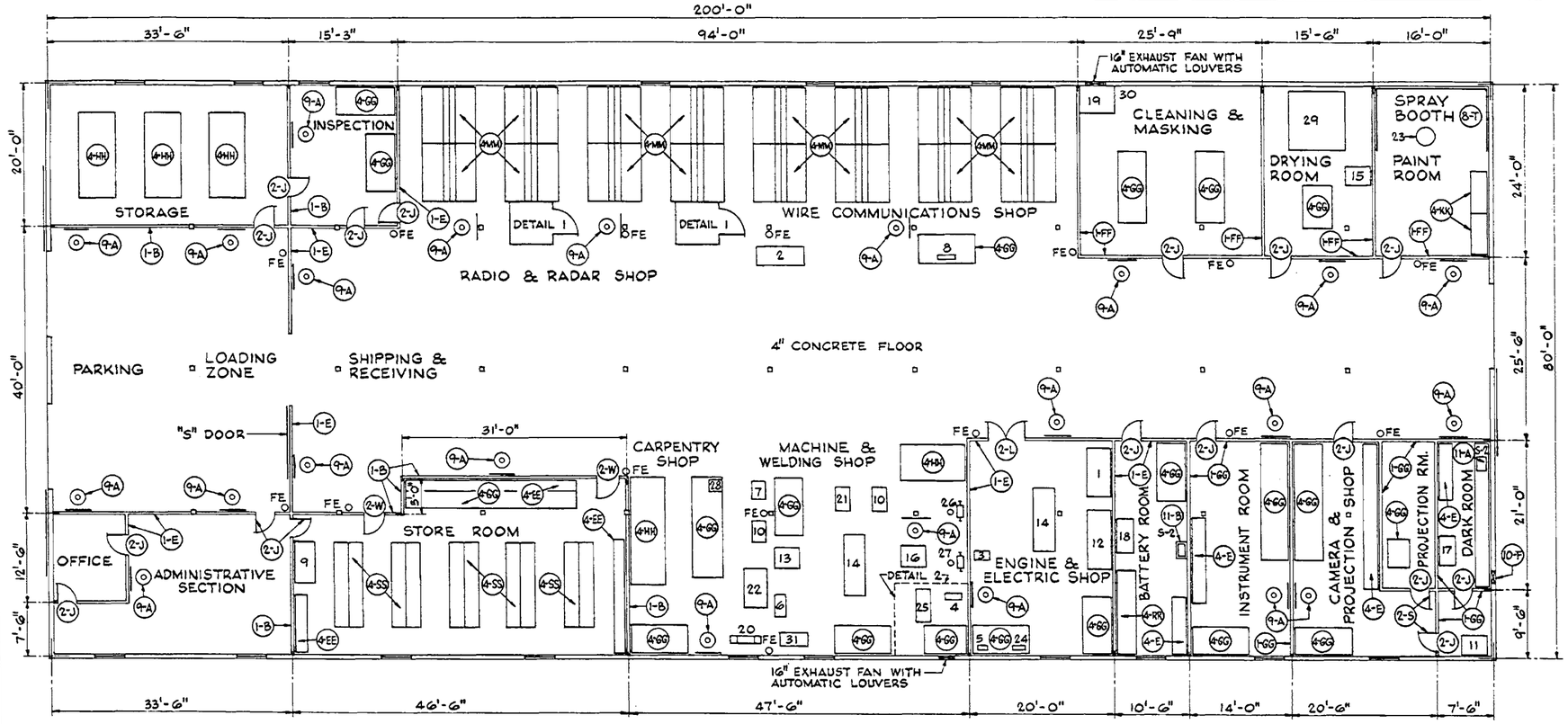
RADIO RECEIVER BUILDING
CABLE VAULT & TRENCH DETAILS

APPROVED: Edwin D. Patterson, Col CE
DATE: 28 February 73
CHIEF, BRANCH: CHIEF, APOS OFFICE, MILITARY ENGINEERING, OCE
APPROVED FOR PROPONENT AGENCY: John A. Gibson COL, CE
DATE: 1 DEC 72
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-21
SHEET 2 OF 2

CABLE VAULT DETAILS

CORPS OF ENGINEERS

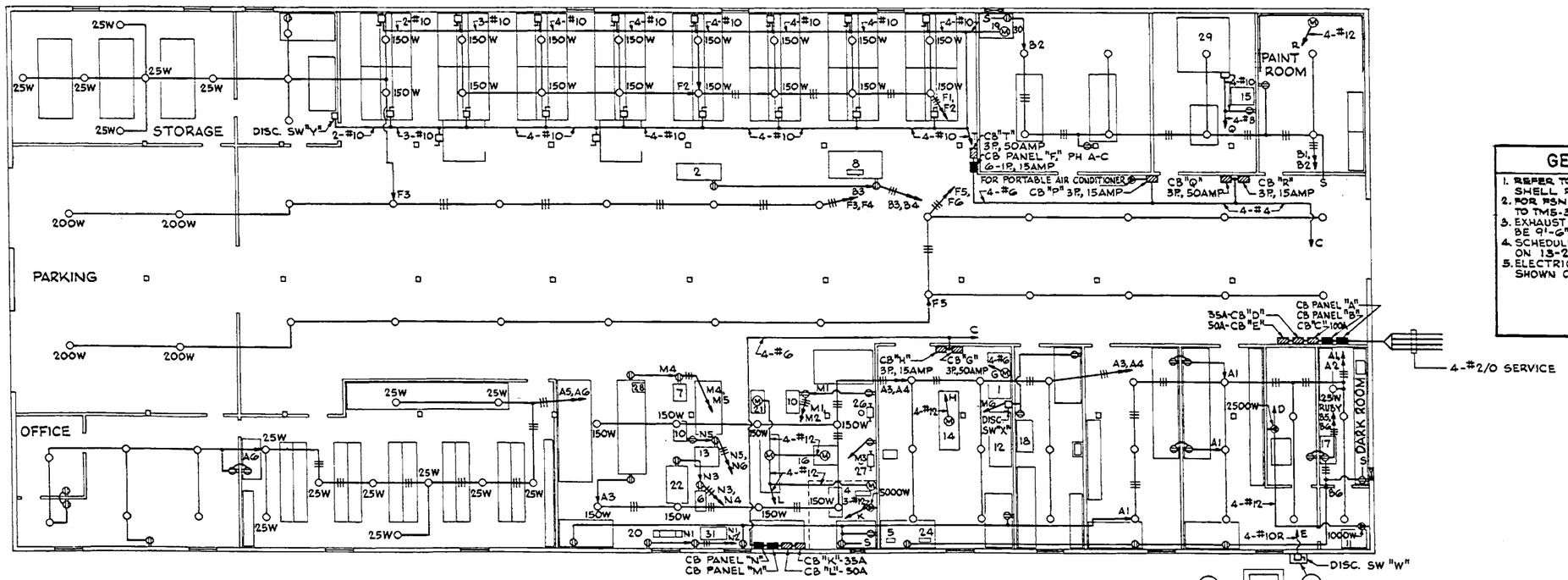
U. S. ARMY



PLAN-SHOP, SIGNAL MAINTENANCE, 80' X 200'

SCALE NO. 1

FACIL. NO. 132301-INTERIOR ONLY
FACIL. NO. 132311-STEEL FRAME W/INTERIOR
FACIL. NO. 132321-WOOD FRAME W/INTERIOR

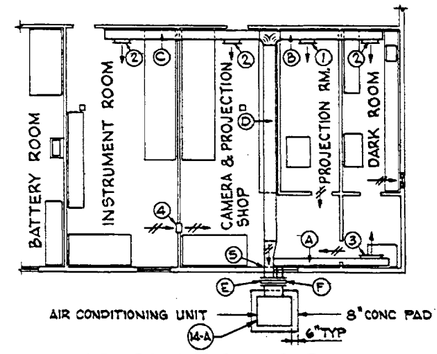


ELECTRICAL PLAN-SHOP, SIGNAL MAINTENANCE, 80' X 200'

SCALE NO. 1

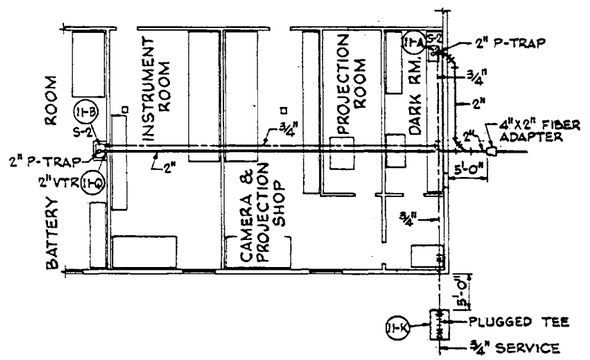
AIR CONDITIONING DUCTS & GRILLES

ITEM LTR.	DUCT SIZE	ITEM NO.	GRILLE SIZE
(A)	10" X 8"	(1)	20"X 6"
(B)	10" X 12"	(2)	24" X 6"
(C)	12" X 12"	(3)	30" X 6"
(D)	20"X 12"	(4)	14" X 8"
(E)	24"X 12"	(5)	30"X 12"
(F)	30"X 12"		



AIR CONDITIONING PLAN

SCALE NO. 1



PLUMBING PLAN

SCALE NO. 1

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR RSN BILL OF MATERIALS, REFER TO TM5-303 BY FACILITY NUMBER.
3. EXHAUST FAN MOUNTING HEIGHT TO BE 9'-6" ABOVE FLOOR.
4. SCHEDULES OF EQUIPMENT SHOWN ON 13-23, 2 OF 2.
5. ELECTRICAL CONNECTED LOADS SHOWN ON 13-23, 2 OF 2.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
13-23	PLANS-80'X200' SHOP	1 OF 2
13-23	PLANS-80'X100' & 40'X100' SHOPS	2 OF 2
99-98	STANDARD DETAILS	
34-04	WOOD FRAME CONSTRUCTION WAREHOUSE TYPE BLDGS	1-3 OF 3
35-36	STEEL FRAME CONST WAREHOUSE TYPE BLDGS	1-3 OF 3

UNDER REVISION DO NOT USE

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES

0 5' 10' 15'

NO. 1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: SHANNON
SUBMITTED BY: C.W. DEICHMANN
APPROVED:

THEATER OF OPERATIONS

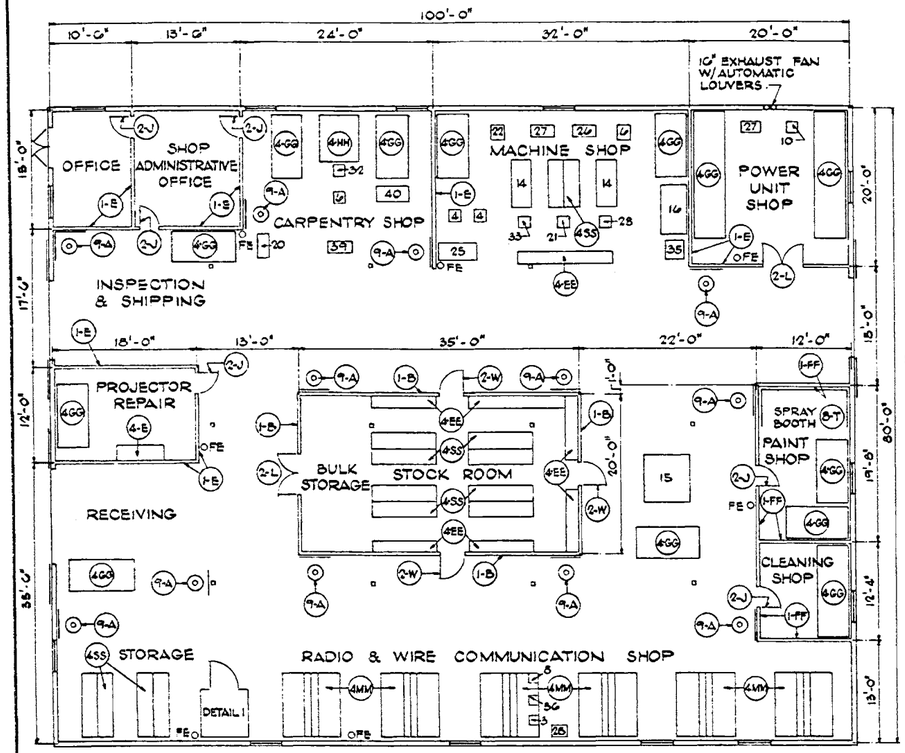
SIGNAL MAINTENANCE SHOPS
80'X200'

APPROVED: DATE: 19 MAR 1969

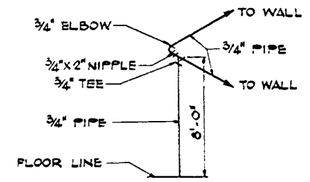
CHIEF, BRANCH — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: OFFICE OF THE ENGINEER, USARPAC
Thomas D. Latimer, LTC
for WM. Corbett, Acting Chief
DATE 24 September 1968

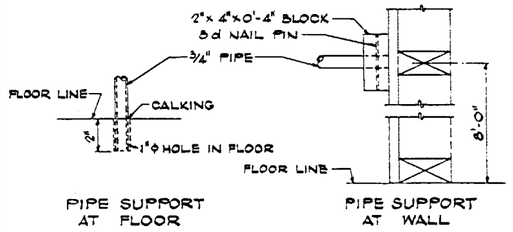
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-23
SHEET 1 OF 2



PLAN - SHOP, SIGNAL MAINTENANCE, 80' X 100'
SCALE NO. 1
FACIL. NO. 132302 - INTERIOR ONLY
FACIL. NO. 132312 - STEEL FRAME W/INTERIOR
FACIL. NO. 132322 - WOOD FRAME W/INTERIOR



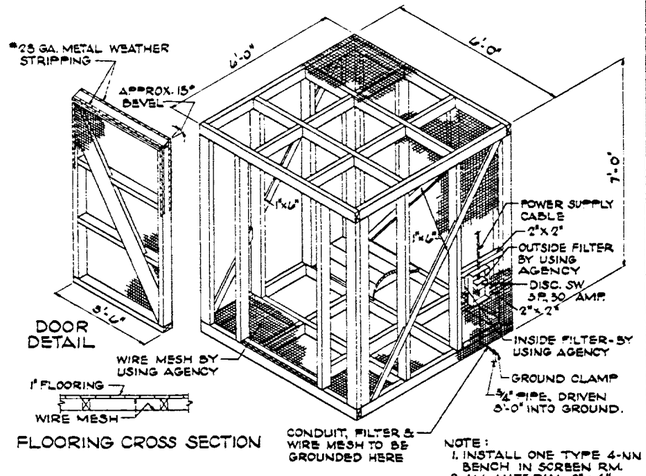
ISOMETRIC DIAGRAM



PIPE SUPPORT AT FLOOR

PIPE SUPPORT AT WALL

DETAIL 2
WELDING ROOM SCREEN SUPPORT
NO SCALE



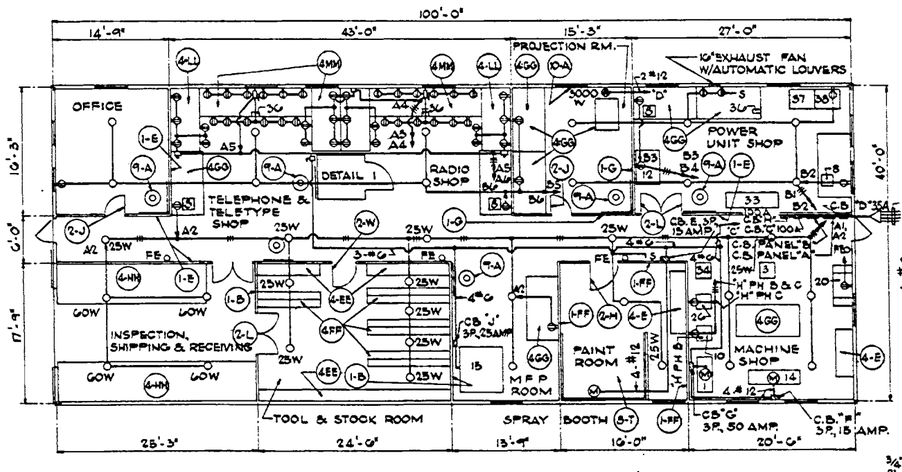
FLOORING CROSS SECTION

SCREEN ROOM
DETAIL 1
NO SCALE

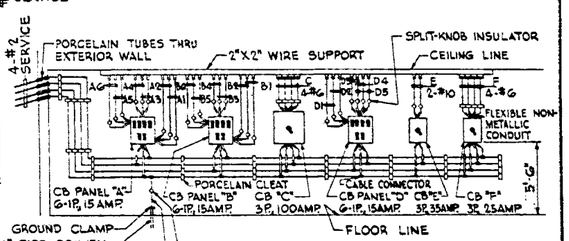
NOTE:
1. INSTALL ONE TYPE 4-NN BENCH IN SCREEN RM.
2. ALL MATERIAL 2"x 4" UNLESS OTHERWISE NOTED.

SCHEDULE OF EQUIPMENT

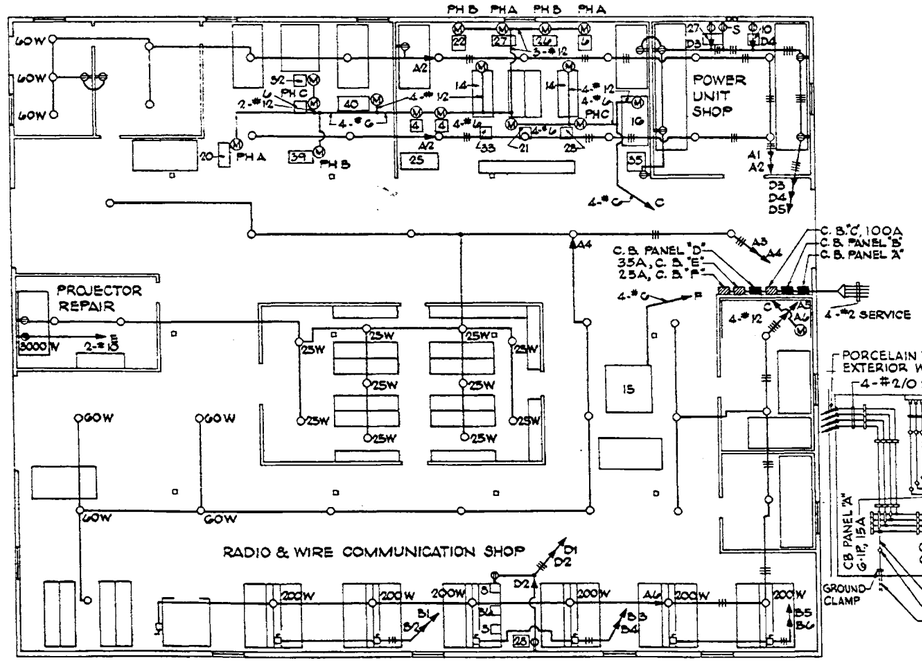
ITEM NO	UNIT DESCRIPTION	MOTOR H.P.	PHASE	QTY 80'x200'	QTY 80'x100'	QTY 40'x100'
1	AIR COMPRESSOR	10	3	1	-	1
2	AIR COMPRESSOR, PORTABLE	1/3	1	1	-	-
3	ANVIL, 32 POUNDS, STEEL	-	-	1	1	1
4	ARC WELDER - 200 AMP	5	3	1	2	-
5	ARMATURE GROWLER	-	-	1	-	-
6	BAND SAW, 14"	3/4	1	1	2	-
7	BELT SANDER, PORTABLE, 3"	3/4	1	1	-	-
8	BENCH GRINDER	1/2	1	1	1	4
9	DESK	-	-	1	-	-
10	DRILL PRESS, BENCH TYPE	1/3	1	2	1	1
11	DRYER, PRINT, 1000 W	-	-	1	-	-
12	ELECTRIC TEST BENCH	-	-	1	-	1
13	ENGRAVING MACHINE	1/4	1	1	-	-
14	LATHE	1 1/2	3	2	2	1
15	MFP PRE-DRY OVEN	-	-	1	1	1
16	MILLING MACHINE	3	3	1	1	-
17	PRINTER, 500W, EN-10	-	-	1	-	-
18	RECTIFIER, TYPE B-2	-	-	1	-	-
19	SAND BLAST UNIT	-	-	1	-	-
20	SEWING MACHINE	1/2	1	1	1	1
21	SHAPER, METAL, 7"	1	3	1	1	-
22	TABLE SAW	3/4	1	1	1	-
23	TURNTABLE	-	-	1	-	-
24	UNDERCUTTER	1/4	1	1	-	-
25	WELDING TABLE	-	-	1	1	-
26	GRINDER, DUAL, 7"	1/2	1	1	1	1
27	BUFFER, 7"	1/2	1	1	2	-
28	DRILL PRESS, PORTABLE	1/2	1	1	2	-
29	MFP OVEN, 10,000 W	-	-	1	-	-
30	SAND BLAST FILTER & FAN	1/2	1	1	-	-
31	PLANER	1/2	1	1	-	-
32	ABRASIVE MACHINE, 6"	-	-	-	1	-
33	ARBOR PRESS	-	-	-	1	1
34	GAS WELDING	-	-	-	-	1
35	PENOGRAPH	-	-	-	1	-
36	VISE	-	-	-	1	3
37	VALVE FACER	-	-	-	-	1
38	VALVE SEATER	-	-	-	-	1
39	WOOD SAW	1/2	1	-	1	-
40	PLANER	1	3	-	1	-



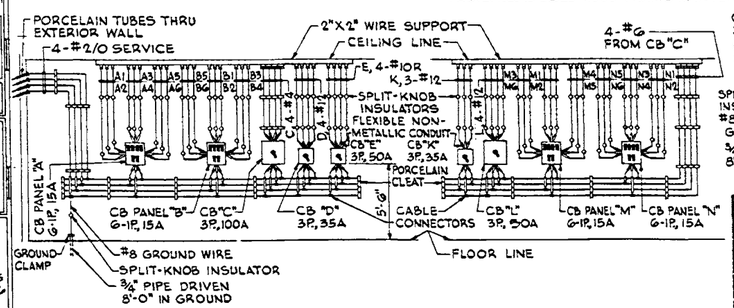
PLAN - SHOP SIGNAL MAINTENANCE, 40' X 100'
SCALE NO. 1
FACIL. NO. 132303 - INTERIOR ONLY
FACIL. NO. 132313 - STEEL FRAME W/INTERIOR
FACIL. NO. 132323 - WOOD FRAME W/INTERIOR



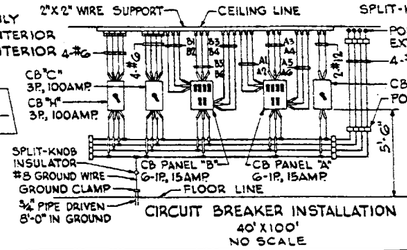
CIRCUIT BREAKER INSTALLATION
80'X100'
NO SCALE



ELECTRICAL PLAN - SHOP SIGNAL MAINTENANCE, 80' X 100'
SCALE NO. 1



CIRCUIT BREAKER INSTALLATION
80'X200'
NO SCALE



CIRCUIT BREAKER INSTALLATION
40'X100'
NO SCALE

ELECTRICAL NOTES

CONNECTED LOADS

	80' X 200'	80' X 100'	40' X 100'
BUILDING			
LIGHTING	10.60 KW	5.40 KW	2.44 KW
RECP. EST.	21.10 KW	8.20 KW	8.90 KW
POWER	39.98 KW	30.32 KW	19.80 KW
TOTAL	71.68 KW	43.92 KW	31.14 KW

1. UNLESS OTHERWISE NOTED ON PLANS, ALL LAMPS TO BE 100W.
2. ALL 60W & 100W LAMPS TO HAVE 8" DIA. CONICAL SHADES.
3. ALL 150 & 200W LAMPS TO HAVE 14" DIA. FLAT SHADES.

UNLESS A.F.C. SIGN IS DO NOT USE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15'
NO. 1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

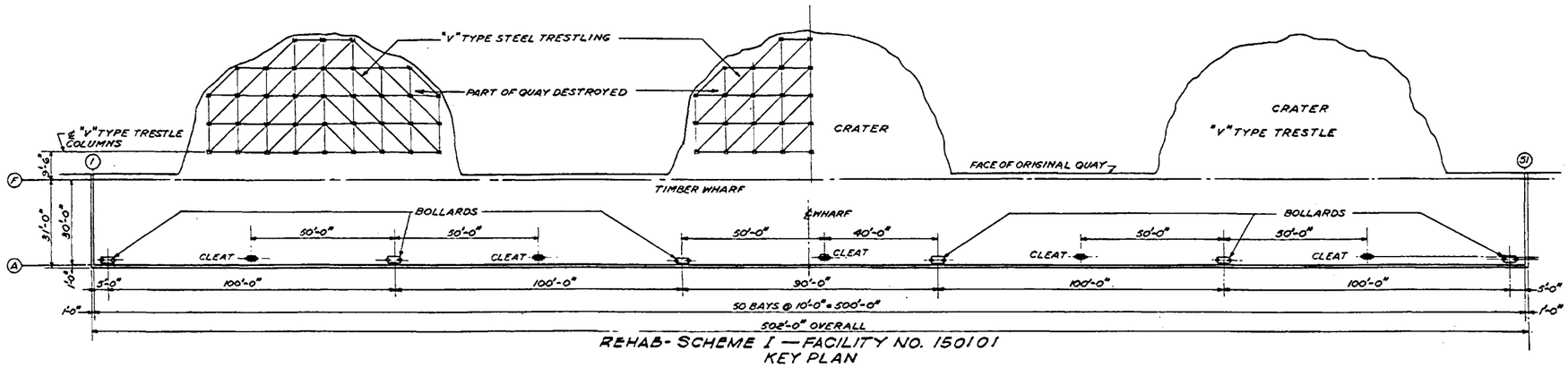
DRAWN BY: HORNE
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
APPROVED: DATE: 19 MAR 1969
CHIEF, BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

THEATER OF OPERATIONS

SIGNAL MAINTENANCE SHOPS
40'X100' & 80'X100'

APPROVED FOR PROPONENT AGENCY: OFFICE OF THE ENGINEER, USARSTRAC
DATE 30 September 1968

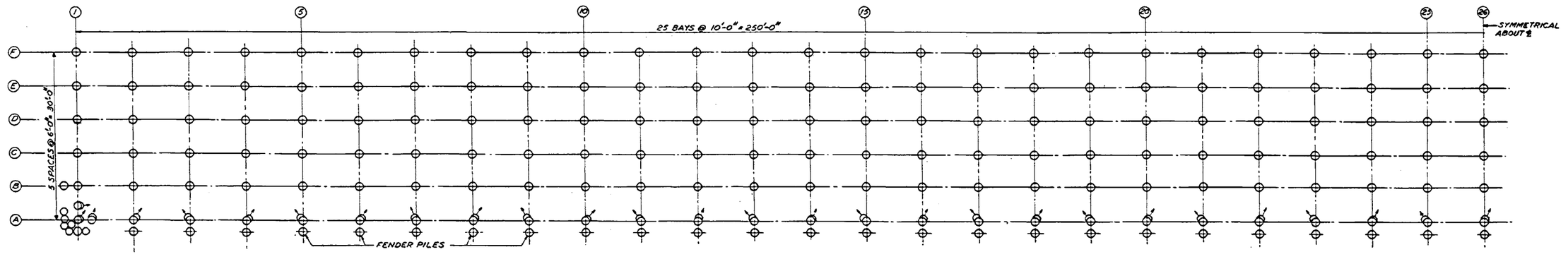
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 13-23
SHEET 2 OF 2



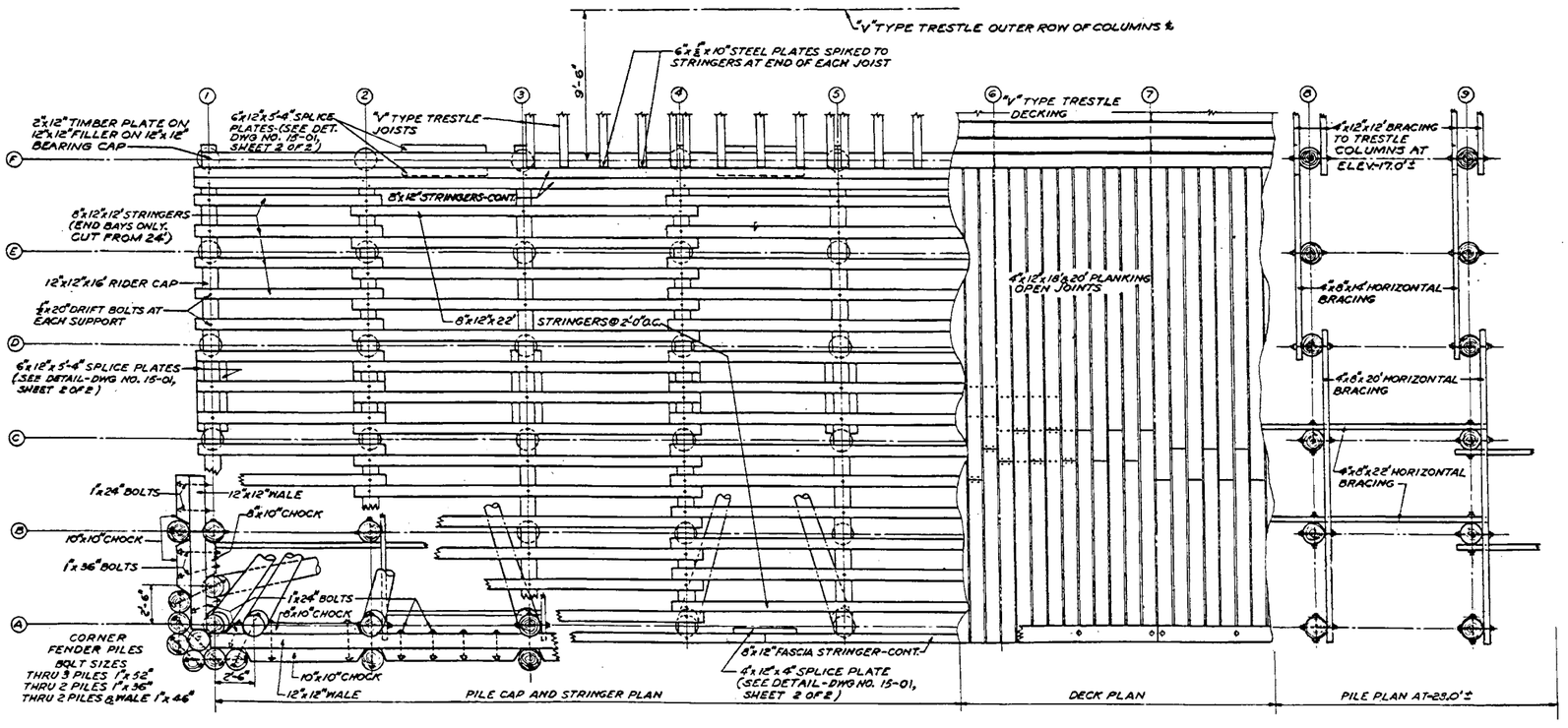
REHAB- SCHEME I — FACILITY NO. 150101
KEY PLAN
SCALE NO. 11

BASIS OF DESIGN

LIVE LOADING 500 PSF.
SIDE PRESSURE 1,000 LBS. PER LIN. FT.
PILE BEARING VALUE 42,000 LBS.
SAFE AXLE LOAD 9,000 LBS.
EXTREME FIBER STRESS, WOOD - 1,800 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1500 PSI.
COMPRESSION PERPENDICULAR TO GRAIN, WOOD - 450 PSI.
HORIZONTAL SHEAR, WOOD - 150 PSI.
MODULUS OF ELASTICITY, WOOD - 1,600,000 PSI.
THE LENGTH OF PILES AS SHOWN ASSUMES A PENETRATION OF 15'-0". THE PENETRATION REQUIRED SHOULD BE DETERMINED BY DRIVING TESTS WHERE POSSIBLE AND THE LENGTH OF PILES ADJUSTED ACCORDINGLY.



HALF PILE PLAN
SCALE NO. 1



FRAMING PLAN
SCALE NO. 2

GENERAL NOTES

HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
HOLES FOR THROUGH BOLTS SHALL BE THE SAME DIAMETER AS THE BOLT.
USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
FOR "V" TRESTLE DETAILS SEE TM5-375.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1 | 0 5' 10' NO. 2 | 0 5' 10' 20' 30' 40' NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C.W. DEICHMANN

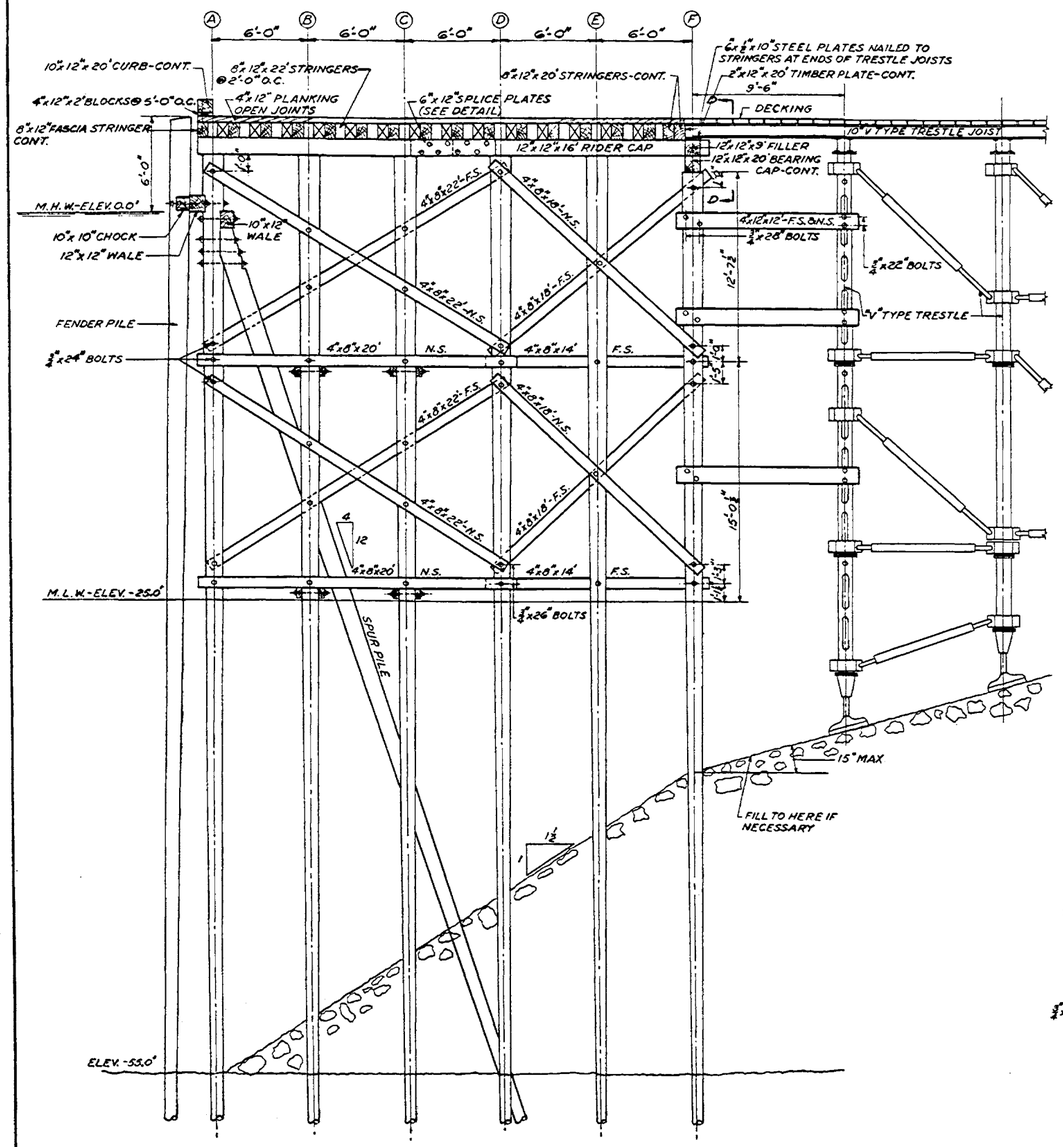
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES PIER OR WHARF
REHAB-SCHEME I

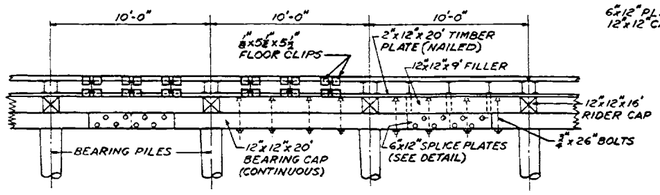
APPROVED: DATE: 19 MAR 1969
CHIEF, STRUCTURES BRANCH | CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
ROBERT W. GENTLEMAN
Colonel, CE
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 14 SEP 1968

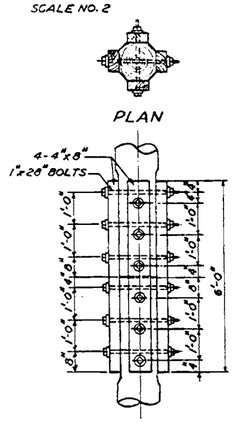
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-01
SHEET 1 OF 2



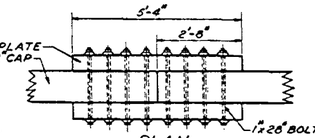
CROSS SECTION THRU CRATER
SCALE NO. 2



SECTION D-D
PART ELEVATION OF BEARING CAP ON LINE (F)
SCALE NO. 2

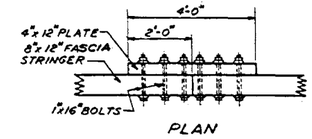


PILE
SPLICE DETAIL
SCALE NO. 4



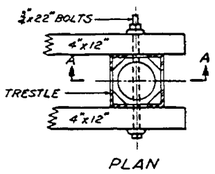


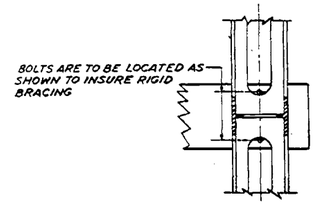
RIDER CAP AND BEARING CAP
SPLICE DETAIL
SCALE NO. 4



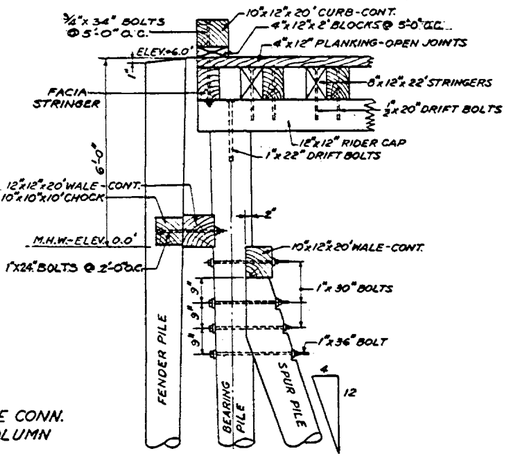


FASCIA STRINGER
SPLICE DETAIL
SCALE NO. 4

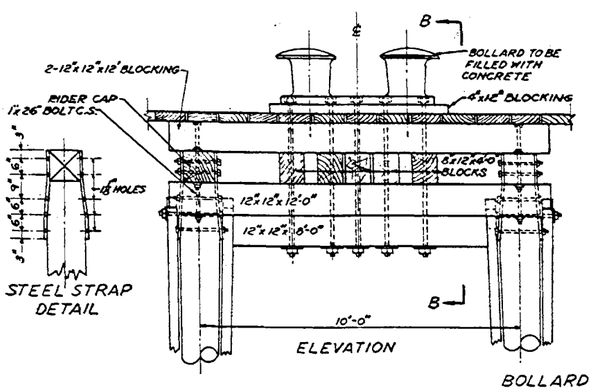


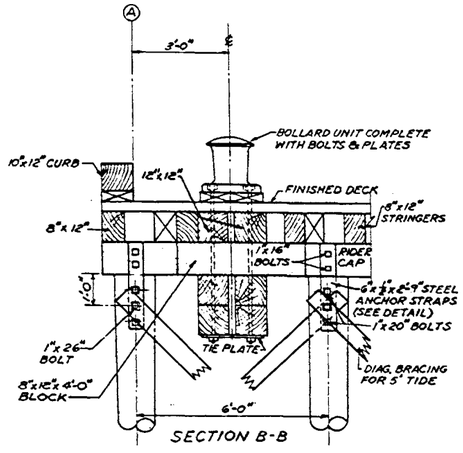


SECTION A-A
DETAIL OF TIMBER BRACE CONN.
AT "V" TYPE TRESTLE COLUMN
SCALE NO. 6

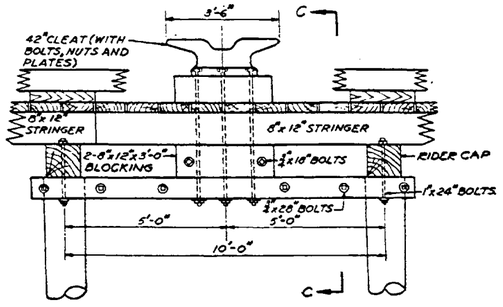


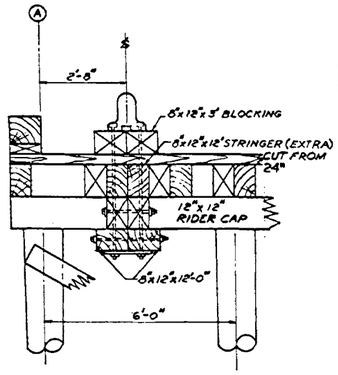
FENDER AND SPUR PILE DETAIL
SCALE NO. 4





BOLLARD FRAMING DETAILS
SCALE NO. 4





CLEAT FRAMING DETAIL
SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' 15' NO.1; 0 1' 2' 3' 6' NO.4; 5' 10' NO.2; 0 1' 2' NO.6

HAYES, SEAY, MATTERN & MATTERN ARCHITECTS - ENGINEERS ROANOKE, VIRGINIA WASHINGTON, D. C.	DEPARTMENT OF THE ARMY OFFICE OF THE CHIEF OF ENGINEERS MILITARY CONSTRUCTION, ENGINEERING DIVISION WASHINGTON, D. C.

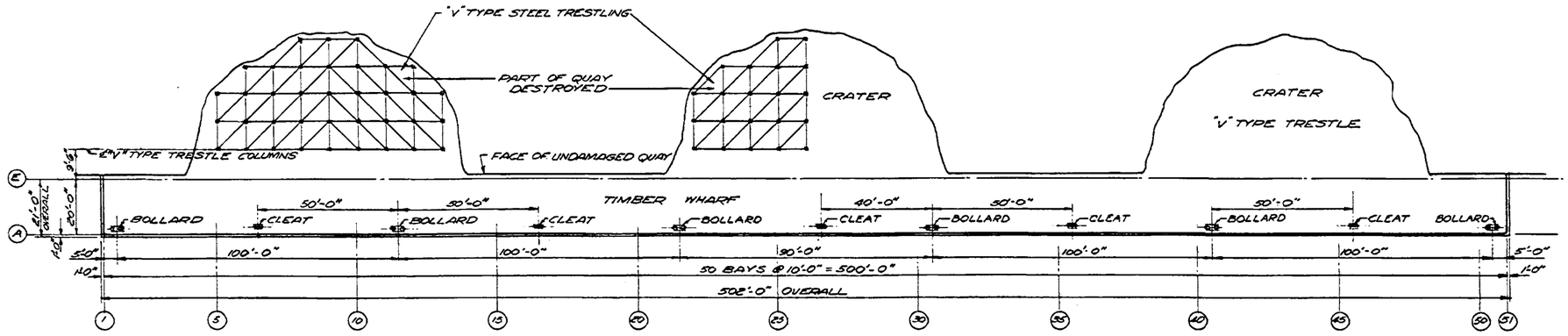
DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, STRUCTURES BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959

THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME I
SECTIONS & DETAILS

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE: 14 SEP 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-01
SHEET 2 OF 2



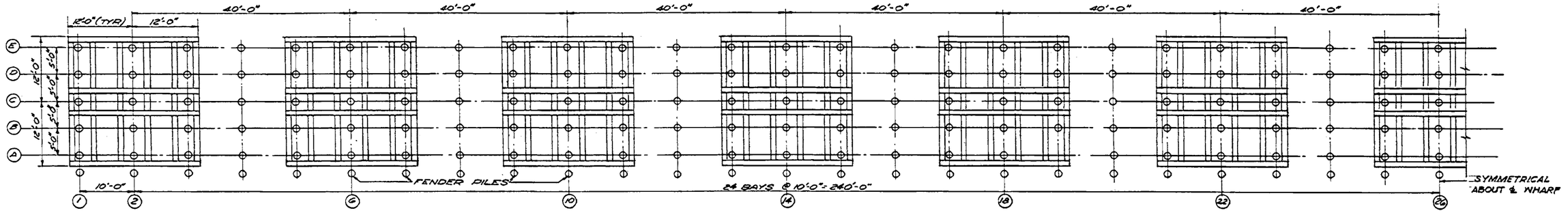
REHAB-SCHEME II — FACILITY NO. 150201
KEY PLAN
SCALE No. 11

BASIS OF DESIGN

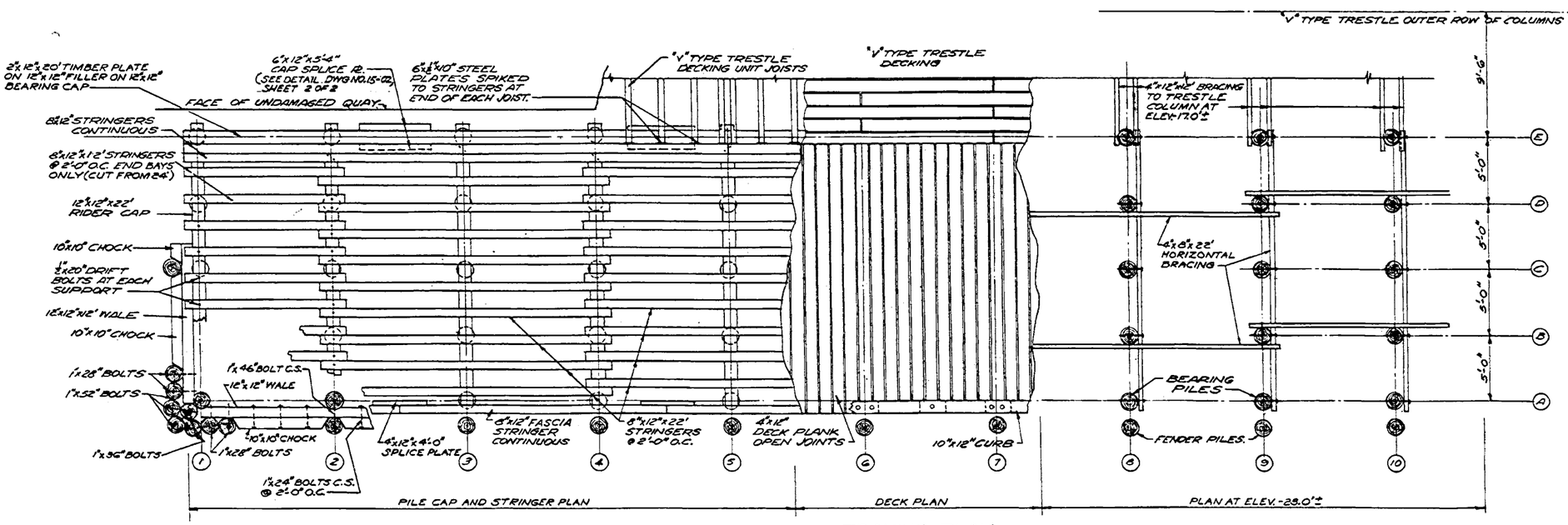
LIVE LOADING 500 PSF.
SIDE PRESSURE 1,000 LBS. PER LIN. FT.
PILE BEARING VALUE 42,000 LBS.
SAFE AXLE LOAD = 9000 LBS.
EXTREME FIBER STRESS, WOOD - 1,800 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1500 PSI.
COMPRESSION PERPENDICULAR TO GRAIN, WOOD - 450 PSI.
MODULUS OF ELASTICITY, WOOD - 1, 600,000 PSI.
HORIZONTAL SHEAR, WOOD - 150 PSI.

GENERAL NOTES

FOR "V" - TRESTLE DETAILS SEE TM 5-375
HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
HOLES FOR BOLTS IN STEEL SHALL BE 1/16" LARGER THAN THE BOLT DIAMETER.
HOLES FOR THROUGH BOLTS IN WOOD SHALL BE THE SAME DIAMETER AS THE BOLT.
NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
BEFORE TIMBER CRIBS ARE CONSTRUCTED, SOUNDINGS SHALL BE TAKEN TO DETERMINE THE PROFILE OF THE BOTTOM, AND THE CRIBS BUILT TO FIT THE CONTOUR OF THE BOTTOM.
AFTER CRIBS ARE SUNK IN POSITION BY FILLING THE SINKING WELLS, AND THE PILES HAVE BEEN PLACED IN THE CRIB, THE ENTIRE CRIB SHALL BE FILLED WITH STONE.
AFTER THE PILES BETWEEN THE CRIBS ARE IN POSITION, STONE SHALL BE PLACED AROUND THE BOTTOMS OF THE PILES.



HALF PILE AND CRIB PLAN
SCALE No. 1



FRAMING PLAN
SCALE No. 2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1 | 0 5' 10' NO. 2 | 0 5' 10' 20' 30' 40' NO. 11

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C.W. DEICHMANN

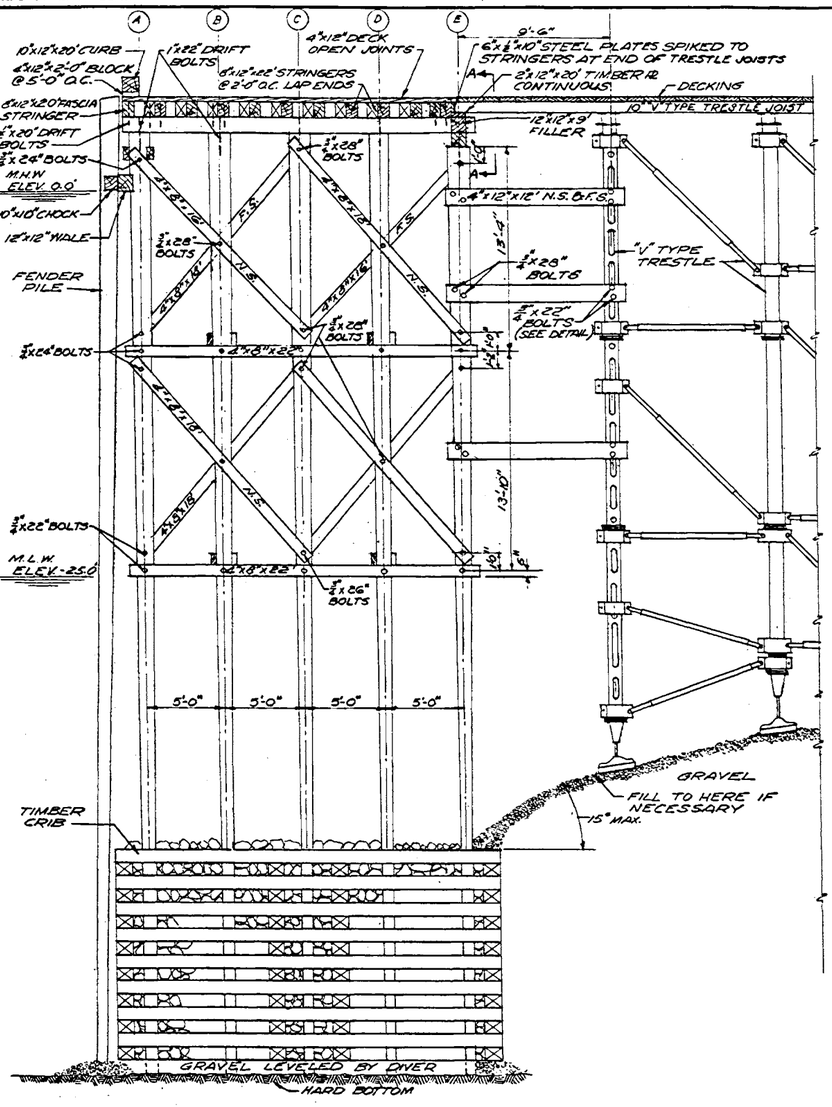
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME II

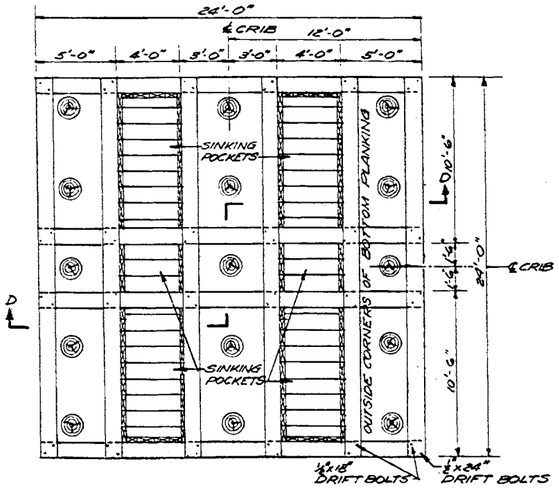
APPROVED: CHIEF, ENGINEERING BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, COL, CE, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE: 14 SEP 1968

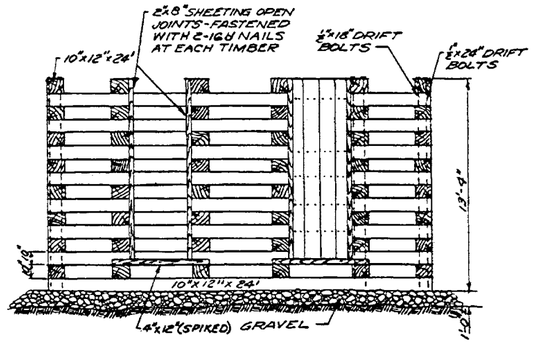
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-02
SHEET 1 OF 2



CROSS SECTION THRU CRATER
SCALE NO. 2

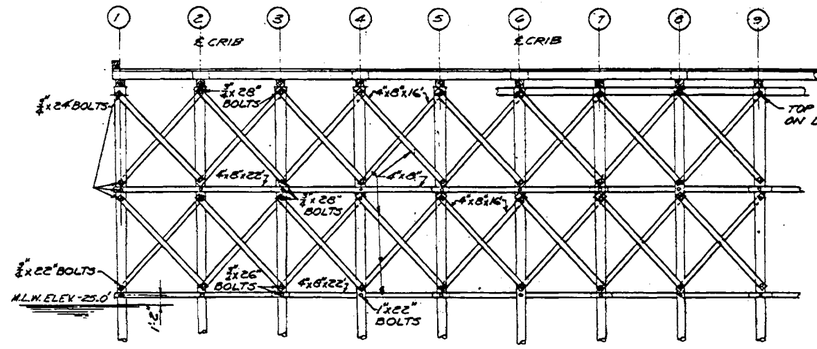


PLAN

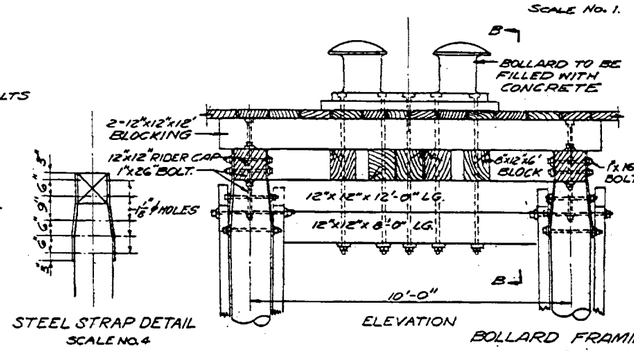


SECTION D-D

CRIB DETAIL
SCALE No. 2

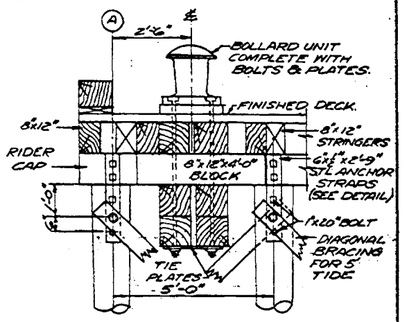


TYPICAL LONGITUDINAL BRACING
LINES B & D ONLY
Scale No. 1.



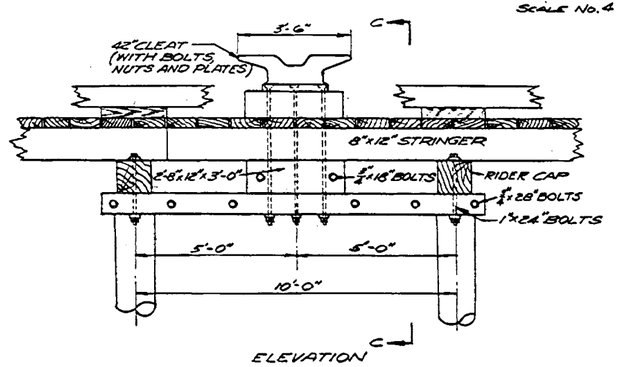
STEEL STRAP DETAIL
SCALE No. 4

ELEVATION

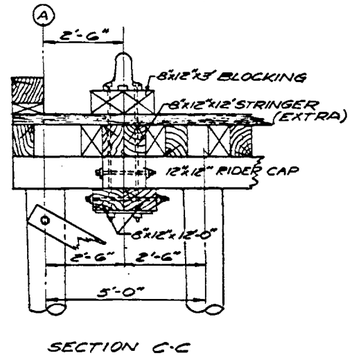


BOLLARD FRAMING DETAIL
Scale No. 4

SECTION B-B

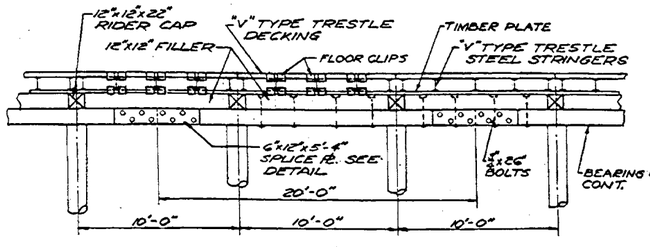


ELEVATION

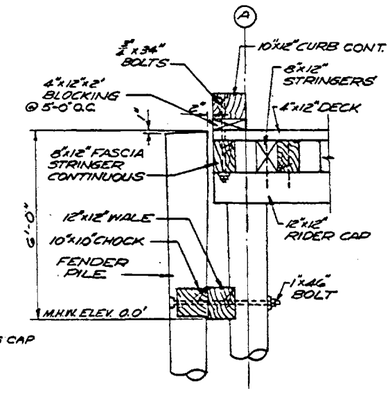


SECTION C-C

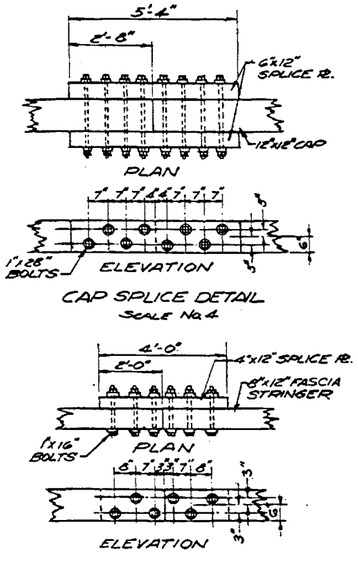
CLEAT FRAMING DETAIL
Scale No. 4



SECTION A-A
PART ELEVATION OF BEARING CAP ON LINE (E)
Scale No. 2

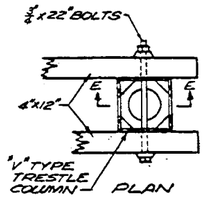


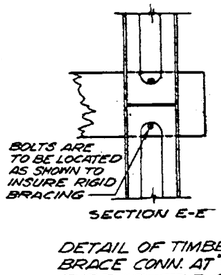
FENDER PILE DETAIL
Scale No. 4



CAP SPLICE DETAIL
Scale No. 4

FASCIA STRINGER SPLICE DETAIL
Scale No. 4



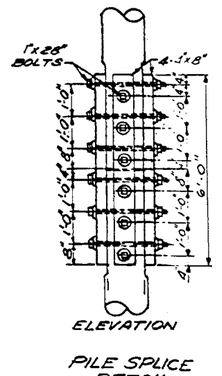


SECTION E-E

DETAIL OF TIMBER BRACE CONN. AT "V" TYPE TRESTLE COL.
Scale No. 6



PLAN



ELEVATION

PILE SPLICE DETAIL
Scale No. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' 15' — NO. 1; 0 1' 2½' 3' 5' — NO. 5; 0 5' 10' — NO. 2; 0 1' 2' — NO. 6

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C. W. DEICHMANN
APPROVED:
CHIEF, ARCHITECTURE BRANCH

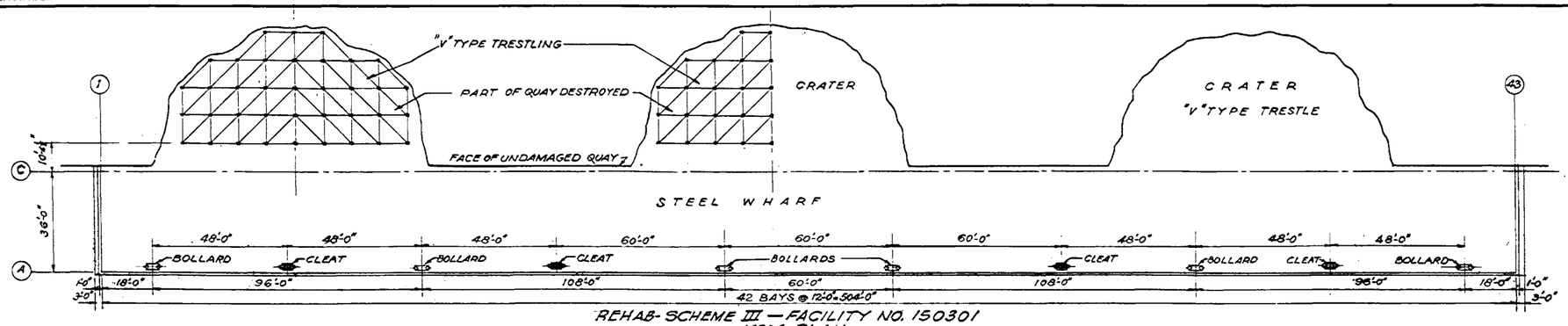
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME II
SECTIONS & DETAILS

APPROVED: DATE: 19 MAR 1959
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
ROBERT W. GENTLEMAN
Colonel, GS
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 14 SEP 1959

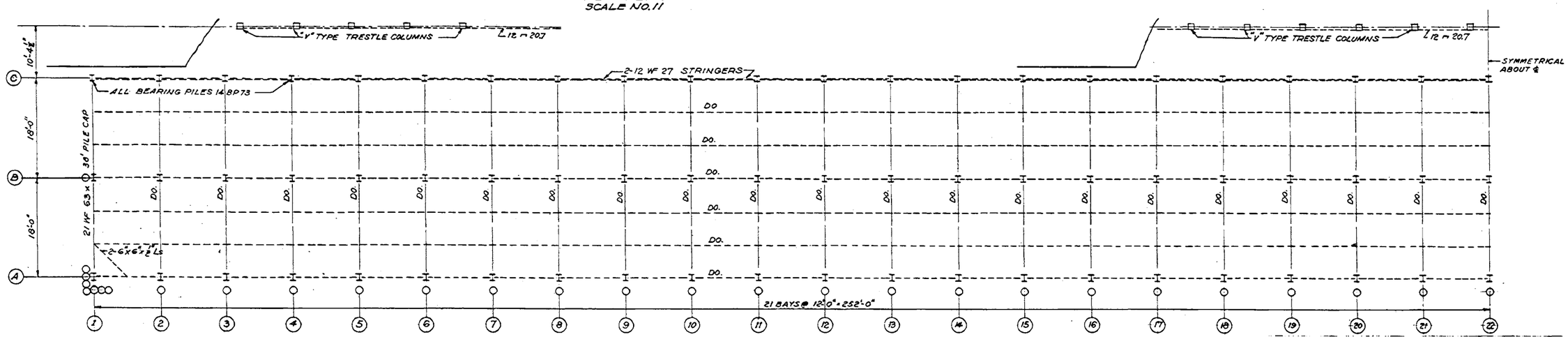
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-02
SHEET 2 OF 2



REHAB-SCHEME III — FACILITY NO. 150301
KEY PLAN
SCALE NO.11

BASIS OF DESIGN

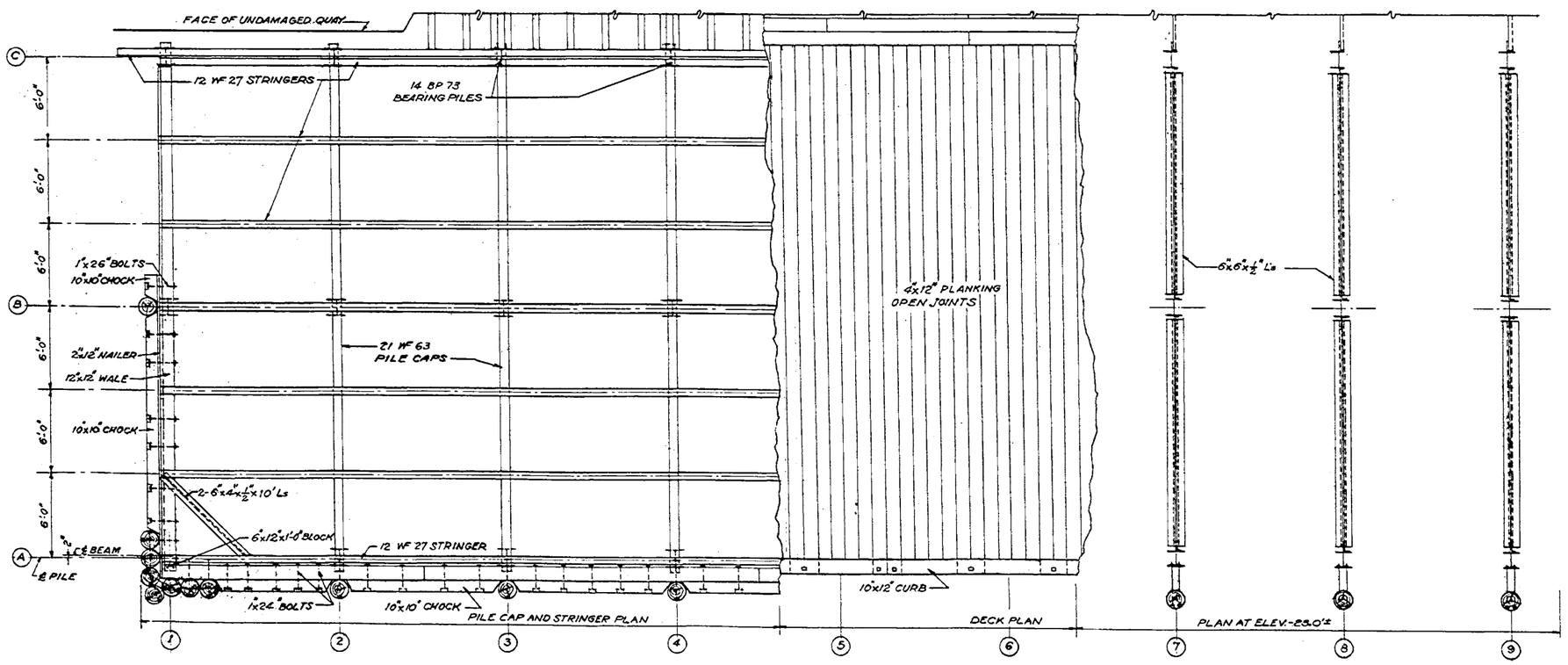
LIVE LOADING 500 PSF.
SIDE PRESSURE 1,000 LBS. PER LIN. FT.
PILE BEARING VALUE 42,000 LBS.
SAFE AXLE LOAD = 2.6 TONS
EXTREME FIBER STRESS, WOOD - 1,800 PSI.
EXTREME FIBER STRESS, STEEL - 24,000 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1,500 PSI.
COMPRESSION PERPENDICULAR TO GRAIN, WOOD - 450 PSI.
HORIZONTAL SHEAR, WOOD - 150 PSI.
MODULUS OF ELASTICITY, WOOD - 1,600,000 PSI.
MODULUS OF ELASTICITY, STEEL - 29,000,000 PSI. L/R FOR STEEL PILES NOT TO EXCEED 160.
THE LENGTH OF PILES AS SHOWN ASSUMES A PENETRATION OF 15'-0". THE PENETRATION REQUIRED SHOULD BE DETERMINED BY DRIVING TESTS WHERE POSSIBLE AND THE LENGTH OF PILES TO BE ADJUSTED ACCORDINGLY.



HALF PILE PLAN
SCALE NO.1

GENERAL NOTES

HOLES FOR DRIFT BOLTS IN WOOD SHALL BE 1/8" SMALLER THAN DRIFT BOLT.
HOLES FOR THROUGH BOLTS IN WOOD SHALL BE THE SAME DIAMETER AS THE BOLT.
NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
HOLES FOR BOLTS IN STEEL SHALL BE BORED 1/16" LARGER THAN THE DIAMETER OF THE BOLT.
FENDER PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
FOR "V" TRESTLE DETAILS SEE TM5-375.



FRAMING PLAN
SCALE NO.2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO.1 — 0 5' 10' NO.2 — 0 5' 10' 20' 30' 40' NO.11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

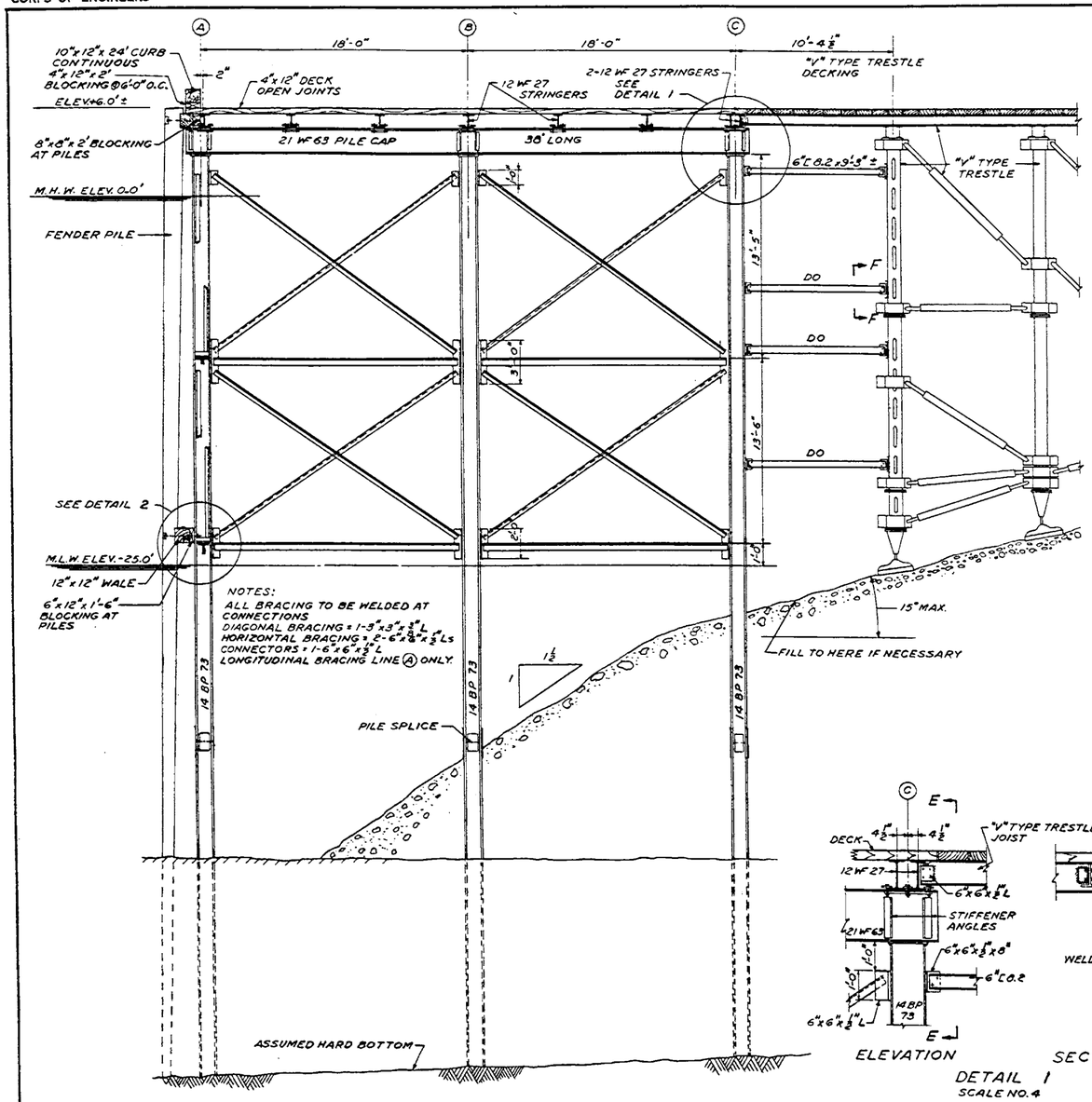
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, FIELD WORKS BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1969

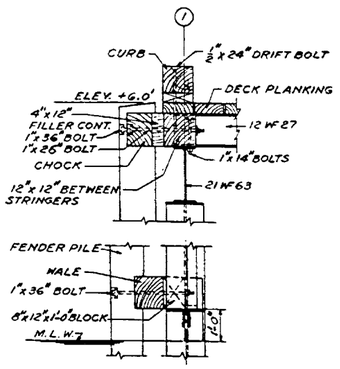
THEATER OF OPERATIONS
PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME III

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 24 SEP 1968

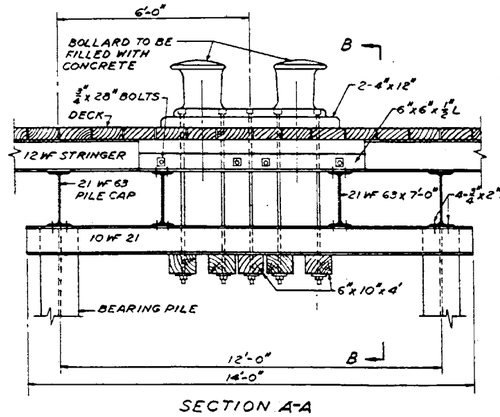
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SPEC. NO.
DRAWING NUMBER 15-03
SHEET 1 OF 2



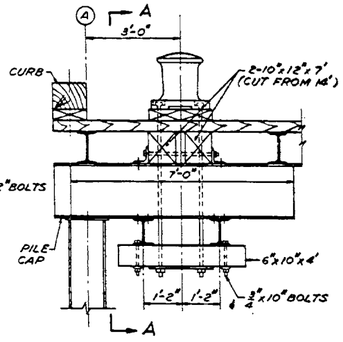
CROSS SECTION THRU CRATER
SCALE NO. 2



TYPICAL SECTION (1) LINE
SCALE NO. 4

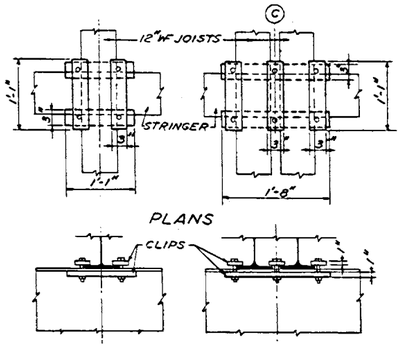


SECTION A-A

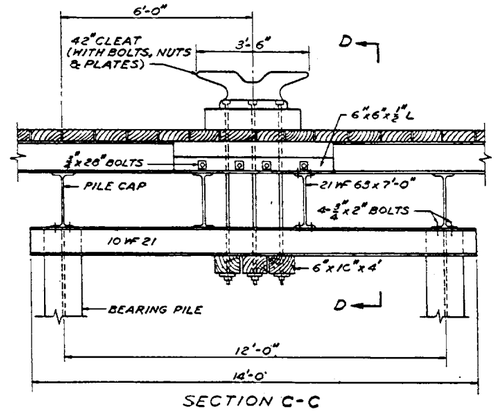


SECTION B-B

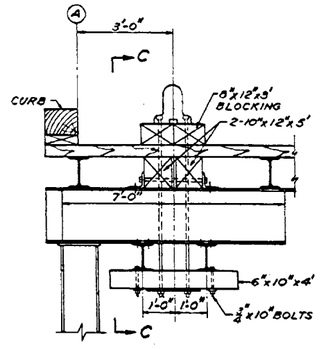
BOLLARD DETAIL
SCALE NO. 4



JOIST CLIP DETAILS
SCALE NO. 6



SECTION C-C



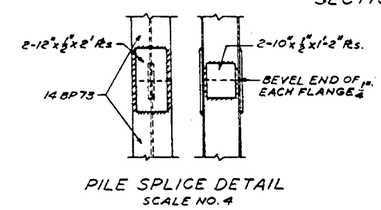
SECTION D-D

CLEAT FRAMING DETAIL
SCALE NO. 4

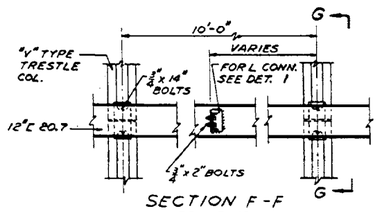
ELEVATION

SECTION E-E

DETAIL 1
SCALE NO. 4

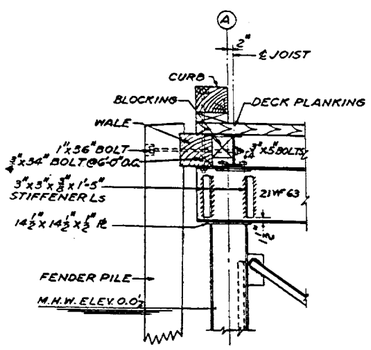


PILE SPLICE DETAIL
SCALE NO. 4

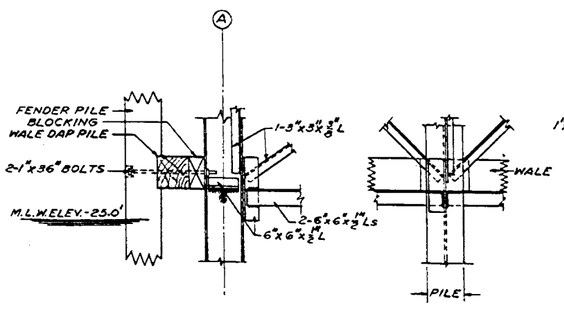


SECTION F-F
SCALE NO. 4

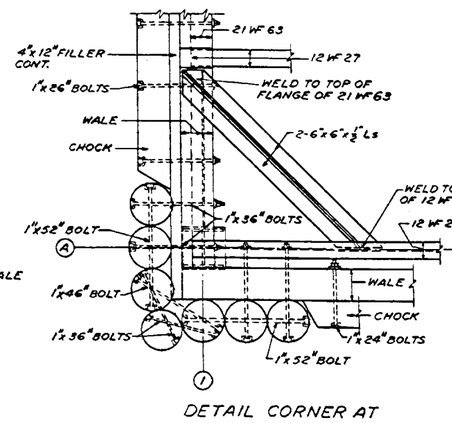
SECTION G-G
SCALE NO. 4



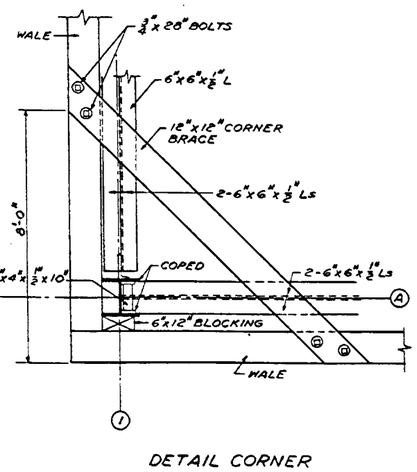
DETAIL FENDER PILE AND CURB
SCALE NO. 4



DETAIL 2
SCALE NO. 4



DETAIL CORNER AT DECK LEVEL
SCALE NO. 4



DETAIL CORNER FRAMING AT EL. -23. ±
SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' NO.2 | 0 1' 2' 3' 4' NO.4 | 0 1' 2' NO.8

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, TECHNICS BRANCH

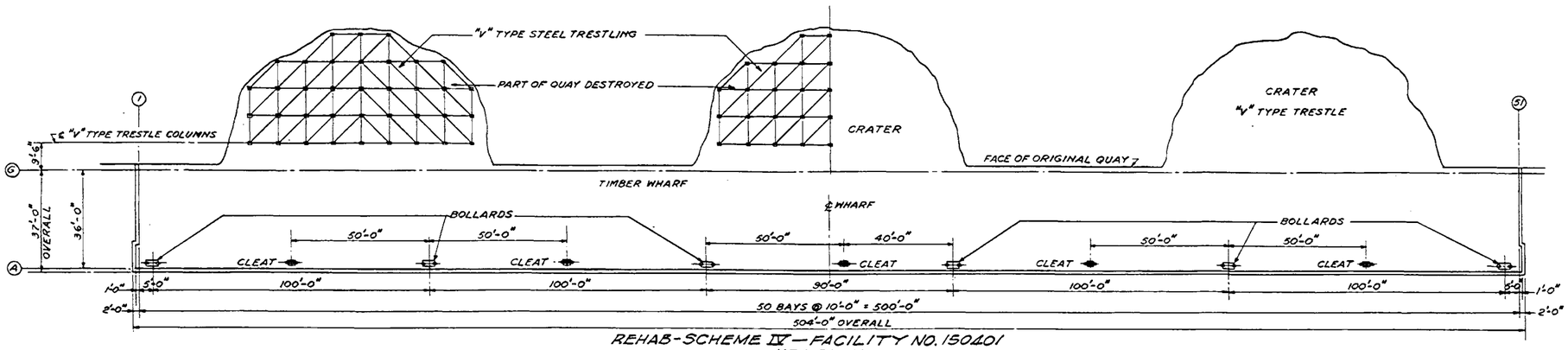
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME III
SECTIONS & DETAILS

APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: ROBERT W. [illegible] Colonel, GS Deputy Chief, Transportation Resources Division Directorate of Transportation
DATE 14 SEP 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-03
SHEET 2 OF 2

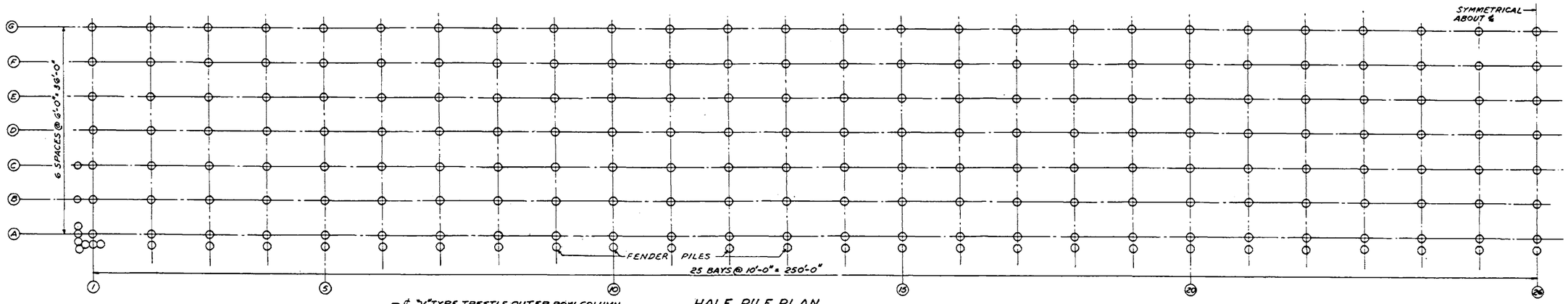


REHAB-SCHEME IV—FACILITY NO. 150401
KEY PLAN
SCALE NO. 11

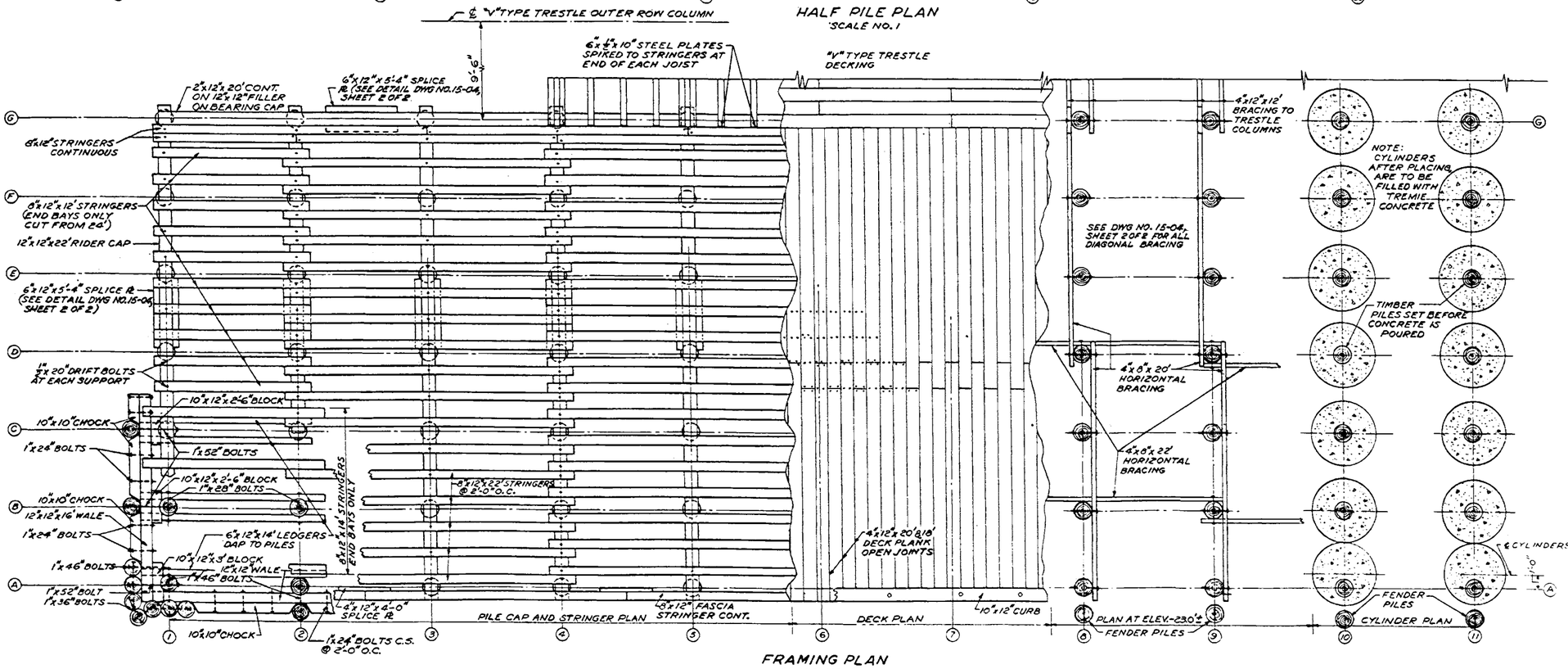
GENERAL NOTES

HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
HOLES FOR THROUGH BOLTS SHALL BE THE SAME DIAMETER AS THE BOLT.
NO BOLT HEADS SHALL PROJECT BEYOND THE FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
PILE LENGTHS TO BE INCREASED OR DECREASED PROPORTIONALLY WITH INCREASE OR DECREASE OF TIDAL RANGE OR DEPTH OF WATER.
CYLINDER FORMS ARE CORRUGATED MULTI-PLATE PIPE, CULVERT, IRON OR STEEL; NESTABLE, NO. 10 GAGE 5'-0" IN DIAMETER x 10'-0" LONG.

FOR "V" TRESTLE DETAILS SEE TM5-375



HALF PILE PLAN
SCALE NO. 1



FRAMING PLAN
SCALE NO. 2

BASIS OF DESIGN

LIVE LOADING 500 PSF.
SIDE PRESSURE 1,000 LBS. PER LIN. FT.
PILE BEARING VALUE 42,000 LBS.
SAFE AXLE LOAD - 9,000 LBS.
EXTREME FIBER STRESS, WOOD - 1,800 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1,500 PSI.
COMPRESSION PERPENDICULAR TO GRAIN, WOOD - 450 PSI.
MODULUS OF ELASTICITY, WOOD - 1,600,000 PSI.
HORIZONTAL SHEAR, WOOD - 150 PSI.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1 | 0 5' 10' NO. 2 | 0 5' 10' 20' 30' 40' NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

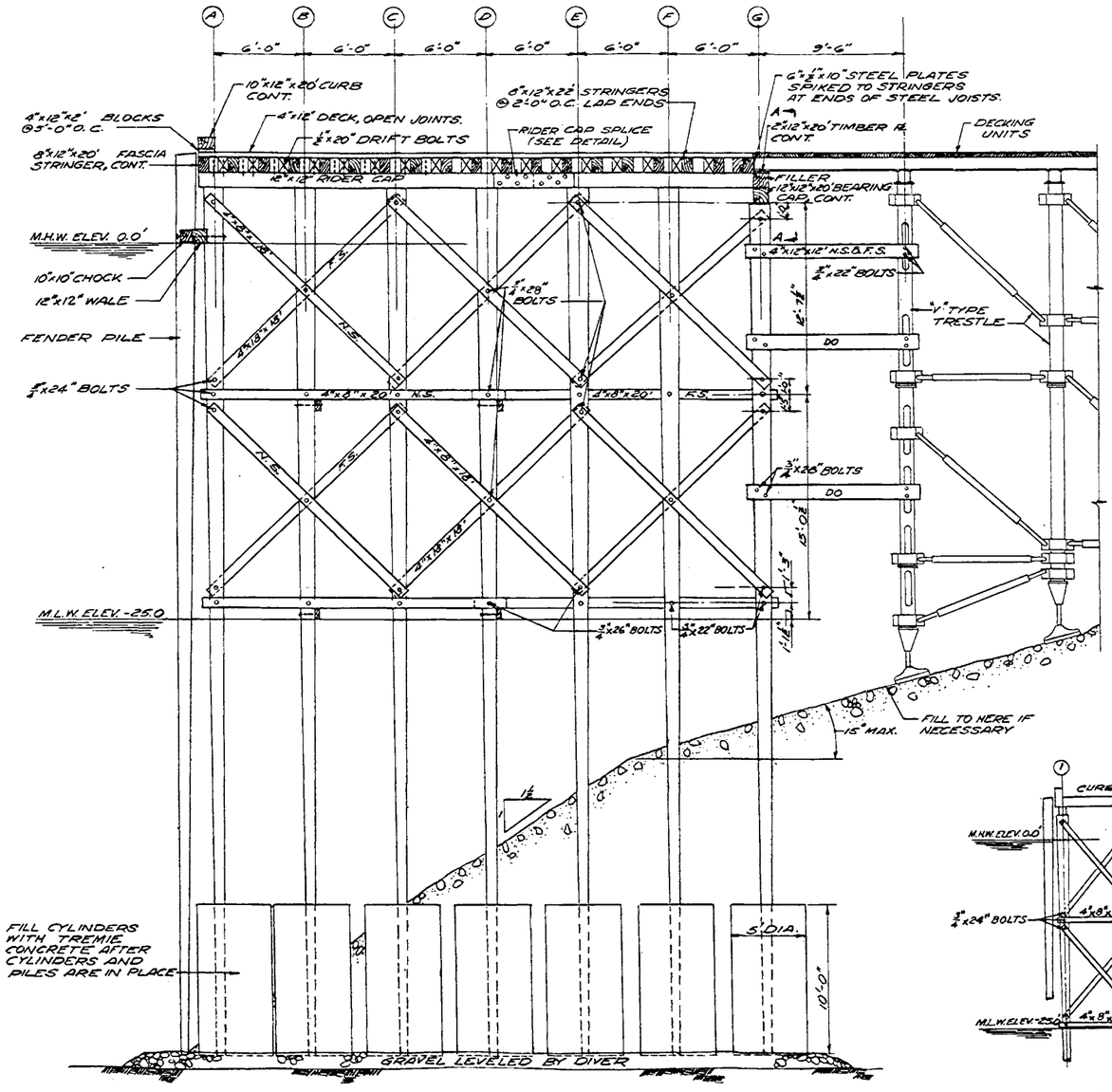
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, STRUCTURES BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTRY, Col, CE, Director, Resources Division, Directorate of Transportation
DATE 14 SEP 1968

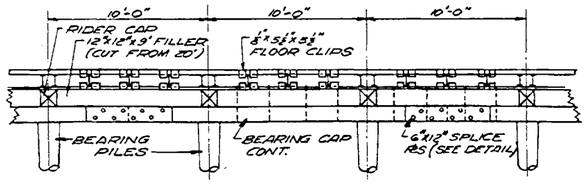
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME IV

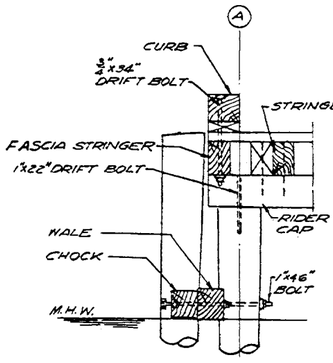
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-04
SHEET 1 OF 2



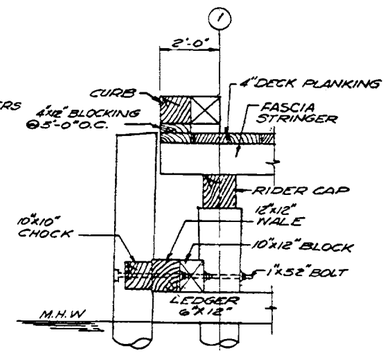
CROSS SECTION THRU CRATER
SCALE No. 2



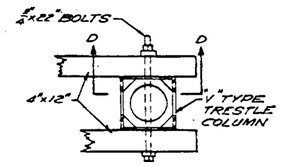
SECTION A-A
PART ELEV. OF BEARING CAP ON LINE (G)
SCALE No. 2



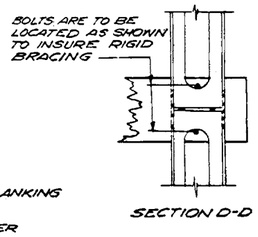
DETAIL LINE (A)
SCALE No. 4



DETAIL LINE (1)
SCALE No. 4

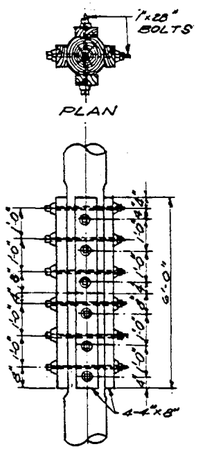


PLAN



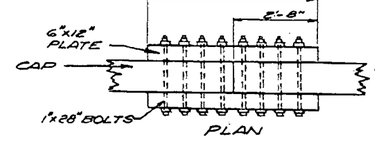
SECTION D-D

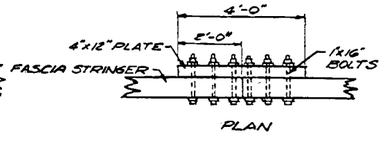
DETAIL OF TIMBER BRACE CONN. AT "V" TYPE TRESTLE COL.
SCALE No. 6



PILE SPLICE DETAIL
SCALE No. 4

TYPICAL LONGITUDINAL BRACING
LINES B & D ONLY
SCALE No. 1



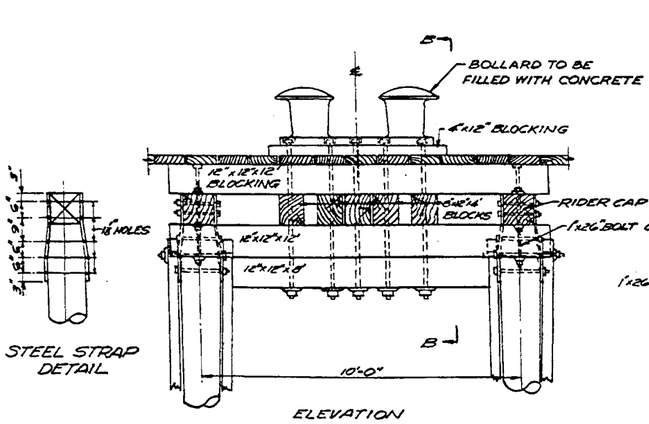


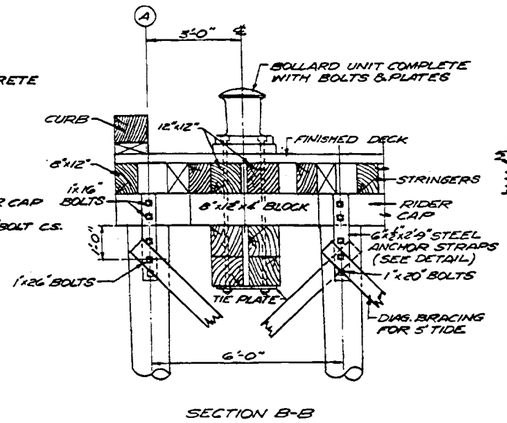


RIDER CAP AND BEARING CAP SPLICE DETAIL
SCALE No. 4

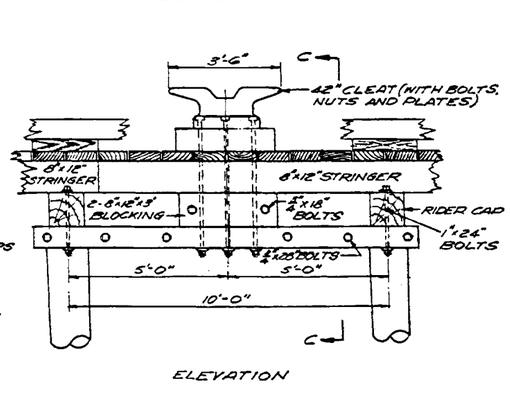


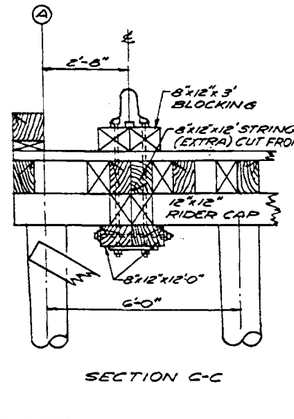
FASCIA STRINGER SPLICE DETAIL
SCALE No. 4





BOLLARD FRAMING DETAILS
SCALE No. 4





CLEAT FRAMING DETAIL
SCALE No. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO.1 (0, 5', 10', 15') NO.2 (0, 5', 10') NO.4 (0, 1', 2', 3', 8') NO.6 (0, 1', 2')

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] DATE: 19 MAR 1959 CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: [signature] ROBERT W. GUTHRIE, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 24 SEP 1958

THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME IV
SECTIONS & DETAILS

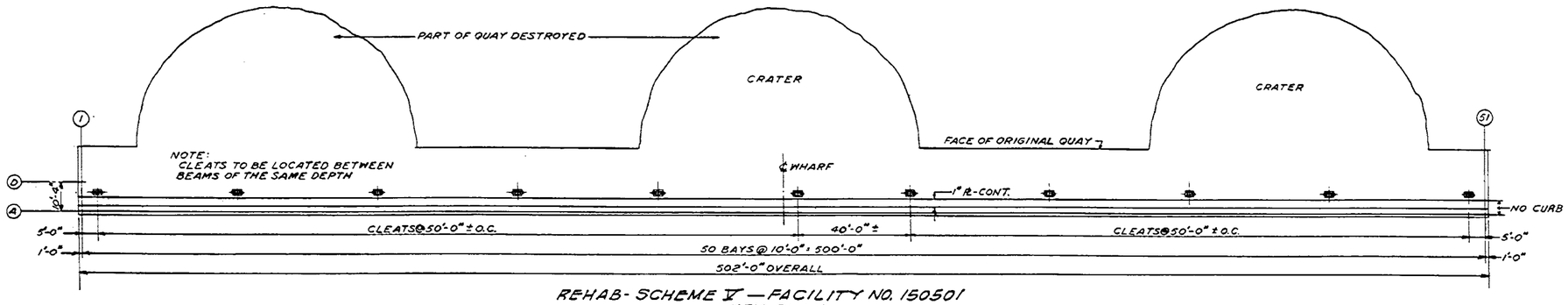
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-04
SHEET 2 OF 2

BASIS OF DESIGN

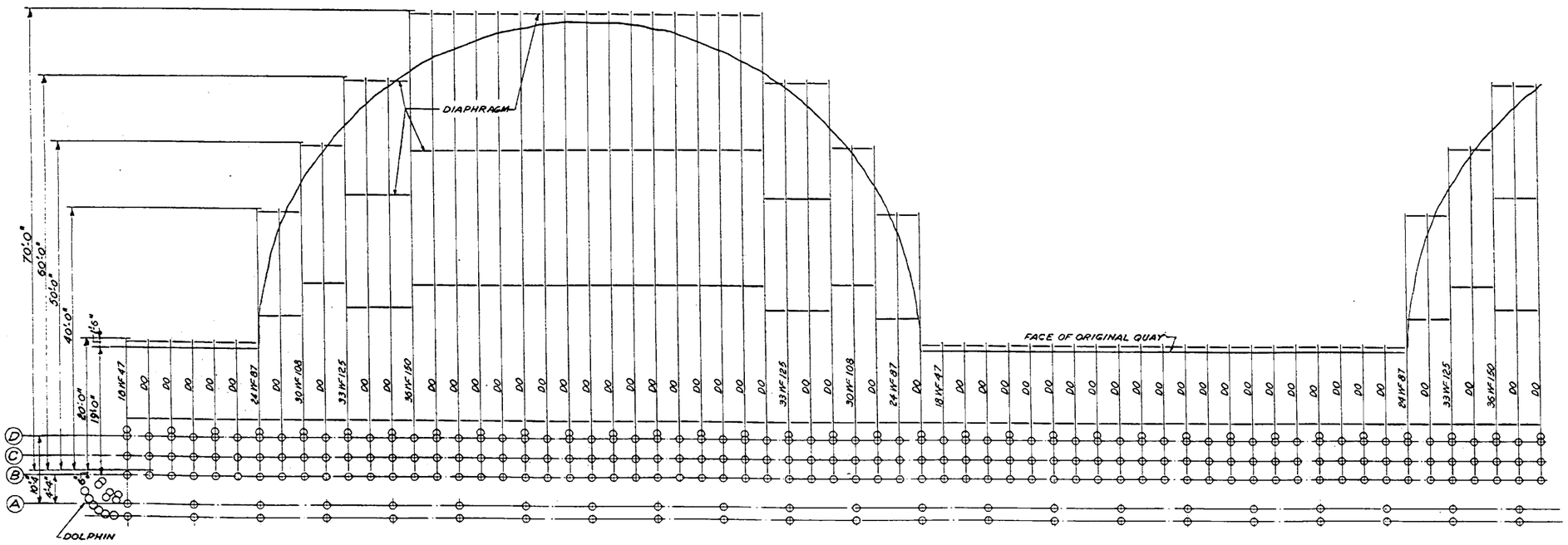
LIVE LOADING 500 P.S.F.
SIDE PRESSURE 1000 LBS. PER. LIN. FT.
PILE BEARING VALUE 42,000 P.S.F.
SAFE AXLE LOAD = 9 000 LBS.
EXTREME FIBER STRESS, WOOD - 1800 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1500 PSI.
COMPRESSION PEPENDICULAR TO GRAIN, WOOD - 450 PSI.
HORIZONTAL SHEAR, WOOD - 150 PSI.
MODULUS OF ELASTICITY, WOOD - 1,600,000 PSI.
THE LENGTH OF PILES AS SHOWN ASSUMES A PENETRATION OF 15'-0"
THE PENETRATION REQUIRED SHOULD BE DETERMINED BY DRIVING TESTS WHERE POSSIBLE AND THE LENGTH OF PILES TO BE ADJUSTED ACCORDINGLY.

GENERAL NOTES

HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
HOLES FOR THROUGH BOLTS SHALL BE THE SAME DIAMETER AS THE BOLT.
NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZE.



REHAB- SCHEME V — FACILITY NO. 150501
KEY PLAN
SCALE NO. 11



PLAN
SCALE NO. 1

SYMBOL	DESCRIPTION (REVISIONS)	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10' 15' — NO. 1
0 5'10' 20' 30' 40' — NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: (Chief, Engineering Branch)

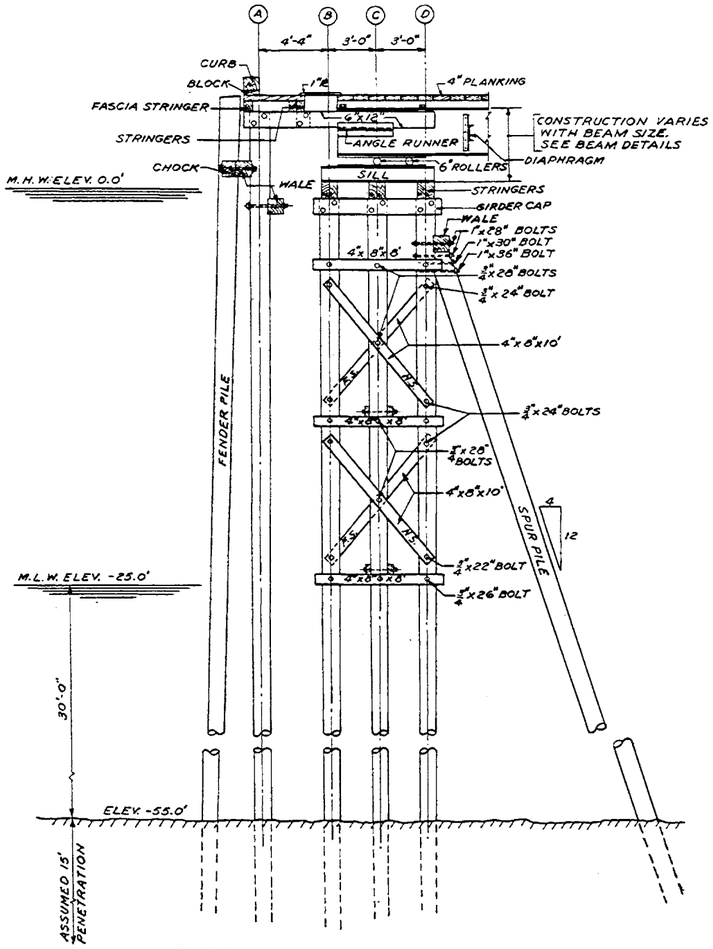
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME V

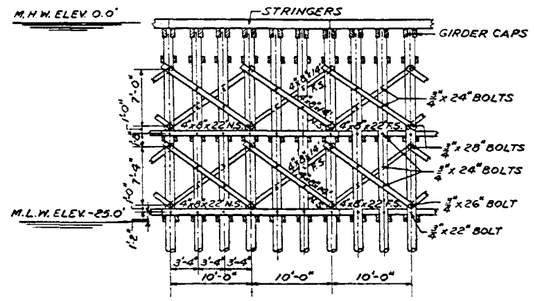
APPROVED: (Chief, Engineering Division, Mil. Constr., O.C.E.) DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1968

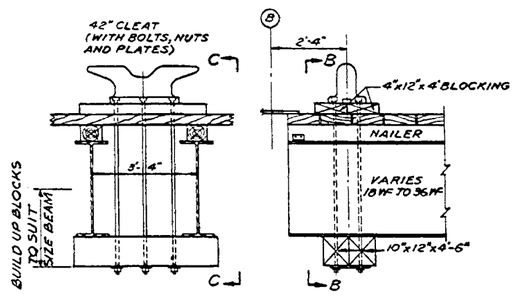
SCALE AS NOTED
SPEC. NO.
DRAWING NUMBER 15-05
SHEET 1 OF 3



TYPICAL CROSS SECTION
SCALE NO. 2

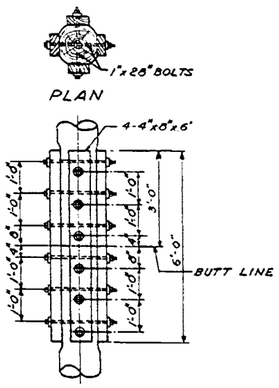


LONGITUDINAL BRACING - LINE "C" ONLY
SCALE NO. 1

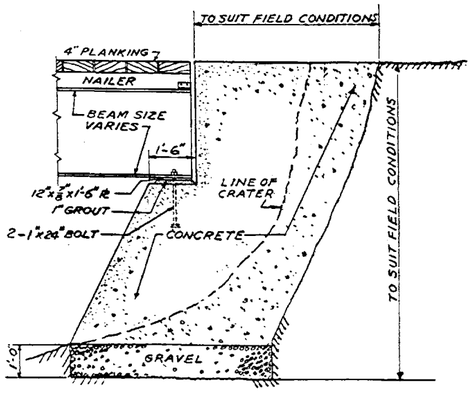


SECTION B-B SECTION C-C

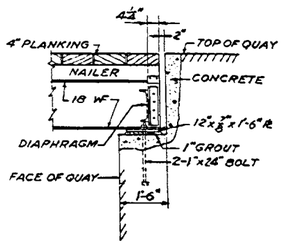
CLEAT FRAMING DETAIL
SCALE NO. 4



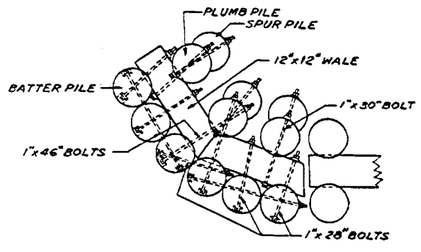
PILE SPLICE DETAIL
SCALE NO. 4



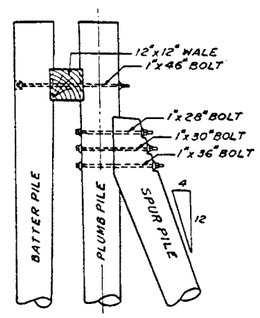
BEAM SUPPORT IN CRATER
SCALE NO. 4



BEAM SUPPORT AT QUAY
SCALE NO. 4



PLAN



SECTION THRU DOLPHIN

DETAILS OF DOLPHIN
SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO.1 | 0 5' 10' NO.2 | 0 1' 2' 3' 4' NO.4

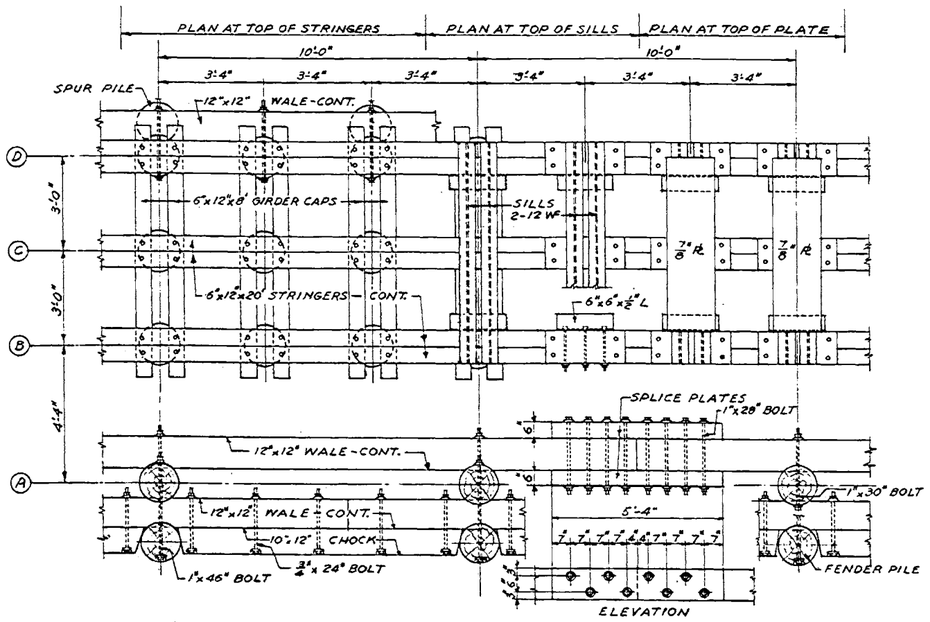
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

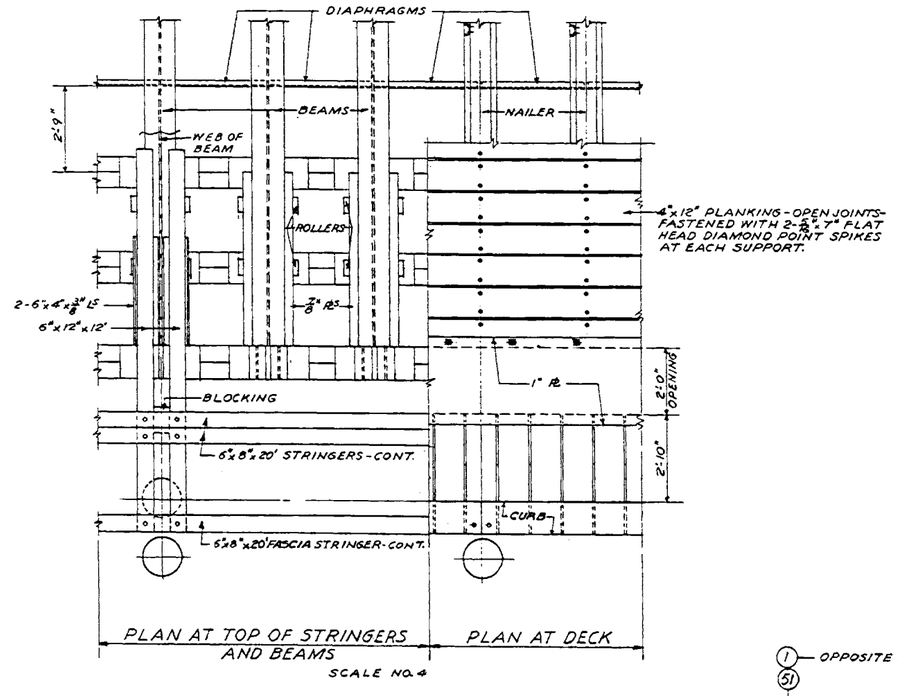
DRAWN BY: WADE
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, ARCHITECT BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1969

THEATER OF OPERATIONS
PORTS-DRY CARGO
UNLOADING FACILITIES-PIER OR WHARF
REHAB-SCHEME V
DETAILS

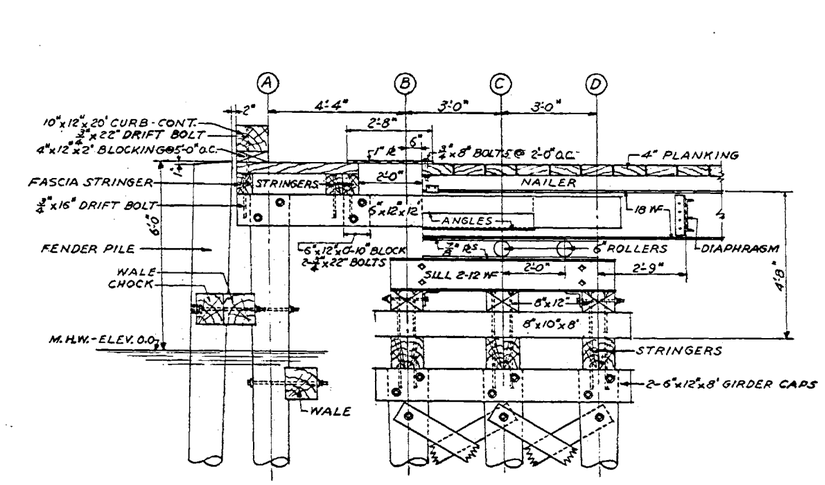
APPROVED FOR PROPONENT AGENCY: [signature] ROBERT W. GENTLEMAN COL CE Colonel, Deputy Chief, Transportation Resources Division Directorate of Transportation
DATE 14 SEP 1968
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-05
SHEET 2 OF 3



PLAN AT ELEVATION 3.0±
SCALE NO. 4



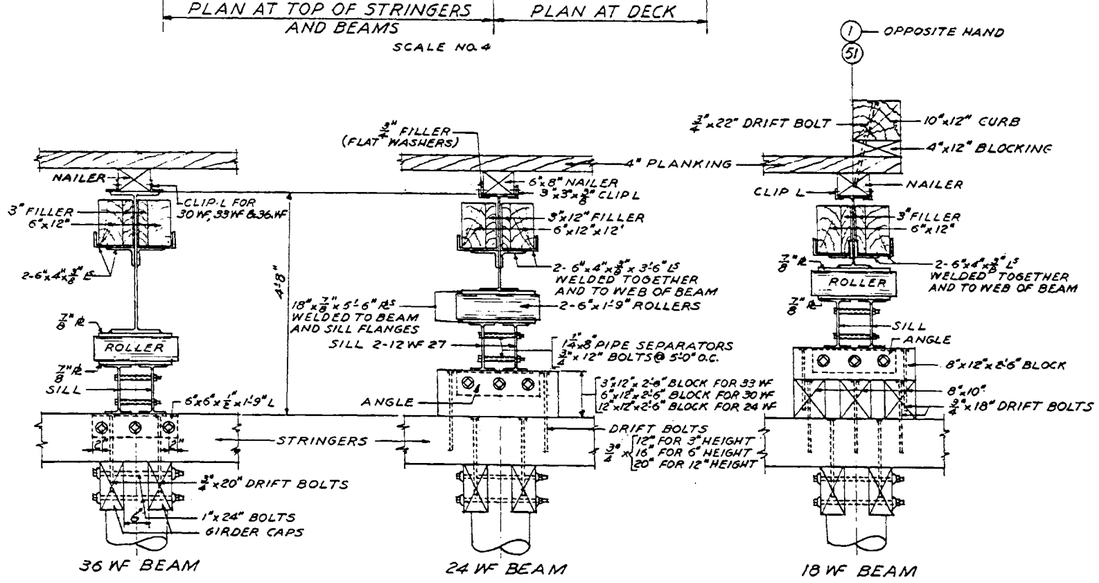
SCALE NO. 4



CROSS SECTION FOR 18 WF BEAM

NOTE: THIS SECTION SIMILAR FOR ALL OTHER BEAMS EXCEPT AS SHOWN OR NOTED ON BEAM DETAILS.

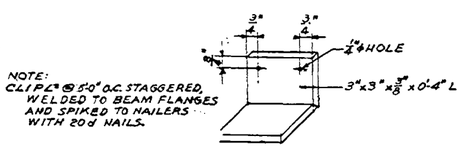
SCALE NO. 4



NOTE: 24 WF DETAIL SIMILAR FOR 30 WF & 33 WF EXCEPT FOR NAILER CLIP ANGLE

BEAM DETAILS

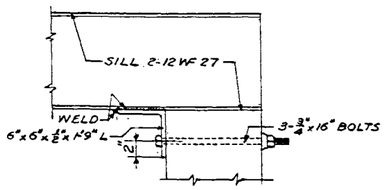
SCALE NO. 5



NOTE: CLIPS @ 5'-0" O.C. STAGGERED, WELDED TO BEAM FLANGES AND SPIKED TO NAILERS WITH 20d NAILS.

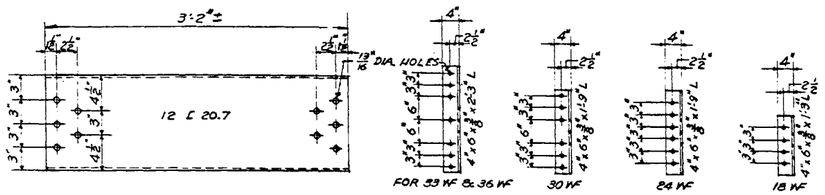
CLIP ANGLE DETAIL FOR NAILER

NO SCALE



SILL DETAIL

SCALE NO. 7



ELEVATION
SCALE NO. 7

DIAPHRAGM ANGLES
SCALE NO. 5

DIAPHRAGM DETAILS
SCALE AS NOTED

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3' 4'0 1' 2' 3'0 3" 8" 9" 1' 2'
NO.4 NO.5 NO.7

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, ARCH'L BRANCH

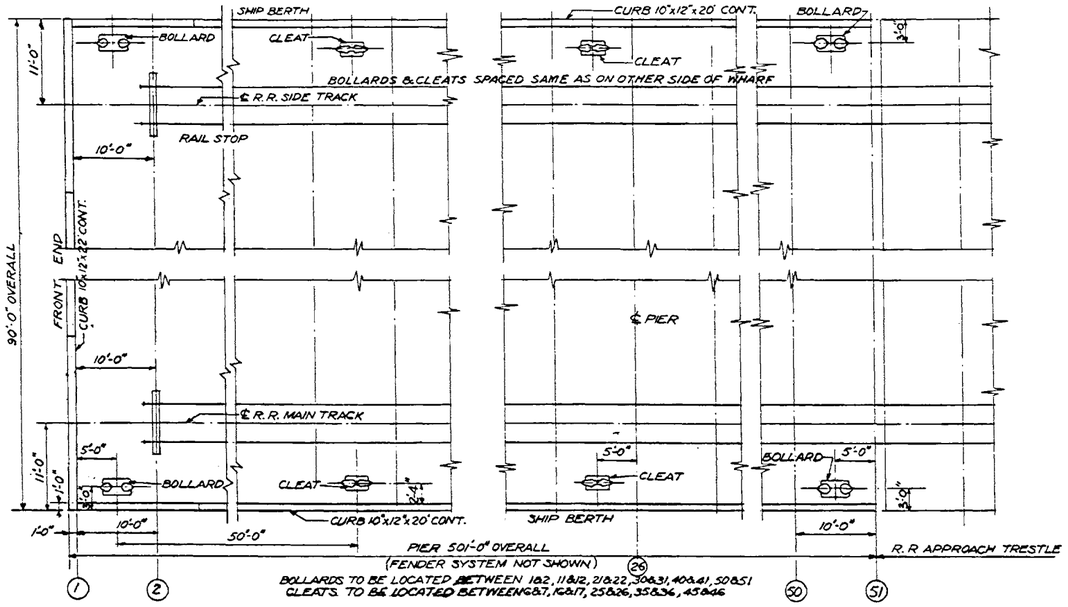
THEATER OF OPERATIONS

PORTS-DRY CARGO UNLOADING FACILITIES-PIER OR WHARF REHAB-SCHEME V DETAILS

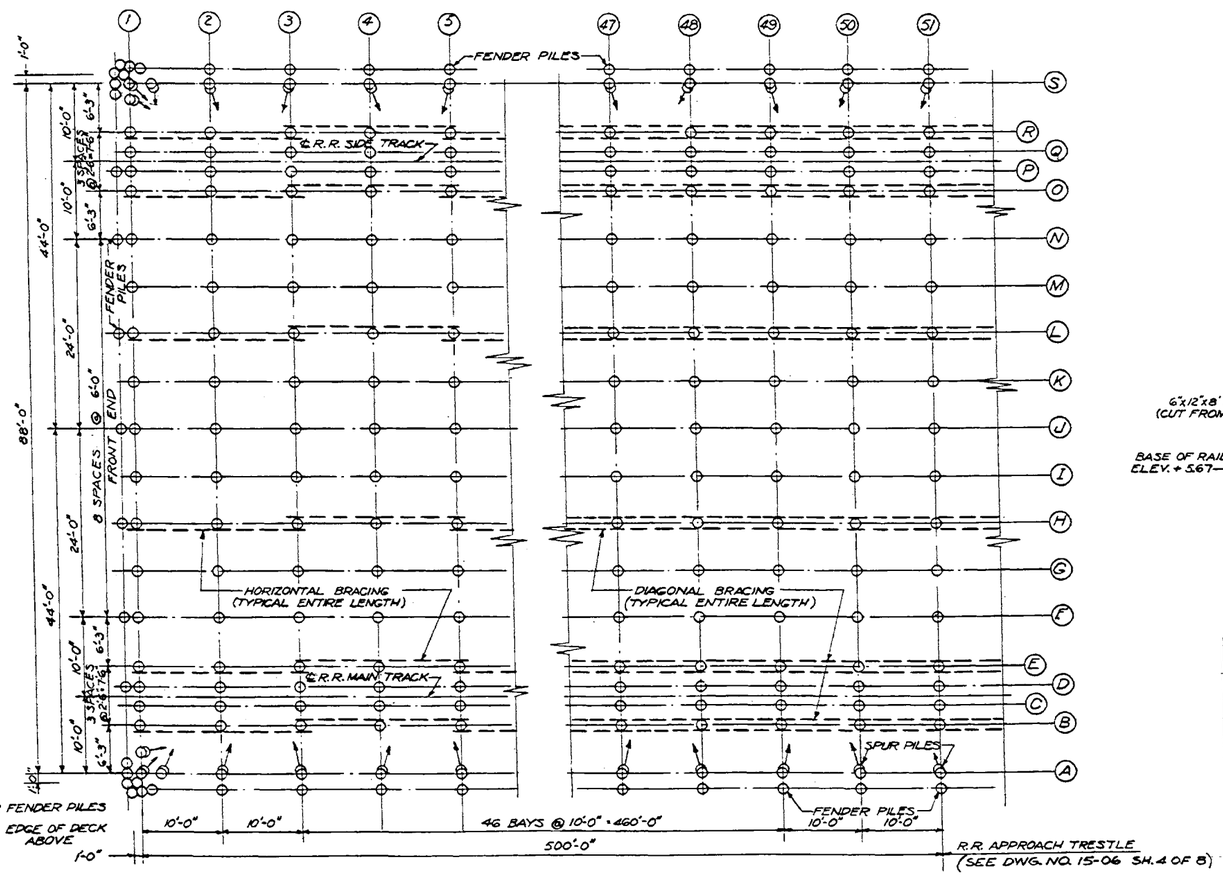
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEE JR GS Colonel, Deputy Chief, Transportation Resources Division Directorate of Transportation
DATE 14 SEP 1968

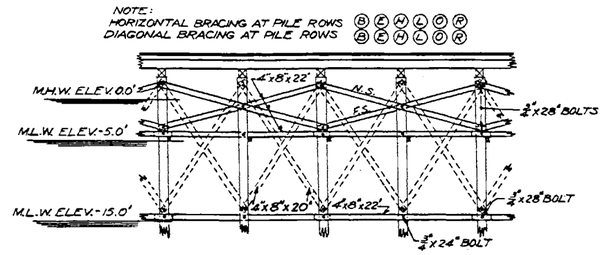
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-05
SHEET 3 OF 3



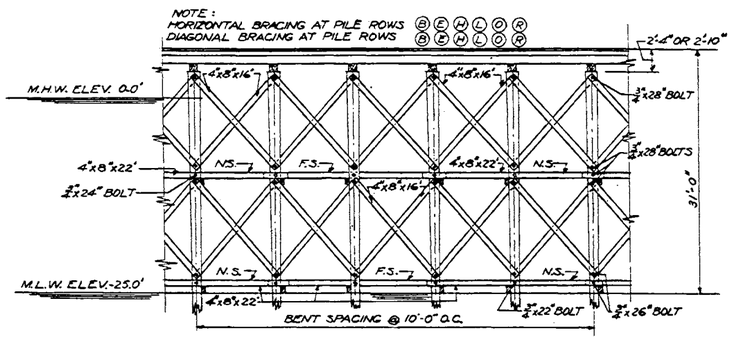
DECK PLAN
SCALE NO.1



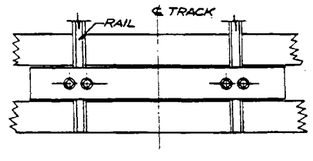
PILE PLAN
SCALE NO.1



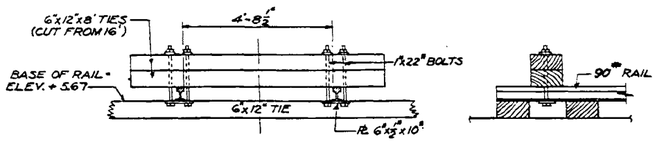
TYPICAL LONGITUDINAL BRACING
FOR 5' & 15' TIDE
SCALE NO.1



TYPICAL LONGITUDINAL BRACING
FOR 25' TIDE
SCALE NO.1



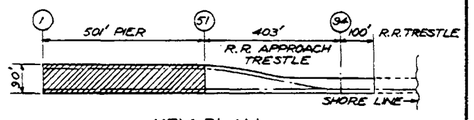
PLAN



ELEVATION SECTION

RAIL-STOP DETAIL
SCALE NO. 4

FACILITY NUMBERS			
FACILITY	5 FT. TIDE	15 FT. TIDE	25 FT. TIDE
PIER 90'x 500'	150601	150602	150603
RR APPROACH TRESTLE 48' TO 90'x 430'	150604	150605	150606
RR TRESTLE 48'x 100'	150607	150608	150609



KEY PLAN
NO SCALE

BASIS OF DESIGN

UNIFORM LIVE LOAD 500 PSF.
RAILROAD LOADING E-50
SIDE PRESSURE ON WHARF 1,000 LBS. PER LIN. FT.
PILE BEARING VALUE 32,000 LBS.
EXTREME FIBER STRESS - WOOD, 1,800 PSI.
COMPRESSION PERPENDICULAR TO GRAIN - WOOD, 450 PSI.
HORIZONTAL SHEAR - WOOD, 150 PSI.
MODULUS OF ELASTICITY - WOOD, 1,600,000 PSI.
COMPRESSION PARALLEL TO GRAIN - WOOD, 1500 PSI.

GENERAL NOTES

HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
HOLES FOR THROUGH BOLTS SHALL BE THE SAME DIAMETER AS THE BOLTS.
NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
NO.1: 0 5' 10' 15'
NO.4: 0 1' 2' 3' 4'

MAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: E.LLISON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C.W. DEICHMANN
APPROVED: (signature) CHIEF, ENGINEERING BRANCH

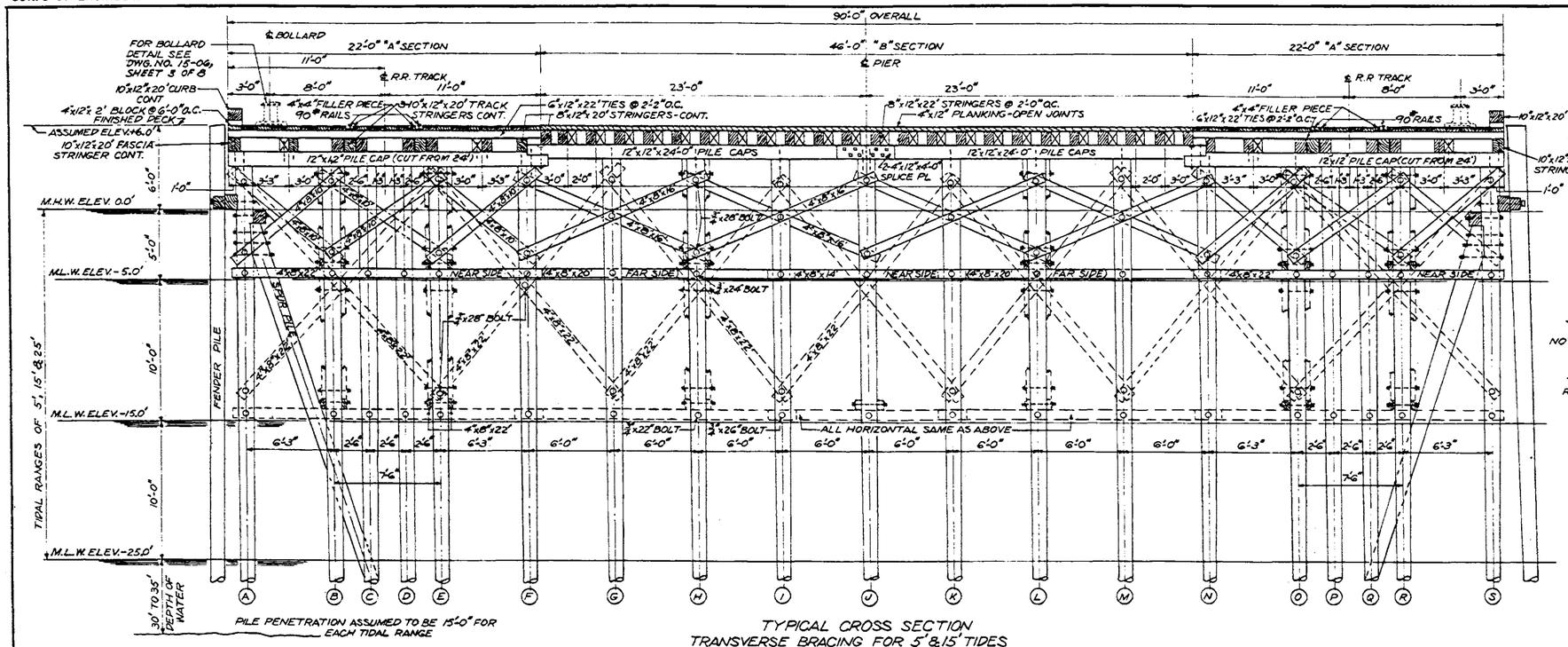
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
DECK-PILE-PLANS & DETAILS

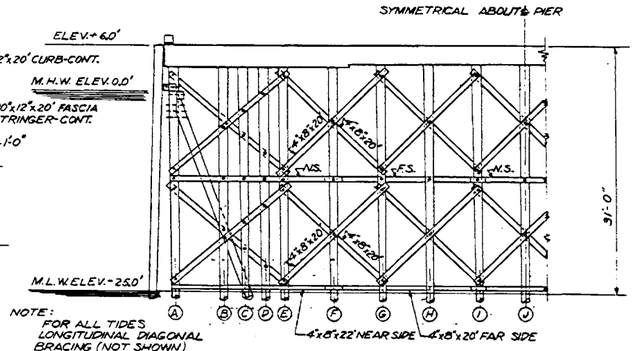
APPROVED: H.M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: (signature)
ROBERT W. GENTLEMAN
COLONEL, GS
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 14 SEP 1968

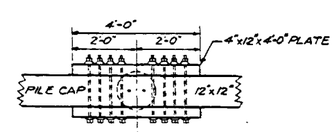
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-06
SHEET 1 OF 8



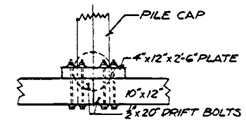
TYPICAL CROSS SECTION
TRANSVERSE BRACING FOR 5' & 15' TIDES
SCALE NO. 2



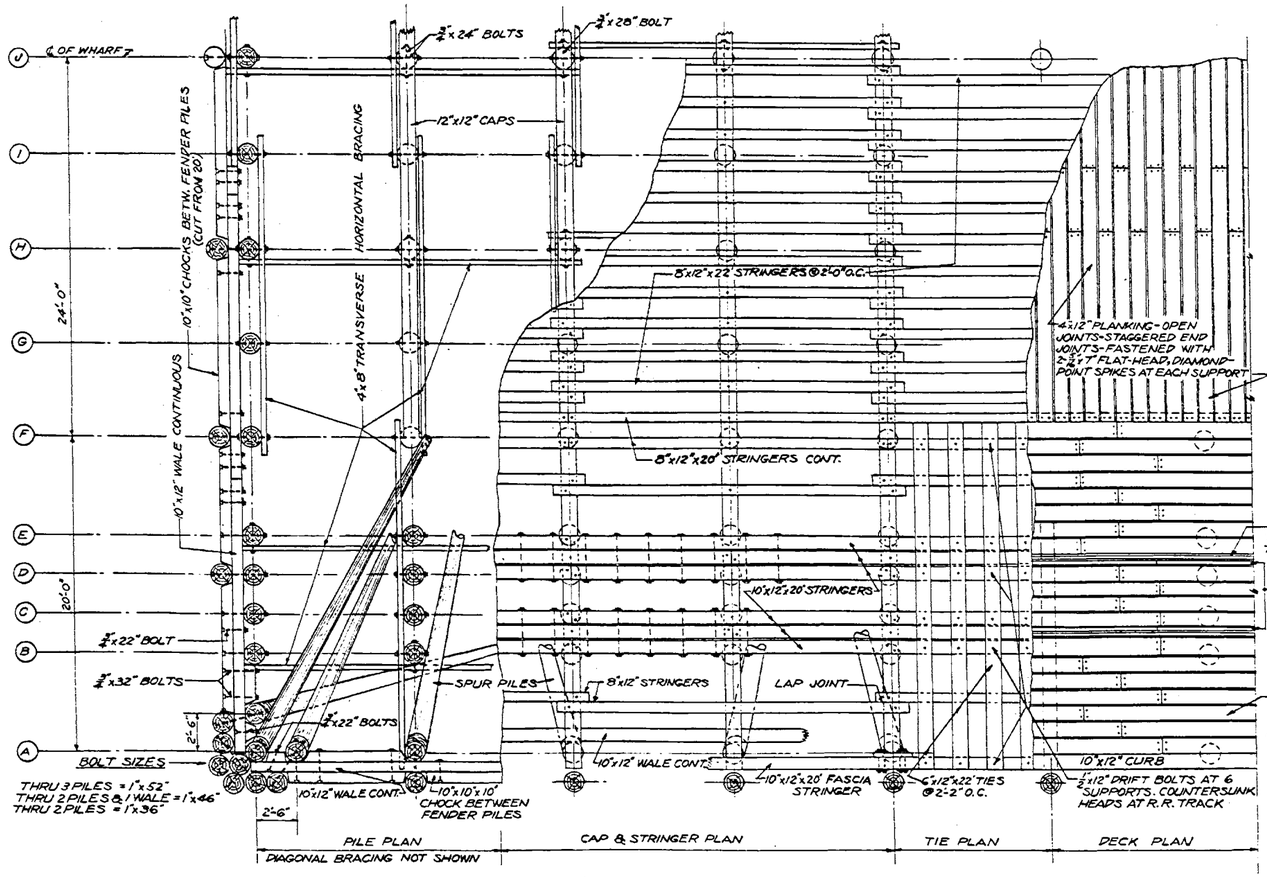
TYPICAL CROSS SECTION
TRANSVERSE BRACING FOR 25' TIDE
SCALE NO. 1



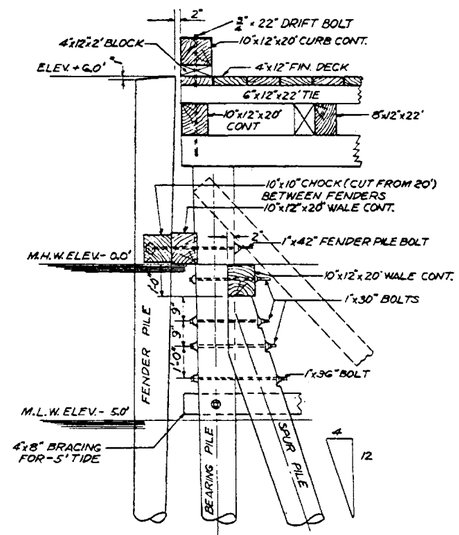
PLAN



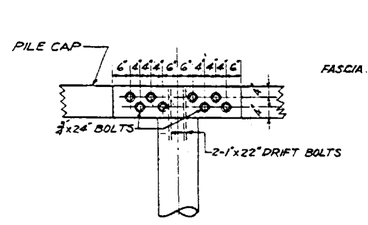
PLAN



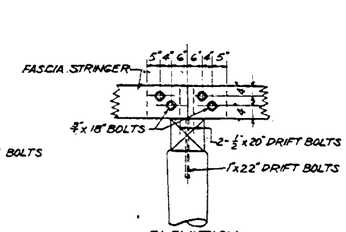
HALF FRAMING PLAN
SCALE NO. 2



FENDER & SPUR PILE DETAIL
SCALE NO. 4



ELEVATION
PILE CAP SPLICE DETAIL
SCALE NO. 4



ELEVATION
FASCIA STRINGER
SPLICE DETAIL
SCALE NO. 4

PILE LENGTHS	
TIDAL RANGE	PILE LENGTH
5'	66'-70'
15'	76'-80'
25'	86'-90'

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2
0 1' 2' 3' 4' NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, DESIGN BRANCH

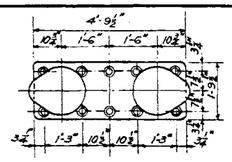
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
FRAMING PLAN-SECTIONS & DETAILS

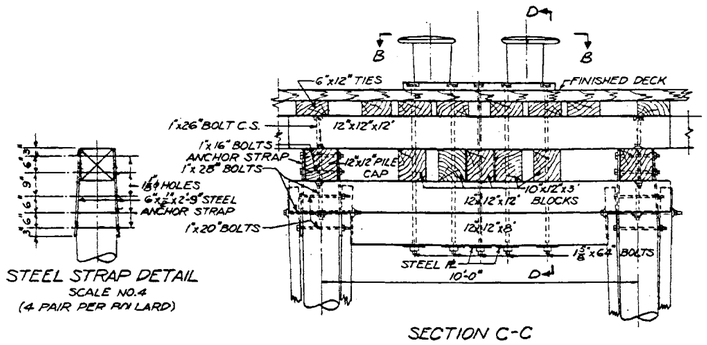
APPROVED: H. M. Williams
DATE: 19 MAR 1959
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: ROBERT W. GETTEMY, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1959

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-06
SHEET 2 OF 8

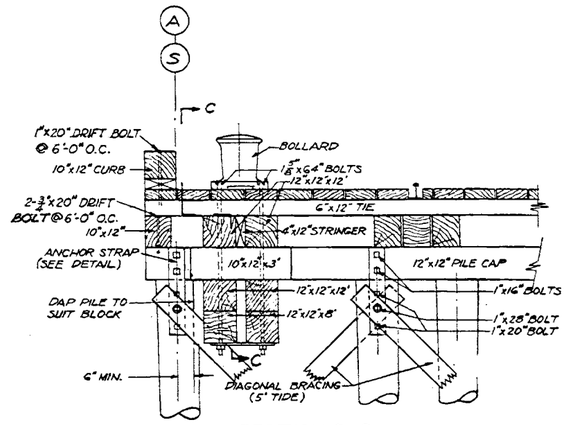


SECTION B-B



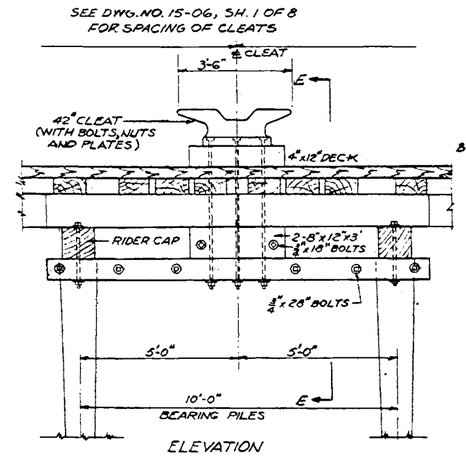
STEEL STRAP DETAIL
SCALE NO.4
(4 PAIR PER PY LARD)

SECTION C-C



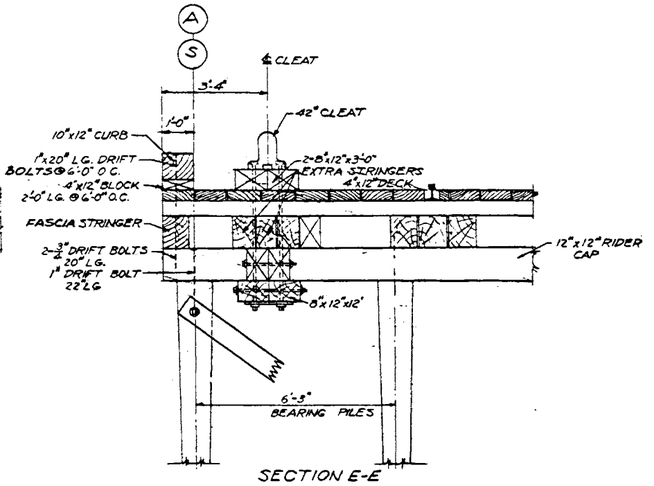
SECTION D-D

BOLLARD FRAMING DETAIL
SCALE NO. 4

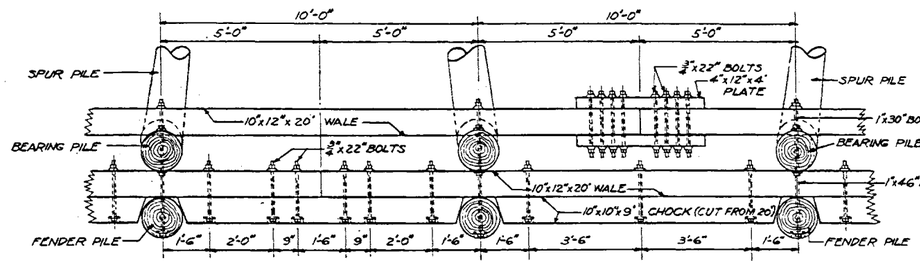


ELEVATION

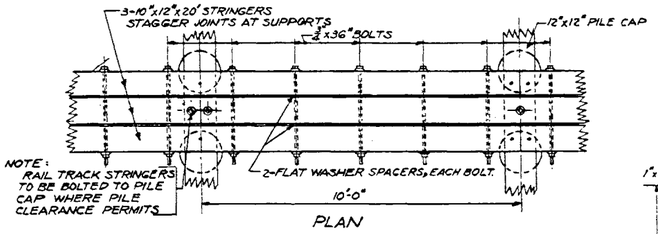
CLEAT FRAMING DETAIL
SCALE NO.4



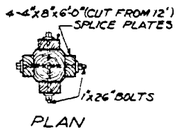
SECTION E-E



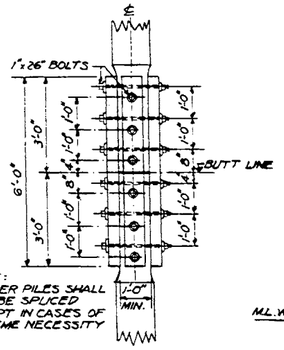
PLAN



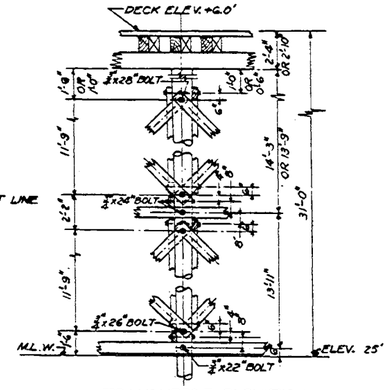
PLAN



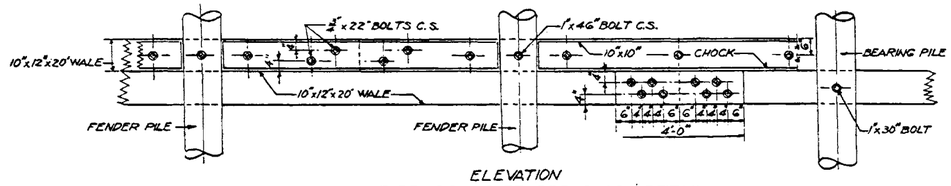
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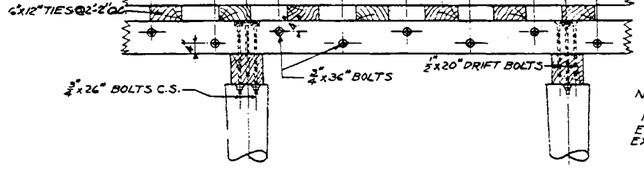
ELEVATION
TIMBER PILE SPLICE
SCALE NO.4



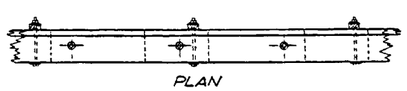
TRANSVERSE ELEVATION
DETAIL OF BRACING CONNECTIONS
SCALE NO. 2



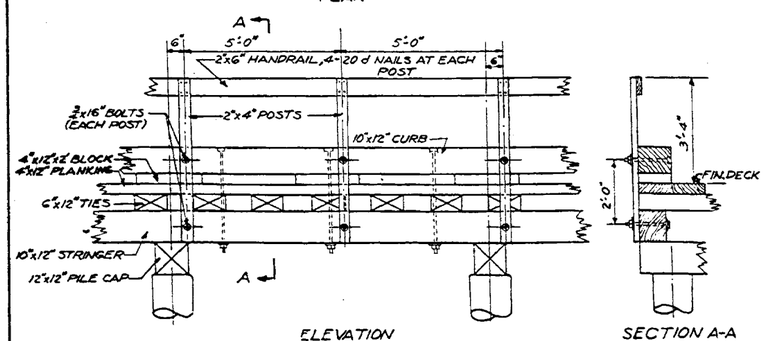
ELEVATION
WALE SPLICE AND FENDER CHOCK DETAIL
SCALE NO. 4



ELEVATION
R.R. STRINGER DETAIL
SCALE NO.4



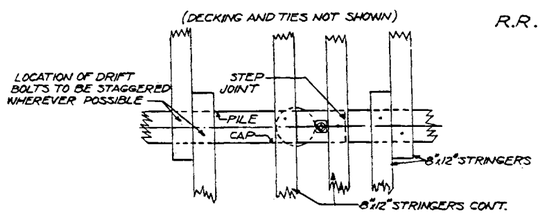
PLAN



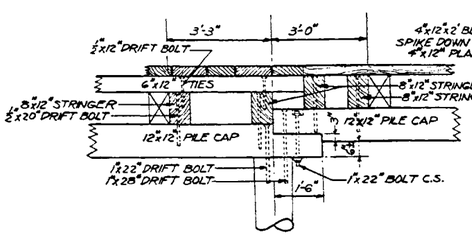
ELEVATION

SECTION A-A

HANDRAIL DETAIL
SCALE NO. 4

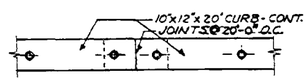


PLAN

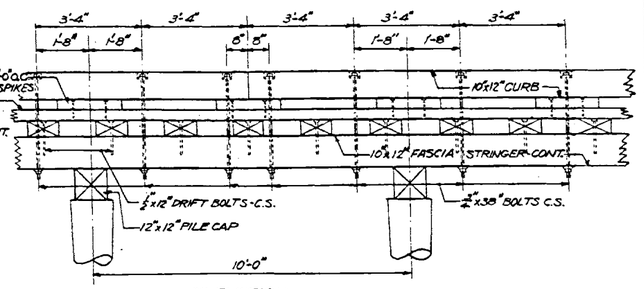


ELEVATION

DETAIL AT CONNECTION "A" SECTION TO "B" SECTION
SCALE NO. 4



PLAN



ELEVATION

CURB SPLICE DETAIL
SCALE NO. 4

NOTE:
FOR GENERAL NOTES SEE DWG. NO. 15-06, SH. 1 OF 8

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' NO.2
0 1' 2' 3' 4' NO.4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS · ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION · ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature]
CHIEF, STRUCTURES BRANCH

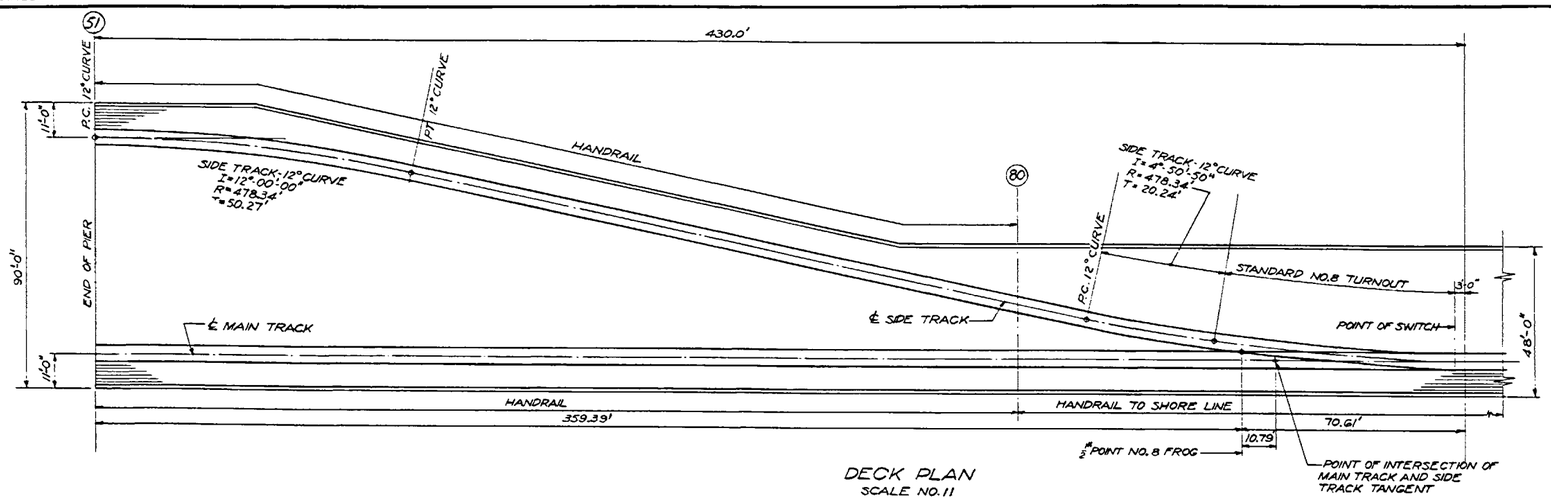
THEATER OF OPERATIONS

PORTS-DRY CARGO UNLOADING FACILITIES
PIER-TIMBER 90'X500'
DETAILS

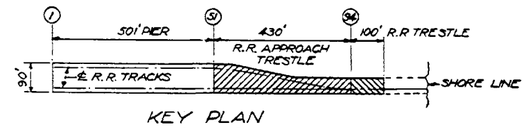
APPROVED: [signature]
DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: [signature]
ROBERT W. GENTLEMAN
Colonel, GS
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 24 SEP 968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-06
SHEET 3 OF 8

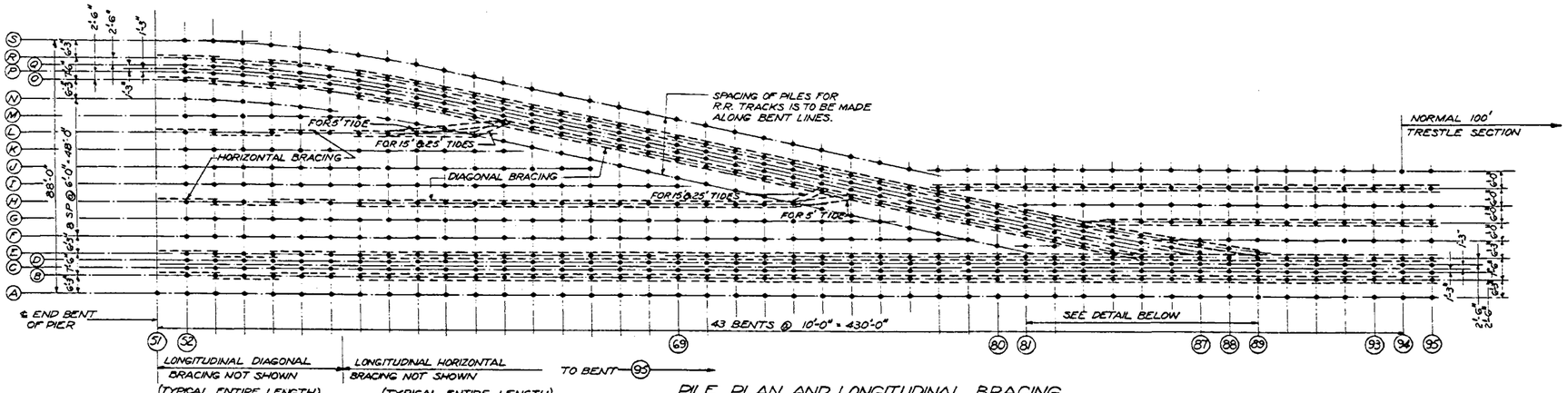


DECK PLAN
SCALE NO. 11

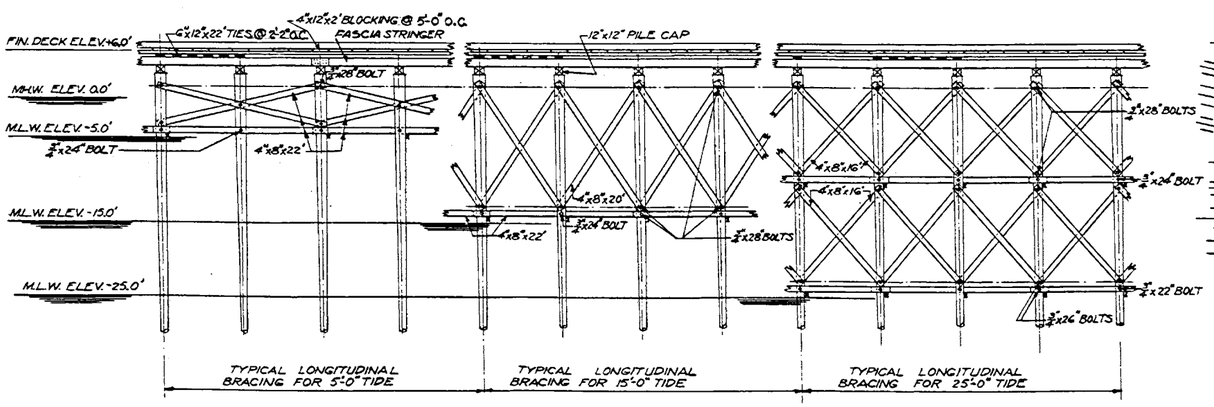


KEY PLAN
NO SCALE

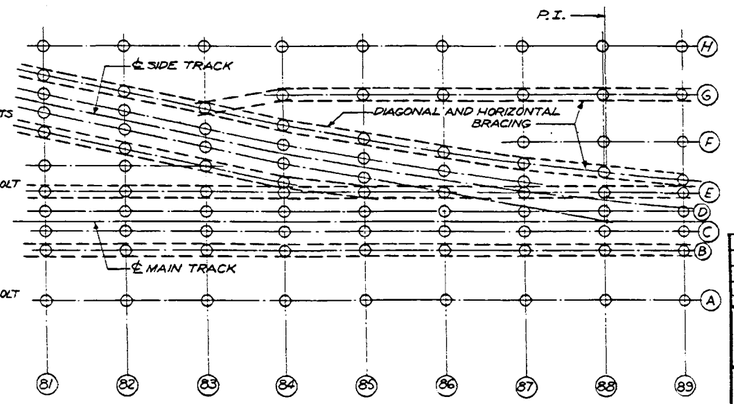
NOTES:
FOR LAYOUT OF STANDARD NO. 8 TURNOUT AND TIE SPACING, USING RAIL SECTION 90# ASCE, SEE DWG. NO. 86-13, SH. 1 OF 1
FOR GENERAL NOTES SEE DWG. NO. 15-06, SH. 1 OF 8



PILE PLAN AND LONGITUDINAL BRACING
(TRANSVERSE BRACING NOT SHOWN)
SCALE NO. 11



ELEVATION
SCALE NO. 1



PILE PLAN AT POINT OF INTERSECTION
(TRANSVERSE BRACING NOT SHOWN)
SCALE NO. 1

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' 20' 30' 40' NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HALE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, STRUCTURES BRANCH

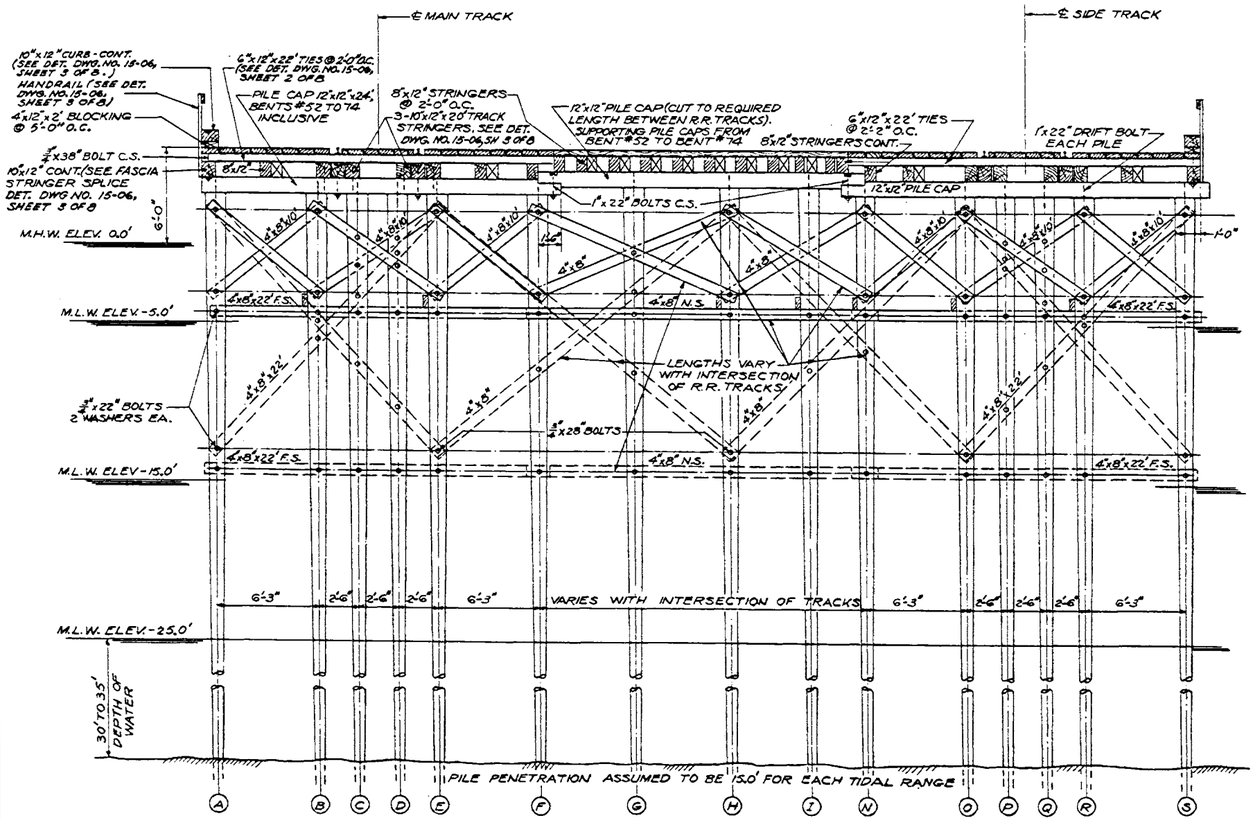
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
RR APPROACH TRESTLE-PLANS-ELEVATIONS

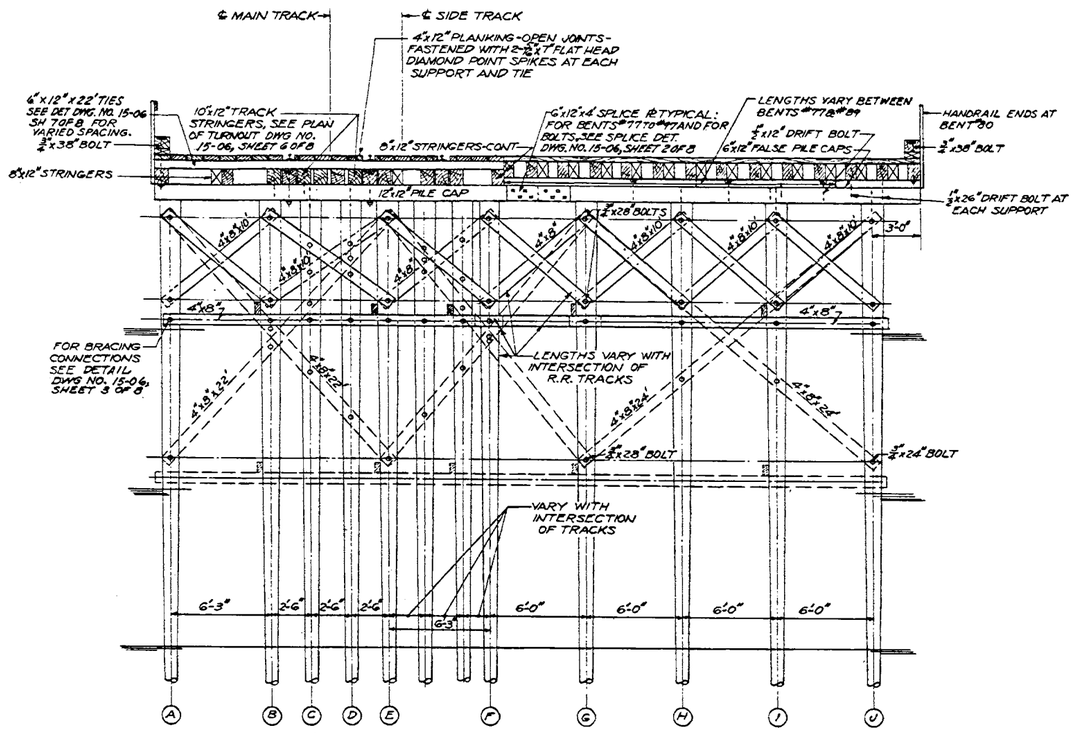
APPROVED: H.M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR. O.C.E.
DATE: 19 MAR 1959

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN Colonel, GS, Deputy Chief, Transportation Resources Division Directorate of Transportation
DATE 14 SEP 1959

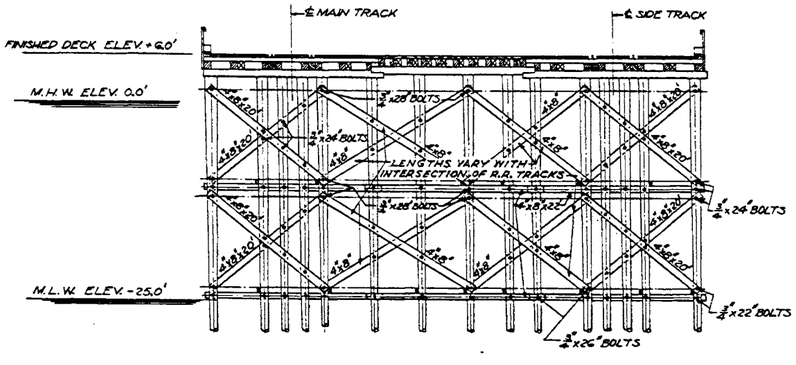
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-06
SHEET 4 OF 8



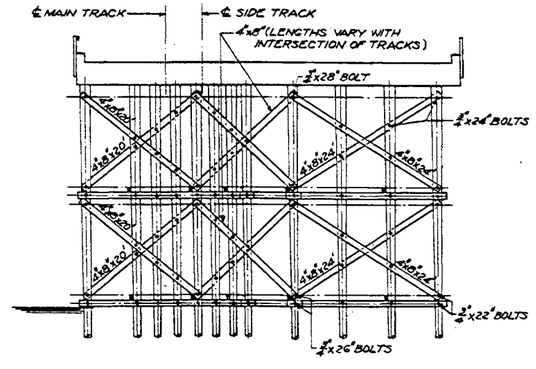
CROSS SECTION AT BENT NO. 69
TRANSVERSE BRACING FOR 5' & 15' TIDES
SCALE NO. 2



CROSS SECTION AT BENT NO. 87
TRANSVERSE BRACING FOR 5' & 15' TIDES
SCALE NO. 2



CROSS SECTION AT BENT NO. 69
TRANSVERSE BRACING FOR 25' TIDE
SCALE NO. 1



CROSS SECTION AT BENT NO. 87
TRANSVERSE BRACING FOR 25' TIDE
SCALE NO. 1

12"x12" PILE CAP LENGTH SCHEDULE

BENT NO.	24'	24'	24'	24'
52 THRU 55			24'	
56			22'	
57			22'	
58			20'	
59			18'	
60			16'	
61			14'	
62			12'	
63			10'	
64		18'	14'	
65		18'	12'	
66		18'	10'	
67		12'	14'	
68			24'	
69			22'	
70			20'	
71			16'	
72			14'	
73			12'	
74			12'	
75 & 76		22'	12'	18'
77 THRU 94		24'	—	24'

NOTE:
FOR GENERAL NOTES SEE DWG. NO. 15-06, SH 1 OF 8
LONGITUDINAL CROSS BRACING NOT SHOWN ON THESE SECTIONS SHOWING ELEVATIONS OF BENTS ONLY.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

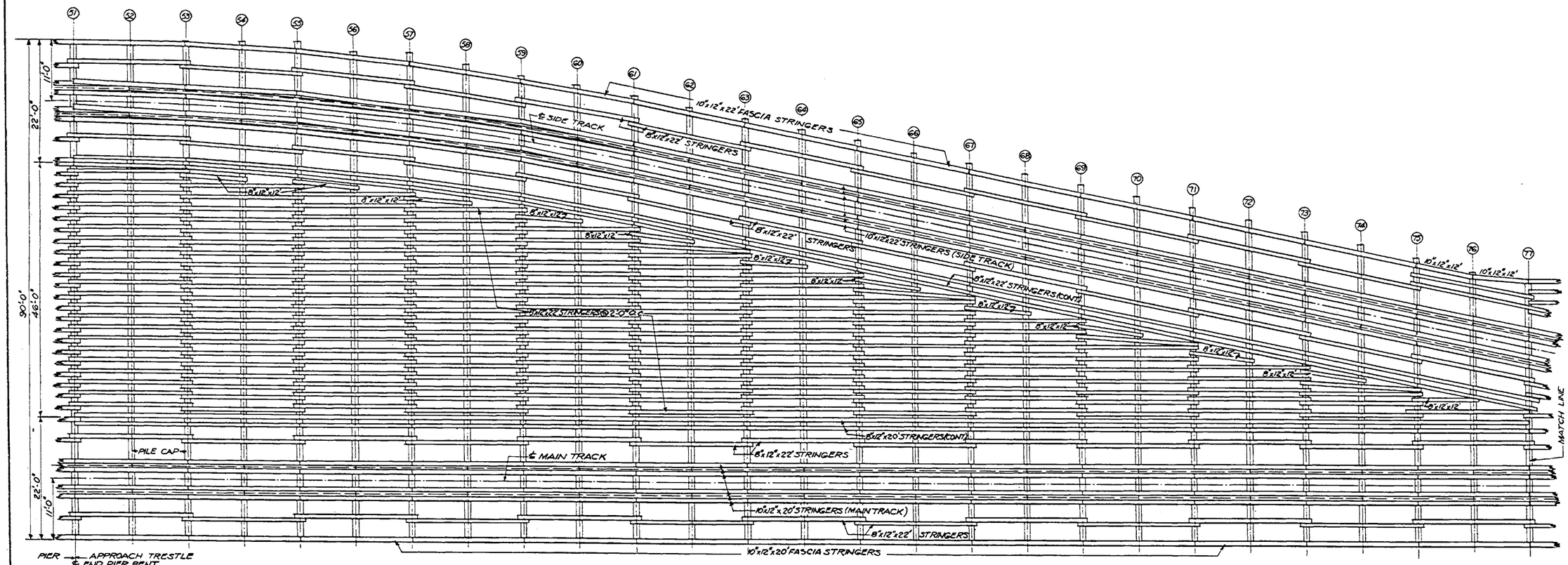
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

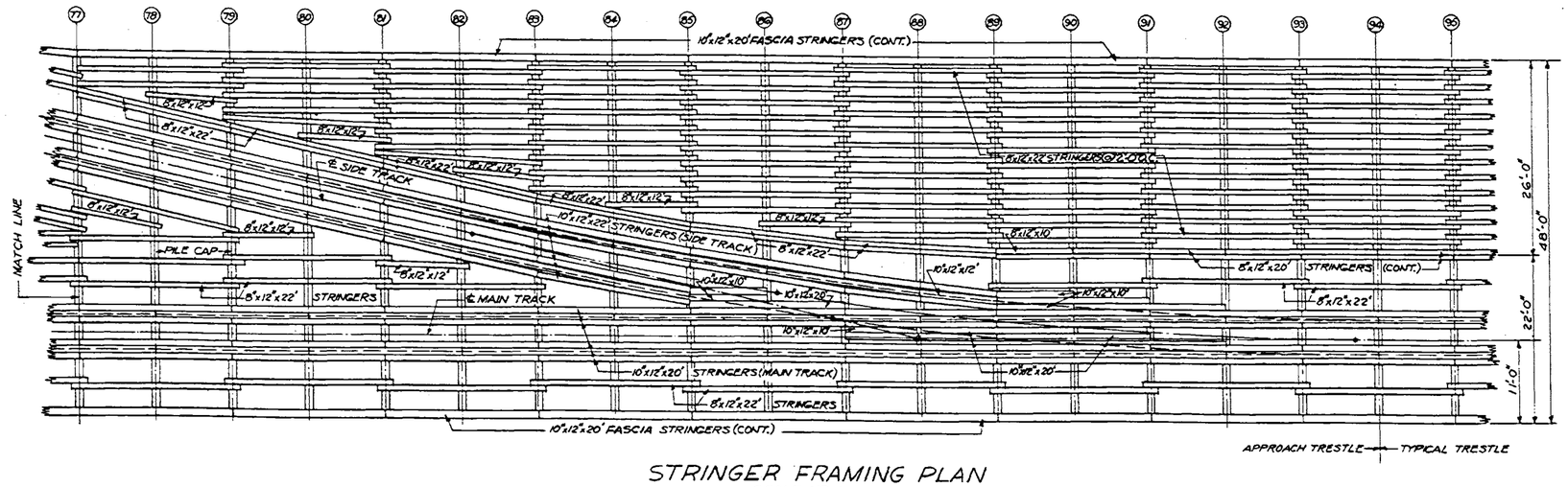
DRAWN BY: HALE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: [signature] ROBERT W. GETTLEMAN COL, Retired, Deputy Chief, Transportation Resources Division Directorate of Transportation
DATE 14 SEP 1968

THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
R. R. APPROACH TRESTLE-SECTIONS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-06
SHEET 5 OF 8





STRINGER FRAMING PLAN
SCALE NO. 1

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15'
NO. 1

MAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HALE
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C.W. DEICHMANN

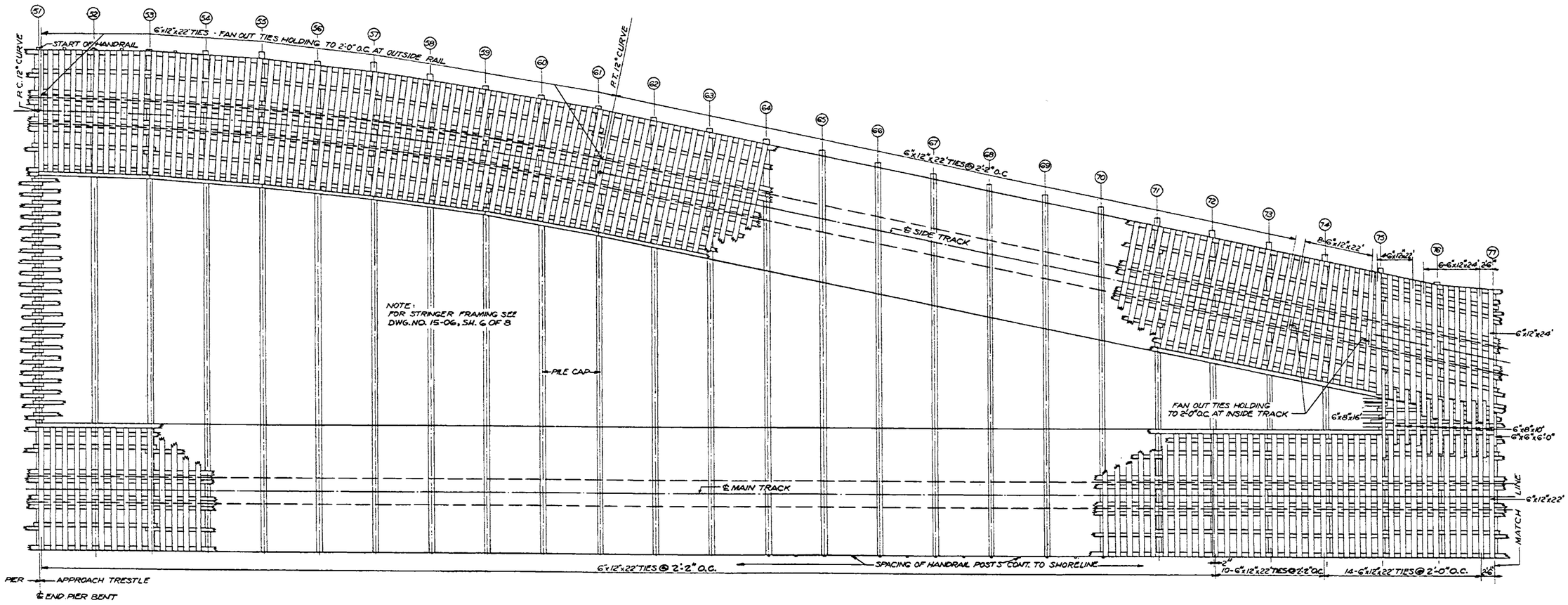
THEATER OF OPERATIONS

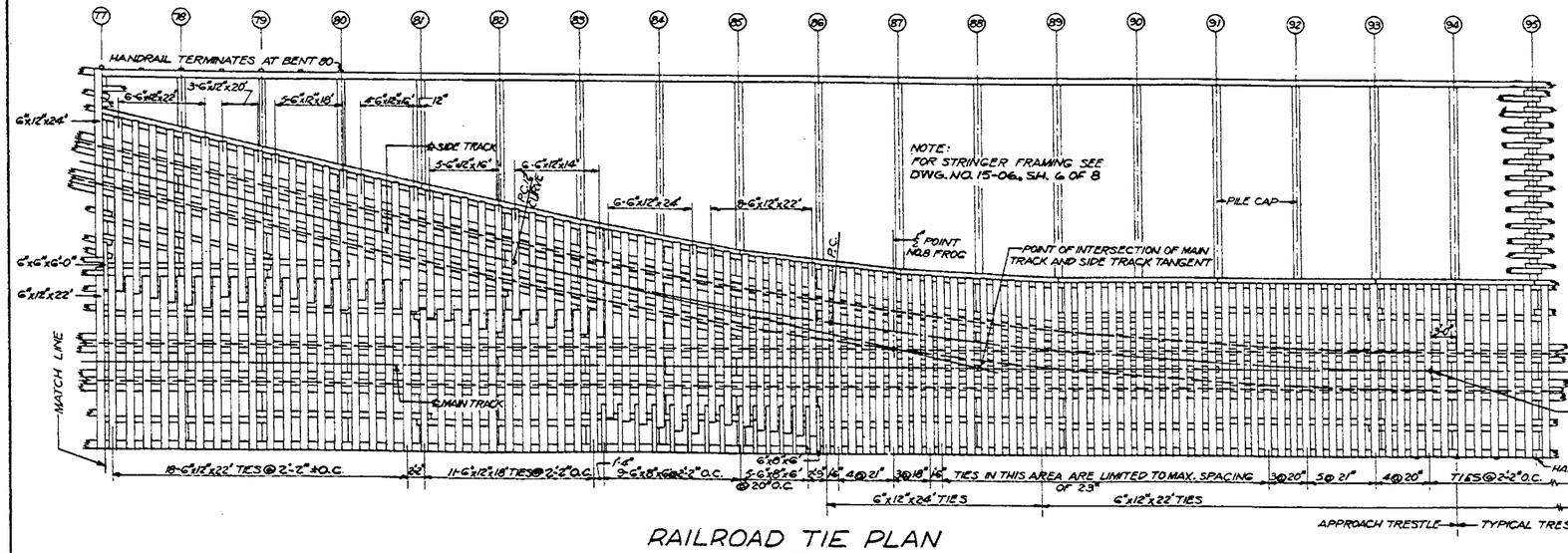
PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
RR APPROACH TRESTLE-FRAMING PLAN

APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: [signature]
ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE: 19 SEP 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-06
SHEET 8 OF 8





RAILROAD TIE PLAN
SCALE NO. 1

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15'
NO. 1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HALE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DE ICHMANN

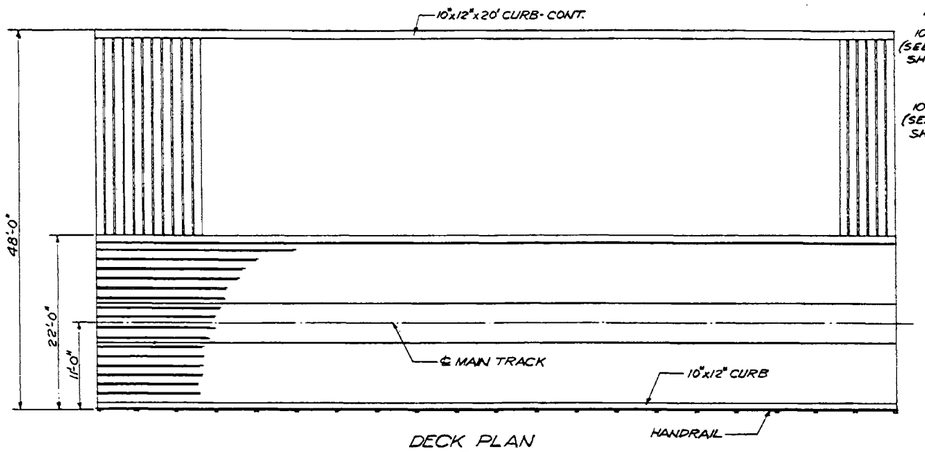
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
RR APPROACH TRESTLE-TIE PLAN

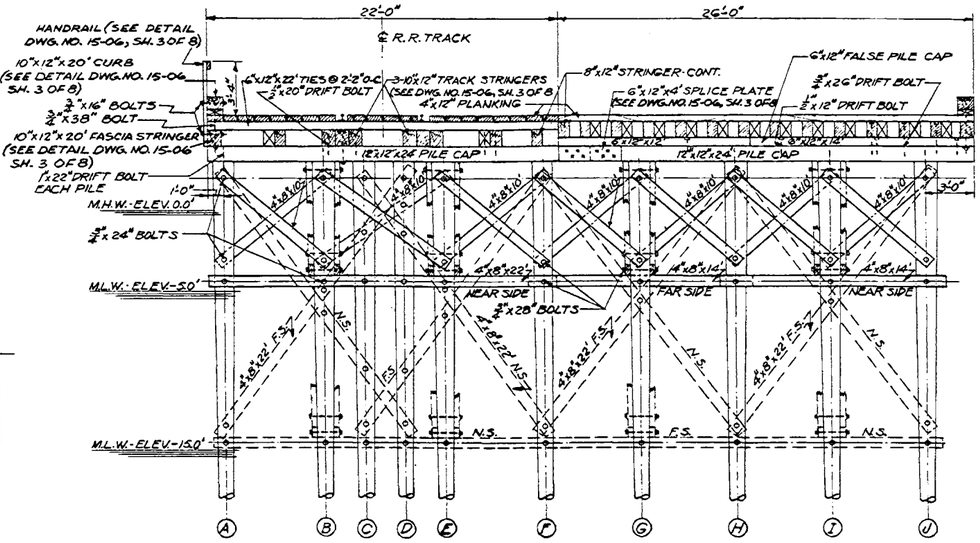
APPROVED: DATE: 18 MAR 1963
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, COL, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1962

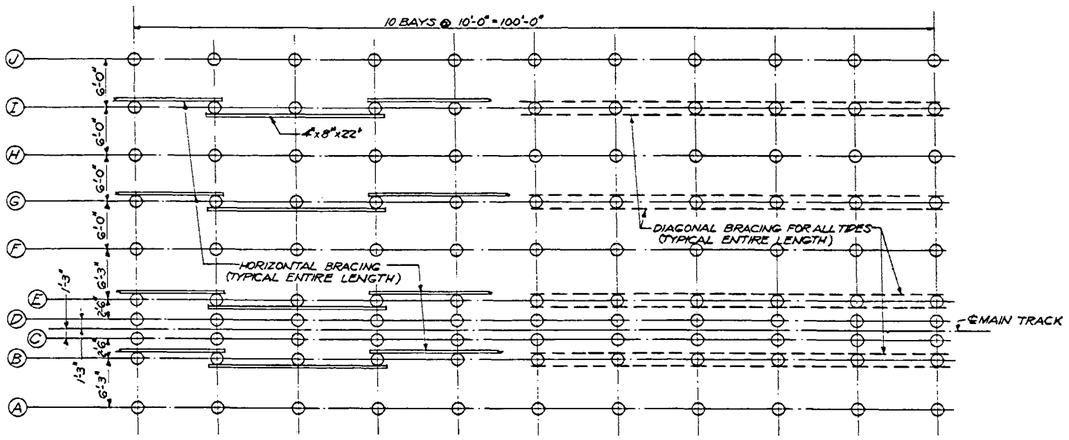
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-06
SHEET 7 OF 8



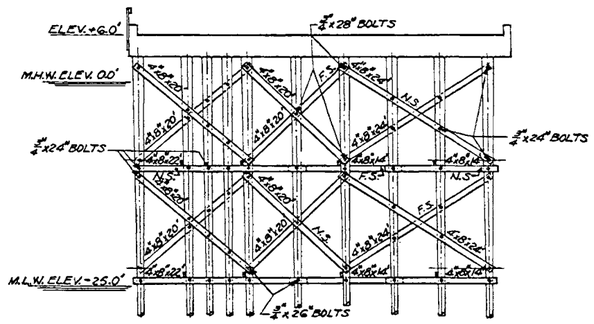
DECK PLAN
SCALE NO.1



TYPICAL CROSS SECTION
TRANSVERSE BRACING FOR-5.0' & 15.0' TIDES
SCALE NO.2

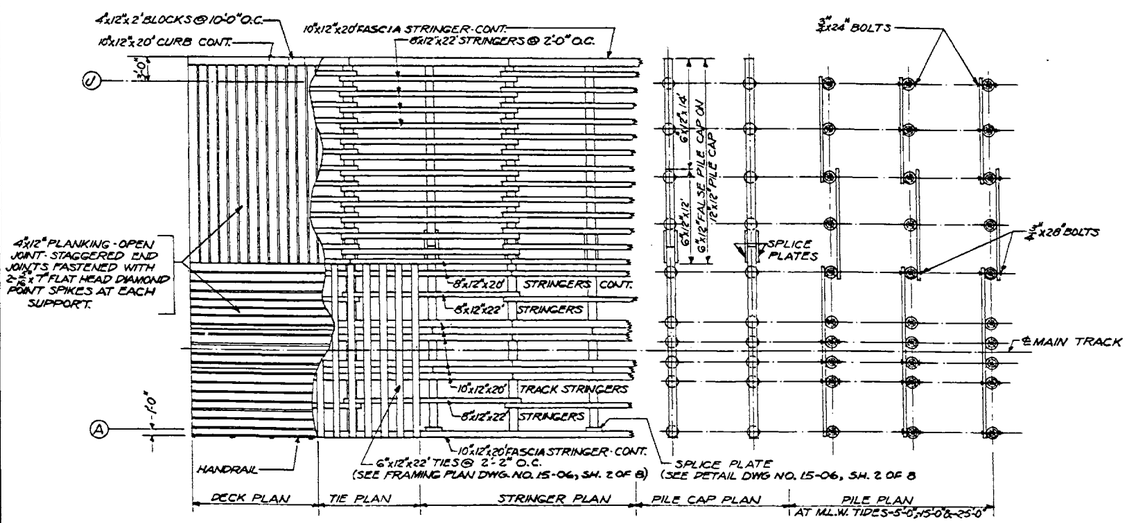


PILE PLAN
SCALE NO.1



TRANSVERSE BRACING FOR 25.0' TIDE
LONGITUDINAL DIAGONAL BRACING NOT SHOWN
SCALE NO.1

NOTES:
FOR PILE LENGTHS, SEE DWG. NO. 15-06, SH. 2 OF 8
FOR LONGITUDINAL BRACING, SEE DWG. NO. 15-06, SH. 1 OF 8



FRAMING PLAN
SCALE NO.1

NOTE:
FOR GENERAL NOTES SEE DWG. NO. 15-06, SH. 1 OF 8

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' — NO.1
0 5' 10' — NO.2

HAYES, SEAY, MATTERN & MATTERN
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DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HALE
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W.DEICHMANN

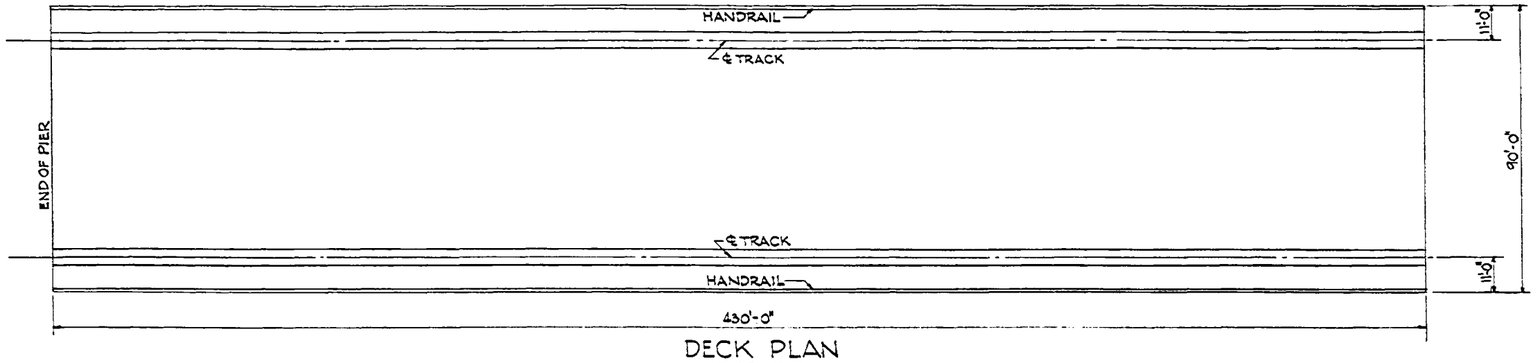
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
RR TRESTLE-100FT SECTION-PLAN-SECTION

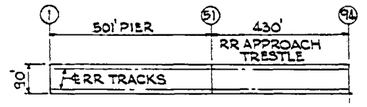
APPROVED: H. Eckam — CHIEF, TRANSPORTATION BRANCH
APPROVED: H.M. Williams — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1969

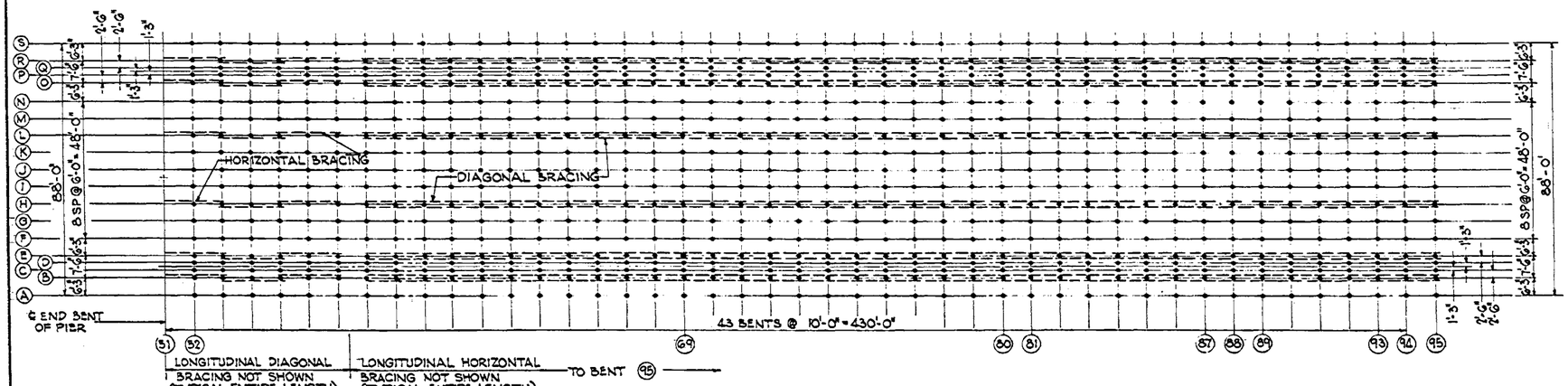
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-06
SHEET 8 OF 8



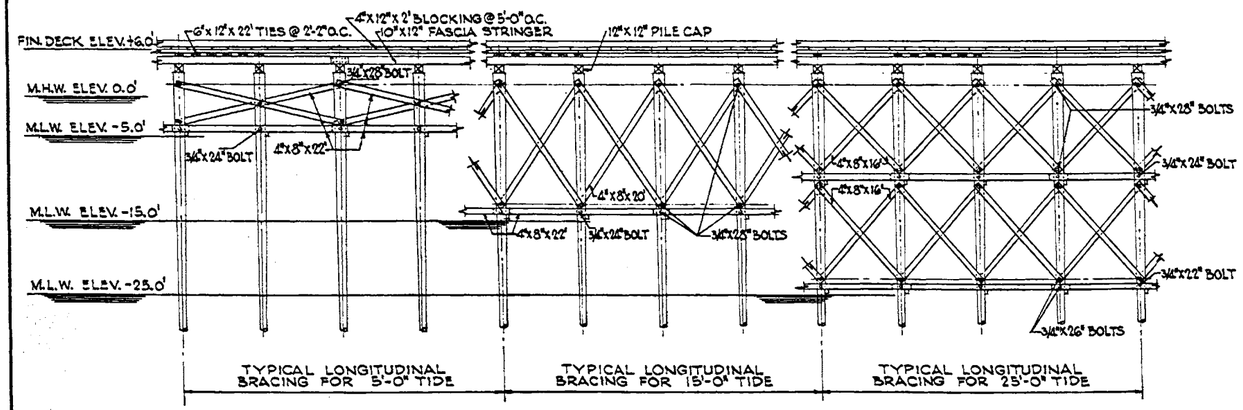
DECK PLAN
SCALE NO. 11



KEY PLAN
NO SCALE



PILE PLAN AND LONGITUDINAL BRACING
(TRANSVERSE BRACING NOT SHOWN)
SCALE NO. 11



ELEVATION
SCALE NO. 1

NOTE:
FOR GENERAL NOTES SEE DWG NO. 15-06, SHEET 1 OF 8.

FACILITY NUMBERS			
FACILITY	5FT. TIDE	15FT. TIDE	25FT. TIDE
RR APPROACH TRESTLE 90' x 430'	150701	150702	150703

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
15-07	PLANS & ELEVATION	1 OF 2
15-07	SECTIONS	2 OF 2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' 20' 30' 40' NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

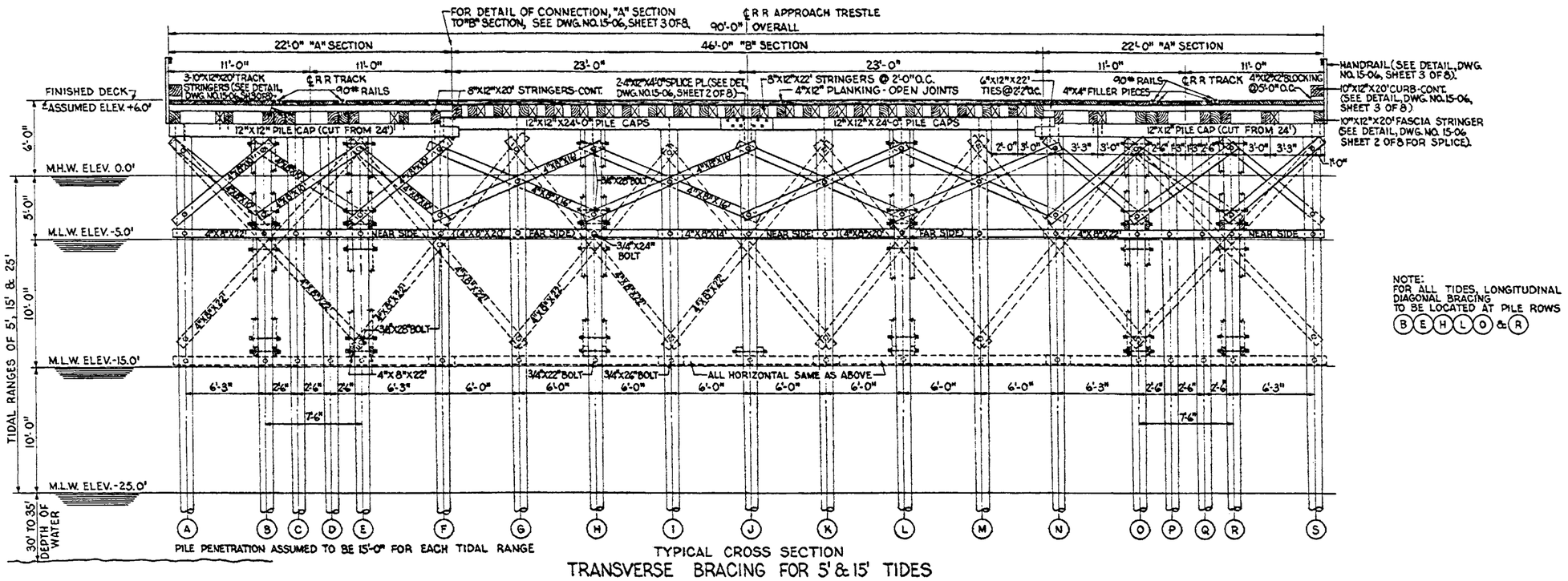
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: H.M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1955
APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation DATE: 1955

THEATER OF OPERATIONS

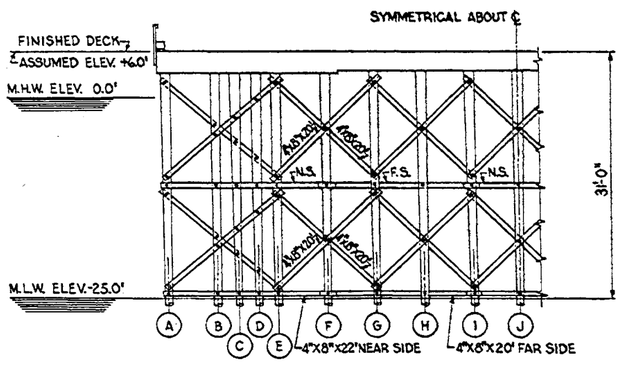
PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
RR APPROACH TRESTLE-90' WIDTH-PLANS & ELEVATION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-07
SHEET 1 OF 2



TYPICAL CROSS SECTION
TRANSVERSE BRACING FOR 5' & 15' TIDES
SCALE NO. 2

NOTE:
FOR ALL TIDES, LONGITUDINAL DIAGONAL BRACING TO BE LOCATED AT PILE ROWS
(B) (E) (H) (L) (O) & (R)



TYPICAL CROSS SECTION
TRANSVERSE BRACING FOR 25' TIDE
SCALE NO. 1

NOTE:
FOR GENERAL NOTES SEE DWG. NO. 15-06, SHEET 1 OF 8.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' — NO. 1
0 5' 10' — NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, STRUCTURES BRANCH

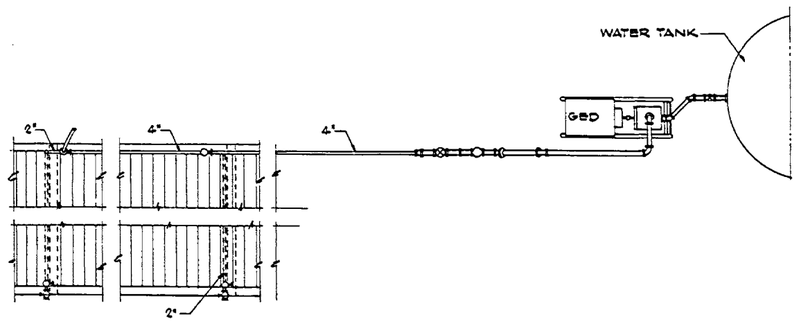
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
PIER-TIMBER 90'X500'
RR APPROACH TRESTLE-90' WIDTH-SECTIONS

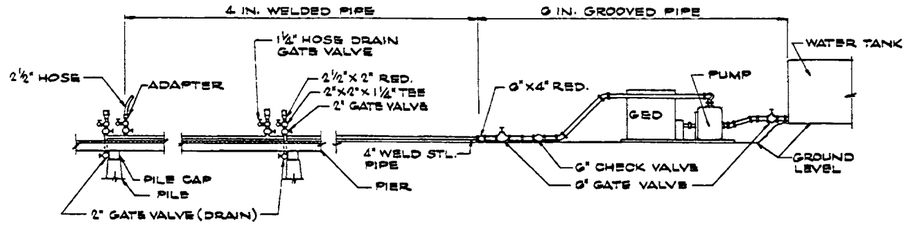
APPROVED: H. M. Williams — DATE: 19 MAR 1959
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-07
SHEET 2 OF 2



PLAN - WATER DISTRIBUTION FOR PIER
NO SCALE



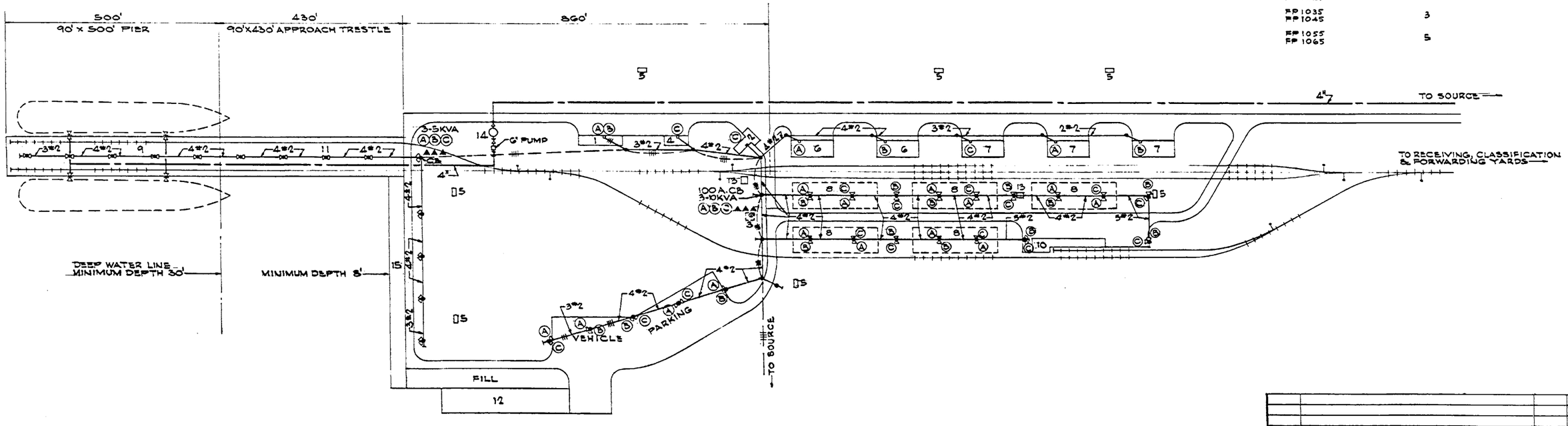
ELEVATION - WATER DISTRIBUTION FOR PIER
NO SCALE

SCHEDULE OF FACILITIES

NO.	FACILITY	FP1015 FP1025 FP1035 FP1045 FP1055 FP1065 QTY.	SIZE OR UNIT	DWG. NO.
	BUILDINGS			
1	ADMINISTRATION	1	20'X100'	61-11
2	FIREHOUSE	1	1600 SF	74-13
3	GENERATOR BLDG. (IF REQ'D)	1	20'X20'	
4	GUARDHOUSE	1	20'X60'	74-13
5	LATRINE, PIT TYPE, 8 SEATS	7	10'X20'	72-36
6	WAREHOUSE, CLOSED	2	40'X100'	44-11
7	WAREHOUSE, OPEN	3	40'X100'	44-11
	OTHER CONSTRUCTION			
	HARDSTAND 3, 6" STONE, 1" COLD S.T.	10.5	1000 SY	85-31
8	OPEN STORAGE	1.4	ACRE	
9	PIER, TIMBER	1	90'X500'	15-06
10	PLATFORM, UNLOADING	1	32'X172'	86-09
11	RAILROAD, APPROACH TRESTLE	1	90'X430'	15-07
	RAILROAD, NO.8 TURNOUT	8	EACH	86-13
	RAILROAD, SINGLE TRACK	1.7	MILE	
12	RAMP, LANDING, STAB. STN.	*	56'X300'	
	ROAD, 2 LANE, 6" STONE, 1" COLD S.T.	1.1	MILE	85-31
13	SUMP, FIRE PROTECTION	2	10000 GAL	84-21
14	WATER TANK	1	500 BBL	84-21
15	WHARF-LIGHTERAGE	1	35'X300'	15-26
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION	10000 GPD	150810	84-21
ELECTRIC DISTRIBUTION	30.3 KW	150812	81-21 81-22 81-23
FLOOD LIGHTING DETAILS			81-24

*	INSTALLATION	QTY.
	FP1015 FP1025	2
	FP1035 FP1045	3
	FP1055 FP1065	5



SITE & UTILITY LAYOUT
PORT, 5, 15 & 25' TIDE RANGE, 1440 TONS/DAY

SCALE NO. 15

INSTALLATION NOS. FP1015 , FP1035 , FP1055 STL. FRAME BLDGS.
INSTALLATION NOS. FP1025 , FP1045 , FP1065 WD. FRAME BLDGS.

GENERAL NOTES

1. BUMPER OR CAR STOP TO BE PLACED AT END OF ALL SPUR TRACKS.
2. AT ALL INTERSECTIONS OF ROADS, EDGES OF FINISHED SURFACES TO HAVE 30 FT. MINIMUM RADIUS.

ELECTRICAL NOTES

1. CB'S FOR TRANSFORMERS TO BE 50 AMP, 3P, 4 WIRE, 250V AC.
2. ALL SEC. COND. NO. 2 WP.
3. POLES MOUNTED ON PIER OR TRESTLE TO BE BOLTED WITH MINIMUM OF SIX ¾" BOLTS TO APPROPRIATE STRUCTURAL MEMBERS, OR BE ATTACHED WITH EQUIVALENT BINDING OF ⅜" STEEL STRAND CABLE.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 50' 100' 200'
NO. 15

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C.W. DE ICHMANN

THEATER OF OPERATIONS
PORT, 1440 TONS/DAY
STD-TPR
SITE & UTILITY LAYOUT

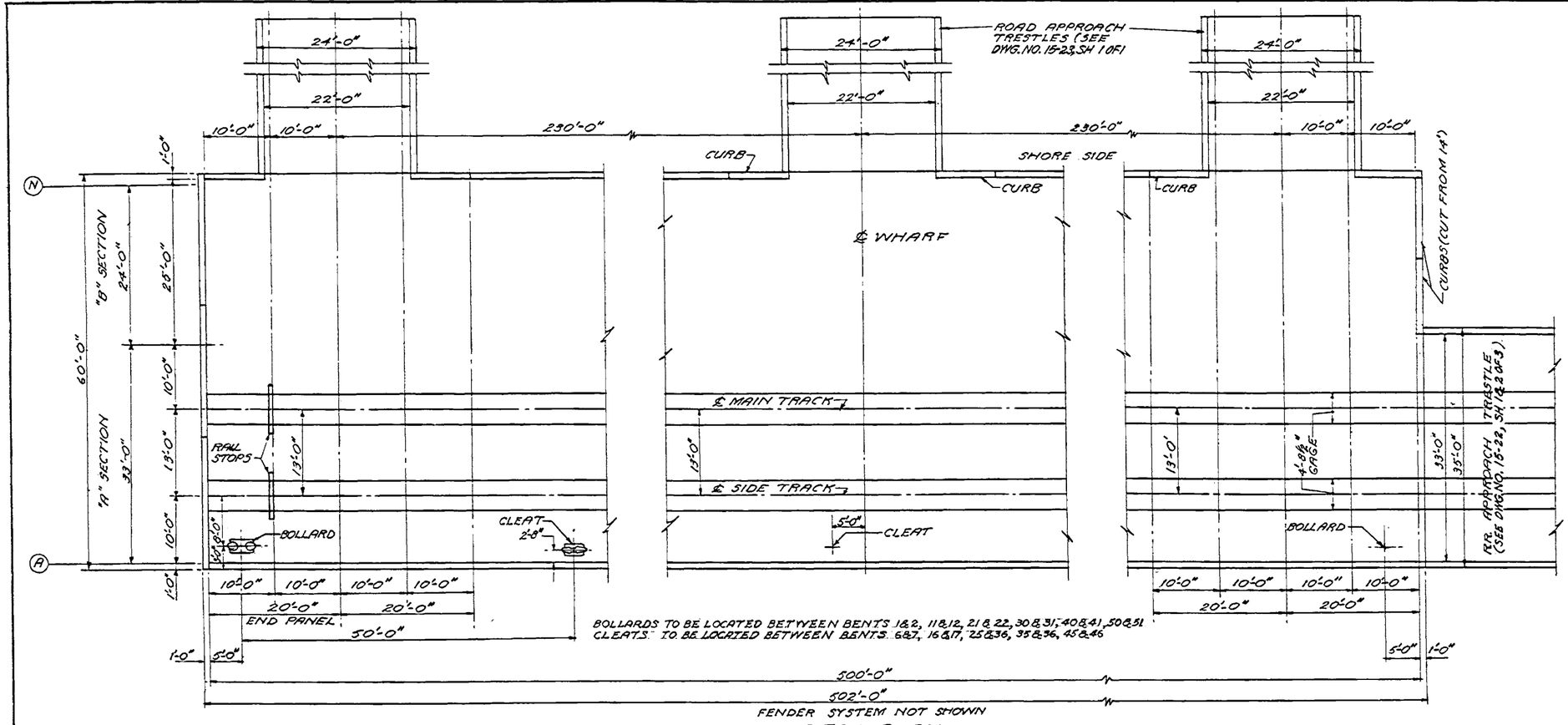
APPROVED: CHIEF, ENGINEERING BRANCH
APPROVED: H.M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN Colonel, GS - Deputy Chief, Transportation Resources Division Directorate of Transportation
DATE 04 SEP 1968

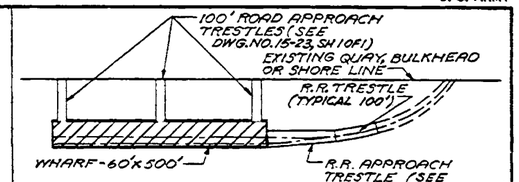
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-08
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY



DECK PLAN
SCALE NO. 1



KEY PLAN
NO SCALE

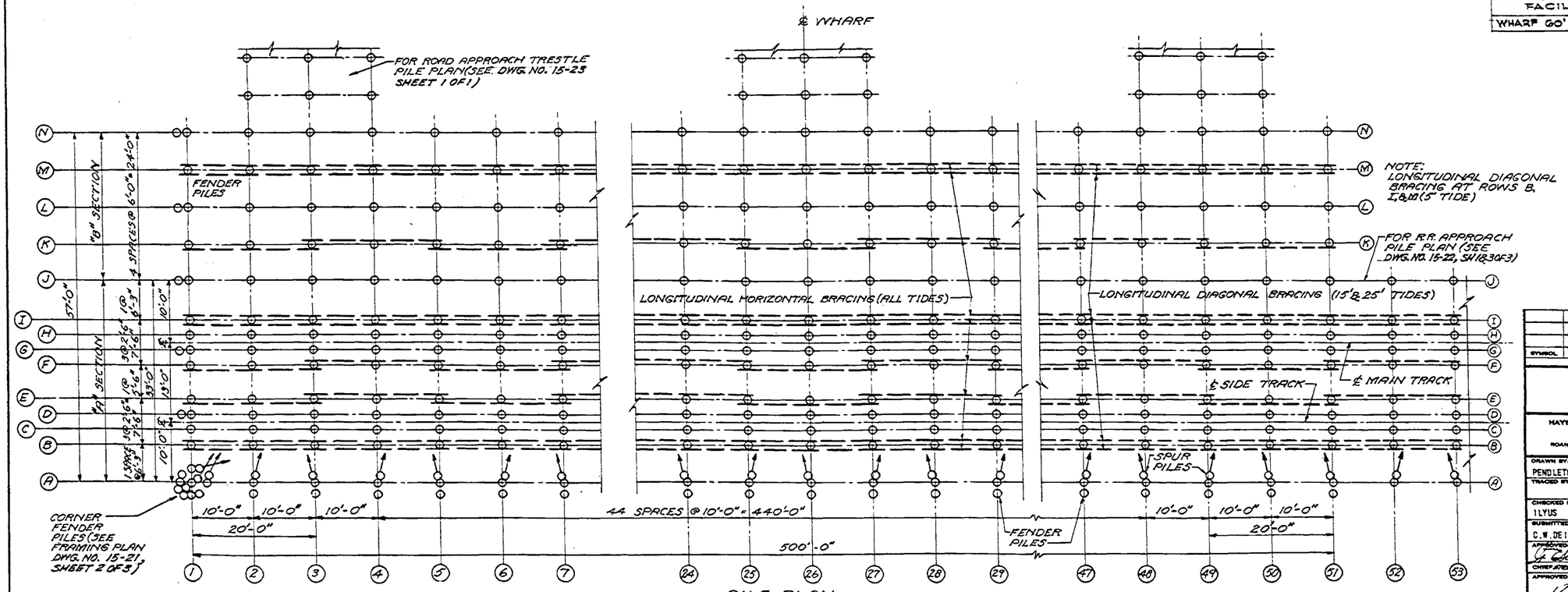
BASIS OF DESIGN

UNIFORM LIVE LOAD 500 PSF.
RAILROAD LOADING E-50
SIDE PRESSURE 1,000 LBS. PER LIN. FT.
PILE BEARING VALUE 32,000 LBS.
EXTREME FIBER STRESS, WOOD - 1,800 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1500 PSI.
COMPRESSION PERPENDICULAR TO GRAIN, WOOD - 450 PSI.
HORIZONTAL SHEAR - WOOD, 150 PSI.
MODULUS OF ELASTICITY, WOOD - 1,600,000 PSI.
THE LENGTH OF PILES AS SHOWN ASSUMES A PENETRATION OF 15'-0". THE PENETRATION REQUIRED SHOULD BE DETERMINED BY DRIVING TESTS WHERE POSSIBLE AND THE LENGTH OF PILES ADJUSTED ACCORDINGLY.

GENERAL NOTES

HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
HOLES FOR THROUGH BOLTS SHALL BE THE SAME DIAMETER AS THE BOLTS.
NO BOLT HEAD SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE DRAWN UP TIGHT.

FACILITY NUMBERS			
FACILITY	5' TIDE	15' TIDE	25' TIDE
WHARF 60' x 500'	152101	152102	152103



PILE PLAN
SCALE NO. 1

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15'
NO. 1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

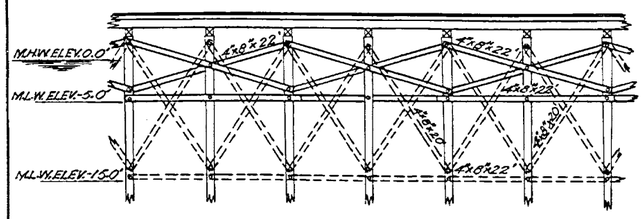
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DE ICHMANN
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1960

THEATER OF OPERATIONS
PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF-TIMBER 60'X500'
DECK & PILE PLANS

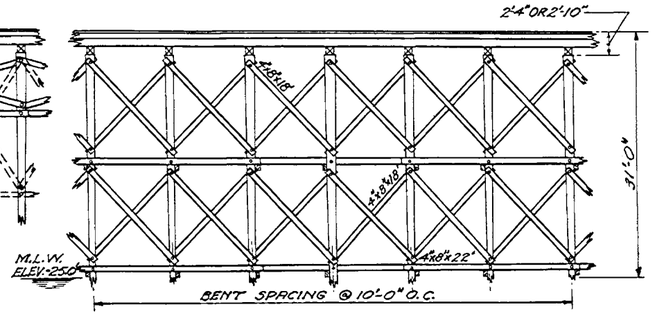
APPROVED FOR PROPONENT AGENCY: [signature] ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1959

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-21
SHEET 1 OF 3



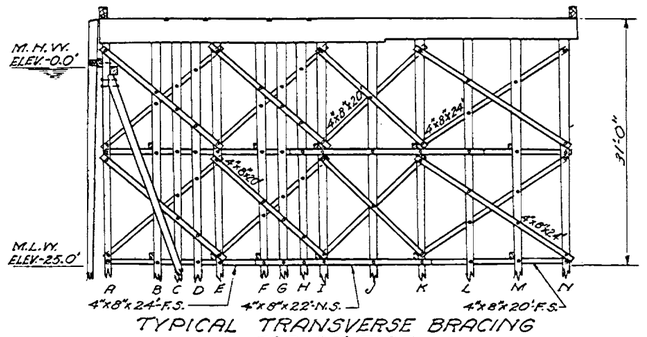
TYPICAL LONGITUDINAL BRACING FOR 5' & 15' TIDES

SCALE NO. 1



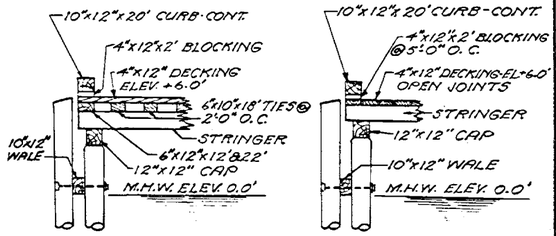
TYPICAL LONGITUDINAL BRACING FOR 25' TIDE

SCALE NO. 1



TYPICAL TRANSVERSE BRACING FOR 25' TIDE

SCALE No. 1



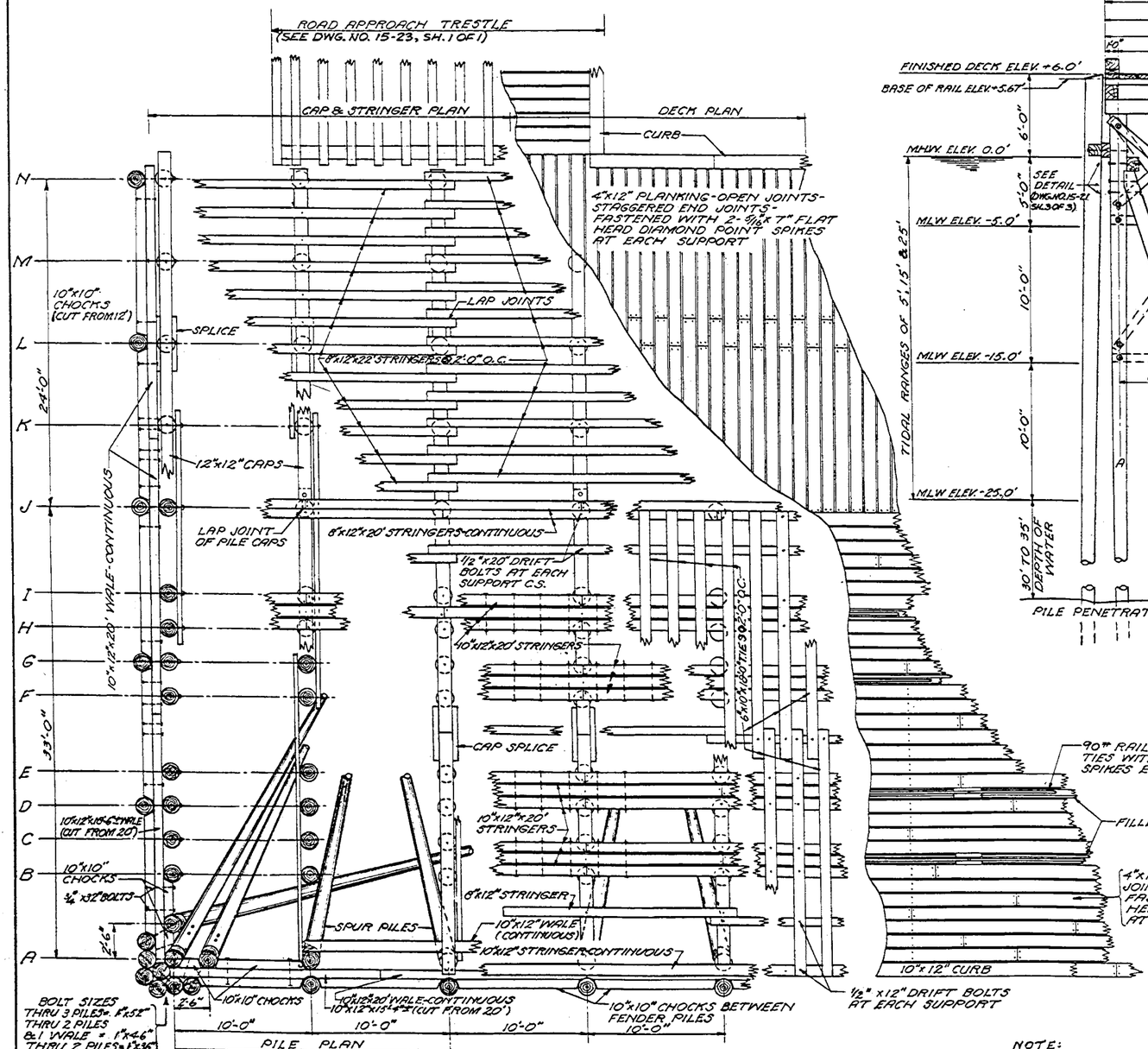
AT "A" SECTION AT "B" SECTION

TYPICAL LONGITUDINAL SECTIONS THRU END OF WHARF

SCALE NO. 2

NOTES:

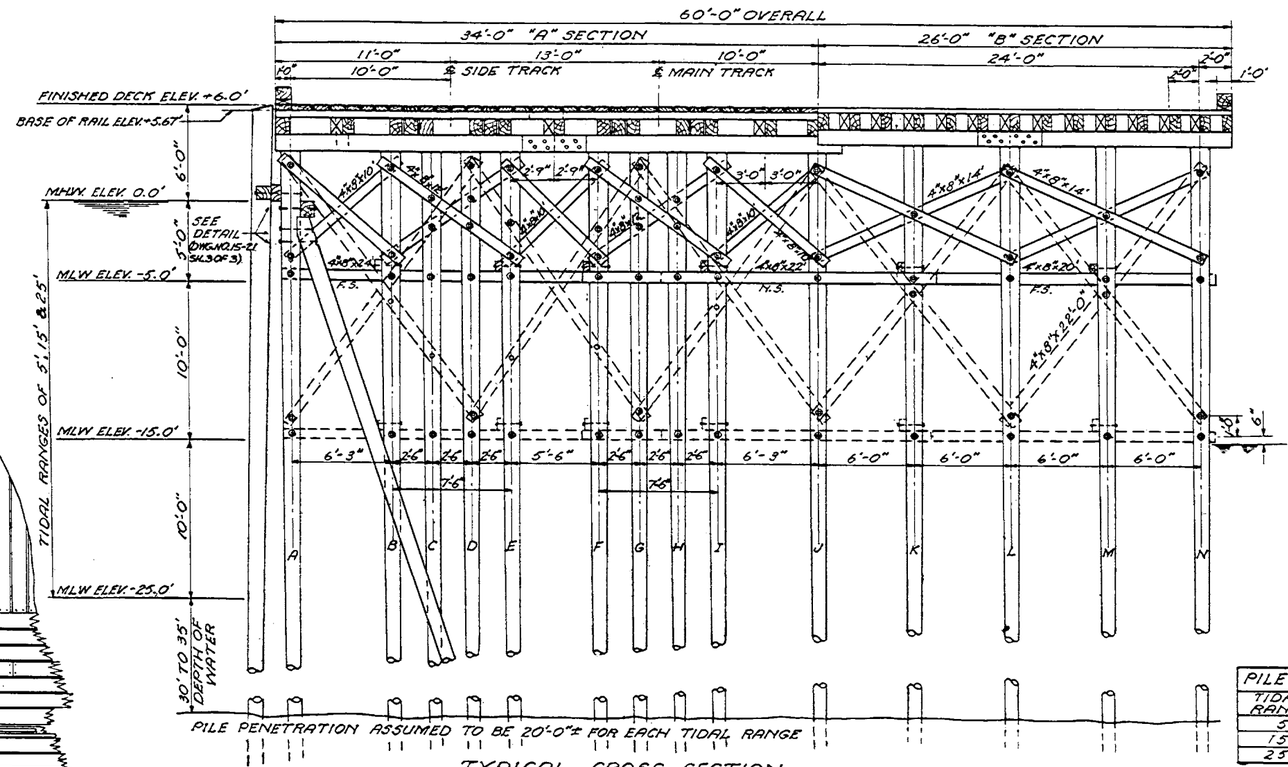
FOR 5',15'&25' TIDES-HORIZONTAL BRACING AT PILE ROWS B,E,F,I,K & M
FOR 5' TIDE-DIAGONAL BRACING AT PILE ROWS B, I & L
FOR 15'&25' TIDES-DIAGONAL BRACING AT PILE ROWS B, I & M



FRAMING PLAN

SCALE No. 2

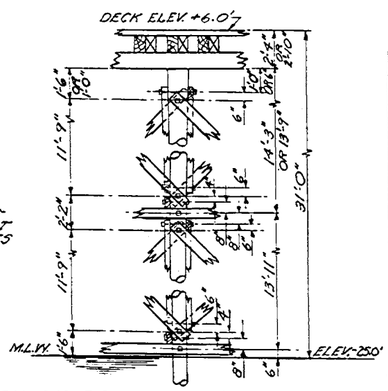
NOTE:
FOR GENERAL NOTES SEE DWG. NO. 15-21, SH. 1 OF 3



TYPICAL CROSS SECTION TRANSVERSE BRACING FOR 5' & 15' TIDES

SCALE No. 2

PILE LENGTHS	
TIDAL RANGE	PILE LENGTH
5'	66'-70'
15'	76'-80'
25'	86'-90'



DETAIL OF BRACING CONNECTIONS TRANSVERSE ELEVATION

SCALE NO. 2

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED:

THEATER OF OPERATIONS

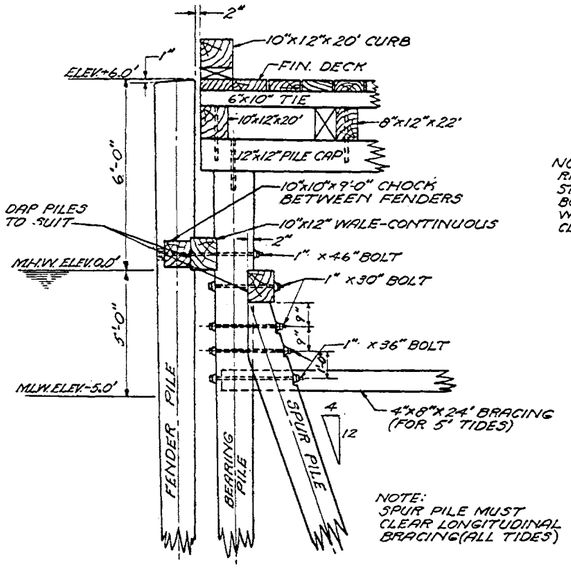
PORTS-DRY CARGO UNLOADING FACILITIES
WHARF-TIMBER 60'X500'
FRAMING PLAN & SECTION

APPROVED: H. M. Williams DATE: 19 MAR 1959
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

CHIEF, ENGINEERING BRANCH

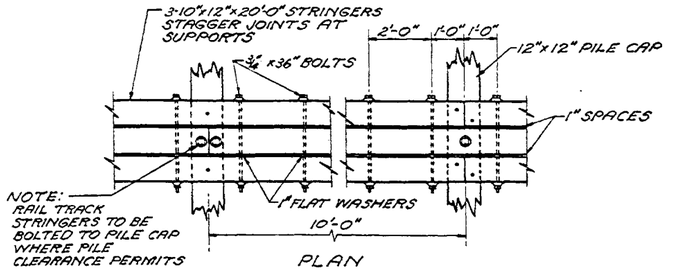
APPROVED FOR PROPONENT AGENCY: Robert W. Gentleman, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1959

SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER 15-21
SHEET 2 OF 3



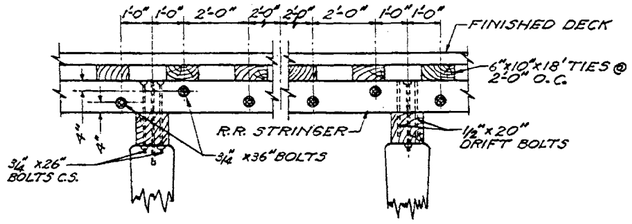
NOTE:
SPUR PILE MUST CLEAR LONGITUDINAL BRACING(ALL TIDES)

FENDER & SPUR PILE DETAIL
SCALE NO. 4



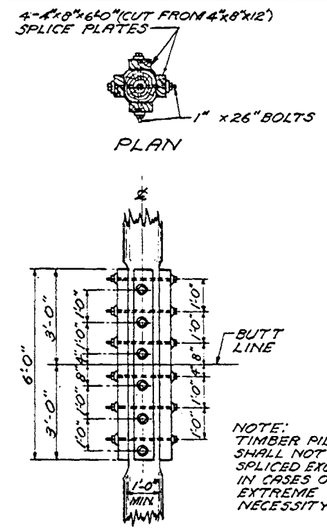
NOTE:
RAIL TRACK STRINGERS TO BE BOLTED TO PILE CAP WHERE PILE CLEARANCE PERMITS

PLAN



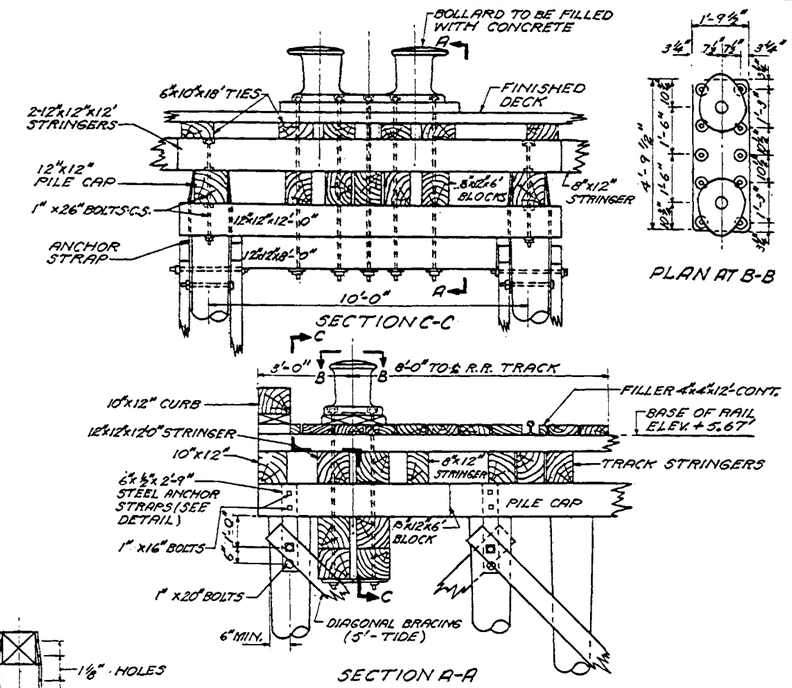
ELEVATION

R.R. STRINGER DETAIL
SCALE NO. 4

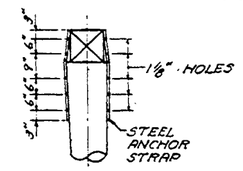


NOTE:
TIMBER PILES SHALL NOT BE SPLICED EXCEPT IN CASES OF EXTREME NECESSITY

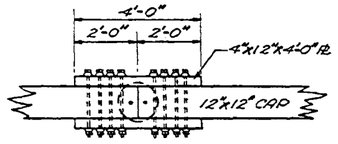
TIMBER PILE SPLICE
SCALE NO. 4



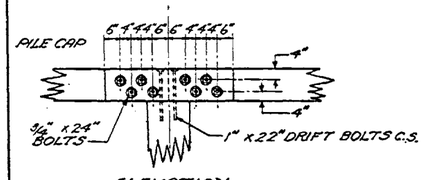
BOLLARD FRAMING DETAIL
SCALE NO. 4



STEEL STRAP DETAIL
SCALE NO. 4

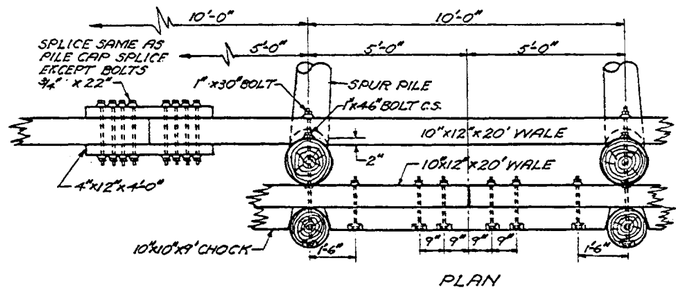


PLAN

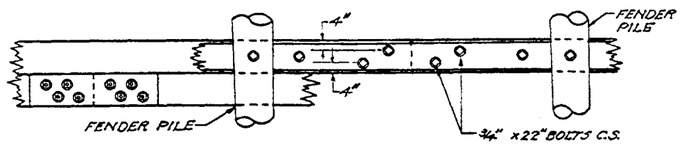


ELEVATION

PILE CAP SPLICE DETAIL
SCALE NO. 4



PLAN

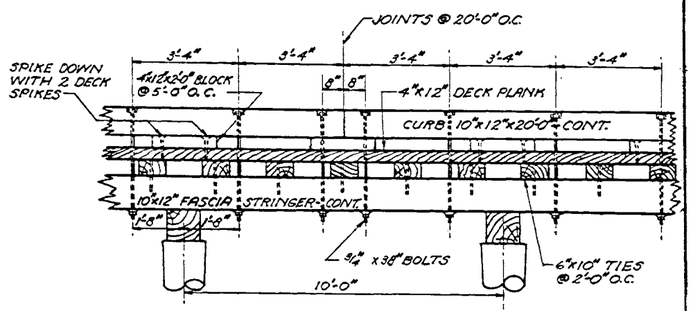


ELEVATION

WALE SPLICE & FENDER CHOCK DETAIL
SCALE NO. 4

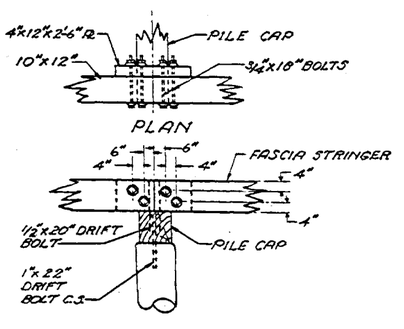
PLAN

LOW WATER BRACING CONNECTION
SCALE NO 4



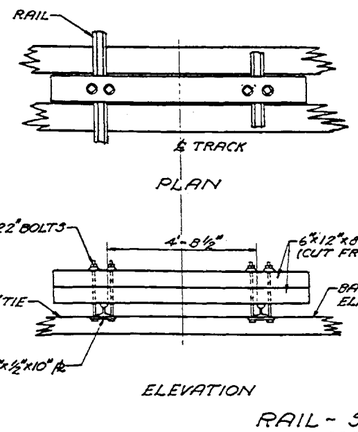
FRONT CURB SPLICE DETAIL
SCALE NO. 4

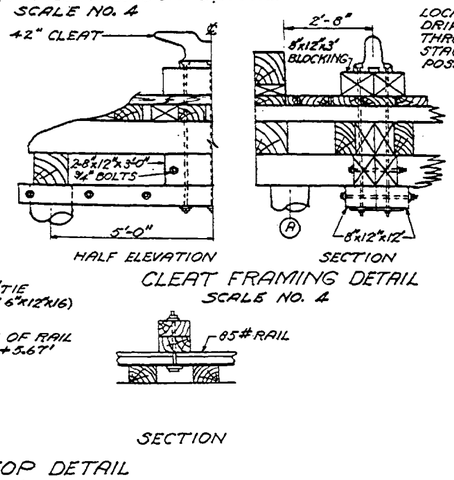
NOTE:
FOR GENERAL NOTES SEE DWG. NO. 15-21, SH. 1 OF 3



ELEVATION

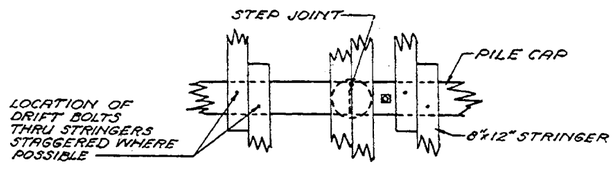
FASCIA STRINGER SPLICE DETAIL
SCALE NO. 4





CLEAT FRAMING DETAIL
SCALE NO. 4

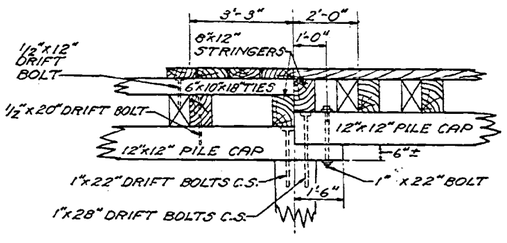
RAIL - STOP DETAIL
SCALE NO. 4



LOCATION OF DRIFT BOLTS THRU STRINGERS STAGGERED WHERE POSSIBLE

(DECKING AND TIES NOT SHOWN)

PLAN



ELEVATION

DETAIL AT CONNECTION OF SECTION "A" & SECTION "B"
SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3' 4'
NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, DESIGN BRANCH

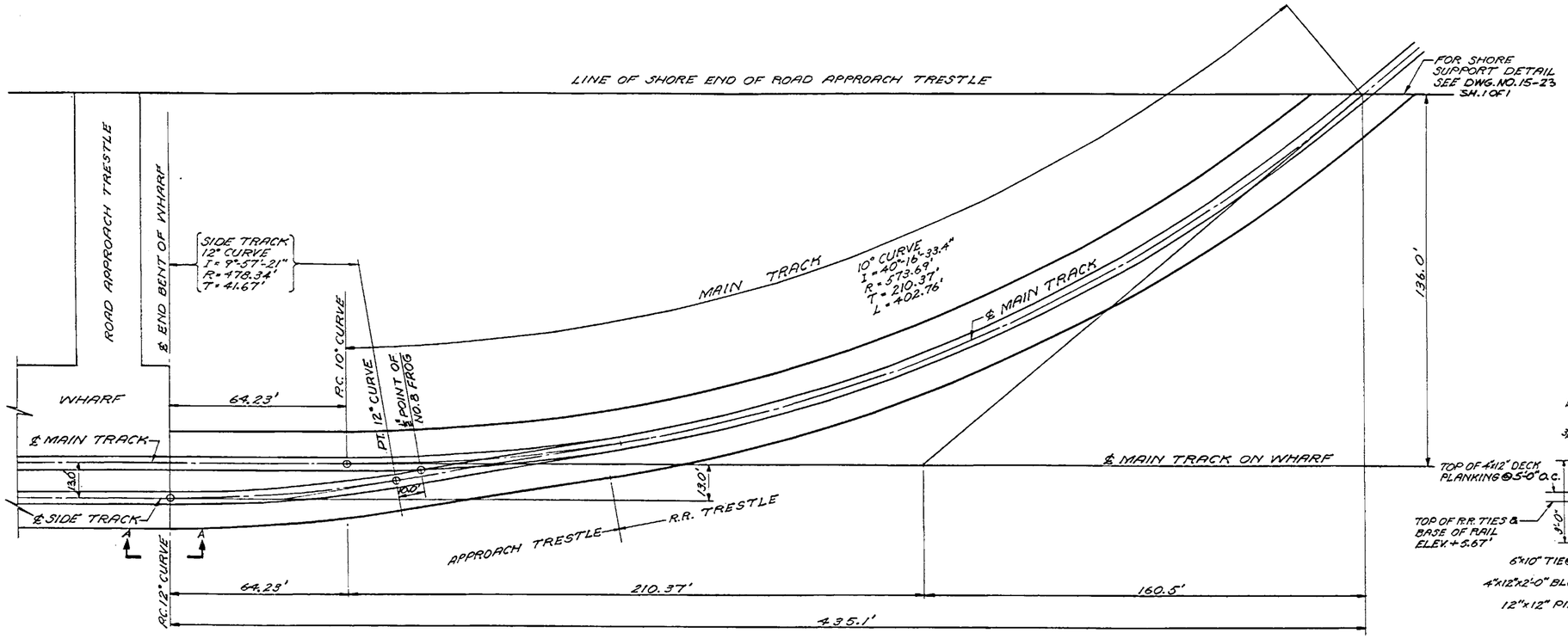
THEATER OF OPERATIONS

PORTS-DRY CARGO UNLOADING FACILITIES
WHARF-TIMBER 60'X500'
DETAILS

APPROVED: Chief, Engineering Division, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

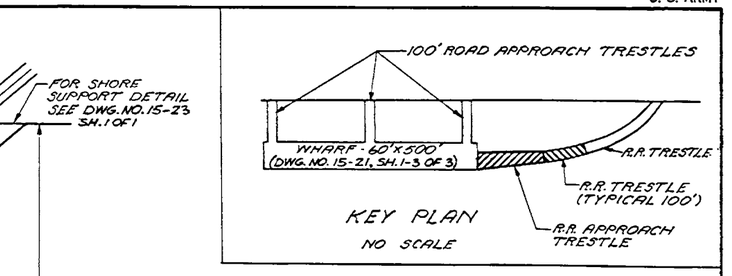
APPROVED FOR PROPONENT AGENCY:
ROBERT W. GENTLEMAN
Colonel, CE
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 24 SEP 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-21
SHEET 3 OF 3



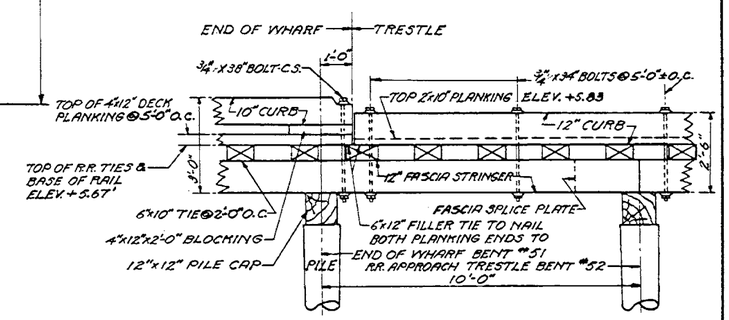
PLAN

SCALE NO. 11



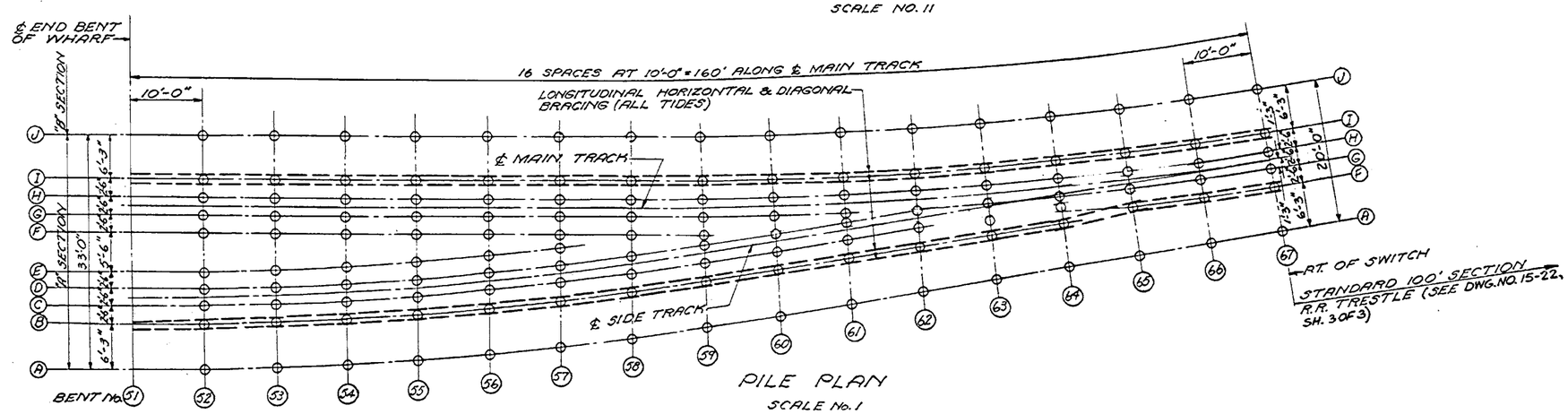
KEY PLAN

NO SCALE



ELEVATION A-A

(SHOWING CURB DETAIL CONNECTION OF WHARF TO R.R. APPROACH TRESTLE)
SCALE No. 4



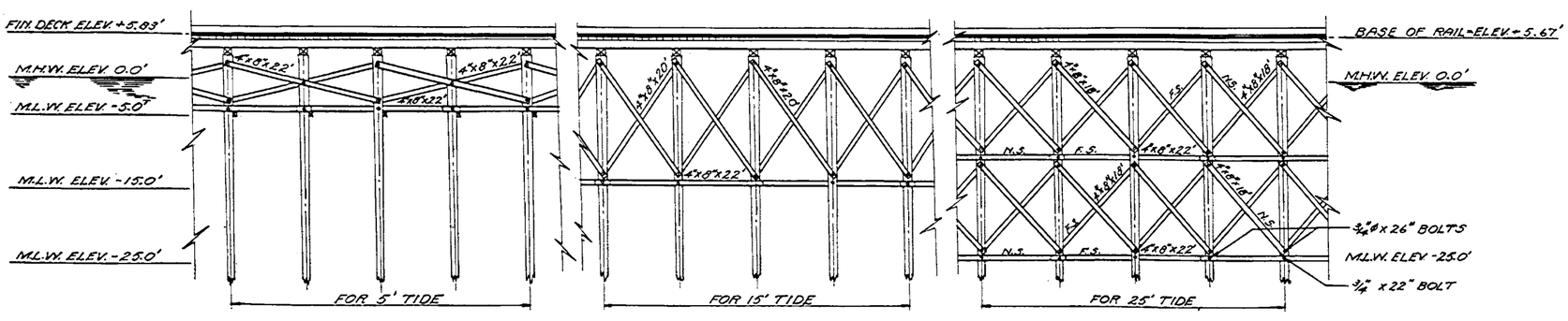
PILE PLAN

SCALE No. 1

FACILITY NUMBERS			
FACILITY	5' TIDE	15' TIDE	25' TIDE
RR APPROACH TRESTLE 100 LF	152201	152202	152203
RR TRESTLE 24'W x 100'	152204	152205	152206

PILE LENGTHS	
TIDAL RANGE	PILE LENGTH
5'	66'-70'
15'	76'-80'
25'	86'-90'

NOTE:
FOR GENERAL NOTES SEE DWG. NO. 15-21, SH. 1 OF 3



TYPICAL LONGITUDINAL BRACING - ROWS Ⓑ & ① (Ⓕ BENTS 65-67)

SCALE No. 1

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 15' NO. 1 | 0 1' 2' 3' 4' NO. 4 | 0 5' 10' 20' 30' 40' NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

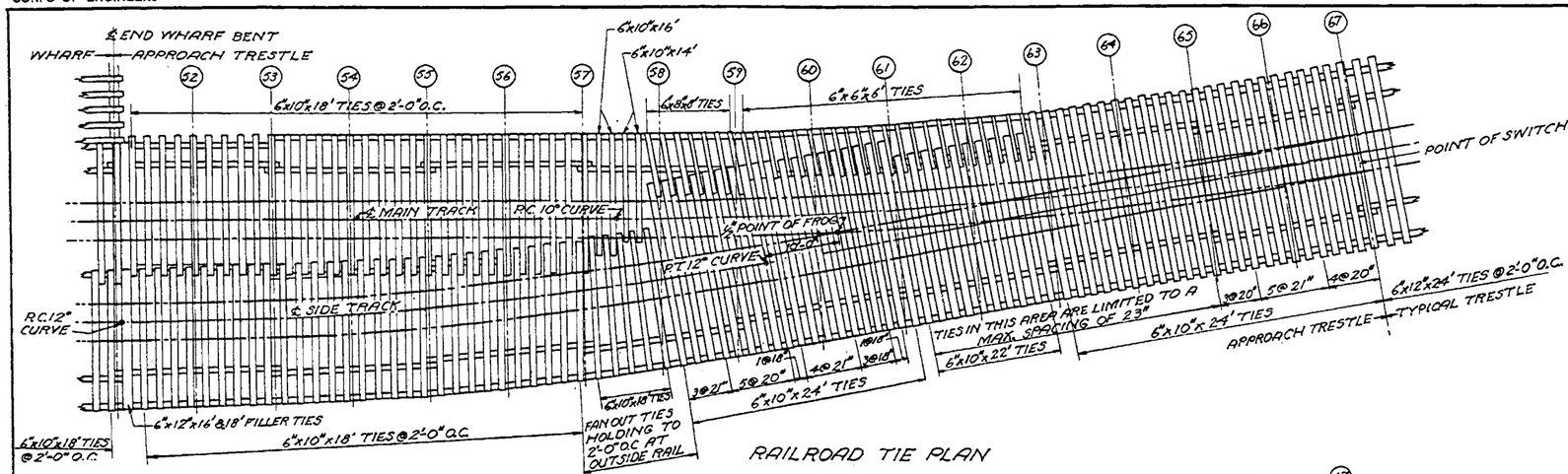
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, ENGINEERING BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1962
APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, CE, Deputy Chief, Transportation Resources Division, Headquarters of Transportation
DATE 14 SEP 1962

THEATER OF OPERATIONS

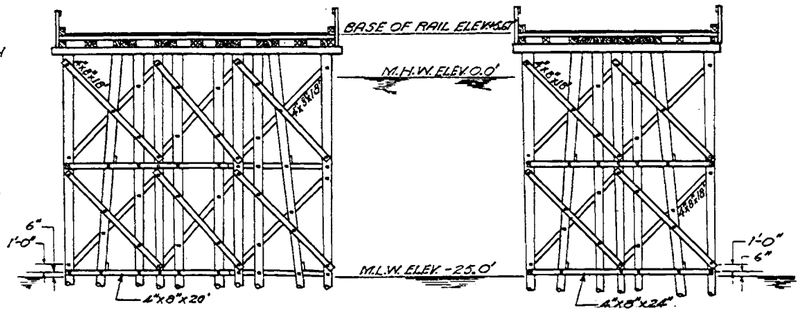
PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF-TIMBER 60'X500'
RR APPROACH TRESTLE-PLANS & SECTIONS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-22
SHEET 1 OF 3



RAILROAD TIE PLAN

SCALE No. 1

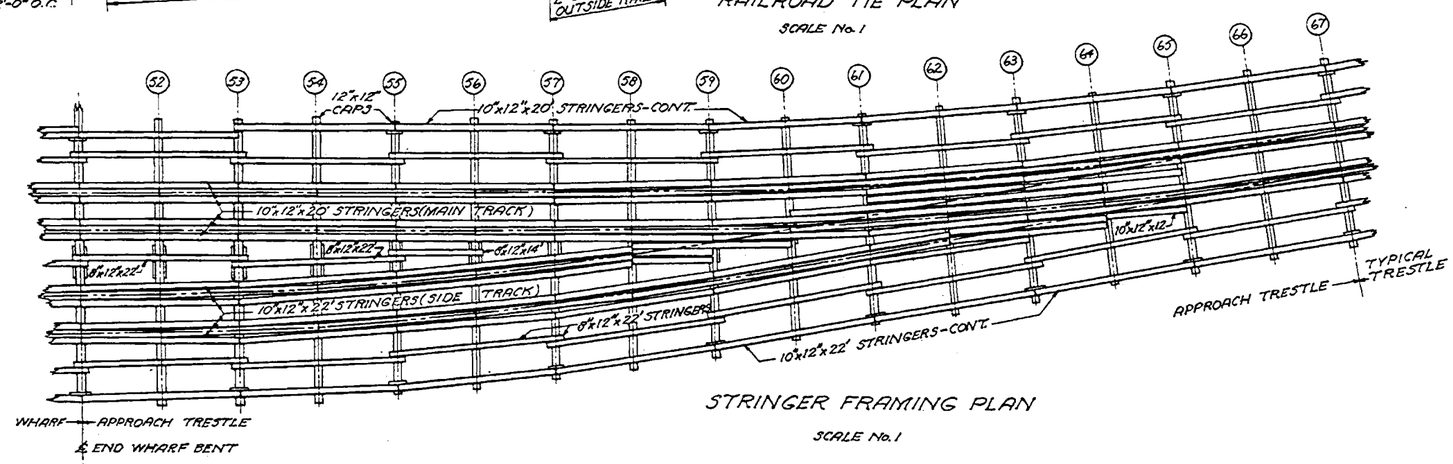


CROSS SECTION AT BENT NO. 53
TRANSVERSE BRACING FOR 25' TIDE

SCALE NO. 1

CROSS SECTION AT BENT NO. 62
TRANSVERSE BRACING FOR 25' TIDE

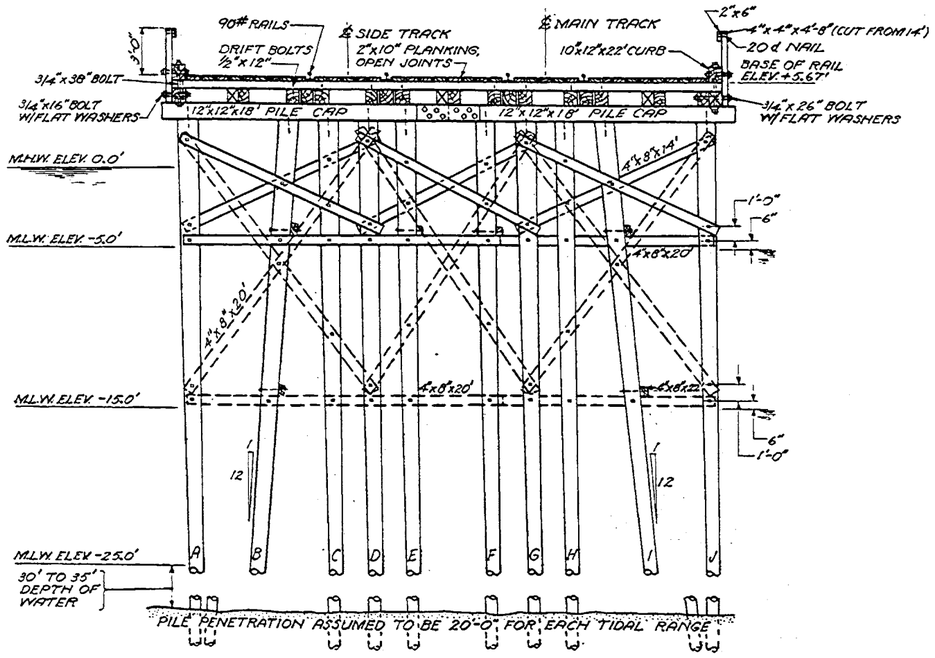
SCALE NO. 1



STRINGER FRAMING PLAN

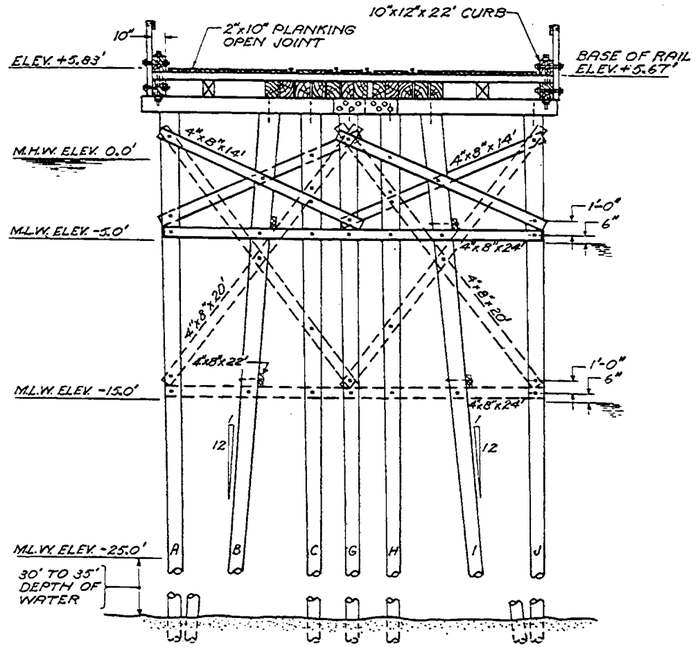
SCALE No. 1

PILE CAP SCHEDULE		
BENT NO.	NO. OF PIECES	LENGTH IN FEET
52	2	18
53	2	18
54	2	18
55	2	18
56	1	18
	1	16
57	1	18
	1	16
58	2	16
59	1	16
60	1	14
60	2	14
	1	12
62	1	14
	1	12
63	1	14
	1	12
64	1	24
65	1	24
66	1	24
67	1	24



CROSS SECTION AT BENT NO. 53
TRANSVERSE BRACING FOR 5' & 15' TIDES

SCALE No. 2



CROSS SECTION AT BENT NO. 62
TRANSVERSE BRACING FOR 5'&15' TIDES

SCALE No. 2

NOTES:
FOR DETAILS SEE DWG. NO. 15-21, SHEET 3 OF 3
FOR BRACING DETAILS SEE DWG. NO. 15-21, SHEET 2 OF 3
FOR GENERAL NOTES SEE DWG. NO. 15-21, SHEET 1 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

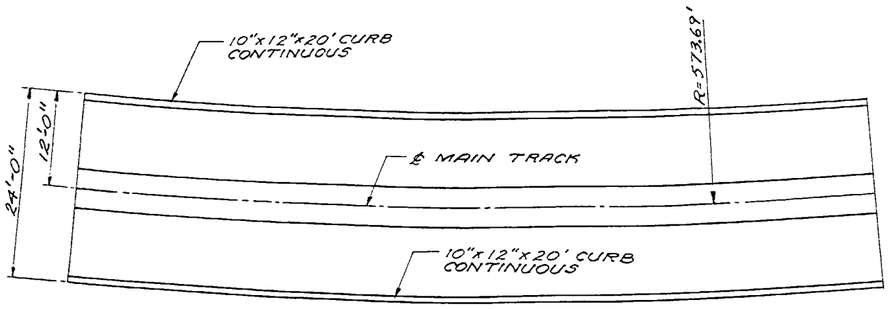
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: LLYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: H. E. Eckam, CHIEF, ENGINEERING BRANCH
APPROVED: H. N. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1968

THEATER OF OPERATIONS

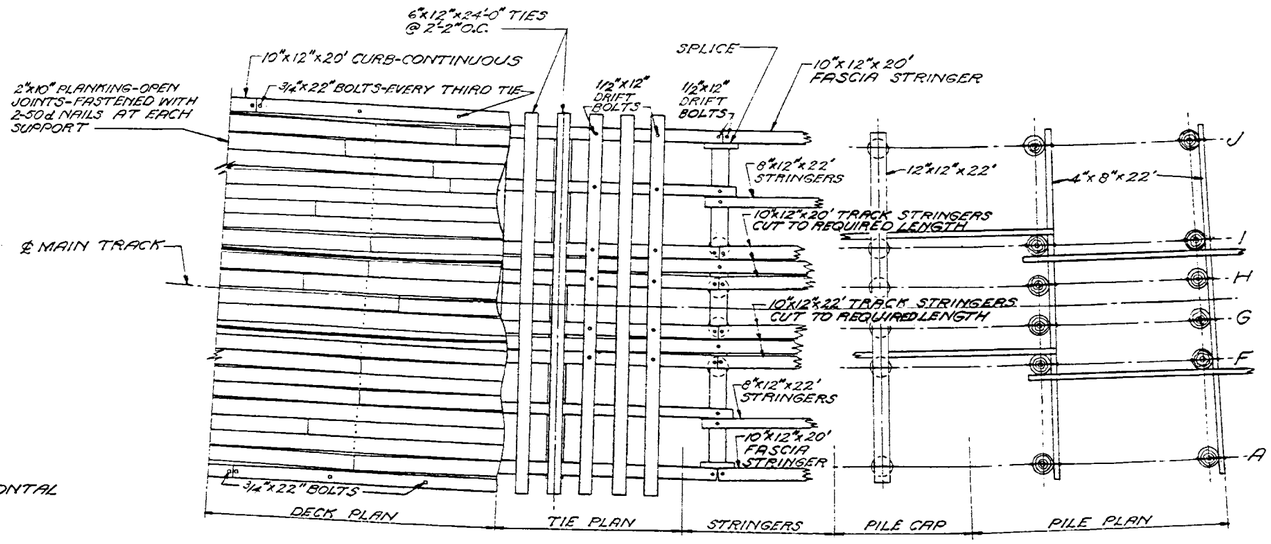
PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF-TIMBER 60'X500'
R.R. APPROACH TRESTLE-PLANS & SECTIONS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-22
SHEET 2 OF 3



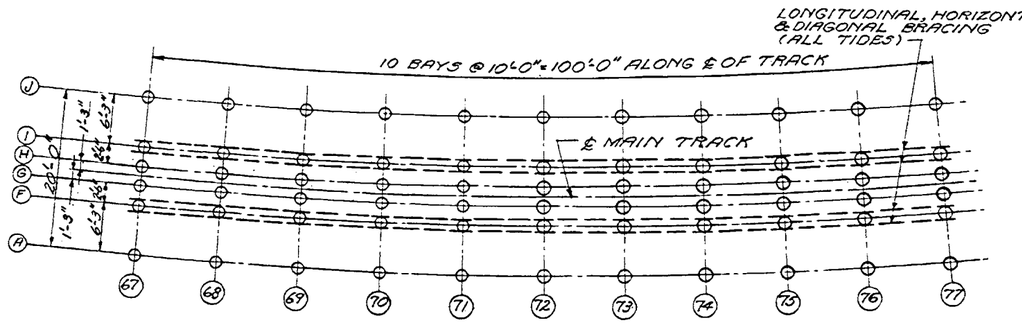
DECK PLAN

SCALE No.1



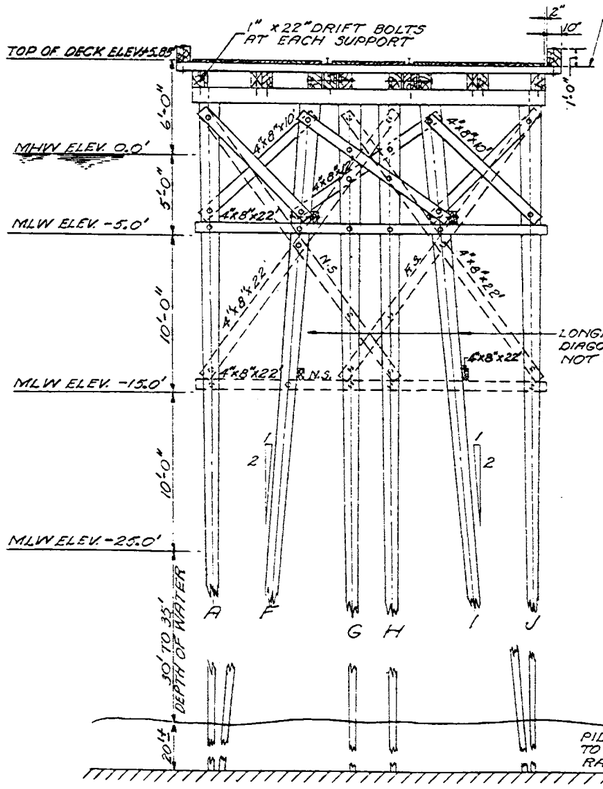
FRAMING PLAN

SCALE No.2



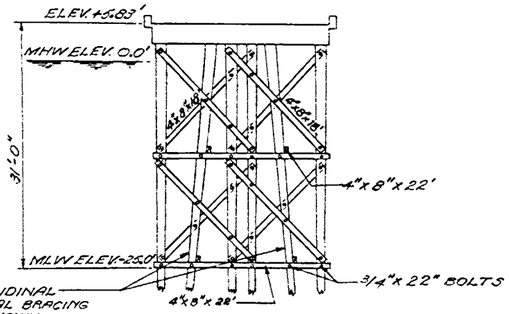
PILE PLAN

SCALE No.1



TYPICAL CROSS SECTION
TRANSVERSE BRACING FOR 5' & 15' TIDES

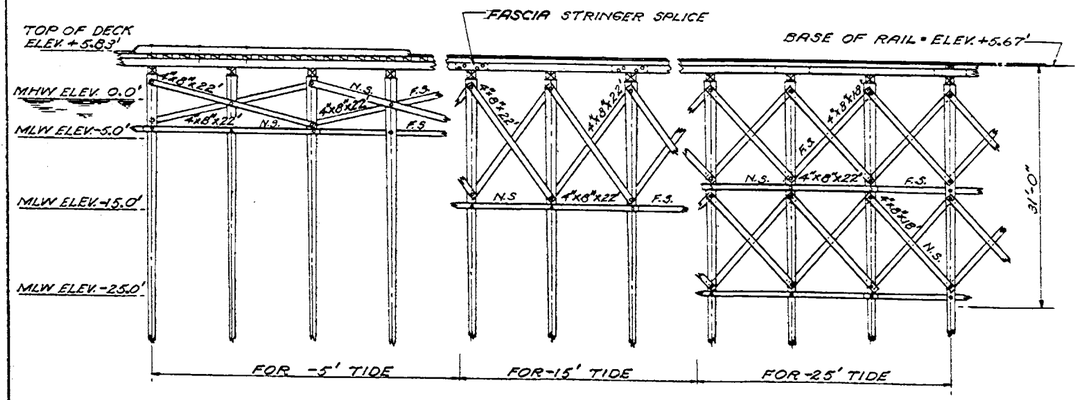
SCALE NO. 2



TYPICAL TRANSVERSE BRACING FOR -25.0' TIDE

SCALE No.1

PILE LENGTHS	
TIDAL RANGE	PILE LENGTH
5'	66'-70'
15'	76'-80'
25'	86'-90'



TYPICAL LONGITUDINAL BRACING

ROWS F & I

SCALE No. 1

NOTES:
FOR DETAILS SEE DWG. NO. 15-21, SHEET 3 OF 3
FOR BRACING DETAILS SEE DWG. NO. 15-21, SHEET 2 OF 3
FOR GENERAL NOTES SEE DWG. NO. 15-21, SHEET 1 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 15' NO.1

0 5' 10' NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN

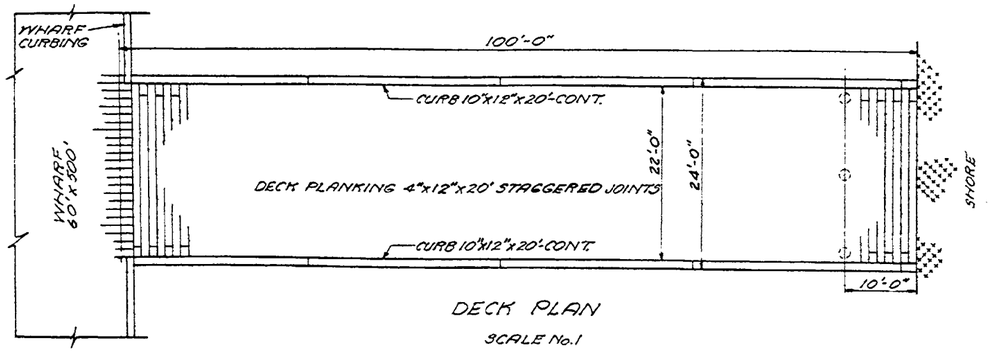
THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF-TIMBER 60'X500'
R.R. APPROACH TRESTLE-PLANS & SECTIONS

APPROVED: DATE: 19 MAR 1963
CHIEF STRUCTURES BRANCH
APPROVED: H.M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

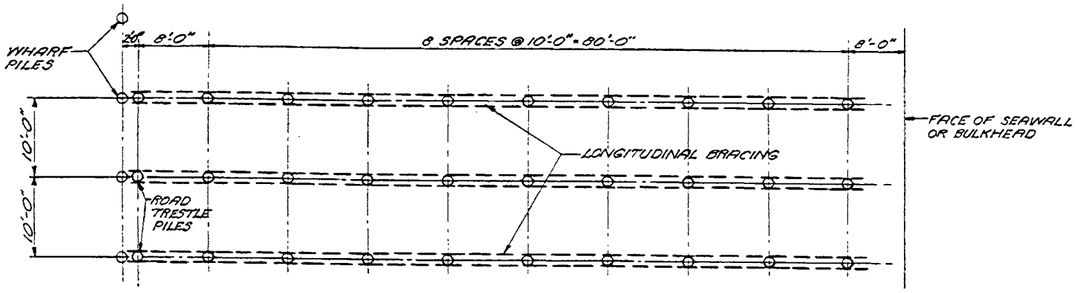
APPROVED FOR PROPONENT AGENCY:
ROBERT W. GENTLEMAN
Colonel, QS
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 14 SEP 1962

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-22
SHEET 3 OF 3



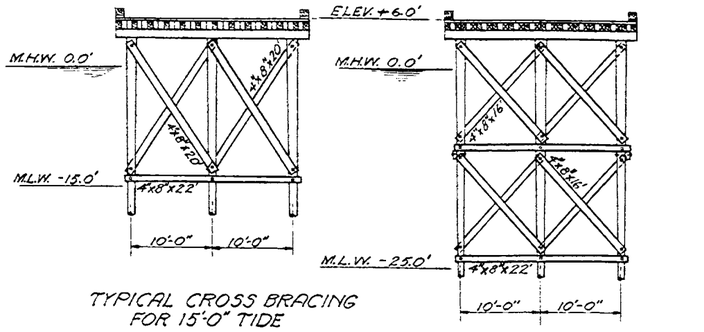
DECK PLAN

SCALE No.1



PILE PLAN

SCALE No.1.

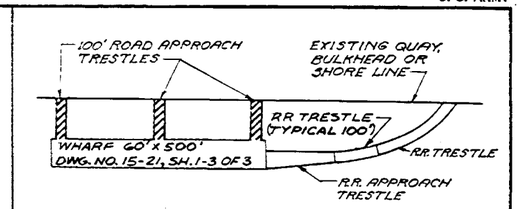


TYPICAL CROSS BRACING FOR 15'-0" TIDE

SCALE No.1

TYPICAL CROSS BRACING FOR 25'-0" TIDE

SCALE No.1

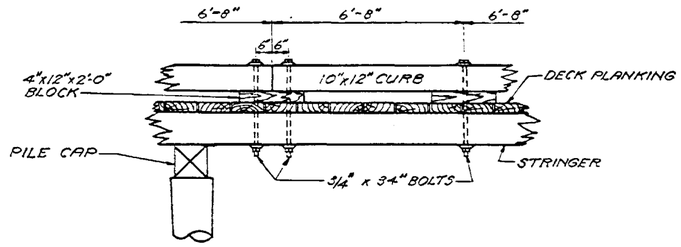


KEY PLAN

NO SCALE

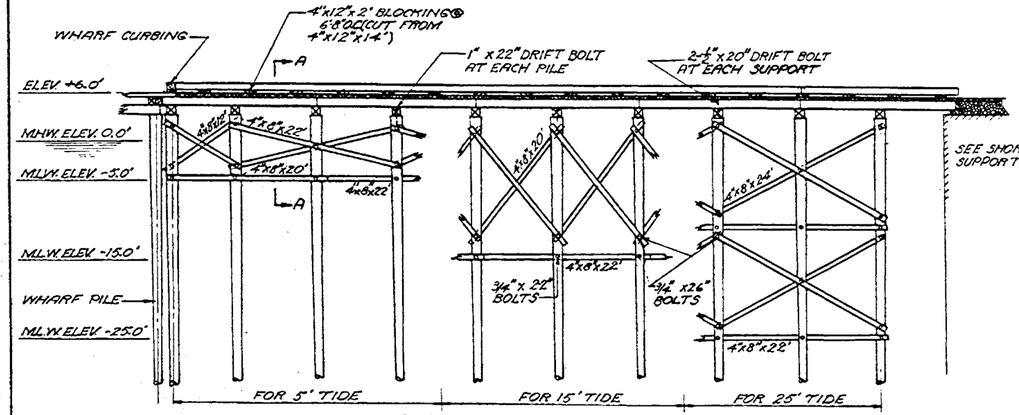


PLAN



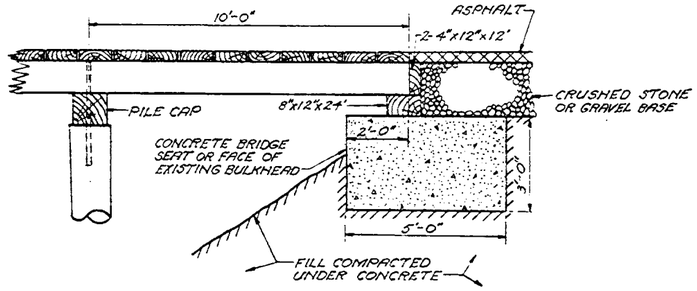
CURB SPLICE DETAIL

SCALE No.4



TYPICAL LONGITUDINAL BRACING

SCALE No.1



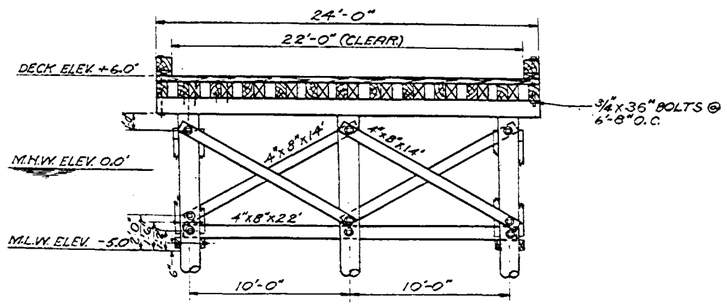
SHORE SUPPORT DETAIL

SCALE No. 4

FACILITY NUMBERS			
FACILITY	5' TIDE	15' TIDE	25' TIDE
ROAD APPROACH TRESTLE 24'x100'	152301	152302	152303

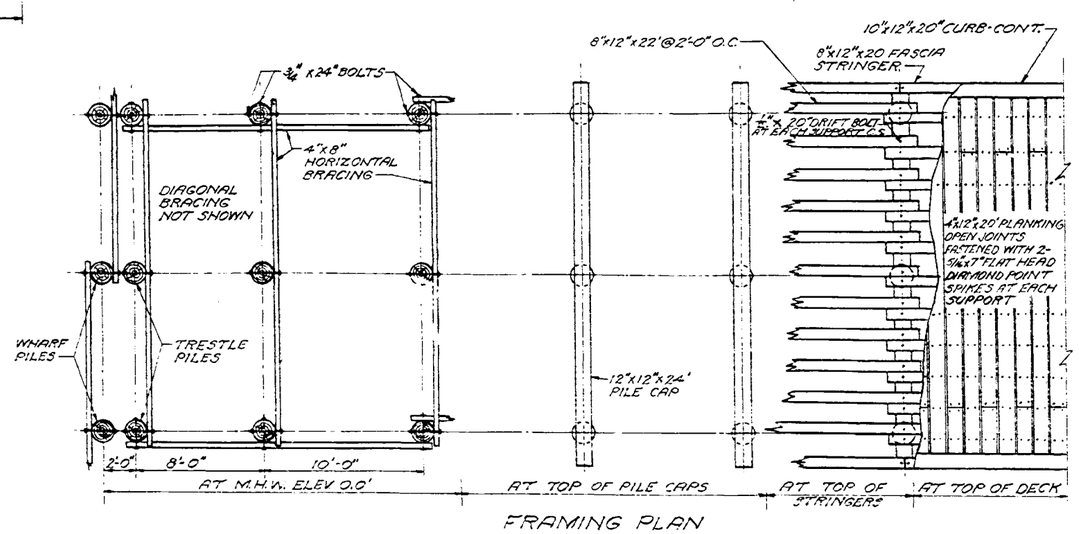
PILE LENGTHS	
TIDAL RANGE	PILE LENGTH
5'	66'-70'
13'	76'-80'
23'	86'-90'

NOTE:
FOR GENERAL NOTES SEE DWG. NO. 15-21, SH. 1 OF 3



SECTION A-A

SCALE No. 2



FRAMING PLAN

SCALE No. 2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 15' NO.1 | 0 5' 10' NO.2 | 0 1' 2' 3' 4' NO.4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HALE
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C. W. PEICHMANN

THEATER OF OPERATIONS

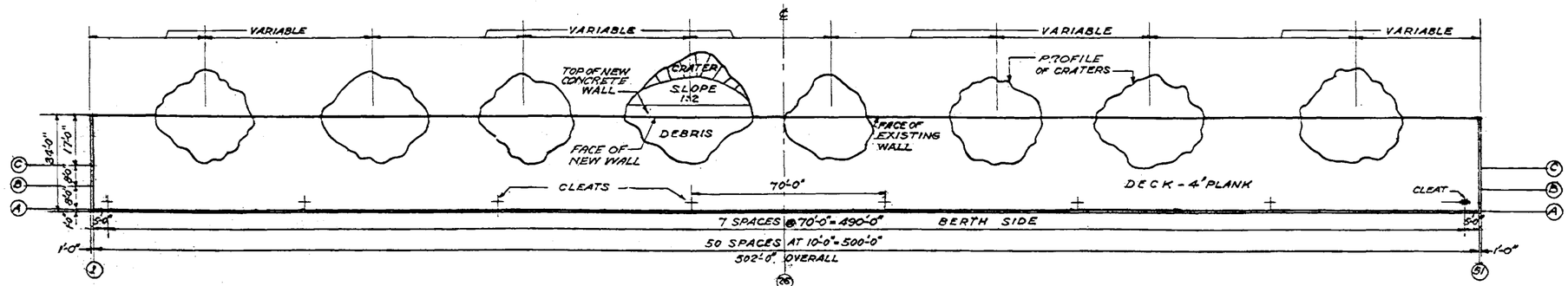
PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF-TIMBER 60'X500'
ROAD APPROACH TRESTLE-PLANS & SECTIONS

APPROVED: H. M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED: H. Eschacm
CHIEF, STEUCTURES BRANCH

APPROVED FOR PROPONENT AGENCY: Lew Hardeman
ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1968

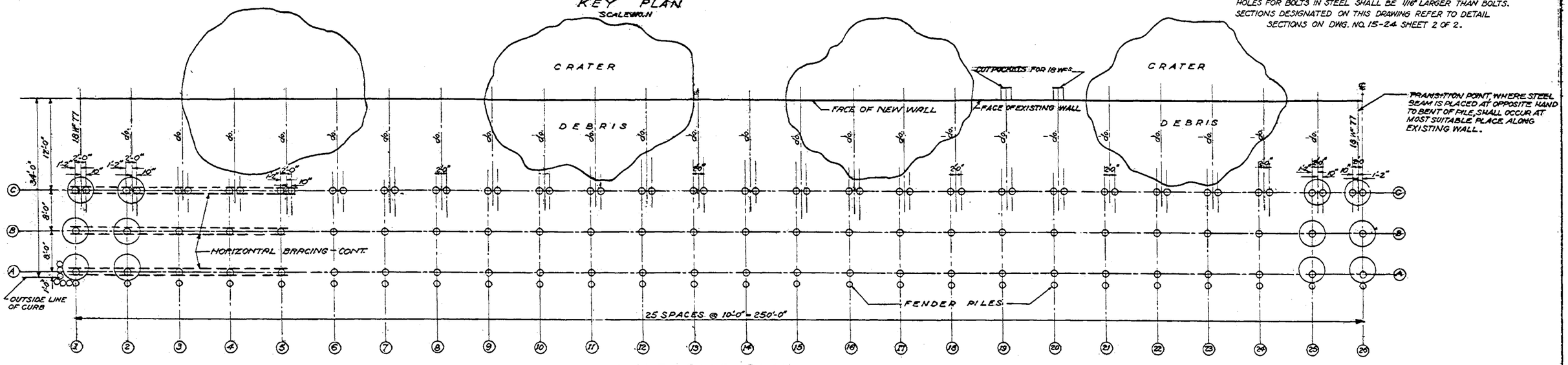
SCALE AS NOTED
SPEC. NO.
DRAWING NUMBER 15-23
SHEET 1 OF 1



KEY PLAN
SCALE NO.1

GENERAL NOTES

ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
12"X12" TIMBER COLUMNS MAY BE SUBSTITUTED FOR TIMBER PILES.
HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
HOLES FOR THROUGH BOLTS IN WOOD SHALL BE SAME SIZE AS BOLTS.
BEARING PILES - 25' LONG; FENDER PILES - 30' LONG; ALL PILE LENGTHS TO BE INCREASED PROPORTIONALLY WITH INCREASE OF FREEBOARD TIDAL RANGE - AND/OR WATER DEPTH.
CYLINDER FORMS ARE CORRUGATED MULTI-PLATE PIPE; CULVERT, IRON OR STEEL; NESTABLE; NO. 10 GAUGE, 5'-0" DIAMETER X 8'-0" LONG.
NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
PROJECTING END OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
USE O.G. WASHERS ON ALL BOLTS IN WOOD.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
HOLES FOR BOLTS IN STEEL SHALL BE 1/16" LARGER THAN BOLTS.
SECTIONS DESIGNATED ON THIS DRAWING REFER TO DETAIL SECTIONS ON DWG. NO. 15-24 SHEET 2 OF 2.

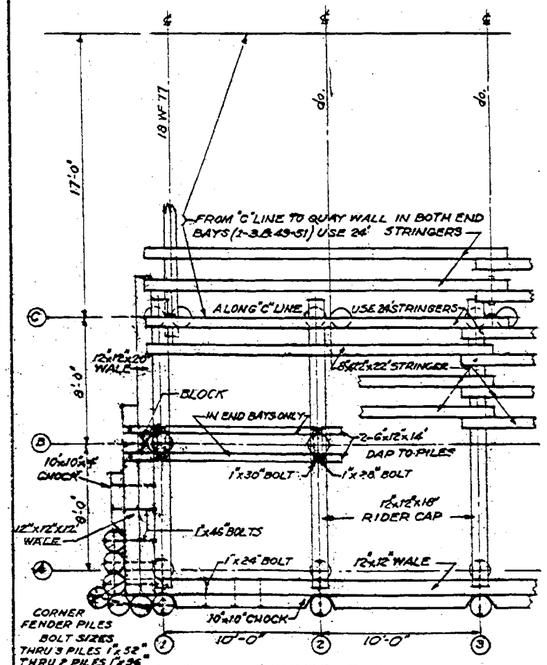


HALF PILE PLAN
SCALE NO.1

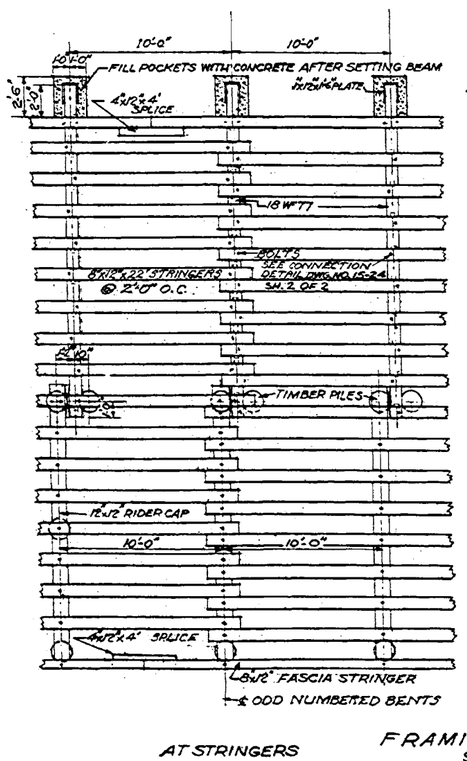
FACILITY NUMBERS	
FACILITY	NUMBER
WHARF REHAB 35'x500' LIGHTERAGE	152401
ELEC. DISTRIBUTION FOR WHARF REHAB	152412

BASIS OF DESIGN

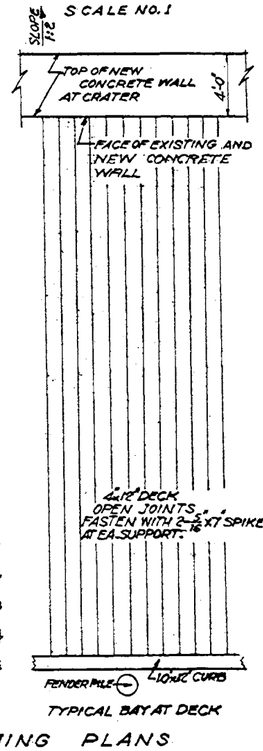
UNIFORM LIVE LOAD 500 PSF.
PILE BEARING VALUE 42,000 LBS.
EXTREME FIBER STRESS, WOOD - 1,800 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1500 PSI.
COMPRESSION PERPENDICULAR TO GRAIN, WOOD - 450 PSI.
HORIZONTAL SHEAR, WOOD - 150 PSI.
MODULUS OF ELASTICITY. WOOD - 1,600,000 PSI.



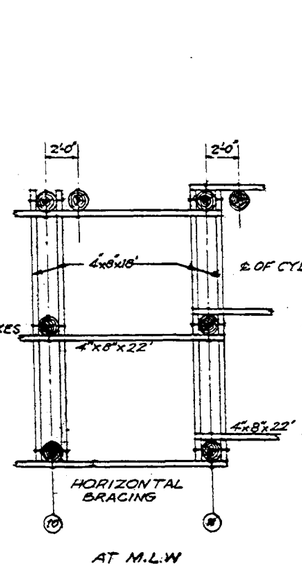
CORNER FRAMING



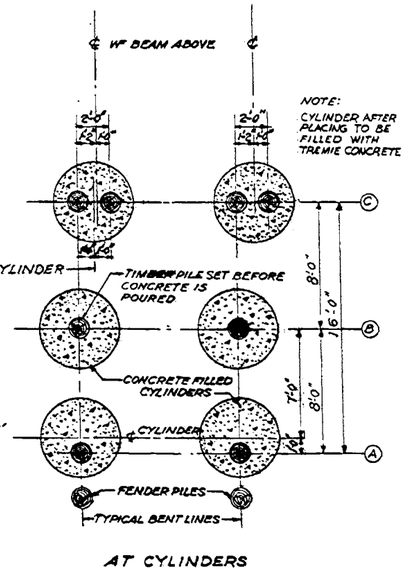
AT STRINGERS



TYPICAL BAY AT DECK



AT M.L.W



AT CYLINDERS

FRAMING PLANS
SCALE NO.2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO.1
0 5' 10' NO.2
0 5' 10' 20' 30' 40' NO.11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C. W. DEITCHMANN

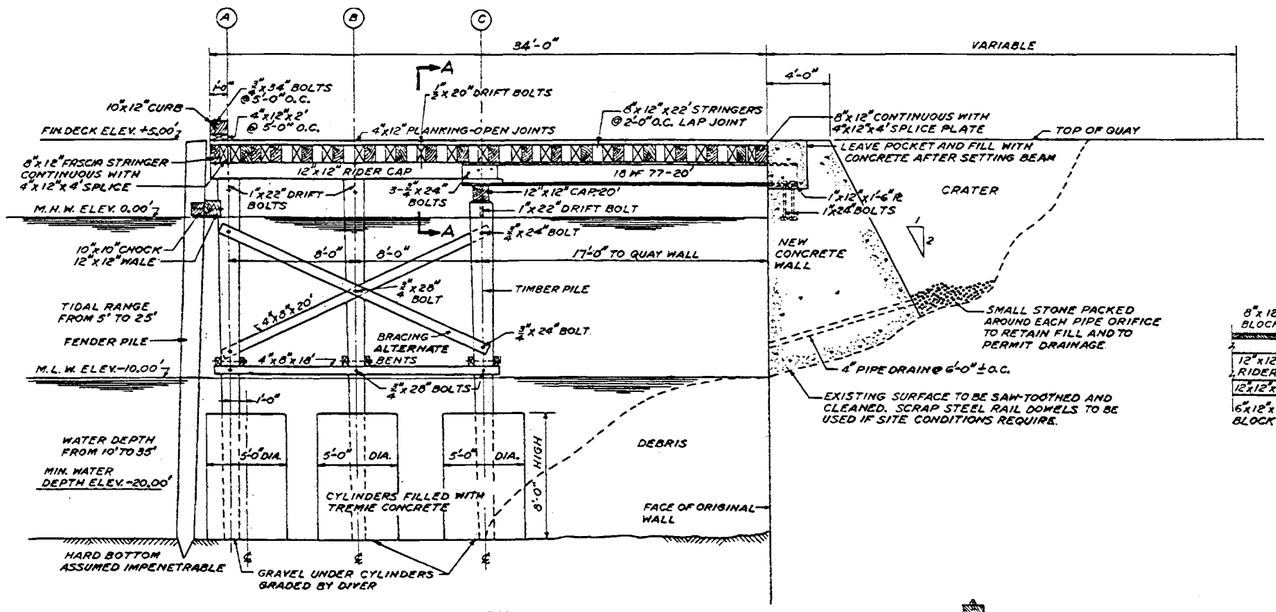
THEATER OF OPERATIONS

PORTS-DRY CARGO UNLOADING FACILITIES
WHARF REHAB-LIGHTERAGE 35'X500'
PLANS

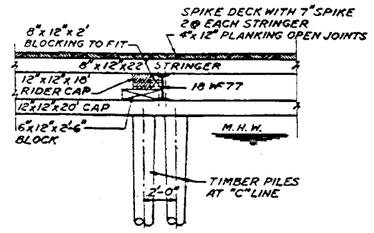
APPROVED: G. Eckhardt, CHIEF, ENGINEERING BRANCH
APPROVED: W. M. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert W. Gentleman, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE: 4 SEP 1968

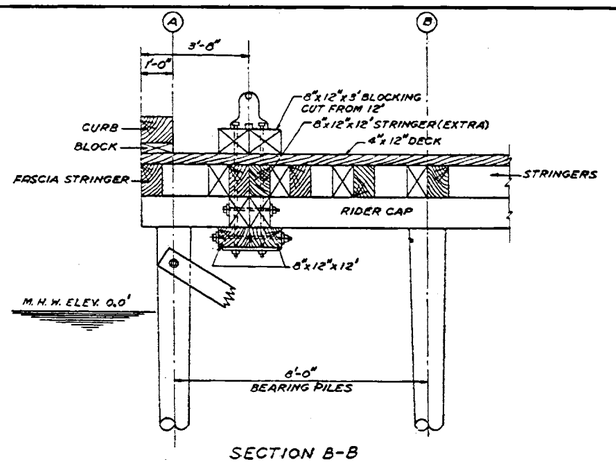
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-24
SHEET 1 OF 2



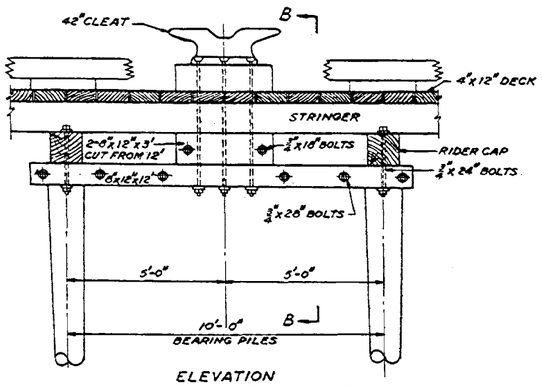
TYPICAL CROSS SECTION
SCALE NO. 2



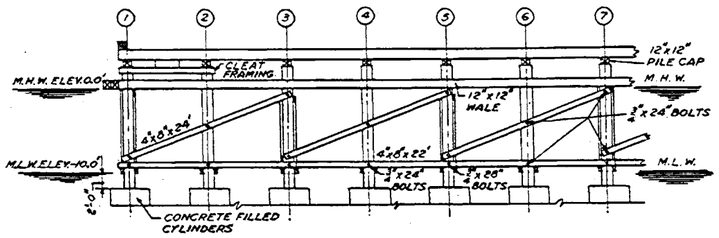
SECTION A-A
SCALE NO.2



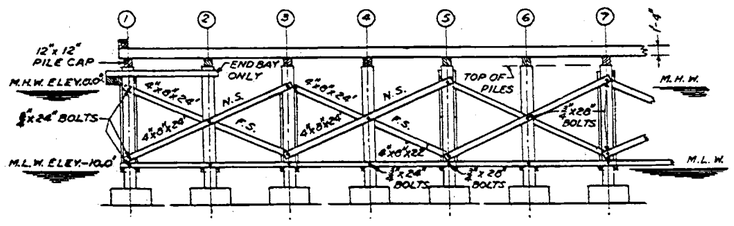
SECTION B-B



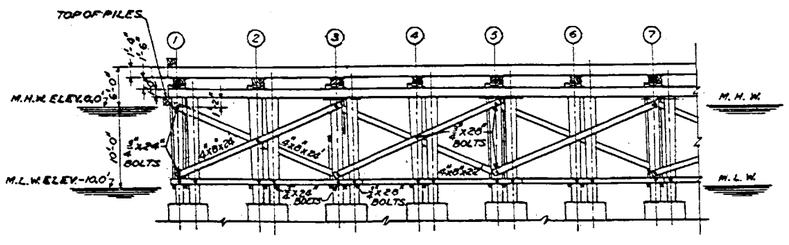
ELEVATION
CLEAT FRAMING DETAILS
SCALE NO. 4



LINE Ⓐ

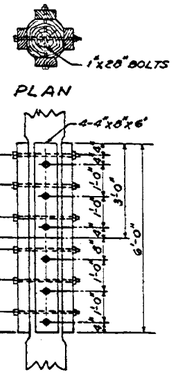


LINE Ⓑ



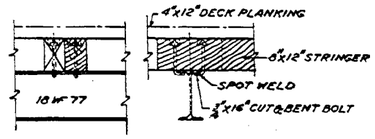
LINE Ⓒ

TYPICAL LONGITUDINAL BRACING
SCALE NO. 1

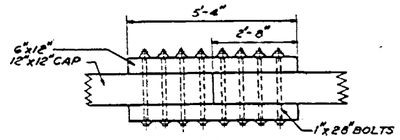


PLAN

ELEVATION
PILE SPLICE DETAIL
SCALE NO. 4



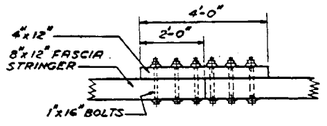
DETAIL
STRINGER TO STEEL BEAM
SCALE NO. 4



PLAN



ELEVATION
BEARING CAP
SPLICE DETAIL
SCALE NO. 4



PLAN



ELEVATION
FASCIA STRINGER
SPLICE DETAIL
SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO.1 | 0 5' 10' NO.2 | 0 1' 2' 3' 4' NO.4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

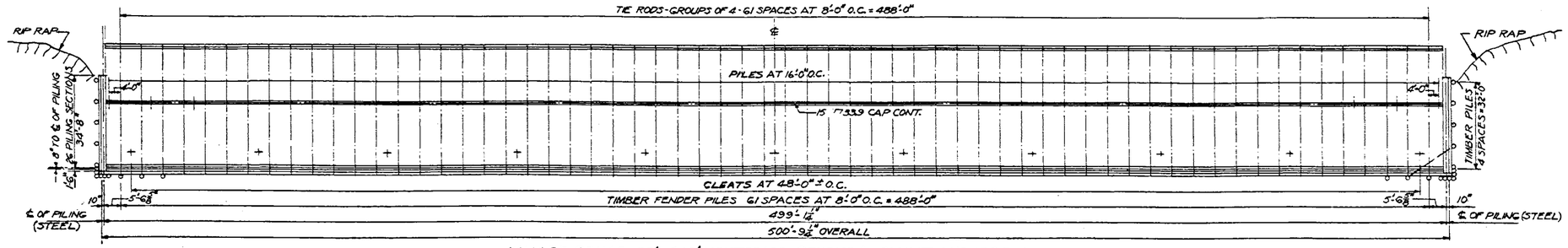
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: MONTO
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, ARCHITECT BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY:
DATE 14 SEP 1968

THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF REHAB-LIGHTERAGE 35'X500'
SECTIONS & DETAILS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-24
SHEET 2 OF 2



WHARF REHAB-35'x500' LIGHTERAGE-SCHEME I-FACILITY NO. 15250I

GENERAL PLAN

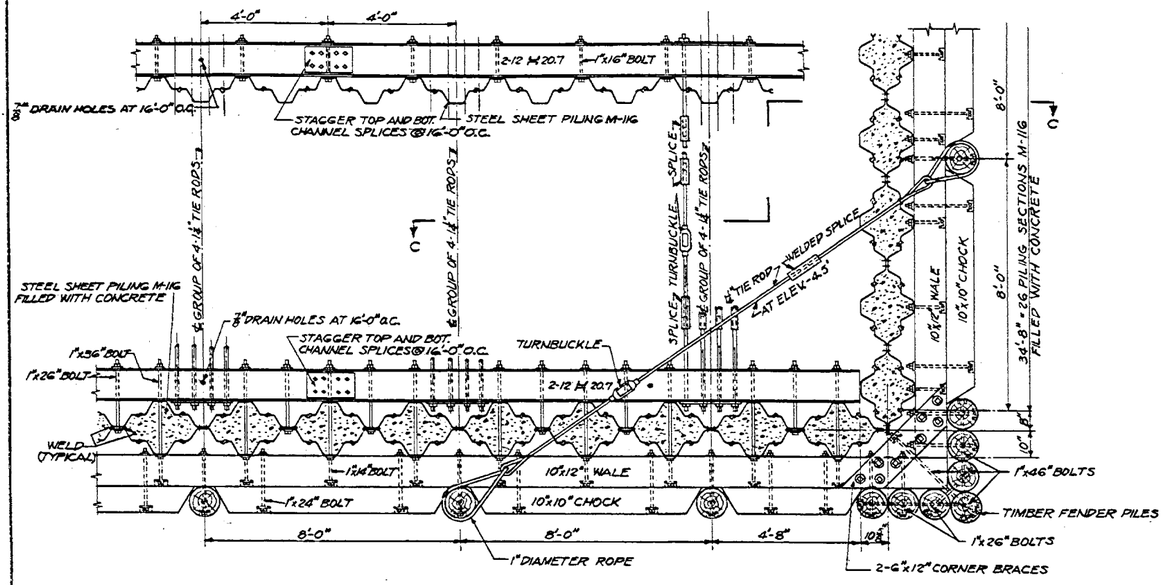
SCALE NO. II

BASIS OF DESIGN

LIVE LOADING 500 PSF.
SIDE PRESSURE 1,000 LBS. PER LIN. FT.
EXTREME FIBER STRESS, WOOD - 1,800 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1,500 PSI.
COMPRESSION PERPENDICULAR TO GRAIN, WOOD - 450 PSI.
HORIZONTAL SHEAR, WOOD - 150 PSI.
MODULUS OF ELASTICITY, WOOD - 1,600,000 PSI.
EXTREME FIBER STRESS, STEEL - 27,000 PSI.

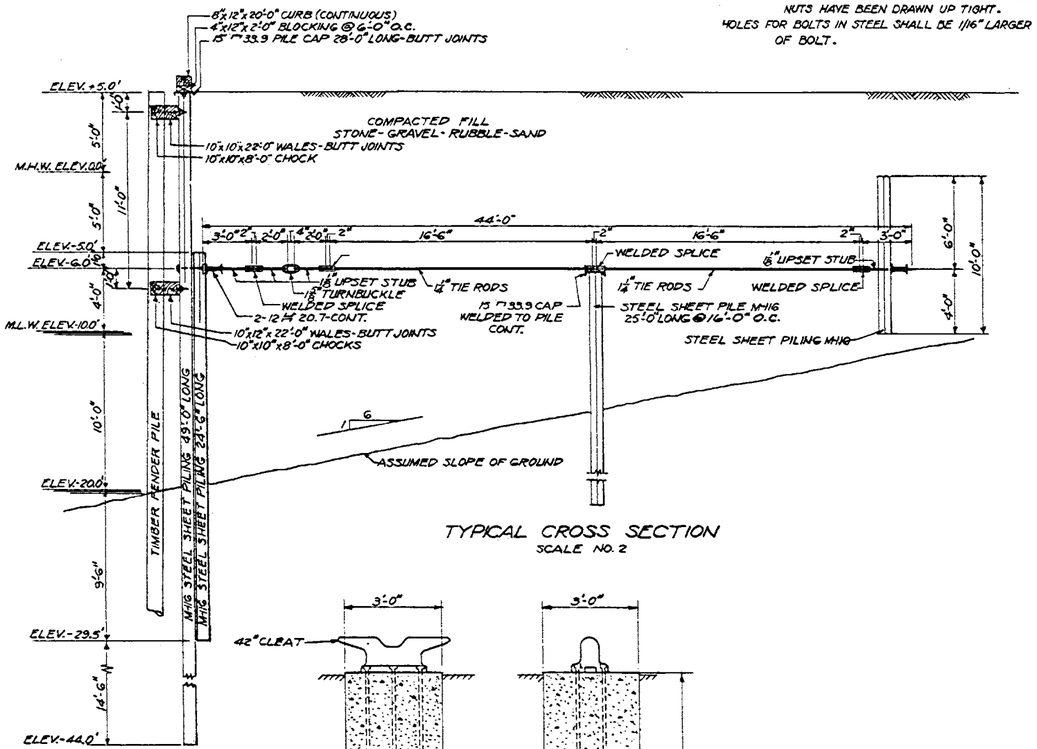
GENERAL NOTES

HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
HOLES FOR THROUGH BOLTS IN WOOD SHALL BE THE SAME DIAMETER AS THE BOLT.
NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.
USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
HOLES FOR BOLTS IN STEEL SHALL BE 1/16" LARGER THAN DIAMETER OF BOLT.



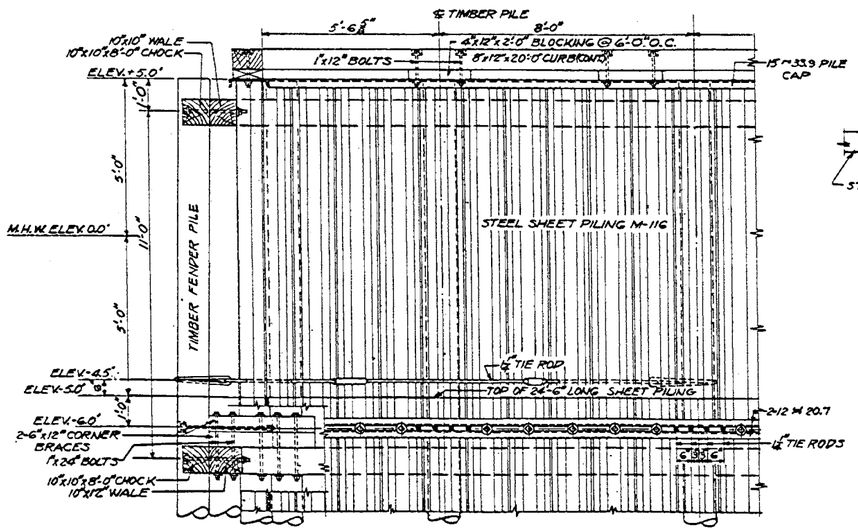
DETAIL PLAN

SCALE NO. 4



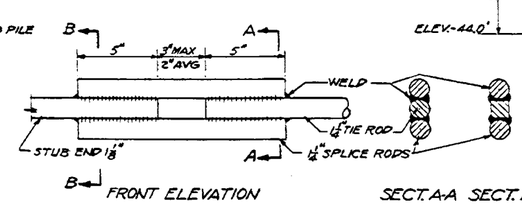
TYPICAL CROSS SECTION

SCALE NO. 2



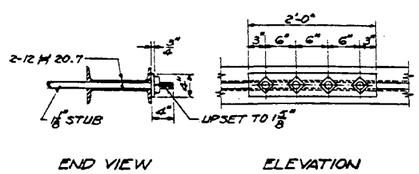
SECTION C-C

SCALE NO. 4



TIE ROD SPLICE

NO SCALE

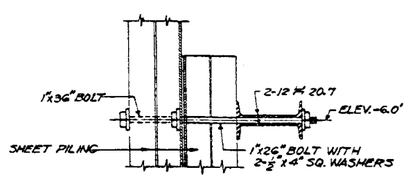


DETAIL OF PLATE FOR TIE RODS

SCALE NO. 6

CLEAT DETAIL SECTIONS

SCALE NO. 4



DETAIL SHOWING SHEET PILING BOLTED TO CHANNELS

SCALE NO. 6

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' NO. 2 · 0 1' 2' NO. 6 · 0 1' 2' 3' 4' NO. 4 · 0 5' 10' 20' 30' 80' NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, ENGINEERING DIVISION

THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF REHAB-LIGHTERAGE 35'X500'
SCHEME I-PLANS-SECTIONS

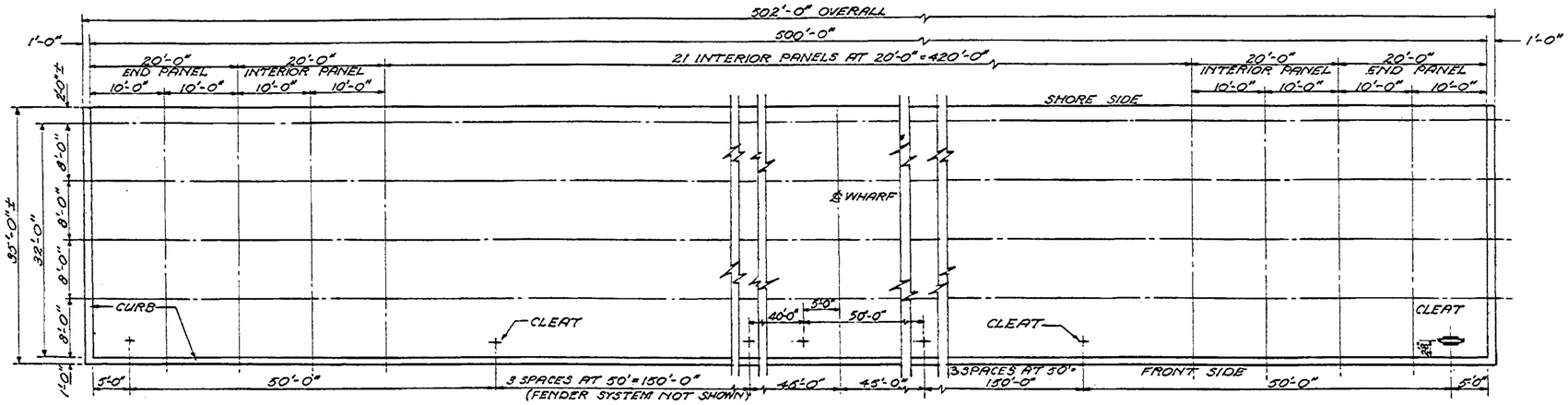
APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: [signature] ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1968

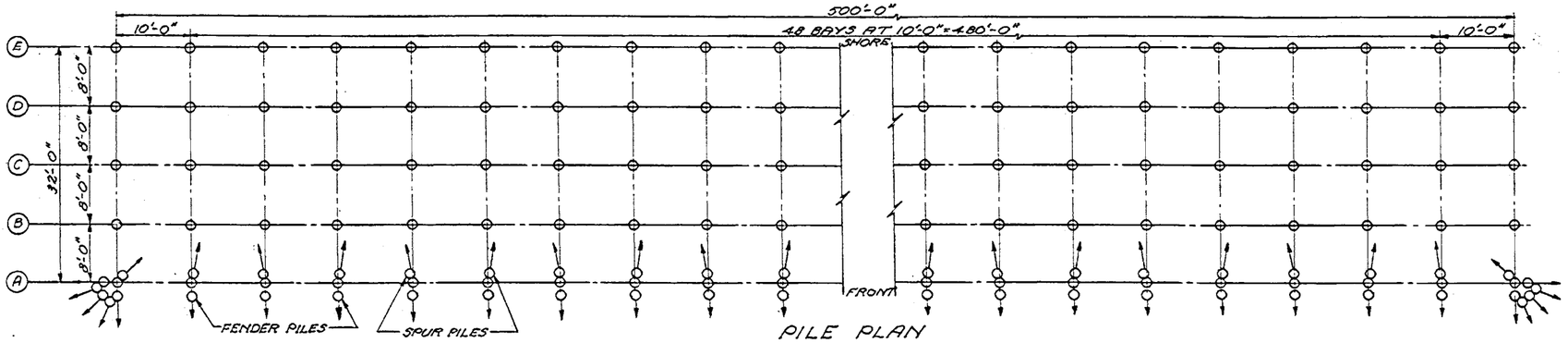
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-25
SHEET 1 OF 1

CORPS OF ENGINEERS

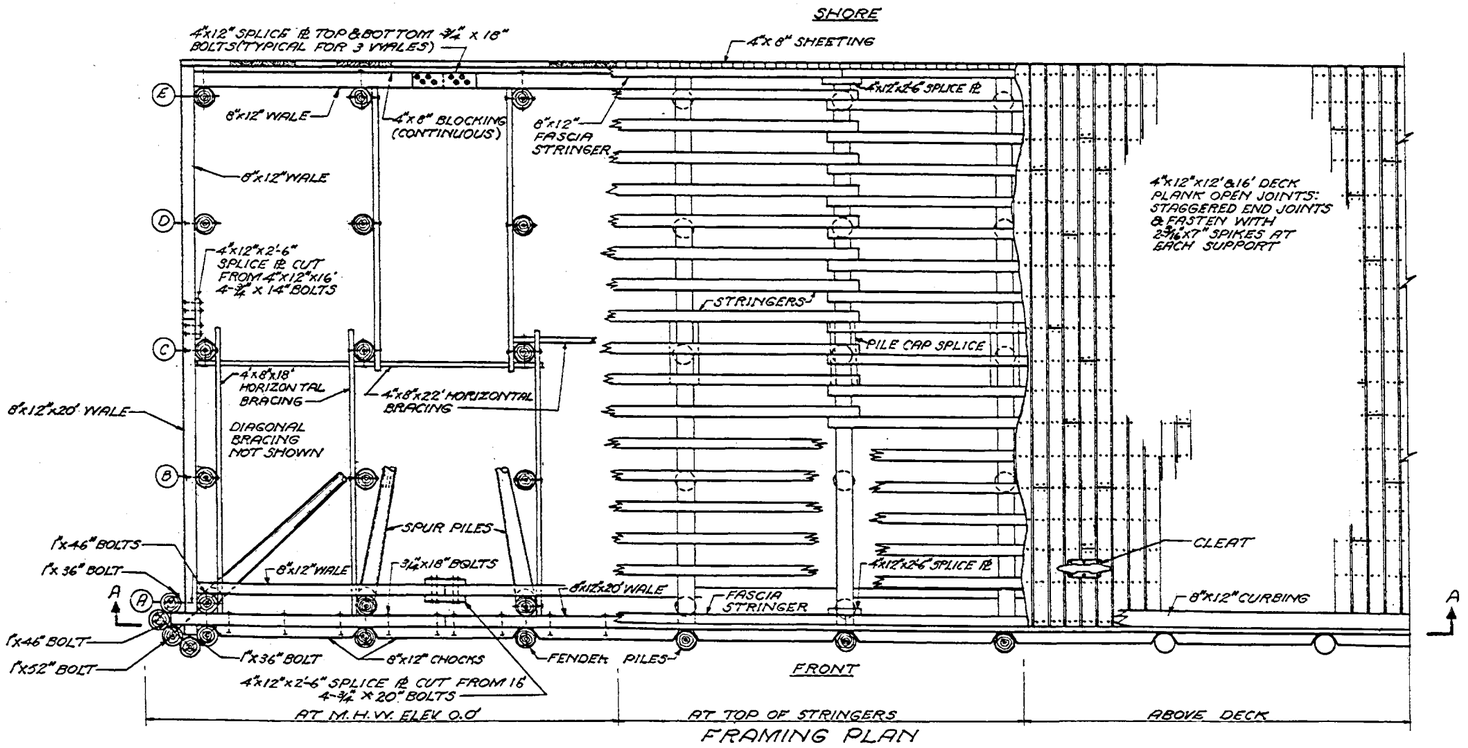
U. S. ARMY



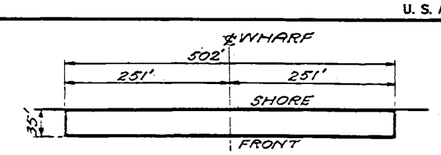
DECK PLAN
SCALE NO. 1



PILE PLAN
SCALE NO. 1



FRAMING PLAN
SCALE NO. 2



KEY PLAN
NO SCALE

BASIS OF DESIGN

UNIFORM LIVE LOAD 500 PSF.
PILE BEARING VALUE 42,000 LBS.
EXTREME FIBER STRESS, WOOD - 1,800 PSI.
COMPRESSION PARALLEL TO GRAIN, WOOD - 1,500 PSI.
COMPRESSION PERPENDICULAR TO GRAIN, WOOD - 450 PSI.
HORIZONTAL SHEAR, WOOD - 150 PSI.
MODULUS OF ELASTICITY, WOOD - 1,600,000 PSI.

GENERAL NOTES

1. HOLES FOR DRIFT BOLTS SHALL BE 1/8" SMALLER THAN DRIFT BOLTS.
2. HOLES FOR THROUGH BOLTS SHALL BE THE SAME DIAMETER AS THE BOLT.
3. NO BOLT HEADS SHALL PROJECT BEYOND FACE OF TIMBER ON OUTSIDE FACE OF FENDER SYSTEM.
4. PROJECTING ENDS OF ALL BOLTS SHALL BE PEENED AFTER LOCK NUTS HAVE BEEN DRAWN UP TIGHT.
5. USE O.G. CAST IRON WASHERS WITH ALL BOLTS IN WOOD.
6. TIMBER DIMENSIONS ARE BASED ON NOMINAL SIZES.
7. ALL PILES 36'-40' LONG; ALL PILE LENGTHS TO BE INCREASED PROPORTIONALLY WITH INCREASE OF FREEBOARD TIDAL RANGE - AND/OR WATER DEPTH.
8. ALL PILES SHALL BE CREOSOTED IF TO BE USED WHERE MARINE BORERS ARE ACTIVE.

FACILITY NUMBERS	
FACILITY	NUMBER
WHARF, 35'x500', LIGHTERAGE	152601

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

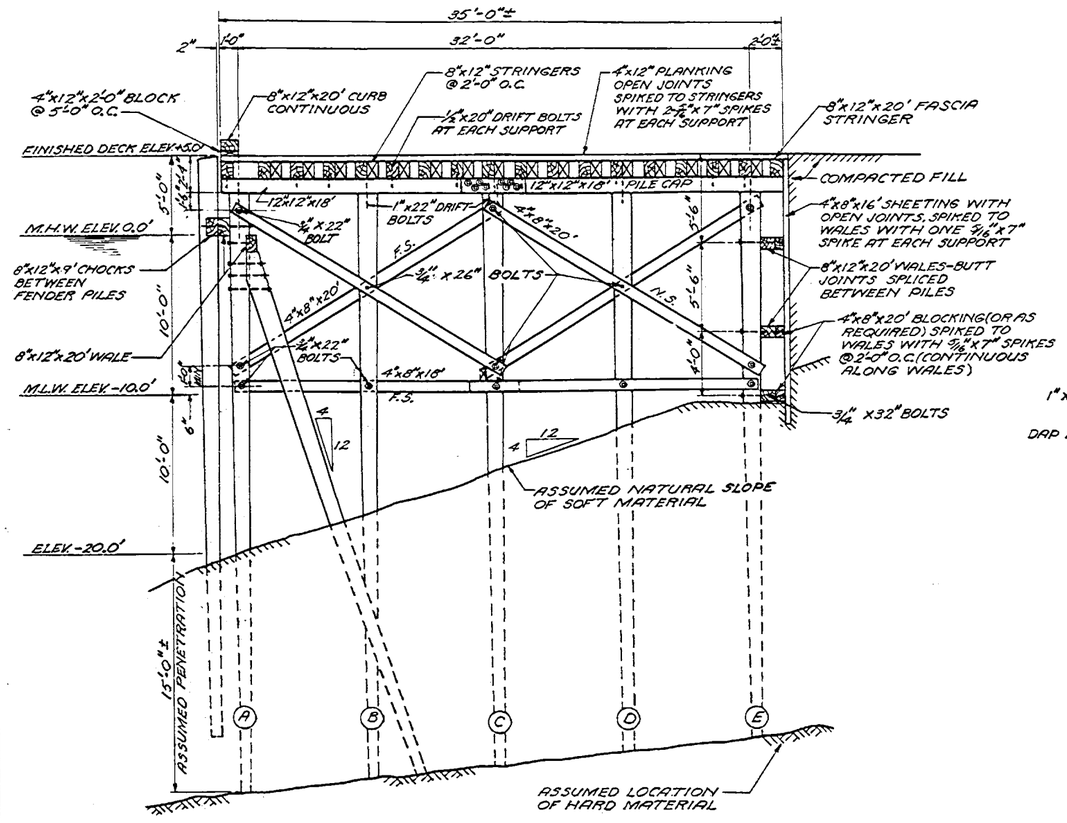
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: G. Gelhaus — CHIEF, ENGINEERING BRANCH
APPROVED: H.M. Williams — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert W. Gentleman, Colonel, CE, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 15 SEP 1968

THEATER OF OPERATIONS

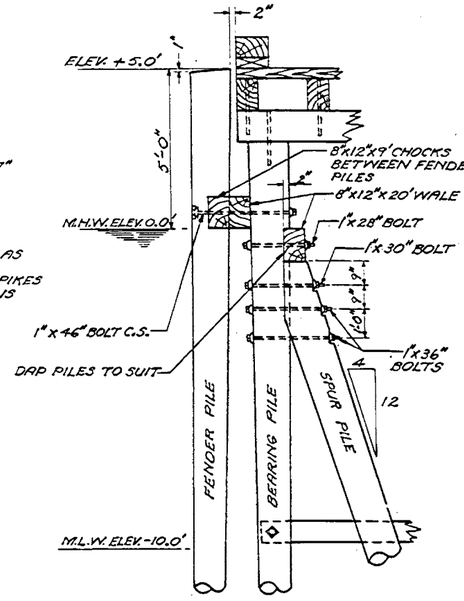
PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF-LIGHTERAGE 35'X500'

DATE 19 MAR 1969
SCALE AS NOTED
SPEC. NO.
DRAWING NUMBER 15-26
SHEET 1 OF 2



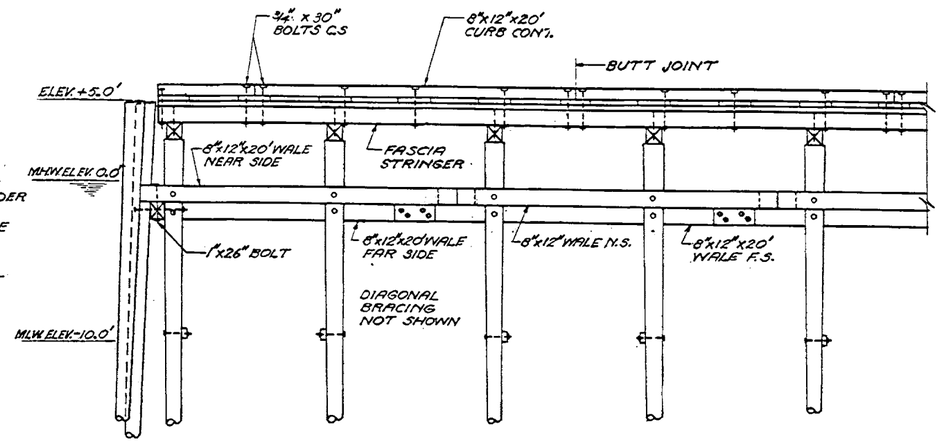
TYPICAL CROSS SECTION

SCALE NO. 2



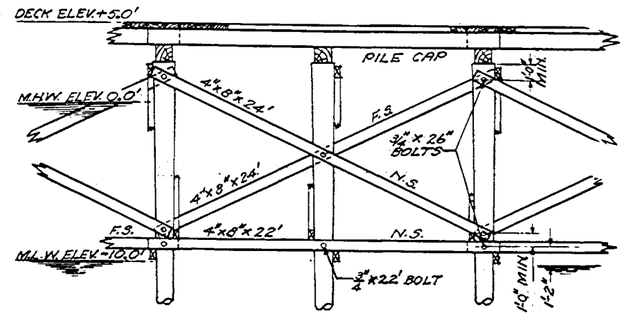
FENDER & SPUR PILE DETAIL

SCALE NO. 4



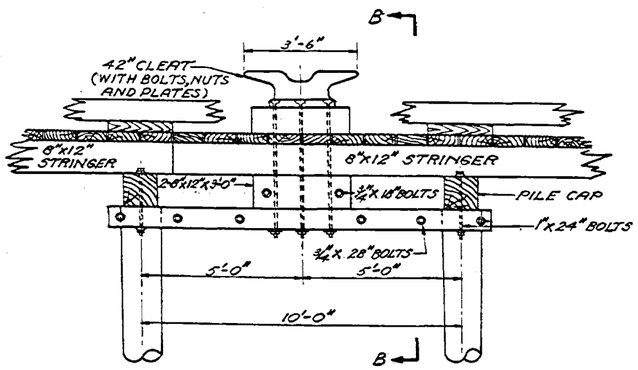
ELEVATION A-A

SCALE NO. 2

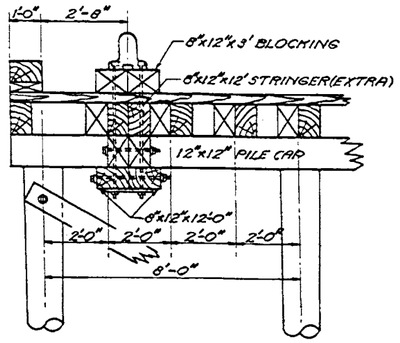


TYPICAL LONGITUDINAL BRACING ROW C ONLY

SCALE NO. 2



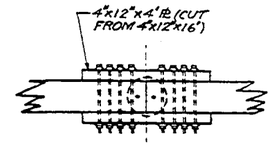
ELEVATION



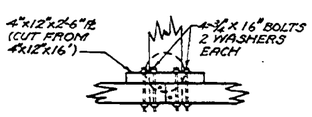
SECTION B-B

CLEAT FRAMING DETAIL

SCALE NO. 4



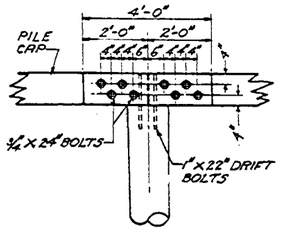
PLAN



PLAN



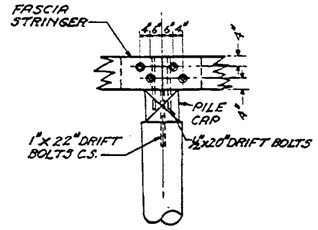
PLAN



ELEVATION

PILE CAP SPLICE DETAIL

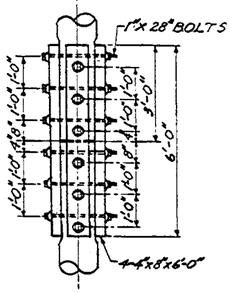
SCALE NO. 4



ELEVATION

FASCIA STRINGER SPLICE DETAIL

SCALE NO. 4



ELEVATION

PILE SPLICE DETAIL

SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' NO.2
0 1' 2' 3' 4' NO.4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HALE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS

PORTS-DRY CARGO
UNLOADING FACILITIES
WHARF-LIGHTERAGE 35'X500'
SECTIONS-ELEVATIONS-DETAILS

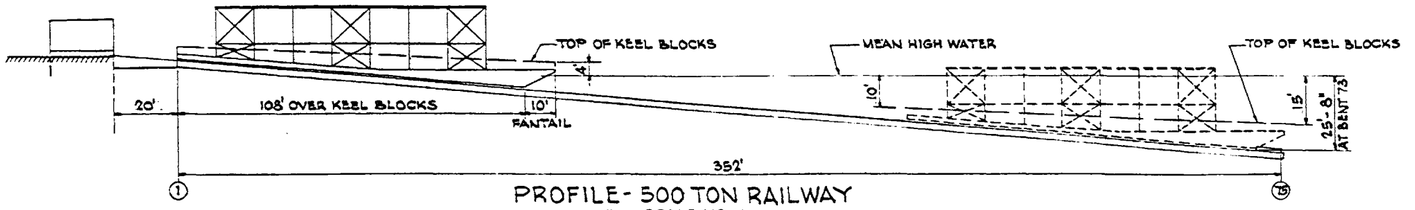
APPROVED: DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
CHIEF, STRUCTURES BRANCH

APPROVED FOR PROPONENT AGENCY:
ROBERT W. GENTLEMAN
Colonel, GS
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 14 SEP 1968

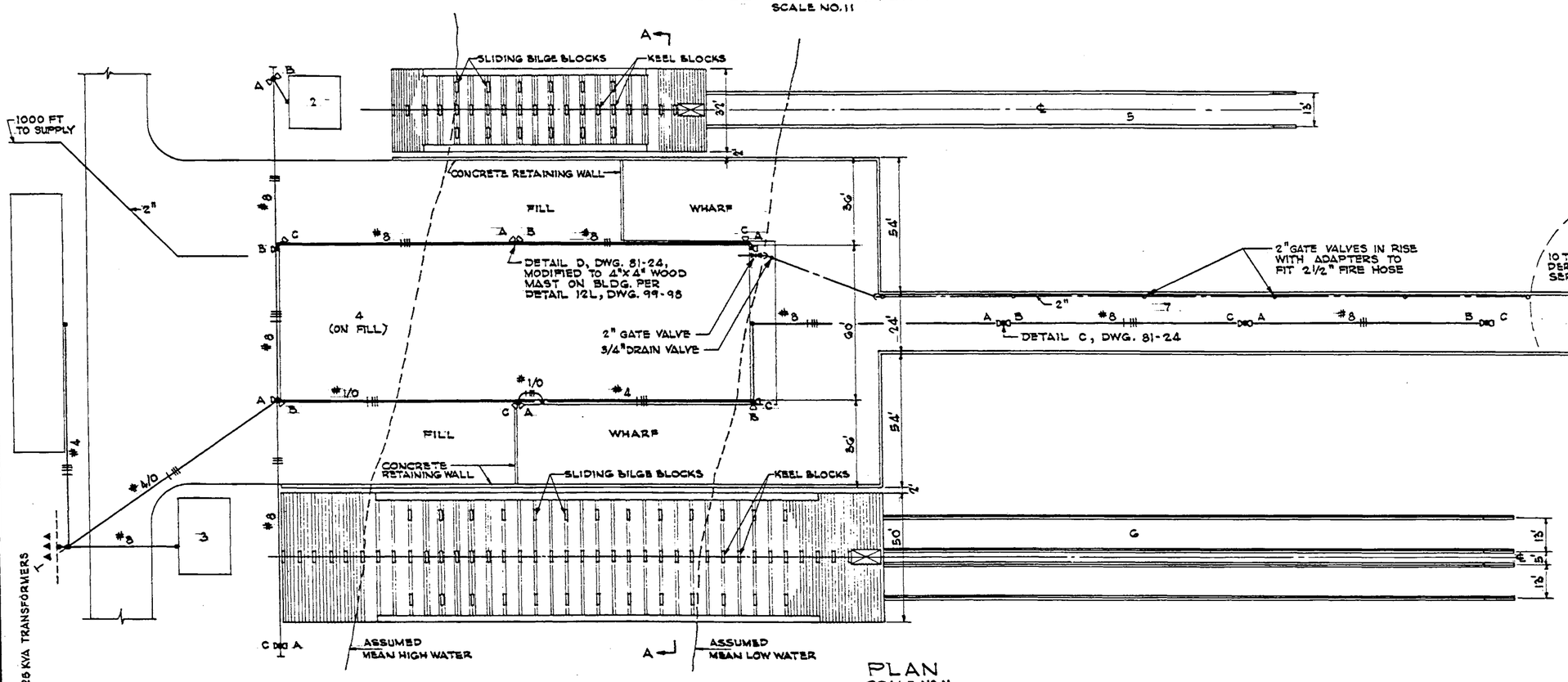
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 2
15-26

CORPS OF ENGINEERS

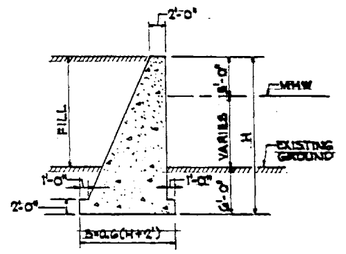
U. S. ARMY



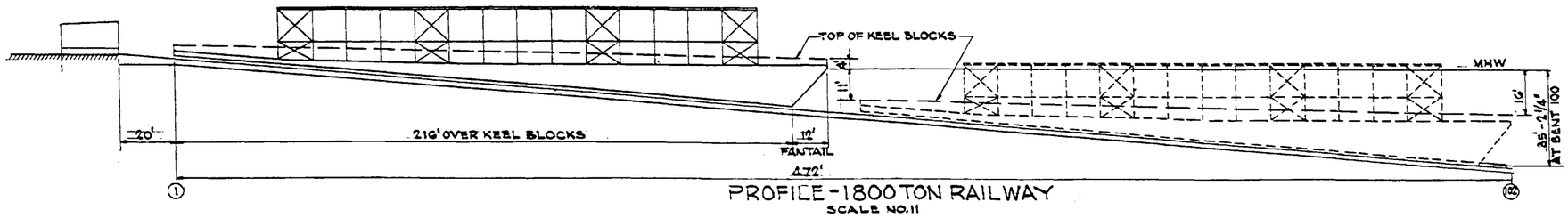
PROFILE - 500 TON RAILWAY
SCALE NO. 11



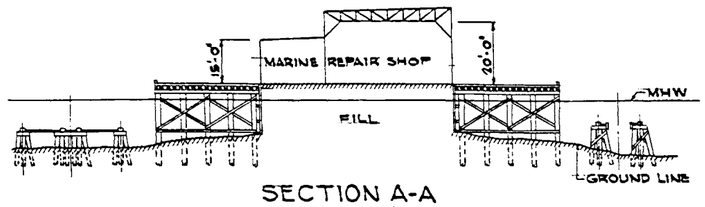
PLAN
SCALE NO. 11
FP 1005



TYPICAL SECTION
CONCRETE RETAINING WALL
SCALE NO. 1



PROFILE - 1800 TON RAILWAY
SCALE NO. 11



SECTION A-A
SCALE NO. 11

SCHEDULE OF FACILITIES

NO.	FACILITY	FP1005 QTY	SIZE OR UNIT	DWG. NO.
	BUILDINGS			
1	ADMINISTRATION	1	20'x100'	G1-11
2	MACHINE HOUSE	1	20'x20'	44-11
3	MACHINE HOUSE	1	20'x30'	44-11
4	MARINE REPAIR SHOP	1	60'x180'	15-32
	OTHER CONSTRUCTION			
5	MARINE RAILWAY	1	500 T	15-33
6	MARINE RAILWAY	1	1800 T	15-33
7	OUTFITTING DOCK	1	24'x300'	15-27
	HARDSTAND-4" STABILIZED STONE	2	1000 SY	85-31
	WHARF-LIGHTERAGE	1	35'x500'	15-26
	SITE AREA	2	ACRE	
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION		153110	84-21
ELECTRICAL DISTRIBUTION	75 KVA	153112	81-24

DOES NOT PROVIDE FOR ELECTRIC WINCHES

ELECTRICAL NOTES

1. POLES MOUNTED ON PIER OR WHARF TO BE BOLTED WITH MINIMUM OF SIX 3/4" BOLTS TO APPROPRIATE STRUCTURAL MEMBERS, OR BE ATTACHED WITH EQUIVALENT BINDING OF 5/8" STEEL STRAND CABLE.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' 20' 30' 40' NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

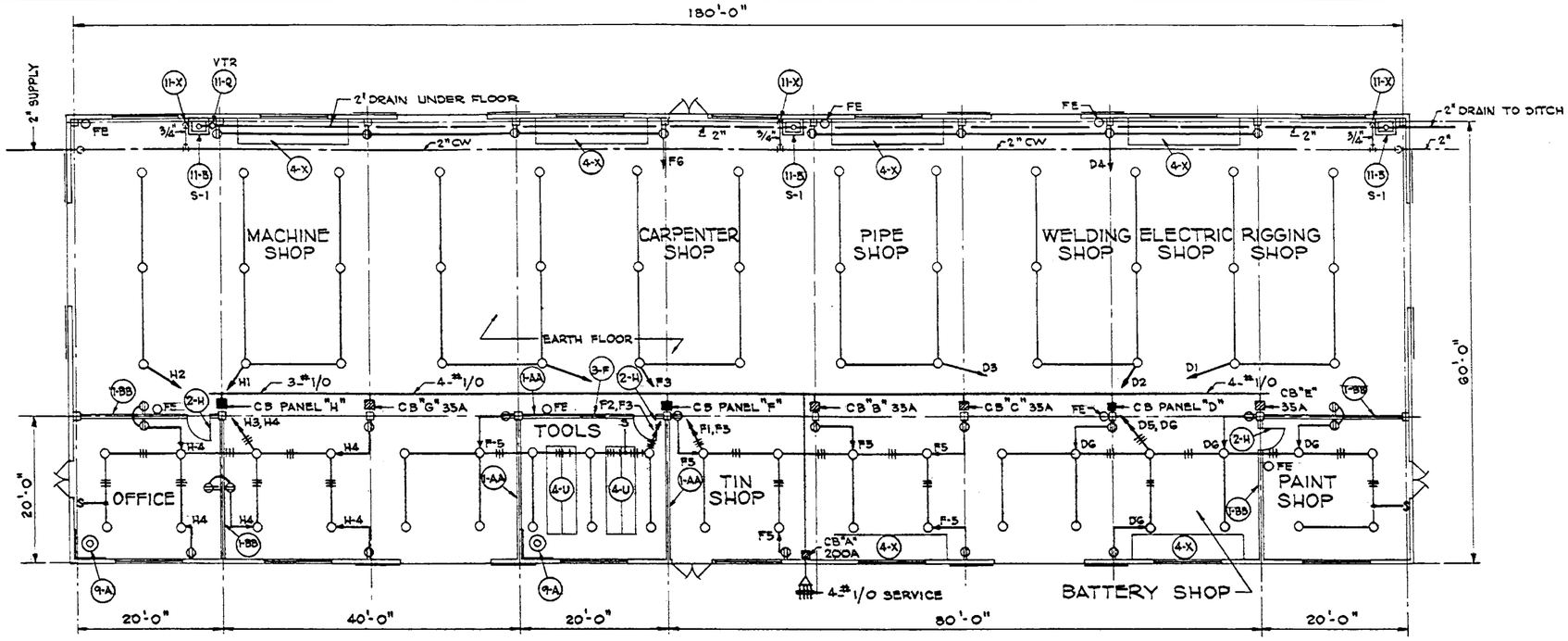
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, CONSTRUCTION BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

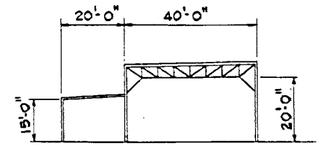
THEATER OF OPERATIONS
MARINE RAILWAY REPAIR
STD.-TPR
SITE & UTILITY LAYOUT

APPROVED FOR PROPONENT AGENCY: [signature] ROBERT W. GENTLEMAN, Colonel, CE, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 24 SEP 1968

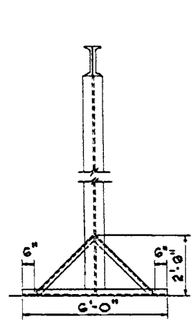
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-31
SHEET 1 OF 1



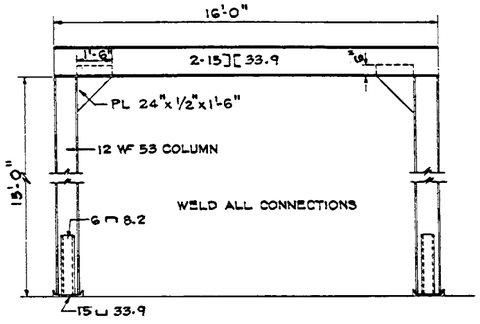
PLAN 60'X180' MARINE SHOP
SCALE NO. 1
FACILITY NO. 153201 - INTERIOR ONLY
FACILITY NO. 153211 - STEEL FRAME W/INTERIOR
FACILITY NO. 153221 - WOOD FRAME W/INTERIOR



DIAGRAMMATIC SECTION
60'x180' MARINE SHOPS
NO SCALE

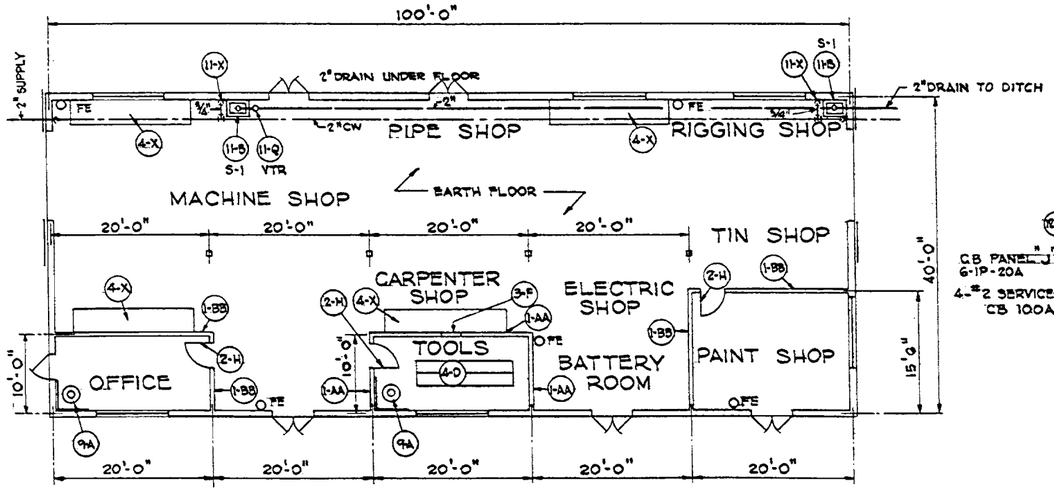


SIDE

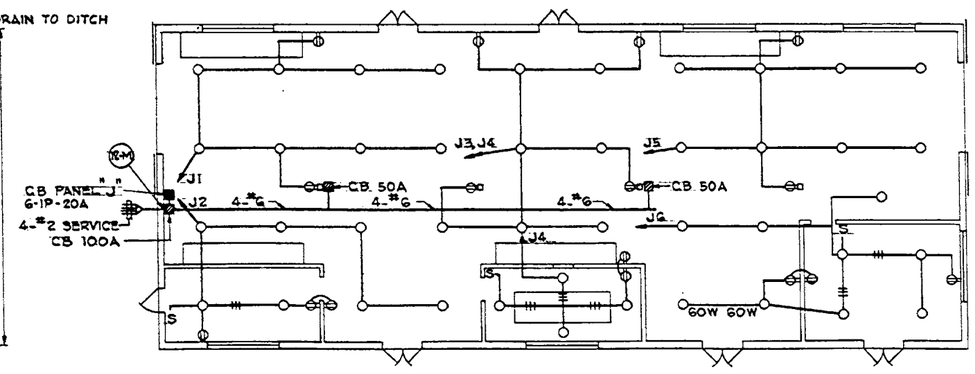


FRONT

HOIST SUPPORT DETAIL
SCALE NO. 3



FLOOR PLAN



ELECTRICAL PLAN

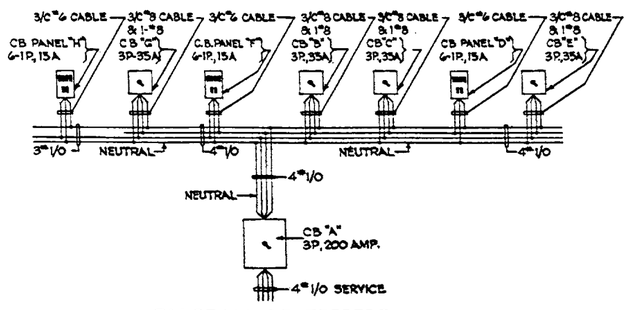


DIAGRAM OF FEEDERS
NO SCALE
FOR FACILITY NO. 153201

40'X100' MARINE SHOP
SCALE NO. 1
FACILITY NO. 153202 - INTERIOR ONLY
FACILITY NO. 153212 - STEEL FRAME W/INTERIOR
FACILITY NO. 153222 - WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

40'x100' MARINE SHOP CONNECTED LOAD		60'x180' MARINE SHOP CONNECTED LOAD	
LIGHTING	4.22 KW	LIGHTING	11.6 KW
RECP EST	1.60 KW	RECP EST	2.6 KW
POWER-2-3 PH OUTLETS @ 8 KW EA	16.00 KW	POWER-4-3 PH OUTLETS @ 8 KW EA	32.0 KW
TOTAL	21.82 KW	TOTAL	46.2 KW

1. UNLESS OTHERWISE NOTED ON PLANS ALL LAMPS TO BE 100 W.
2. ALL GO & 100 W LAMPS TO HAVE 8" CONICAL SHADES.
1. ALL LAMPS IN 14'-6" LOW BAY AREAS TO BE 100 W.
2. ALL LAMPS IN 20'-0" MEDIUM BAY AREAS TO BE 200 W.
3. ALL 100 W LAMPS TO HAVE 8" CONICAL SHADES.
4. ALL 200 W LAMPS TO HAVE 14" DIA FLAT SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
15-32	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-04	WOOD FRAME CONSTRUCTION WAREHOUSE TYPE BLDGS.	1-3 OF 3
34-19	WOOD FRAME CONSTRUCTION SHOP TYPE BLDGS.	1-12 OF 12
35-36	STEEL FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3
35-46	STEEL FRAME CONST. SHOP TYPE BLDGS.	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	UNDER REVISION		

REVISIONS

GRAPHIC SCALES
0 5' 10' 15' NO.1
0 1' 2' 3' 4' 5' NO.3

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

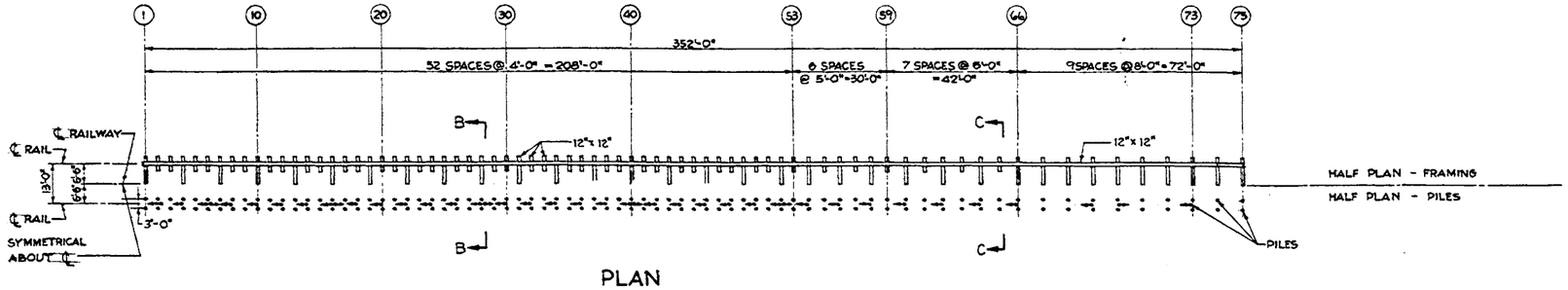
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: APPROVED: DATE: 19 MAR 1969
CHIEF, BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR. O.C.E.
APPROVED FOR PROPONENT AGENCY: ASST DCSLOG (SUPPLY & MAINT) DIR OF MAINT, MAINT CON DIV
DATE

THEATER OF OPERATIONS

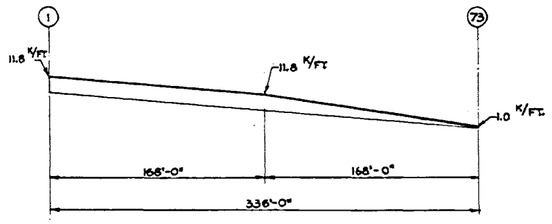
MARINE SHOPS
40'X100' & 60'X180'
PLANS

SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER 15-32
SHEET 1 OF 1



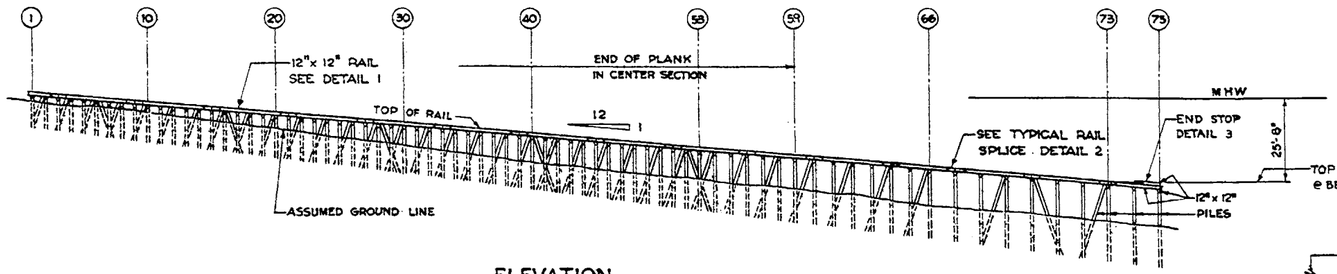
PLAN

SCALE NO. 11



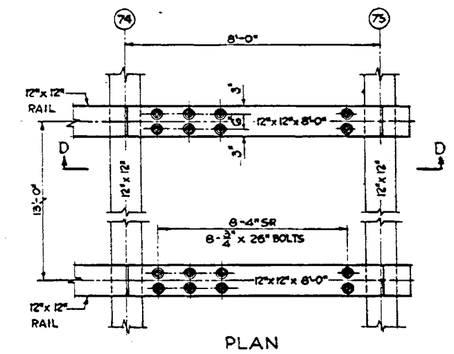
LOADING DIAGRAM
GROUNDWAY

NO SCALE

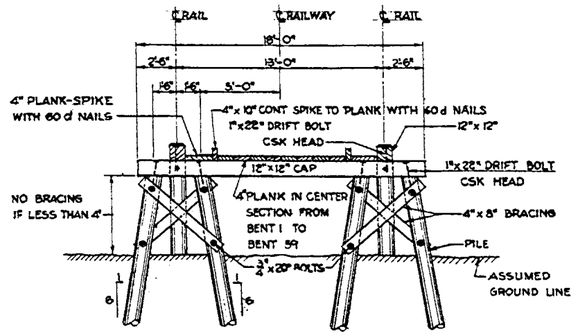


ELEVATION

SCALE NO. 11

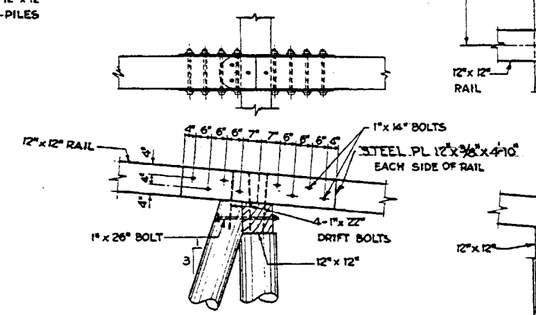


PLAN



SECTION B B

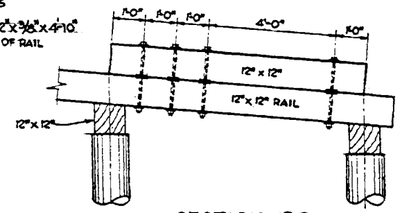
SCALE NO. 2



NOTE :
RAIL SPLICES SHOULD BE STAGGERED SO THAT ONLY ONE RAIL IS SPLICED AT ANY PILE BENT

DETAIL - 2
TYPICAL PILE AND RAIL SPLICE

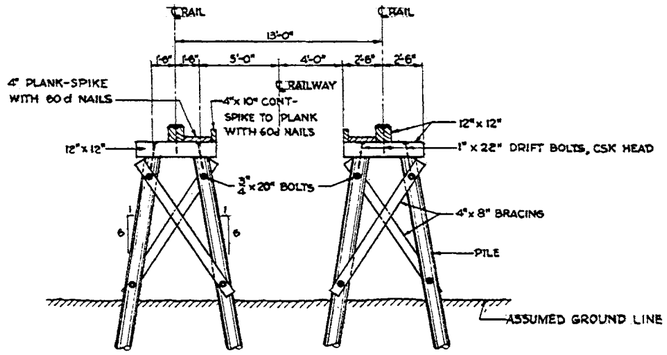
SCALE NO. 4



SECTION D D

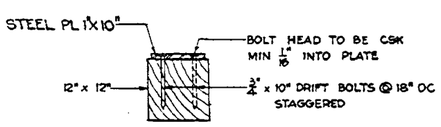
DETAIL-3
END STOP

SCALE NO. 4



SECTION C C

SCALE NO. 2



DETAIL - 1
RAIL

SCALE NO. 6

MARINE RAILWAY
FACILITY NO. 153305 - 500 TON MARINE RAILWAY
FACILITY NO. 153318 - 1800 TON MARINE RAILWAY

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.	DWG. NO.	DESCRIPTION	SHEET NO.
15-33	500 TON GROUNDWAY PLANS - DETAILS	1 OF 8	15-33	1800 TON CRADLE - PART II 500 TON CRADLE - HAUL DTL	7 OF 8
15-33	500 TON CRADLE PLANS - ELEVATIONS - DETAILS	2 OF 8	15-33	CRADLE DETAILS	8 OF 8
15-33	1800 TON GROUNDWAYS PLANS - ELEVATIONS	3 OF 8			
15-33	1800 TON CRADLE PLANS - ELEVATIONS	4 OF 8			
15-33	1800 TON CRADLE CROSS SECTIONS - DETAILS	5 OF 8			
15-33	1800 TON CRADLE DETAILS - PART I	6 OF 8			

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO. 2: 0, 5', 10'
NO. 4: 0, 1', 2', 3', 4'
NO. 6: 0, 1', 2'
NO. 8: 0, 5', 10', 20', 30', 40'
NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

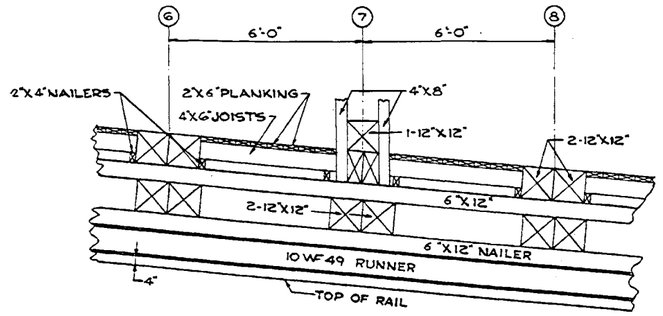
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DE ICHMANN
APPROVED: CHIEF, AREA/ASSR BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Research Division, Directorate of Transportation
DATE: 4 SEP 1968

THEATER OF OPERATIONS

MARINE RAILWAY
500 TON GROUNDWAY
PLANS - DETAILS

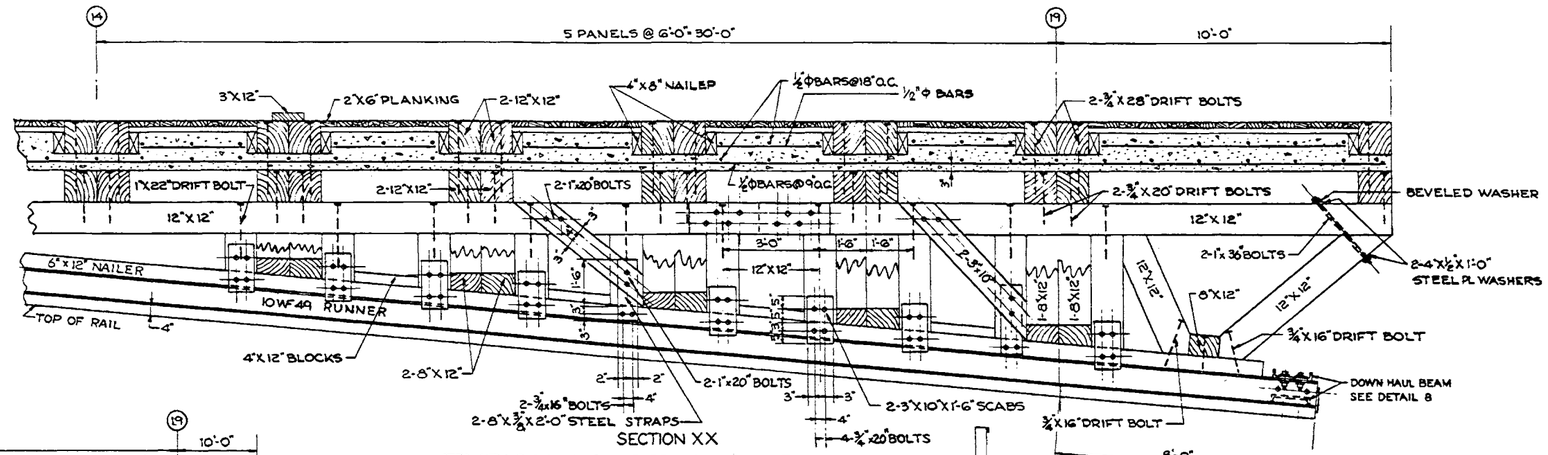
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-33
SHEET 1 OF 8



ELEVATION

TYPICAL LONGITUDINAL FRAME

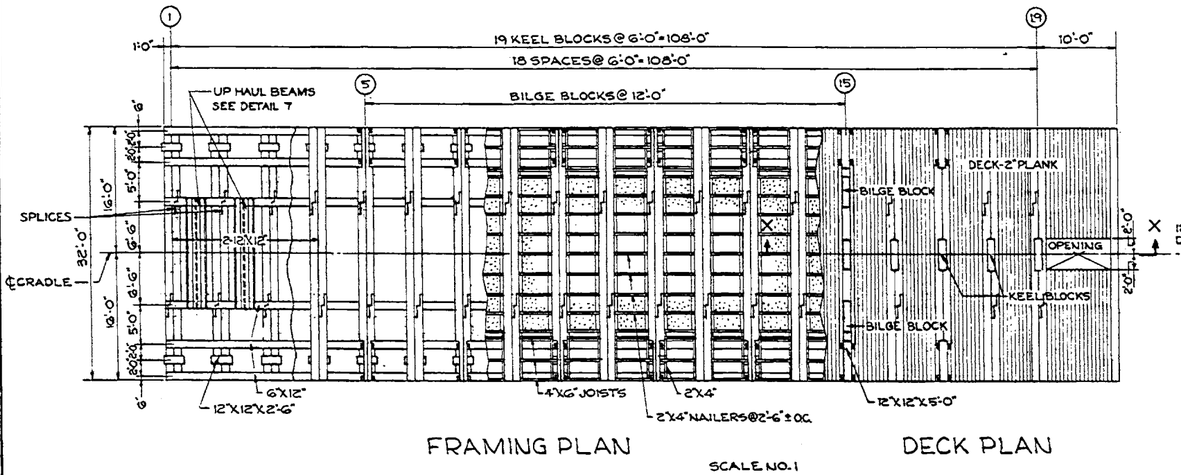
SCALE NO.4



SECTION XX

TYPICAL LONGITUDINAL FRAME

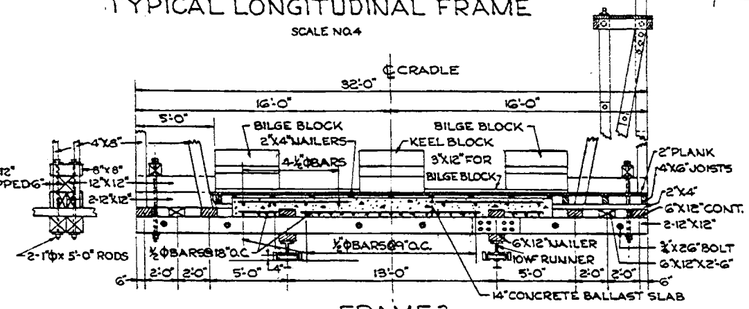
SCALE NO.4



FRAMING PLAN

DECK PLAN

SCALE NO.1



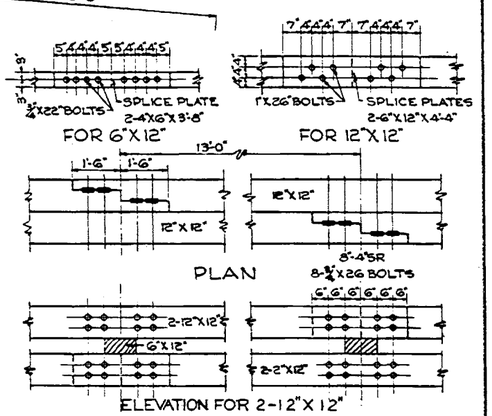
FRAME 3

FRAMES 5,7,9,11,13 SIMILAR

FRAMES 1,2,4,6,8,10,12,14 SIMILAR EXCEPT

NO WALKWAY SUPPORTS AND BILGE BLOCKS

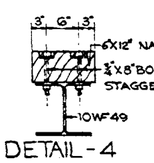
SCALE NO.2



DETAIL-6

SPLICES

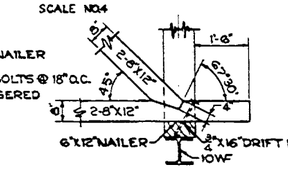
SCALE NO.4



DETAIL-4

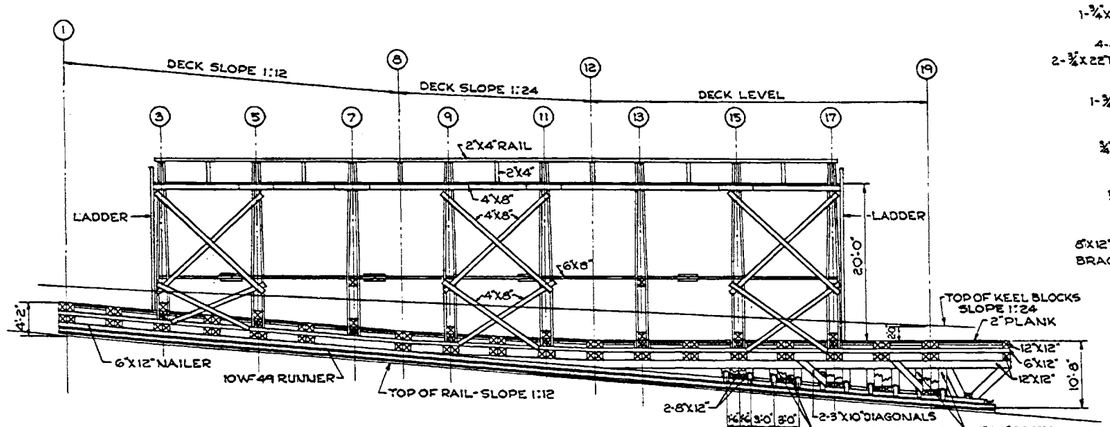
RUNNER

SCALE NO.6



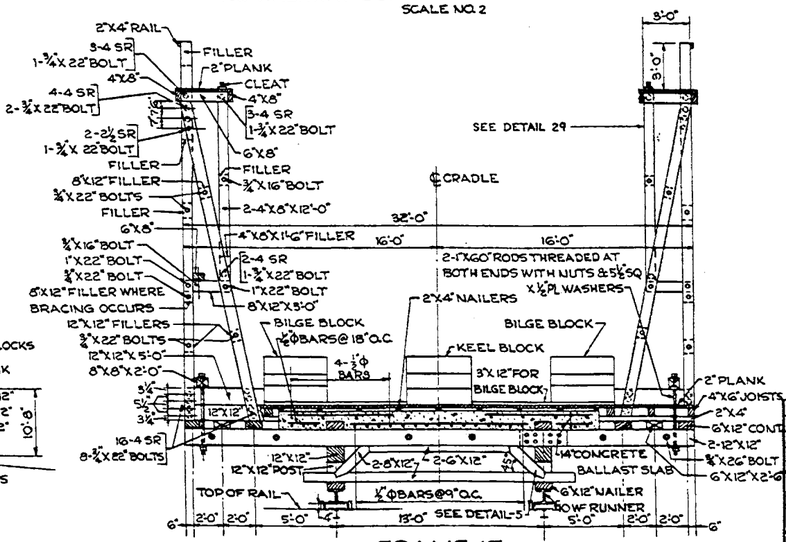
DETAIL-5

SCALE NO.4



ELEVATION

SCALE NO.1



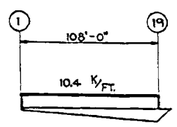
FRAME 15

FRAME 17 SIMILAR

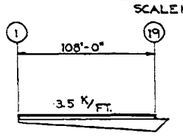
FRAMES 16,18,19 SIMILAR EXCEPT

NO WALKWAY SUPPORTS AND BILGE BLOCKS

SCALE NO.2



KEEL BLOCK



BILGE BLOCK

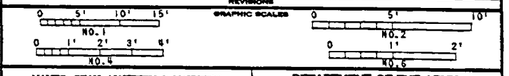
LOADING DIAGRAM

CRADLE

NO SCALE

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES



MAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, ENGINEERING BRANCH

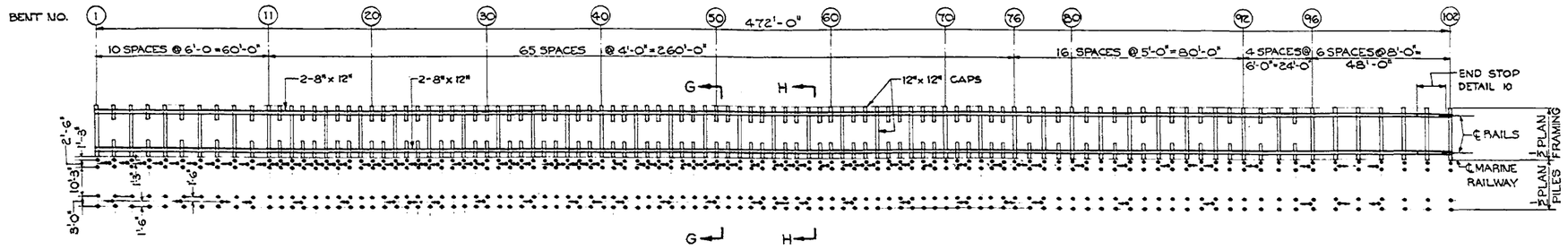
THEATER OF OPERATIONS

MARINE RAILWAY
500 TON CRADLE
PLANS-ELEVATION-DETAILS

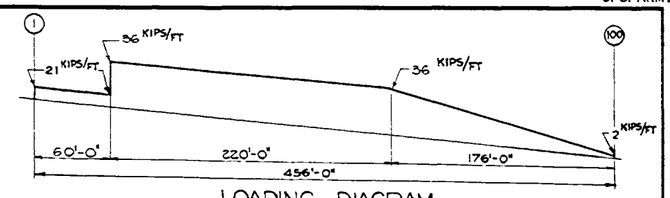
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY:
ROBERT W. GENTLEMAN
Colonel, GS
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 14 SEP 1966

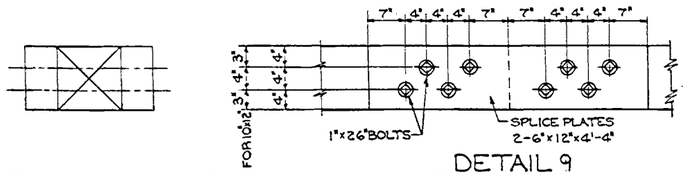
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-33
SHEET 2 OF 8



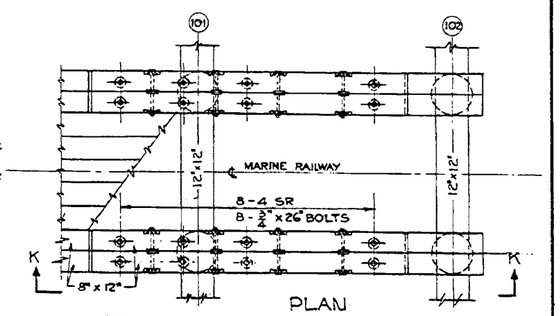
PLAN
SCALE NO. 11



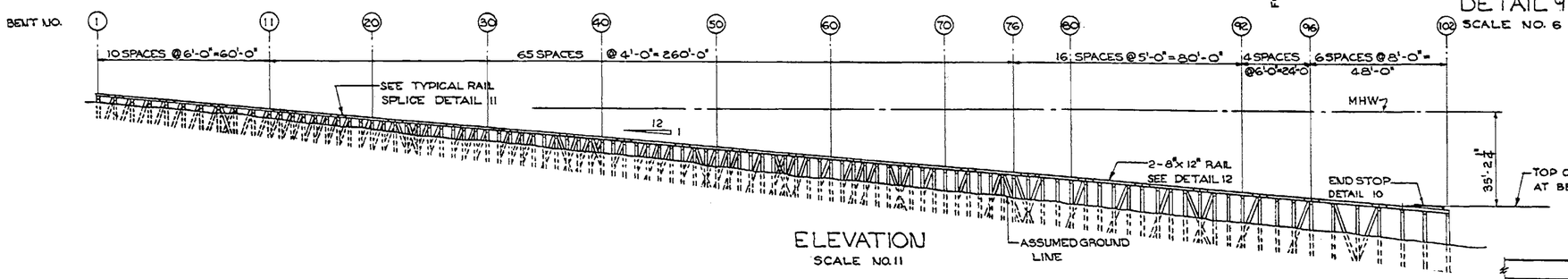
LOADING DIAGRAM
GROUNDWAY
NO SCALE



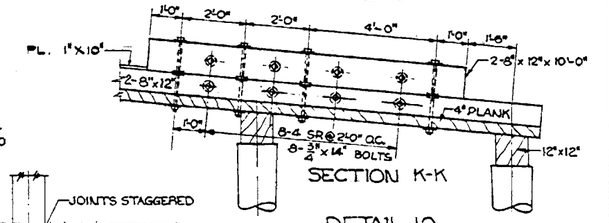
DETAIL 9
SCALE NO. 6



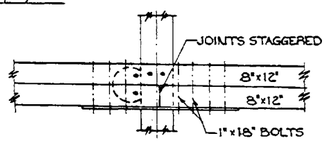
PLAN



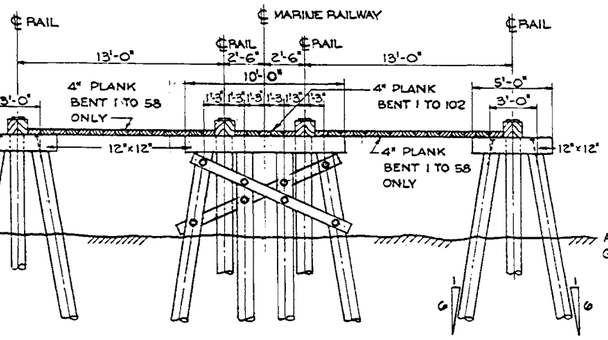
ELEVATION
SCALE NO. 11



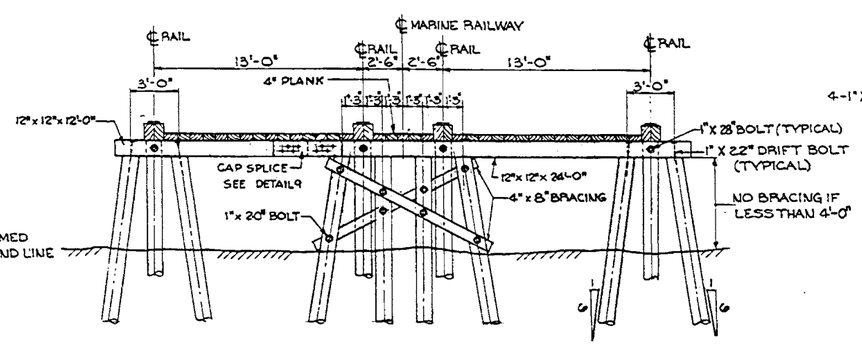
SECTION K-K



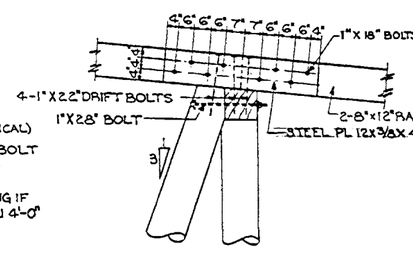
DETAIL-10
END STOP
4 REQUIRED
SCALE NO. 4



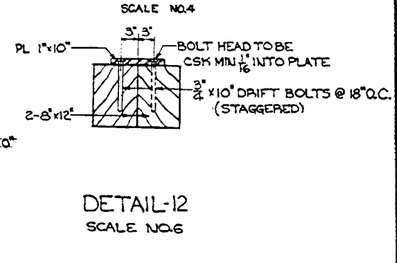
SECTION GG
SCALE NO. 2



SECTION H-H
SCALE NO. 2



DETAIL - 11
TYPICAL PILE AND RAIL SPLICE
SCALE NO. 4



DETAIL-12
SCALE NO. 6

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO. 2 (0, 5', 10'); NO. 4 (0, 1', 2', 3', 4'); NO. 6 (0, 1', 2'); NO. 8 (0, 5', 10', 20', 30', 40')

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

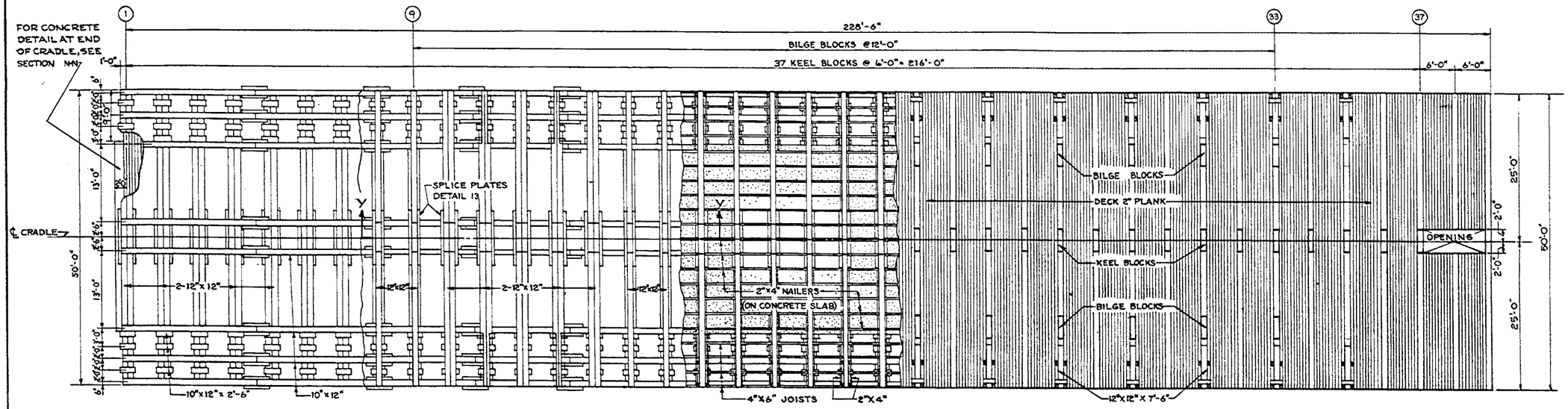
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: H. Graham, CHIEF, STRUCTURES BRANCH
APPROVED: H. M. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: Robert W. Gentleman, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE: 14 SEP 1968

THEATER OF OPERATIONS

MARINE RAILWAY
1800 TON GROUNDWAY
PLANS-ELEVATION-DETAILS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-33
SHEET 3 OF 8

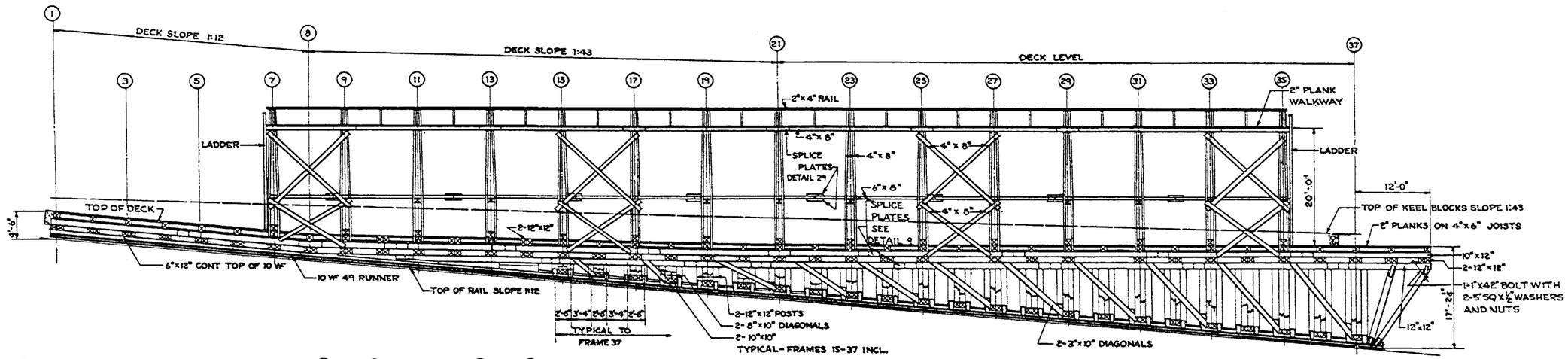


FRAMING PLAN

SCALE NO. 1

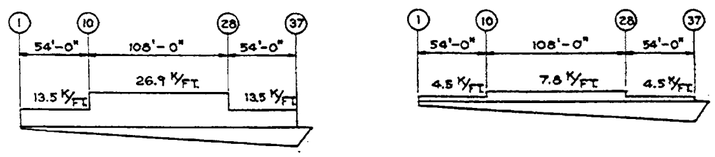
DECK PLAN

SCALE NO. 1



ELEVATION

SCALE NO.1



KEEL BLOCKS BILGE BLOCKS

LOADING DIAGRAM

CRADLE

NO SCALE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 15'

NO. 1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: YASS
SUBMITTED BY: C. W. DE ICHMANN

THEATER OF OPERATIONS

MARINE RAILWAY
1800 TON CRADLE
PLANS-ELEVATION

APPROVED: [signature] CHIEF, ENGR/PROJ BRANCH

APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: [signature] ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation

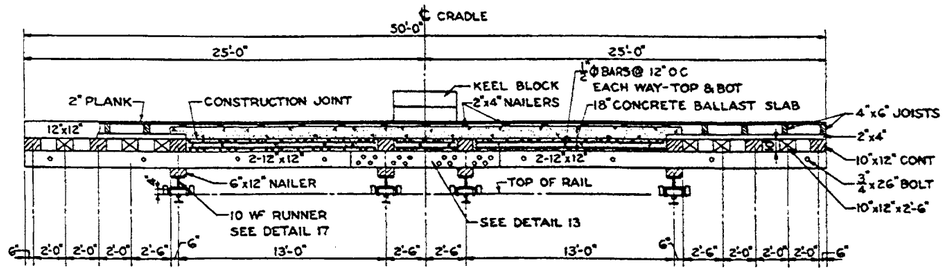
DATE: 24 SEP 1968

SCALE: AS NOTED

SPEC. NO.

DRAWING NUMBER: 15-33

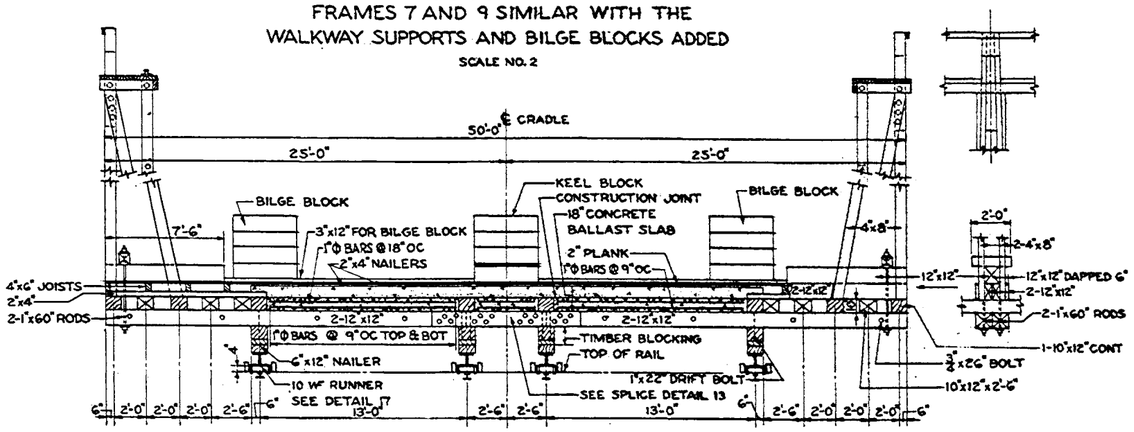
SHEET 4 OF 8



FRAME 1

FRAME 2,3,4,5,6, AND 8 SIMILAR
FRAMES 7 AND 9 SIMILAR WITH THE
WALKWAY SUPPORTS AND BILGE BLOCKS ADDED

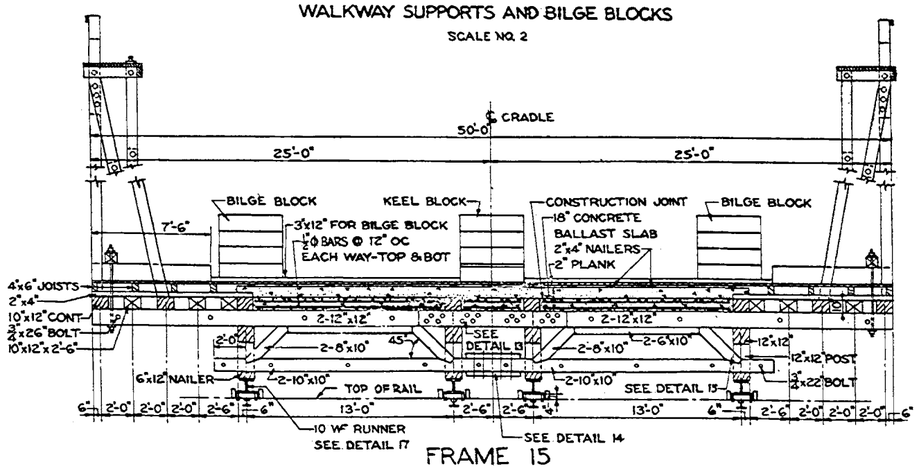
SCALE NO. 2



FRAME 11

FRAME 13 SIMILAR
FRAMES 10, 12, 14 SIMILAR EXCEPT NO
WALKWAY SUPPORTS AND BILGE BLOCKS

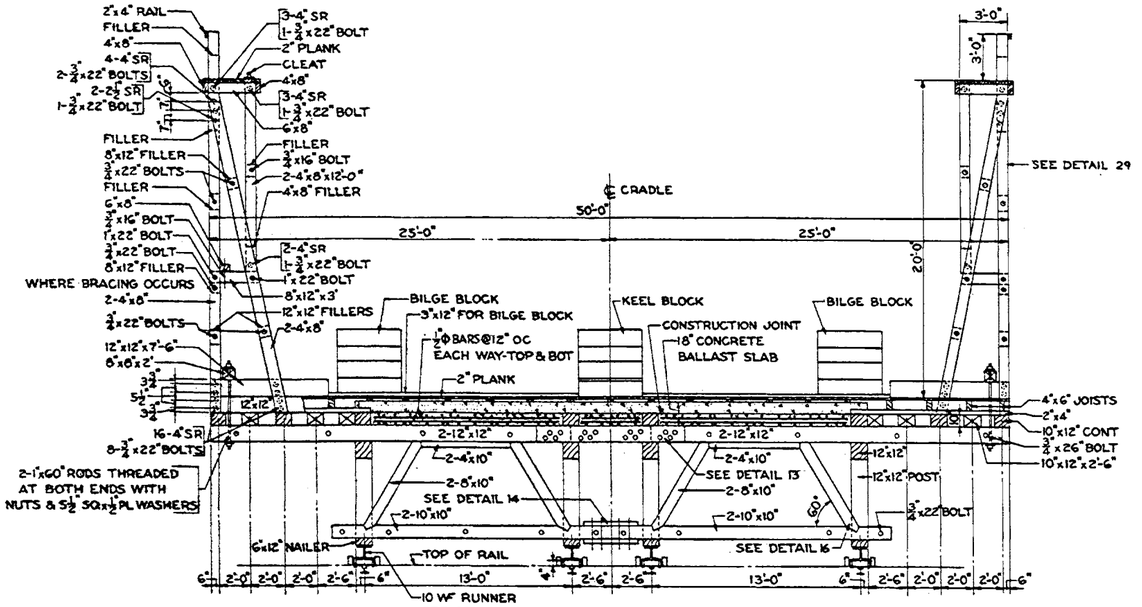
SCALE NO. 2



FRAME 15

FRAMES 17, 19, 21 SIMILAR
FRAMES 16, 18, 20 SIMILAR EXCEPT NO
WALKWAY SUPPORTS AND BILGE BLOCKS

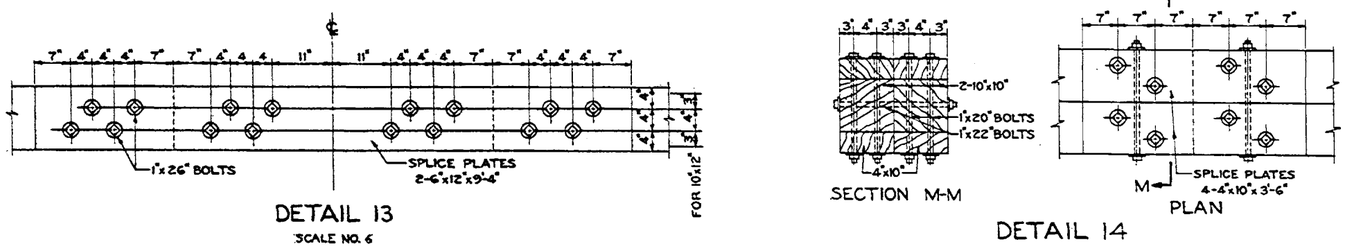
SCALE NO 2



FRAME 23

FRAMES 25, 27, 29, 31, 33, 35 SIMILAR
FRAMES 22, 24, 26, 28, 30, 32, 34, 36, 37 SIMILAR EXCEPT
NO WALKWAY SUPPORTS AND BILGE BLOCKS

SCALE NO 2

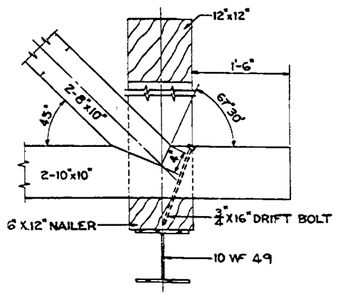


DETAIL 13

SCALE NO. 6

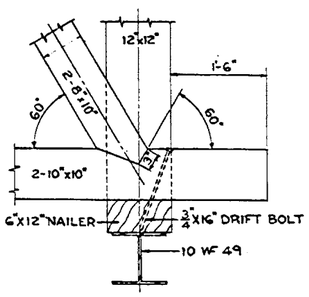
DETAIL 14

SCALE NO. 6



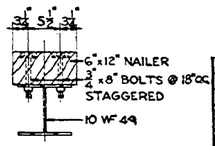
DETAIL 15

SCALE NO. 6



DETAIL 16

SCALE NO. 6



RUNNER DETAIL 17

SCALE NO 6

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' — NO. 2
0 1' 2' — NO. 6

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, SECTION BRANCH

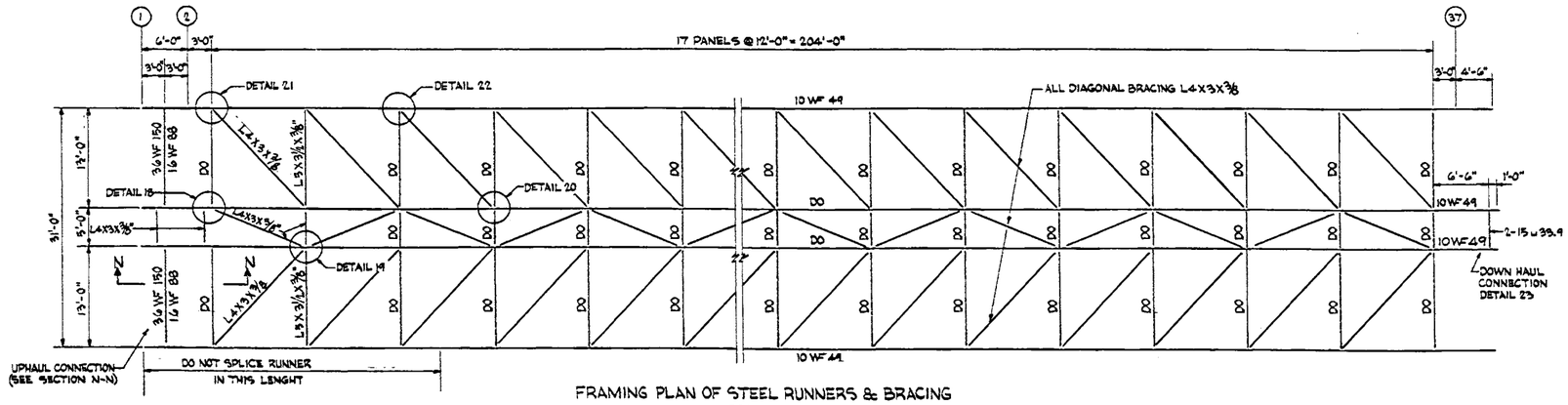
THEATER OF OPERATIONS

MARINE RAILWAY
1800 TON CRADLE
CROSS SECTIONS-DETAILS

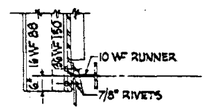
APPROVED: H. M. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE: 14 SEP 1968

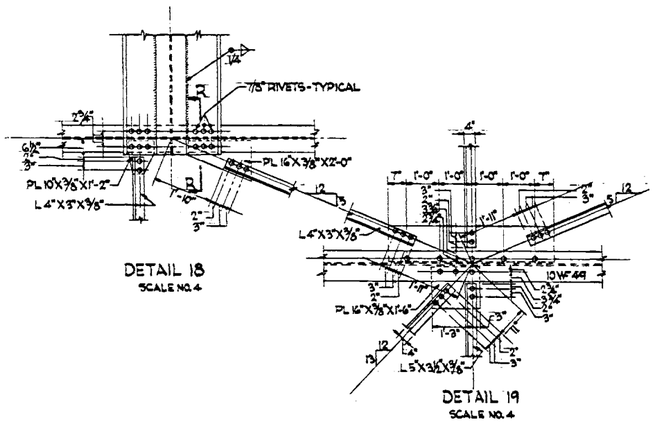
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-33
SHEET 5 OF 8



FRAMING PLAN OF STEEL RUNNERS & BRACING
SCALE NO. 1

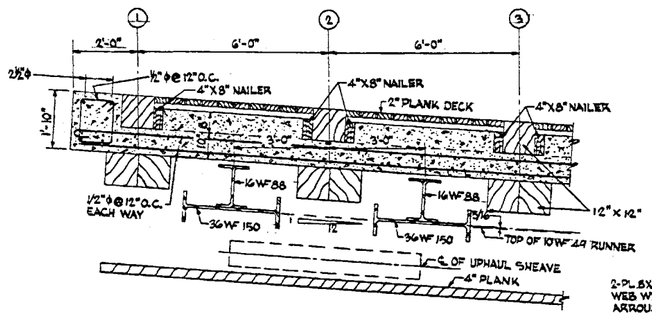


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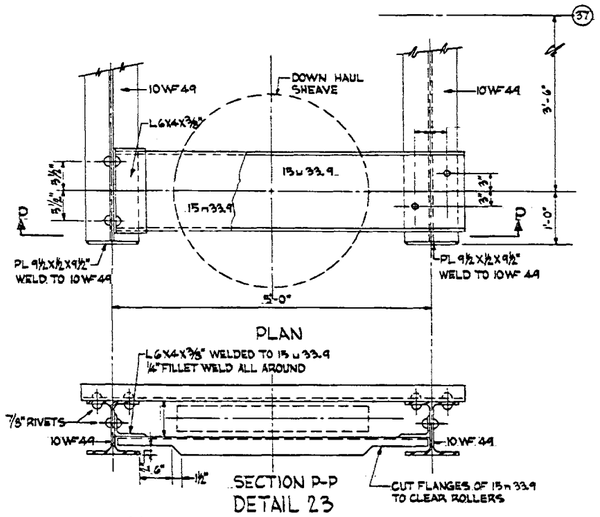


DETAIL 18
SCALE NO. 4

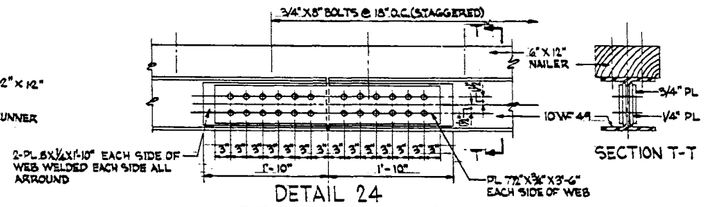
DETAIL 19
SCALE NO. 4



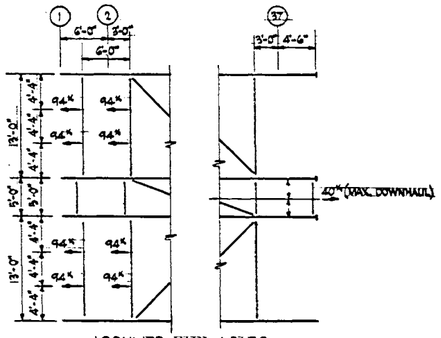
SECTION N-N
SCALE NO. 4



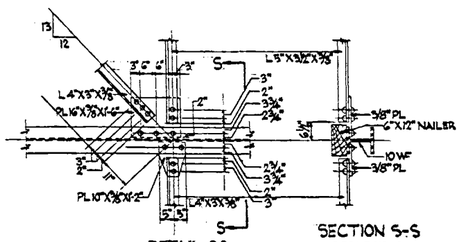
DETAIL 23
DOWN HAUL CONNECTIONS TO CRADLE
SCALE NO. 6



DETAIL 24
TYPICAL RUNNER SPLICE
SCALE NO. 6

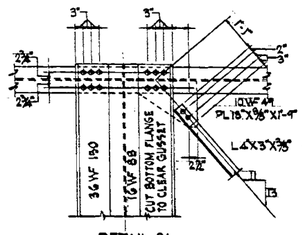


ASSUMED HAUL LOADS
SCALE NO. 1

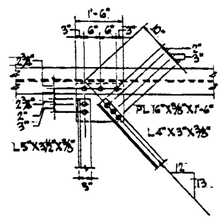


DETAIL 20
SCALE NO. 4

SECTION S-S
SCALE NO. 4



DETAIL 21
SCALE NO. 4



DETAIL 22
SCALE NO. 4

GENERAL NOTES

1. UNLESS OTHERWISE NOTED ON PLAN ALL RIVETS TO BE 7/8" DIA. WITH 15/16" DIA. HOLES.
2. IF DESIRED FOR CONSTRUCTION EXPEDIENCY, 7/8" STRUCTURAL STEEL RIBBED BOLTS MAY BE USED WITH 15/16" DIA. HOLES TO REPLACE RIVETS.
3. WOOD AND STEEL SHOULD BE TREATED FOR USE IN SALT WATER.

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10' 15' NO.1 | 0 1' 2' 3' 4' NO.4 | 0 1' . 2' NO.6

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature]
CHIEF, ARCHITECT BRANCH

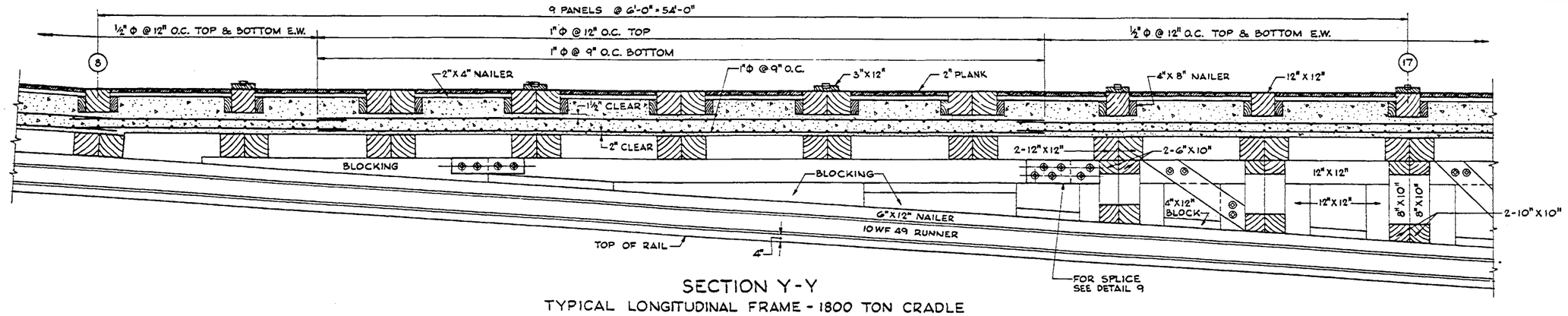
THEATER OF OPERATIONS

MARINE RAILWAY
1800 TON-CRADLE
DETAILS-PART I

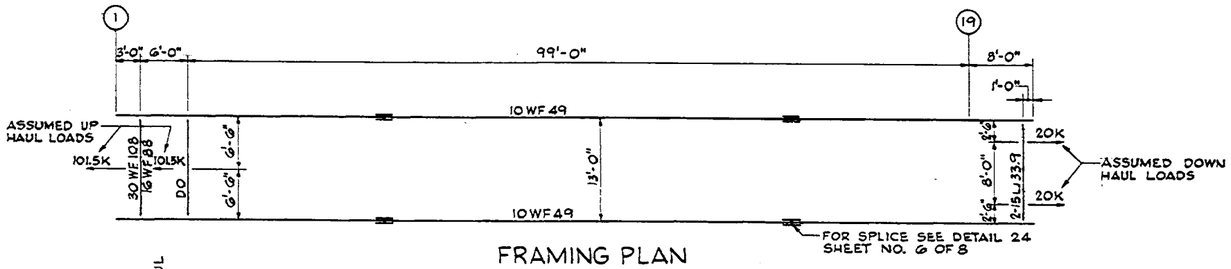
APPROVED: H.W. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: ROBERT W. BENTLEMAN, Colonel, GS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE: 14 SEP 1969

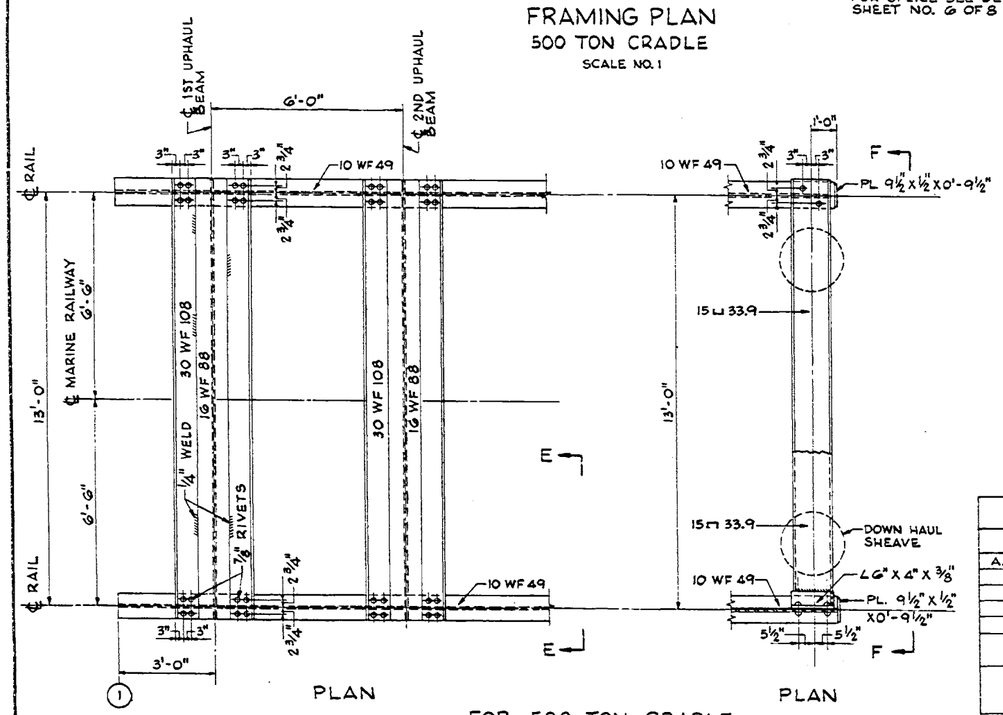
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 15-33
SHEET 6 OF 8



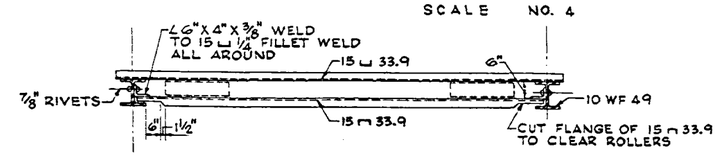
SECTION Y-Y
TYPICAL LONGITUDINAL FRAME - 1800 TON CRADLE
SCALE NO. 4



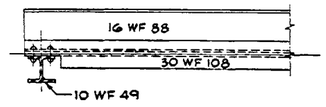
FRAMING PLAN
500 TON CRADLE
SCALE NO. 1



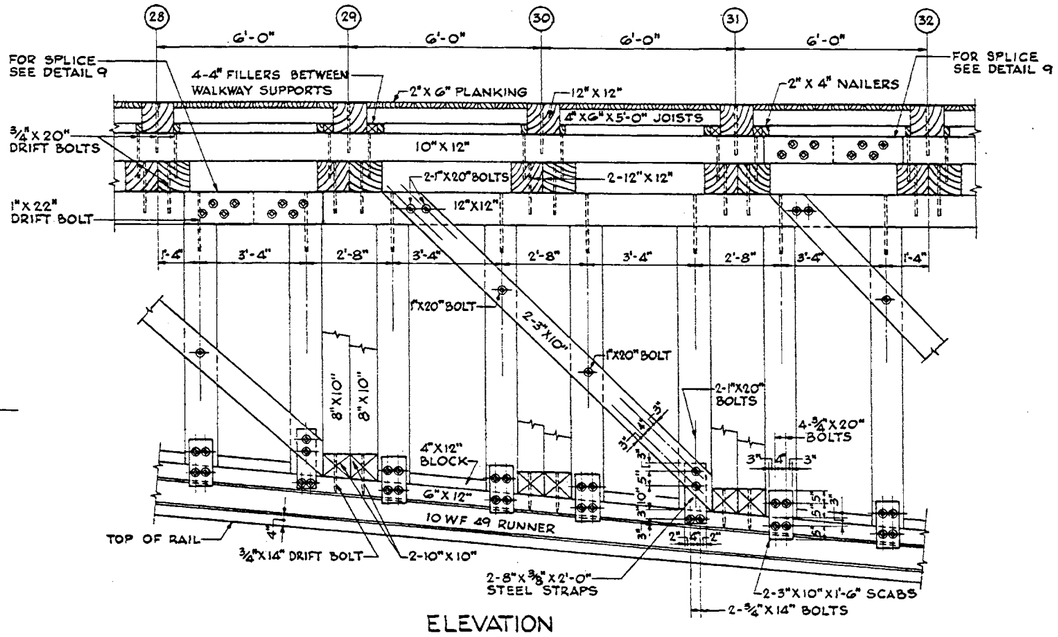
FOR 500 TON CRADLE
SCALE NO. 4



SECTION F-F
DETAIL-8
DOWN HAUL BEAM
SCALE NO. 4



SECTION E-E
DETAIL-7
UP HAUL BEAMS
SCALE NO. 4



ELEVATION
TYPICAL LONGITUDINAL FRAME - 1800 TON CRADLE
SCALE NO. 4

BASIS OF DESIGN

STEEL

A. STRUCTURAL AND RIVET STEEL

(1) AXIAL TENSION ON NET SECTION:-		
	STRUCTURAL MEMBERS	27,000 PSI
	MACHINE BOLTS, AT ROOT OF THREAD	20,000 PSI
(2) AXIAL COMPRESSION:-ON GROSS SECTION:-		
	FOR LENGTH OF MEMBER	L INCHES
	FOR RADIUS OF GYRATION	r INCHES
	FOR VALUES OF L/r NOT GREATER THAN 140:-	
	RIVETED OR BOLTED ENDS.	$21{,}300-\frac{3}{8}(L/r)^2$ PSI
	PINNED ENDS	$21{,}300-\frac{1}{2}(L/r)^2$ PSI
	FOR VALUES L/r OVER 140 BUT NOT TO EXCEED 200:-	
	BOLTED OR PINNED ENDS	$\frac{56{,}000}{1+(L^2/5{,}750\,r^2)}$
	COMPRESSION, SPLICE MATERIAL	24,000 PSI
	STIFFENERS OF PLATE GIRDERS	24,000 PSI
(3) BENDING.-ON EXTREME FIBER OF ROLLED AND BUILT-UP SECTIONS:- COMPRESSION IN FLANGES = $27{,}000-7.5\times(L/B)^2$ PSI (B=WIDTH OF FLANGE IN INCHES & L=LENGTH OF UNSUPPORTED FLANGE BETWEEN LATERAL CONNECTIONS OR KNEE BRACES IN INCHES)		
(4) DIAGONAL TENSION IN WEBS OF GIRDERS OF ROLLED BEAMS; AT SECTIONS WHERE MAXIMUM SHEAR AND MOMENT OCCUR SIMULTANEOUSLY		27,000 PSI
(5) SHEAR		
	GIRDER WEBS, GROSS SECTION	16,500 PSI
	PINS	17,000 PSI
	POWER-DRIVEN RIVETS AND STRUCTURAL RIBBED BOLTS IN TIGHT-FITTING HOLES	15,000 PSI
	UNFINISHED BOLTS	12,000 PSI
(6) BEARING		
	PINS, STEEL PARTS IN CONTACT	33,000 PSI
	POWER-DRIVEN RIVETS OR INTERCHANGEABLE STR. RIBBED BOLTS IN TIGHT-FITTING HOLES	30,000 PSI
	UNFINISHED BOLTS	25,000 PSI
B. WELDS (1) FILLET WELDS-ON THROAT AREA, TENSION, COMPRESSION OR SHEAR (425 LBS PER LIN IN. FOR EA 1/16" OF SIZE)		9,600 PSI
(2) BUTT WELDS-ON WELD AREA:		
	COMPRESSION	16,000 PSI
	SHEAR	12,000 PSI

WOOD

MAXIMUM EXTREME FIBER STRESS AND TENSION PARALLEL TO GRAIN	2,100 PSI
MAX. COMPRESSION PERPENDICULAR TO GRAIN	500 PSI
MAX. COMPRESSION PARALLEL TO GRAIN	1,500 PSI
MAX. HORIZONTAL SHEAR	120 PSI
MODULUS OF ELASTICITY	1,600,000 PSI

CONCRETE

COMPRESSION IN PEDESTALS, HEIGHT TO THICKNESS RATIOS NOT TO EXCEED 3 TO 1	750 PSI
BENDING STRESS IN EXTREME FIBER COMPRESSION	1,250 PSI
TENSION	90 PSI
SHEAR	75 PSI
PUNCHING SHEAR	200 PSI
BOND TO TIMBER OR STEEL PILES	15 PSI

GENERAL NOTE: ROUGH TIMBER SHOULD BE USED IF POSSIBLE - LOADING SHOULD BE REDUCED PROPORTIONATELY IF FINISHED TIMBER IS USED.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO.1
0 1' 2' 3' 4' NO.4

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D.C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C.W. DEICHMANN

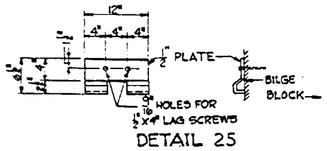
THEATER OF OPERATIONS
MARINE RAILWAY
1800 TON CRADLE-DETAILS-PART II
500 TON CRADLE-HAUL DETAILS

APPROVED: H.M. Williams DATE: 19 MAR 1959
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

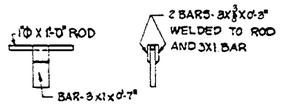
APPROVED: Chief, Structures Branch

APPROVED FOR PROPONENT AGENCY: ROBERT W. GENTLEMAN, Colonel, CS, Deputy Chief, Transportation Resources Division, Directorate of Transportation
DATE 14 SEP 1959

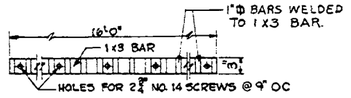
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-33
SHEET 7 OF 8



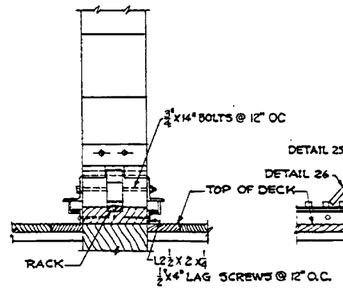
DETAIL 25



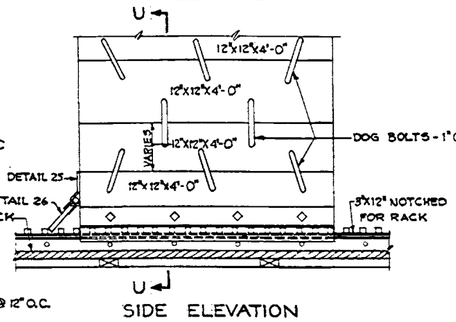
DETAIL 26



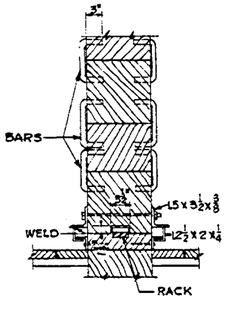
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END ELEVATION

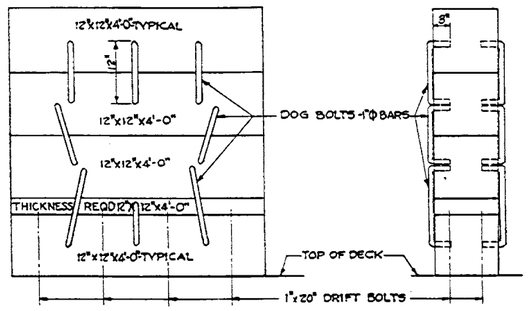


SIDE ELEVATION

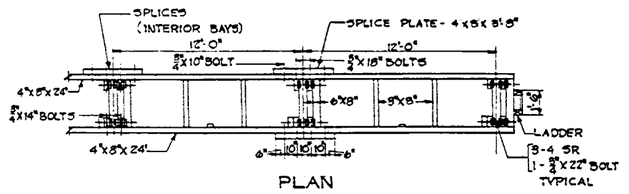


SECTION U-U

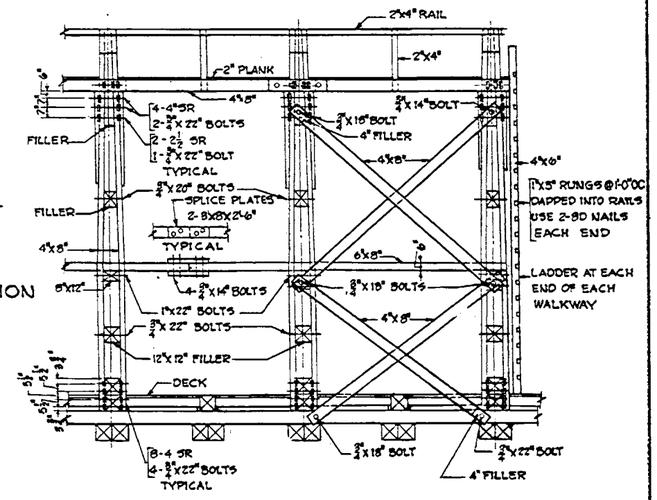
DETAIL 27
BILGE BLOCK
SCALE NO. 6



SIDE ELEVATION

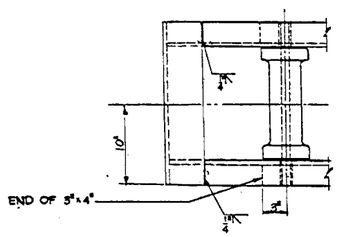


PLAN

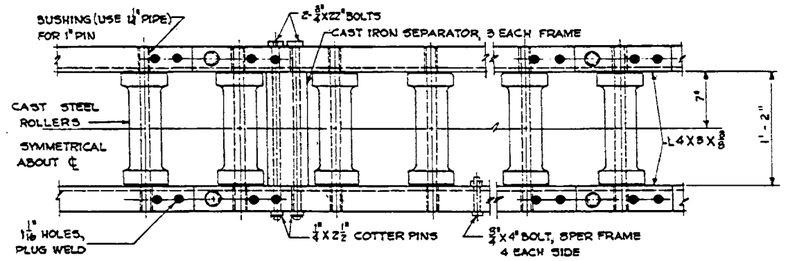


ELEVATION

DETAIL 29
WALKWAY FRAMING-TYPICAL BAYS
SCALE NO. 2

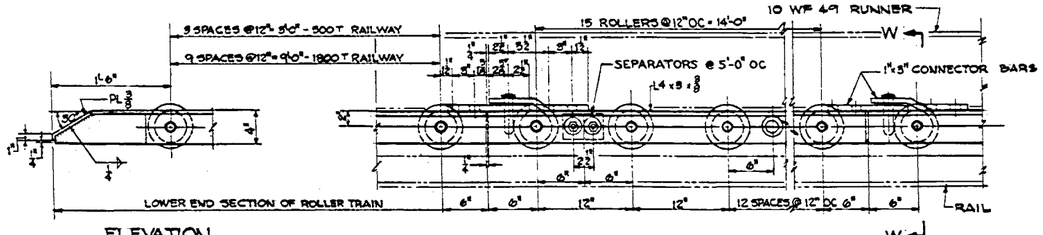


SCALE NO. 7



PLAN

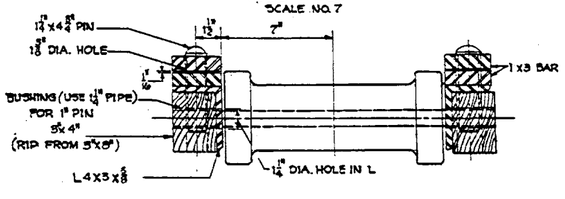
SCALE NO. 7



ELEVATION
MUD PLOW
SCALE NO. 7

ELEVATION

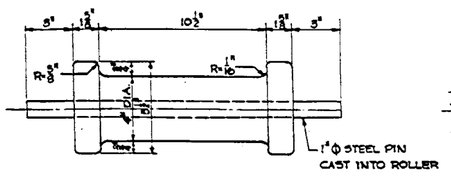
SCALE NO. 7



SECTION W W

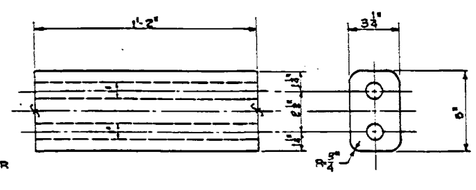
SCALE NO. 8

ROLLER WITH CONNECTOR PLATE



CAST STEEL ROLLER

SCALE NO. 8



CAST IRON SEPARATOR

SCALE NO. 8

DETAIL 30
ROLLER FRAME

GENERAL NOTES

RAILWAY	NO. ROLLER FRAMES PER ROLLER TRAIN
500 TON	15 - 15'
1800 TON	22 - 15'

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 2
0 1' 2'
NO. 6
0 3" 6" 9" 1' 2'
NO. 7
0 1" 2" 3" 6" 9" 1'
NO. 8

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

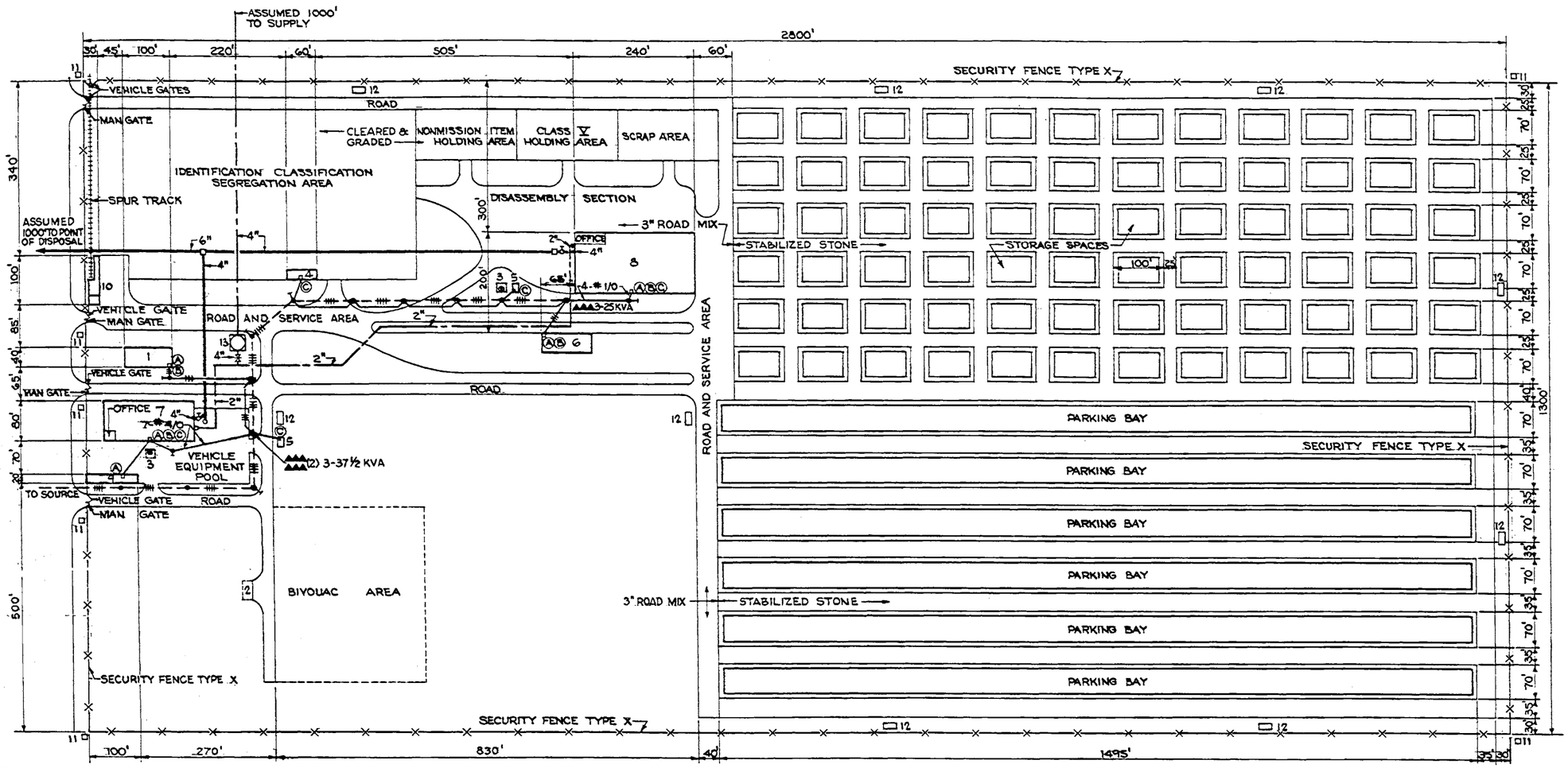
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature]
CHIEF, [illegible] BRANCH
APPROVED: [signature] H. M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1960

THEATER OF OPERATIONS
MARINE RAILWAY CRADLE DETAILS

APPROVED FOR PROPONENT AGENCY:
ROBERT W. GENTLEMAN
Colonel, GS
Deputy Chief, Transportation Resources Division
Directorate of Transportation
DATE 14 SEP 59

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 15-33
SHEET 8 OF 8



SITE & UTILITY LAYOUT

SCALE NO. 15

INST. NO. JA1011 STL FRAME BLDGS.

INST. NO. JA1021 WOOD FRAME BLDGS.

GENERAL NOTES

1. PLACE BUMPER OR CAR STOP AT THE END OF ALL SPUR TRACKS.
2. DRAINAGE SHALL BE PROVIDED BY OPEN DITCHES AND CULVERTS. CULVERT MATERIALS ARE INCLUDED IN ROAD AND RAILROAD FACILITIES.
3. PROVIDE 30' MINIMUM RADIUS FOR EDGES OF FINISHED SURFACES AT ROAD INTERSECTIONS.

SCHEDULE OF FACILITIES

NO.	FACILITY	STD-TPR INST. NO. JA1011, JA1021 QTY.	SIZE OR UNIT	DWG. NO.
	BUILDINGS			
1	COLLECTING POST OFFICE	1	40'X100'	61-11
2	COMPANY HQ (IF REQ'D)	1		
3	ELEC. GENERATING PLANT(IF REQ'D)	2		
4	GUARD HOUSE	1	20'X60'	74-13
5	LATRINE, PIT TYPE, 8 SEATS	2	10'X20'	72-36
6	SERVICE SECTION OFFICE	1	40'X100'	61-11
7	SHOP-AUTOMOTIVE ARMAMENT REBUILD	1	80'X180'	21-43
8	SHOP-GENERAL PURPOSE REBUILD	1	120'X240'	21-82
9	STOREHOUSE	1	20'X100'	44-11
	OTHER CONSTRUCTION			
	FENCE-SECURITY-TYPE X	8.2	1000 FT	71-09
	FENCE-SECURITY-VEHICLE & MAN GATE	6	EACH	71-09
	OPERATING AREAS-CLEARED & GRADED	32.2	ACRES	

NO.	FACILITY	STD-TPR INST. NO. JA1011, JA1021 QTY.	SIZE OR UNIT	DWG. NO.
10	PLATFORM-UNLOADING	1.9	1000 SF	86-09
	RAILROAD-SINGLE TRACK SPUR	0.1	MILE	
	ROAD, 2 LANE, 6" STABILIZED STONE	5.3	MILE	85-31
	ROAD, 2 LANE, 6" STONE, 3" COLD ROAD MIX	1.5	MILE	85-31
11	SENTRY BOX	7	4'X4'	
	SERVICE AREA, 6" STONE, 3" COLD ROAD MIX	22.5	1000 SY	85-31
12	SUMP-FIRE PROTECTION	9	10,000 GAL	84-21
13	WATER TANK	1	21,000 GAL	84-21
	SITE AREA	84	ACRES	
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	11,500 GPD	200310	84-21
DRAINAGE	8050GPD	200311	83-15
ELECTRIC DISTRIBUTION	249 KW	200312	81-23 81-22 81-21

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 50' 100' 200'

NO. 15

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C. W. BEICHMANN
APPROVED:

THEATER OF OPERATIONS

ORDNANCE COLLECTING POINT
MAINTENANCE & PRODUCTION
STD-TPR
SITE & UTILITY LAYOUT

APPROVED: 19 MAR 1969
CHIEF, STRUCTURES BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:

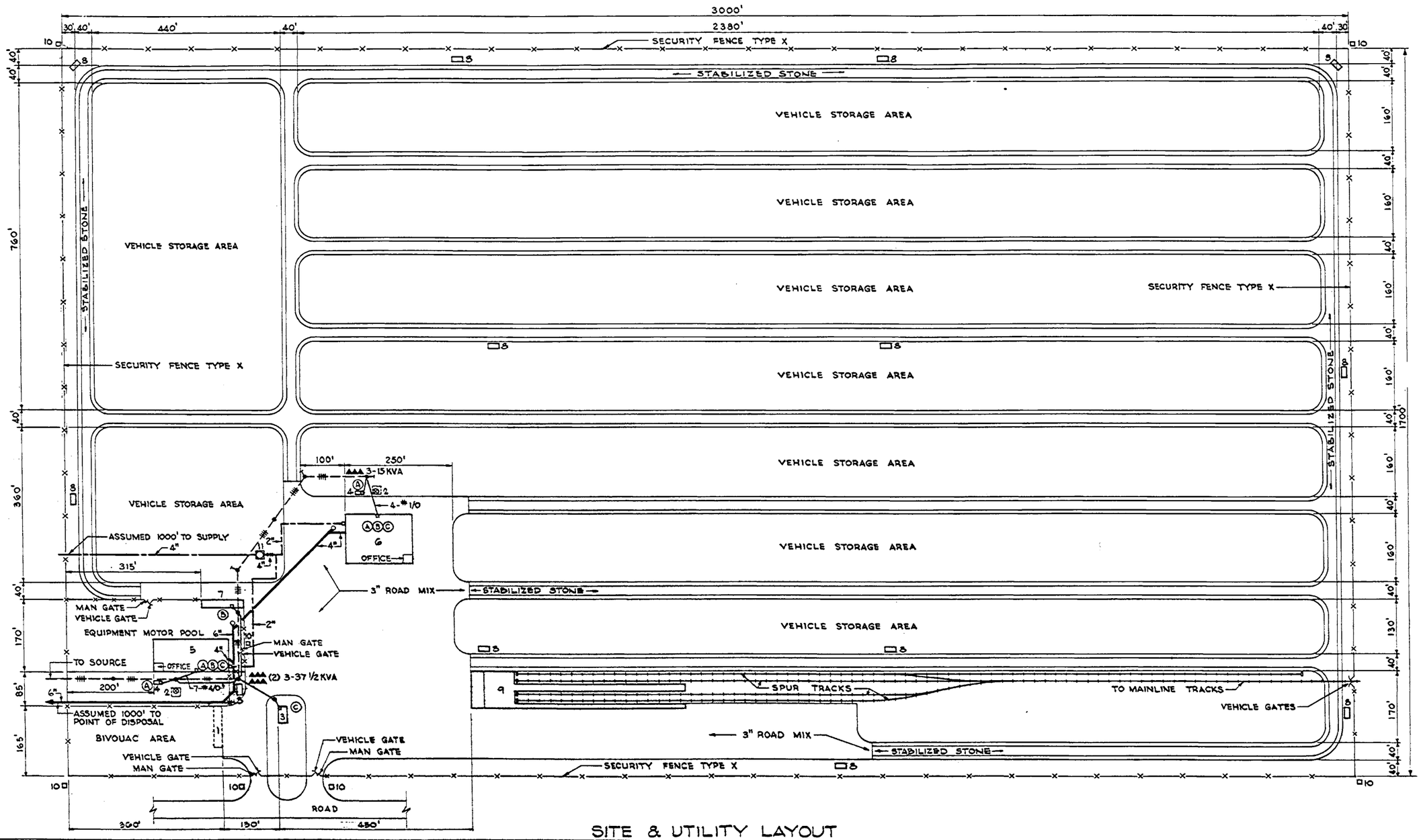
DATE

SCALE: AS NOTED

SPEC. NO.

DRAWING NUMBER: 20-03

SHEET 1 OF 1



SITE & UTILITY LAYOUT

SCALE NO. 15

INST. NO. JA 1041 STL FRAME BLDGS.
INST. NO. JA 1051 WOOD FRAME BLDGS.

SCHEDULE OF FACILITIES

NO.	FACILITY	STD.-TPR INST. NO. JA 1041, JA 1051 QTY.	SIZE OR UNIT	DWG. NO.
	BUILDINGS			
1	BATTALION HQ (IF REQ'D)	1		
2	ELEC. GENERATING PLANT (IF REQ'D)	2		
3	INSPECTION BUILDING	1	20' X 40'	61-11
4	LATRINE, PIT TYPE, 8 SEATS	2	10' X 20'	72-56
5	SHOP, AUTOMOTIVE ARMAMENT REBUILD	1	80' X 180'	21-45
6	SHOP, PARK COMPANY	1	120' X 100'	21-81
7	STOREHOUSE	1	20' X 100'	44-11
	OTHER CONSTRUCTION			
	FENCE, SECURITY - TYPE X	10.5	1000 FT.	71-09
	FENCE, SECURITY-VEHICLE, MAN GATE	6	EACH	71-09
	VEHICLE STORAGE-CLEARED & GRADED	70	ACRES	
8	SUMP, FIRE PROTECTION	12	10000 GAL.	84-21

NO.	FACILITY	STD.-TPR INST. NO. JA 1041, JA 1051 QTY.	SIZE OR UNIT	DWG. NO.
9	PLATFORM - UNLOADING	20.8	1000 SF	80-09
	RAILROAD - NO. 8 TURNOUT	4	EACH	80-13
	RAILROAD - SINGLE TRACK	1.1	MILE	
	ROAD, 2 LANE, 6" STABILIZED STONE	4.5	MILE	85-31
	ROAD, 2 LANE, 6" STONE, 3" COLD ROAD MIX	0.1	MILE	85-31
10	SENTRY BOX	7	4' X 6'	
	SERVICE AREA, 6" STONE, 3" COLD ROAD MIX	41.2	1000 SY	85-31
11	WATER TANK	1	21,000 GAL	84-21
	SITE AREA	118	ACRES	

UTILITIES

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION	15,000 GPD	200410	84-21
DRAINAGE	10,500 GPD	200411	85-15
ELECTRIC DISTRIBUTION	186 KW	200412	81-25, 81-22, 81-21

GENERAL NOTES

1. PLACE BUMPER OR CAR STOP AT THE END OF ALL SPUR TRACKS.
2. DRAINAGE SHALL BE PROVIDED BY OPEN DITCHES AND CULVERTS. CULVERT MATERIALS ARE INCLUDED IN ROAD AND RAILROAD FACILITIES.
3. PROVIDE 30' MINIMUM RADIUS FOR EDGES OF FINISHED SURFACES AT ROAD INTERSECTIONS.

ELECTRICAL NOTES

1. TOTAL ELECTRICAL CONNECTED LOAD - 211.0 K.W.

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES
0 50' 100' 200'
NO. 15

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. BEICHMANN

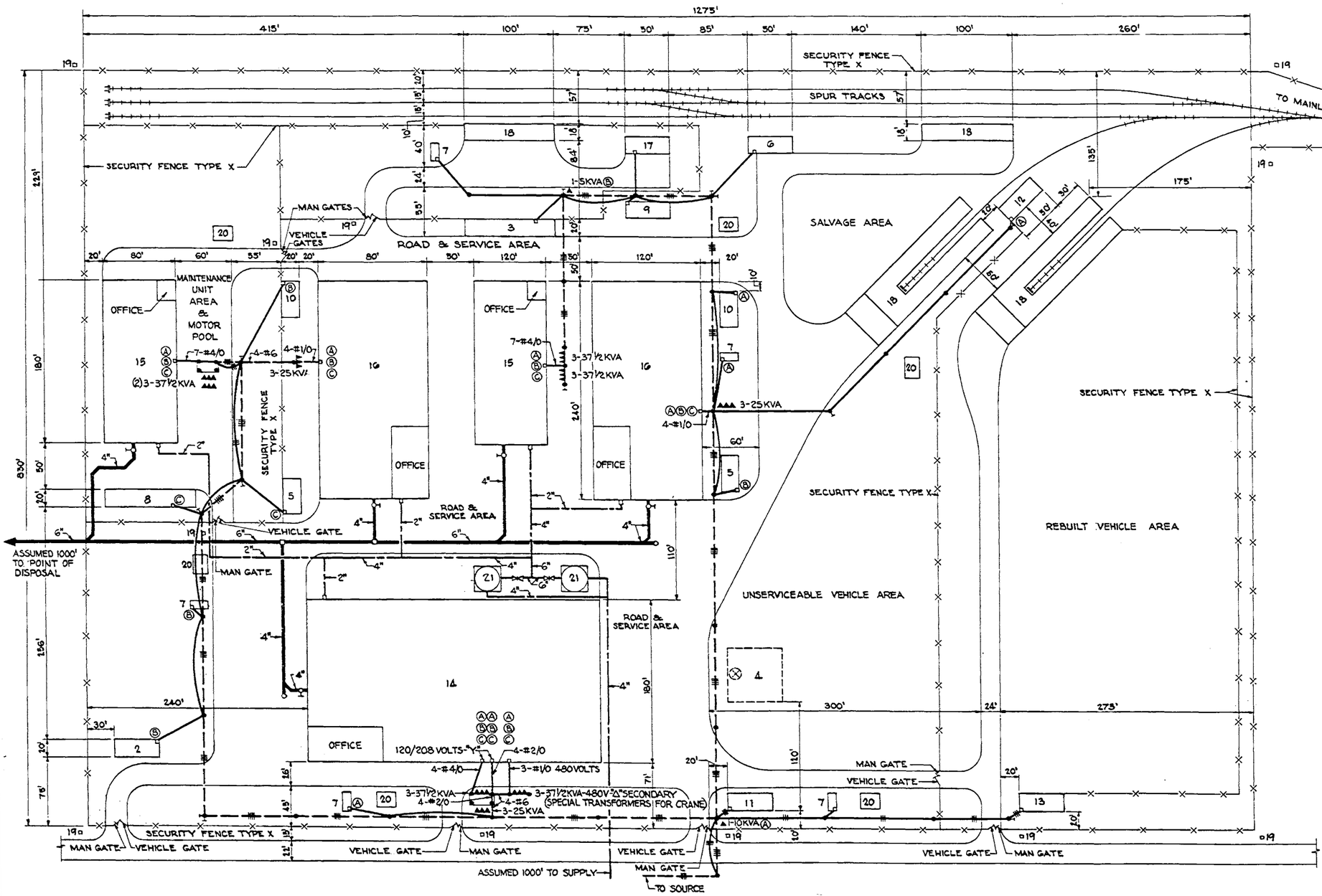
THEATER OF OPERATIONS

BASE ORDNANCE PARK
MAINTENANCE & PRODUCTION
STD-TPR
SITE & UTILITY LAYOUT

APPROVED: H. Eichen — APPROVED: H.M. Williams — DATE: 19 MAR 1969
CHIEF, STRUCTURES BRANCH — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 20-04
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY



SCHEDULE OF FACILITIES

NO.	FACILITY	STD-TP2 INST. NO. JA 1061, JA 1071 QTY.	SIZE OR UNIT	DWG. NO.
	BUILDINGS			
1.	BN. HEADQUARTERS (IF REQ'D)	1		
2	BATTALION SHOP OFFICE (USE ADMINISTRATION BLDG)	1	20' X 50'	61-11
3	BATTALION SUPPLY OFFICE (USE HQ & UNIT SUPPLY-BN)	1	20' X 100'	61-11
4	ELEC. GENERATING PLANT (IF REQ'D)	1		
5	FINAL INSPECTION BLDG (USE HQ & UNIT SUPPLY-CO.)	2	20' X 40'	61-11
6	FLAMMABLE MATERIALS STORAGE (USE STOREHOUSE)	1	20' X 50'	44-11
7	LATRINE, PIT TYPE, 8 SEATS	5	10' X 20'	72-36
8	MOTOR STORAGE (USE STOREHOUSE)	1	20' X 100'	44-11
9	PRE-INSPECTION BLDG (USE ADMINISTRATION BLDG)	1	20' X 50'	61-11
10	PRODUCTION CONTROL SUB-OFFICE	2	20' X 40'	61-11
11	RECEIVING CONTROL OFFICE (USE ADMINISTRATION)	1	20' X 50	61-11
12	RR RECEIVING & SHIPPING CONTROL (USE ADMINISTRATION BLDG)	1	20' X 50'	61-11
13	SHIPPING CONTROL OFFICE (USE ADMINISTRATION BLDG)	1	20' X 50'	61-11
14	SHOP-ARTILLARY & FIRE CONTROL REBUILD	1	180' X 320'	21-51
15	SHOP-AUTOMOTIVE ARMAMENT REBUILD	2	80' X 180'	21-43
16	SHOP-GENERAL PURPOSE REBUILD	2	120' X 240'	21-32
17	STOREHOUSE	1	20' X 50'	44-11
	OTHER CONSTRUCTION			
	FENCE-SECURITY-TYPE X	7.8	1000 FT	71-09
	FENCE-SECURITY-VEHICLE & MAN GATE	10	EACH	71-09
	OPERATING AREA-CLEARED & GRADED	13	ACRES	
18	PLATFORM-UNLOADING	18.2	1000 SF	86-09
	RAILROAD-SINGLE TRACK	1.0	MILE	
	RAILROAD-NO. 8 TURNOUT	8	EACH	86-13
	ROAD, 2 LANE, 6" STONE, 3" COLD MIX	1.0	MILE	85-31
19	SENTRY BOX	12	4' X 4'	
	SERVICE AREA, 6" STONE, 3" COLD MIX	20	1000SY	85-31
20	SUMP-FIRE PROTECTION	6	10000 GAL	84-21
21	WATER TANK & TOWER	2	210006AL	84-21
	SITE AREA	24.5	ACRES	
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	675000GPD	200510	84-21
DRAINAGE		200511	83-15
ELECTRIC DISTRIBUTION	716KW	200512	81-21,22,23

SITE & UTILITY LAYOUT

SCALE NO. 13

INST. NO. JA 1061 STEEL FRAME BLDGS.
INST. NO. JA 1071 WOOD FRAME BLDGS.

ELECTRICAL NOTES

1. WIRE SIZE FOR PRIMARY DISTRIBUTION #4 UNLESS OTHERWISE NOTED.
2. WIRE SIZE FOR SECONDARY DISTRIBUTION #6.

GENERAL NOTES

1. PLACE BUMPER OR CAR STOP AT END OF ALL SPUR TRACKS.
2. DRAINAGE SHALL BE PROVIDED BY OPEN DITCHES AND CULVERTS. CULVERTS ARE INCLUDED IN ROAD AND RAILROAD FACILITIES.
3. PROVIDE 30 FT. MINIMUM RADIUS FOR EDGES OF FINISHED SURFACE AT ROAD INTERSECTIONS.

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 50' 100'
NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

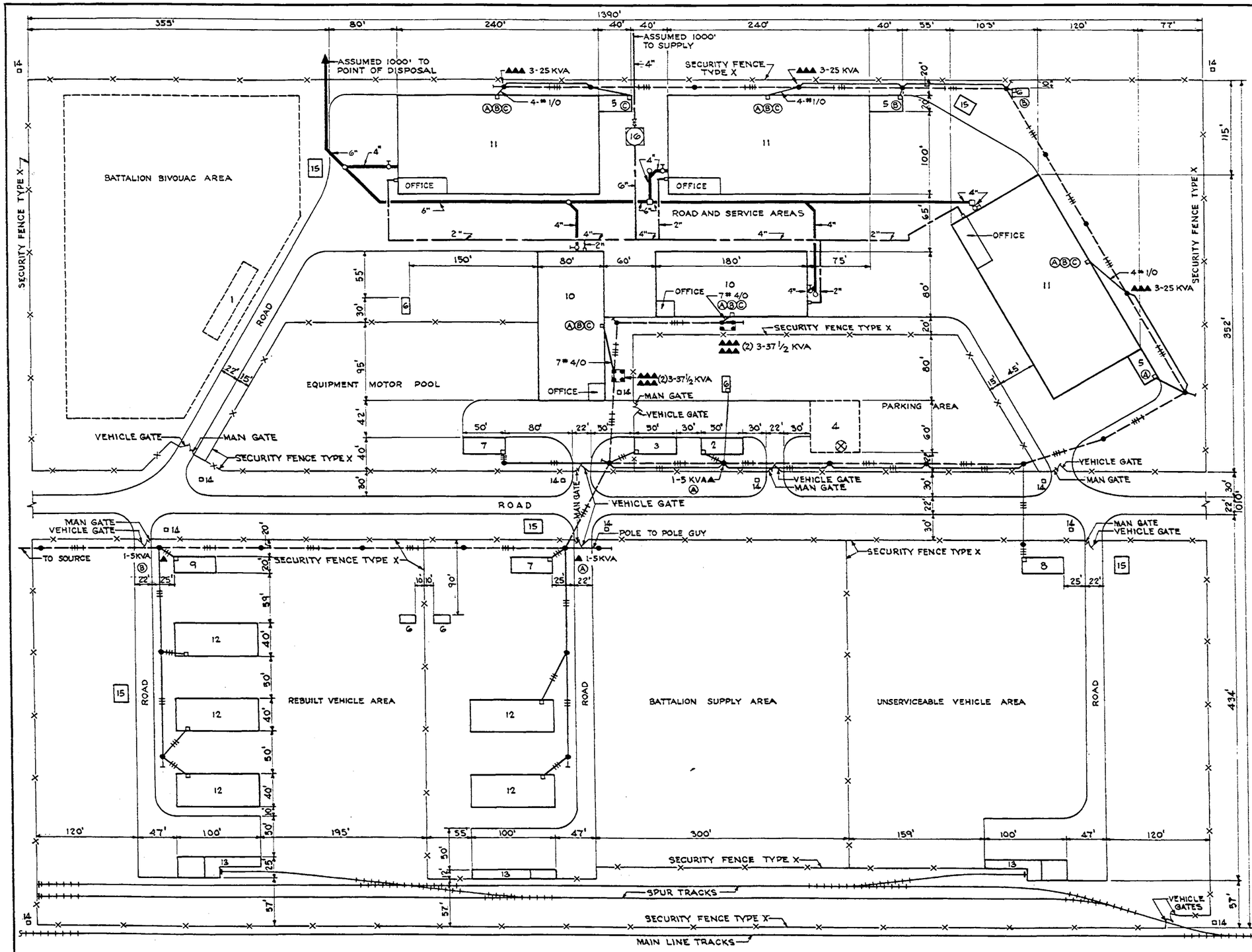
DRAWN BY: BALLOU
TRACED BY:
CHECKED BY: MELTON
SUBMITTED BY: C.W. OEICHMANN
APPROVED: H. Eschamy for H.M. Williams
CHIEF, STRUCTURES BRANCH, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS
ORDNANCE ARMAMENT REBUILD
GENERAL AUTOMOTIVE, ARTILLERY & FIRE CONTROL
STD-TP2
SITE & UTILITY LAYOUT

APPROVED: DATE: 19 MAR 1969
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 20-05
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY



SCHEDULE OF FACILITIES

NO.	FACILITY	STD-TPR INST. NO. JA1081, JA1091 QTY	SIZE OR UNIT	DWG. NO.
BUILDINGS				
1	BN HEADQUARTERS (IF REQ'D)	1	20'X100	61-11
2	BN SHOP & PARK COMPANY CONTROL (USE ADMINISTRATION BLDG)	1	20' X 50'	61-11
3	BN SUPPLY OFFICE (USE ADMINISTRATION BLDG.)	1	20' X 50'	61-11
4	ELEC. GENERATING PLANT (IF REQ'D)		2-300 KW	61-16
5	INSPECTION BUILDING (USE HQ & UNIT SUPPLY-CO)	3	20'X 40'	61-11
6	LATRINE, PIT TYPE, 8 SEATS	5	10' X 20'	72-36
7	OFFICE (USE ADMINISTRATION BLDG.)	2	20' X 50'	61-11
8	RECEIVING CONTROL BLDG. (USE ADMINISTRATION BLDG)	1	20' X 50'	61-11
9	SHIPPING CONTROL BLDG. (USE ADMINISTRATION BLDG)	1	20' X 50'	61-11
10	SHOP-AUTOMOTIVE ARMAMENT REBUILD	2	80'X180'	21-43
11	SHOP-GENERAL PURPOSE REBUILD	3	120'X240'	21-82
12	WAREHOUSE-CLOSED	5	40'X100'	44-11
OTHER CONSTRUCTION				
	FENCE-SECURITY-TYPE X	10	1000 FT	71-09
	FENCE-SECURITY-VEHICLE & MAN GATE	10	EACH	71-09
	OPERATING AREA-CLEARED & GRADE	15	ACRES	
13	PLATFORM-UNLOADING	4.9	1000 SF	86-09
	RAILROAD-NO. 8 TURNOUT	4	EACH	86-13
	RAILROAD-SINGLE TRACK	0.8	MILE	
	ROAD, 2 LANE, 6"STONE, 3"COLD MIX	0.6	MILE	85-31
14	SENTRY BOX	12	4' X 4'	
	SERVICE AREA, 6"STONE, 3" COLD MIX	17.5	1000 SY	85-31
15	SUMP-FIRE PROTECTION	5	10000 GAL	84-21
16	WATER TANK	1	21000 GAL	84-21
	SITE AREA	33	ACRES	

UTILITIES			
ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	37500 GPD	200610	84-21
DRAINAGE		200611	83-15
ELECTRIC DISTRIBUTION	553 KW	200612	81-21 81-22 81-23

SITE & UTILITY LAYOUT

SCALE NO.13

INST. NO. JA1081 STL FRAME BLDGS.

INST. NO. JA1091 WOOD FRAME BLDGS.

GENERAL NOTES

1. PLACE BUMPER OR CAR STOP AT THE END OF ALL SPUR TRACKS.
2. DRAINAGE SHALL BE PROVIDED BY OPEN DITCHES AND CULVERTS. CULVERT MATERIALS ARE INCLUDED IN ROAD AND RAILROAD FACILITIES.
3. PROVIDE 50' MINIMUM RADIUS FOR EDGES OF FINISHED SURFACES AT ROAD INTERSECTIONS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
REVISIONS			

GRAPHIC SCALES

0 50' 100'

NO.13

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

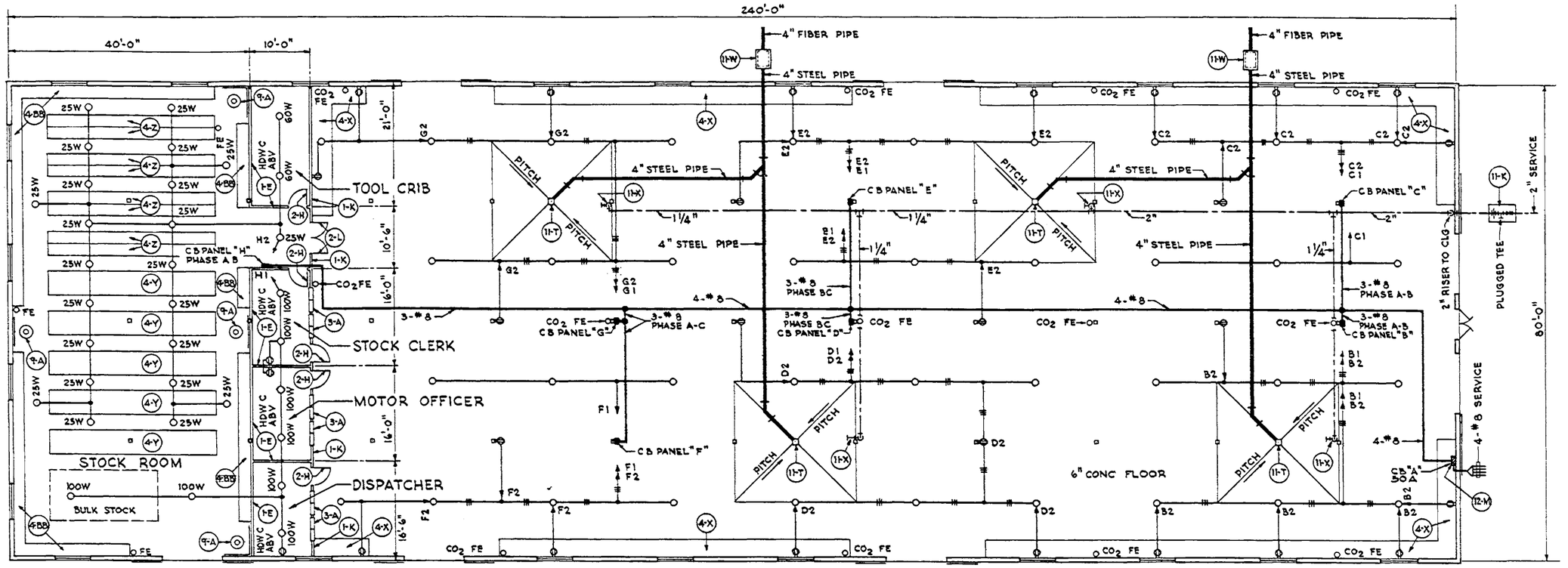
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ILYUS
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED BY: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY:
DATE

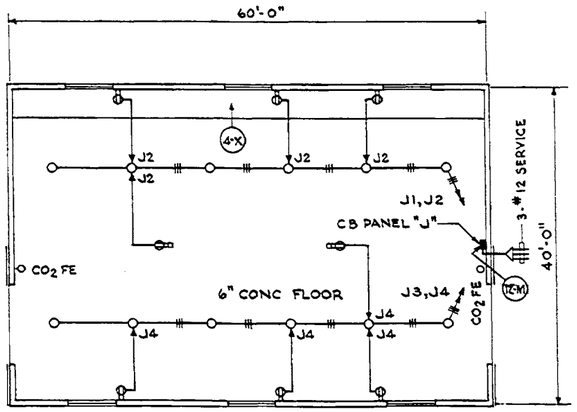
THEATER OF OPERATIONS

ORDNANCE AUTOMOTIVE REBUILD MAINTENANCE & PRODUCTION
STD TPR
SITE & UTILITY LAYOUT

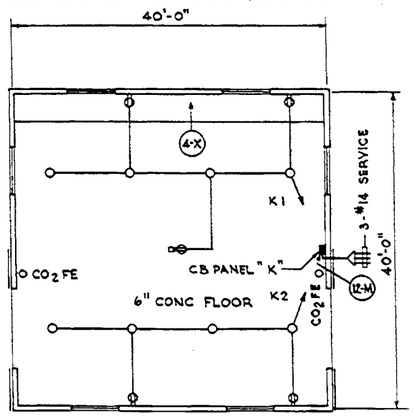
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 20-06
SHEET 1 OF 1



PLAN
SHOP—AUTOMOTIVE MAINTENANCE - 80'x 240'
SCALE NO.1
FACIL. NO. 214103 - INTERIOR ONLY
FACIL. NO. 214113 - STEEL FRAME W/INTERIOR
FACIL. NO. 214123 - WOOD FRAME W/INTERIOR



PLAN
SHOP-MOTOR REPAIR - 40'x 60'
SCALE NO.1
FACIL. NO. 214102 - INTERIOR ONLY
FACIL. NO. 214112 - STEEL FRAME W/INTERIOR
FACIL. NO. 214122 - WOOD FRAME W/INTERIOR



PLAN
SHOP-MOTOR REPAIR-40'x 40'
SCALE NO.1
FACIL. NO. 214101 - INTERIOR ONLY
FACIL. NO. 214111 - STEEL FRAME W/INTERIOR
FACIL. NO. 214121 - WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

CONNECTED LOAD

	AUTOM MAINT 80'x240'	MOTOR REPAIR 40'x60'	MOTOR REPAIR 40'x40'
BUILDINGS			
LIGHTING	9.10 KW	2.90 KW	1.60 KW
RECP. EST.	2.40 KW	.80 KW	.50 KW
TOTAL	11.50 KW	3.20 KW	2.10 KW

1. UNLESS OTHERWISE NOTED ON PLANS. ALL LAMPS TO BE 200 W.
2. ALL 60 & 100 W. LAMPS TO HAVE 8" CONICAL SHADES.
3. ALL 200 W. LAMPS TO HAVE 14" DIA. FLAT SHADES.
4. UNLESS OTHERWISE NOTED ON PLAN ALL C.B. PANELS IN AUTOMOTIVE MAINTENANCE SHOP TO BE 2-1P, 15 AMP.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO
21-41	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-04	WOOD FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3
35-36	STEEL FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	NEXT REVISION		

REVISIONS

GRAPHIC SCALES
0 5' 10' 15'
NO.1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

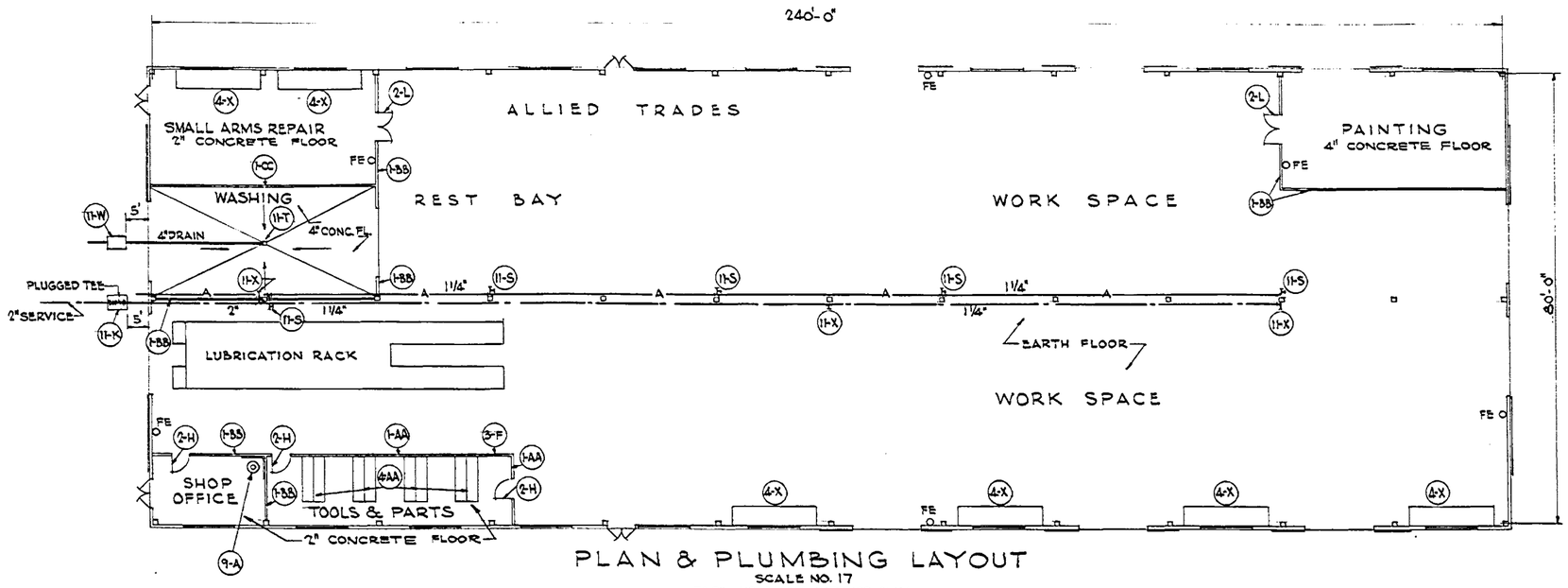
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: I LYUS
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED:

THEATER OF OPERATIONS

SHOPS
AUTOMOTIVE MAINTENANCE 80'X240'
MOTOR REPAIR 40'X40'-40'X60'

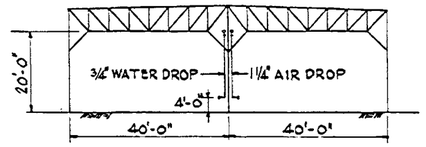
APPROVED: DATE: 18 MAR 1969
CHIEF, BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 21-41
SHEET 1 OF 1



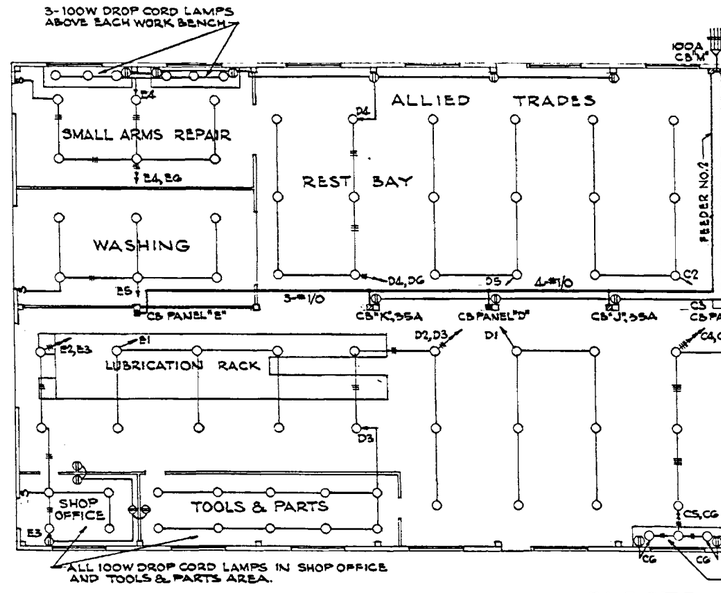
PLAN & PLUMBING LAYOUT

SCALE NO. 17

FACIL. NO. 214201 - INTERIOR ONLY
FACIL. NO. 214211 - STEEL FRAME W/INTERIOR
FACIL. NO. 214221 - WOOD FRAME W/INTERIOR



DIAGRAMMATIC SECTION
NO SCALE



ELECTRICAL PLAN

SCALE NO. 17

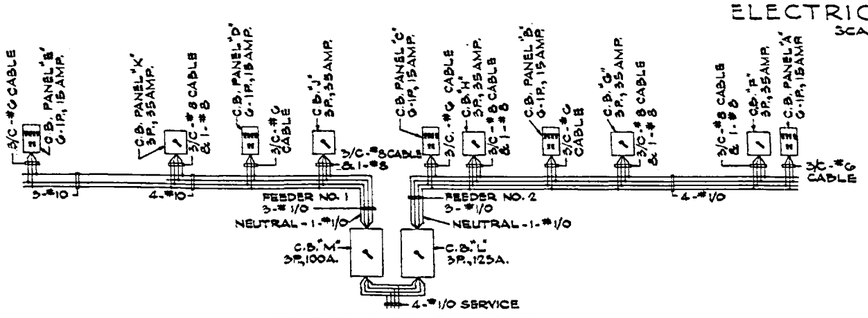


DIAGRAM OF FEEDERS

NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	25.0 KW
RECP. EST.	3.2 KW
5-3PH POWER OUTLETS @ 8 KW EA.	40.0 KW
TOTAL	68.2 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 200 W.
2. ALL 100 W LAMPS TO HAVE 8" CONICAL SHADES.
3. ALL 200 W LAMPS TO HAVE 14" DIA. FLAT SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
21-42	PLANS	1 OF 1
21-97	LUBRICATION RACK	1 OF 1
99-98	STANDARD DETAILS	
34-19	WOOD FRAME CONST. SHOP TYPE BLDGS.	1-12 OF 12
55-46	STEEL FRAME CONST. SHOP TYPE BLDGS.	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	NOTICE REVISION		

REVISIONS

GRAPHIC SCALES
0 10' 20'
NO. 17

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

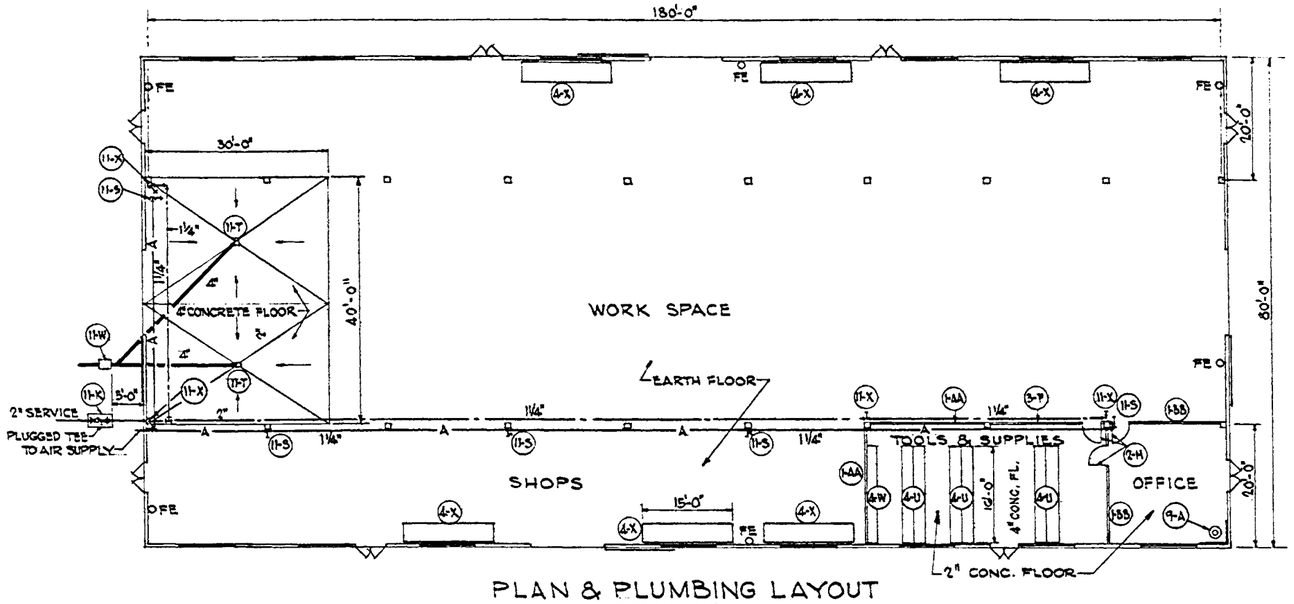
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

THEATER OF OPERATIONS

SHOP-FIELD MAINTENANCE
80'X240'

DRAWN BY: LALL
TRACED BY:
CHECKED BY: EDWARDS
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
APPROVED: DATE: 19 MAR 1969
CHIEF, BRANCH: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

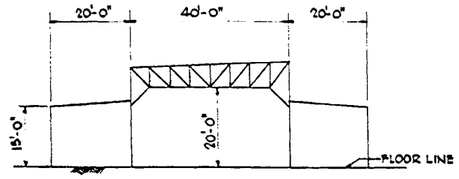
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 21-42
SHEET 1 OF 1



PLAN & PLUMBING LAYOUT

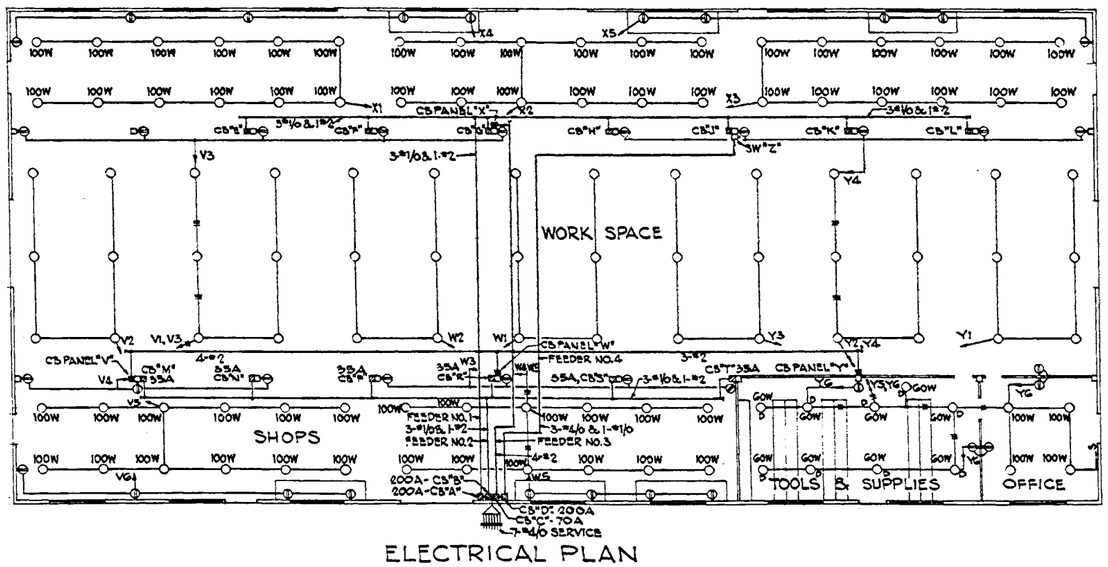
SCALE NO. 17

FACIL. NO. 214301-INTERIOR ONLY
FACIL. NO. 214311-STEEL FRAME W/INTERIOR
FACIL. NO. 214321-WOOD FRAME W/INTERIOR



DIAGRAMMATIC SECTION

NO SCALE



ELECTRICAL PLAN

SCALE NO. 17

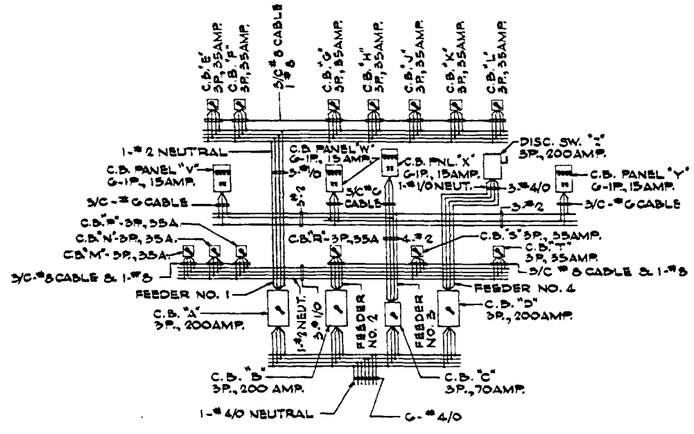


DIAGRAM OF FEEDERS

NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	15.34 KW
RECP EST.	4.00 KW
POWER-13-3PH 35A C.B.'S @ 8 KW EA.	104.00 KW
ELEC. FURNACE - 3PH	50.00 KW
TOTAL	173.34 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 200W.
2. ALL GO & 100W LAMPS TO HAVE 8" CONICAL SHADES.
3. ALL 200W LAMPS TO HAVE 14" DIA. FLAT SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR PSN BILL OF MATERIALS-REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
21-43	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-19	WOOD FRAME CONST. SHOP TYPE BLDGS.	1-12 OF 12
35-46	STEEL FRAME CONST. SHOP TYPE BLDGS.	1-3 OF 3

UNDER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 10' 20'
NO. 17

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LALL
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

THEATER OF OPERATIONS

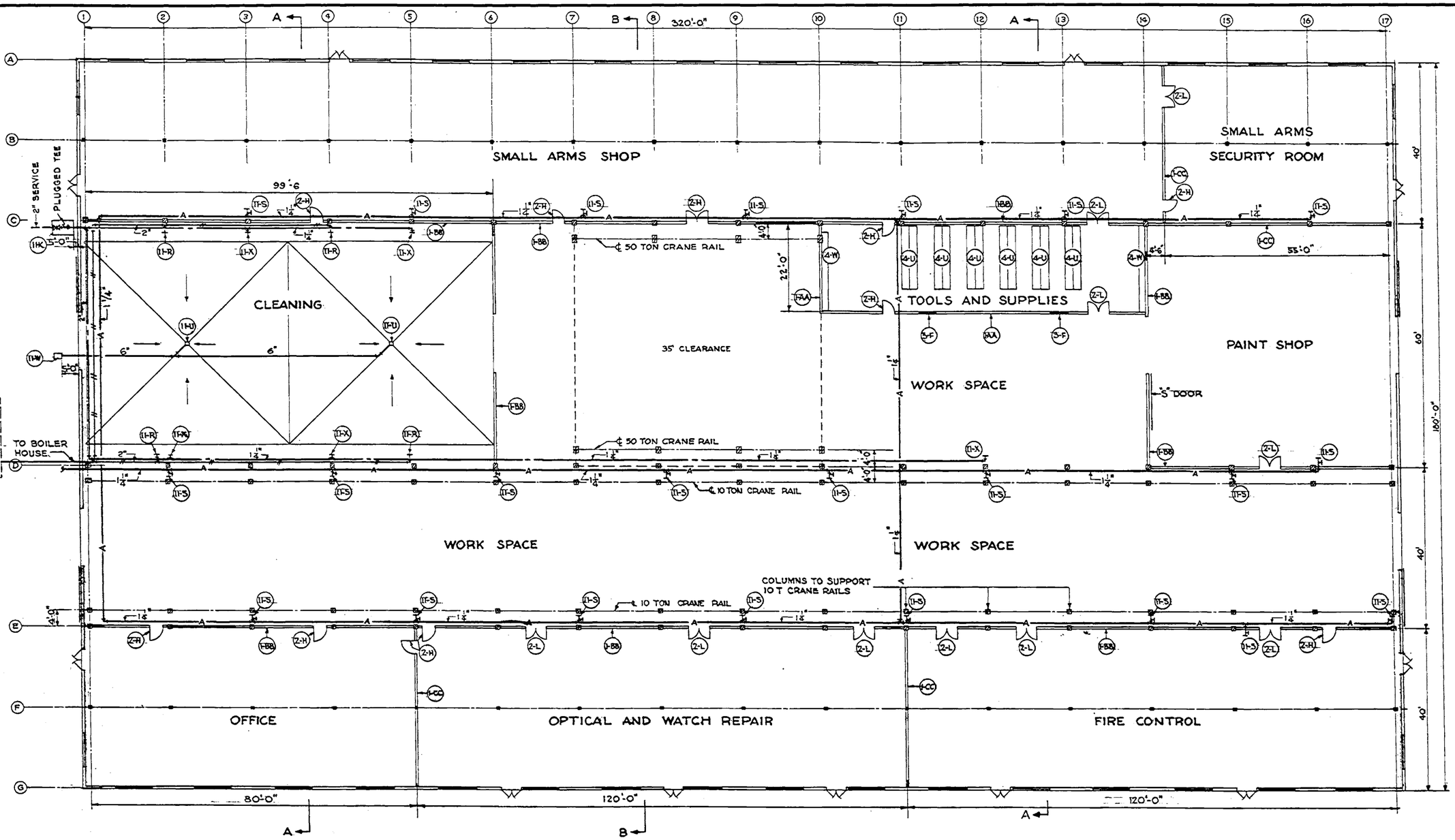
AUTOMOTIVE ARMAMENT REBUILD SERVICE
80'X180'

19 MAR 1969

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1
21-43

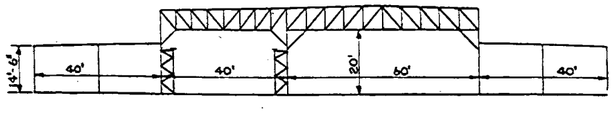
CORPS OF ENGINEERS

U. S. ARMY



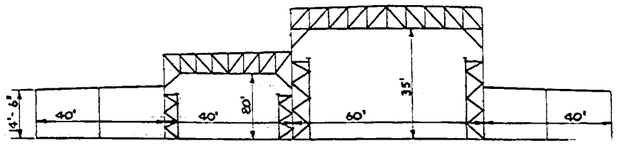
PLAN

SCALE NO. 17



DIAGRAMMATIC SECTION A-A

SCALE NO. 11



DIAGRAMMATIC SECTION B-B

SCALE NO. 11

FACILITY NUMBERS

21.51.21 - WOOD FRAME, WOOD & FELT CLAD BLDG W/INTERIOR
21.51.22 - WOOD FRAME, METAL CLAD BLDG W/INTERIOR
21.51.03 - CRANE SUPPORT, 10 TON - 100 FT.

GENERAL NOTES

1. BOILER HOUSE EQUIPMENT AND PROTECTIVE COVER BY USING AGENCY

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.	DWG. NO.	DESCRIPTION	SHEET NO.
21-51	PLAN	1 OF 13			
21-51	CROSS SECTIONS	2 OF 13	21-51	ALTERNATE FOOTING DETAILS	13 OF 13
21-51	ELEVATIONS & ROOF FRAMING	3 OF 13	99-98	STANDARD DETAILS	
21-51	WALL FRAMING	4 OF 13	34-19	DOOR & WINDOW DETAILS	5 OF 12
21-51	FOOTING & COLUMN DETAILS	5 OF 13			
21-51	COLUMNS - PART 1	6 OF 13			
21-51	COLUMNS - PART 2	7 OF 13			
21-51	60 FT MONITOR TRUSS	8 OF 13			
21-51	50 TON CRANE SUPPORT	9 OF 13			
21-51	MISCELLANEOUS DETAILS	10 OF 13			
21-51	BRACING 60 FT SPAN	11 OF 13			
21-51	ELECTRICAL PLAN	12 OF 13			

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 20' 30' 40' NO. 11

0 5' 10' 15' 20' NO. 17

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C.W. DEICHMANN
APPROVED: H. M. Williams for
CHIEF, STRUCTURES BRANCH, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

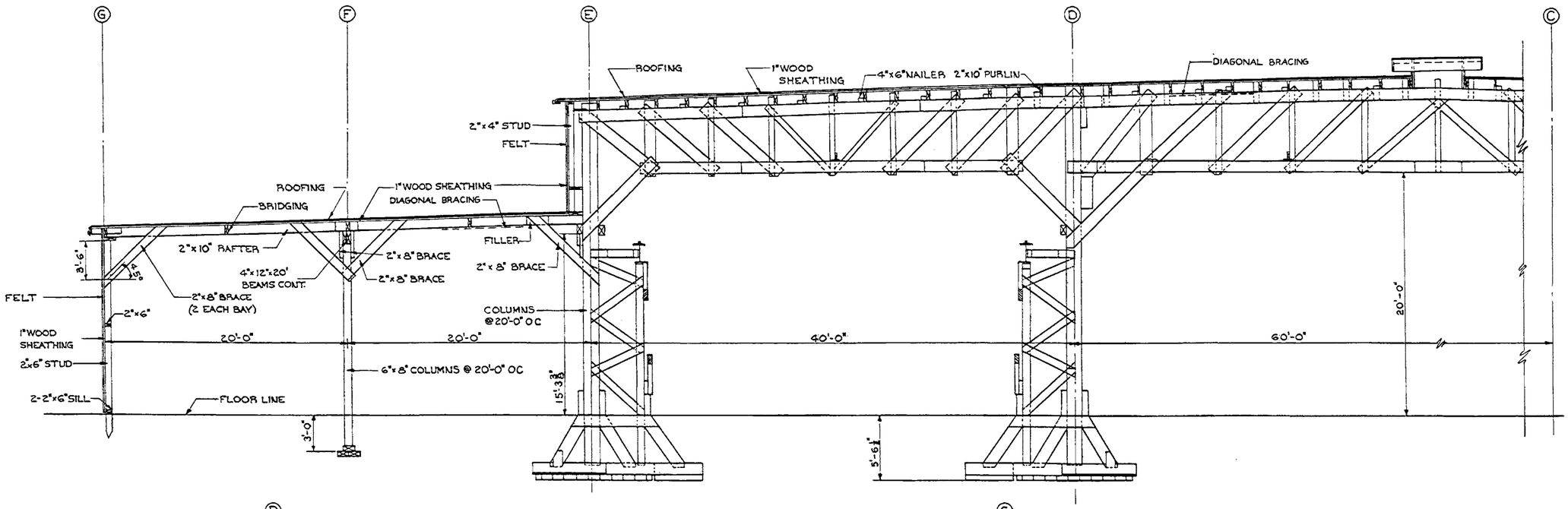
THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
PLAN & SCHEDULE OF DRAWINGS

DATE: 19 MAR 1958

SCALE: SPEC. NO.

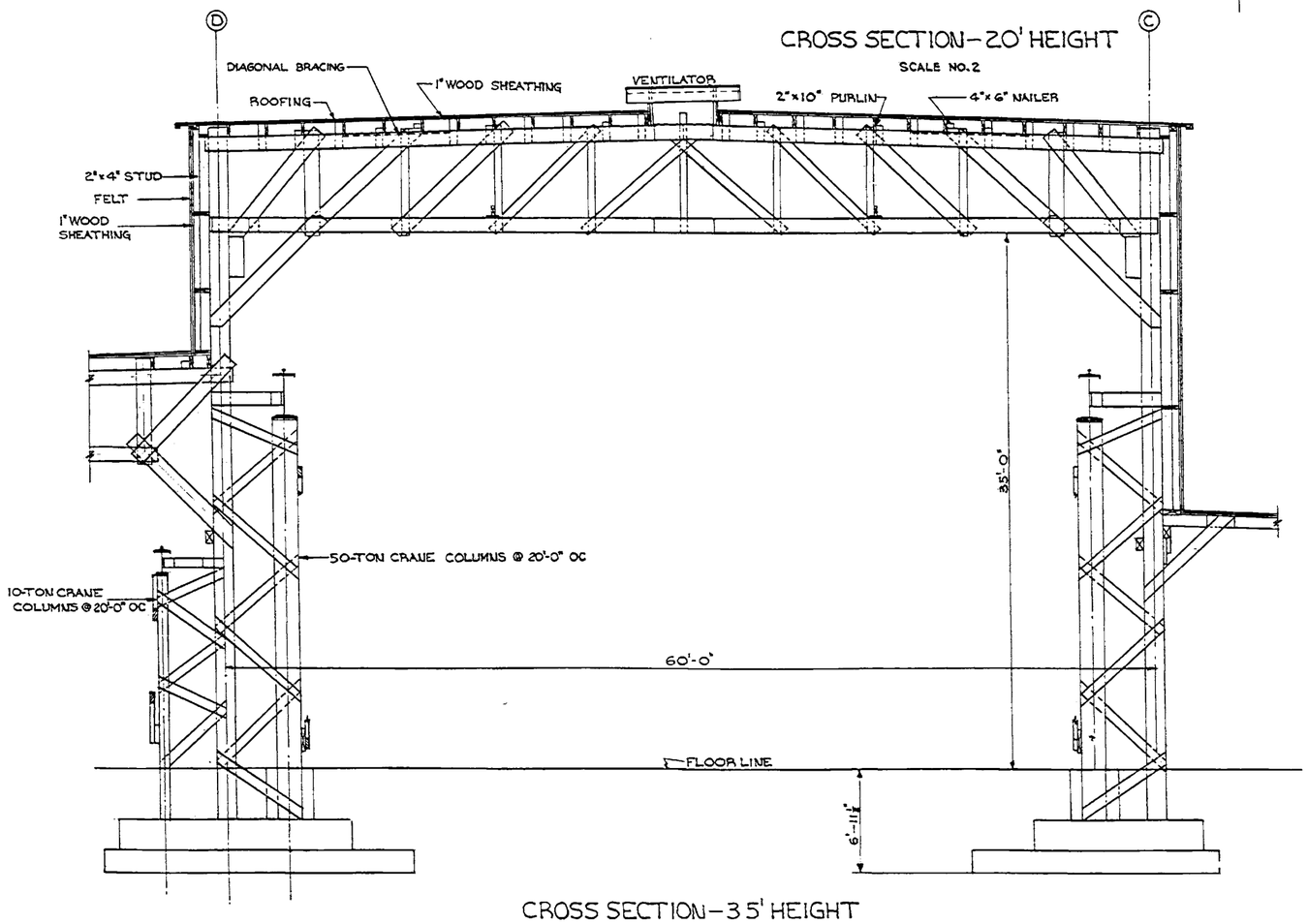
DRAWING NUMBER: 21-51

SHEET 1 OF 13



CROSS SECTION – 20' HEIGHT

SCALE NO. 2



CROSS SECTION – 35' HEIGHT

SCALE NO. 2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 5' 10'

NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
CROSS SECTIONS

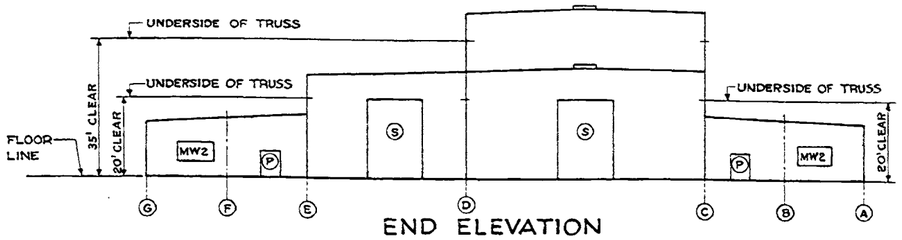
APPROVED: H. E. Eckam
APPROVED: H. M. Williams
DATE: 19 MAR 1969
CHIEF, STRUCTURES BRANCH — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

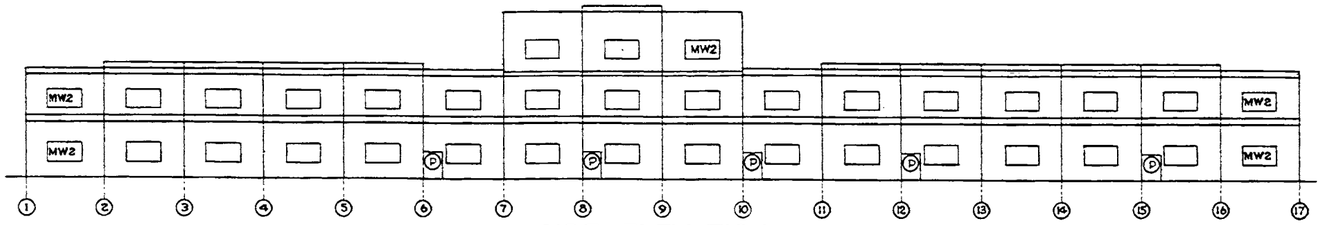
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DRAWING NUMBER 21-51

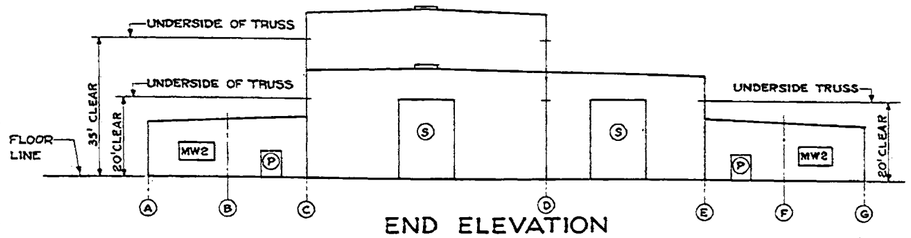
SHEET 2 OF 13



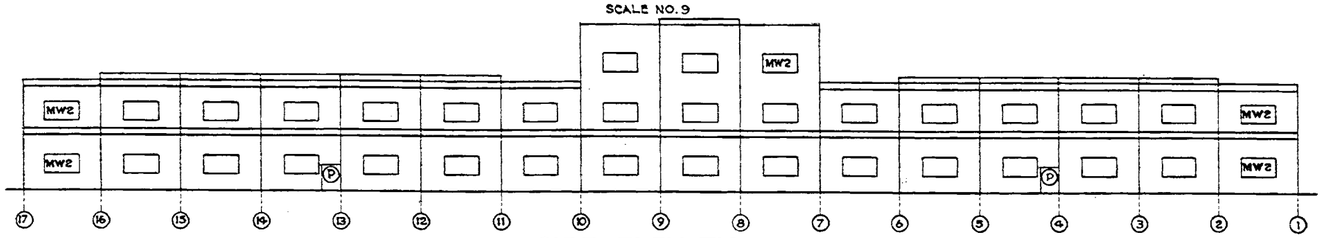
END ELEVATION
ON (17) LINE
SCALE NO. 9



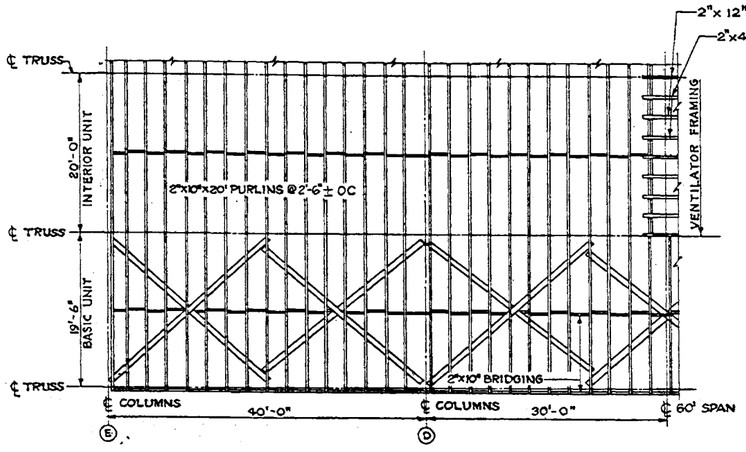
SIDE ELEVATION
ON (G) LINE
SCALE NO. 9



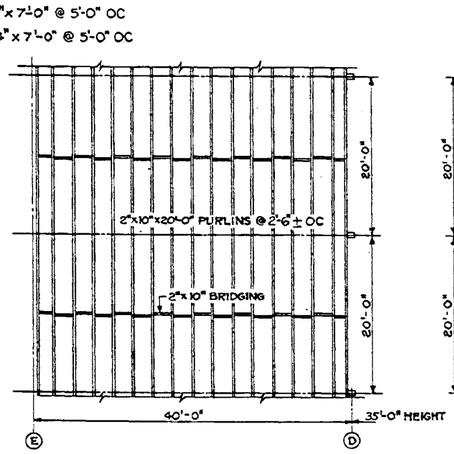
END ELEVATION
ON (1) LINE
SCALE NO. 9



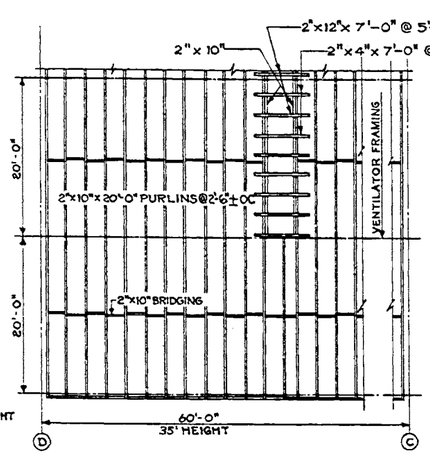
SIDE ELEVATION
ON (A) LINE
SCALE NO. 9



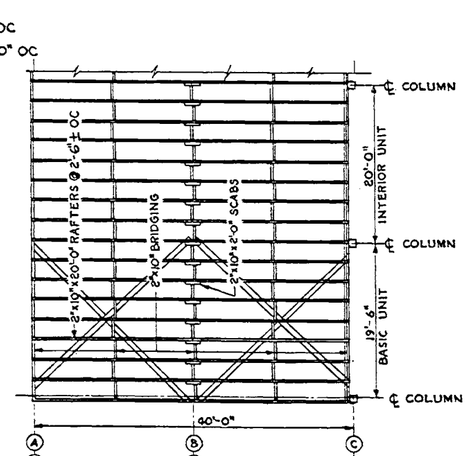
40'-60' SPANS
TYPICAL
SCALE NO.1



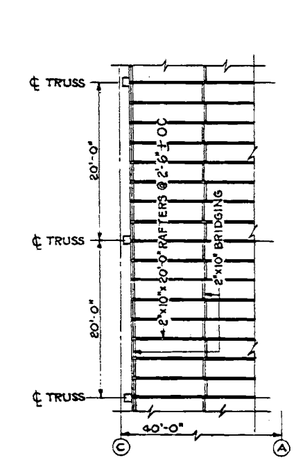
40' SPAN COLUMN LINES (7) TO (10)
SCALE NO.1



60' SPAN COLUMN LINES (7) TO (10)
SCALE NO.1



40' LEAN-TO
TYPICAL
SCALE NO.1



40' LEAN-TO
COLUMN LINES (7) TO (10)
SCALE NO.1

GENERAL NOTES

1. VERTICAL SWAY BRACING IN TWO END BAYS AND EVERY THIRD BAY.
2. IN HIGH WIND AREAS, VERTICAL SWAY BRACING IN TWO END BAYS AND ALTERNATE BAYS.
3. TOP LATERAL BRACING IN SAME BAYS AS VERTICAL SWAY BRACING.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO.1
0 10' 20' 30' NO.9

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

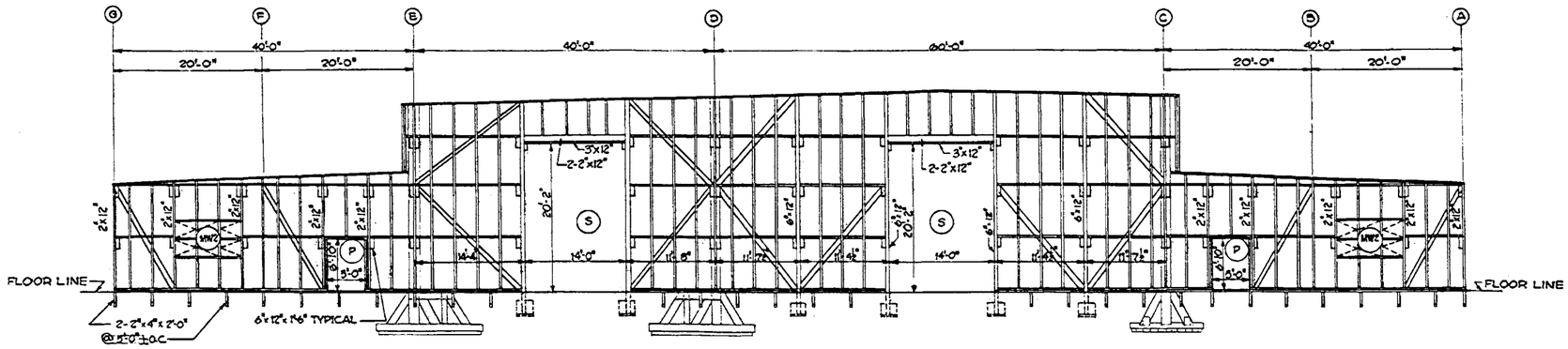
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] for H.M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

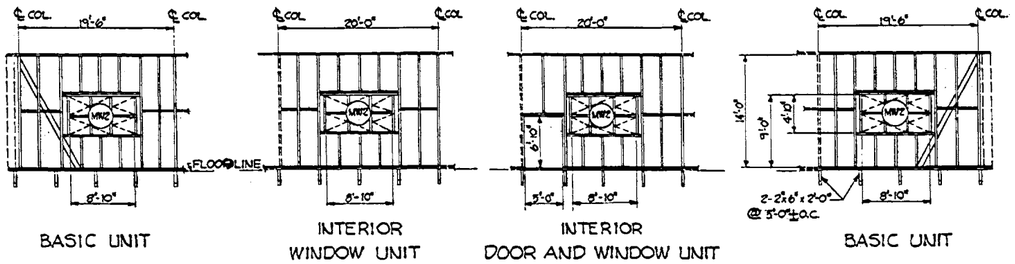
THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
ELEVATIONS & ROOF FRAMING

DATE: 19 MAR 1309
SCALE:
SPEC. NO.
DRAWING NUMBER: 21-51
SHEET 3 OF 13

TIMBER SCHEDULE					
LOCATION	STUDS	GIRT	DIAG BRACING	SILL	PLATE
END WALLS	2"X4" @ CONT	3"X10" @ CONT	2"x8"	2-2"x4"	2"x4"
SIDE WALLS CLERESTORY	2"x4"	2"X12" @ CONT	—	—	2"x4"
END WALL 35' HGT CLERESTORY	2"x8"	—	—	2"x8"	2"x8"
SIDE WALLS LEAN-TO	2"X6" @ CONT	2"x6"	2"x8"	2-2"x6"	2"x12"

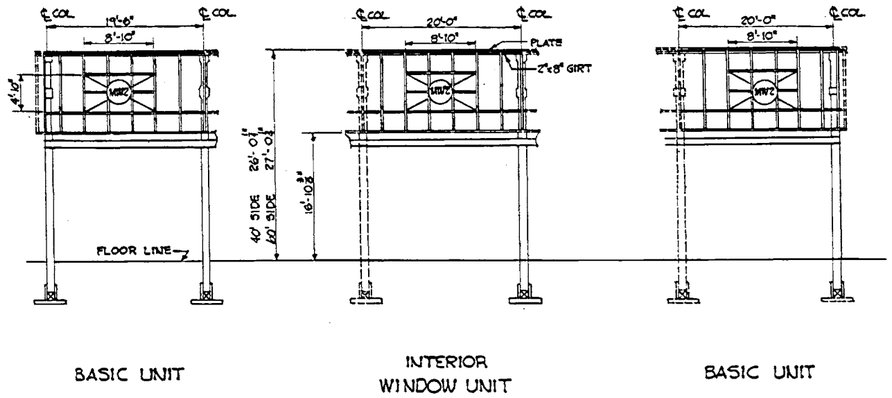


END WALL
(OPPOSITE END SIMILAR)
SCALE NO.1



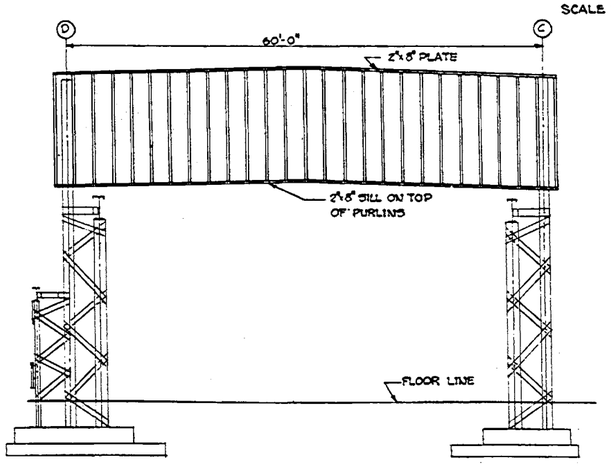
BASIC UNIT | INTERIOR WINDOW UNIT | INTERIOR DOOR AND WINDOW UNIT | BASIC UNIT

SIDE WALLS - LEAN TO
SCALE NO.1

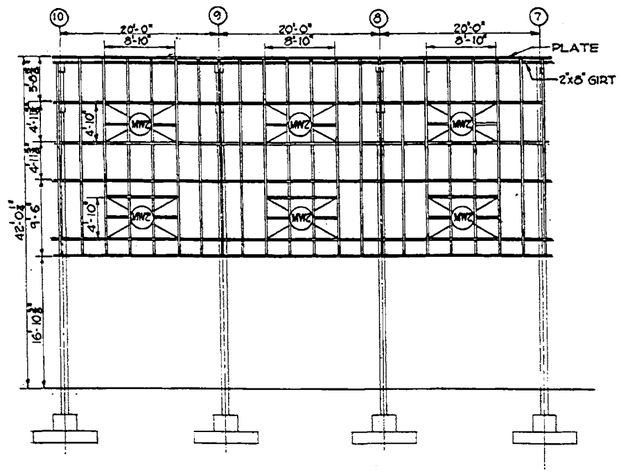


BASIC UNIT | INTERIOR WINDOW UNIT | BASIC UNIT

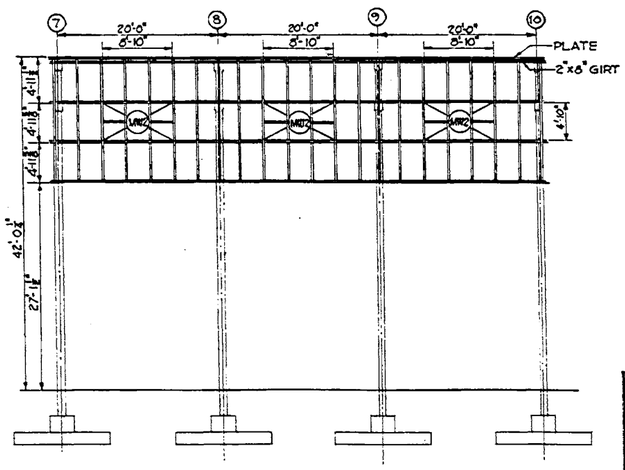
SIDE WALLS - CLERESTORY
SCALE NO.1



CLERESTORY COLUMN LINES 7 AND 10
(END WALL)
SCALE NO.1



CLERESTORY COLUMN LINE C
SCALE NO.1



CLERESTORY COLUMN LINE D
SCALE NO.1

GENERAL NOTES

1. SIZE OF MEMBERS GIVEN IN TIMBER SCHEDULE ARE TYPICAL UNLESS OTHERWISE NOTED ON PLANS

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 5' 10' 15'

NO.1

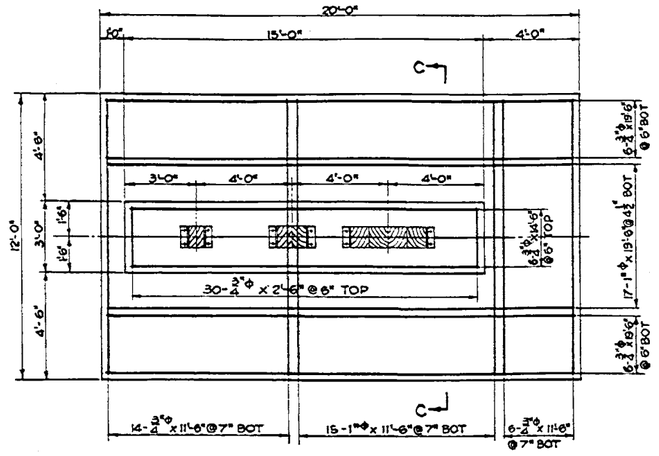
MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

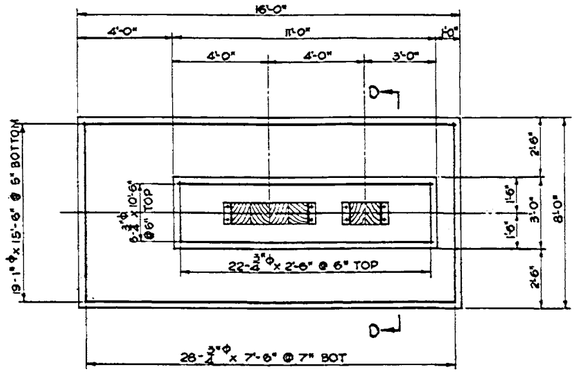
DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1951
APPROVED FOR PROPONENT AGENCY:
DATE:

THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
WALL FRAMING

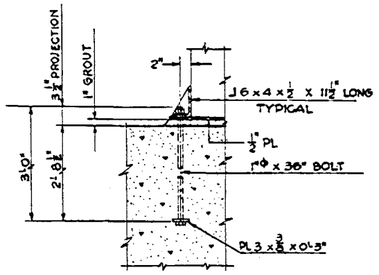
SCALE: SPEC. NO.
DRAWING NUMBER: 21-51
SHEET 4 OF 13



PLAN

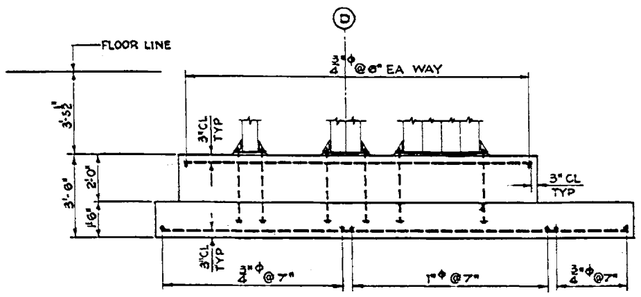


PLAN

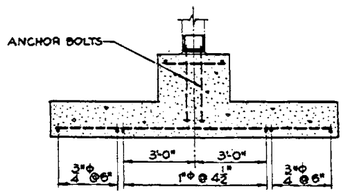


ANCHOR BOLT DETAIL

SCALE NO 6



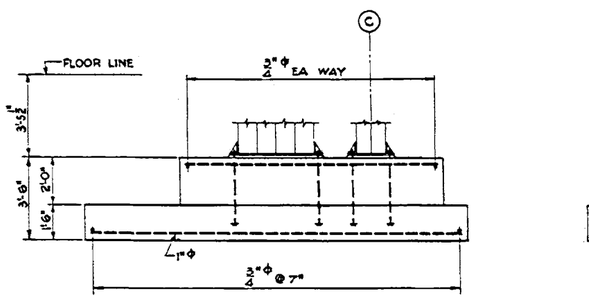
ELEVATION



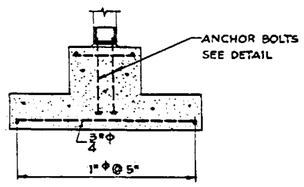
SECTION C-C

FOOTING AT COLUMNS D-7, D-8, D-9 & D-10

SCALE NO 3



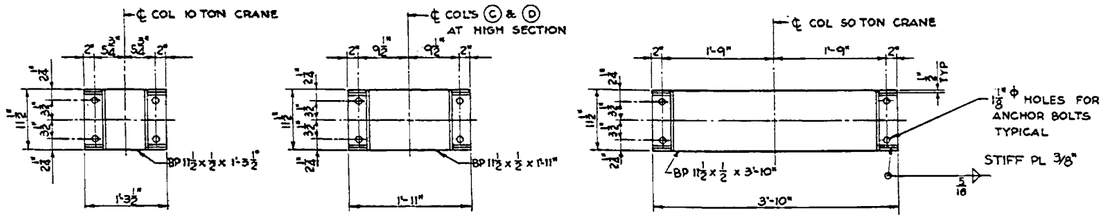
ELEVATION



SECTION D-D

FOOTING AT COLUMNS C-7, C-8, C-9 & C-10

SCALE NO 3



BASE PLATE DETAILS

SCALE NO 6

GENERAL NOTES

1. MINIMUM ULTIMATE STRENGTH OF CONCRETE AT 28 DAYS TO BE 2500 PSI.
2. ALL REINFORCEMENT TO HAVE ALLOWABLE STRESS OF 20,000 PSI.
3. CONTINUOUS REINFORCEMENT TO LAP 30 DIAMETERS UNLESS OTHERWISE NOTED.
4. THE CONCRETE FOOTING SHALL HAVE NO CONSTRUCTION JOINTS AND SHALL BE POURED MONOLITHICALLY.
5. MINIMUM BEARING CAPACITY OF SOIL 3000 PSF.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 1' 2' 3' 4' 5' — NO. 3

0 1' 2' — NO. 6

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C. W. DEICHMANN
APPROVED:

THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
FOOTING & COLUMN DETAILS

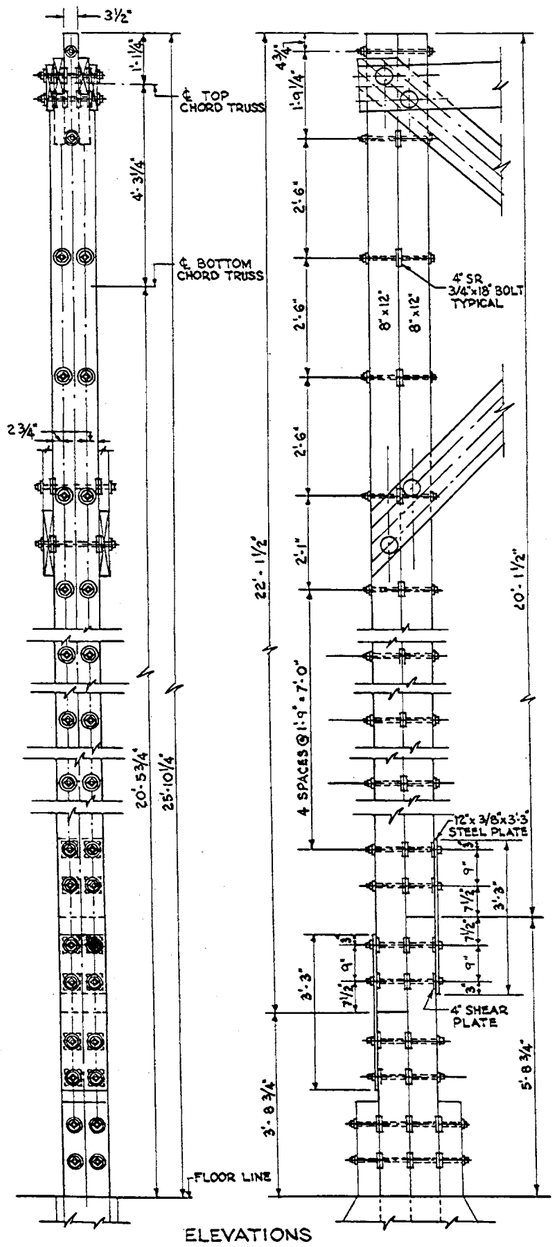
APPROVED: for H. M. Williams DATE: 19 MAR 1969
CHIEF, STRUCTURES BRANCH | CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

SCALE:
SPEC. NO.
DRAWING NUMBER
SHEET 5 OF 13
21-51

BASIS OF DESIGN

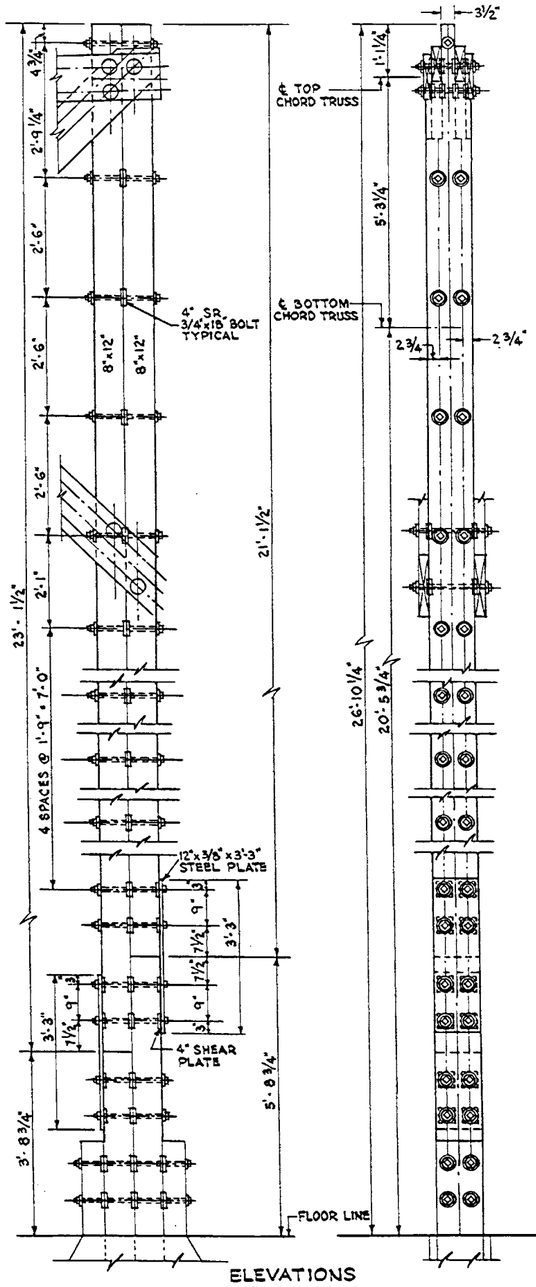
MAX. EXTREME FIBER STRESS & TENSION PARALLEL TO GRAIN	2100 PSI
MAX. COMPRESSION PERPENDICULAR TO GRAIN	500 PSI
MAX. COMPRESSION PARALLEL TO GRAIN	1500 PSI
MAX. HORIZONTAL SHEAR	120 PSI
MODULUS OF ELASTICITY	1,600,000 PSI



ELEVATIONS

TYPICAL COLUMNS ON LINE E

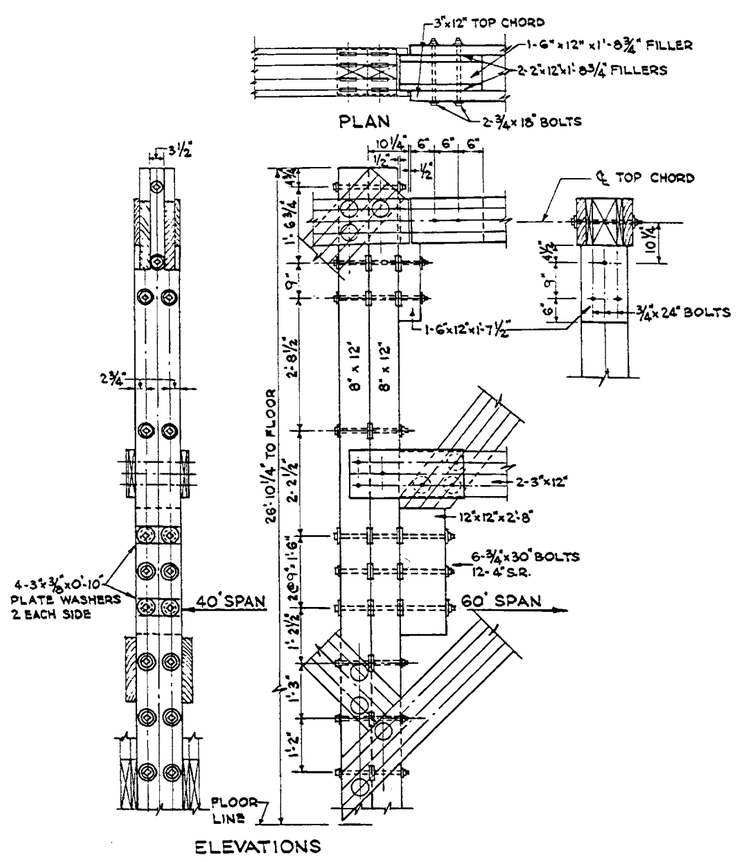
SCALE NO. 5



ELEVATIONS

TYPICAL COLUMNS ON LINE C

SCALE NO. 5



ELEVATIONS

TYPICAL COLUMNS ON LINE D

NOTE:

REMAINDER OF COLUMN DETAILS SAME AS TYPICAL COLUMNS ON LINE C

SCALE NO. 5

GENERAL NOTES

1. FOR NOTES ON SPLIT RINGS AND WASHERS, SEE DRAWING NO. 21-51 SHEET NO. 8 OF 13.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALE 0 1' 2' 3'

NO. 5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

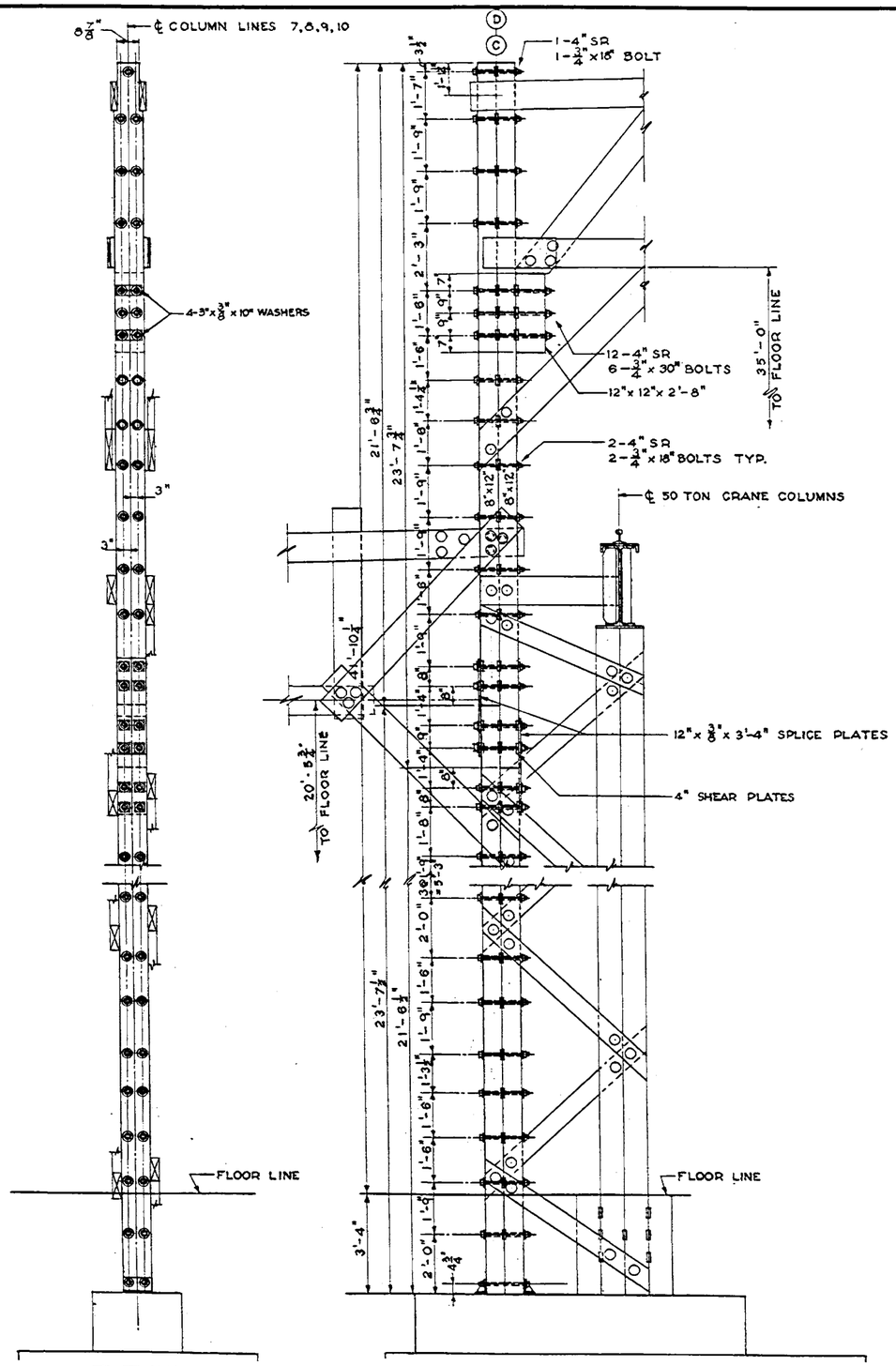
DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
COLUMNS - PART 1

APPROVED: [signature] CHIEF, STRUCTURAL BRANCH
APPROVED: [signature] for H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1953

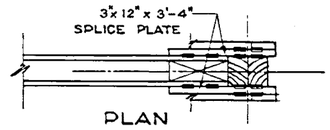
APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE:
SPEC. NO.
DRAWING NUMBER: 21-51
SHEET 8 OF 13

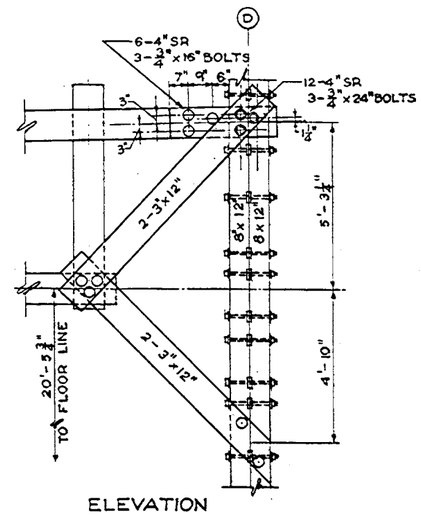


ELEVATIONS OF COLUMNS AT HIGH SECTION

SCALE NO. 4



PLAN



ELEVATION

40' TRUSS CONNECTION TO COLUMNS AT HIGH SECTION

SCALE NO. 4

GENERAL NOTES

1. FOR NOTES ON SPLIT RINGS AND WASHERS, SEE DRAWING NO. 21-51, SHEET NO. 8 OF 13.
2. FOR BASIS OF DESIGN, SEE DRAWING NO. 21-51, SHEET NO. 6 OF 13.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 1' 2' 3' 4'

NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

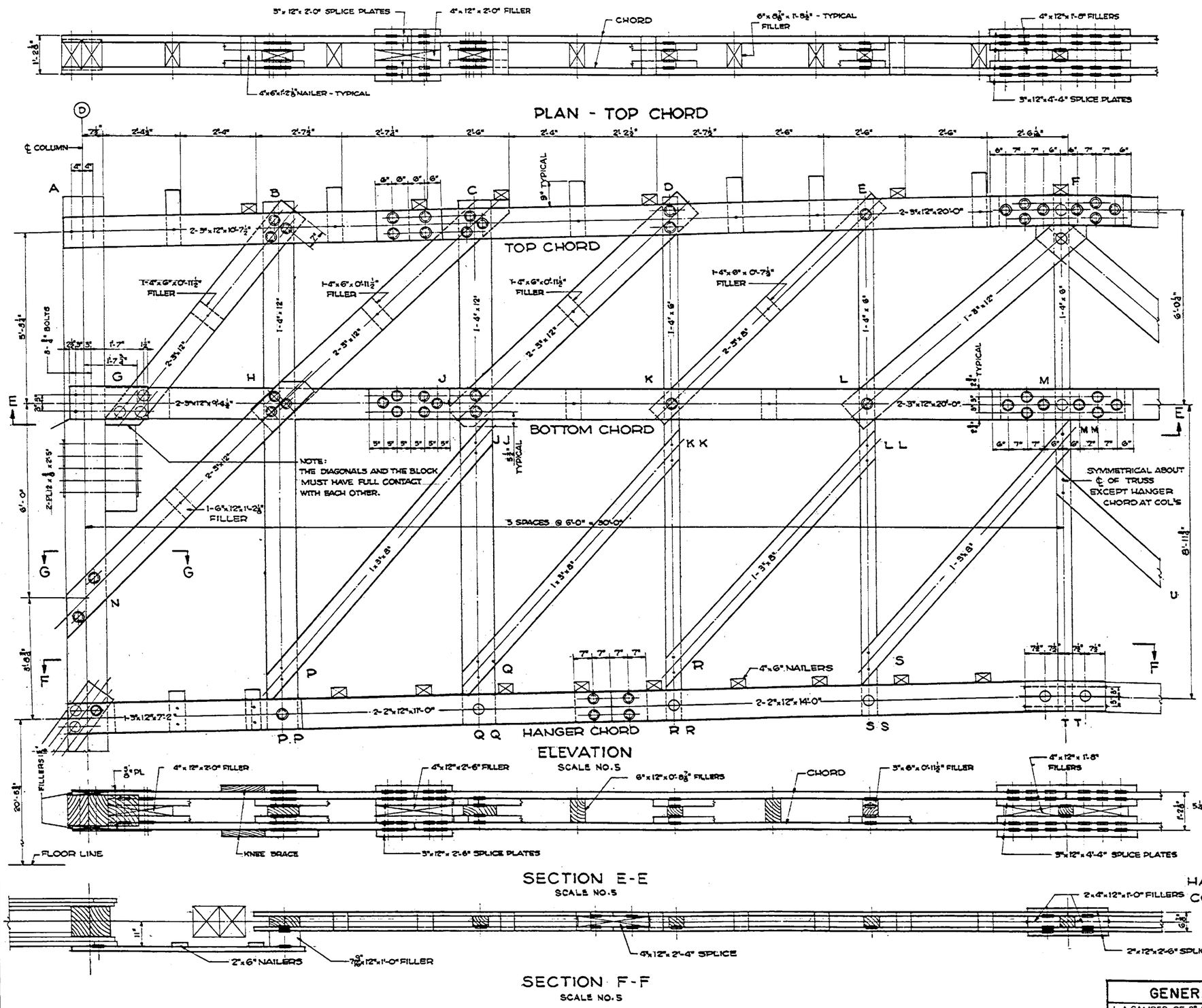
DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

THEATER OF OPERATIONS

SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
COLUMNS - PART 2

DATE: 19 MAR 1969

SCALE:
SPEC. NO.
DRAWING NUMBER: 21-51
SHEET 7 OF 13



TIMBER SCHEDULE

MEMBER	NO. OF PIECES	CUT FROM
TOP CHORD	4	3"x12"x 20'
TOP CHORD	4	3"x12"x 20'
SPLICE PLATE	4	3"x12"x 20'
SPLICE PLATE	8	3"x12"x 20'
FILLER	2	4"x12"x 20'
FILLER	4	4"x12"x 20'
BOTTOM CHORD	4	3"x12"x 20'
BOTTOM CHORD	4	3"x12"x 20'
SPLICE PLATE	4	3"x12"x 20'
SPLICE PLATE	8	3"x12"x 20'
FILLER	2	4"x12"x 20'
FILLER	2	4"x12"x 20'
FILLER	2	2"x12"x 20'
HGR CHORD	4	2"x12"x 14'
HGR CHORD	4	4"x12"x 14'
SPLICE PLATE	2	2"x12"x 14'
SPLICE PLATE	2	4"x12"x 20'
FILLER	2	4"x12"x
HEADER	2	3"x12"x
FILLER	2	
POST BP'	2	4"x12"x 20'
POST CQ'	2	4"x12"x 20'
POST DR'	2	4"x 6"x 16'
POST ES'	2	4"x 6"x 16'
POST FT'	1	4"x 6"x 16'
DIAG. BG	4	3"x 12"x 20'
DIAG. CH	4	3"x 12"x 20'
DIAG. DJ	4	3"x 12"x 20'
DIAG. EK	4	3"x 8"x 12'
DIAG. FL	2	3"x 12"x 20'
BRACE HN	4	3"x 12"x 20'
DIAG. J'D	2	3"x 8"x 12'
DIAG. K'Q	2	3"x 8"x 12'
DIAG. LR	2	3"x 8"x 12'
DIAG. MS	1	3"x 8"x 12'
DIAG. MU	1	3"x 8"x 12'
NAILER	9	4"x 6"x 16"
NAILER	2	4"x 6"x 16"
FILLER	4	6"x 12"x 12"
FILLER	2	6"x 12"x 12"
FILLER	12	6"x 10"x 20"
FILLER	6	4"x 6"x 16"
FILLER	2	4"x 6"x 16"
FILLER	8	SCRAP
FILLER	2	SCRAP
NAILER	4	2"x6"x 8"
NAILER	18	4"x 6"x 16"
FILLER(COL©)	1	6"x 12"x 12"

BOLT & RING SCHEDULE

JOINT	RINGS NO.	BOLTS NO.	BOLTS DIA.&LENGTH
A		4	3/4"x 16"
B	24	6	3/4"x 16"
C	24	6	3/4"x 16"
D	16	4	3/4"x 16"
E	8	2	3/4"x 16"
F	2	1	3/4"x 22"
F	2	1	3/4"x 12"
G	12	12	3/4"x 16"
H	36	6	3/4"x 22"
J	16	4	3/4"x 16"
K	8	2	3/4"x 16"
L	8	2	3/4"x 16"
M	2	1	3/4"x 22"
N	8	4	3/4"x 22"
J-J		4	3/4"x 8"
K-K		4	3/4"x 8"
L-L		4	3/4"x 8"
M-M		4	3/4"x 8"
P		4	3/4"x 8"
Q		4	3/4"x 8"
R		4	3/4"x 8"
S		2	3/4"x 8"
U		2	3/4"x 8"
P-P	6	2	3/4"x 22"
Q-Q	2	2	3/4"x 8"
R-R	2	2	3/4"x 8"
S-S	2	2	3/4"x 8"
T-T		2	3/4"x 32"
TC SPL PL	32	8	3/4"x 22"
TC SPL PL	32	8	3/4"x 22"
BC SPL PL	48	12	3/4"x 22"
BC SPL PL	32	8	3/4"x 22"
HGR CHORD COL©SPL PL	1	3	3/4"x 26"
HGR CHORD COL©SPL PL	2	2	3/4"x 26"
FILLER		16	3/4"x 16"
FILLER		2	3/4"x 22"
FILLER		8	3/4"x 12"
FILLER		2	3/4"x 22"
NAILER		8	3/4"x 6"
SPL PL	16	8	3/4"x 10"
SPL PL	6	2	3/4"x 10"
TOTAL	347		

GENERAL NOTES

1. A CAMBER OF 3" AT THE CENTER OF THE TRUSS SPAN SHALL BE INTRODUCED INTO BOTH TOP AND BOTTOM CHORDS DURING FABRICATION. BOLT SPACING ABOVE DOES NOT MAKE ALLOWANCE FOR CAMBER.
2. ALL SPLIT RINGS - 4" WITH 3/4" BOLT AND 2-3" CAST OR MALLEABLE IRON WASHERS FOR EACH ASSEMBLY.
3. FOR BASIS OF DESIGN, SEE DRAWING NO. 21-51, SHEET 6 OF 13.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3'
NO.5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

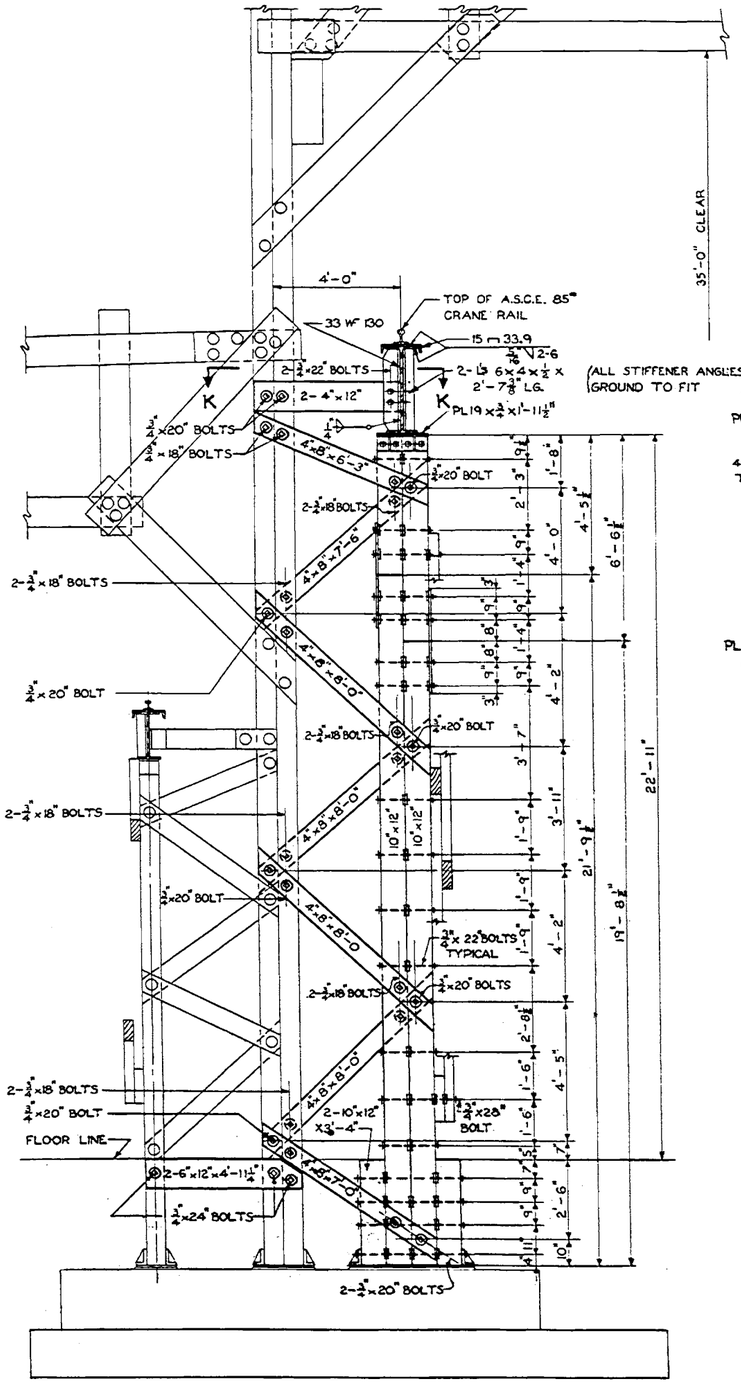
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C. W. DEICHMANN
APPROVED:
CHIEF, STRUCTURES BRANCH
APPROVED:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY:
DATE:

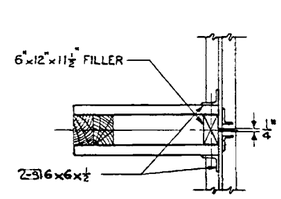
THEATER OF OPERATIONS

SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
60 FT MONITOR TRUSS

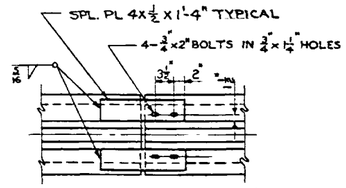
SCALE:
SPEC. NO.
DRAWING NUMBER
SHEET 8 OF 13
21-51



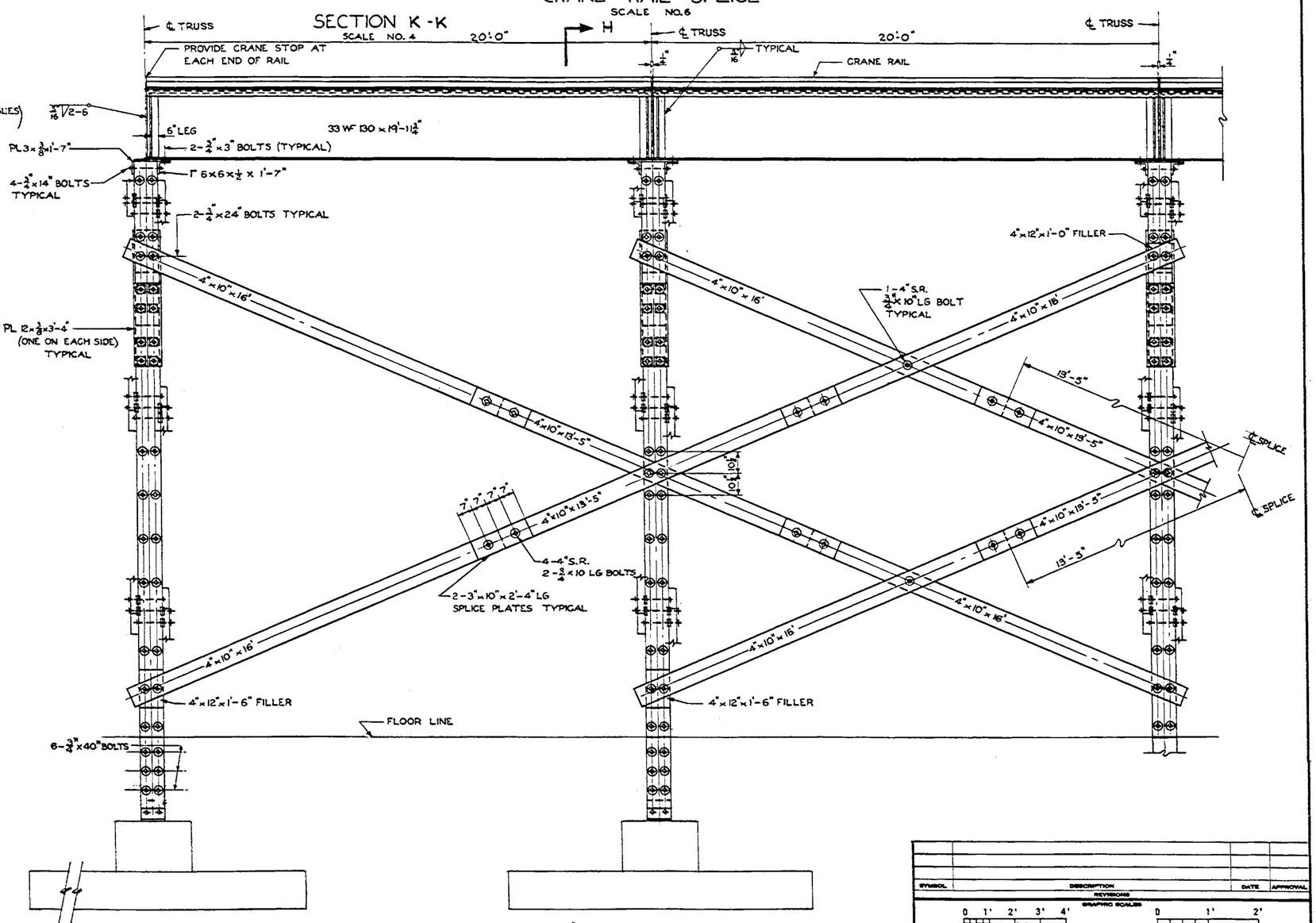
SECTION H-H
SCALE NO. 4



SECTION K-K
SCALE NO. 4



CRANE RAIL SPLICE
SCALE NO.6



ELEVATION
SCALE NO.4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3' 4' NO.4
0 1' 2' NO.8

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

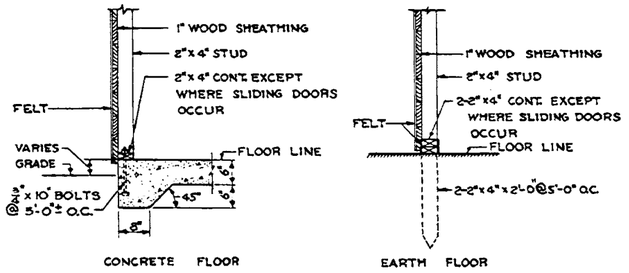
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C.W. DEICHMANN

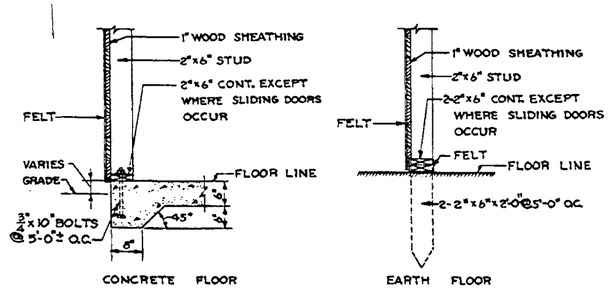
THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
50 TON CRANE SUPPORT

APPROVED: H. C. Schaaf — Chief, Structures Branch
APPROVED: for H.M. Williams — Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE:
SPEC. NO.
DRAWING NUMBER: 21-51
SHEET 9 OF 13

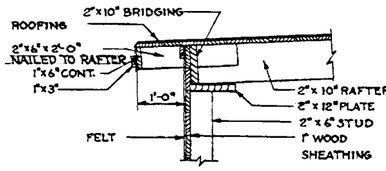


END WALL

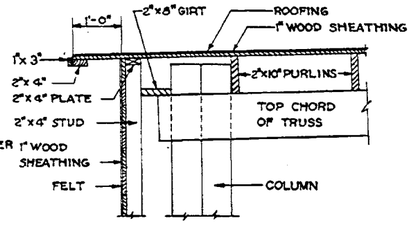


LEAN-TO SIDE WALL AND END WALL

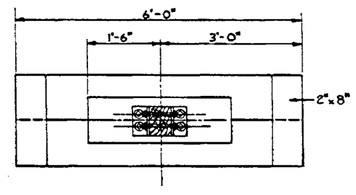
EXTERIOR WALL
SCALE NO. 5



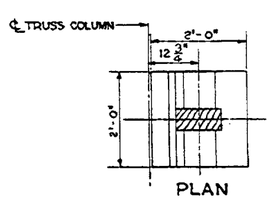
LEAN-TO



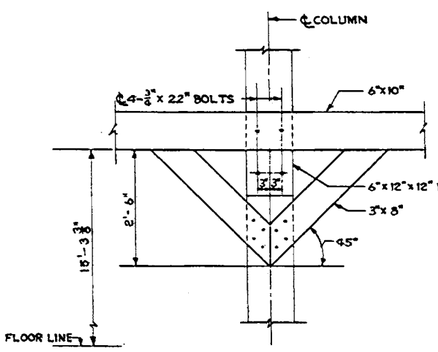
SIDE WALL



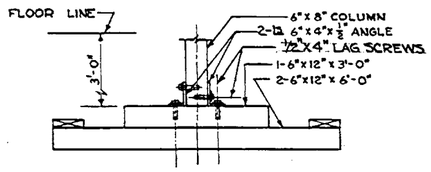
PLAN



PLAN

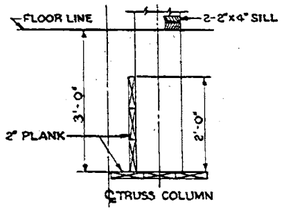


LEAN-TO SUPPORT AT CLERESTORY
SCALE NO. 5



ELEVATION

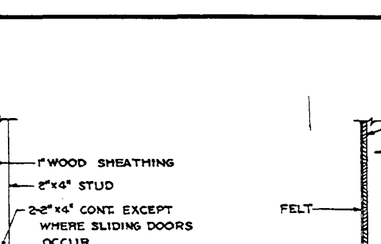
40' LEAN-TO COLUMN FOOTING
SCALE NO. 5



ELEVATION

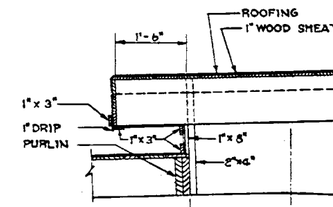
6" x 12" POST FOOTING
SCALE NO. 5

TYPICAL END WALL



END WALL 35' HEIGHT

CORNICE DETAILS
SCALE NO. 5



CLERESTORY SIDE WALL DETAIL
SCALE NO. 5

60' VENTILATOR
SCALE NO. 5

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 1' 2' 3'

NO. 5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
MISCELLANEOUS DETAILS

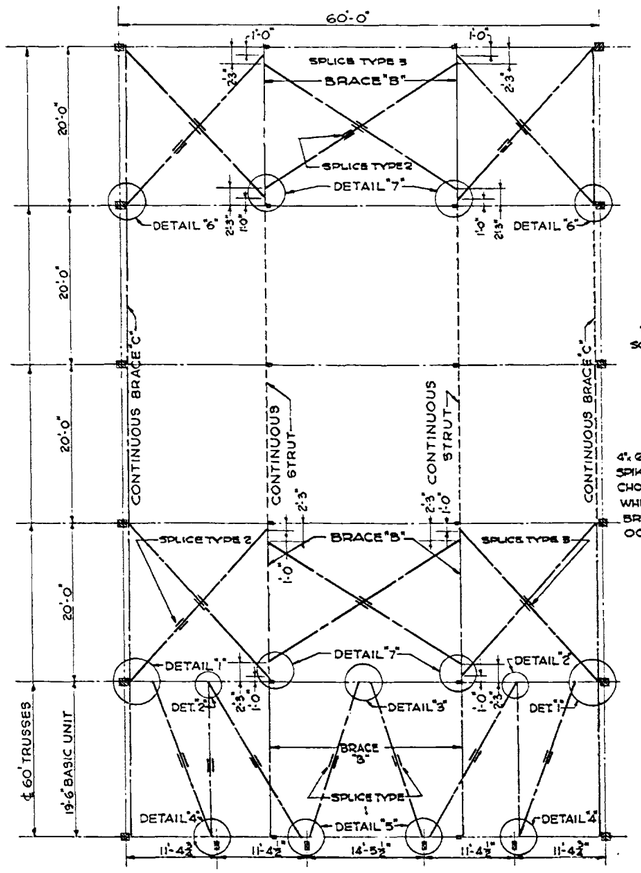
APPROVED: Wm. W. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED: CHIEF, STRUCTURES BRANCH
APPROVED FOR PROPONENT AGENCY:
DATE

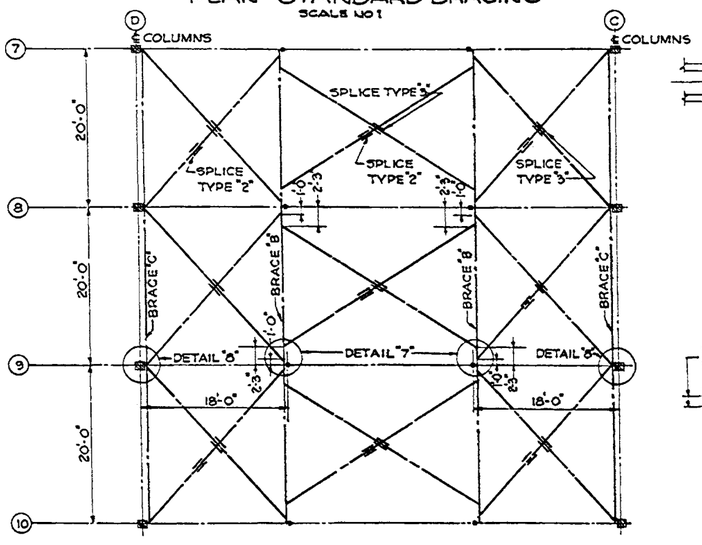
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DRAWING NUMBER: 21-51

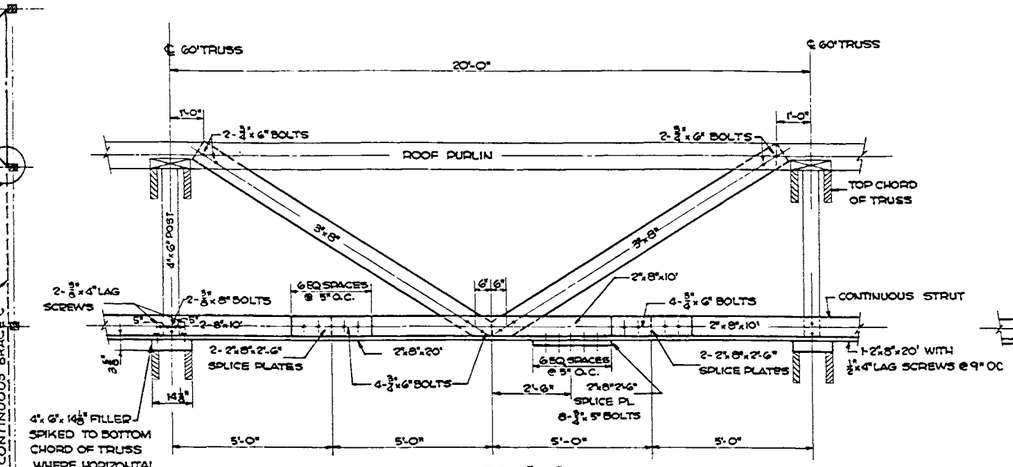
SHEET 10 OF 13



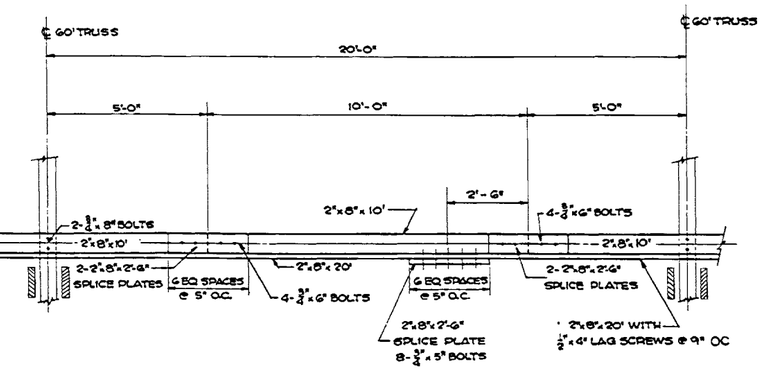
PLAN - STANDARD BRACING
SCALE NO 1



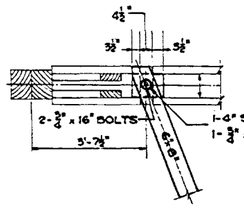
PLAN - BRACING HIGH BAYS
SCALE NO 1



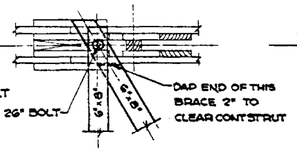
BRACE "B"
SCALE NO. 4



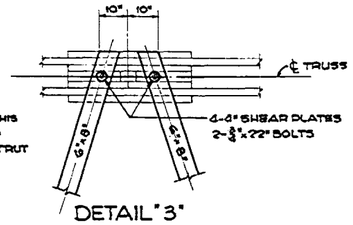
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SCALE NO 4



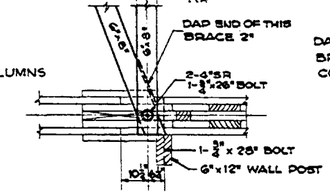
DETAIL "1"
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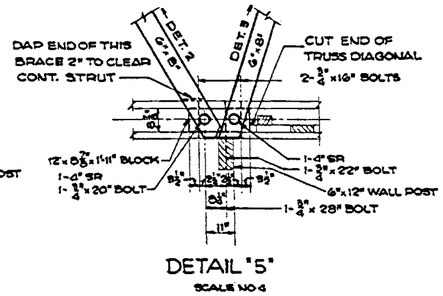
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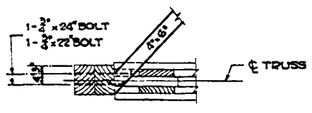
DETAIL "3"
SCALE NO 4



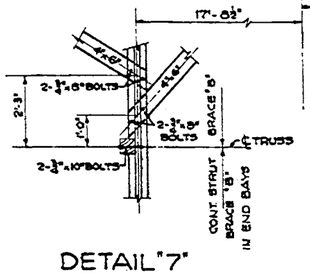
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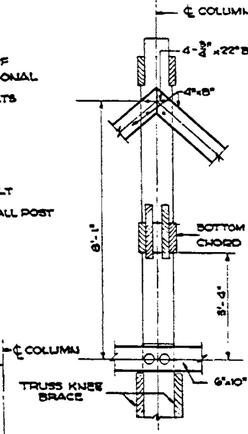
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SCALE NO 4



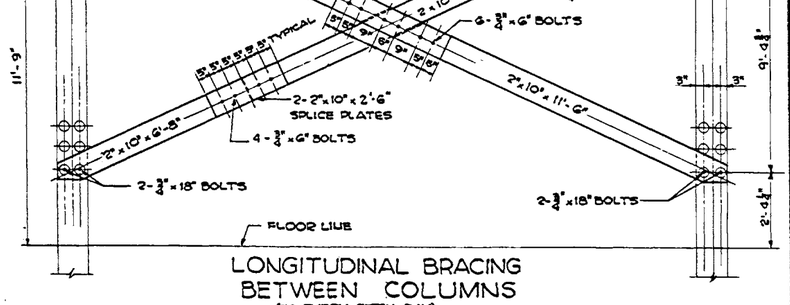
DETAIL "6"
SCALE NO 4



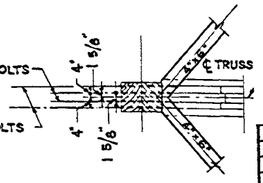
DETAIL "7"
SCALE NO 4



BRACE "C"
CONN. TO COLUMN
SCALE NO. 4



LONGITUDINAL BRACING BETWEEN COLUMNS
(IN EVERY FIFTH BAY)
SCALE NO 4



DETAIL "8"
SCALE NO 4

GENERAL NOTES

1. VERTICAL SWAY BRACING IN TWO END BAYS AND EVERY THIRD BAY.
2. IN HIGH WIND VELOCITY AREAS, VERTICAL SWAY BRACING IN TWO END BAYS AND ALTERNATE BAYS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' — NO. 1
0 1' 2' 3' 4' — NO. 4

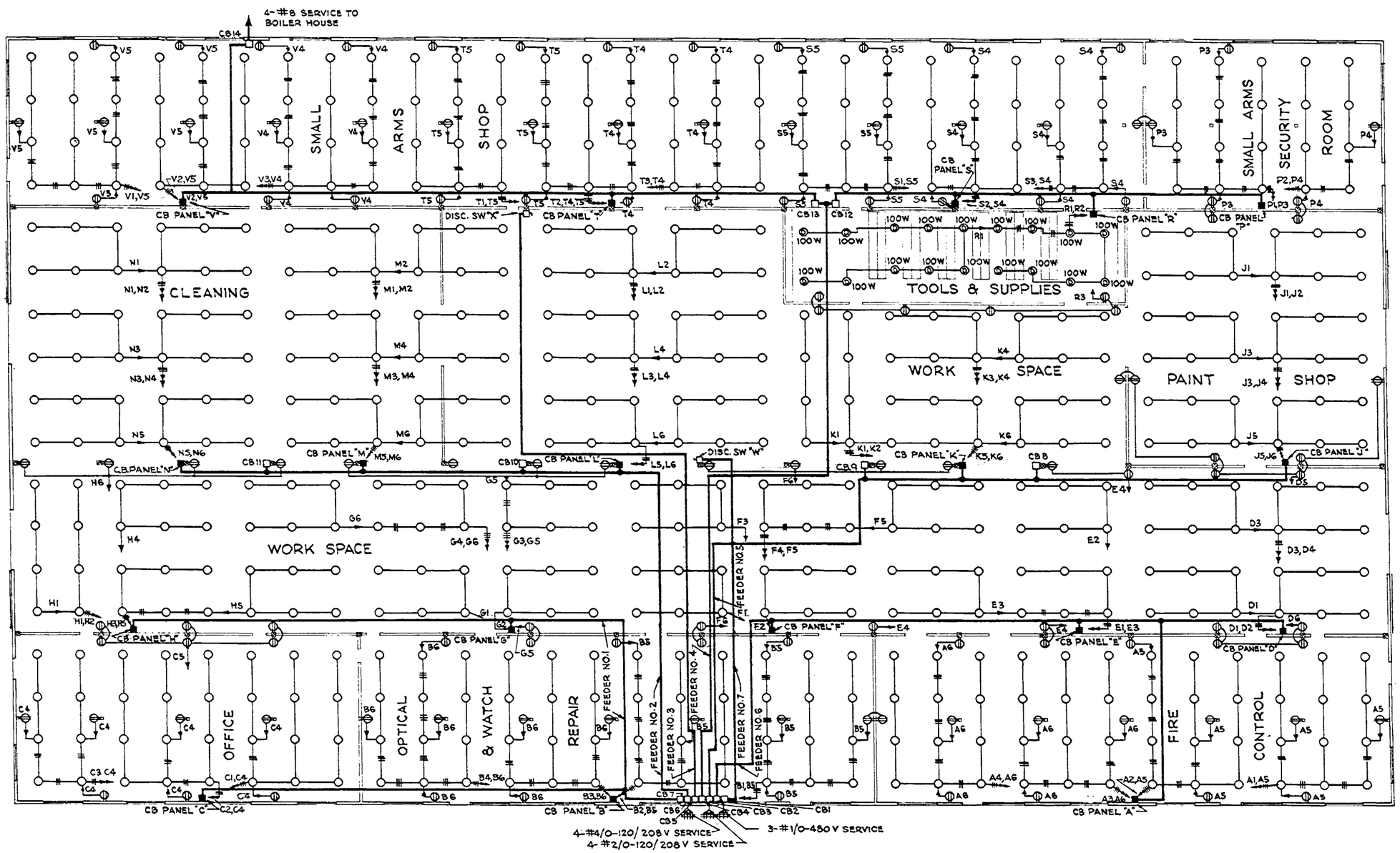
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] for H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
BRACING - 60 FT SPAN

APPROVED FOR PROPONENT AGENCY:
DATE
SCALE:
SPEC. NO.
DRAWING NUMBER 21-51
SHEET 11 OF 13



PLAN

SCALE NO. 17

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	86.00 K.W.
RECP EST	12.20 K.W.
208 V POWER EST	73.18 K.W.
TOTAL 120/208 V	171.38 K.W.
480 V CRANE POWER EST	56.76 K.W.
TOTAL PRIMARY EST	228.14 K.W.

1. ALL LAMPS IN 35' HIGH BAY SHALL BE 150 W PROJECTOR FLOOD.
2. ALL LAMPS IN 20' MEDIUM BAYS SHALL BE 200 W UNLESS OTHERWISE NOTED.
3. ALL LAMPS IN 14'-6" LOW BAYS SHALL BE 100 W
4. ALL 100 W LAMPS TO HAVE 8" CONICAL SHADES.
5. ALL 200 W LAMPS TO HAVE 14" DIA. FLAT SHADES.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 5' 10' 15' 20'

NO. 17

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: SPOFFORD
SUBMITTED BY: D. W. DEICHMANN
APPROVED:

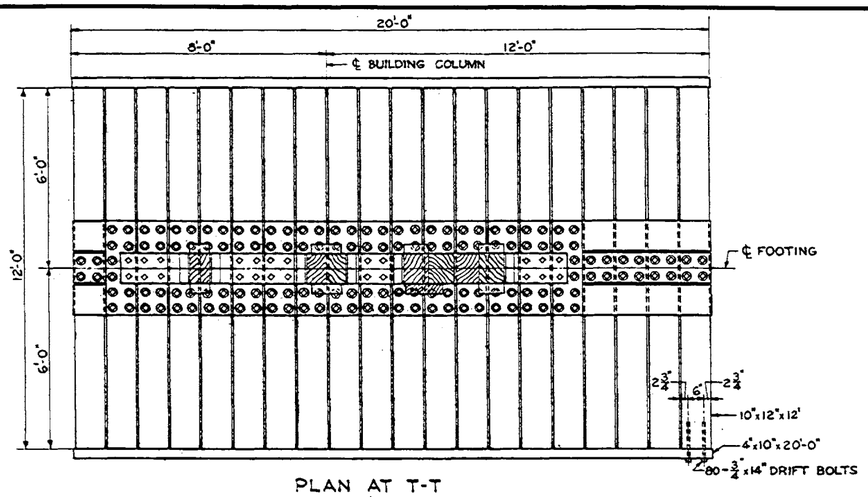
THEATER OF OPERATIONS

SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
ELECTRICAL PLAN

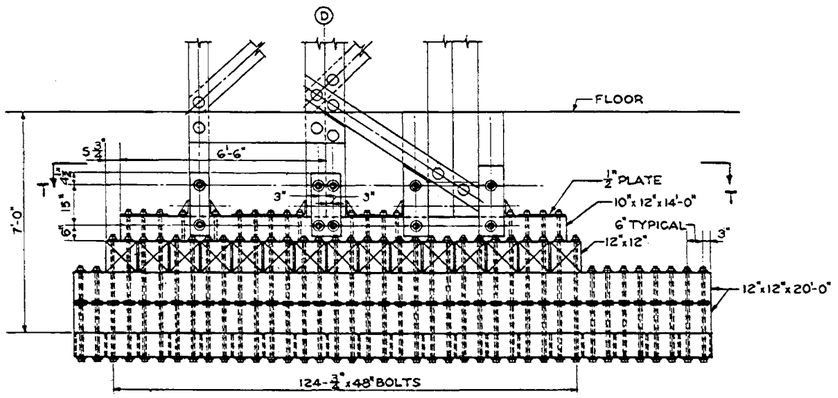
APPROVED: DATE:
H. H. Williams 19 MAR 1969
CHIEF, STRUCTURES BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

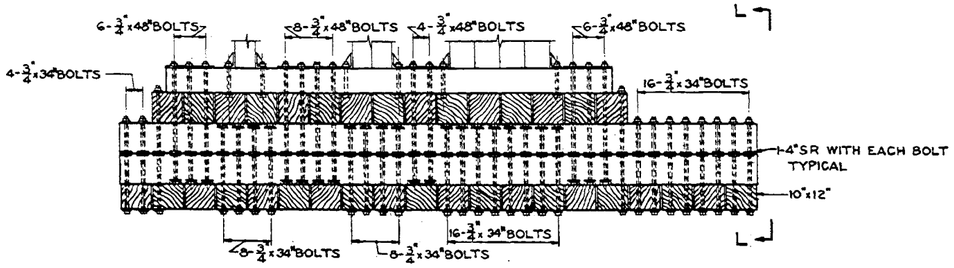
SCALE:
SPEC. NO.
DRAWING NUMBER 21-51
SHEET 12 OF 13



PLAN AT T-T



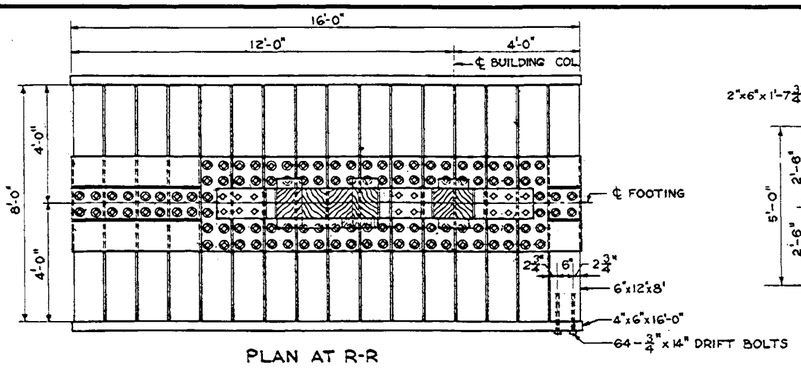
ELEVATION



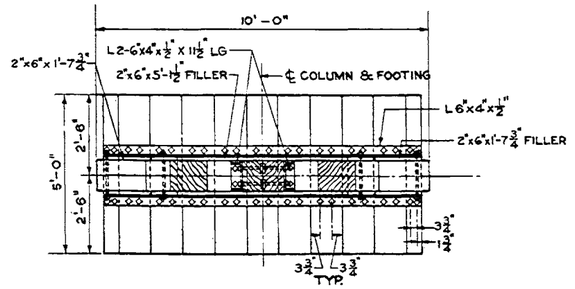
SECTION M-M

FOOTING AT COLUMNS D-7, D-8, D-9, & D-10

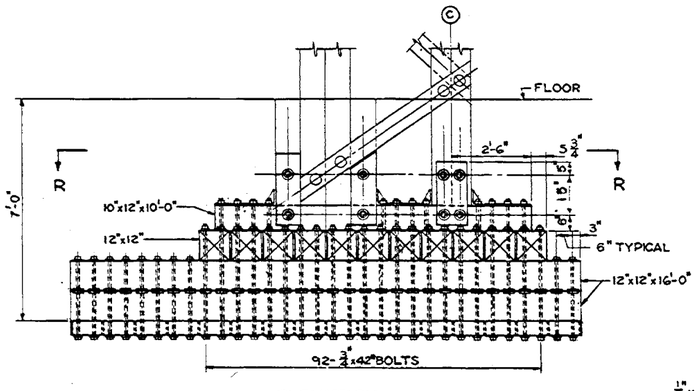
SCALE NO. 4



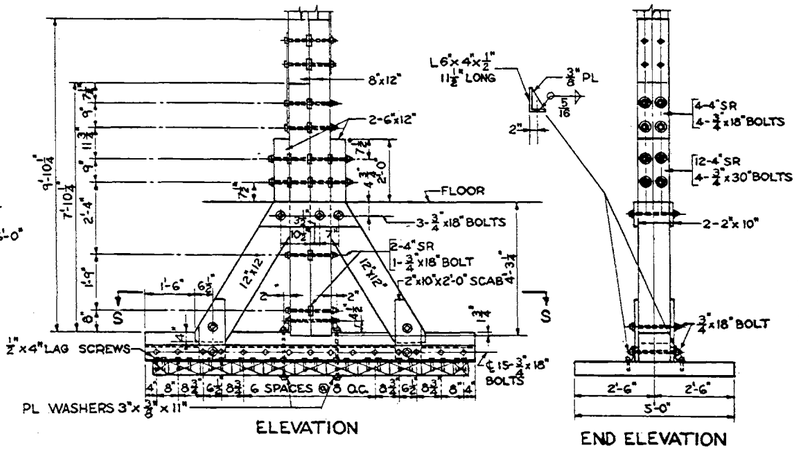
PLAN AT R-R



PLAN AT S-S



ELEVATION

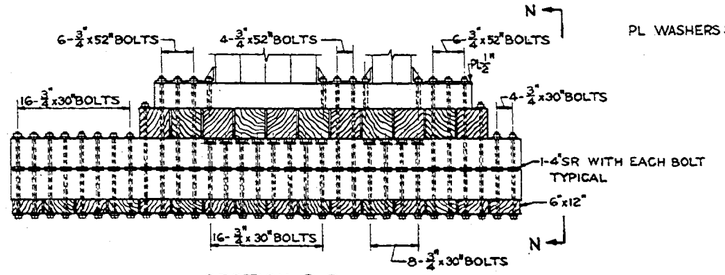


ELEVATION

END ELEVATION

STANDARD COLUMN FOOTING DETAIL

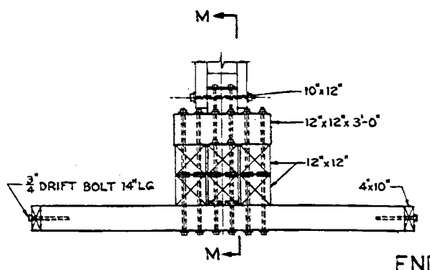
SCALE NO. 4



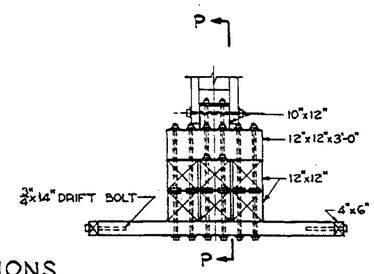
SECTION P-P

FOOTING AT COLUMNS C-7, C-8, C-9, & C-10

SCALE NO. 4



ELEVATION L-L



ELEVATION N-N

END ELEVATIONS

SCALE NO. 4

GENERAL NOTES

1. ALL SPLIT RINGS - 4" WITH ¾" BOLT AND 2-3" CAST OR MALLEABLE IRON WASHERS FOR EACH ASSEMBLY.
2. PROVIDE 3" SAND BED UNDER FOOTINGS.
3. MINIMUM BEARING CAPACITY OF SOIL 3000 PSF.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 1' 2' 3' 4'

NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

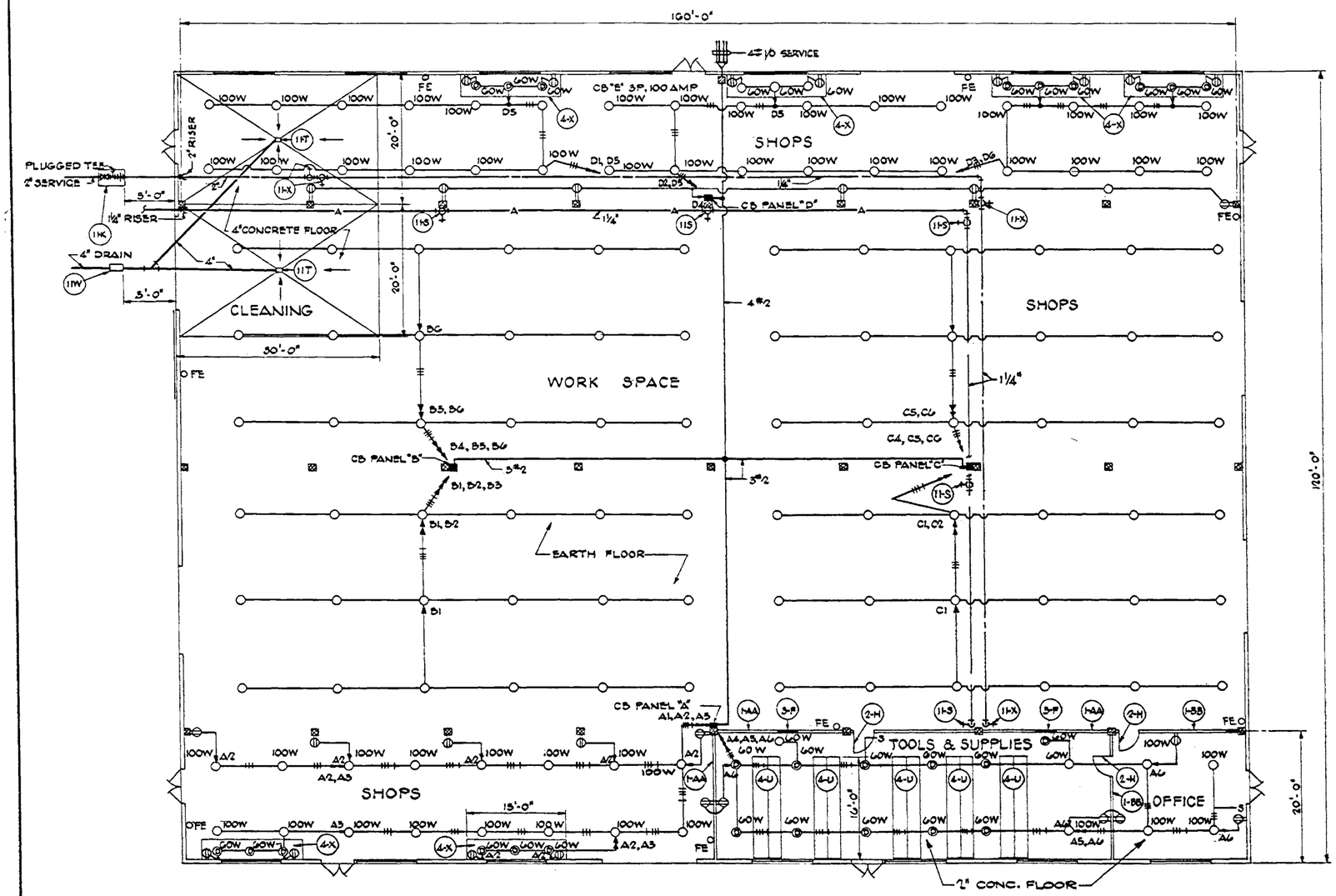
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: FAY
TRACED BY:
CHECKED BY: BPOFFORD
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
SHOP
ARTILLERY & FIRE CONTROL REBUILD
180'X320'
ALTERNATE FOOTING DETAILS

APPROVED: H. E. Schramm, Chief, Structures Branch
APPROVED: for L. M. Williams, Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY:
DATE
SCALE:
SPEC. NO.
DRAWING NUMBER: 21-51
SHEET 13 OF 13



PLAN

SCALE NO. 1

FACIL. NO. 218101 - INTERIOR ONLY
FACIL. NO. 218111 - STEEL FRAME W/INTERIOR
FACIL. NO. 218121 - WOOD FRAME W/INTERIOR

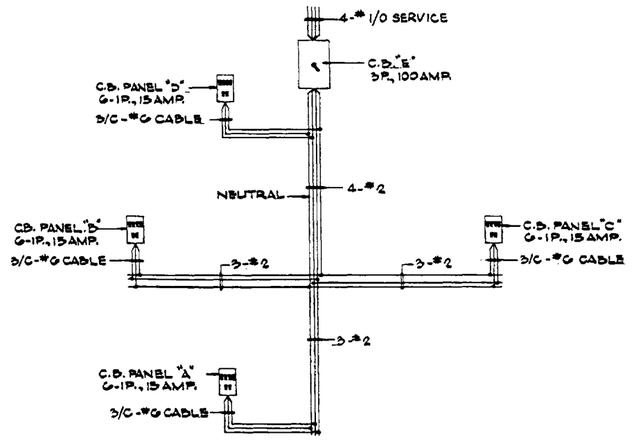
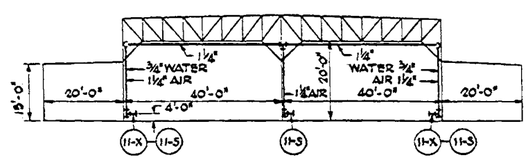


DIAGRAM OF FEEDER

NO SCALE



DIAGRAMMATIC SECTION

SCALE NO. 9

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	21.5KW
RECP. EST.	3.00KW
TOTAL	24.5KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 200W.
2. ALL 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.
3. ALL 200 W LAMPS TO HAVE 14" DIA. FLAT SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR P3N BILL OF MATERIALS-REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
21-81	PLAN	1 OF 1
99-98	STANDARD DETAILS	
54-19	WOOD FRAME CONST. SHOP TYPE BLDGS.	1-12 OF 12
55-46	STEEL FRAME CONST. SHOP TYPE BLDGS.	1-50 OF 3

UNDER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

DRAWING SCALES

0 5' 10' 15' NO.1

0 10' 20' 30' NO.9

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

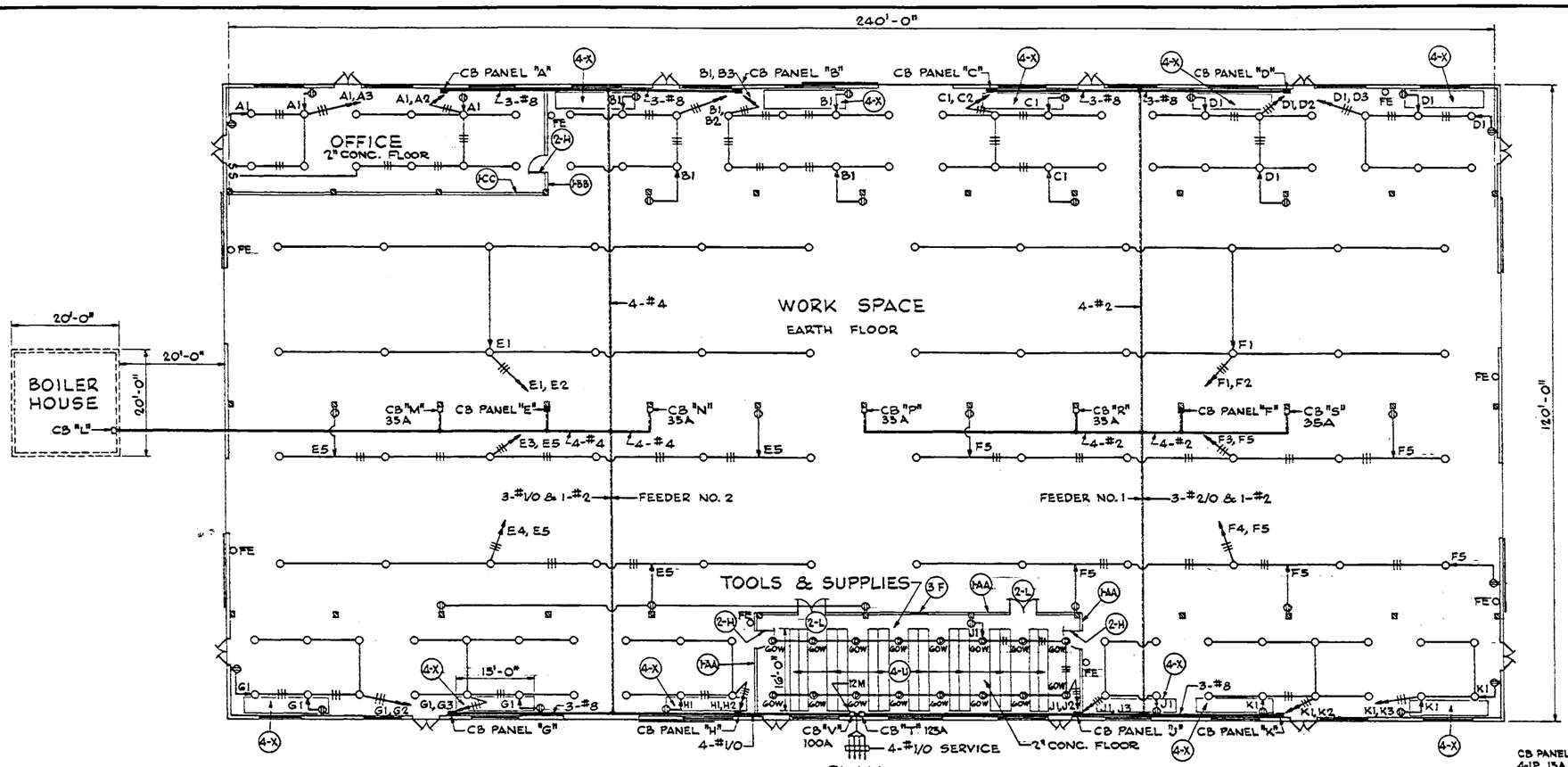
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HORNE
TRACED BY:
CHECKED BY: EDWARDS
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
APPROVED:
DATE: 19 MAR 1963
CHIEF, BRANCH
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS

SHOP-PARK COMPANY
120'X160'

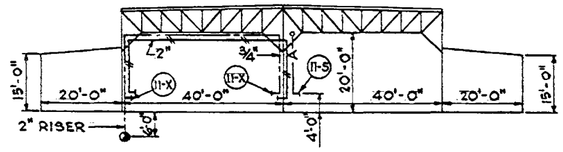
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1
21-81



PLAN

SCALE NO. 1

FACILITY NO. 218201 - INTERIOR ONLY
FACILITY NO. 218211 - STEEL FRAME W/INTERIOR
FACILITY NO. 218221 - WOOD FRAME W/INTERIOR



DIAGRAMMATIC SECTION

NO SCALE

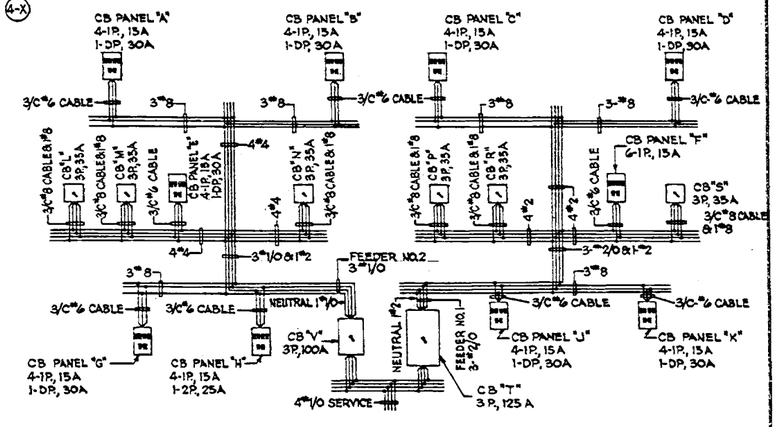
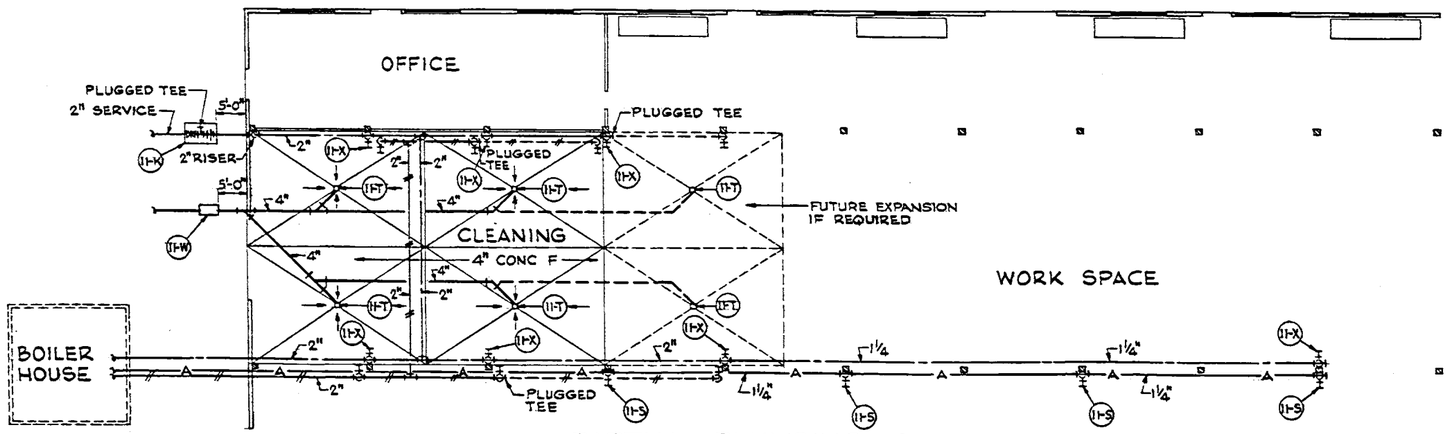


DIAGRAM OF FEEDERS

NO. SCALE

FACILITY NO. 218201



PARTIAL PLUMBING PLAN

SCALE NO. 17

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	16.56 KW
RECP EST	3.20 KW
POWER	41.31 KW
TOTAL	61.07 KW

1. ALL LAMPS IN 20' MEDIUM BAY AREAS TO BE 150W PROJECTOR FLOODS.
2. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS IN 14'-6" LOW BAY AREAS TO BE 100W.
3. ALL GO & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS REFER TO TM5-303 BY FACILITY NUMBER.
3. BOILER HOUSE EQUIPMENT AND PROTECTIVE COVER BY USING AGENCY.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
21-82	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-19	WOOD FRAME CONST. SHOP TYPE BLDGS.	1-12 OF 12
35-46	STEEL FRAME CONST. SHOP TYPE BLDGS	1-3 OF 3

NUMBER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES

0 5' 10' 15' 20'

NO. 17

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

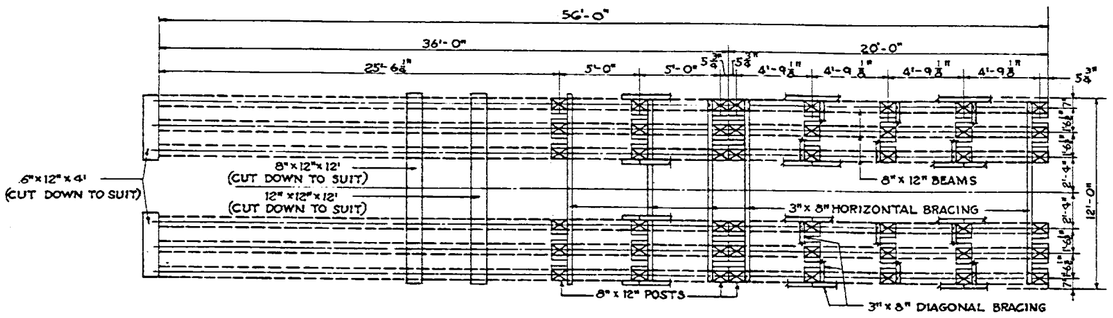
DRAWN BY: SHANNON
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
CHIEF, BRANCH
APPROVED FOR PROPONENT AGENCY:
DATE

APPROVED: DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

THEATER OF OPERATIONS

SHOP-GENERAL PURPOSE REBUILD
120'X240'

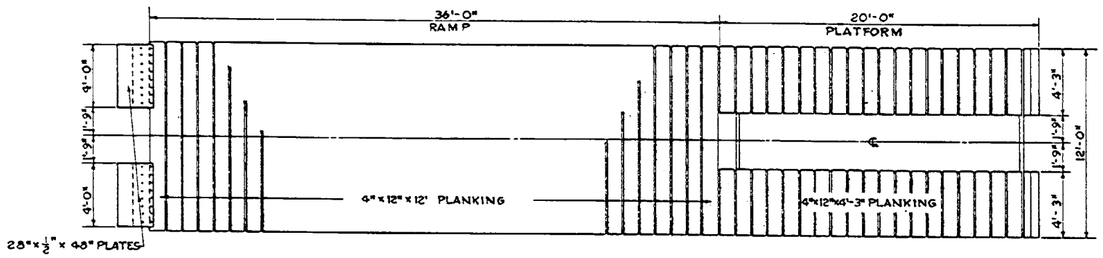
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 21-82
SHEET 1 OF 1



FRAMING PLAN

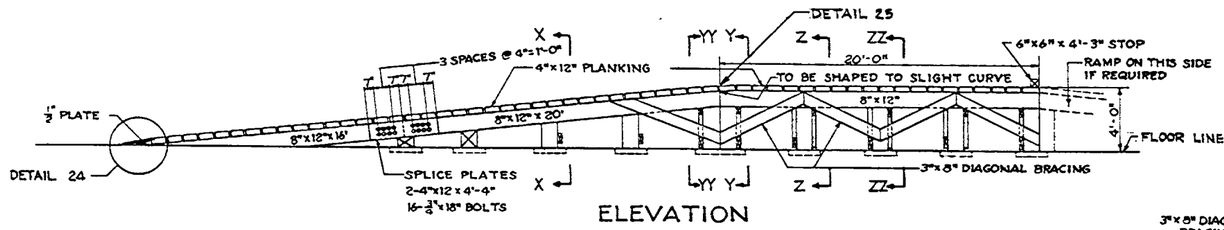
SCALE NO 2

FACILITY NO. 219701



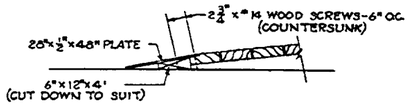
PLAN OF RAMP AND PLATFORM

SCALE NO 2



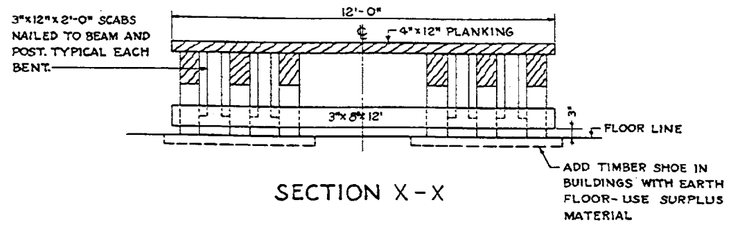
ELEVATION

SCALE NO 2

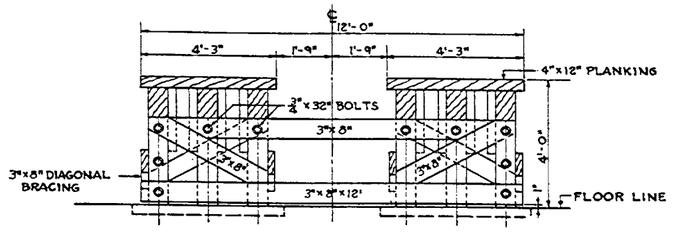


DETAIL 24

SCALE NO. 4

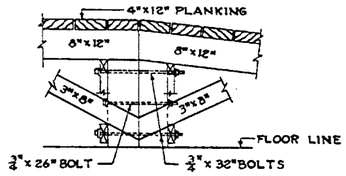


SECTION X-X



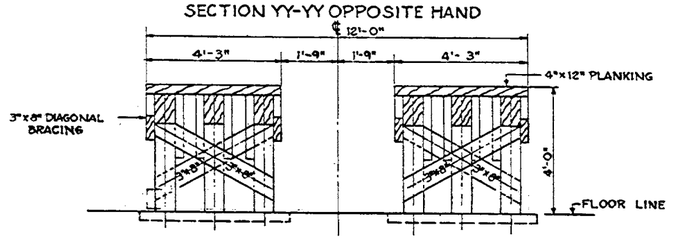
SECTION Y-Y

SECTION YY-YY OPPOSITE HAND



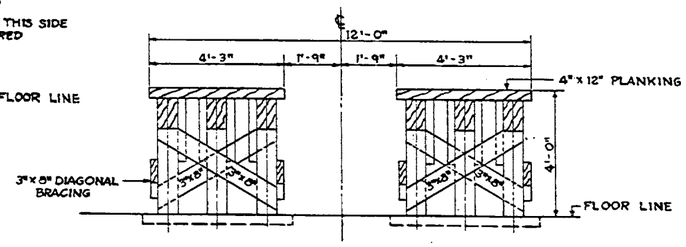
DETAIL 25

SCALE NO 4



SECTION Z-Z

NOTE-
GOD NAILS USED THROUGHOUT EXCEPT WHERE BOLTS OR WOOD SCREWS ARE INDICATED



SECTION ZZ-ZZ

SECTIONS

SCALE NO 4

GENERAL NOTES

1. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.

UNDER REVISION

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' NO.2

0 1' 2' 3' 4' NO.4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DE ICHMANN
APPROVED:
CHIEF, BRANCH

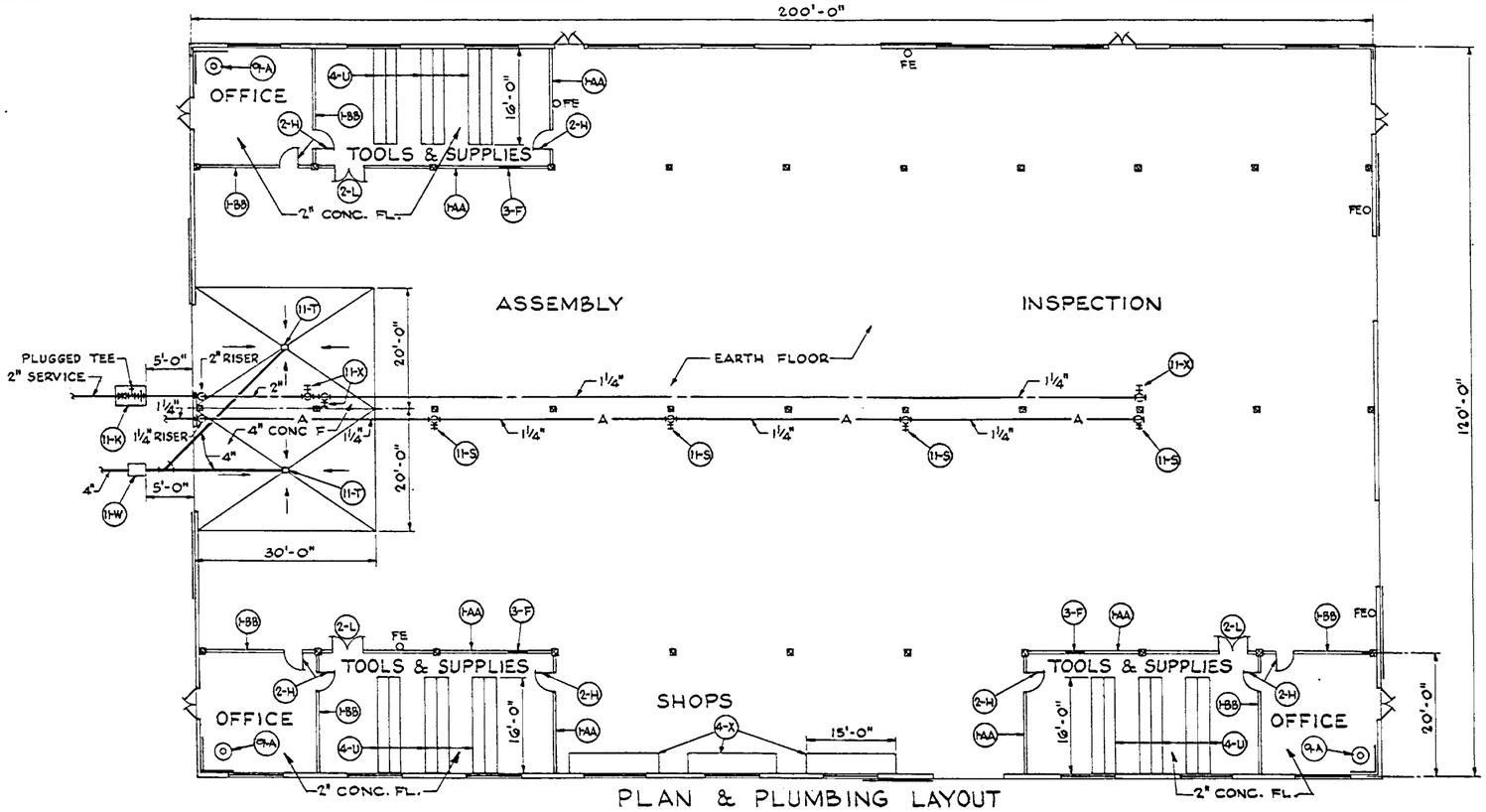
THEATER OF OPERATIONS

LUBRICATION RACK
12'X56'

APPROVED: DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

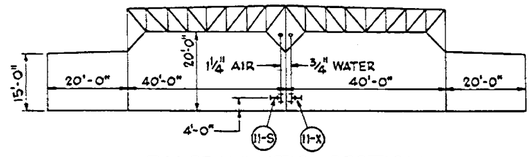
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1
21-97



PLAN & PLUMBING LAYOUT

SCALE NO. 17

FACILITY NO. 224101 - INTERIOR ONLY
FACILITY NO. 224111 - STEEL FRAME W/INTERIOR
FACILITY NO. 224121 - WOOD FRAME W/INTERIOR



DIAGRAMMATIC SECTION

NO SCALE

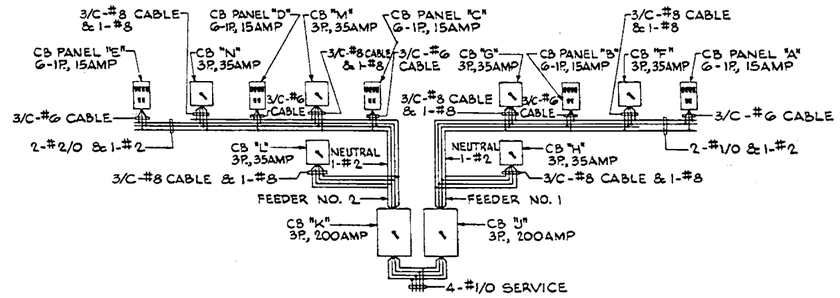
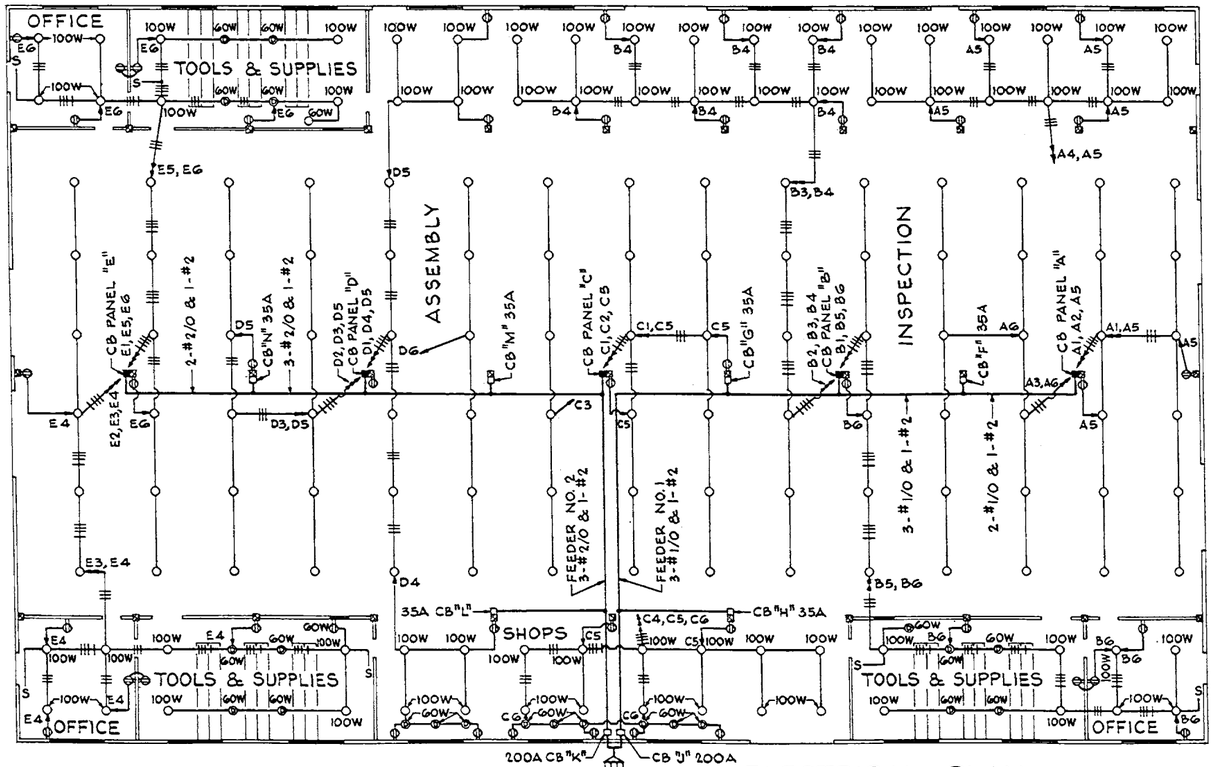


DIAGRAM OF FEEDERS

NO SCALE



ELECTRICAL PLAN

SCALE NO. 17

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	26.2 KW
RECP EST	4.5 KW
6-3PH POWER OUTLETS @ 8 KW EA.	48.0 KW
TOTAL	78.7 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 200W.
2. ALL 100W LAMPS TO HAVE 8" CONICAL SHADES.
3. ALL 200W LAMPS TO HAVE 14" DIA. FLAT SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG NO.	DESCRIPTION	SHEET NO.
22-41	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-19	WOOD FRAME CONST. SHOP TYPE BLDGS.	1-12 OF 12
35-46	STEEL FRAME CONST. SHOP TYPE BLDGS.	1-3 OF 3

UNDER REVISION

SYMBOL	DESCRIPTION - REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10' 15' 20'
NO. 17

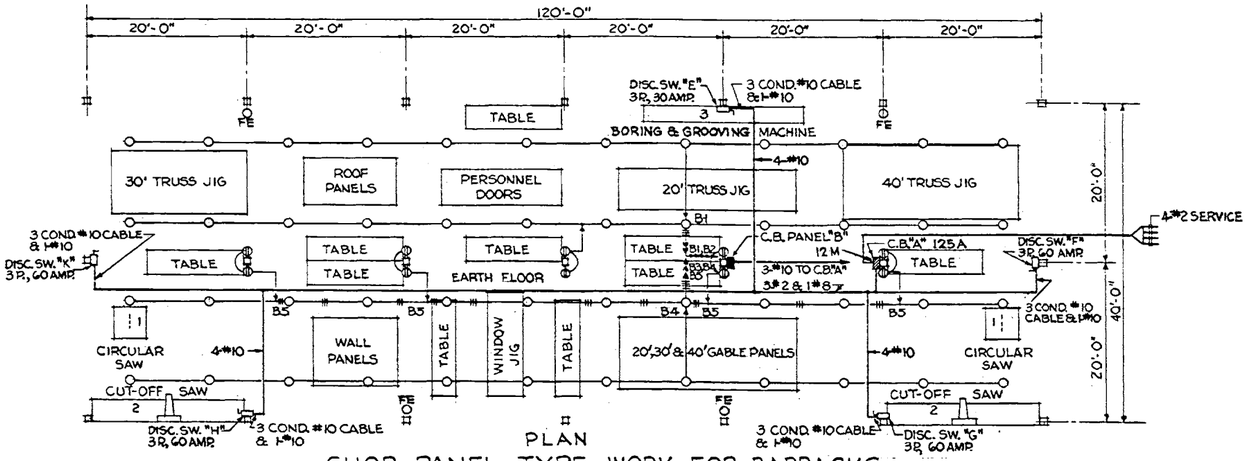
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

THEATER OF OPERATIONS

MOTOR VEHICLE ASSY
120'X200'

DRAWN BY:	VASS
TRACED BY:	
CHECKED BY:	PENDLETON
SUBMITTED BY:	C. W. DEICHMANN
APPROVED:	
DATE:	19 MAR 1969
CHIEF, BRANCH	CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:	
SCALE:	AS NOTED
SPEC. NO.	
DRAWING NUMBER	22-41
DATE	
SHEET	1 OF 1

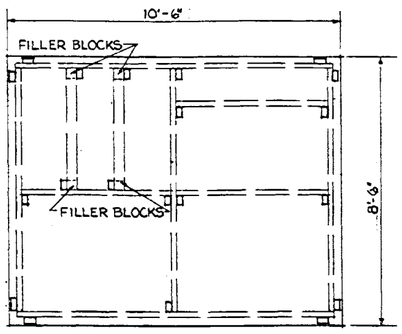


PLAN

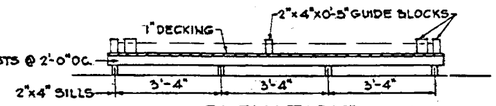
SHOP-PANEL TYPE WORK FOR BARRACKS

SCALE NO. 1

FACIL. NO. 340101-INTERIOR ONLY
FACIL. NO. 340122-WOOD FRAME W/INTERIOR



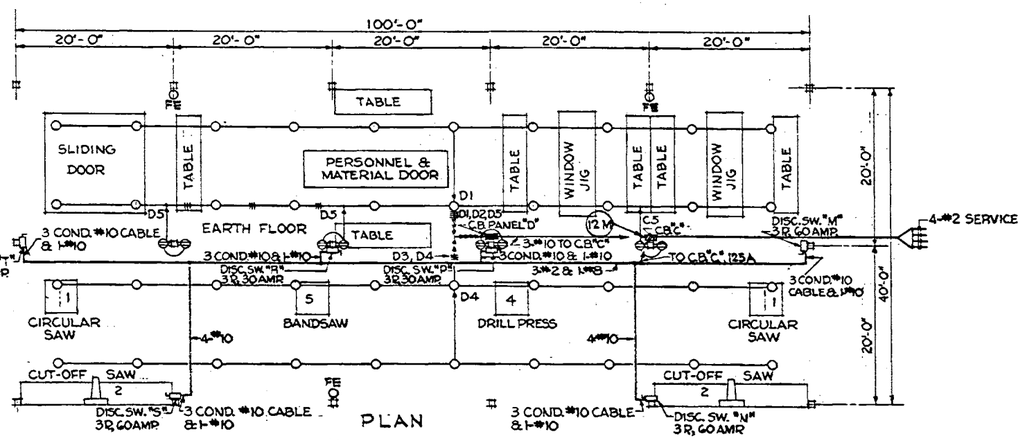
PLAN



ELEVATION

JIG FOR WALL PANELS

SCALE NO. 4

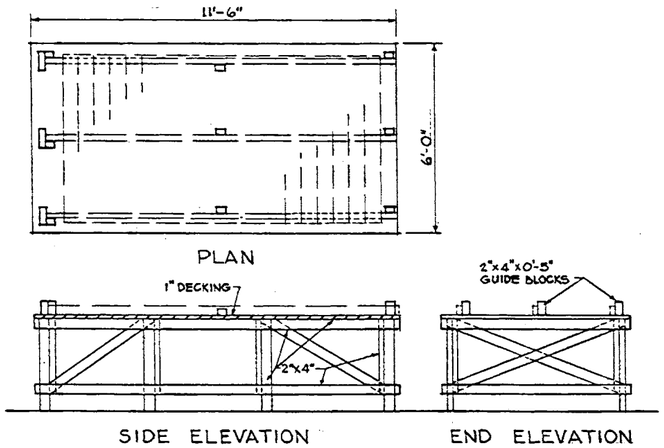


PLAN

PRE-CUT WORK FOR BARRACKS & WAREHOUSES

SCALE NO. 1

FACIL. NO. 340101-INTERIOR ONLY
FACIL. NO. 340121-WOOD FRAME W/INTERIOR



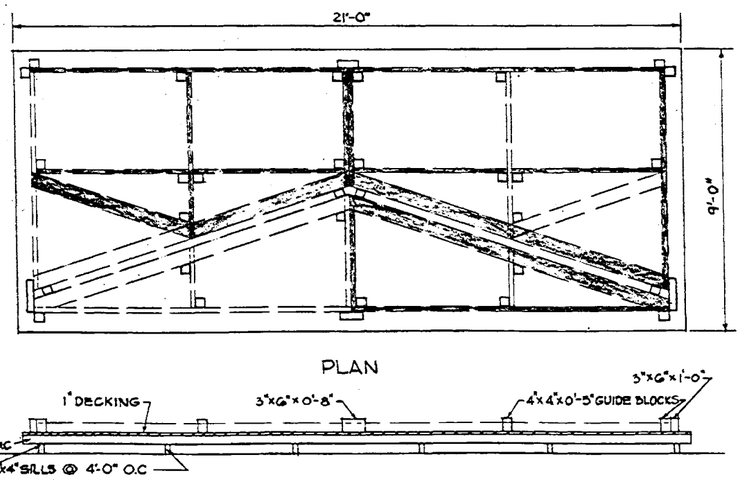
PLAN

SIDE ELEVATION

END ELEVATION

JIG FOR ROOF PANELS

SCALE NO. 4



PLAN

ELEVATION

JIG FOR 20, 30 & 40 FT. GABLE PANELS

SCALE NO. 4

SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QTY.	MOTOR H.P.
	SHOP FOR PANEL TYPE WORK		
1	SAW, CIR, WOODWORKING, 16 IN.	2	5
2	SAW, CIR, WOODWORKING, STATIONARY, OVHD. ARM	2	5
3	MACHINE, BORING & GROOVING FOR SPLIT RINGS (USE PRESS, DRILL, FLOOR TYPE WITH CUTTER HEAD & MACHINE SHANK BITS) CUTTER HEADS BITS	1	2
	SHOP FOR PRE-CUT WORK		
1	SAW, CIR, WOODWORKING, 16 IN	2	5
2	SAW, CIR, WOODWORKING, STATIONARY, OVHD ARM	2	5
4	PRESS, DRILL, FLOOR TYPE	1	2
5	SAW, BAND, WOODWORKING, 32" THROAT	1	3

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	SHOP-PANEL WORK	SHOP-PRE-CUT WORK
LIGHTING	4.80 K W	4.00 KW
RECP. EST.	.80 K W	.80 KW
POWER	20.39 K W	23.14 KW
TOTAL	25.99 K W	27.94 KW

1 ALL LAMPS TO BE 100 W. MOUNTED 10' ABOVE FLOOR
2 ALL LAMPS TO HAVE 8" CONICAL SHADES

GENERAL NOTES

1 BUILDING BAY SCHEDULE CONTAINS REFERENCE TO ADDITIONAL DRAWINGS REQUIRED AND QUANTITY OF BAYS FOR CONSTRUCTION PURPOSES.
2 4" CONCRETE SLAB TO BE PLACED UNDER ITEM NOS. 1, 4 & 5 IN SCHEDULE OF EQUIPMENT.
3 REFER TO DRAWING 34-03 FOR DIMENSIONS OF PANELS

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
34-01	PLANS	1 OF 2
34-01	DETAILS	2 OF 2
99-98	STANDARD DETAILS	

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 1' 2' 3' 4' NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

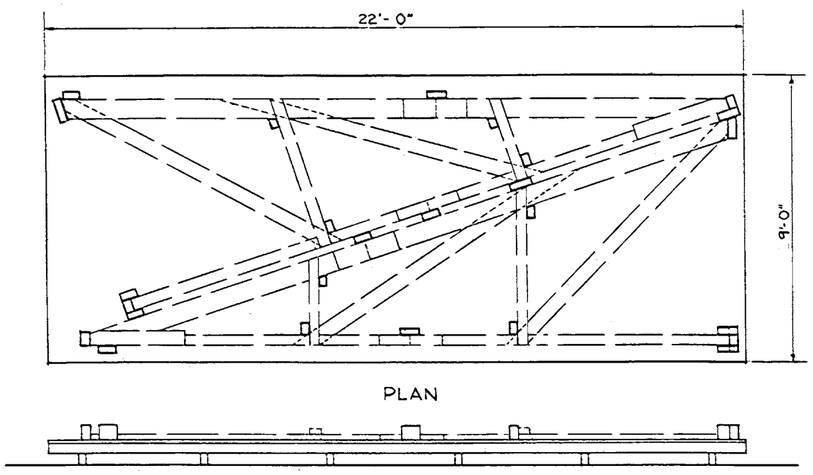
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY:
DATE

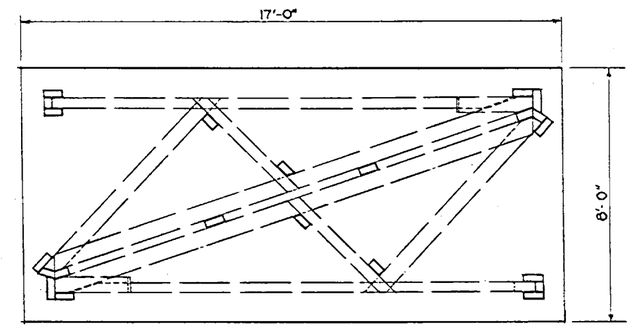
THEATER OF OPERATIONS

SHOPS-CARPENTER
WAREHOUSE TYPE SHED
PRE-CUT WORK-40'X100'
PANEL TYPE WORK-40'X120'

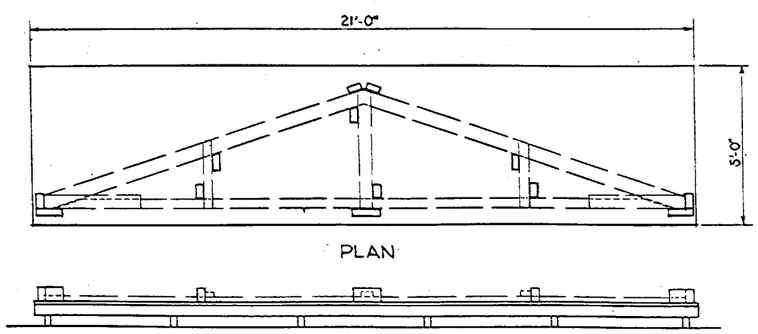
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-01
SHEET 1 OF 2



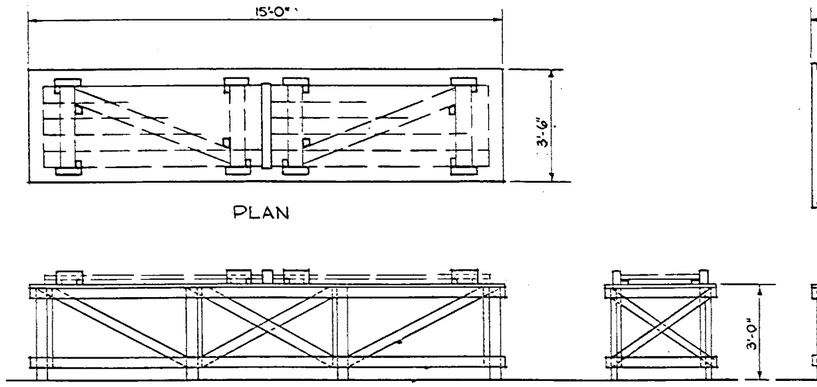
JIG FOR 40 FT. TRUSS
SCALE NO. 4



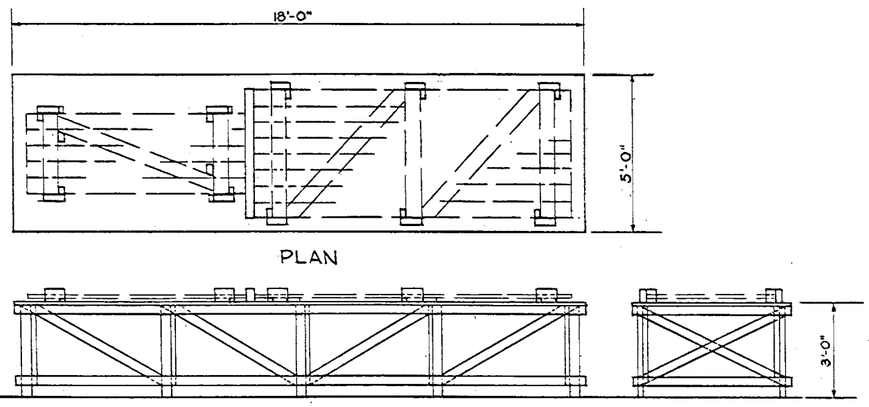
JIG FOR 30 FT TRUSS
SCALE NO. 4



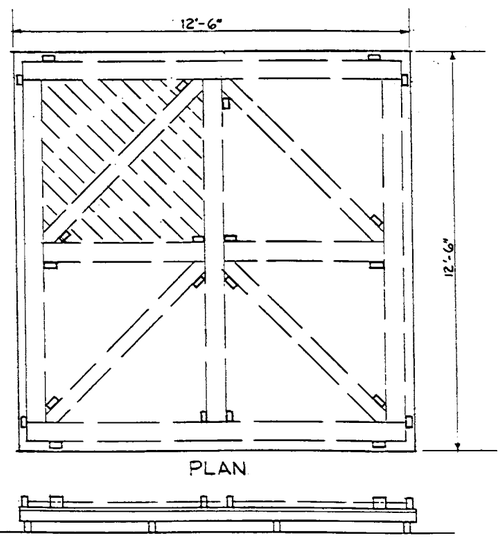
JIG FOR 20 FT. TRUSS
SCALE NO. 4



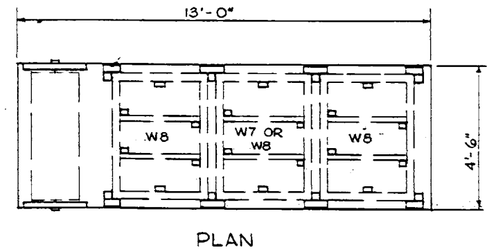
JIG FOR PERSONNEL DOORS
SCALE NO. 4



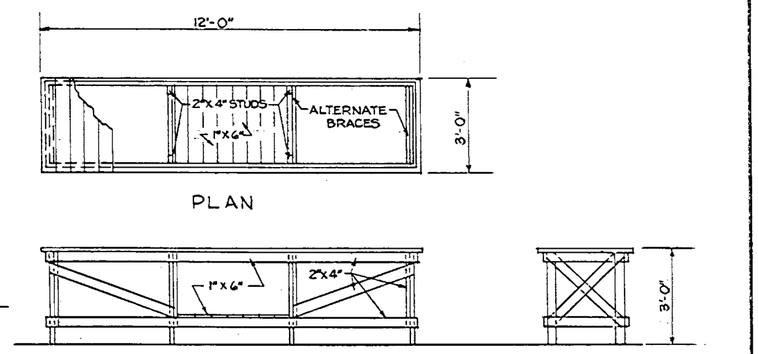
JIG FOR MATERIAL & PERSONNEL DOORS
SCALE NO. 4



JIG FOR SLIDING DOORS
SCALE NO. 4



JIG FOR WINDOWS
SCALE NO. 4



12 FT WORK TABLE
SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 1' 2' 3' 4'

NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH

THEATER OF OPERATIONS

SHOPS-CARPENTER
WAREHOUSE TYPE SHED
DETAILS-JIG & WORK TABLES

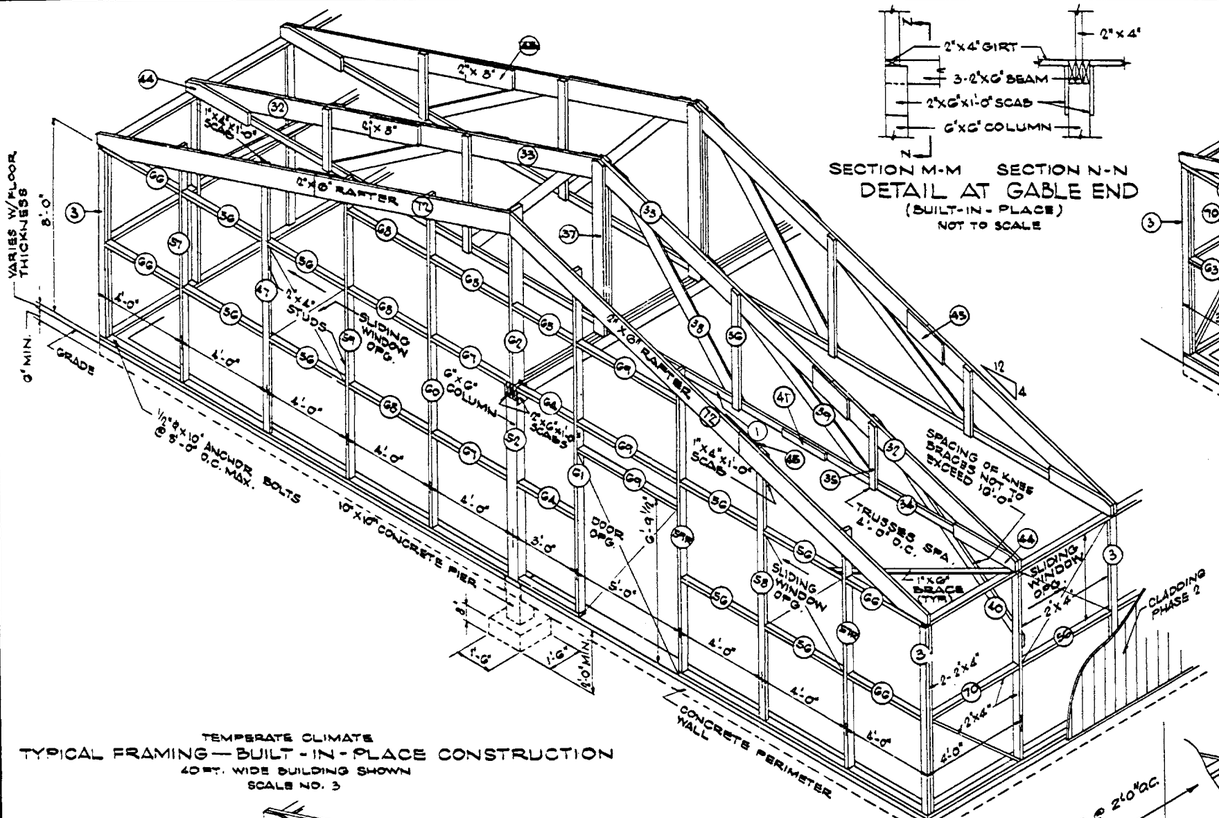
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY:

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
DATE
SHEET 2 OF 2
34-01

CORPS OF ENGINEERS

U. S. ARMY



TEMPERATE CLIMATE

TYPICAL FRAMING — BUILT-IN-PLACE CONSTRUCTION

40 FT. WIDE BUILDING SHOWN

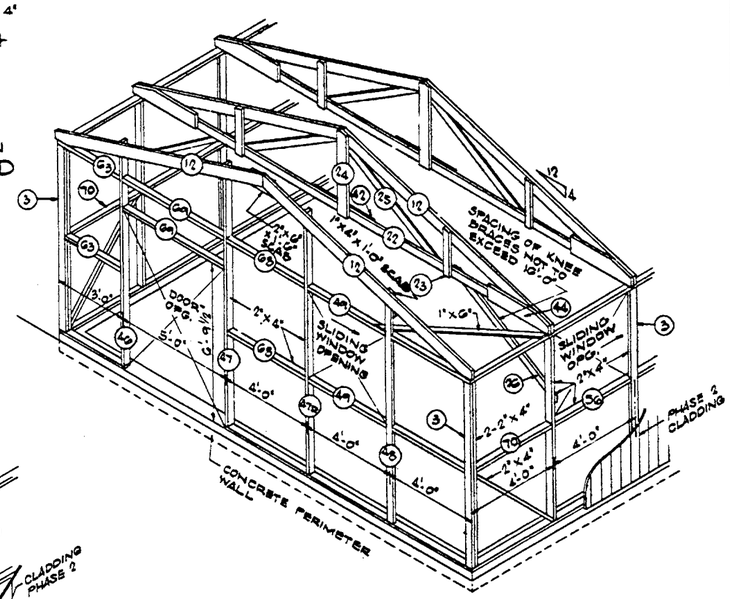
SCALE NO. 3

SECTION M-M SECTION N-N

DETAIL AT GABLE END

(BUILT-IN-PLACE)

NOT TO SCALE

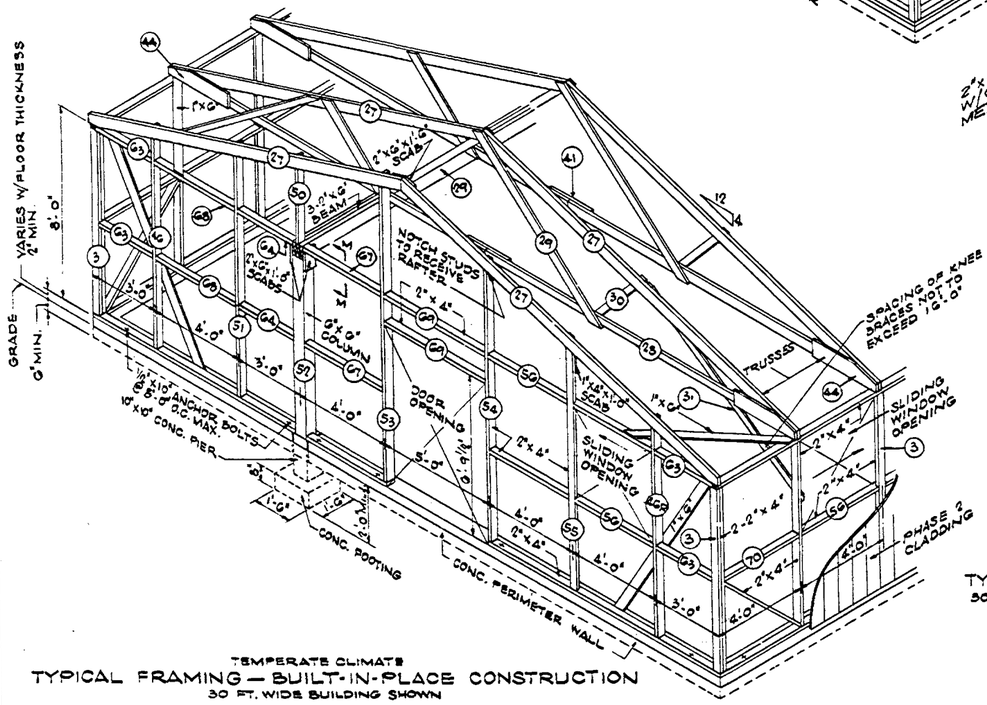


TEMPERATE CLIMATE

TYPICAL FRAMING — BUILT-IN-PLACE CONSTRUCTION

20 FT. WIDE BUILDING SHOWN

SCALE NO. 3

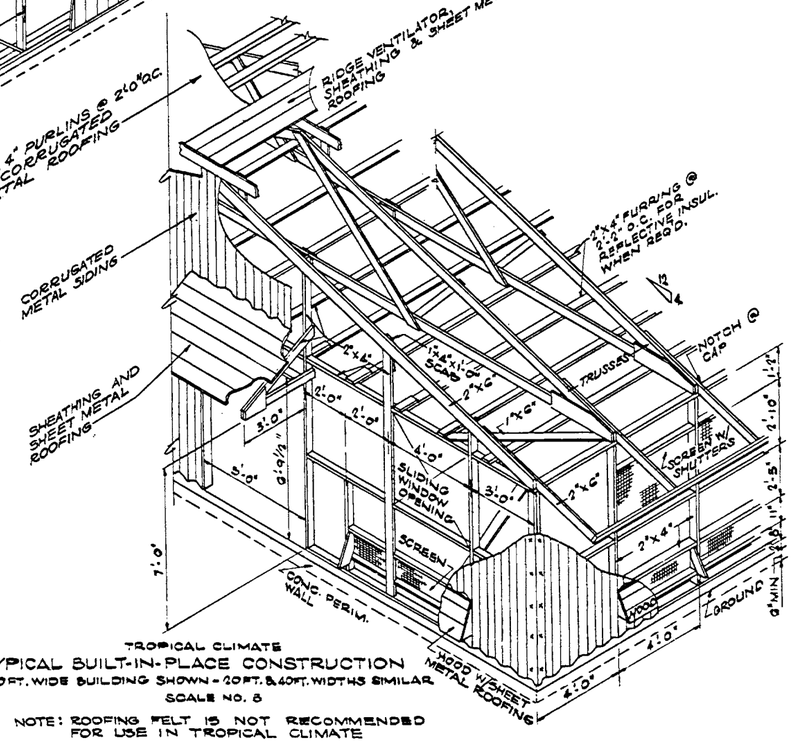


TEMPERATE CLIMATE

TYPICAL FRAMING — BUILT-IN-PLACE CONSTRUCTION

30 FT. WIDE BUILDING SHOWN

SCALE NO. 3



TROPICAL CLIMATE

TYPICAL BUILT-IN-PLACE CONSTRUCTION

30 FT. WIDE BUILDING SHOWN - 20 FT. & 40 FT. WIDTHS SIMILAR

SCALE NO. 3

NOTE: ROOFING FELT IS NOT RECOMMENDED FOR USE IN TROPICAL CLIMATE

FACILITY NUMBERS

BARRACKS TYPE BUILDINGS 8'-0" CLEAR HEIGHT

PHASE 1 - FRAME, ROOF & CONCRETE FOUNDATION BUILT-IN-PLACE CONSTRUCTION

TYPE OF ROOF	BASIC BUILDINGS 20'x 20'	30'x 40'	40'x 50'
WOOD & FELT	340321	340331	340341
CORRUGATED STEEL	340325	340335	340343

ADDITIONAL 10 FT LENGTHS FOR BARRACKS TYPE BLDG. PHASE 1 - FRAME, ROOF & CONCRETE FOUNDATION BUILT-IN-PLACE CONSTRUCTION

TYPE OF ROOF	BLDG. WIDTHS FOR 10FT. UNIT 20 FT	30 FT	40 FT
WOOD & FELT	340322	340332	340342
CORRUGATED STEEL	340326	340336	340346

NOTE: BILLS OF MATERIAL FOR ABOVE FACILITIES CONTAIN SUFFICIENT MATERIALS FOR PANEL OR BUILT-IN-PLACE CONSTRUCTION.

FACILITY NUMBERS

PHASE 2 - CLADDING, 8'-1"x 100' UNIT BARRACKS TYPE BLDGS.

FACILITY NO.	DESCRIPTION
340361	WOOD & FELT W/ DOORS AND WINDOWS
340363	CORRUGATED STL. W/DOORS AND WINDOWS
340364	CORR. STL. W/DOORS, SCREEN OPENINGS & VENTS (TROP. CLIM.)

NOTE: PHASE 2 CLADDING INCLUDES SUFFICIENT MATERIAL TO CONSTRUCT WALL COVERING, 8 WINDOWS & 2 DOUBLE DOORS

FACILITY NUMBERS

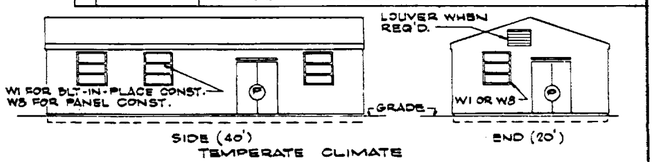
PHASE 3 - FLOOR 1000 SF UNIT

FACILITY NO.	DESCRIPTION
340371	CONCRETE, 2" THICK, WITHOUT REINFORCEMENT
340372	CONCRETE, 4" THICK, WITHOUT REINFORCEMENT
340373	CONCRETE, 6" THICK, WITH 6"x6" WIRE MESH
340374	1" WOOD ON WOOD JOISTS, 40# LL
340375	1" WOOD WITH COMPOSITION FLOOR FINISH ON WOOD JOISTS, 40# LL
340376	1" WOOD WITH 1/2" INSULATION BOARD & COMPOSITION FLOOR FINISH ON WOOD JOISTS, 40# LL
340378	1" WOOD ON WOOD JOISTS, 100# LL
340379	1" WOOD WITH COMPOSITION FLOOR FINISH ON WOOD JOISTS, 100# LL
340380	1" WOOD WITH 1/2" INSULATION BOARD & COMPOSITION FLOOR FINISH ON WOOD JOISTS, 100# LL
340381	1" WOOD SUB-FLOOR & 1" WOOD FINISH FLOOR ON WOOD JOISTS, 100# LL

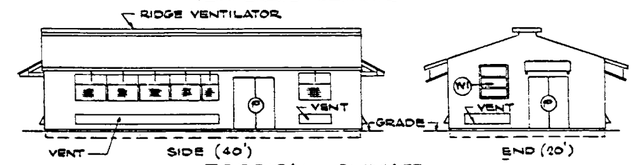
NOTE: BILLS OF MATERIAL FOR FACILITIES NO. 340374 - 340381 INCLUSIVE INCLUDE MATERIAL FOR WOOD PIERS & WOOD FOOTINGS

PHASE 4 - INTERIOR LINER 1000 SF UNIT

FACILITY NO.	DESCRIPTION
340391	INTERIOR LINER - THERMAL INSULATION BOARD & HARDPRESSED FIBERBOARD - TEMPERATE CLIMATE
340392	REFLECTIVE TYPE INSULATION IN CEILING W/FURRING FOR USE IN TROPICAL CLIMATE



TEMPERATE CLIMATE



TROPICAL CLIMATE

TYPICAL ELEVATIONS

20'x40' BLDG. SHOWN - 20, 30 & 40' WIDTHS x VARIABLE LENGTH SIMILAR

NO SCALE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 1' 2' 3' 4' 5'

NO. 3

NAILING SCHEDULE

MINIMUM SIZE AND NUMBER - UNLESS OTHERWISE NOTED FOR STANDARD COMMON NAILS ONLY		
DESCRIPTION	NO. & SIZE	
BUILT-UP MEMBERS, PIECES IN CONTACT - EACH LAYER	12" O.C. STAGGERED	10d
SHEATHING TO STUDS, RAFTER, GIRT, PLATE, BLOCKING, ETC.	6" BOARD	2-8d
	OVER 6"	3-8d
1"x6" DIAG. BRACING TO STUD, GIRT, RAFTER, BLOCKING, ETC.		3-8d
RAFTER TO GIRDER, GIRT TO POST, STUD TO SILL, TOE NAIL EA. SIDE		2-10d
GIRT, SPACER, BLOCKING - EACH END		2-10d
WOOD MEMBERS TO SIDE OR STUD		4-16d

MINIMUM SIZE AND NUMBER - UNLESS OTHERWISE NOTED FOR STANDARD COMMON NAILS ONLY	
DESCRIPTION	NO. & SIZE
SINGLE PLATE TO TOP OF STUD	2-10d

NOTE: NAILS ON OPPOSITE SIDE OF A TIMBER SHALL BE STAGGERED TO PREVENT SPLITTING.
MINIMUM SPACING @ TO ¢ 1/2 NAIL LENGTH
MINIMUM SPACING FROM EDGE 1/4 NAIL LENGTH

GENERAL NOTES

1. IN TERMITE AREAS, FOOTINGS, POSTS & STEPS SHOULD BE CONSTRUCTED WITH TREATED WOOD OR CONCRETE.
2. REFER TO DWG. 34-15 FOR SMOKE JACK DETAILS.
3. ROOF PANELS OF CORRUGATED STEEL ARE NOT RECOMMENDED IN PANEL CONSTRUCTION.
4. FOR FSN BILLS OF MATERIAL - REFER TO TM E-303 BY FACILITY NUMBER
5. FRAMING MEMBERS FOR TROPICAL CLIMATE BLDGS. ARE SIMILAR TO TEMPERATE CLIMATE BLDGS. EXCEPT FOR VENTILATOR OVERHANGS & SCREENED OPENINGS.
6. 5/8" EXTERIOR PLYWOOD, TYPE C-C OR C-C PLUGGED, MAY BE USED FOR ROOF AND WALL SHEATHING. PLYCLIPS AND 8d NAILS SHOULD BE USED.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO
34-03	SCHEDULE OF FACIL. TYP. FRAMING & ELEVS.	1 OF 7
34-03	PANEL DETAILS RIDGE VENTILATOR DET.	2 OF 7
34-03	LUMBER CUTTING DET. ROOFING DETAILS	3 OF 7
34-03	TYPICAL CROSS SECTS. & DETAILS	4 OF 7
34-03	ALT. WOOD FLR. FRAMING PLATFORMS & STEPS	5 OF 7
34-03	ALTERNATE WOOD FLOOR FRAMING	6 OF 7
34-03	ALT. FOOTING DET. & MISC. WD. FLOOR DET.	7 OF 7
34-15	WINDOW, DOOR & MISC. DETAILS	1, 2 OF 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
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MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

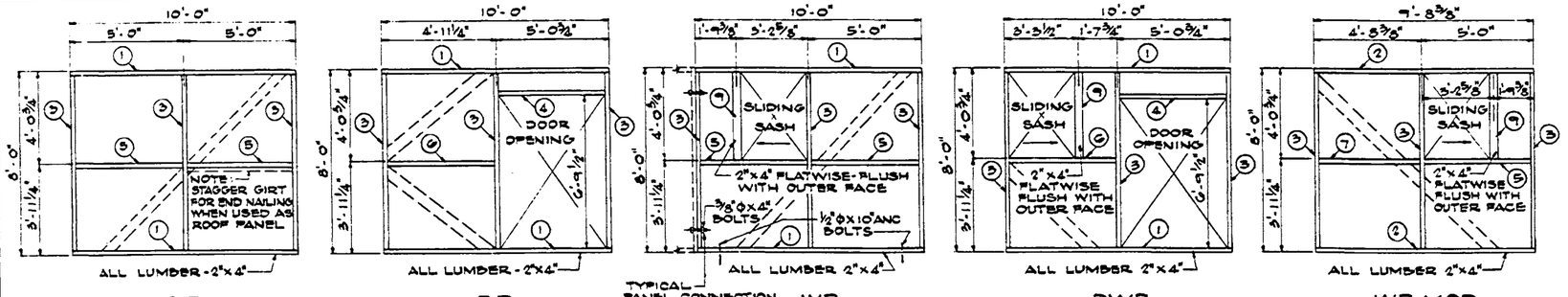
DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEITCHMANN
APPROVED: H. Gilchrist DATE:
APPROVED: H.M. Williams DATE: 19
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:

THEATER OF OPERATIONS

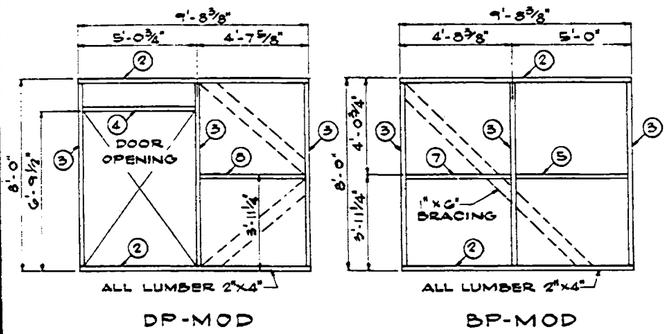
WOOD FRAME CONSTRUCTION
BARRACKS TYPE BUILDING
8'-0" MIN. CLEARANCE

SCHEDULE OF FACILITIES
TYPICAL FRAMING & ELEVATIONS

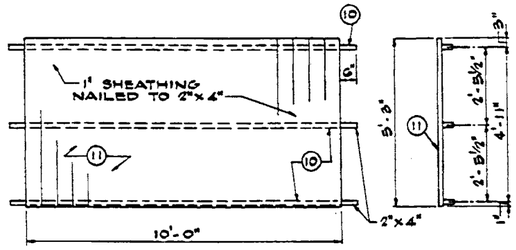
SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 7
34-03



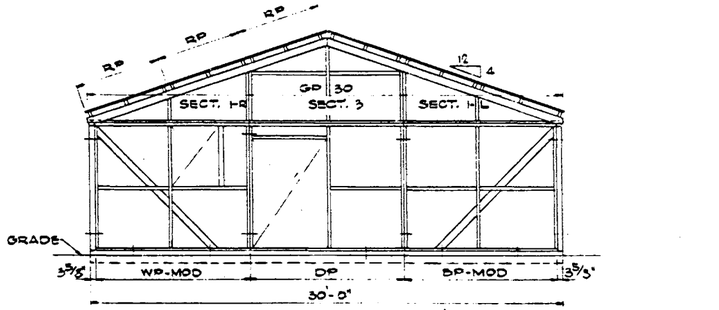
WALL PANELS
SCALE NO. 3



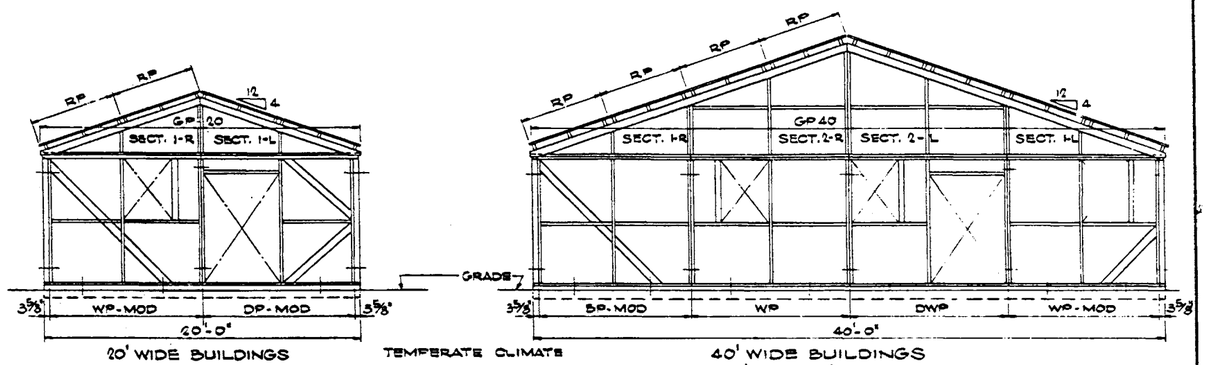
WALL PANELS
SCALE NO. 3



ROOF PANEL RP
NO SCALE

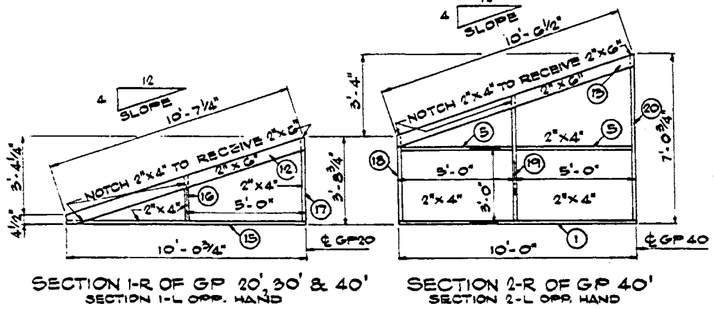


TYP. END FRAMING ELEVATION FOR 30' WIDE BUILDINGS
PANEL CONSTRUCTION
SCALE NO. 2

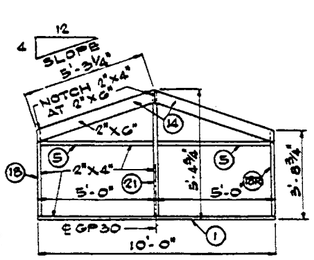


20' WIDE BUILDINGS — TEMPERATE CLIMATE — 40' WIDE BUILDINGS

TYPICAL END FRAMING ELEVATIONS FOR 20' & 40' BUILDINGS
PANEL CONSTRUCTION
SCALE NO. 2

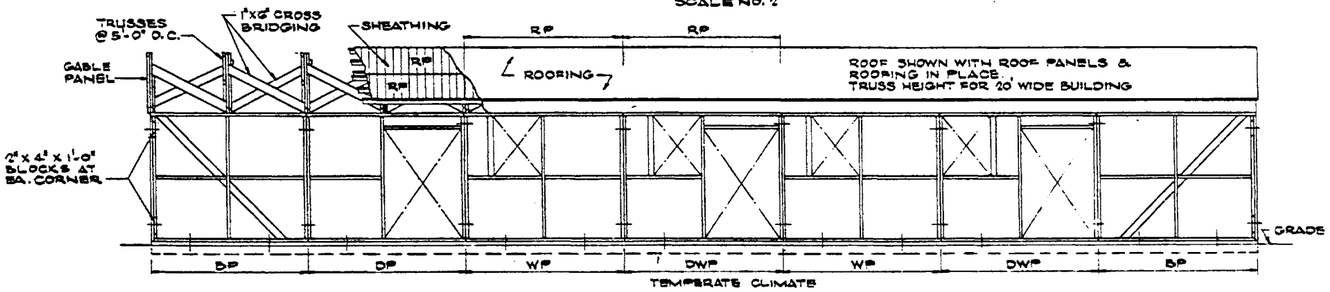


SECTION 1-R OF GP 20', 30' & 40'
SECTION 1-L OPP. HAND
SECTION 2-R OF GP 40'
SECTION 2-L OPP. HAND



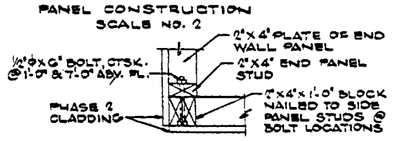
SECTION-3 OF GP 30'

GABLE PANELS
SCALE NO. 3

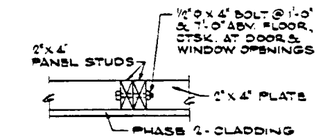


TEMPERATE CLIMATE

TYPICAL SIDE FRAMING ELEVATION
PANEL CONSTRUCTION
SCALE NO. 2

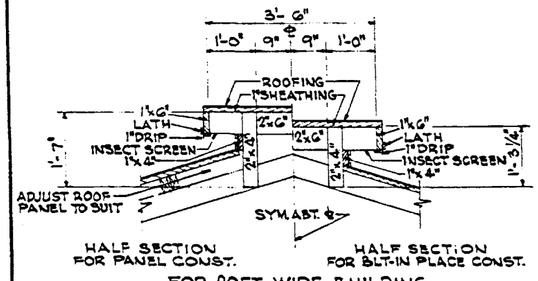


PLAN AT CORNER



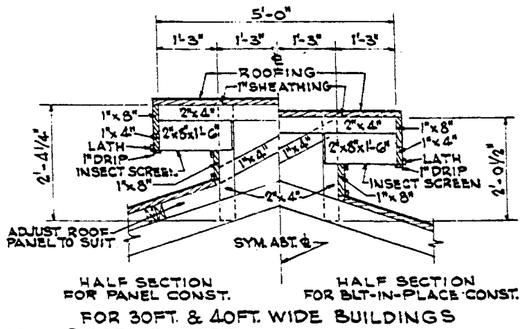
PLAN AT ADJOINING PANELS

WALL PANEL ASSEMBLY
PANEL CONSTRUCTION
NOT TO SCALE



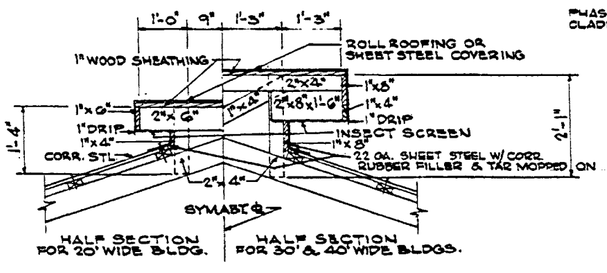
HALF SECTION FOR PANEL CONST. — HALF SECTION FOR BLT-IN PLACE CONST.

FOR 20FT. WIDE BUILDING
WITH WOOD SHEATHING & ROLL ROOFING ROOF



HALF SECTION FOR PANEL CONST. — HALF SECTION FOR BLT-IN-PLACE CONST.

FOR 30FT. & 40FT. WIDE BUILDINGS



HALF SECTION FOR 20' WIDE BLDG. — HALF SECTION FOR 30' & 40' WIDE BLDGS.

WITH CORRUGATED STEEL ROOF

RIDGE VENTILATORS
SCALE NO. 3

REVISIONS

SYMBOL	DESCRIPTION	DATE	APPROVAL

GRAPHIC SCALES: NO.2 (0, 5', 10') — NO.3 (0, 1', 2', 3', 4', 5') — NO.5 (0, 1', 2', 3')

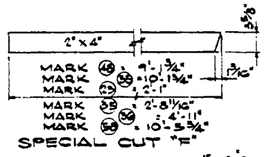
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA — WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

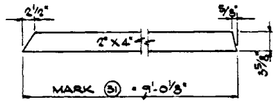
DRAWN BY: MELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF ARCHITECTURAL BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
BARRACKS TYPE BUILDING
8'-0" MIN. CLEARANCE
PANEL TYPE CONSTRUCTION DETAILS
RIDGE VENTILATOR DETAILS
(PANEL TYPE OR BUILT-IN-PLACE CONSTRUCTION)

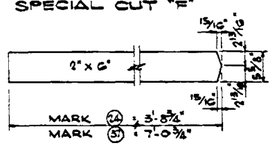
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-03
SHEET 2 OF 7



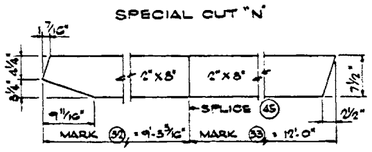
SPECIAL CUT "E"



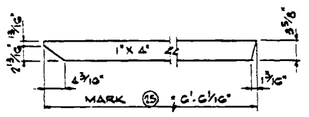
SPECIAL CUT "N"



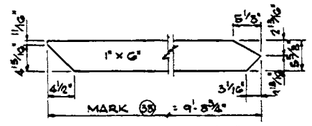
SPECIAL CUT "G"



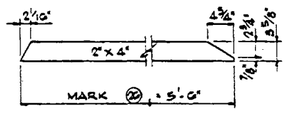
SPECIAL CUT "P" SPECIAL CUT "Q"



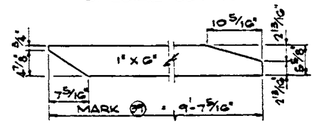
SPECIAL CUT "H"



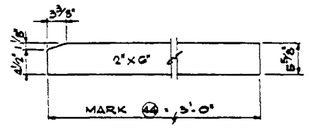
SPECIAL CUT "R"



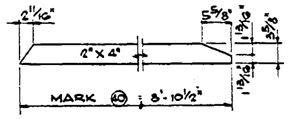
SPECIAL CUT "J"



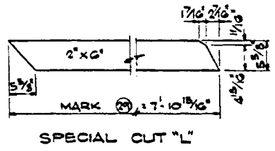
SPECIAL CUT "S"



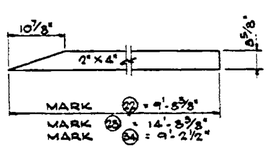
SPECIAL CUT "K"



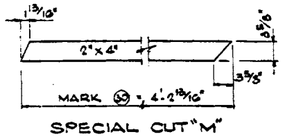
SPECIAL CUT "T"



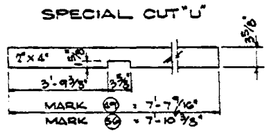
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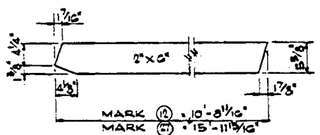
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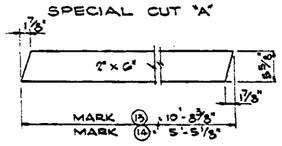
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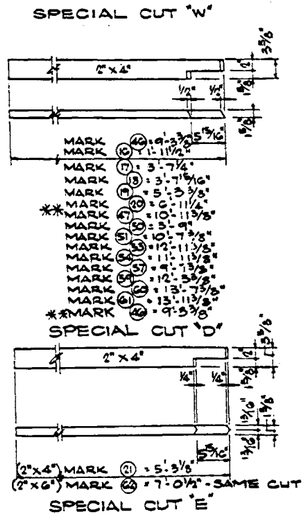
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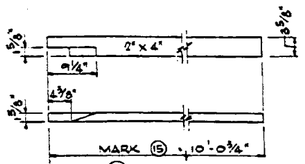
SPECIAL CUT "A"



SPECIAL CUT "B"



SPECIAL CUT "D"



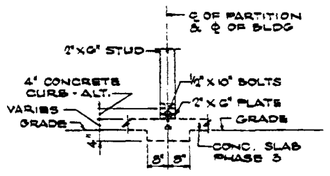
MARK (15R) OPPOSITE HAND

SPECIAL CUT "C"

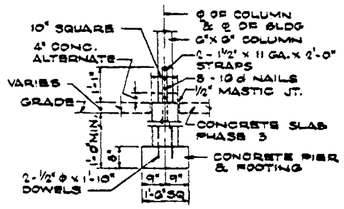
SPECIAL CUT "E"

DETAILS OF SPECIAL CUTS

NO SCALE

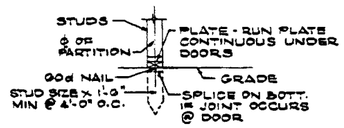


BEARING PARTITION

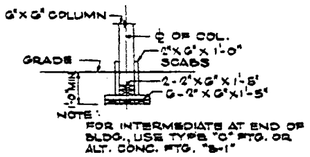


INTERIOR COLUMN

WHEN BUILDING HAS CONCRETE FLOOR

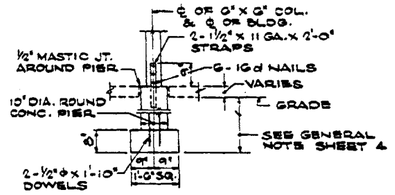


PARTITION



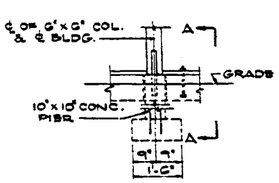
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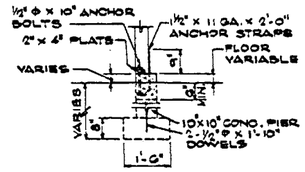
WHEN BUILDING HAS EARTH FLOOR



INTERIOR COLUMN

ALTERNATE CONCRETE FOOTING





SECTION A-A

INTERMEDIATE COLUMN AT END OF BUILDING - WHEN BUILDING HAS CONCRETE PERIMETER WALL

MISCELLANEOUS FOOTING DETAILS

SCALE NO. 4

QUANTITIES & SPECIAL CUTS REQUIRED
PANEL TYPE OR BUILT-IN-PLACE CONSTRUCTION

MARK NUMBER *	SIZE IN INCHES	OVERALL LENGTH OF MEMBERS	SPECIAL CUT	BP	DP	WP	DWP	BP MOD	DP MOD	WP MOD	RP	SBC 1	SBC 2	SBC 3	RT 20	RT 30	RT 40
1	2X4	10'- 0"		2	2	2	2										2
2	2X4	9'- 8 3/8"						2	2	2							
3	2X4	7'- 8 3/8"		3	3	3	3	3	3	3							
4	2X4	4'- 10 5/16"			1		1										
5	2X4	4'- 9 9/16"		2		2		1		1			2	2			
6	2X4	4'- 8 13/16"			1		1										
7	2X4	4'- 5 15/16"						1		1							
8	2X4	4'- 5 9/16"							1								
9	2X4	5'- 11 1/8"				1	1			1							
10	2X4	11'- 0"									3						
11	1X6	5'- 3"									20						
12	2X6	10'- 8 1/16"	A									1			2		
13	2X6	10'- 8 3/8"	B										1				
14	2X6	5'- 5 1/8"	B											2			
15, 15R	2X4	10'- 0 3/4"	C									1					
16, 16R	2X4	1'- 11 1/2"	D									1					
17, 17R	2X4	3'- 7 1/4"	D									1					
18, 18R	2X4	3'- 7 15/16"	D										1	2			
19, 19R	2X4	5'- 3 3/8"	D										1				
20, 20R	2X4	6'- 11 1/4"	D										1				
21	2X4	5'- 3 1/8"	E											1			
22	2X4	9'- 8 3/8"	U												2		
23	2X4	2'- 1"	E												2		
24	2X6	3'- 8 3/8"	G												1		
25	1X4	6'- 6 1/16"	H												2		
26	2X4	5'- 6"	J												2		
27	2X6	13'- 11 15/16"	A													2	
28	2X4	14'- 8 3/8"	U													2	
29	2X6	7'- 10 13/16"	L													2	
30	2X4	4'- 2 13/16"	M													2	
31	2X4	9'- 0 1/8"	N													2	
32	2X8	9'- 3 3/16"	P														2
33	2X8	12'- 0"	Q														2
34	2X4	9'- 2 1/2"	U														2
35	2X4	2'- 8 1/16"	E														2
36	2X4	4'- 11"	E														2
37	2X6	7'- 0 5/16"	G														2
38	1X6	9'- 8 3/4"	R														2
39	1X6	9'- 7 5/16"	S														2
40	2X4	8'- 10 1/2"	T														2
41	2X4	2'- 0"														2	2
42	2X4	3'- 0"													1		
44	2X6	3'- 0"	K												2	2	2
45	2X8	2'- 0"															2

QUANTITIES & SPECIAL CUTS REQUIRED
BUILT-IN-PLACE CONSTRUCTION ONLY

MARK NUMBER *	SIZE IN INCHES	OVERALL LENGTH OF MEMBERS	SPECIAL CUT	20'x20' BLDG.	30'x40' BLDG.	40'x50' BLDG.
3	2X4	7'- 8 3/8"		10	26	32
40 40R	2X4	9'- 3 5/8"	D	1 EA	2 EA	
47 47R	2X4	10'- 11 5/8"	D	2 EA		
48	2X4	9'- 1 3/4"	E	2		
49	2X4	7'- 7 9/16"	W	4		
50 50R	2X4	3'- 9"	D		1 EA	
51 51R	2X4	10'- 7 7/8"	D		1 EA	
52	6X6	7'- 6 3/8"			5	6
53 53R	2X4	12'- 11 3/8"	D		1 EA	
54 54R	2X4	11'- 11 3/8"	D		1 EA	
55	2X4	10'- 1 3/4"	F		2	
56	2X4	7'- 10 3/8"	W	2	8	10
57 57R	2X4	9'- 7 3/8"	D			2 EA
58	2X4	10'- 5 3/4"	R			4
59 59R	2X4	12'- 3 3/8"	D			2 EA
60 60R	2X4	13'- 7 3/8"	D			1 EA
61 61R	2X4	13'- 11 3/8"	D			1 EA
62	2X6	7'- 0 1/2"	E			2
63	2X4	2'- 7 9/16"		4	8	
64	2X4	2'- 8 7/16"			2	4
65	2X4	2'- 10 3/8"			2	2
66	2X4	3'- 7 9/16"				8
67	2X4	3'- 8 7/16"			4	4
68	2X4	3'- 10 3/8"		4	6	10
69	2X4	4'- 10 3/8"		4	6	10
70	2X4	3'- 7 15/16"		4	4	4
72	2X6	21'-3 5/16" (SPLICED)	A			4

* NOTE:
"X" FOLLOWING MARK NUMBERS INDICATES MEMBERS ARE IDENTICAL EXCEPT REVERSE BEVELS.

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES

0 1' 2' 3' 4'

NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

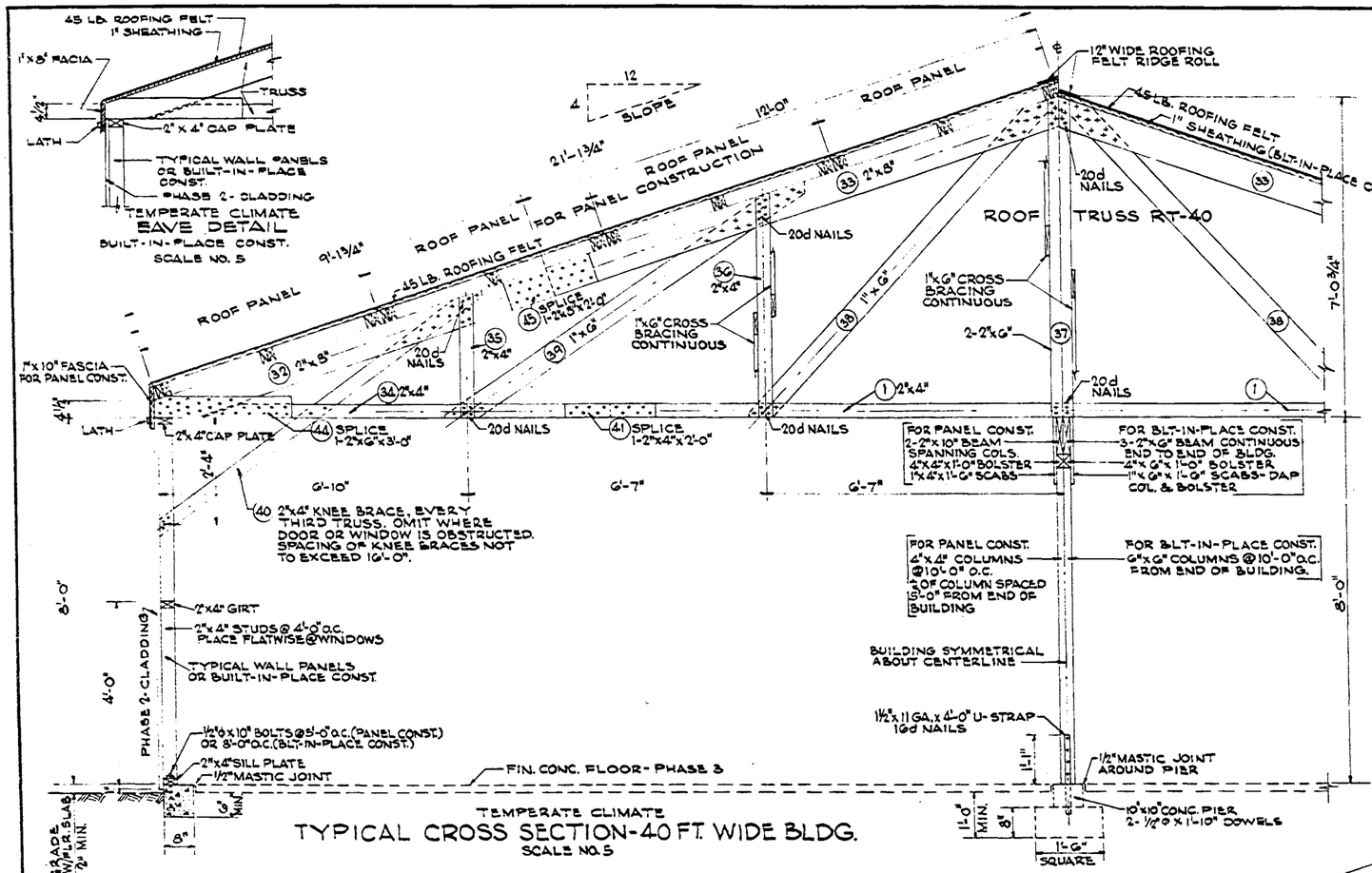
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION, ENGINEERING DIVISION
WASHINGTON, D. C.

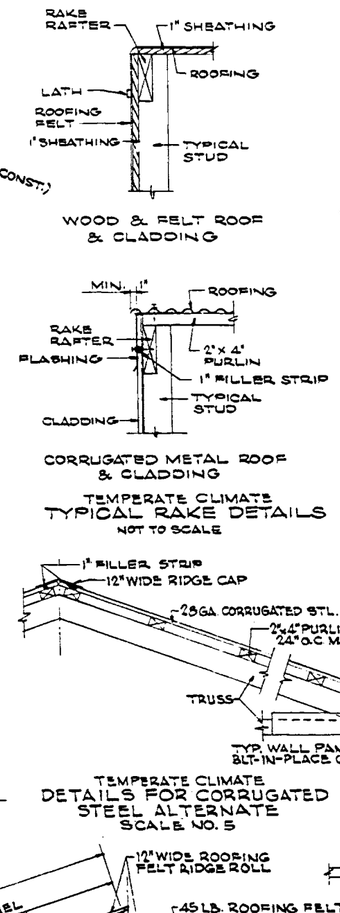
DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: C. W. Deichmann CHIEF, ENGINEERING BRANCH
APPROVED: H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE: 15 MAR 1

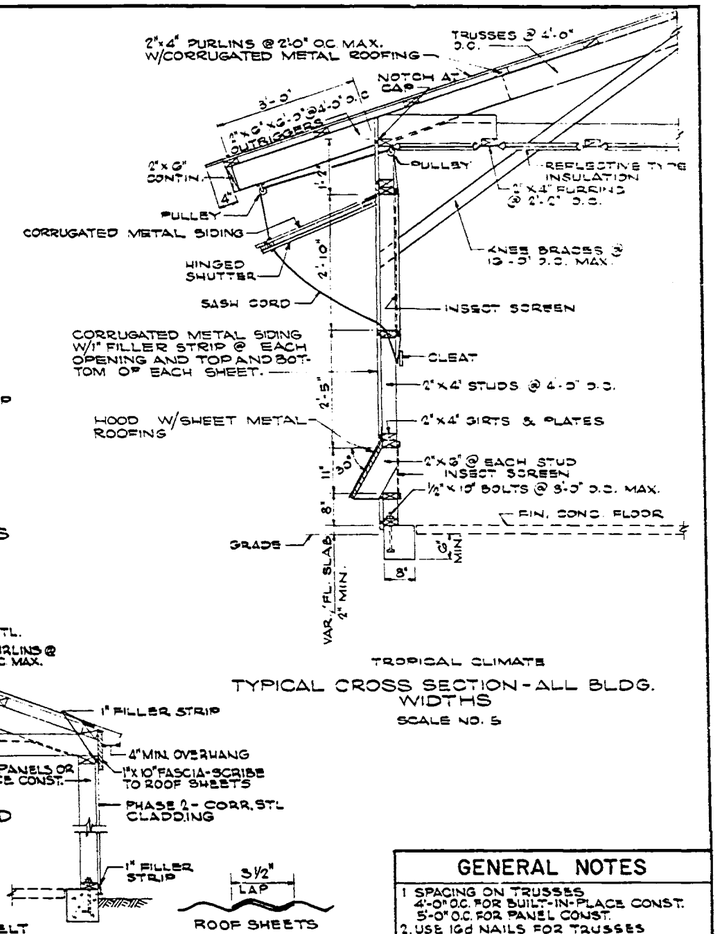
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
BARRACKS TYPE BUILDING
8'-0" MIN. CLEARANCE

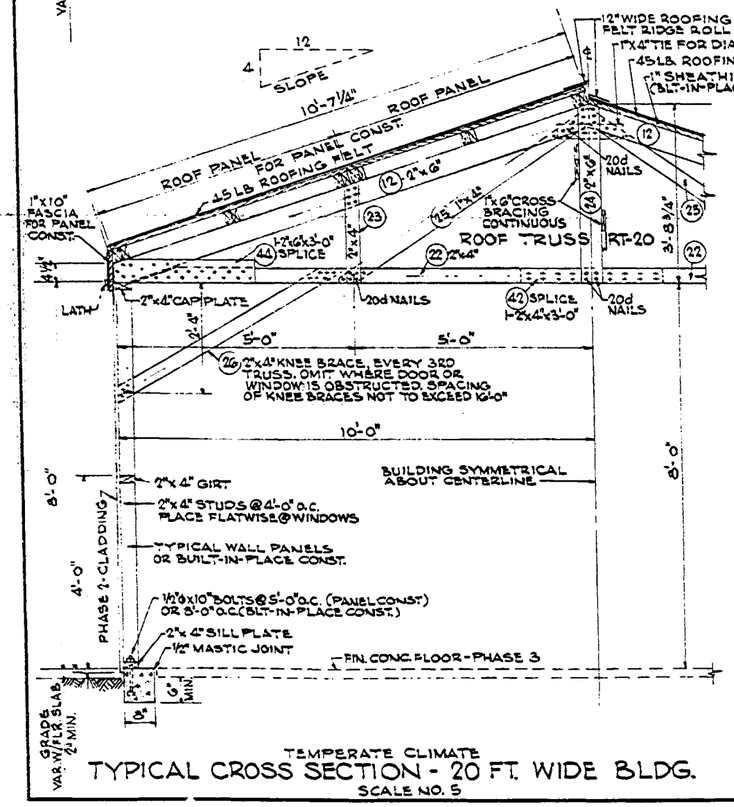
LUMBER CUTTING DETAILS & FOOTING DETAILS

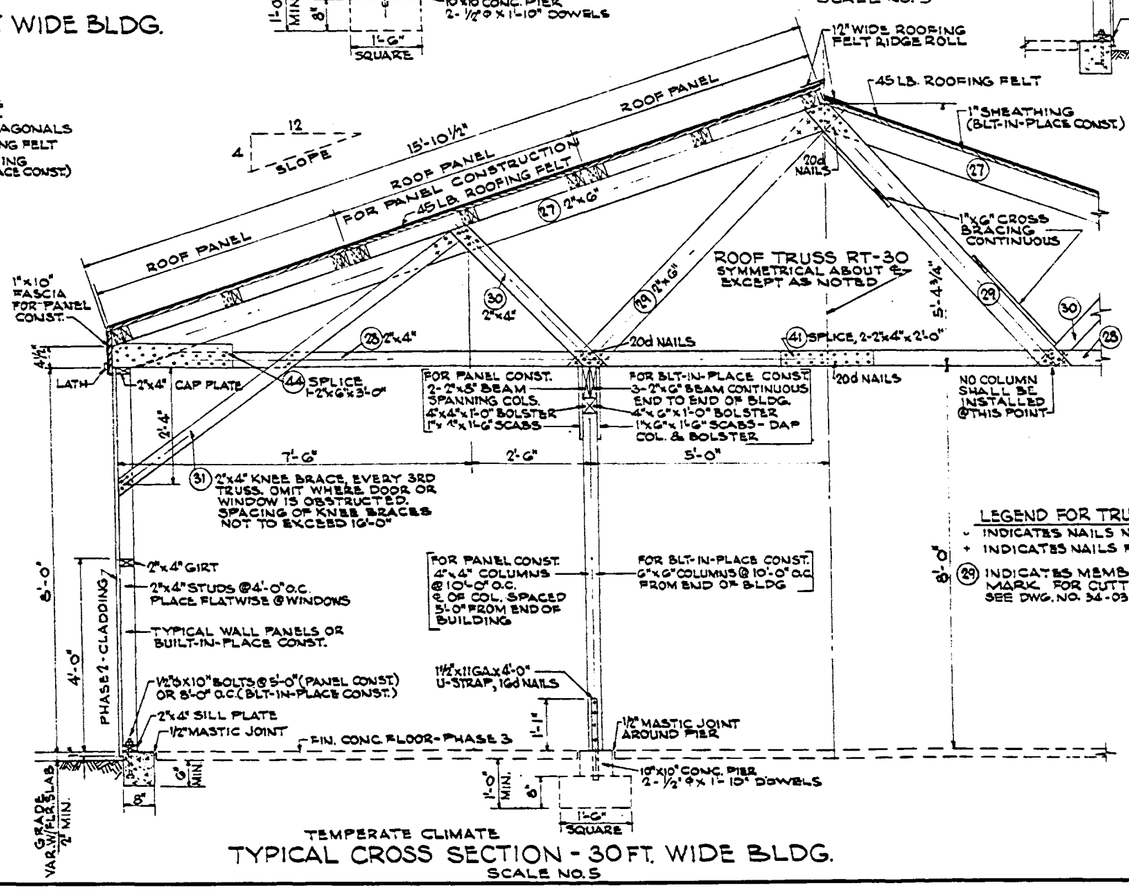
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-03
SHEET 3 OF 7











CORRUGATED STEEL LAP DETAILS
NO SCALE

NOTE: LAP ENDS OF ROOF SHEETS 8" MINIMUM. CUT ALL FINISHING SHEETS AS REQUIRED.

GENERAL NOTES

1. SPACING ON TRUSSES 4'-0" O.C. FOR BUILT-IN-PLACE CONST. 5'-0" O.C. FOR PANEL CONST.
2. USE 16d NAILS FOR TRUSSES UNLESS OTHERWISE NOTED.
3. REINFORCEMENT SHALL NOT BE USED IN CONCRETE PIERS UNLESS THE HEIGHT EXCEEDS SIX TIMES THE LEAST DIMENSION.
4. SOIL BEARING VALUE ASSUMED AT 3000 PSF.
5. ALL FOOTINGS SHALL BE EXTENDED BELOW FROST LINE WHEN REQUIRED.
6. CONCRETE SLABS ON GRADE OR GRAVEL FILL SHALL BE POURED IN ALTERNATE SECTIONS NOT TO EXCEED 800 SQUARE FEET IN AREA.
7. USE GRAVEL FILL UNDER CONCRETE FLOOR SLAB WHERE CONDITIONS WARRANT.
8. SHEET METAL SCREWS SPACED @ 1'-0" O.C. SHALL BE USED TO SECURE END & SIDE LAPS OF CORRUGATED SHEET METAL CLADDING AND ROOFING.

LEGEND FOR TRUSSES:
- ∨ INDICATES NAILS NEAR SIDE
- + INDICATES NAILS FAR SIDE
- (29) INDICATES MEMBER MARK FOR CUTTING LIST. SEE DWG. NO. 54-03, SH. 5 OF 7

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 1' 2' 3' — NO.5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

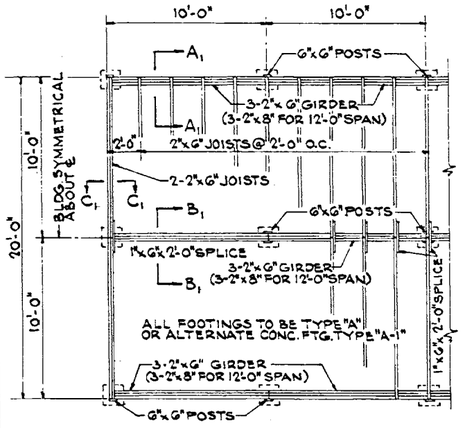
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C. W. DEICHMANN
APPROVED: H. Calhoun
CHIEF, STDS. / SPECS. BRANCH
APPROVED: H. M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

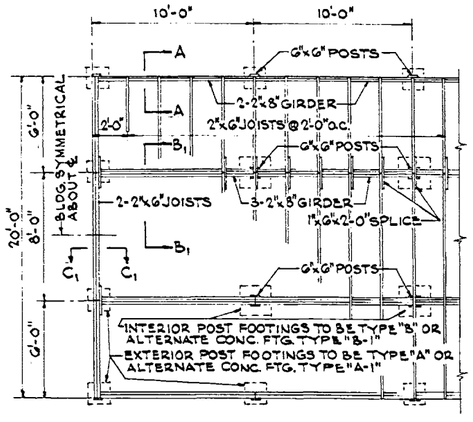
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
BARRACKS TYPE BUILDING
8'-0" MIN. CLEARANCE

TYPICAL CROSS SECTIONS & DETAILS

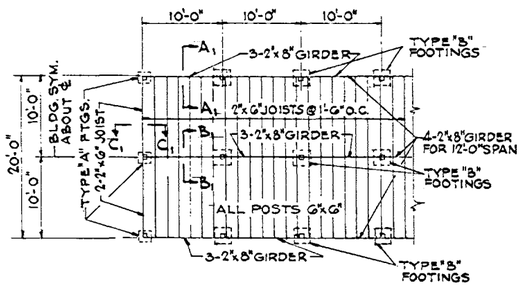
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 54-03
SHEET 4 OF 7



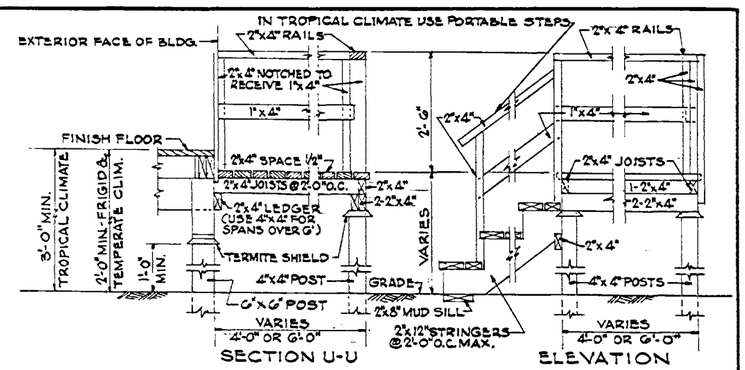
WOOD FLOOR TYPE-1
LL 40 LB/SQ.FT.
SCALE NO. 2



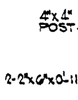
WOOD FLOOR TYPE-2
LL 100 LB/SQ. FT.
SCALE NO. 2



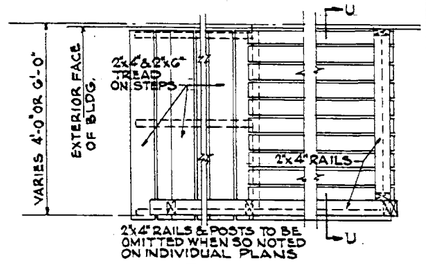
NOTE: USE DETAILS AS SHOWN FOR WOOD FLOOR TYPE-1 EXCEPT WHERE OTHERWISE SHOWN OR NOTED HEREON. ALTERNATE CONC. FTGS. "A-1" & "B-1" MAY BE SUBSTITUTED FOR "A" & "B" ABOVE.



SECTION U-U ELEVATION



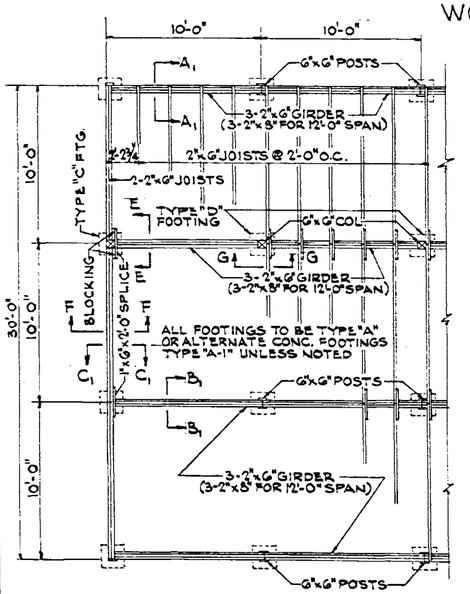
TYPICAL FOOTING FOR PLATFORM POST



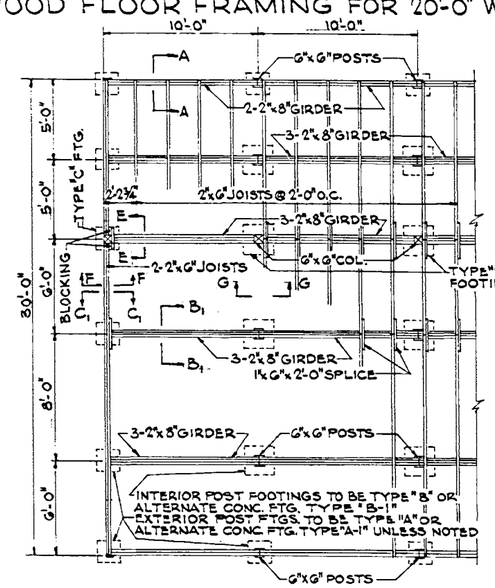
2"x4" RAILS & POSTS TO BE OMITTED WHEN SO NOTED ON INDIVIDUAL PLANS

PLAN (STEPS AT SIDE)

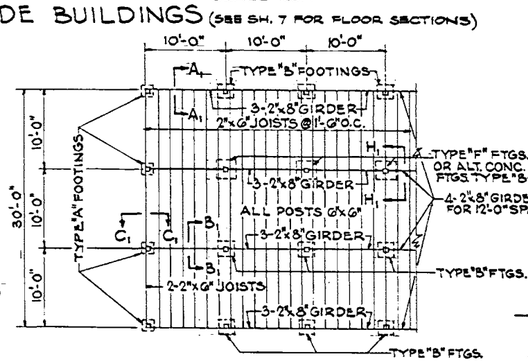
WOOD FLOOR FRAMING FOR 20'-0" WIDE BUILDINGS (SEE SH. 7 FOR FLOOR SECTIONS)



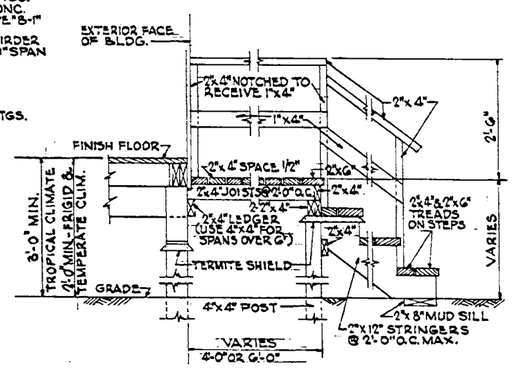
WOOD FLOOR TYPE-4
LL 40 LB./SQ.FT.
SCALE NO. 2



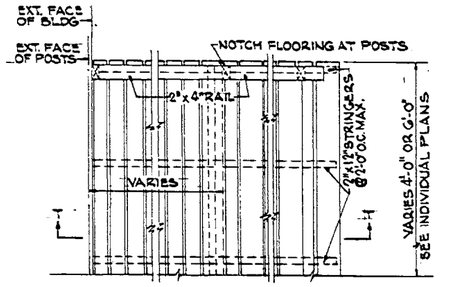
WOOD FLOOR TYPE-5
LL 100 LB/SQ FT
SCALE NO. 2



NOTE: USE DETAILS AS SHOWN FOR WOOD FLOOR TYPE-4 EXCEPT WHERE OTHERWISE SHOWN OR NOTED HEREON. ALTERNATE CONC. FTGS. "A-1" & "B-1" MAY BE SUBSTITUTED FOR "A" & "B" ABOVE.



SECTION T-T



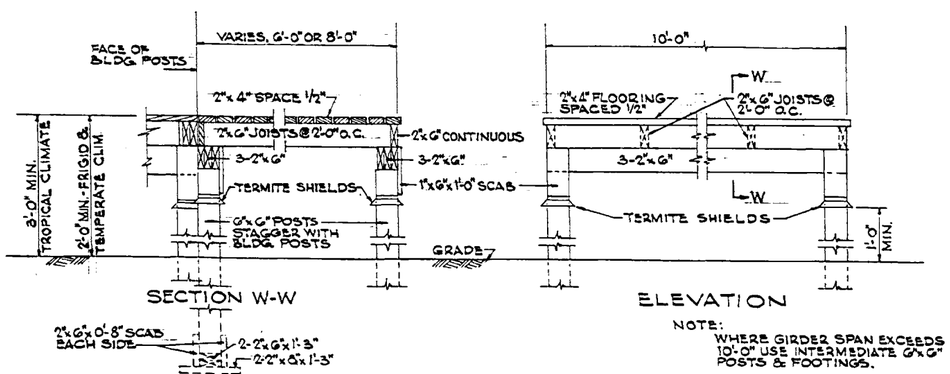
PLAN (STEPS AT FRONT)

WOOD PLATFORM & STEPS
SCALE NO. 5

WOOD FLOOR TYPE-3
WITH 2" CONC. FINISH FLOOR (SEE SH. 7)
LL 40 LB/SQ FT
SCALE NO. 1

WOOD FLOOR TYPE-6
WITH 2" CONC. FINISH FLOOR (SEE SH. 7)
LL 40 LB/SQ FT
SCALE NO. 1

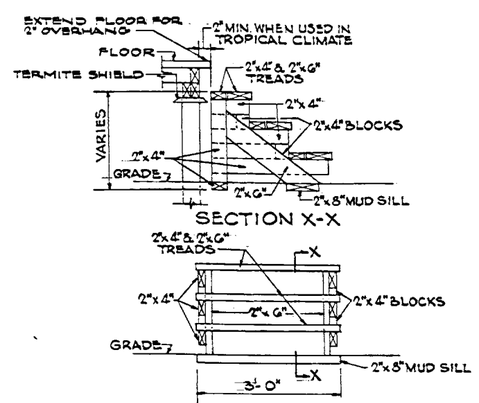
WOOD FLOOR FRAMING FOR 30'-0" WIDE BUILDINGS
(SEE SH. 7 FOR FLOOR SECTIONS)



SECTION W-W ELEVATION

NOTE:
WHERE GIRDER SPAN EXCEEDS 10'-0" USE INTERMEDIATE 6"x6" POSTS & FOOTINGS.

LOADING PLATFORM
LL 100 LB/SQ.FT.
SCALE NO. 5



SECTION X-X

ELEVATION

PORTABLE WOOD STEPS
SCALE NO. 5

NOTE:
5/8" EXTERIOR PLYWOOD, TYPE C-C OR C-C PLUGGED, MAY BE USED FOR FINISH FLOOR OR SUB-FLOOR.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1 — 0 5' 10' NO. 2 — 0 1' 2' 3' NO. 5

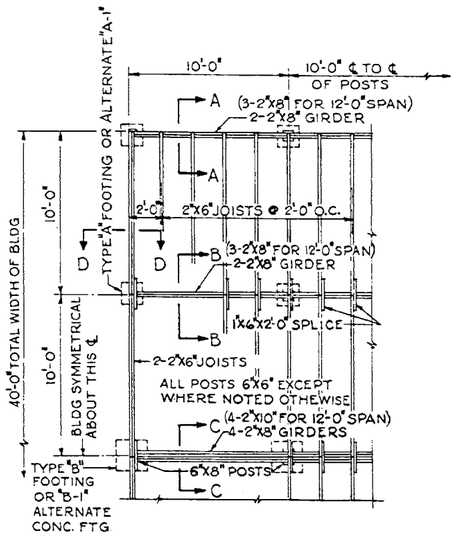
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DE ICHMANN
APPROVED: H. C. Wadsworth, CHIEF, J. [illegible] BRANCH
APPROVED: H. M. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959
APPROVED FOR PROPONENT AGENCY:
DATE:

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
BARRACKS TYPE BUILDING
8'-0" MIN. CLEARANCE
ALTERNATE WOOD FLOOR FRAMING
PLATFORMS & STEPS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-03
SHEET 5 OF 7

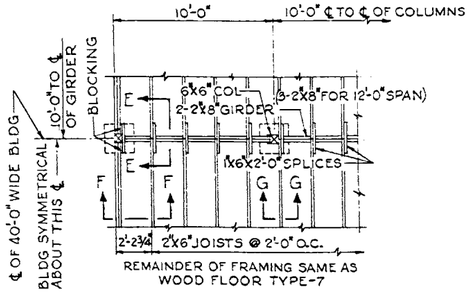


(FOR BUILDINGS WITH BEARING PARTITION ON ℄)

WOOD FLOOR TYPE-7

L L 40 LB/SQ FT

SCALE NO. 2

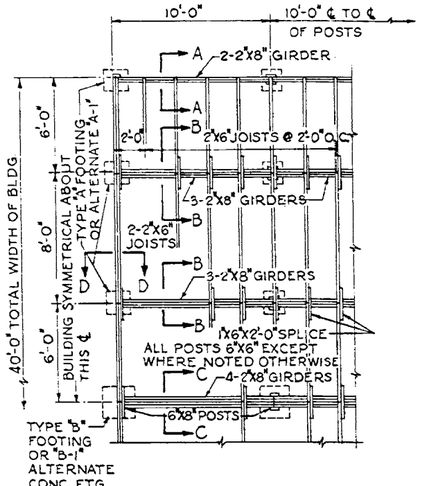


(FOR BUILDINGS WITH COLUMNS ON ℄)

WOOD FLOOR TYPE-8

L L 40 LB/SQ.FT.

SCALE NO. 2

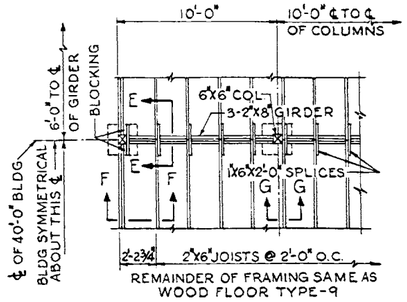


(FOR BUILDINGS WITH BEARING PARTITION ON ℄)

WOOD FLOOR TYPE-9

L L 100 LB/SQ.FT.

SCALE NO. 2

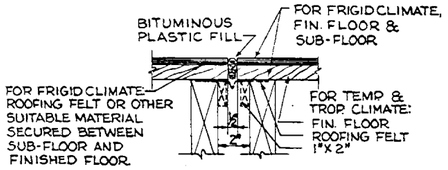


(FOR BUILDINGS WITH COLUMNS ON ℄)

WOOD FLOOR TYPE-10

L L 100 LB/SQ.FT.

SCALE NO. 2

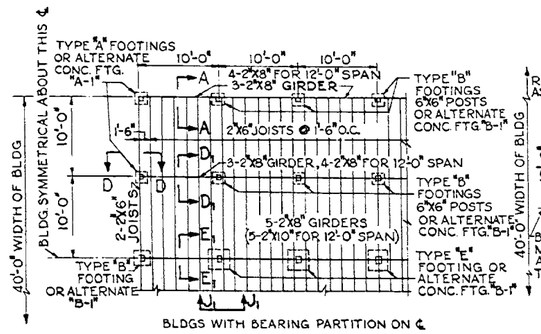


DETAIL A

SCALE NO. 8

FLOOR FRAMING PLANS FOR 40'-0" WIDE BUILDING

(SEE SH. 7 FOR FLOOR SECTIONS)



BLDGS WITH BEARING PARTITION ON ℄

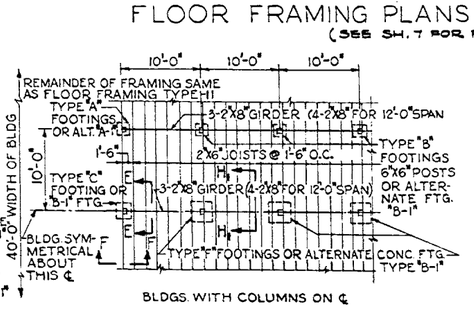
NOTE: USE DETAILS AS SHOWN FOR WOOD FLOOR TYPE-7 EXCEPT WHERE OTHERWISE SHOWN OR NOTED HEREON.

FLOOR FRAMING TYPE-11

WITH 2" CONC. FINISH FLOOR (SEE SH.7)

L L 40 LB/SQ.FT.

SCALE NO.1



BLDGS. WITH COLUMNS ON ℄

NOTE: USE DETAILS AS SHOWN FOR WOOD FLOOR TYPE-8 EXCEPT WHERE OTHERWISE SHOWN OR NOTED HEREON.

FLOOR FRAMING TYPE-12

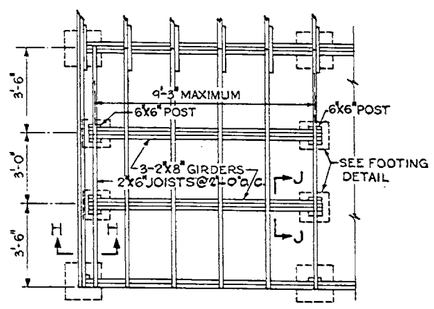
WITH 2" CONC. FINISH FLOOR (SEE SH.7)

L L 40 LB/SQ.FT.

SCALE NO.1

FLOOR FRAMING PLANS FOR 40'-0" WIDE BUILDING

(SEE SH. 7 FOR FLOOR SECTIONS)

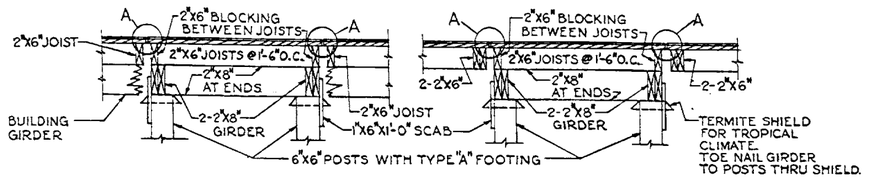


PLAN

SCALE NO. 3

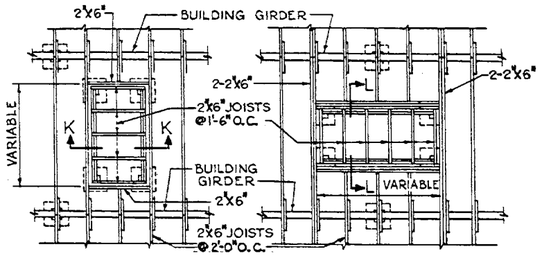
FLOOR REINFORCING DETAILS

(IN AREAS SUPPORTING HEATERS STORAGE TANKS OR OTHER HEAVY CONCENTRATED LOADS)



SECTION K-K SECTION L-L

SCALE NO.5



TYPICAL FLOOR FRAMING PLANS

SCALE NO. 2

METHOD OF FRAMING FLOOR FOR ISOLATING EQUIPMENT FROM BUILDING TO AVOID VIBRATION

NOTE.
5/8" EXTERIOR PLYWOOD, TYPE O-C OR C-C PLUGGED, MAY BE USED FOR FINISH FLOOR OR SUB-FLOOR.

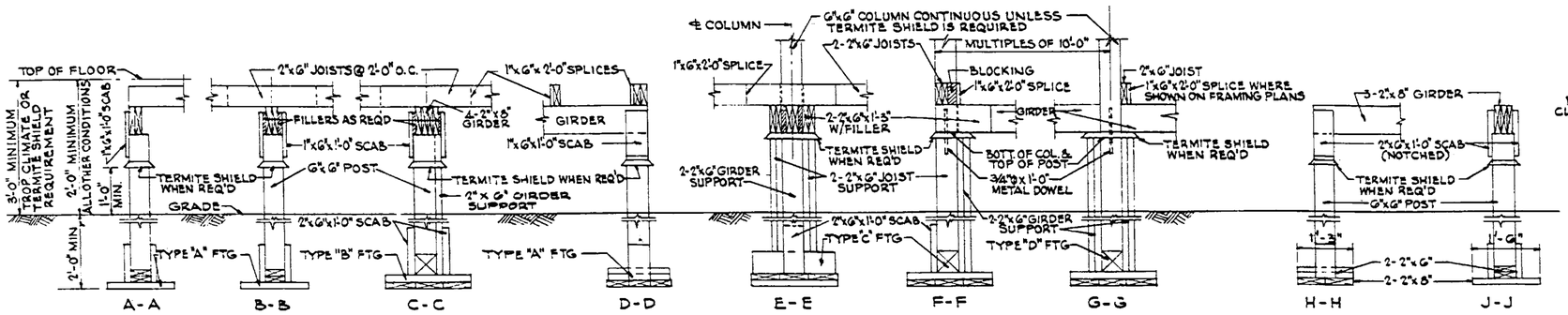
SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES — NO.1 · NO.2 · NO.3 · NO.5 · NO.8

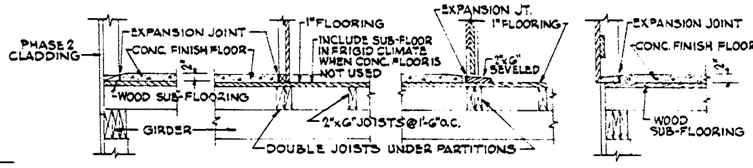
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON	THEATER OF OPERATIONS WOOD FRAME CONSTRUCTION BARRACKS TYPE BUILDING 8'-0" MIN. CLEARANCE ALTERNATE WOOD FLOOR FRAMING
TRACED BY:	
CHECKED BY: VASS	
SUBMITTED BY: C.W. DEICHMANN	
APPROVED: CHIEF, STRUCTURES BRANCH	APPROVED: H.M. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY. DATE	SCALE: AS NOTED; SPEC. NO.; DRAWING NUMBER: 34-03; SHEET 8 OF 7

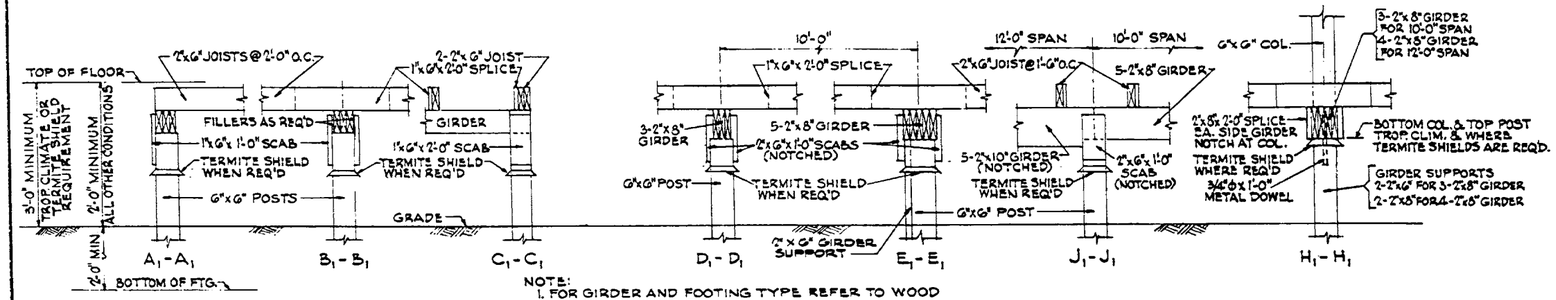


NOTE: PROVIDE CONSTRUCTION JOINTS IN 2" CONCRETE FINISH OVER ALL GIRDERS AND AT ABOUT 20'-0" CENTERS PARALLEL TO FLOOR JOISTS.



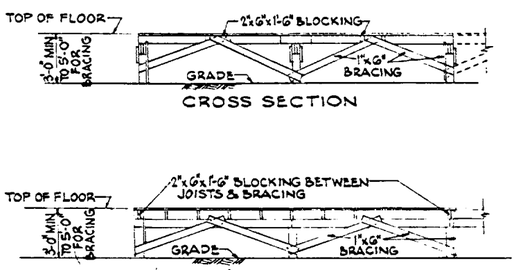
DETAIL AT EXTERIOR WALL | DETAIL AT PARTITION | DETAIL AT INTERIOR DOOR | DETAIL AT EXTERIOR DOOR

DETAILS OF CONCRETE FINISH FLOOR ON WOOD FRAMING
SCALE NO. 5



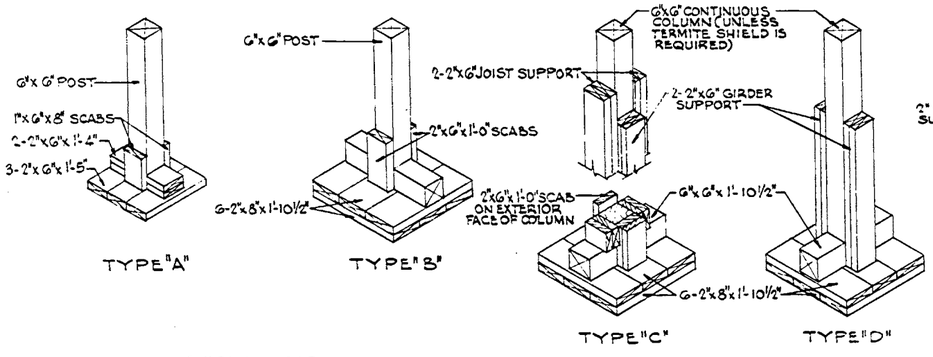
NOTE:
1. FOR GIRDER AND FOOTING TYPE REFER TO WOOD FLOOR FRAMING PLANS.
2. INSTALL TERMITE SHIELDS AND TREAT WOOD FOOTINGS & POSTS IN TERMITE AREAS.
3. WHEN TERMITE SHIELDS ARE USED, BUTT POST AND COLUMN. JOIN USING 3/4"Ø x 1'-0" METAL DOWEL. OTHERWISE COLUMNS WHERE INDICATED ARE CONTINUOUS FROM ROOF TO FOOTING.

WOOD FLOOR FRAMING DETAILS
SCALE NO. 5

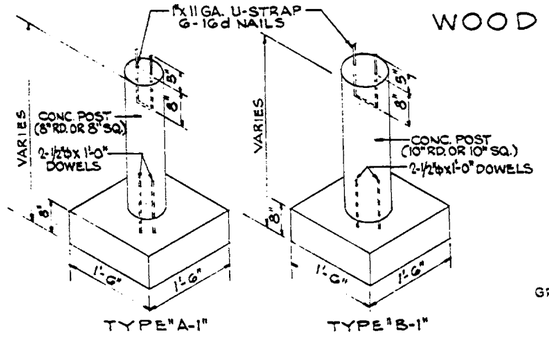


NOTE: BRACING REQUIRED WHEN FLOOR IS MORE THAN 3' ABOVE GRADE.

WOOD POST BRACING DETAILS
MAXIMUM DISTANCE BETWEEN BRACED PANELS = 20'-0"
SCALE NO. 2

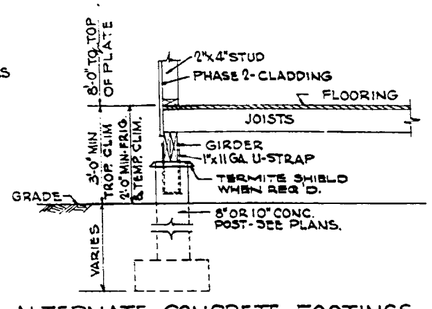


WOOD FOOTING DETAILS
NO SCALE

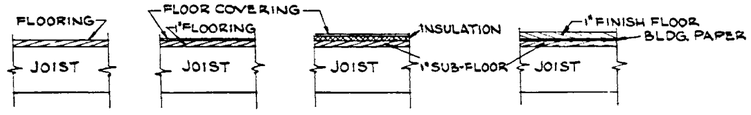


ALTERNATE CONCRETE FOOTINGS
NO SCALE

NOTE: USE TERMITE SHIELDS AT TOP OF CONC. POSTS IN AREAS WHERE REQUIRED.



ALTERNATE CONCRETE FOOTINGS
ALL WOOD FLOOR TYPES
SCALE NO. 5



TYPICAL CROSS SECTIONS FOR VARIOUS WOOD FLOOR COMBINATIONS
NO SCALE

NOTE:
5/8" EXTERIOR PLYWOOD, TYPE C-C OR C-C PLUGGED, MAY BE USED FOR FINISH FLOOR OR SUB-FLOOR.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' (NO. 2) — 0 1' 2' 3' (NO. 5)

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA

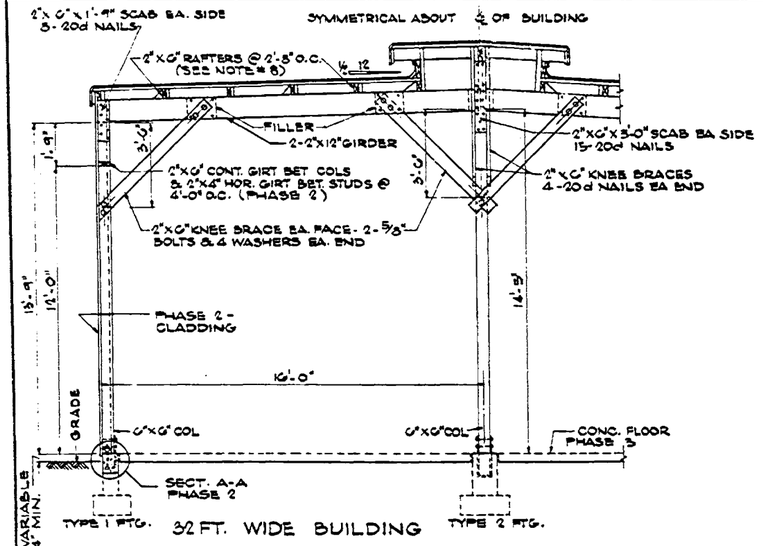
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

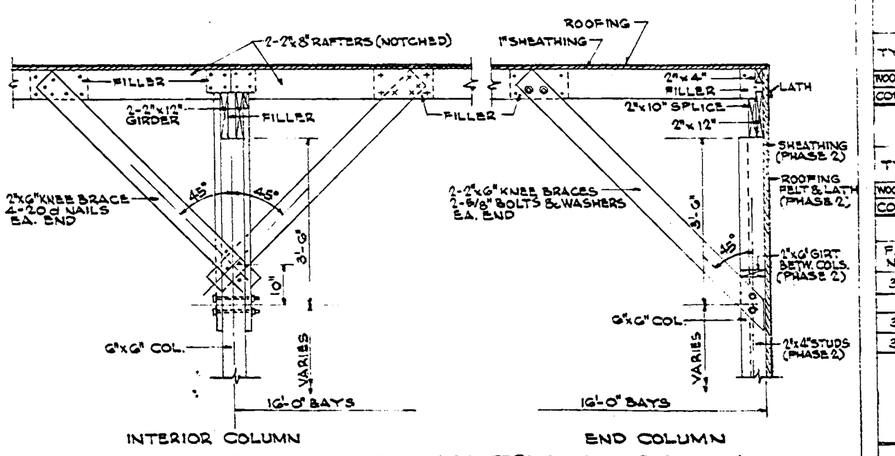
DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED:
CHIEF, DRAFTING BRANCH

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
BARRACKS TYPE BUILDING
8'-0" MIN. CLEARANCE
ALTERNATE FOOTING DETAILS
MISCELLANEOUS WOOD FLOOR DETAILS

APPROVED: H. M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19

APPROVED FOR PROPONENT AGENCY:
DATE
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-03
SHEET 7 OF 7





LONGITUDINAL SECTION AT INTERMEDIATE COLUMN LINES
SCALE NO. 5

FACILITY NUMBERS
WAREHOUSE TYPE BASIC BLDGS. — 13'-9" MINIMUM CLEARANCE
PHASE 1 - FRAME, ROOF & CONCRETE FOUNDATION

TYPE OF ROOF	BASIC BUILDINGS 32'W x 32'L	48'W x 32'L	64'W x 32'L	80'W x 32'L	96'W x 32'L
WOOD & FELT (TEMP)	340401	340411	340421	340431	340441
CORR. MET. (TROP)	340402	340412	340422	340432	340442

ADDITIONAL BAYS FOR WAREHOUSE TYPE BLDGS. - 13'-9" MIN. CLEAR. PHASE 1 - FRAME, ROOF & CONCRETE FOUNDATION

TYPE OF ROOF	BUILDING WIDTHS FOR 16' BAY 32'	48'	64'	80'	96'
WOOD & FELT (TEMP)	340403	340413	340423	340433	340443
CORR. MET. (TROP)	340404	340414	340424	340434	340444

PHASE 2 - CLADDING 15'-3" x 100' UNIT

FACILITY NUMBER	DESCRIPTION
340461	WOOD & FELT W/WINDOWS & DOORS - TEMPERATE CLIMATE
340463	CORRUGATED STEEL W/WINDOWS & DOORS - ALL CLIMATES
340464	CORRUGATED STEEL W/SCREENED VENTS & DOORS - TROPICAL CLIMATE

NOTE - PHASE 2 CLADDING UNIT INCLUDES SUFFICIENT MATERIAL TO CONSTRUCT CONCRETE PERIMETER WALL, STUDDING, WALL COVERING, 4 WINDOWS AND 2 HINGED DOORS. SLIDING DOORS ARE SEPARATE FACILITIES AND NOT INCLUDED IN CLADDING UNIT.

FACILITY NUMBERS
SLIDING DOORS

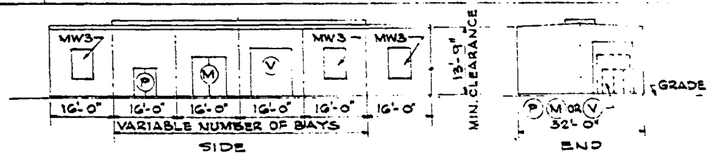
FACILITY NUMBER	DESCRIPTION
341801	SLIDING DOOR IN PAIR, 10'-4"x12'-0" OPENING W/DOUBLE TRACK
341802	SLIDING DOOR, ONE PANEL, 10'-4" OR 12'-4"x12'-0" OPG. W/SINGLE TRACK

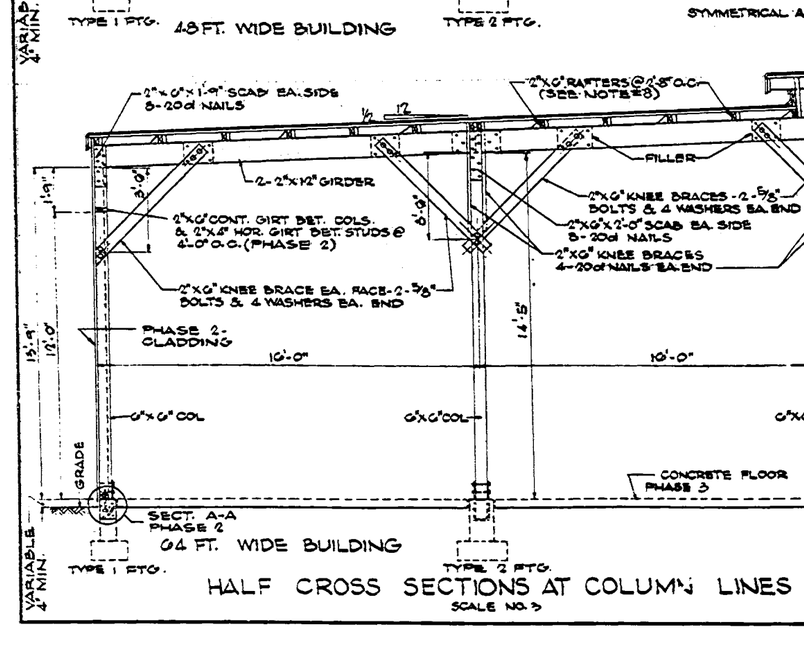
FACILITY NUMBERS
PHASE 3 FLOOR 1000 SF UNIT

FACILITY NUMBER	DESCRIPTION
340372	CONCRETE, 4" THICK, WITHOUT REINFORCEMENT
340373	CONCRETE, 6" THICK, WITH 6"x6" WIRE MESH

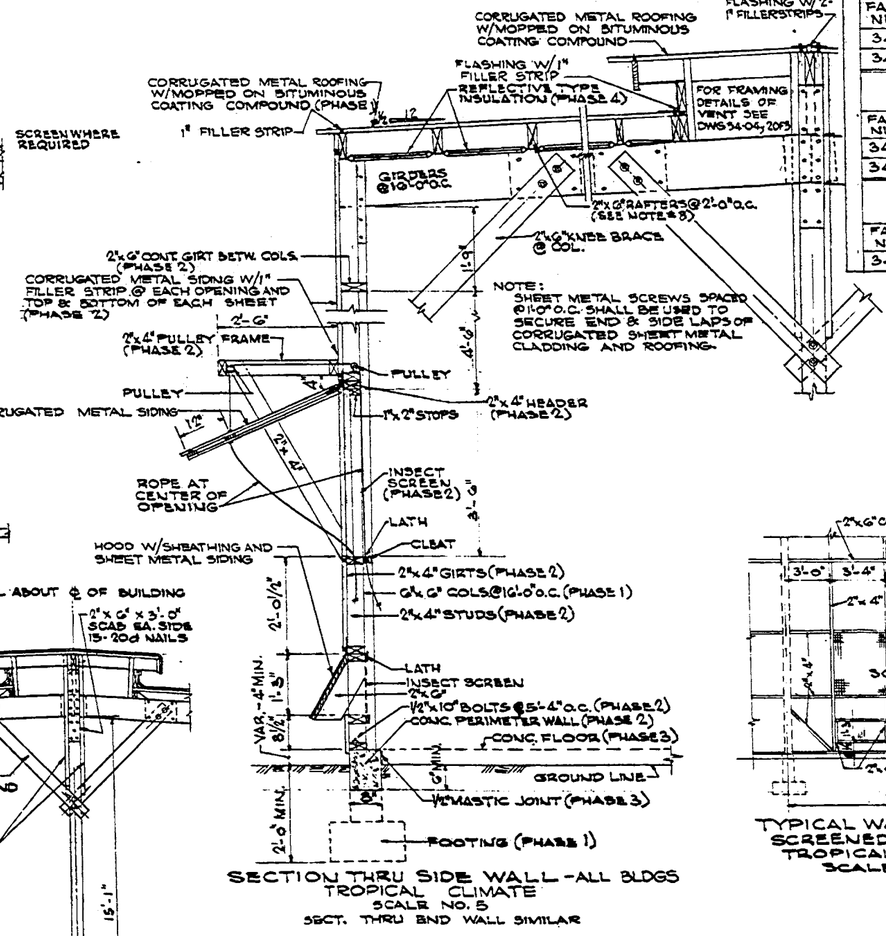
FACILITY NUMBERS
PHASE 4 - INTERIOR LINER 1000 SF UNIT

FACILITY NUMBER	DESCRIPTION
340492	REFLECTIVE TYPE INSULATION IN CEILING FOR TROPICAL CLIMATE

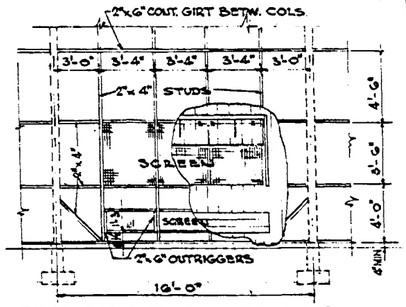




HALF CROSS SECTIONS AT COLUMN LINES
SCALE NO. 5

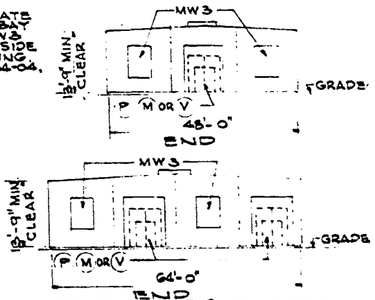


SECTION THRU SIDE WALL - ALL BLDGS
TROPICAL CLIMATE
SCALE NO. 5
SECT. THRU END WALL SIMILAR



TYPICAL WALL FRAMING
SCREENED VENT BAY
TROPICAL CLIMATE
SCALE NO. 2

NOTE
IN TROPICAL CLIMATE SCREENED VENT BAY MAY REPLACE MW3 WINDOW BAY ON SIDE OR END OF BUILDING. DETAILS ON DWG 34-04, SHEET 1 OF 3.



TYPICAL ELEVATIONS - PHASE 2 CLADDING
TEMPERATE CLIMATE
NO SCALE

GENERAL NOTES

1. REINFORCEMENT SHALL BE USED IN CONCRETE PIERS WHEN THE HEIGHT EXCEEDS SIX TIMES THE LEAST DIMENSION.
2. SOIL BEARING PRESSURE IS ASSUMED TO BE 3000 #/FT². ALL FOOTINGS SHOULD EXTEND BELOW FROST LINE.
3. WHERE CONDITIONS WARRANT, GRAVEL FILL MAY BE USED UNDER CONCRETE FLOORS.
4. PLACE (ON GRADE) CONCRETE SLABS IN ALTERNATE SECTIONS NOT TO EXCEED 800 SQ. FT. IN AREA.
5. FOR ROOF SUPPORTING PIPE LOADS REFER TO DWG 34-04 SH. 3 OF 3.
6. TO PREVENT SPLITTING, STAGGER AND DRIVE NAILS FROM BOTH SIDES WHEN ACCESSIBLE.
7. PHASE 1 - FRAME, ROOF & FOUNDATION INCLUDES ONLY THE ROOF, COLUMNS WITH FOOTINGS, & THE KNEE BRACES & MAY BE UTILIZED AS AN OPEN SHED WAREHOUSE.
8. WHERE REFLECTIVE INSULATION IS USED IN CEILING ROOF RAFTER SPACING IS REDUCED TO 2'-0" O.C.
9. FOR "SUBSTITUTE" OR MATERIAL "EQUAL TO" TM 5-302 BY FACILITY NUMBER.
10. 3/8" EXTERIOR PLYWOOD TYPE CC OR C-C PLUGGED, MAY BE USED FOR ROOF AND WALL SHEATHING. PLY CLIPS AND 6d NAILS SHOULD BE USED.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
34-04	ELEVATIONS - SECTIONS SCHEDULE - 32, 48 & 64 FT. WIDTHS	1 OF 3
34-04	ELEV - SECT - 80, 96, 112, 128 & 144' WIDTHS - GEN. DTLS.	2 OF 3
34-04	FRAMING, SECTIONS & DETAILS	3 OF 3
34-18	WINDOWS & DOOR DETAILS	1, 2 OF 2

REVISIONS

SYMBOL	DESCRIPTION	DATE	APPROVAL

GRAPHIC SCALES
NO. 2: 0, 5', 8'
NO. 3: 0, 1', 2', 3', 4', 5'
NO. 5: 0, 1', 2', 3'

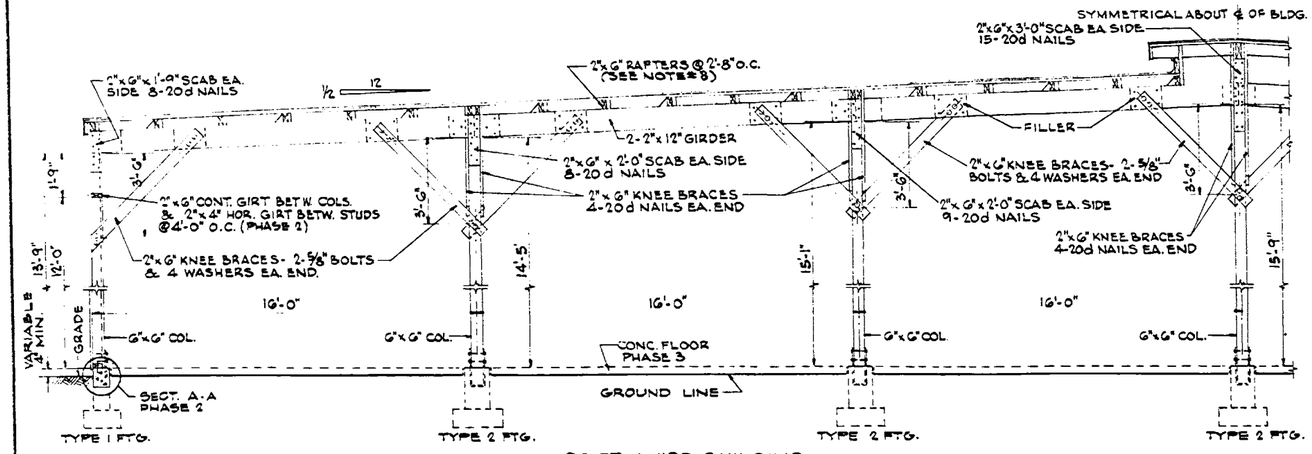
MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED: A. Eddleman — Chief, Standardization
APPROVED: A. M. Williams — Chief, Engineering Division, Mil. Constr., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE: 1944

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
WAREHOUSE TYPE BUILDING
13'-9" MIN. CLEARANCE
SCHEDULE OF FACILITIES
ELEVATIONS & SECTIONS
32', 48' & 64' WIDTHS

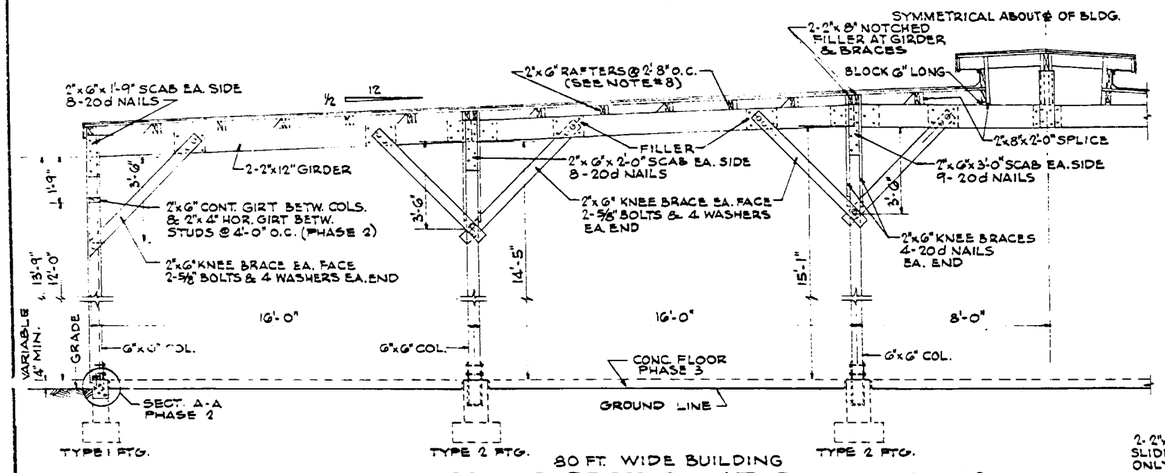
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-04
DATE
SHEET 1 OF 3



96 FT. WIDE BUILDING

HALF CROSS SECTION AT COLUMN LINES

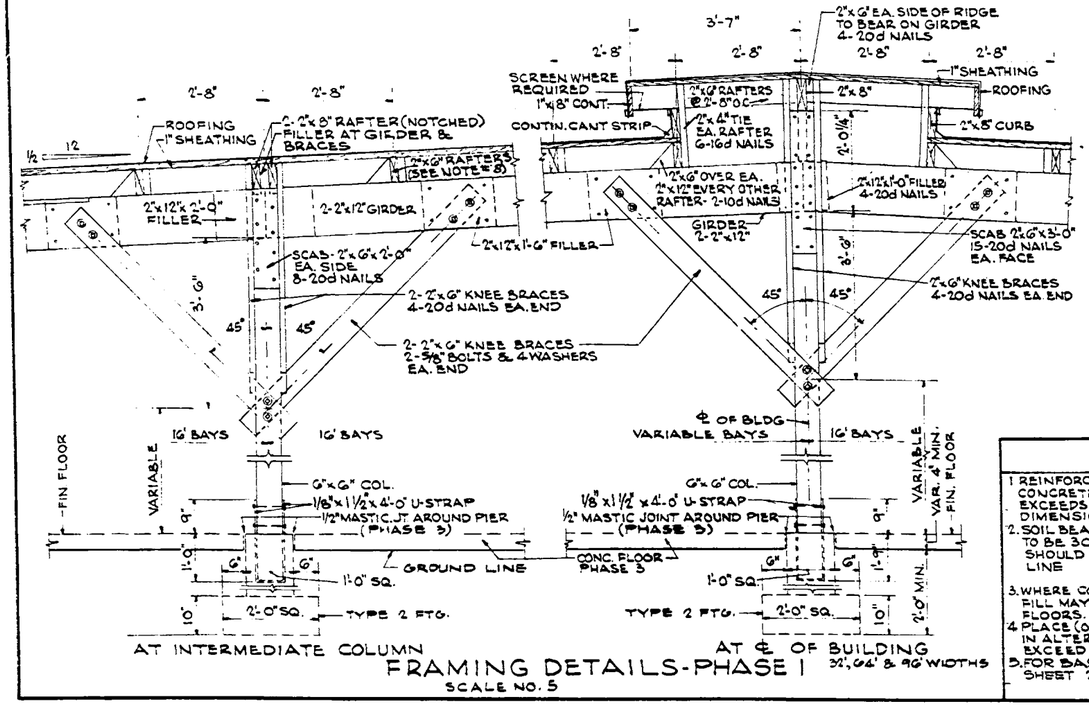
SCALE NO. 3



80 FT. WIDE BUILDING

HALF CROSS SECTION AT COLUMN LINES

SCALE NO. 3

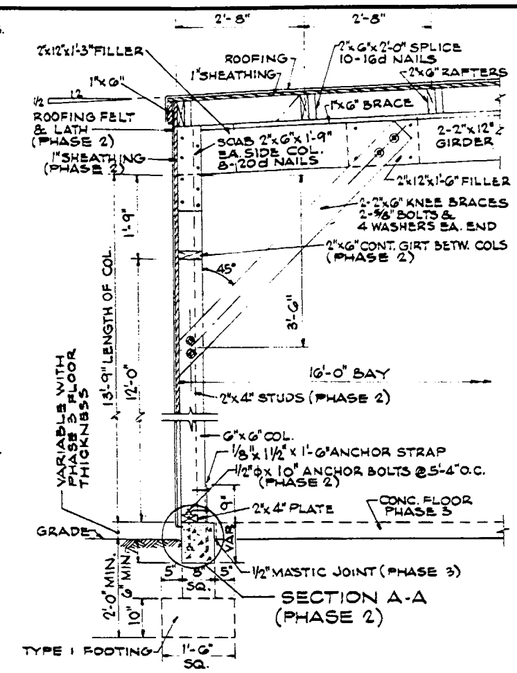


AT INTERMEDIATE COLUMN AT ℄ OF BUILDING

FRAMING DETAILS-PHASE 1

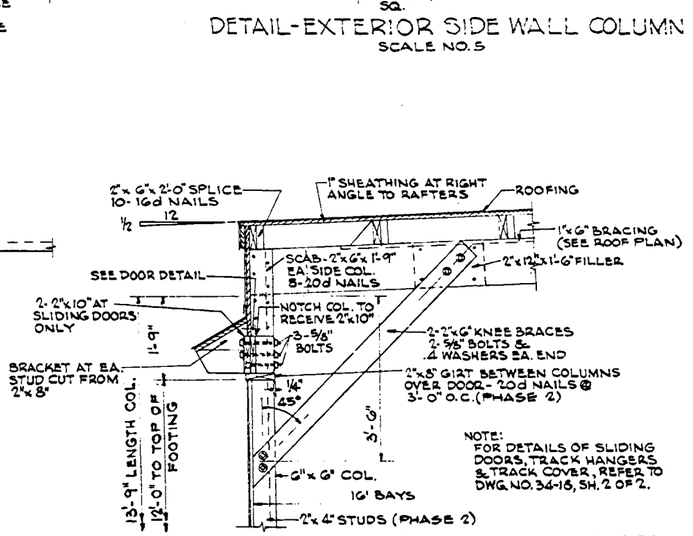
32', 64' & 96' WIDTHS

SCALE NO. 5



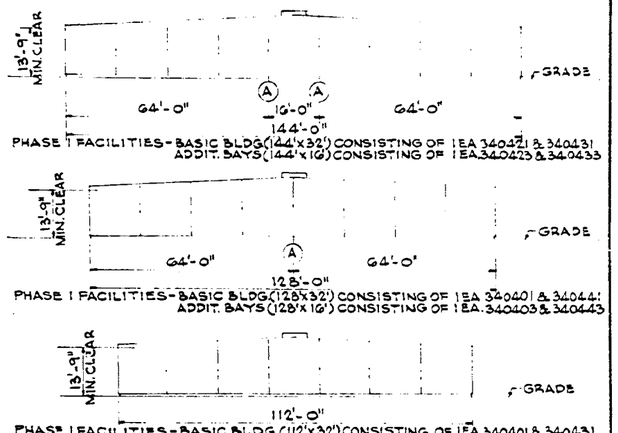
DETAIL-EXTERIOR SIDE WALL COLUMN

SCALE NO. 5



SECTION AT EXTERIOR WALL THRU SLIDING DOOR OPG.

SCALE NO. 5

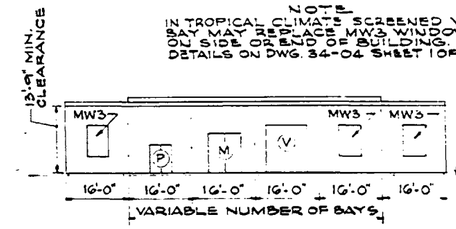


TYPICAL 112', 128' & 144' END ELEVATIONS

NO SCALE

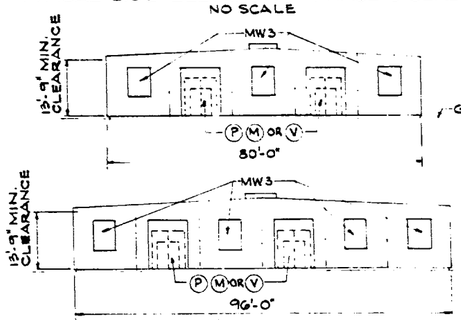
NOTE - SUFFICIENT MATERIALS FOR THE ABOVE WIDTHS ARE FURNISHED BY COMBINING THE PHASE 1 FACILITIES AS INDICATED. COLUMN PIER FOOTINGS AT Ⓐ LOCATIONS TO BE 8 INCHES ABOVE FINISHED FLOOR. WINDOW OR DOOR OPENINGS ARE PLACED AS REQUIRED IN PHASE 2 - CLADDING.

NOTE
IN TROPICAL CLIMATE SCREENED VENT BAY MAY BE PLACE MW3 WINDOW BAY ON SIDE OR END OF BUILDING. DETAILS ON DWG. 34-04 SHEET 1 OF 3



TYPICAL SIDE ELEVATION - PHASE 2 CLADDING

NO SCALE



TYPICAL END ELEVATIONS - PHASE 2 CLADDING

NO SCALE

NAILING SCHEDULE

MINIMUM SIZE & NUMBER - UNLESS OTHERWISE NOTED FOR STANDARD COMMON NAILS ONLY	
DESCRIPTION	NUMBER & SIZE
BUILT-UP MEMBERS, PIECES IN CONTACT - EACH LAYER	16d @ 12" O.C. STAGGER
SHEATHING TO STUDS, RAFTER, GIRT, PLATE, BLOCKING, ETC.	6" BOARD = 2-8d OVER 6" = 3-8d
1"x6" DIAGONAL BRACING TO STUD, GIRT, RAFTER, BLOCKING, ETC.	3-8d
RAFTER TO GIRDER, GIRT TO POST, STUD TO SILL - TOE NAIL EACH SIDE	2-10d
GIRT, SPACER, BLOCKING - EACH END	2-10d
WOOD MEMBERS TO SIDE OF STUD	4-16d

NOTE: 1. USE SHEET METAL SCREWS TO SECURE LAPS OF CORRUGATED ROOFING AND SIDING.
2. NAILS ON OPPOSITE SIDE OF A TIMBER SHALL BE STAGGERED TO PREVENT SPLIT.
MINIMUM SPACING ℄ TO ℄ = 1/2 NAIL LENGTH.
MINIMUM SPACING FROM EDGE = 1/4 NAIL LENGTH.

GENERAL NOTES

1. REINFORCEMENT SHALL BE USED IN CONCRETE PIERS WHEN THE HEIGHT EXCEEDS SIX TIMES THE LEAST DIMENSION.
2. SOIL BEARING PRESSURE IS ASSUMED TO BE 3000#/FT². ALL FOOTINGS SHOULD EXTEND BELOW FROST LINE
3. WHERE CONDITIONS WARRANT, GRAVEL FILL MAY BE USED UNDER CONCRETE FLOORS.
4. PLACE (ON GRADE) CONCRETE SLABS IN ALTERNATE SECTIONS NOT TO EXCEED 800 SQ. FT. IN AREA.
5. FOR BASIS OF DESIGN SEE DWG. 34-19 SHEET 2.
6. TO PREVENT SPLITTING, STAGGER AND DRIVE NAILS FROM BOTH SIDES WHEN ACCESSIBLE.
7. PHASE 1 - FRAME, ROOF & FOUNDATION INCLUDES ONLY THE ROOF, COLUMNS WITH FOOTINGS & THE KNEE BRACES & MAY BE UTILIZED AS AN OPEN SHED WAREHOUSE.
8. WHERE REFLECTIVE INSULATION IS USED IN CEILING ROOF RAFTER SPACING IS REDUCED TO 24.0" O.C.
9. CORRUGATED METAL ROOFING IS NOT RECOMMENDED FOR ROOFS WITH LESS THAN 4 IN 12 PITCH. IF CORRUGATED METAL IS USED FOR ROOFING A BITUMINOUS COATING COMPOUND SHALL BE MOPPED ON AFTER ROOF IS IN PLACE.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
34-04	ELEVATIONS - SECTIONS - 80', 96', 112', 128' & 144' WIDE GENERAL DETAILS	2 OF 3
34-04	ELEVATIONS - SECTIONS - SCHEDULE - 32', 48' & 64' WIDTHS	1 OF 3
34-04	FRAMING, SECTIONS & DETAILS	3 OF 3
34-18	WINDOW & DOOR DETAILS	1, 2 OF 2

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 1' 2' 3' 4' 5' NO. 3
0 1' 2' 3' NO. 5

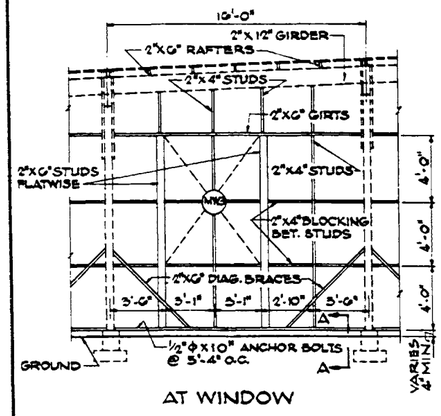
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

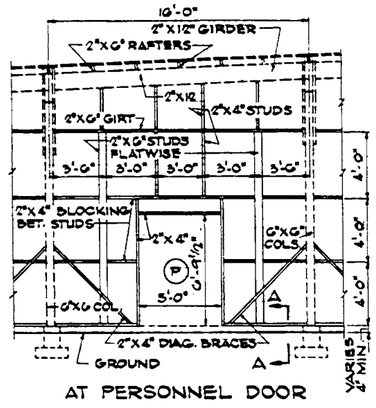
DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C. W. DE ICHMANN
APPROVED: [signature] CHIEF, ARCHITECTURAL BRANCH
APPROVED: H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 10
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
WAREHOUSE TYPE BUILDING
13'-9" MIN. CLEARANCE
GENERAL DETAILS
ELEVATIONS & SECTIONS
80', 96', 112', 128' & 144' WIDTHS

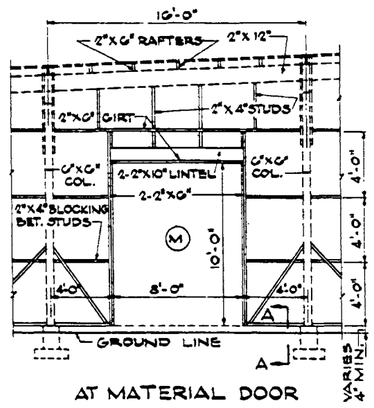
SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER: 34-04
SHEET 2 OF 3



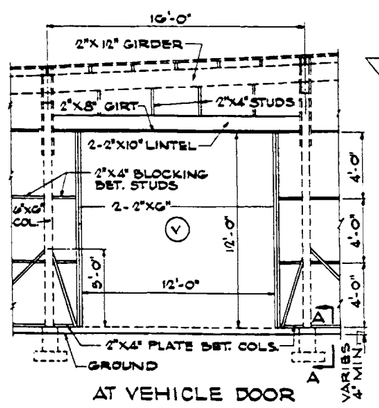
AT WINDOW



AT PERSONNEL DOOR



AT MATERIAL DOOR

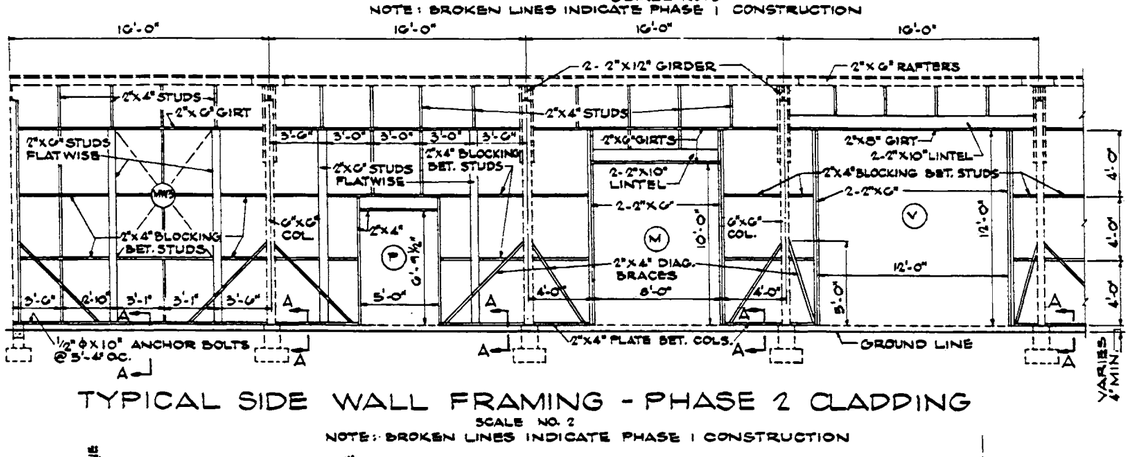


AT VEHICLE DOOR

TYPICAL END WALL FRAMING - PHASE 2 CLADDING

SCALE NO. 2

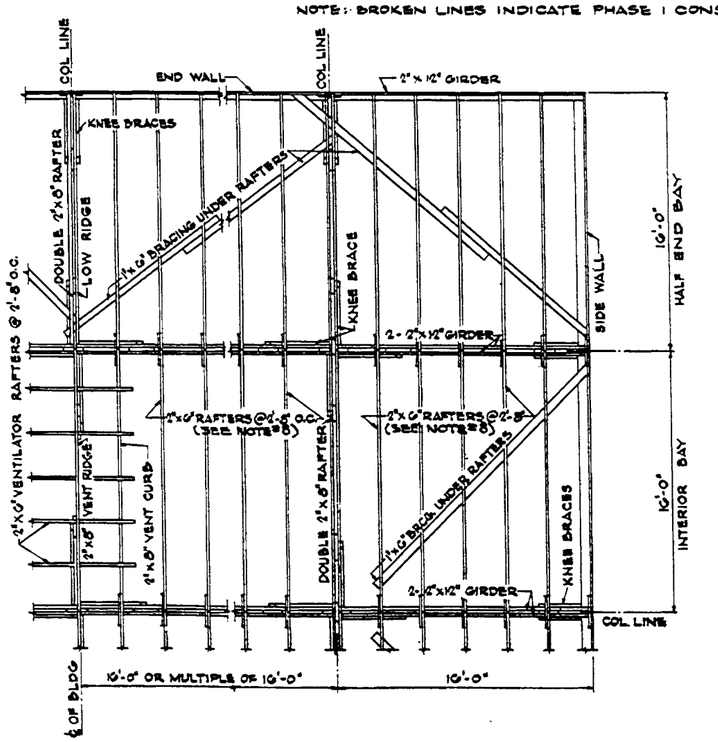
NOTE: BROKEN LINES INDICATE PHASE 1 CONSTRUCTION

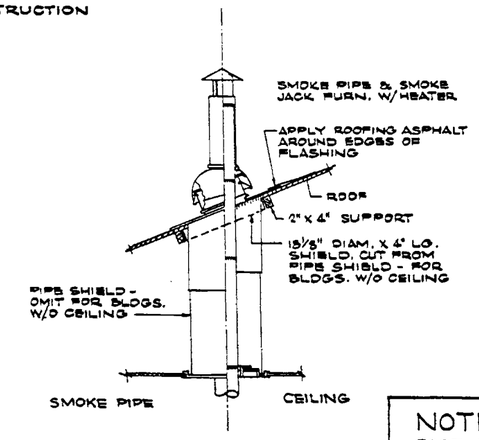


TYPICAL SIDE WALL FRAMING - PHASE 2 CLADDING

SCALE NO. 2

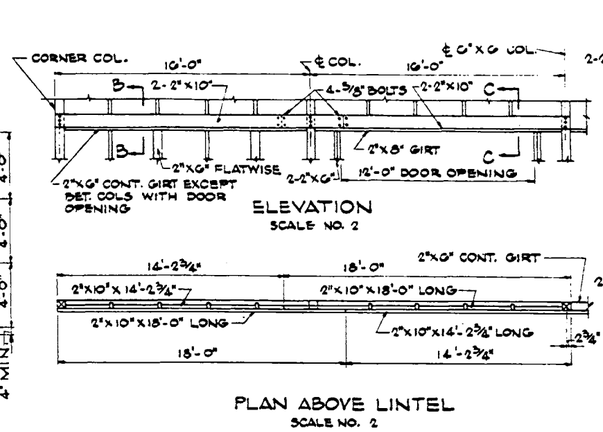
NOTE: BROKEN LINES INDICATE PHASE 1 CONSTRUCTION





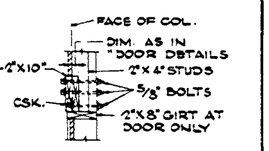
SMOKE JACK ASSEMBLY FOR BLDGS, W/CEILING

NOT TO SCALE



ELEVATION

SCALE NO. 2

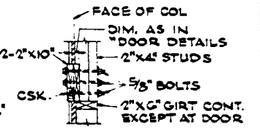


SECTION C-C

SCALE NO. 5

PLAN ABOVE LINTEL

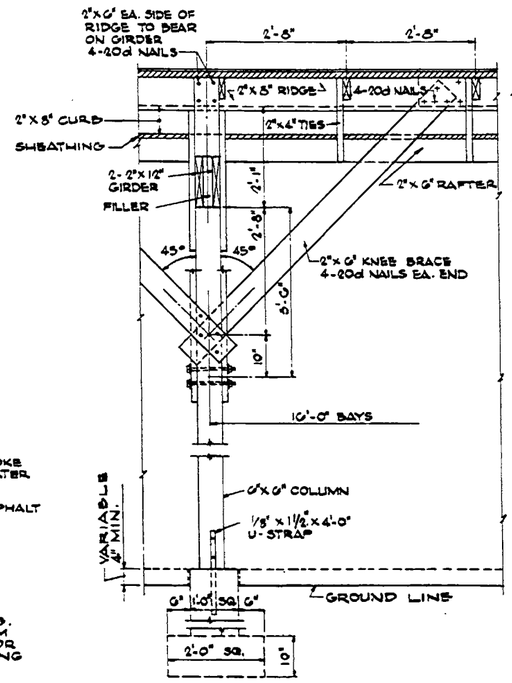
SCALE NO. 2

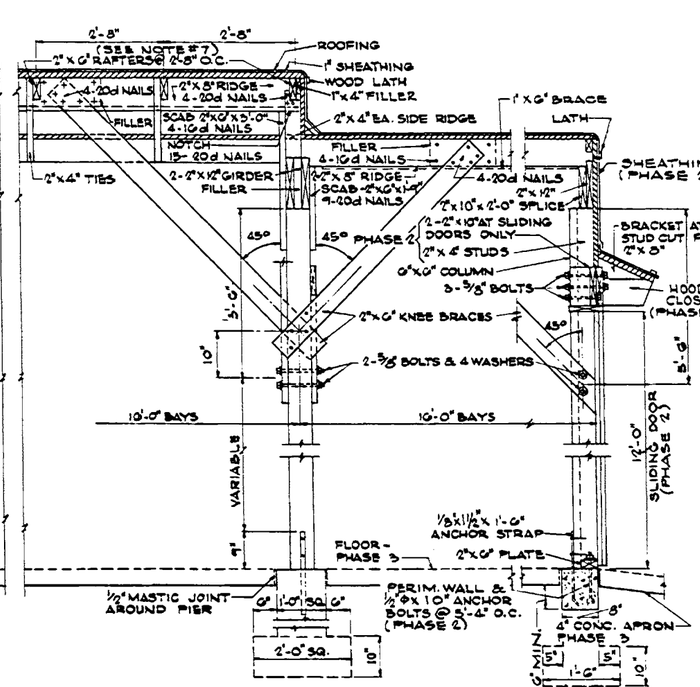


SECTION B-B

SCALE NO. 5

DOOR LINTEL AND TRACK SUPPORT DETAILS FOR PHASE 2 CLADDING





LONGITUDINAL SECTION AT ℄ OF 32', 64', 96' & 128' WIDTH BUILDINGS

PHASE 1 EXCEPT AS INDICATED

SCALE NO. 5

NOTE:

ROOF SYSTEM SUPPORTING PIPE LOADS

WAREHOUSE TYPE-WOOD FRAME BLDGS

TEMPERATE CLIMATE

1. PIPE AT RIGHT ANGLE (90°) TO PURLINS.
   (a) COMBINATION WEIGHT OF PIPE 80-114 LB/LF 2"x8" PURLINS @ 2'-0" O.C. WITH DOUBLE 2"x8" @ 4'-0" AND PIPE HUNG THERE FROM IN ONE POSITION.
   (b) COMBINATION WEIGHT OF PIPE LESS THAN 75 LB/LF 2"x8" PURLINS @ 2'-0" OC. AND PIPE HUNG AT 4'-0" OC. IN ONE POSITION.
2. PIPE PARALLEL TO PURLINS.
   (a) COMBINATION WEIGHT OF PIPE 70 LBS OR LESS/LF. 2"x8" PURLINS @ 2'-0" OC. AND PIPE HUNG @ 8'-0" O.C. FROM ANY ADJOINING PAIR.
3. GIRDERS IN AREAS OF ROOF SUPPORTING PIPE TO BE 2-3"x12".

TROPICAL CLIMATE

1. PIPE AT RIGHT ANGLE (90°) TO PURLINS.
   (a) COMBINATION WEIGHT OF PIPE 114 LBS OR LESS/LF. 2"x8" PURLINS @ 2'0 OC. AND PIPE HUNG @ 4'-0" OC. IN ONE POSITION.
2. PIPE PARALLEL TO PURLINS.
   (a) COMINATION WEIGHT OF PIPE 70 LB OR LESS/LF. 2"x8" PURLINS @ 2'0" O.C. AND PIPE HUNG @ 8'-0" OC. FROM ANY ADJOINING PAIR.
3. GIRDERS TO BE 2-2"x12" THRUOUT.

PIPE DATA

NOM PIPE SIZE	REC. MAX. SPAN	STD. PIPE LB/LF	WATER IN PIPE LB/LF	PIPE & WATER LB/LF
3/4"	7'	1.13	.23	1.36
1	7'	1.68	.37	2.05
1 1/4"	8'	2.27	.65	2.92
1 1/2"	9'	2.72	.88	3.60
2"	10'	3.65	1.45	5.10
4"	14'	10.79	5.52	16.31
6"	17'	18.97	12.52	31.49
8"	19'	24.70	21.64	46.34

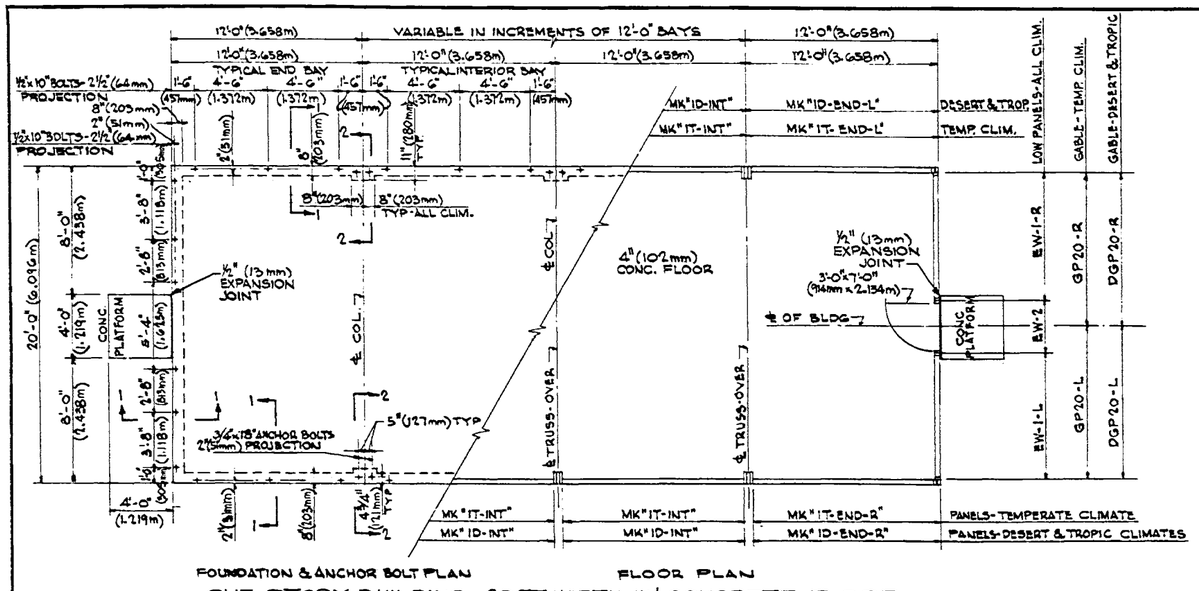
SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' (NO. 2); 0 1' 2' 3' (NO. 5)

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

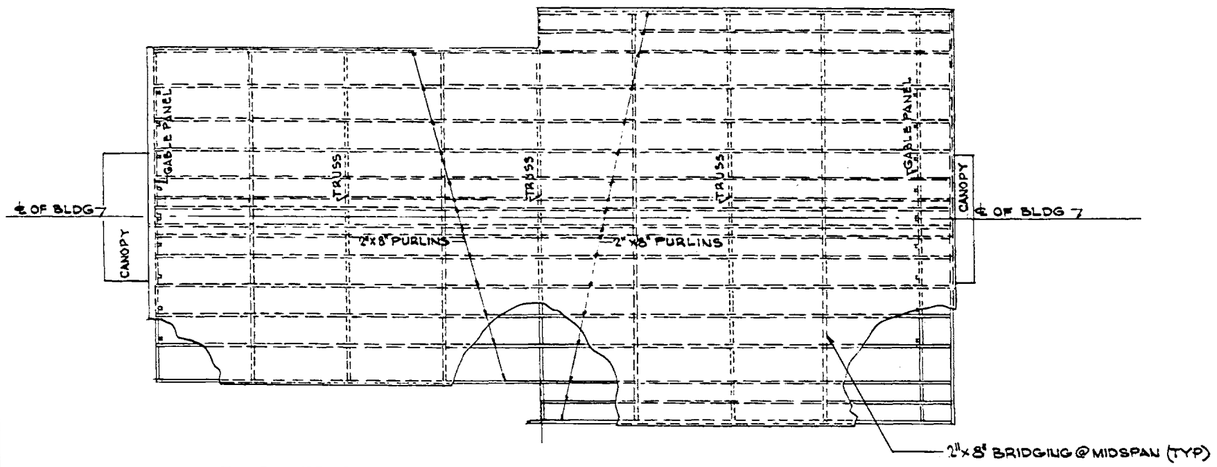
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON	THEATER OF OPERATIONS
TRACED BY:	WOOD FRAME CONSTRUCTION
CHECKED BY: WADE	WAREHOUSE TYPE BUILDING
SUBMITTED BY: C. E. DEICHMANN	13'-9" MIN. CLEARANCE
APPROVED:	FRAMING. SECTIONS & DETAILS
APPROVED: DATE: 19 MAR 1953	
CHIEF, STRUC. ENGR. BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.	
APPROVED FOR PROPONENT AGENCY:	SCALE: AS NOTED SPEC. NO.
DATE	DRAWING NUMBER: SHEET 3 OF 3 — 39-04



FOUNDATION & ANCHOR BOLT PLAN — FLOOR PLAN

ONE STORY BUILDING-20FT WIDTH W/ CONCRETE FLOOR
SCALE NO. 2



TEMPERATE CLIMATE — DESERT & TROPIC CLIMATES

ROOF PLAN
SCALE NO. 2

BASIS OF DESIGN
GENERAL PURPOSE BUILDINGS

LOADINGS
- WIND - 70 MPH
- SNOW- 20 PSF HORIZONTAL PROJECTION
- FLOOR LIVE LOAD
  - 50 PSF-1ST FLOOR ALL BUILDINGS & 2ND FLOOR 30FT.
  - 40 PSF-2ND FLOOR 20FT. WIDE BUILDINGS.

MINIMUM BEARING CAPACITY OF SOIL — 3000 PSF

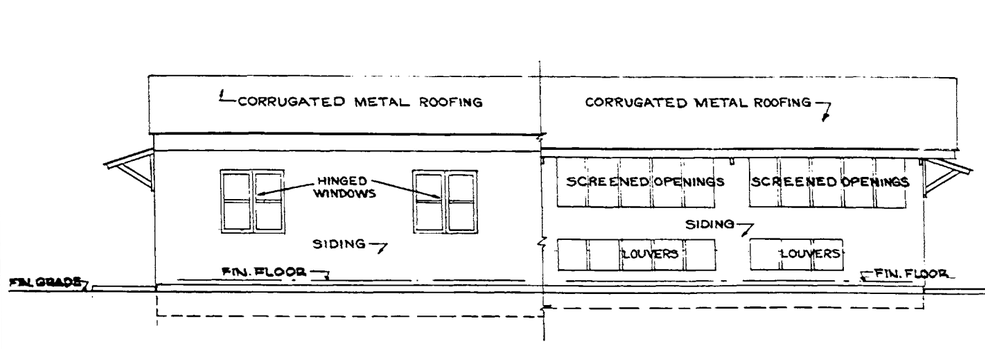
ALLOWABLE UNIT STRESSES
- LUMBER
  - EXTREME FIBER-BENDING & TENSION PARALLEL TO GRAIN - 1200 PSI
  - HORIZONTAL SHEAR - 105 PSI
  - COMPRESSION PARALLEL TO GRAIN - 900 PSI
  - COMPRESSION PERPENDICULAR TO GRAIN - 390 PSI
  - MODULUS OF ELASTICITY - 1,760,000 PSI
- CONCRETE
  - COMPRESSIVE STRENGTH AT 28DAYS - 2500 PSI
  - UNIT SHEAR - 100 PSI
  - MAXIMUM BENDING - 100 PSI
  - BEARING - 800 PSI

SCHEDULE OF DRAWINGS
GENERAL PURPOSE BUILDINGS

DRAWING NO. 34-05 SHEET NO.	DESCRIPTION
1	20FT WIDE-ONE STORY W/CONC FLOOR-PLANS & ELEVATIONS
2	20FT WIDE-TWO STORY W/CONC 1ST FLOOR-PLANS & ELEVATIONS
3	30FT WIDE-ONE STORY W/CONC FLOOR-PLANS & ELEVATIONS
4	30FT WIDE-TWO STORY W/CONC 1ST FLOOR-PLANS & ELEVATIONS
5	20FT WIDE-ONE STORY W/WOOD FLOOR-PLANS & ELEVATIONS
6	20FT WIDE-TWO STORY W/WOOD FLOOR-PLANS & ELEVATIONS
7	30FT WIDE-ONE STORY W/WOOD FLOOR-PLANS & ELEVATIONS
8	30FT WIDE-TWO STORY W/WOOD FLOOR-PLANS & ELEVATIONS
9	STAIR DETAILS, FOUNDATION & GIRDER FRAMING DETAILS
10	STAIR DETAILS, FOUNDATION & GIRDER FRAMING DETAILS
11	TRUSS DETAILS, 20FT & 30FT SPANS-TRUSS COLUMNS
12	SIDEWALL PANEL DETAILS
13	ENDWALL PANEL DETAILS
14	TYPICAL SIDEWALL SECTIONS & DETAILS
15	TYPICAL ENDWALL SECTIONS, LINER & WINDOW DETAILS

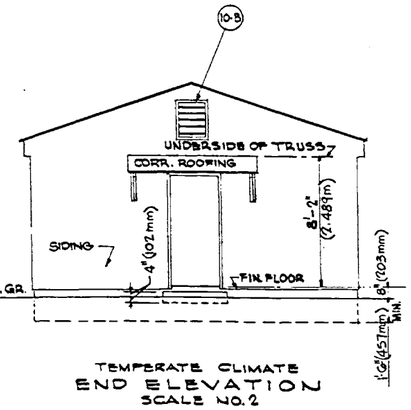
SCHEDULE OF FACILITIES
FOR
GENERAL PURPOSE TYPE BUILDINGS

CLIMATE				ROOF FLOORING SIDING	CORRUGATED METAL CONCRETE 1ST & WOOD 2ND FLOOR CORRUGATED METAL	CORRUGATED METAL CONCRETE 1ST & WOOD 2ND FLOOR PLYWOOD	CORRUGATED METAL WOOD 1ST & 2ND FLOORS CORRUGATED METAL	CORRUGATED METAL WOOD 1ST & 2ND FLOORS PLYWOOD
TEMPERATE	BASIC BUILDING	ONE STORY	20x48		340511	340512	340513	340514
			30x48		340515	340516	340517	340518
		TWO STORY	20x48		340521	340522	340523	340524
			30x48		340525	340526	340527	340528
	12 FT BAY ADDITION	ONE STORY	20 FT WIDE		340531	340532	340533	340534
			30 FT WIDE		340535	340536	340537	340538
		TWO STORY	20 FT WIDE		340541	340542	340543	340544
			30 FT WIDE		340545	340546	340547	340548
DESERT/TROPIC	BASIC BUILDING	ONE STORY	20x48		340551	340552	340553	340554
			30x48		340555	340556	340557	340558
		TWO STORY	20x48		340561	340562	340563	340564
			30x48		340565	340566	340567	340568
	12 FT BAY ADDITION	ONE STORY	20 FT WIDE		340571	340572	340573	340574
			30 FT WIDE		340575	340576	340577	340578
		TWO STORY	20 FT WIDE		340581	340582	340583	340584
			30 FT WIDE		340585	340586	340587	340588



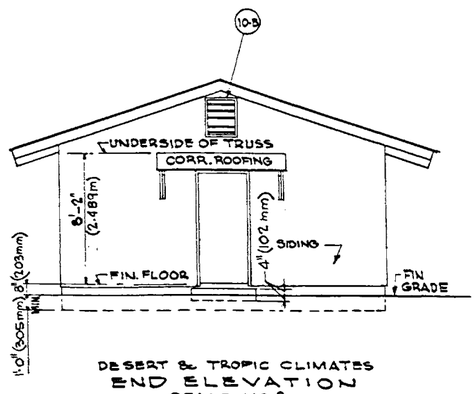
TEMPERATE CLIMATE — DESERT & TROPIC CLIMATES

SIDE ELEVATION
SCALE NO. 2



TEMPERATE CLIMATE

END ELEVATION
SCALE NO. 2



DESERT & TROPIC CLIMATES

END ELEVATION
SCALE NO. 2

GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

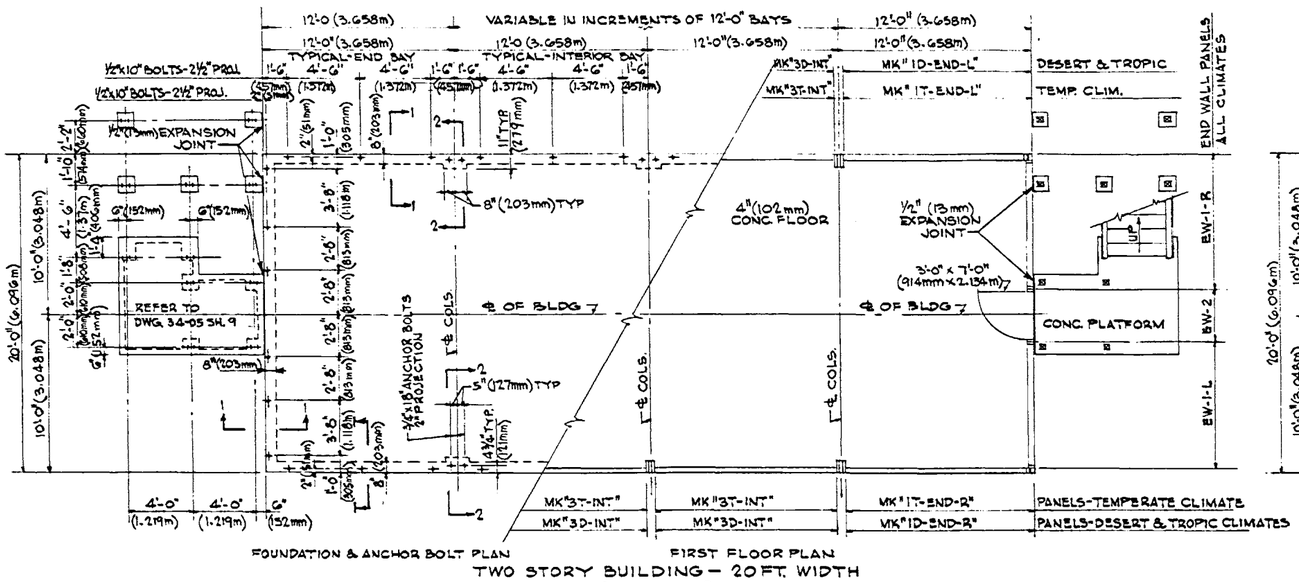
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: DEICHMANN
TRACED BY: DEICHMANN
CHECKED BY: BARKSDALE
SUBMITTED BY: C.W. DEICHMANN

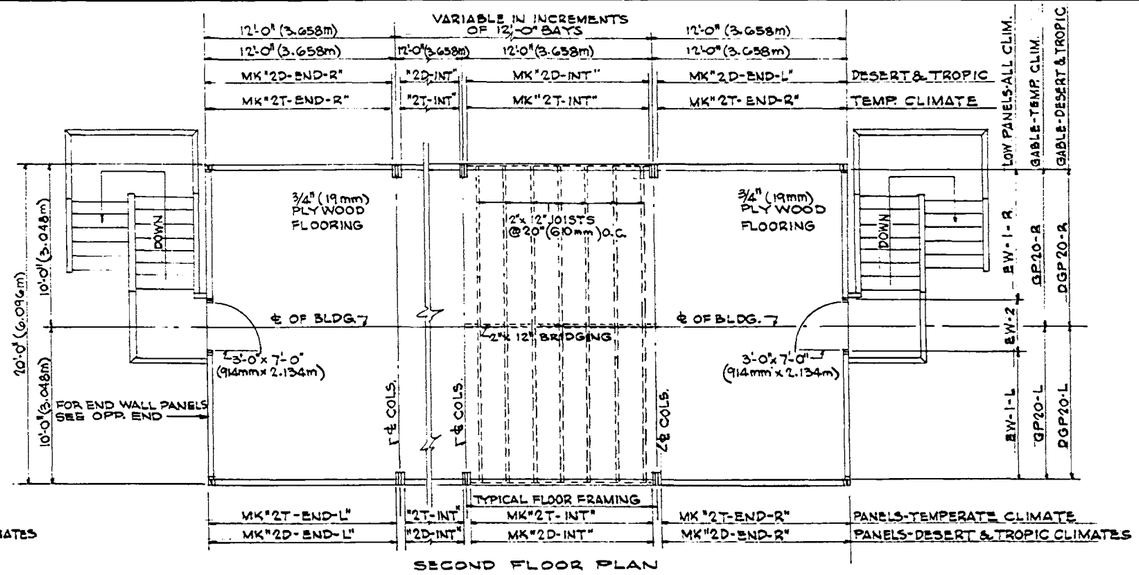
ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
PLANS & ELEVATIONS
20 FT WIDE BUILDING - ONE STORY W/CONC FL.
INDEX OF DRAWINGS & FACILITY NUMBERS

APPROVED: Edwin A. Patterson
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE
DATE: 27 April 73

APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-05
SHEET 1 OF 15



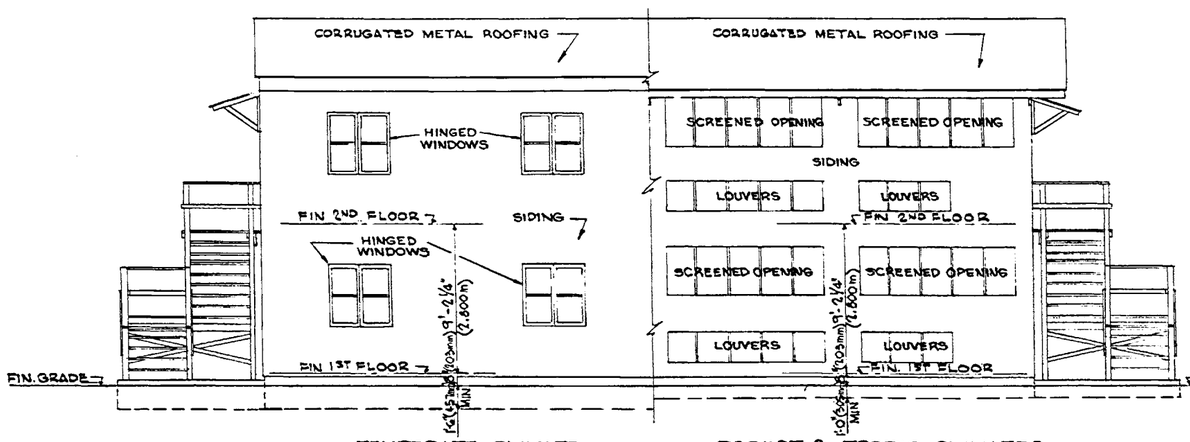
TWO STORY BUILDING — 20 FT. WIDTH
SCALE NO. 2



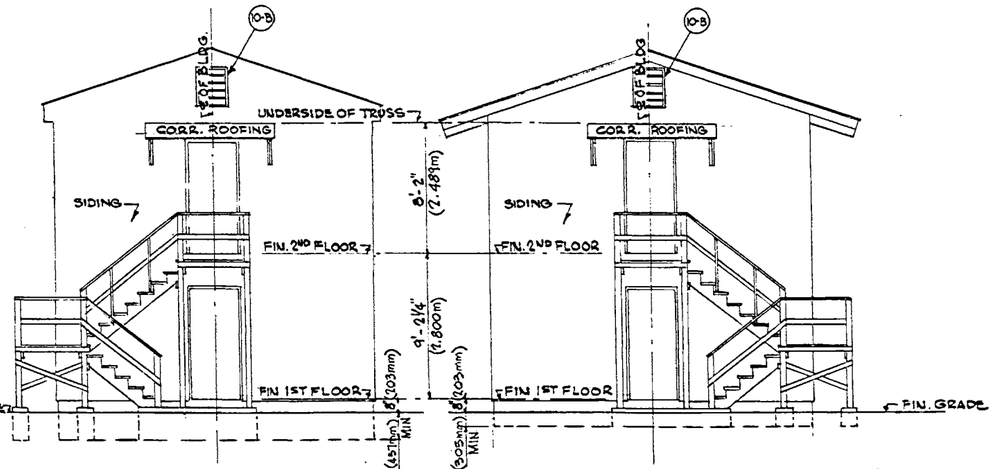
TWO STORY BUILDING — 20 FT. WIDTH
SCALE NO. 2

NOTE
SECOND FLOOR DESIGNED FOR 40 LB / SQ. FT. LIVE LOAD AND SHOULD NOT BE USED AS OFFICE OR STORAGE AREA.

ROOF PLAN
IDENTICAL TO ROOF PLAN OF ONE STORY BLDG
REFER TO DWG. NO. 34-05, SHEET 1.



SIDE ELEVATION
SCALE NO. 2



TEMPERATE CLIMATE
LEFT END ELEVATION
SCALE NO. 2

DESERT & TROPIC CLIMATES
RIGHT END ELEVATION
SCALE NO. 2

GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

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OFFICE OF THE CHIEF OF ENGINEERS
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WASHINGTON, D. C.

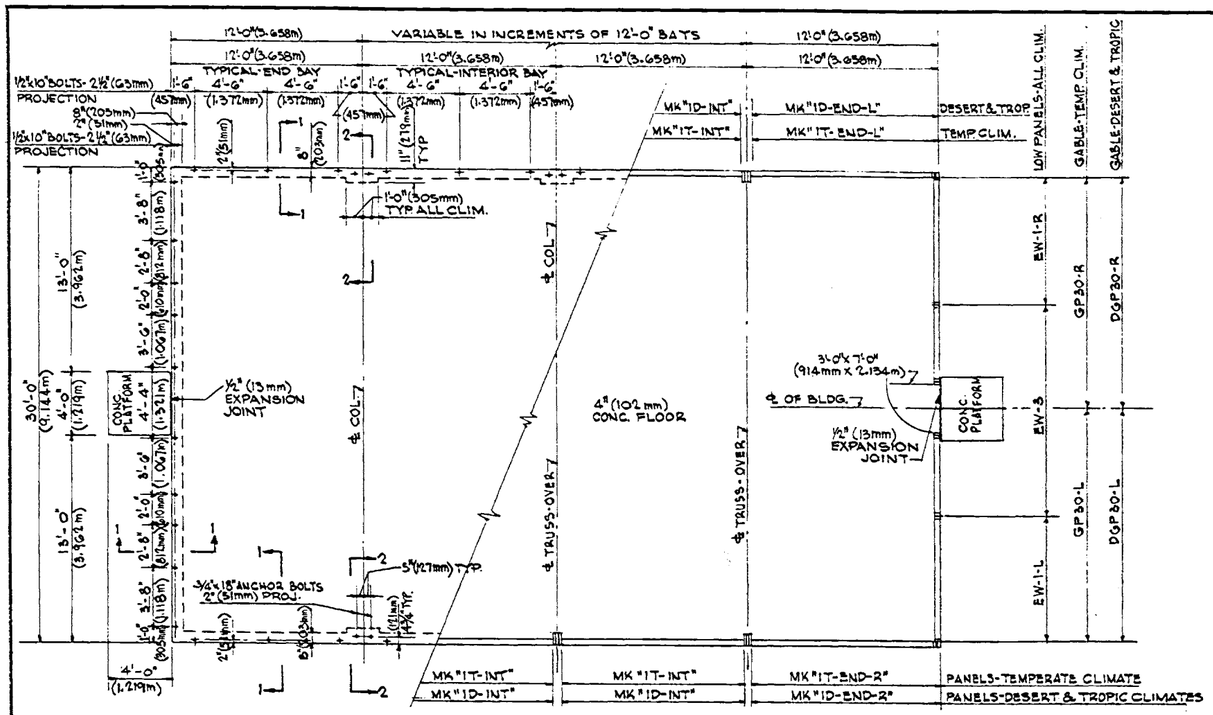
DRAWN BY: DEICHMANN
TRACED BY: DEICHMANN
CHECKED BY: BARKSDALE
SUBMITTED BY: C.W. DEICHMANN

ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
PLANS & ELEVATIONS
20 FT WIDE BUILDING - TWO STORY
W/CONCRETE 1ST FLOOR

APPROVED: Edwin D. Patterson
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE
DATE: 22 April 73

APPROVED FOR PROPONENT AGENCY:
DATE:

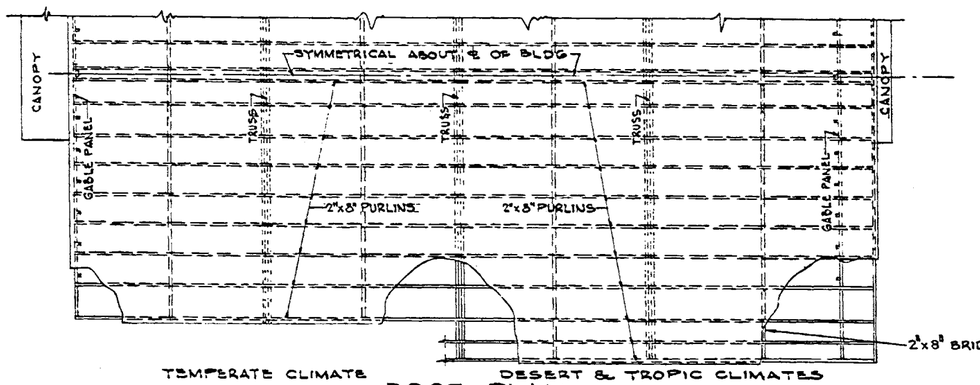
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-05
SHEET 2 OF 15



FOUNDATION & ANCHOR BOLT PLAN

FLOOR PLAN

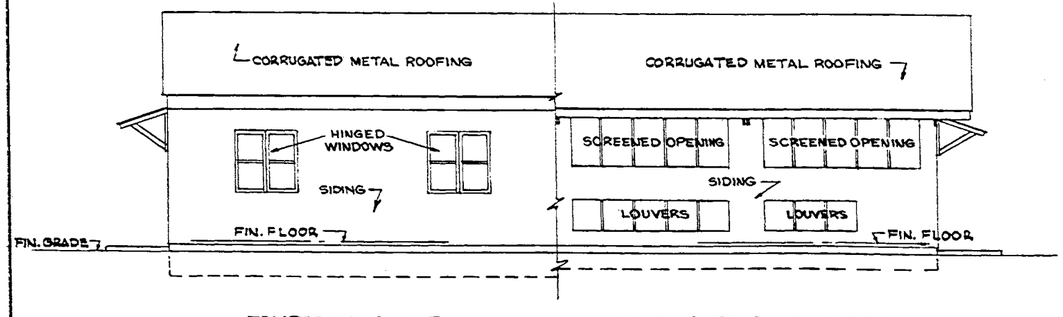
ONE STORY BUILDING-30FT WIDTH W/CONCRETE FLOOR
SCALE NO. 2



TEMPERATE CLIMATE

DESERT & TROPIC CLIMATES

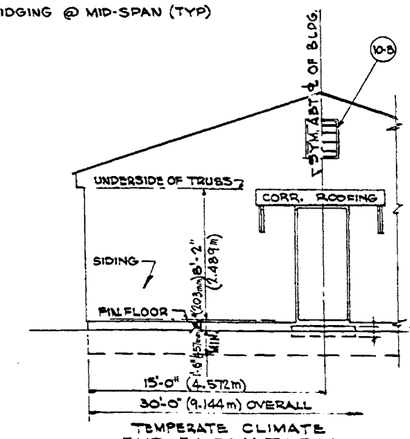
ROOF PLAN
SCALE NO. 2



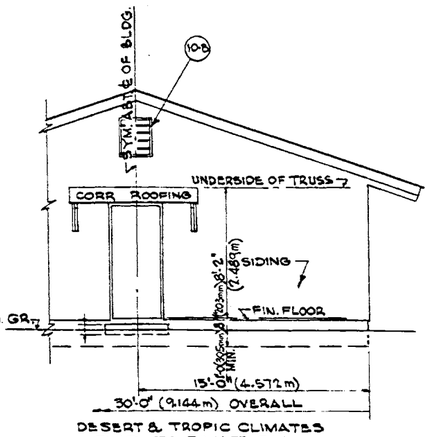
TEMPERATE CLIMATE

DESERT & TROPIC CLIMATES

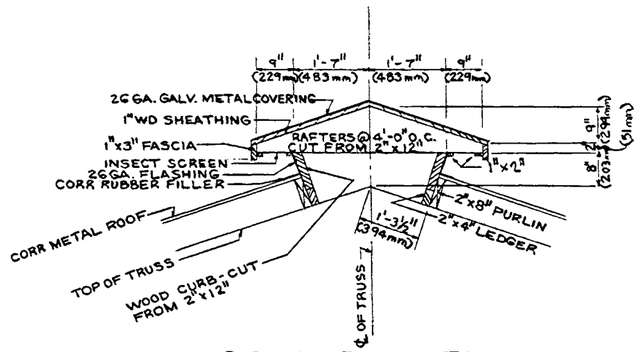
SIDE ELEVATION
SCALE NO. 2



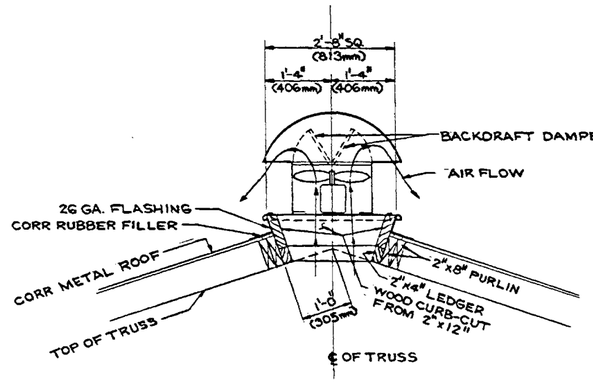
TEMPERATE CLIMATE END ELEVATION
SCALE NO. 2



DESERT & TROPIC CLIMATES END ELEVATION
SCALE NO. 2



RIDGE VENTILATOR
SCALE NO. 5
TYPICAL FOR ALL BUILDING & ALL CLIMATES WHEN REQUIRED



POWER ROOF VENTILATOR
SCALE NO. 5
TYPICAL FOR ALL BUILDINGS & ALL CLIMATES WHEN REQUIRED

GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
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DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

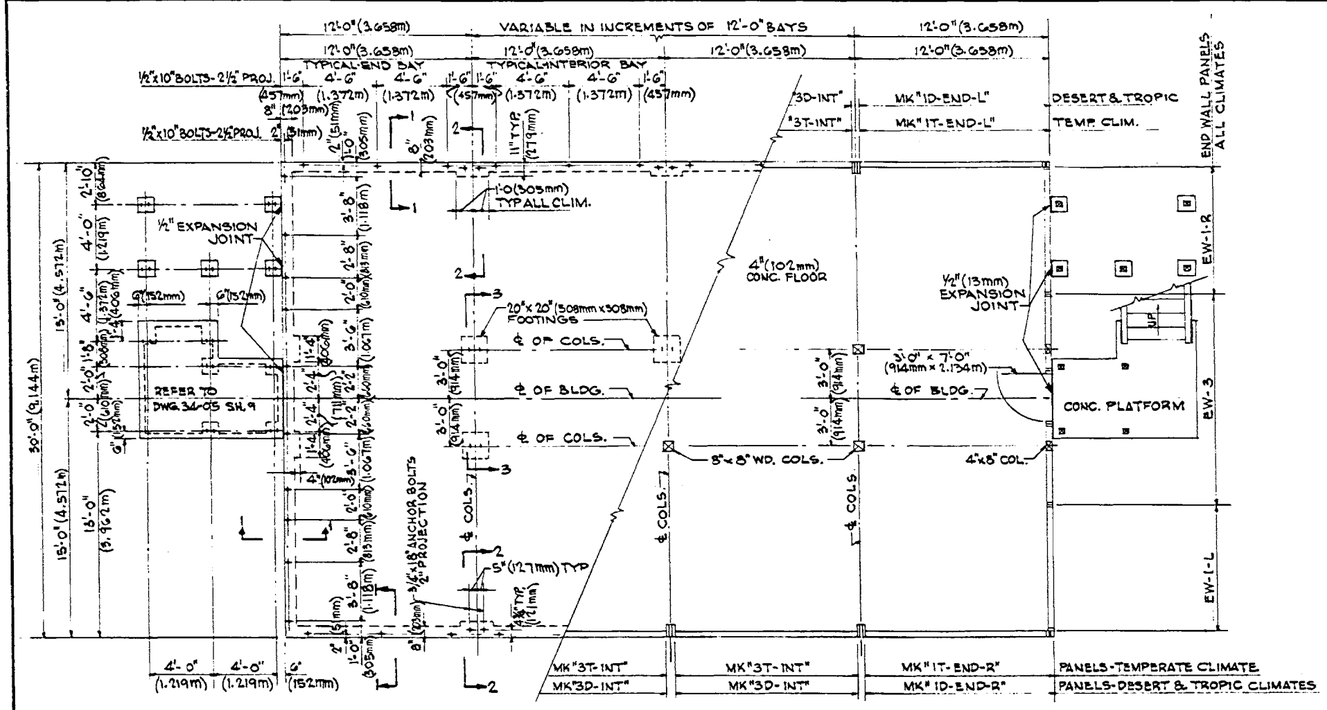
DRAWN BY: DEICHMANN
TRACED BY: DEICHMANN
CHECKED BY: BARKSDALE
SUBMITTED BY: C.W. DEICHMANN

ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
PLANS & ELEVATIONS
30 FT WIDE BUILDING - ONE STORY
W/CONCRETE FLOOR

APPROVED: Edwin O Patterson
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE
DATE: 27April 73

APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 3 OF 15
34-05

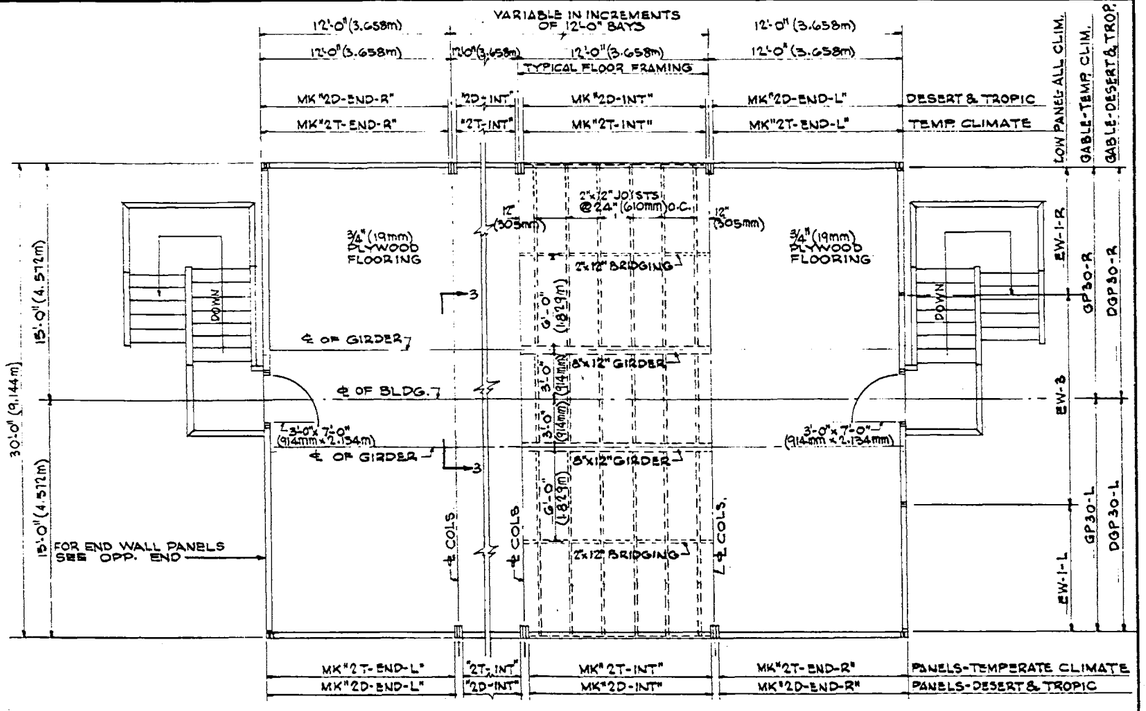


FOUNDATION & ANCHOR BOLT PLAN

FIRST FLOOR PLAN

TWO STORY BUILDING — 30FT. WIDTH

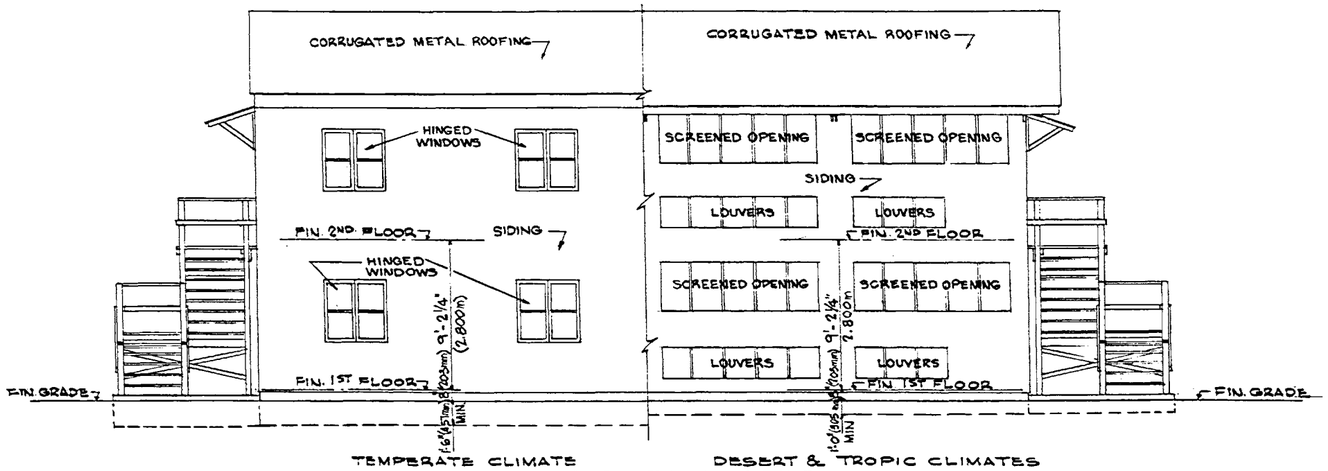
SCALE NO 2



SECOND FLOOR PLAN

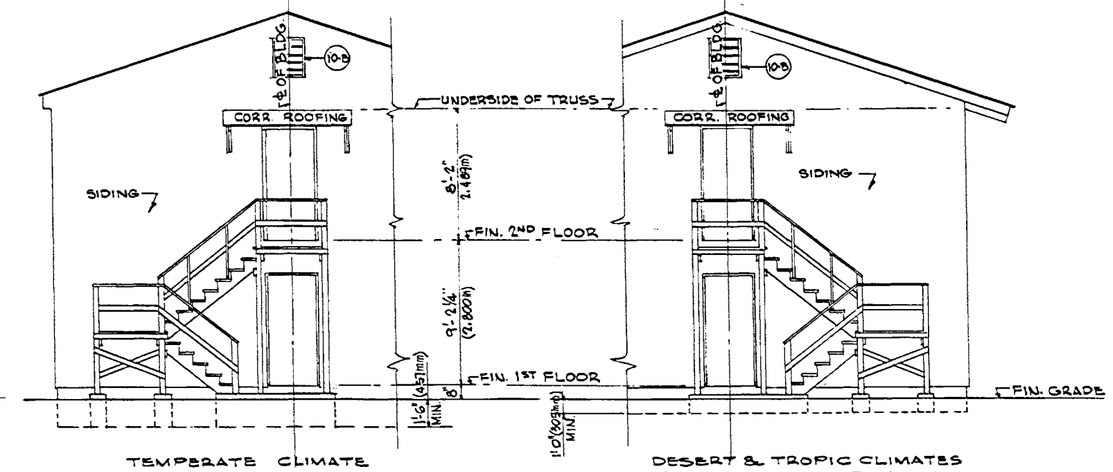
TWO STORY BUILDING — 30 FT. WIDTH

SCALE NO. 2



SIDE ELEVATION

SCALE NO 2



LEFT END ELEVATION

SCALE NO. 2

RIGHT END ELEVATION

SCALE NO. 2

ROOF PLAN

IDENTICAL TO ROOF PLAN OF ONE STORY BLDG.
REFER TO DWG NO. 34-05, SHEET 3.

GRAPHIC SCALES
0 5' 10'
0 1m 3m
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D. C.

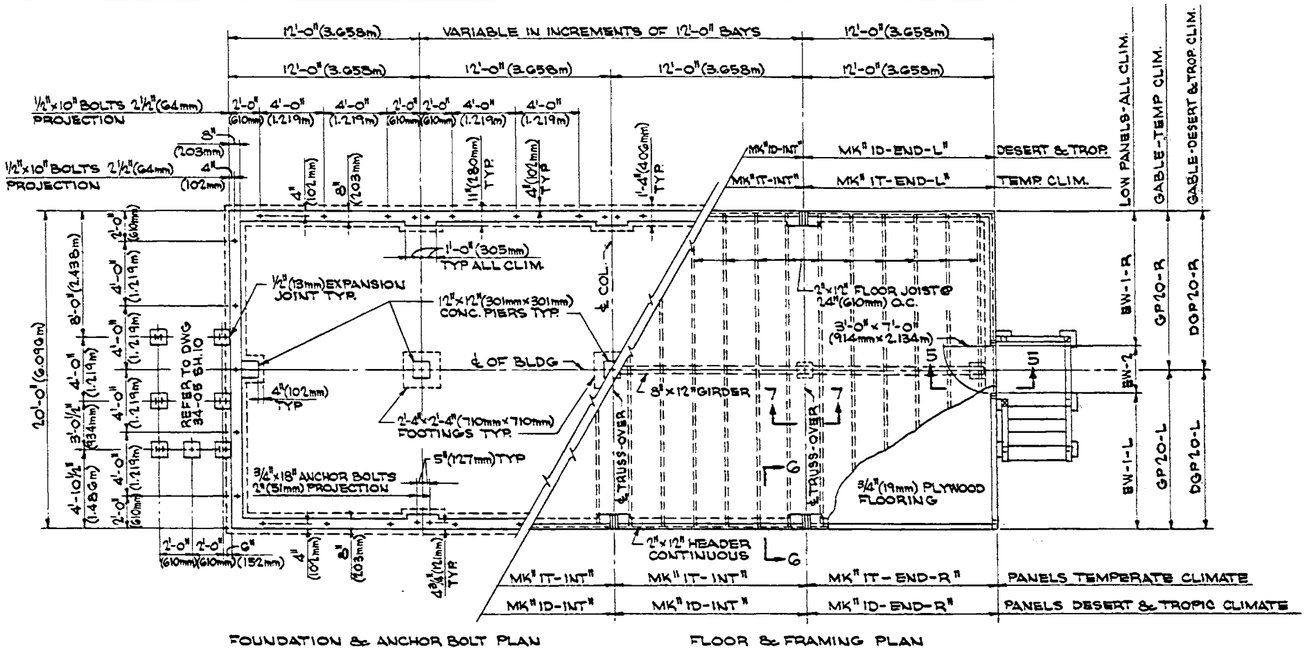
DRAWN BY: DEICHMANN
TRACED BY: DEICHMANN
CHECKED BY: BARKSDALE
SUBMITTED BY: C. W. DEICHMANN

ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
PLANS & ELEVATIONS
30 FT WIDE BUILDING - TWO STORY
W/CONCRETE 1ST FLOOR

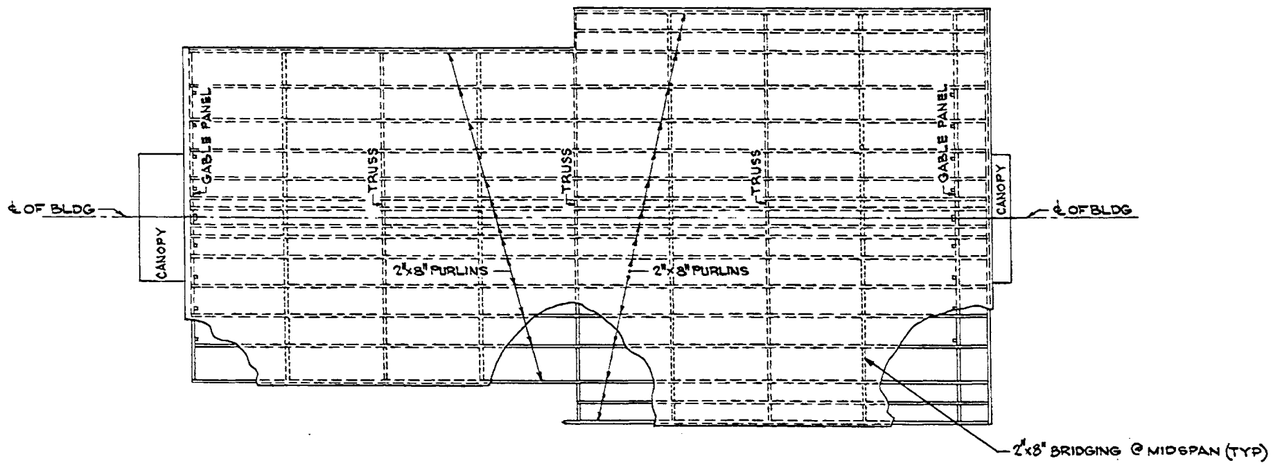
APPROVED: Edwin O. Patterson
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE.
DATE: 27 April 73

APPROVED FOR PROPONENT AGENCY:
DATE:

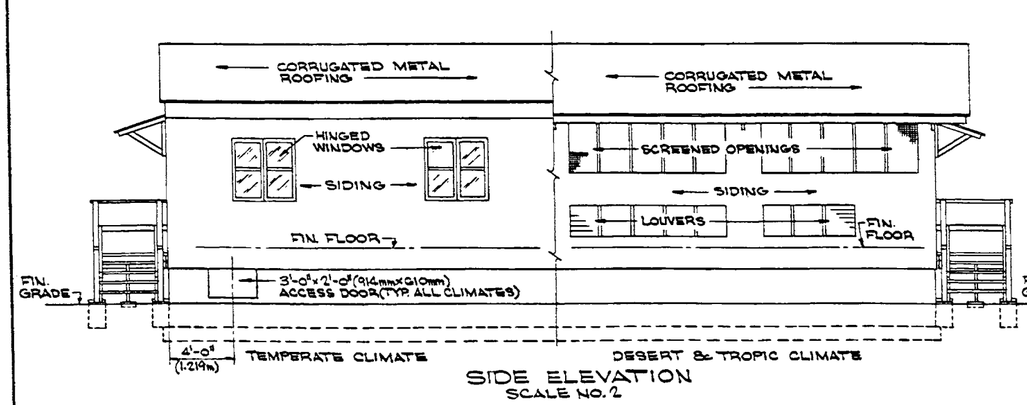
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-05
SHEET 4 OF 15



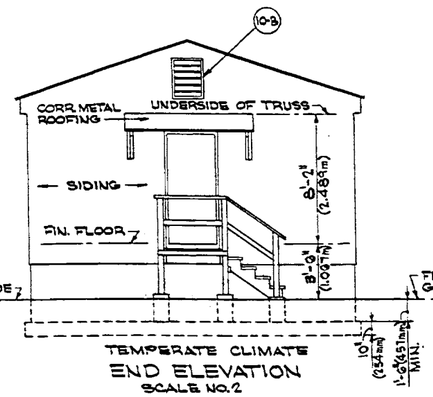
ONE STORY BUILDING - 20 FT. WIDTH W/ WOOD FLOOR
SCALE NO. 2



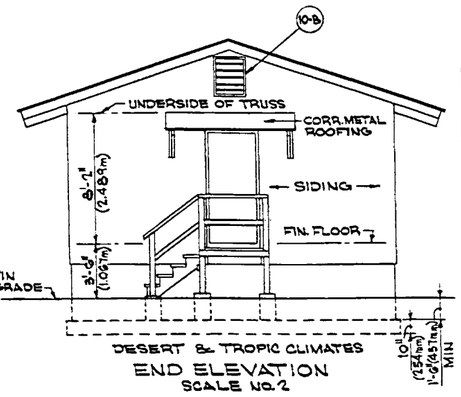
ROOF PLAN
SCALE NO. 2



SIDE ELEVATION
SCALE NO. 2



END ELEVATION
SCALE NO. 2



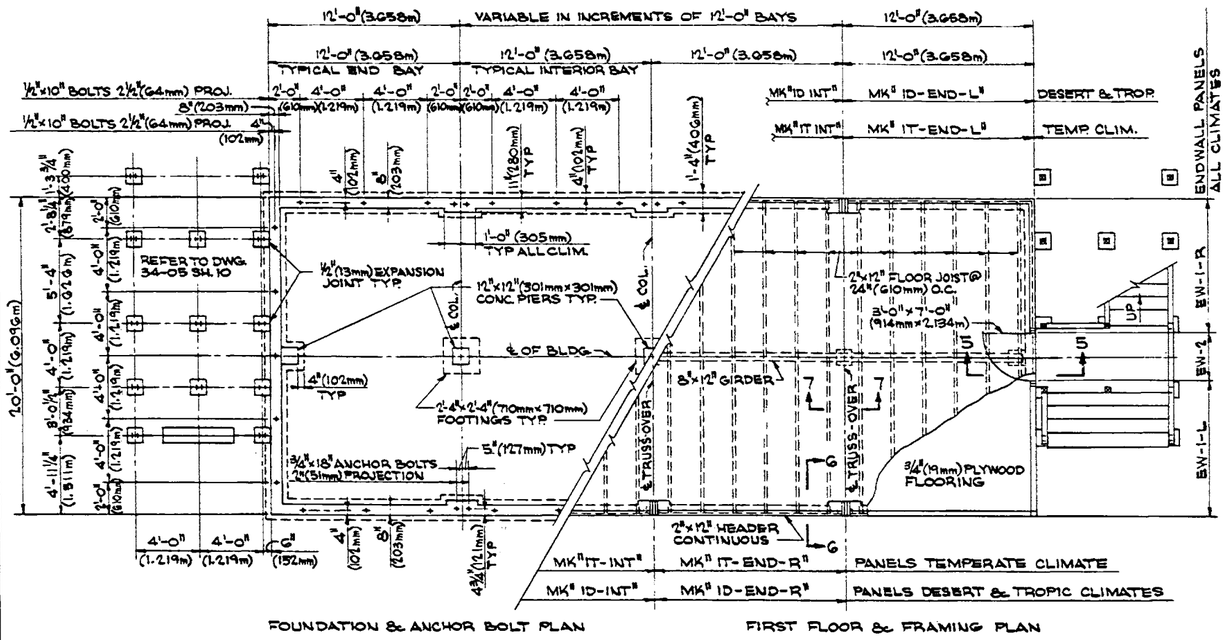
END ELEVATION
SCALE NO. 2

GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

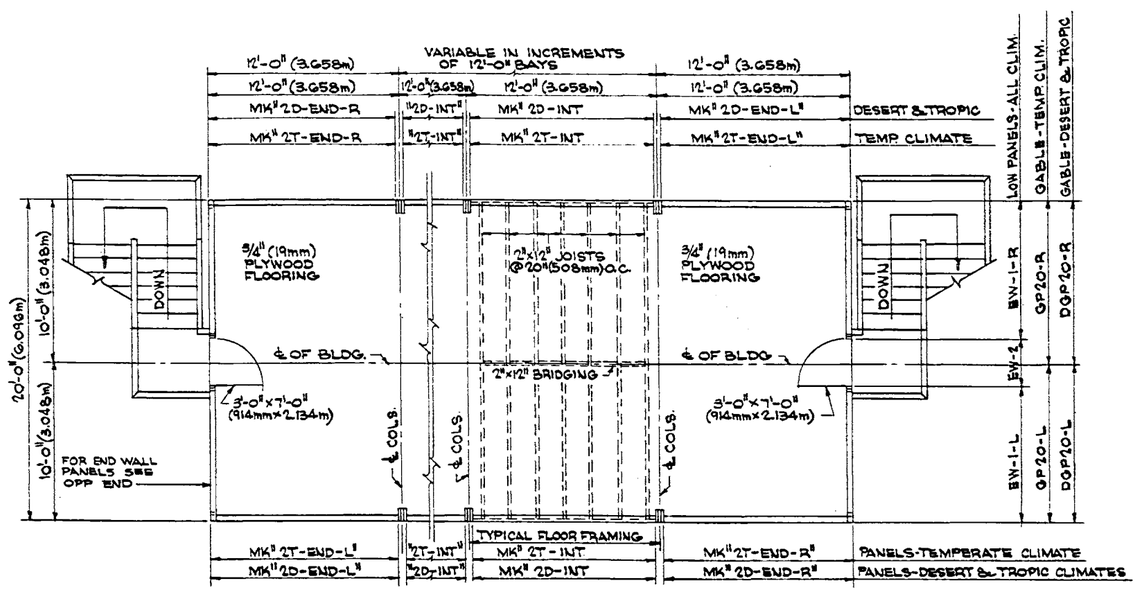
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS : ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: GREGORY	ARMY FACILITIES COMPONENTS SYSTEM
TRACED BY: GREGORY	WOOD FRAME CONSTRUCTION GENERAL PURPOSE TYPE BUILDINGS PLANS & ELEVATIONS 20 FT WIDE BUILDING - ONE STORY W/WOOD FLOOR
CHECKED BY: BARKSDALE	
SUBMITTED BY: B.H. BARKSDALE	APPROVED: Elmo D. Patterson, CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE. DATE: 27 April 73
APPROVED FOR PROPONENT AGENCY:	SCALE: AS NOTED SPEC. NO.
DATE	DRAWING NUMBER: 34-05
	SHEET 5 OF 15



TWO STORY BUILDING - 20FT WIDTH
SCALE NO 2

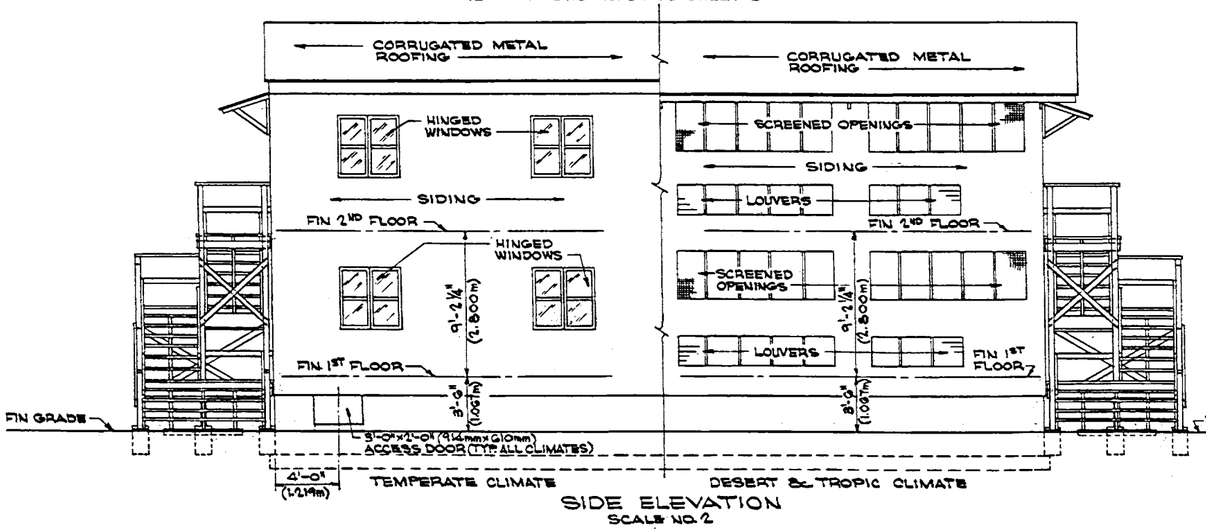


SECOND FLOOR PLAN

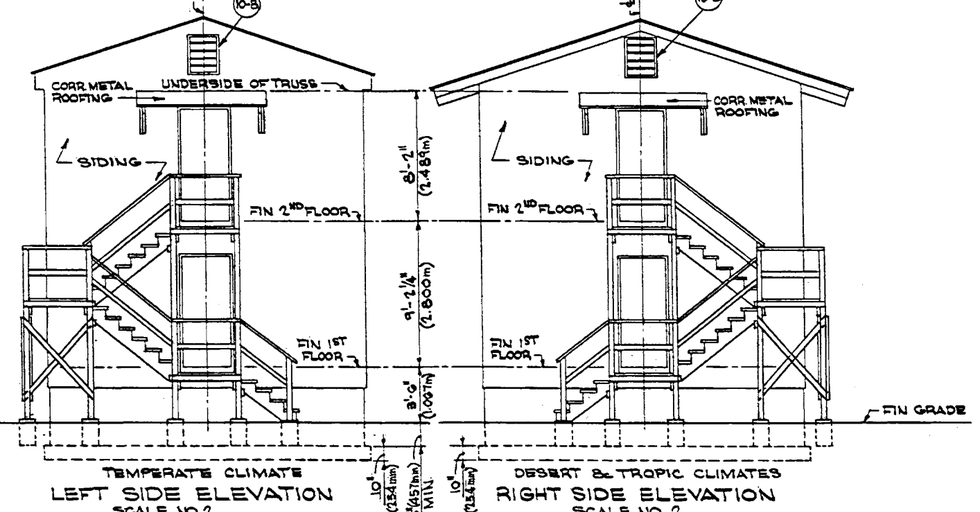
TWO STORY BUILDING - 20 FT. WIDTH
SCALE NO. 2

NOTE
SECOND FLOOR DESIGNED FOR 40 LB/SQFT LIVE LOAD AND SHOULD NOT BE USED AS OFFICE OR STORAGE AREA.

ROOF PLAN
IDENTICAL TO ROOF PLAN OF ONE STORY BUILDING
REFER TO DWG NO. 34-05 SHEET 5



SIDE ELEVATION
SCALE NO 2



LEFT SIDE ELEVATION
SCALE NO. 2

RIGHT SIDE ELEVATION
SCALE NO. 2

GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

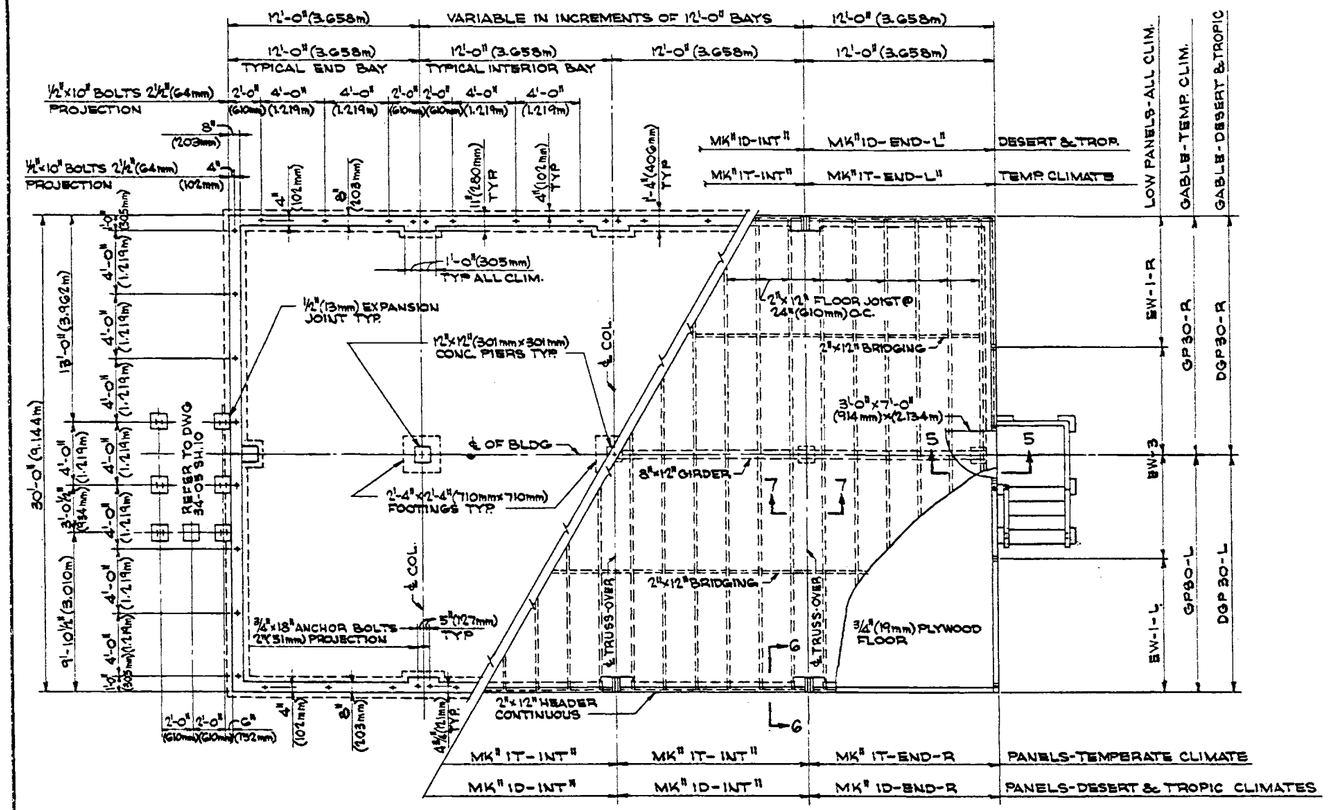
DRAWN BY: GREGORY
TRACED BY: GREGORY
CHECKED BY: BARKSDALE
SUBMITTED BY: B.H. BARKSDALE

ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
PLANS & ELEVATIONS
20 FT WIDE BUILDING - TWO STORY
W/WOOD FLOOR

APPROVED: Edwin D. Patterson DATE: 27 April 73
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE

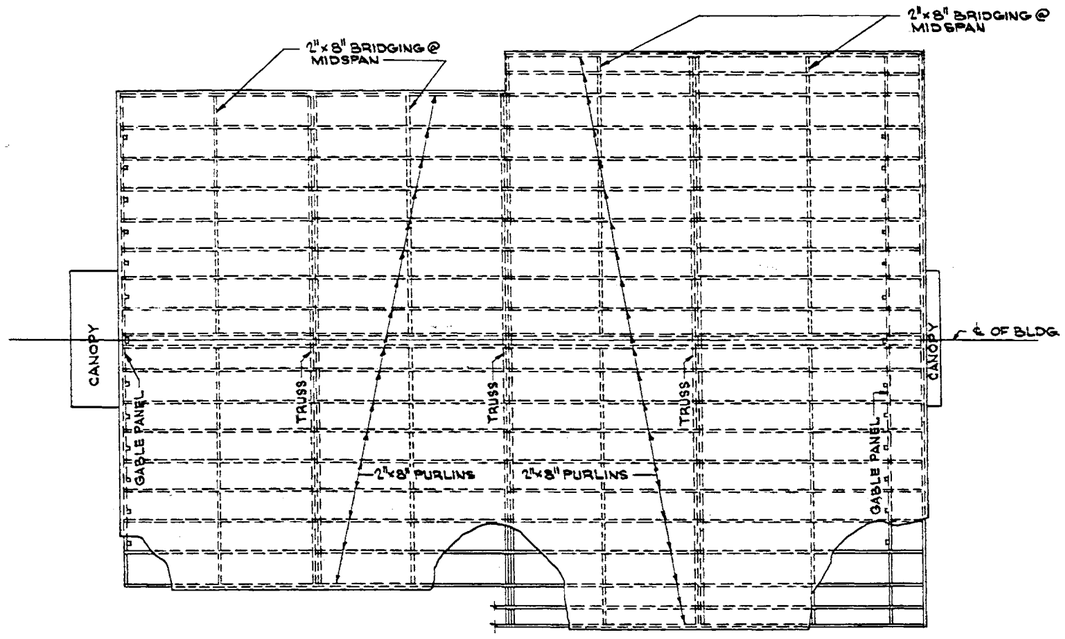
APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-05
SHEET 6 OF 15



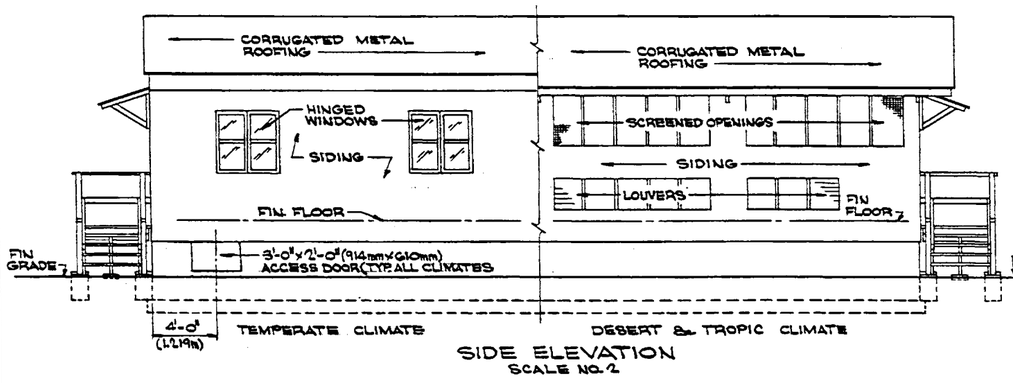
FOUNDATION & ANCHOR BOLT PLAN — FLOOR & FRAMING PLAN

ONE STORY BUILDING - 30 FT. WIDTH W/ WOOD FLOOR
SCALE NO. 2

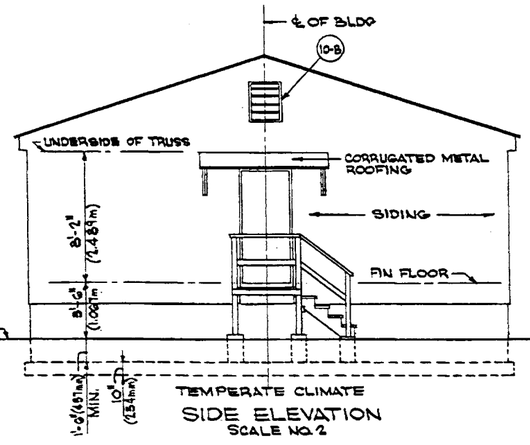


TEMPERATE CLIMATE — DESERT & TROPIC CLIMATES

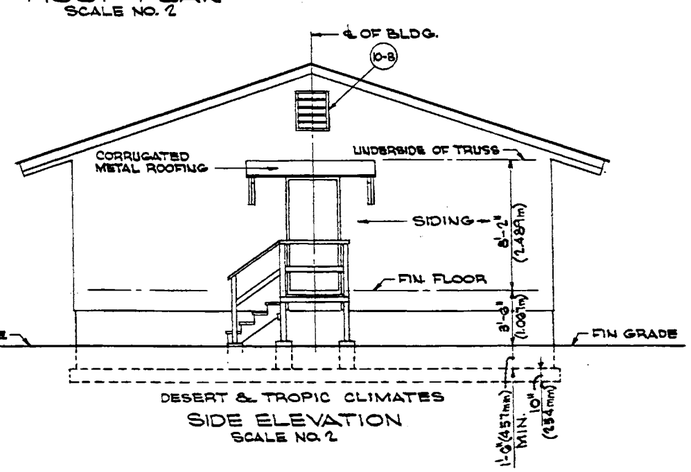
ROOF PLAN
SCALE NO. 2



SIDE ELEVATION
SCALE NO. 2



SIDE ELEVATION
SCALE NO. 2



SIDE ELEVATION
SCALE NO. 2

GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
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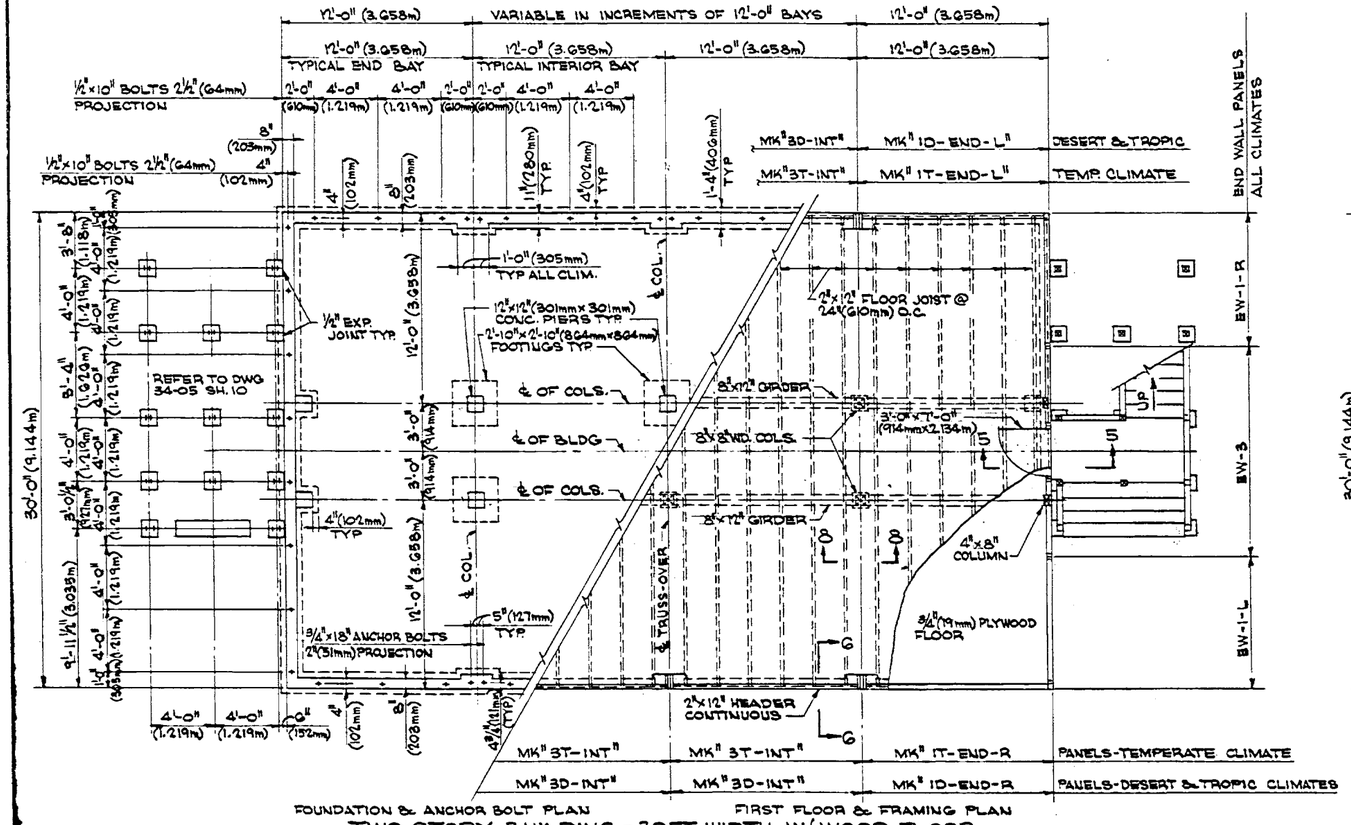
DRAWN BY: GREGORY
TRACED BY: GREGORY
CHECKED BY: BARKSDALE
SUBMITTED BY: B.H. BARKSDALE

ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
PLANS & ELEVATIONS
30 FT WIDE BUILDING - ONE STORY
W/WOOD FLOOR

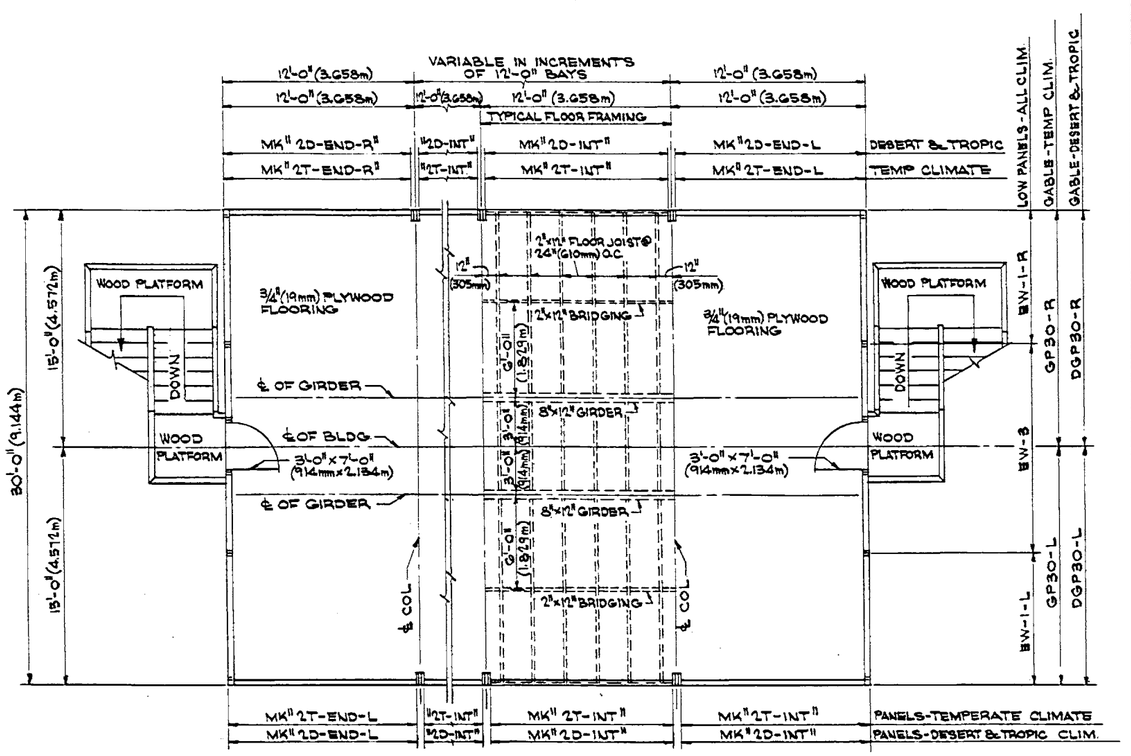
APPROVED: Edwin L Patterson
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE
DATE: 27 April 73

APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 7 OF 15
34-05

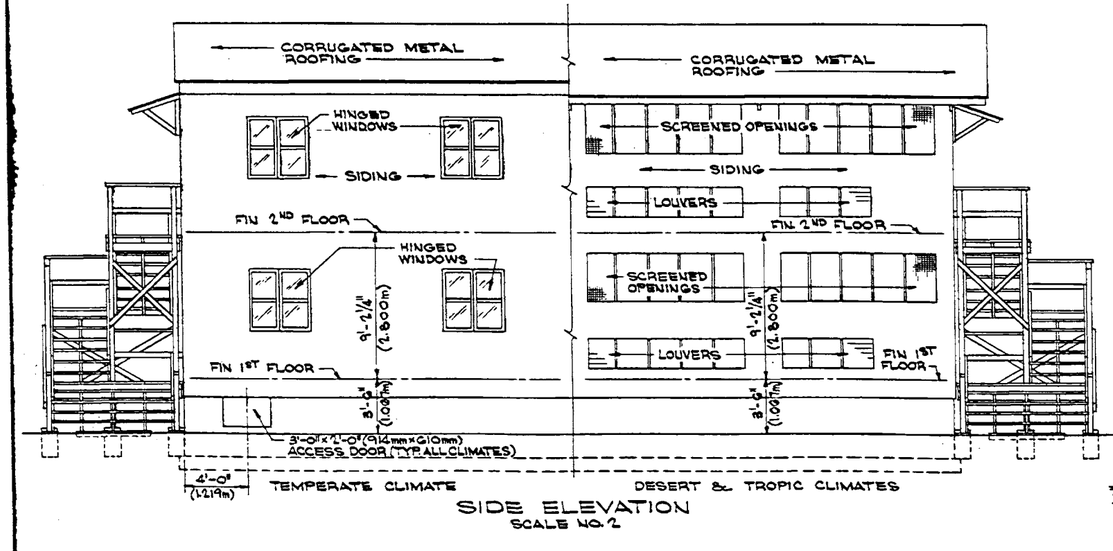


TWO STORY BUILDING - 30FT. WIDTH W/ WOOD FLOOR
SCALE NO. 2

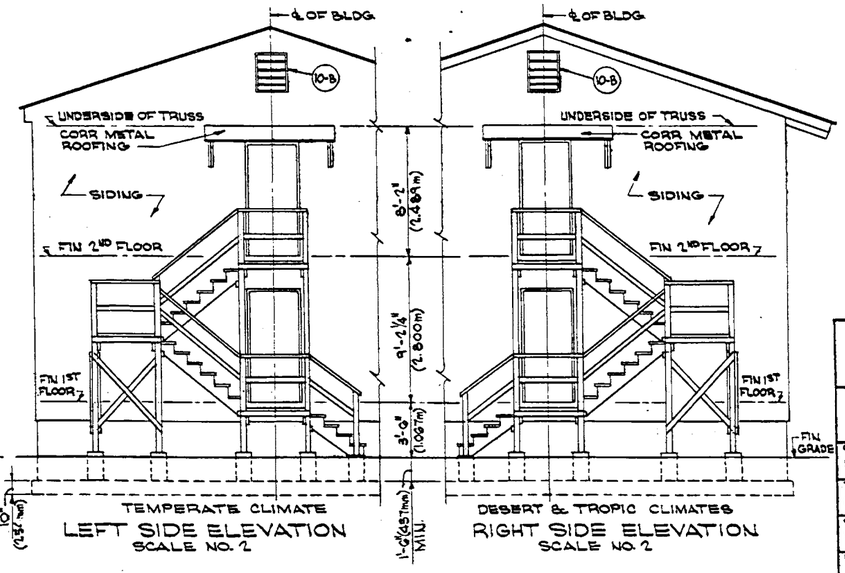


SECOND FLOOR PLAN
TWO STORY BUILDING - 30FT. WIDTH
SCALE NO. 2

ROOF PLAN
IDENTICAL TO ROOF PLAN OF ONE STORY BUILDING
REFER TO DWG NO. 34-05 SHEET 7



SIDE ELEVATION
SCALE NO. 2



LEFT SIDE ELEVATION
SCALE NO. 2

RIGHT SIDE ELEVATION
SCALE NO. 2

GRAPHIC SCALES
0 5' 10'
0 1m 2m 3m
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

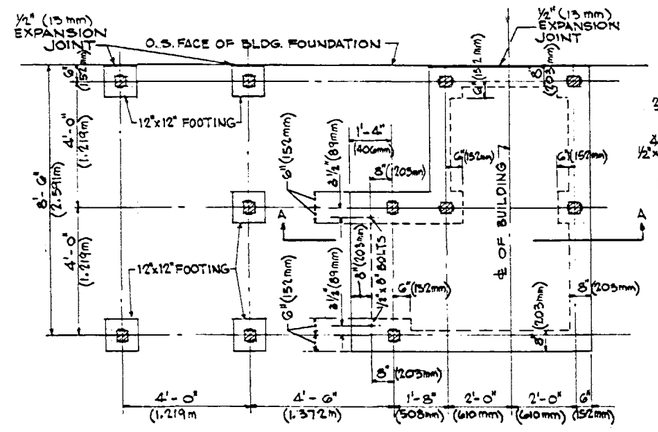
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: GREGORY
TRACED BY: GREGORY
CHECKED BY: BARKSDALE
SUBMITTED BY: B.H. BARKSDALE

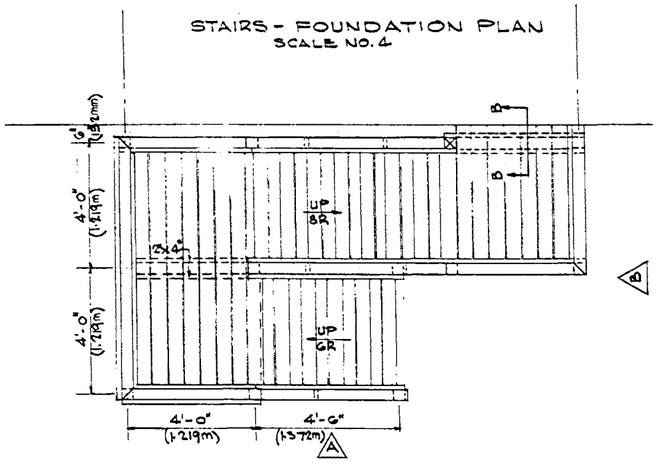
ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
PLANS & ELEVATIONS
30 FT WIDE BUILDING - TWO STORY
W/WOOD FLOOR

APPROVED: Edwin D Patterson
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE.
DATE: 27 April 73

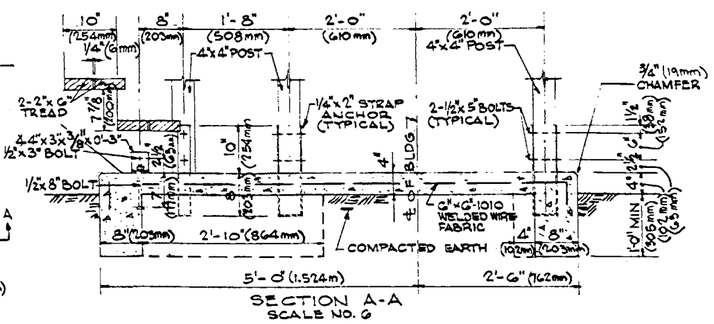
APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-05
SHEET 8 OF 15



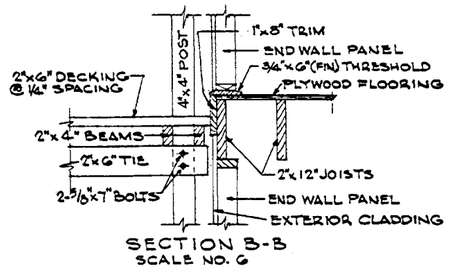
STAIRS - FOUNDATION PLAN
SCALE NO. 4



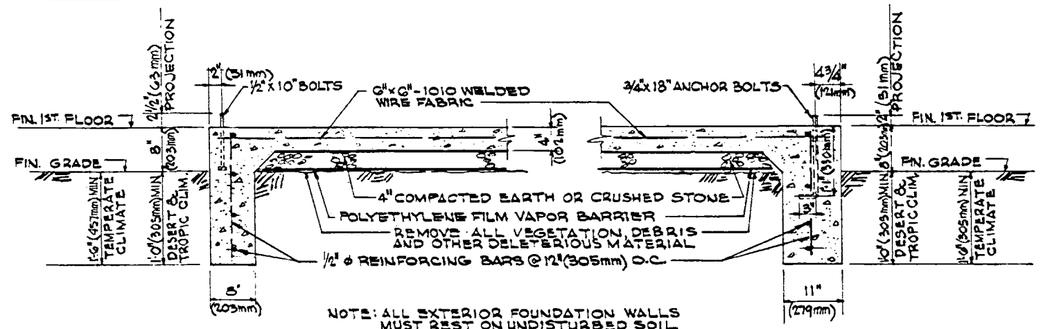
STAIRS - PLAN
SCALE NO. 4



SECTION A-A
SCALE NO. 6



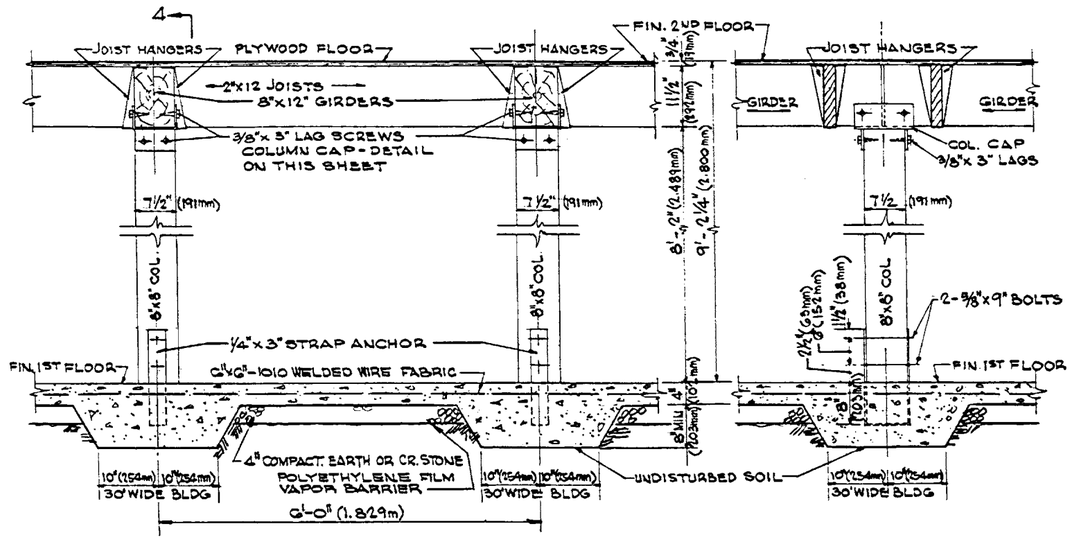
SECTION B-B
SCALE NO. 6



NOTE: ALL EXTERIOR FOUNDATION WALLS MUST REST ON UNDISTURBED SOIL REGARDLESS OF CLIMATE.
IN COLD CLIMATES, FOUNDATION DEPTH TO BE CARRIED TO BELOW FROST LINE.

SECTION 1-1
SCALE NO. 6

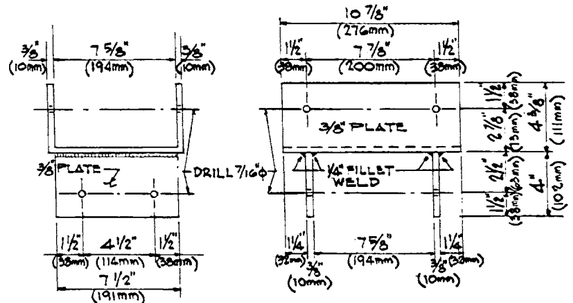
SECTION 2-2
SCALE NO. 6



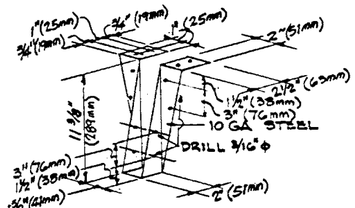
4

SECTION 3-3
SCALE NO. 6

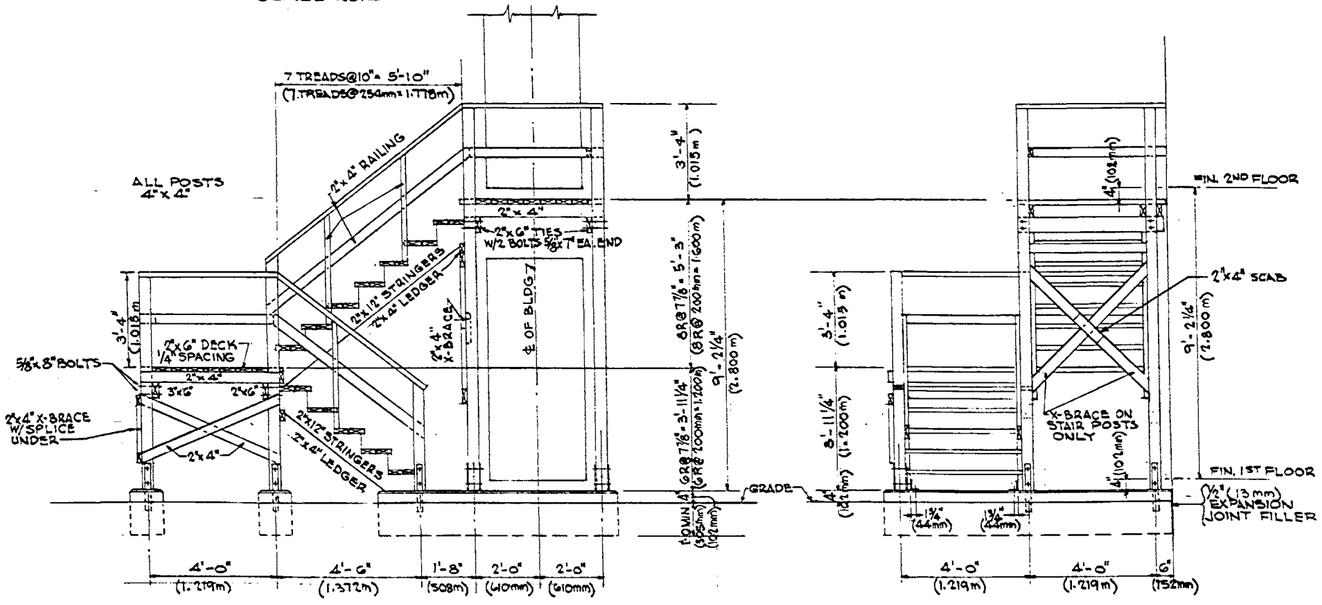
SECTION 4-4
SCALE NO. 6



COLUMN CAP
NO SCALE



JOIST HANGER
NO SCALE



STAIR - ELEVATION "A"
SCALE NO. 4

STAIR - ELEVATION "B"
SCALE NO. 4

GRAPHIC SCALES
0 1' 2' 3' 4'
0 1m
NO. 4
0 1' 2'
0 300mm 600mm
NO. 6

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: DEICHMANN
TRACED BY: DEICHMANN
CHECKED BY: BARKSDALE
SUBMITTED BY: C.W. DEICHMANN

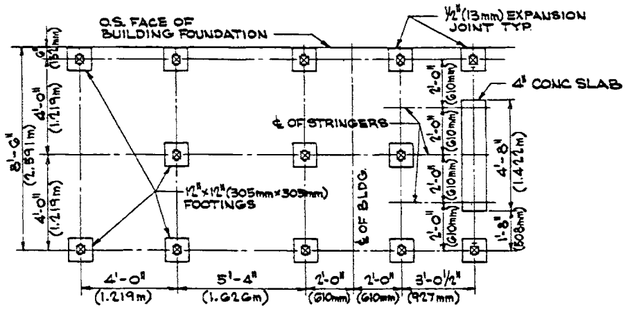
ARMY FACILITIES COMPONENTS SYSTEM

WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDING
STAIR DETAILS, FOUNDATION & GIRDER FRAMING DETAILS

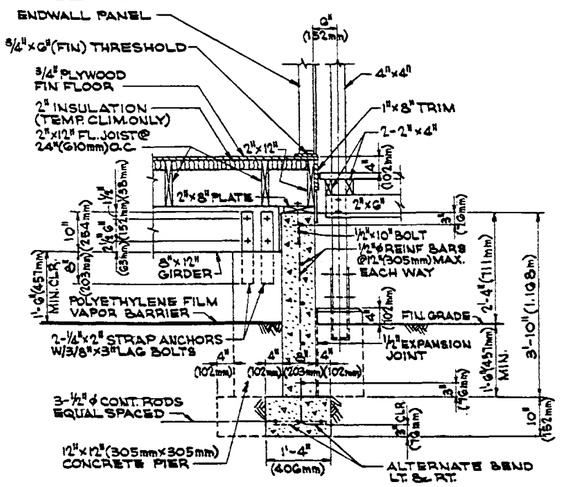
APPROVED: Edwin O. Patterson
CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE.
DATE: 27 April 73

APPROVED FOR PROPONENT AGENCY:
DATE:

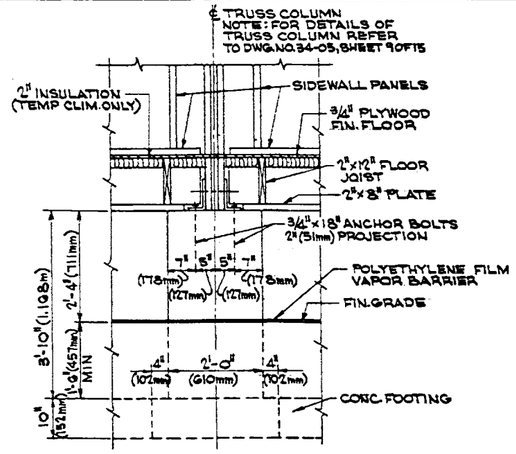
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 9 OF 15
34-05



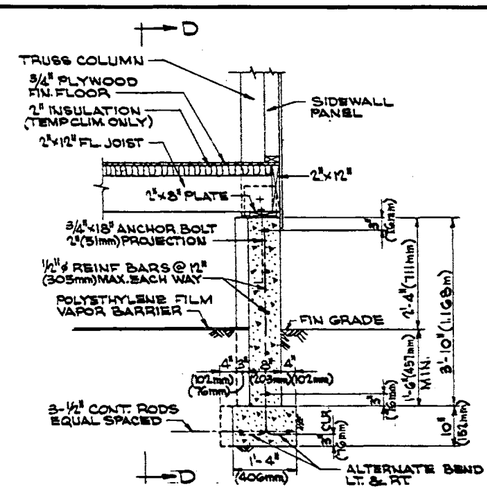
STAIRS - FOUNDATION PLAN
SCALE NO. 4



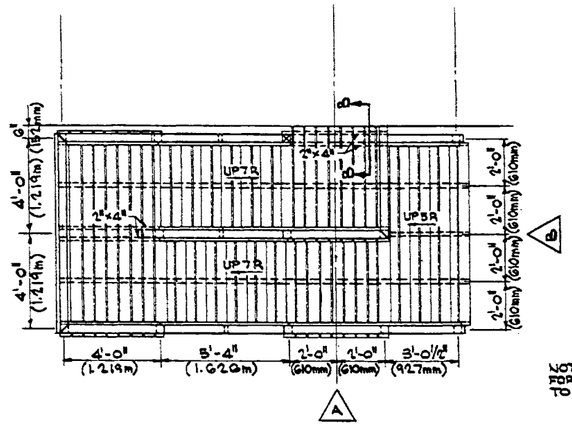
SECTION 5-5
SCALE NO. 5



SECTION D-D
SCALE NO. 5

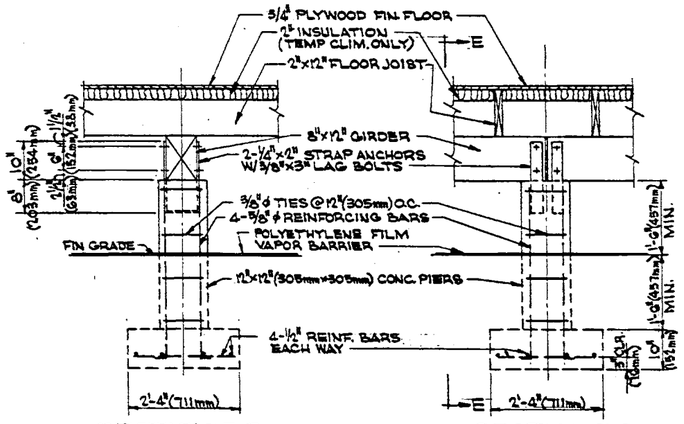


SECTION G-G
SCALE NO. 5



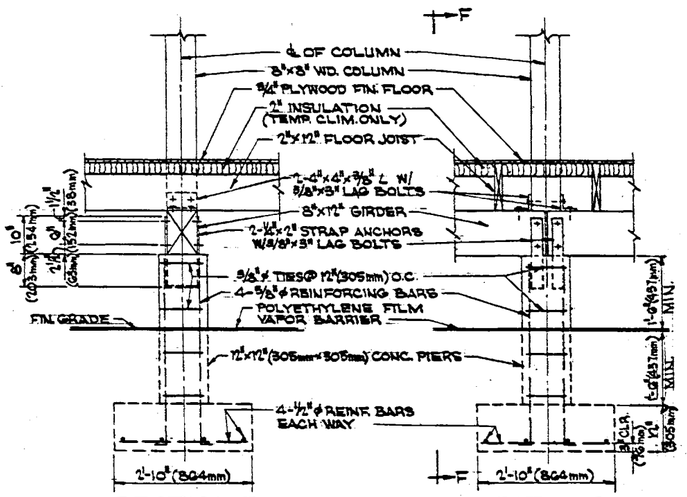
STAIRS - PLAN
SCALE NO. 4

NOTE:
FOR SECTION B-B REFER TO DWG. NO. 34-05, SHEET 9 OF 15.



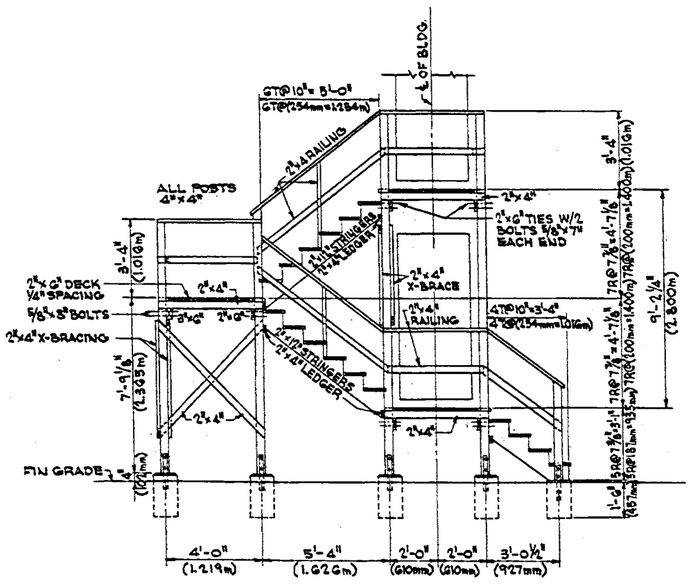
SECTION E-E
SCALE NO. 5

SECTION 7-7
SCALE NO. 5

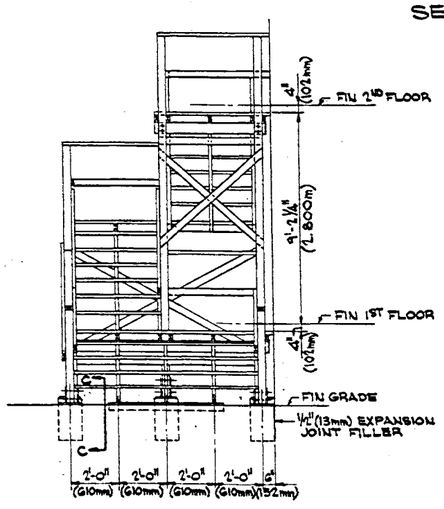


SECTION F-F
SCALE NO. 5

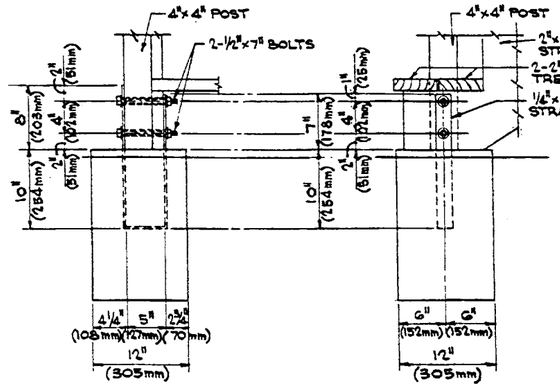
SECTION 8-8
SCALE NO. 5



STAIRS - ELEVATION "A"
SCALE NO. 4



STAIRS - ELEVATION "B"
SCALE NO. 4



FRONT VIEW
SCALE NO. 7

SECTION C-C
SCALE NO. 7

GRAPHIC SCALES
NO. 4 | NO. 5 | NO. 7

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: GREGORY
TRACED BY: GREGORY
CHECKED BY: BARKSDALE
SUBMITTED BY: B.H. BARKSDALE

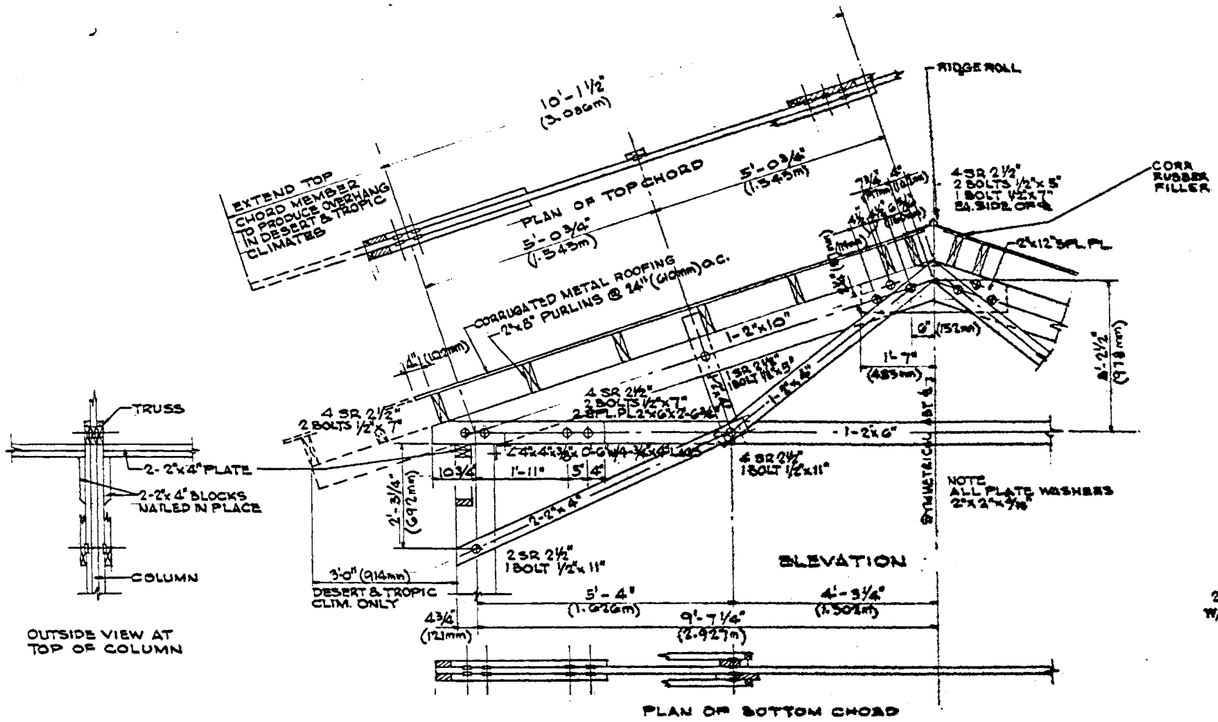
ARMY FACILITIES COMPONENTS SYSTEM

WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDING
STAIR DETAILS, FOUNDATION & GIRDER FRAMING DETAILS

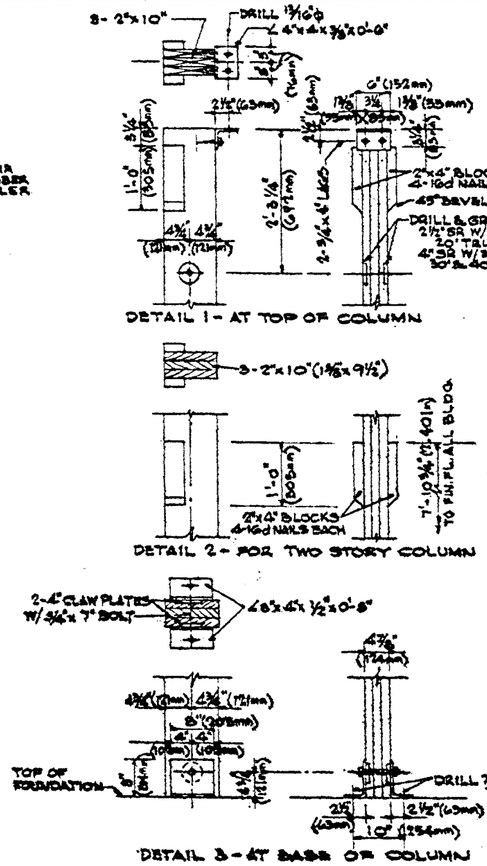
APPROVED: Edwin A. Patterson, CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE
DATE: 27 April 23

APPROVED FOR PROPONENT AGENCY:
DATE:

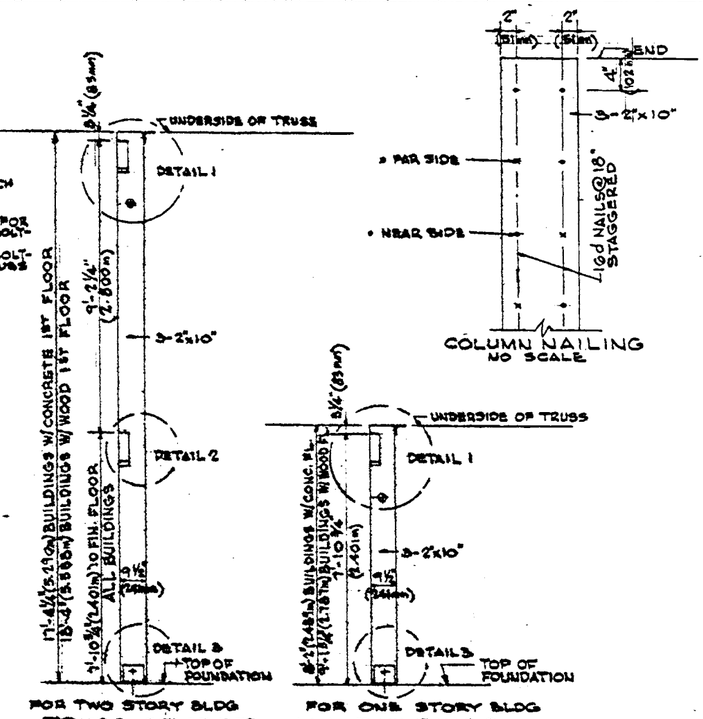
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-05
SHEET 10 OF 15



TRUSS DETAILS – 20' WIDE BLDG., TEMPERATE CLIMATE
SCALE NO. 3

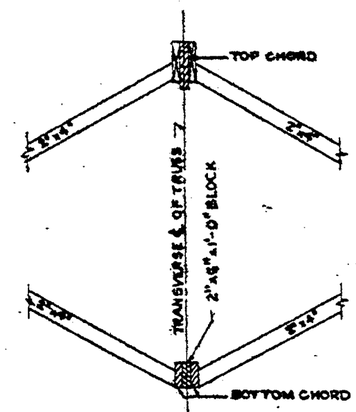


TRUSS COLUMN – DETAILS
SCALE NO. 6



TRUSS COLUMNS – ALL BUILDINGS
ALL CLIMATES
SCALE NO. 4

TRUSS DETAILS – 30' WIDE BLDG., TEMPERATE CLIMATE
SCALE NO. 5



TRUSS SWAY BRACING
SCALE NO. 3
SWAY BRACING AT MID-SPAN TYPICAL FOR 3 SPAN TRUSSES AND ALL BAYS

GRAPHIC SCALES
NO. 4 NO. 5 NO. 6

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA - WASHINGTON, D.C.

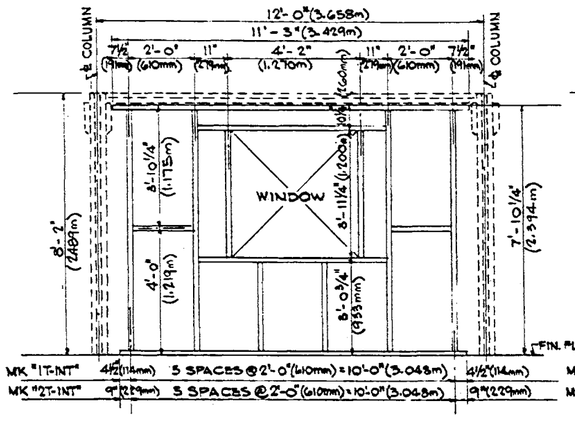
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

DRAWN BY: DEICHMANN
TRACED BY: DEICHMANN
CHECKED BY: BARKSDALE
SUBMITTED BY: C.W. DEICHMANN

ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
TRUSS DETAILS - 20 FT & 30 FT SPANS
TRUSS COLUMN DETAILS

APPROVED: Edwin D Patterson
CHIEF, APOS OFFICE, MILITARY ENGINEERING, OCE.
DATE: 27 April 73

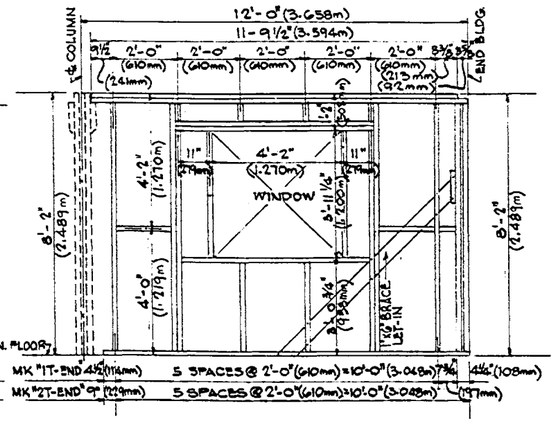
APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-05
SHEET 11 OF 15



INTERIOR BAY

1 STORY BLDG — MK "1T-INT"

2 STORY BLDG, 2ND FLOOR — MK "2T-INT"

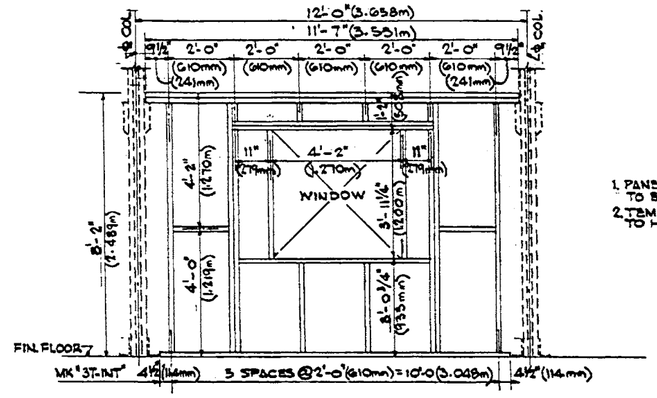


RIGHT END BAY

(LEFT END BAY - OPP. HAND)

1 STORY BLDG & 2 STORY BLDG, 1ST FLOOR } MK "1T-END" (R OR L)

2 STORY BLDG, 2ND FLOOR — MK "2T-END" (R OR L)



NOTE

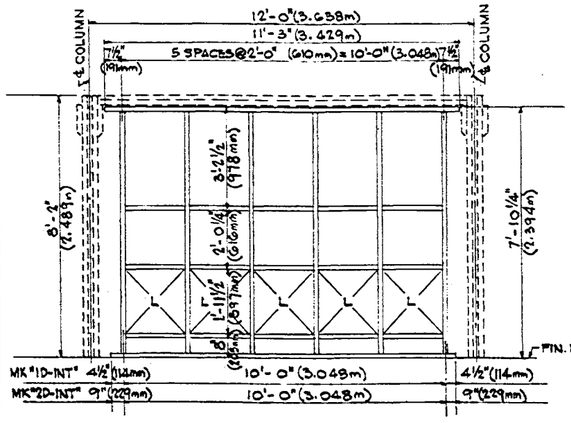
1. PANEL STUDS, GIRTS & PLATES TO BE 2"x 4" LUMBER.
2. TEMPORARY BRACE ALL PANELS TO HOLD SQUARE UNTIL IN PLACE.

INTERIOR BAY

2 STORY BLDG, 1ST FLOOR — MK "3T-INT"

SIDE PANELS - TEMPERATE CLIMATE

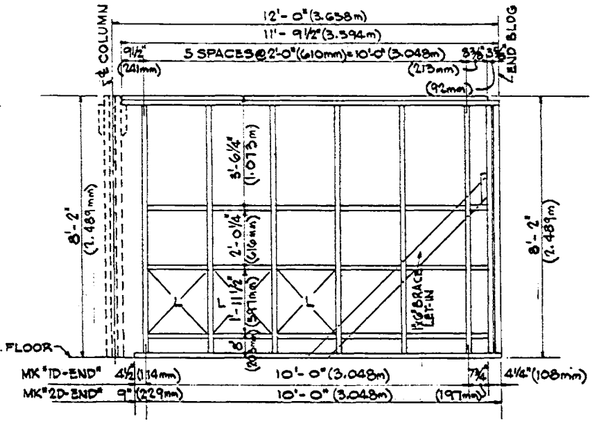
SCALE NO. 4



INTERIOR BAY

1 STORY BLDG — MK "1D-INT"

2 STORY BLDG, 2ND FLOOR — MK "2D-INT"

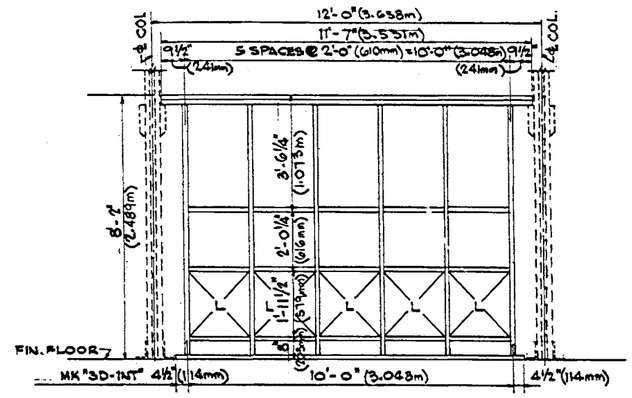


RIGHT END BAY

(LEFT END BAY - OPP. HAND)

1 STORY BLDG & 2 STORY BLDG, 1ST FLOOR } MK "1D-END" (R OR L)

2 STORY BLDG, 2ND FLOOR — MK "2D-END" (R OR L)



NOTE

1. PANEL STUDS, GIRTS & PLATES TO BE 2"x 4" LUMBER.
2. TEMPORARY BRACE ALL PANELS TO HOLD SQUARE UNTIL IN PLACE.
3. "L" INDICATES LOCATION OF LOUVERS WHEN REQUIRED.

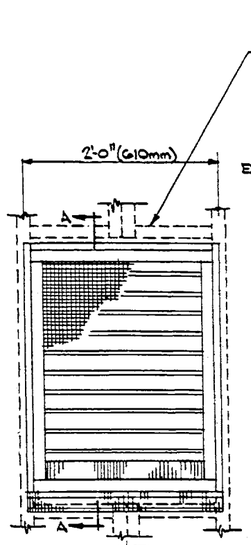
INTERIOR BAY

2 STORY BLDG, 1ST FLOOR — MK "3D-INT"

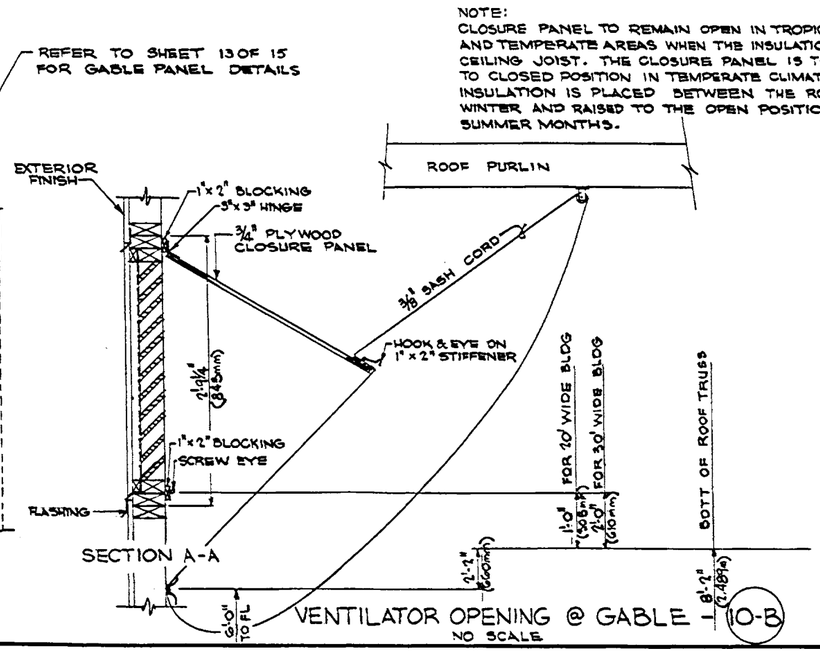
SIDE PANELS - DESERT & TROPIC CLIMATES

SCALE NO. 4

NOTE:
CLOSURE PANEL TO REMAIN OPEN IN TROPICAL AREAS AND TEMPERATE AREAS WHEN THE INSULATION IS AT CEILING JOIST. THE CLOSURE PANEL IS TO BE DROPPED TO CLOSED POSITION IN TEMPERATE CLIMATE WHEN THE INSULATION IS PLACED BETWEEN THE ROOF JOIST IN WINTER AND RAISED TO THE OPEN POSITION IN THE SUMMER MONTHS.



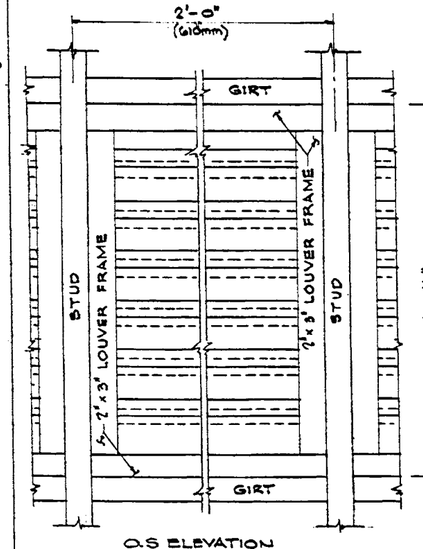
ELEVATION



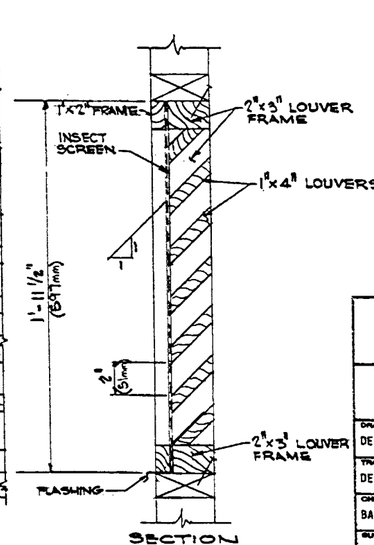
SECTION A-A

VENTILATOR OPENING @ GABLE — 10-B

NO SCALE



O.S ELEVATION



SECTION

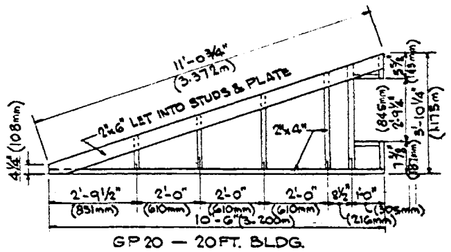
LOUVER DETAILS

NO SCALE

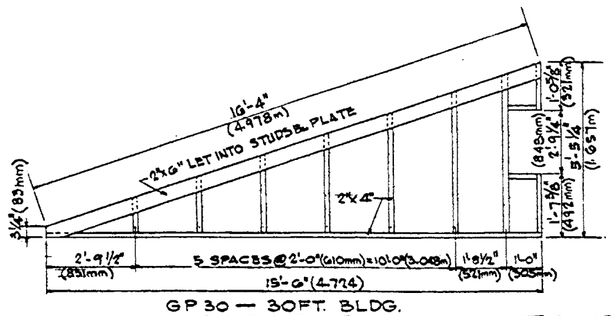
GRAPHIC SCALES 0 1' 2' 3' 4' / 0 1m

NO. 4

HAYES, SEAY, MATTERN & MATTERN, ARCHITECTS - ENGINEERS, ROANOKE, VIRGINIA, WASHINGTON, D. C.	DEPARTMENT OF THE ARMY, OFFICE OF THE CHIEF OF ENGINEERS, DIRECTOR OF MILITARY ENGINEERING, WASHINGTON, D.C.
DRAWN BY: DEICHMANN	ARMY FACILITIES COMPONENTS SYSTEM
TRACED BY: DEICHMANN	WOOD FRAME CONSTRUCTION, GENERAL PURPOSE TYPE BUILDINGS, SIDE WALL PANEL DETAILS, ALL CLIMATES
CHECKED BY: BARKSDALE	
SUBMITTED BY: C.W. DEICHMANN	APPROVED: Edwin D. Patterson, CHIEF, AFCS OFFICE, MILITARY ENGINEERING, OCE — DATE: 27 April 73
APPROVED FOR PROPONENT AGENCY: — DATE:	SCALE: AS NOTED — SPEC. NO. — DRAWING NUMBER: 34-05 — SHEET 12 OF 15



GP 20 — 20FT. BLDG.

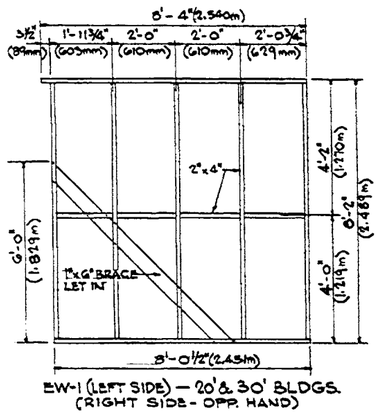


GP 30 — 30FT. BLDG.

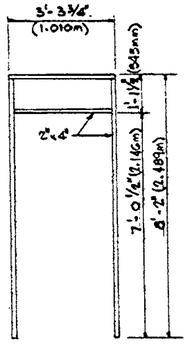
GABLE PANELS — TEMPERATE CLIMATE

LEFT SIDE SHOWN — (RIGHT SIDE IS OPPOSITE HAND)

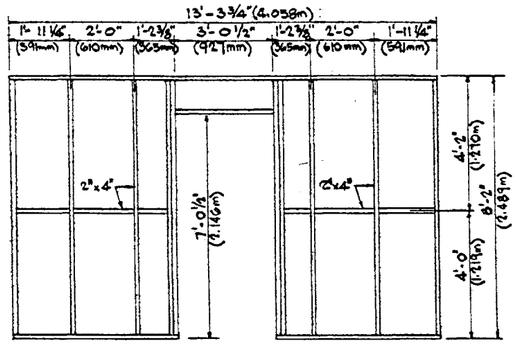
SCALE NO. 4



EW-1 (LEFT SIDE) — 20' & 30' BLDGS.
(RIGHT SIDE - OPP. HAND)



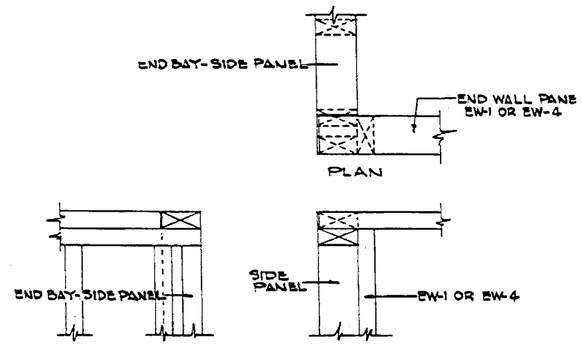
EW-2 — 20' BLDG.
(AT CENTER)



EW-3 (AT CENTER) — 30'

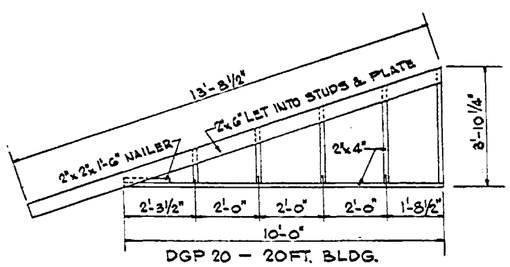
END WALL PANELS — ALL CLIMATES

SCALE NO. 4

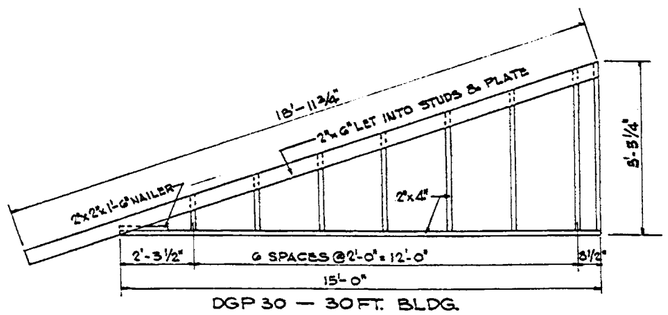


CORNER CONNECTION OF PANELS AT TOP PLATE

NO SCALE



DGP 20 — 20FT. BLDG.



DGP 30 — 30FT. BLDG.

GABLE PANELS — DESERT & TROPIC CLIMATES

(LEFT SIDE SHOWN — (RIGHT SIDE IS OPPOSITE HAND)

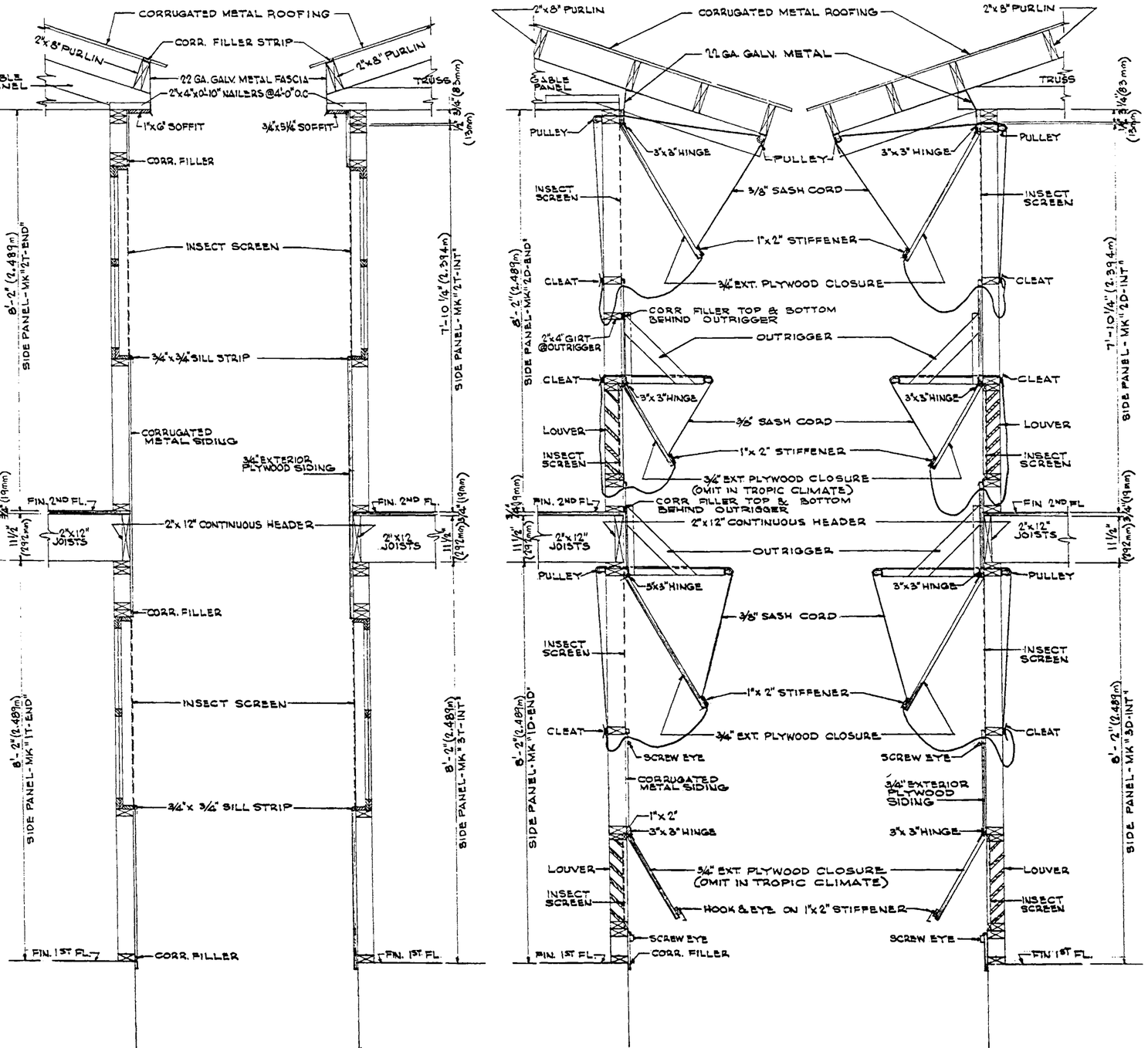
SCALE NO. 4

GRAPHIC SCALES

0 1' 2' 3' 4'

0 NO. 4 1m

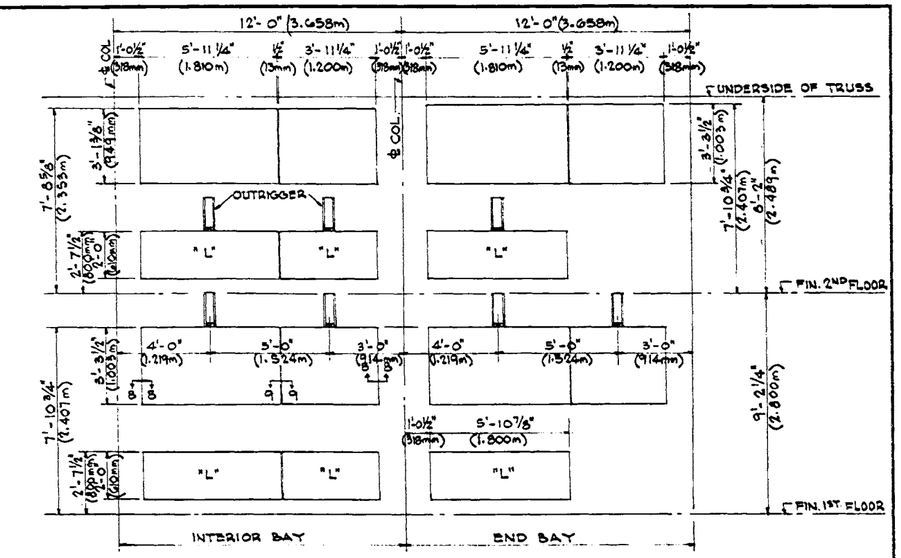
HAYES, SEAY, MATTERN & MATTERN ARCHITECTS - ENGINEERS ROANOKE, VIRGINIA WASHINGTON, D.C.	DEPARTMENT OF THE ARMY OFFICE OF THE CHIEF OF ENGINEERS DIRECTOR OF MILITARY ENGINEERING WASHINGTON, D.C.
DRAWN BY: DEICHMANN TRACED BY: DEICHMANN CHECKED BY: BARKSDALE	ARMY FACILITIES COMPONENTS SYSTEM WOOD FRAME CONSTRUCTION GENERAL PURPOSE TYPE BUILDINGS END WALL PANEL DETAILS ALL CLIMATES
SUBMITTED BY: C.W. DEICHMANN	APPROVED: Edwin D. Patten, CHIEF, APOS OFFICE, MILITARY ENGINEERING, OCE. DATE: 27 April 73
APPROVED FOR PROPONENT AGENCY: DATE:	SCALE: AS NOTED SPEC. NO. DRAWING NUMBER: 34-05 SHEET 13 OF 15



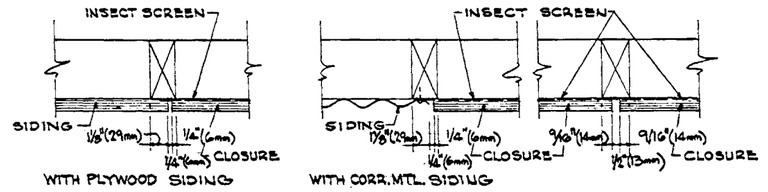
END BAY SHOWING CORRUGATED METAL SIDING — INTERIOR BAY SHOWING PLYWOOD SIDING — TEMPERATE CLIMATE

END BAY SHOWING CORRUGATED METAL SIDING — INTERIOR BAY SHOWING PLYWOOD SIDING — DESERT & TROPIC CLIMATES

TYPICAL SIDE WALL SECTIONS
SCALE NO. 6

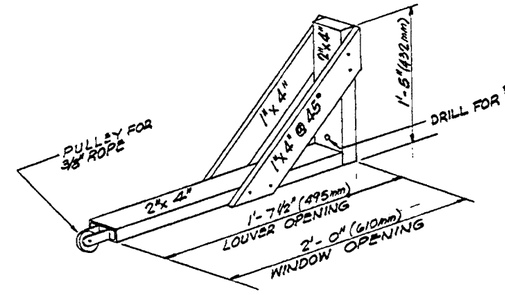


TYPICAL SIDE ELEVATION SHOWING CLOSURES—DESERT CLIMATE
SCALE NO. 3
OMIT CLOSURES (MARKED "L") W/APPURTENANCES IN TROPIC CLIMATE.



SECTION 8-8
SCALE NO. 8

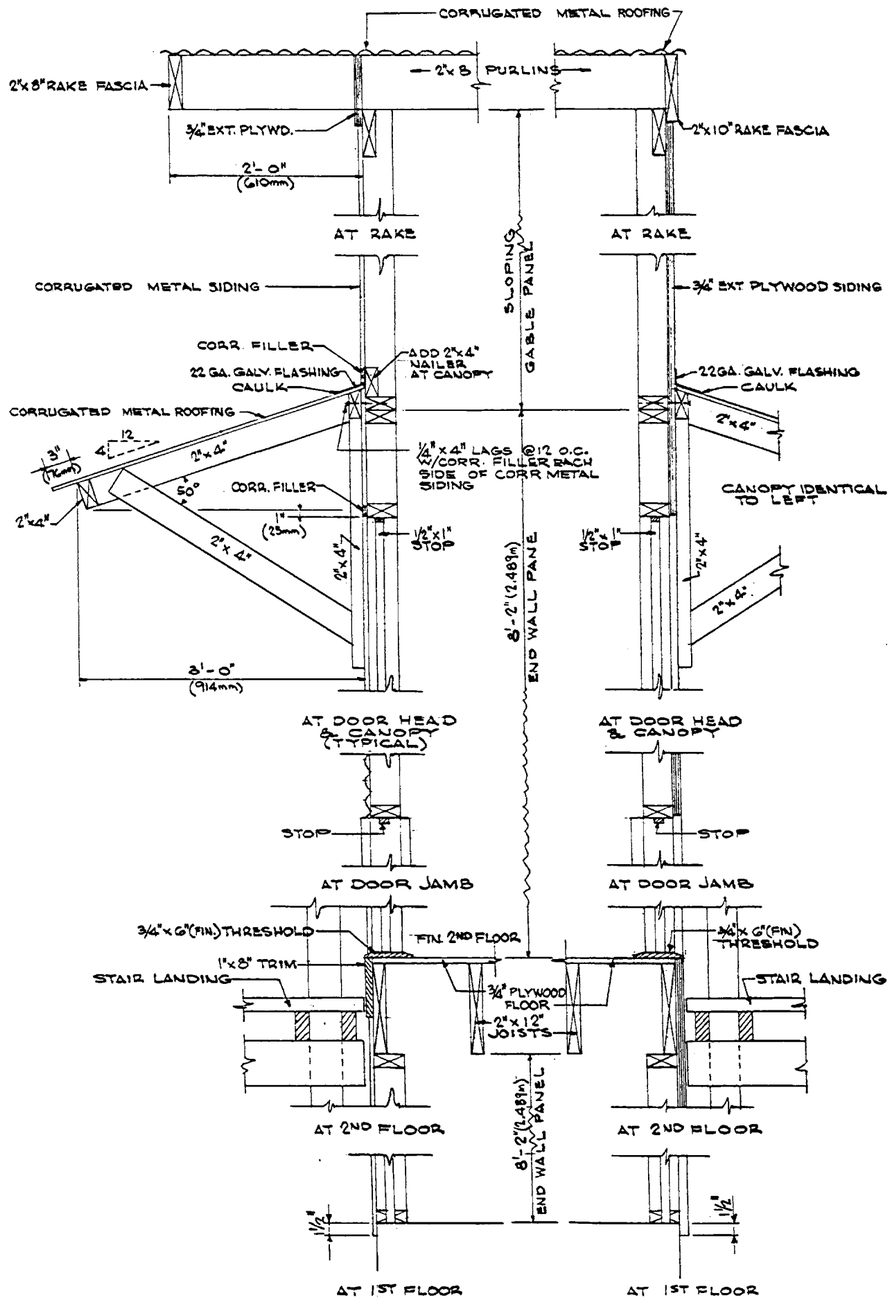
SECT. 9-9
SCALE NO. 8



OUTRIGGER FOR CLOSURES
NO SCALE

GRAPHIC SCALES
0 1' 2' 3' 4' 0 1m NO. 3
0 1' 2' 0 300mm 600mm NO. 6
0 3" 6" 9" 1' 0 100mm 300mm NO. 8

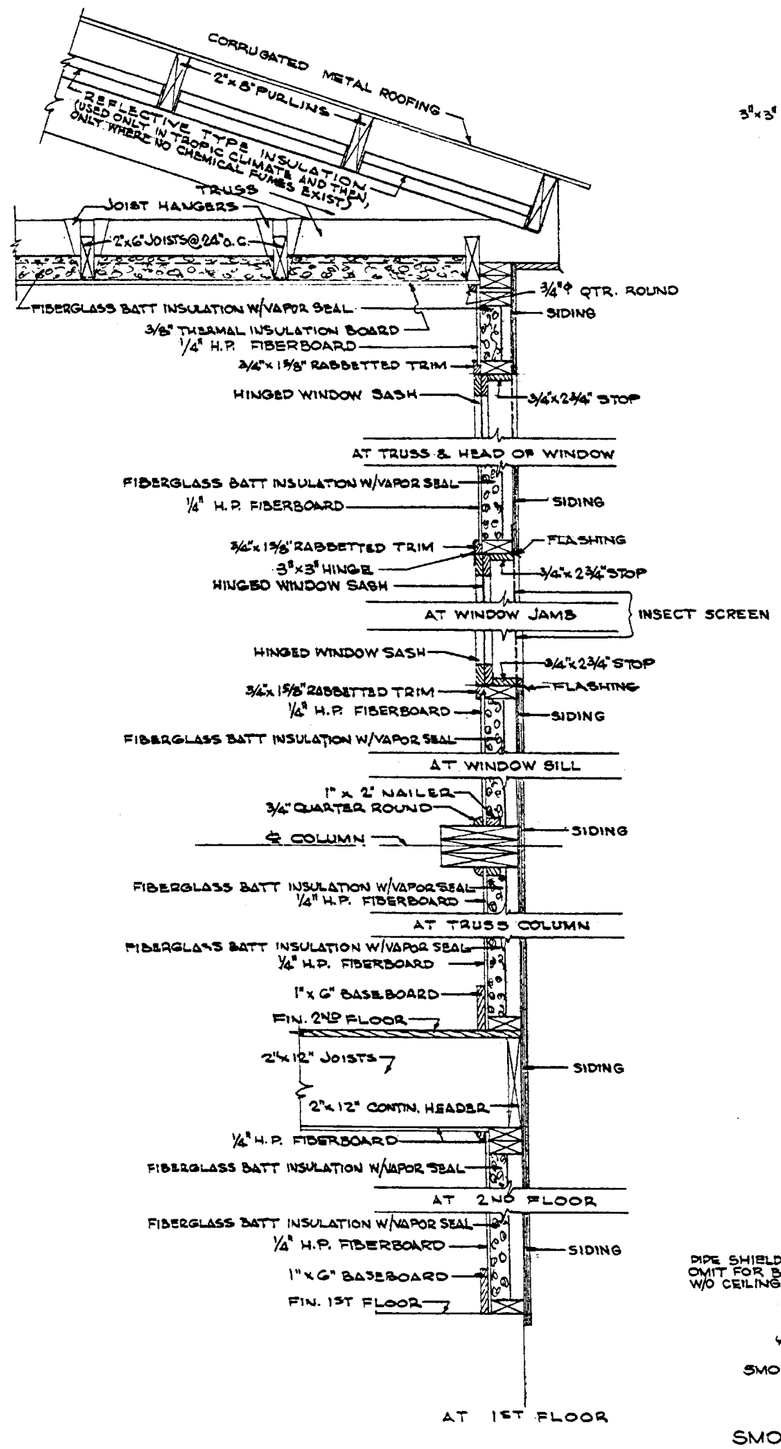
HAYES, SEAY, MATTERN & MATTERN ARCHITECTS - ENGINEERS ROANOKE, VIRGINIA WASHINGTON, D. C.	DEPARTMENT OF THE ARMY OFFICE OF THE CHIEF OF ENGINEERS DIRECTOR OF MILITARY ENGINEERING WASHINGTON, D. C.
DRAWN BY: DEICHMANN	ARMY FACILITIES COMPONENTS SYSTEM
TRACED BY: DEICHMANN	WOOD FRAME CONSTRUCTION GENERAL PURPOSE TYPE BUILDINGS TYPICAL SIDE WALL SECTIONS & DETAILS
CHECKED BY: BARKSDALE	
SUBMITTED BY: C.W. DEICHMANN	APPROVED: Edwin A. Patterson, CHIEF, APCS OFFICE, MILITARY ENGINEERING, OCE — DATE: 27 April 73
APPROVED FOR PROPONENT AGENCY: DATE	SCALE: AS NOTED — SPEC. NO. — DRAWING NUMBER: 34-05 — SHEET 14 OF 15



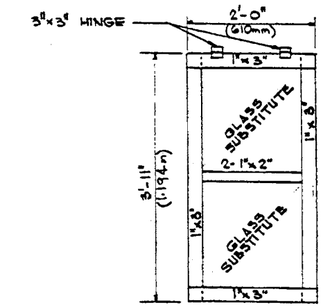
END WALL SHOWING CORRUGATED METAL SIDING

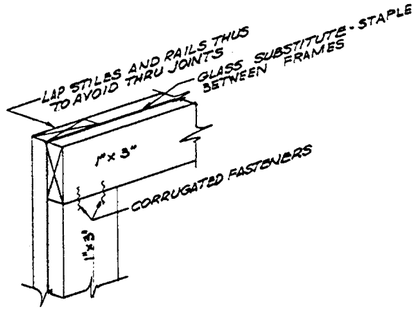
END WALL SHOWING PLYWOOD SIDING

TYPICAL END WALL SECTIONS
SCALE NO.7

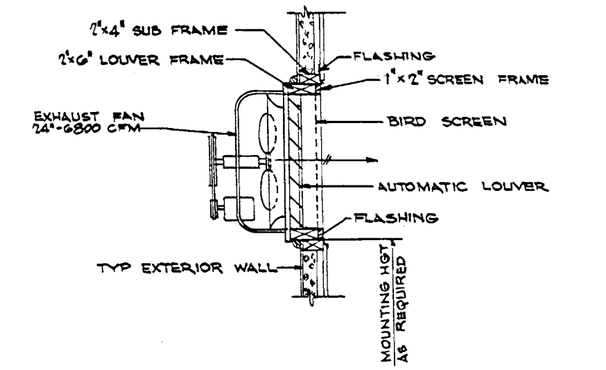


LINER DETAILS
SCALE NO.7

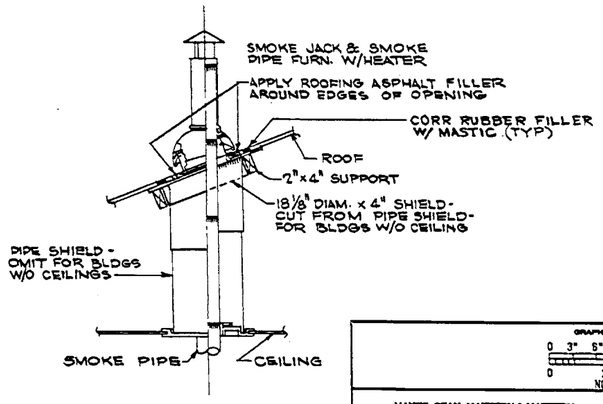




WINDOW SASH DETAILS
NO SCALE



POWER EXHAUST FAN DETAIL
NO SCALE
TYPICAL FOR ALL BUILDINGS & ALL CLIMATES WHEN REQUIRED



SMOKE JACK ASSEMBLY FOR BLDGS W/CEILINGS (WHEN REQUIRED)
NO SCALE

GRAPHIC SCALES
0 3" 6" 9" 1'
0 200mm 400mm
NO. 7

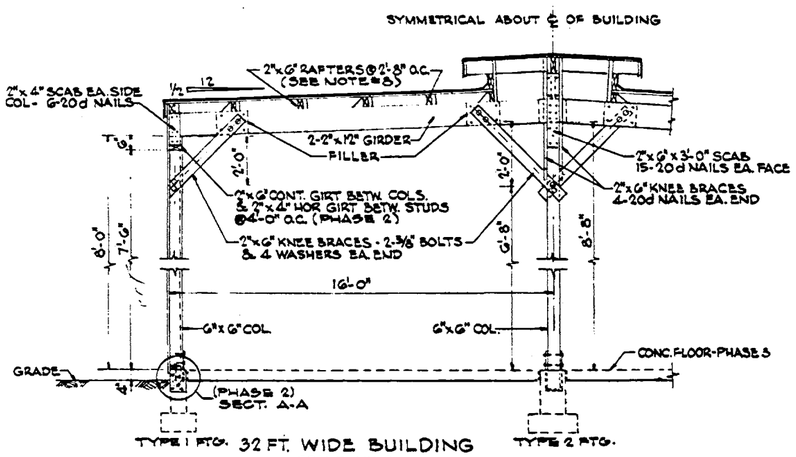
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
DIRECTOR OF MILITARY ENGINEERING
WASHINGTON, D.C.

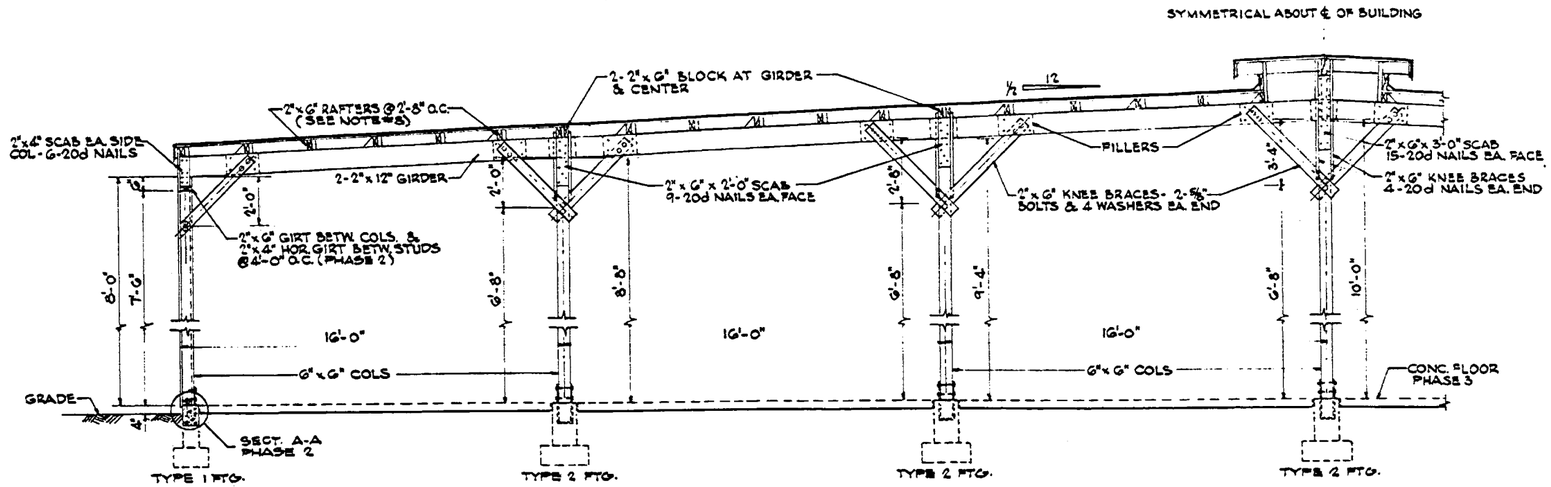
DRAWN BY: DEICHMANN
TRACED BY: DEICHMANN
CHECKED BY: BARKSDALE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: Edwin A. Patterson, CHIEF, APOR OFFICE, MILITARY ENGINEERING, OCE
DATE: 27 April 73
APPROVED FOR PROPONENT AGENCY:
DATE:

ARMY FACILITIES COMPONENTS SYSTEM
WOOD FRAME CONSTRUCTION
GENERAL PURPOSE TYPE BUILDINGS
TYPICAL END WALL SECTIONS
LINER DETAILS
WINDOW DETAILS

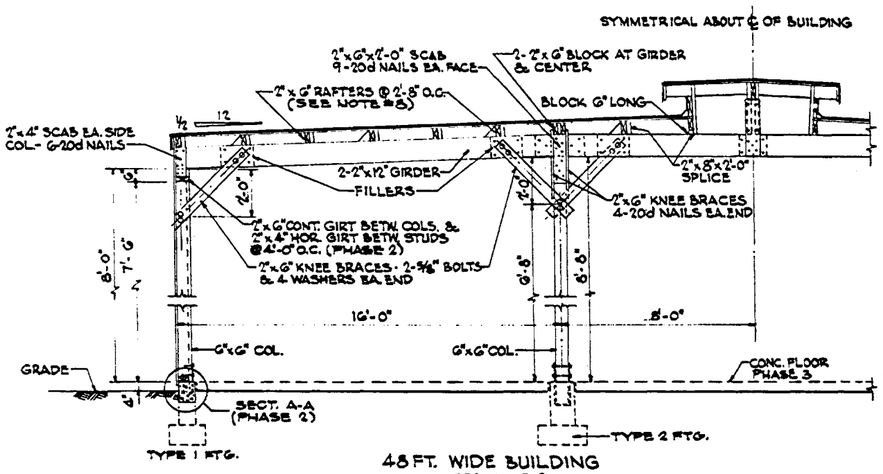
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-05
SHEET 15 OF 15



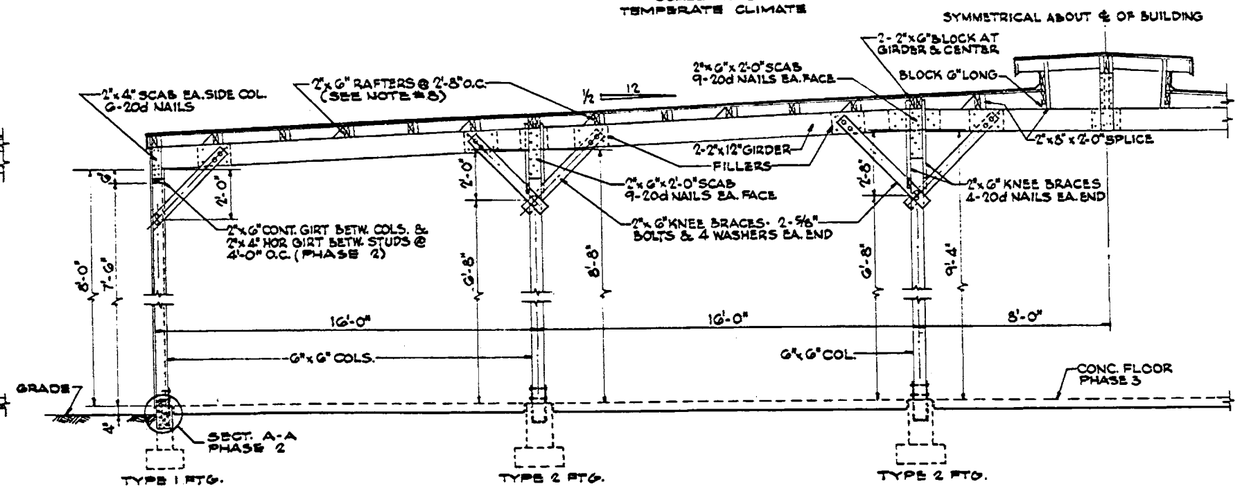
32 FT. WIDE BUILDING
SCALE NO. 3
TEMPERATE CLIMATE



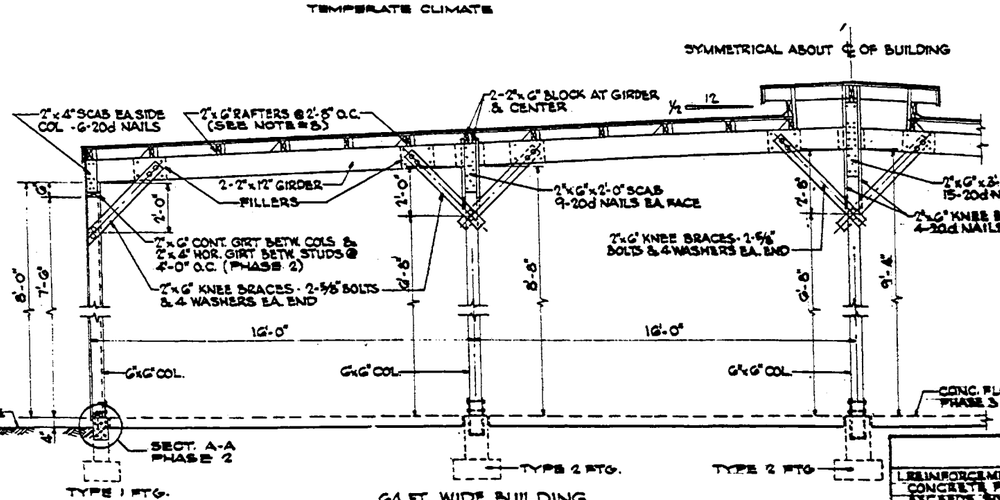
96 FT. WIDE BUILDING
SCALE NO. 3
TEMPERATE CLIMATE



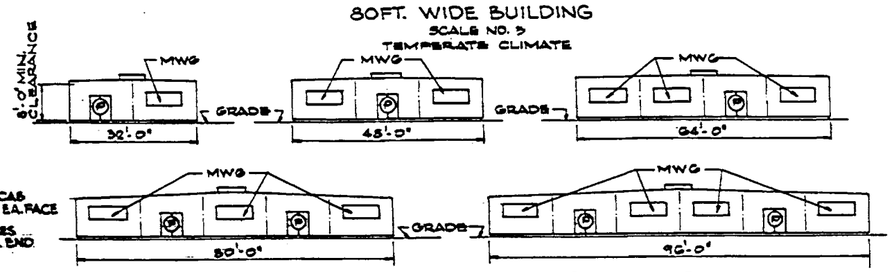
48 FT. WIDE BUILDING
SCALE NO. 3
TEMPERATE CLIMATE



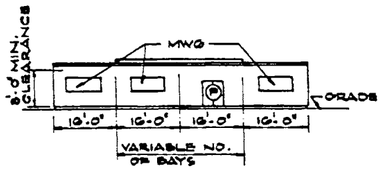
80FT. WIDE BUILDING
SCALE NO. 3
TEMPERATE CLIMATE



64 FT. WIDE BUILDING
SCALE NO. 3
TEMPERATE CLIMATE



TYPICAL END ELEVATIONS - PHASE 2 CLADDING
TEMPERATE CLIMATE
NO SCALE



TYPICAL SIDE ELEVATION
PHASE 2 - CLADDING
TEMPERATE CLIMATE
NO SCALE

NOTE:
UNITS HAVE IDENTICAL OPENINGS ON BOTH SIDE ELEVATIONS.

CORRUGATED SHEET METAL IS NOT RECOMMENDED FOR ROOFS WITH PITCH LESS THAN 4 INCHES IN 12 INCHES.

NOTE:
FOR ROOF SUPPORTING PIPE LOADS
REFER TO DWG. 34-04 SH. 3 OF 3.

GENERAL NOTES

1. REINFORCEMENT SHALL BE USED IN CONCRETE PIERS WHEN THE HEIGHT EXCEEDS SIX TIMES THE LEAST DIMENSION.
2. SOIL BEARING PRESSURE IS ASSUMED TO BE 2000# /FT². ALL FOOTINGS SHOULD EXTEND BELOW FROST LINE.
3. WHERE CONDITIONS WARRANT, GRAVEL FILL MAY BE USED UNDER CONCRETE FLOORS.
4. PLACES (ON GRADE) CONCRETE SLABS IN ALTERNATE SECTIONS NOT TO EXCEED 800 SQ. FT. IN AREA.
5. 16 FT. GIRDER SPANS MAY BE USED IF INDICATED ON PLANS. IF SPAN EXCEEDS 16' USE INTERMEDIATE POST.
6. TO PREVENT SPLITTING, STAGGER AND DRIVE NAILS FROM BOTH SIDES WHEN ACCESSIBLE.
7. PHASE 1 - FRAME, ROOF AND FOUNDATION INCLUDES ONLY THIS ROOF, COLUMNS WITH FOOTINGS & THE KNEE BRACES & MAY BE UTILIZED AS AN OPEN SHED WAREHOUSE.
8. WHERE INSULATION OF ANY TYPE IS USED IN CEILING, ROOF RAFTER SPACING IS REDUCED TO 2'-0" O.C.
9. ⅜" EXTERIOR PLYWOOD, TYPE C-C OR C-C PLUGGED, MAY BE USED FOR ROOF & WALL SHEATHING. 8 CYCLITE 8d NAILS SHOULD BE USED.
10. FOR DESIGN CRITERIA, REFER TO DWG. NO. 34-11 SHEET 2.
11. REFER TO DWG. NO. 34-11 SHEET 2 FOR ADDITIONAL GENERAL NOTES.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
34-11	ELEVATIONS-SECTIONS-ALL WIDTHS TEMPERATE CLIMATE	1 OF 3
34-11	FRAMING DETAILS TEMPERATE CLIMATE	2 OF 3
34-11	FRAMING DETAILS TROPICAL CLIMATE & SCHED. OF PADS,	3 OF 3
34-15	WINDOW & DOOR DET'LS	1 & 2 OF 2

SYMBOL	DESCRIPTION	DATE	APPROVAL
▲	REVISED G&N. NOTE # 8	AUG '70	CWD

REVISIONS
DRAWING SCALES
0 1' 2' 3' 4' 5'
NO.3

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

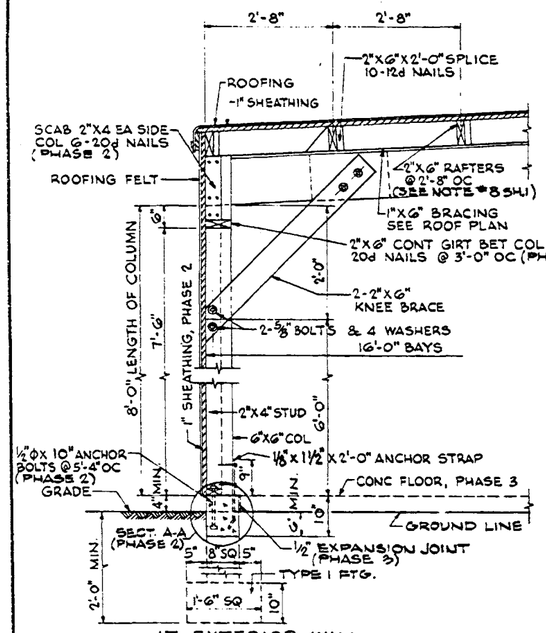
DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature]
CHIEF, ARCHITECT BRANCH

APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

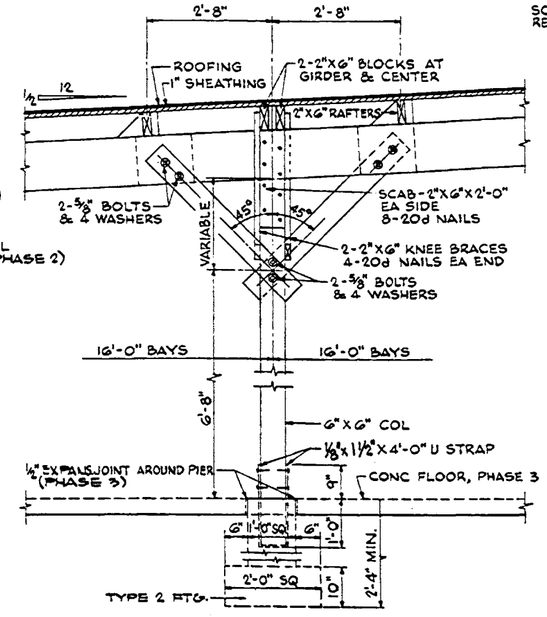
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
WAREHOUSE TYPE BUILDING
8'-0" MIN. CLEARANCE
FOR PERSONNEL USE
ELEVATIONS & SECTIONS
ALL WIDTHS-TEMPERATE CLIMATE

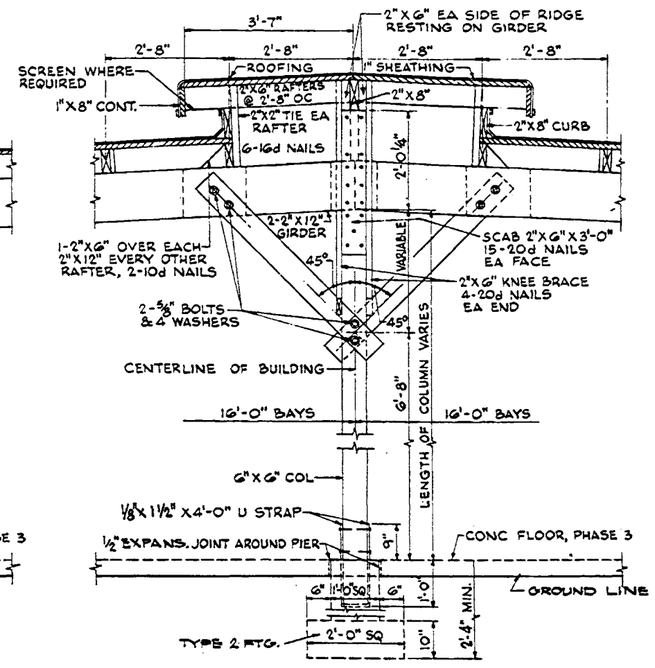
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-11
SHEET 1 OF 3



AT EXTERIOR WALL



AT INTERMEDIATE COLUMN



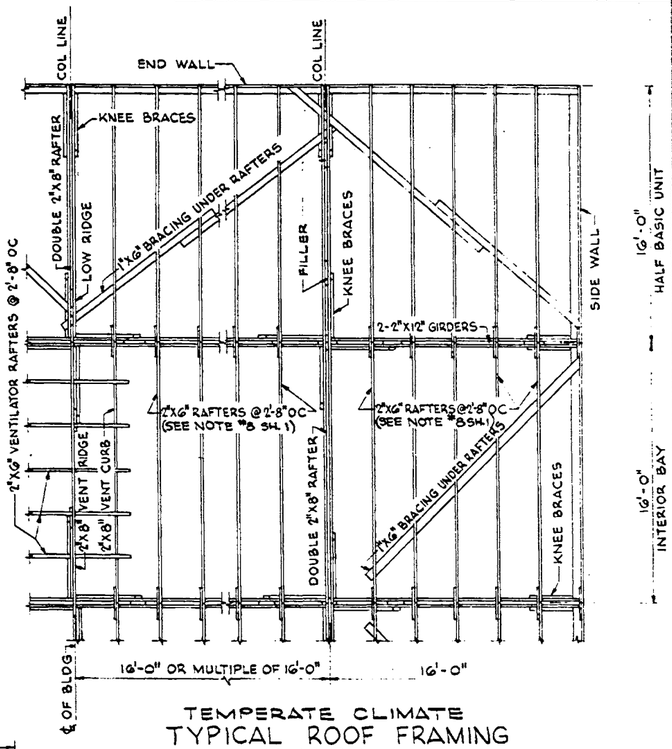
AT ℄ OF BUILDING

HALF CROSS SECTION AT COLUMN LINES
TEMPERATE CLIMATE
SCALE NO. 5

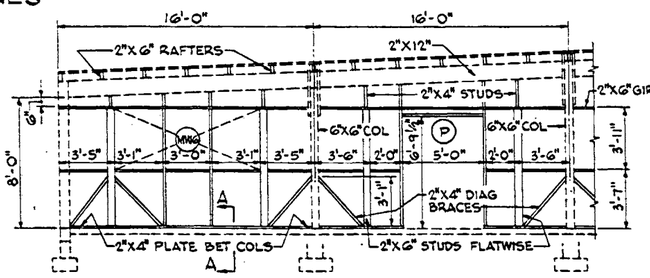
NAILING SCHEDULE

MINIMUM SIZE & NUMBER-UNLESS OTHERWISE NOTED FOR STANDARD COMMON NAILS ONLY.	
DESCRIPTION	NO. & SIZE
BUILT-UP MEMBERS, PIECES IN CONTACT - EACH LAYER	16d-12"OC STAGGERED
SHEATHING TO STUDS, RAFTER, GIRT, PLATE, BLOCKING, ETC.	6" BOARD = 2-8d OVER 6" = 3-8d
1"X6" DIAG BRACING TO STUD, GIRT, RAFTER, BLOCKING, ETC.	3-8d
RAFTER TO GIRDER, GIRT TO POST, STUD TO SILL - TOE NAIL EACH SIDE	2-10d
GIRT, SPACER, BLOCKING - EACH SIDE	2-10d
WOOD MEMBERS TO SIDE OF STUD	4-16d
SINGLE PLATE TO TOP OF STUD	2-16d

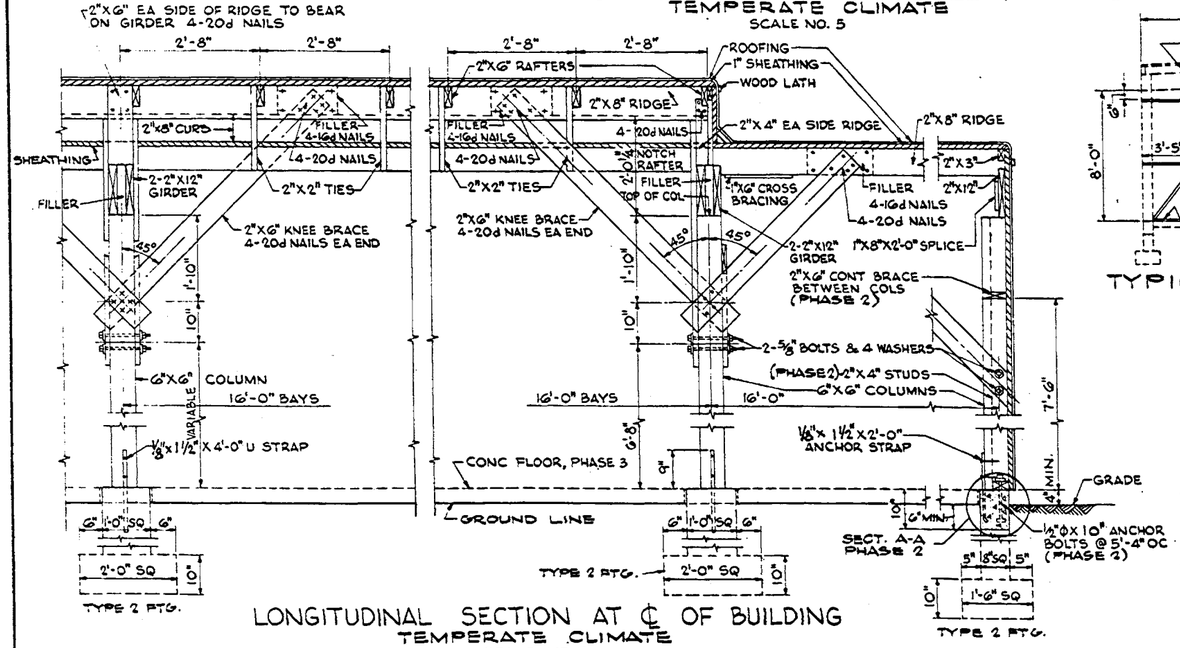
NOTE:
1. NAILS ON OPPOSITE SIDE OF A TIMBER SHALL BE STAGGERED TO PREVENT SPLITTING.
MINIMUM SPACING ℄ TO ℄ - 1/2 NAIL LENGTH
MINIMUM SPACING FROM EDGE - 1/2 NAIL LENGTH
2. USE SHEET METAL SCREWS TO SECURE LAPS OF CORRUGATED ROOFING AND SIDING.



TEMPERATE CLIMATE
TYPICAL ROOF FRAMING
PHASE 1
SCALE NO. 2

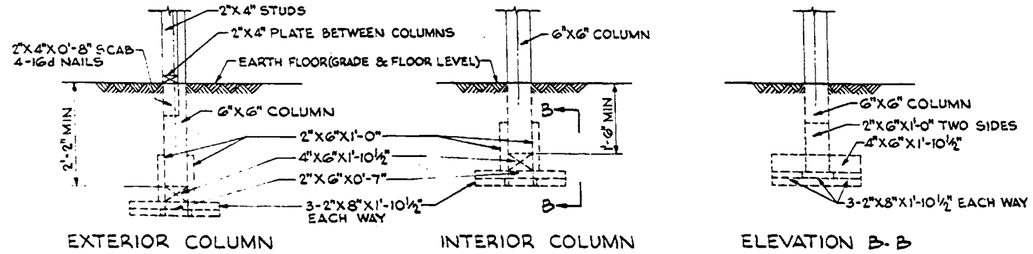


TYPICAL END WALL FRAMING - PHASE 2
TEMPERATE CLIMATE
SCALE NO. 2
NOTE: BROKEN LINES INDICATE PHASE 1 CONSTRUCTION



LONGITUDINAL SECTION AT ℄ OF BUILDING
TEMPERATE CLIMATE
SCALE NO. 5

TYPICAL SIDE WALL FRAMING - PHASE 2
TEMPERATE CLIMATE
SCALE NO. 2
NOTE: BROKEN LINES INDICATE PHASE 1 CONSTRUCTION



EXTERIOR COLUMN INTERIOR COLUMN ELEVATION B-B

ALTERNATE WOOD FOOTINGS & EARTH FLOOR
SCALE NO. 5

GENERAL NOTES

1. REINFORCEMENT SHALL BE USED IN CONCRETE PIERS WHEN THE HEIGHT EXCEEDS SIX TIMES THE LEAST DIMENSION.
2. SOIL BEARING PRESSURE IS ASSUMED TO BE 3000#/FT². ALL FOOTINGS SHOULD EXTEND BELOW FROST LINE.
3. WHERE CONDITIONS WARRANT, GRAVEL FILL MAY BE USED UNDER CONCRETE FLOORS.
4. PLACE CONCRETE SLABS IN ALTERNATE SECTIONS NOT TO EXCEED 800 SQ. FT. IN AREA.
5. REFER TO DWG. NO. 34-11, SHEET 3 OF 3 FOR SMOKE JACK ASSEMBLY DETAILS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' NO.2
0 1' 2' 3' NO.5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

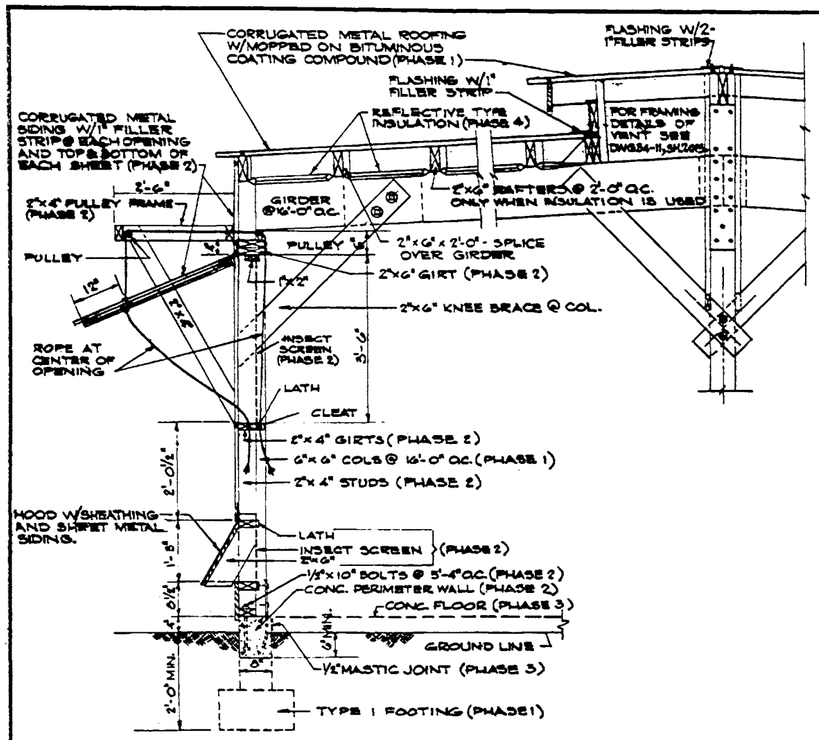
DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: H. C. Eichamy
CHIEF, ARMY/NCO BRANCH

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
WAREHOUSE TYPE BUILDING
8'-0" MIN. CLEARANCE
FOR PERSONNEL USE

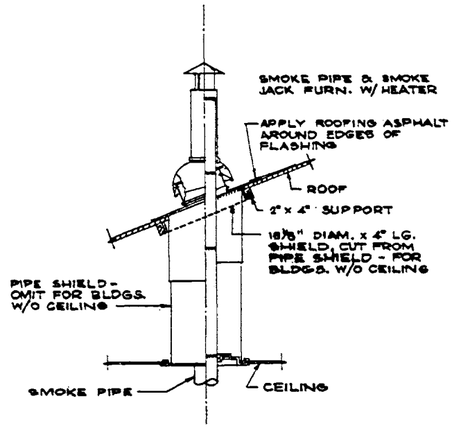
FRAMING DETAILS-TEMPERATE CLIMATE

APPROVED: H. M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE:

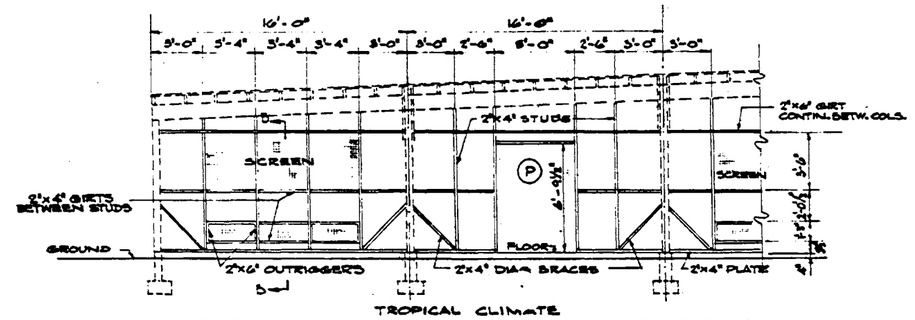
APPROVED FOR PROPONENT AGENCY:
DATE
SCALE AS NOTED
SPEC NO.
DRAWING NUMBER 34-11
SHEET 2 OF 3



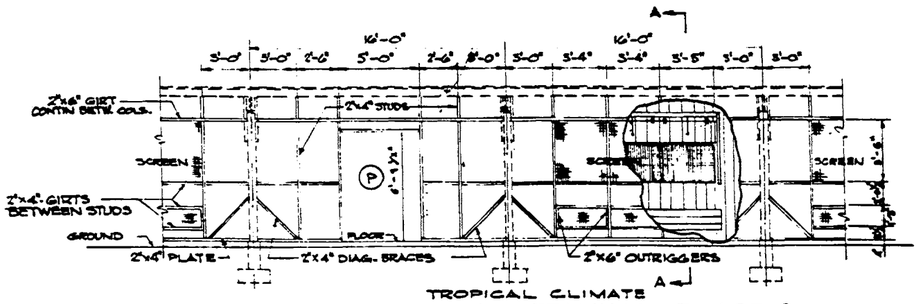
SECTION A-A THRU SIDE WALL - ALL BUILDINGS
TROPICAL CLIMATE
SCALE NO. 3
SECTION B-B END WALL IS SIMILAR



SMOKE JACK ASSEMBLY
NOT TO SCALE



TROPICAL CLIMATE
TYPICAL END WALL FRAMING - PHASE 2
SCALE NO 2
NOTE - BROKEN LINES INDICATE PHASE 1 CONSTRUCTION



TROPICAL CLIMATE
TYPICAL SIDE WALL FRAMING - PHASE 2
SCALE NO 2
NOTE: BROKEN LINES INDICATE PHASE 1 CONSTRUCTION

FACILITY NUMBERS
WAREHOUSE TYPE BASIC BLDGS. - PERSONNEL USE
8'-0" MINIMUM CLEARANCE
PHASE 1 - FRAME, ROOF & CONCRETE FOUNDATION

TYPE OF ROOF	BASIC BUILDINGS 32'W x 32'L	48'W x 32'L	64'W x 32'L	80'W x 32'L	96'W x 32'L
WOOD & FELT (TEMP.)	341101	341111	341121	341131	341141
CORR. MET. (TROP.)	341102	341112	341122	341132	341142

ADDITIONAL BAYS FOR WAREHOUSE TYPE BLDGS - 8'-0" MIN. CLEAR.
PHASE 1 - FRAME, ROOF & CONCRETE FOUNDATION

TYPE OF ROOF	BUILDING WIDTHS FOR 16' BAY 32'	48'	64'	80'	96'
WOOD & FELT (TEMP.)	341103	341113	341123	341133	341143
CORR. MET. (TROP.)	341104	341114	341124	341134	341144

PHASE 2 - CLADDING 9'-0" x 100' UNIT

FACILITY NUMBER	DESCRIPTION
341101	WOOD & FELT W/WINDOWS & DOORS - TEMPERATE CLIMATE
341103	CORRUGATED STEEL W/WINDOWS & DOORS - TEMPERATE CLIMATE
341104	CORRUGATED STEEL W/SCREENED VENTS & DOORS - TROPICAL CLIMATE

NOTE - PHASE 2 CLADDING UNIT INCLUDES SUFFICIENT MATERIAL TO CONSTRUCT CONCRETE PERIMETER WALL, STUDDING, WALL COVERING, 4 WINDOWS AND 2 DOORS.

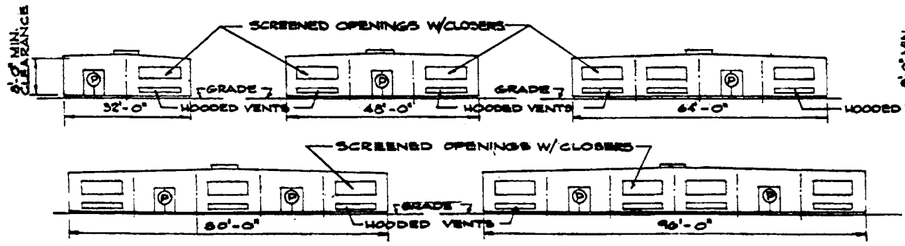
FACILITY NUMBERS
PHASE 3 FLOOR 1000 SF UNIT

FACILITY NUMBER	DESCRIPTION
340372	CONCRETE, 4" THICK, WITHOUT REINFORCEMENT
340373	CONCRETE, 6" THICK, WITH 6"x6" WIRE MESH

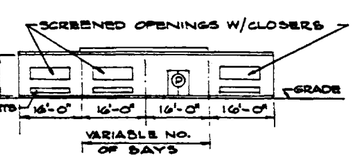
FACILITY NUMBERS
PHASE 4 LINER 1000 SF UNIT

	FACILITY NUMBER	DESCRIPTION
	340492	REFLECTIVE TYPE INSULATION IN CEILING FOR TROPICAL CLIMATE
▲	340493	CEILING, WOOD OR STEEL FRAME WAREHOUSE OR SHOP TYPE BLDGS FOR PERSONNEL USE. TEMPERATE CLIMATE (-20°F). "U" FACTOR = 0.07
▲	340494	CEILING, WOOD OR STEEL FRAME WAREHOUSE OR SHOP TYPE BLDGS FOR MAINTENANCE OR STORAGE USE. TEMPERATE CLIMATE (-20°F). "U" FACTOR = 0.12
▲	340495	WALLS, WOOD OR STEEL FRAME WAREHOUSE OR SHOP TYPE BLDGS FOR PERSONNEL USE. TEMPERATE CLIMATE (-20°F). "U" FACTOR = 0.17
▲	340496	WALLS, WOOD OR STEEL FRAME WAREHOUSE OR SHOP TYPE BLDGS FOR MAINTENANCE OR STORAGE USE. TEMPERATE CLIMATE (-20°F). "U" FACTOR = 0.27

NOTE: FOR FSN BILLS OF MATERIAL - REFER TO TM 5-303 BY FACILITY NUMBER.



TYPICAL END ELEVATIONS - PHASE 2 CLADDING
TROPICAL CLIMATE
NO SCALE



TYPICAL SIDE ELEVATION
PHASE 2 - CLADDING
TROPICAL CLIMATE
NO SCALE
NOTE:
UNITS HAVE IDENTICAL OPENINGS ON BOTH SIDE ELEVATIONS

GENERAL NOTES

1. CORRUGATED METAL SIDING IS NOT RECOMMENDED FOR ROOFS WITH LESS THAN 4" PITCH. IF CORRUGATED METAL IS USED FOR ROOFING A BITUMINOUS COATING COMPOUND SHALL BE APPLIED ON AFTER ROOF IS IN PLACE.
2. [illegible] NOT EXCEED 8' (2'-0" O.C. SHALL BE USED TO SUPPORT ENDS & SIDES OF CORRUGATED SHEET METAL ROOFING AND CLADDING.

SYMBOL	DESCRIPTION	DATE	APPROVAL
▲	REVISED FACILITY SCHEDULE	AUG '70	CWD

GRAPHIC SCALES
0 5' 10' — NO. 2
0 1' 2' 3' — NO. 5

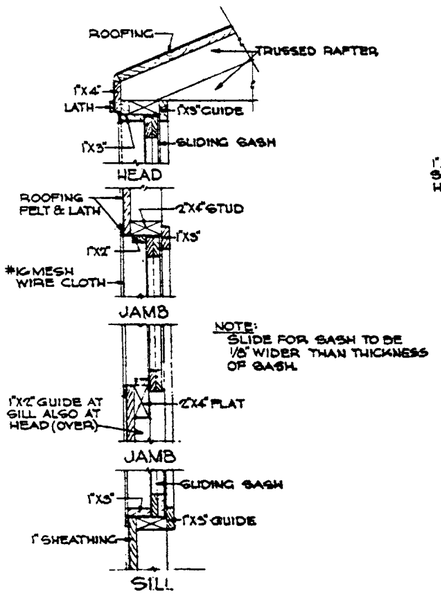
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: KEISTER
TRACED BY:
CHECKED BY: I.L.TUS
QUANTITIES BY: C.V. DEICHMANN
SUBMITTED BY:

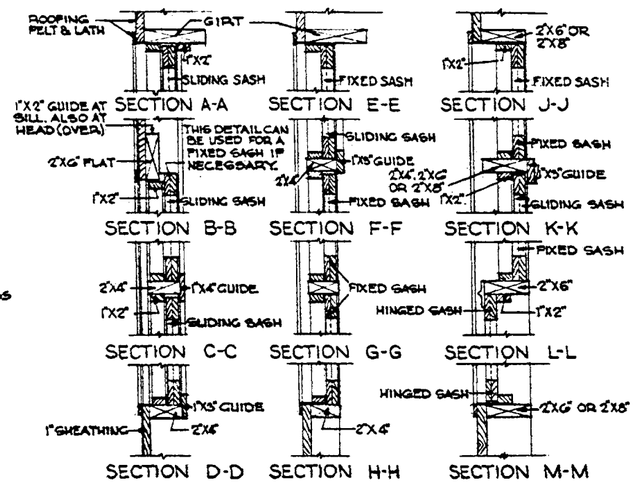
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
WAREHOUSE TYPE BUILDING
8'-0" MIN. CLEARANCE
FOR PERSONNEL USE
SCHEDULE OF FACILITIES
FRAMING DETAILS - TROPICAL CLIMATE

APPROVED: H. M. Williams — DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR. O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 39-11
SHEET 3 OF 3



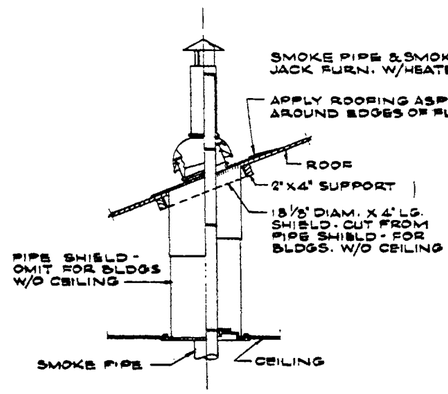
DETAILS OF SLIDING WINDOW TEMPERATE CLIMATE

SCALE NO. 7



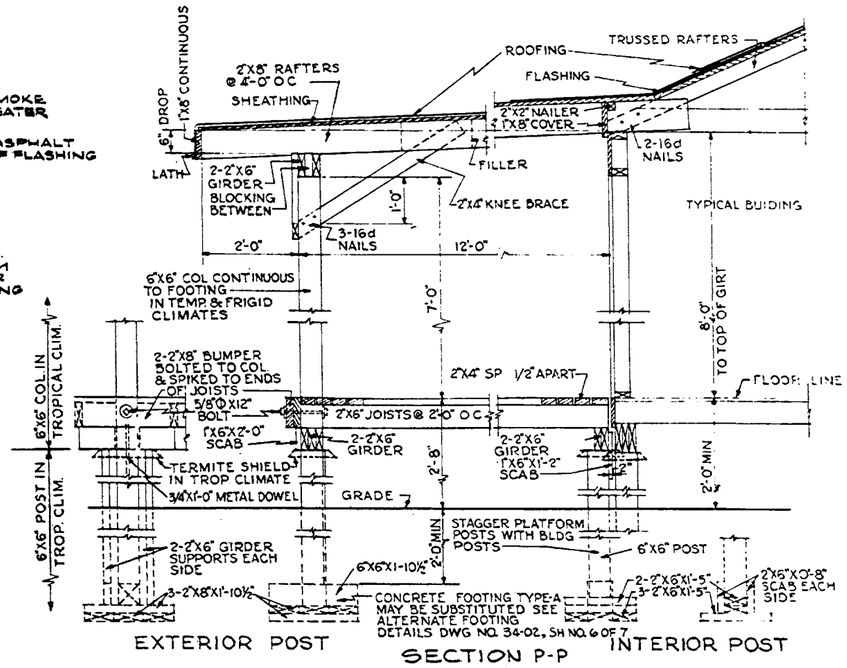
MULTIPLE WINDOW DETAILS

SCALE NO. 7



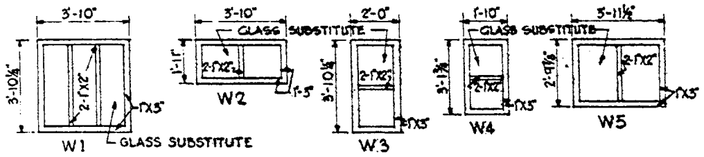
SMOKE JACK ASSEMBLY FOR BLDGS. W/CEILING

NOT TO SCALE



EXTERIOR POST — SECTION P-P — INTERIOR POST

SCALE NO. 5

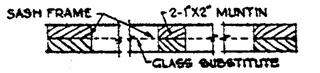


SASH TYPES

SCALE NO. 3

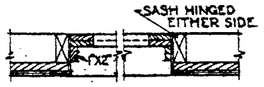
MULTIPLE WINDOWS SHOWING SASH TYPES

SCALE NO. 2



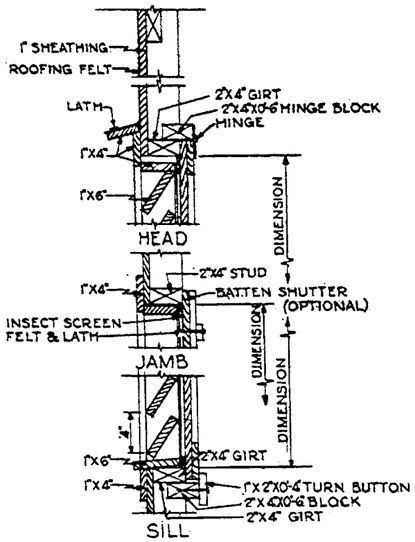
DETAIL OF SASH

SCALE NO. 8



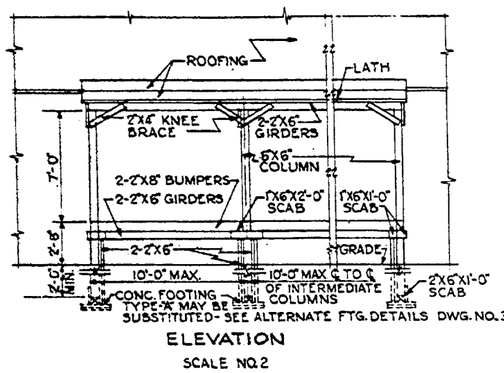
SPECIAL HINGED SASH (JAMB SECTION)

SCALE NO. 7



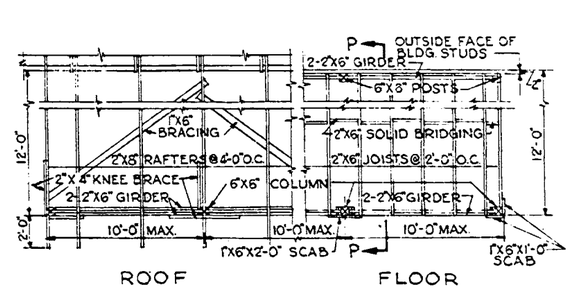
TYPICAL LOUVER DETAILS

SCALE NO. 7



ELEVATION

SCALE NO. 2



ROOF — FLOOR

FRAMING PLANS

SCALE NO. 2

DETAILS OF COVERED PLATFORM BUILT-IN-PLACE CONSTRUCTION BARRACKS TYPE BUILDING

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES — NO. 2 — NO. 3 — NO. 5 — NO. 7

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: F. Gibson
APPROVED: H. M. Williams
DATE: 19
CHIEF, ARCH'L & ENG'G BRANCH
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

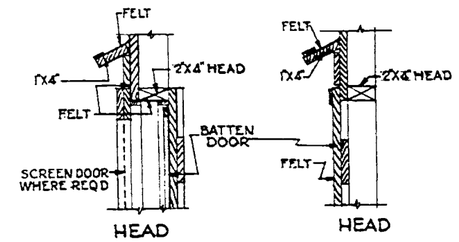
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
BARRACKS & WAREHOUSE BUILDINGS

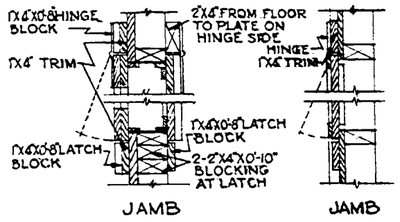
WINDOWS & MISCELLANEOUS DETAILS

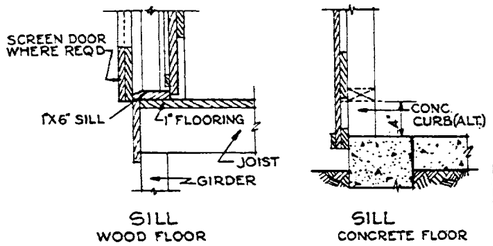
SCALE AS NOTED
SPEC. NO.
DRAWING NUMBER 34-18
SHEET 1 OF 2

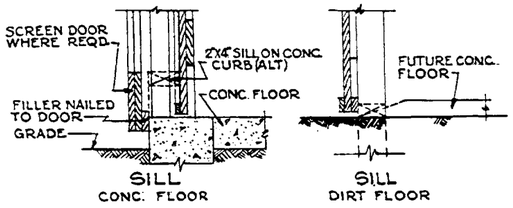
SCHEDULE OF DRAWINGS

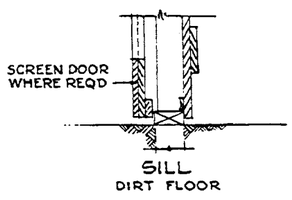
DWG. NO.	DESCRIPTION	SHEET NO.
34-18	WINDOWS & MISCELLANEOUS DETAILS	1 OF 2
34-18	EXTERIOR DOOR DETAILS	2 OF 2







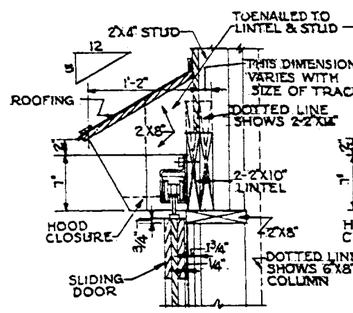


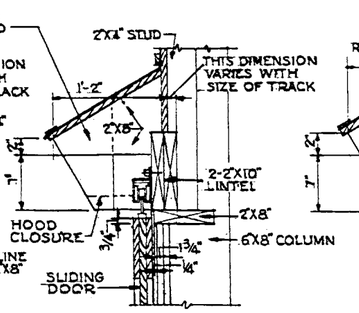


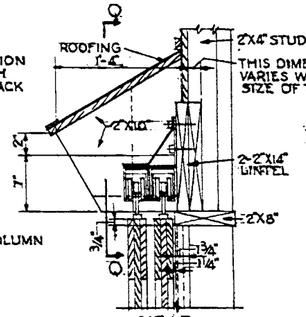
DOORS OPENING OUT

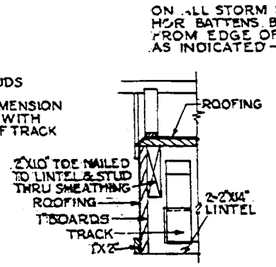
DOORS OPENING IN

HINGED DOOR DETAILS
(TEMPERATE CLIMATE)
SCALE NO. 7

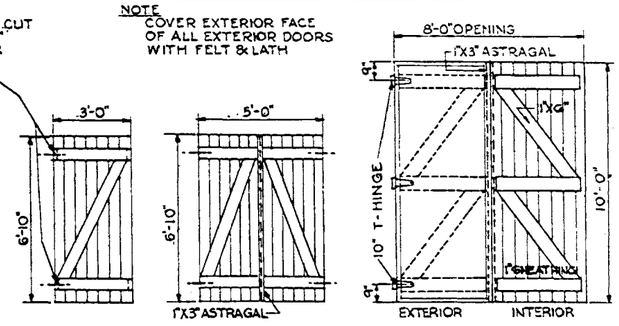




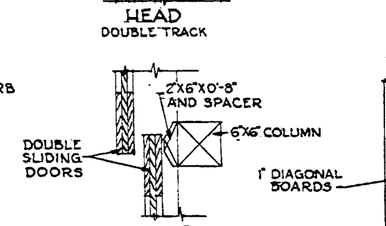


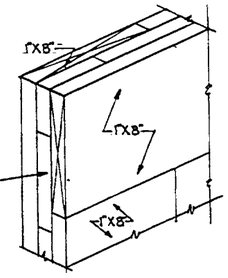


NOTE
COVER EXTERIOR FACE OF ALL EXTERIOR DOORS WITH FELT & LATH



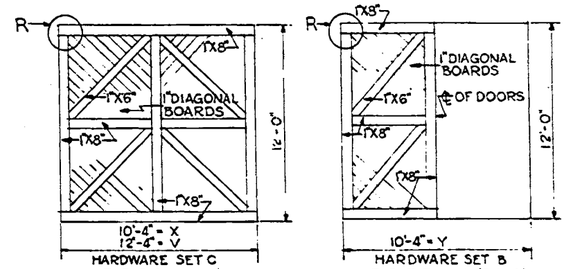
HINGED DOORS
SCALE NO. 3



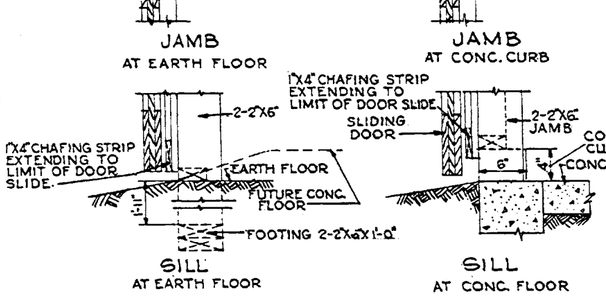


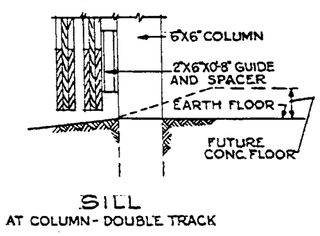
DETAIL R
NO SCALE

NOTE
DOOR BRACING AS SHOWN SHALL BE ON BOTH SIDES OF DOOR.



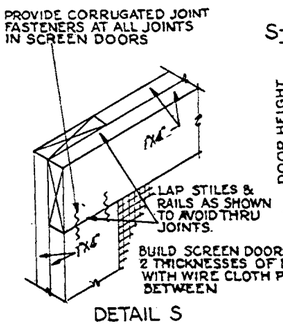
SLIDING DOORS
SCALE NO 2



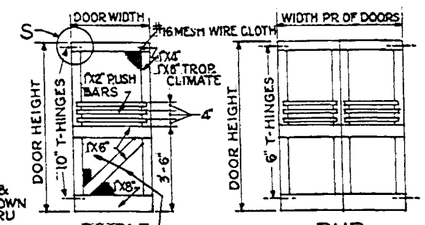


SLIDING DOOR DETAILS
SCALE NO. 7

PROVIDE CORRUGATED JOINT FASTENERS AT ALL JOINTS IN SCREEN DOORS



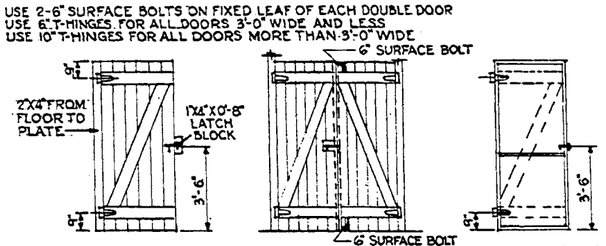
DETAIL S



NOTE: #24 MESH WIRE CLOTH SHALL BE USED IN TROPICAL CLIMATES

SCREEN DOOR DETAILS
SCALE NO. 4

USE 2-6" SURFACE BOLTS ON FIXED LEAF OF EACH DOUBLE DOOR
USE 6" T-HINGES FOR ALL DOORS 3'-0" WIDE AND LESS
USE 10" T-HINGES FOR ALL DOORS MORE THAN 3'-0" WIDE



HARDWARE LOCATION
SCALE NO. 4

GENERAL NOTES

1. ALL EXTERIOR DOORS FOR HOSPITAL BUILDINGS WILL BE FIVE CROSS-PANEL DOORS AS PER SIZE DESIGNATED ON INDIVIDUAL BUILDING PLANS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: NO. 2 · NO. 3 · NO. 4 · NO. 7

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

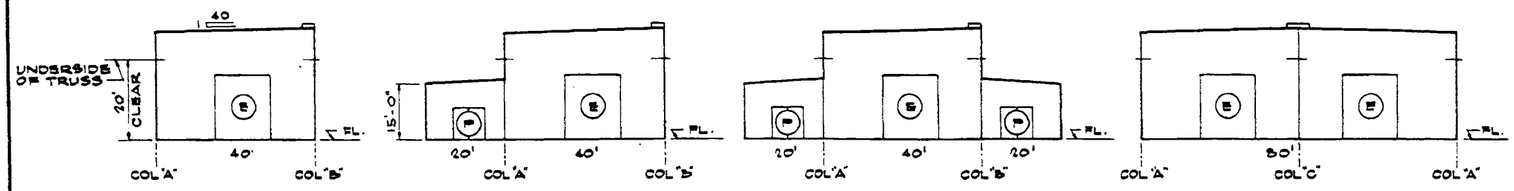
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: DATE:
CHIEF, STANDARD BRANCH
APPROVED: H.M. Williams DATE: 19 MAR 1943
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
BARRACKS & WAREHOUSE BUILDINGS

EXTERIOR DOOR DETAILS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-18
SHEET 2 OF 2

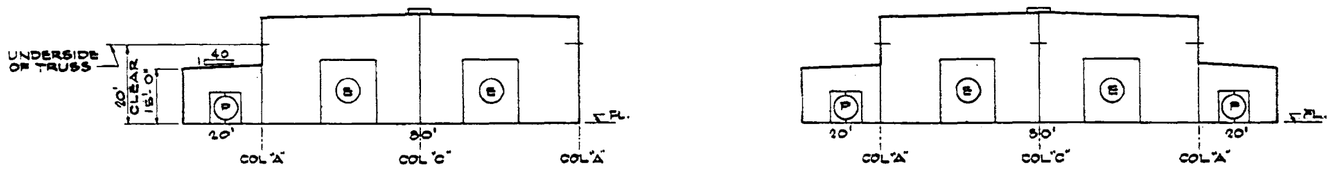


40' BUILDING

40' BUILDING W/ 20' LEAN-TO

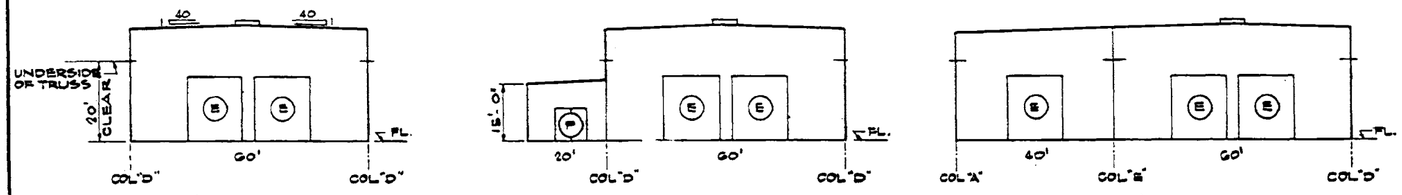
40' BUILDING W/2 - 20' LEAN-TO'S

80' BUILDING



80' BUILDING W/ 20' LEAN-TO

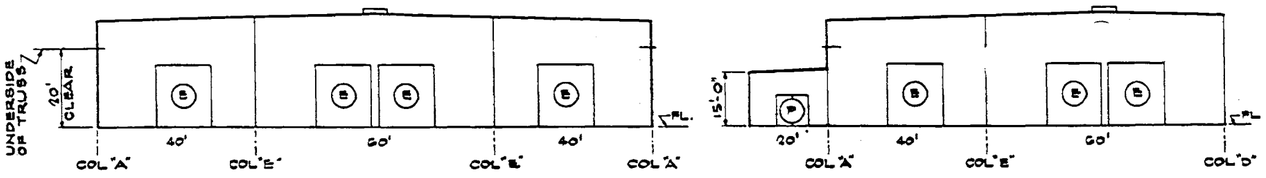
80' BUILDING W/2 - 20' LEAN-TO'S



60' BUILDING

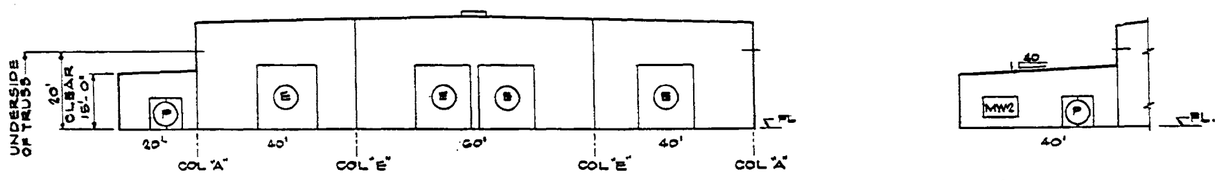
60' BUILDING W/20' LEAN-TO

100' BUILDING



140' BUILDING

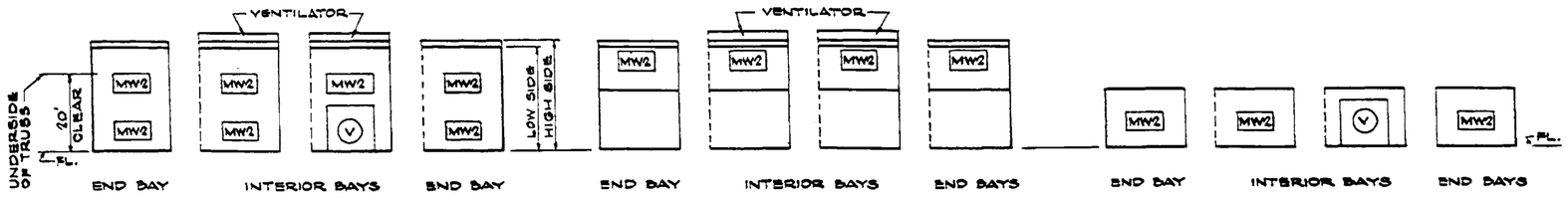
100' BUILDING W/ 20' LEAN-TO



140' BUILDING W/20' LEAN-TO

40' LEAN-TO

TYPICAL END ELEVATIONS - VARIOUS COMBINATIONS OF SPANS
SCALE NO. 9



FULL HEIGHT

CLERESTORY

LEAN-TO

TYPICAL SIDE ELEVATIONS
SCALE NO. 9

FACILITY NUMBERS
SHOP TYPE BUILDINGS - 20 FT. CLEAR HEIGHT
PHASE 1, FRAME, ROOF & CONC. FOUNDATION

BASIC BUILDINGS

TYPE OF ROOF	40'x40' (2-20' BAYS)	60'x60' (3-20' BAYS)	80'x80' (4-20' BAYS)	100'x100' (5-20' BAYS)	140'x140' (7-20' BAYS)
WOOD & FELT (TEMP)	341901	341911	341921	341931	341941
CORR. MET. (TROP)	341903	341913	341923	341933	341943

ADDITIONAL BAY FOR SHOP TYPE BLDG. - 20FT. CLEAR HEIGHT
PHASE 1, FRAME, ROOF & CONC. FOUNDATION

BUILDING WIDTHS FOR 20' BAY

TYPE OF ROOF	40'	60'	80'	100'	140'
WOOD & FELT (TEMP)	341902	341912	341922	341932	341942
CORR. MET. (TROP)	341904	341914	341924	341934	341944

LEAN-TOS FOR SHOP TYPE BLDG, 15'-0" MINIMUM CLEARANCE
PHASE 1, FRAME, ROOF & CONC. FOUNDATION

TYPE OF ROOF	BASIC LEAN-TO		ADDITIONAL BAY FOR LEAN-TO	
	20'W BY 40'L	40'W BY 40'L	20'W BY 20'L	40'W BY 20'L
WOOD & FELT (TEMP)	341951	341953	341952	341954
CORR. MET. (TROP)	341955	341957	341956	341958

FACILITY NUMBERS
PHASE 2 - CLADDING 100FT. LONG UNITS

FACILITY NO.	DESCRIPTION
341901	CLADDING END WALL - 27 FT. HGT. - WOOD & FELT (STUDS, GIRTS, PLATES, SHEATHING & FELT) TEMPERATE CLIMATE
341962	CLADDING SIDE WALL - 27 FT. HGT. - WOOD & FELT - TEMPERATE CLIMATE (STUDS, GIRTS, PLATES, SHEATHING & FELT, 9 WINDOWS, 1 HINGED DOOR)
341963	CLADDING CLERESTORY - 10 FT. HGT. - WOOD & FELT - TEMPERATE CLIMATE (STUDS, GIRTS, PLATES, SHEATHING & FELT, 5 WINDOWS)
341964	CLADDING LEAN-TO - 15'-9 1/2" HGT. - WOOD & FELT - TEMPERATE CLIMATE (SHEATHING & FELT, 4 WINDOWS, 1 HINGED DOOR)
341965	CLADDING END WALL - 27 FT. HGT. - CORRUGATED STEEL - ALL CLIMATES (STUDS, GIRTS, PLATES, FURRING, CORRUGATED STEEL)
341966	CLADDING SIDE WALL - 27 FT. HGT. - CORRUGATED STEEL - ALL CLIMATES (STUDS, GIRTS, PLATES, FURRING, CORR. STL., 9 WINDOWS, 1 HINGED DOOR)
341967	CLADDING CLERESTORY - 10 FT. HGT. - CORRUGATED STEEL - ALL CLIMATES (STUDS, GIRTS, PLATES, FURRING, CORR. STL., 5 WINDOWS)
341968	CLADDING LEAN-TO - 15'-9 1/2" HGT. - CORRUGATED STEEL - ALL CLIMATES (FURRING, CORR. STL., 4 WINDOWS, 1 HINGED DOOR)

NOTE: THE ABOVE CLADDING FACILITIES CONTAIN SUFFICIENT MATERIAL TO CONSTRUCT GROUND VENTILATOR FOR TROPICAL CLIMATE.

FACILITY NUMBERS
SLIDING DOORS

FACILITY NO.	DESCRIPTION
341971	SLIDING DOOR, ONE PANEL, 12'-4" x 12'-0" WITH SINGLE TRACK
341972	SLIDING DOOR, ONE PANEL, 14'-4" x 16'-0" WITH SINGLE TRACK
341973	SLIDING DOOR, ONE PANEL, 14'-4" x 20'-0" WITH SINGLE TRACK

FACILITY NUMBERS
PHASE 3 FLOOR 1000 SF UNIT

FACILITY NO.	DESCRIPTION
340372	CONCRETE, 4" THICK WITHOUT REINFORCEMENT
340373	CONCRETE, 6" THICK WITH 6"x6" WIRE MESH

NOTE: FOR FSN BILL OF MATERIAL - REFER TO TM 5-303 BY FACILITY NUMBER.
Δ REFER TO DRAWING NO 34-04, SHEET 1 OF 3 FOR PHASE 4 - CEILING AND WALL LINERS

SYMBOL	DESCRIPTION	DATE	APPROVAL
Δ	ADDED LINER NOTE	OCT '70	RAR

REVISIONS

GRAPHIC SCALES
0 10' 20' 30'
NO. 9

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

SCHEDULE OF DRAWINGS

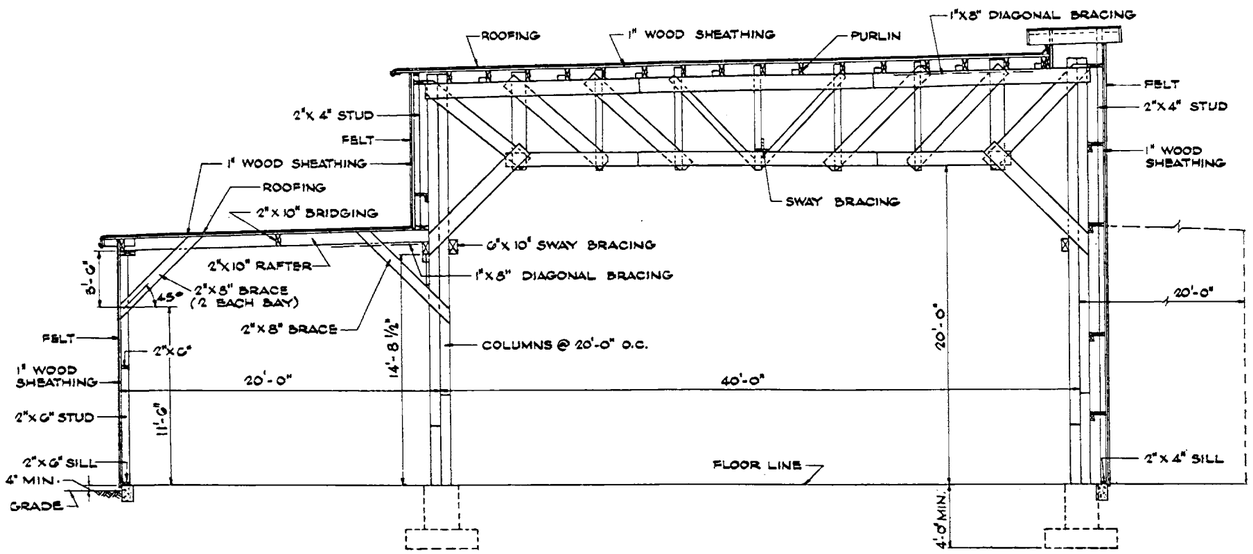
DWG. NO.	DESCRIPTION	SHEET NO.
34-19	TYP. ELEV. & SPANS	1 OF 12
34-19	CROSS SECTIONS	2,3 OF 12
34-19	ROOF FRAMING & DET.	4 OF 12
34-19	MISC. DET. DOORS-WINDOW	5 OF 12
34-19	COLUMNS	6 OF 12
34-19	COLUMNS & FOOTINGS	7 OF 12
34-19	40 FT. TRUSS	8 OF 12
34-19	60 FT. TRUSS	9 OF 12
34-19	BRACING - 40 FT. SPAN	10 OF 12
34-19	BRACING - 60 FT. SPAN	11 OF 12
34-19	10 TON CRANE SUPPORT	12 OF 12

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature]
CHIEF, ETT PVC/PREPARANCH
APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

SCHEDULE OF FACILITIES
TYPICAL ELEVATIONS & SPANS

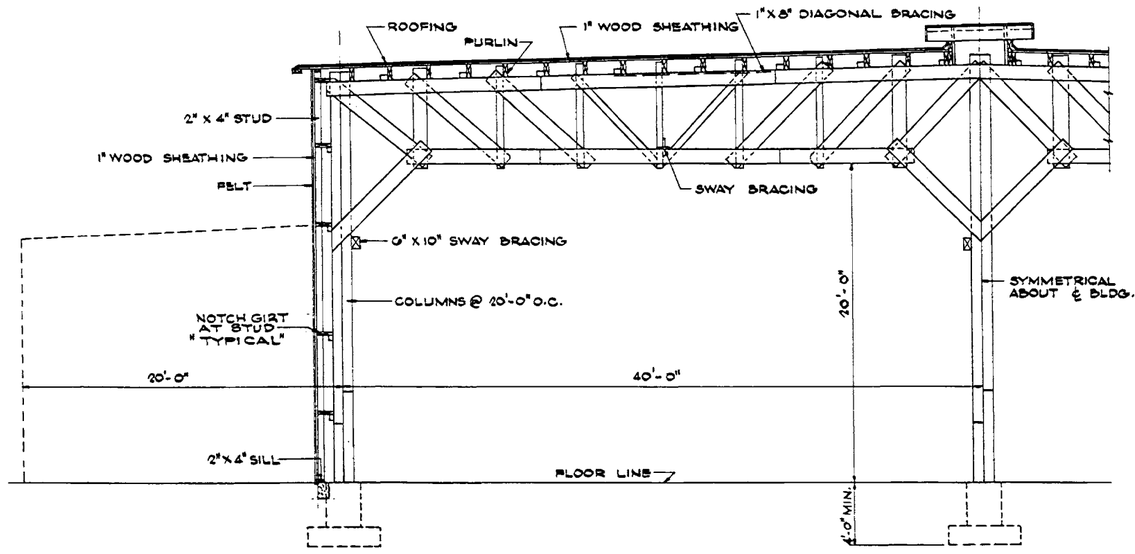
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 1 OF 12



CROSS SECTION

40 FT. WIDE BUILDING WITH 20 FT. WIDE LEAN-TO

SCALE NO. 2



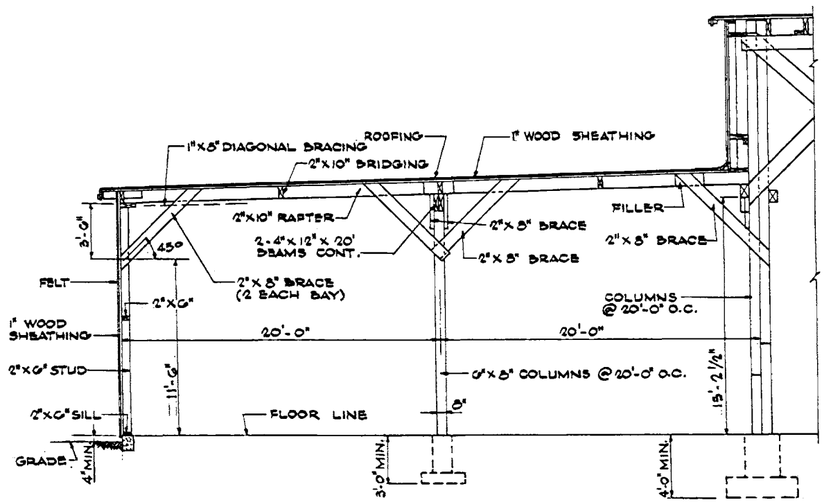
HALF CROSS SECTION

80 FT. WIDE BUILDING

SCALE NO. 2

BASIS OF DESIGN

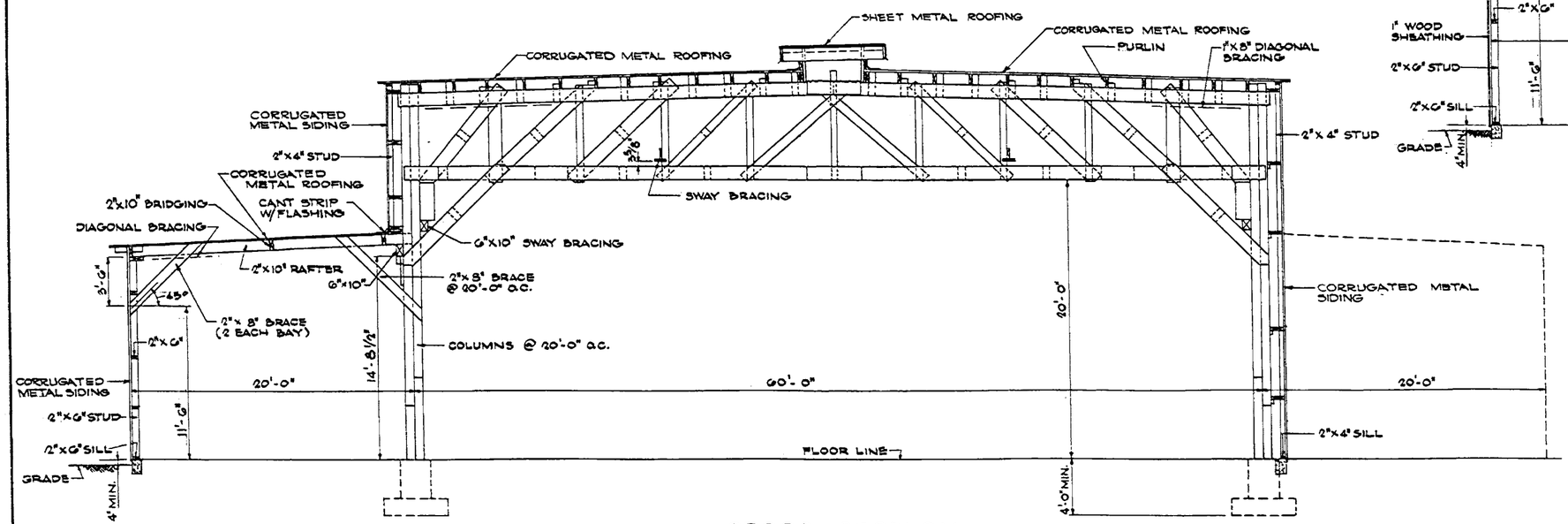
1. LOADINGS:
   MAXIMUM SNOW LOAD - 20 LB. PER SQ. FT. OF HORIZONTAL PROJECTION
   MINIMUM SNOW LOAD - 10 LB. PER SQ. FT. OF HORIZONTAL PROJECTION
   WIND LOAD - 10 LB. PER SQ. FT. ON FLAT SURFACE NORMAL TO DIRECTION OF WIND (50 M.P.H. VELOCITY)
   NOTE: FOR HIGH WIND AREAS, BUILDINGS MUST BE GUYED.
   ADDITIONAL LOADING - AN ALLOWANCE OF 1000 LBS. PER PANEL POINT OF TRUSS LOWER CHORD IS MADE TO SUPPORT PIPES, ETC. NO ALLOWANCE IS MADE FOR CHAIN HOISTS OR THE LIFTING OF HEAVY LOADS.
2. ALLOWABLE LUMBER STRESSES:
   MAXIMUM EXTREME FIBER STRESS & TENSION PARALLEL TO GRAIN — 1400 P.S.I.
   MAXIMUM COMPRESSION PERPENDICULAR TO GRAIN — 500 P.S.I.
   MAXIMUM COMPRESSION PARALLEL TO GRAIN — 1500 P.S.I.
   MAXIMUM HORIZONTAL SHEAR — 120 P.S.I.
   MODULUS OF ELASTICITY — 1,600,000 P.S.I.
3. ALLOWABLE CONCRETE STRESSES:
   MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS — 2500 P.S.I.
   UNIT SHEAR (AS A MEASURE OF DIAGONAL TENSION) — 100 P.S.I.
   MAXIMUM BENDING (EXTREME FIBER STRESS IN TENSION) — 100 P.S.I.
   BEARING — 800 P.S.I.
4. MINIMUM BEARING CAPACITY OF SOIL — 3000 P.S.F.



CROSS SECTION

40 FT. WIDE LEAN-TO

SCALE NO. 2



CROSS SECTION

60 FT. WIDE BUILDING WITH 20 FT. WIDE LEAN-TO

SCALE NO. 2

TROPICAL CLIMATE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10'

NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
CHIEF, ARCHITECT BRANCH

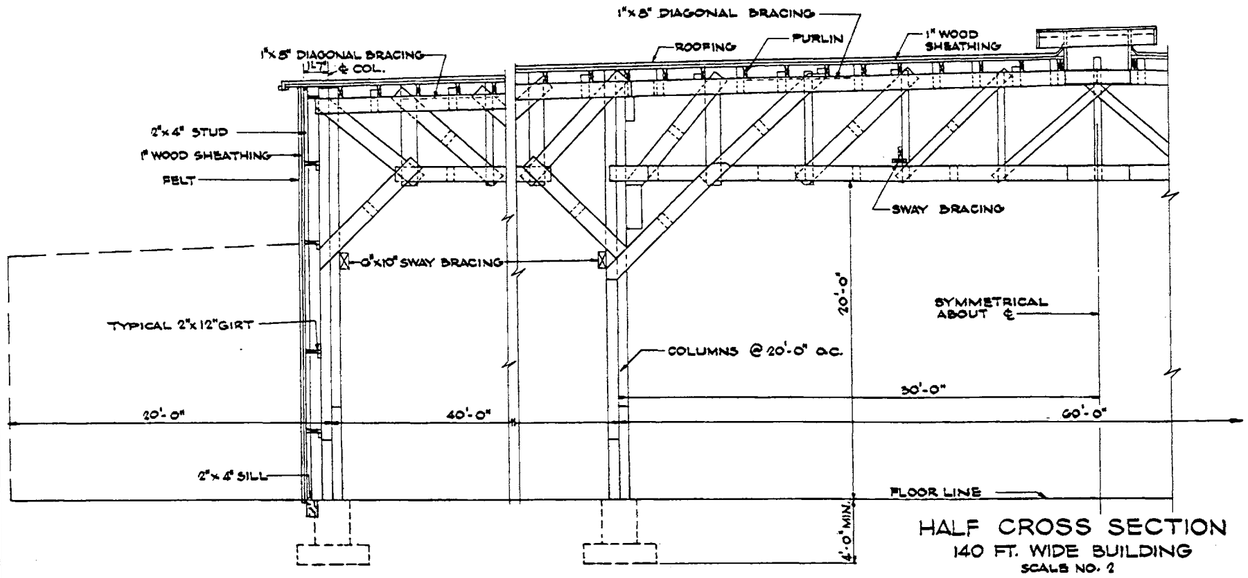
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

40', 60' & 80' WIDTHS
CROSS SECTIONS WITH & WITHOUT LEAN-TOS

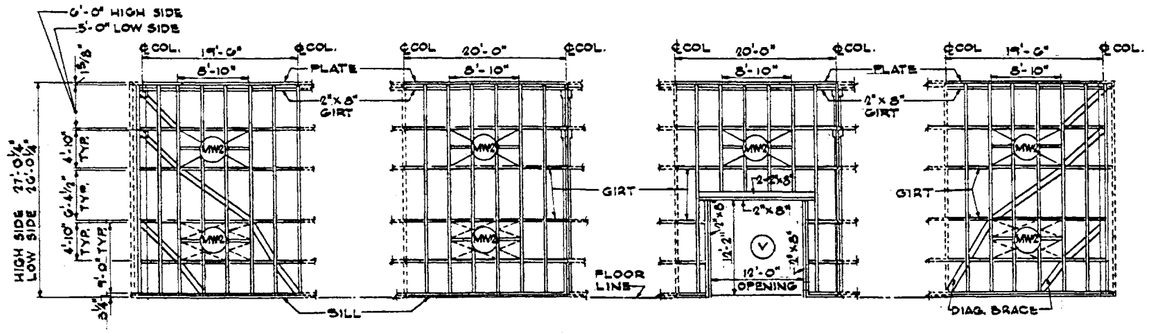
APPROVED: H.M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 2 OF 12

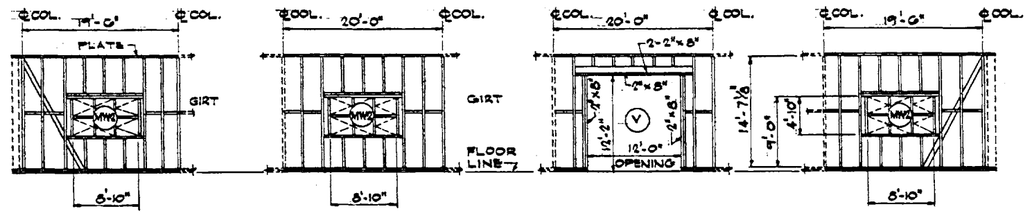


HALF CROSS SECTION
140 FT. WIDE BUILDING
SCALE NO. 2



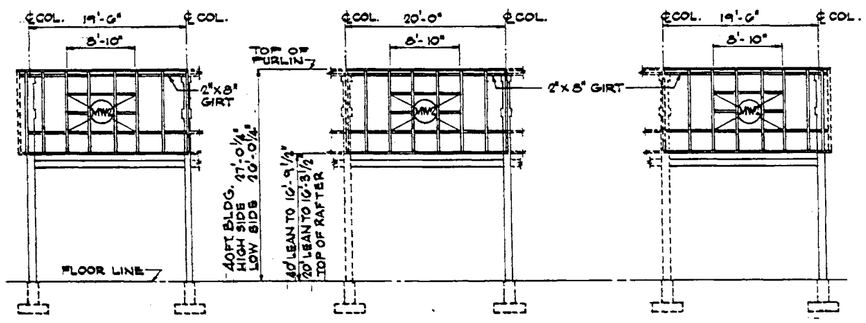
END BAY | INTERIOR BAY WINDOW UNIT | INTERIOR BAY DOOR UNIT | END BAY

SIDE WALL FRAMING
SCALE NO. 1



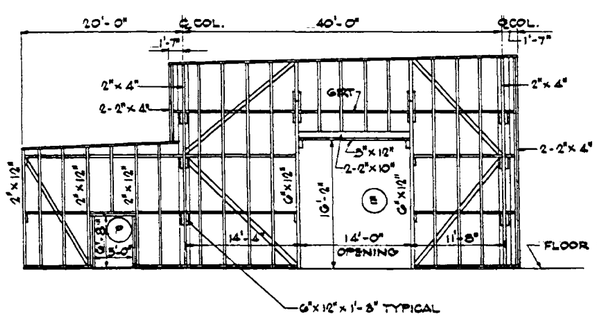
END BAY | INTERIOR BAY WINDOW UNIT | INTERIOR BAY DOOR UNIT | END BAY

LEAN-TO SIDE WALL FRAMING
SCALE NO. 1

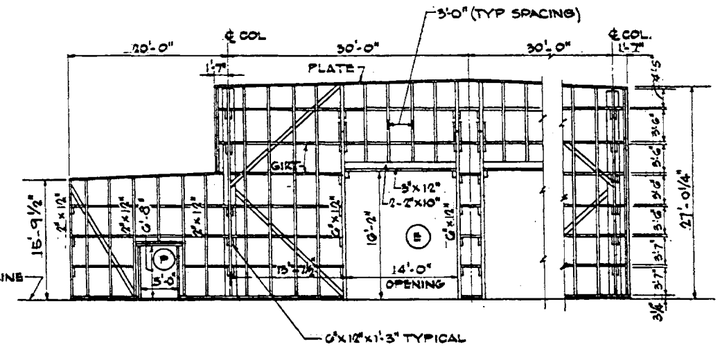


END BAY | INTERIOR BAY WINDOW UNIT | END BAY

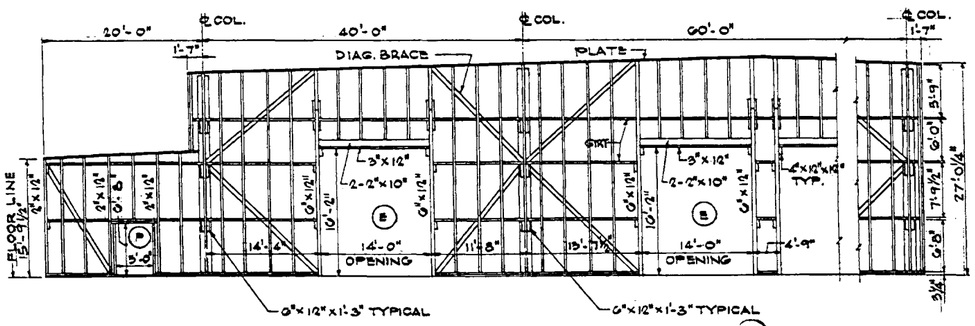
CLERESTORY SIDE WALL FRAMING
SCALE NO. 1



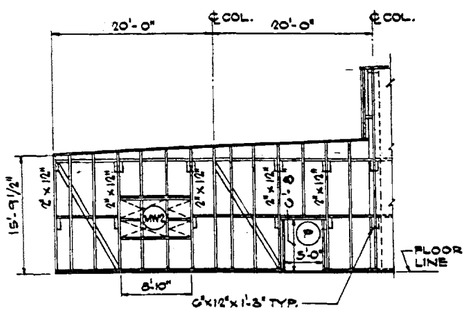
40 FT. WIDE BUILDING WITH 20 FT. WIDE LEAN-TO



60 FT. WIDE BUILDING WITH 20 FT WIDE LEAN-TO
TYPICAL FRAMING FOR TROPICAL CLIMATE ONLY



100 FT. WIDE BUILDING WITH 20 FT. WIDE LEAN-TO



40 FT. WIDE LEAN-TO

NOTE: CONNECT 6"x 12" POSTS TO TRUSSES.

END WALL FRAMING
SCALE NO. 1

TIMBER SCHEDULE

LOCATION	STUDS	GIRT	DIAG. BRCG.	* SILL	PLATE
END WALLS	2"x 4"	5"x 10" CONT.	2"x 8"	2-2"x 4"	2"x 4"
SIDE WALLS	2"x 4"	2"x 12" CONT.	2"x 8"	2-2"x 4"	2"x 4"
SIDE WALLS - CLERESTORY	2"x 4"	2"x 12" CONT.	—	—	2"x 4"
SIDE WALLS - LEAN-TO	2"x 6" CONT.	2"x 6"	2"x 8"	2-2"x 6"	2"x 12"

GENERAL NOTES

1. SIZE OF MEMBERS GIVEN IN TIMBER SCHEDULE ARE TYPICAL UNLESS OTHERWISE NOTED ON PLANS.
2. WHEN CONCRETE FLOOR & CURB ARE USED SILL (*) SHALL BE 1-2"x 4"
3. CORRUGATED SHEET METAL IS NOT RECOMMENDED FOR ROOFS WITH PITCH LESS THAN 3 INCHES IN 12 INCHES.
4. 3/8" EXTERIOR PLYWOOD, TYPE C-C OR C-C PLUGGED, MAY BE USED FOR ROOF & WALL SHEATHING. PLYCLIPS & 8d NAILS SHOULD BE USED.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO. 1: 0 5' 10' 15'
NO. 2: 0 5' 10'

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

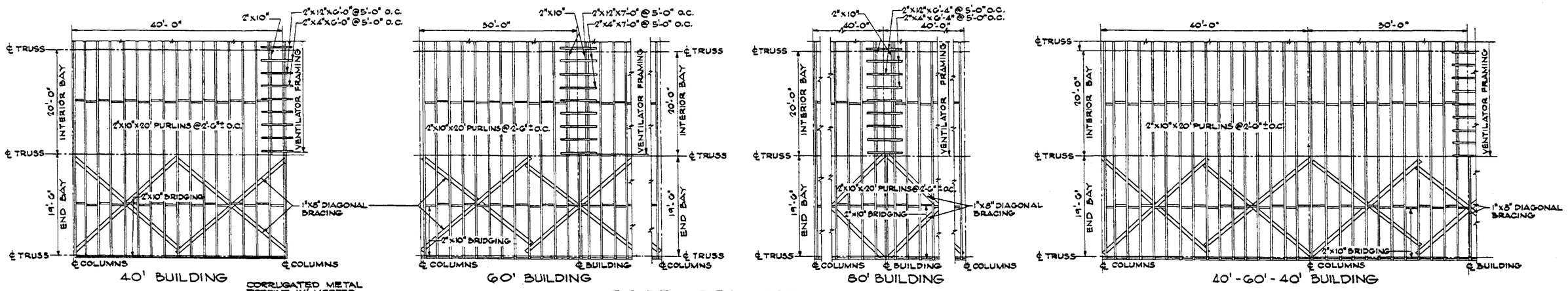
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: CHIEF, STRUCTURES BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1959
APPROVED FOR PROPONENT AGENCY:
DATE:

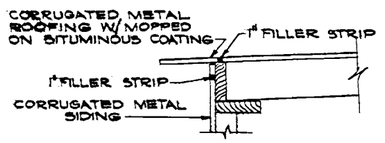
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

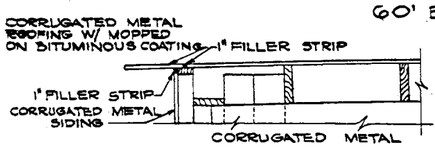
CROSS SECTIONS & WALL FRAMING
40', 60' & 80' SHOP WIDTHS
20' & 40' LEAN-TO WIDTHS

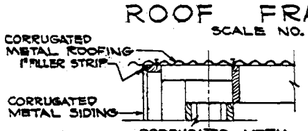
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 3 OF 12

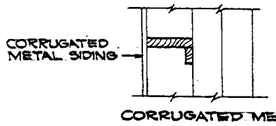


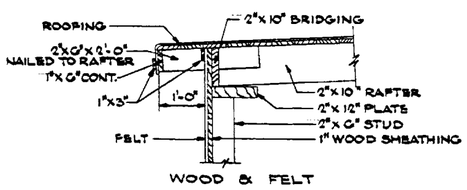
ROOF FRAMING
SCALE NO. 1

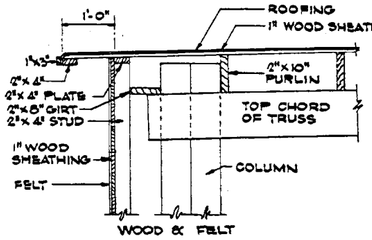


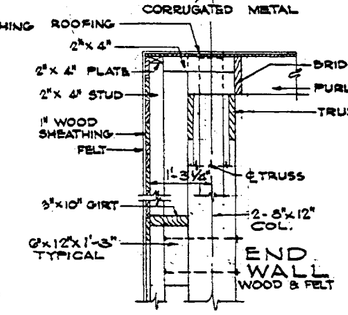


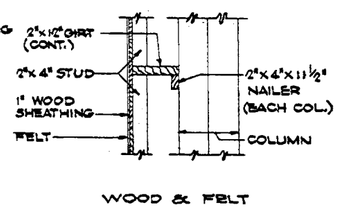


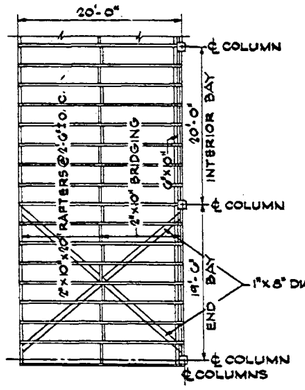


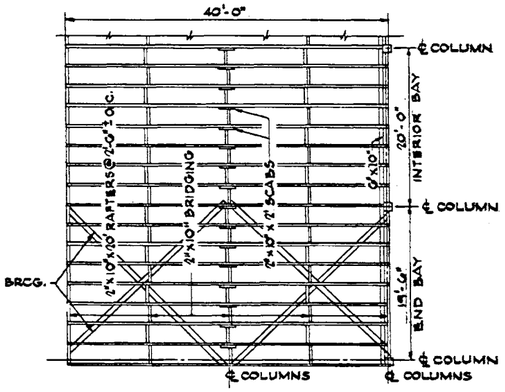




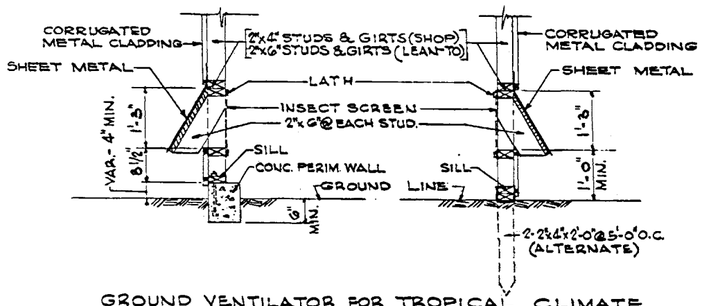




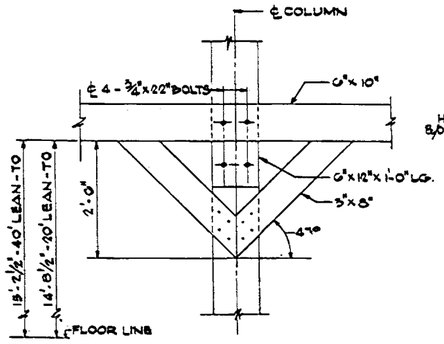




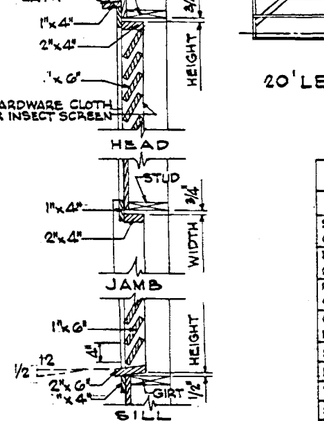
ROOF FRAMING
SCALE NO. 1



GROUND VENTILATOR FOR TROPICAL CLIMATE
SIDE & END WALLS BETWEEN COLUMNS
SCALE NO. 5



LEAN-TO SUPPORT AT CLERESTORY
SCALE NO. 5

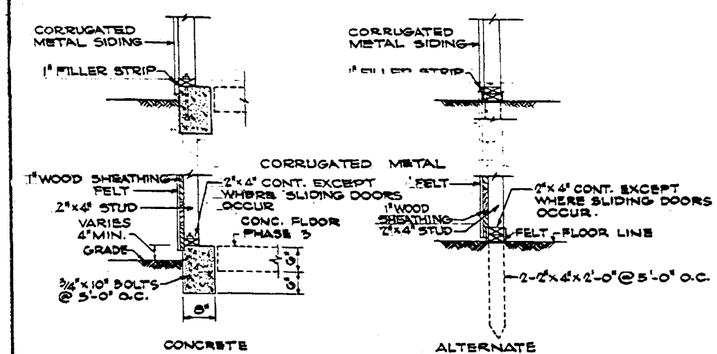


DETAIL OF LOUVERD WINDOW FOR TROPICAL CLIMATE
NO SCALE

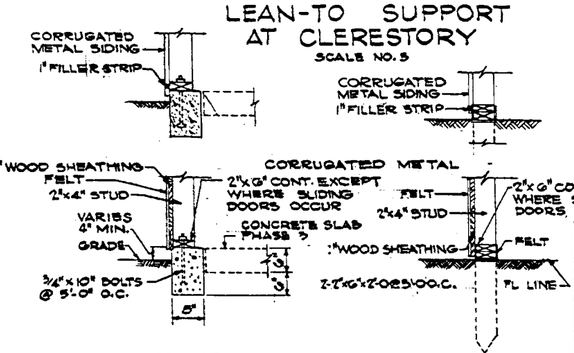
NAILING SCHEDULE

DESCRIPTION	NO. & SIZE
SHEATHING TO STUDS, RAFTERS, GIRTS, PLATES, BLOCKING, ETC.	3 - 8d
DIAGONAL BRACING TO PURLIN OR RAFTER.	3 - 8d
RAFTER TO PLATE, STUD TO SILL, STUD TO GIRT.	2 - 10d
GIRT TO COLUMN, PURLIN TO NAILER.	3 - 10d
SPACER, BLOCKING, BA. STUD	2 - 10d
PLATE OR GIRT TO STUD	2 - 10d
TRUSS MEMBER TO FILLER	4 - 10d
SILL TO STAKE	2 - 60d
45 LB FELT TO ROOF SHEATHING	0"O.C. 7/8" ROOFING NAILS
SHEET METAL OR VENTILATORS	
CORRUGATED METAL	HOR. 1 PER THIRD CORR. VERT 12"O.C. FOUNDRY NAILS.

UNLESS OTHERWISE NOTED, MINIMUM NO. & SIZE FOR STANDARD COMMON WIRE NAILS ONLY.



EXTERIOR WALL FOOTINGS
SCALE NO. 5



GENERAL NOTES

1. CORRUGATED METAL ROOFING IS NOT RECOMMENDED FOR ROOF WITH LESS THAN 4 IN 12 PITCH. IF CORRUGATED METAL IS USED FOR ROOFING A BITUMINOUS COATING COMPOUND SHALL BE MOPPED ON AFTER ROOF IS IN PLACE.
2. SHEET METAL SCREWS SPACED @ 1'-0" O.C. SHALL BE USED TO SECURE END & SIDE LAPS OF CORRUGATED SHEET METAL CLADDING AND ROOFING.

GENERAL NOTES

3. TOP LATERAL BRACING IN SAME BAYS AS VERTICAL SWAY BRACING.
4. VERTICAL SWAY BRACING IN END BAYS & EVERY THIRD BAY.
5. IN LONG BUILDINGS, VERTICAL SWAY BRACING IN TWO END BAYS & EVERY THIRD BAY.
6. IN HIGH WIND VELOCITY AREAS, VERTICAL SWAY BRACING IN TWO END BAYS & ALTERNATE BAYS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 20' NO. 1
0 1' 2' 3' NO. 5

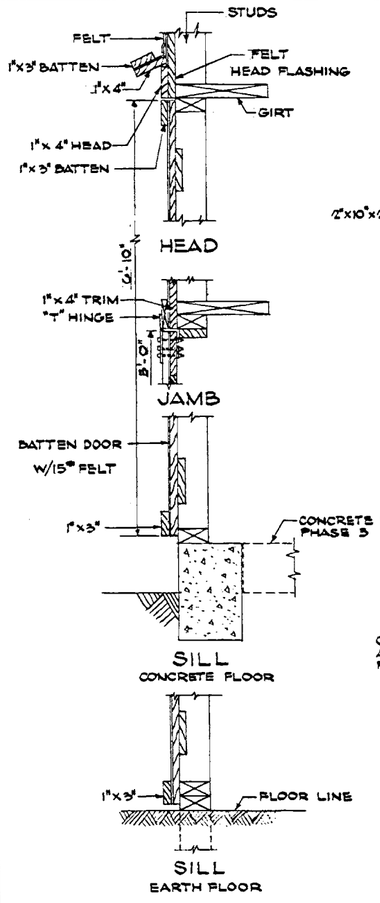
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature]
CHIEF, [illegible] BRANCH

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY
ROOF FRAMING & MISCELLANEOUS DETAILS

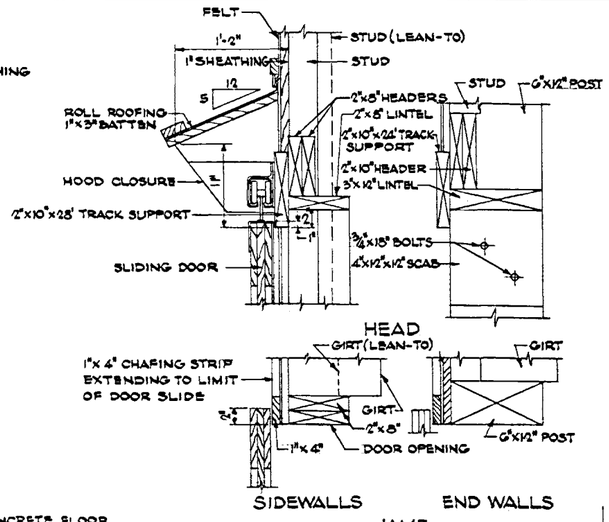
APPROVED: [signature] DATE: 19 MAR 1959
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 4 OF 12



HINGED DOOR DETAILS

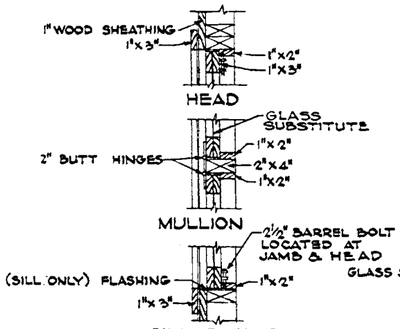
DOORS SWING OUT

SCALE NO. 7



SLIDING DOOR DETAILS

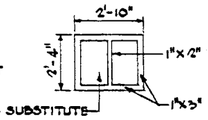
SCALE NO. 7



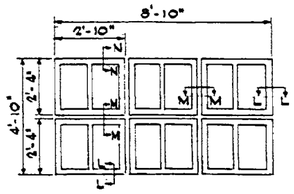
ALTERNATE HINGED SASH

SCALE NO. 7

NOTE:
1"x2" TO BE RIPPED FROM WIDER STOCK.

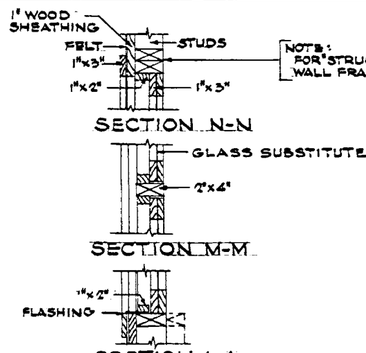


SINGLE SASH



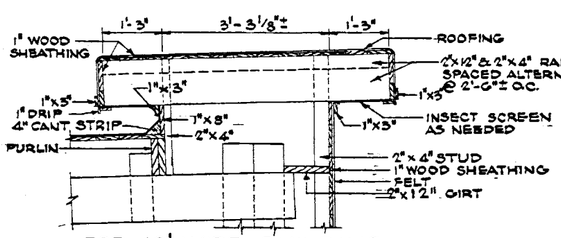
MW2 SASH

SCALE NO. 3

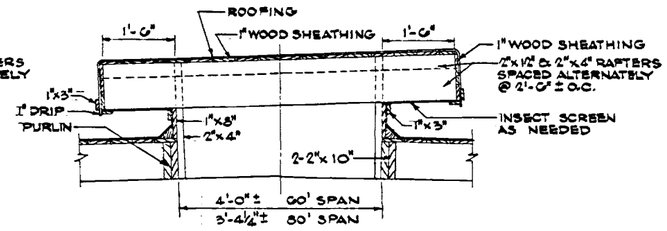


SCALE NO. 7

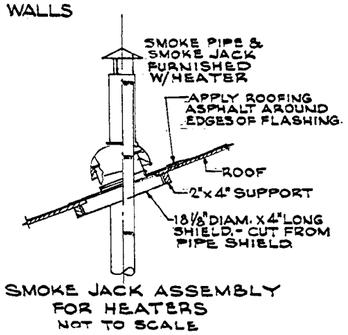
MULTIPLE WINDOW DETAILS



FOR 40' WIDE BUILDING



FOR 60' & 80' WIDE BUILDING



SMOKE JACK ASSEMBLY FOR HEATERS

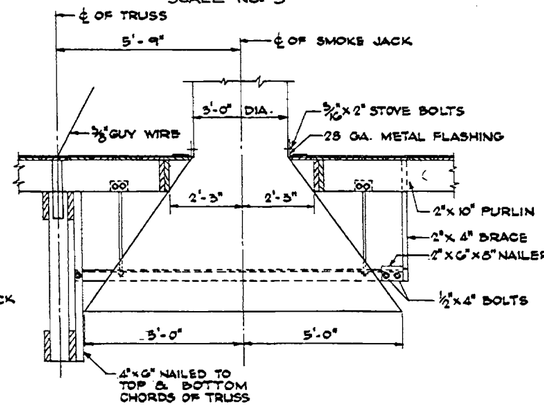
NOT TO SCALE

VENTILATORS

WOOD & FELT

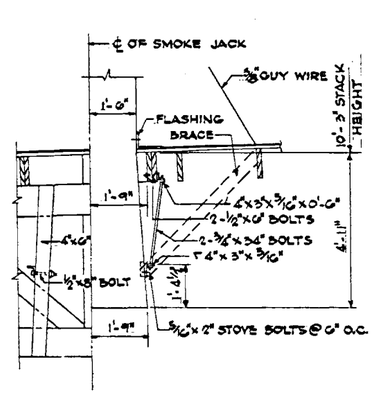
FOR VENTILATORS WITH CORRUGATED METAL SEE DWG 94-19 SH 8

SCALE NO. 5



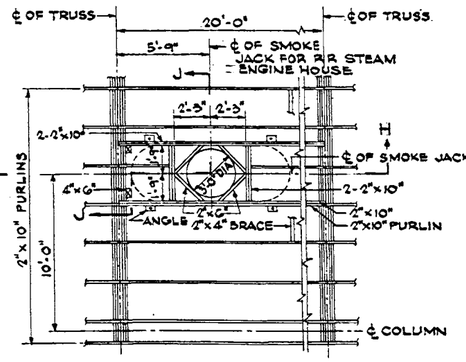
SECTION H-H

SCALE NO. 4



SECTION J-J

SCALE NO. 4

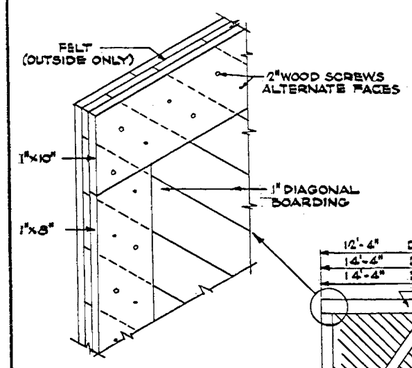


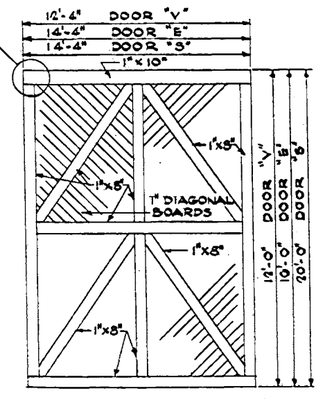
FRAMING PLAN

SCALE NO. 2

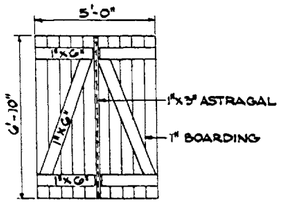
DETAIL 13

SMOKE JACK FOR RR STEAM ENGINE HOUSE

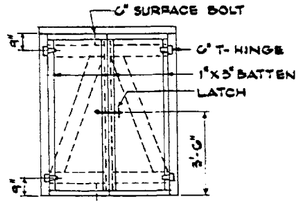




SLIDING DOORS "S", "E" & "V"



ELEVATION



HARDWARE LOCATION

DOOR "P"

NAILING SCHEDULE

DESCRIPTION	NO. & SIZE
SASH	CORRUGATED FASTENERS & 6" OC - 4d
WINDOW & DOOR TRIM & BATTEN TO SHEATHING UNDER 15 LB FELT	6" OC - 6d
WINDOW STOP	12" OC - 8d

UNLESS OTHERWISE NOTED, MINIMUM NO. & SIZE FOR STANDARD COMMON WIRE NAILS ONLY.

GENERAL NOTES

1. COVER EXTERIOR FACE OF EXTERIOR DOORS WITH 15# FELT.
2. DOORS OF OTHER SIZES AS REQUIRED BY FIELD CONDITIONS SHALL BE OF SIMILAR CONSTRUCTION.
3. SASH IN ALL LOWER LEVEL WINDOWS TO BE HINGED SASH.

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES 0 3" 6" 9" 1' 2'

0 5' 10' NO. 2 | 0 1' 2' 3' 5' NO. 3 | 5' 0 1' 2' 3' 5' NO. 4 | 0 1' 2' NO. 7 | 1' 2' 3' NO. 5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: MELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, [illegible] BRANCH

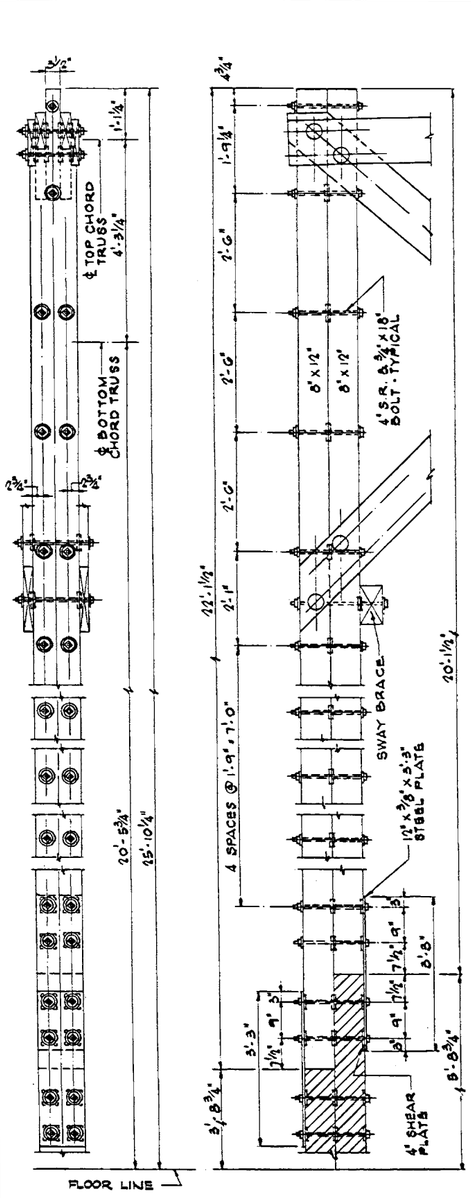
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

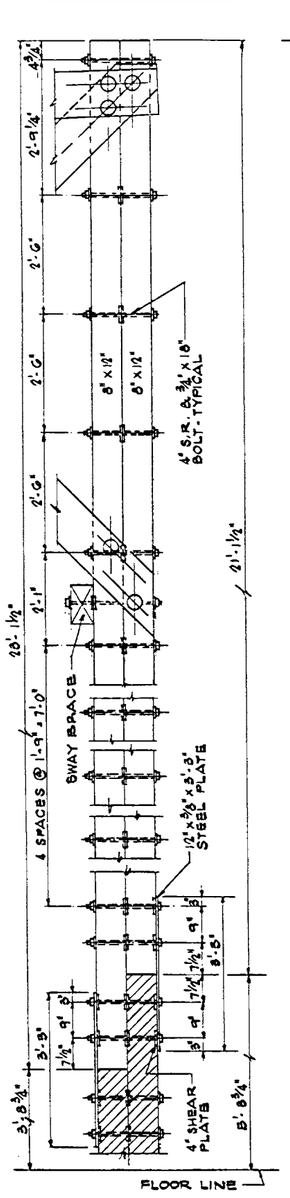
DOORS & WINDOWS
MISCELLANEOUS DETAILS

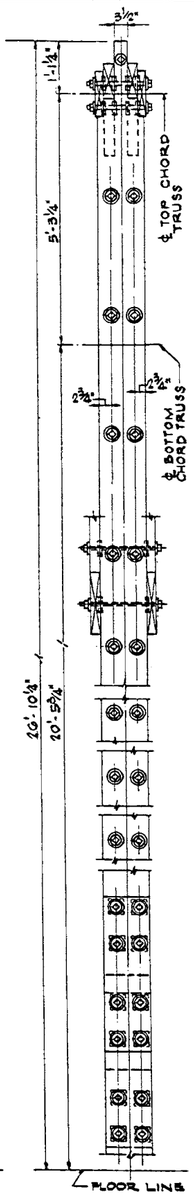
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DATE: 19 MAR 1969

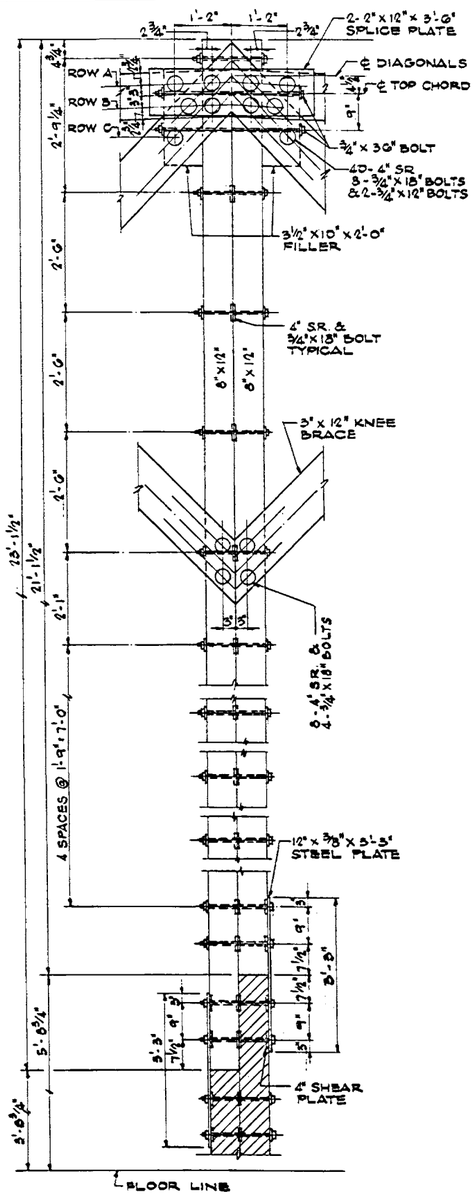
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DATE

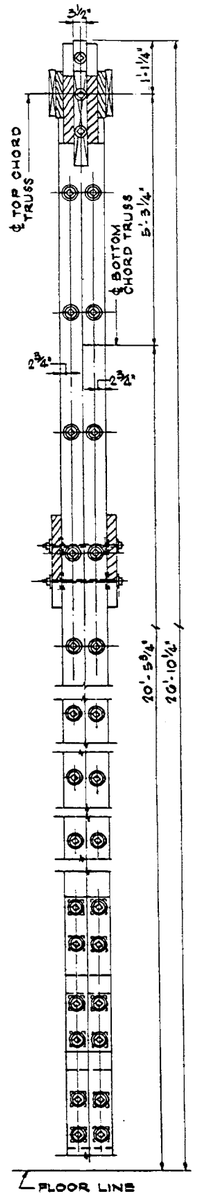
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 94-19
SHEET 5 OF 12

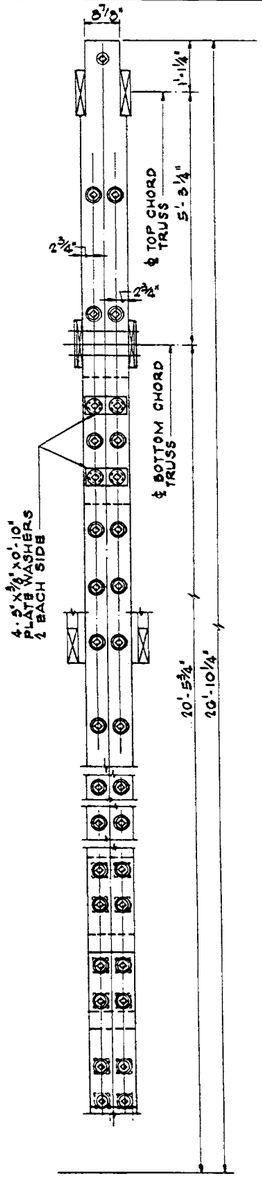


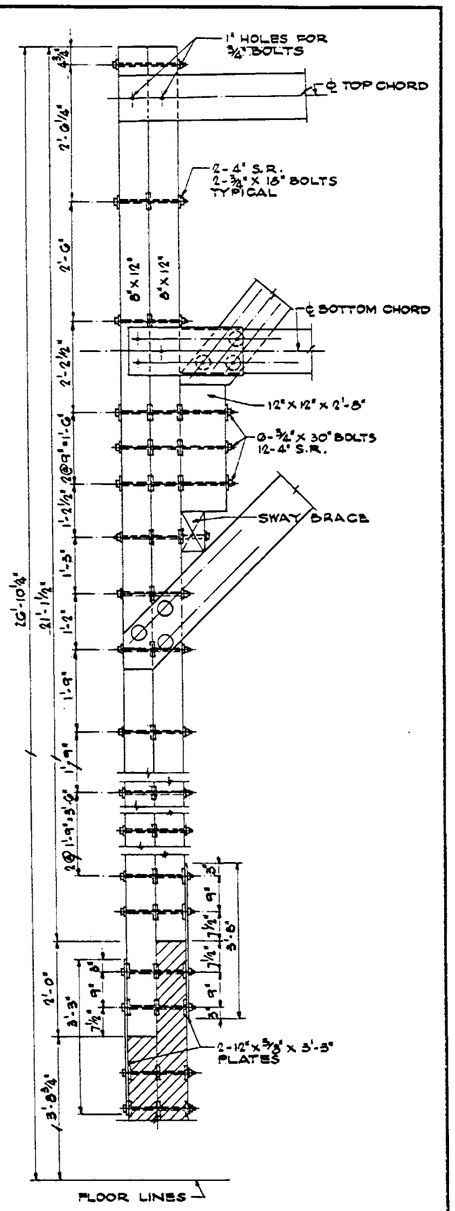










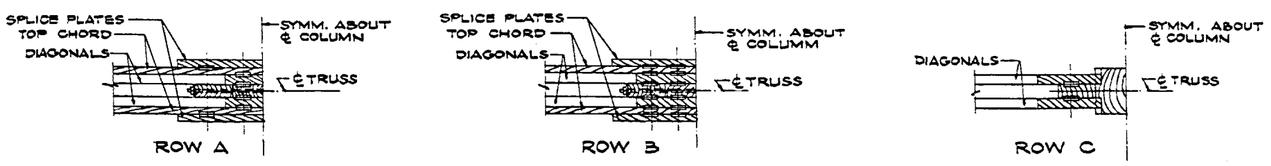


ELEVATIONS - COLUMN "A"

ELEVATIONS - COLUMN "B"

ELEVATIONS - COLUMN "C"

ELEVATIONS COLUMN "D"



TRUSS CONNECTIONS - PLANS OF SPLIT RINGS

SYMBOL	DESCRIPTION (REVISIONS)	DATE	APPROVAL

GRAPHIC SCALES
0 1' 2' 3'
NO. 5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

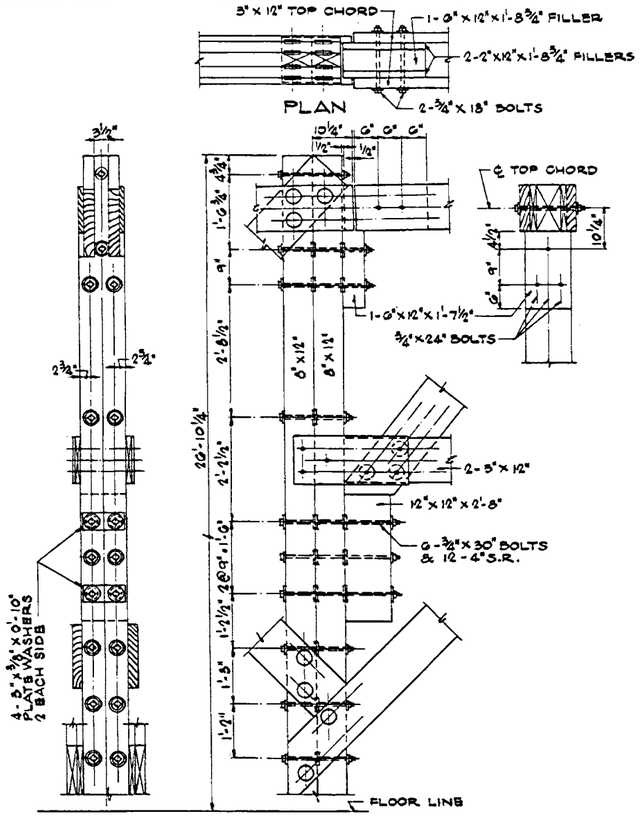
DEPARTMENT OF THE ARMY
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MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

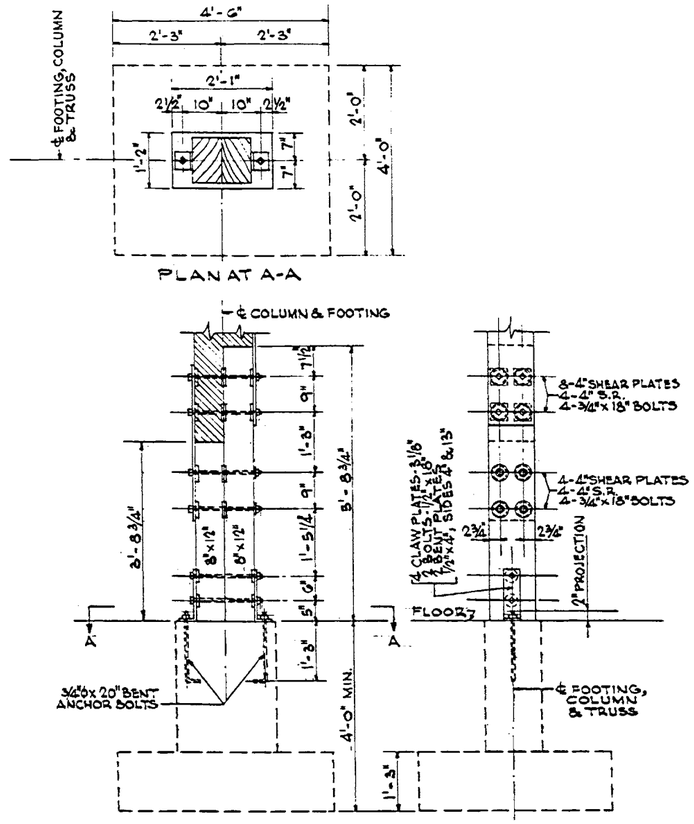
DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, [illegible] BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

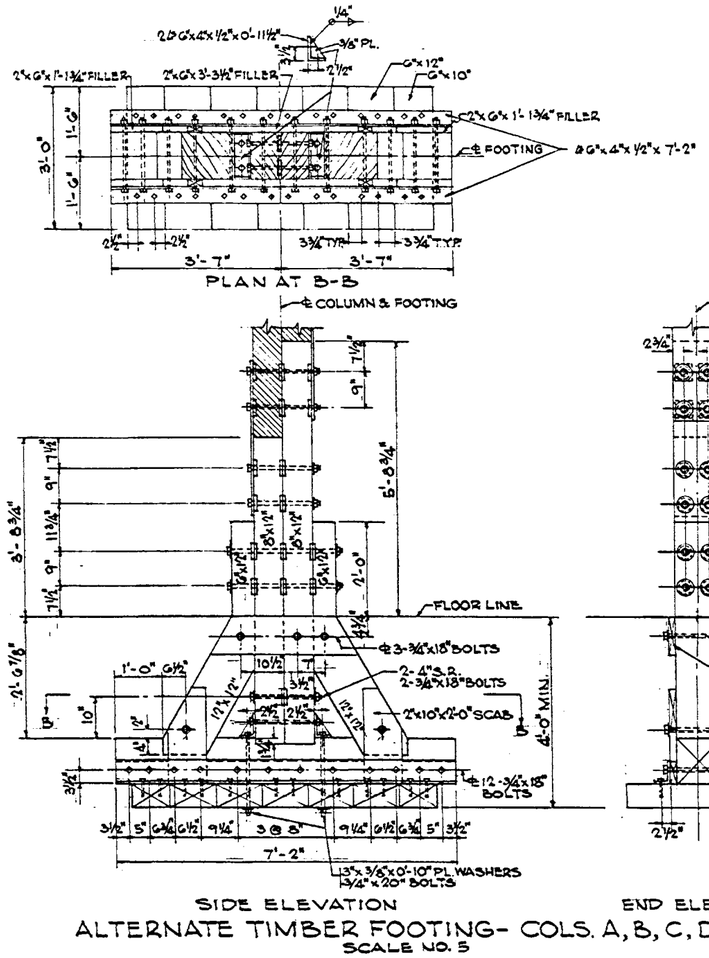
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

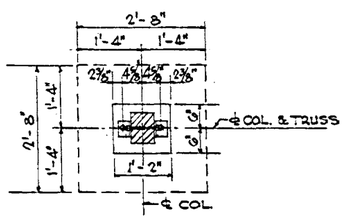
COLUMNS

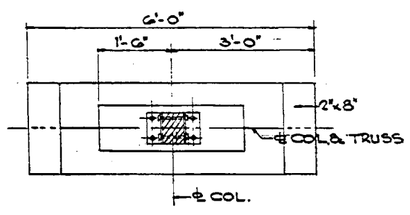
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SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 6 OF 12

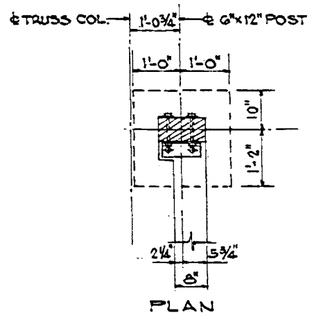


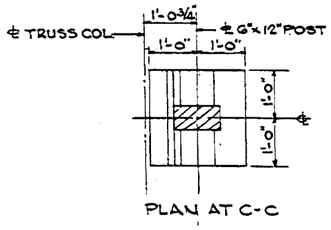


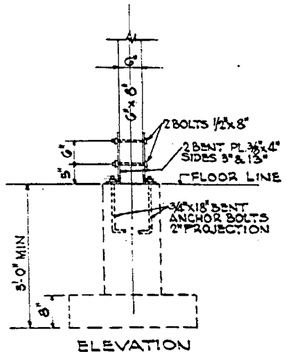


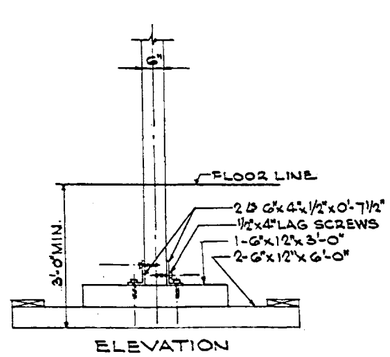


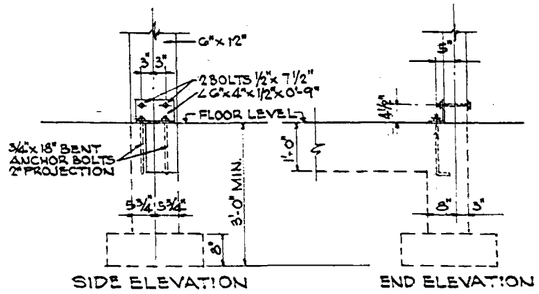


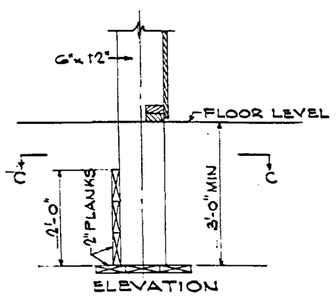












CONCRETE FOOTING
40' LEAN-TO COLUMN
SCALE NO. 5

ALTERNATE TIMBER FOOTING
40' LEAN-TO COLUMN
SCALE NO. 5

CONCRETE FOOTING
6"x12" POST
SCALE NO. 5

ALTERNATE TIMBER FOOTING
6"x12" POST
SCALE NO. 5

NOTE
ALL FOOTINGS SHALL BE EXTENDED BELOW FROST LINE WHEN REQUIRED.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3'
NO. 5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DE ICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C. W. DE ICHMANN
APPROVED:
CHIEF STRUCTURES BRANCH

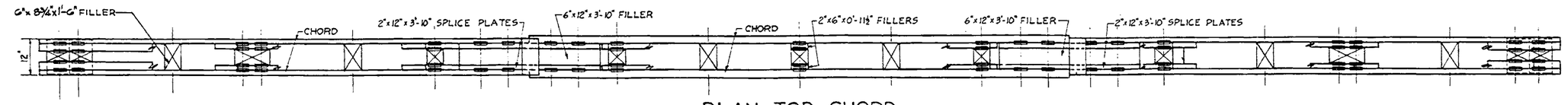
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

COLUMNS & FOOTING

APPROVED: H. M. Williams
DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

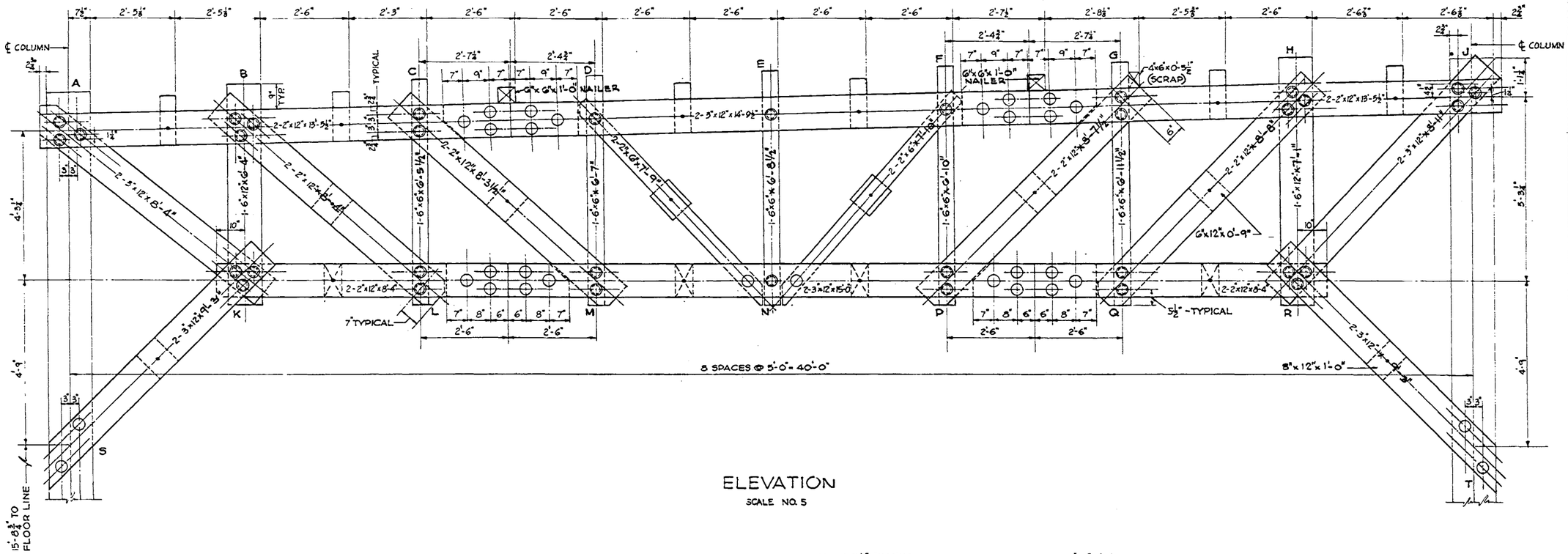
APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 7 OF 12



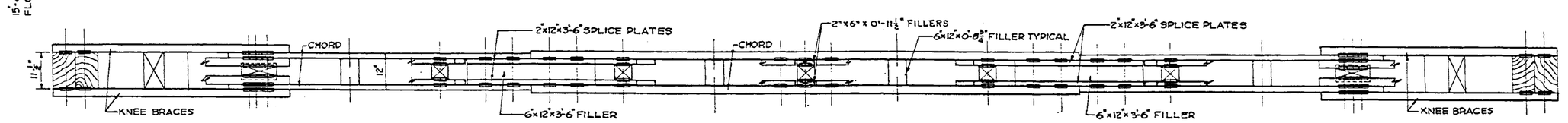
PLAN - TOP CHORD

SCALE NO. 5



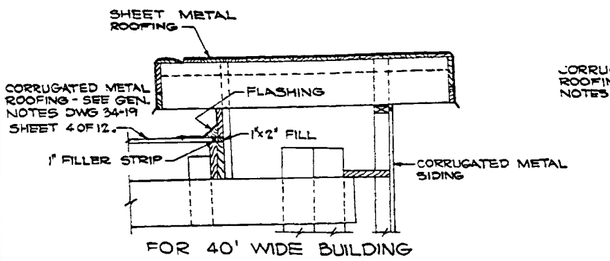
ELEVATION

SCALE NO. 5

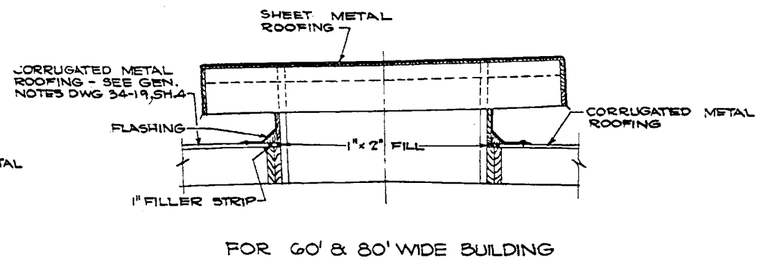


PLAN - BOTTOM CHORD
(BOTTOM VIEW)

SCALE NO. 5



FOR 40' WIDE BUILDING



FOR 60' & 80' WIDE BUILDING

VENTILATORS

CORRUGATED METAL

FOR FRAMING DETAILS SEE WOOD & FELT VENTILATORS DRAWING 34-19 SHEET 5

SCALE NO. 5

TIMBER SCHEDULE

MEMBER	NO. OF PIECES	CUT FROM
TOP CHORD	2	3" x 12" x 16'
TOP CHORD	4	2" x 12" x 14'
SPLICE PLATE	4	2" x 12" x 18'
FILLER	2	6" x 12" x 16'
BOTTOM CHORD	2	3" x 12" x 16'
BOTTOM CHORD	4	2" x 12" x 18'
SPLICE PLATE	4	2" x 12" x 18'
FILLER	2	6" x 12" x 16'
POST B-K	1	6" x 12" x 14'
POST H-R	1	6" x 12" x 14'
POST C-L	1	6" x 6" x 16'
POST D-M	1	6" x 6" x 16'
POST E-N	1	6" x 6" x 16'
POST F-P	1	6" x 6" x 16'
POST G-Q	1	6" x 6" x 16'
DIAGONAL A-K	2	3" x 12" x 20'
DIAGONAL J-R	2	3" x 12" x 20'
DIAGONAL B-L	2	2" x 12" x 18'
DIAGONAL C-M	2	2" x 12" x 18'
DIAGONAL G-P	2	2" x 12" x 18'
DIAGONAL H-Q	2	2" x 12" x 18'
KNEE BRACE K-S	2	3" x 12" x 18'
KNEE BRACE R-T	2	3" x 12" x 18'
DIAGONAL D-N	2	2" x 6" x 16'
DIAGONAL F-N	2	2" x 6" x 16'
NAILERS	8	6" x 6" x 16'
FILLERS	16	6" x 12" x 14'
FILLERS	4	2" x 6" STUB
FILLERS	2	6" x 12" SUR.

BOLT & RING SCHEDULE

JOINT	RINGS NO.	BOLTS NO.	BOLTS DIA. & LENGTH
A	12	3	3/4" x 14"
B	12	3	3/4" x 14"
C	8	2	3/4" x 14"
D	4	1	3/4" x 16"
E	4	1	3/4" x 16"
F	4	1	3/4" x 16"
G	8	2	3/4" x 14"
H	12	3	3/4" x 14"
J	12	3	3/4" x 14"
K	18	3	3/4" x 22"
L	8	2	3/4" x 14"
M	8	2	3/4" x 16"
N	4	1	3/4" x 16"
N	4	4	3/4" x 6"
P	8	2	3/4" x 16"
Q	8	2	3/4" x 14"
R	18	3	3/4" x 22"
S	4	2	3/4" x 18"
T	4	2	3/4" x 18"
SPLICE PL	24	12	3/4" x 16"
SPLICE PL	24	12	3/4" x 14"
FILLERS		4	3/4" x 16"
FILLERS		6	3/4" x 14"
FILLERS		6	3/4" x 12"
FILLERS		2	3/4" x 18"
TOTAL	208		

GENERAL NOTES

1. A CAMBER OF 2" AT THE CENTER OF THE TRUSS SPAN SHALL BE INTRODUCED INTO BOTH TOP AND BOTTOM CHORDS DURING FABRICATION. BOLT SPACING ABOVE DOES NOT MAKE ALLOWANCE FOR CAMBER.
2. ALL SPLIT RINGS - 4" WITH 3/4" BOLT AND 2-3" CAST OR MALLEABLE IRON WASHERS FOR EACH ASSEMBLY.
3. FOR BASIS OF DESIGN, SEE DRAWING NO 34-19, SHEET 2 OF 12.

SYMBOL	DESCRIPTION (REVISIONS)	DATE	APPROVAL

GRAPHIC SCALES 0 1' 2' 3'

NO. 5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

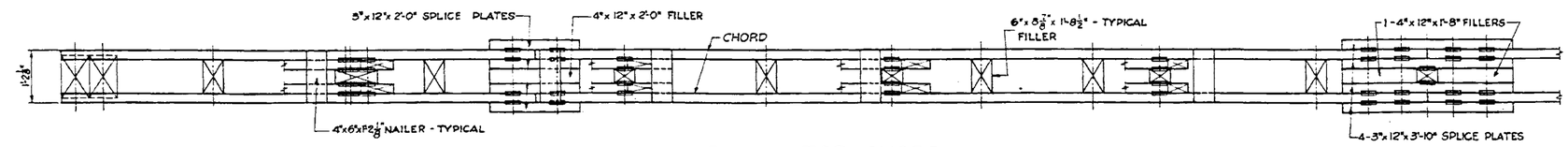
DRAWN BY: EWING
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, ARCH. BRANCH
APPROVED: H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1953
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS

WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

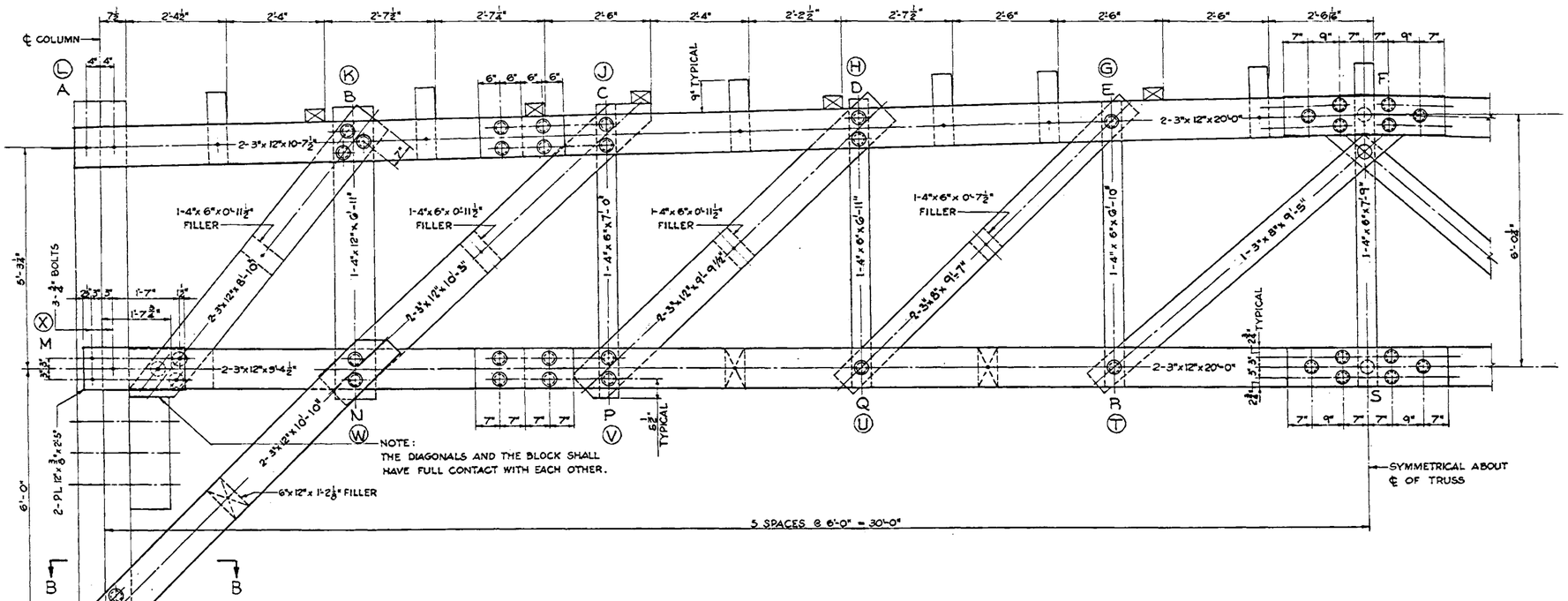
DETAILS OF 40 FT. TRUSS AND VENTILATOR DETAILS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 34-19
SHEET 8 OF 12



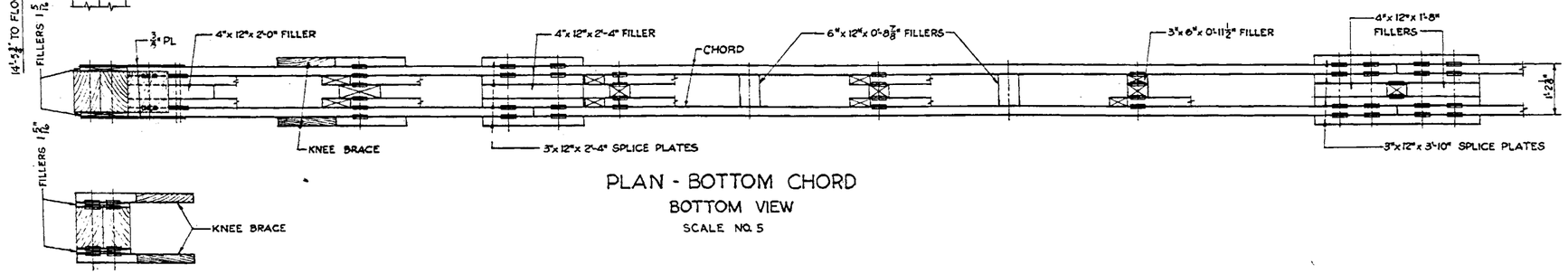
PLAN - TOP CHORD

SCALE NO. 5



ELEVATION

SCALE NO. 5



PLAN - BOTTOM CHORD

BOTTOM VIEW

SCALE NO. 5

PLAN AT B-B

TIMBER SCHEDULE

MEMBER	NO. OF PIECES	CUT FROM
TOP CHORD	4	3"x 12"x 20'
TOP CHORD	4	3" x 12"x 20'
SPLICE PLATE	4	3"x 12"x 20'
SPLICE PLATE	8	3" x 12" x 20'
FILLER	2	4"x 12"x 16'
FILLER	4	4"x 12"x 16'
BOTTOM CHORD	4	3" x 12"x 20'
BOTTOM CHORD	4	3"x 12"x 20'
SPLICE PLATE	4	3"x 12"x 20'
SPLICE PLATE	8	3"x 12"x 20'
FILLER	2	4"x 12"x 16'
FILLER	2	4"x 12"x 16'
POST BN-KW	2	4"x 12"x 20'
POST CP-JV	2	4"x 6"x 14'
POST DQ-HU	2	4"x 6"x 14'
POST ER-GT	2	4"x 6"x 14'
POST FS	1	4"x 6"x 14'
DIAG. BM-KX	4	3"x 12"x 20'
DIAG. CN-JW	4	3"x 12"x 20'
BRACE NY-WZ	4	3"x 12"x 20'
DIAG. DP-HY	4	3"x 12"x 20'
DIAG. EQ-GU	4	3"x 8"x 10'
DIAG. FR-FT	2	3"x 8"x 10'
NAILER	8	4"x 6"x 14'
NAILER	2	4"x 6"x 14'
FILLER	4	6"x 12"x 12'
FILLER	2	6"x 12"x 12'
FILLER	12	6"x 10"x 12'
FILLER	6	4"x 6"x 14'
FILLER	2	4"x 6"x 14'
FILLER	8	SCRAP
FILLER	2	SCRAP

BOLT & RING SCHEDULE

JOINT	RINGS	BOLTS	
	NO.	NO.	DIA. & LENGTH
A-L		4	3/4" x 16"
B-K	24	6	3/4" x 16"
C-J	16	4	3/4" x 16"
D-H	16	4	3/4" x 16"
E-G	8	2	3/4" x 16"
F	2	1	3/4" x 22"
F	2	1	3/4" x 12"
M-X	12	12	3/4" x 16"
N-W	24	4	3/4" x 22"
P-V	16	4	3/4" x 16"
Q-U	8	2	3/4" x 16"
R-T	8	2	3/4" x 16"
S	2	1	3/4" x 22"
Y-Z	16	4	3/4" x 22"
TC SPL PL	24	6	3/4" x 22"
BC SPL PL	24	6	3/4" x 22"
TC SPL PL	32	8	3/4" x 22"
BC SPL PL	32	8	3/4" x 22"
FILLERS		16	3/4" x 16"
FILLERS		2	3/4" x 22"
FILLERS		8	3/4" x 12"
TOTAL	266		

GENERAL NOTES

1. A CAMBER OF 3" AT THE CENTER OF THE TRUSS SPAN SHALL BE INTRODUCED INTO BOTH TOP AND BOTTOM CHORDS DURING FABRICATION. BOLT SPACING ABOVE DOES NOT MAKE ALLOWANCE FOR CAMBER.
2. FOR NOTES ON SPLIT RINGS AND WASHERS SEE DRAWING NO 34-19, SHEET 8 OF 12.
3. FOR BASIS OF DESIGN, SEE DRAWING NO. 34-19, SHEET 2 OF 12

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 1' 2' 3'

NO. 5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EWING
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
CHIEF, STRUCTURES BRANCH

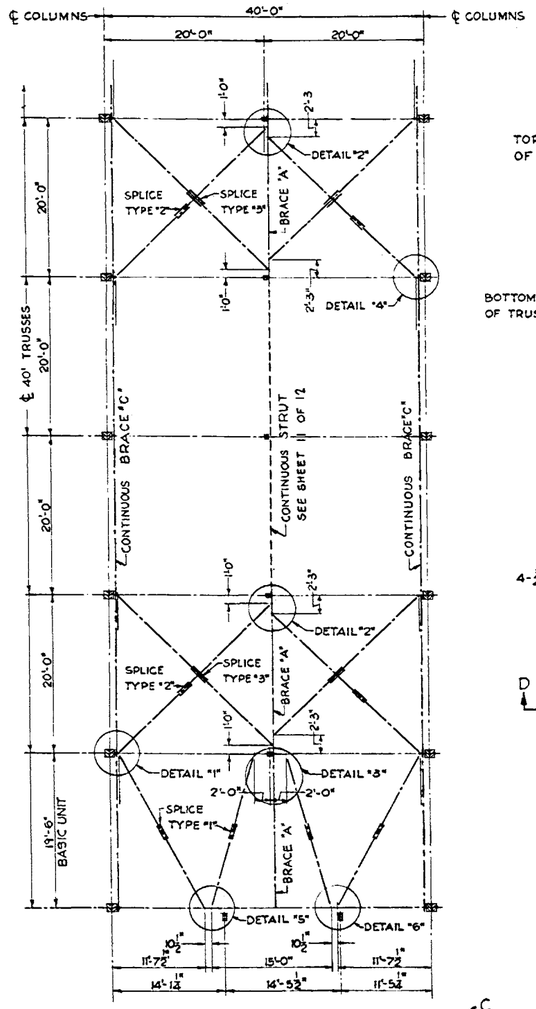
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

DETAILS OF 60 FT. TRUSS

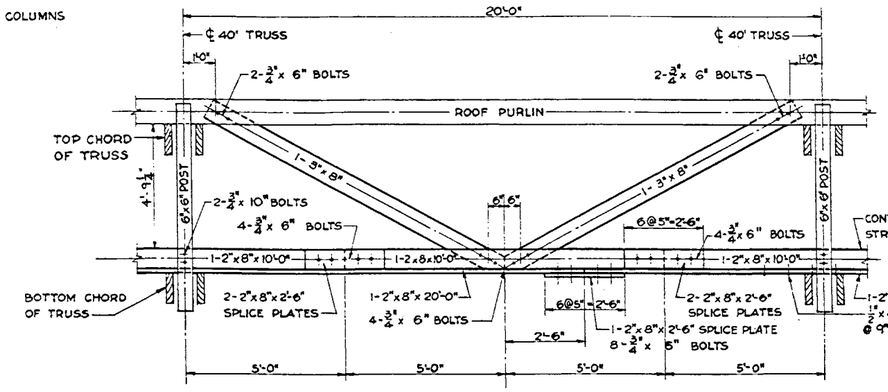
APPROVED: H.M. Williams
DATE: 19 MAY 1950
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

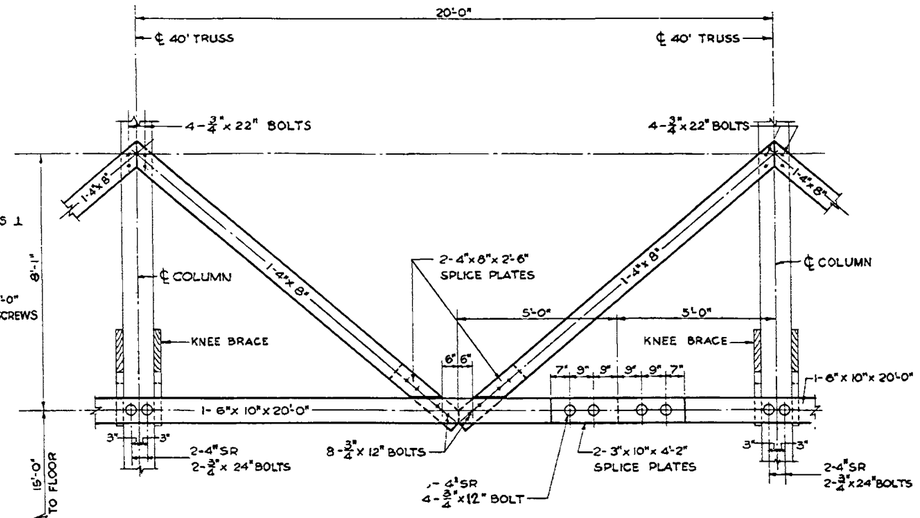
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 9 OF 12



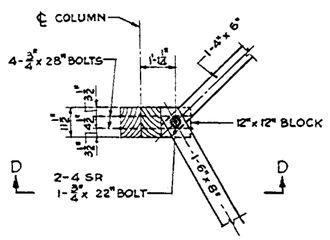
PLAN
SCALE NO. 1



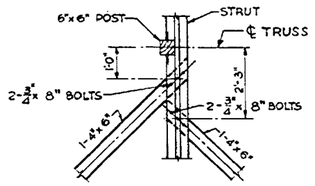
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SCALE NO. 4



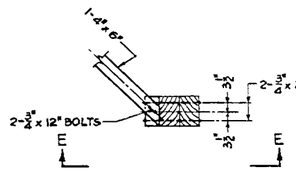
BRACE "C"
SCALE NO. 4



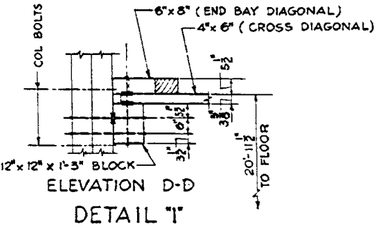
PLAN



DETAIL "2"
SCALE NO. 4

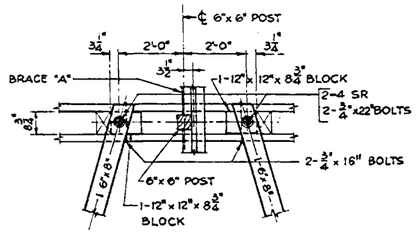


PLAN

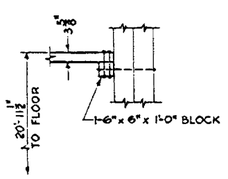


ELEVATION D-D

DETAIL "1"
SCALE NO. 4

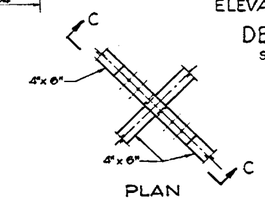


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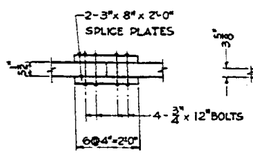


ELEVATION E-E

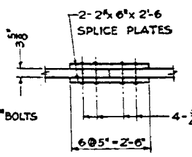
DETAIL "4"
SCALE NO. 4



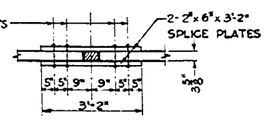
PLAN



ELEVATION TYPE "1"

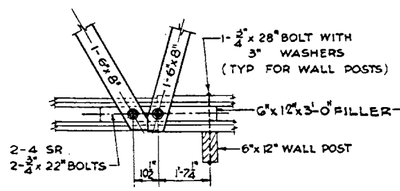


ELEVATION TYPE "2"

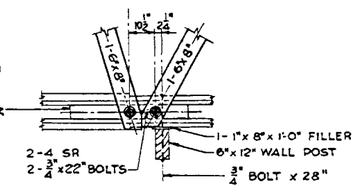


ELEVATION C-C TYPE "3"

TYPICAL SPLICES
SCALE NO. 4



DETAIL "5"
SCALE NO. 4



DETAIL "6"
SCALE NO. 4

GENERAL NOTES

1. VERTICAL SWAY BRACING IN END BAYS AND EVERY THIRD BAY.
2. IN LONG BUILDINGS, VERTICAL SWAY BRACING IN TWO END BAYS AND EVERY THIRD BAY.
3. IN HIGH WIND VELOCITY AREAS, VERTICAL SWAY BRACING IN TWO END BAYS AND ALTERNATE BAYS.

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 1' 2' 3' 4' NO. 4

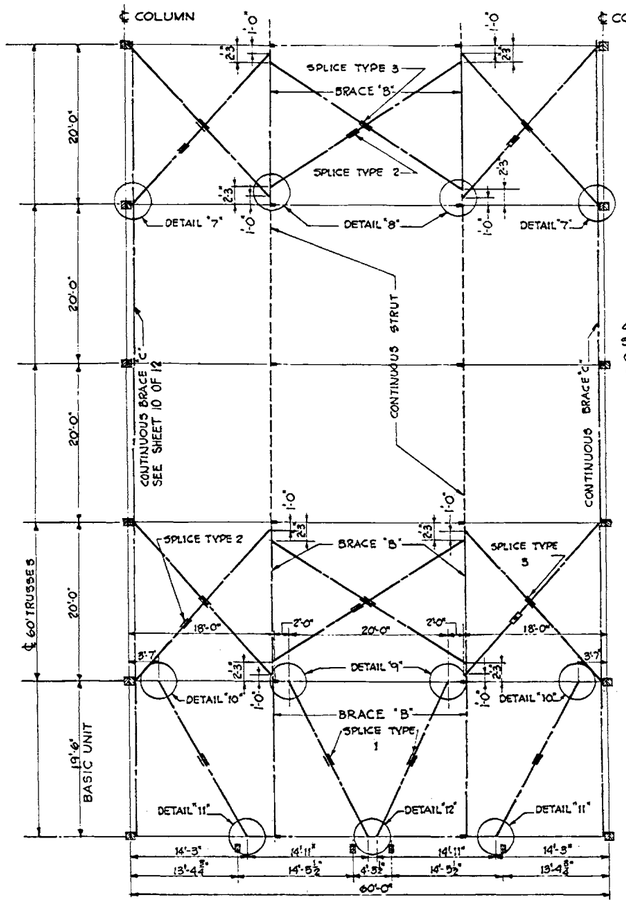
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EWING
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, STANDARDS BRANCH
APPROVED: H.M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1943
APPROVED FOR PROPONENT AGENCY:
DATE
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 10 OF 12

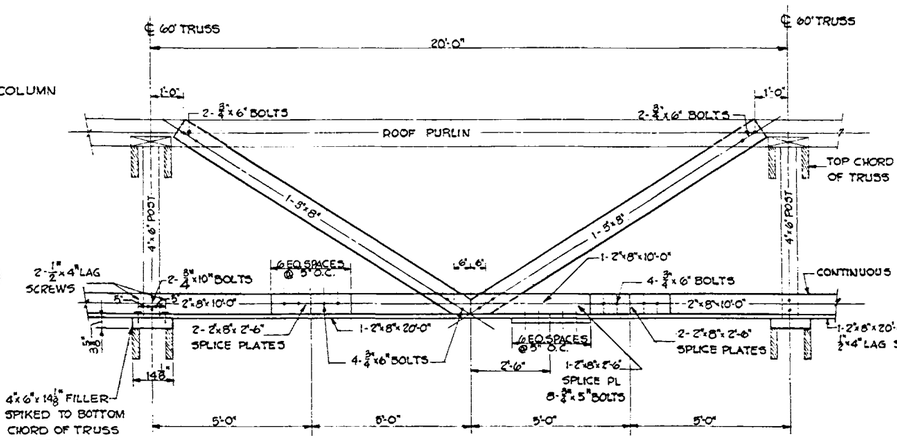
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

BRACING-40 FT. TRUSS

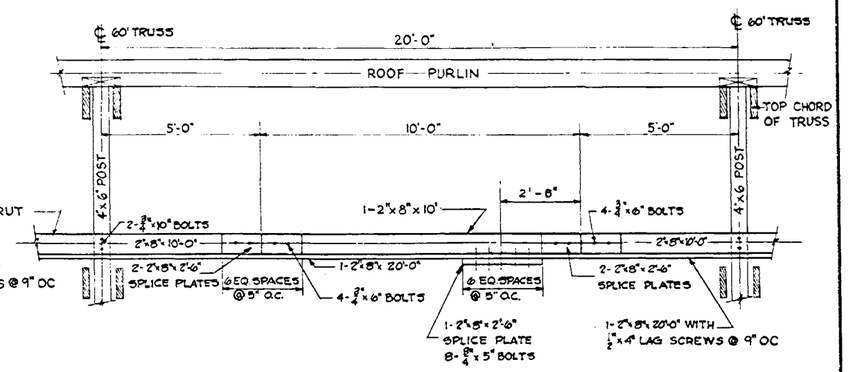


PLAN
SCALE NO.1

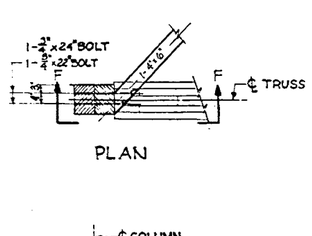
NOTE:
FOR SPLICE DETAILS
SEE SHEET NO. 10 OF 12



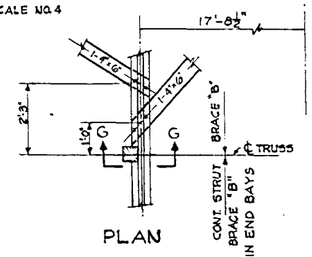
BRACE "B"
SCALE NO.4



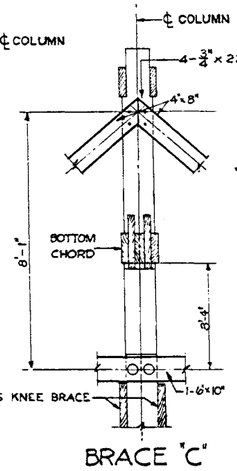
CONTINUOUS STRUT
SCALE NO.4



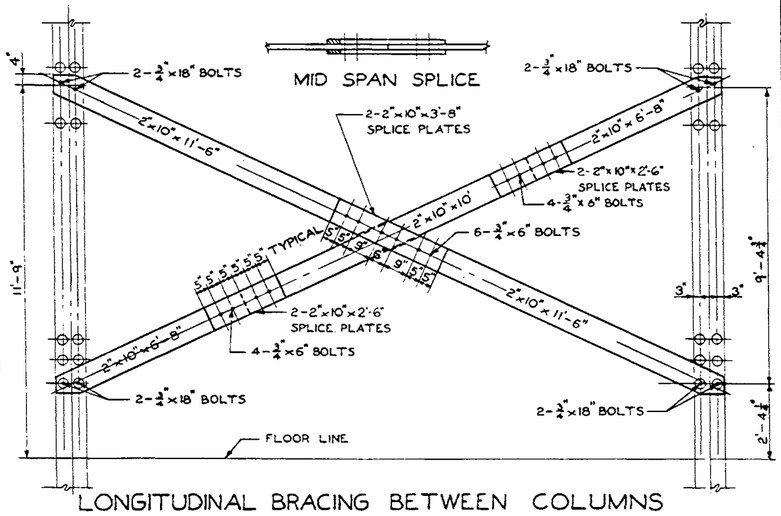
PLAN



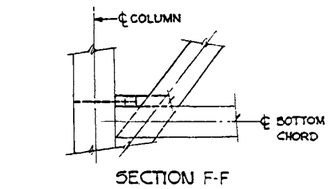
PLAN



BRACE "C"
CONN. TO COLUMN
SCALE NO.4

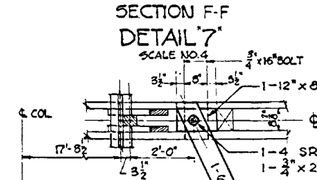


LONGITUDINAL BRACING BETWEEN COLUMNS
(IN EVERY FIFTH BAY)
SCALE NO. 4



SECTION F-F

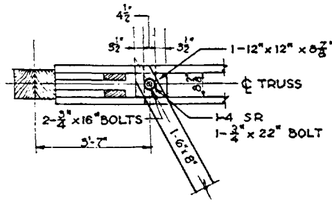
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SCALE NO.4



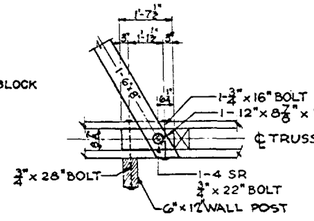
SECTION G-G

DETAIL "8"
SCALE NO.4

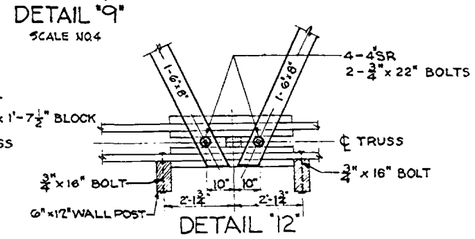
DETAIL "9"
SCALE NO.4



DETAIL "10"
SCALE NO.4



DETAIL "11"
SCALE NO.4



DETAIL "12"
SCALE NO.4

GENERAL NOTES

1. VERTICAL SWAY BRACING IN END BAYS AND EVERY THIRD BAY.
2. IN LONG BUILDINGS, VERTICAL SWAY BRACING IN TWO END BAYS AND EVERY THIRD BAY.
3. IN HIGH WIND VELOCITY AREAS, VERTICAL SWAY BRACING IN TWO END BAYS AND ALTERNATE BAYS.

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES

0 5' 10' 15' NO.1

0 1' 2' 3' 4' NO.4

MAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

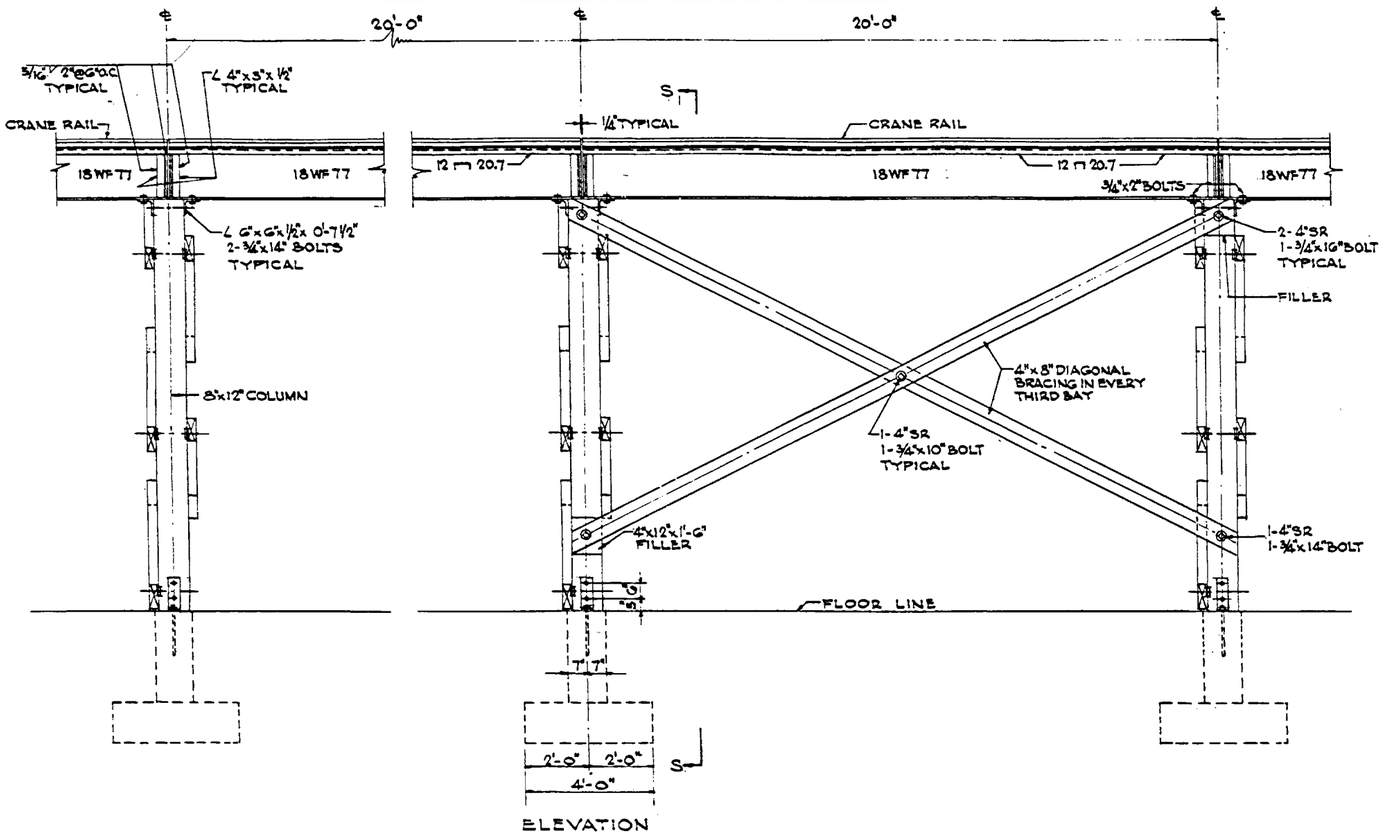
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

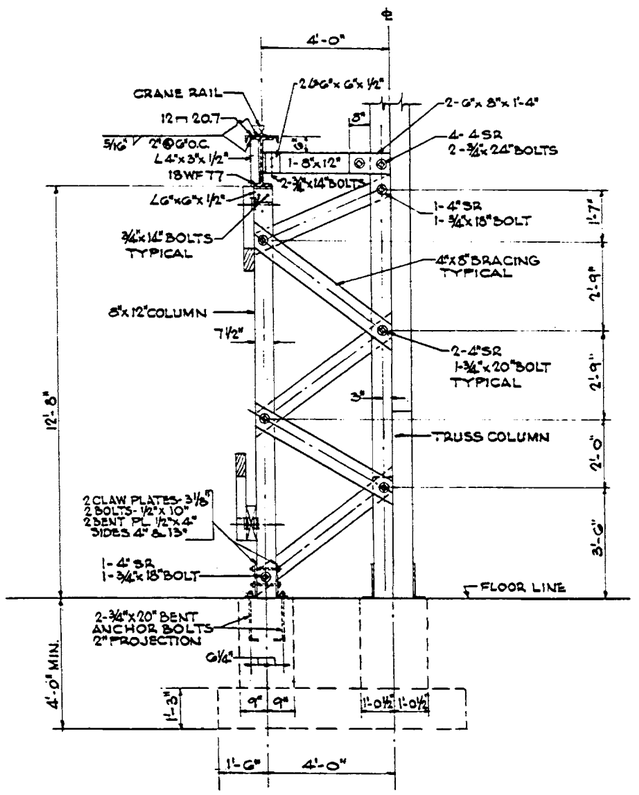
DRAWN BY: EWING
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED: H. C. Schaum, CHIEF, STANDARDS BRANCH
APPROVED: H.M. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY:

THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

BRACING-60 FT. TRUSS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
DATE
SHEET 11 OF 12

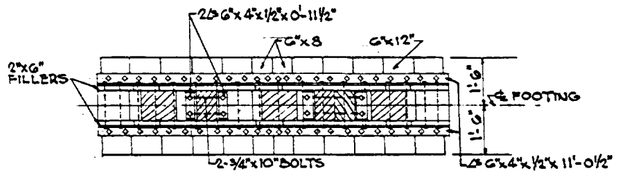




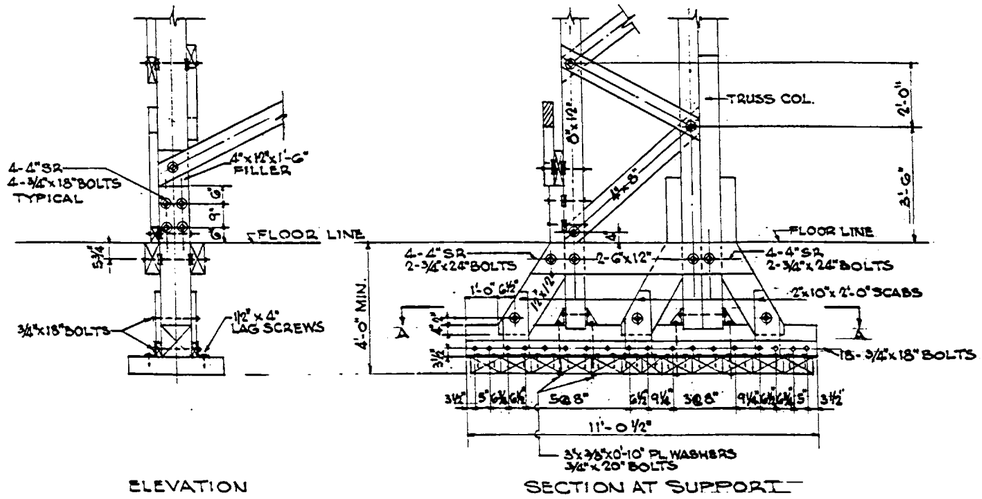
SECTION S-S

10 TON CRANE SUPPORT WITH CONCRETE FOOTINGS

SCALE NO. 4



PLAN AT A-A



ELEVATION SECTION AT SUPPORT

ALTERNATE TIMBER FOOTING

SCALE NO. 4

NOTE
ITEMS NOT IDENTIFIED ARE SAME AS NORMAL COLUMN FOOTING.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3' 4'
NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EWING
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED:

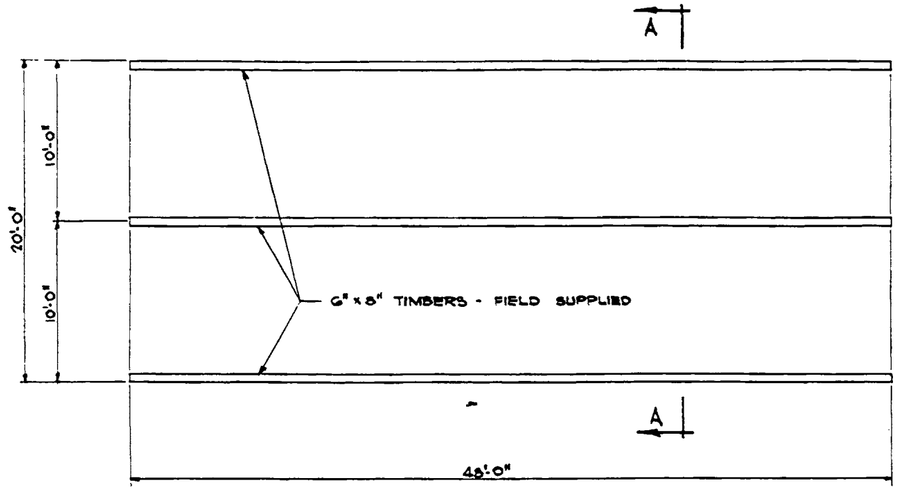
THEATER OF OPERATIONS
WOOD FRAME CONSTRUCTION
SHOP-HEAVY DUTY

10 TON CRANE SUPPORT

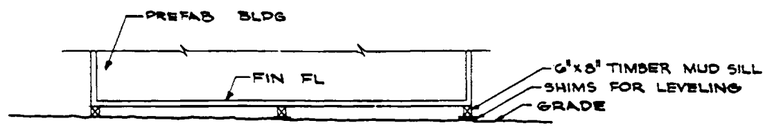
APPROVED: H. M. Williams DATE: 12 MAR 1960
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
CHIEF, STRUCTURES BRANCH

APPROVED FOR PROPONENT AGENCY:
DATE

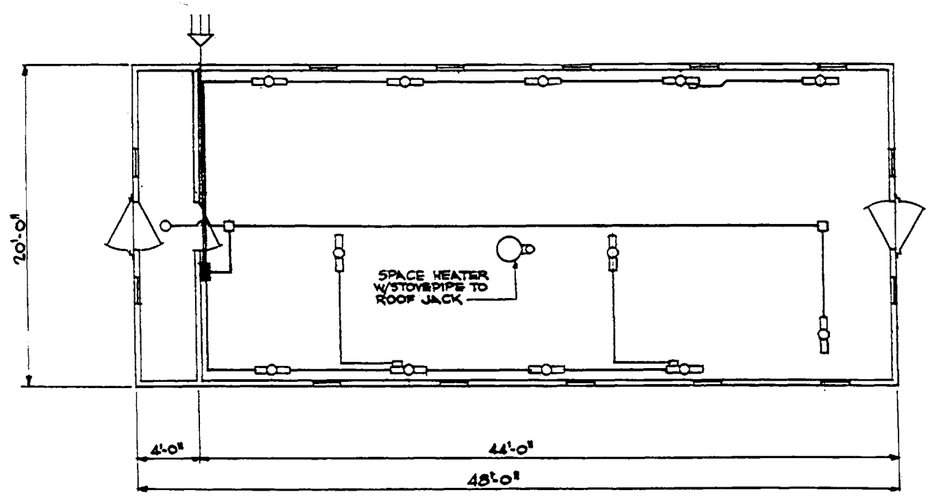
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 34-19
SHEET 12 OF 12



FOUNDATION PLAN
SCALE NO. 2



SECTION A-A
SCALE NO. 2



FLOOR PLAN
W/ELECTRICAL LAYOUT
SCALE NO. 2

GENERAL NOTES

1. THIS PREFABRICATED BARRACKS TYPE BUILDING IS A SELF-CONTAINED UNIT WHICH PROVIDES COMFORTABLE LIVING CONDITIONS IN AMBIENT TEMPERATURES AS LOW AS 65°F BELOW ZERO.
2. THIS BUILDING WAS SPECIFICALLY DESIGNED FOR ARCTIC CONDITIONS. IT MAY BE USED, WITH NECESSARY MODIFICATIONS, IN OTHER CLIMATIC LOCATIONS WHERE WELL INSULATED BUILDINGS ARE REQUIRED. IN TROPICAL LOCATIONS, SOME MEANS FOR AIR CONDITIONING WOULD BE USED.
3. IN LOCATING THE BUILDING SITE, A LEVEL OR NEARLY LEVEL AREA SHOULD BE CHOSEN. THE BUILDING MAY BE ERECTED ON A SNOW PACKED AREA BUT A PERMANENT SITE MUST BE PREPARED BEFORE THE SPRING THAW AND THE BUILDING RELOCATED ON IT.
4. THIS BUILDING CONTAINS A COMPLETE ELECTRICAL ASSEMBLY AND 1-70,000 BTU/HR SPACE HEATER AS PART OF THE PACKAGED BUILDING.
5. REFER TO TECHNICAL MANUALS TM 5-491, TM 5-589 AND CORPS OF ENGINEERS DRAWINGS D9823 SHEETS 1 THROUGH 24 FOR COMPLETE DETAILS TO ERECT THIS BUILDING.

20' x 48' PREFABRICATED BARRACKS (PANELIZED T-5) FOR FRIGID CLIMATE (-65°F)

FACILITY NO. 54421

SYMBOL	DESCRIPTION	DATE	APPROVAL

RECORDING GRAPHIC SCALES: 0 5' 10' — NO.2

MAYER, GRAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
DESIGNED BY: WADE
SUBMITTED BY: C.W. DE LONGUEIL
APPROVED: GROUP STRUCTURES BRANCH

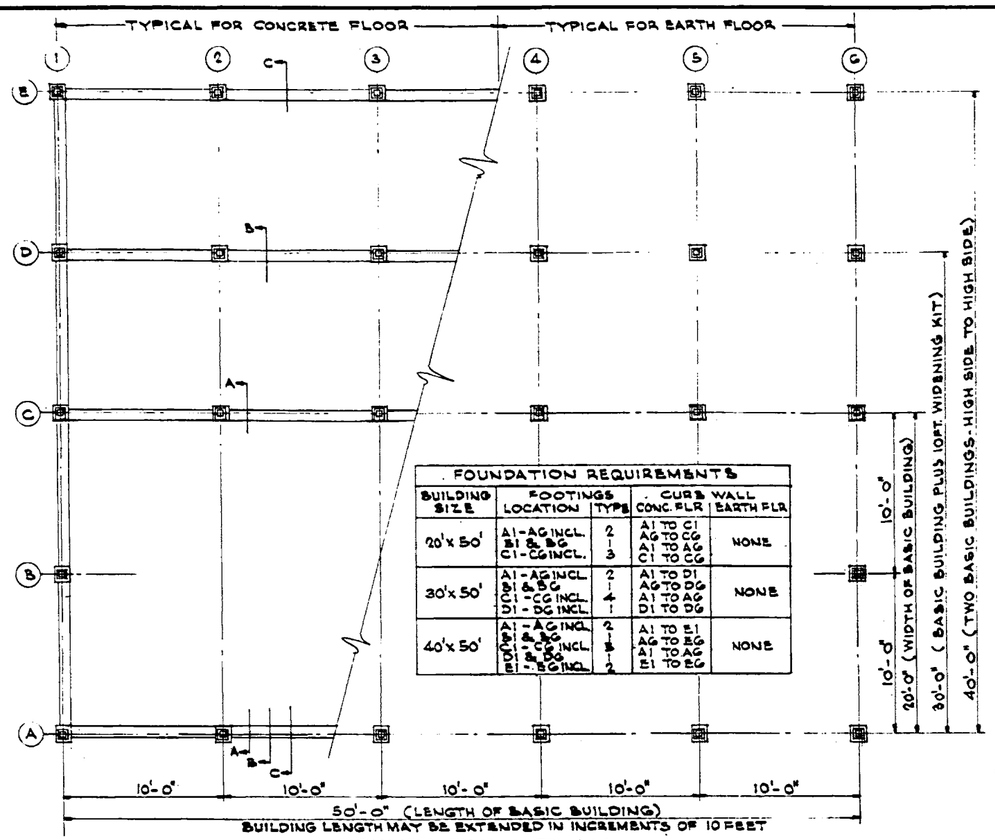
THEATER OF OPERATIONS

FOUNDATION PLANS FOR 20'X48' PREFABRICATED BARRACKS FOR FRIGID CLIMATE (-65°F)

APPROVED: DATE: 17 FEB 52.
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

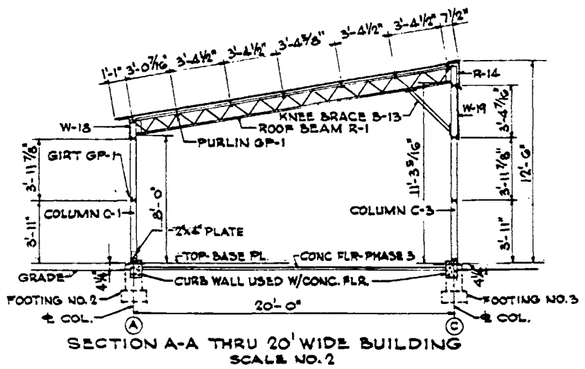
APPROVED FOR PRESIDENT ASSEMBLY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 36-22
SHEET 1 OF 3

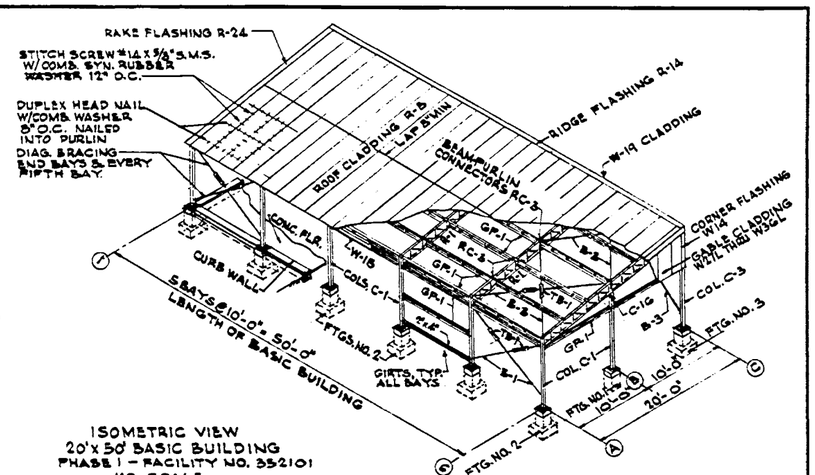


FOUNDATION REQUIREMENTS				
BUILDING SIZE	FOOTINGS LOCATION	FOOTINGS TYPE	CURB WALL CONC. FLR	CURB WALL EARTH FLR
20'x 50'	A1-AG INCL. B1 & BG C1-CG INCL.	2 1 3	A1 TO C1 AG TO CG A1 TO AG C1 TO CG	NONE
30'x 50'	A1-AG INCL. B1 & BG C1-CG INCL. D1-DG INCL.	2 1 4 1	A1 TO D1 AG TO DG A1 TO AG D1 TO DG	NONE
40'x 50'	A1-AG INCL. B1 & BG C1-CG INCL. D1-DG INCL. E1-EG INCL.	2 1 3 1 2	A1 TO E1 AG TO EG A1 TO AG E1 TO EG	NONE

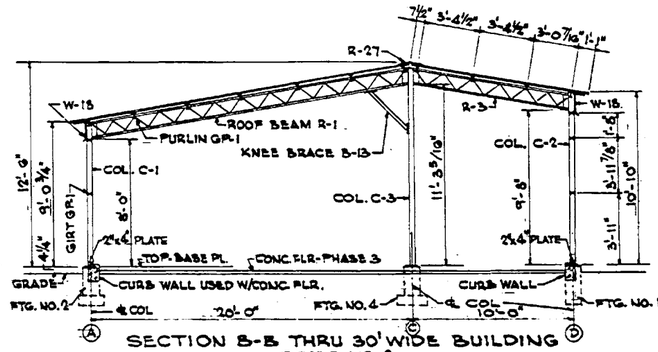
FOUNDATION PLAN
SCALE NO. 2



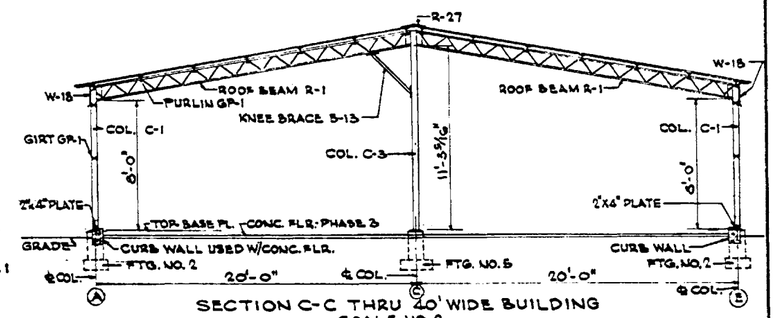
SECTION A-A THRU 20' WIDE BUILDING
SCALE NO. 2



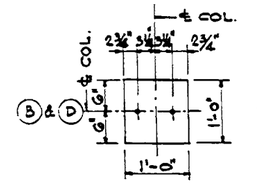
ISOMETRIC VIEW
20'x 50' BASIC BUILDING
PHASE 1 - FACILITY NO. 352101
NO SCALE
NOTE- CURB WALL & CONC. FLOOR NOT INCLUDED IN FACILITY NO. 352101



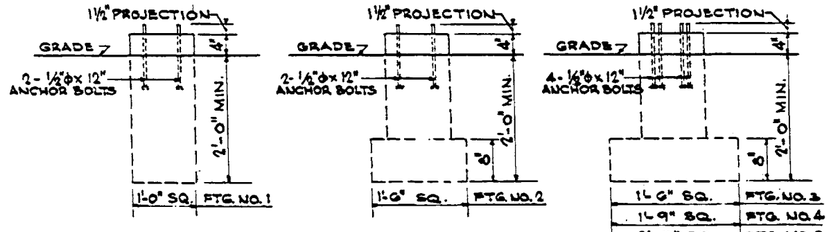
SECTION B-B THRU 30' WIDE BUILDING
SCALE NO. 2



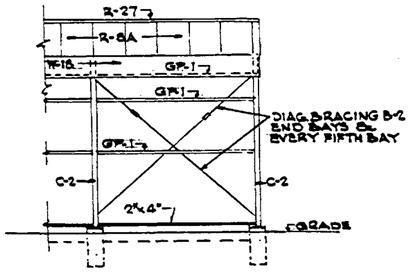
SECTION C-C THRU 40' WIDE BUILDING
SCALE NO. 2



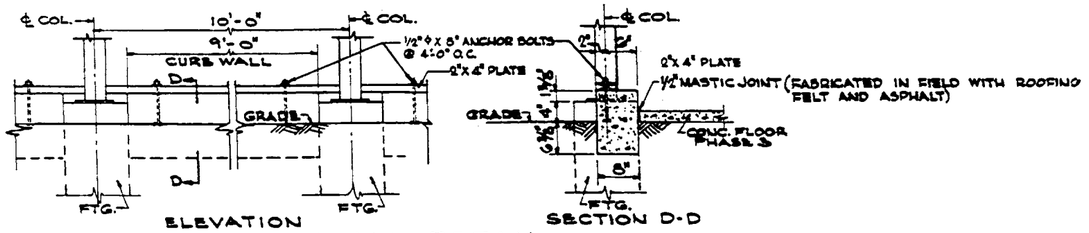
PLAN



FOOTING DETAILS
SCALE NO. 6



SIDE ELEVATION - END BAY
LINE "D" - 30' WIDE BUILDING
SCALE NO. 2



ELEVATION

SECTION D-D

CURB WALL DETAIL
SCALE NO. 6

FACILITY NUMBERS BARRACKS TYPE BUILDINGS — 8'-0" MIN. CLEAR HGT.	
FACILITY NO.	PHASE 1 - FRAME, ROOF & FOUNDATION
352101 *	20'x 50' BASIC BUILDING - PHASE 1 STEEL FRAME, METAL ROOF & CONCRETE FOOTINGS.
352102	10'x 50' WIDENING KIT - PHASE 1 STEEL FRAME, METAL ROOF & CONCRETE FOOTINGS.
352103	CONCRETE CURB WALL - 8"x12"x 100 FT. UNIT (PHASE 1 CONSTRUCTION WHEN REQUIRED).
FACILITY NO.	PHASE 2 - CLADDING - 8'x 100' UNIT
352111	CORRUGATED STEEL WITH DOORS & WINDOWS - TEMPERATE CLIMATE
352112	CORRUGATED STEEL WITH DOORS & SCREENED OPENINGS AND VENTS - TROPICAL CLIMATE
FACILITY NO.	PHASE 3 - FLOOR - 1000 SF UNIT
340371	CONCRETE, 3" THICK WITHOUT REINFORCEMENT
340372	CONCRETE, 4" THICK WITHOUT REINFORCEMENT
340373	CONCRETE, 6" THICK WITH 6"x 6" WIRE MESH
FACILITY NO.	PHASE 4 - LINER - 1000 SF UNIT
▲ 352191	WALL LINER - THERMAL INSULATION BOARD AND HARDPRESSED FIBER BOARD - TROPICAL CLIMATE ONLY
▲ 352192	CEILING LINER - THERMAL INSULATION BOARD - TROPICAL CLIMATE ONLY
352193	REFLECTIVE TYPE INSULATION IN CEILING W/FURRING FOR USE IN TROPICAL CLIMATE
* 340393	CEILING, FOR PERSONNEL USE, TEMPERATE CLIMATE (-20°F)
340394	WALLS, FOR PERSONNEL USE, TEMPERATE CLIMATE (-20°F)

*AN ERECTION MANUAL IS PROVIDED WITH EACH BASIC BUILDING, PHASE 1.

NOTE:
FOR FSN BILLS OF MATERIAL - REFER TO TM 5-303 BY FACILITY NUMBER.

GENERAL NOTES

1. FOUNDATIONS & FLOORS TO BE POURED ON UNDISTURBED SOIL OR WELL COMPACTED SAND OR GRAVEL FILL HAVING A BEARING CAPACITY OF AT LEAST 2000 PSF.
2. WHERE THE BEARING CAPACITY IS LESS THAN 2000 PS.F. DESIGN OF FOUNDATION OR GRADE BEAM SHALL BE DONE BY OFFICER IN CHARGE.
3. ALL CONCRETE TO BE CLASS "C" (2000 PS.I.)
4. HORIZONTAL WALL GIRTS ARE SUPPLIED IN PHASE 1 FACILITY.
5. THE PURLINS (GP-1) AND GIRTS (GP-1) ARE STEEL MEMBERS WELDED IN SUCH A MANNER THAT ROOF & WALL CLADDING IS NAILED DIRECTLY TO MEMBER. FOR BEST RESULTS, USE A STRINGLINE TO INDICATE NAILING GROOVE.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
35-21	SCHEDULE OF FACILITIES, FND. PLAN & FOOTINGS, SECTIONS & ISOMETRIC	1 OF 4
35-21	MISC. FRAMING DETAILS, ROOFING & CLADDING, FLASHINGS.	2 OF 4
35-21	CLADDING DETAILS, DOOR & WINDOW DTLS.	3 OF 4
35-21	TYP. CLADDING ISOMETRICS, LINER & INSULATION DTLS.	4 OF 4

SYMBOL	REVISIONS DESCRIPTION	DATE	APPROVAL
▲	REVISED FACILITY SCHEDULE	AUG '70	CWD

GRAPHIC SCALES: 0 5' 10' NO. 2 — 0 1' 2' NO. 8

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

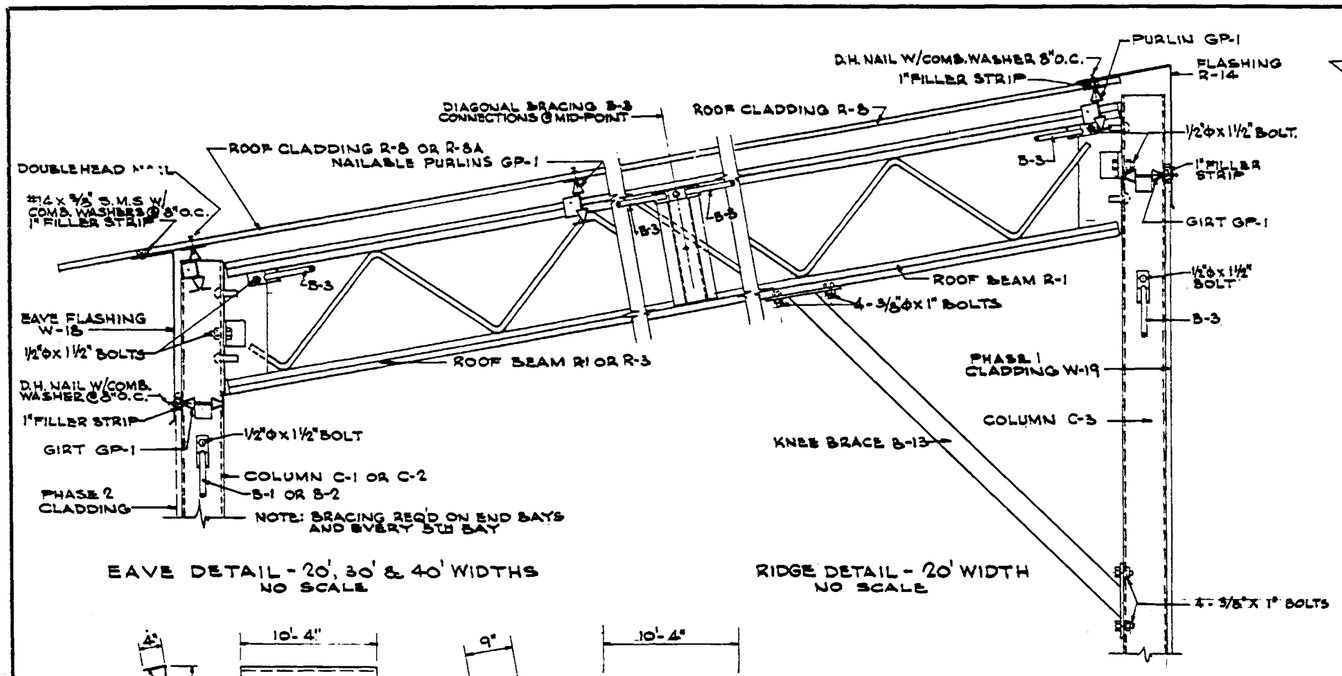
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C.W. DEICHMANN
APPROVED: H. M. Williams — DATE: 19 MAR 1969
CHIEF, ENGINEERING BRANCH — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

THEATER OF OPERATIONS

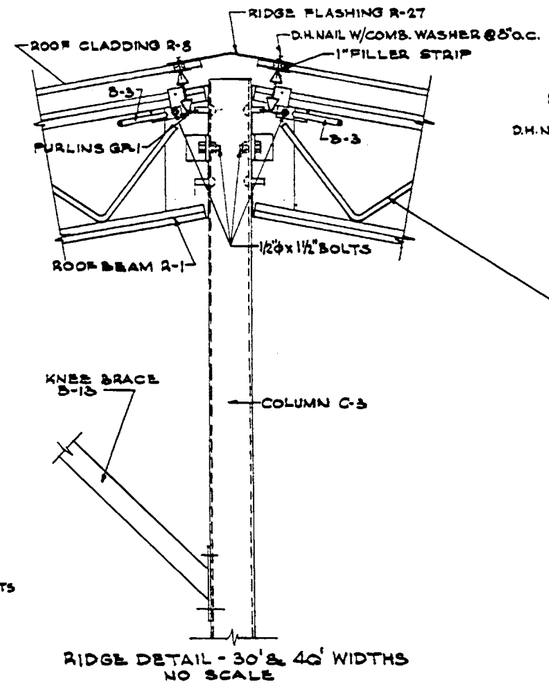
STEEL FRAME CONSTRUCTION
BARRACKS TYPE BUILDINGS
SCHEDULE OF FACILITIES
FOUNDATION PLAN & FOOTINGS
SECTIONS & ISOMETRIC

SCALE: AS NOTED — SPEC. NO.
DRAWING NUMBER: 35-21
SHEET 1 OF 4

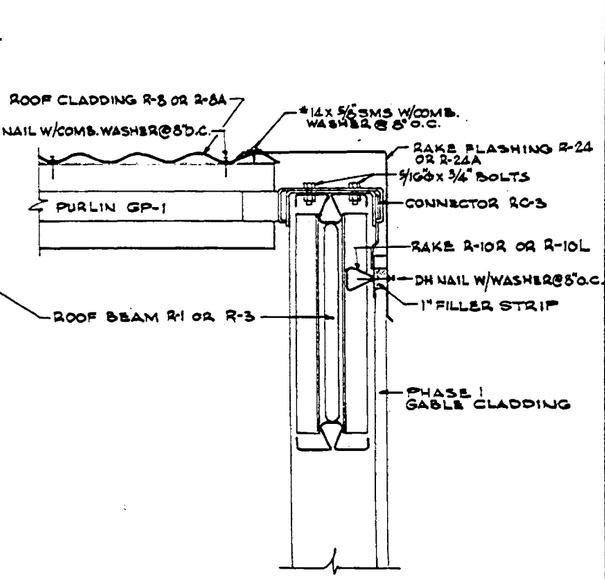


EAVE DETAIL - 20', 30' & 40' WIDTHS
NO SCALE

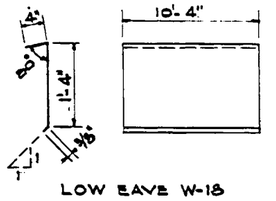
RIDGE DETAIL - 20' WIDTH
NO SCALE



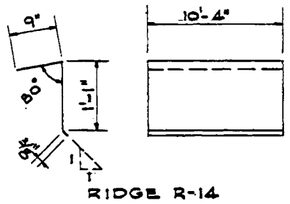
RIDGE DETAIL - 30' & 40' WIDTHS
NO SCALE



RAKE DETAIL - ALL WIDTHS
NO SCALE



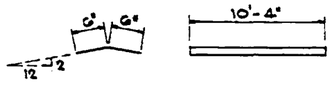
LOW EAVE W-18



RIDGE R-14

CORNER W-14

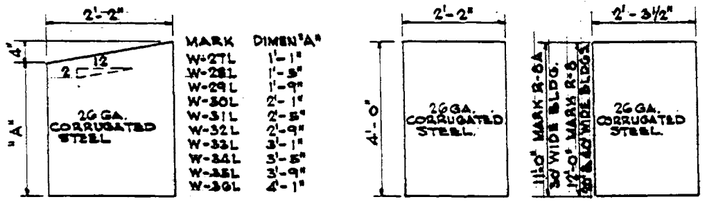
RAKE R-24 & R-24A



RIDGE CAP R-27

NOTE:
ALL FLASHINGS
24 GA. STEEL

FLASHING DETAILS - PHASE 1
NO SCALE



GABLE CLADDING
MARK W-27R THRU W-36R
IDENTICAL OPPOSITE HAND

WALL CLADDING W-19

ROOF CLADDING

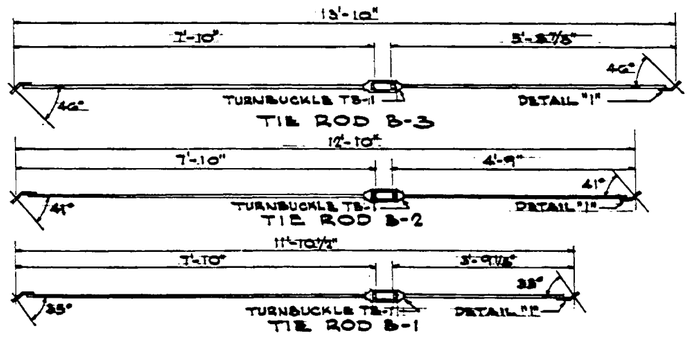
CLADDING SHEETS FOR PHASE 1
NO SCALE



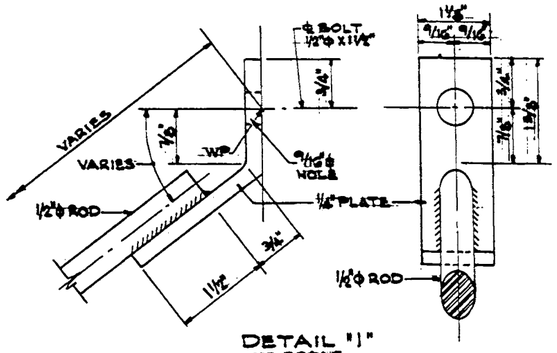
ROOF SHEETS GABLE SHEETS (MINIMUM)

CLADDING LAP DETAILS
NO SCALE

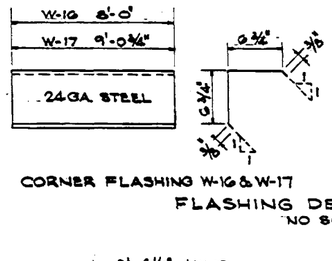
NOTE: LAP ENDS OF ROOF SHEETS MINIMUM OF 8". CUT ALL FINISHING SHEETS AS REQUIRED.



DIAGONAL BRACING - TIE ROD DETAILS
NO SCALE



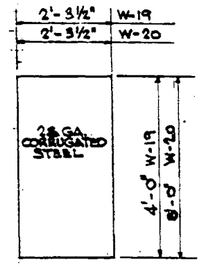
DETAIL "1"
NO SCALE



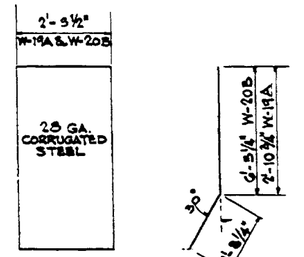
CORNER FLASHING W-16 & W-17

DOOR HEAD FLASHING D-1

FLASHING DETAILS - PHASE 2
NO SCALE

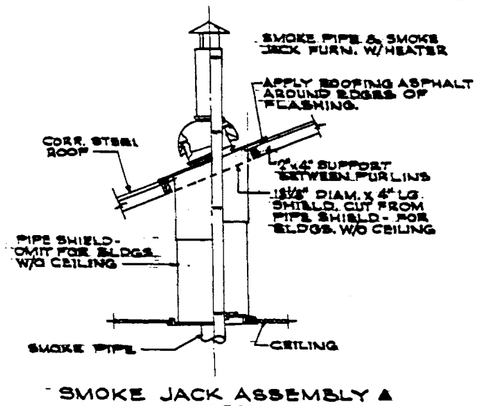


WALL CLADDING
W-19 & W-20



WALL CLADDING W-19A & W-20B

CLADDING SHEETS FOR PHASE 2
NO SCALE



SMOKE JACK ASSEMBLY A
NOT TO SCALE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		
▲	ADDED SMOKE JACK ASSEMBLY	OCT '10	CWD

GRAPHIC SCALES
NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION, ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C.W. DEICHMANN

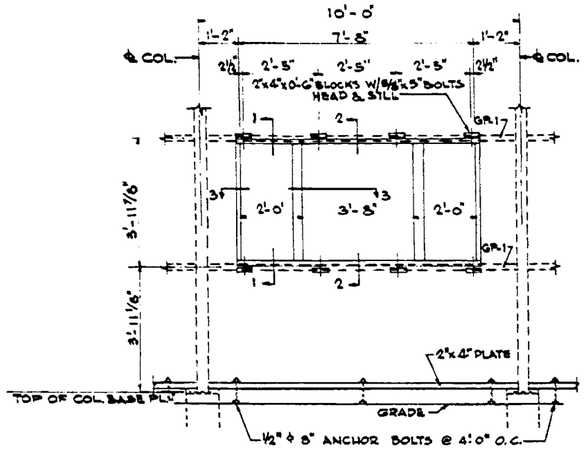
THEATER OF OPERATIONS

STEEL FRAME CONSTRUCTION
BARRACKS TYPE BUILDINGS
MISCELLANEOUS FRAMING DETAILS
ROOFING & CLADDING SHEETS
FLASHINGS & SMOKE JACK ASSEMBLY

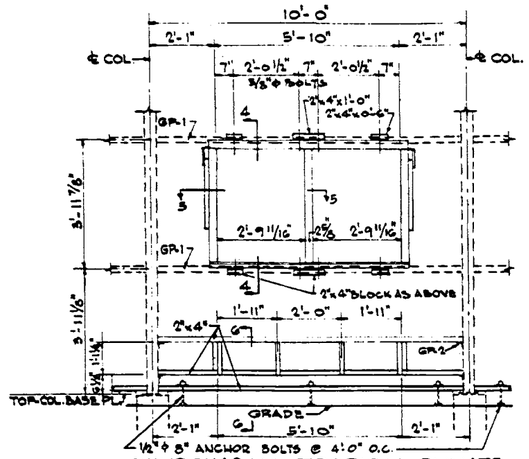
APPROVED: H. M. Williams
DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:

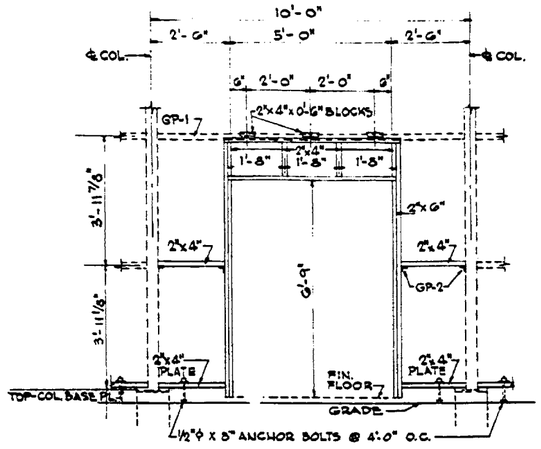
SCALE: NONE
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 4
35-21



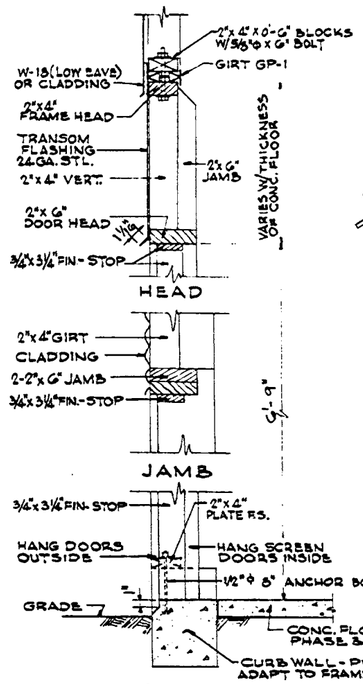
WINDOW BAY - TEMPERATE CLIMATE
EXTERIOR VIEW - CLADDING OMITTED
SCALE NO. 4



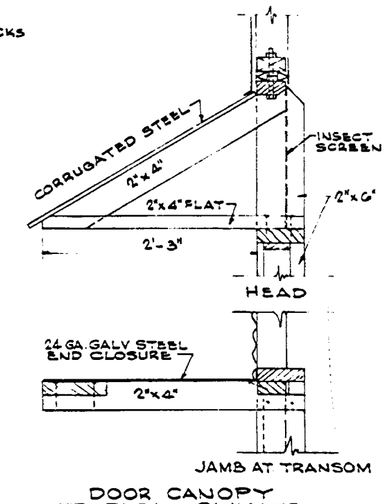
WINDOW BAY - TROPICAL CLIMATE
EXTERIOR VIEW - CLADDING OMITTED
SCALE NO. 4



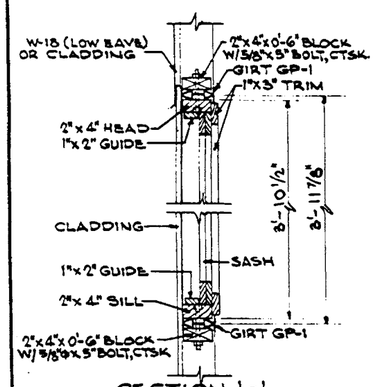
DOOR BAY - ALL CLIMATES
EXTERIOR VIEW - CLADDING OMITTED
SCALE NO. 4



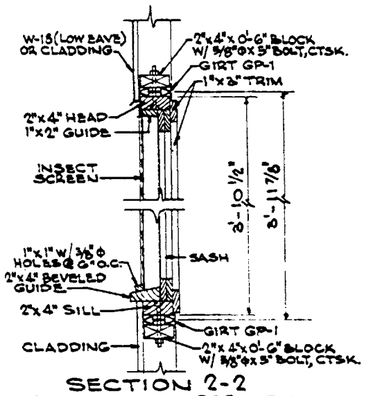
DOOR FRAME DETAILS
SCALE NO. 7



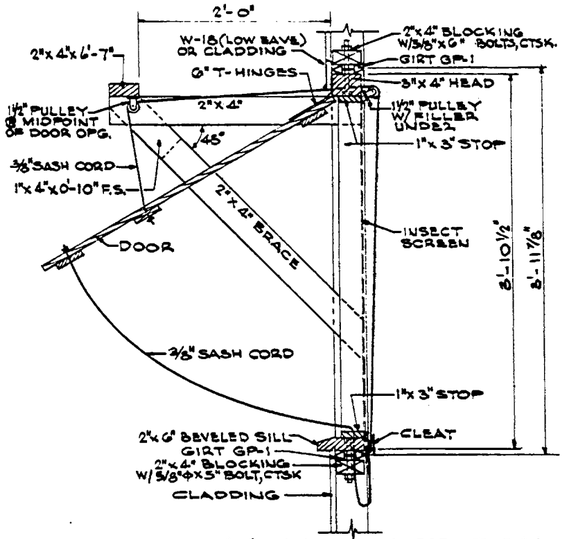
DOOR CANOPY
TROPICAL CLIMATE
SCALE NO. 7



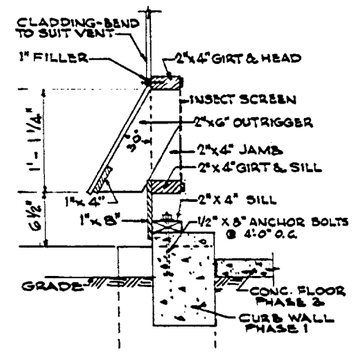
SECTION 1-1
SASH IN OPEN POSITION



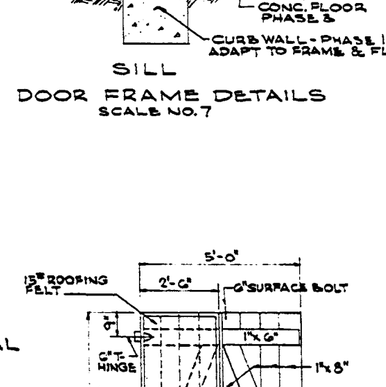
SECTION 2-2
SASH IN CLOSED POSITION



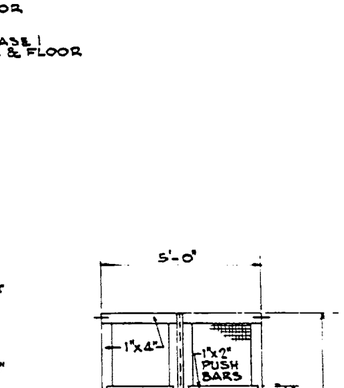
SECTION 4-4 - WINDOW - TROPICAL
SCALE NO. 7



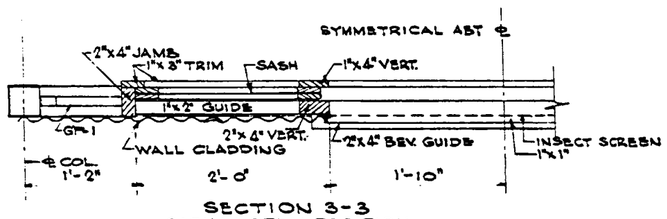
SECTION G-G - VENT - TROPICAL
ALL BAYS EXCEPT DOOR BAYS
SCALE NO. 7



BATTEN DOOR
SCALE NO. 4



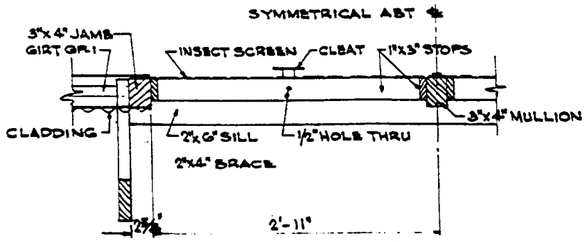
SCREEN DOOR
SCALE NO. 4



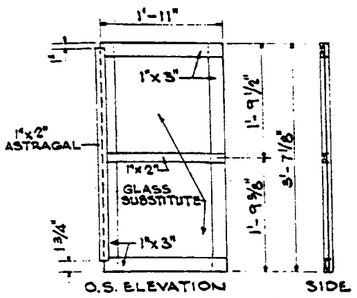
SECTION 3-3
SASH IN OPEN POSITION

WINDOW DETAILS - TEMP. CLIMATE
SCALE NO. 7

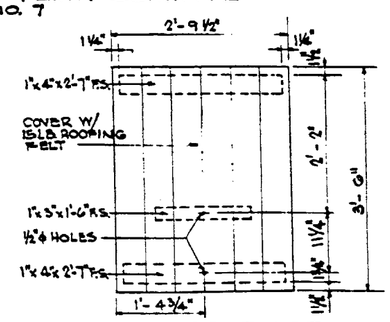
TYPICAL LAP JOINT
WINDOW SASH & SCREEN DOORS
NO SCALE



SECTION 5-5 - WINDOW - TROPICAL
SCALE NO. 7



SASH DETAILS
SCALE NO. 6



CLOSURE DOOR
FOR WINDOW OPG - TROPICAL
SCALE NO. 6

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3' — NO. 4
0 1' 2' — NO. 6
0 3" 6" 9" 1' — NO. 7

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C.W. DEICHMANN

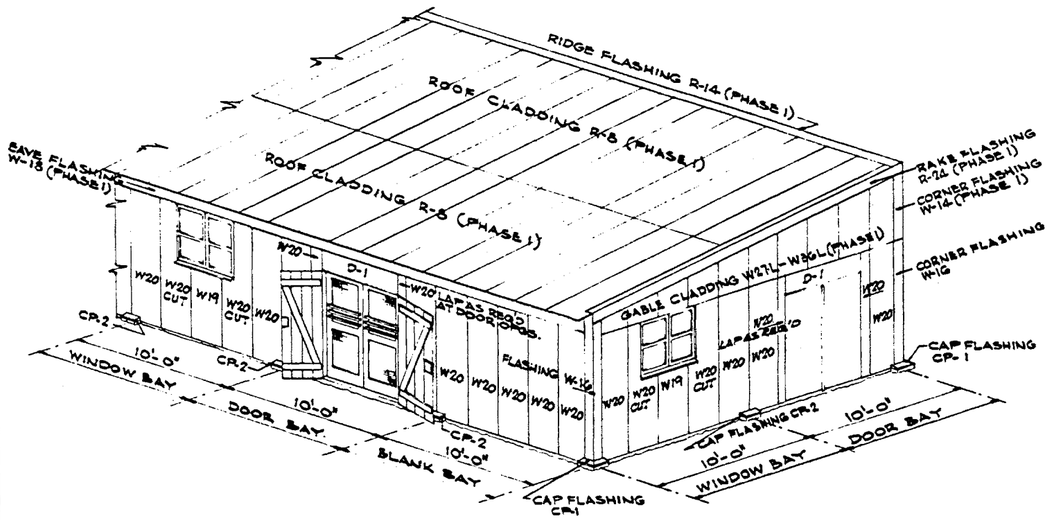
THEATER OF OPERATIONS

STEEL FRAME CONSTRUCTION
BARRACKS TYPE BUILDINGS
CLADDING DETAILS
DOOR & WINDOW DETAILS

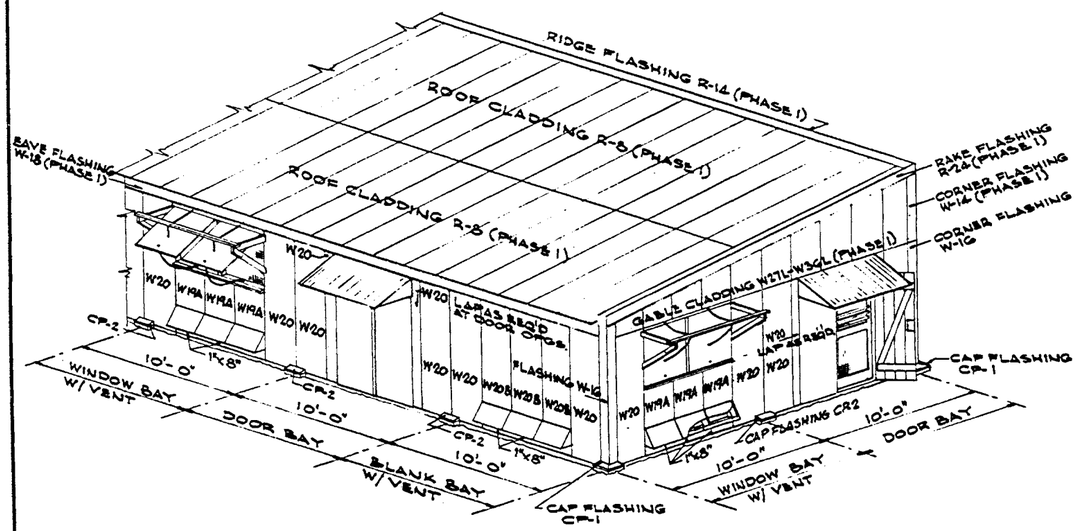
APPROVED: H. M. Williams DATE: 19 NOV 43
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:

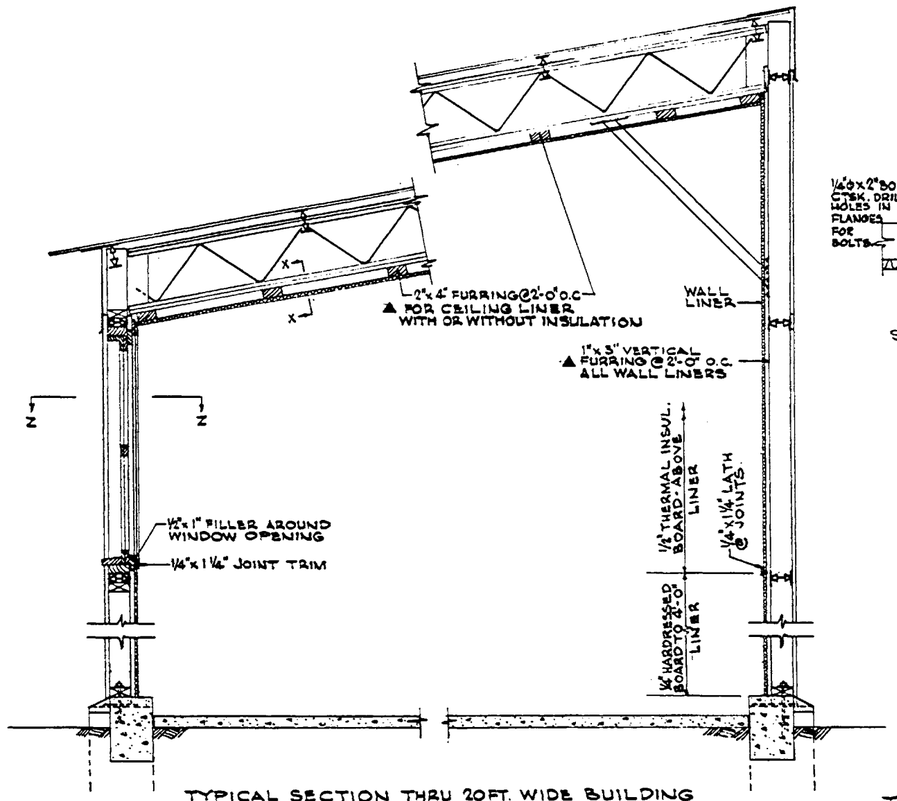
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
DATE
SHEET 3 OF 4
35-21



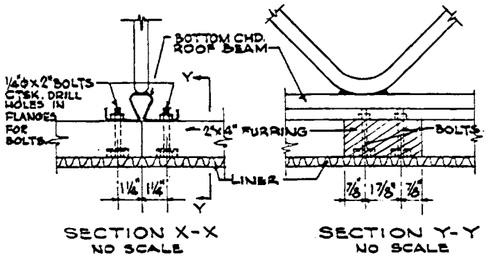
TYPICAL CLADDING - TEMPERATE CLIMATE
NO SCALE
ALL ITEMS ARE PHASE 2 UNLESS OTHERWISE NOTED



TYPICAL CLADDING - TROPICAL CLIMATE
NO SCALE
ALL ITEMS ARE PHASE 2 UNLESS OTHERWISE NOTED

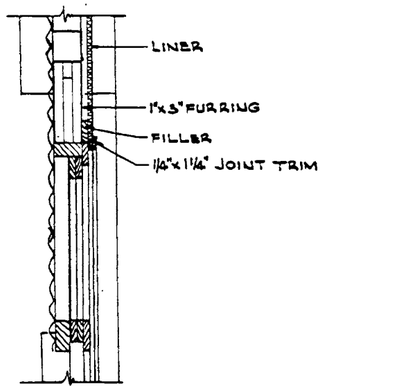


TYPICAL SECTION THRU 20FT. WIDE BUILDING
SHOWING WALL & CEILING LINER
SCALE NO. 6

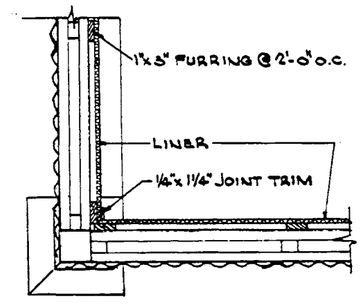


SECTION X-X
NO SCALE

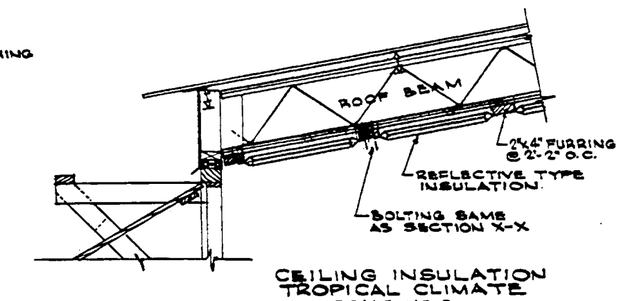
SECTION Y-Y
NO SCALE



PLAN Z-Z
TYPICAL AT WINDOWS
SCALE NO. 7

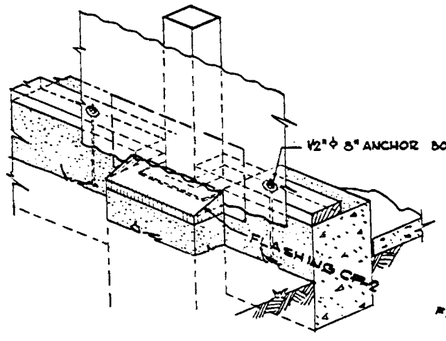


PLAN Z-Z
TYPICAL AT CORNERS
SCALE NO. 7



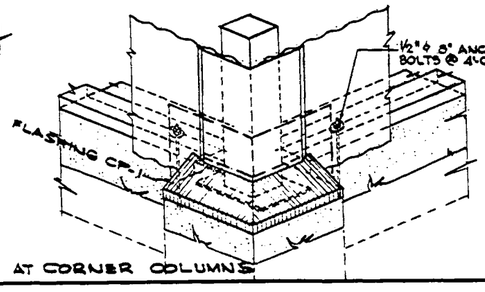
CEILING INSULATION
TROPICAL CLIMATE
SCALE NO. 6

NOTE:
NO DOORS, WINDOWS, OR VENTS CAN BE INSTALLED IN THE END BAYS OR EVERY 5TH BAY WHERE DIAGONAL BRACING OCCURS.

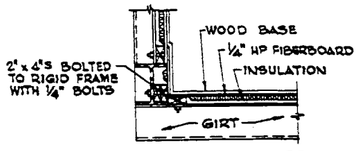


AT INTERMEDIATE COLUMNS

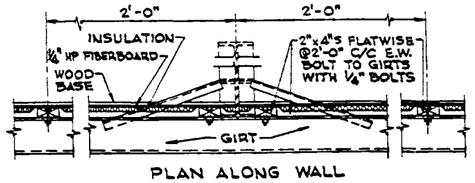
CAP FLASHINGS
(FIELD FABRICATED)
FOR
COLUMN FOOTINGS
SCALE NO. 7



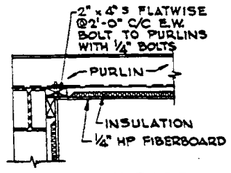
AT CORNER COLUMNS



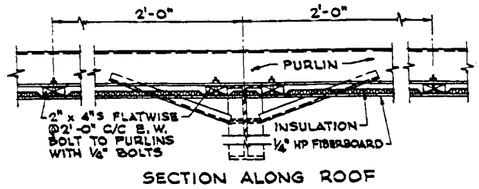
PLAN AT CORNER



PLAN ALONG WALL



CORNER AT ROOF



SECTION ALONG ROOF

△ LINER ATTACHMENT DETAIL FOR RIGID FRAME BUILDING
SCALE NO. 6

SYMBOL	DESCRIPTION	DATE	APPROVAL
△	REMOVED SMOKE JACK DETAIL-ADDED LINER DETAIL	OCT '70	CWD
▲	REVISED TYPICAL SECTION	AUG '70	CWD

REVISIONS

GRAPHIC SCALES
0 1' 2' NO. 6
0 3" 6" 9" 1' NO. 7

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C. W. DEICHMANN
APPROVED:

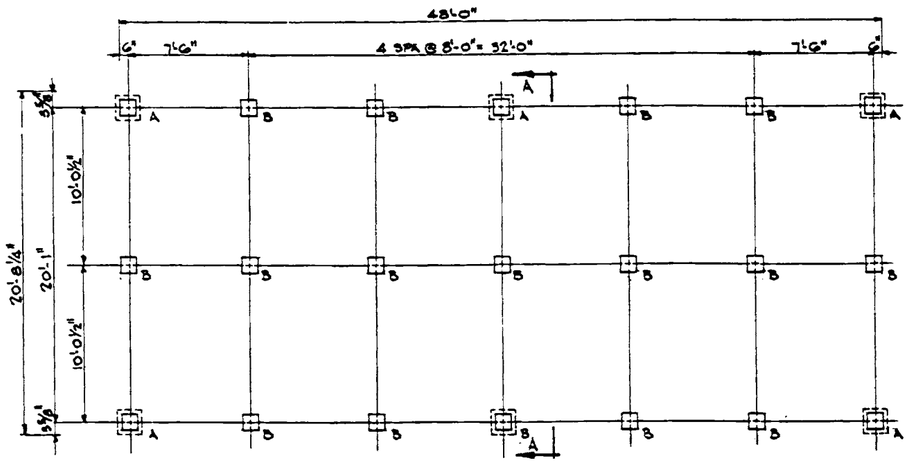
THEATER OF OPERATIONS

STEEL FRAME CONSTRUCTION
BARRACKS TYPE BUILDINGS
TYPICAL CLADDING ISOMETRICS
LINER AND INSULATION DETAILS
△

APPROVED: A. M. Williams DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 35-21
SHEET 4 OF 4



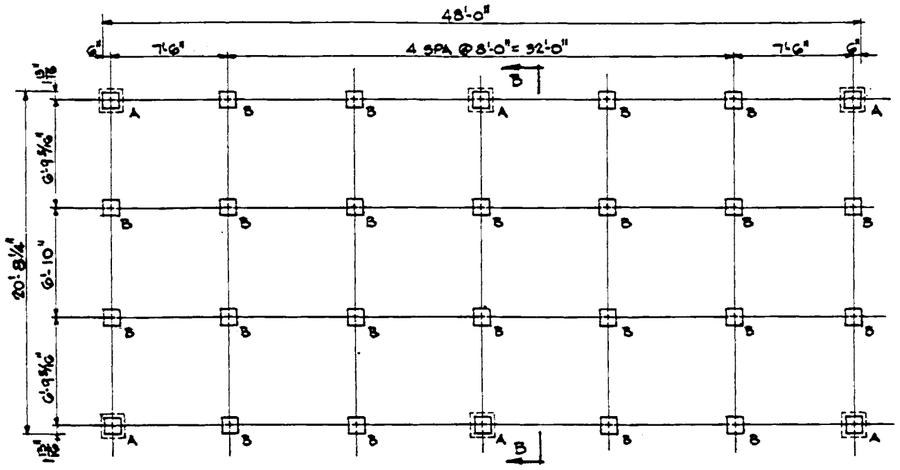
FOUNDATION PLAN - CONCRETE OR WOOD POST FOR READY-CUT ROUND ARCH BUILDING

SCALE NO. 2

FACILITY NO. 352211

GENERAL NOTES

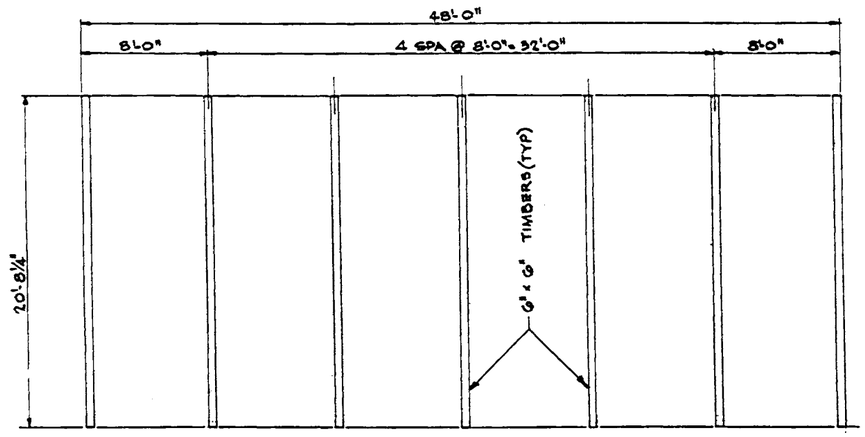
1. THESE PREFABRICATED STEEL BUILDINGS; A VERTICAL WALL, ROUND ARCH BUILDING AND AN ARCH RIB BUILDING ARE WEATHERTIGHT UNITS IN WHICH COMFORTABLE LIVING CONDITIONS MAY BE MAINTAINED IN AMBIENT TEMPERATURES AS LOW AS -40°F.
2. IT IS POSSIBLE TO CONSTRUCT THESE BUILDINGS WITH THEIR STRINGERS PLACED ON THE GROUND, BUT SOME TYPE OF EXPEDIENT FOUNDATION, SUCH AS SHOWN ON THIS DRAWING, SHOULD BE USED.
3. WHEN A CONCRETE SLAB IS USED, ASPHALT OR SOME OTHER TYPE OF SEALER SHOULD BE APPLIED TO THE BOTTOMS OF THE STUD CHANNELS.
4. REFER TO TECHNICAL MANUALS TM 5-402, TM 5-560 AND CORPS OF ENGINEERS DRAWING D-6770 SHEETS 1 THROUGH 33 FOR COMPLETE DETAILS TO ERECT THESE BUILDINGS.
5. REFER TO DRAWING 81-41 FOR THE LIGHTING KIT DETAILS THAT ARE TO BE USED WITH THESE BUILDINGS.
6. USE 2-70,000 B.T.U. HEATERS FOR HEATING.



FOUNDATION PLAN - CONCRETE OR WOOD POST FOR ARCH RIB BUILDING

SCALE NO. 2

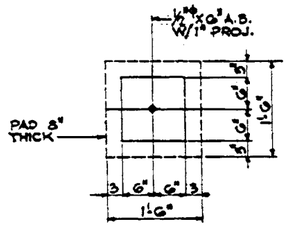
FACILITY NO. 352212



FOUNATION PLAN - TIMBER FOR ROUND ARCH AND ARCH RIB BUILDING

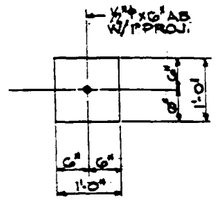
SCALE NO. 2

FACILITY NO. 352213 - ROUND ARCH BLDG
FACILITY NO. 352214 - ARCH RIB BLDG



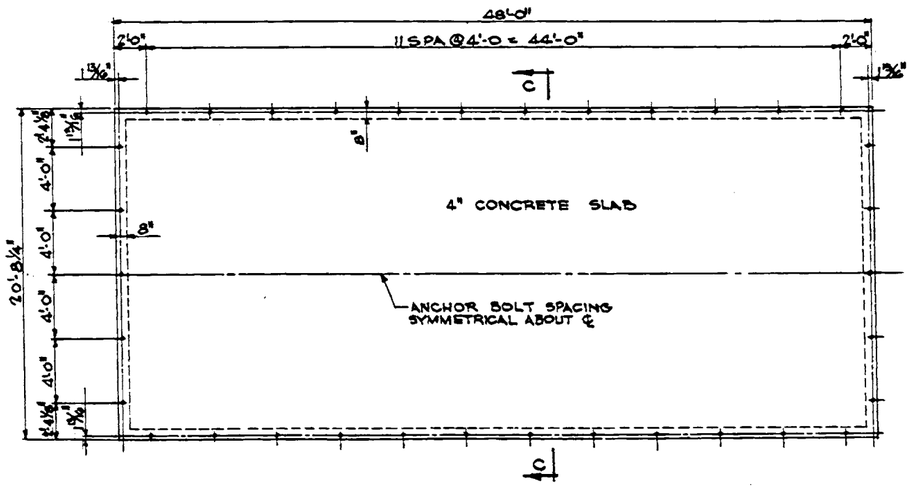
PIER A

SCALE NO. 6



PIER B

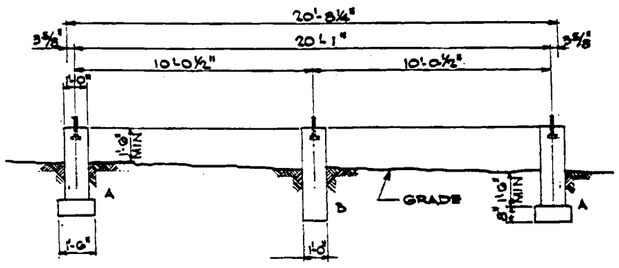
SCALE NO. 6



FOUNDATION PLAN - CONCRETE FLOOR FOR ROUND ARCH AND ARCH RIB BUILDING

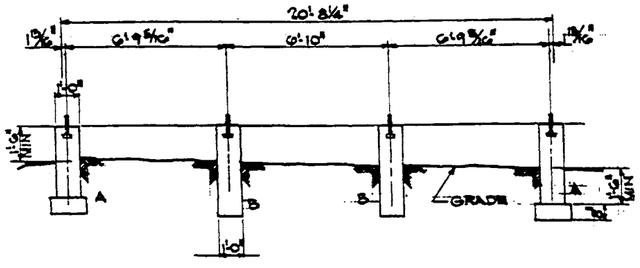
SCALE NO. 2

FACILITY NO. 352215 - ROUND ARCH BLDG
FACILITY NO. 352216 - ARCH RIB BLDG



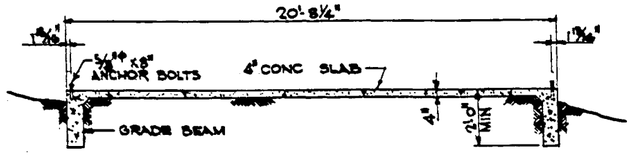
SECTION A-A

SCALE NO. 3



SECTION B-B

SCALE NO. 3



SECTION C-C

SCALE NO. 3

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS
DRAFTING SCALES
0 5' 10' NO. 2 | 0 1' 2' 3' 4' 5' NO. 3 | 0 1' 2' NO. 8

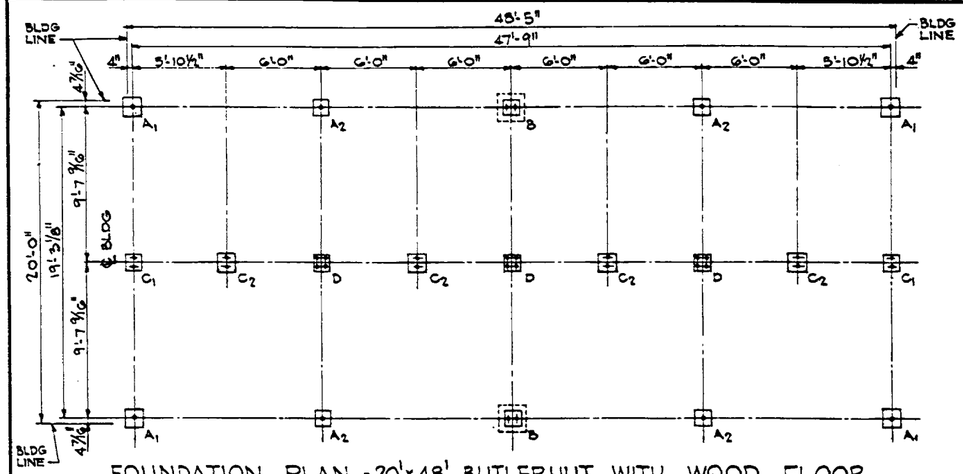
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DESIGN BY: J. JOHNSON
TRACED BY:
QUANTITIES BY: WADE
SUBMITTED BY: R. B. DEJOHNSON
APPROVED:
CHIEF, ENGINEERING DIVISION
APPROVED:
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 17 FEB 1971
AS NOTED
SPEC. NO.
DRAWING NUMBER: 35-22
SHEET 1 OF 1

THEATER OF OPERATIONS

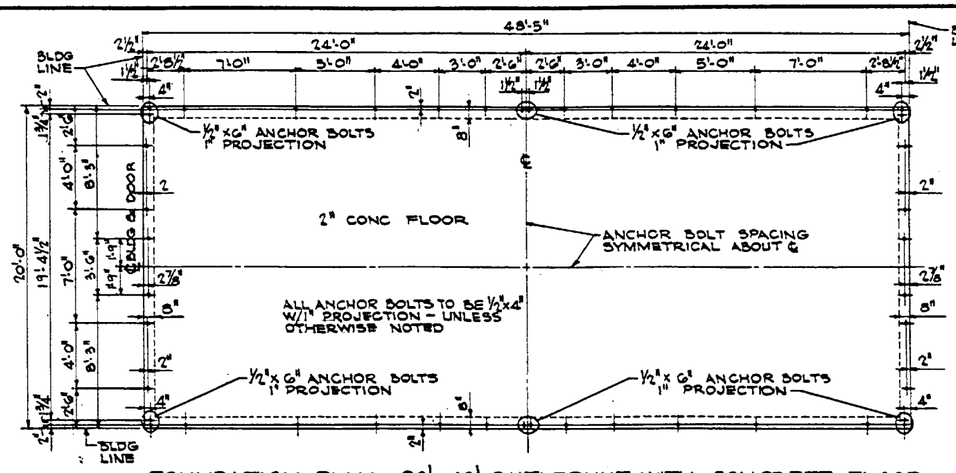
FOUNDATION PLANS FOR
20'X48' PREFABRICATED, READY CUT, ROUND ARCH
& 20'X48' PREFABRICATED, ARCH RIB BUILDINGS
FOR FRIGID CLIMATE (-40°F)



FOUNDATION PLAN - 20'x48' BUTLERHUT WITH WOOD FLOOR

SCALE NO. 2

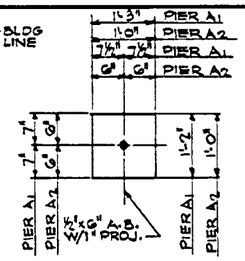
FACILITY NO. 352312 - BUILDING FOR TROPICAL CLIMATE
FACILITY NO. 352314 - BUILDING FOR TEMPERATE CLIMATE (-20°F)



FOUNDATION PLAN - 20'x48' BUTLERHUT WITH CONCRETE FLOOR

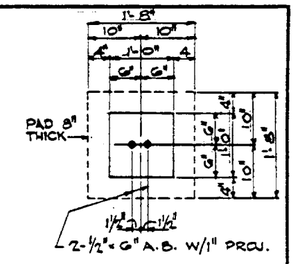
SCALE NO. 2

FACILITY NO. 352311 - BUILDING FOR TROPICAL CLIMATE
FACILITY NO. 352313 - BUILDING FOR TEMPERATE CLIMATE (-20°F)



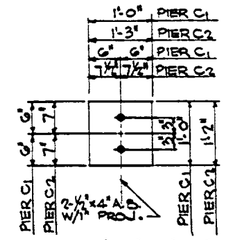
PIER "A1" & "A2"

SCALE NO. G



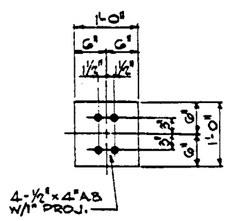
PIER "B"

SCALE NO. G



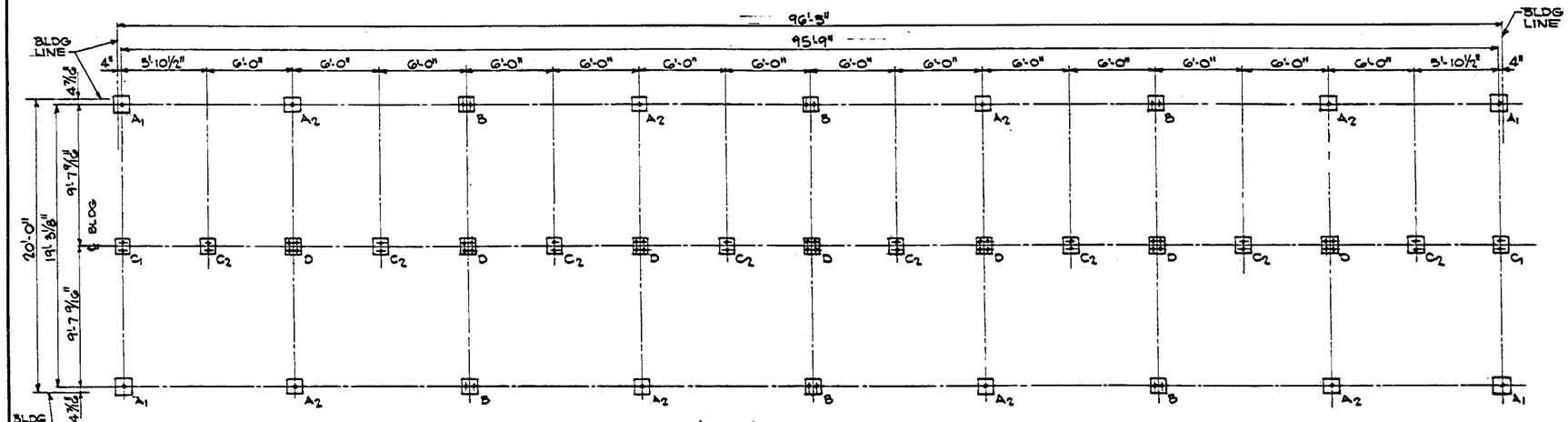
PIER "C1" & "C2"

SCALE NO. G



PIER "D"

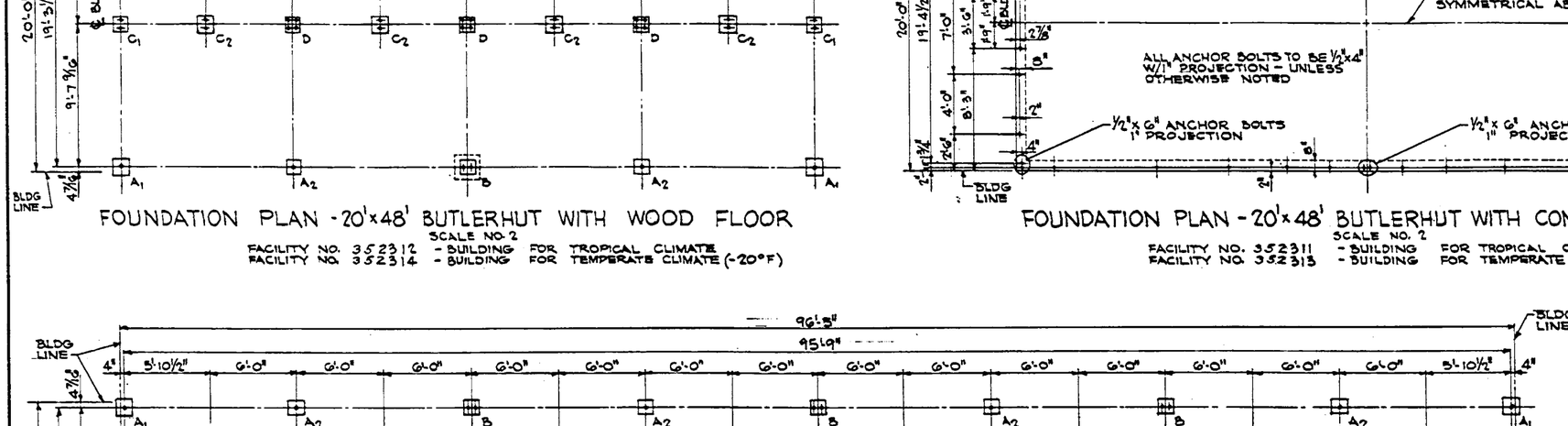
SCALE NO. G



FOUNDATION PLAN - 20'x96' BUTLERHUT WITH WOOD FLOOR

SCALE NO. 2

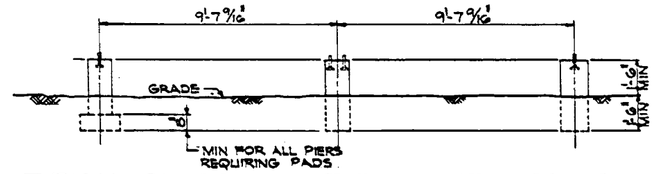
FACILITY NO. 352322 - BUILDING FOR TROPICAL CLIMATE
FACILITY NO. 352324 - BUILDING FOR TEMPERATE CLIMATE (-20°F)



FOUNDATION PLAN - 20' x96' BUTLERHUT WITH CONCRETE FLOOR

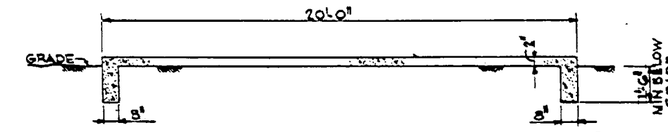
SCALE NO. 2

FACILITY NO. 352321 - BUILDING FOR TROPICAL CLIMATE
FACILITY NO. 352323 - BUILDING FOR TEMPERATE CLIMATE (-20°F)



TYPICAL SECTION - BUTLERHUT WITH WOOD FLOOR

SCALE NO. 3



TYPICAL SECTION - BUTLERHUT WITH CONCRETE FLOOR

SCALE NO. 3

GENERAL NOTES

1. TOP OF PIERS AND SLAB SHALL HAVE TROWEL FINISH.
2. PIERS AND SLAB TO BE SQUARE, LEVEL AND SMOOTH.
3. SET ANCHOR BOLTS BY MEANS OF A TEMPLATE. DO NOT HAND SET ANCHOR BOLTS.
4. ANCHOR BOLTS ARE INCLUDED IN SHIPMENT OF BUILDING.
5. CRATING MATERIAL TO BE USED FOR ENTRANCE PLATFORMS AND STEPS WHERE REQUIRED.
6. SUFFICIENT MATERIAL FOR FOUNDATION FORMS IS INCLUDED IN FACILITY BILL OF MATERIAL.
7. SOIL BEARING IS ASSUMED TO BE 2000 PSF.
8. CONNECTED ELECTRICAL LOAD FOR 20'X48' BUILDING IS 4.6 KW WITH 2-#8 AWG RHW SERVICE. LOAD FOR 20'X96' BLDG IS 8.4 KW WITH 2-#4 AWG RHW SERVICE.
9. REFERENCE DRAWINGS, BUREAU OF YARDS AND DOCKS Y&D DRAWINGS NO.1,109,695 THROUGH 1,109,708.
10. THE BUTLERHUT, MODEL 166 IS SHIPPED COMPLETE WITH WALL AND CEILING LINER CONSISTING OF 1/8" HARD PRESSED FIBERBOARD AND FURRING STRIPS. THE NUTS FOR THE TEMPERATE ZONE HAVE A 2-INCH FIBERGLASS INSULATION FOR WALLS AND CEILINGS. EACH PREFABRICATED BUILDING IS SHIPPED WITH AN ERECTION MANUAL AND BILL OF MATERIALS SHOWING COMPLETE ERECTION DETAILS. THE NUTS FOR THE TROPICAL ZONE ARE SHIPPED WITH A TROPICAL CONVERSION KIT TO PROVIDE VENTILATION OPENINGS AT THE FLOOR LINE. EACH NUT IS SHIPPED COMPLETE WITH SMOKE JACKS, RIDGE ROOF VENTILATORS, DOORS, SCREEN DOORS AND WINDOWS, WINDOWS, 2-WIRE-120 VOLT ELECTRICAL WIRING SYSTEM AND ANCILLARY UNITS. HEATING FOR THE TEMPERATE ZONE IS TO BE PROVIDED BY MEANS OF THE NECESSARY NUMBER OF OIL FIRED SPACE HEATERS. THE SPACE HEATERS ARE NOT SHIPPED AS PART OF THE FABRICATED BUILDING, BUT MUST BE FURNISHED SEPARATELY.
11. THE NECESSARY EQUIPMENT TO ERECT TEN 20'X48' PREFABRICATED METAL BUTLERHUT BUILDINGS IS EQUIPAGE FACILITY NO.E-20000.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' NO.2 | 0 1' 2' 3' 4' 5' NO.3 | 0 1' 2' NO.8

MAYER, BRAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: SHAFFER
SUBMITTED BY: C. W. DEICHMANN
APPROVED:
CHIEF, STRUCTURES BRANCH

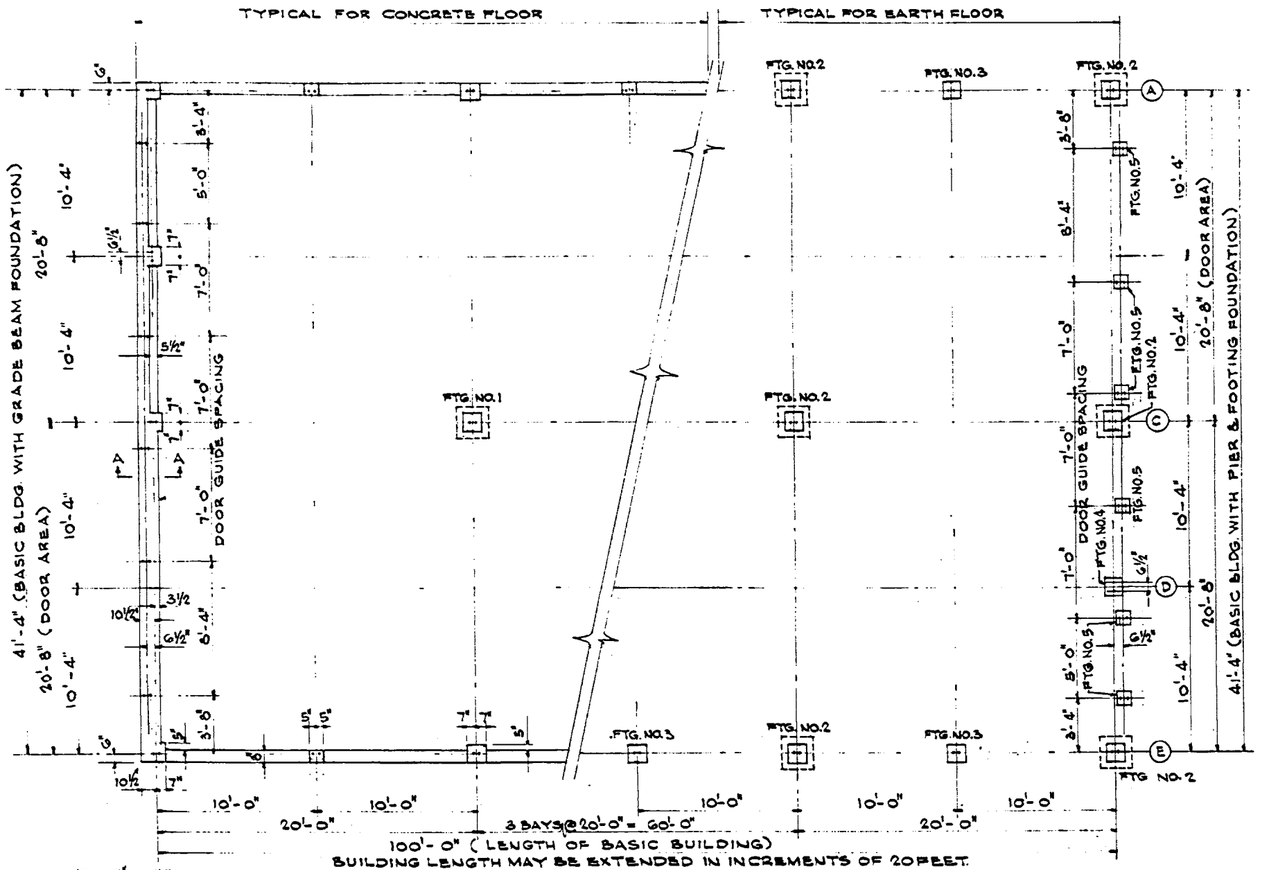
APPROVED: DATE: 17 FEB 1971
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

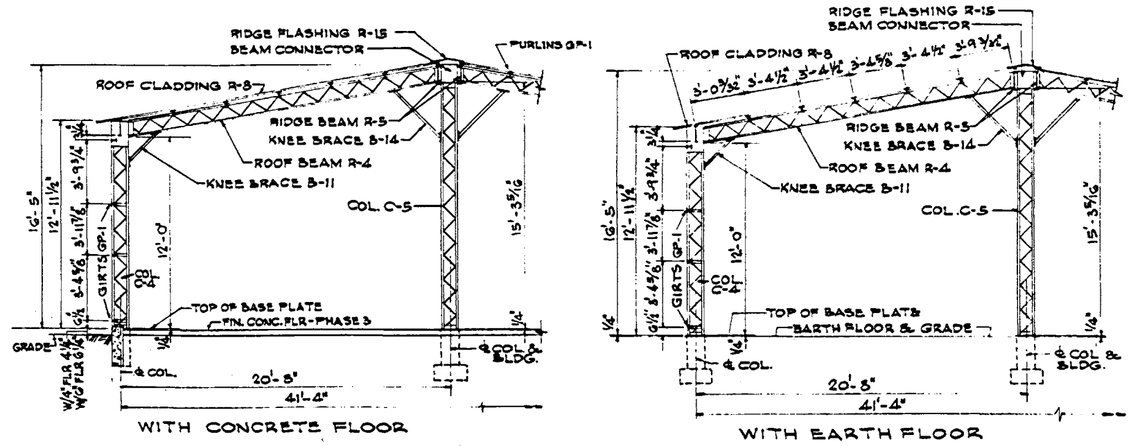
THEATER OF OPERATIONS

FOUNDATION PLANS FOR BUTLERHUT BARRACKS 20'X48' & 20'X96'

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 35-23
SHEET 1 OF 1

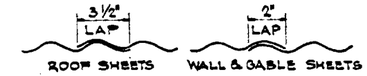


FOUNDATION PLAN
SCALE NO. 2



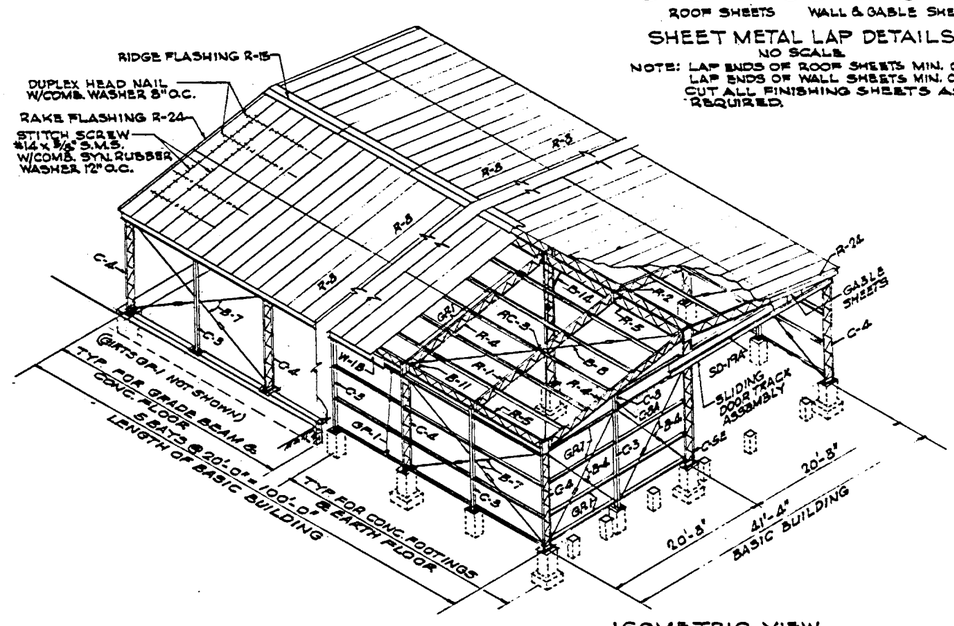
WITH CONCRETE FLOOR — WITH EARTH FLOOR

HALF CROSS-SECTIONS - 40 FT. WIDE BUILDING.
(SYMMETRICAL ABOUT ℄ OF BUILDING)
SCALE NO. 2

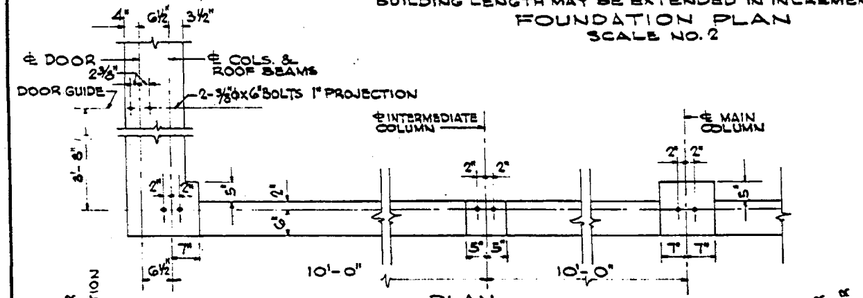


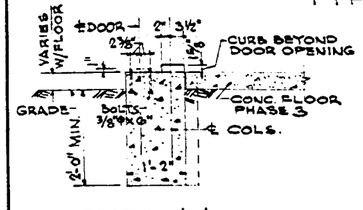
SHEET METAL LAP DETAILS
NO SCALE.

NOTE: LAP ENDS OF ROOF SHEETS MIN. OF 8"
LAP ENDS OF WALL SHEETS MIN. OF 4"
CUT ALL FINISHING SHEETS AS REQUIRED.

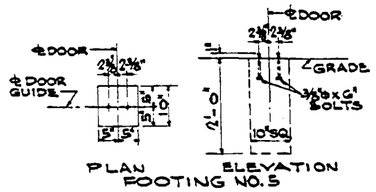


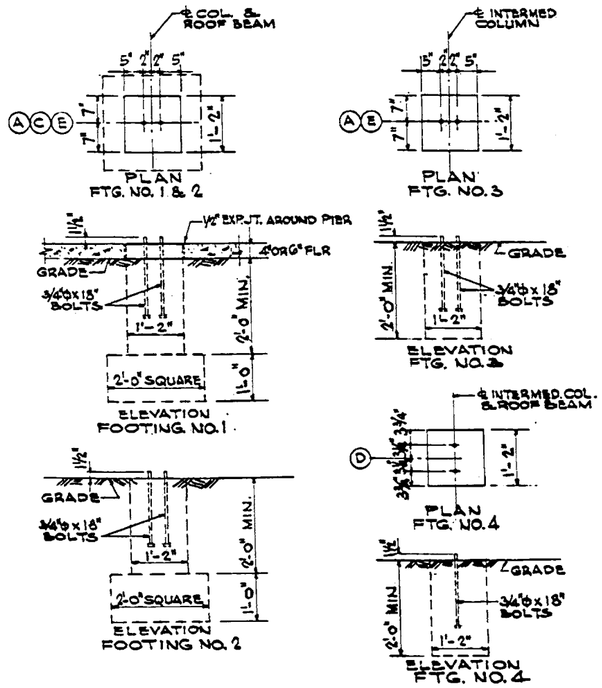
ISOMETRIC VIEW
40' x 100' BASIC BUILDING
NO SCALE.





SECTION A-A
SCALE NO. 5





FOOTING DETAILS
SCALE NO. 5

GENERAL NOTES

1. FOUNDATIONS & FLOORS TO BE POURED ON UNDISTURBED SOIL OR WELL COMPACTED SAND OR GRAVEL FILL HAVING A BEARING CAPACITY OF AT LEAST 2000 PSF.
2. WHERE THE BEARING CAPACITY IS LESS THAN 2000 PSF, DESIGN OF FOUNDATION OR GRADE BEAM SHALL BE DONE BY OFFICER IN CHARGE.
3. ALL CONCRETE TO BE CLASS "C" (2000 PSI).
4. HORIZONTAL WALL GIRTS ARE SUPPLIED IN PHASE 1 FACILITY.
5. PURLINS (GP-1) & GIRTS (GR-1) ARE STEEL MEMBERS WELDED IN SUCH A MANNER THAT ROOF & WALL CLADDING IS NAILED DIRECTLY TO MEMBER. FOR BEST RESULTS, USE A STRINGLINE TO INDICATE NAILING GROOVE.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
35-36	FRAME, ROOF & FDN	1 OF 3
35-36	CLADDING, DOORS & WINDOWS	2 & 3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' NO. 2 — 0 1' 2' 3' NO. 5

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

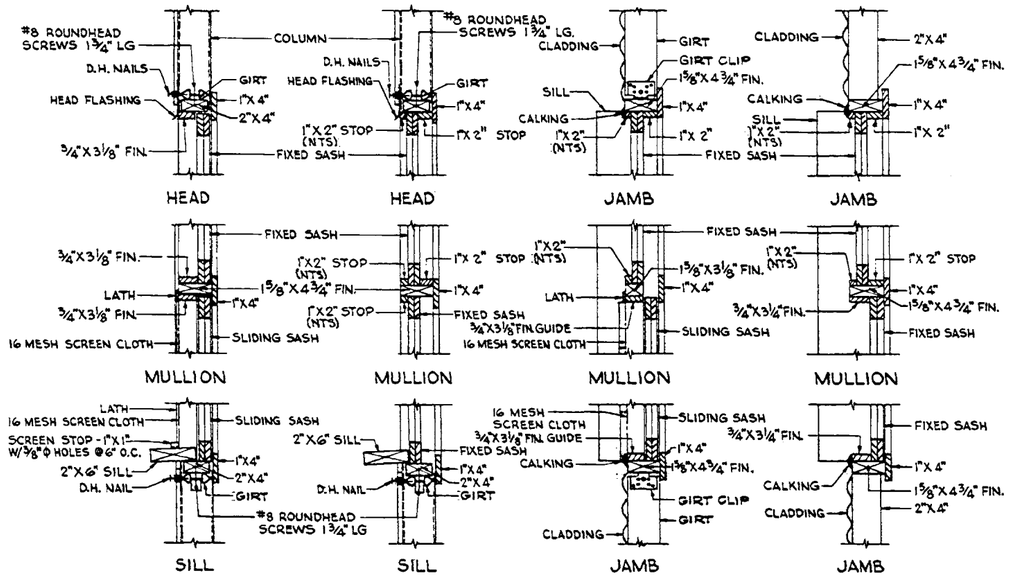
DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS

STEEL FRAME CONSTRUCTION
WAREHOUSE TYPE BUILDINGS
FOUNDATION PLAN & FOOTINGS
SECTIONS & ISOMETRIC

APPROVED: H.M. Williams DATE: 19 MAR 1951
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER: 35-36
SHEET 1 OF 3



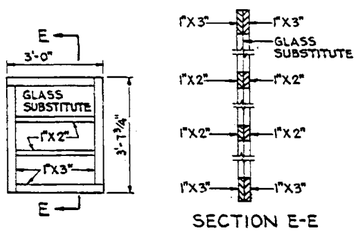
SECTION A-A SECTION B-B SECTION C-C SECTION D-D

MULTIPLE WINDOW DETAILS

SCALE NO. 7

MULTIPLE WINDOW

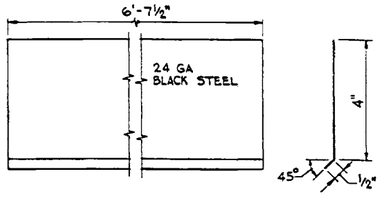
SCALE NO. 3



SECTION E-E

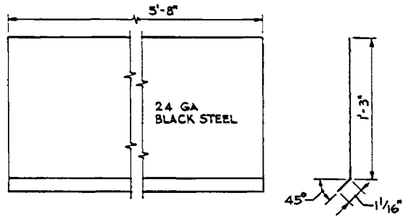
SASH DETAIL

NO SCALE



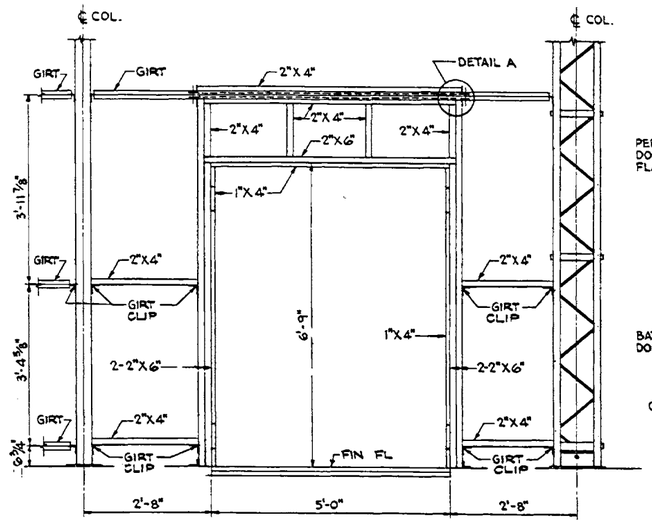
WINDOW HEAD FLASHING

NO SCALE



PERSONNEL DOOR HEAD FLASHING

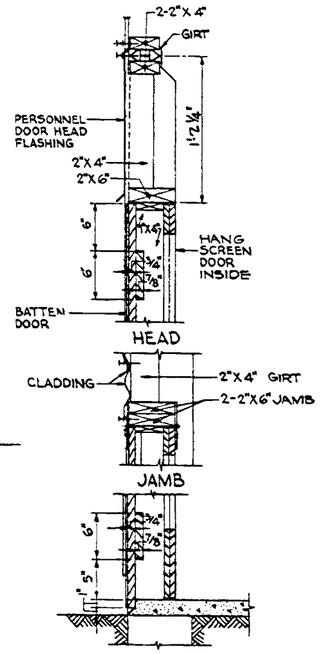
NO SCALE



PERSONNEL DOOR FRAMING DETAIL

CLADDING REMOVED

SCALE NO. 5

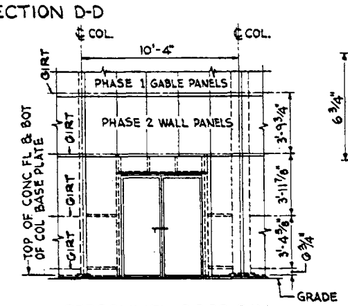


PERSONNEL DOOR DETAIL

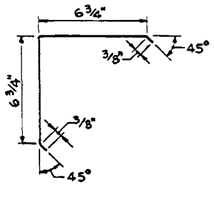
SCALE NO. 7

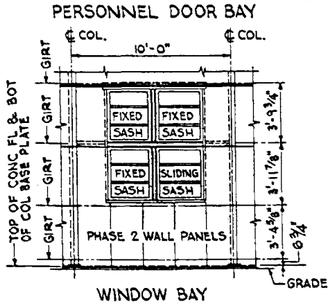
DETAIL A

SCALE NO. 8

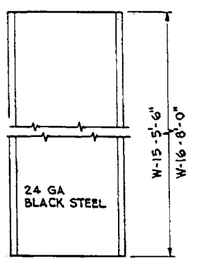


PERSONNEL DOOR BAY



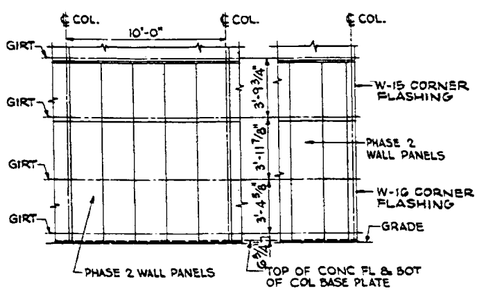


WINDOW BAY



CORNER FLASHING

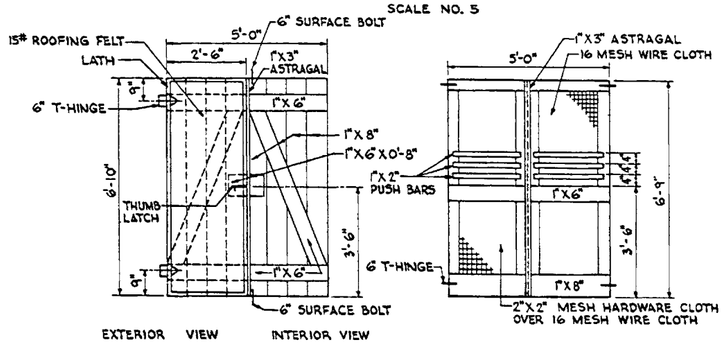
NO SCALE



BAY W/O WINDOW CORNER FLASHING

CLADDING

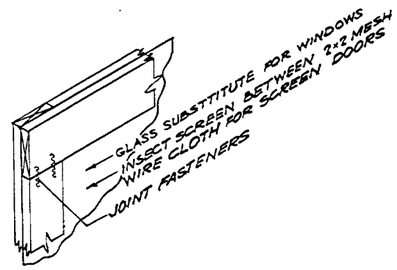
SCALE NO. 2



BATTEN DOOR SCREEN DOOR

PERSONNEL DOOR DETAILS

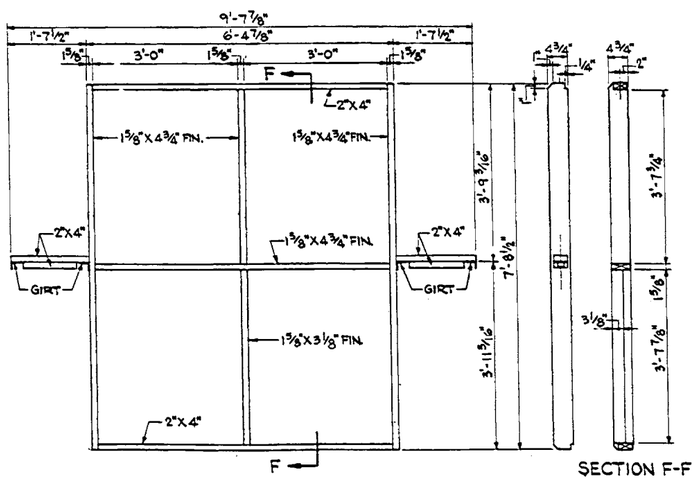
SCALE NO. 4



TYPICAL LAP JOINT

WINDOW SASH & SCREEN DOORS

NO SCALE



WINDOW FRAME

SCALE NO. 5

SECTION F-F

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES 0 3" 6" 9" 1' 2' | 0 1' 2' 3' 6' 9' 1' | NO.2 | NO.7 5' | NO.3 | NO.4 | NO.8 | NO.5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D.C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

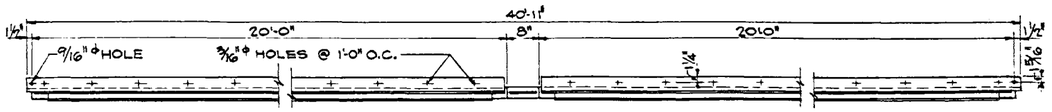
DRAWN BY: WADE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS

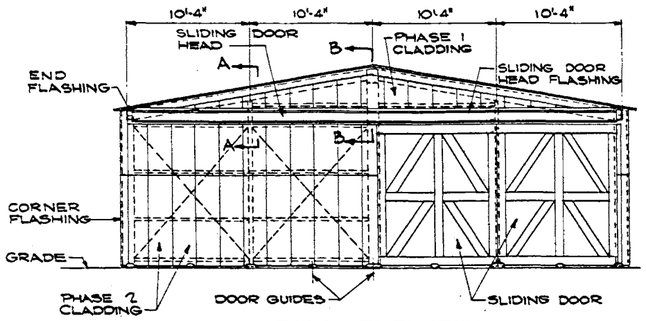
PREFABRICATED STEEL FRAME BUILDING
CLADDING, DOORS & WINDOWS
DETAILS FOR 12FT HIGH BUILDING

APPROVED: H. E. Shaney — Chief, Structures Branch
APPROVED: H. M. Williams — Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969

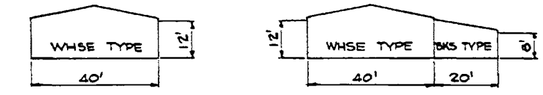
APPROVED FOR PROPONENT AGENCY:
DATE:
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 35-36
SHEET 2 OF 3



SLIDING DOOR TRACK ASSEMBLY
NO SCALE

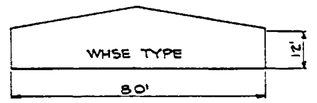


END ELEVATION
SCALE NO. 24

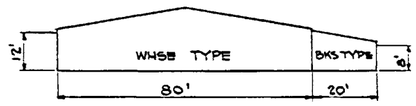


FACILITY NO. 353G01
40' x 100'

FACILITY NO. 353G02
60' x 100'
(USE 1-40'x100' WHSE PLUS 2-20'x50' BKS)

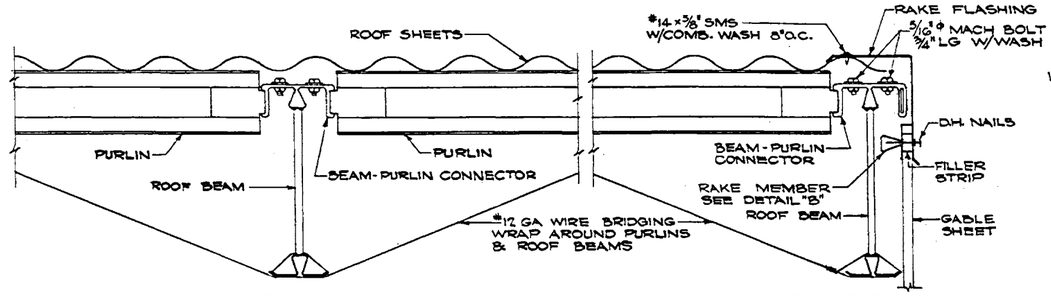


FACILITY NO. 353G03
80' x 100'
(USE 2-40' x 100' WHSE W/CONVERSION KIT)



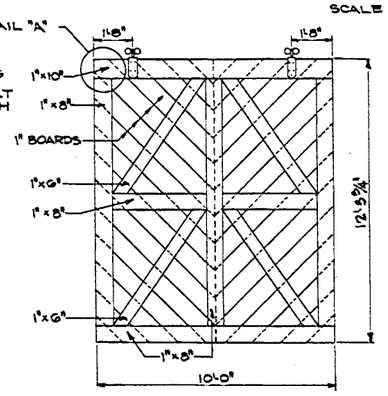
FACILITY NO. 353G04
100' x 100'
(USE 2-40'x100' WHSE W/CONVERSION KIT PLUS 2-20'x50' BKS)

TYPICAL WAREHOUSE COMBINATIONS
NO SCALE

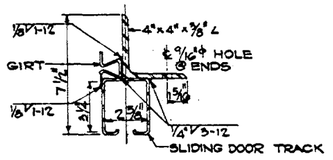


SECTION D-D
NO SCALE

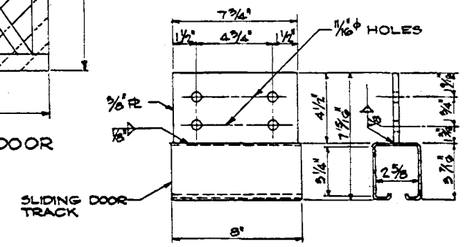
SECTION E-E
NO SCALE



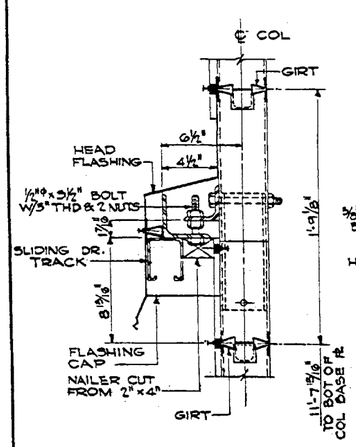
TYPICAL SLIDING DOOR
SCALE NO 3



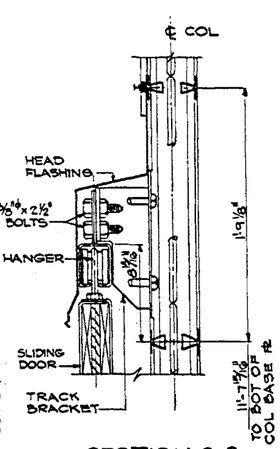
SECTION C-C
NO SCALE



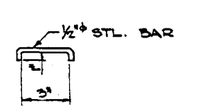
TRACK SPLICE
NO SCALE



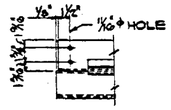
SECTION A-A
NO SCALE



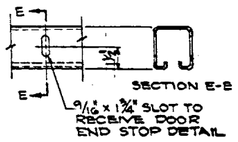
SECTION B-B
NO SCALE



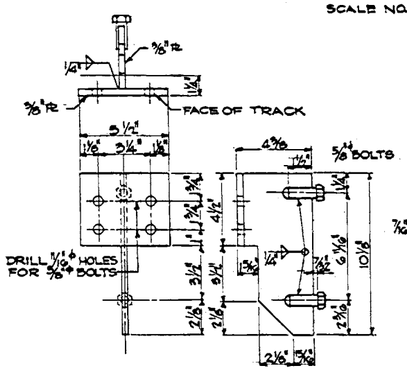
DOOR END STOP DETAIL
NO SCALE



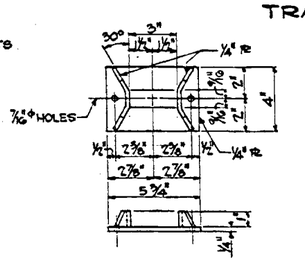
DETAIL "C"
NO SCALE



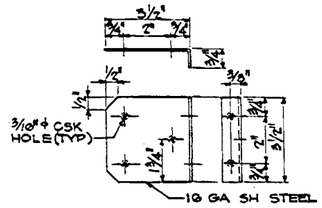
DETAIL "B"
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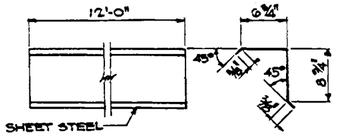
TRACK BRACKET
NO SCALE



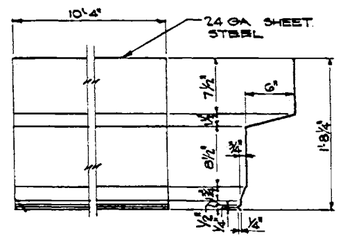
DOOR GUIDE
5 REQD PER DOOR OPNG
NO SCALE



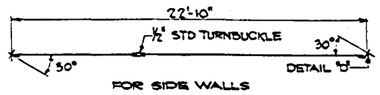
BUMPER SHOE
4 REQD PER DOOR
NO SCALE



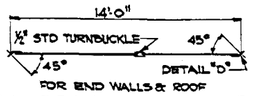
RAKE FLASHING
NO SCALE



SLIDING DOOR HEAD FLASHING
NO SCALE

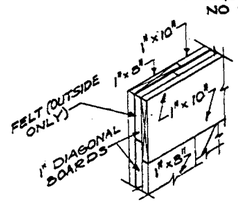


FOR SIDE WALLS

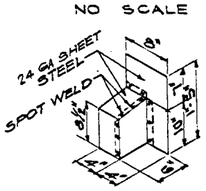


FOR END WALLS & ROOF

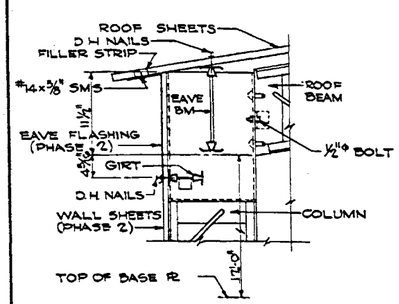
DIAGONAL BRACING ROD DETAIL
NO SCALE



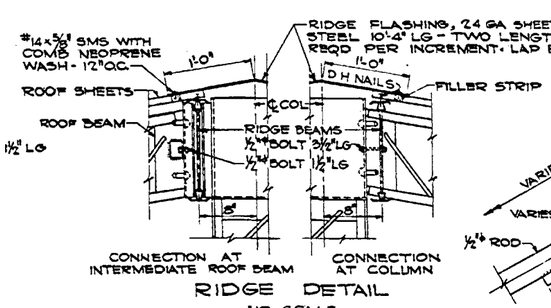
DETAIL "A"
NO SCALE



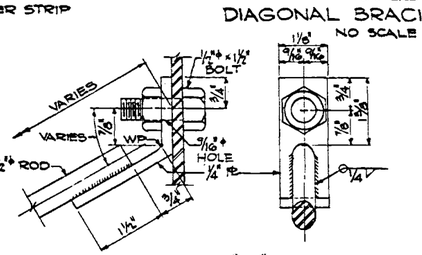
FLASHING CAP-RIGHT END
LEFT END OPPOSITE HAND
NO SCALE



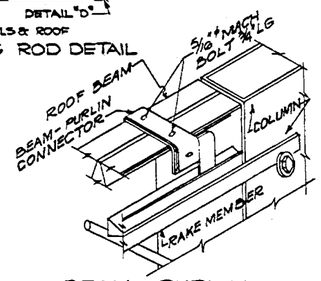
EAVE DETAIL
NO SCALE



RIDGE DETAIL
NO SCALE



DETAIL "D"
NO SCALE



BEAM - PURLIN CONNECTOR DETAIL
NO SCALE

SYMBOL	DESCRIPTION / REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10' — NO.24
0 1' 2' 3' 4' — NO.3

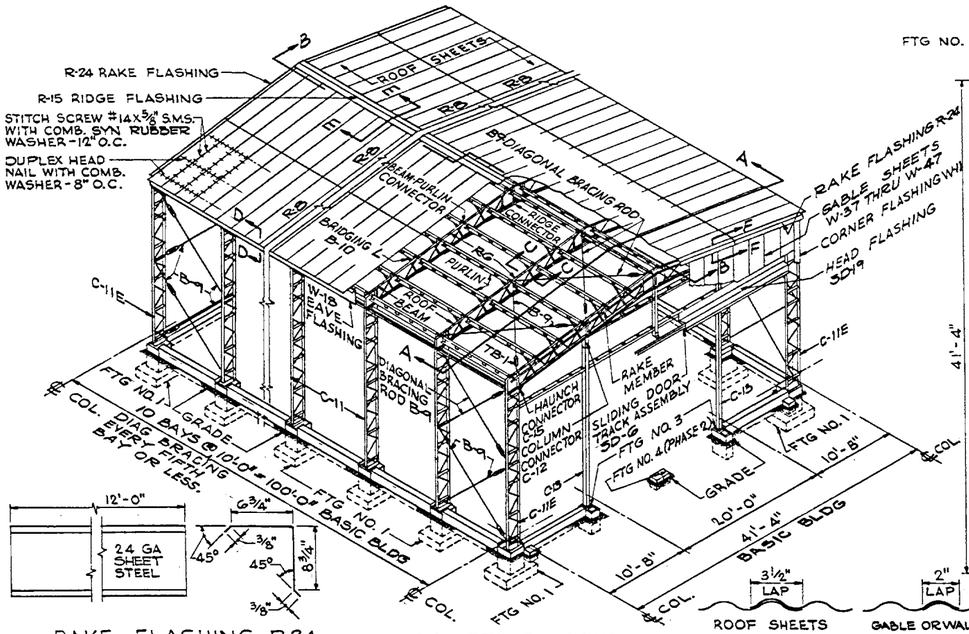
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED: H. Gilchrist — CHIEF, ENGINEERING BRANCH
APPROVED: J. M. Williams — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY:
DATE:

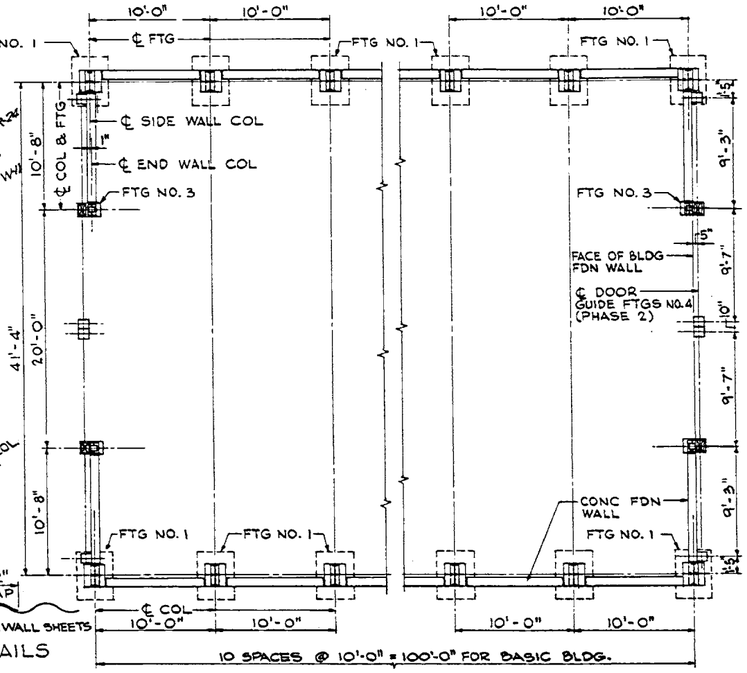
THEATER OF OPERATIONS
PREFABRICATED STEEL FRAME BUILDING
CLADDING, DOORS & WINDOWS
DETAILS FOR 12FT HIGH BUILDING

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 35-36
SHEET 3 OF 3

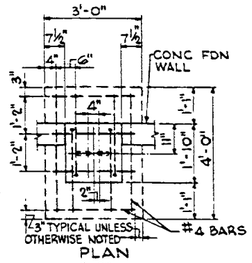


ISOMETRIC VIEW
NO SCALE

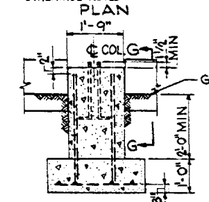
RAKE FLASHING R-24
NO SCALE



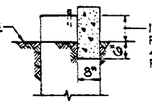
FOUNDATION PLAN
SCALE NO. 24



PLAN

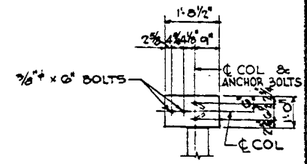


SECTION
FOOTING NO. 1

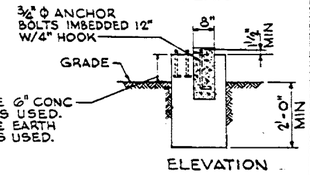


SECTION G-G

10" WHERE 6" CONC FLOOR IS USED. 4" WHERE EARTH FLOOR IS USED.

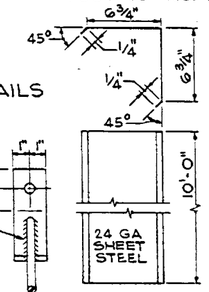


PLAN

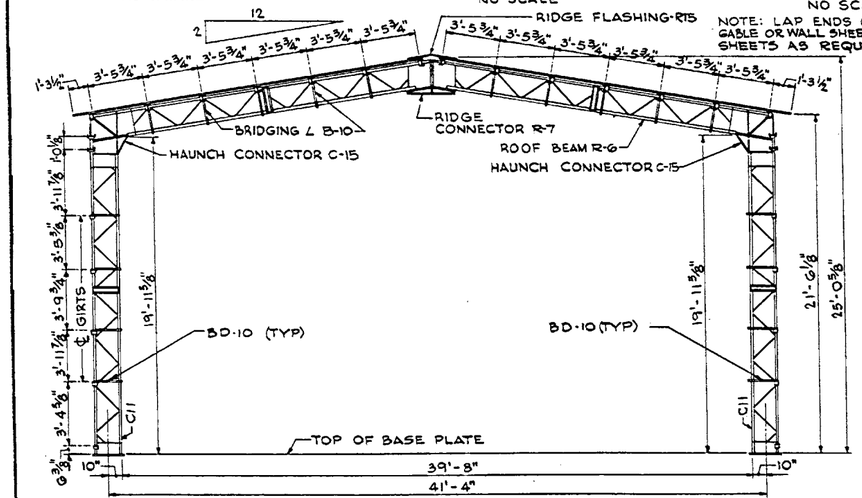


ELEVATION
FOOTING NO. 3

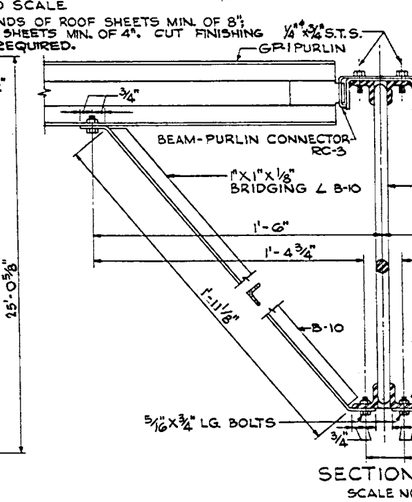
FOOTING & BASE PLATE DETAILS
SCALE NO. 4



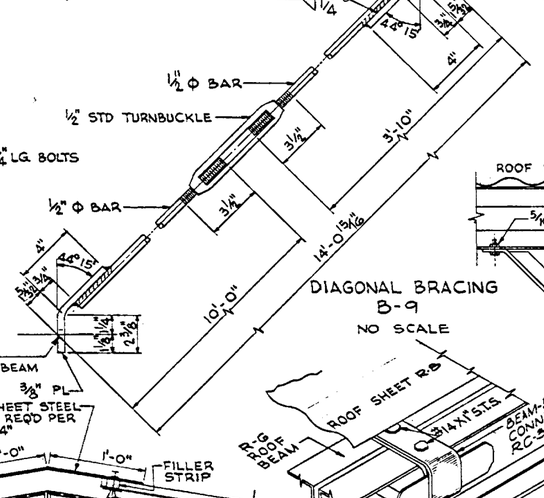
CORNER FLASHING W-11
NO SCALE
BEAM-PURLIN CONNECTOR RC-3



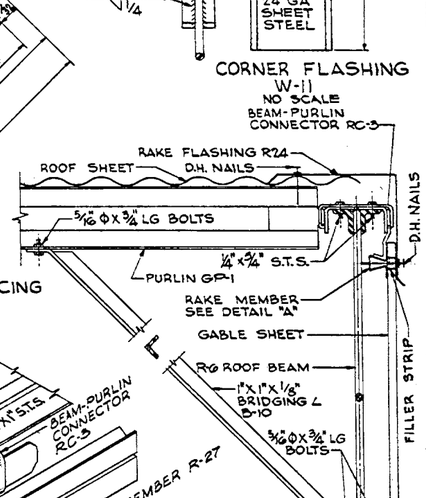
SECTION A-A



SECTION C-C
SCALE NO. 8



DIAGONAL BRACING B-9
NO SCALE

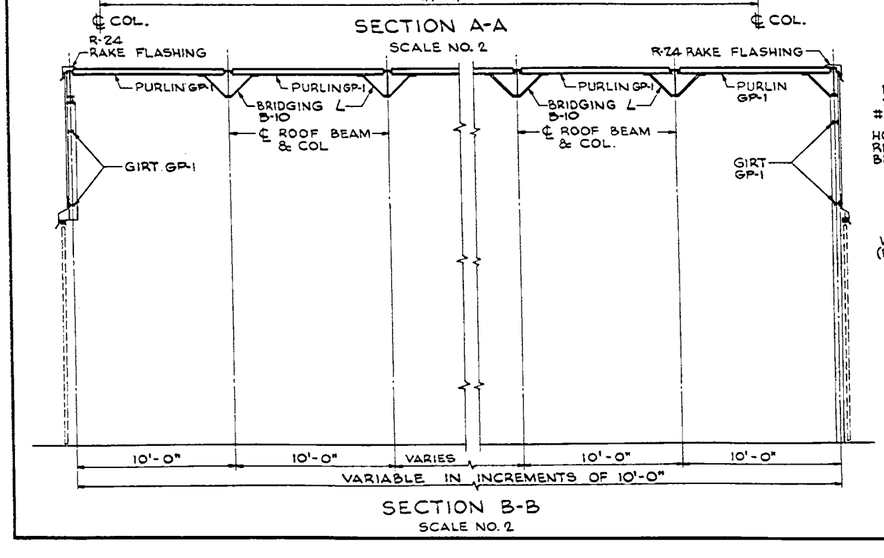


SECTION F-F
SCALE NO. 8

SECTION D-D
SCALE NO. 7

SECTION E-E
SCALE NO. 7

DETAIL "A"
NO SCALE



SECTION B-B
SCALE NO. 2

GENERAL NOTES

1. FOUNDATIONS & FLOORS TO BE POURED ON UNDISTURBED SOIL OR WELL COMPACTED SAND OR GRAVEL FILL HAVING A BEARING CAPACITY OF AT LEAST 2000 #/SF. WHERE THE BEARING CAPACITY IS LESS THAN 2000 #/SF, DESIGN OF FOUNDATION OR GRADE BEAM SHALL BE DONE BY OFFICER IN CHARGE. ALL CONCRETE TO BE CLASS "C" (2000 #/SQ. IN.)
2. HORIZ. WALL GIRTS NOT SHOWN ARE SUPPLIED IN PHASE I FACILITIES.
3. WINDOW SASHES SHOULD LAP STILES AND RAILS AND PROVIDE CORRUGATED JOINT FASTENERS AT ALL CORNERS.
4. FOR SCHEDULE OF FACILITIES SEE SHEET 3 OF 3.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
35-46	FRAME, ROOF & FOUNDATION	1 OF 3
35-46	CLADDING, DOORS & WINDOWS	2 OF 3
35-46	CLADDING, DOORS & WINDOWS	3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' — NO.2; 0 1' 2' 3' 4' — NO.5; 0 3" 6" 9" 1' — NO.7; 0 1' 2" 3" 6" 9" 1' — NO.8; 0 1' 2' 3' 4' 5' 10' — NO.24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

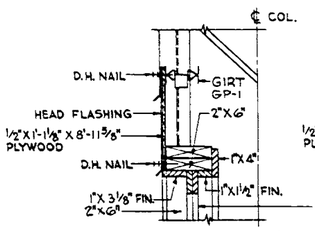
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: APPROVED: DATE: 19 MAR 1969
CHIEF, ENGINEERING BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

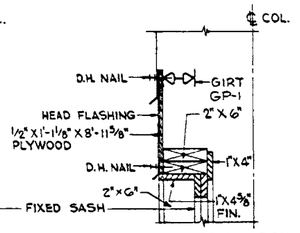
THEATER OF OPERATIONS

PREFABRICATED STEEL FRAME BUILDING
FRAME, ROOF & FOUNDATION
DETAILS FOR 20FT HIGH BUILDING

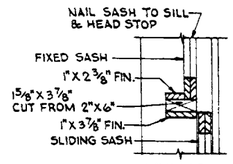
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 35-46
SHEET 1 OF 3



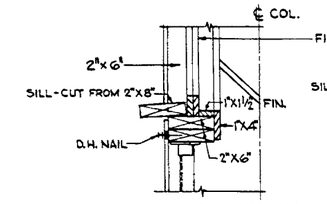
HEAD-UPPER WINDOW



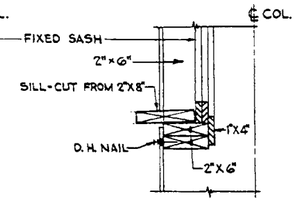
HEAD-UPPER WINDOW



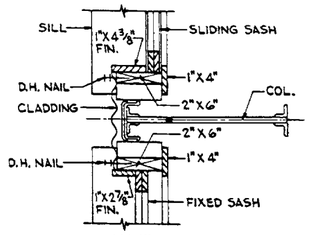
MULLION



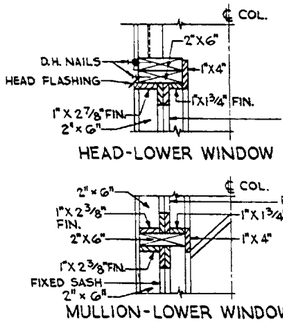
SILL-UPPER WINDOW



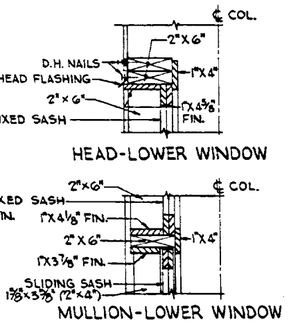
SILL-UPPER WINDOW



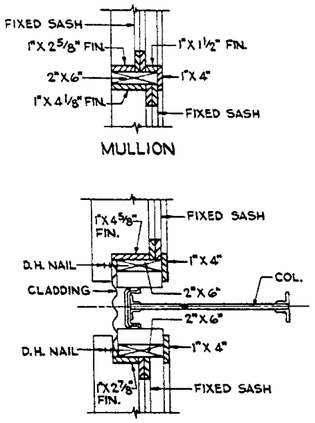
JAMB
SECTION C-C



MULLION-LOWER WINDOW



MULLION-LOWER WINDOW



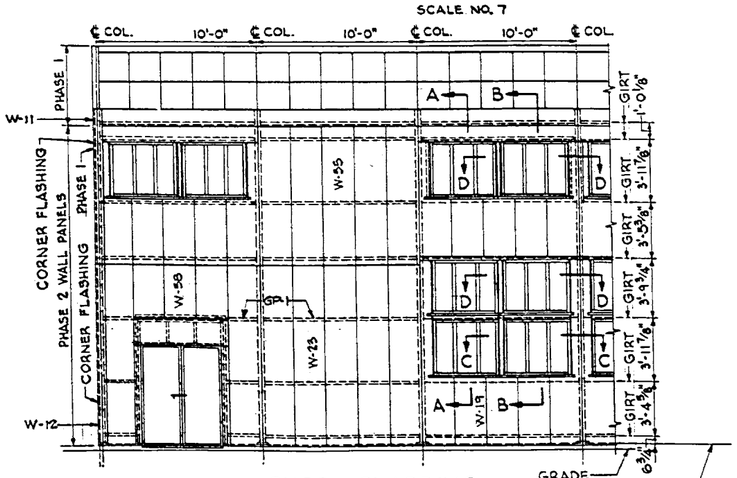
MULLION

SILL-LOWER WINDOW
SECTION A-A

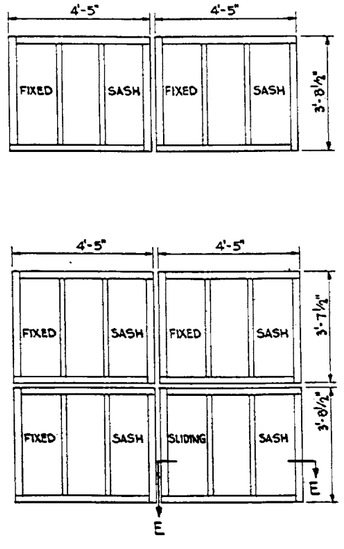
SILL-LOWER WINDOW
SECTION B-B

JAMB
SECTION D-D

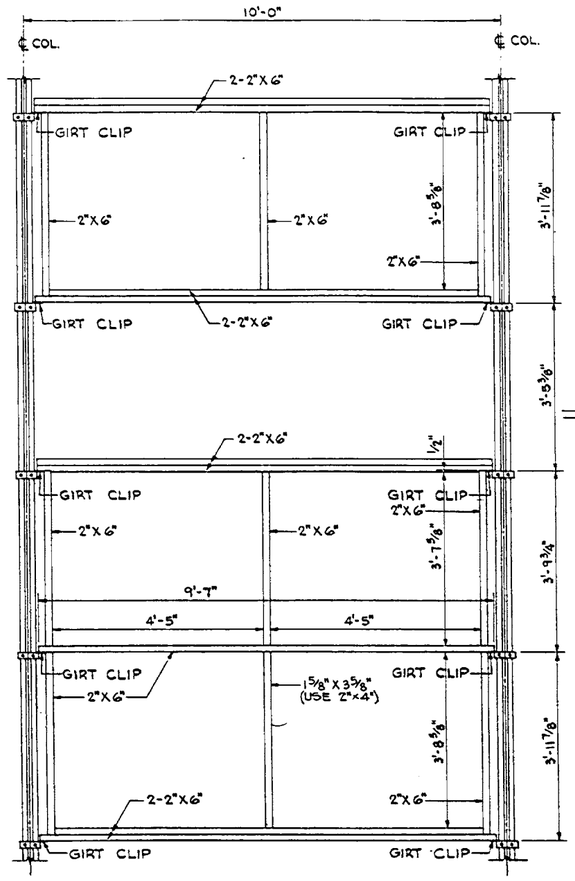
MULTIPLE WINDOW DETAILS
SCALE NO. 7



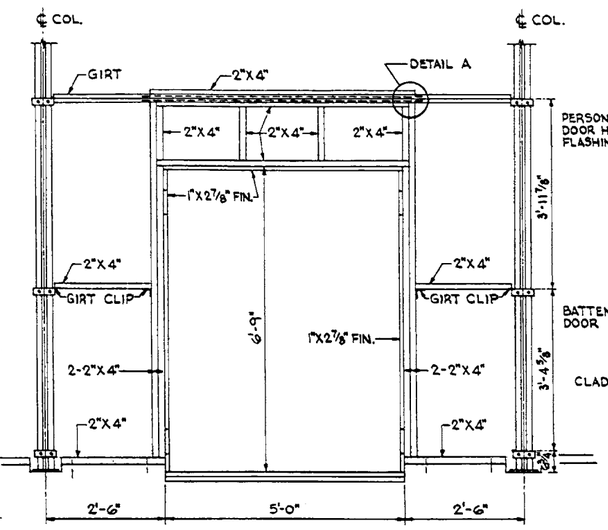
SHOP CLADDING
SCALE NO. 2



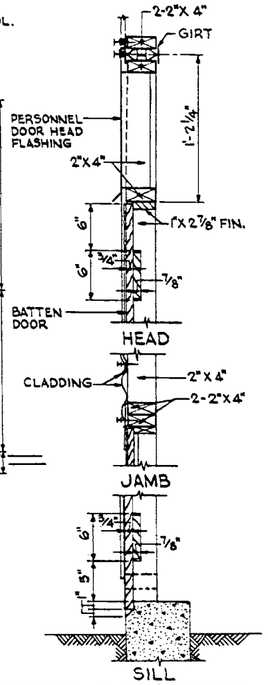
MULTIPLE WINDOW
SCALE NO. 4



WINDOW FRAME
SCALE NO. 5



PERSONNEL DOOR FRAMING DETAIL
CLADDING REMOVED
SCALE NO. 5



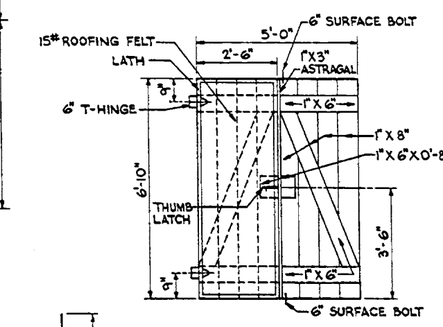
PERSONNEL DOOR DETAIL
SCALE NO. 7

UPPER WINDOW

LOWER WINDOW

WINDOW HEAD FLASHINGS
NO SCALE

SECTION E-E
SCALE NO. 7



BATTEN DOOR
PERSONNEL DOOR DETAIL
SCALE NO. 4

PERSONNEL DOOR HEAD FLASHING
NO SCALE

DETAIL A
SCALE NO. 8

LOW EAVE FLASHING -W18
NO SCALE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 3" 6" 9" 1' 2' | 0 1" 2" 3" 6" 9" 1' | NO.7 0 5' 10' | 0 1' 2' 3' 6' | NO.8 0 1' 2' 3' | NO.2 | NO.4 | NO.5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN

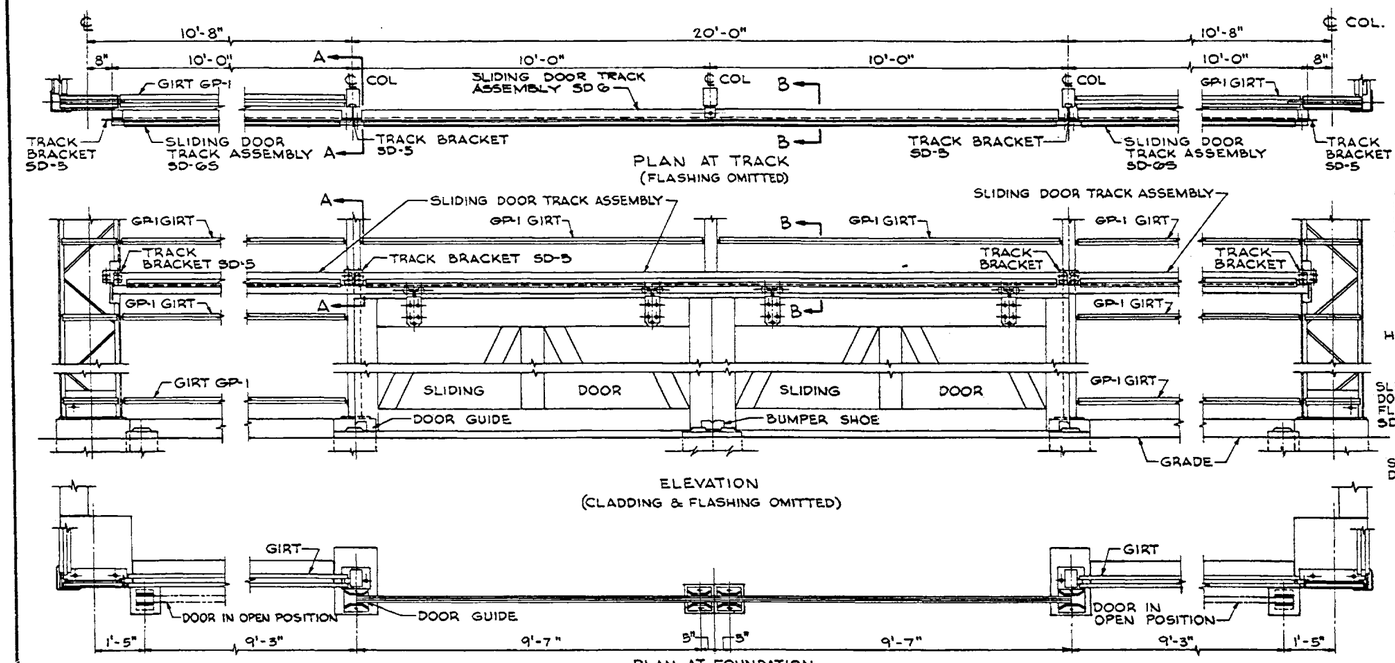
THEATER OF OPERATIONS

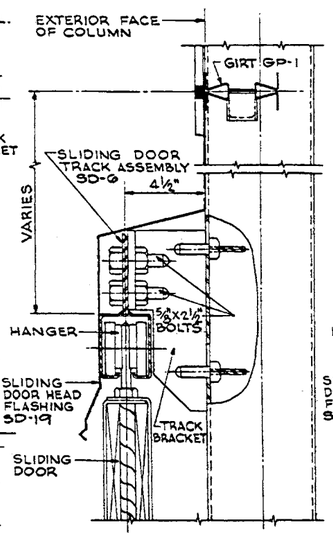
PREFABRICATED STEEL FRAME BUILDING
CLADDING, DOORS & WINDOWS
DETAILS FOR 20FT HIGH BUILDING

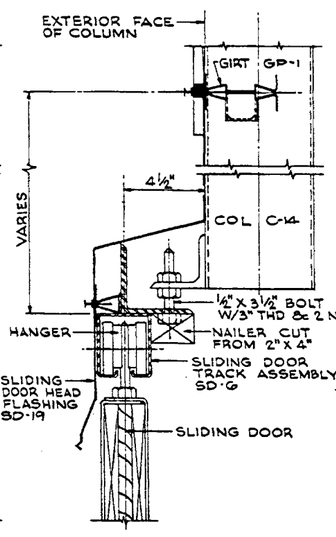
APPROVED: [signature] CHIEF, ARCH-ENG BRANCH
APPROVED: H.M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

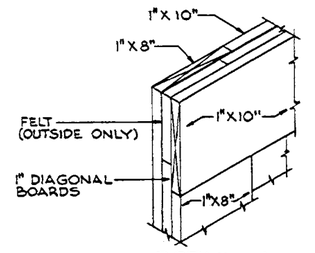
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DATE:

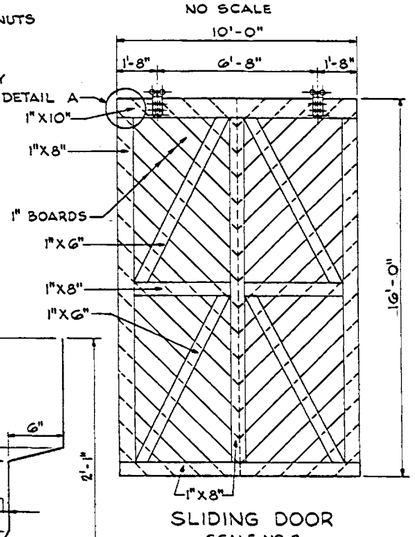
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 35-46
SHEET 2 OF 3

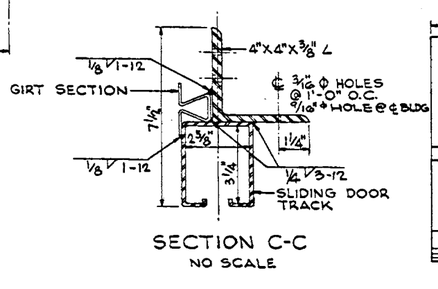


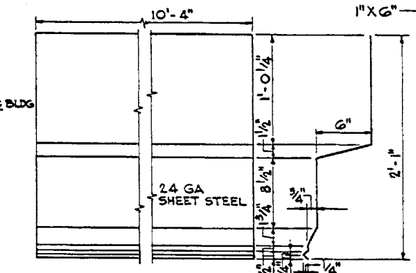


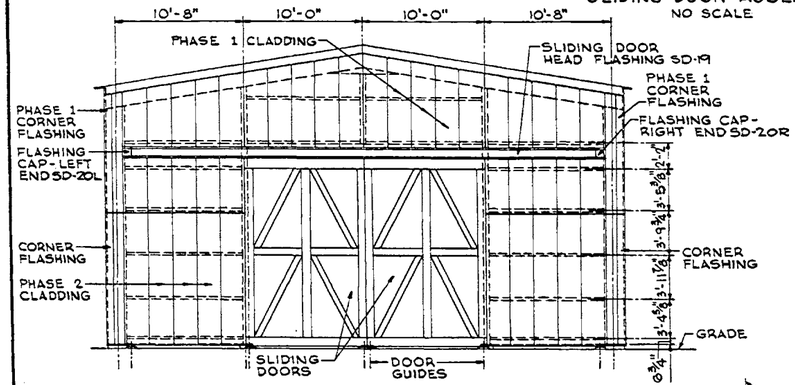


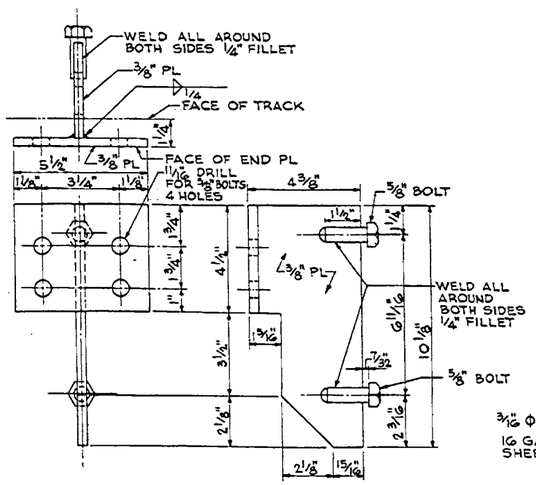


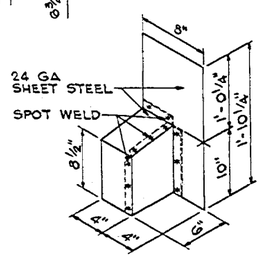


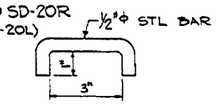


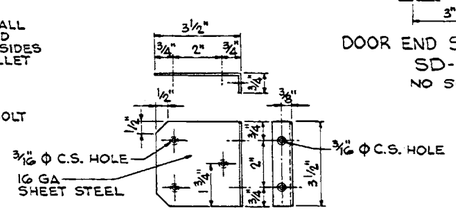


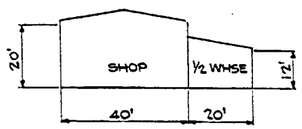


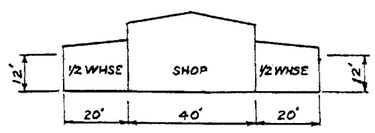


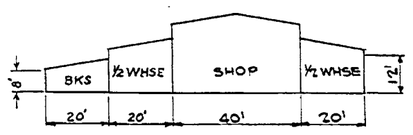




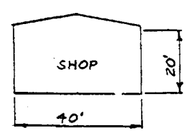




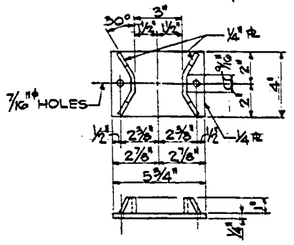




TYPICAL SHOP COMBINATIONS
NO SCALE



SHOP BUILDING
NO SCALE



SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 1' 2' 3' 5' 5' NO. 3/8 — 0 1' 2' NO. 6 — 0 1' 2' 3' NO. 1/2 — 0 5' 10' NO. 24

HAYES, SEAY, MATTERN & MATTERN ARCHITECTS - ENGINEERS ROANOKE, VIRGINIA WASHINGTON, D. C.	DEPARTMENT OF THE ARMY OFFICE OF THE CHIEF OF ENGINEERS MILITARY CONSTRUCTION - ENGINEERING DIVISION WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

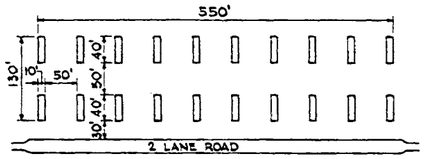
THEATER OF OPERATIONS

PREFABRICATED STEEL FRAME BUILDING
CLADDING, DOORS & WINDOWS
DETAILS FOR 20FT HIGH BUILDING

APPROVED: H. Eskam — CHIEF, STANDARDIZATION BRANCH
APPROVED: H. M. Williams — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

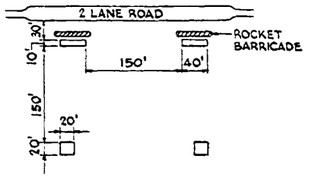
APPROVED FOR PROPONENT AGENCY:
DATE:

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 35-46
SHEET 3 OF 3

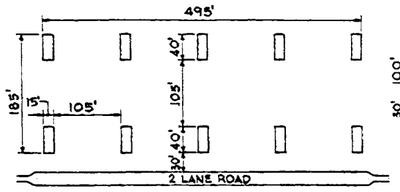


DETAIL OF 1-400 TON FSU OF CAT "A" CONSISTING OF 20-20 TON STACKS, IN OPEN ON HARDSTAND 10' X 40'. 5-FSU'S REQD PER SECTION.

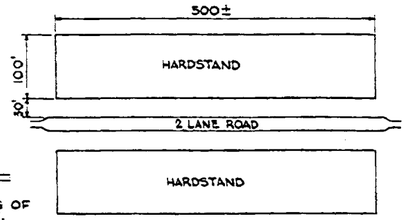
DETAIL FOR CAT "B" SAME AS CAT "A" EXCEPT 5 OPEN PADS IN ONE FSU SHOULD BE REPLACED WITH 20' X 20' SHELTERS. 4-FSU'S REQD PER SECTION.



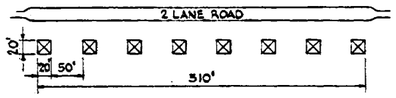
DETAIL OF 1-80 TON FSU OF CAT "F" CONSISTING OF 2-20'X20' SHELTERS & 2-10'X40' OPEN HARDSTANDS, EACH 20 TONS. 2-FSU'S REQD PER SECTION.



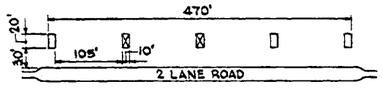
DETAIL OF 1-300 TON FSU OF CAT "C" CONSISTING OF 10-30 TON STACKS OPEN ON HARDSTAND 15' X 40'. 5-20' X 30' SHELTERS SHOULD BE SUBSTITUTED FOR HARDSTAND PADS IN ONE FSU. 4-FSU'S REQD PER SECTION.



SEGREGATION & RENOVATION AREA



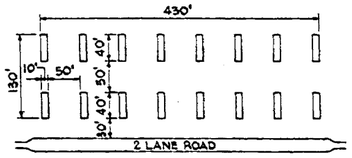
DETAIL OF 1-160 TON FSU OF CAT "D" CONSISTING OF 8-20 TON SHELTERS 20' X 20'. 1-FSU REQD PER SECTION.



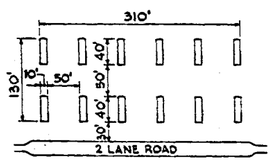
DETAIL OF 1-50 TON FSU OF CAT "E" CONSISTING OF 2-SHELTERS & 3-HARDSTANDS, EACH 10'X20' 10 TONS. 4-FSU'S REQD PER SECTION.

15000 TON DEPOT FSU DETAILS PER ONE SECTION

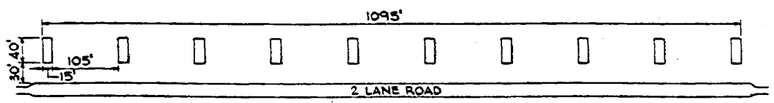
SCALE NO. 15



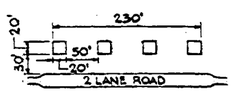
CAT "A" 320 TON FSU: 2-FSU'S REQD PER SECTION



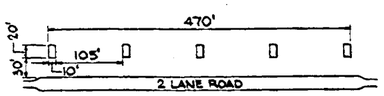
CAT "B" 240 TON FSU: 2-FSU'S REQD PER SECTION



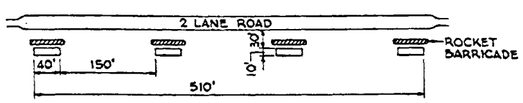
CAT "C" 300 TON FSU: 1-FSU REQD PER SECTION



CAT "D" 80 TON FSU
1-FSU REQD PER SECTION



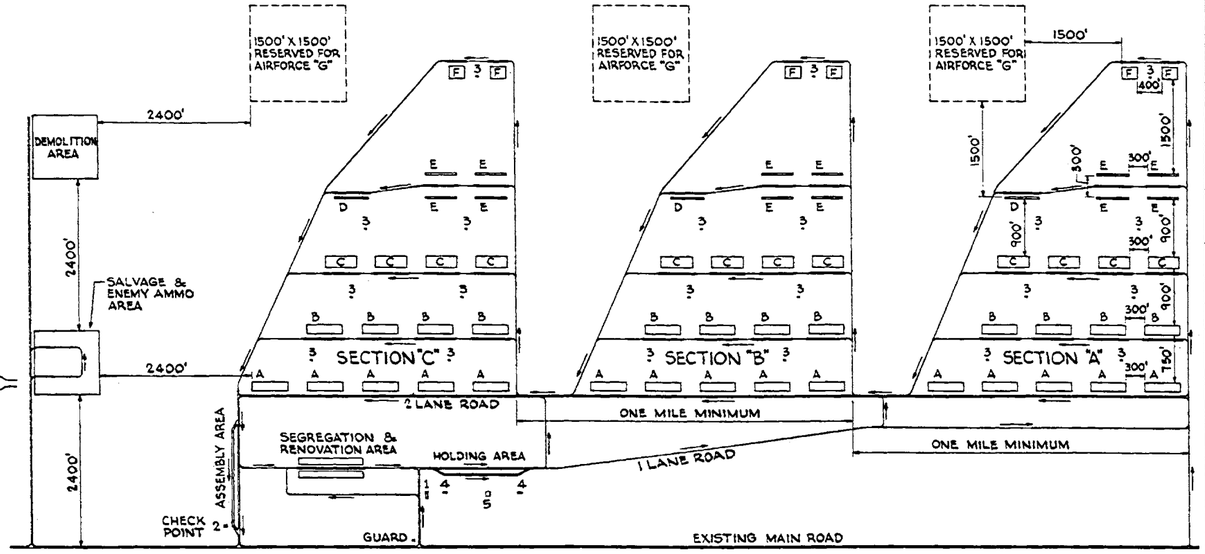
CAT "E" 50 TON FSU: 2-FSU'S REQD PER SECTION



CAT "F" 80 TON FSU: 1-FSU REQD PER SECTION

5000 TON DEPOT FSU DETAILS PER ONE SECTION

SCALE NO. 15



SITE LAYOUT - 15000 TON INSTALLATION

SCALE NO. 21

STD-ITR { INST. NO. DA 1021 STEEL FRAME BLDGS. / INST. NO. DA 1031 WOOD FRAME BLDGS.

STD-TPR { INST. NO. DA 1041 STEEL FRAME BLDGS. / INST. NO. DA 1051 WOOD FRAME BLDGS.

SITE LAYOUT 5000 TON INSTALLATION

SCALE NO. 20

STD-INT - INST. NO. DA 1011 NO BLDGS. REQ'D.

SCHEDULE FOR 15000 TON STD-ITR & TPR

STORAGE

CATEGORY	FSU'S REQD	FSU'S TONS	SHELTERS REQD	SHELTERS SIZE	HARDSTANDS REQD	HARDSTANDS SIZE	TONS
A	15	400	——	——	300	10'X40'	6000
B	12	400	15	20'X20'	225	10'X40'	4800
C	12	300	15	20'X30'	105	15'X40'	3600
D	3	160	24	20'X20'	——	——	480
E	12	50	24	10'X20'	36	10'X20'	600
F	6	80	12	20'X20'	12	10'X40'	480
SEGREGATION AREA 50%					50000 SQ FT		——
TOTAL			34200 SQ FT		37222 SQ YD		15960

BUILDINGS OTHER THAN STORAGE

NO.	FACILITY	QTY	SIZE	DWG NO.
1	ADMINISTRATION	1	20'X100'	61-11
2	CHECK POINT GUARD SHELTER	1	20'X20'	44-11
3	LATRINE, PIT TYPE, 2 SEATS	21	10'X10'	72-36
4	LATRINE, PIT TYPE, 8 SEATS	2	10'X20'	72-36
5	SHOP, MOTOR REPAIR	1	40'X40'	21-41

OTHER CONSTRUCTION

FACILITY	STD	QTY	UNIT	FACILITY
ROAD, 1 LANE, 4" EARTH OR STABILIZED STONE	3	15	MILE	853111
ROAD, 1 LANE, 1" COLD SURFACE TREATMENT ON 4" STABILIZED STONE BASE	5	15	MILE	853112
ROAD, 2 LANE, 6" EARTH OR STABILIZED STONE	3	8	MILE	853121
ROAD, 2 LANE, 1" COLD SURFACE TREATMENT ON 6" STABILIZED STONE BASE	5	8	MILE	853122
HARDSTAND, 4" EARTH OR STABILIZED STONE	3	35	1000SY	853131
HARDSTAND, 1" COLD SURFACE TREATMENT ON 4" STABILIZED STONE BASE	5	37	1000SY	853132

SCHEDULE FOR 5000 TON STD 2

STORAGE

CATEGORY	FSU'S REQD	FSU'S TONS	SHELTERS	HARDSTANDS REQD	HARDSTANDS SIZE	TONS
A	6	320	APPROX 10% COVERED BY USING SERVICE WITH LOCAL MATERIAL OR PAULIN	96	10'X40'	1920
B	6	240		72	10'X40'	1440
C	3	300		30	15'X40'	900
D	3	80		12	10'X40'	240
E	6	50		30	10'X20'	300
F	3	80		12	10'X40'	240
TOTAL				11200 SQ YD		5040

OTHER CONSTRUCTION

ITEM	QTY	UNIT	FACILITY
ROAD, 1 LANE, DRAIN & GRADE	7	MILE	853110
ROAD, 2 LANE, DRAIN & GRADE	5	MILE	853120

QUANTITY-DISTANCE TABLE

CATEGORY	GROSS TONS PER STACK	GROSS TONS PER FSU	MINIMUM DISTANCE IN FEET BETWEEN STACKS 1 UNBARRICADED	STACKS 1 BARRICADED	FSU'S UNBARRICADED	FSU'S BARRICADED	CATEGORIES
A, B & D	0-10	400	40	30	300		750
	10-20 MAX	400	50	40	300		750
C	0-10	300	75	60	300		900
	10-30 MAX	300	105	75			900
E	0-5	50	75	60	300		900
	5-10 MAX	50	105	75			900
F & G	20	20	150	75	200	75	1500
	20	30	150	75	230	90	1500
	20	40	150	75	265	99	1500
	20	50	150	75	295	110	1500
	20	60	150	75	330	120	1500
	20	80	150	75	340	135	1500
	20	100	150	75	455	150	1500

GENERAL NOTES

1. FOR DEFINITION OF CATEGORIES AND QUANTITY-DISTANCES REFER TO FM 9-6, JUNE 1965 AND TM 9-1300-206, NOV. 1964.
2. MINIMUM OUTSIDE EXPOSURE 1800 FEET
3. ALL DIMENSIONS SHOWN ARE MINIMUM DISTANCES.
4. A 15 YARD FIRE BREAK MUST BE PROVIDED AROUND ALL AMMUNITION STACKS.
5. FSU DENOTES "FIELD STORAGE UNIT".

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 50' 100' 200' NO. 15 — 0 500' 1000' NO. 20 — 0 1000' 2000' NO. 21

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

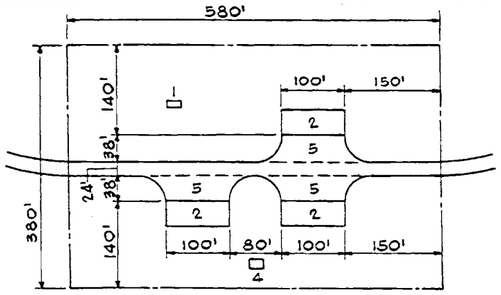
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: I LYUS
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C.W. DEICHMANN

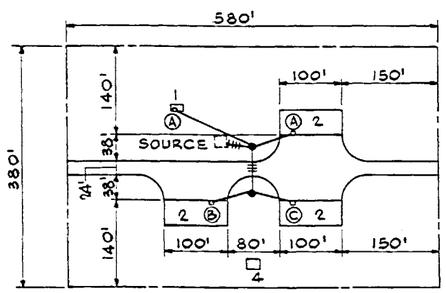
THEATER OF OPERATIONS

AMMUNITION STORAGE
5000 TON-STD-INT
15000 TON-STD-ITR & TPR
SITE LAYOUTS

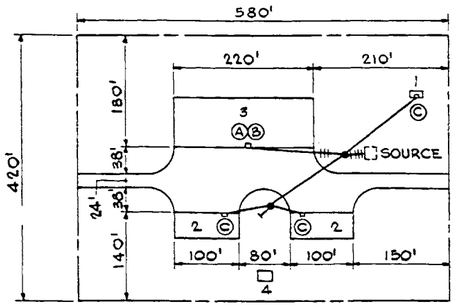
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY:
DATE
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 40-01
SHEET 1 OF 1



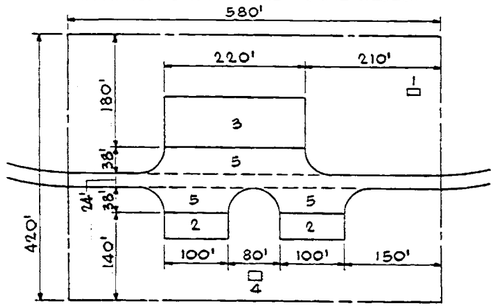
SITE LAYOUT
12,000 SF COVERED STORAGE-STD-ITR
SCALE NO. 15
INST. NO. DS 1001 STEEL FRAME BLDGS.
INST. NO. DS 1011 WOOD FRAME BLDGS.



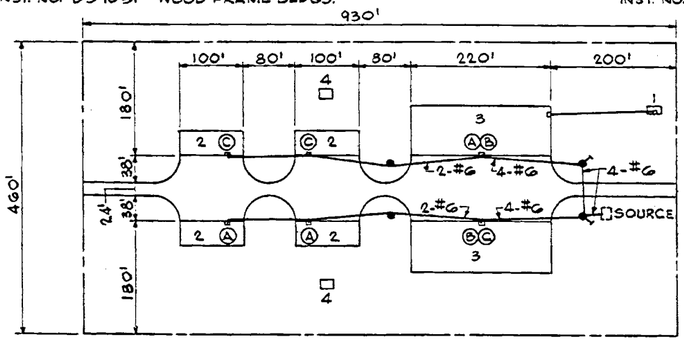
SITE & UTILITY LAYOUT
12,000 SF COVERED STORAGE-STD-TPR
SCALE NO. 15
INST. NO. DS 1021 STEEL FRAME BLDGS.
INST. NO. DS 1031 WOOD FRAME BLDGS.



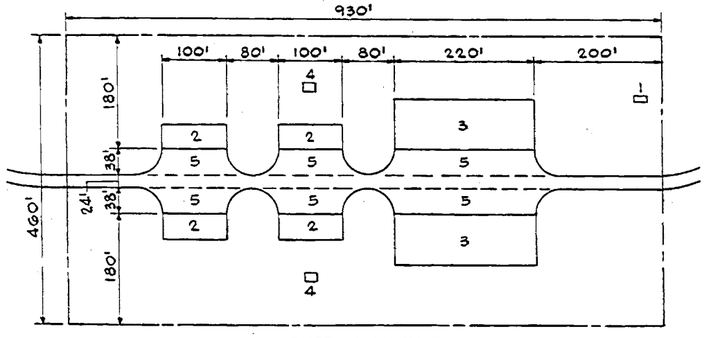
SITE & UTILITY LAYOUT
25,000 SF COVERED STORAGE-STD-TPR
SCALE NO. 15
INST. NO. DS 1061 STEEL FRAME BLDGS.
INST. NO. DS 1071 WOOD FRAME BLDGS.



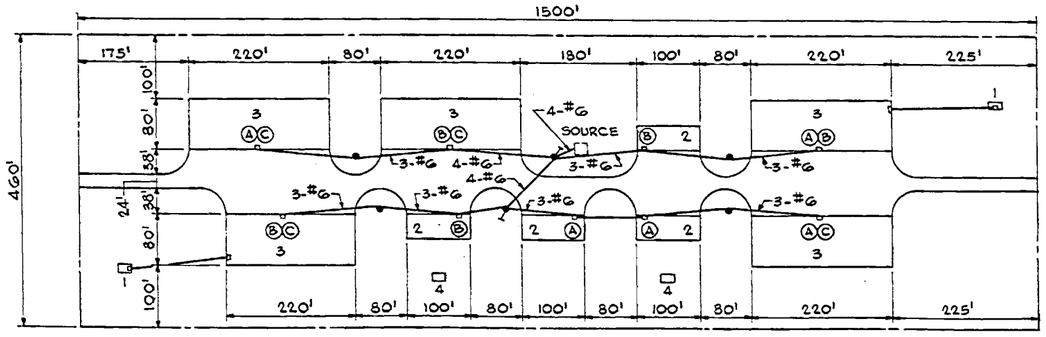
SITE LAYOUT
25,000 SF COVERED STORAGE-STD-ITR
SCALE NO. 15
INST. NO. DS 1041 STEEL FRAME BLDGS.
INST. NO. DS 1051 WOOD FRAME BLDGS.



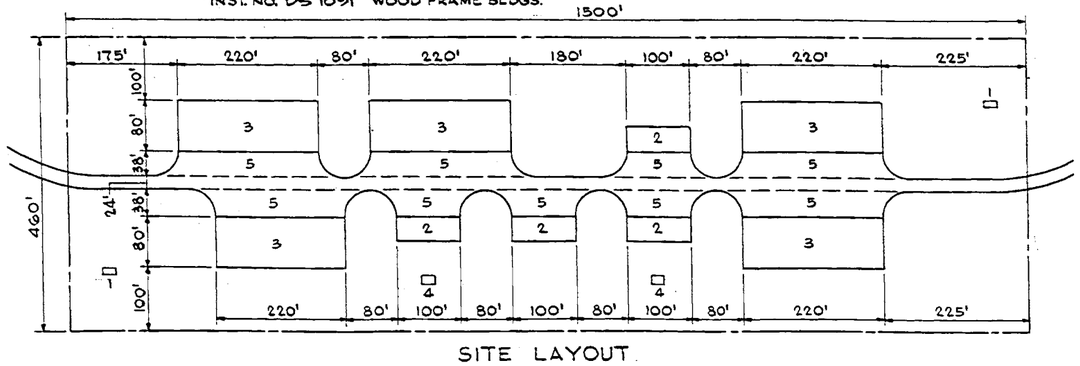
SITE & UTILITY LAYOUT
50,000 SF COVERED STORAGE-STD-TPR
SCALE NO. 15
INST. NO DS 1101 STEEL FRAME BLDGS.
INST. NO. DS 1111 WOOD FRAME BLDGS.



SITE LAYOUT
50,000 SF COVERED STORAGE-STD-ITR
SCALE NO. 15
INST. NO. DS 1081 STEEL FRAME BLDGS.
INST. NO. DS 1091 WOOD FRAME BLDGS.



SITE & UTILITY LAYOUT
100,000 SF COVERED STORAGE-STD-TPR
SCALE NO. 15
INST. NO. DS 1141 STEEL FRAME BLDGS.
INST. NO. DS 1151 WOOD FRAME BLDGS.



SITE LAYOUT
100,000 SF COVERED STORAGE-STD-ITR
SCALE NO. 15
INST. NO. DS 1121 STEEL FRAME BLDGS.
INST. NO. DS 1131 WOOD FRAME BLDGS.

STD-ITR
SCHEDULE OF FACILITIES

NO.	FACILITY	SIZE OR UNIT	12,000 SF QUANTITY	25,000 SF QUANTITY	50,000 SF QUANTITY	100,000 SF QUANTITY	DWG. NO
BUILDINGS							
1	LATRINE, PIT TYPE, 8 SEATS	10'x 20'	1	1	1	2	72-36
2	SHED	40'x100'	3	2	4	4	—
3	SHED	80'x220'	-	1	2	5	—
OTHER CONSTRUCTION							
5	HARDSTAND, 4" STABILIZED STONE	1000 SY	1.8	2.3	4.6	7.5	85-31
	ROAD, 2 LANE, 6" STABILIZED STONE	MILE	0.1	0.1	0.2	0.3	85-31
4	SUMP, FIRE PROTECTION	10,000 GAL	1	1	2	2	84-21
	SITE AREA	ACRE	5.1	5.6	9.8	15.8	—

STD-TPR
SCHEDULE OF FACILITIES

NO.	FACILITY	SIZE OR UNIT	12,000 SF QUANTITY	25,000 SF QUANTITY	50,000 SF QUANTITY	100,000 SF QUANTITY	DWG. NO.
BUILDINGS							
1	LATRINE, PIT TYPE, 8 SEATS	10'X 20'	1	1	1	2	72-36
2	WAREHOUSE	40'X100'	3	2	4	4	44-11
3	WAREHOUSE	80'X220'	-	1	2	5	44-11
OTHER CONSTRUCTION							
	ROAD, 2 LANE, 6" STABILIZED STONE	MILE	0.3	0.3	0.7	0.9	85-31
4	SUMP, FIRE PROTECTION	10,000 GAL.	1	1	2	2	84-21
	SITE AREA	ACRE	5.1	5.6	9.8	15.8	—
UTILITIES							
ENGINEER SERVICES REQUIRED			FACILITY NUMBERS				DWG. NO.
ELECTRIC DISTRIBUTION			401112	401127	401142	401157	81-23

ELECTRICAL NOTES

STD 5-CONNECTED LOAD

12,000 SF COVERED STORAGE	3.1 KW
25,000 SF COVERED STORAGE	6.7 KW
50,000 SF COVERED STORAGE	13.3 KW
100,000 SF COVERED STORAGE	27.2 KW

1. 12,000 SF & 25,000 UTILITY LAYOUT SHOWS 3 PHASE 110/208 V GASOLINE GENERATOR SOURCE. IF SOURCE IS 1 PHASE 110/220 V TRANSFORMER OR LOW VOLTAGE DISTRIBUTION, ELIMINATE PHASE DESIGNATION.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 50' 100' 200'
NO. 15

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

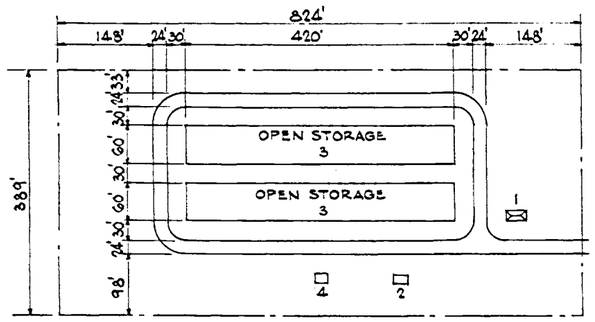
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

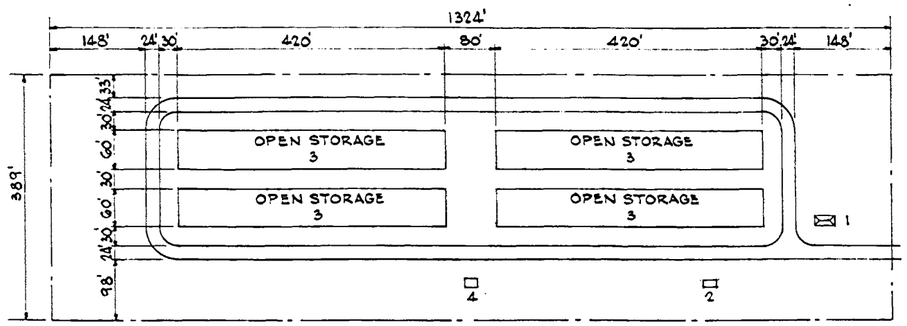
DRAWN BY: WADE
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] for H. W. Williams
CHIEF, STRUCTURES BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE:

THEATER OF OPERATIONS

DRY CARGO STORAGE-COVERED
12000, 25000, 50000 & 100000 SF
STD-ITR & TPR
SITE & UTILITY LAYOUTS

APPROVED: DATE: 19 MAR 1969
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 40-11
SHEET 1 OF 1





50,000 SF OPEN STORAGE - STD-INT & ITR

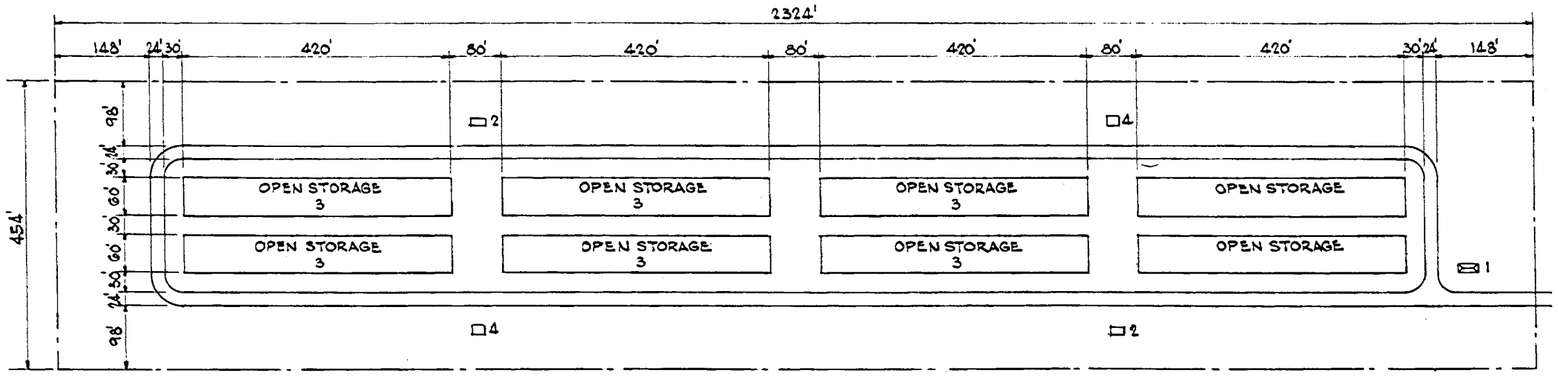
SCALE NO. 15

STD-INT - INST. NO. DS 1161 TENTAGE ONLY
STD-ITR - INST. NO. DS 1171 TENTAGE ONLY

100,000 SF OPEN STORAGE - STD-INT & ITR

SCALE NO. 15

STD-INT - INST. NO. DS 1181 TENTAGE ONLY
STD-ITR - INST. NO. DS 1191 TENTAGE ONLY



200,000 SF OPEN STORAGE - STD-INT & ITR

SCALE NO. 15

STD-INT - INST. NO. DS 1201 TENTAGE ONLY
STD-ITR - INST. NO. DS 1211 TENTAGE ONLY

STD-INT SCHEDULE OF FACILITIES

NO.	FACILITY	SIZE OR UNIT	50000 SF QUANTITY	100000 SF QUANTITY	200000 SF QUANTITY	DWG. NO.
	TENTAGE					
1	ADMINISTRATION	16'X32'	1	1	1	–
2	LATRINE, PIT TYPE, 8 SEATS	10'X20'	1	1	2	72-36
	OTHER CONSTRUCTION					
3	HARDSTAND, GRADED & DRAINED	1000 SY	5.6	11.2	22.3	85-31
	ROAD, 2 LANE, GRADED & DRAINED	MILE	0.3	0.5	0.9	85-31
4	SUMP, FIRE PROTECTION	10000 GAL	1	1	2	84-21
	SITE AREA	ACRE	7.4	11.8	24.2	–

STD-ITR SCHEDULE OF FACILITIES

NO.	FACILITY	SIZE OR UNIT	50000 SF QUANTITY	100000 SF QUANTITY	200000 SF QUANTITY	DWG. NO.
	TENTAGE					
1	ADMINISTRATION	16'X32'	1	1	1	–
2	LATRINE, PIT TYPE, 8 SEATS	10'X20'	1	1	2	72-36
	OTHER CONSTRUCTION					
3	HARDSTAND, 6" STABILIZED STONE 1" COLD SURFACE TREATMENT	1000 SY	5.6	11.2	22.3	85-31
	ROAD, 2 LANE, 6" STABILIZED STONE	MILE	0.3	0.5	0.9	85-31
4	SUMP, FIRE PROTECTION	10000 GAL	1	1	2	84-21
	SITE AREA	ACRE	7.4	11.8	24.2	–

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 50' 100' 200'
NO. 15

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C. W. SPEICHMANN
APPROVED:

THEATER OF OPERATIONS

DRY CARGO STORAGE-OPEN
50000, 100000 & 200000 SF
STD-INT & ITR
SITE LAYOUTS

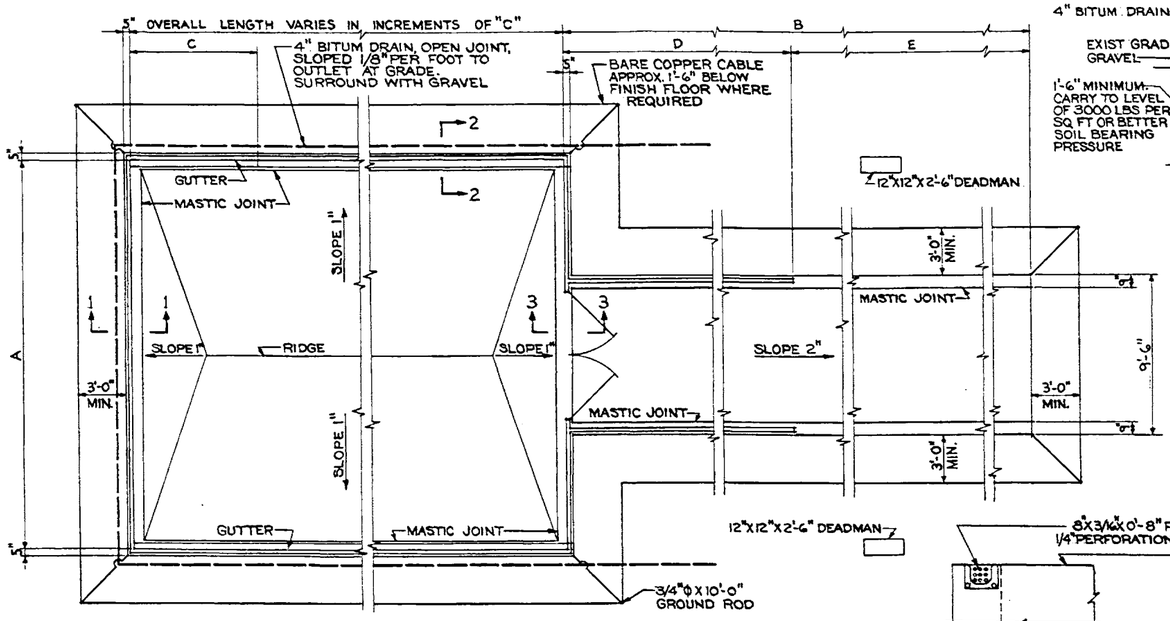
APPROVED: H. M. Williams DATE: 19 MAR 1969
CHIEF, STRUCTURES BRANCH CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1
40-12

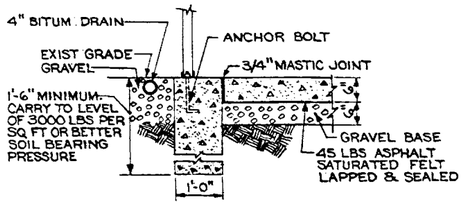
CORPS OF ENGINEERS

U. S. ARMY



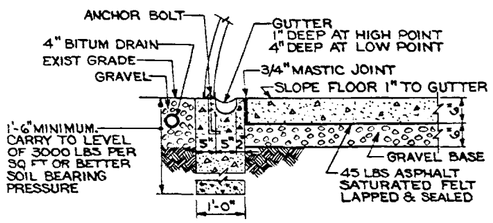
FOUNDATION & FLOOR PLAN

NO SCALE



SECTION 1 - 1

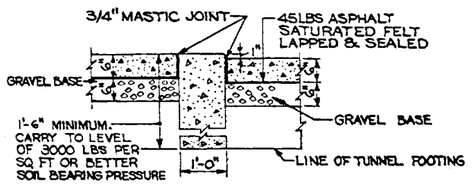
SCALE NO. 5



SECTION 2-2

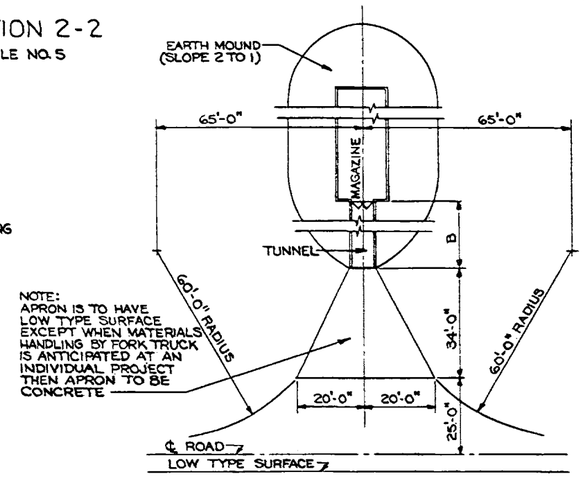
SCALE NO. 5

SCHEDULE OF DIMENSIONS		
LETTER	MAGAZINE INSIDE WIDTH	
	16 FT.	25 FT.
A	16'-0"	25'-0"
B	21'-0"	29'-0"
C	6'-0"	8'-0"
D	8'-0"	14'-0"
E	13'-0"	15'-0"
F	8'-0½"	12'-6"



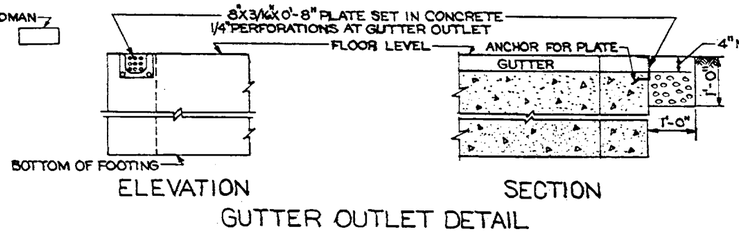
SECTION 3-3

SCALE NO. 5



PLOT PLAN

SCALE NO. 11

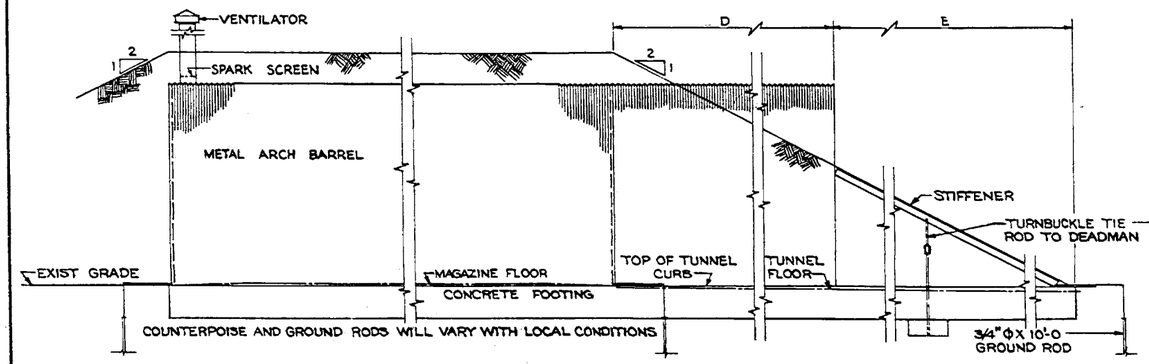


ELEVATION

SECTION

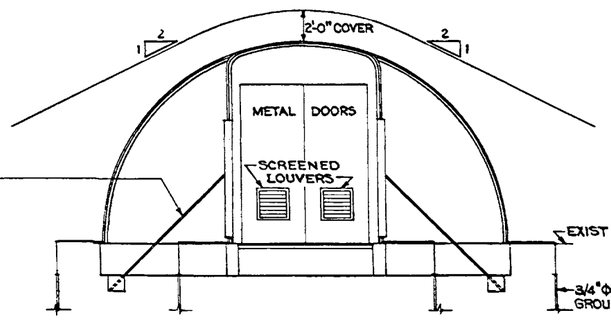
GUTTER OUTLET DETAIL

SCALE NO. 5



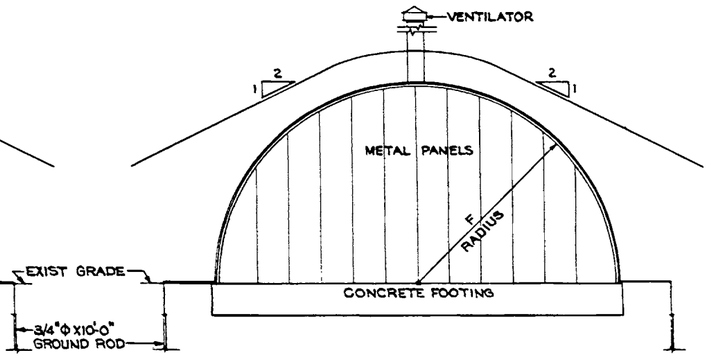
SIDE ELEVATION

NO SCALE



FRONT ELEVATION

NO SCALE



REAR ELEVATION

NO SCALE

FACILITY NO 421413, 16'X 18'
FACILITY NO 421414, 16'X 24'
FACILITY NO 421416, 16'X 36'
FACILITY NO 421424, 25'X 32'
FACILITY NO 421425, 25'X 40'
FACILITY NO 421426, 25'X 48'

ELECTRICAL NOTES

1. FOR LIGHTNING PROTECTION A COUNTERPOISE IS USED IF RESISTANCE OF 10 OHMS CANNOT BE OBTAINED WITH DRIVEN GROUND RODS.
2. ALL CONDUCTORS SHALL BE NO. 1/0 BARE COPPER MINIMUM.
3. ONE GROUND ROD AND CONNECTIONS SHALL BE PROVIDED AT EACH CORNER AS SHOWN.
4. JUMPERS SHALL BE PROVIDED AT EACH CORNER OF BASE MEMBER AS SHOWN AND WHEREVER ELSE NEEDED TO FORM A COMPLETE ELECTRICAL LOOP AROUND BUILDING AND TUNNEL.
5. ALL CONNECTIONS SHALL BE WELDED OR BRAZED.

GENERAL NOTES

1. DESIGN LIVE LOADS SHALL BE AS FOLLOWS:
   SNOW - 20 LBS PER SQ FT SUPERIMPOSED ON EARTH FILL AS SHOWN.
   FLOOR - 300 LBS PER SQ FT.
2. CONCRETE IN FLOOR SLABS SHALL DEVELOP A MINIMUM ULTIMATE STRENGTH IN COMPRESSION OF 3000 LBS PER SQ IN. & 2000 LBS PER SQ IN. FOR FOOTINGS AT THE END OF 28 DAYS.
3. SEE ERECTION MANUAL FOR BACKFILLING INSTRUCTIONS.
4. PROVIDE 4"ϕ PERFORATED OR OPEN-JOINT BITUM. DRAINS AT FOOTINGS OF REAR AND SIDE WALLS. SLOPE 1/8" PER FOOT TO OUTLET.
5. FOR LOCATION AND DETAILS OF ANCHOR BOLTS AND SHEETING BASE MEMBER, SEE ERECTION MANUAL.
6. FOR DESIGN OF ARCH SEE MILITARY SPECIFICATIONS MIL-B-160418

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
42-14	PLAN, DETAILS & ELEVATIONS	1 OF 1

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 1' 2' 3' — NO. 5

0 5' 10' 20' 30' 40' — NO. 11

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HALE
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DEICHMANN
APPROVED:

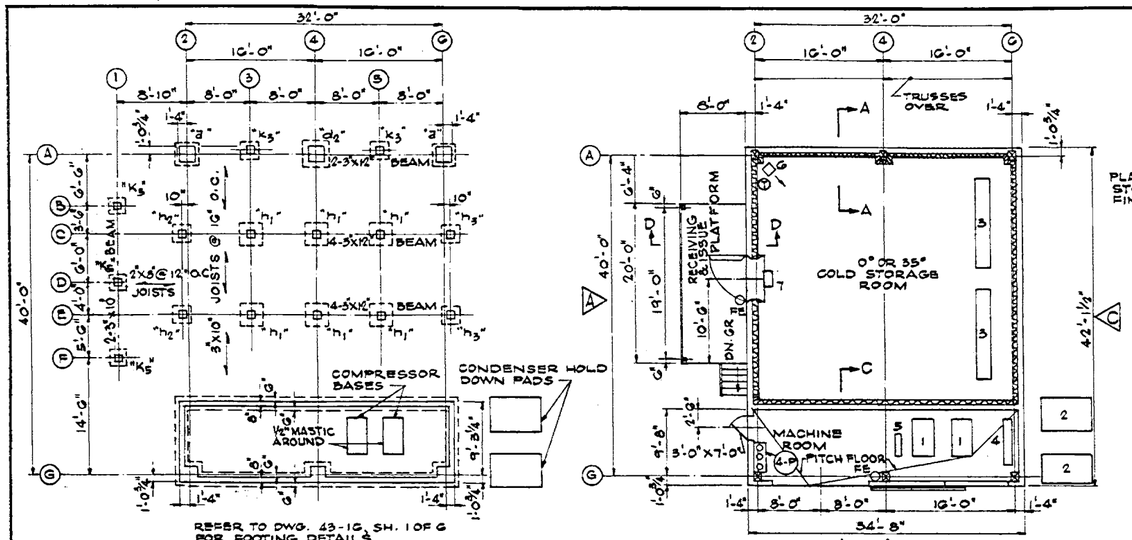
THEATER OF OPERATIONS

MAGAZINE-STEEL ARCH
16'X VARIABLE LENGTHS
25'X VARIABLE LENGTHS

APPROVED: DATE: 19 MAR 1969
CHIEF, STRUCTURES BRANCH — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 42-14
SHEET 1 OF 1

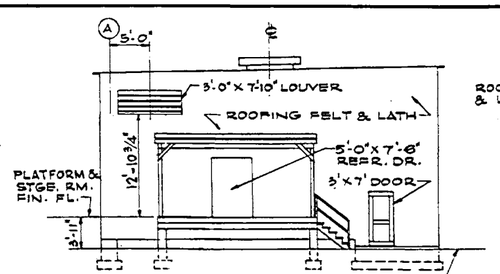


FOUNDATION & FLOOR FRAMING
SCALE NO. 1

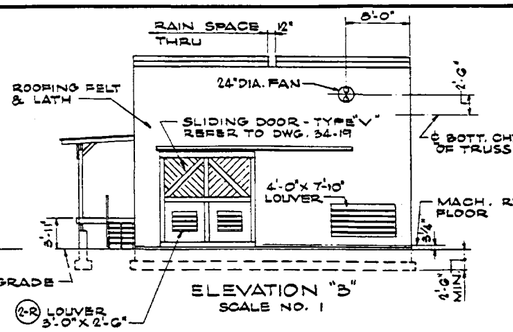
PLAN
SCALE NO. 1

REFRIGERATED WAREHOUSE - 32' X 40'

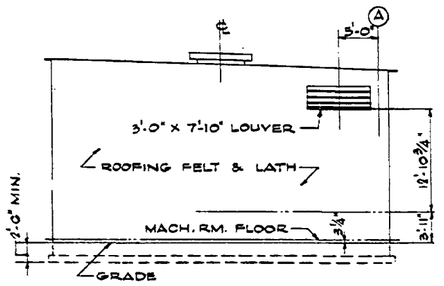
TROPICAL ZONE - FACIL. NO. 431521
TEMPERATE ZONE - FACIL. NO. 431522
FRIGID ZONE - FACIL. NO. 431523
RATPROOFING-ALL ZONES - FACIL. NO. 431510



ELEVATION "A"
SCALE NO.



ELEVATION "B"
SCALE NO. 1



ELEVATION "C"
SCALE NO. 1

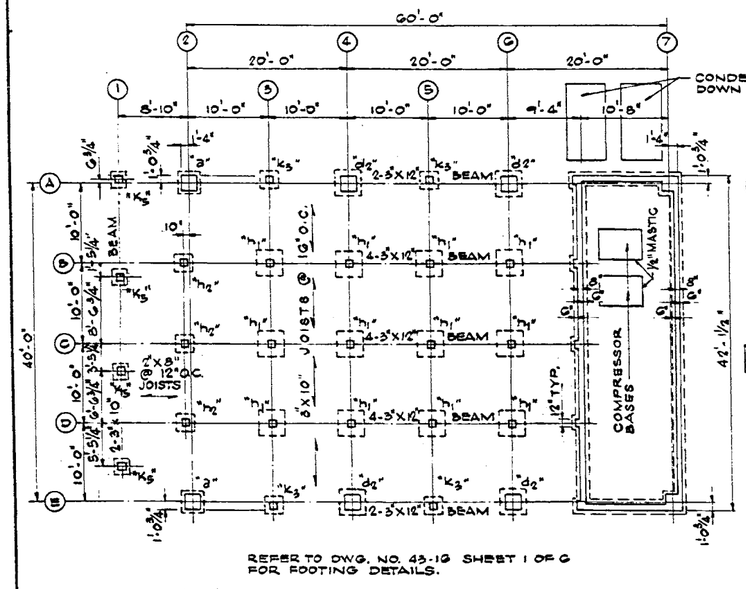
SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	ELECT. EQUIP RATING *	REFRIG. WHSE. ALL ZONES 32'x40'	REFRIG. WHSE. ALL ZONES 40'x60'
			QUANTITY	
1	COMPRESSOR	30 HP	2	2
2	CONDENSER	2 HP	2	2
3	UNIT COOLER	1½ HP	2	4
4	RECEIVER (R-12)	NONE	1	1
5	OIL RECEIVER	2 KW	1	1
6	UNIT HEATER	7.5 KW	1	1
7	AIR CURTAIN FAN	⅓ HP	1	1

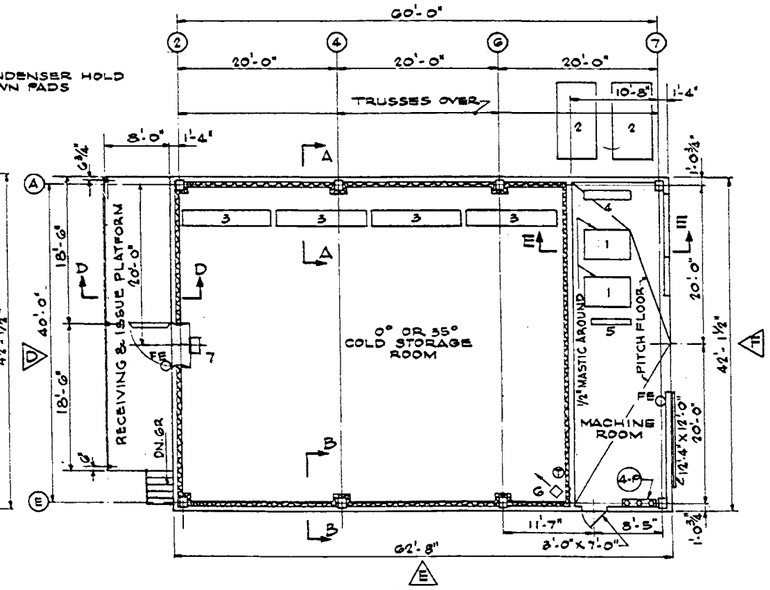
OMIT UNIT HEATER IN TROPIC ZONE
* INDICATED HORSEPOWER IS APPROXIMATE

SCHEDULE OF STORAGE CAPABILITIES

DESCRIPTION	32'X 40' REFR. WAREHOUSE	40'X 60' REFR. WAREHOUSE
GROSS CUBIC FEET - ALL ZONES	9293 C.F.	18,857 C.F.
NET CUBIC FEET - ALL ZONES	3237 C.F.	7287 C.F.
HOLDING REFRIGERATION EFFECT WHEN OPERATING AT 0° F. ROOM TEMPERATURE - ALL ZONES	75,750 BTU/HR.	122,197 BTU/HR.
PRODUCT LOADING REFRIGERATION EFFECT WHEN OPERATING AT 0° F. ROOM TEMPERATURE - ALL ZONES	34,161 BTU/HR.	121,849 BTU/HR.
ESTIMATED MAXIMUM POUNDS OF FROZEN FOOD PRODUCT THAT COULD BE STORED IN WAREHOUSE.	120,800 LBS.	271,900 LBS.
THE MAXIMUM NET PRODUCT LOADING IN ANY 24 HOUR PERIOD OF TIME	120,800 LBS.	271,900 LBS.



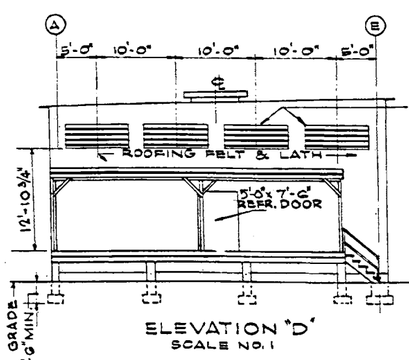
FOUNDATION & FLOOR FRAMING
SCALE NO. 1



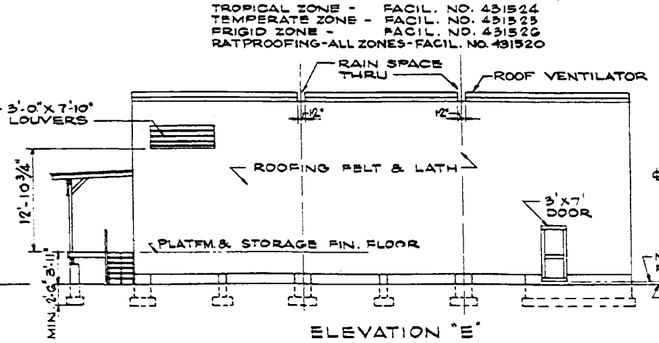
PLAN
SCALE NO.

REFRIGERATED WAREHOUSE - 40' X 60'

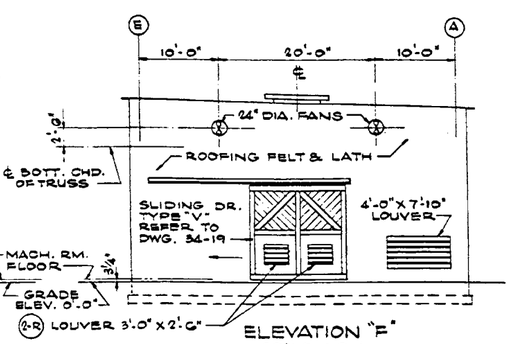
TROPICAL ZONE - FACIL. NO. 431524
TEMPERATE ZONE - FACIL. NO. 431525
FRIGID ZONE - FACIL. NO. 431526
RATPROOFING-ALL ZONES-FACIL. NO. 431520



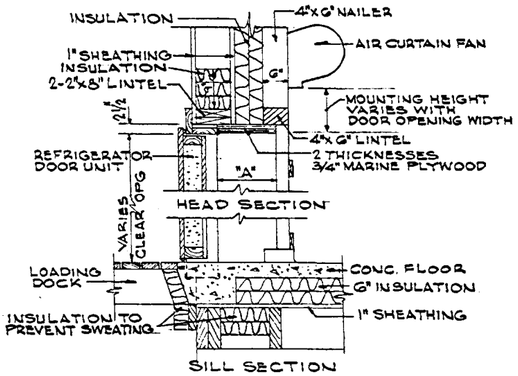
ELEVATION "D"
SCALE NO. 1

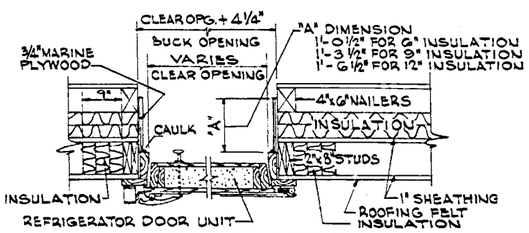


ELEVATION "E"
SCALE NO. 1



ELEVATION "F"
SCALE NO. 1





PLAN SECTION
TYPICAL REFRIGERATOR DOOR INSTALLATION
NOT TO SCALE

DESIGN DATA

TEMPERATURE CONDITIONS -

TROPICAL ZONE	110° FDB/ 81° FWB
TEMPERATE ZONE	100° FDB/ 80° FWB
FRIGID ZONE	70° FDB/ 58° FWB

REFRIGERANT - DICHLORODIFLUOROMETHANE (R-12)
COMPRESSOR OPERATING TIME - 16 HOURS
ASSUMED ALTITUDE - 1500 FEET ABOVE SEA LEVEL.

GENERAL NOTES

1. THE TROPICAL ZONE SHALL BE CONSIDERED THAT AREA BOUNDED BY THE ISOTHERMAL LINES WHOSE MEAN ANNUAL TEMPERATURES ARE 70° OR HIGHER. THE TEMPERATE ZONE SHALL BE THAT AREA BETWEEN THE ISOTHERMAL LINES WHOSE MEAN ANNUAL TEMPERATURES ARE BETWEEN 50° F AND 70° F. THE FRIGID ZONE SHALL BE CONSIDERED THAT AREA BOUNDED BY THE ISOTHERMAL LINES WHOSE MEAN ANNUAL TEMPERATURES ARE 50° OR LOWER. REFER TO TECHNICAL MANUAL TM 5-785 FOR SITE TEMPERATURES.
2. REFRIGERATED WAREHOUSES SHALL HAVE 6 INCHES OF THERMAL INSULATION IN FLOORS FOR ALL ZONES WITH WALL AND CEILING INSULATION AS INDICATED IN SECTIONS ON DWG. 43-15, SHEET 3 OF 3.
3. THE SHOP TYPE BUILDING AS MODIFIED ON THESE DRAWINGS IS USED FOR THE REFRIGERATED WAREHOUSE STRUCTURE. REFER TO DWG. 34-19 FOR ROOF TRUSSES, COLUMNS AND OTHER BUILDING DETAILS NOT SHOWN.
4. HEATING SHALL BE REQUIRED IN THE 35° F STORAGE ROOMS WHERE THE OUTSIDE TEMPERATURE DROPS BELOW FREEZING FOR EXTENDED PERIODS OF TIME.
5. IN AREAS SUBJECT TO TYPHOON CONDITIONS, PROTECT OUTDOOR CONDENSERS BY THE INSTALLATION OF HEAVY WIRE NETTING OVER AND AROUND CONDENSERS AND CONNECTING PIPING.
6. NOTES APPEARING ON DRAWING 43-15 OR 43-16 SHALL APPLY TO BOTH DRAWINGS WHERE APPLICABLE.

DESIGN LIVE LOADS

FLOOR	250 LBS PER SQ FT
LOADING DOCK	200 LBS PER SQ FT

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
43-15	PLANS, ELEV., DETAILS	1 OF 3
43-15	MECH. & ELECT. PLANS	2 OF 3
43-15	SECTIONS & DETAILS	3 OF 3
43-16	PLANS, ELEV., DETAILS	1-6 OF 6
34-19	SHOP TYPE BLDGS.-DET	1-12 OF 12
99-98	STANDARD DETAILS	

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15'
NO. 1

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED:
CHIEF, TECHNICAL BRANCH

THEATER OF OPERATIONS

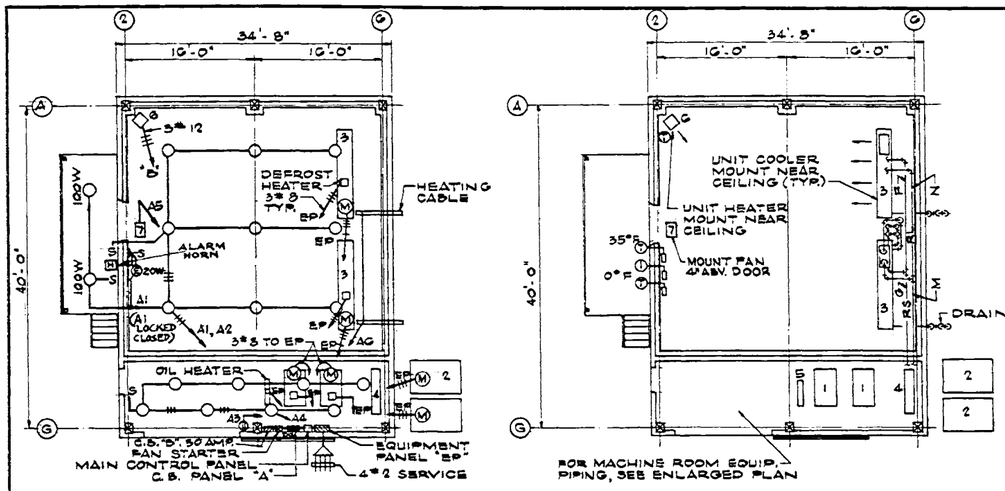
REFRIGERATED WAREHOUSE
32'X40' & 40'X60'

PLANS, ELEVATIONS & DETAILS

APPROVED: H. M. Williams
DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
John E. Sutherland
Col., SigC
DATE 12 Sept 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-15
SHEET 1 OF 3



ELECTRICAL PLAN

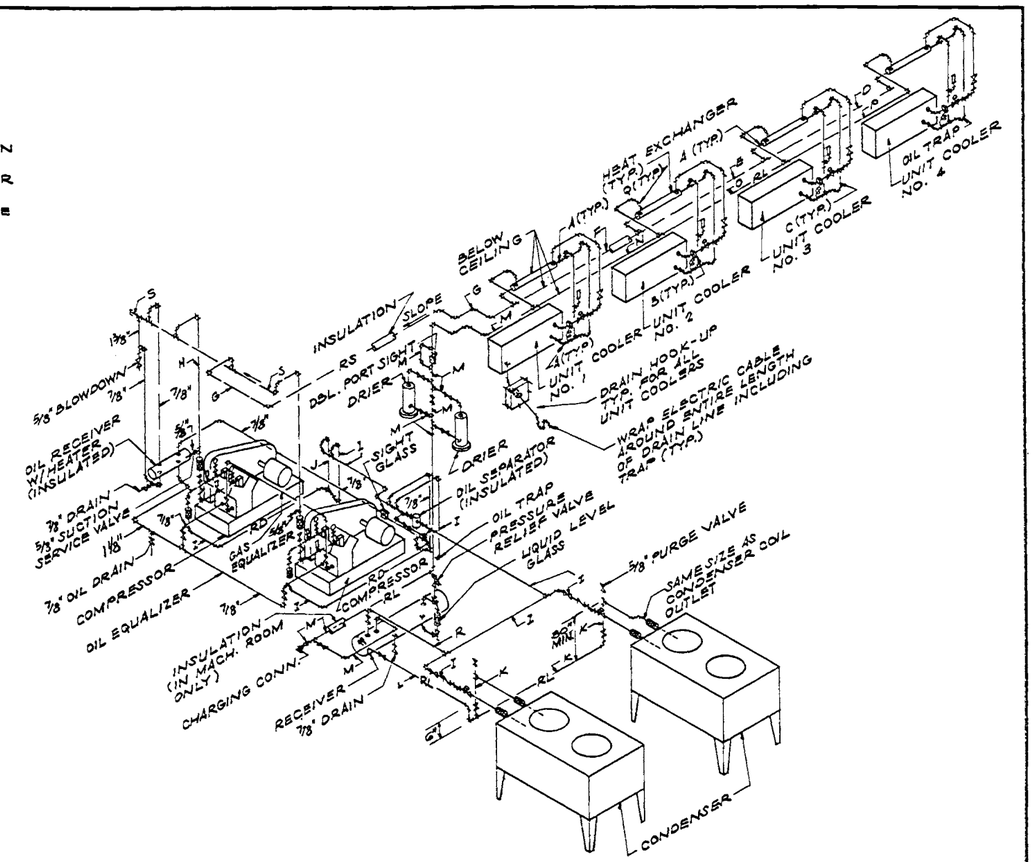
PLAN - REFRIGERATION PIPING

REFRIGERATED WAREHOUSE 32' X 40'

SCALE NO. 1

LEGEND

- OR — OIL RETURN
- FLEXIBLE PIPE CONNECTION
- EXPANSION VALVE
- INDICATING THERMOMETER WITH REMOTE BULB
- THERMOSTAT WITH REMOTE BULB
- THERMOMETER & WELL



ISOMETRIC - 40' X 60' REFRIGERATED WAREHOUSE

NO SCALE

NOTES:
1. 32'X40' REFRIGERATED WARHOUSE IDENTICAL EXCEPT OMIT UNIT COOLERS 3 & 4.
2. REFER TO DRAWING 43-16 FOR DETAILS OF PIPE PENETRATION, PIPE HANGER, UNIT COOLER DETAIL, ETC.

ELECTRICAL PLAN

PLAN - REFRIGERATION PIPING

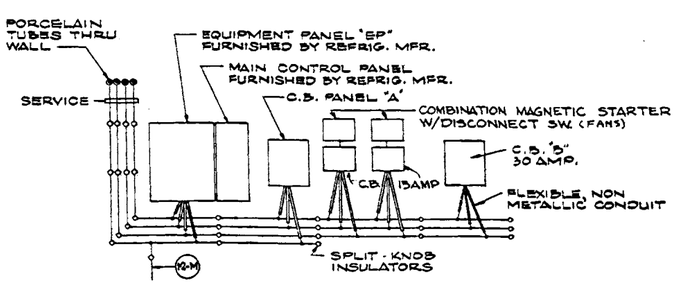
REFRIGERATED WAREHOUSE 40'X60'

SCALE NO. 1

PLAN - MACHINE ROOM

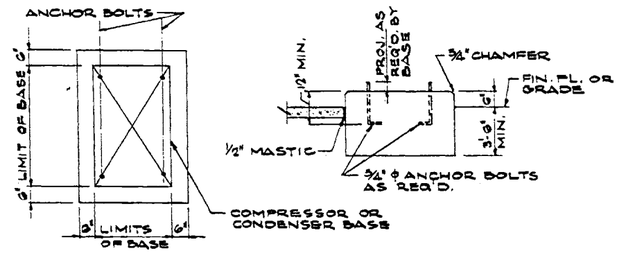
SCALE NO. 2

SCHEDULE OF PIPE SIZES		
MARK	WAREHOUSE 40'X60'	WAREHOUSE 32'X40'
A	2 1/8"	2 1/8"
B	7/8"	7/8"
C	1 5/8"	1 5/8"
D	2 1/8"	—
E	3 1/8"	—
F	3 1/8"	2 1/8"
G	3 5/8"	2 5/8"
H	2 5/8"	2 1/8"
I	1 3/8"	1 1/8"
J	7/8"	7/8"
K	1 3/8"	1 1/8"
L	1 5/8"	1 3/8"
M	1 1/8"	7/8"
N	1 1/8"	3/4"
O	7/8"	—
P	3/4"	—
Q	3/4"	3/4"
R	5/8"	5/8"
S	4 1/8"	3 1/8"



CIRCUIT BREAKER INSTALLATION

NO SCALE



TYPICAL COMPRESSOR OR CONDENSER BASE

NO SCALE

ELECTRICAL NOTES (CONT.)

9. ALL WIRING SHALL BE INSTALLED IN CONDUIT AND/OR FLEXIBLE CABLES IN ACCORDANCE WITH N.E.C. FROM THE EQUIPMENT PANEL "EP" TO THE REFRIGERATION EQUIPMENT AND BE FURNISHED BY THE REFRIGERATION EQUIPMENT CONTRACTOR.
10. FURNISH MAIN BREAKER IN EACH EQUIPMENT PANEL "ER"
11. REFRIGERATION CONTRACTOR SHALL FURNISH A HORN, PUSH-BUTTON OPERATED ON ROOM SIDE WITH 20W SIGNAL LAMP FOR EACH OF THE COOLER ROOMS. HORNS TO BE MOUNTED OUTSIDE OF BUILDING. WIRING MATERIALS TO BE INCLUDED.

ELECTRICAL NOTES

CONNECTED LOAD		
SIZE	32'X40'	40'X60'
LIGHTING	3.0 KW	4.5 KW
RECP. EST.	1.0 KW	1.5 KW
POWER	69.0 KW	97.0 KW
TOTAL	73.0 KW	103.0 KW

1. CONNECTED LOAD DOES NOT INCLUDE DEFROST HEATER LOAD.
2. UNLESS OTHERWISE NOTED ON PLANS, ALL LAMPS TO BE 150W.
3. SEAL ALL WALL PENETRATIONS VAPOR TIGHT.
4. ELECTRICAL EQUIP. PANELS & MAIN CONTROL BOARDS SHALL INCLUDE THE PRE-WIRED ELEC. CONTROLS & INSTRUMENTS FOR THE UNIT COOLERS, COMPRESSORS & CONDENSERS THAT ARE NOT FURNISHED INTEGRAL WITH THE EQUIPMENT.
5. MAIN CONTROL BOARDS SHALL INCLUDE MANUAL SWITCH TO SELECT ELECTRIC OR AIR DEFROSTING.
6. REFRIGERATION CONTROLS SHALL INCLUDE INTERLOCKS TO PREVENT COMPRESSOR OPERATION UNLESS CONDENSER IS OPERATING, OIL PRESSURE FAILURE CUT-OUT SWITCHES, HIGH-LOW LIMIT SWITCHES & NON-CYCLING COMPRESSOR PUMP-DOWN CONTROL.
7. DOOR SWITCH SHALL START AIR CURTAIN FAN WHEN DOOR IS OPEN.

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES

0 5' 10' 15' NO. 1

0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED:

THEATER OF OPERATIONS

REFRIGERATED WAREHOUSES 32'X40' & 40'X60'

MECHANICAL AND ELECTRICAL PLANS

APPROVED: DATE: 19 MAR 1959

CHIEF, FIXED FACILITIES BRANCH

CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:

Col., GSC

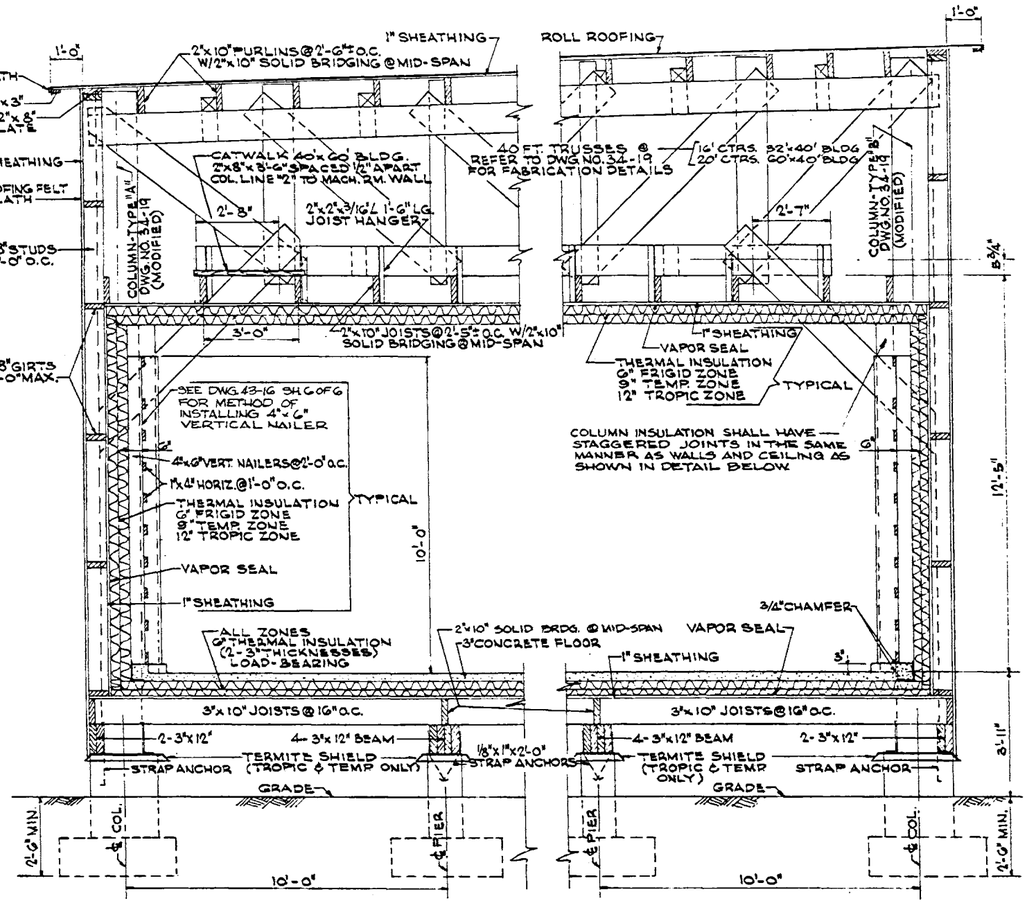
DATE 12 Sept 1968

SCALE: AS NOTED

SPEC. NO.

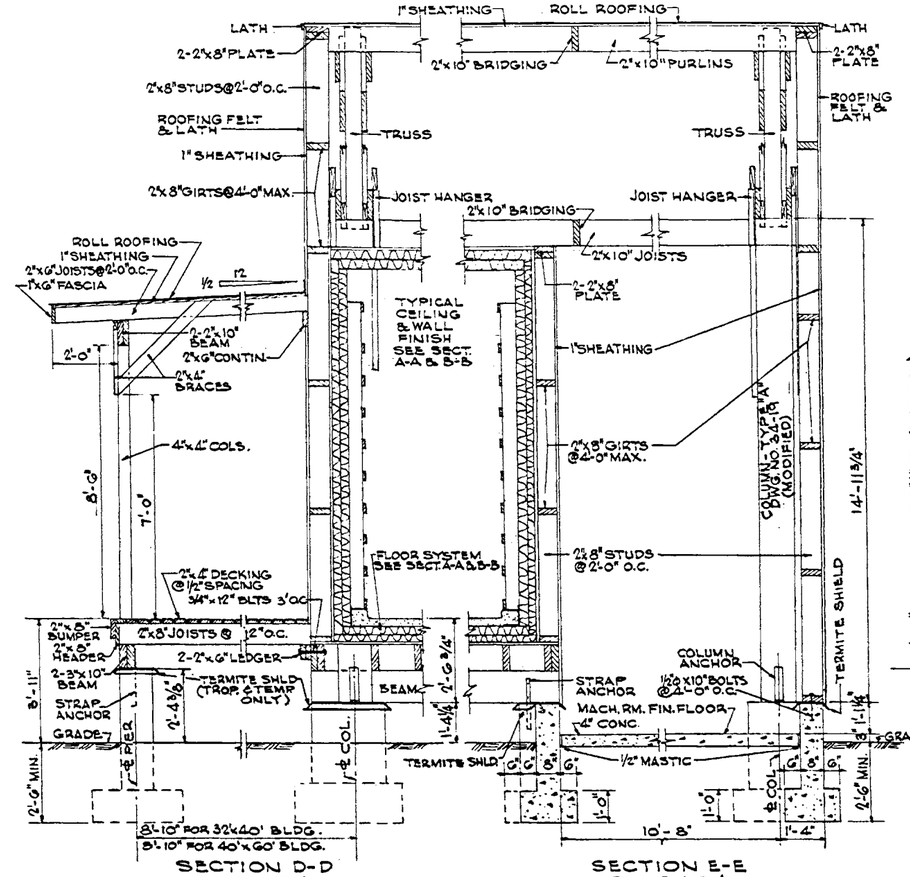
DRAWING NUMBER 43-15

SHEET 2 OF 3



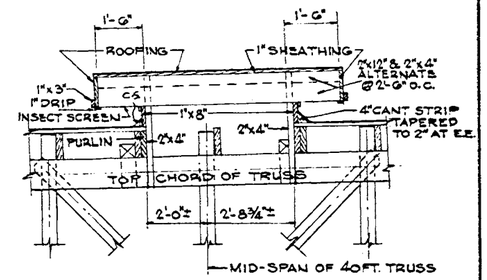
SECTION A-A
SCALE NO. 4

SECTION B-B
SCALE NO. 4

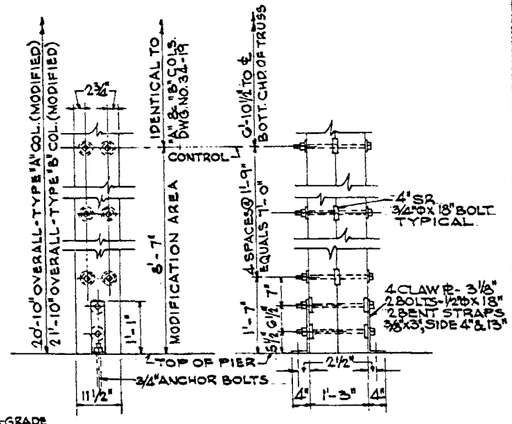


SECTION D-D
SCALE NO. 4

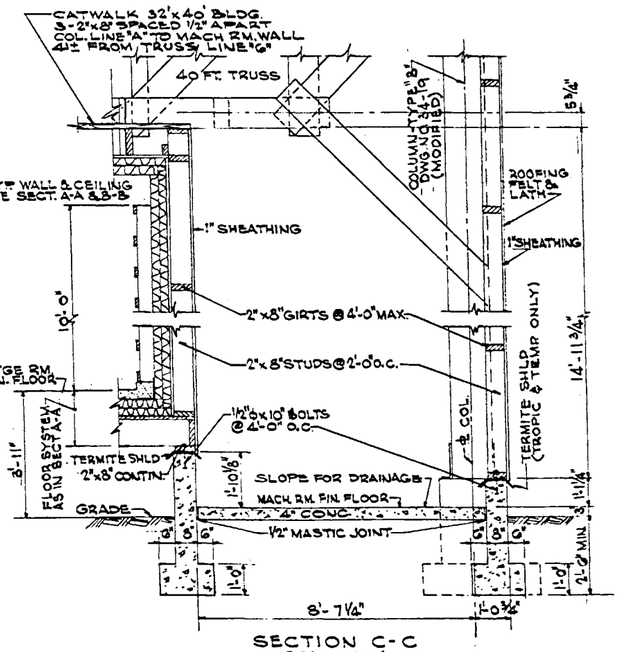
SECTION E-E
SCALE NO. 4



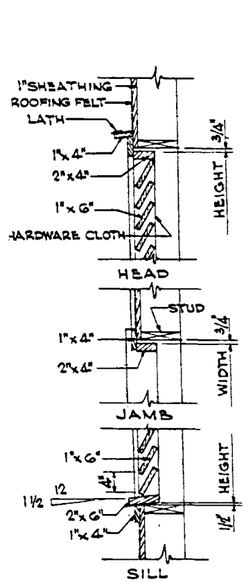
ROOF VENTILATOR
32'x40' & 40'x60' BUILDINGS
SCALE NO. 4



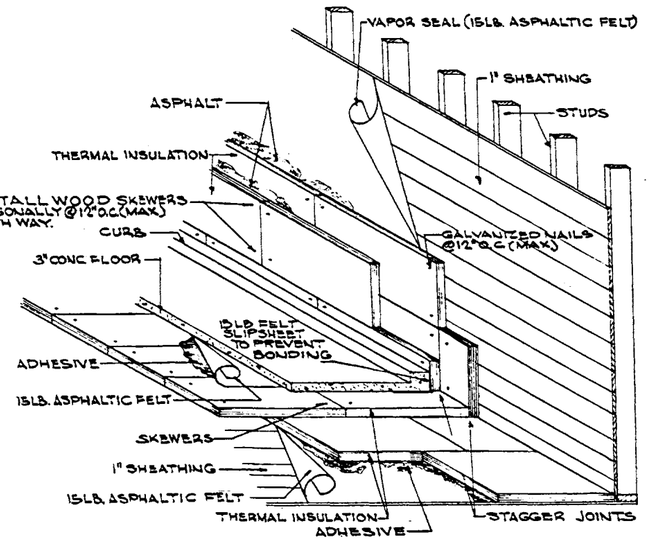
MODIFICATION OF TYPE "A" & "B" COLUMNS FROM DWG. NO. 34-19
NOT TO SCALE



SECTION C-C
SCALE NO. 4



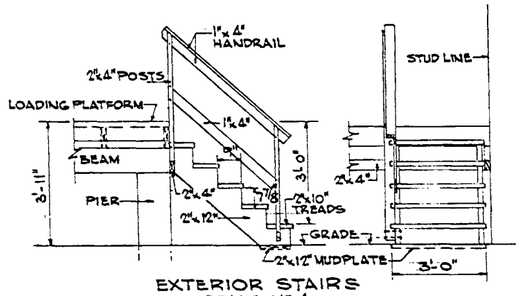
DETAIL OF LOUVER
SCALE NO. 6



WALLS & CEILING
TACK LAYER OF ASPHALTIC FELT TO WOOD SHEATHING WITH EDGES LAPPED 2" OR MORE. ERECT FIRST LAYER OF INSULATION IN HOT ASPHALT (MELTING POINT 140° USED @ 200-220°F) APPLIED EVENLY TO BACK OF INSULATION AND SECURE WITH GALVANIZED NAILS. ERECT SECOND LAYER IN HOT ASPHALT SECURED WITH WOOD SKEWERS TO FIRST LAYER.

FLOOR
OVER ENTIRE AREA OF FLOOR SHEATHING TACK LAYER OF ASPHALTIC FELT WITH EDGES LAPPED AT LEAST 3". OVER FELT APPLY ADHESIVE AND APPLY FIRST LAYER OF INSULATION IN WET ADHESIVE. APPLY SECOND LAYER OF INSULATION DRY OVER FIRST LAYER USE WOOD SKEWERS AS NECESSARY. BEFORE COVERING WITH CONCRETE, APPLY 15LB ASPHALT FELT IN COLD ADHESIVE ON TOP OF INSULATION.

APPLICATION DETAILS OF INSULATION
NOT TO SCALE



EXTERIOR STAIRS
SCALE NO. 4

NOTES
1. TERMITE SHIELDS ARE USED ONLY IN TROPIC & TEMP ZONES.
2. CONCRETE SLAB SHALL BE PLACED IN ALTERNATE SECTIONS NOT EXCEEDING 800 SQ FT. IN AREA.

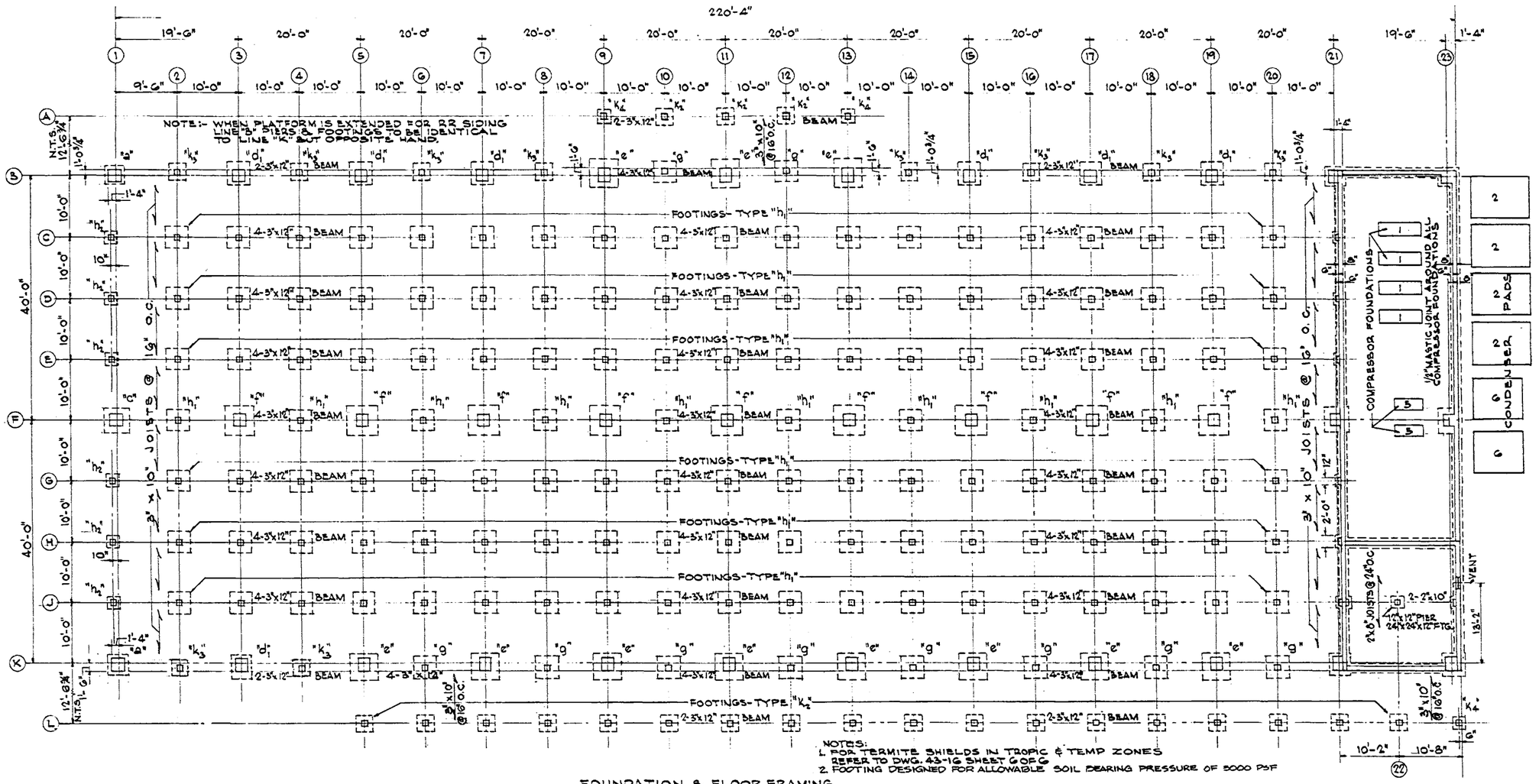
SYMBOL	DESCRIPTION (REVISIONS)	DATE	APPROVAL

GRAPHIC SCALES
0 1' 2' 3' 4' — NO. 4
0 1' 2' — NO. 6

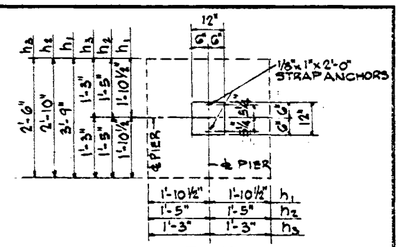
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

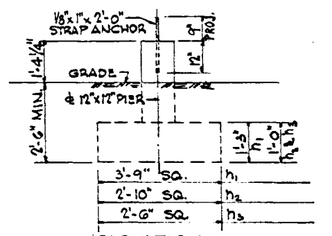
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

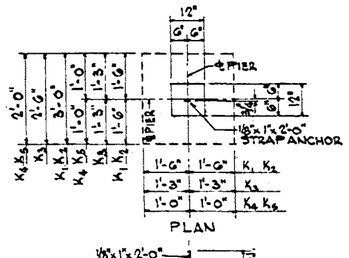
DRAWN BY: DEICHMANN	THEATER OF OPERATIONS
TRACED BY:	REFRIGERATED WAREHOUSES 32'X40' & 40'X60'
CHECKED BY: JOHNSON	SECTION & DETAILS
SUBMITTED BY: C.W. DEICHMANN	
APPROVED: (CHIEF, ARCH'L BRANCH)	APPROVED: H.M. Williams (CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.) DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: John E. Sutherland, Chief of Staff, U.S. Army, OCOS, TA DATE: 12 Sept 1968	SCALE: AS NOTED SPEC. NO. DRAWING NUMBER: 43-15 SHEET 3 OF 3

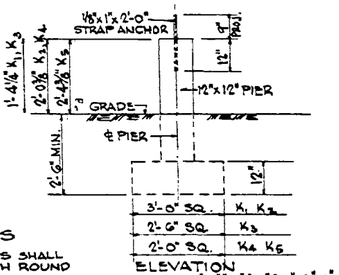


FOUNDATION & FLOOR FRAMING
SCALE NO. 1



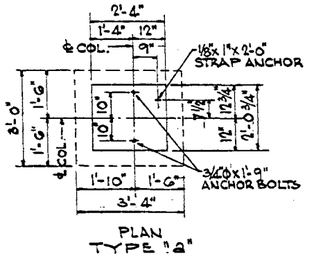


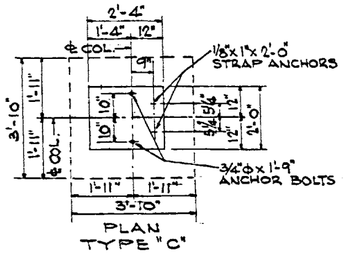


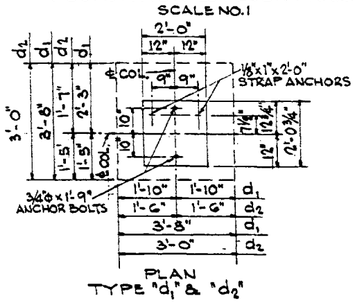


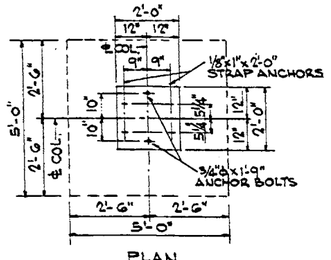
STRUCTURAL NOTES

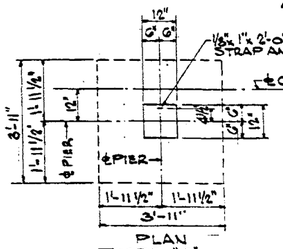
ALL COLUMN AND PIER FOOTINGS SHALL HAVE REINFORCING BARS 1/2 INCH ROUND AT 5 INCH CENTERS EACH WAY.









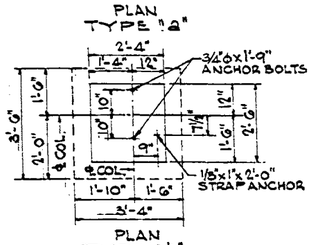


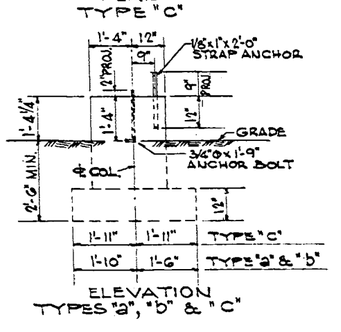
DESIGN LIVE LOADS

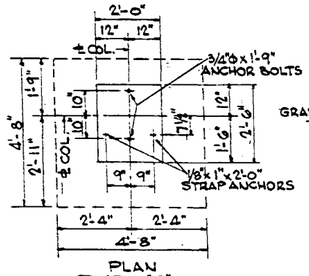
FLOOR	350 LBS PER SQ FT
LOADING DOCK	200 LBS PER SQ FT

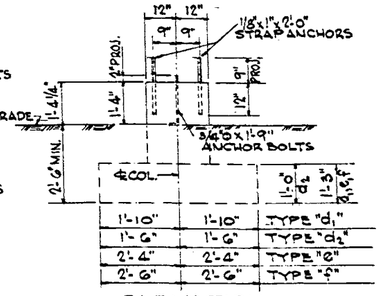
SCHEDULE OF DRAWINGS

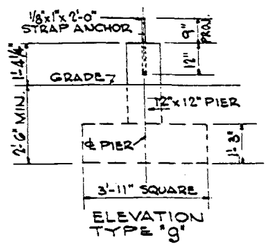
DWG. NO.	DESCRIPTION	SHEET NO.
43-16	PLANS, ELEVATIONS, DETL. 80'X220' REFRIG. WHSE.	1-6 OF 6
43-15	PLANS, ELEVATIONS, DETL. 32'x40' & 40'x60' REFR. WHSE	1-3 OF 3
34-19	SHOP TYPE BLDG-DETLS.	1-12 OF 12
34-18	WINDOW & DOOR DETLS.	1 & 2 OF 2
99-98	STANDARD DETAILS	











FOOTING DETAILS
SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 1' 2' 3' 4' NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS

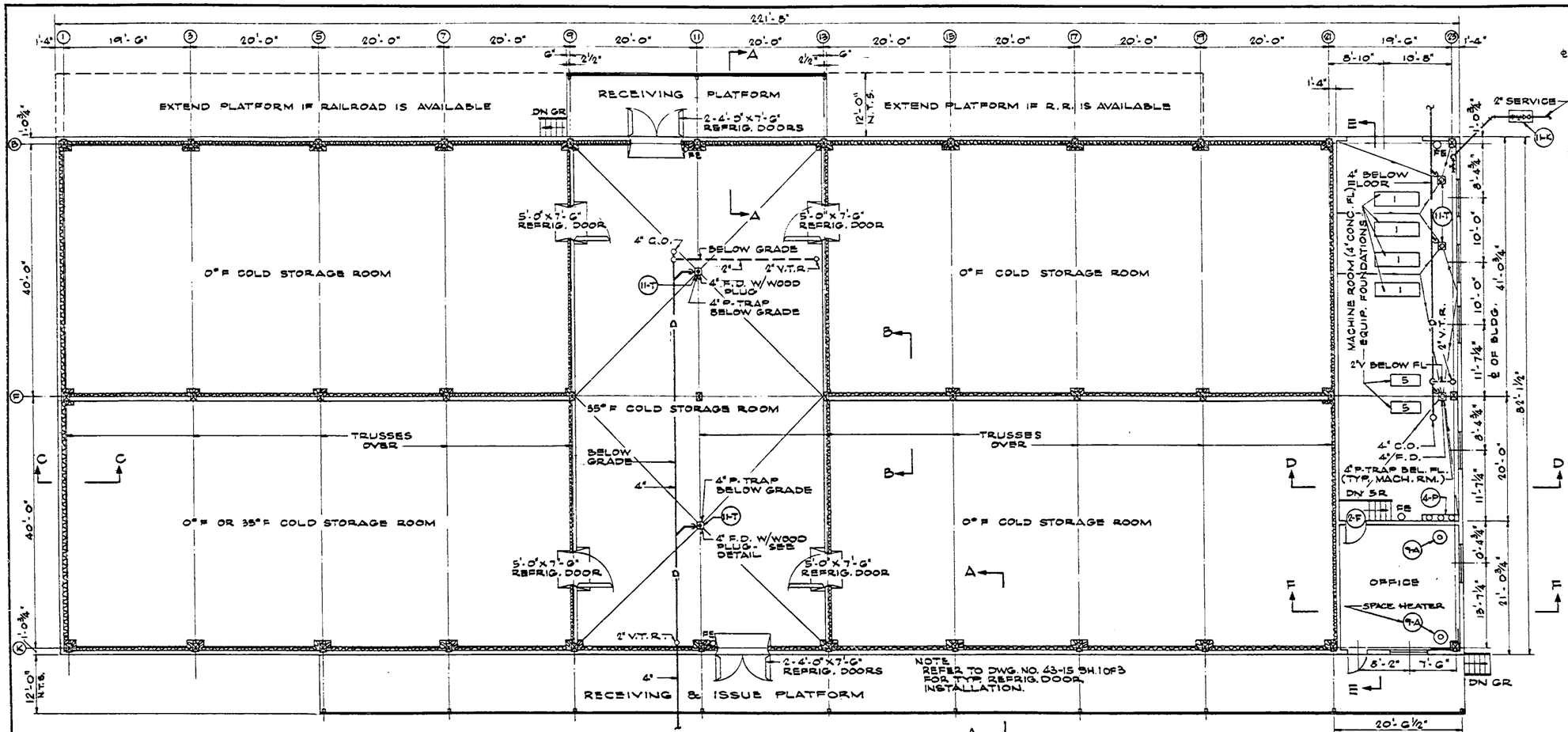
REFRIGERATED WAREHOUSE
80'X220'

FOUNDATION & FLOOR FRAMING

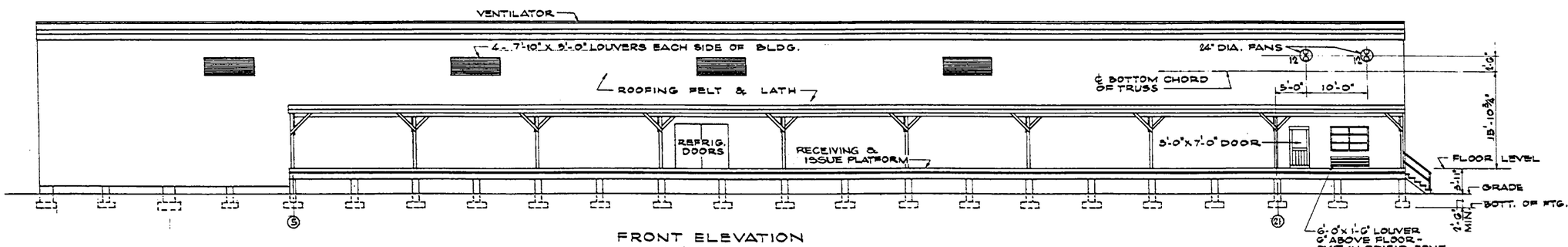
APPROVED: DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
DATE 12 Sept 1962

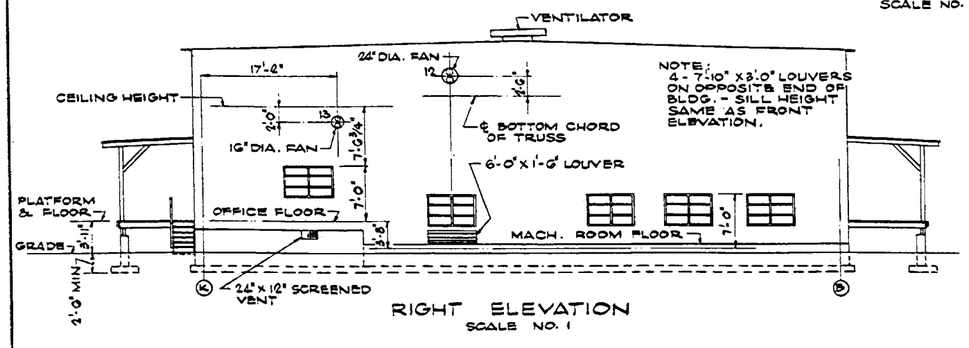
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-16
SHEET 1 OF 6



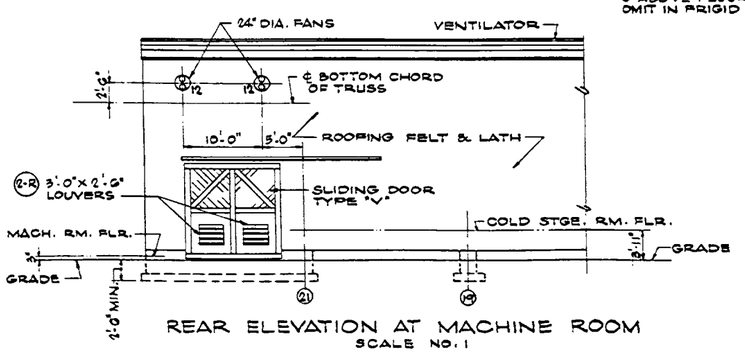
FLOOR PLAN
SCALE NO. 1



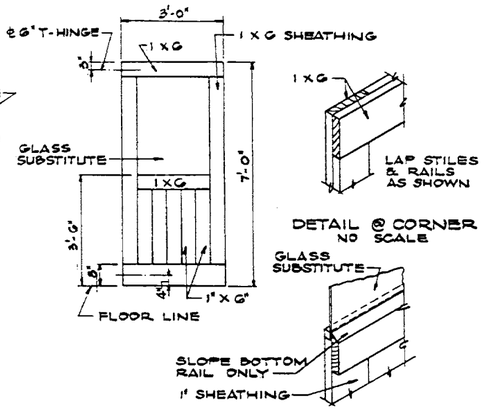
FRONT ELEVATION
SCALE NO. 1



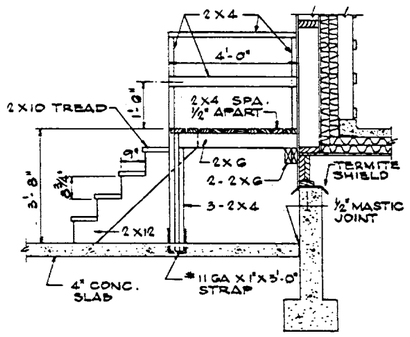
RIGHT ELEVATION
SCALE NO. 1



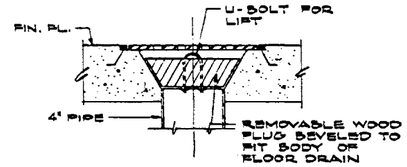
REAR ELEVATION AT MACHINE ROOM
SCALE NO. 1



EXTERIOR DOOR DETAILS
SCALE NO. 4



MACHINE ROOM STAIRS
SCALE NO. 4



WOOD PLUG FOR FLOOR DRAIN
35° COLD STORAGE ROOMS
NO SCALE

NOTE:
ALL WINDOWS ARE SLIDING SASH TYPE W5. FOR DETAILS REFER TO DWG. NO. 34-15.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO. 1: 0 5' 10' 15'
NO. 4: 0 1' 2' 3' 4'

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: [signature] DATE: 12 Sept 1968

THEATER OF OPERATIONS

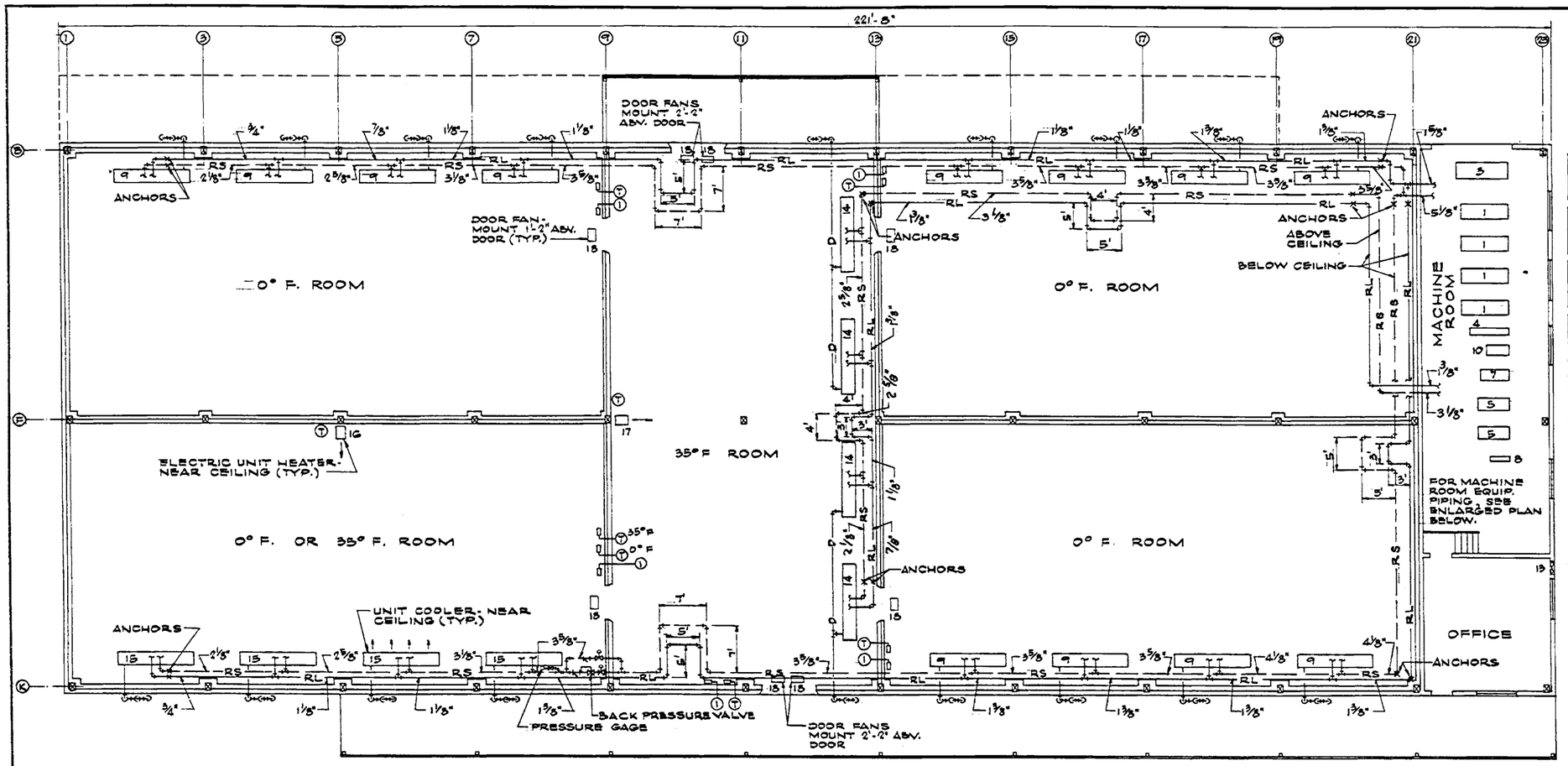
REFRIGERATED WAREHOUSE
80'X220'

FLOOR PLAN-ELEVATIONS & DETAILS

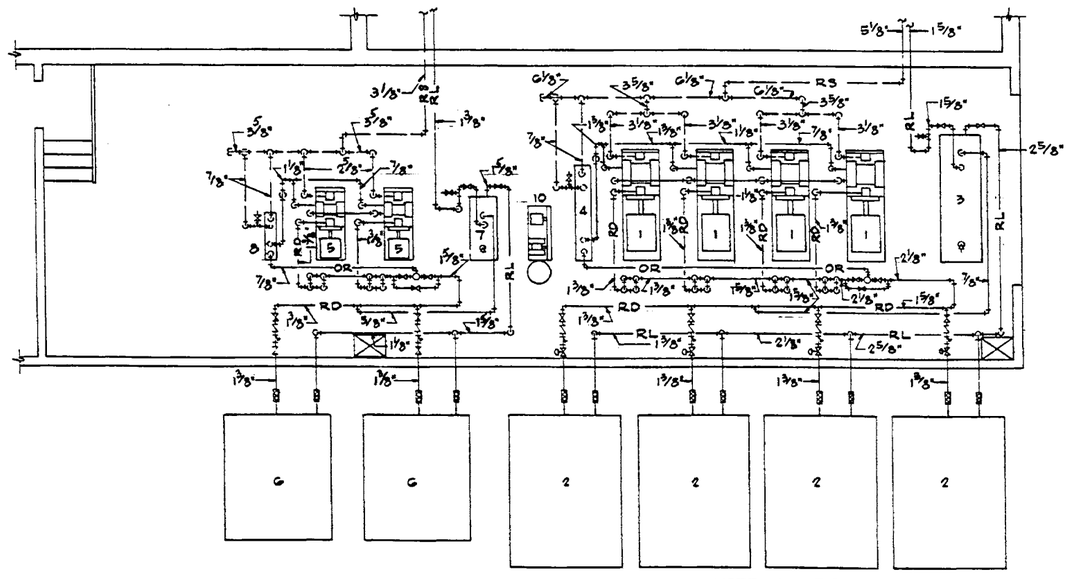
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-16
SHEET 2 OF 6

REFRIGERATED WAREHOUSE - 80' X 220'

TROPICAL ZONE - FACIL. NO. 431G21
TEMPERATE ZONE - FACIL. NO. 431G22
FRIGID ZONE - FACIL. NO. 431G23
RATPROOFING - ALL ZONES - FACIL. NO. 431G10



PLAN - REFRIGERATION PIPING
SCALE NO. 1



NOTE : ALL PIPE SIZES ARE O.D.

PLAN - MACHINE ROOM
SCALE NO. 2

LEGEND

- OR — OIL RETURN
- FLEXIBLE PIPE CONNECTION
- EXPANSION VALVE
- INDICATING THERMOMETER WITH REMOTE BULB
- THERMOSTAT WITH REMOTE BULB
- THERMOMETER & WELL

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	80' x 220' REFRIGERATED WAREHOUSE		
		TROPIC ZONE	TEMP. ZONE	FRIGID ZONE
		QUANTITY		
1	COMPRESSOR	4	4	4
2	CONDENSER	4	4	4
3	RECEIVER (R-22)	1	1	1
4	OIL RECEIVER	1	1	1
5	COMPRESSOR	2	2	2
6	CONDENSER	2	2	2
7	RECEIVER (R-22)	1	1	1
8	OIL RECEIVER	1	1	1
9	UNIT COOLER	12	12	12
10	VACUUM PUMP	1	1	1
11	SPACE HEATER	NONE	2	2
12	FAN (SEE ELEVATIONS)	5	5	3
13	FAN (SEE ELEVATIONS)	1	1	NONE
14	UNIT COOLER	4	4	4
15	UNIT COOLER	4	4	4
16	UNIT HEATER	NONE	1	1
17	UNIT HEATER	NONE	1	1
18	AIR CURTAIN FAN	8	8	8

SCHEDULE OF STORAGE CAPABILITIES

DESCRIPTION	80'X220' REFRIG. WAREHOUSE
GROSS CUBIC FEET - ALL ZONES	211,750 C.F.
NET CUBIC FEET - ALL ZONES	90,273 C.F.
HOLDING REFRIGERATION EFFECT WHEN OPERATING AT 0° F ROOM TEMPERATURE - ALL ZONES	507,940 BTU/HR.
PRODUCT LOADING REFRIGERATION EFFECT WHEN OPERATING AT 0° F ROOM TEMPERATURE - ALL ZONES	383,872 BTU/HR.
PRODUCT LOADING PLUS EVOLUTION OF HEAT REFRIGERATION EFFECT FOR CONTINUOUS LOADING OF 4.8 DAYS WITH MAXIMUM LOADING LIMITED TO 175,000 LBS. OF CHILLED FOOD IN 24 HOUR PERIOD WHEN OPERATING AT 35° F ROOM TEMPERATURE - ALL ZONES	170,122 BTU/HR.
HOLDING PLUS EVOLUTION OF HEAT REFRIGERATION EFFECT BETWEEN LOADING PERIODS WHEN OPERATING AT 35° F ROOM TEMPERATURE - ALL ZONES	163,770 BTU/HR.
ESTIMATED MAXIMUM LBS. OF FROZEN FOOD PRODUCT THAT COULD BE STORED IN WAREHOUSE.	2,040,000 LBS.
ESTIMATED MAXIMUM LBS. OF CHILLED FOOD PRODUCT THAT COULD BE STORED IN WAREHOUSE.	853,700 LBS.
THE MAXIMUM NET PRODUCT LOADING IN ANY 24 HOUR PERIOD OF FROZEN FOOD - ALL ZONES.	642,000 LBS.
THE MAXIMUM NET PRODUCT LOADING IN ANY 24 HOUR PERIOD OF CHILLED FOOD	175,000 LBS.

GENERAL NOTES

1. THE TROPICAL ZONE SHALL BE CONSIDERED THAT AREA BOUNDED BY THE ISOTHERMAL LINES WHOSE MEAN ANNUAL TEMPERATURES ARE 70° F. OR HIGHER. THE TEMPERATE ZONE SHALL BE CONSIDERED THAT AREA BETWEEN THE ISOTHERMAL LINES WHOSE MEAN ANNUAL TEMPERATURES ARE BETWEEN 70° F. AND 30° F. THE FRIGID ZONE SHALL BE CONSIDERED THAT AREA BOUNDED BY THE ISOTHERMAL LINES WHOSE MEAN ANNUAL TEMPERATURES ARE 30° F. OR LOWER. REFER TO TECHNICAL MANUAL TM-5-785 FOR SITE TEMPERATURES.
2. REFRIGERATED WAREHOUSES IN THE TROPICAL ZONE SHALL HAVE 12 INCHES THERMAL INSULATION, IN THE TEMPERATE ZONE 9 INCHES AND IN THE FRIGID ZONE 6 INCHES IN EXTERIOR WALLS & CEILING. ALL ZONES SHALL HAVE 3 INCHES OF THERMAL INSULATION BETWEEN THE 35° F. ROOM AND THE 0° F. ROOMS. FLOORS, ALL ZONES, SHALL HAVE 6" INSULATION.
3. THE SHOP TYPE BUILDING AS MODIFIED ON THESE DRAWINGS IS USED FOR THE REFRIGERATED WAREHOUSE STRUCTURE. REFER TO DRAWING 34-19 FOR ROOF TRUSSES, COLUMNS AND OTHER BUILDING DETAILS NOT SHOWN.
4. HEATING SHALL BE REQUIRED IN THE 35° F. STORAGE ROOMS IN THE CLIMATIC ZONES WHERE THE OUTSIDE TEMPERATURE FALLS BELOW FREEZING FOR EXTENDED PERIODS OF TIME.
5. IN AREAS SUBJECT TO TYPHOON CONDITIONS, PROTECT OUTDOOR CONDENSERS BY THE INSTALLATION OF HEAVY WIRE NETTING OVER & AROUND CONDENSERS & CONNECTING PIPING.
6. THE CEILINGS, WALLS AND FLOORS OF THE COLD STORAGE SPACE SHALL BE RAT PROOFED WITH 1/2 INCH WIRE MESH HARDWARE CLOTH, 19 GAGE, GALVANIZED. THE MESH SHALL BE APPLIED BEHIND THE SHEATHING AND OVER THE WALL STUDS, FLOOR JOIST AND CEILING RAFTERS.
7. THE REFRIGERATING SYSTEMS HAVE BEEN DESIGNED ON THE FOLLOWING MAXIMUM PRESURE DROPS AND VELOCITIES OF THE REFRIGERANT:
   - SUCTION LINE PRESSURE DROP OF - 3 PSI/100FT
   - HOT GAS LINE PRESSURE DROP OF - 3 PSI/ 100FT
   - LIQUID LINE VELOCITY FROM CONDENSER TO RECEIVER - 100FPM
   - LIQUID LINE PRESSURE DROP FROM RECEIVER TO SYSTEM - 2PSI/100FT
8. NOTES APPEARING ON DRAWINGS 43-15 OR 43-16 SHALL APPLY TO BOTH DRAWINGS WHERE APPLICABLE.

DESIGN DATA

TEMPERATURE CONDITIONS -

TROPICAL ZONE	110° FDB/ 81° FWB
TEMPERATE ZONE	100° FDB/ 80° FWB
FRIGID ZONE	70° FDB/ 58° FWB

REFRIGERANT - MONOCHLORODIFLUOROMETHANE (R-22)
COMPRESSOR OPERATING TIME - 16 HOURS
ASSUMED ALTITUDE - 100 FEET ABOVE SEA LEVEL

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
NO. 1: 0, 5', 10', 15'
NO. 2: 0, 5', 10'

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

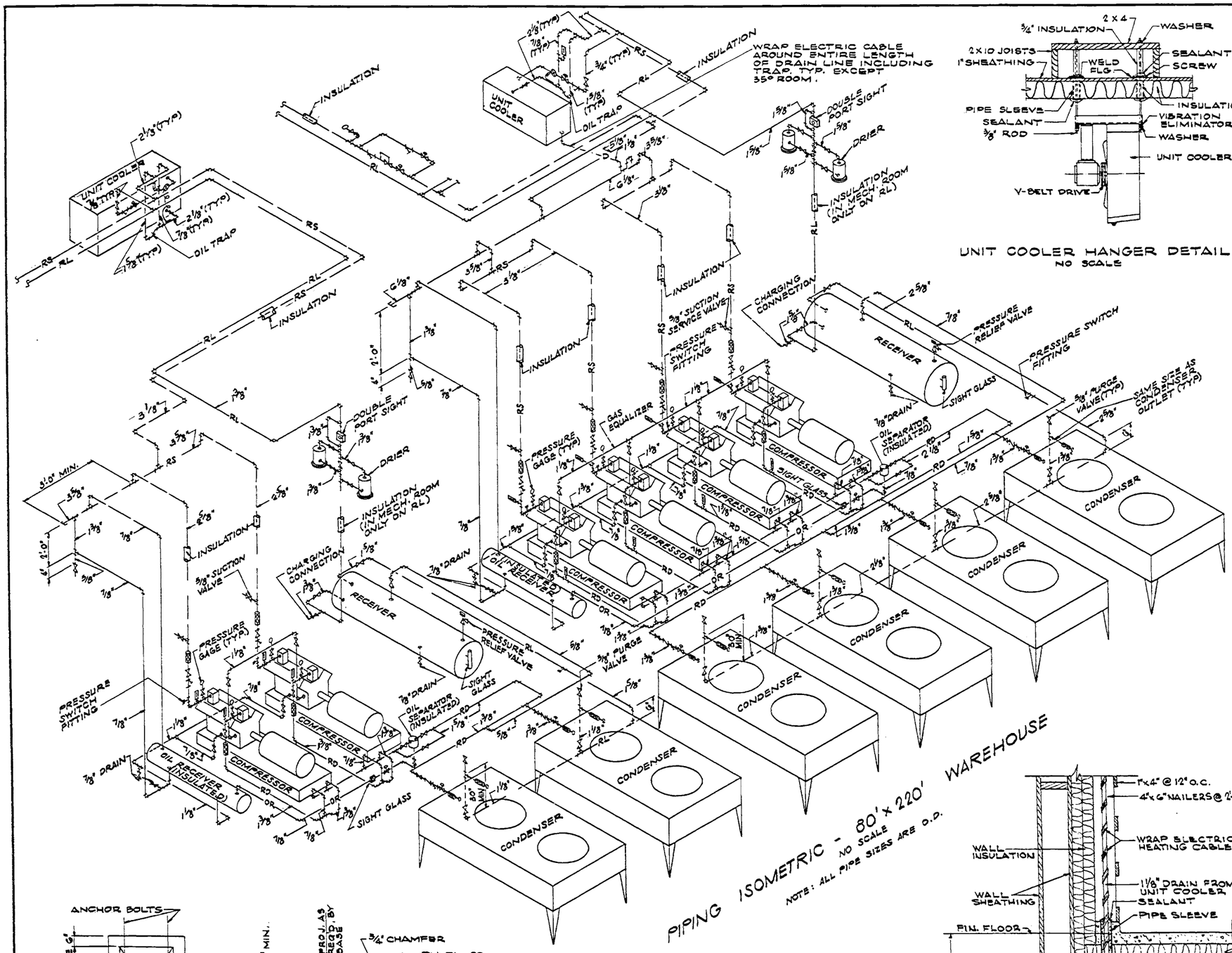
DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WEBB
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1957
APPROVED FOR PROPONENT AGENCY: [signature] CHIEF, OCE
DATE: 17 April 1957

THEATER OF OPERATIONS

REFRIGERATED WAREHOUSE
80'X220'

REFRIGERATION PLANS

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-16
SHEET 3 OF 8



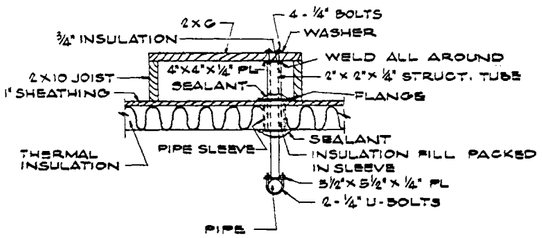
PIPING ISOMETRIC - 80' x 220' WAREHOUSE

NO SCALE

NOTE: ALL PIPE SIZES ARE O.D.

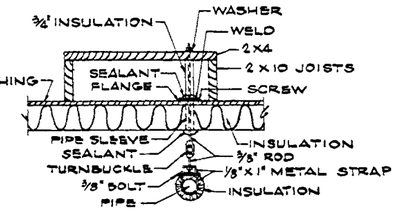
UNIT COOLER HANGER DETAIL

NO SCALE



PIPE ANCHOR DETAIL

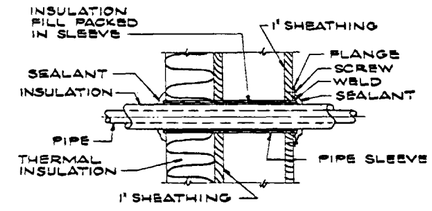
NO SCALE



HANGER SPACING	
PIPE SIZE O. D.	MAX. SPAN
3/8" - 1 1/8"	7'
1 3/8" - 1 5/8"	9'
2 1/8"	10'
2 5/8"	11'
3 1/8"	12'
3 5/8"	13'
4 1/8"	14'
5 1/8"	16'
6 1/8"	17'

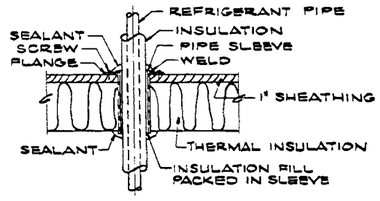
PIPE HANGER DETAIL

NO SCALE



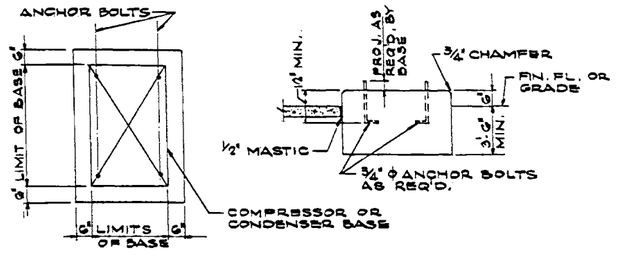
WALL SLEEVE PENETRATION DETAIL

NO SCALE



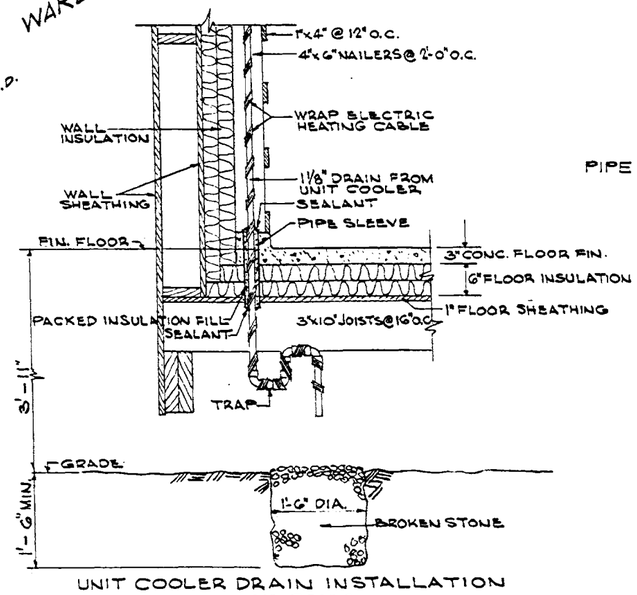
PIPE PENETRATING CEILING INSULATION

NO SCALE



TYPICAL COMPRESSOR OR CONDENSER BASE

NO SCALE



UNIT COOLER DRAIN INSTALLATION

NO SCALE

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

NO SCALE

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WEBB
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS

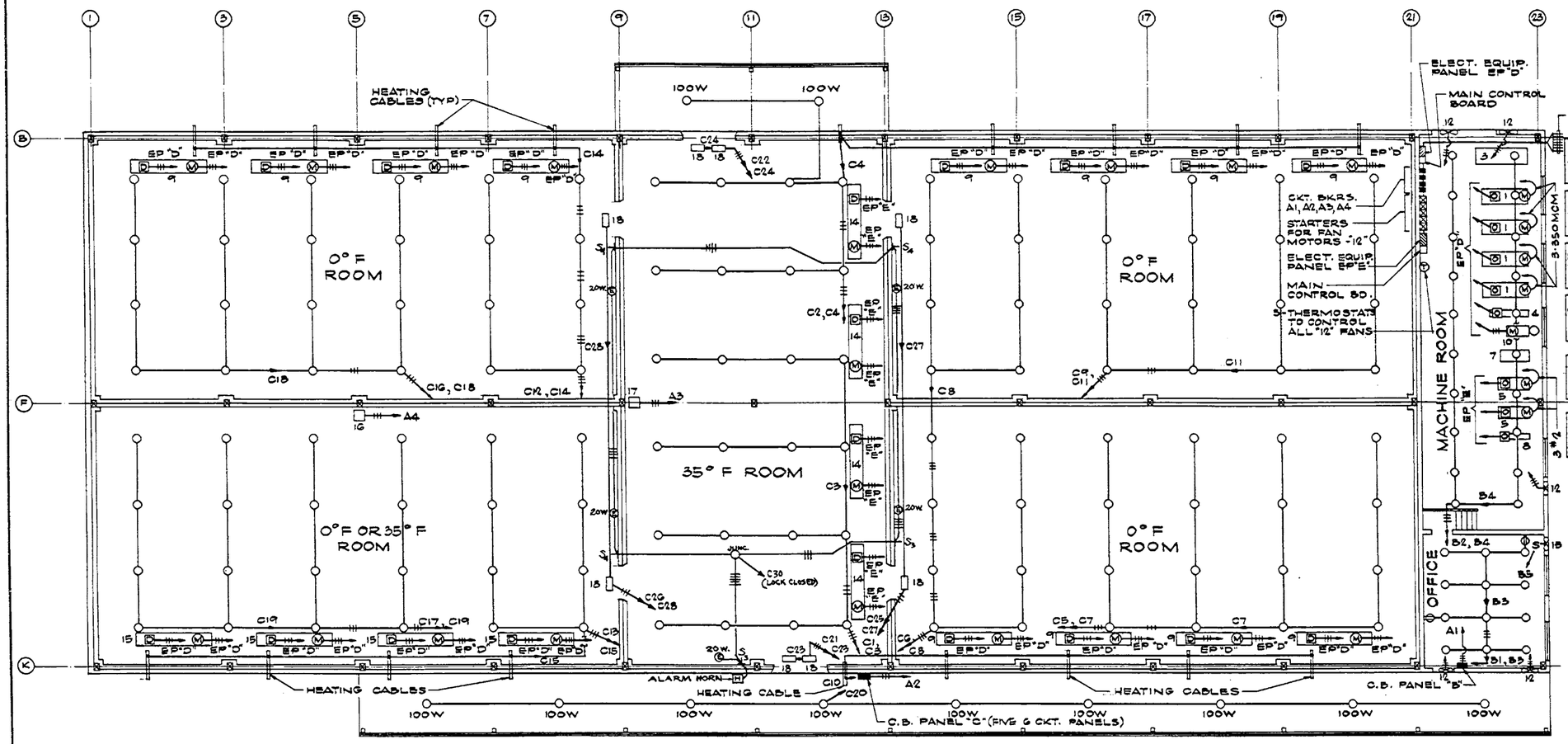
REFRIGERATED WAREHOUSE 80'X220'

REFRIGERATION ISOMETRIC & DETAILS

APPROVED: H. A. Williams — DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
Col. C.E.
DATE 11 Sept 1942

SCALE: AS NOTED
SPEC. NO. NCSS-104
DRAWING NUMBER 43-16
SHEET 4 OF 8



LEGEND

- UNIT COOLER DEFROST HEATER, 3 # 8 TO EQUIPMENT PANEL
- OIL HEATER
- FAN MOTOR

CIRCUIT BREAKER & FEEDER SCHEDULE

CIRCUIT NO.	NO. POLES	AMPS	WIRE
A1	2	30	3 # 10
A2	3	100	4 # 4
A3	3	50	3 # 10
A4	3	50	3 # 10

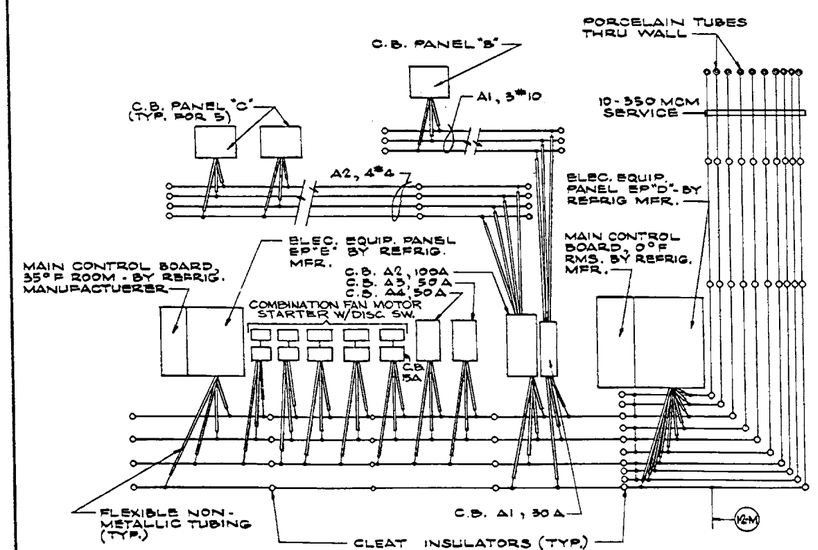
SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	80' X 220' REFRIGERATED WAREHOUSE TROPIC ZONE	TEMP. ZONE	FRIGID ZONE	ELECT. EQUIP. RATING *
		QUANTITY			
1	COMPRESSOR	4	4	4	100 HP
2	CONDENSER	4	4	4	5 HP
3	RECEIVER (R-22)	1	1	1	NONE
4	OIL RECEIVER	1	1	1	2 KW
5	COMPRESSOR	2	2	2	30 HP
6	CONDENSER	2	2	2	3 HP
7	RECEIVER (R-22)	1	1	1	NONE
8	OIL RECEIVER	1	1	1	2 KW
9	UNIT COOLER	12	12	12	1⅓ HP
10	VACUUM PUMP	1	1	1	2 HP
11	SPACE HEATER	NONE	2	2	NONE
12	FAN	5	5	3	1 HP
13	FAN	1	1	NONE	½ HP
14	UNIT COOLER	4	4	4	1⅓ HP
15	UNIT COOLER	4	4	4	1⅓ HP
16	UNIT HEATER	NONE	1	1	12 KW
17	UNIT HEATER	NONE	1	1	12 KW
18	AIR CURTAIN FAN W/ DOOR SWITCH	8	8	8	⅓ HP

* INDICATED HORSEPOWER IS APPROXIMATE

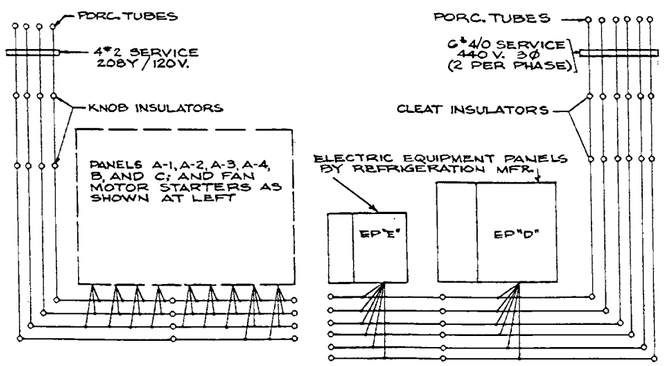
ELECTRICAL PLAN

SCALE NO. 1



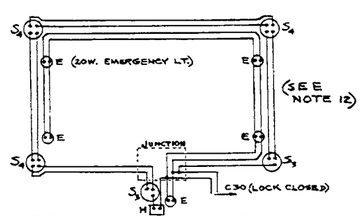
400 V CIRCUIT BREAKER INSTALLATION - 50 C SERVICE

NO SCALE



440 V. & 208Y/120V. CIRCUIT BREAKER INSTALLATION 60 C. SERVICE

NO SCALE



CIRCUIT DIAGRAM - HORN ALARM

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	24.0 KW
RSCP. EST	1.0 KW
POWER	514.0 KW
TOTAL	539.0 KW

1. CONNECTED LOAD DOES NOT INCLUDE DEFROST HEATER LOAD.
2. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 150 W.
3. SEAL ALL WALL PENETRATIONS VAPOR TIGHT.
4. ELECTRICAL EQUIP. PANELS & MAIN CONTROL BOARDS SHALL INCLUDE THE PRE-WIRED ELECTRIC CONTROLS & INSTRUMENTS FOR THE UNIT COOLERS, COMPRESSORS, CONDENSERS & VACUUM PUMP THAT ARE NOT FURNISHED INTEGRAL WITH THE EQUIPMENT.
5. MAIN CONTROL BOARDS SHALL INCLUDE MANUAL SWITCH TO SELECT ELECTRIC OR AIR DEFROSTING.
6. MAIN CONTROL BOARD FOR PANEL EP "E" SHALL INCLUDE A SELECTOR SWITCH TO CHANGE FROM THE 35° THERMOSTAT TO THE 0° THERMOSTAT.
7. REFRIGERATION CONTROLS SHALL INCLUDE INTERLOCKS TO PREVENT COMPRESSOR OPERATION UNLESS CONDENSER IS OPERATING, OIL PRESSURE FAILURE CUT-OUT SWITCHES, HIGH-LOW LIMIT SWITCHES & NON-CYCLING COMPRESSOR PUMP DOWN CONTROL.
8. DOOR SWITCH SHALL START AIR CURTAIN FAN WHEN DOOR IS OPEN.
13. THE OIL HTR. ELEC. COIL SHALL BE CAPABLE OF DUAL VOLTAGE INSTALLATION AND SHALL BE ENERGIZED AS LONG AS THE COMPRESSORS ARE IDLE. AT THE COMPRESSORS START-UP THE COIL SHALL BE DE-ENERGIZED. THE OIL TEMPERATURE IN THE COMPR. SHALL NOT EXCEED 80°F ABOVE SAT. VAPOR TEMP.
14. THE AUTOMATIC TIMER FOR THE UNIT COOLER SHALL PREVENT THE SOLENOID VALVE FROM OPENING DURING THE DEFROSTING CYCLE.

ELECTRICAL NOTES (CONT)

9. ALL WIRING SHALL BE INSTALLED IN CONDUIT AND/OR FLEXIBLE CABLES IN ACCORDANCE WITH N.E.C. FROM THE EQUIPMENT PANELS EP"E" & EP"D" TO THE REFRIGERATION EQUIPMENT AND BE FURNISHED BY THE REFRIGERATION EQUIPMENT CONTRACTOR.
10. FURNISH MAIN BREAKER IN EACH EQUIPMENT PANEL EP"E" & EP"D"
11. THE EQUIPMENT PANEL EP"E" CAN BE COMBINED WITH THE EQUIPMENT PANEL EP"D" AS A SINGLE EQUIPMENT PANEL AT THE CONTRACTORS OPTION.
12. REFRIGERATION CONTRACTOR SHALL FURNISH A HORN, PUSH-BUTTON OPERATED ON ROOM SIDE WITH 20W SIGNAL LAMP FOR EACH OF THE COOLER ROOMS. HORNS TO BE MOUNTED OUTSIDE OF BUILDING. WIRING MATERIALS TO BE INCLUDED.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' 15'

NO. 1

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: KEMP
TRACED BY:
CHECKED BY: SCOTT
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS

REFRIGERATED WAREHOUSE 80'X220'

ELECTRICAL PLAN

APPROVED: DATE: 19 MAR 1969

CHIEF, STRUCTURES BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

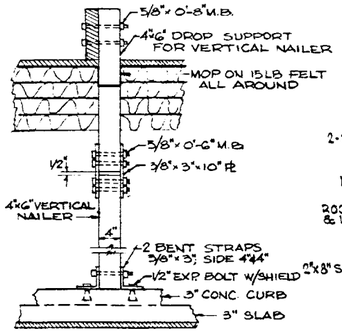
APPROVED FOR PROPONENT AGENCY:

DATE 12 Sept 1967

SCALE: AS NOTED SPEC. NO.

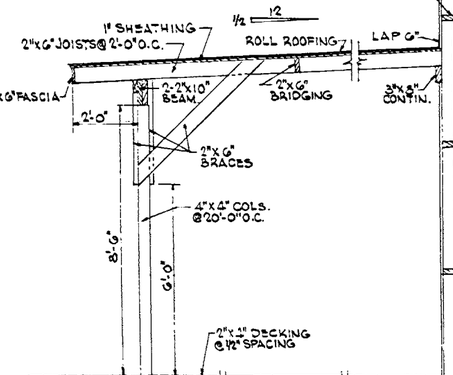
DRAWING NUMBER: 43-16

SHEET 5 OF 8

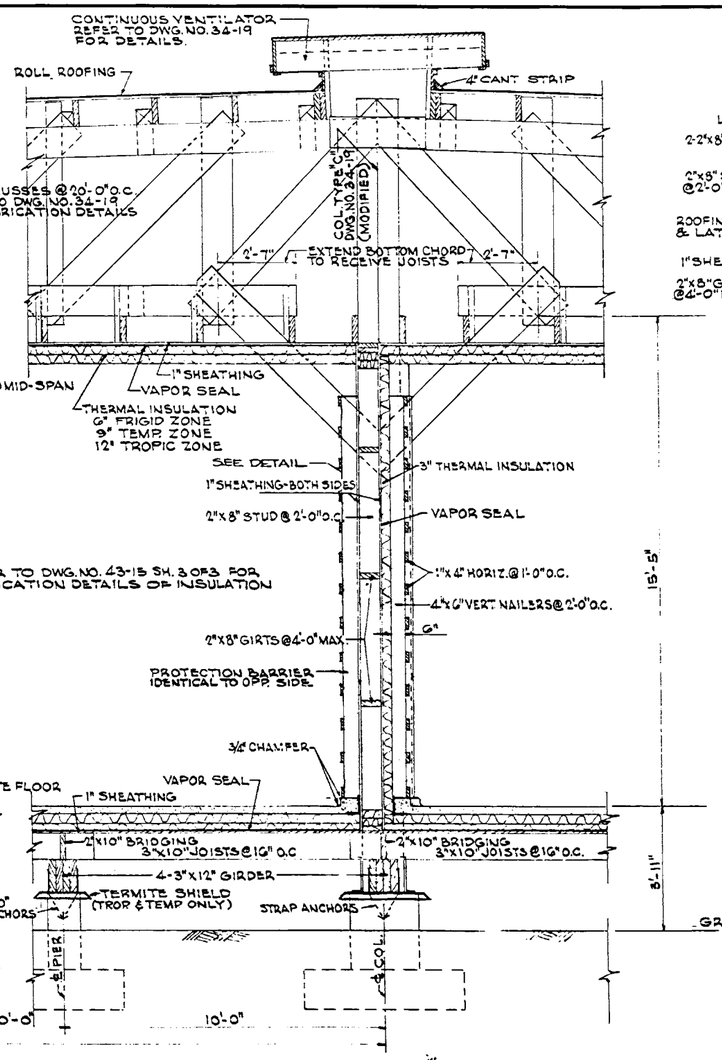


DETAILED METHOD OF ANCHORING EACH CORNER AND EVERY 4TH 4"x6" VERTICAL NAILER

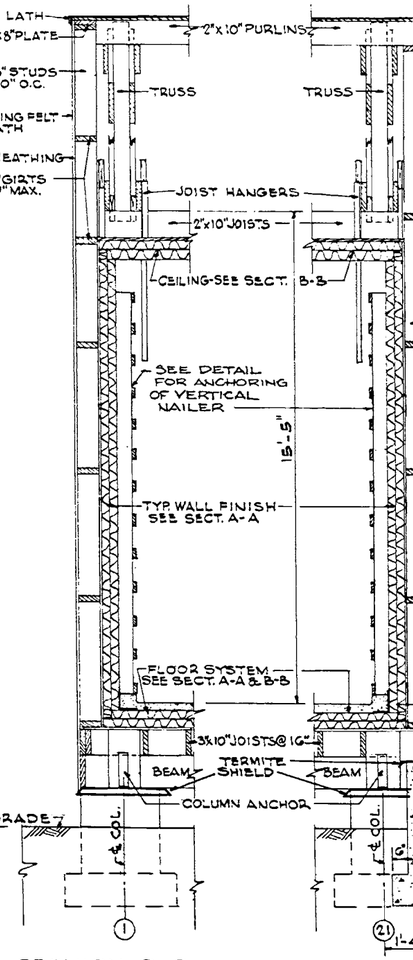
NO SCALE



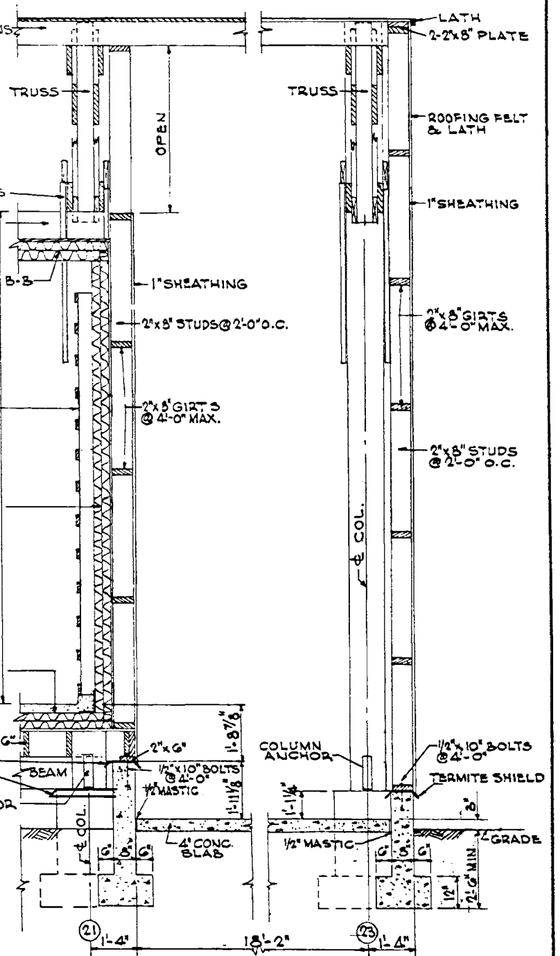
SECTION A-A
SCALE NO. 4



SECTION B-B
SCALE NO. 4

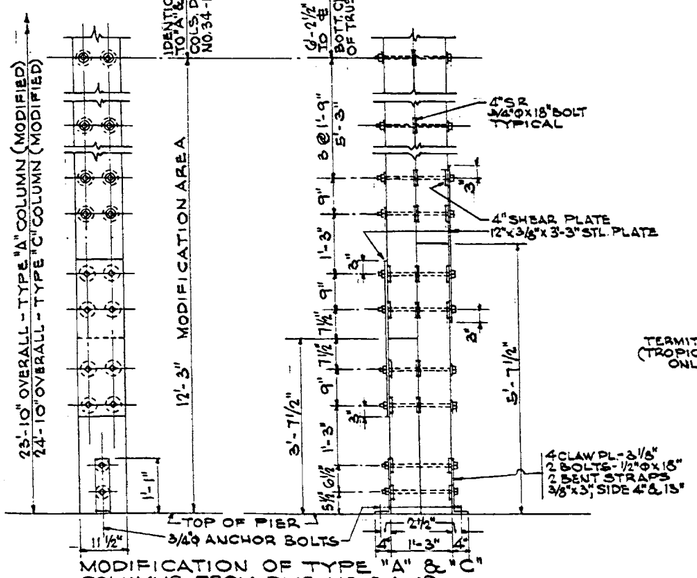


SECTION C-C
SCALE NO. 4



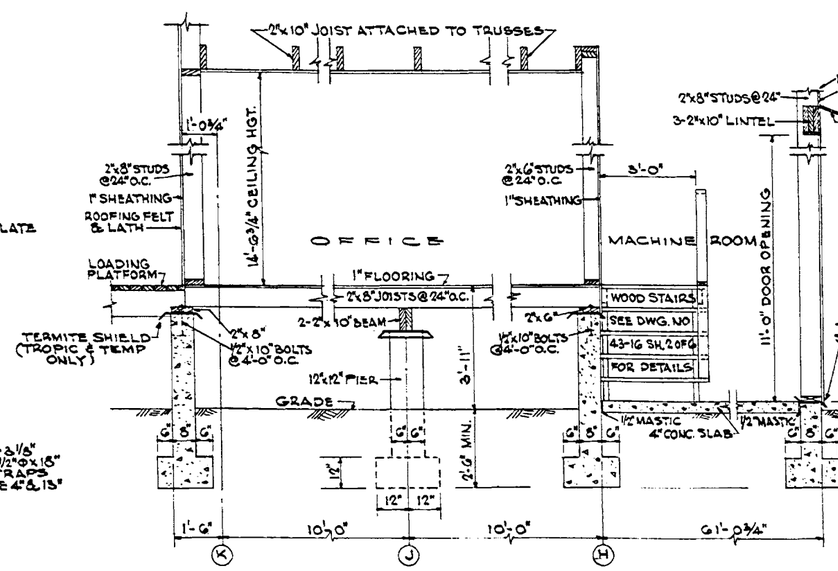
SECTION D-D
SCALE NO. 4

NOTES:
1- TERMITE SHIELDS ARE USED ONLY IN TROPIC & TEMPERATE ZONES.
2- THE 1/2" MASTIC JOINT SHALL BE FABRICATED FROM THE 45# ROOFING FELT & ASPHALT.
3- CONCRETE SLABS SHALL BE PLACED IN ALTERNATE SECTIONS NOT EXCEEDING 800 SQ.FT. IN AREA.

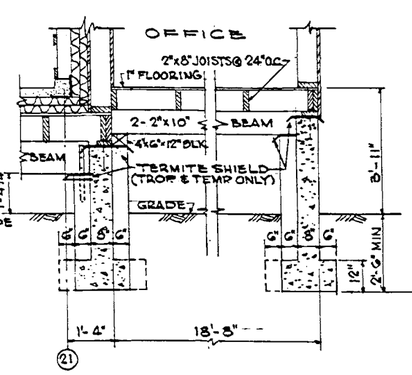


MODIFICATION OF TYPE "A" & "C" COLUMNS FROM DWG. NO. 34-19

NOT TO SCALE



SECTION E-E
SCALE NO. 4



SECTION F-F
SCALE NO. 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3' 4'
NO. 4

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, DRAFTING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: [signature] Col., AGC DATE 12 Sept 1968
SCALE: AS NOTED
SPEC. NO.

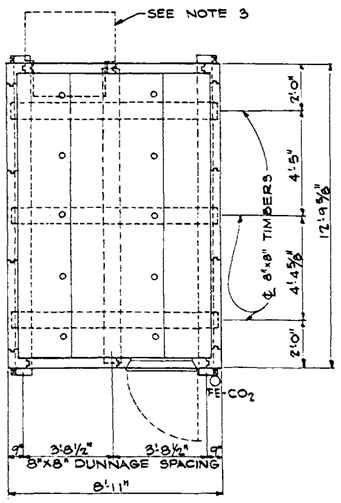
THEATER OF OPERATIONS

REFRIGERATED WAREHOUSE 80'X220'

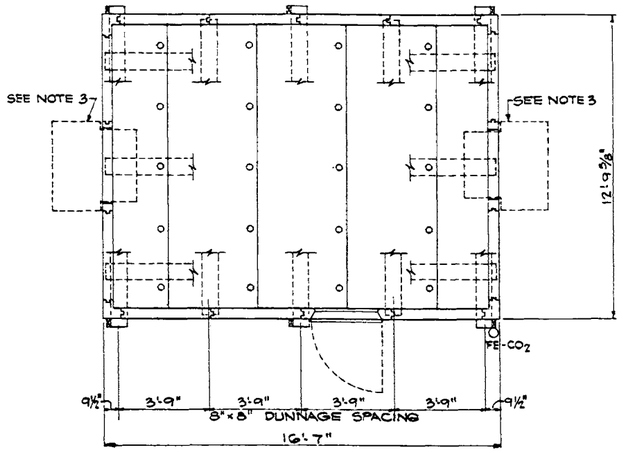
SECTIONS & DETAILS

DRAWING NUMBER 43-16

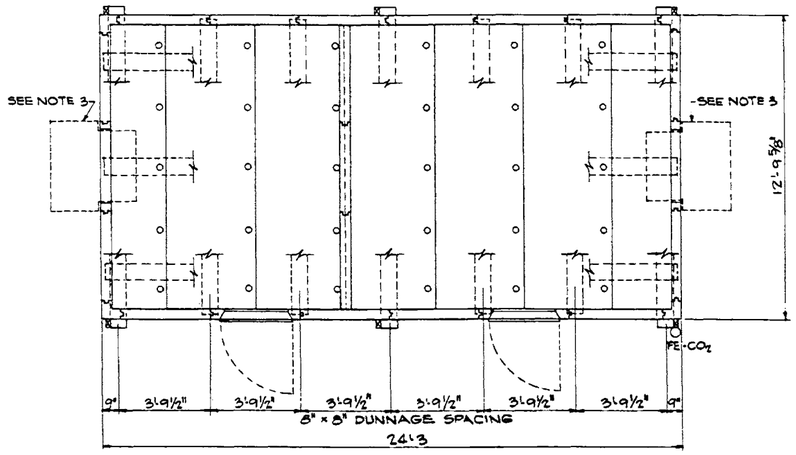
SHEET 6 OF 6



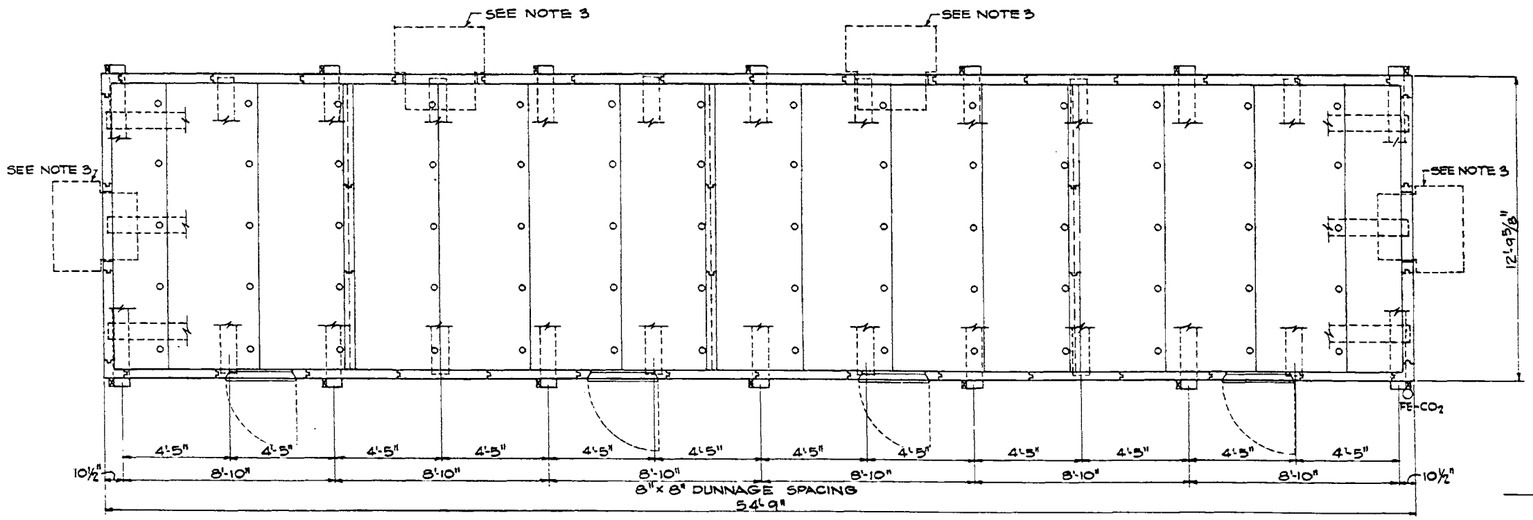
PLAN - SIZE 600
FACILITY NO. 431701



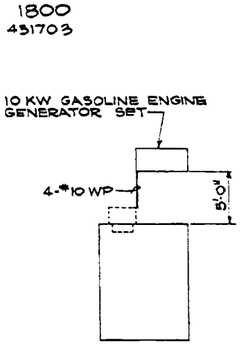
PLAN - SIZE 1200
FACILITY NO. 431702

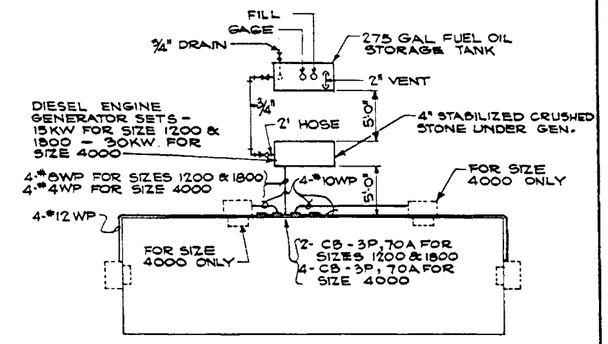


PLAN - SIZE 1800
FACILITY NO. 431703



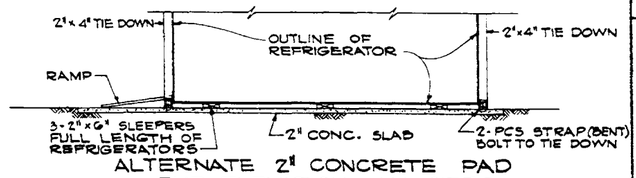
PLAN - SIZE 4000
FACILITY NO. 431704





NOTE: ALL WIRE 600V WEATHER PROOF

KEY PLAN
NO SCALE

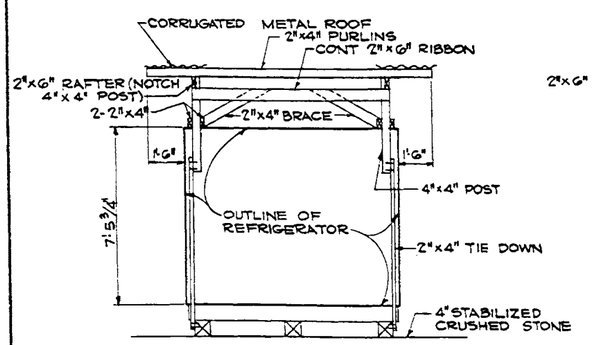


ALTERNATE 2" CONCRETE PAD
END ELEVATION - ALL SIZES
SCALE NO. 3

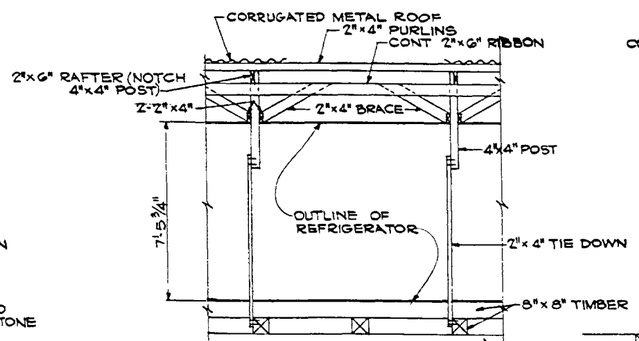
GENERAL NOTES

1. TOP VIEW OF ALL REFRIGERATOR SIZES SHOWN WITH CEILING PANELS REMOVED FOR CLARITY.
2. HEIGHTS, LENGTHS & WIDTHS ARE APPROXIMATE ERECTED DIMENSIONS.
3. REFRIGERATION UNIT, EMD, 10000 BTUH.
4. EACH REFRIGERATOR PACKAGED FOR OVERSEAS SHIPMENT CONTAINS ITS RESPECTIVE ERECTION DRAWING.
5. WHEN IT BECOMES NECESSARY IN THE FIELD TO INSTALL PREFABRICATED REFRIGERATORS IN PARALLEL ROWS WITH REFRIGERATION UNITS BACK-TO-BACK, PROVIDE AT LEAST 15'-0" SPACE BETWEEN THE WALLS (ALLEY) OF THE REFRIGERATORS.

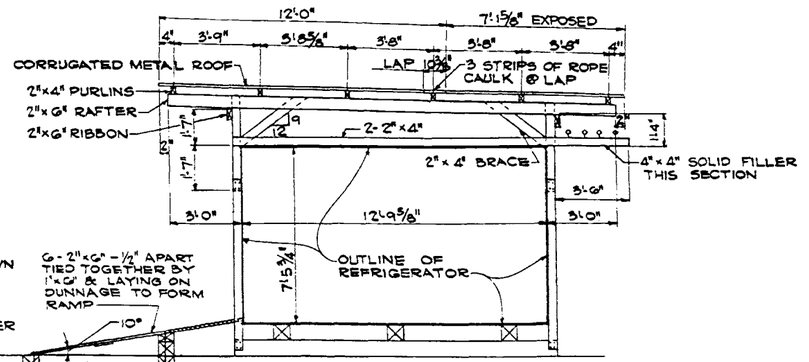
REFRIGERATORS, PREFABRICATED WALK-IN PANEL TYPE ASSEMBLIES



FRONT ELEVATION - SIZE 600
SCALE NO. 3



FRONT ELEVATION - TYP BAY
SIZES 1200, 1800 & 4000
SCALE NO. 3



END ELEVATION - ALL SIZES
SCALE NO. 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3' 4' 5' 6'
NO. 3

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JOHNSON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN

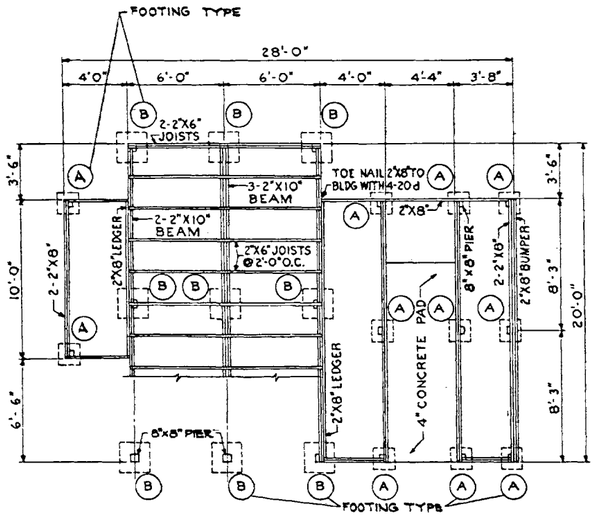
THEATER OF OPERATIONS

REFRIGERATORS
PREFABRICATED WALK-IN PANEL TYPE
ASSEMBLIES

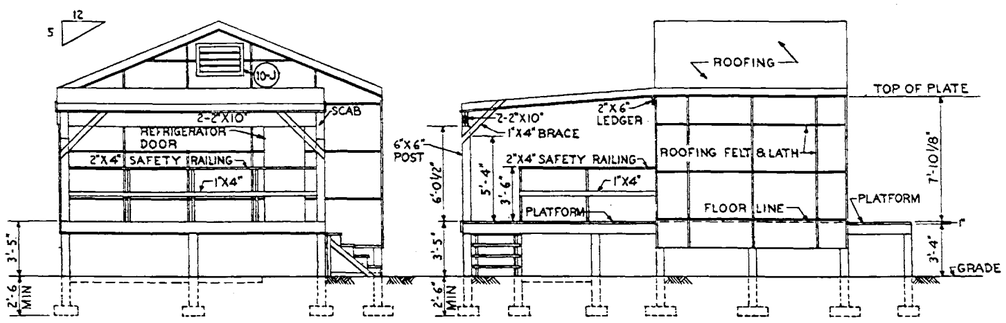
APPROVED: H. M. Williams — DATE: 19 MAR 1959
CHIEF, STRUCTURES BRANCH — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: John E. Sutherland, Ch. Res. Sect.
DATE: 12 Sept 1958

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-17
SHEET 1 OF 1

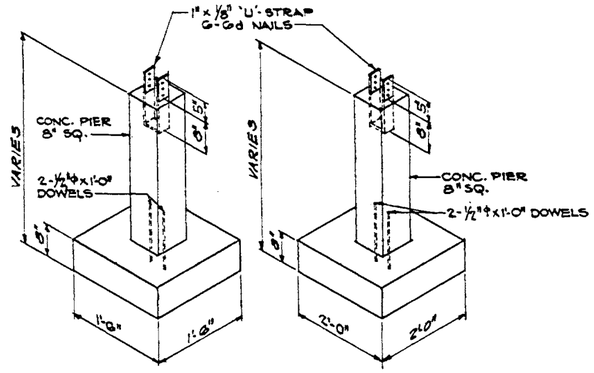


FOUNDATION & FRAMING PLAN
SCALE NO. 2



ELEVATION B
SCALE NO. 2

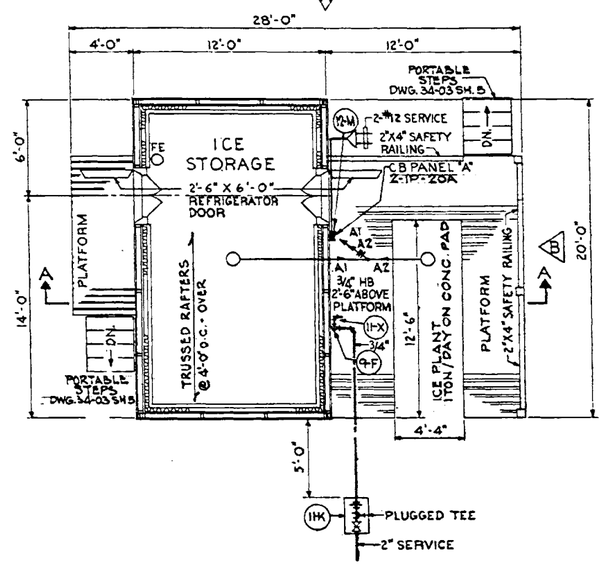
ELEVATION A
SCALE NO. 2



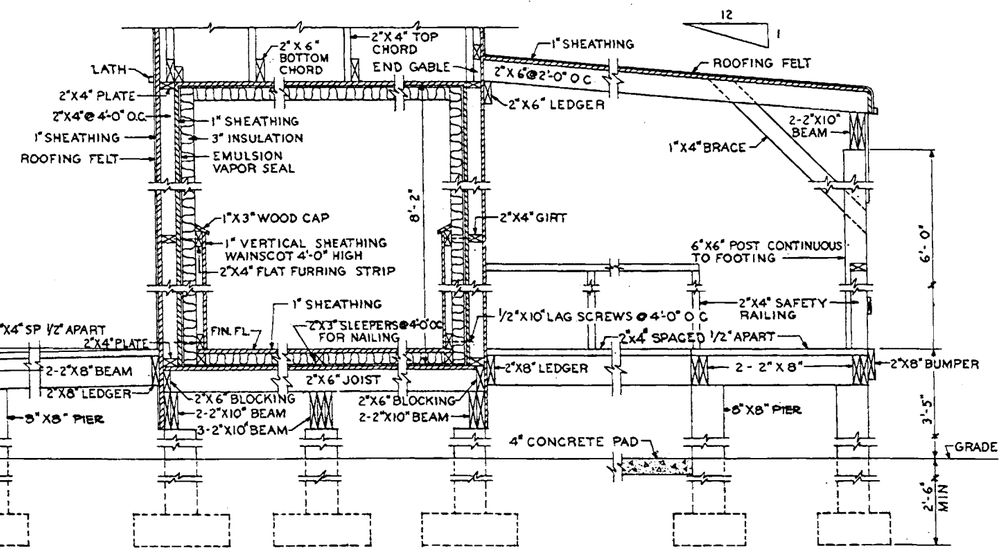
TYPE "A" TYPE "B"

CONCRETE FOOTINGS
NO SCALE

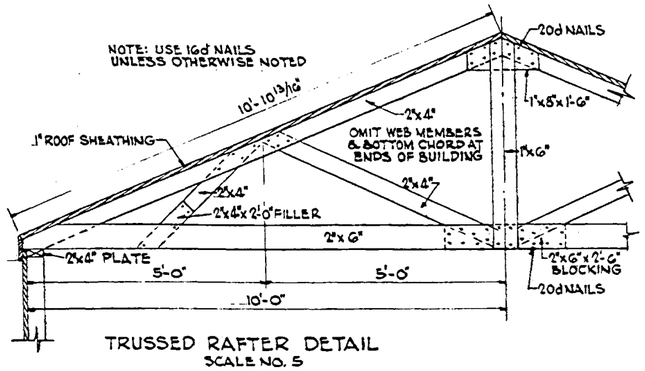
NOTES:
1. USE TERMITE SHIELDS AT TOP OF CONCRETE POSTS IN AREAS WHERE REQUIRED.
2. ALL COLUMN & PIER FOOTINGS SHALL HAVE REINFORCING BARS 1/2" ROUND AT 5" CENTERS BOTH WAYS.
3. ALL 6" SLABS TO HAVE WOVEN WIRE MESH REINFORCEMENT.



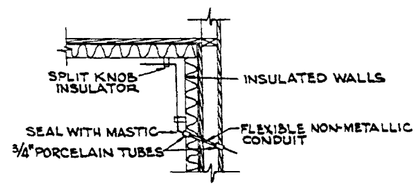
PLAN
SCALE NO. 2
FACIL. NO. 432121 - WOOD FRAME W/INTERIOR



SECTION A-A
SCALE NO. 5



TRUSSED RAFTER DETAIL
SCALE NO. 5



WIRING THRU INSULATED WALLS
TYPICAL
NO SCALE

GENERAL NOTES
1. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER
2. WATER USAGE - 250 GPD.

ELECTRICAL NOTES

CONNECTED LOADS	
LIGHTING	0.12 KVA
POWER EST.	0.0 KVA
TOTAL	0.12 KVA

1. ALL LAMPS TO BE GOW.
2. ALL LAMPS TO HAVE 8" CONICAL SHADES
3. FOR WIRING THRU INSULATED WALLS REFER TO DETAIL ON THIS SHEET.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
43-21	PLANS & ELEVATIONS	1 OF 1
99-98	STANDARD DETAILS	

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' NO. 2
0 1' 2' 3' NO. 5

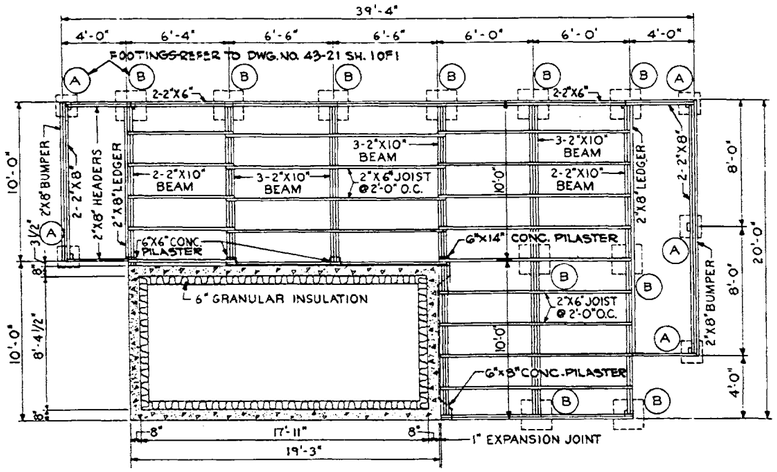
HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, [illegible] BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., S.C.E. DATE: 19 MAR 1969

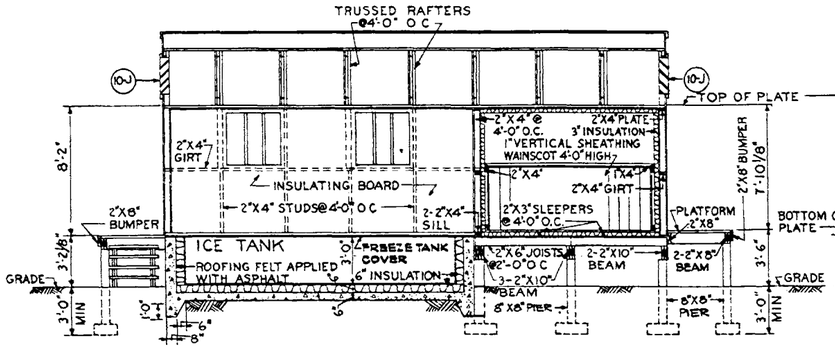
THEATER OF OPERATIONS
ICE PLANT-1 TON
20'X24'-WOOD FRAME

APPROVED FOR PROPONENT AGENCY: [signature] HQ AMC
DATE: 17 Sept 1968
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-21
SHEET 1 OF 1



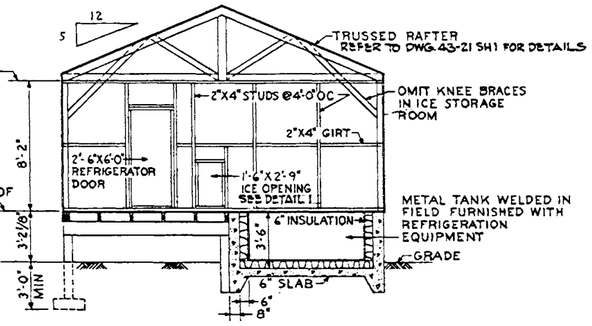
FOUNDATION & FRAMING PLAN

SCALE NO. 2



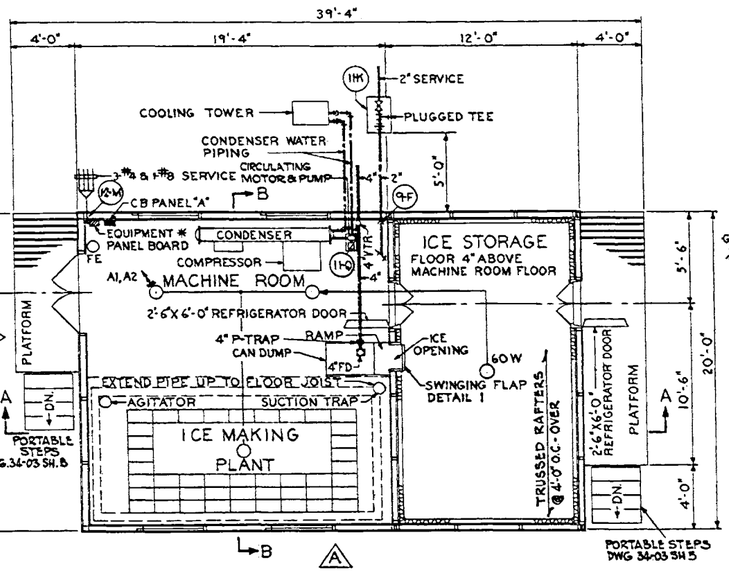
SECTION A-A

SCALE NO. 2



SECTION B-B

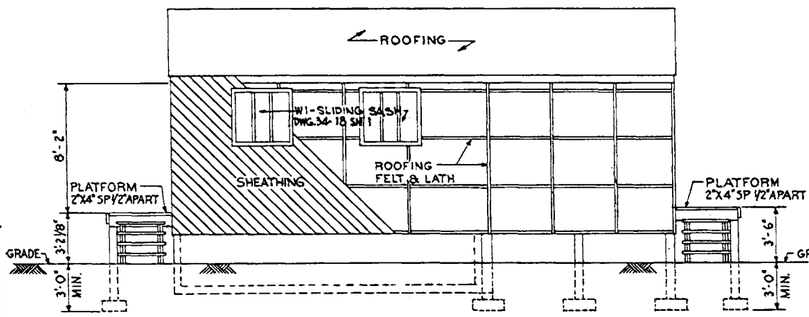
SCALE NO. 2



PLAN

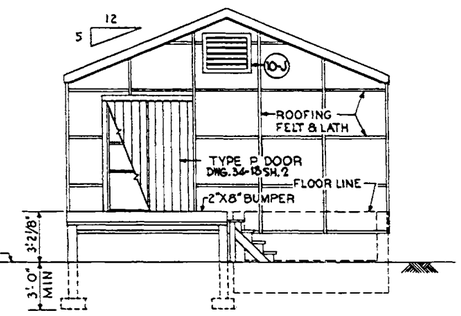
FACIL. NO. 432221 - WOOD FRAME W/INTERIOR

SCALE NO. 2



ELEVATION A

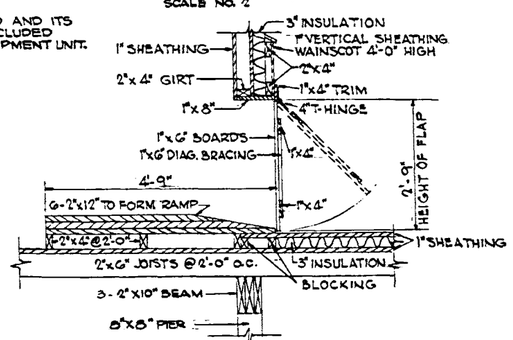
SCALE NO. 2



ELEVATION B

SCALE NO. 2

FACIL. NO. 432221



DETAIL 1

ICE RAMP & SWINGING FLAP

SCALE NO. 5

* EQUIPMENT PANELBOARD AND ITS BRANCH CKT WIRING INCLUDED IN REFRIGERATION EQUIPMENT UNIT.

GENERAL NOTES

1. FOR FSN BILL OF MATERIALS-REFER TO TM 5-303 BY FACILITY NUMBER
2. WATER USAGE - 1000 GPD

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	.36 KVA
POWER EST	21.10 KVA
TOTAL	21.46 KVA

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 100 W.
2. ALL 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.
3. FOR WIRING THRU INSULATED WALLS REFER TO DWG 43-21 SH. 1
4. PLUMBING CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS TO BE PROVIDED W/ICE PLANT.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
43-21	PLANS & ELEVATIONS	1 OF 1
43-22	PLANS & ELEVATIONS	1 OF 1
43-23	PLANS & ELEVATIONS	1 OF 1
99-98	STANDARD DETAILS	

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' NO.2

0 1' 2' 3' NO.5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

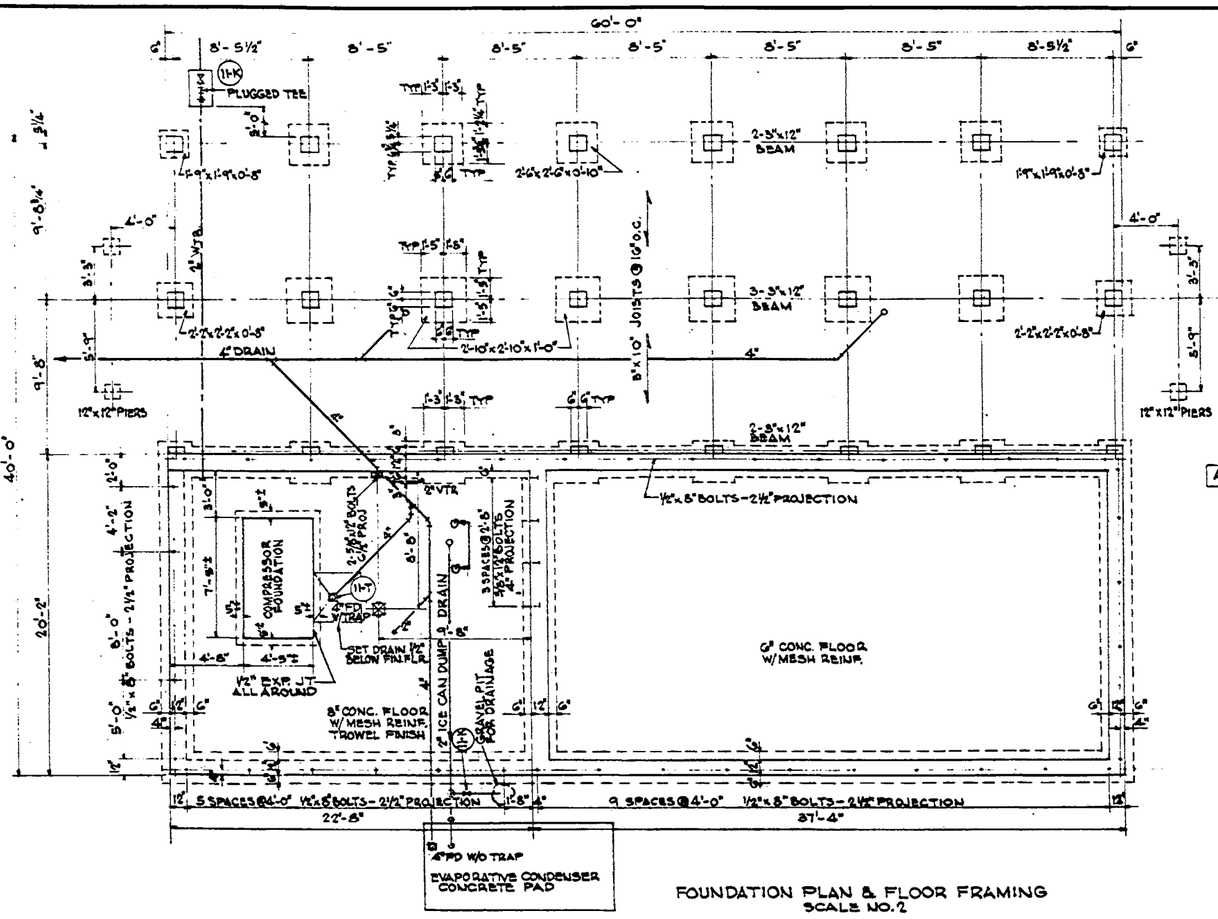
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DEICHMANN

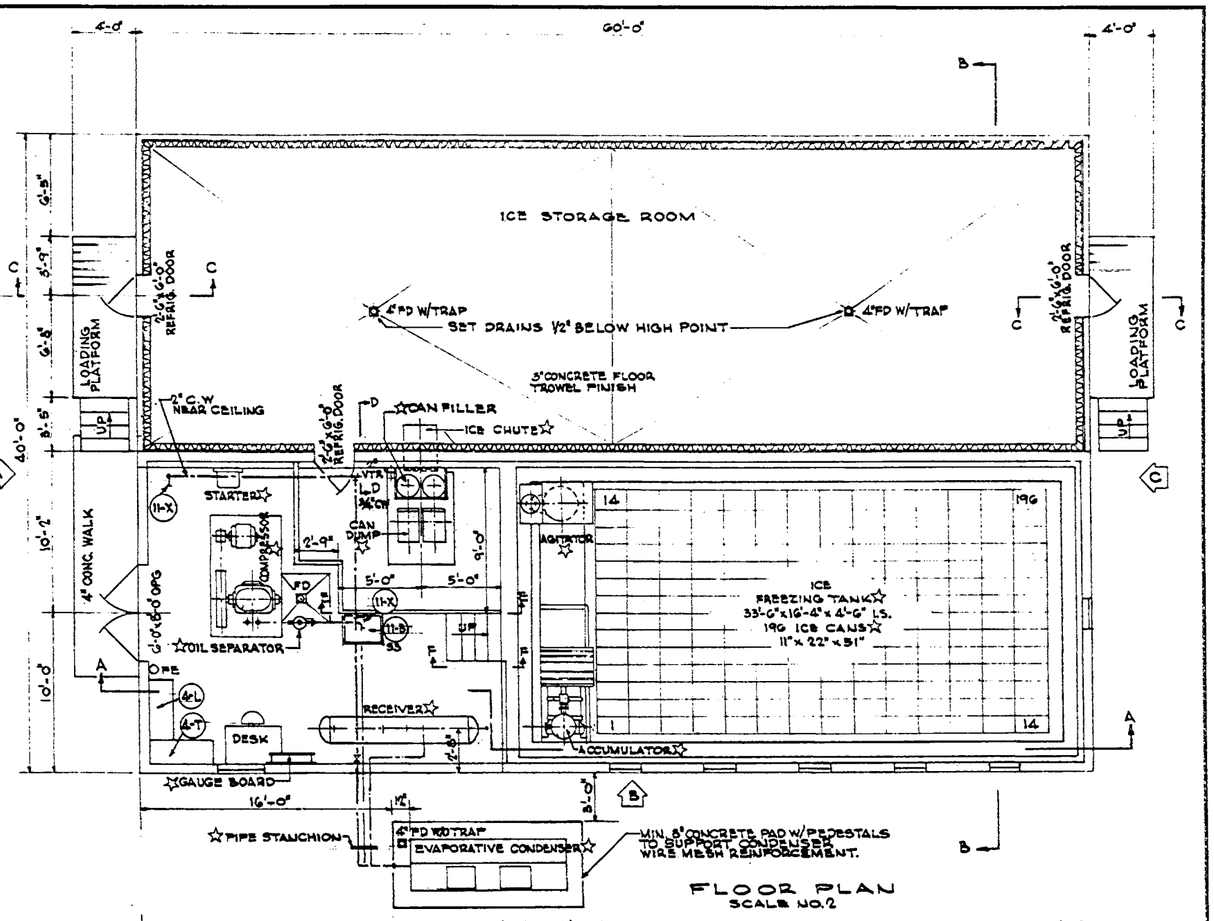
THEATER OF OPERATIONS

ICE PLANT-3.6 TON
20'X31'-WOOD FRAME

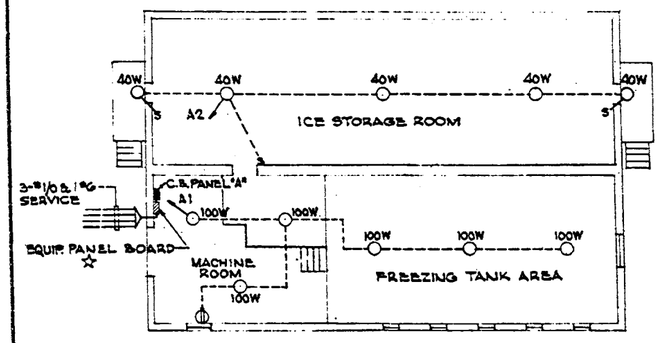
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: CN Gavo HQ AMC DATE: 17 Sept 1968
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-22
SHEET 1 OF 1



FOUNDATION PLAN & FLOOR FRAMING
SCALE NO. 2



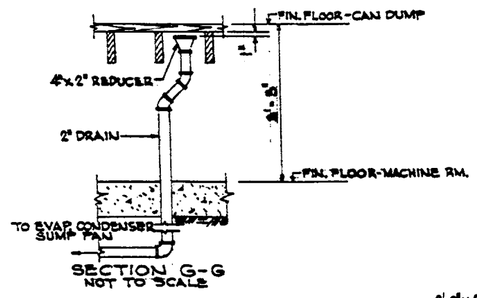
FLOOR PLAN
SCALE NO. 2



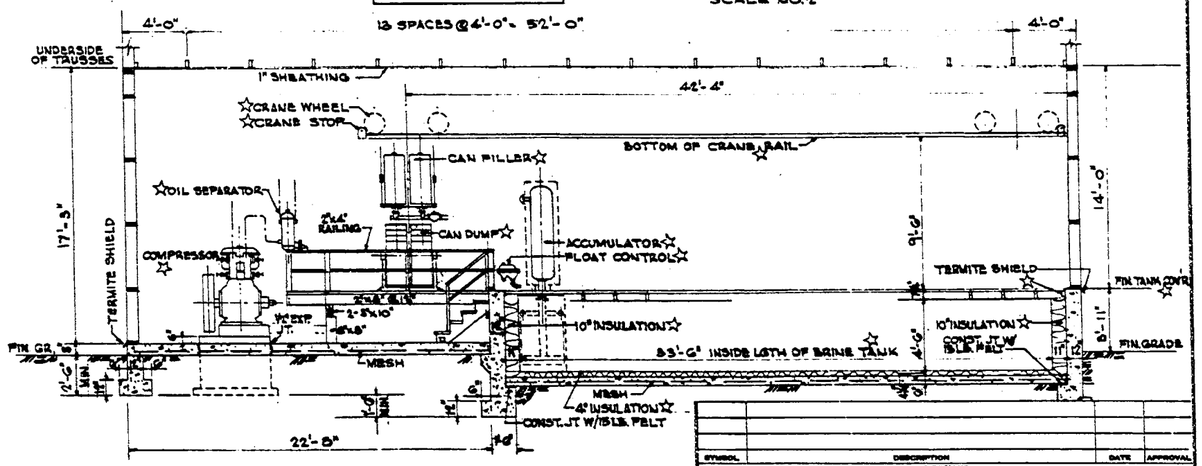
LIGHTING PLAN
SCALE NO. 1

ICE PLANT - 15 TON
FACILITY NO. 432321 - BUILDING W/INTERIOR

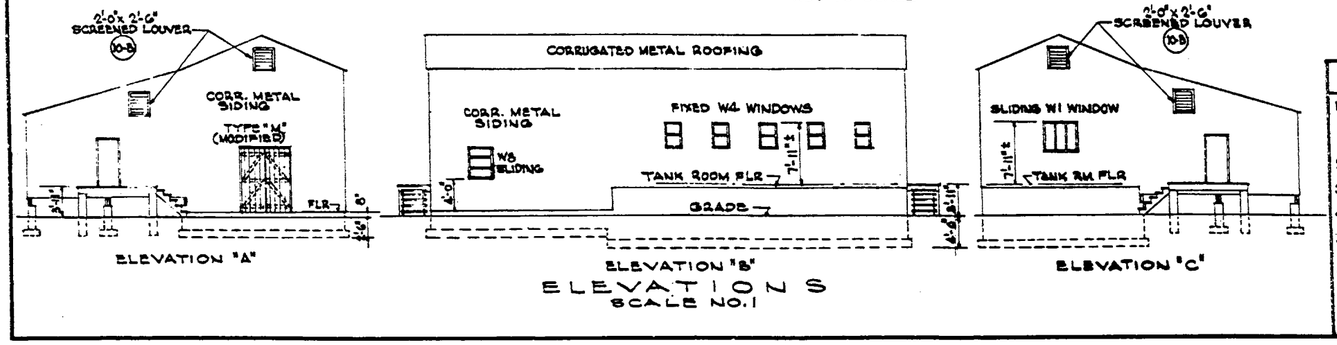
NOTE:
WHEN THIS FACILITY IS USED, A STORAGE SPACE OF APPROXIMATELY 500 SQUARE FEET SHOULD BE PROVIDED BY USING AN ADJACENT WAREHOUSE SPACE OR PROVIDING BARRACKS TYPE STORAGE SPACE WITH CONCRETE FLOOR ADJACENT TO THE ICE PLANT.



SECTION G-G
NOT TO SCALE



SECTION A-A
SCALE NO. 2



ELEVATIONS
SCALE NO. 1

GENERAL NOTES

1. ☆ DESIGNATES ITEM INCLUDED WITH ICE-MAKING EQUIPMENT UNIT WHICH ALSO INCLUDES ALL WIRING AND EQUIPMENT PIPING. REFER TO MILITARY SPEC. MIL-I-10493.
2. FOR BILL OF MATERIALS REFER TO TM 5-303 BY FACILITY NUMBER.
3. ALL LIGHTING FIXTURES TO HAVE 10" CONICAL SHADES.
4. SOIL BEARING IS ASSUMED TO BE 2000 PSF.
5. REFER TO MFGR'S DWGS FOR SIZE & CONDITIONS FOR COMPRESSOR FOUNDATION.
6. REFER TO MFGR'S DWGS FOR SIZE OF EVAPORATIVE CONDENSER PAN, & LOCATION OF SUPPORTING LEGS.
7. SPECIFICATIONS REQUIRE INSTALL SPLIT [illegible] INCLUDED IN THE [illegible]

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
43-23	PLANS & DETAILS	1-2 OF 2
34-18	WINDOWS & DOORS	1-2 OF 2
99-98	STANDARD DETAILS	
43-15	SECTIONS & DETAILS	3 OF 3

SERVICE REQUIREMENTS

WATER	5500 GPD
SEWAGE	900 GPD
ELECTRIC	
LIGHTING	1 KVA
POWER	75 KVA
TOTAL EST. MAX. DEMAND	76 KVA

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C. F. DEICHMANN
APPROVED: DATE: 17 FEB 1971
CHIEF, STRUCTURES BRANCH — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
C. N. Clark — H. A. M.
DATE 16 December 1970

THEATER OF OPERATIONS
STORAGE FACILITIES
ICE PLANT - 15 TON
40'X60' WOOD FRAME
PLANS, ELEVATIONS & SECTION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-23
SHEET 1 OF 2

PLAN OF BOTTOM CHORD
SCALE NO. 4

PLAN OF BOTTOM CHORD
SCALE NO. 4

PLAN OF TOP CHORD
SCALE NO. 4

PLAN OF TOP CHORD
SCALE NO. 4

DETAIL NO. 1
NOT TO SCALE

SECTION C-C
SCALE NO. 5

PLAN SECTION
THRU ICE STORAGE ROOM DOOR
NOT TO SCALE

LOADING PLATFORM STAIRS
SCALE NO. 4

SECTION B-B
SCALE NO. 4

CRANE RAIL SUPPORT
NOT TO SCALE

SECTION D-D
SCALE NO. 5

SECTION E-E
SCALE NO. 5

SECTION F-F
SCALE NO. 5

NOTE: THE BILL OF MATERIAL CONTAINS SUFFICIENT STRUCTURAL PLATES AND ANGLES TO TEMPORARILY BRACE THE INTERIOR OF THE BRINE TANK SO THAT IT MAY BE HOISTED INTO THE CONCRETE BASIN LINED WITH THE REQUIRED INSULATION AFTER HAVING BEEN WELDED INTO ONE PIECE ON THE WORK SPACE ADJACENT TO THE BUILDING. THE ANGLE BRACING AND LIFTING PLATES SHOULD BE REMOVED & SCRAPPED AND THE INTERIOR OF THE TANK HAVE ALL TRACES OF THE STRUCTURAL ATTACHMENTS REMOVED BY GRINDING. THE TANK SHOULD THEN BE REPAINTED WHERE DESTROYED BY GRINDING.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 1' 2' 3' 4' NO. 4
0 1' 2' 3' NO. 5

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

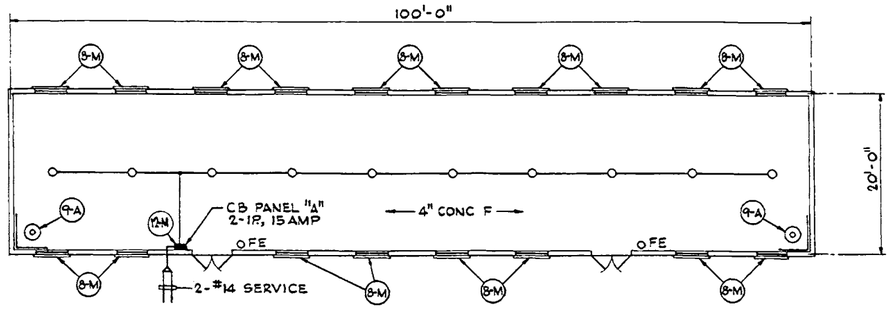
DRAWN BY: BEICHMAN
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C. W. BEICHMAN

THEATER OF OPERATIONS
STORAGE FACILITIES
ICE PLANT - 15 TON
40'X80' WOOD FRAME
SECTIONS & DETAILS

APPROVED: DATE: 17 FEB 1971
CHIEF, STRUCTURES BRANCH
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
C.N. Gordon Howell
DATE 16 December 1970

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 43-23
SHEET 2 OF 2

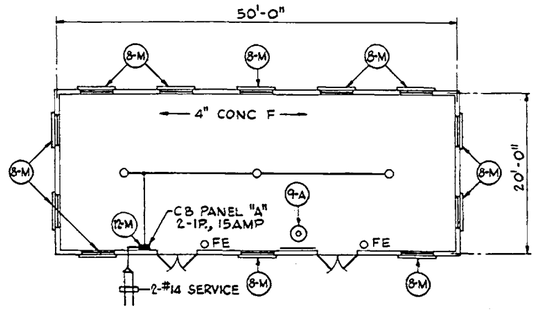


PLAN

STOREHOUSE 20' X 100'

SCALE NO. 1

FACIL. NO. 441102 - INTERIOR ONLY
FACIL. NO. 441112 - STEEL FRAME W/INTERIOR
FACIL. NO. 441122 - WOOD FRAME W/INTERIOR

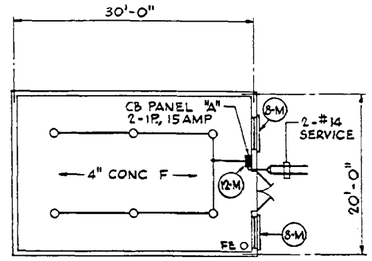


PLAN

STOREHOUSE 20' X 50'

SCALE NO. 1

FACIL. NO. 441101 - INTERIOR ONLY
FACIL. NO. 441111 - STEEL FRAME W/INTERIOR
FACIL. NO. 441121 - WOOD FRAME W/INTERIOR

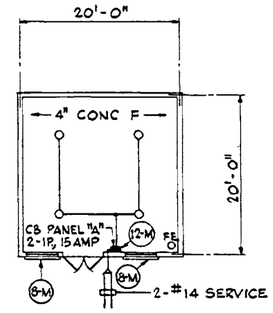


PLAN

STOREHOUSE 20' X 30'

SCALE NO. 1

FACIL. NO. 441106 - INTERIOR ONLY
FACIL. NO. 441116 - STEEL FRAME W/INTERIOR
FACIL. NO. 441126 - WOOD FRAME W/INTERIOR

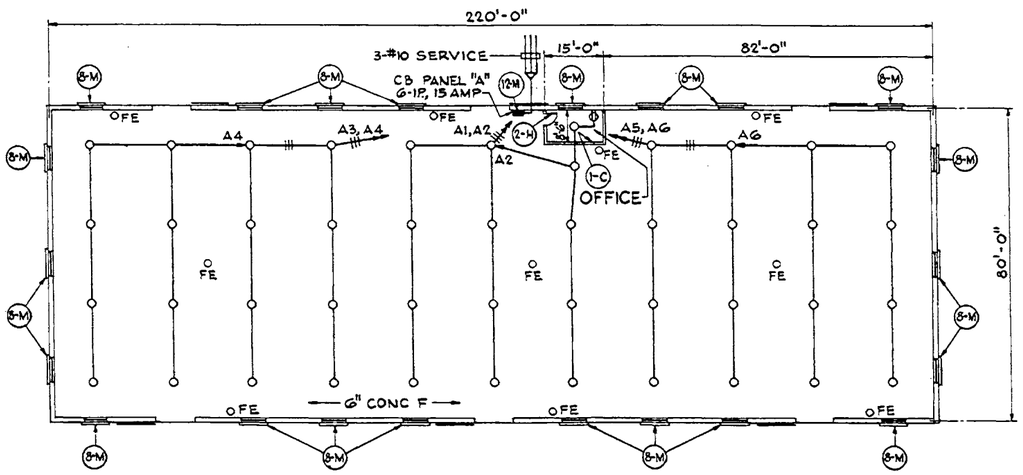


PLAN

STOREHOUSE 20' X 20'

SCALE NO. 1

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FACIL. NO. 441115 - STEEL FRAME W/INTERIOR
FACIL. NO. 441125 - WOOD FRAME W/INTERIOR

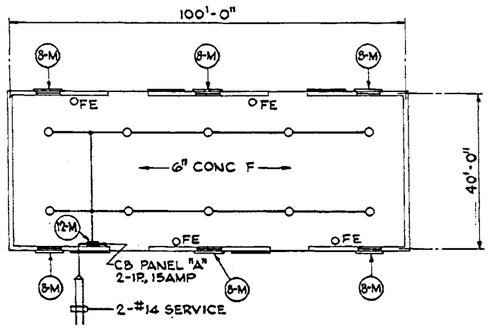


PLAN

WAREHOUSE 80' X 220'

SCALE NO. 9

FACIL. NO. 441104 - INTERIOR ONLY
FACIL. NO. 441114 - STEEL FRAME W/INTERIOR
FACIL. NO. 441124 - WOOD FRAME W/INTERIOR



PLAN

WAREHOUSE 40' X 100'

SCALE NO. 9

FACIL. NO. 441103 - INTERIOR ONLY
FACIL. NO. 441113 - STEEL FRAME W/INTERIOR
FACIL. NO. 441123 - WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	STOREHOUSE 20'X20'	STOREHOUSE 20'X30'	STOREHOUSE 20'X50'	STOREHOUSE 20'X100'	WAREHOUSE 40'X100'	WAREHOUSE 80'X220'
LIGHTING	.10KW	.15KW	.18KW	.60KW	1.0KW	4.50KW
RECP EST						.10KW
TOTAL	.10KW	.15KW	.18KW	.60KW	1.0KW	4.60KW

1. LAMPS IN 20'X50' & 20'X100' STOREHOUSES TO BE 60W.
2. LAMPS IN 20'X20' & 20'X30' STOREHOUSES TO BE 25W.
3. LAMPS IN WAREHOUSES TO BE 100W.
4. ALL 60W & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303, BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
44-11	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
34-04	WOOD FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4
35-36	STEEL FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 15' — NO. 1

0 10' 20' 30' — NO. 9

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

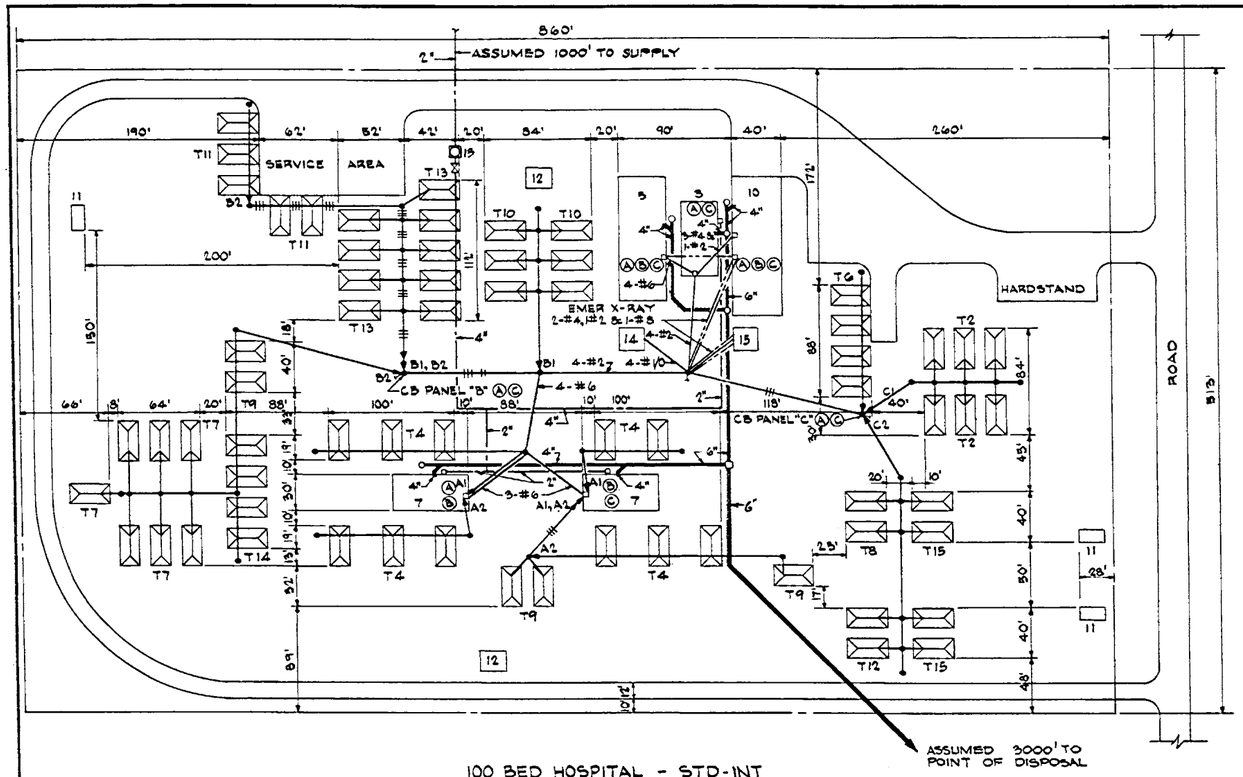
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION, ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. — DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY:
DATE:

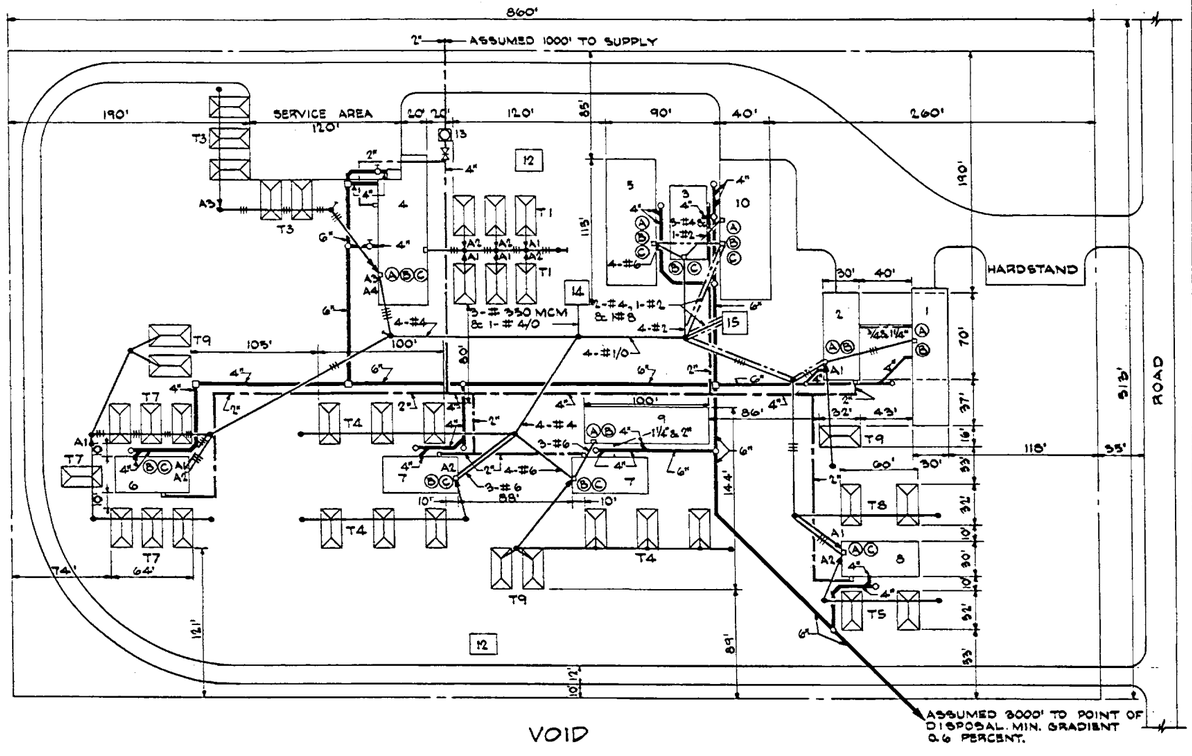
THEATER OF OPERATIONS

STOREHOUSES-VARIOUS SIZES
WAREHOUSES-OPEN & CLOSED
40'X100'-80'X220'

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 44-11
SHEET 1 OF 1



100 BED HOSPITAL - STD-INT
SCALE NO. 13
INST. NO. GH 0111 STL FRAME BLDGS.
INST. NO. GH 0121 WOOD FRAME BLDGS.



VOID

SCHEDULE OF FACILITIES

NO.	FACILITY	STD-INT INST. NO. GH 0111, GH 0121 QTY.	SIZE OR UNIT	DWG. NO.	VOID QTY.	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES						
T1	SPECIAL SERVICES				6	16' X 32'	72-51
T2	ADMIN-ADMISSION & DISPOSITION	6	16' X 32'	72-51			
T3	LINEN EXCHANGE & SUPPLY				5	16' X 32'	72-51
T4	WARD - ACUTE	11	16' X 32'	72-51	9	16' X 32'	72-51
T5	HOUSING-OFFICERS- FEMALE				2	16' X 32'	72-51
T6	DISPENSARY	4	16' X 32'	72-51			
	TENTAGE WITHOUT FRAMES						
T7	HOUSING - EM	7	16' X 32'		7	16' X 32'	
T8	HOUSING - OFFICERS - MALE	2	16' X 32'		2	16' X 32'	
T9	RECREATION	5	16' X 32'		5	16' X 32'	
T10	SPECIAL SERVICES	6	16' X 32'				
T11	LINEN EXCHANGE & SUPPLY	5	16' X 32'				
T12	HOUSING - OFFICERS- FEMALE	2	16' X 32'				
T13	MESS	9	16' X 32'				
T14	UTILITY 2	4	16' X 32'				
T15	UTILITY 8	4	16' X 32'				
	BUILDINGS						
1	ADMIN-ADMISSION & DISPOSITION 1				1	30' X 110'	51-11
2	DISPENSARY 3				1	30' X 70'	51-23
3	E E & PHARMACY 2	1	30' X 60'	51-21	1	30' X 60'	51-21
4	MESS BUILDING 4				1	4400 SF	51-66
5	SURGERY-CENTRALIZED MATERIEL	1	40' X 100'	51-44	1	40' X 100'	51-44
6	UTILITY BLDG. 2				1	30' X 60'	51-81
7	UTILITY BLDG. 3	2	30' X 60'	51-83	2	30' X 60'	51-83
8	UTILITY BLDG. 8				1	30' X 60'	51-85
9	WARD BLDG. 2 - ACUTE				1	30' X 100'	51-61
10	XRAY - LAB - DENTAL	1	40' X 110'	51-33	1	40' X 110'	51-33
11	LATRINE - PIT TYPE - 8 SEATS	3	10' X 20'	72-36			
	OTHER CONSTRUCTION						
	HARDSTANDS - DRAIN & GRADE	7.1	1000 SY	85-31			
	HARDSTANDS - 4" STABILIZED STONE				7.1	1000 SY	85-31
	ROAD - 2 LANE - DRAIN & GRADE	0.4	MILE	85-31			
	ROAD - 2 LANE - 6" STABILIZED STONE				0.4	MILE	85-31
12	SUMP - FIRE PROTECTION	2	10,000 GAL	84-21	2	10000 GAL	84-21
13	WATER TANK	1	4200 GAL	84-21	1	4200 GAL	84-21
14	LOAD CENTER	1			1		
15	LOAD CENTER - EMERGENCY	1			1		
	SITE AREA	10.1	ACRES		10.1	ACRES	
	UTILITIES						
	ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS	DEMAND	FACILITY NO.	DWGS FOR DETAILS
	WATER DISTRIBUTION	5000 GPD	5003 10	84-21	5000 GPD	5003 25	84-21
	SEWAGE	2500 GPD	5003 11	85-15	3500 GPD	5003 26	85-15
	ELECTRIC DISTRIBUTION	40.1 KW	5003 12	81-23	58.8 KW	5003 27	81-23

STD-INT-ELECTRICAL LOADS

LOAD CTR	FACIL.	QTY.	SERVICE	TOTAL CONNECTED LOADS - KW	TOTAL DEMAND LOADS - KW
14	T7	7	LIGHTING	20.0	18.0
	T8	2			
	T9	5	POWER	13.2	7.9
	T10	6			
	T2	6			
	T11	5			
	T4	11	RECP EST	11.0	8.2
	T12	2			
	T6	4	X-RAY	20.00	6.00
	T13	9			
	T14	4			
	T15	4	GRAND TOTAL	64.2	40.1
	3	1			
	5	1			
	7	2	OVERALL DEMAND		40.1
	10	1			
15 EMER	5	1	EMER XRAY	20.00	10.00
	10	1	EMER LTG	1.05	1.05

VOID

LOAD CTR	FACIL.	QTY.	SERVICE	TOTAL CONNECTED LOADS - KW	TOTAL DEMAND LOADS - KW
14	T7	7	LIGHTING	22.2	19.9
	T8	2			
	T9	5	POWER	29.8	17.9
	T1	6			
	T3	5			
	T4	9	RECP EST	20.0	15.0
	T5	2			
	1	1	X-RAY	20.00	6.00
	2	1			
	3	1			
	4	1	GRAND TOTAL	92.0	58.8
	5	1			
	6	1			
	7	2	OVERALL DEMAND		58.8
	8	1			
	9 & 10	1			
15 EMER	5	1	EMER XRAY	20.00	16.00
	10	1	EMER. LTG.	1.18	1.18
	2	1			

STD-INT- OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EACH TYPE	TOTALS
T4	WARD - ACUTE	10	11	110	
			TOTAL BEDS - PATIENTS		110
T8	HOUSING - OFFICERS - MALE	6	2	12	
			TOTAL MALE OFFICER ACCOMODATIONS		12
T12	HOUSING - OFFICERS - FEMALE	6	2	12	
			TOTAL FEMALE OFFICER ACCOMODATIONS		12
T7	HOUSING - EM	12	7	84	
				TOTAL EM	84
			TOTAL HOSPITAL OCCUPANCY		218

VOID

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EACH TYPE	TOTALS
T4	WARD - ACUTE	10	9	90	
9	WARD BUILDING - 2 - ACUTE	28	1	28	
			TOTAL BEDS - PATIENTS		118
T8	HOUSING - OFFICERS - MALE	6	2	12	
			TOTAL MALE OFFICER ACCOMODATIONS		12
T5	HOUSING - OFFICERS - FEMALE	6	2	12	
			TOTAL FEMALE OFFICER ACCOMODATIONS		12
T7	HOUSING - EM	12	7	84	
				TOTAL EM	84
			TOTAL HOSPITAL OCCUPANCY		226

GENERAL NOTES

1. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

ELECTRICAL NOTES

STD 2

1 ALL CB PANELS TO BE 2-10, 15 AMP
2 HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDING OR CB PANELS MOUNTED ON THE POLES.

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES 0 50' 100'

NO. 13

HAYES, SEAY, MATTERN & MATTERN, ARCHITECTS - ENGINEERS, ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY, OFFICE OF THE CHIEF OF ENGINEERS, MILITARY CONSTRUCTION - ENGINEERING DIVISION, WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

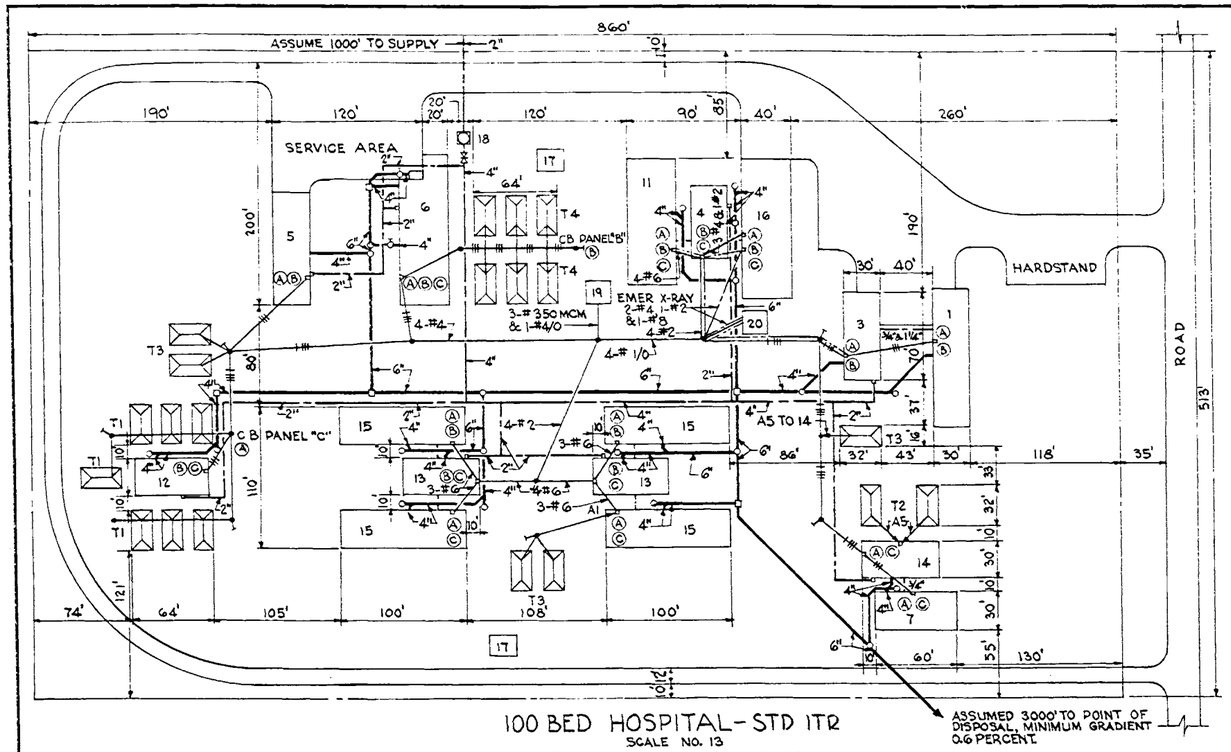
THEATER OF OPERATIONS
HOSPITAL 100 BED
STD-INT
SITE & UTILITY LAYOUTS

UNDER REVISION

APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROCUREMENT AGENCY: Robert Bernstein D/PS&D
DATE 9 OCT. 68

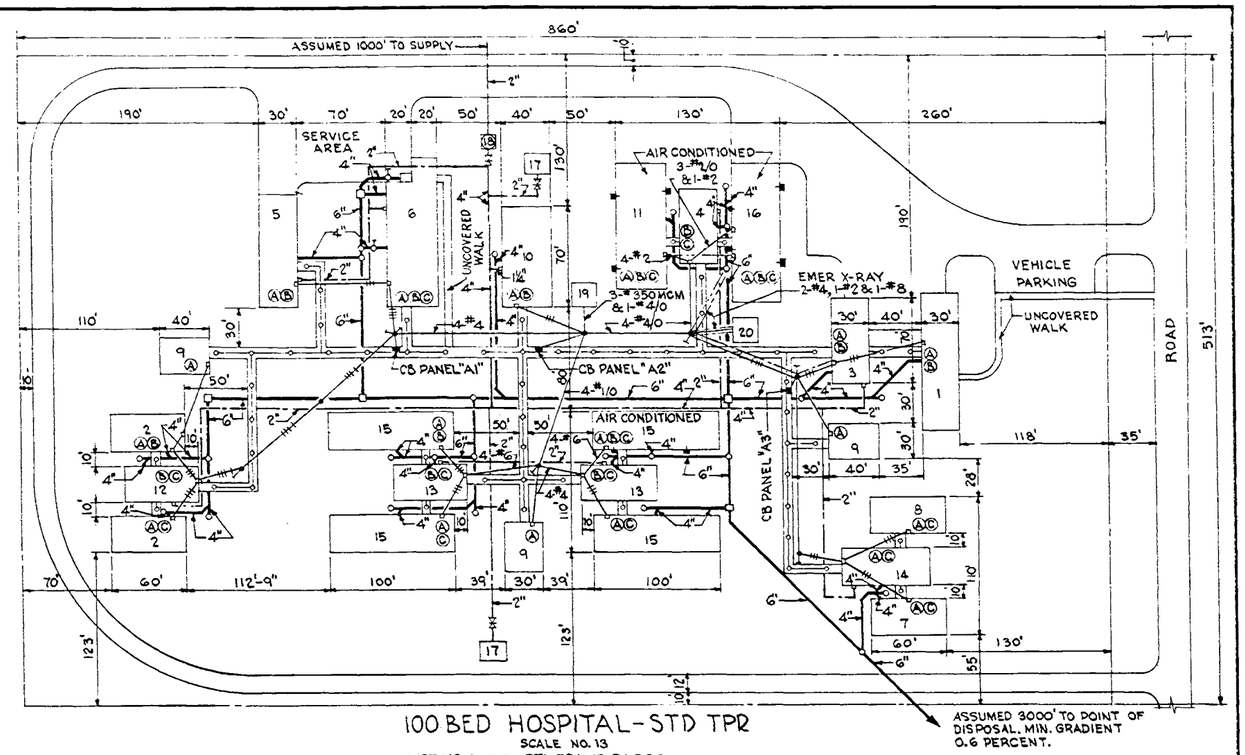
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 50-03
SHEET 1 OF 2



100 BED HOSPITAL - STD ITR

SCALE NO. 13

INST. NO. GH0131 STL FRAME BLDGS.
INST. NO. GH0141 WOOD FRAME BLDGS.



100 BED HOSPITAL - STD TPR

SCALE NO. 13

INST. NO. GH0151 STL FRAME BLDGS.
INST. NO. GH0161 WOOD FRAME BLDGS.

NOTE : AIR CONDITIONING UTILITIES — FACIL. NO. 500378
AIR CONDITIONING & MECHANICAL VENTILATION — FACIL. NO. 500374

SCHEDULE OF FACILITIES

NO.	FACILITY	STD - ITR INST. NO. GH0131, GH0141 QTY.	SIZE OR UNIT	DWG NO.	STD - TPR INST. NO. GH0151, GH0161 QTY	SIZE OR UNIT	DWG NO.
	TENTAGE WITH FRAMES						
T1	HOUSING-E M	7	16'X 32'	72-51			
T2	HOUSING- OFFICERS-MALE	2	16'X 32'	72-51			
T3	RECREATION	5	16'X 32'	72-51			
T4	SPECIAL SERVICES	6	16'X 32'	72-51			
	BUILDINGS						
1	ADMIN-ADMISSION & DISPOSITION 1	1	30'X110'	51-11	1	30'X110'	51-11
2	BARRACKS-2				2	30'X 60'	51-71
3	DISPENSARY-3	1	30'X 70'	51-23	1	30'X 70'	51-23
4	EE-PHARMACY-2	1	30'X 60'	51-21	1	30'X 60'	51-21
5	LINEN EXCHANGE & SUPPLY-2	1	30'X 90'	51-56	1	30'X 90'	51-56
6	MESS BUILDING-4	1	4400 SF	51-66	1	4400 SF	51-66
7	OFFICERS QUARTERS-FEMALE-2	1	30'X 60'	51-71	1	30'X 60'	51-71
8	OFFICERS QUARTERS-MALE-2				1	30'X 60'	51-71
9	RECREATION BUILDING-2				3	30'X 40'	51-91
10	SPECIAL SERVICES-SPC-A3				1	40'X 70'	51-93
11	SURGERY-CENTRALIZED MATERIEL	1	40'X 100'	51-44	1	40'X 100'	51-44
12	UTILITY BUILDING-2	1	30'X 60'	51-81	1	30'X 60'	51-81
13	UTILITY BUILDING-3	2	30'X 60'	51-83	2	30'X 60'	51-83
14	UTILITY BUILDING-8	1	30'X 60'	51-85	1	30'X 60'	51-85
	WALKS-COVERED				14.4	8'X 100'	51-97
15	WARD BUILDING-2-ACUTE	4	30'X 100'	51-51	4	30'X 100'	51-51
16	X-RAY-LAB-DENTAL	1	40'X 110'	51-33	1	40'X 110'	51-33
	OTHER CONSTRUCTION						
	HARDSTANDS, 4" STABILIZED STONE	7.1	1000 SY	85-31	7.1	1000 SY	85-31
	ROAD, 2 LANE, 6" STABILIZED STONE	0.4	MILE	85-31			
	ROAD, 2 LANE, 6" STONE, 1" COLD SURFACE				0.34	MILE	85-31
17	SUMP-FIRE PROTECTION	2	100006AL	84-21	2	100006AL	84-21
18	WATER TANK	1	47006AL	84-21	1	47006AL	84-21
19	LOAD CENTER	1			1		
20	LOAD CENTER-EMERGENCY	1			1		
	SITE AREA	10.1	ACRES		10.1	ACRES	
	UTILITIES						

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS. FOR DETAILS	DEMAND	FACILITY NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION	50006PD	500340	84-21	50006PD	500370	84-21
SEWAGE	35006PD	500341	83-15	35006PD	500371	83-15
ELECTRIC DISTRIBUTION WITHOUT AIR CONDITIONING	67.2 KW	500342	81-23	72.1 KW	500372	81-23

ELECTRICAL LOADS

STD-ITR LOAD CTR	FACILITY	QTY	SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
19	HOUSING-EM	7	LIGHTING	23.4	21.1
	HOUSING-OFFICERS-MALE	2			
	RECREATION	5			
	SPECIAL SERVICES	6			
	ADMIN-ADMISSION & DISPOSITION	1	POWER	31.3	18.8
	DISPENSARY-3	1			
	EE-PHARMACY-2	1			
	LINEN EXCHANGE & SUPPLY-2	1	RECP. EST.	28.3	21.3
	MESS BUILDING-4	1			
	OFFICERS QUARTERS-FEMALE-2	1			
	SURGERY-CENTRALIZED MATERIEL	1	X-RAY	20.00	6.00
	UTILITY BUILDING-2	1			
	UTILITY BUILDING-3	2			
	UTILITY BUILDING-8	1	GRAND TOTAL	103.0	67.2
	WARD BUILDING-2-ACUTE	4			
	X-RAY-LAB-DENTAL	1	OVERALL DEMAND		67.2
20	SURGERY-CENTRALIZED MATERIEL	1	EMER. X-RAY	20.00	10.00
	X-RAY-LAB-DENTAL	1	EMER. LIGHTING	1.18	1.18
	DISPENSARY-3	1			

STD-TPR LOAD CTR	FACILITY	QTY	W/O AIR CONDITIONING SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW	WITH AIR CONDITIONING SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
19	ADMIN-ADMISSION & DISPOSITION	1	LIGHTING	25.6	23.0	LIGHTING	25.6	23.0
	BARRACKS-2	2						
	DISPENSARY-3	1						
	EE-PHARMACY-2	1						
	LINEN EXCHANGE & SUPPLY-2	1	POWER	31.1	18.7	POWER	55.0	51.4
	MESS BUILDING-4	1						
	OFFICERS QUARTERS-FEMALE-2	1						
	OFFICERS QUARTERS-MALE-2	1	RECP. EST.	32.5	24.4	RECP. EST.	32.5	24.4
	RECREATION BUILDING-2	3						
	SPECIAL SERVICES-SPC-A3	1						
	SURGERY-CENTRALIZED MATERIEL	1	X-RAY	20.00	6.00	X-RAY	20.00	6.00
	UTILITY BUILDING-2	1						
	UTILITY BUILDING-3	2						
	UTILITY BUILDING-8	1	GRAND TOTAL	109.2	72.1	GRAND TOTAL	193.7	104.8
	WALKS-COVERED							
	WARD BUILDING-2-ACUTE	4	OVERALL DEMAND		72.1	OVERALL DEMAND		104.8
	X-RAY-LAB-DENTAL	1						
20	SURGERY-CENTRALIZED MATERIEL	1	EMER. X-RAY	20.00	10.00	EMER X-RAY	20.00	10.00
	X-RAY-LAB-DENTAL	1	EMER. LIGHTING	1.18	1.18	EMER. LIGHTING	1.18	1.18
	DISPENSARY-3	1						

OCCUPANCY SCHEDULE

STD-ITR NO.	FACILITY	NO. OF BEDS	NO. OF FACILITIES	NO. OF BEDS EA. TYPE	TOTAL
15	WARD BUILDING-2-ACUTE	28	4	112	
	TOTAL BEDS-PATIENTS				112
T2	HOUSING-OFFICERS-MALE	6	2	12	
	TOTAL MALE OFFICER ACCOMIDATIONS				12
7	OFFICERS QUARTERS-FEMALE-2	13	1	13	
	TOTAL FEMALE OFFICER ACCOMIDATIONS				13
T1	HOUSING-E M	12	7	84	
	TOTAL E M				84
	TOTAL HOSPITAL OCCUPANCY				221

STD-TPR NO.	FACILITY	NO. OF BEDS	NO. OF FACILITIES	NO. OF BEDS EA. TYPE	TOTAL
15	WARD BUILDING-2-ACUTE	28	4	112	
	TOTAL BEDS-PATIENTS				112
8	OFFICERS QUARTERS-MALE-2	14	1	14	
	TOTAL MALE OFFICER ACCOMIDATIONS				14
7	OFFICERS QUARTERS-FEMALE-2	13	1	13	
	TOTAL FEMALE OFFICER ACCOMIDATIONS				13
2	BARRACKS-2	42	2	84	
	TOTAL E M				84
	TOTAL HOSPITAL OCCUPANCY				223
2	EMERGENCY WARD	20	2	40	
	TOTAL EMERGENCY BEDS				40

GENERAL NOTES

1. SEE FACIL. DWG'S. FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS
2. BUILDINGS INDICATED WILL BE AIR CONDITIONED WHEN REQUIRED.
3. ALL WALKS ARE COVERED WALKS, 8'-0 WIDE, EXCEPT AS NOTED.

ELECTRICAL NOTES

STD 4

1. ALL CB PANELS TO BE 2-1P, 15 AMP.
2. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 50' 100'

NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

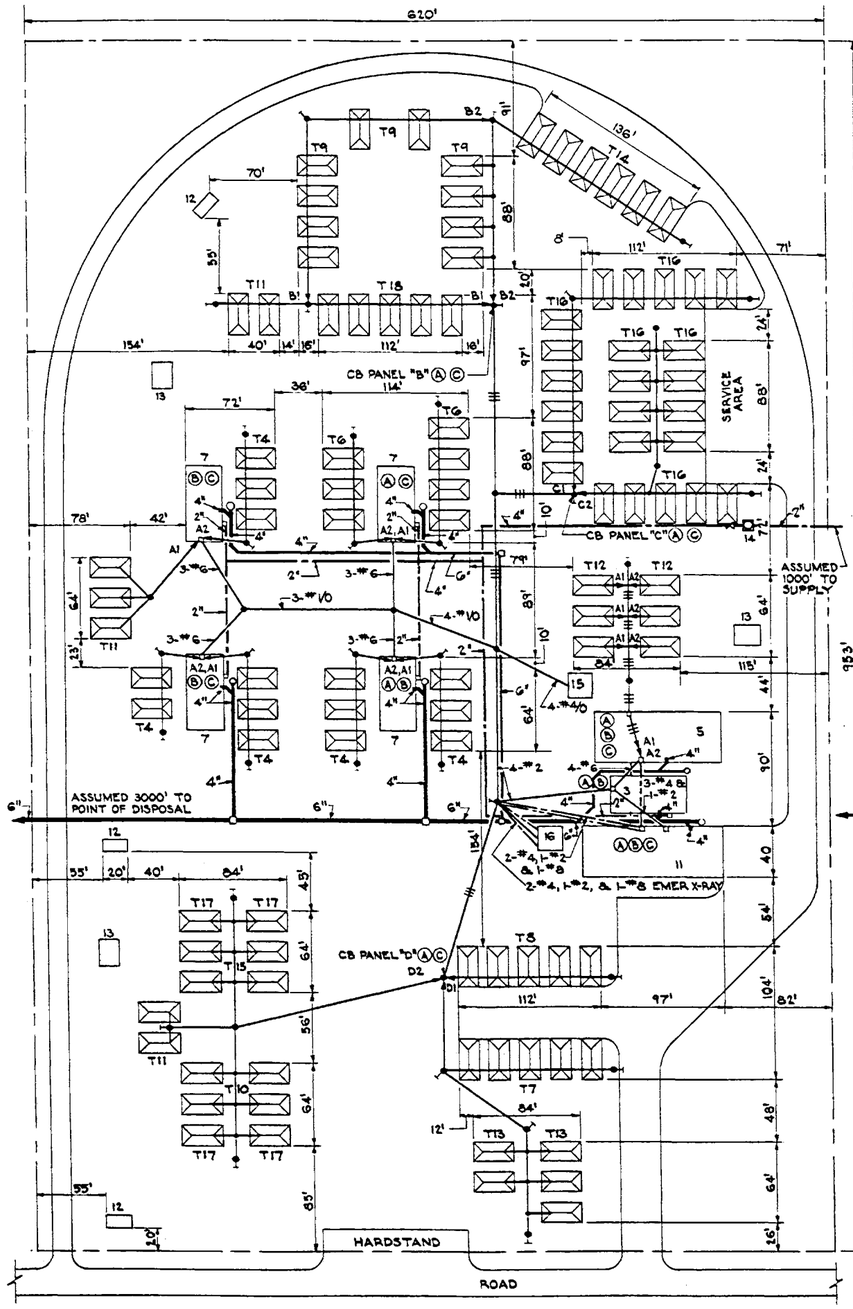
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: I LYUS
TRACED BY:
CHECKED BY: BALLOU
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, ARCHITECTURE BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: [signature] D/PS&O
DATE: 9 OCT. 68

THEATER OF OPERATIONS
HOSPITALS, 100 BED STD ITR & TPR
SITE & UTILITY LAYOUTS

UNDER REVISION

DATE: 19 MAR 1959
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 50-03
SHEET 2 OF 2

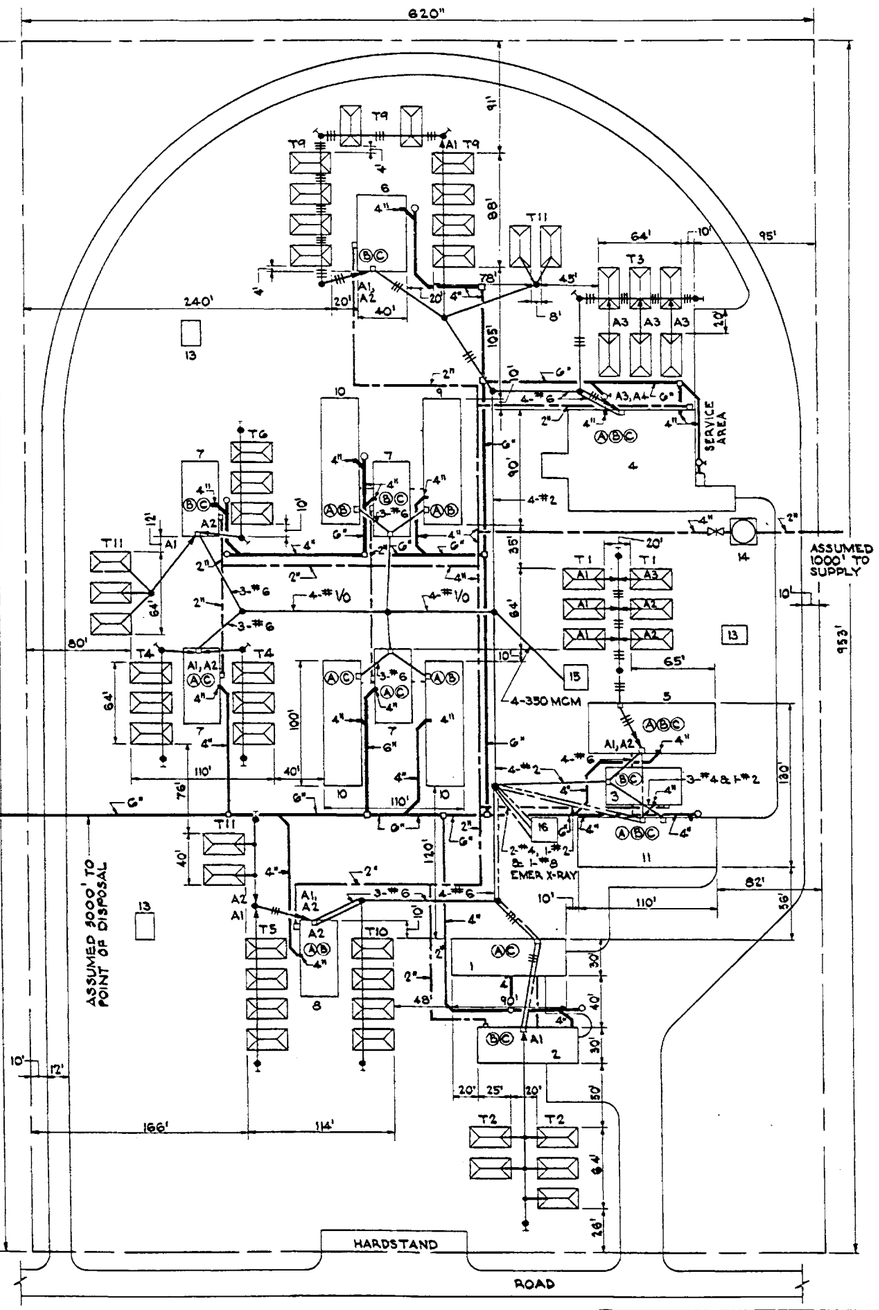


200 BED HOSPITAL-STD-INT

SCALE NO. 13

INST. NO. GH0211 STL FRAME BLDGS.

INST. NO. GH0221 WOOD FRAME BLDGS.



VOID

SCHEDULE OF FACILITIES

NO.	FACILITY	STD.-INT INST. NO. GH0211, GH0221 QTY	SIZE OR UNIT	DWG. NO.	VOID QTY	SIZE OR UNIT	DWG. NO.
TENTAGE WITH FRAMES							
T1	SPECIAL SERVICES				6	16' X 32'	72-51
T2	ADMINISTRATION				5	16' X 32'	72-51
T3	LINEN EXCHANGE & SUPPLY				6	16' X 32'	72-51
T4	WARD, ACUTE	14	16' X 32'	72-51	6	16' X 32'	72-51
T5	HOUSING-OFFICERS-FEMALE				4	16' X 32'	72-51
T6	WARD, STANDARD	7	16' X 32'	72-51	3	16' X 32'	72-51
T7	DISPENSARY	5	16' X 32'	72-51			
T8	ADMISSION & DISPOSITION	5	16' X 32'	72-51			
TENTAGE WITHOUT FRAMES							
T9	HOUSING - EM	10	16' X 32'		10	16' X 32'	
T10	HOUSING -OFFICERS-MALE	4	16' X 32'		4	16' X 32'	
T11	RECREATION	7	16' X 32'		7	16' X 32'	
T12	SPECIAL SERVICES	6	16' X 32'				
T13	ADMINISTRATION	5	16' X 32'				
T14	LINEN EXCHANGE & SUPPLY	6	16' X 32'				
T15	HOUSING-OFFICERS-FEMALE	4	16' X 32'				
T16	MESS	24	16' X 32'				
T17	UTILITY 8	4	16' X 32'				
T18	UTILITY 1	5	16' X 32'				
BUILDINGS							
1	ADMISSION & DISPOSITION 4				1	30' X 90'	51-13
2	DISPENSARY 2				1	30' X 80'	51-23
3	EE & PHARMACY 2	1	30' X 60'	51-21	1	30' X 60'	51-21
4	MESS BUILDING 3				1	8200 SF	51-65
5	SURGERY, CENTRALIZED, MATERIEL	1	40' X 100'	51-44	1	40' X 100'	51-44
6	UTILITY BUILDING 1				1	40' X 60'	51-81
7	UTILITY BUILDING 3	4	30' X 60'	51-83	4	30' X 60'	51-83
8	UTILITY BUILDING 8				1	30' X 60'	51-85
9	WARD BUILDING 1-STANDARD				1	30' X 100'	51-51
10	WARD BUILDING 2-ACUTE				3	30' X 100'	51-51
11	X-RAY-LAB-DENTAL	1	40' X 110'	51-33	1	40' X 110'	51-33
12	LATRINE, PIT TYPE, 8 SEATS	3	10' X 20'	72-36			
OTHER CONSTRUCTION							
	HARDSTANDS-DRAIN & GRADE	7.4	1000 SY	85-31			
	HARDSTANDS-4" STABILIZED STONE				7.4	1000 SY	85-31
	ROAD, 2 LANE, DRAIN & GRADE	0.4	MILE	85-31			
	ROAD, 2 LANE, 6" STABILIZED STONE				0.4	MILE	85-31
13	SUMP-FIRE PROTECTION	3	10,000 GAL	84-21	3	10,000 GAL	84-21
14	WATER TANK	1	4,200 GAL	84-21	1	10,500 GAL	84-21
15	LOAD CENTER	1			1		
16	LOAD CENTER-EMERGENCY	1			1		
	SITE AREA	13.6	ACRES		13.6	ACRES	

UTILITIES						
ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	10000 GPD	500410	84-21	10000 GPD	500425	84-21
SEWAGE	5000 GPD	500411	83-15	7000 GPD	500426	83-15
ELECTRIC DISTRIBUTION	52.2 KW	500412	81-23	80.3 KW	500427	81-23

VOID

LOAD CTR	FACILITY	QTY	SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
15	T9	10	LIGHTING	30.0	27.0
	T10	4			
	T11	7			
	T1	6	POWER	37.0	22.5
	T2	5			
	T3	6			
	T4	6			
	T5	4	RECP EST	31.5	24.2
	T6	3			
	1	1			
	2	1			
	3	1	X-RAY	20.0	6.0
	4	1			
	5	1			
	6	1			
	7	4	GRAND TOTAL	119.5	80.3
	8	1			
	9	1			
	10	3	OVERALL DEMAND		80.3
	11	1			
16 (EMER)	2	1	EMER X-RAY	20.0	10.0
	5	1			
	11	1	EMER LTG	1.18	1.18

STD-INT-OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EACH TYPE	TOTALS
T6	WARD-STANDARD	10	7	70	——
T4	WARD-ACUTE	10	14	140	——
	TOTAL BEDS - PATIENTS				210
T10	HOUSING-OFFICERS-MALE	6	4	24	——
	TOTAL MALE OFFICER ACCOMODATIONS				24
T15	HOUSING-OFFICERS-FEMALE	6	4	24	——
	TOTAL FEMALE OFFICER ACCOMODATIONS				24
T9	HOUSING-EM	12	10	120	——
	TOTAL-EM				120
	TOTAL HOSPITAL OCCUPANCY				378

VOID

NO.	FACILITY	NO. OF BEDS	NO. OF FACILITY	NO. OF BEDS EACH TYPE	TOTALS
T6	WARD-STANDARD	10	3	30	——
T4	WARD-ACUTE	10	6	60	——
9	WARD BUILDING 1-STANDARD	34	1	34	——
10	WARD BUILDING 2-ACUTE	28	3	84	——
	TOTAL BEDS - PATIENTS				208
T10	HOUSING-OFFICERS-MALE	6	4	24	——
	TOTAL MALE OFFICER ACCOMODATIONS				24
T5	HOUSING-OFFICERS-FEMALE	6	4	24	——
	TOTAL FEMALE OFFICER ACCOMODATIONS				24
T9	HOUSING-EM	12	10	120	——
	TOTAL-EM				120
	TOTAL HOSPITAL OCCUPANCY				376

GENERAL NOTES

1. ALL CB PANELS TO BE 2-1P, 15 AMP.
2. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS OR CB PANELS MOUNTED ON THE POLES.
3. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

STD-INT-ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY	SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMANDS LOADS-KW
15	T9	10	LIGHTING	29.3	26.3
	T10	4			
	T11	7			
	T12	6	POWER	14.4	8.6
	T13	5			
	T14	6			
	T4	14	RECP EST	15.1	11.3
	T15	4			
	T6	7			
	T7	5	X-RAY	20.0	6.0
	T16	24			
	T17	4			
	T8	5	GRAND TOTAL	78.8	52.2
	T18	5			
	3	1			
	5	1			
	7	4	OVERALL DEMAND		52.2
	11	1			
16 (EMER)	5	1	EMER X-RAY	20.0	10.0
	11	1	EMER LTG	1.05	1.05

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES

0 50' 100'

NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: BALLOU
TRACED BY:
CHECKED BY: EDWARDS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature]
CHIEF, ENGINEERING BRANCH

THEATER OF OPERATIONS

200 BED HOSPITAL STD-INT
SITE & UTILITY LAYOUTS

UNDER REVISION

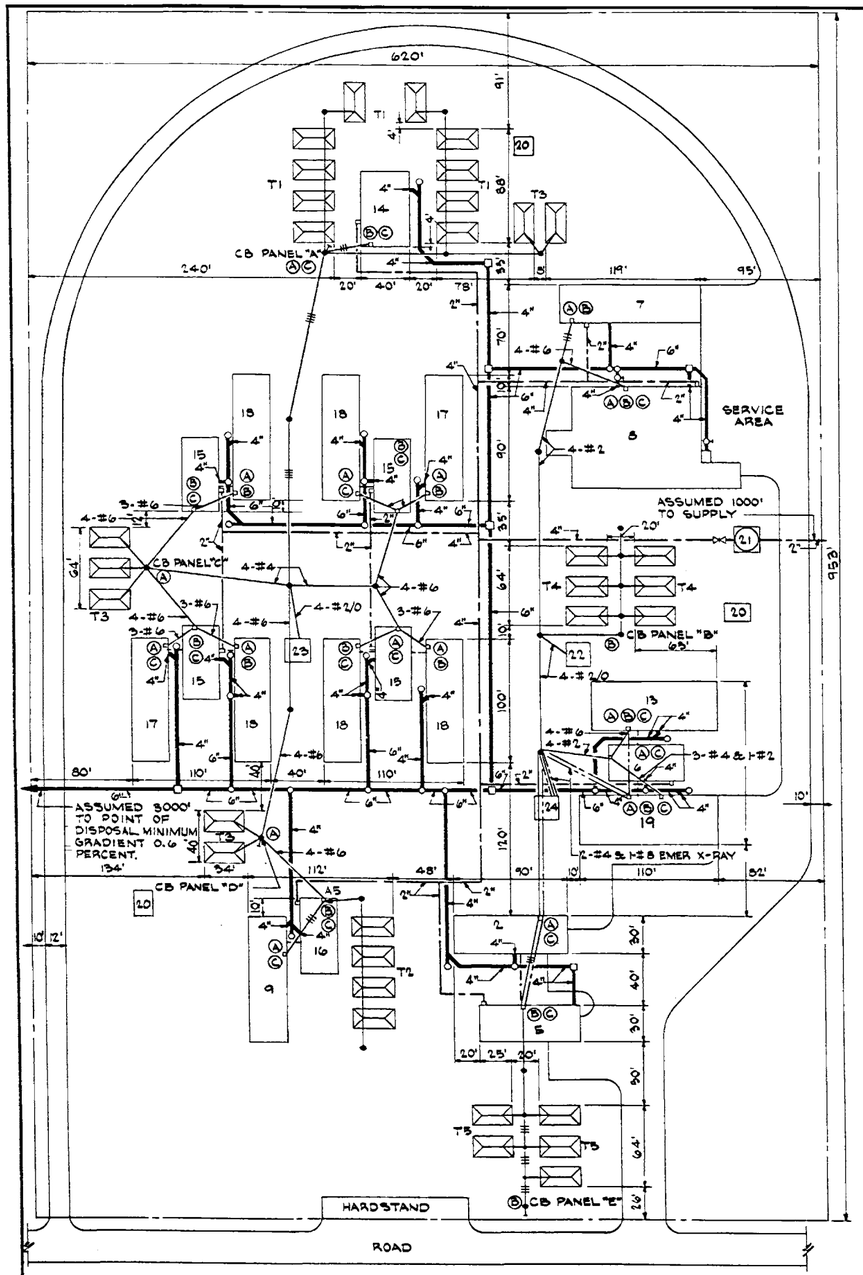
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CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: [signature] D/PS&O
DATE: 9 OCT. 68

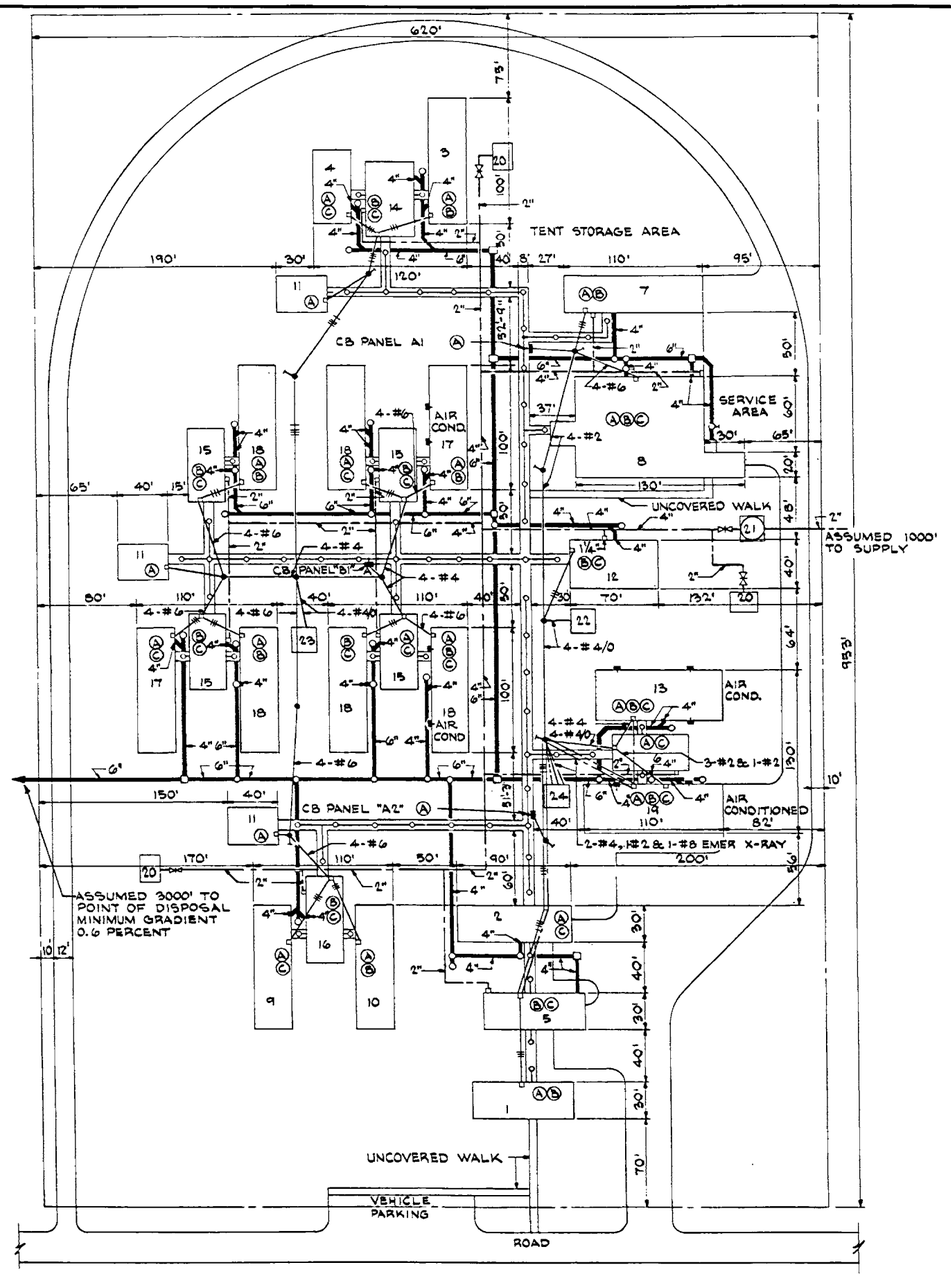
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 50-04
SHEET 1 OF 2

CORPS OF ENGINEERS

U. S. ARMY



200 BED HOSPITAL - STD-ITR
SCALE NO. 13
INST. NO. GH0231 STL FRAME BLDGS.
INST. NO. GH0241 WOOD FRAME BLDGS.



200 BED HOSPITAL - STD-TPR
SCALE NO. 13
INST. NO. GH0251 STL FRAME BLDGS.
INST. NO. GH0261 WOOD FRAME BLDGS.

SCHEDULE OF FACILITIES

NO	FACILITY	STD-ITR INST. NO. GH0231, GH0241 QTY.	STD-ITR SIZE OR UNIT	STD-ITR DWG. NO.	STD-TPR INST. NO. GH0251, GH0261 QTY.	STD-TPR SIZE OR UNIT	STD-TPR DWG. NO.
	TENTAGE WITH FRAMES						
T1	HOUSING - EM	10	16'X32'	72-51			
T2	HOUSING - OFFICERS - MALE	4	16'X32'	72-51			
T3	RECREATION	7	16'X32'	72-51			
T4	SPECIAL SERVICES	6	16'X32'	72-51			
T5	ADMINISTRATION	5	16'X32'	72-51			
	BUILDINGS						
1	ADMINISTRATION 3				1	30'X50'	51-11
2	ADMISSION & DISPOSITION 4	1	30'X90'	51-13	1	30'X90'	51-13
3	BARRACKS 1				1	30'X100'	51-71
4	BARRACKS 2				1	30'X60'	51-71
5	DISPENSARY - 2	1	30'X80'	51-23	1	30'X80'	51-23
6	EE & PHARMACY 2	1	30'X60'	51-21	1	30'X60'	51-21
7	LINEN EXCHANGE & SUPPLY 1	1	30'X110'	51-56	1	30'X110'	51-56
8	MESS BUILDING 3	1	8200 SF.	51-65	1	8200 SF.	51-65
9	OFFICERS QUARTERS - FEMALE-1	1	30'X100'	51-71	1	30'X100'	51-71
10	OFFICERS QUARTERS - MALE-1				1	30'X100'	51-71
11	RECREATION BUILDING - 2				3	30'X40'	51-91
12	SPECIAL SERVICES SPC-A3				1	40'X70	51-93
13	SURGERY - CENTRALIZED MATERIEL	1	40'X100'	51-44	1	40'X100'	51-44
14	UTILITY BUILDING 1	1	40'X60'	51-81	1	40'X60'	51-81
15	UTILITY BUILDING 3	4	30'X60'	51-83	4	30'X60'	51-83
16	UTILITY BUILDING 8	1	30'X60'	51-85	1	30'X60'	51-85
	WALKS - COVERED				17.5	8'X100'	51-97
17	WARD BUILDING 1 - STANDARD	2	30'X100'	51-51	2	30'X100'	51-51
18	WARD BUILDING 2 - ACUTE	5	30'X100'	51-51	5	30'X100'	51-51
19	XRAY - LAB - DENTAL	1	40'X110'	51-33	1	40'X110'	51-33
	OTHER CONSTRUCTION						
	HARDSTANDS, 4" STABILIZED STONE	7.4	1000 SY.	85-31	7.4	1000 SY.	85-31
	ROAD - 2 LANE, 6" STABILIZED STONE	0.4	MILE	85-31			
	ROAD - 2 LANE, 6" STONE, 1" COLD SURFACE				0.4	MILE	85-31
20	SUMP - FIRE PROTECTION	3	10,000 GAL	84-21	3	10,000 GAL	84-21
21	WATER TANK	1	10,500 GAL	84-21	1	10,500 GAL	84-21
22	LOAD CENTER	1			1		
23	LOAD CENTER	1			1		
24	LOAD CENTER - EMERGENCY	1			1		
	SITE AREA	13.6	ACRES		13.6	ACRES	
	UTILITIES						

ENGINEER SERVICES REQUIRED	DEMAND	FACIL. NO.	DWGS. FOR DETAILS	DEMAND	FACIL. NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION	10,000 GPD	500442	84-21	10,000 GPD	500470	84-21
SEWAGE	7,000 GPD	500441	83-15	7,000 GPD	500471	83-15
ELECTRIC DISTRIBUTION WITHOUT AIR CONDITIONING	91.6 KW	500442	81-23	97.9 KW	500472	81-23
AIR CONDITIONING UTILITIES					500473	
AIR COND. & MECH. VENTILATION					500474	

STD-TPR ELECTRICAL LOADS

LOAD CTR.	FACIL. NO.	QTY.	W/O AIR CONDITION'G SERVICE	W/O AIR CONDITION'G TOTAL CONNECTED LOADS KW	W/O AIR CONDITION'G TOTAL DEMAND LOADS KW	WITH AIR CONDITION'G SERVICE	WITH AIR CONDITION'G TOTAL CONNECTED LOADS KW	WITH AIR CONDITION'G TOTAL DEMAND LOADS KW
22	COVERED WALK 7	1	LIGHTING	18.4	10.6	LIGHTING	18.7	10.9
	8	1						
	12	1	POWER	32.3	19.4	POWER	66.4	39.8
	13	1						
	6	1	RECP EST.	11.7	8.8	RECP EST	11.7	8.8
	19	1	X-RAY	20.0	6.0	X-RAY	20.0	6.0
	2	1						
	5	1	GRAND TOTAL	82.4	50.8	GRAND TOTAL	116.8	71.2
	1	1						
23	COVERED WALK 3	1	LIGHTING	10.0	14.4	LIGHTING	10.0	14.4
	4	1	POWER	6.0	4.0	POWER	33.8	20.3
	14	1						
	11	3	RECP EST.	38.3	28.7	RECP EST.	38.3	28.7
	17	2						
	15	4	GRAND TOTAL	60.8	47.1	GRAND TOTAL	88.1	65.4
	16	1						
	10	1						
	18	5	OVERALL DEMAND		97.9	OVERALL DEMAND		134.0
	9	1						
24 EMER.	13	1	EMER. X-RAY	18.00	18.00	EMER. X-RAY	20.00	10.00
	19	1	EMER. LTG.	1.18	1.18	EMER. LTG.	1.18	1.18
	5	1						

STD-ITR ELECTRICAL LOADS

LOAD CTR.	FACIL. NO.	QTY.	SERVICE	TOTAL CONNECTED LOADS KW	TOTAL CONNECTED LOADS KW
22	7	1	LIGHTING	17.7	10.0
	8	1			
	T4	6	POWER	32.3	19.4
	13	1			
	6	1	RECP EST	9.9	7.4
	19	1	X-RAY	20.00	6.00
	2	1			
	5	1	GRAND TOTAL	79.9	46.8
	T5	5			
23	T1	10	LIGHTING	13.0	13.5
	14	1			
	T3	7	POWER	6.6	4.0
	17	2			
	18	5	RECP EST	33.8	25.3
	15	4			
	9	1			
	16	1	GRAND TOTAL	55.4	42.8
	T2	4	OVERALL DEMAND		91.6
24 EMER.	13	1	EMER. X-RAY	20.00	10.00
	19	1	EMER. LTG.	1.18	1.18
	5	1			

STD-TPR OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EACH TYPE	TOTAL
17	WARD BUILDING - 1 - STANDARD	34	2	68	
18	WARD BUILDING - 2 - ACUTE	28	5	140	
				TOTAL BED PATIENTS	208
10	OFFICERS QUARTERS - MALE	24	1	24	
				TOTAL MALE OFFICERS ACCOMODATIONS	24
9	OFFICERS QUARTERS - FEMALE	23	1	23	
				TOTAL FEMALE OFFICERS ACCOMODATIONS	23
3	BARRACKS 1	74	1	74	
4	BARRACKS 2	42	1	42	
				TOTAL EM	116
				TOTAL HOSPITAL OCCUPANCY	371
3	BARRACKS 1 - EMER. WARD	36	1	36	
4	BARRACKS 2 - EMER. WARD	20	1	20	
				TOTAL EMER. BEDS	56

STD-ITR OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EACH TYPE	TOTAL
17	WARD BUILDING - 1 - STANDARD	34	2	68	
18	WARD BUILDING - 2 - ACUTE	28	5	140	
				TOTAL BEDS - PATIENTS	208
T2	HOUSING - OFFICERS - MALE	6	4	24	
				TOTAL MALE OFFICERS ACCOMODATIONS	24
9	OFFICERS QUARTERS - FEMALE	23	1	23	
				TOTAL FEMALE OFFICERS ACCOMODATIONS	23
T1	HOUSING - EM	12	10	120	
				TOTAL EM	120
				TOTAL HOSPITAL OCCUPANCY	375

GENERAL NOTES

1. BUILDINGS INDICATED WILL BE AIR CONDITIONED WHEN REQUIRED.
2. ALL WALKS ARE COVERED WALKS 8'-0" WIDE, EXCEPT AS NOTED.
3. SEE FACILITY DRAWING FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDING.

ELECTRICAL NOTES

1. ALL CB PANEL TO BE 2-1P, 15 AMP.
2. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 50' 100'
NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: BALLOU
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, STRUCTURES BRANCH

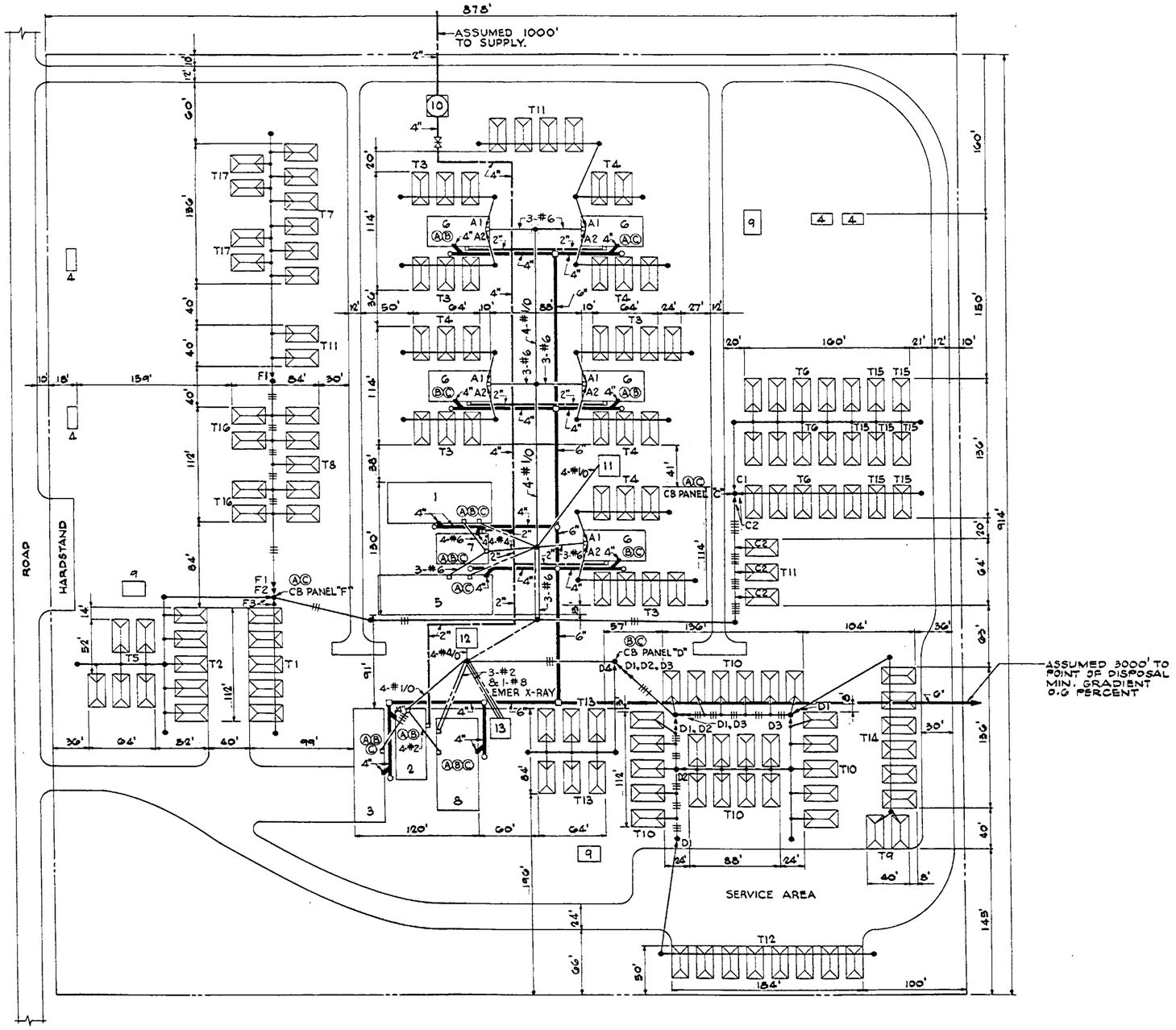
THEATER OF OPERATIONS
HOSPITAL, 200 BED
STD-ITR & TPR
SITE & UTILITY LAYOUTS

UNDER REVISION

APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: [signature] D/PS&O
DATE: 9 OCT. 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 50-04
SHEET 2 OF 2



300 BED HOSPITAL - STD-INT

SCALE NO. 13

INST. NO. GH 0311 STEEL FRAME BLDGS.

INST. NO. GH 0921 WOOD FRAME BLDGS.

SCHEDULE OF FACILITIES

NO.	FACILITY	STD.-INT INST. NO. GH 0311, GH 0321 QTY.	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES			
T1	ADMISSION & DISPOSITION	5	16'X32'	72-51
T2	DISPENSARY	5	16'X32'	72-51
T3	WARD - STANDARD	17	16'X32'	72-51
T4	WARD - ACUTE	14	16'X32'	72-51
	TENTAGE WITHOUT FRAMES			
T5	ADMINISTRATION	5	16'X32'	
T6	HOUSING - EM	14	16'X32'	
T7	HOUSING-OFFICERS-FEMALE	6	16'X32'	
T8	HOUSING-OFFICERS-MALE	5	16'X32'	
T9	LINEN EXCHANGE	2	16'X32'	
T10	MESS	24	16'X32'	
T11	RECREATION	9	16'X32'	
T12	SHOP	8	16'X32'	
T13	SPECIAL SERVICES	6	16'X32'	
T14	SUPPLY	6	16'X32'	
T15	UTILITY 2	7	16'X32'	
T16	UTILITY 5	4	16'X32'	
T17	UTILITY 6	4	16'X32'	
	BUILDINGS			
1	CENTRALIZED MATERIEL SECT 2	1	40'X100'	51-46
2	EENT & PHARMACY 1	1	50'X70'	51-21
3	LABORATORY & DENTAL 3	1	30'X110'	51-35
4	LATRINE, PIT TYPE, 8 SEATS	4	10'X20'	72-56
5	SURGERY 2	1	40'X110'	51-42
6	UTILITY BUILDING 3	5	30'X60'	51-85
7	UTILITY BUILDING 9	1	30'X50'	51-87
8	X-RAY, PHYSICAL THERAPY	1	40'X90'	51-32
	OTHER CONSTRUCTION			
	ROAD, 2 LANE, DRAIN & GRADE	0.6	MILE	85-31
9	SUMP - FIRE PROTECTION	3	10,000 GAL	84-21
10	WATER TANK	1	10,500 GAL	84-21
11	LOAD CENTER	1		
12	LOAD CENTER	1		
13	LOAD CENTER-EMERGENCY	1		
	HARDSTANDS, DRAIN & GRADE	12.5	1000 SY	85-81
	SITE AREA	18.4	ACRES	
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION	15,000 GPD	500510	84-21
SEWAGE	7500 GPD	500511	83-15
ELECTRIC DISTRIBUTION	77.4 KW	500512	81-25

ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY	SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
11	T6	14	LIGHTING	20.0	23.4
	T8	5			
	T11	9			
	T5	5	POWER	18.5	11.1
	T4	14			
	T7	6			
	T3	17			
	T2	5	RECP. EST.	14.4	10.8
	T15	7			
	T1	5			
	T16	4	GRAND TOTAL	58.9	45.3
	T17	4			
	1	1			
	5	1			
	6	5			
	7	1			
12	T13	6	LIGHTING	15.6	14.0
	T9	2	POWER	6.7	4.1
	T12	8	RECP. EST.	6.7	5.0
	T14	6	X-RAY	30.0	9.0
	T10	24	GRAND TOTAL	59.0	32.1
	2	1			
	3	1	OVERALL DEMAND		77.4
	8	1			
13 (EMER)	1	1	EMER. X-RAY	30.0	10.0
	5	1			
	8	1	EMER. LTG.	2.03	2.03

OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EACH TYPE	TOTALS
T3	WARD 1 - STANDARD	10	17	170	
T4	WARD 2 - ACUTE	10	14	140	
	TOTAL BEDS - PATIENTS				310
T8	HOUSING-OFFICERS-MALE	6	5	30	
	TOTAL MALE OFFICER ACCOMMODATIONS				30
T7	HOUSING-OFFICERS-FEMALE	6	6	36	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				36
T6	HOUSING - E.M.	12	14	108	
	TOTAL - E.M.				108
	TOTAL HOSPITAL OCCUPANCY				544

ELECTRICAL NOTES

1. ALL CB PANELS TO BE 4-1P, 15 AMP EXCEPT CB PANELS "C" WHICH IS 2-1P, 15 AMP.
2. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS OR CB PANELS MOUNTED ON THE POLES.

GENERAL NOTES

1. REFER TO FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 50' 100'

NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
HOSPITAL 300 BED STD-INT
SITE & UTILITY LAYOUT

UNDER REVISION

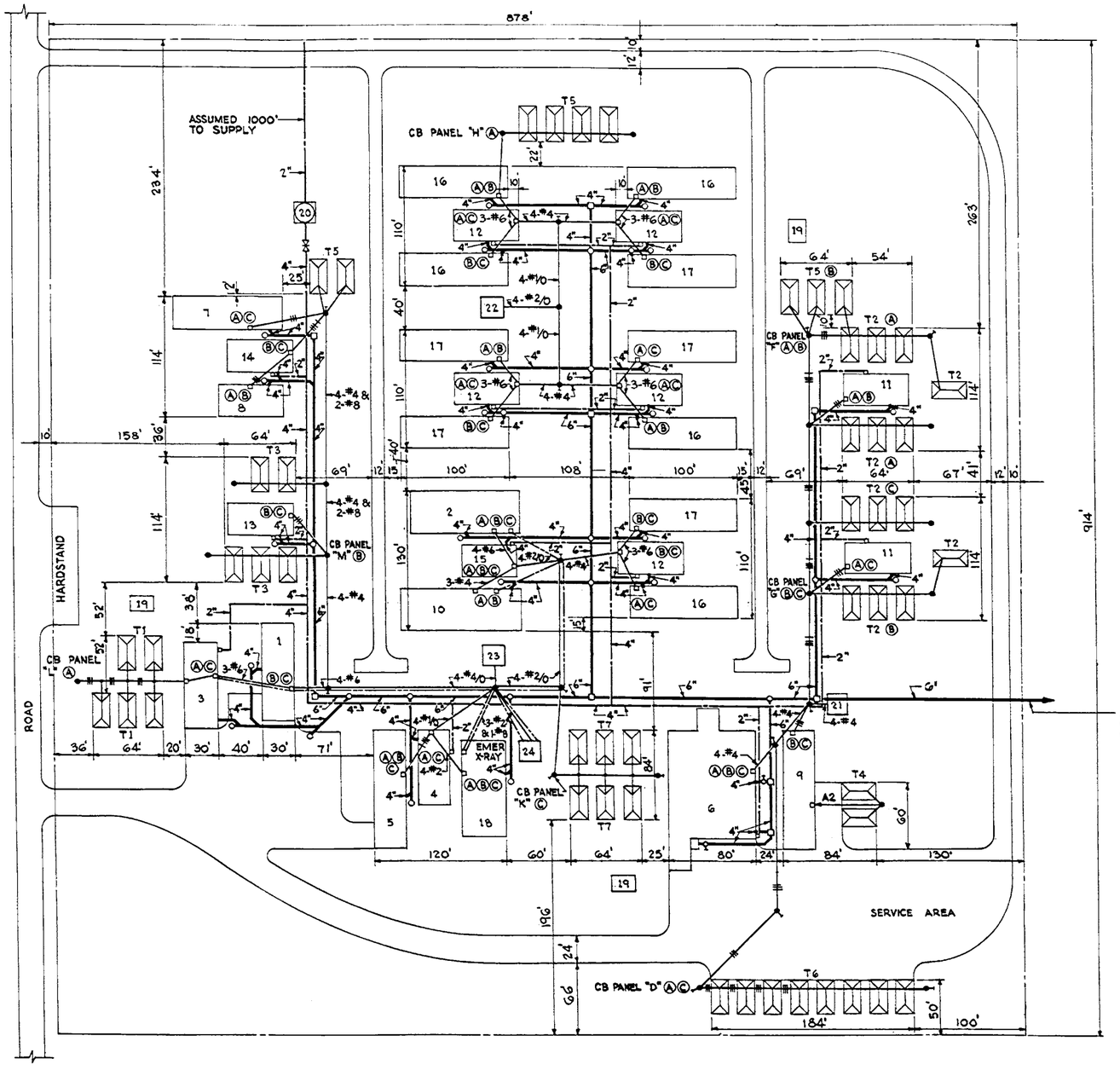
APPROVED: [signature] DATE: 19 MAR 1960
CHIEF, ENGINEERING BRANCH, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/PS&O
DATE 9 OCT 60

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 50-05
SHEET 1 OF 3

CORPS OF ENGINEERS

U. S. ARMY



SCHEDULE OF FACILITIES

NO.	FACILITY	INST. NO. GH 0331, GH 0341 QTY	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES			
T1	ADMINISTRATION	5	16' X 32'	72-51
T2	HOUSING-EM	14	16' X 32'	72-51
T3	HOUSING-OFFICERS-MALE	5	16' X 32'	72-51
T4	LINEN EXCHANGE	2	16' X 32'	72-51
T5	RECREATION	9	16' X 32'	72-51
T6	SHOP	8	16' X 32'	72-51
T7	SPECIAL SERVICES	6	16' X 32'	72-51
	BUILDINGS			
1	ADMISSION & DISPOSITION 4	1	30' X 90'	51-13
2	CENTRALIZED MATERIEL SECT. 2	1	40'X 100'	51-46
3	DISPENSARY 2	1	30'X 80'	51-23
4	EENT & PHARMACY 1	1	30'X70'	51-21
5	LABORATORY & DENTAL 3	1	30'X 110'	51-35
6	MESS BUILDING 3	1	8200 SF	51-65
7	OFFICERS' QUARTERS-FEMALE 1	1	30'X100'	51-71
8	OFFICERS' QUARTERS-FEMALE 2	1	30'X60'	51-71
9	SUPPLY STOREHOUSE 2	1	30'X 110'	51-54
10	SURGERY 2	1	40'X 110'	51-42
11	UTILITY BUILDING 2	2	30'X 60'	51-81
12	UTILITY BUILDING 3	5	30'X60'	51-83
13	UTILITY BUILDING 5	1	30'X 60'	51-83
14	UTILITY BUILDING 6	1	30'X 60'	51-85
15	UTILITY BUILDING 9	1	30'X 50'	51-87
16	WARD BUILDING-1-STANDARD	5	30'X100'	51-51
17	WARD BUILDING-2-ACUTE	5	30'X100'	51-51
18	XRAY-PHYSICAL THERAPY	1	40'X90'	51-32
	OTHER CONSTRUCTION			
	HARDSTANDS, 4" STABILIZED STONE	12.5	1000 SY	85-31
	ROAD, DOUBLE LANE, 6" STABILIZED STONE	0.6	MILE	85-31
19	SUMP-FIRE PROTECTION	3	10000 GAL	84-21
20	WATER TANK	1	10500 GAL	84-21
21	LOAD CENTER	1		
22	LOAD CENTER	1		
23	LOAD CENTER	1		
24	LOAD CENTER-EMERGENCY	1		
	SITE AREA	18.4	ACRES	

UTILITIES			
ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	15000 GPD	500540	84-21
SEWAGE	10500 GPD	500541	83-15
ELECTRIC DISTRIBUTION	129.0KW	500542	81-21 81-22 81-23

ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY	SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
21	T2	14	LIGHTING	12.7	11.4
	T5	3	POWER	20.8	12.5
	T4	2	RECP EST	1.6	1.2
	T6	8	GRAND TOTAL	35.1	25.1
	6	1			
	9	1			
	11	2			
22	T5	4	LIGHTING	11.5	10.2
	12	4	POWER	2.4	1.5
	16	4	RECP EST	34.6	26.0
	17	4	GRAND TOTAL	48.5	37.7
23	T3	5	LIGHTING	22.8	20.5
	T5	2			
	T7	6			
	T1	5	POWER	30.7	18.5
	1	1			
	2	1			
	3	1	RECP EST	24.3	18.2
	4	1			
	5	1			
	7	1	X-RAY	30.00	10.0
	8	1			
	10	1			
	12	1	GRAND TOTAL	107.8	68.2
	13	1			
	14	1			
	15	1			
	16	1	OVERALL DEMAND		129.0
	17	1			
	18	1			
24 (EMER)	2	1	EMER X-RAY	30.0	10.0
	3	1			
	10	1	EMER LTG	2.16	2.16
	18	1			

OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EACH TYPE	TOTALS
16	WARD BUILDING-1-STANDARD	34	5	170	
17	WARD BUILDING-2-ACUTE	28	5	140	
	TOTAL BEDS-PATIENTS				310
T3	HOUSING-OFFICERS-MALE	6	5	30	
	TOTAL MALE OFFICER ACCOMMODATIONS				30
7	OFFICERS' QUARTERS-FEMALE 1	23	1	23	
8	OFFICERS' QUARTERS-FEMALE 2	13	1	13	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				36
T2	HOUSING-E.M.	12	14	168	
	TOTAL-E.M.				168
	TOTAL HOSPITAL OCCUPANCY				544

300 BED HOSPITAL - STD-ITR

SCALE · NO. 13

INST. NO. GH 0331-STEEL FRAME BLDGS.
INST. NO. GH 0341-WOOD FRAME BLDGS.

ELECTRICAL NOTES

1. ALL CB PANELS TO BE 2-1P, 15 AMP.
2. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS.

GENERAL NOTES

1. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES 0 50' 100'

NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ILYUS
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C. W. DEICHMANN
APPROVED:
CHIEF, STRUCTURES BRANCH

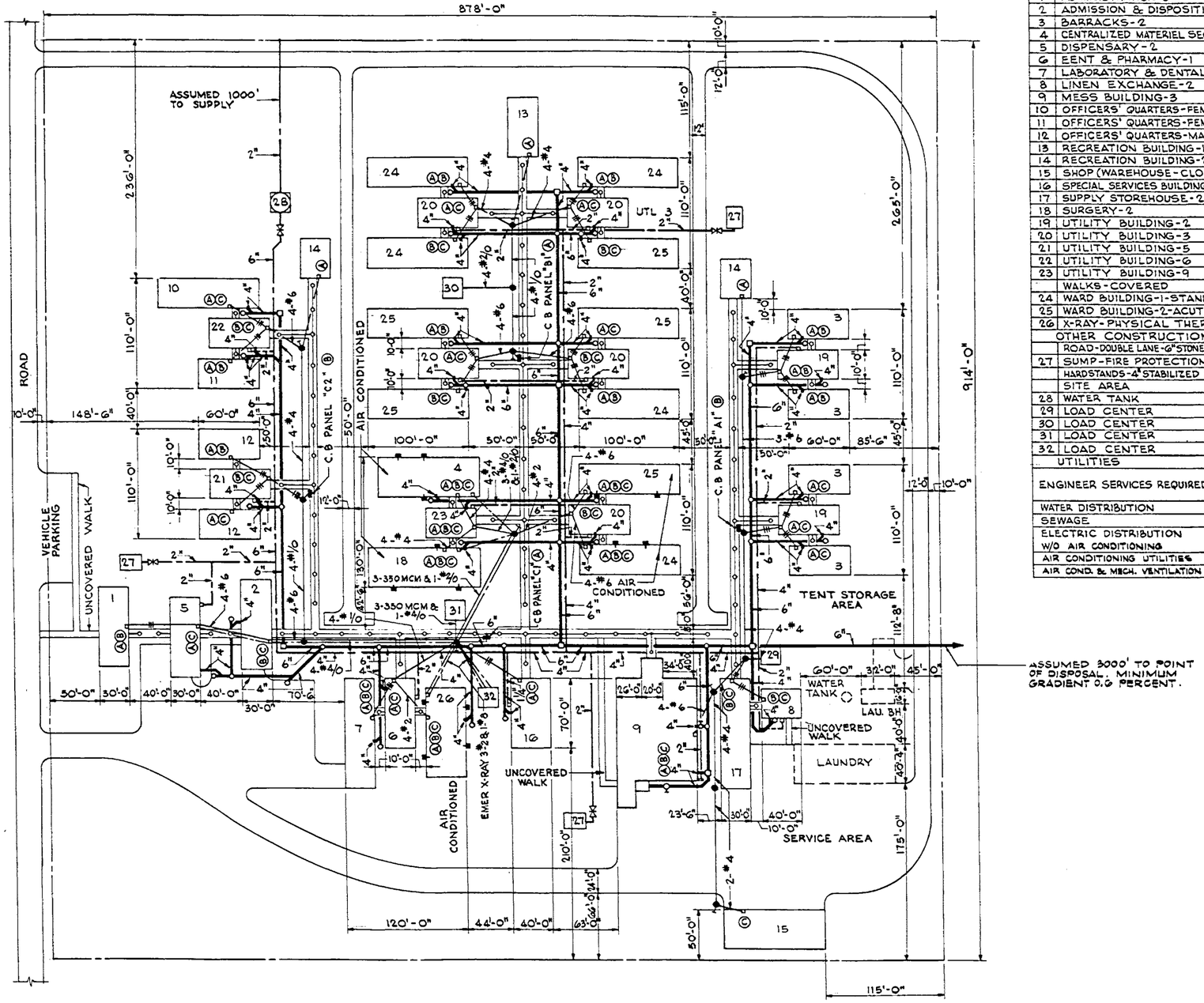
THEATER OF OPERATIONS
HOSPITAL 300 BED STD-ITR
SITE & UTILITY LAYOUT

UNDER REVISION

APPROVED: H. M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959

APPROVED FOR PROPONENT AGENCY:
Robert Bernstein 2/1540
DATE 7 OCT. 58

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 50-05
SHEET 2 OF 3



300 BED HOSPITAL-STD-TPK

SCALE NO.13

GH0351 INST. NO. GH0351 STEEL FRAME BLDGS.
GH0361 INST. NO. GH0361 WOOD FRAME BLDGS.

SCHEDULE OF FACILITIES

NO.	FACILITY	QTY	SIZE OR UNIT	DWG. NO.
	BUILDINGS			
1	ADMINISTRATION-3	1	30'X80'	51-11
2	ADMISSION & DISPOSITION-4	1	30'X90'	51-13
3	BARRACKS-2	4	30'X60'	51-71
4	CENTRALIZED MATERIEL SECTION-2	1	40'X100'	51-46
5	DISPENSARY-2	1	30'X80'	51-23
6	EENT & PHARMACY-1	1	30'X70'	51-21
7	LABORATORY & DENTAL-3	1	30'X110'	51-35
8	LINEN EXCHANGE-2	1	30'X40'	51-56
9	MESS BUILDING-3	1	8200 SF	51-65
10	OFFICERS' QUARTERS-FEMALE-1	1	30'X100'	51-71
11	OFFICERS' QUARTERS-FEMALE-2	1	30'X60'	51-71
12	OFFICERS' QUARTERS-MALE-2	2	30'X60'	51-71
13	RECREATION BUILDING-1	1	30'X60'	51-91
14	RECREATION BUILDING-2	2	30'X40'	51-91
15	SHOP (WAREHOUSE-CLOSED)	1	40'X100'	44-11
16	SPECIAL SERVICES BUILDING-SPC-A3	1	40'X70'	51-93
17	SUPPLY STOREHOUSE-2	1	30'X110'	51-54
18	SURGERY-2	1	40'X110'	51-42
19	UTILITY BUILDING-2	2	30'X60'	51-81
20	UTILITY BUILDING-3	5	30'X60'	51-83
21	UTILITY BUILDING-5	1	30'X60'	51-83
22	UTILITY BUILDING-6	1	30'X60'	51-85
23	UTILITY BUILDING-9	1	30'X50'	51-87
	WALKS-COVERED	24.7	8'X 100'	51-97
24	WARD BUILDING-1-STANDARD	5	30'X100'	51-51
25	WARD BUILDING-2-ACUTE	5	30'X100'	51-51
26	X-RAY-PHYSICAL THERAPY	1	40'X90'	51-32
	OTHER CONSTRUCTION			
	ROAD-DOUBLE LANE-6"STONE,1"COLD MIX	0.64	MILE	85-31
27	SUMP-FIRE PROTECTION	3	10,000 GAL	84-21
	HARDSTANDS-4"STABILIZED STONE	12.5	1000 SY	85-31
	SITE AREA	18.6	ACRES	—
28	WATER TANK	1	10,500 GAL	84-21
29	LOAD CENTER	1	—	—
30	LOAD CENTER	1	—	—
31	LOAD CENTER	1	—	—
32	LOAD CENTER	1	—	—
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	15,000 GPD	500570	84-21
SEWAGE	10,500 GPD	500571	83-15
ELECTRIC DISTRIBUTION W/O AIR CONDITIONING	138.3 KW	500572	81-23
AIR CONDITIONING UTILITIES		500573	
AIR COND. & MECH. VENTILATION		500574	

ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY	W/O AIR CONDITION'G SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW	WITH AIR CONDITION'G SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
29	COVERED WALK	14	LIGHTING	14.3	12.8	LIGHTING	14.3	12.8
	14	1	POWER	20.8	12.5	POWER	20.8	12.5
	3	4	RECP EST	5.6	4.2	RECP EST	5.6	4.2
	19	2	GRAND TOTAL	40.7	29.5	GRAND TOTAL	40.7	29.5
	8	1						
	17	1						
	9	1						
	15	1						
30	COVERED WALK	13	LIGHTING	11.8	10.6	LIGHTING	11.8	10.6
	13	1	POWER	2.4	1.5	POWER	2.4	1.5
	24	4	RECP EST	35.1	26.4	RECP EST	35.1	26.4
	20	4	GRAND TOTAL	49.3	38.5	GRAND TOTAL	49.3	38.5
	25	4						
31	COVERED WALK	4	LIGHTING	24.0	21.6	LIGHTING	24.0	21.6
	4	1						
	23	1						
	18	1						
	25	1	POWER	30.7	18.8	POWER	121.6	75.7
	20	1						
	24	1						
	1	1	RECP EST	28.3	21.2	RECP EST	28.3	21.2
	5	1						
	2	1						
	7	1	X-RAY	30.0	9.0	X-RAY	30.0	9.0
	6	1						
	26	1						
	16	1	GRAND TOTAL	113.0	70.3	GRAND TOTAL	208.4	127.5
	12	2						
	21	1						
	14	1						
	10	1	OVERALL DEMAND		138.3	OVERALL DEMAND		195.5
	22	1						
	11	1						
32	4	1	EMER X-RAY	36.00	36.00	EMER X-RAY	40.00	12.00
	18	1						
	5	1	EMER LTG	2.16	2.16	EMER LTG	2.16	2.16
	26	1						

OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF BLDGS	NO. OF BEDS EA. TYPE	TOTAL
24	WARD BUILDING-1-STANDARD	34	5	170	
25	WARD BUILDING-2-ACUTE	28	5	140	
	TOTAL BEDS-PATIENTS				310
12	OFFICERS' QUARTERS-MALE-2	14	2	28	
	TOTAL MALE OFFICER ACCOMODATIONS				28
10	OFFICERS' QUARTERS-FEMALE-1	23	1	23	
11	OFFICERS' QUARTERS-FEMALE-2	13	1	13	
	TOTAL FEMALE OFFICER ACCOMODATIONS				36
3	BARRACKS-2	42	4	168	
	TOTAL E.M.				168
	TOTAL HOSPITAL OCCUPANCY				542
3	EMERGENCY WARD-BARRACKS-2	20	4	80	
	TOTAL EMERGENCY BEDS				80

GENERAL NOTES

1. ONLY BUILDINGS INDICATED WILL BE AIR CONDITIONED WHEN REQUIRED.
2. ALL WALKS ARE COVERED WALKS 8'-0" WIDE, EXCEPT AS NOTED.
3. REFER TO FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 50' 100'
NO.13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C.W.DEICHMANN
APPROVED: [signature] CHIEF, [illegible] BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1968
APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/PS&O
DATE 9 OCT 68

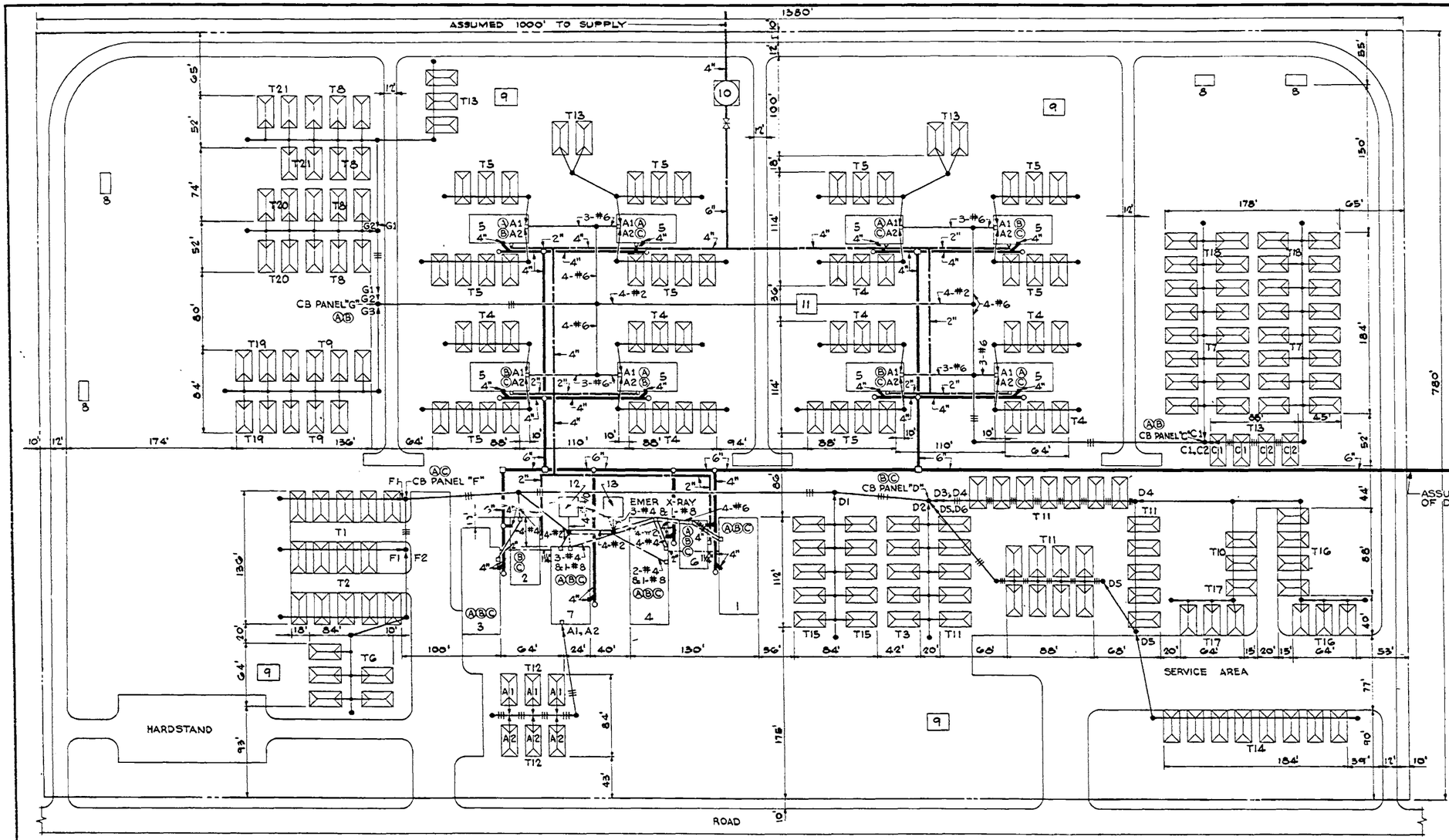
THEATER OF OPERATIONS
HOSPITAL-300 BED STD-TPK
SITE & UTILITY LAYOUT

UNDER REVISION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 50-05
SHEET 3 OF 3

CORPS OF ENGINEERS

U. S. ARMY



SITE & UTILITY LAYOUT

SCALE NO. 13

INST. NO. GH0511 STEEL FRAME BLDGS.
INST. NO. GH0521 WOOD FRAME BLDGS.

ELECTRICAL LOADS

LOAD CTR	TYPE FACILITY	QTY	SERVICE	TOTAL CONN. LOADS-KW	TOTAL DEMAND LOADS-KW
11	T7	23	LIGHTING	23.0	22.5
	T9	7			
	T13	11			
	T4	22	POWER	4.8	2.9
	T3	11			
	T5	31	RECP. EST.	16.6	12.5
	T20	4			
	T21	4	GRAND TOTAL	46.4	37.9
	T19	4			
	T18	9			
	5	8			
12	T15	10	LIGHTING	32.0	29.8
	T6	5			
	T10	2			
	T14	8	POWER	22.5	15.5
	T16	7			
	T3	5			
	T17	4	RECP. EST.	10.0	7.5
	T12	6			
	T2	5			
	T11	25	X-RAY	40.0	12.0
	T1	9			
	1	1			
	2	1	GRAND TOTAL	104.5	62.8
	3	1			
	4	1			
	6	1	OVERALL DEMAND		100.7
	7	1			
13 (EMER)	1	1	EMER X-RAY	40.0	12.0
	4	1			
	7	1	EMER. LTG.	1.91	1.91

SCHEDULE OF FACILITIES

NO.	FACILITY	INST. NO. GH0511, GH0521 QTY.	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES			
T1	ADMISSION & DISPOSITION	9	16'X32'	72-51
T2	DISPENSARY	5	16'X32'	72-51
T3	PHYSICAL MEDICINE	5	16'X32'	72-51
T4	WARD - ACUTE	22	16'X32'	72-51
T5	WARD - STANDARD	31	16'X32'	72-51
	TENTAGE WITHOUT FRAMES			
T6	ADMINISTRATION	5	16'X32'	
T7	HOUSING - E.M.	23	16'X32'	
T8	HOUSING - OFFICERS, FEMALE	11	16'X32'	
T9	HOUSING - OFFICERS, MALE	7	16'X32'	
T10	LINEN EXCHANGE	2	16'X32'	
T11	MESS	25	16'X32'	
T12	PROFESSIONAL SERVICES	6	16'X32'	
T13	RECREATION	11	16'X32'	
T14	SHOP	8	16'X32'	
T15	SPECIAL SERVICES	10	16'X32'	
T16	SUPPLY 1	7	16'X32'	
T17	SUPPLY 3	4	16'X32'	
T18	UTILITY 1	9	16'X32'	
T19	UTILITY 4	4	16'X32'	
T20	UTILITY 6	4	16'X32'	
T21	UTILITY 7	4	16'X32'	

NO.	FACILITY	INST. NO. GH0511, GH0521 QTY.	SIZE OR UNIT	DWG. NO.
	BUILDINGS			
1	CENTRALIZED MATERIEL SECT 2	1	40'X100'	51-46
2	DENT & PHARMACY 1	1	30'X70'	51-21
3	LABORATORY & DENTAL 2	1	40'X110'	51-34
4	SURGERY 2	1	40'X110'	51-42
5	UTILITY BUILDING 3	8	30'X60'	51-85
6	UTILITY BUILDING 9	1	30'X50'	51-87
7	X-RAY 2	1	40'X80'	51-31
8	LATRINE-PIT TYPE - 8 SEATS	4	10'X20'	72-36
	OTHER CONSTRUCTION			
	HARDSTANDS, DRAIN & GRADE	14.8	1000 SY	85-31
	ROAD, 2 LANE, DRAIN & GRADE	0.8	MILE	85-31
9	SUMP - FIRE PROTECTION	4	10,000 GAL	84-21
10	WATER TANK 3	1	21,000 GAL	84-21
11	LOAD CENTER	1		
12	LOAD CENTER	1		
13	LOAD CENTER-EMERGENCY	1		
	SITE AREA	24.7	ACRES	
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAIL
WATER DISTRIBUTION	25,000 GPD	500610	84-21
SEWAGE	12,500 GPD	500611	85-15
ELECTRIC DISTRIBUTION	100.7 KW	500612	81-23

OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EACH TYPE	TOTALS
T4	WARD-ACUTE	10	22	220	
T5	WARD-STANDARD	10	31	310	
	TOTAL BEDS-PATIENTS				550
T9	HOUSING-OFFICERS-MALE	6	7	42	
	TOTAL MALE OFFICER ACCOMMODATIONS				42
T8	HOUSING-OFFICERS-FEMALE	6	11	66	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				66
T7	HOUSING-E.M.	12	23	276	
	TOTAL E.M.				276
	TOTAL HOSPITAL OCCUPANCY				914

GENERAL NOTES

CB PANEL SCHEDULE

PANEL	SIZE
C	2-1P, 15 AMP.
D	6-1P, 15 AMP.
F	2-1P, 15 AMP.
G	4-1P, 15 AMP.

1. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS OR CB PANELS MOUNTED ON THE POLES.
2. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 50' 100'
NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN

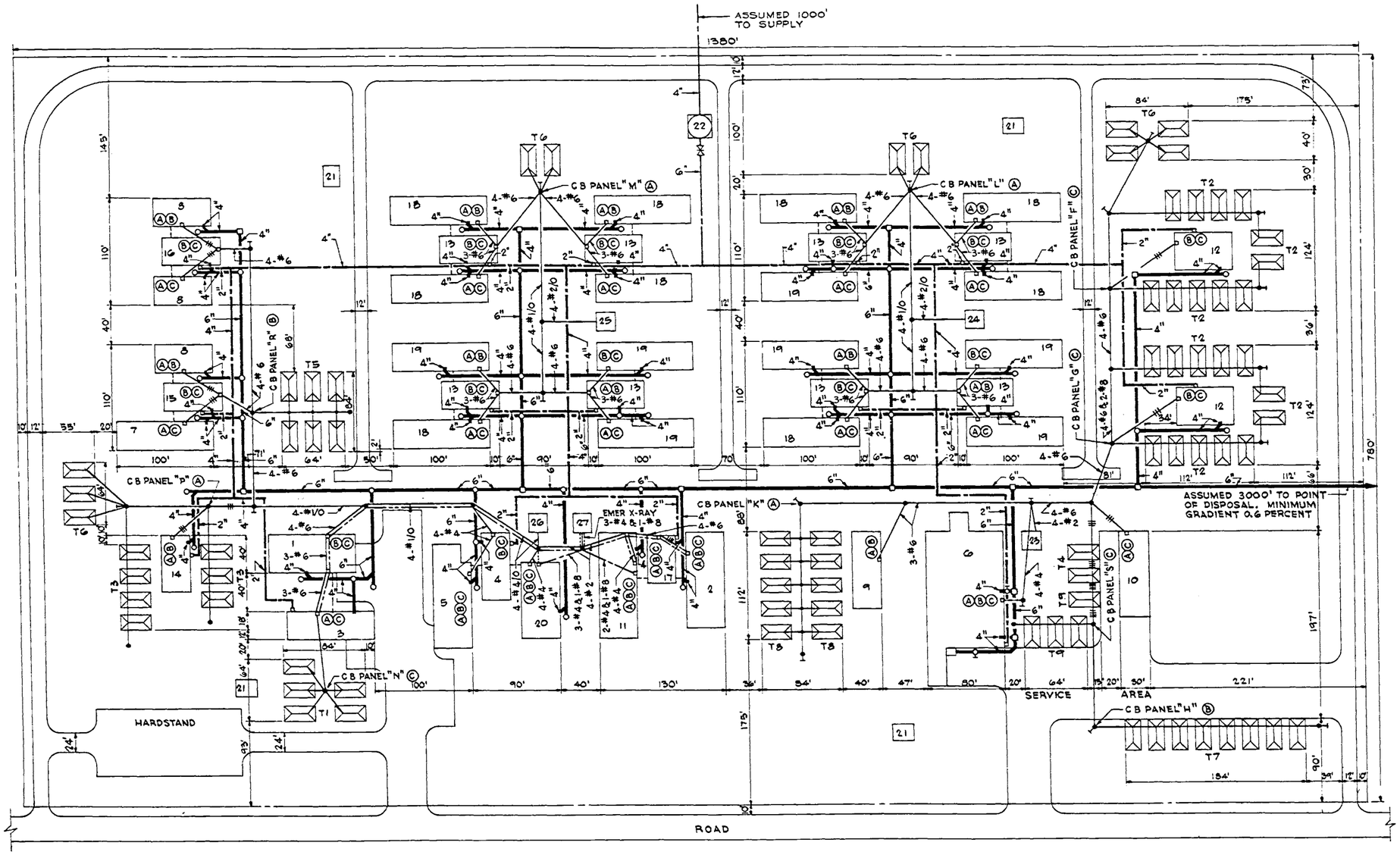
THEATER OF OPERATIONS
HOSPITAL 500 BED
1378-INT
SITE & UTILITY LAYOUT

UNDER REVISION

APPROVED: [signature] CHIEF, ARCHITECTURAL BRANCH
APPROVED: [signature] for H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/PSED
DATE 9 OCT 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 3
50-06



SITE & UTILITY LAYOUT

SCALE NO. 13

INST. NO. GH 0531 STEEL FRAME BLDGS.
INST. NO. GH 0541 WOOD FRAME BLDGS.

ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY
23	T2	23
	T6	4
	T8	10
	T4	2
	T7	8
	T9	4
	6	1
	9	1
	10	1
	12	2
24	T6	2
	13	4
	18	4
	19	4
25	T6	2
	13	4
	18	5
	19	3
26	T3	7
	T6	3
	T1	5
	T5	6
	1	1
	2	1
	3	1
	4	1
	7	1
	8	3
	5	1
	11	1
	14	1
	15	1
	16	1
	17	1
	20	1
27 (EMER)	2	1
	3	1
	11	1
	20	1

SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
LIGHTING	19.4	17.4
POWER	22.3	13.4
RECP EST	3.7	2.8
GRAND TOTAL	45.3	33.6
LIGHTING	10.7	9.6
POWER	2.4	1.5
RECP EST	34.6	26.0
GRAND TOTAL	47.7	37.1
LIGHTING	10.6	9.5
POWER	2.4	1.5
RECP EST	34.6	26.0
GRAND TOTAL	47.6	37.0
LIGHTING	22.7	20.5
POWER	35.7	21.4
RECP EST	17.1	12.8
X-RAY	40.0	12.0
GRAND TOTAL	115.5	66.7
OVERALL DEMAND		174.4
EMER X-RAY	40.0	12.0
EMER LTG	2.04	2.04

OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL	NO. OF BEDS EACH TYPE	TOTALS
18	WARD BLDG. - 1 - STANDARD	34	9	306	
19	WARD BLDG. - 2 - ACUTE	28	7	196	
	TOTAL BEDS - PATIENTS				502
T3	HOUSING - OFFICERS - MALE	6	7	42	
	TOTAL MALE OFFICERS ACCOMODATIONS				42
7	OFFICERS QUARTERS - FEMALE 1	23	1	23	
8	OFFICERS QUARTERS - FEMALE 2	13	3	39	
	TOTAL FEMALE OFFICERS ACCOMODATIONS				62
T2	HOUSING - EM	12	23	276	
	TOTAL EM				276
	TOTAL HOSPITAL OCCUPANCY				882

SCHEDULE OF FACILITIES

NO.	FACILITY	QTY.	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES			
T1	ADMINISTRATION	5	16'X32'	72-51
T2	HOUSING - EM	23	16'X32'	72-51
T3	HOUSING - OFFICERS - MALE	7	16'X32'	72-51
T4	LINEN EXCHANGE	2	16'X32'	72-51
T5	PROFESSIONAL SERVICES	6	16'X32'	72-51
T6	RECREATION	11	16'X32'	72-51
T7	SHOP	8	16'X32'	72-51
T8	SPECIAL SERVICES	10	16'X32'	72-51
T9	SUPPLY 3	4	16'X32'	72-51
	BUILDINGS			
1	ADMISSION & DISPOSITION 3	1	40'X90'	51-12
2	CENTRALIZED MATERIEL SECT. 2	1	40'X100'	51-46
3	DISPENSARY 1	1	30'X90'	51-23
4	EENT & PHARMACY 1	1	30'X70'	51-21
5	LABORATORY & DENTAL 2	1	40'X110'	51-34
6	MESS BLDG. 2	1	10,000 S.F.	51-64
7	OFFICERS QUARTERS - FEMALE 1	1	30'X100'	51-71
8	OFFICERS QUARTERS - FEMALE 2	3	30'X60'	51-71
9	PHYSICAL MEDICINE 2	1	30'X50'	51-36
10	SUPPLY STOREHOUSE 1	1	30'X90'	51-54
11	SURGERY 2	1	40'X110'	51-42
12	UTILITY BLDG. 1	2	40'X60'	51-81
13	UTILITY BLDG. 3	8	30'X60'	51-83
14	UTILITY BLDG. 4	1	30'X60'	51-83
15	UTILITY BLDG. 6	1	30'X60'	51-85
16	UTILITY BLDG. 7	1	30'X60'	51-85
17	UTILITY BLDG. 9	1	30'X50'	51-87
18	WARD BLDG. - 1 - STANDARD	9	30'X100'	51-51
19	WARD BLDG. - 2 - ACUTE	7	30'X100'	51-51
20	XRAY 2	1	40'X80'	51-31
	OTHER CONSTRUCTION			
	HARDSTANDS - 4" STABILIZED STONE	14.8	1000 SY.	85-31
	ROAD, 2 LANE - 6" STABILIZED STONE	0.8	MILE	85-31
21	SUMP - FIRE PROTECTION	4	10,000 GAL	84-21
22	WATER TANK	1	21,000 GAL	84-21
23	LOAD CENTER	1		
24	LOAD CENTER	1		
25	LOAD CENTER	1		
26	LOAD CENTER	1		
27	LOAD CENTER - EMERGENCY	1		
	SITE AREA	24.7	ACRES	
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACIL. NO.	DWG. FOR DETAILS
WATER DISTRIBUTION	25000 GPD	500640	84-21
SEWAGE	17,500 GPD	500641	83-15
ELECTRIC DISTRIBUTION	174.4 KW	500642	81-23

GENERAL NOTES

1. REFER TO FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDING

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 50' 100'
NO. 13

MAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: HELTON
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, STRUCTURES BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 13 MAY 1969
APPROVED FOR PROPONENT AGENCY: Robert Brunston D/PS&O
DATE 4 OCT. 68

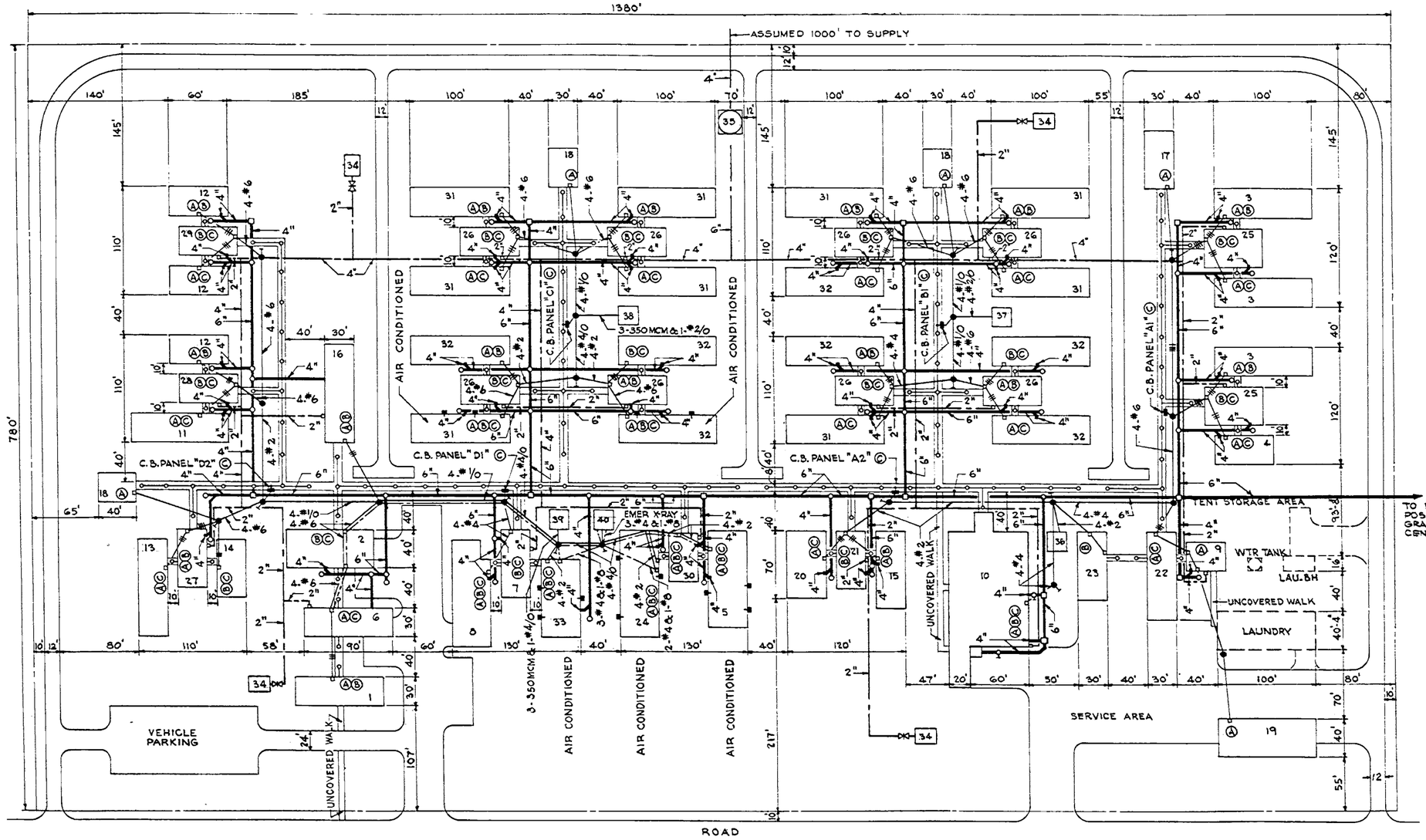
THEATER OF OPERATIONS
HOSPITAL 500 BED STD-1102
SITE & UTILITY LAYOUT

UNDER REVISION

SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER 50-06
SHEET 2 OF 3

CORPS OF ENGINEERS

U. S. ARMY



SITE & UTILITY LAYOUT

SCALE NO. 13

INST. NO. GH 0551-STEEL FRAME BLDGS.

INST. NO. GH 0561-WOOD FRAME BLDGS.

SCHEDULE OF FACILITIES

NO.	FACILITY	QTY	SIZE OR UNIT	DWG. NO.
BUILDINGS				
	COVERED WALKS	1	8'X3426'	51-97
1	ADMINISTRATION-2	1	30'X90'	51-11
2	ADMISSION & DISPOSITION-3	1	40'X90'	51-12
3	BARRACKS-1	3	30'X100'	51-71
4	BARRACKS-2	1	30'X60'	51-71
5	CENTRALIZED MATERIEL SECTION-2	1	40'X100'	51-46
6	DISPENSARY-1	1	30'X90'	51-23
7	EENT & PHARMACY-1	1	30'X70'	51-21
8	LABORATORY & DENTAL-2	1	40'X110'	51-34
9	LINEN EXCHANGE-2	1	30'X40'	51-56
10	MESS BUILDING-2	1	10000 SF.	51-64
11	OFFICERS' QUARTERS-FEMALE-1	1	30'X100'	51-71
12	OFFICERS' QUARTERS-FEMALE-2	3	30'X60'	51-71
13	OFFICERS' QUARTERS-MALE-1	1	30'X100'	51-71
14	OFFICERS' QUARTERS-MALE-2	1	30'X60'	51-71
15	PHYSICAL MEDICINE-2	1	30'X80'	51-36
16	PROFESSIONAL SERVICES BUILDING	1	30'X100'	51-13
17	RECREATION BUILDING-1	1	30'X60'	51-91
18	RECREATION BUILDING-2	3	30'X40'	51-91
19	SHOP (WAREHOUSE-CLOSED)	1	40'X100'	44-11
20	SPECIAL SERVICES BUILDING-SPC-A2	1	40'X70'	51-91
21	SPECIAL SERVICES BUILDING-SPC-B2	1	30'X60'	51-93
22	SUPPLY STOREHOUSE-1	1	30'X90'	51-54
23	SUPPLY STOREHOUSE-3	1	30'X70'	51-54
24	SURGERY-2	1	40'X110'	51-42
25	UTILITY BUILDING-1	2	40'X60'	51-81
26	UTILITY BUILDING-3	8	30'X60'	51-85
27	UTILITY BUILDING-4	1	30'X60'	51-85
28	UTILITY BUILDING-6	1	30'X60'	51-85
29	UTILITY BUILDING-7	1	30'X60'	51-85
30	UTILITY BUILDING-9	1	30'X50'	51-87
31	WARD BUILDING-1-STANDARD	9	30'X100'	51-51
32	WARD BUILDING-2-ACUTE	7	30'X100'	51-51
33	X-RAY-2	1	40'X80'	51-31
OTHER CONSTRUCTION				
	ROAD-DOUBLE LANE-6" STONE, COLD MIX	0.80	MILE	85-31
34	SUMP-FIRE PROTECTION	4	10000 GAL	84-31
	HARDSTANDS-4" STABILIZED STONE	14.80	1000 SY	85-21
	SITE AREA	24.71	ACRES	
35	WATER TANK	1	210000 GAL	84-21
36	LOAD CENTER	1		
37	LOAD CENTER	1		
38	LOAD CENTER	1		
39	LOAD CENTER	1		
40	LOAD CENTER-EMERGENCY	1		
UTILITIES				

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	250000 GPD	500670	84-21
SEWAGE	175000 GPD	500671	83-15
ELECTRIC DISTRIBUTION WITHOUT AIR CONDITIONING	185.6 KW	500672	81-23
AIR CONDITIONING UTILITIES		500673	
AIR COND. & MECH. VENTILATION		500674	

STD-TPR OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	NO. OF BEDS EA. TYPE	TOTAL
31	WARD BUILDING-1-STANDARD	34	9	306	
32	WARD BUILDING-2-ACUTE	28	7	196	
	TOTAL BEDS-PATIENTS				502
13	OFFICERS' QUARTERS-MALE-1	24	1	24	
14	OFFICERS' QUARTERS-MALE-2	14	1	14	
	TOTAL MALE OFFICER ACCOMMODATIONS				38
11	OFFICERS' QUARTERS-FEMALE-1	23	1	23	
12	OFFICERS' QUARTERS-FEMALE-2	13	3	39	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				62
3	BARRACKS-1	74	3	222	
4	BARRACKS-2	42	1	42	
	TOTAL E.M.				264
	TOTAL HOSPITAL OCCUPANCY				866
3	EMER. WARD - BARRACKS-1	36	3	108	
4	EMER. WARD - BARRACKS-2	20	1	20	
	TOTAL EMER. BEDS				128

ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY	WITHOUT AIRCONDITIONING: SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW	WITH AIRCONDITIONING: SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
36	COVERED WALK		LIGHTING	17.7	16.0	LIGHTING	17.7	16.0
	3	3						
	4	1						
	9	1						
	10	1	POWER	23.1	13.8	POWER	23.1	13.8
	15	1						
	17	1						
	19	1	RECP EST	10.7	8.0	RECP EST	10.7	8.0
	20	1						
	21	1	GRAND TOTAL	51.5	37.8	GRAND TOTAL	51.5	37.8
	22	1						
	23	1						
	25	2						
37	COVERED WALK		LIGHTING	11.2	10.0	LIGHTING	11.2	10.0
	18	1	POWER	2.4	1.5	POWER	2.4	1.5
	26	4	RECP EST	34.9	26.1	RECP EST	34.9	26.1
	31	4	GRAND TOTAL	48.5	37.6	GRAND TOTAL	48.5	37.6
	32	4						
38	COVERED WALK		LIGHTING	11.1	10.0	LIGHTING	11.1	10.0
	18	1	POWER	2.4	1.5	POWER	29.6	17.8
	26	4	RECP EST	34.9	26.1	RECP EST	34.9	26.1
	31	5	GRAND TOTAL	48.4	37.6	GRAND TOTAL	75.6	53.9
	32	3						
39	COVERED WALK		LIGHTING	24.5	22.1	LIGHTING	24.5	22.1
	1	1						
	2	1						
	5	1						
	6	1	POWER	36.2	21.7	POWER	97.5	58.5
	7	1						
	8	1						
	11	1	RECP EST	22.4	16.8	RECP EST	22.4	16.8
	12	3						
	13	1						
	14	1	X-RAY	40.0	12.0	X-RAY	40.0	12.0
	16	1						
	18	1						
	24	1	GRAND TOTAL	123.1	72.6	GRAND TOTAL	184.4	109.4
	27	1						
	28	1						
	29	1	OVERALL DEMAND		185.6	OVERALL DEMAND		238.7
	30	1						
	33	1						
40 EMER	5	1	EMER X-RAY	36.00	36.00	EMER X-RAY	40.0	12.0
	6	1						
	24	1	EMER LTG	2.04	2.04	EMER LTG	2.04	2.04
	33	1						

GENERAL NOTES

1. ONLY BUILDINGS INDICATED WILL BE AIR CONDITIONED WHEN REQUIRED.
2. ALL WALKS ARE COVERED WALKS, 8'-0" WIDE, EXCEPT AS NOTED.
3. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 50' 100'

NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: I.LYUS
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
HOSPITAL-300 BED STD-TPR
SITE & UTILITY LAYOUT

UNDER REVISION

APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, DESIGN BRANCH, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 2/Lt 9 OCT 68

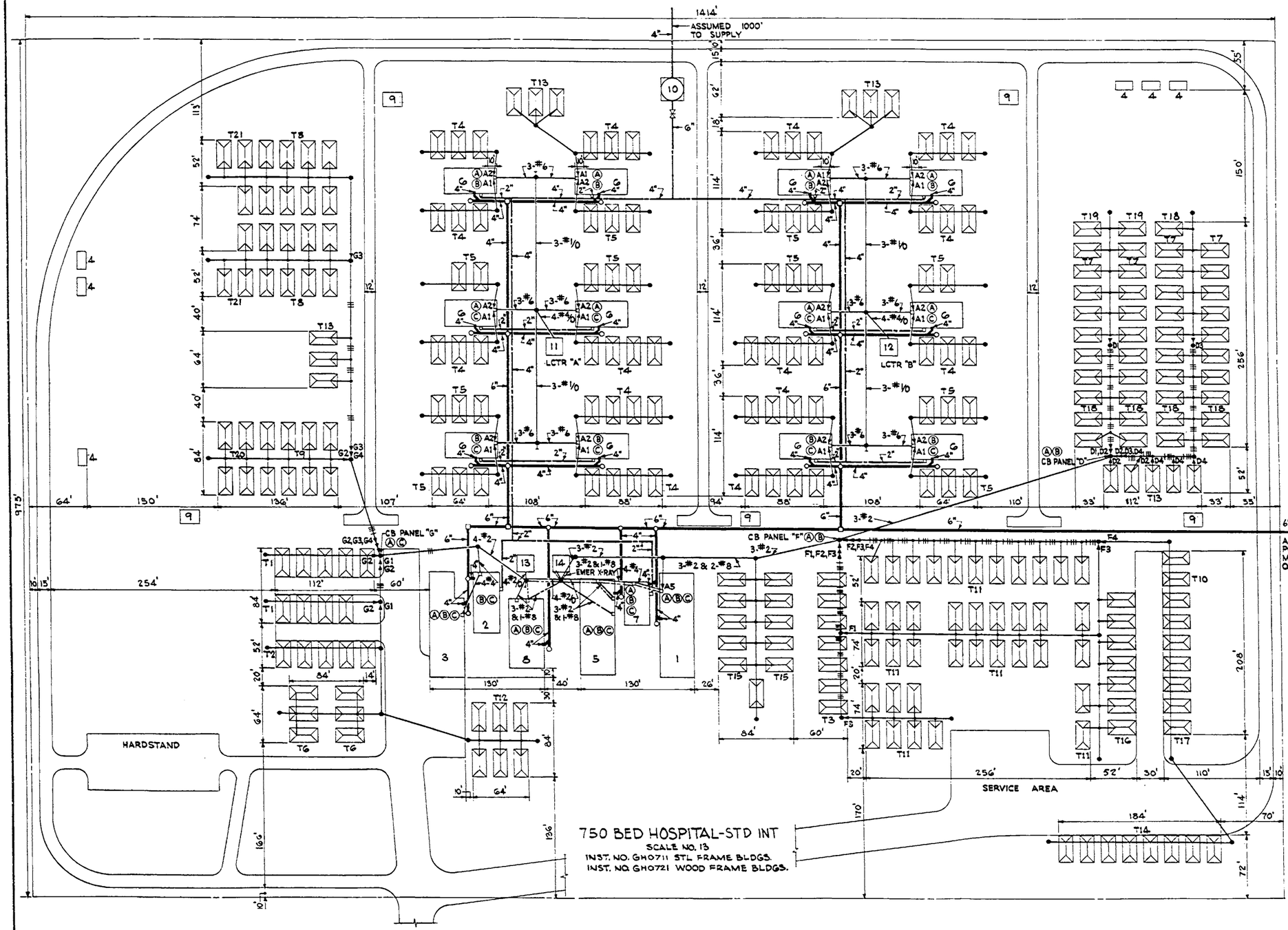
SCALE: AS NOTED SPEC. NO.

DRAWING NUMBER 50-06

SHEET 3 OF 3

CORPS OF ENGINEERS

U. S. ARMY



750 BED HOSPITAL-STD INT

SCALE NO. 13

INST. NO. GH0711 STL FRAME BLDGS.

INST. NO. GH0721 WOOD FRAME BLDGS.

ELECTRICAL LOADS

LOAD CTR	TYPE FACILITY	QTY
11	T13	3
	T5	14
	T4	24
	G	6
12	T13	3
	T5	14
	T4	24
	G	6
13	T7	30
	T9	8
	T13	8
	T15	11
	T6	6
	T10	3
	T8	15
	T14	8
	T16	7
	T3	7
	T17	6
	T12	6
	T2	5
	T11	38
	T1	9
	T21	7
	T20	4
	T18	9
	T19	4
	1	1
	2	1
	3	1
	5	1
	7	1
	8	1
14	1	1
	5	1
(EMER)	8	1

SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
LIGHTING	11.3	10.2
POWER	3.6	2.2
RECP EST	12.5	9.4
GRAND TOTAL	27.4	21.8
LIGHTING	11.3	10.2
POWER	3.6	2.2
RECP EST	12.5	9.4
GRAND TOTAL	27.4	21.8
LIGHTING	48.1	43.2
POWER	25.7	15.4
RECP EST	10.0	7.5
X-RAY	40.0	12.0
GRAND TOTAL	123.8	78.1
OVERALL DEMAND		121.7
EMER X-RAY	40.00	12.00
EMER LTG	1.91	1.91

STD INT-OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	BEDS EA. TYP.	TOTAL
T4	WARD-STANDARD	10	48	480	
T5	WARD-ACUTE	10	28	280	
	TOTAL BEDS-PATIENTS				760
T9	HOUSING-OFFICERS-MALE	6	8	48	
	TOTAL MALE OFFICER ACCOMMODATIONS				48
T8	HOUSING-OFFICERS-FEMALE	6	15	90	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				90
T7	HOUSING-EM	12	30	360	
	TOTAL E.M.				360
	TOTAL HOSPITAL OCCUPANCY				1258

STD INT-SCHEDULE OF FACILITIES

NO.	FACILITY	QTY	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES			
T1	ADMISSION & DISPOSITION	9	16'X 32'	T2-51
T2	DISPENSARY	5	16'X 32'	T2-51
T3	PHYSICAL & OCCUP. THERAPY 1	7	16'X 32'	T2-51
T4	WARD-STANDARD	48	16'X 32'	T2-51
T5	WARD-ACUTE	28	16'X 32'	T2-51
	TENTAGE WITHOUT FRAMES			
T6	ADMINISTRATION	6	16'X 32'	
T7	HOUSING-EM	30	16'X 32'	
T8	HOUSING-OFFICERS-FEMALE	15	16'X 32'	
T9	HOUSING-OFFICERS-MALE	8	16'X 32'	
T10	LINEN EXCHANGE	3	16'X 32'	
T11	MESS	38	16'X 32'	
T12	PROFESSIONAL SERVICES	6	16'X 32'	
T13	RECREATION	14	16'X 32'	
T14	SHOP	8	16'X 32'	
T15	SPECIAL SERVICES	11	16'X 32'	
T16	SUPPLY 1	7	16'X 32'	
T17	SUPPLY 4	6	16'X 32'	
T18	UTILITY 1	9	16'X 32'	
T19	UTILITY 2	4	16'X 32'	
T20	UTILITY 4	4	16'X 32'	
T21	UTILITY 6	7	16'X 32'	
	BUILDINGS			
1	CENTRALIZED MATERIEL SECT. 1	1	40'X 120'	51-45
2	EENT & PHARMACY 1	1	30'X 70'	51-21
3	LABORATORY & DENTAL 1	1	40'X 120'	51-34
4	LATRINE, PIT TYPE, 8 SEATS	6	10'X 20'	72-36
5	SURGERY 2	1	40'X 110'	51-42
6	UTILITY BUILDING 3	12	30'X 60'	51-83
7	UTILITY BUILDING 9	1	30'X 50'	51-87
8	X-RAY 2	1	40'X 80'	51-31
	OTHER CONSTRUCTION			
	HARDSTANDS, DRAIN & GRADE	19.5	1000 SY	85-31
	ROAD, 2 LANE, DRAIN & GRADE	1.1	MILE	85-31
9	SUMP-FIRE PROTECTION	5	10,000GAL	84-21
10	WATER TANK	1	21,000GAL	84-21
11	LOAD CENTER	1		
12	LOAD CENTER	1		
13	LOAD CENTER	1		
14	LOAD CENTER-EMERGENCY	1		
	SITE AREA	31.7	ACRES	

UTILITIES			
ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	375,000GPD	500710	84-21
SEWAGE	187,500GPD	500711	83-15
ELECTRIC DISTRIBUTION	121.7KW	500712	81-23

ELECTRICAL NOTES

1. ALL CB PANELS TO BE 4-1P, 15 AMP.
2. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS OR CB PANELS MOUNTED ON THE POLES.

GENERAL NOTES

1. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 50' 100'

NO.13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: JLYUS
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C.W. DEICHMANN
APPROVED: H. B. Adams Jr. Chief, Engineering Branch
APPROVED: H. M. Williams Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1971
APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/PSEO
DATE 9 OCT 68

THEATER OF OPERATIONS

HOSPITAL-750 BED STD UNIT

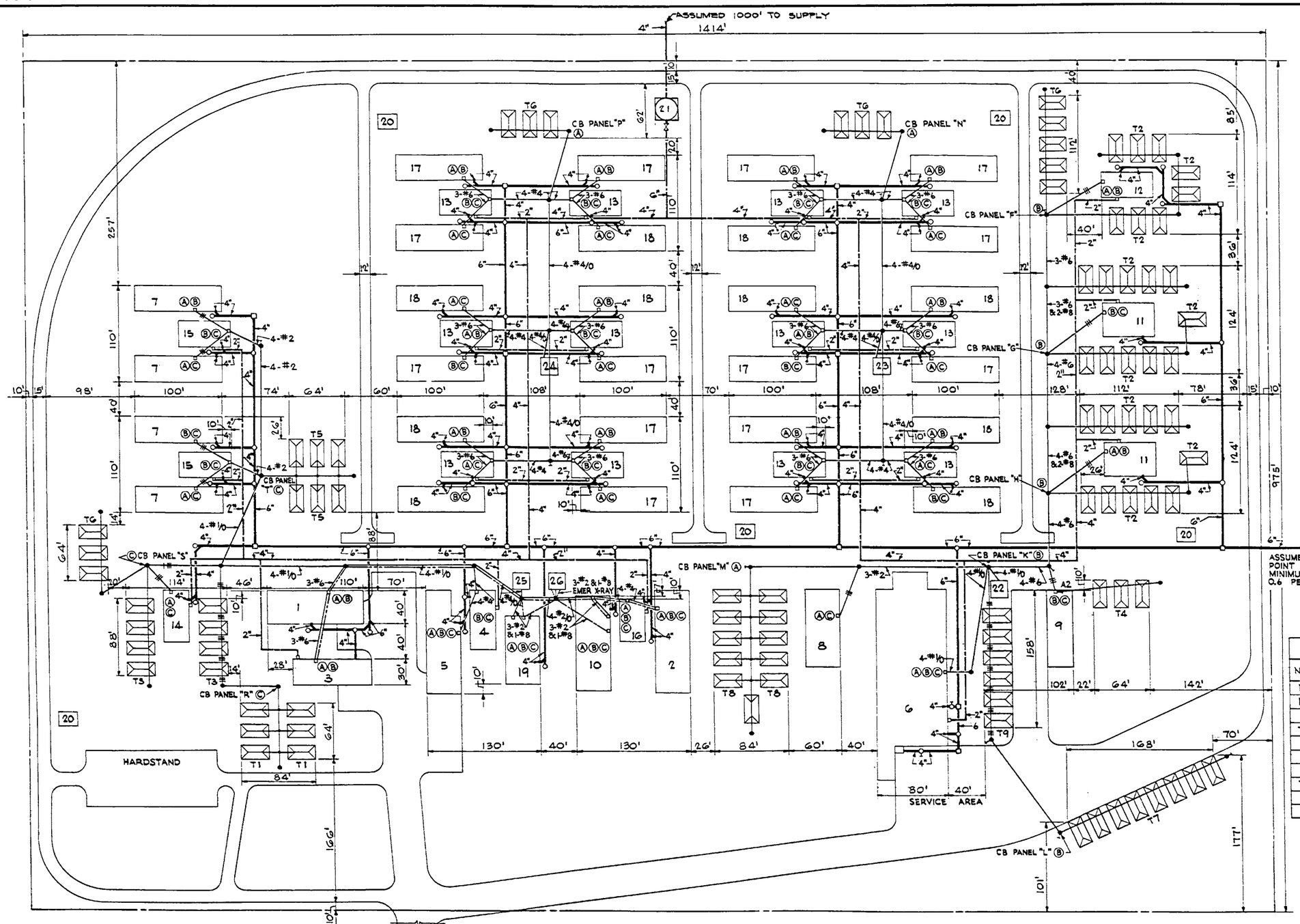
SITE & UTILITY LAYOUT

UNDER REVISION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 50-07
SHEET 1 OF 3

CORPS OF ENGINEERS

U. S. ARMY



ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY
22	T2	30
	T6	5
	T8	11
	T4	3
	T7	8
	T9	6
	6	1
	8	1
	9	1
	11	2
	12	1
23	T6	3
	13	6
	17	7
	18	5
24	T6	3
	13	6
	17	7
	18	5
25	T3	8
	T6	3
	T1	6
	T5	6
	1	1
	2	1
	3	1
	4	1
	7	4
	5	1
	10	1
	14	1
	15	2
	16	1
	19	1
26 EMER	2	1
	3	1
	10	1
	19	1

SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
LIGHTING	24.2	22.0
POWER	41.4	24.8
RECP EST	4.6	3.5
GRAND TOTAL	70.2	50.3
LIGHTING	15.9	14.4
POWER	3.6	2.2
RECP EST	52.0	39.0
GRAND TOTAL	71.5	55.6
LIGHTING	15.9	14.4
POWER	3.6	2.2
RECP EST	52.0	39.0
GRAND TOTAL	71.5	55.6
LIGHTING	24.7	22.3
POWER	38.8	23.3
RECP EST	19.2	14.4
X-RAY	40.0	12.0
GRAND TOTAL	122.7	72.0
OVERALL DEMAND		235.5
EMER X-RAY	40.0	12.0
EMER LTG	2.04	2.04

STD ITR-OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL	NO. OF BEDS EACH TYPE	TOTALS
17	WARD BUILDING-1-STANDARD	34	14	476	
18	WARD BUILDING-2-ACUTE	28	10	280	
	TOTAL BEDS-PATIENTS				756
T3	HOUSING-OFFICERS-MALE	6	8	48	
	TOTAL MALE OFFICER ACCOMMODATIONS				48
7	OFFICERS' QUARTERS-FEMALE 1	23	4	92	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				92
T2	HOUSING-EM	12	30	360	
	TOTAL-E.M.				360
	TOTAL HOSPITAL OCCUPANCY				1256

STD ITR-SCHEDULE OF FACILITIES

NO.	FACILITY	QTY	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES			
T1	ADMINISTRATION	6	16'X32'	72-51
T2	HOUSING-EM	30	16'X32'	72-51
T3	HOUSING-OFFICERS-MALE	8	16'X32'	72-51
T4	LINEN EXCHANGE	3	16'X32'	72-51
T5	PROFESSIONAL SERVICES	6	16'X32'	72-51
T6	RECREATION	14	16'X32'	72-51
T7	SHOP	8	16'X32'	72-51
T8	SPECIAL SERVICES	11	16'X32'	72-51
T9	SUPPLY 4	6	16'X32'	72-51
	BUILDINGS			
1	ADMISSION & DISPOSITION 2	1	40'X110'	51-12
2	CENTRALIZED MATERIEL SECT. 1	1	40'X120'	51-45
3	DISPENSARY 1	1	30'X90'	51-23
4	EENT & PHARMACY 1	1	30'X70'	51-21
5	LABORATORY & DENTAL 1	1	40'X120'	51-34
6	MESS BUILDING 1	1	16,000SF	51-63
	BUILDINGS			
7	OFFICERS' QUARTERS-FEMALE 1	4	30'X100'	51-71
8	PHYSICAL & OCCUP. THERAPY 1	1	40'X90'	51-36
9	SUPPLY STOREHOUSE 1	1	30'X90'	51-54
10	SURGERY 2	1	40'X110'	51-42
11	UTILITY BUILDING 1	2	40'X60'	51-81
12	UTILITY BUILDING 2	1	30'X60'	51-81
13	UTILITY BUILDING 3	12	30'X60'	51-83
14	UTILITY BUILDING 4	1	30'X60'	51-83
15	UTILITY BUILDING 6	2	30'X60'	51-85
16	UTILITY BUILDING 9	1	30'X50'	51-87
17	WARD BUILDING-1-STANDARD	14	30'X100'	51-51
18	WARD BUILDING-2-ACUTE	10	30'X100'	51-51
19	X-RAY 2	1	40'X80'	51-31
	OTHER CONSTRUCTION			
	HARDSTANDS, 4" STABILIZED STONE	19.5	10000SY	85-31
	ROAD, 2 LANE, 6" STABILIZED STONE	1.1	MILE	85-31
	OTHER CONSTRUCTION			
20	SUMP-FIRE PROTECTION	5	10,000 GAL	84-21
21	WATER TANK	1	21,000 GAL	84-21
22	LOAD CENTER	1		
23	LOAD CENTER	1		
24	LOAD CENTER	1		
25	LOAD CENTER	1		
26	LOAD CENTER-EMERGENCY	1		
	SITE AREA	31.7	ACRES	

UTILITIES

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION	37,500GPD	500740	84-21
SEWAGE	26,250GPD	500741	83-15
ELECTRIC DISTRIBUTION	233.5KW	500742	81-23

ELECTRICAL NOTES

1. ALL CB PANELS TO BE 2-1P, 15AMP
2. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS.

GENERAL NOTES

1. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

750 BED HOSPITAL STD ITR

SCALE NO.13

INST. NO. GH0731 STL FRAME BLDGS.

INST. NO. GH0741 WOOD FRAME BLDGS.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 50' 100'

NO.13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C.W. DEITCHMANN

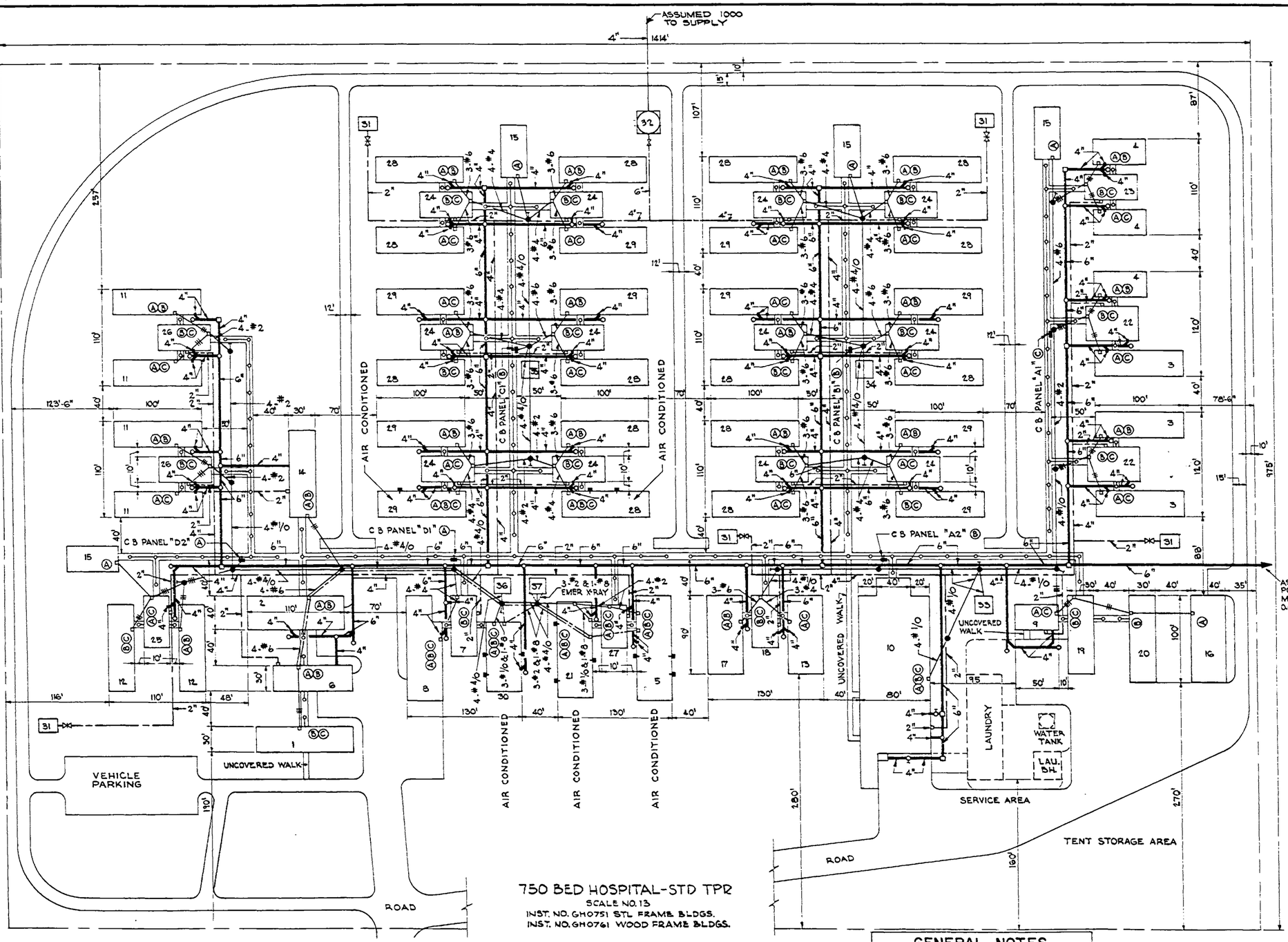
THEATER OF OPERATIONS
HOSPITAL 750-BED STD ITR
SITE & UTILITY LAYOUT

UNDER REVISION

APPROVED: H. Graham, Jr. Chief, Projects Branch
APPROVED: W. H. Williams, Chief, Engineering Division, Mil. Constr. O.C.E.
DATE: 19 MAR 1960

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 0/1560
DATE 9 OCT. 60

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 50-07
SHEET 2 OF 3



750 BED HOSPITAL-STD TPR

SCALE NO. 13

INST. NO. GH0751 STL FRAME BLDGS.

INST. NO. GH0761 WOOD FRAME BLDGS.

ELECTRICAL LOADS

WITH AIR CONDITIONED BUILDINGS AS NOTED ON PLANS

LOAD CTR	FACILITY	QTY	SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
33	COVERED WALK	1	LIGHTING	22.2	20.0
	13	1			
	18	1			
	17	1	POWER	42.2	25.3
	10	1			
	9	1			
	19	1	RECP EST	12.9	9.7
	20	1			
	16	1			
	3	3	GRAND TOTAL	77.3	55.0
	22	2			
	4	3			
	23	1			
	15	1			
34	COVERED WALK	1	LIGHTING	16.7	15.0
	28	7	POWER	3.6	2.2
	24	6	RECP EST	52.5	39.3
	29	5	GRAND TOTAL	72.8	56.5
	15	1			
35	COVERED WALK	1	LIGHTING	16.7	15.0
	29	5	POWER	30.8	18.5
	24	6	RECP EST	52.5	39.3
	28	7	GRAND TOTAL	100.0	72.8
	15	1			
36	COVERED WALK	1	LIGHTING	28.8	25.9
	5	1			
	27	1			
	21	1	POWER	90.6	54.4
	30	1			
	7	1			
	8	1	RECP EST	25.6	19.2
	1	1			
	6	1			
	2	1	X-RAY	40.0	12.0
	12	2			
	25	1			
	15	1	GRAND TOTAL	185.0	111.5
	11	4	OVERALL DEMAND		295.8
	26	2			
	14	1			
37 (EMER)	5	1	EMER X-RAY	40.0	12.0
	21	1			
	30	1	EMER LTG.	2.04	2.04
	6	1			

ELECTRICAL LOADS

WITHOUT AIR CONDITIONING

LOAD CENTERS 33, 34, & 37 IDENTICAL TO ABOVE

35	COVERED WALK	1	LIGHTING	16.7	15.0
	29	5	POWER	3.6	2.2
	24	6	RECP EST.	52.5	39.3
	28	7	GRAND TOTAL	72.8	56.5
	15	1			
36	COVERED WALK	1	LIGHTING	28.8	25.9
	5	1			
	27	1			
	21	1	POWER	59.4	23.6
	30	1			
	7	1			
	8	1	RECP EST	25.6	19.2
	1	1			
	6	1			
	2	1	X-RAY	40.0	12.0
	12	2			
	25	1			
	15	1	GRAND TOTAL	185.8	80.7
	11	4			
	26	2	OVERALL DEMAND		248.7
	14	1			

SCHEDULE OF FACILITIES

NO.	FACILITY	QTY	SIZE OR UNIT	DWG. NO.
	BUILDINGS			
1	ADMINISTRATION-1	1	30' X 110'	51-11
2	ADMISSION & DISPOSITION-2	1	40' X 110'	51-12
3	BARRACKS-1	3	30' X 100'	51-71
4	BARRACKS-2	3	30' X 60'	51-71
5	CENTRALIZED MATERIEL SECT.-1	1	40' X 120'	51-45
6	DISPENSARY-1	1	30' X 90'	51-23
7	EENT & PHARMACY-1	1	30' X 70'	51-21
8	LABORATORY & DENTAL-1	1	40' X 120'	51-34
9	LINEN EXCHANGE-1	1	30' X 50'	51-56
10	MESS BUILDING-1	1	16,000 SF	51-63
11	OFFICERS' QUARTERS-FEMALE-1	4	30' X 100'	51-71
12	OFFICERS' QUARTERS-MALE-1	2	30' X 100'	51-71
13	PHYS. & OCCUPATIONAL THERAPY-1	1	40' X 90'	51-36
14	PROFESSIONAL SERVICES BLDG.	1	30' X 100'	51-13
15	RECREATION BLDG.-1	4	30' X 60'	51-91
16	SHOP (WAREHOUSE-CLOSED)	1	40' X 100'	44-11
17	SPECIAL SERVICES BLDG-SPC-A1	1	40' X 90'	51-91
18	SPECIAL SERVICES BLDG-SPC-B1	1	30' X 60'	51-93
19	SUPPLY STOREHOUSE-1	1	30' X 90'	51-54
20	SUPPLY STOREHOUSE-4	1	30' X 100'	51-54
21	SURGERY-2	1	40' X 110'	51-42
22	UTILITY BUILDING-1	2	40' X 60'	51-81
23	UTILITY BUILDING-2	1	30' X 60'	51-81
24	UTILITY BUILDING-3	12	30' X 60'	51-85
25	UTILITY BUILDING-4	1	30' X 60'	51-83
26	UTILITY BUILDING-6	2	30' X 60'	51-85
27	UTILITY BUILDING-9	1	30' X 50'	51-87
	WALKS-COVERED	42.2	8' X 100'	51-97
28	WARD BUILDING-1-STANDARD	14	30' X 100'	51-51
29	WARD BUILDING-2-ACUTE	10	30' X 100'	51-51
30	X-RAY-2	1	40' X 80'	51-31

NO.	FACILITY	QTY	SIZE OR UNIT	DWG. NO.
	OTHER CONSTRUCTION			
	ROAD-2 LANE-6" STONE, I" COLD MIX	1.10	MILE	85-31
31	SUMP-FIRE PROTECTION	5	10,000 GAL	84-21
	HARDSTANDS-4" STABILIZED STONE	19.8	1000 SY	85-31
	SITE AREA	31.7	ACRES	—
32	WATER TANK	1	21,000 GAL	84-21
33-36	LOAD CENTER	4	—	—
37	LOAD CENTER-EMERGENCY	1	—	—
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS FOR DETAILS
WATER DISTRIBUTION	375006PD	500770	84-21
SEWAGE	262,50GPD	500771	83-15
ELECTRIC DISTRIBUTION W/O AIR COND.	295.8KW	500772	81-23
AIR CONDITIONING UTILITIES		500773	
AIR COND. & MECHANICAL VENTILATION		500774	

GENERAL NOTES

1. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

OCCUPANCY SCHEDULE

NO.	BUILDING	NO. OF BEDS	NO. OF BLDGS	NO. OF BEDS EA. TYPE	TOTAL
28	WARD 1	34	14	476	
29	WARD 2	28	10	280	
	TOTAL BEDS - PATIENTS				756
12	MALE OFFICER QUARTERS	24	2	48	
	TOTAL MALE OFFICER ACCOMODATIONS				48
11	FEMALE OFFICER QUARTERS	23	4	92	
	TOTAL FEMALE OFFICER ACCOMODATIONS				92
3	BARRACKS 1	74	3	222	
4	BARRACKS 2	42	3	126	
	TOTAL E.M.				348
	TOTAL HOSPITAL OCCUPANCY				1244
3	EMER. WARD-BARRACKS 1	36	3	102	
4	EMER. WARD-BARRACKS 2	20	3	60	
	TOTAL EMERGENCY BEDS				162

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES

0 50' 100'

NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: BALLOU
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] Adv. H.M. Williams
CHIEF, [illegible] BRANCH
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 9/Oct 60
DATE 9 OCT. 60

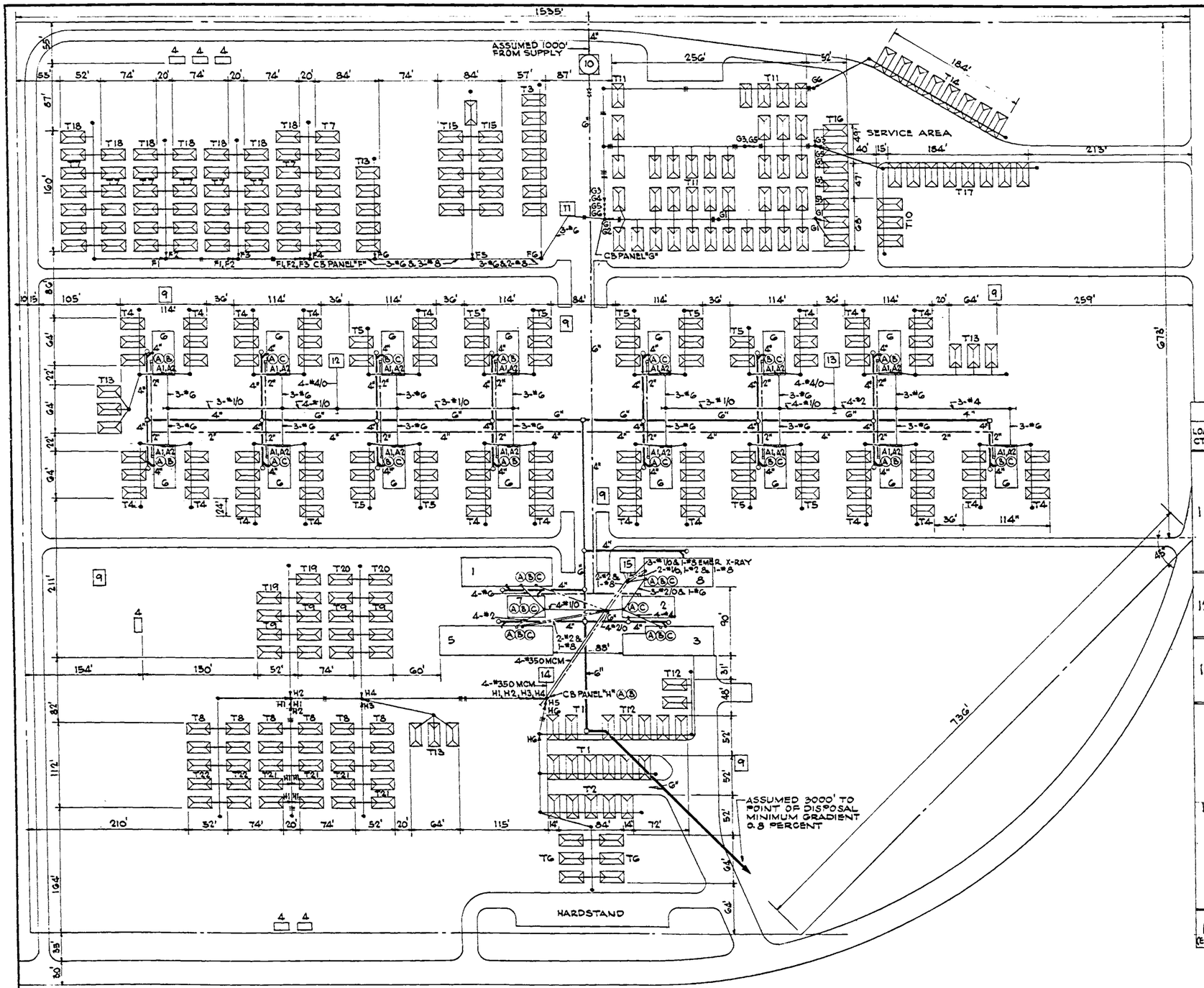
THEATER OF OPERATIONS
750 BED HOSPITAL-STD TPR
SITE & UTILITY LAYOUT

UNDER REVISION

DATE: 20 [illegible] 1960
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 50-07
SHEET 3 OF 3

CORPS OF ENGINEERS

U. S. ARMY



SCHEDULE OF FACILITIES

NO.	FACILITY	QTY.	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES			
T1	ADMISSION & DISPOSITION	9	16'x32'	72-51
T2	DISPENSARY	5	16'x32'	72-51
T3	PHYSICAL & OCCUP. THERAPY 1	7	16'x32'	72-51
T4	WARD- STANDARD	68	16'x32'	72-51
T5	WARD-ACUTE	28	16'x32'	72-51
	TENTAGE WITHOUT FRAMES			
T6	ADMINISTRATION	6	16'x32'	
T7	HOUSING- E.M.	37	16'x32'	
T8	HOUSING-OFFICERS- FEMALE	19	16'x32'	
T9	HOUSING-OFFICERS-MALE	11	16'x32'	
T10	LINEN EXCHANGE	3	16'x32'	
T11	MESS	38	16'x32'	
T12	PROFESSIONAL SERVICES	6	16'x32'	
T13	RECREATIONAL	14	16'x32'	
T14	SHOP	8	16'x32'	
T15	SPECIAL SERVICES	11	16'x32'	
T16	SUPPLY 1	7	16'x32'	
T17	SUPPLY 3	8	16'x32'	
T18	UTILITY 1	14	16'x32'	
T19	UTILITY 4	4	16'x32'	
T20	UTILITY 5	4	16'x32'	
T21	UTILITY 6	7	16'x32'	
T22	UTILITY 7	4	16'x32'	
	BUILDINGS			
1	CENTRALIZED MATERIEL SECT. 1	1	40'x120'	51-45
2	EENT & PHARMACY 1	1	30'x70'	51-21
3	LABORATORY & DENTAL 1	1	40'x120'	51-34
4	LATRINE, PIT TYPE, 8 SEATS	6	10'x20'	72-36
5	SURGERY 1	1	40'x150'	51-41
6	UTILITY BUILDING 3	15	30'x60'	51-83
7	UTILITY BUILDING 9	1	30'x50'	51-87
8	X-RAY 1	1	40'x90'	51-31
	OTHER CONSTRUCTION			
	HARDSTAND, DRAIN & GRADE	18.8	1000 SY	85-31
	ROAD, 2 LANE, DRAIN & GRADE	1.2	MILE	85-31
9	SUMP, FIRE PROTECTION	6	10000 GAL	84-21
10	WATER TANK	1	21000 GAL	84-21
11	LOAD CENTER	1		
12	LOAD CENTER	1		
13	LOAD CENTER	1		
14	LOAD CENTER	1		
15	LOAD CENTER-EMERGENCY	1		
	SITE AREA	38.9	ACRE	
	UTILITIES			

ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION	50000 GPD	500810	84-21
SEWAGE	25000 GPD	500811	83-15
ELECTRIC DISTRIBUTION	139.7 KW	500812	81-23

ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY	SERVICE	TOTAL CONN. LD-KW	TOTAL DEMAND LD-KW
11	T7	37	LIGHTING	24.9	22.4
	T13	5			
	T15	11			
	T10	3			
	T14	8			
	T16	7			
	T3	7			
	T17	8			
	T11	38			
	T18	14			
12	T13	3	LIGHTING	14.8	13.3
	T5	14	POWER	4.8	2.9
	T4	37	RECP EST	16.6	12.5
	G	8	GRAND TOTAL	36.2	28.7
13	T13	3	LIGHTING	13.2	11.8
	T5	14	POWER	4.2	2.5
	T4	31	RECP EST	14.6	10.9
	G	7	GRAND TOTAL	32.0	25.2
14	T9	11	LIGHTING	27.9	25.1
	T13	3			
	T6	6			
	T8	19	POWER	25.7	15.4
	T12	6			
	T2	5			
	T1	9	RECP EST	10.5	7.9
	T20	4			
	T21	7			
	T22	4	X-RAY	50.0	15.0
	T19	4			
	1	1			
	2	1	GRAND TOTAL	114.1	93.4
	3	1			
	5	1			
	7	1	OVERALL DEMAND		139.7
	8	1			
15 (EMER)	1	1	EMER X-RAY	50.00	15.00
	5	1	EMER LTG.	2.47	2.47
	8	1			

OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	BEDS EA TYPE	TOTAL
T4	WARD 1 - STANDARD	10	68	680	
T5	WARD 2 - ACUTE	10	28	280	
	TOTAL BEDS - PATIENTS				960
T9	HOUSING-OFFICERS-MALE	6	11	66	
	TOTAL MALE OFFICER ACCOMMODATIONS				66
T8	HOUSING-OFFICERS-FEMALE	6	19	114	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				114
T7	HOUSING-E.M.	12	37	444	
	TOTAL E.M.				444
	TOTAL HOSPITAL OCCUPANCY				1584

ELECTRICAL NOTES

1. ALL C.B. PANELS TO BE G-I-P, 15 AMP.
2. HOME RUN ARROWS INDICATE CIRCUITS FROM C.B. PANELS INSIDE THE BUILDINGS OR C.B. PANEL MOUNTED ON THE POLES.
3. LOAD CENTER "11" TO BE 1 PHASE 3W 120/240V.

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES

0 50' 100' 150'

NO.14

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] CHIEF, ARCHITECTURE BRANCH

THEATER OF OPERATIONS

UNDER REVISION

HOSPITAL, 1000 BED STD-INT
SITE & UTILITY LAYOUT

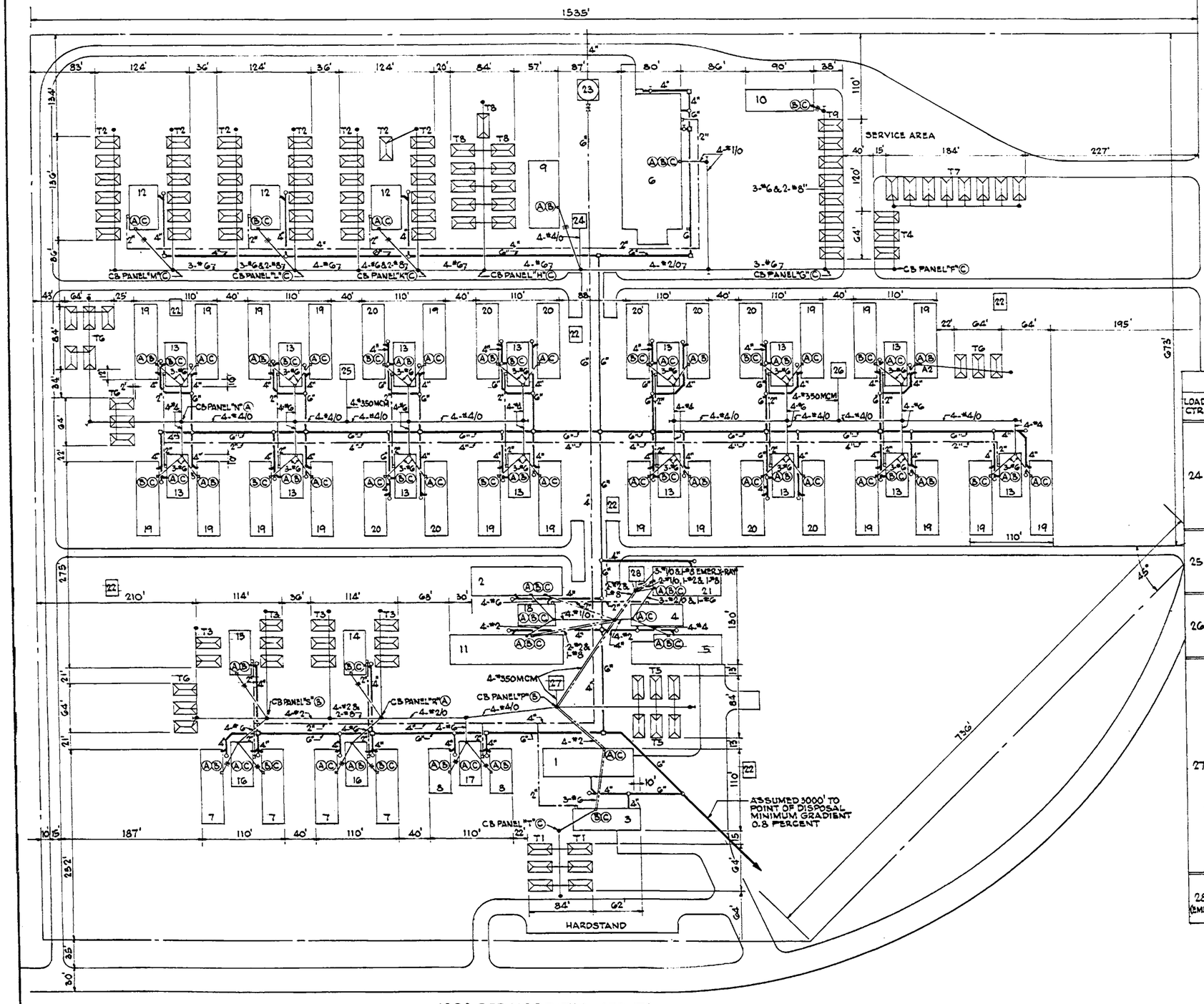
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/PS&O
DATE 9 OCT. 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 50-08
SHEET 1 OF 4

CORPS OF ENGINEERS

U. S. ARMY



1000 BED HOSPITAL - STD ITR
SCALE NO. 14
INST. NO. GH1031 STL FRAME BLDGS.
INST. NO. GH1041 WOOD FRAME BLDGS.

SCHEDULE OF FACILITIES

NO.	FACILITY	QTY.	SIZE OR UNIT	DWG. NO.
	TENTAGE WITH FRAMES			
T1	ADMINISTRATION	6	16'x32'	72-51
T2	HOUSING - E M	37	16'x32'	72-51
T3	HOUSING - OFFICERS - MALE	11	16'x32'	72-51
T4	LINEN EXCHANGE	3	16'x32'	72-51
T5	PROFESSIONAL SERVICES	6	16'x32'	72-51
T6	RECREATION	14	16'x32'	72-51
T7	SHOP	8	16'x32'	72-51
T8	SPECIAL SERVICES	11	16'x32'	72-51
T9	SUPPLY 3	8	16'x32'	72-51
	BUILDINGS			
1	ADMISSION & DISPOSITION 1	1	40'x120'	51-12
2	CENTRALIZED MATERIEL SECT. 1	1	40'x120'	51-45
3	DISPENSARY 1	1	30'x90'	51-23
4	SENT & PHARMACY 1	1	30'x70'	51-21
5	LABORATORY & DENTAL 1	1	40'x120'	51-34
6	MESS BUILDING 1	1	10000 SF	51-63
7	OFFICERS' QUARTERS-FEMALE 1	4	30'x100'	51-71
8	OFFICERS' QUARTERS-FEMALE 2	2	30'x90'	51-71
9	PHYSICAL & OCCUP. THERAPY 1	1	40'x90'	51-36
10	SUPPLY STOREHOUSE 1	1	30'x90'	51-54
11	SURGERY 1	1	40'x150'	51-41
12	UTILITY BLDG 1	3	40'x60'	51-81
13	UTILITY BLDG 3	15	30'x60'	51-83
14	UTILITY BLDG 4	1	30'x60'	51-83
15	UTILITY BLDG 5	1	30'x60'	51-83
16	UTILITY BLDG 6	2	30'x60'	51-85
17	UTILITY BLDG 7	1	30'x60'	51-85
18	UTILITY BLDG 9	1	30'x50'	51-87
19	WARD BUILDING 1 - STANDARD	20	30'x100'	51-51
20	WARD BUILDING 2 - ACUTE	10	30'x100'	51-51
21	X-RAY 1	1	40'x90'	51-31
	OTHER CONSTRUCTION			
	HARDSTAND, 4" STABILIZED STONE	18.8	1000 SY	85-31
	ROAD, 2 LANE, 6" STABILIZED STONE	1.2	MILE	85-31
22	SUMP-FIRE PROTECTION	6	10000 GAL	84-21
23	WATER TANK	1	21000 GAL	84-21
24	LOAD CENTER	1		
25	LOAD CENTER	1		
26	LOAD CENTER	1		
27	LOAD CENTER	1		
28	LOAD CENTER-EMERGENCY	1		
	SITE AREA	38.9	ACRE	

UTILITIES			
ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWG. FOR DETAILS
WATER DISTRIBUTION	50000 GPD	500840	84-31
SEWAGE	35000 GPD	500841	83-15
ELECTRIC DISTRIBUTION	274.4 KW	500842	81-23

ELECTRICAL LOADS

LOAD CTR	FACILITY	QTY.	SERVICE	TOTAL CONN. LD-KW	TOTAL DEMAND LD-KW
24	T2	37	LIGHTING	23.6	21.2
	T4	3			
	T7	8	POWER	41.4	24.8
	T8	11			
	T9	8	RECP EST	4.6	3.5
	6	1			
	9	1	GRAND TOTAL	69.6	49.5
	10	1			
	12	3			
25	T6	8	LIGHTING	22.3	20.0
	13	8	POWER	4.8	2.9
	19	11	RECP EST	69.3	52.0
	20	5	GRAND TOTAL	96.4	74.9
26	T6	3	LIGHTING	18.5	10.5
	13	7	POWER	4.2	2.5
	19	9	RECP EST	60.6	45.8
	20	5	GRAND TOTAL	83.3	64.5
27	T1	6			
	T3	11	LIGHTING	29.0	20.1
	T5	6			
	T6	3			
	1	1	POWER	40.4	27.8
	2	1			
	3	1			
	4	1	RECP EST	22.1	10.6
	5	1			
	7	4			
	8	2	X-RAY	50.0	15.0
	11	1			
	T4	1			
	15	1	GRAND TOTAL	147.5	85.5
	16	2			
	17	1			
	18	1	OVERALL DEMAND		274.4
	21	1			
28 (EMER)	2	1	EMER X-RAY	50.00	15.00
	3	1			
	11	1	EMER LTG.	2.60	2.60
	21	1			

OCCUPANCY SCHEDULE

NO.	FACILITY	NO. OF BEDS	NO. OF FACIL.	BEDS EA. TYPE	TOTAL
19	WARD 1 - STANDARD	34	20	680	
20	WARD 2 - ACUTE	28	10	280	
	TOTAL BEDS - PATIENTS				960
T3	HOUSING - OFFICERS - MALE	6	11	66	
	TOTAL MALE OFFICER ACCOMMODATIONS				66
7	OFFICERS' QTRS - FEMALE 1	23	4	92	
8	OFFICERS' QTRS - FEMALE 2	13	2	26	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				118
T2	HOUSING - E M	12	37	444	
	TOTAL E M				444
	TOTAL HOSPITAL OCCUPANCY				1588

GENERAL NOTES

1. ALL CB PANELS TO BE 2-1P, 15 AMP.
2. HOME RUN ARROWS INDICATE CIRCUITS FROM CB PANELS INSIDE THE BUILDINGS.
3. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 50' 100' 150'
NO. 14

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/PS&O
DATE 9 OCT. 68

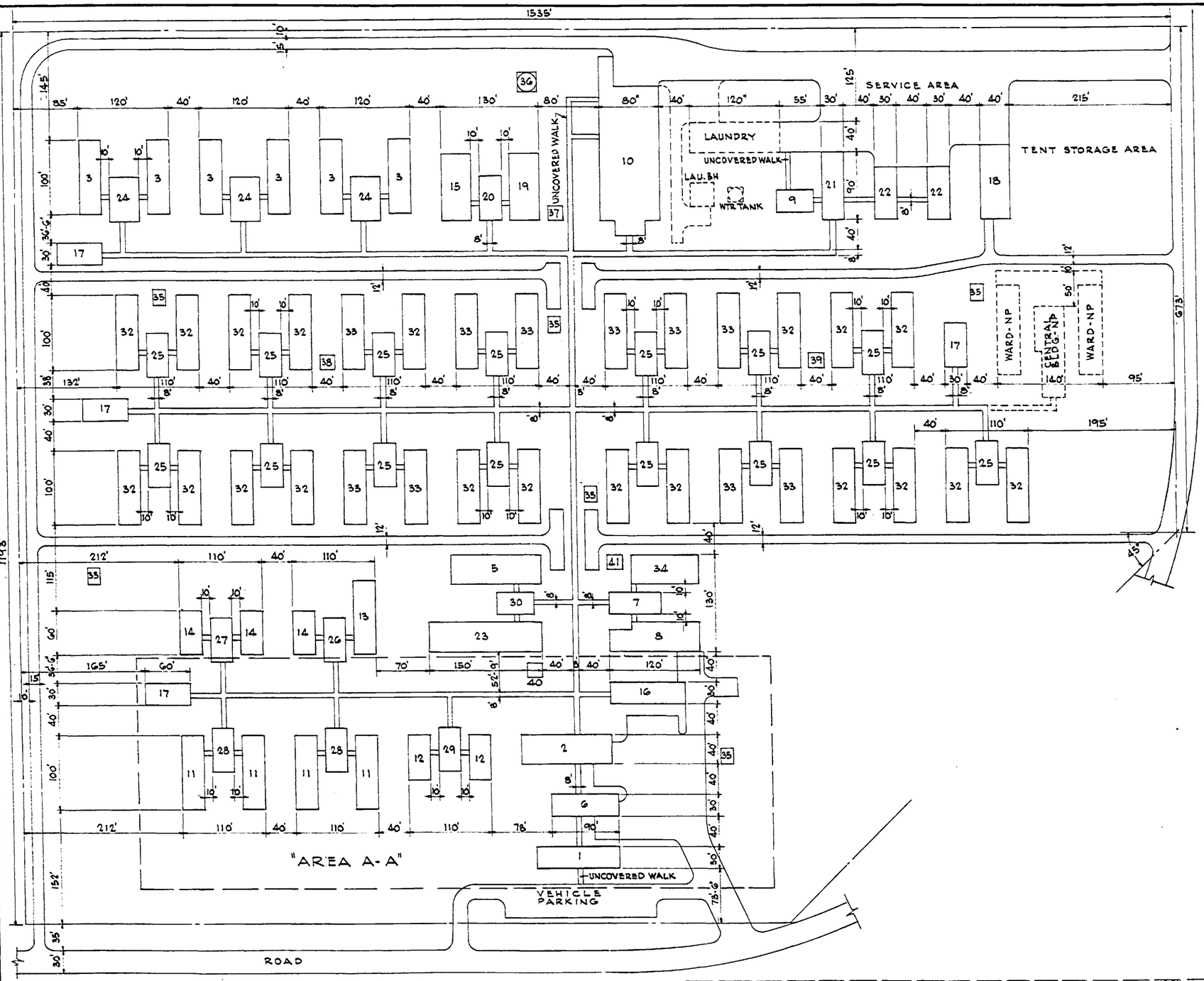
THEATER OF OPERATIONS
HOSPITAL-1000 BED STRUCTURES
SITE & UTILITY LAYOUT

UNDER REVISION

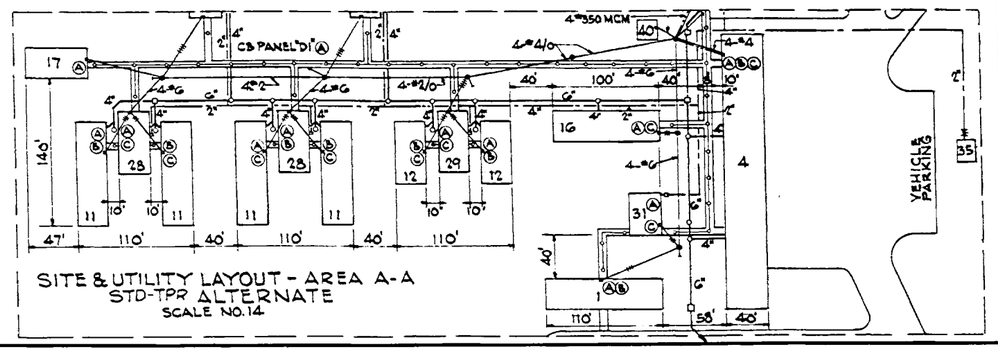
DATE 19 MAR 1969
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 4
50-08

CORPS OF ENGINEERS

U. S. ARMY



SITE LAYOUT - STD-TPR
SCALE NO. 14
INST NO. GH1051, GH1061
STD-TPR ALTERNATE
IDENTICAL EXCEPT AREA A-A



SITE & UTILITY LAYOUT - AREA A-A
STD-TPR ALTERNATE
SCALE NO. 14

SCHEDULE OF FACILITIES

NO.	FACILITY	STD-TPR INST. NO. GH1051, GH1061 QTY.	STD-TPR SIZE OR UNIT	STD-TPR DWG. NO.	TPR-ALTERNATE QTY.	TPR-ALTERNATE SIZE OR UNIT	TPR-ALTERNATE DWG. NO.
	BUILDINGS						
1	ADMINISTRATION-1	1	30x110	51-11	1	30x110	51-11
2	ADMISSION & DISPOSITION-1	1	40'X120'	51-12			
3	BARRACKS-1	6	30'x100'	51-71	6	30'x100'	51-71
4	CASUALTY, RECV, HOLD & TREAT.				1	40'X260'	51-15
5	CENTRALIZED MATERIEL-1	1	40'x120'	51-45	1	40'x120'	51-45
6	DISPENSARY-1	1	30'x 90'	51-23			
7	EENT & PHARMACY-1	1	30'x 70'	51-21	1	30'x 70'	51-21
8	LABORATORY & DENTAL-1	1	40'x120'	51-34	1	40'x120'	51-34
9	LINEN EXCHANGE-1	1	30'x 50'	51-56	1	30'x 50'	51-56
10	MESS BUILDING-1	1	16000SF	51-63	1	16000SF	51-63
11	OFFICER QUARTERS-FEMALE-1	4	30'x100'	51-71	4	30'x100'	51-71
12	OFFICER QUARTERS-FEMALE-2	2	30'x 60'	51-71	2	30'x 60'	51-71
13	OFFICER QUARTERS-MALE-1	1	30'x100'	51-71	1	30'x100'	51-71
14	OFFICER QUARTERS-MALE-2	3	30'x 60'	51-71	3	30'x 60'	51-71
15	PHYSICAL & OCCUP THERAPY-1	1	40'x 90'	51-36	1	40'x 90'	51-36
16	PROFESSIONAL SERVICES BLDG	1	30'x100'	51-13	1	30'x100'	51-13
17	RECREATION BLDG-1	4	30'x 60'	51-91	4	30'x 60'	51-91
18	SHOP(WAREHOUSE-CLOSED)	1	40'x100'	44-11	1	40'x100'	44-11
19	SPECIAL SERVICES BLDG-A1	1	40'x 90'	51-91	1	40'x 90'	51-91
20	SPECIAL SERVICES BLDG-B1	1	30'x 60'	51-93	1	30'x 60'	51-93
21	SUPPLY STOREHOUSE-1	1	30'x 90'	51-54	1	30'x 90'	51-54
22	SUPPLY STOREHOUSE-3	2	30'x 70'	51-54	2	30'x 70'	51-54
23	SURGERY-1	1	40'x150'	51-41	1	40'x150'	51-41
24	UTILITY BLDG-1	3	40'x 60'	51-81	3	40'x 60'	51-81
25	UTILITY BLDG-3	15	30'x 60'	51-83	15	30'x 60'	51-83
26	UTILITY BLDG-4	1	30'x 60'	51-83	1	30'x 60'	51-83
27	UTILITY BLDG-5	1	30'x 60'	51-83	1	30'x 60'	51-83
28	UTILITY BLDG-6	2	30'x 60'	51-85	2	30'x 60'	51-85
29	UTILITY BLDG-7	1	30'x 60'	51-85	1	30'x 60'	51-85
30	UTILITY BLDG-9	1	30'x 50'	51-87	1	30'x 50'	51-87
31	UTILITY BLDG-10				1	30'x 40'	51-87
	WALKS-COVERED	51.8	8'x 100'	51-97	56	8'x 100'	51-97
32	WARD BLDG-1, STANDARD	20	30'x100'	51-51	20	30'x100'	51-51
33	WARD BLDG-2, ACUTE	10	30'x100'	51-51	10	30'x100'	51-51
34	X-RAY-1	1	40'x 90'	51-31	1	40'x 90'	51-31
	OTHER CONSTRUCTION						
	ROAD, 2 LANE, 6" CRUSHED STONE, 1" COLD SURFACE TREAT.	1.15	MILE	85-31	1.15	MILE	85-31
35	SUMP, FIRE PROTECTION	6	10000GAL	84-21	6	10000GAL	84-21
	HARDSTANDS, 4"STABILIZED STONE	18.9	1000 SY	85-31	18.9	1000 SY	85-31
	SITE AREA	38.92	ACRE		38.92	ACRE	
36	WATER TANK	1	21000GAL	84-21	1	21000GAL	84-21
37	LOAD CENTER	1			1		
38	LOAD CENTER	1			1		
39	LOAD CENTER	1			1		
40	LOAD CENTER	1			1		
41	LOAD CENTER-EMERGENCY	1			1		

UTILITIES						
ENGINEER SERVICES REQUIRED	DEMAND	FACILITY NO.	DWGS. FOR DETAILS	DEMAND	FACILITY NO.	DWGS. FOR DETAILS
WATER DISTRIBUTION	50000GPD	500870	84-21	50000GPD	500870	84-21
SEWAGE	35000GPD	500871	83-15	35000GPD	500871	83-15
ELECTRIC DISTRIBUTION WITHOUT AIR CONDITIONING	297.1 KW	500872	81-23	301.1 KW	500872	81-23
AIR CONDITIONING UTILITIES		500873			500873	
AIR COND. & MECH. VENTILATION		500874			500874	

OCCUPANCY SCHEDULE - STD & OR TPR - ALT.

NO.	FACILITY	NUMBER OF BEDS	NUMBER OF BUILDINGS	NO. OF BEDS EACH TYPE	TOTAL
32	WARD BLDG-1, STANDARD	34	20	680	
33	WARD BLDG-2, ACUTE	28	10	280	
	TOTAL BEDS - PATIENTS				960
13	OFFICER QUARTERS-MALE-1	24	1	24	
14	OFFICER QUARTERS-MALE-2	14	3	42	
	TOTAL MALE OFFICER ACCOMMODATIONS				66
11	OFFICER QUARTERS-FEMALE-1	23	4	92	
12	OFFICER QUARTERS-FEMALE-2	13	2	26	
	TOTAL FEMALE OFFICER ACCOMMODATIONS				118
3	BARRACKS-1	74	6	444	
	TOTAL ENLISTED MEN				444
	TOTAL HOSPITAL OCCUPANCY				1588
3	EMERGENCY WARD, BARRACKS-1	36	6	216	
	TOTAL EMERGENCY BEDS				216

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

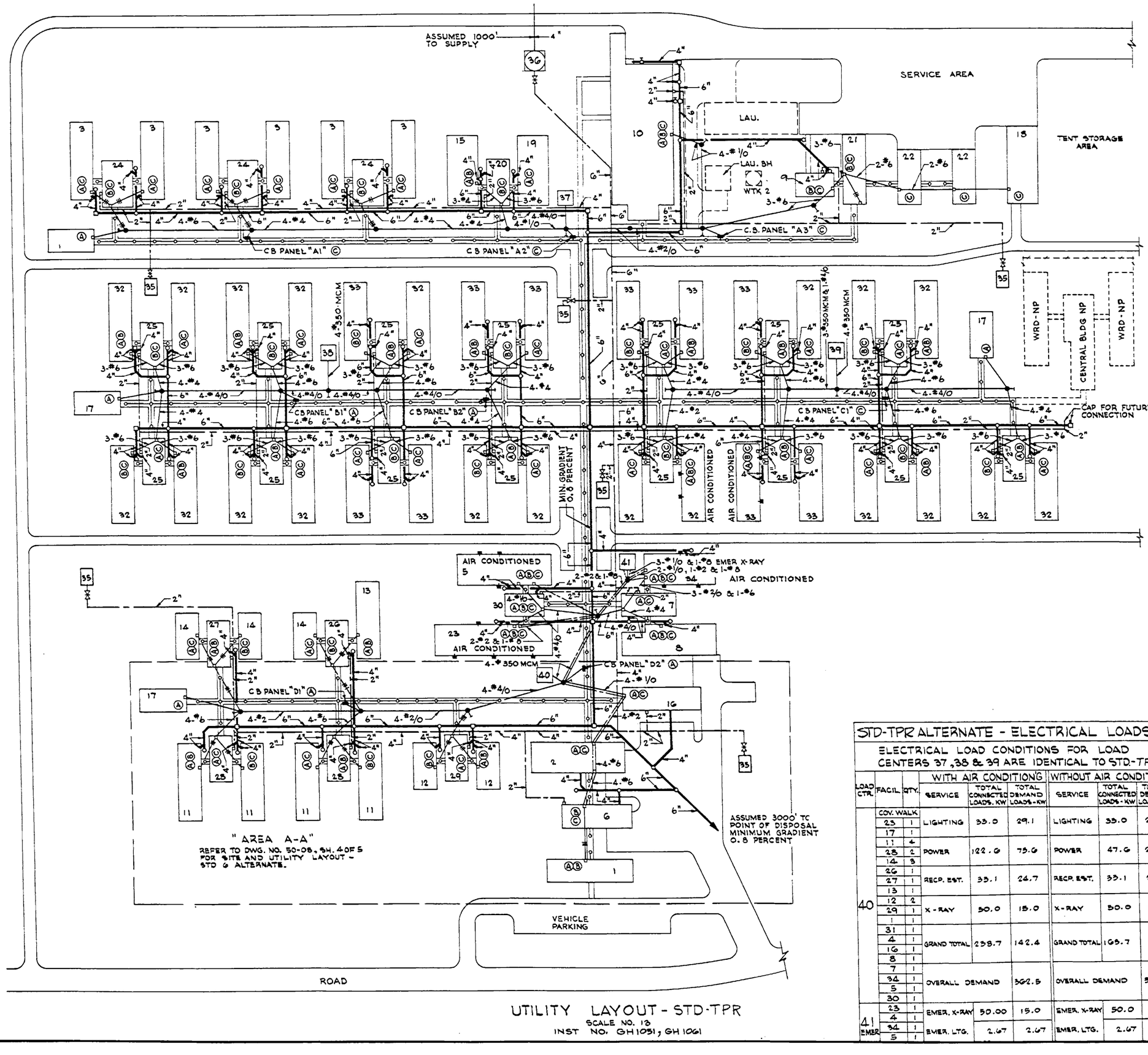
GRAPHIC SCALES
0 50' 100' 150'
NO. 14

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: Chief, Planning Branch
APPROVED: Chief, Engineering Division, Mil. Constr., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert E. Bernstein D/PS&O
DATE 9 OCT 68

THEATER OF OPERATIONS
SCHEDULE OF FACILITIES
SITE LAYOUT
UNDER REVISION
DATE: 19 MAR 1969
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 3 OF 4
50-08



STD-TPR - ELECTRICAL LOADS

LOAD CTR.	FACIL.	QTY.	WITH AIR CONDITION'G SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW	WITHOUT AIR CONDITIONG SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
37	COV. WALK							
	17	1	LIGHTING	24.6	22.1	LIGHTING	24.6	22.1
	3	6						
	24	3						
	15	1	POWER	42.2	25.3	POWER	42.2	25.3
	20	1						
	19	1						
	10	1	RECP. EST.	14.7	11.0	RECP. EST.	14.7	11.0
	9	1						
	21	1						
	22	2	GRAND TOTAL	81.5	58.4	GRAND TOTAL	81.5	58.4
	18	1						
38	COV. WALK		LIGHTING	21.8	19.6	LIGHTING	21.8	19.6
	17	1	POWER	4.8	2.9	POWER	4.8	2.9
	32	11	RECP. EST.	69.8	54.8	RECP. EST.	69.8	54.8
	33	5	GRAND TOTAL	96.4	77.3	GRAND TOTAL	96.4	77.3
	25	8						
39	COV. WALK		LIGHTING	19.1	17.2	LIGHTING	19.1	17.2
	17	1	POWER	31.4	18.9	POWER	4.2	2.5
	32	9	RECP. EST.	61.1	48.3	RECP. EST.	61.1	48.3
	33	5	GRAND TOTAL	111.6	84.4	GRAND TOTAL	84.4	68.0
	25	7						
40	COV. WALK							
	23	1	LIGHTING	31.4	28.2	LIGHTING	31.4	28.2
	17	1						
	11	4						
	28	2	POWER	121.8	73.1	POWER	46.9	28.1
	14	3						
	26	1						
	27	1	RECP. EST.	29.6	22.1	RECP. EST.	29.6	22.1
	13	1						
	12	2						
	29	1	X-RAY	50.0	15.0	X-RAY	50.0	15.0
	1	1						
	6	1						
	2	1						
	16	1	GRAND TOTAL	232.8	158.4	GRAND TOTAL	157.9	93.4
	8	1						
	7	1						
	34	1						
	5	1	OVERALL DEMAND		358.5	OVERALL DEMAND		297.1
	30	1						
41 EMER	23	1	EMER. X-RAY	30.0	15.0	EMER. X-RAY	50.0	15.0
	6	1						
	34	1	EMER. LTG.	2.60	2.60	EMER. LTG.	2.60	2.60
	5	1						

GENERAL NOTES

1. SEE FACILITY DRAWINGS FOR SIZE OF WATER LINES BETWEEN ADJACENT BUILDINGS.

STD-TPR ALTERNATE - ELECTRICAL LOADS

ELECTRICAL LOAD CONDITIONS FOR LOAD CENTERS 37, 38 & 39 ARE IDENTICAL TO STD-TPR

LOAD CTR.	FACIL.	QTY.	WITH AIR CONDITION'G SERVICE	TOTAL CONNECTED LOADS, KW	TOTAL DEMAND LOADS-KW	WITHOUT AIR CONDITIONG SERVICE	TOTAL CONNECTED LOADS-KW	TOTAL DEMAND LOADS-KW
40	COV. WALK							
	23	1	LIGHTING	33.0	29.1	LIGHTING	33.0	29.1
	17	1						
	11	4						
	28	2	POWER	122.6	73.6	POWER	47.6	28.6
	14	3						
	26	1						
	27	1	RECP. EST.	33.1	24.7	RECP. EST.	33.1	24.7
	13	1						
	12	2						
	29	1	X-RAY	50.0	15.0	X-RAY	50.0	15.0
	1	1						
	31	1						
	4	1						
	16	1	GRAND TOTAL	238.7	142.4	GRAND TOTAL	165.7	97.4
	8	1						
	7	1						
	34	1						
	5	1	OVERALL DEMAND		362.5	OVERALL DEMAND		301.1
	30	1						
41 EMER	23	1	EMER. X-RAY	50.00	15.0	EMER. X-RAY	50.0	15.0
	4	1						
	34	1	EMER. LTG.	2.67	2.67	EMER. LTG.	2.67	2.67
	5	1						

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 50' 100'
NO. 13

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION, ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] Lt. Col. Corps of Engrs
APPROVED: [signature] Wm. H. Williams
DATE: 19 MAR 1959
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: [signature] 12/5/60
DATE: 9 OCT. 60

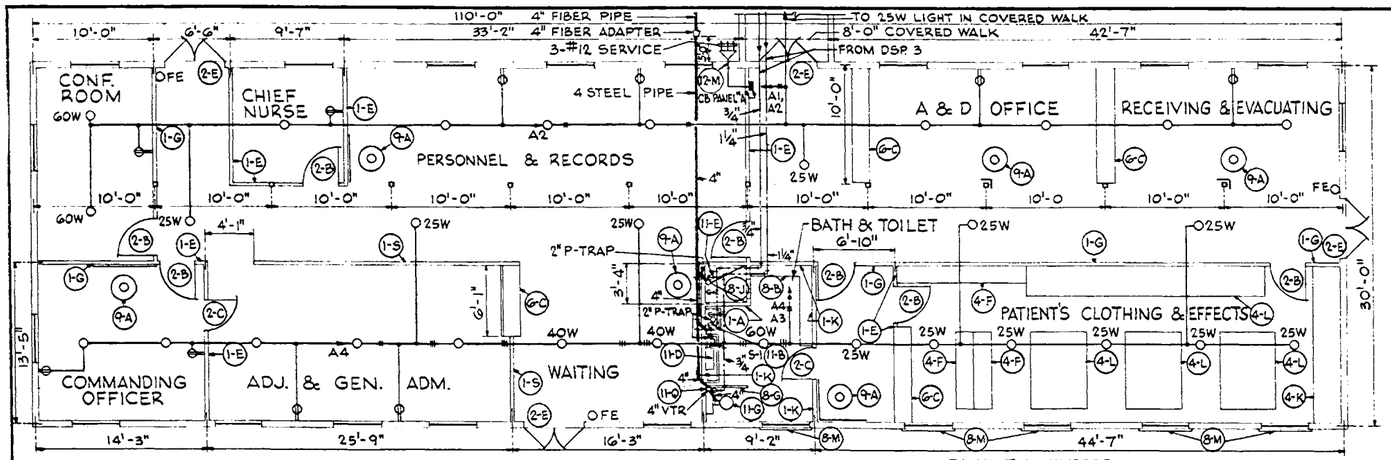
THEATER OF OPERATIONS
HOSPITAL - 100 BED
STD-TPR & TPR ALTERNATE
UTILITY LAYOUT

UNDER REVISION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 4 OF 4
50-08

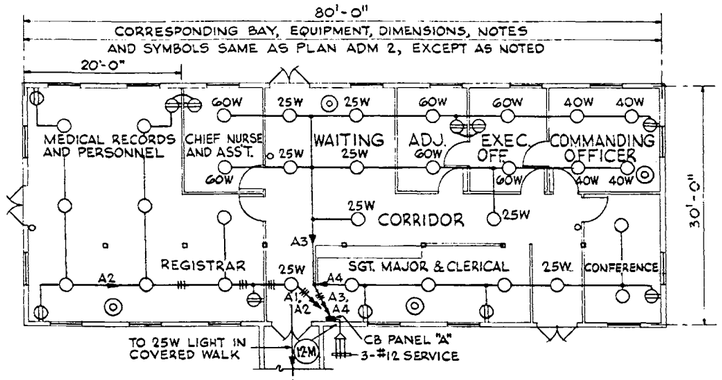
UTILITY LAYOUT - STD-TPR

SCALE NO. 13
INST NO. GH 1051, GH 1061



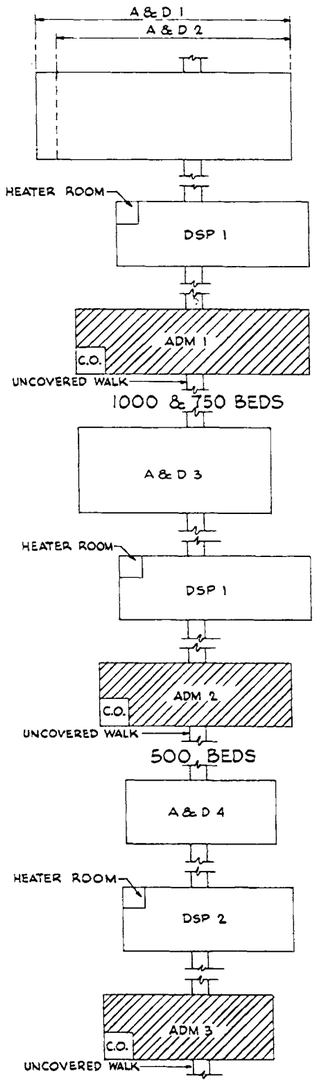
PLAN ADM-A & D 1
100 BEDS
SCALE NO. 24

FACILITY NUMBERS
511104- INTERIOR ONLY
511105- INTERIOR ONLY W/O PLUMBING
511114- STEEL FRAME W/INTERIOR
511124- WOOD FRAME W/INTERIOR

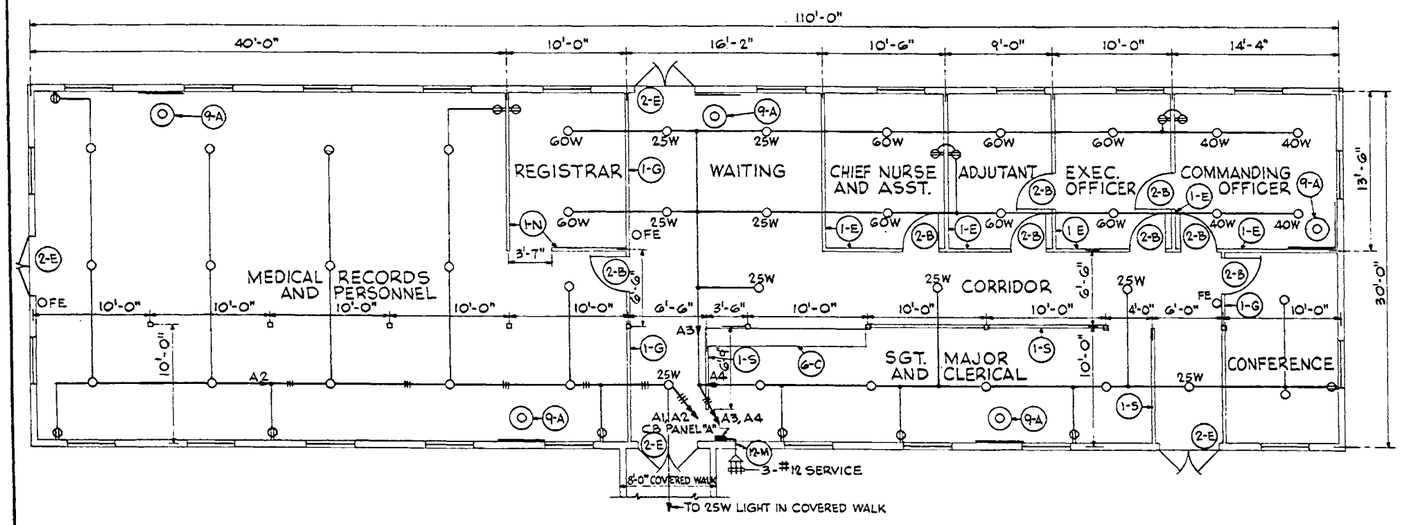


PLAN ADM 3
300 & 200 BEDS
SCALE NO. 1

FACILITY NUMBERS
511101- INTERIOR ONLY
511111- STEEL FRAME W/INTERIOR
511121- WOOD FRAME W/INTERIOR

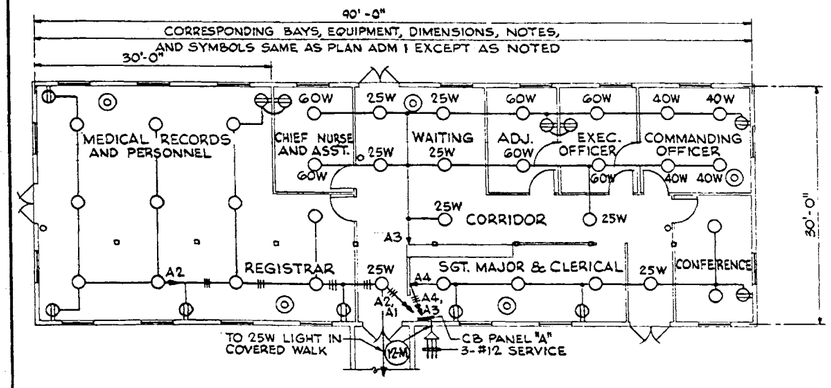


KEY PLANS
NO SCALE



PLAN ADM 1
1000 & 750 BEDS
SCALE NO. 24

FACILITY NUMBERS
511103- INTERIOR ONLY
511113- STEEL FRAME W/INTERIOR
511123- WOOD FRAME W/INTERIOR



PLAN ADM 2
500 BEDS
SCALE NO. 1
FACILITY NUMBERS
511102- INTERIOR ONLY
511112- STEEL FRAME W/INTERIOR
511122- WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	ADM A&D 1	ADM 1	ADM 2	ADM 3
LIGHTING	1.89KW	2.89KW	2.35KW	2.05KW
RECP EST	1.00KW	1.40KW	1.20KW	1.10KW
TOTAL	2.89KW	4.29KW	3.55KW	3.15KW

1. UNLESS OTHERWISE NOTED ON PLANS ALL LAMPS TO BE 100W.
2. ALL 40, 60, & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS- REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-11	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

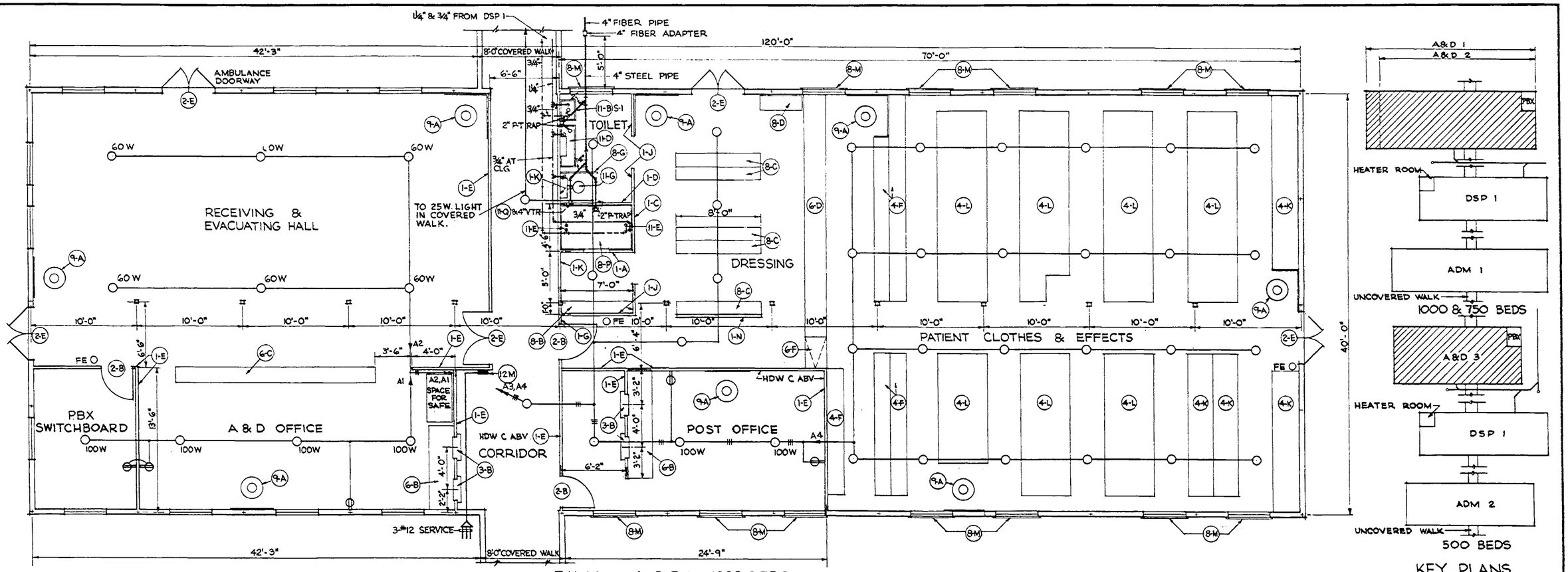
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: VASS
SUBMITTED BY: C. W. DEICHMANN
APPROVED:
CHIEF, ENGINEERING BRANCH
APPROVED: A. M. Wallace
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 NOV 1968
APPROVED FOR PROPONENT AGENCY:
Robert Bernstein D/PS&O
DATE 9 OCT. 68

THEATER OF OPERATIONS
ADMINISTRATION HOSPITAL
ADM 1-88'-0"X110', ADM 2-90'-0"X90', ADM 3-30'X80'
ADM-A & D1-30'X110'

UNDER REVISION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-11
SHEET 1 OF 1

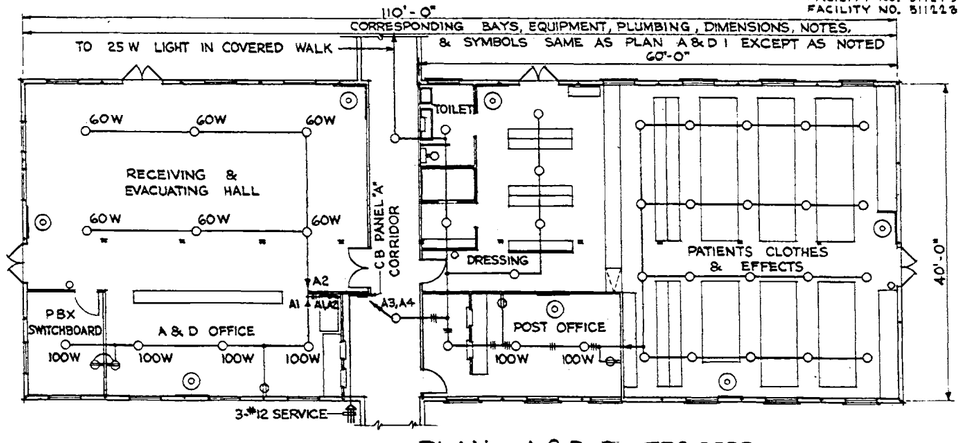


PLAN A&D1 - 1000 BEDS

SCALE NO. 2

FACILITY NO. 511203 - INTERIOR ONLY FACILITY NO. 511206-INTERIOR W/O PLUMBING
FACILITY NO. 511213 - STEEL FRAME W/INTERIOR
FACILITY NO. 511223 - WOOD FRAME W/INTERIOR

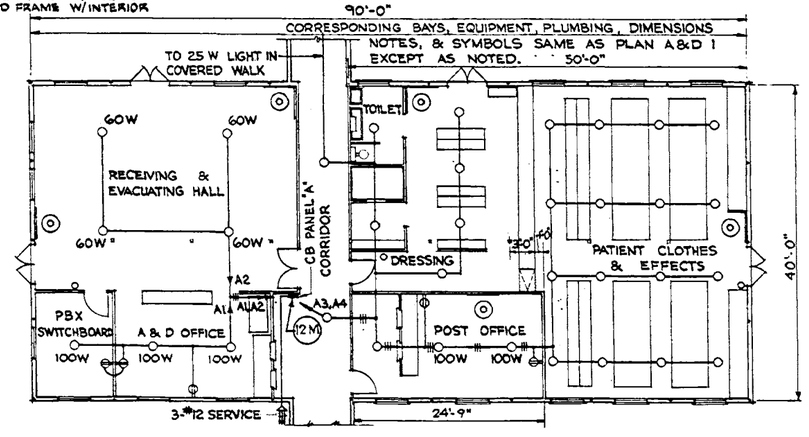
KEY PLANS



PLAN A&D 2 - 750 BEDS

SCALE NO. 1

FACILITY NO. 511201 - INTERIOR ONLY
FACILITY NO. 511205 - INTERIOR W/O PLUMBING
FACILITY NO. 511212 - STEEL FRAME W/INTERIOR
~~FACILITY NO. 511222 - WOOD FRAME W/INTERIOR~~



PLAN A&D 3 - 500 BEDS

SCALE NO. 1

FACILITY NO. 511201 - INTERIOR ONLY
FACILITY NO. 511204 - INTERIOR W/O PLUMBING
FACILITY NO. 511211 - STEEL FRAME W/INTERIOR
FACILITY NO. 511221 - WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	A&D1	A&D2	A&D3
LIGHTING	1.81 KW	1.71 KW	1.39 KW
RECP EST	.50KW	.50 KW	.50KW
TOTAL	2.31 KW	2.21 KW	1.89KW

1. UNLESS OTHERWISE NOTED ON PLANS ALL LAMPS TO BE 25 W.
2. ALL 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-12	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: PENDLETON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature] DATE:
CHIEF, ARCHITECTS BRANCH, ENGR. DIV., MIL. CONSTR., O.C.E.

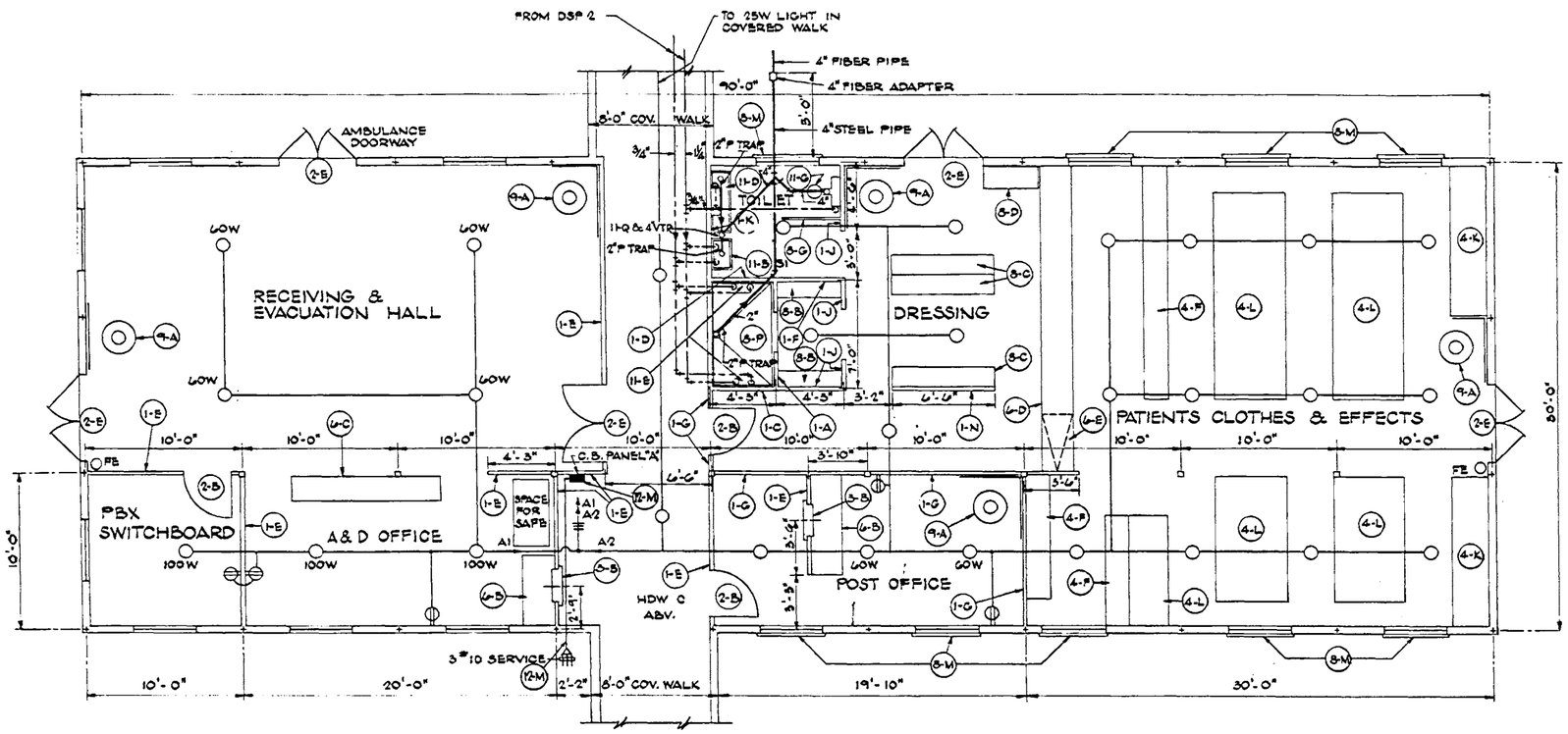
THEATER OF OPERATIONS
ADMISSION & DISPOSITION
A & B1-40'X120' A & D2-40'X110'
A & D3-40'X90'

UNDER REVISION

APPROVED: [signature] DATE: 19 [illegible]
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
Robert Bernstein D/PS&O
DATE 9 OCT 68

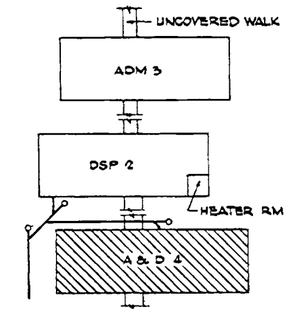
SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER 51-12
SHEET 1 OF 1



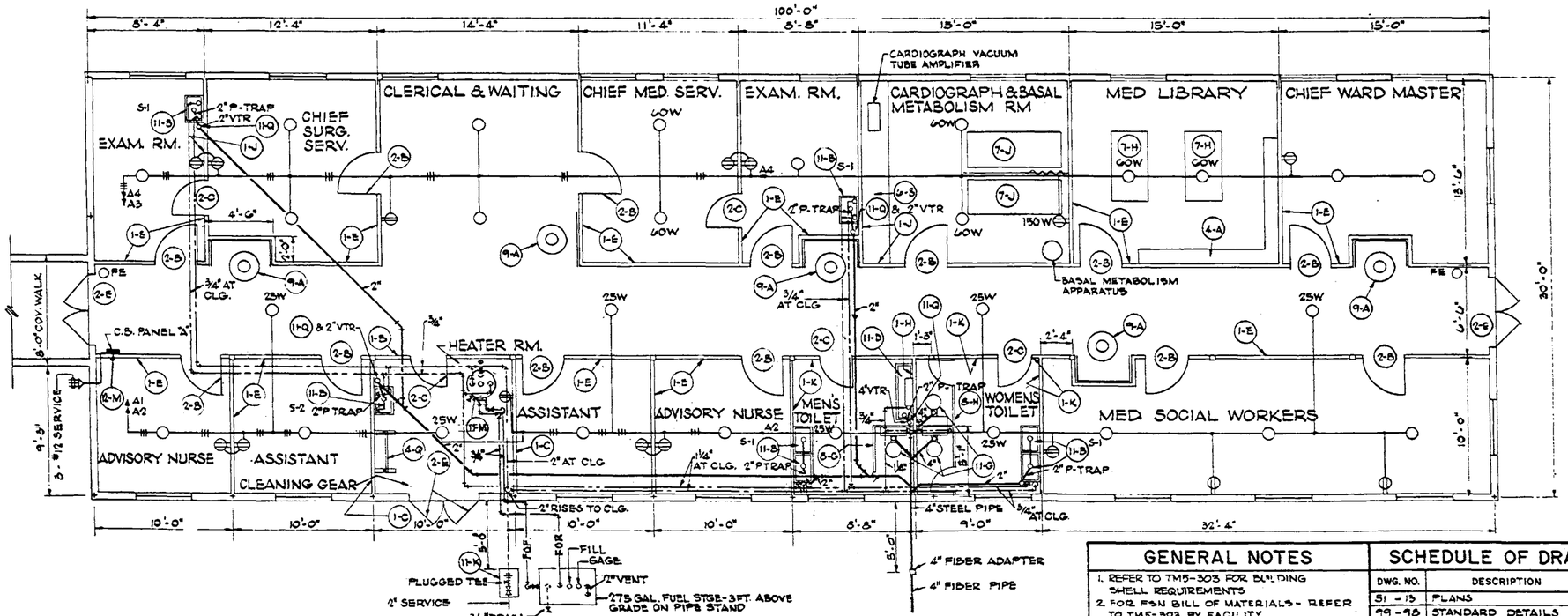
ADMISSION & DISPOSITION A & D 4-30' X 90'

SCALE NO. 2

FACIL. NO. 511301 - INTERIOR ONLY
FACIL. NO. 511302 - INTERIOR W/O PLUMBING
FACIL. NO. 511311 - STEEL FRAME W/INTERIOR
FACIL. NO. 511321 - WOOD FRAME W/INTERIOR



KEY PLAN
NO SCALE



PROFESSIONAL SERVICES BLDG. PROF 1 - 30' X 100'

SCALE NO. 2

FACIL. NO. 511303 - INTERIOR ONLY FACIL. NO. 511313 - STEEL FRAME W/INTERIOR
FACIL. NO. 511323 WOOD FRAME W/INTERIOR

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51 - 13	PLANS	1 OF 1
99 - 98	STANDARD DETAILS	
34 - 03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35 - 21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

ELECTRICAL NOTES

BUILDING	A & D 4 FACILITY NO. 511301	PROF. 1 FACILITY NO. 511303
CONNECTED LOAD		
LIGHTING	1.19 KW	2.04 KW
RECP. EST.	.50 KW	1.30 KW
POWER	—	.54 KW
TOTAL	1.69 KW	3.88 KW

1. UNLESS OTHERWISE NOTED ON PLANS, ALL LAMPS TO BE 25 W. FOR FAC. NO. 511301 AND 100 W. FOR FAC. NO. 511303.
2. ALL 60 & 100 W. LAMPS TO HAVE 8" CONICAL SHADES.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

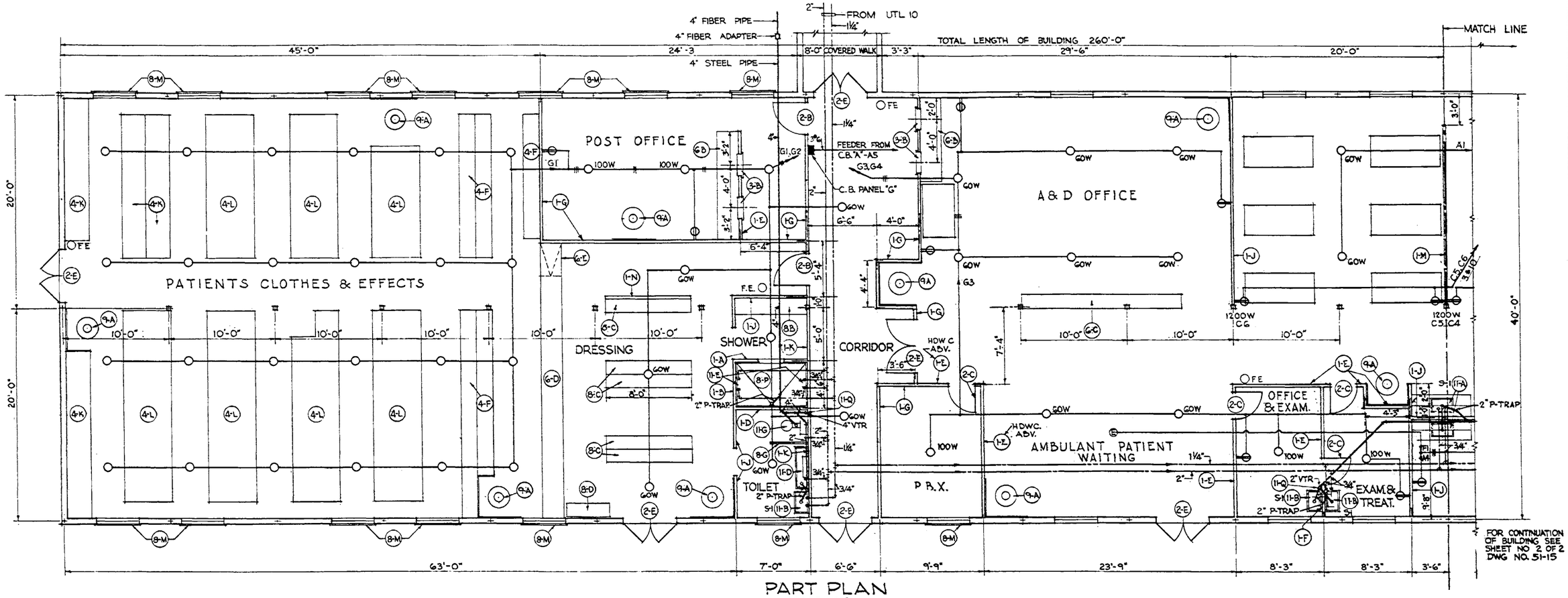
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: CHIEF, ARCH-ENGR BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/PS&O
DATE: 9 OCT. 62

THEATER OF OPERATIONS
PROFESSIONAL SERVICES BUILDING PROF 1 - 30' X 100'
ADMISSION & DISPOSITION
A & D 4-30' X 90'

UNDER REVISION

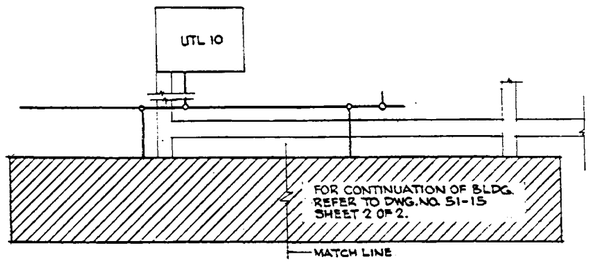
DATE: 19 MAR 1963
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-13
SHEET 1 OF 1



PART PLAN

SCALE NO. 2

FACILITY NUMBERS
511501 - INTERIOR ONLY
511511 - STL FRAME W/INTERIOR
511521 - WOOD FRAME W/INTERIOR



KEY PLAN

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	4.16 KW
RECP EST	5.13 KW
POWER	0.75 KW
TOTAL	10.04 KW
EMER LTG	.13 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 25 W.
2. ALL 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-15	PART PLAN	1 OF 2
51-15	PART PLAN	2 OF 2
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

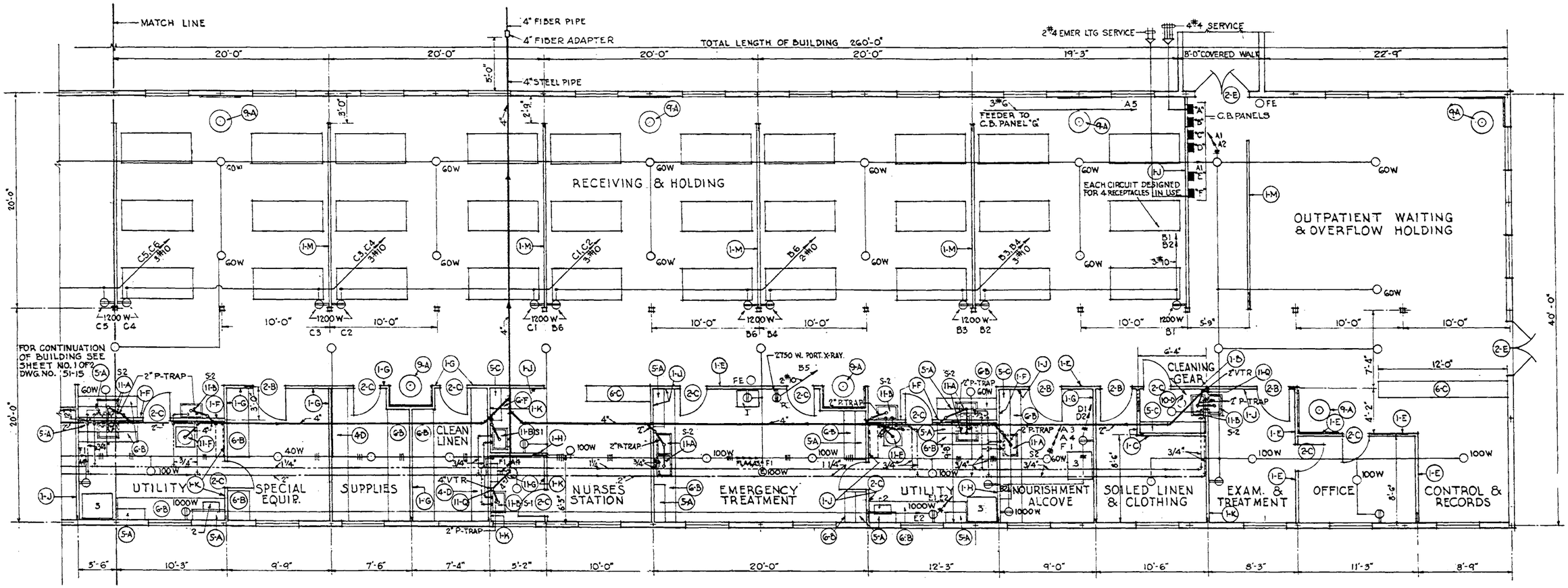
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: H. M. Williams
DATE: 10 MAR 1953
CHIEF, ENGINEERING BRANCH & CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/FSLO
DATE: 9 OCT. 52

THEATER OF OPERATIONS
CASUALTY RECEIVING, HOLDING & TREATMENT
80 BED HOSP - BRICK
PART PLAN

UNDER REVISION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-15
SHEET 1 OF 2



PART PLAN

SCALE NO. 2

FACILITY NUMBERS
511501 - INTERIOR ONLY
511511 - STL FRAME W/INTERIOR
511521 - WOOD FRAME W/INTERIOR

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QTY
1	CABINET, UTILITY, STEEL, 18"x24"x72"	1
2	STERILIZER, INSTRUMENT, FSN 6530-782-6503	2
3	REFRIGERATOR, MECHANICAL, 6 CU. FT.	3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 2

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: ELLISON
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS
CASUALTY RECEIVING, HOLDING & TREATMENT
RCV-DSB-40'X260'
PART PLAN

UNDER REVISION

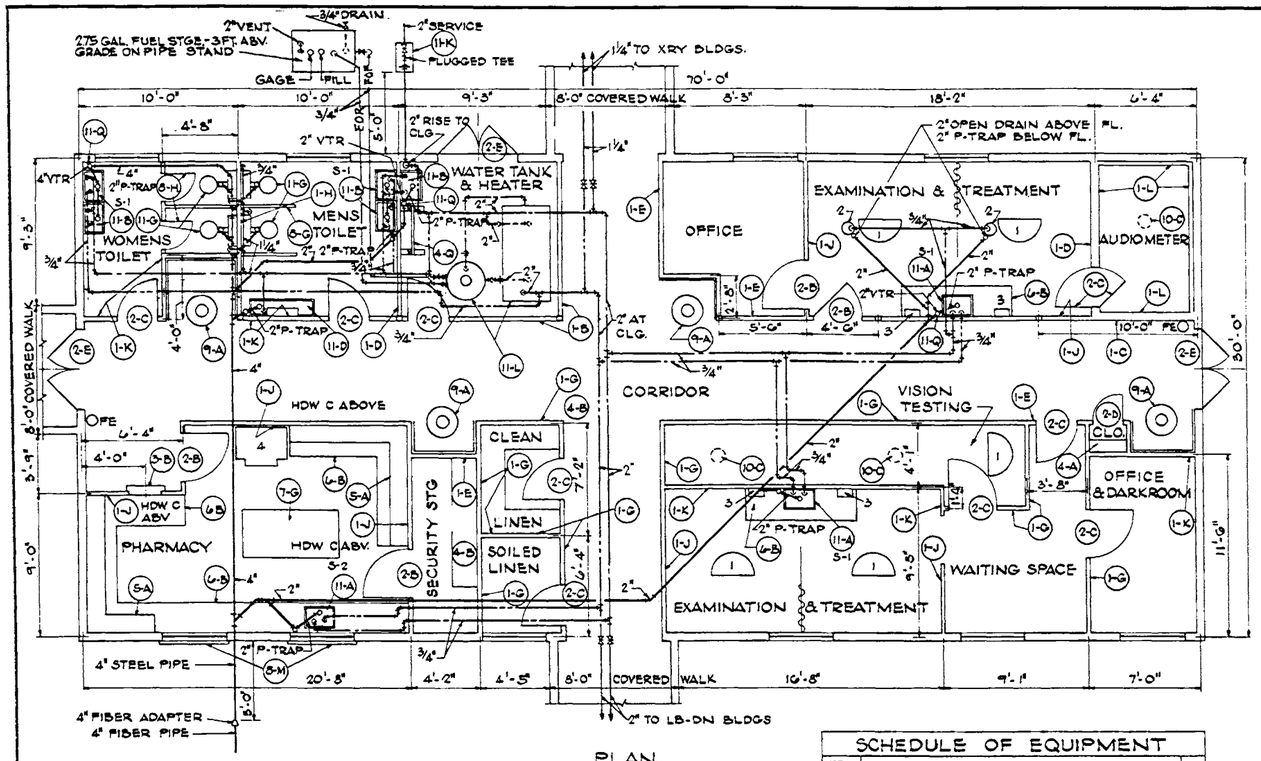
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 SEP 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 10/20/69
DATE 9 OCT. 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 2 OF 2
51-15

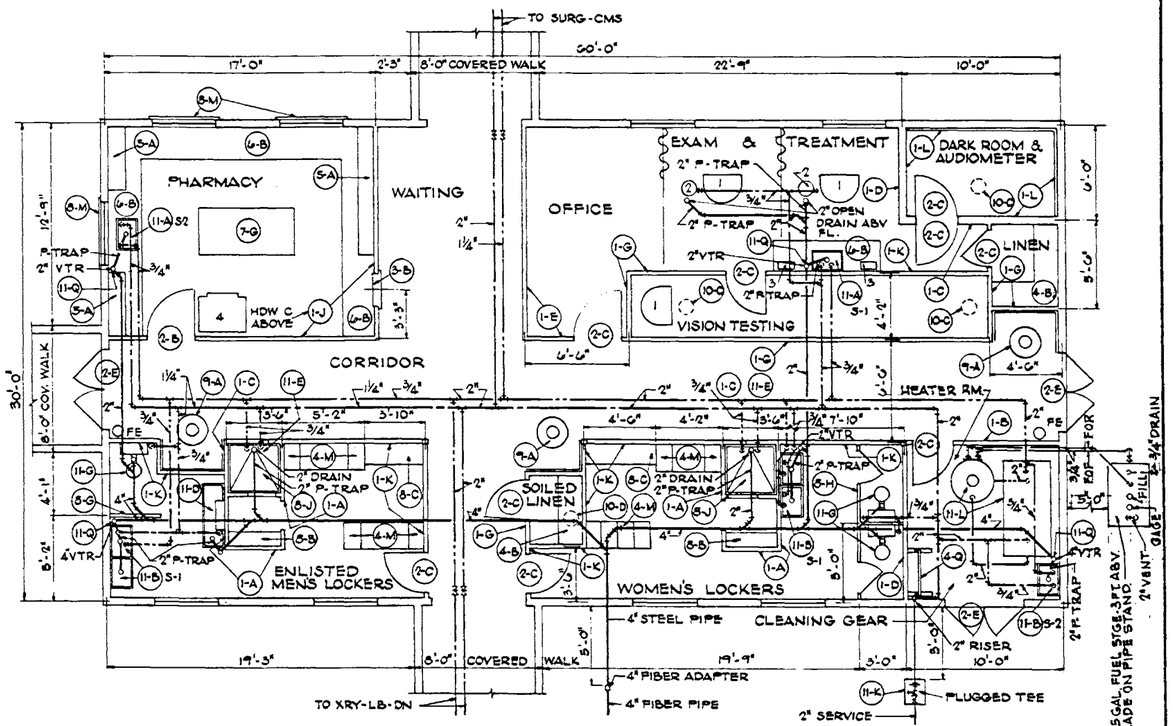
CORPS OF ENGINEERS

U. S. ARMY



PLAN

SCALE NO. 2



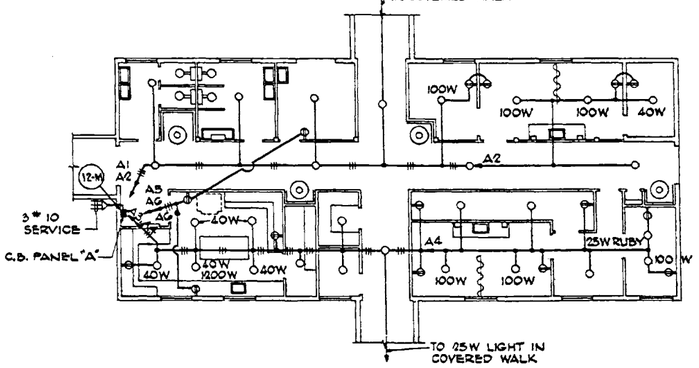
PLAN

SCALE NO. 2

SCHEDULE OF EQUIPMENT		
ITEM NO.	UNIT DESCRIPTION	QTY.
1	CHAIR, SURGICAL, W/ADJUSTABLE LIGHT	5
2	CUSPIDOR, FOUNTAIN	2
3	STERILIZER, INSTRUMENT, BOILING TYPE, 12"x12"x42"	4
4	REFRIGERATOR, 12 CU. FT. 40"x30"x73" ½ HP-M	1

ELECTRICAL NOTES	
CONNECTED LOAD	
LIGHTING	1.29 KW
RECP. EST.	1.44 KW
POWER	.77 KW
TOTAL	3.50 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 25W.
2. ALL 40 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

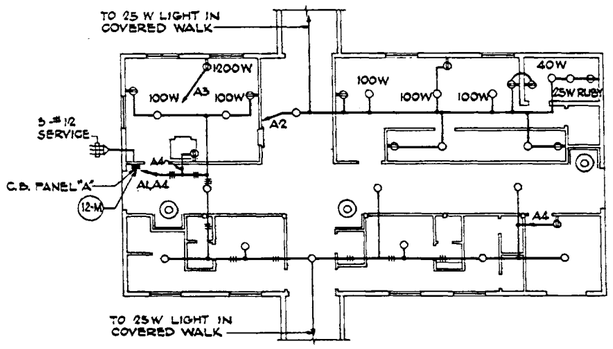


ELECTRICAL PLAN

SCALE NO. 1

EENT & PHARMACY - EE-PH1, 30'X70'

FACIL. NO. 512101-INTERIOR ONLY
FACIL. NO. 512111-STEEL FRAME W/INTERIOR
FACIL. NO. 512121-WOOD FRAME W/INTERIOR
FACIL. NO. 530302-MECHANICAL VENTILATION ONLY



ELECTRICAL PLAN

SCALE NO. 1

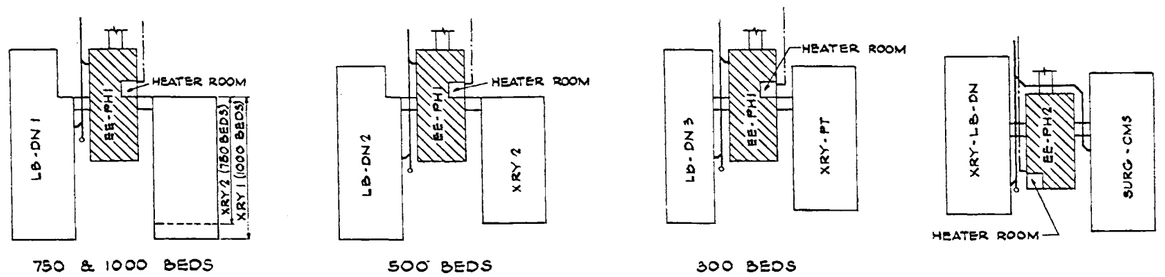
EE & PHARMACY - EE-PH2, 30'X60'

FACIL. NO. 512102-INTERIOR ONLY
FACIL. NO. 512112-STEEL FRAME W/INTERIOR
FACIL. NO. 512122-WOOD FRAME W/INTERIOR
FACIL. NO. 530301-MECHANICAL VENTILATION ONLY

SCHEDULE OF EQUIPMENT		
ITEM NO.	UNIT DESCRIPTION	QTY
1	CHAIR, SPECIALIST, W/ADJUSTABLE LIGHT	3
2	CUSPIDOR, FOUNTAIN	2
3	STERILIZER, INSTRUMENT, FSN 6530-782-6503	2
4	REFRIGERATOR, 8 CU.FT. 30"x29"x65"-⅛HP-M	1

ELECTRICAL NOTES	
CONNECTED LOAD	
LIGHTING	0.92 KW
RECP EST	1.14 KW
POWER	0.07 KW
TOTAL	2.73 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 25 W.
2. ALL 40 & 100W LAMPS TO HAVE 8" CONICAL SHADES.



EENT & PHARMACY

KEY PLANS

NO SCALE

GENERAL NOTES

1. REFER TO TM 5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS- REFER TO TM 5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-21	PLAN	1 OF 1
99-98	STANDARD DETAILS	
53-03	MECHANICAL VENTILATION (1# REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
33-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' 15' NO. 1; 0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS
EENT & PHARMACY, EE-PH, 30'X70'
EE & PHARMACY, EE-PH 2, 30'X60'

UNDER REVISION

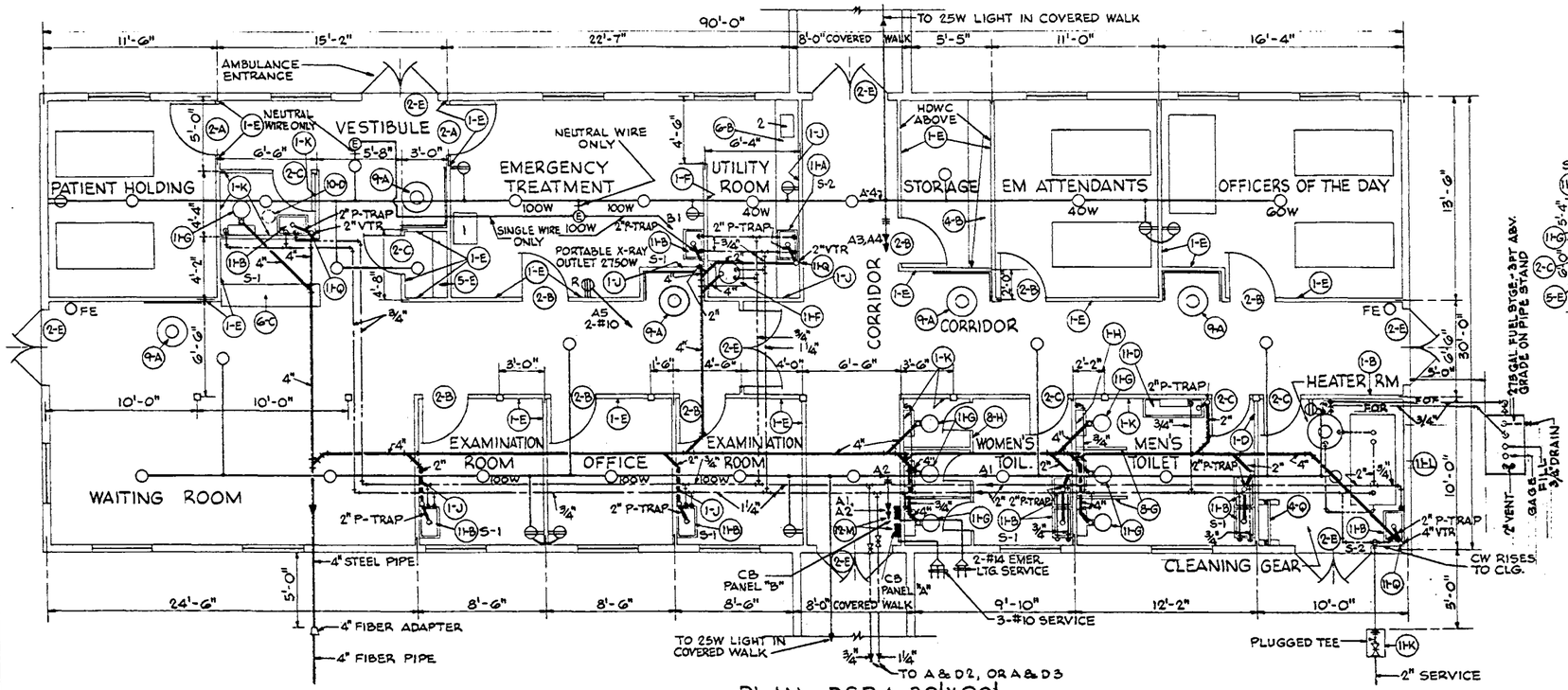
APPROVED: [signature] Lt. Col., Engrs. CHIEF, DESIGNING BRANCH
APPROVED: [signature] H.M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1959

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 0/P&C
DATE 9 Oct 58

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-21
SHEET 1 OF 1

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QUANTITY DSP 1	DSP 2	DSP 3
1	CABINET, UTILITY, STEEL, 18"X24"X72"	1	1	1
2	STERILIZER, INSTRUMENT, FSN 6530-782-6503	1	1	1

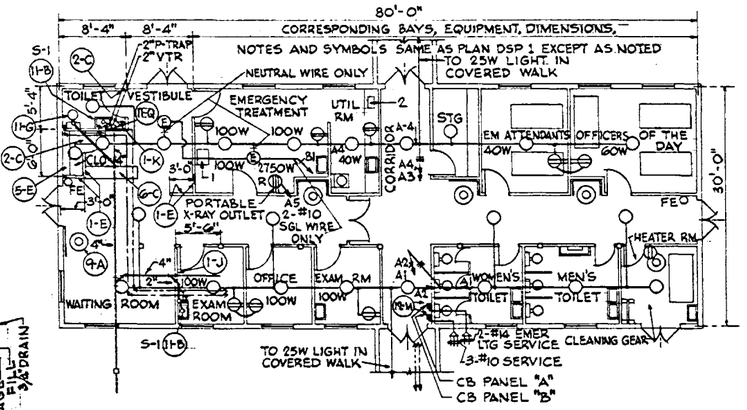


PLAN - DSP 1, 30'X90'

1000, 750 & 500 BEDS

SCALE NO. 2

FACIL. NO. 512302-INTERIOR ONLY FACIL. NO. 512304-INTERIOR W/O PLUMBING
FACIL. NO. 512312-STEEL FRAME W/INTERIOR
FACIL. NO. 512322-WOOD FRAME W/INTERIOR
FACIL. NO. 530103-MECHANICAL VENTILATION ONLY

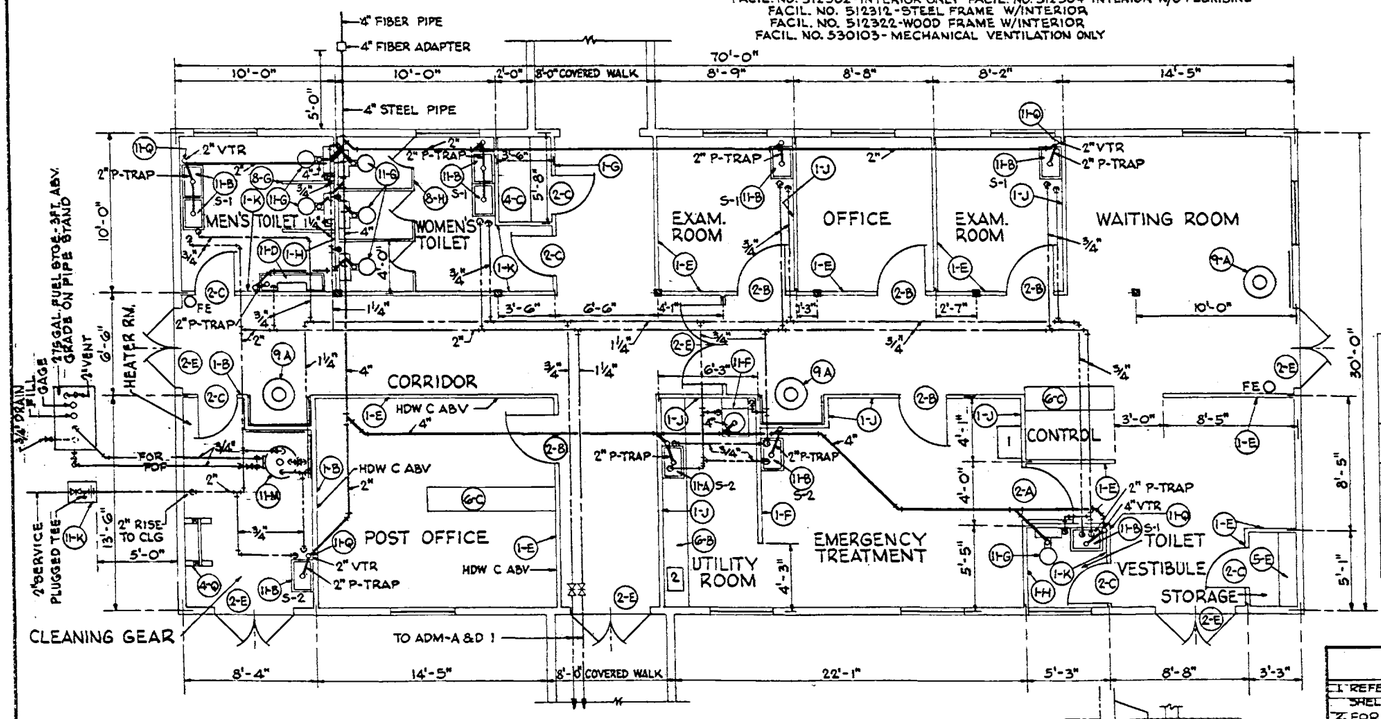


PLAN - DSP 2 30'X80'

300 & 200 BEDS

SCALE NO. 1

FACIL. NO. 512301-INTERIOR ONLY FACIL. NO. 512303-INTERIOR W/O PLUMBING
FACIL. NO. 512311-STEEL FRAME W/INTERIOR
FACIL. NO. 512321-WOOD FRAME W/INTERIOR
FACIL. NO. 530102-MECHANICAL VENTILATION ONLY

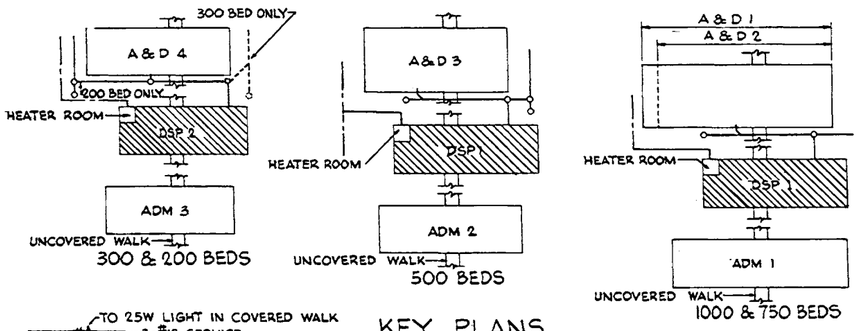


PLAN - DSP 3, 30' X 70'

100 BEDS

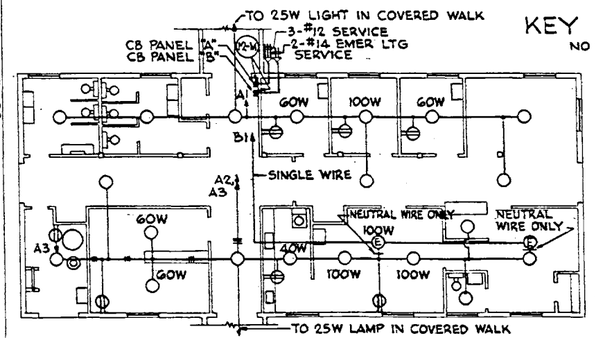
SCALE NO. 2

FACIL. NO. 512305-INTERIOR ONLY FACIL. NO. 512306-INTERIOR W/O PLUMBING
FACIL. NO. 512315-STEEL FRAME W/INTERIOR
FACIL. NO. 512325-WOOD FRAME W/INTERIOR
FACIL. NO. 530101-MECHANICAL VENTILATION ONLY



KEY PLANS

NO SCALE



ELECTRICAL PLAN - DSP 3

SCALE NO. 1

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	DSP 1	DSP 2	DSP 3
LIGHTING	1.12 KW	1.07 KW	.93 KW
RECP EST	1.35 KW	1.35 KW	.60 KW
POWER	.42 KW	.42 KW	.41 KW
TOTAL	2.89 KW	2.84 KW	1.94 KW
EMER LTG	.13 KW	.13 KW	.13 KW

1. UNLESS OTHERWISE NOTED ON PLANS ALL LAMPS TO BE 25W.
2. ALL 40, 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

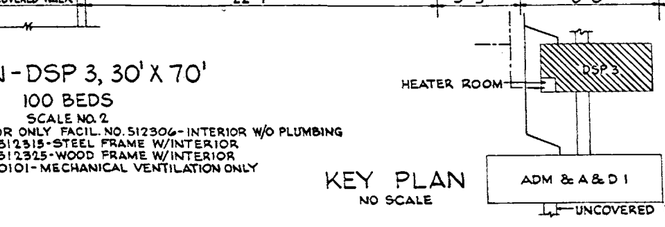
1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-23	PLANS	1 OF 1
99-98	STANDARD DETAILS	
53-01	MECHANICAL VENTILATION (IF REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS	1-4 OF 4

KEY PLAN

NO SCALE



REVISIONS

SYMBOL	DESCRIPTION	DATE	APPROVAL

GRAPHIC SCALES

0 5' 10' 15' — NO. 1

0 5' 10' — NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS

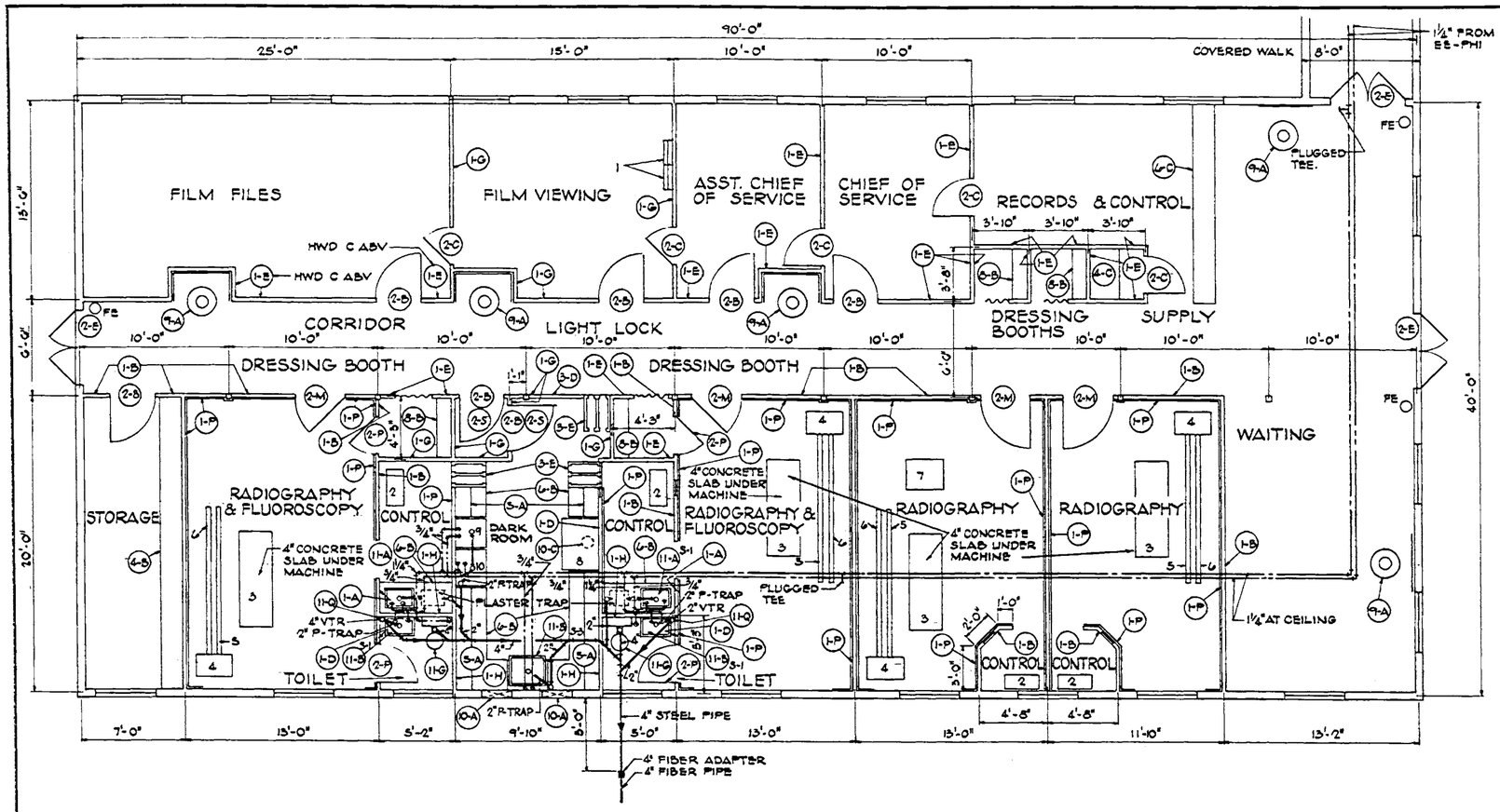
DISPENSARIES
DSP 1-30'X90'
DSP 2-30'X80'
DSP 3-30'X70'

UNDER REVISION

APPROVED: [signature] DATE: 10 MAR 1969
CHIEF, STRUCTURES BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 4/25/69
DATE 9 OCT. 1968

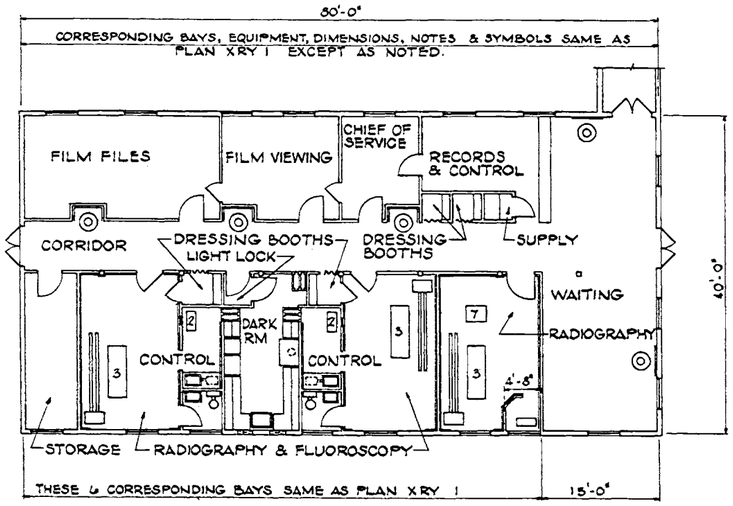
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-23
SHEET 1 OF 1



PLAN XRY 1, 1000 BEDS

SCALE NO. 2

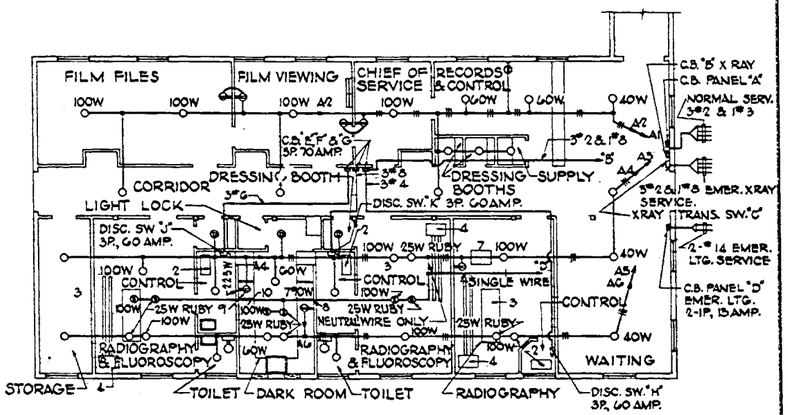
FACIL. NO. 513102-INTERIOR ONLY
FACIL. NO. 513112-STEEL FRAME W/INTERIOR
FACIL. NO. 513122-WOOD FRAME W/INTERIOR
FACIL. NO. 520101-AIR CONDITIONING ONLY



PLAN XRY2, 750 & 500 BEDS

SCALE NO. 1

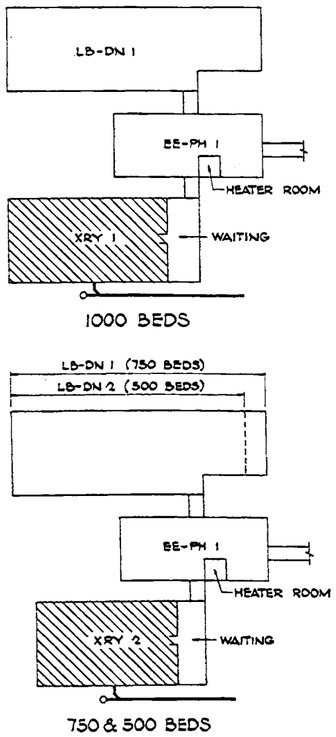
FACIL. NO. 513101-INTERIOR ONLY
FACIL. NO. 513111-STEEL FRAME W/INTERIOR
FACIL. NO. 513121-WOOD FRAME W/INTERIOR
FACIL. NO. 520102-AIR CONDITIONING ONLY

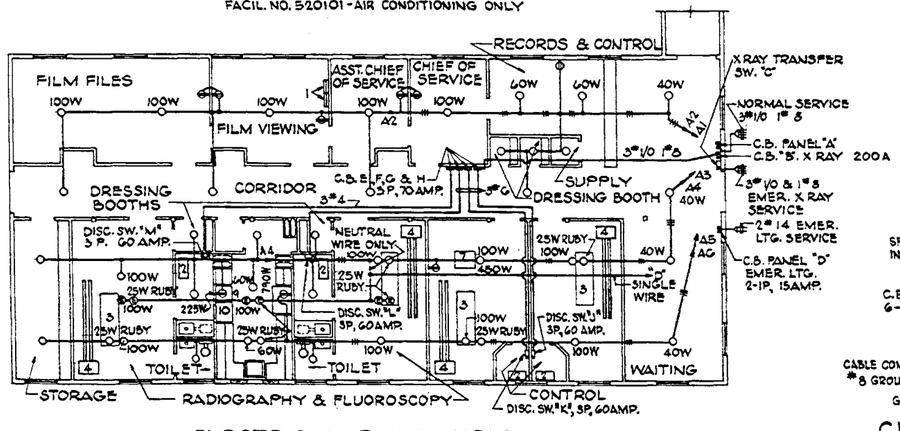


ELECTRICAL PLAN XRY 2

750 & 500 BEDS

SCALE NO. 1

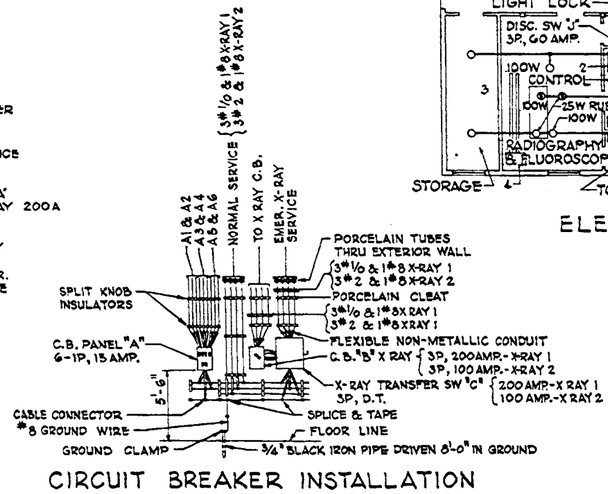




ELECTRICAL PLAN XRY 1

1000 BEDS

SCALE NO. 1



CIRCUIT BREAKER INSTALLATION

XRY-1 & XRY-2

NO SCALE

SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QUANTITY X-RY 1	QUANTITY X-RY 2
1	ILLUMINATOR, RADIOGRAPHIC FILM, FLUORESCENT	2	2
2	CONTROL UNIT, X-RAY APPARATUS		
3	TABLE & TUBE STAND, 94"×55"×115"	4	3
4	TRANSFORMER, 20"×15"×24"		
5	TUBE STAND, 102"×47"×105"		
6	TUBE UNIT ASSEMBLY		
7	CASSET CHANGER, FIELD	1	1
8	DRYER & LOADING BIN COMB. RADIOGRAPHIC, FIELD	1	1
9	PROCESSING ASSEMBLY, RADIOGRAPHIC, DARK RM. FIELD	1	1
10	TANK, RADIOGRAPHIC, DARK ROOM, FIELD	1	1

ELECTRICAL NOTES

CONNECTED LOAD

	X-RAY 1	X-RAY 2
BUILDING LIGHTING	2.21 KW	1.86 KW
RECP. EST.	.50 KW	.40 KW
POWER	1.92 KW	1.82 KW
X-RAY	40.00 KW	30.00 KW
TOTAL	44.53 KW	34.08 KW
EMER LTG	.38 KW	.38 KW
EMER X-RAY	40.00 KW	30.00 KW

1. UNLESS OTHERWISE NOTED ON PLANS - ALL LAMPS TO BE 25 W.
2. ALL 40, 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR F&N BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-31	PLANS	1 OF 1
99-98	STANDARD DETAILS	
52-01	AIR CONDITIONING-X-RY 1 (IF REQUIRED)	1 OF 1
52-01	AIR CONDITIONING-X-RY 2 (IF REQUIRED)	1 OF 1
54-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS	1-4 OF 4

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES

0 5' 10' 15' NO. 1

0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
X-RAY
APP. 7-40'X90' XRY 2-40'X80'

UNDER REVISION

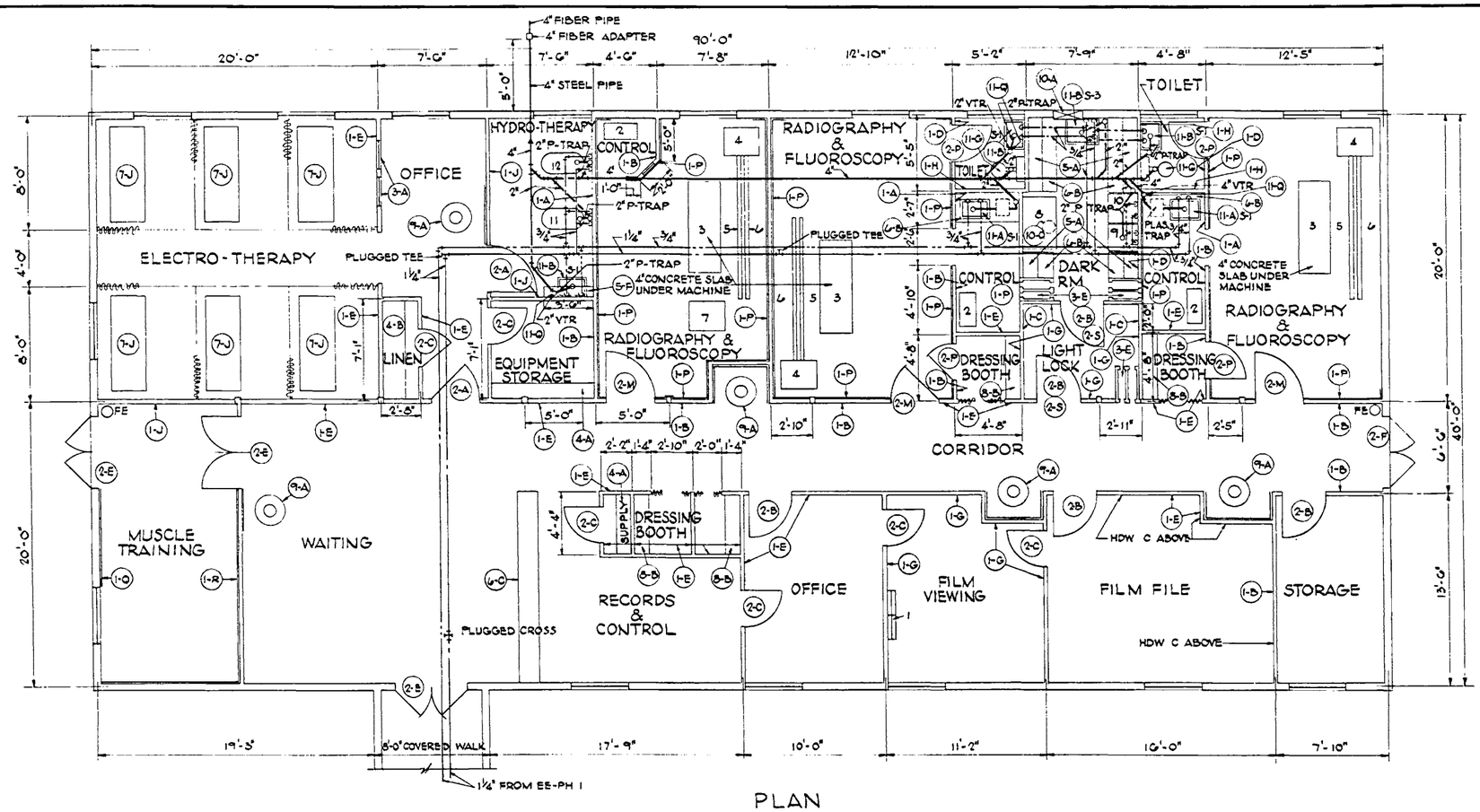
APPROVED: [signature] Roy
CHIEF, ENGINEERING BRANCH
APPROVED: H. N. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernstein D/PSEO
DATE 9 OCT 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-31
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY



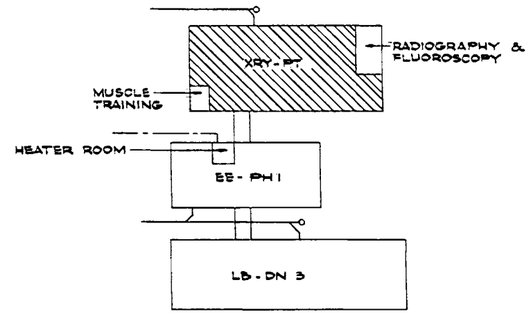
PLAN

SCALE NO. 2

FACIL. NO. 513201 - INTERIOR ONLY
FACIL. NO. 513211 - STEEL FRAME W/INTERIOR
FACIL. NO. 513221 - WOOD FRAME W/INTERIOR
FACIL. NO. 520301 - AIR CONDITIONING ONLY

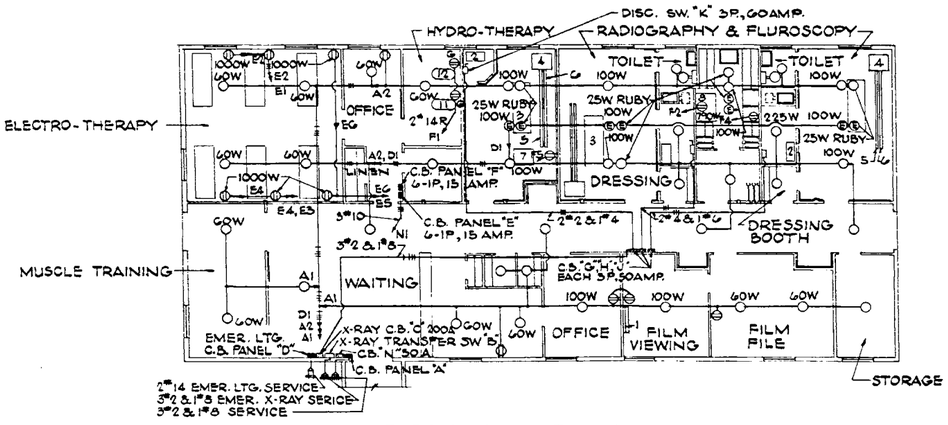
SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QUANTITY
1	ILLUMINATOR, RADIOGRAPHIC, FILM, FLUORESCENT	2
2	CONTROL UNIT, X-RAY APPARATUS	
3	TABLE & TUBE STAND, 94"x 53"x 119"	
4	TRANSFORMER, 20"x 15"x 24"	3
5	TUBE STAND, 102"x 47"x 105"	
6	TUBE, UNIT ASSEMBLY	
7	CASSETTE CHANGER, FIELD	1
8	DRYER & LOADING BIN COMB. RADIOGRAPHIC, FIELD	1
9	PROCESSING ASSEMBLY RADIOGRAPHIC, DARK RM. FIELD	1
10	TANK, RADIOGRAPHIC, DARK ROOM, FIELD	1
11	BATH, ARM, WHIRLPOOL 1/3 HP	1
12	BATH, LEG, WHIRLPOOL 1/3 HP	1



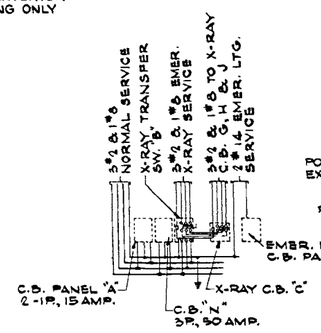
KEY PLAN

NO SCALE



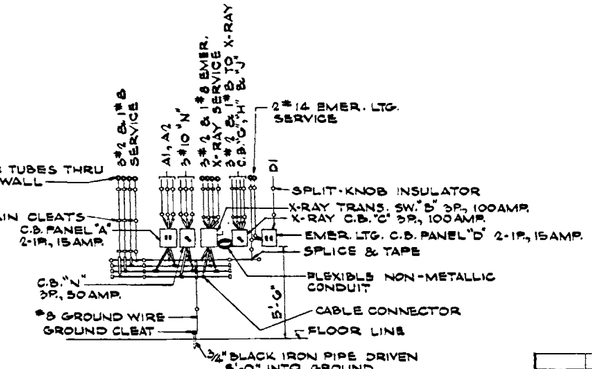
ELECTRICAL PLAN

SCALE NO. 1



WIRING DIAGRAM

NO SCALE



CIRCUIT BREAKER INSTALLATION

NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	2.12 KW
RECP. EST.	1.60KW
POWER	2.45KW
X-RAY	30.00KW
TOTAL	36.17 KW
EMER. LTG.	.50 KW
EMER X-RAY	30.00 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 25W.
2. ALL GO & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-32	PLAN	1 OF 1
99-98	STANDARD DETAILS	
52-03	AIR CONDITIONING (IF REQUIRED)	1 OF 1
54-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 15' NO. 1

0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: SHANNON
SUBMITTED BY: C.W. DEICHMANN
APPROVED: APPROVED: DATE:
CHIEF, STRUCTURES BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 0/P5&O
DATE 9 Oct 68

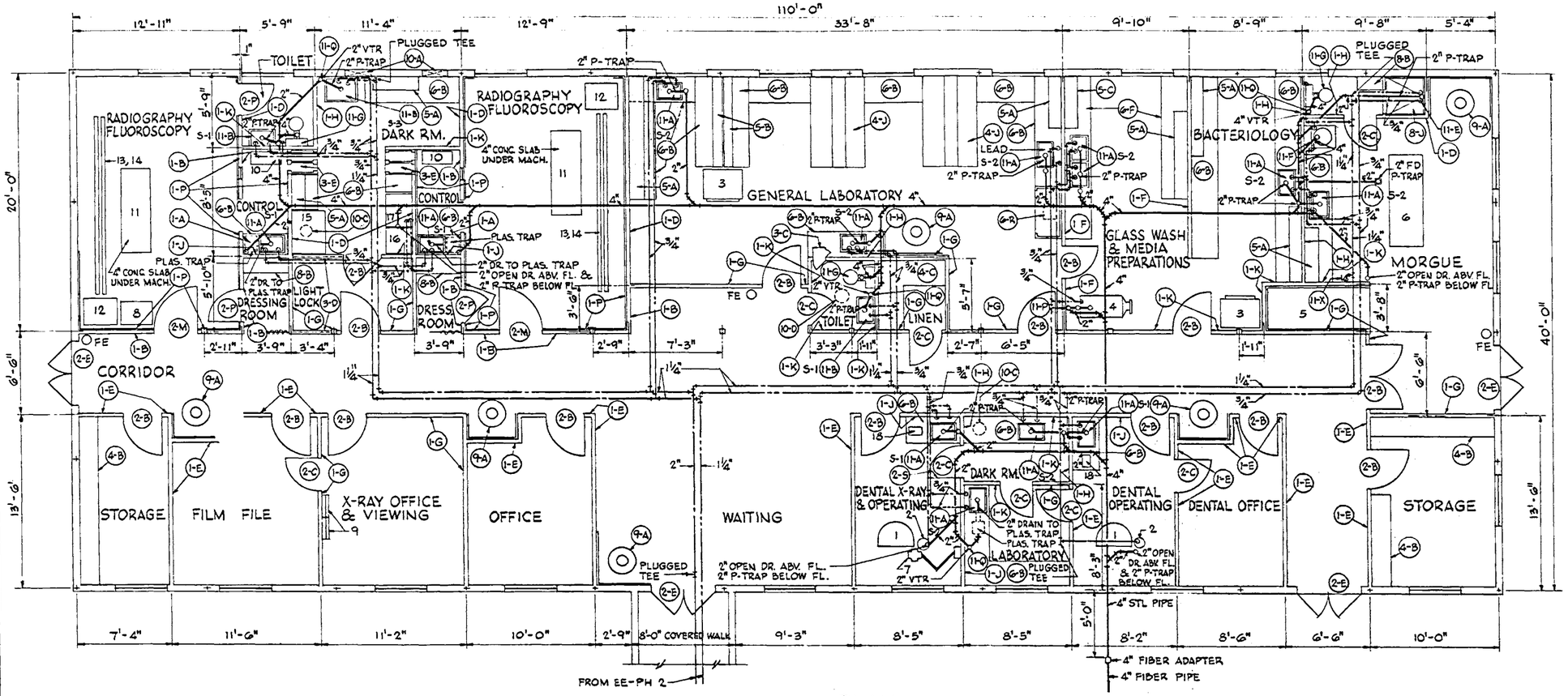
THEATER OF OPERATIONS
X-RAY, PHYSICAL THERAPY
XRY-PT-48-X30

UNDER REVISION

SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER 51-32
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY



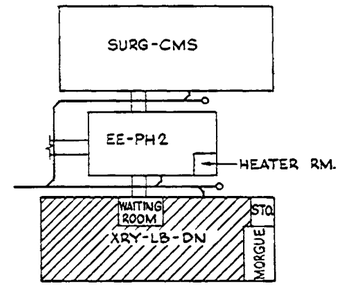
PLAN

SCALE NO. 2

FACIL. NO. 513301 - INTERIOR ONLY
FACIL. NO. 513311 - STEEL FRAME W/INTERIOR
FACIL. NO. 513321 - WOOD FRAME W/INTERIOR
FACIL. NO. 520302 - AIR CONDITIONING ONLY

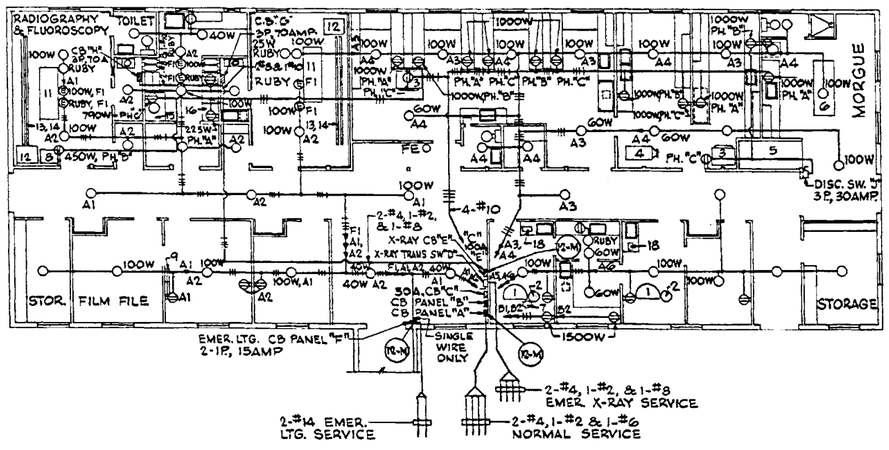
SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QTY.
1	CHAIR, DENTAL OPERATING, FOLDING, FIELD	2
2	CUSPIDOR, FOUNTAIN	2
3	REFRIGERATOR, 8 CU FT., 36"X 29"X 65" 1/6 H.P.	2
4	STERILIZER, DRESSING, UTENSIL, 16" X 36"	1
5	REFRIGERATOR, MORTUARY, 2-CADAVER 1 H.P.	1
6	TABLE, AUTOPSY	1
7	RADIOGRAPHIC UNIT, DENTAL, WALL MOUNTING	1
8	CASSETTE CHANGER, FIELD	1
9	ILLUMINATOR, RADIOGRAPHIC, FILM, FLUORESCENT	2
10 11 12 13 14	RADIOGRAPHIC & FLUOROSCOPIC UNIT, FIELD (CONSISTS OF THE FOLLOWING ITEMS.) CONTROL TABLE TRANSFORMER TUBE STAND TUBE UNIT ASSEMBLY	2
15	DRYER & LOADING BIN COMB. RADIOGRAPHIC, FIELD	1
16	PROCESSING ASSEMBLY, RADIOGRAPHIC DARK RM., FIELD	1
17	TANK, RADIOGRAPHIC FIELD PROCESSING, FIELD	1
18	STERILIZER, INSTRUMENT, FSN 6530-782-6503	2



KEY PLAN

NO. SCALE



ELECTRICAL PLAN

SCALE NO. 1

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	2.95 KW
RECP EST	3.50 KW
POWER	3.30 KW
X-RAY	20.00 KW
TOTAL	29.75 KW
EMER LTG	.38 KW
EMER X-RAY	20.00 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 25W.
2. ALL 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-33	PLANS	1 OF 1
99-98	STANDARD DETAILS	
52-03	AIR CONDITIONING (IF REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' 15' NO.1 — 0 5' 10' NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

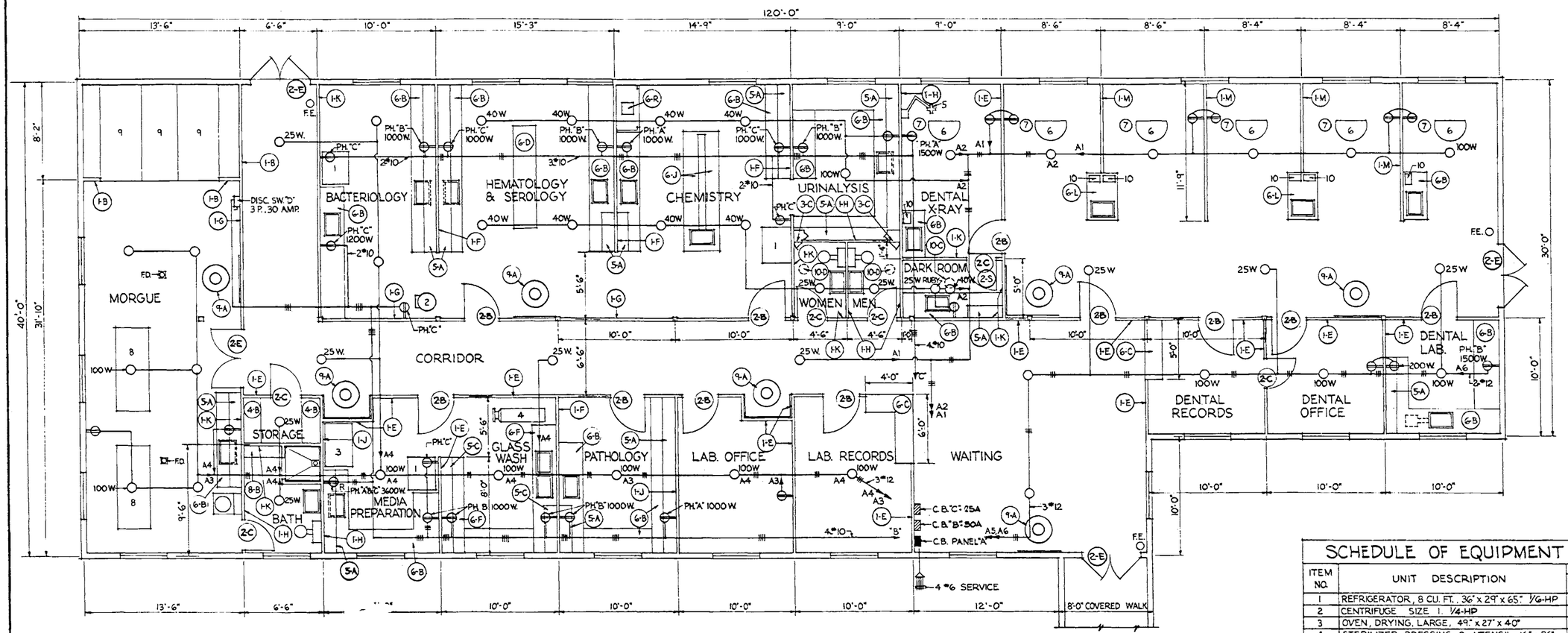
DRAWN BY: WADE
TRACED BY:
CHECKED BY: EDWARDS
SUBMITTED BY: C. W. DEITCHMANN
APPROVED: for W. M. Williams
CHIEF, ARCH. BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 01/9560
DATE 9 OCT 68

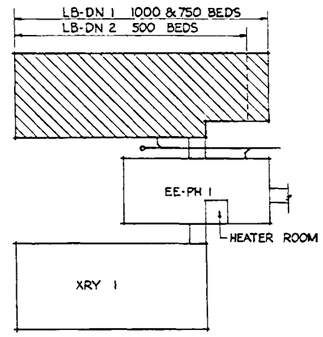
THEATER OF OPERATIONS
(X-RAY - LAB - DENTAL)
HRP-LB-DN 40' X 110'

UNDER REVISION

DATE 19 MAR 1969

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 51-33
SHEET 1 OF 1





KEY PLAN
NO SCALE

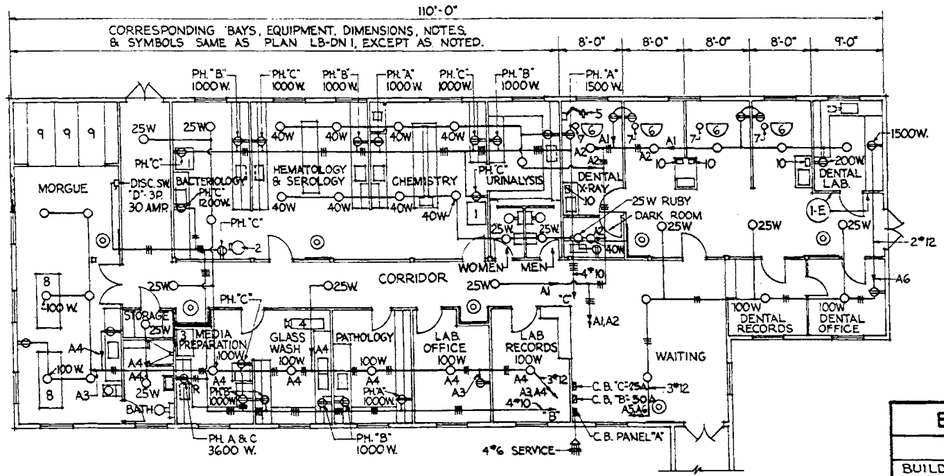
PLAN - LB-DN 1, 1000 & 750 BEDS

SCALE NO. 2

FACIL. NO. 513402 - INTERIOR ONLY
FACIL. NO. 513412 - STEEL FRAME W/INTERIOR
FACIL. NO. 513422 - WOOD FRAME W/INTERIOR
FACIL. NO. 530106 - MECHANICAL VENTILATION ONLY

SCHEDULE OF EQUIPMENT

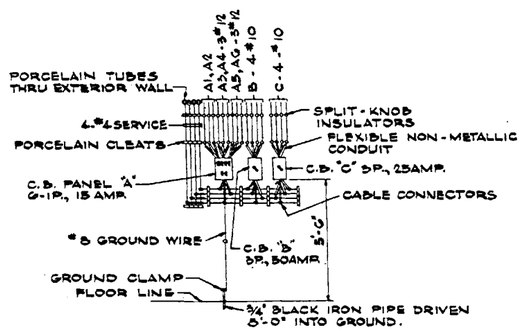
ITEM NO.	UNIT DESCRIPTION	QTY LB-DN-1	QTY LB-DN-2
1	REFRIGERATOR, 8 CU. FT., 36" x 29" x 65" 1/6-HP	3	3
2	CENTRIFUGE SIZE 1. 1/4-HP	1	1
3	OVEN, DRYING, LARGE, 49" x 27" x 40"	1	1
4	STERILIZER, DRESSING & UTENSIL, 16" x 36"	1	1
5	RADIOGRAPHIC UNIT, DENTAL, WALL MOUNTING	1	1
6	CHAIR, DENTAL OPERATING, FOLDING, FIELD	6	4
7	CUSPIDOR, FOUNTAIN	6	4
8	TABLE, AUTOPSY	2	2
9	REFRIGERATOR, MORTUARY, 5 CADAVER, 1-HP	1	1
10	STERILIZER, INSTRUMENT FSN 6530-782-6503	6	4



PLAN - LB-DN 2, 500 BEDS

SCALE NO. 1

FACIL. NO. 513401 - INTERIOR ONLY
FACIL. NO. 513411 - STEEL FRAME W/INTERIOR
FACIL. NO. 513421 - WOOD FRAME W/INTERIOR
FACIL. NO. 530105 - MECHANICAL VENTILATION ONLY



CIRCUIT BREAKER INSTALLATION
NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	LB-DN1	LB-DN2
LIGHTING	2.64 KW	2.37 KW
RECP. EST	4.28 KW	4.17 KW
POWER	5.65 KW	4.40 KW
TOTAL	12.57 KW	10.94 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 60W.
2. ALL 40, 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-305 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER
3. FOUNDATION FOR ITEM NO. 2 TO BE CONSTRUCTED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-34	PLANS & ELECTRICAL	1 OF 2
51-34	PLUMBING	2 OF 2
99-98	STANDARD DETAILS	
53-01	MECHANICAL VENTILATION (IF REQUIRED)	1 OF 1
54-05	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-2 OF 7
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
NO. 1: 0, 5', 10', 15'
NO. 2: 0, 5', 10'

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

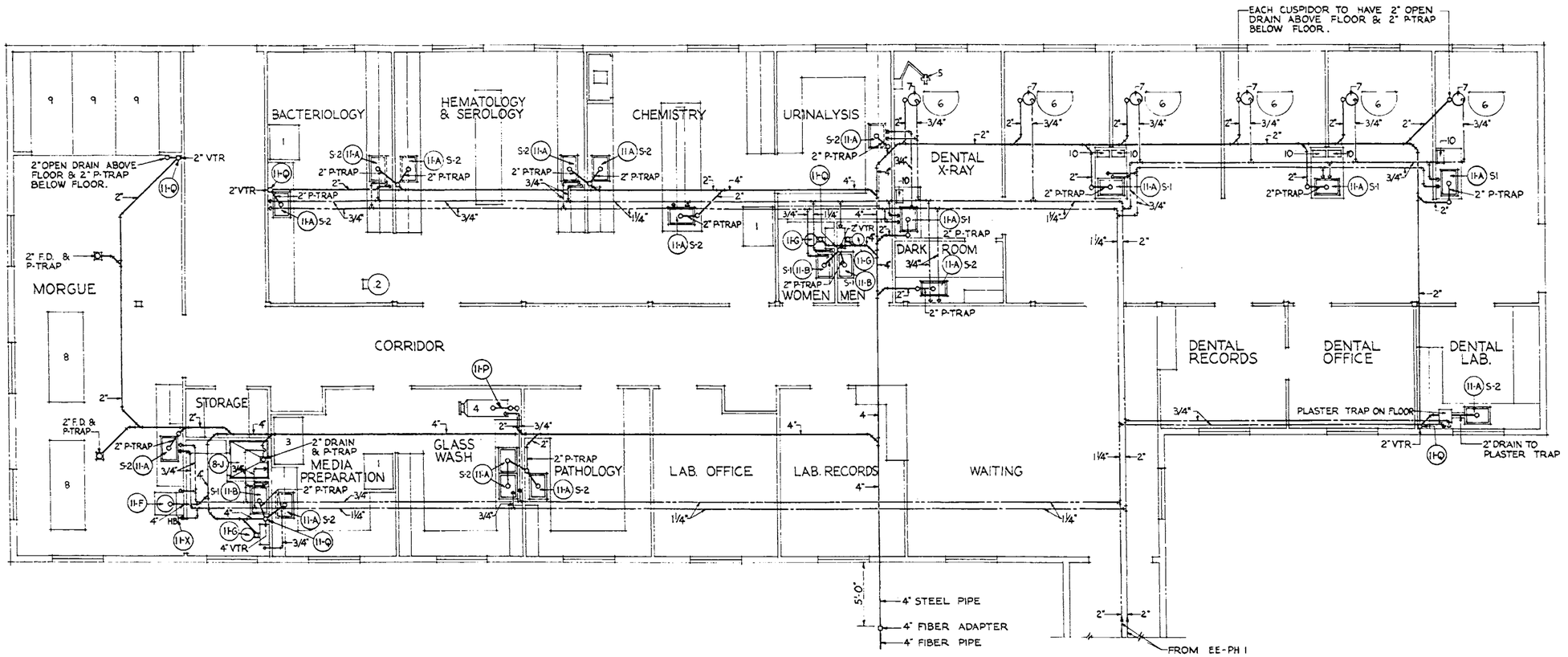
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LALL
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN
APPROVED: W. Schramm, Jr. / APPROVED: H. R. Williams
DATE: 19 MAR 1969
CHIEF, STRUCTURE BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 0/1040
DATE 9 Oct 68

THEATER OF OPERATIONS
LABORATORY & DENTAL
LB-DN1-40'X120' - LB-DN2-40'X110'

UNDER REVISION

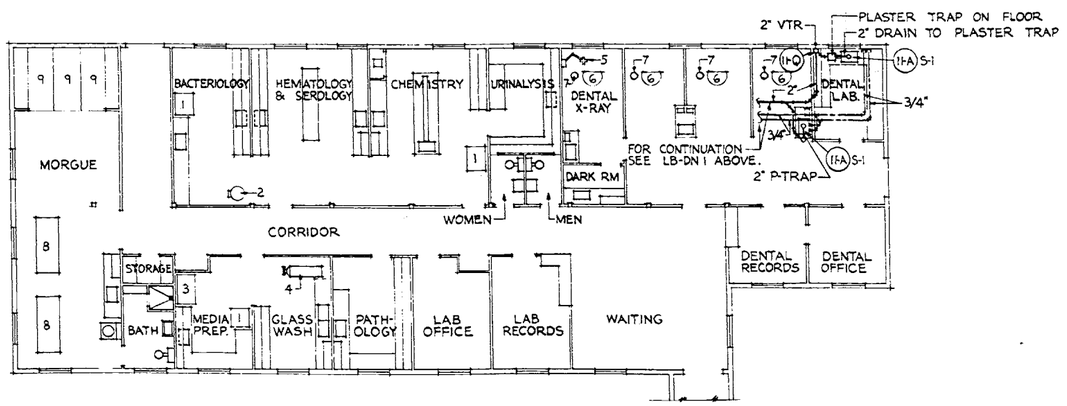
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-34
SHEET 1 OF 2



PLAN

LB-DN 1 (1000 & 750 BEDS)

SCALE NO 2



PLAN

LB-DN 2 (500 BEDS)

SCALE NO. 1

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10' 15' NO.1

0 5' 10' NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: VASS
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C.W. DEICHMANN
APPROVED: H. E. Haas, CHIEF, PROJECTS BRANCH

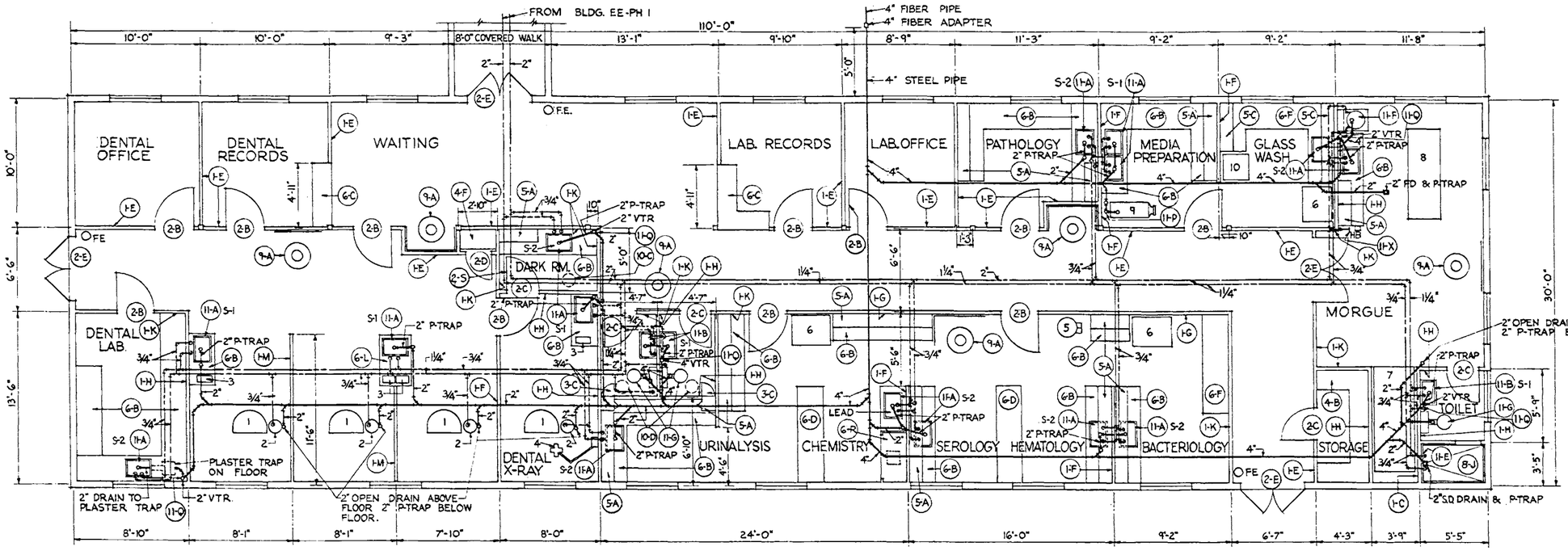
THEATER OF OPERATIONS
LABORATORY-DENTAL
LB-DN-LB-DN2-PLUMBING

UNDER REVISION

APPROVED: By H.M. Williams, CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 18 MAY 1959

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 0/1540
DATE 9 OCT 60

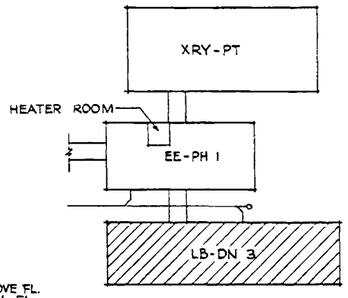
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-34
SHEET 2 OF 2



PLAN

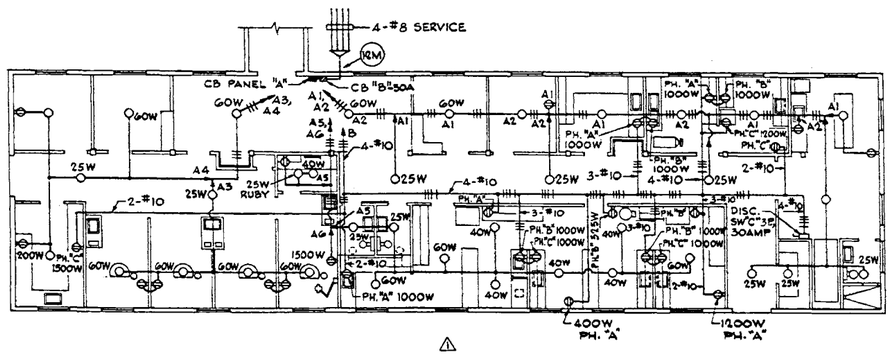
SCALE NO. 2

FACIL. NO. 513501-INTERIOR ONLY
FACIL. NO. 513511-STEEL FRAME W/INTERIOR
FACIL. NO. 513521-WOOD FRAME W/INTERIOR
FACIL. NO. 530104-MECHANICAL VENTILATION ONLY



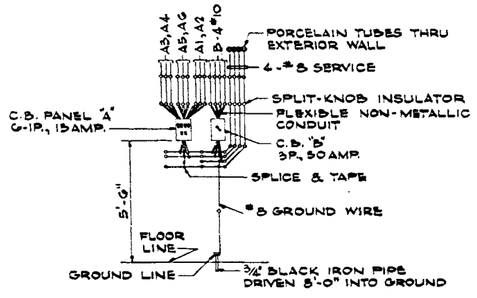
KEY PLAN

NO SCALE



ELECTRICAL PLAN

SCALE NO. 1



CIRCUIT BREAKER INSTALLATION

NO SCALE

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QTY.
1	CHAIR, DENTAL, OPERATING, FOLDING, FIELD	4
2	CUSPIDOR, FOUNTAIN	4
3	STERILIZER, INSTRUMENT, BOILING, FSN 6530-782-6503	4
4	RADIOGRAPHIC UNIT, DENTAL, WALL MOUNTING	1
5	CENTRIFUGE, SIZE 1, MEDIUM DUTY - ⅙ H.P.	1
6	REFRIGERATOR, 8 CU. FT., 36" X 29" X 65" - 1/6 H.P.	3
7	REFRIGERATOR, MORTUARY, 2 CADAVER - 1 H.P.	1
8	TABLE, AUTOPSY	1
9	STERILIZER, DRESSING & UTENSIL, 16" X 36"	1
10	OVEN, DRYING, SMALL, 25" X 22" X 28"	1

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	1.98 KW
RECP EST	3.66 KW
POWER	3.43 KW
TOTAL	9.07 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 100W.
2. ALL 40, 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

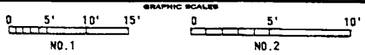
1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS REFER TO TM5-303 BY FACILITY NUMBER.
3. FOUNDATION FOR ITEM NO.5 TO BE CONSTRUCTED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-35	PLAN, PLUMBING & ELEC.	1 OF 1
99-98	STANDARD DETAILS	
53-01	MECHANICAL VENTILATION (IF REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES



MAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HALE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
LABORATORY & DENTAL
(DH-N3-GO-XTO)

UNDER REVISION

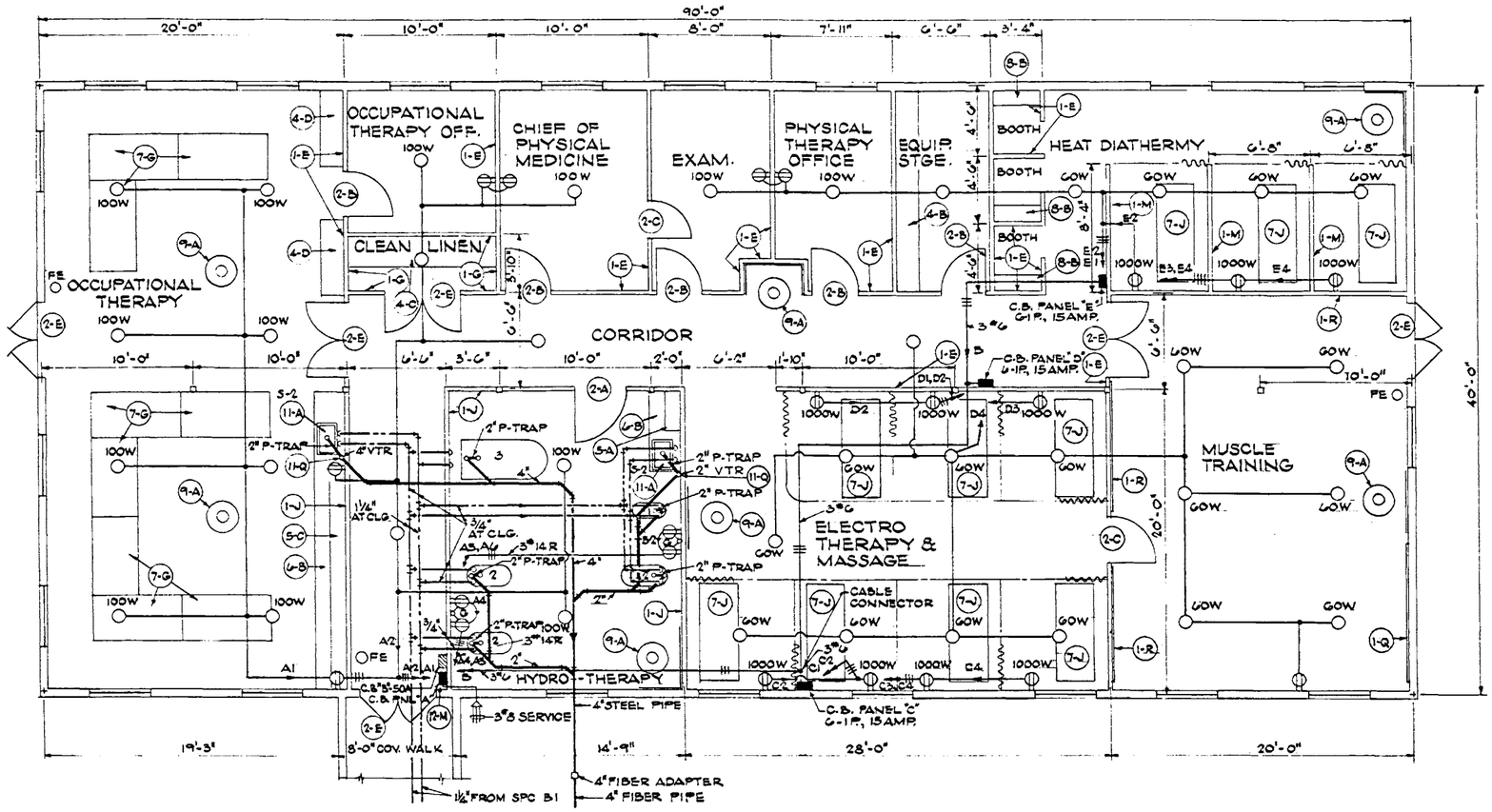
APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, STRUCTURES BRANCH
APPROVED: H. M. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 4/5/69
DATE 9 OCT 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-35
SHEET 1 OF 1

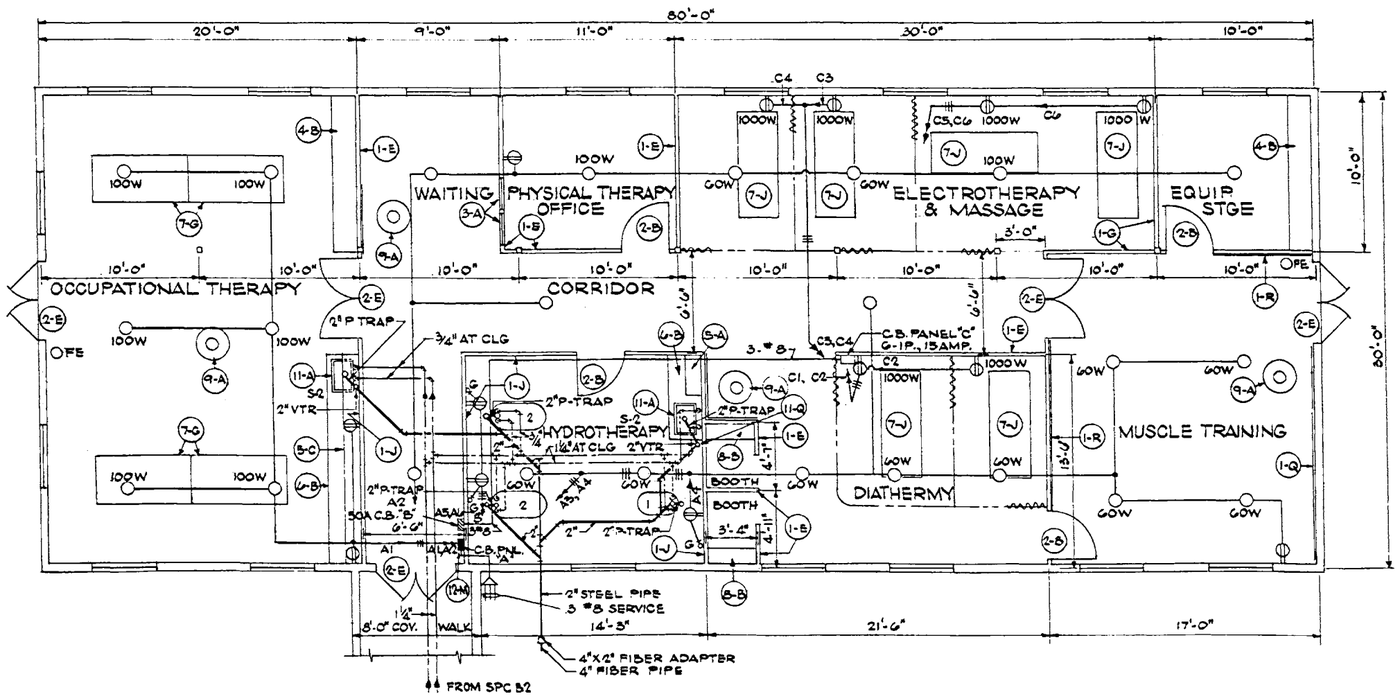
CORPS OF ENGINEERS

U. S. ARMY



PHYSICAL & OCCUPATIONAL THERAPY, PTOT 1 - 40' X 90' -
SCALE NO. 2

FACIL. NO. 513601 - INTERIOR ONLY
FACIL. NO. 513611 - STEEL FRAME W/INTERIOR
FACIL. NO. 513621 - WOOD FRAME W/INTERIOR
FACIL. NO. 530304 - MECHANICAL VENTILATION ONLY
FACIL. NO. 513602 - INTERIOR W/O PLUMBING

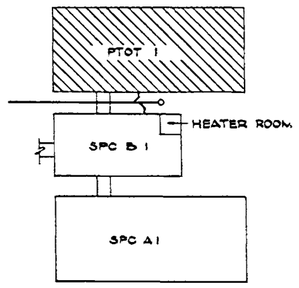


PHYSICAL MEDICINE, PTOT 2 - 30' X 80'
SCALE NO. 2

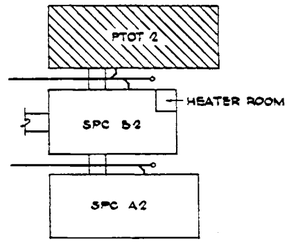
FACIL. NO. 513603 - INTERIOR ONLY
FACIL. NO. 513613 - STEEL FRAME W/INTERIOR
FACIL. NO. 513623 - WOOD FRAME W/INTERIOR
FACIL. NO. 530303 - MECHANICAL VENTILATION ONLY
FACIL. NO. 513604 - INTERIOR W/O PLUMBING

SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QUANTITY PTOT 1	QUANTITY PTOT 2
1	BATH, ARM, WHIRLPOOL, ⅓ H.P.	1	1
2	BATH, LEG, WHIRLPOOL, ⅓ H.P.	3	2
3	BATH, TUB, CONTINUOUS FLOW, 78"X35"	1	-



PTOT 1



PTOT 2

KEY PLANS
NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

	PT OT 1 40'X90'	PT OT 2 30'X80'
BUILDING		
LIGHTING	2.61 KW	1.59 KW
RECP EST	2.70 KW	1.60 KW
POWER	1.80 KW	1.35 KW
TOTAL	7.11 KW	4.54 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 25W.
2. ALL 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BLDG. SHELL REQUIREMENTS.
2. FOR F&N BILL OF MATERIAL - REFER TO TM5-303 BY FACILITY NUMBER.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-36	PLANS	1 OF 1
99-98	STANDARD DETAILS	
53-03	MECHANICAL VENTILATION (IF REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDG.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDG.	1-4 OF 4

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10'
NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: KEISTER
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
PHYSICAL MEDICINE, PTOT 2-30'X80'
PHYSICAL & OCCUPATIONAL THERAPY
PTOT 1-40'X90'

UNDER REVISION

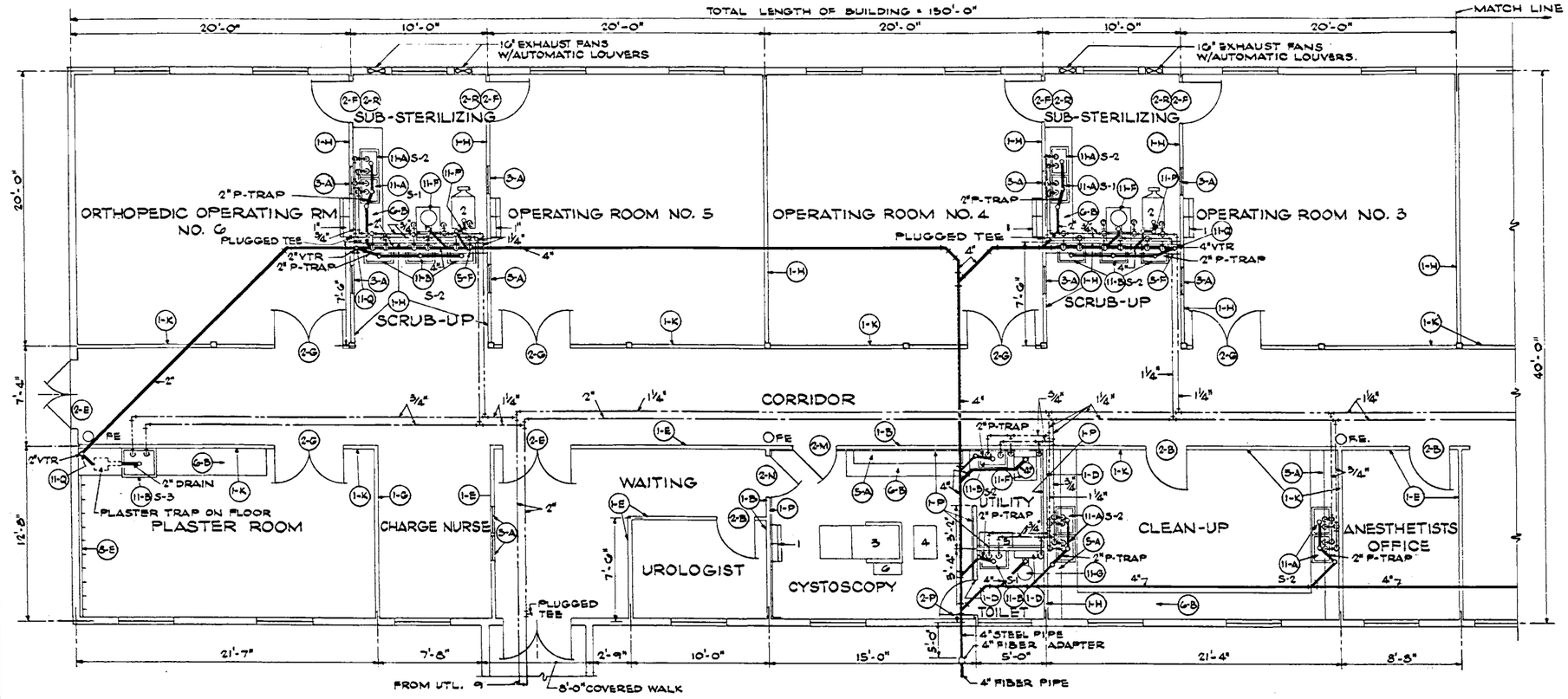
APPROVED: [signature] Chief, Engineering Branch
APPROVED: [signature] Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1963

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 01/0360
DATE 9 OCT 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER 51-36
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY

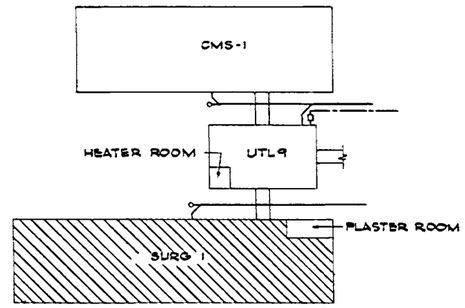


PART PLAN
SCALE NO. 2

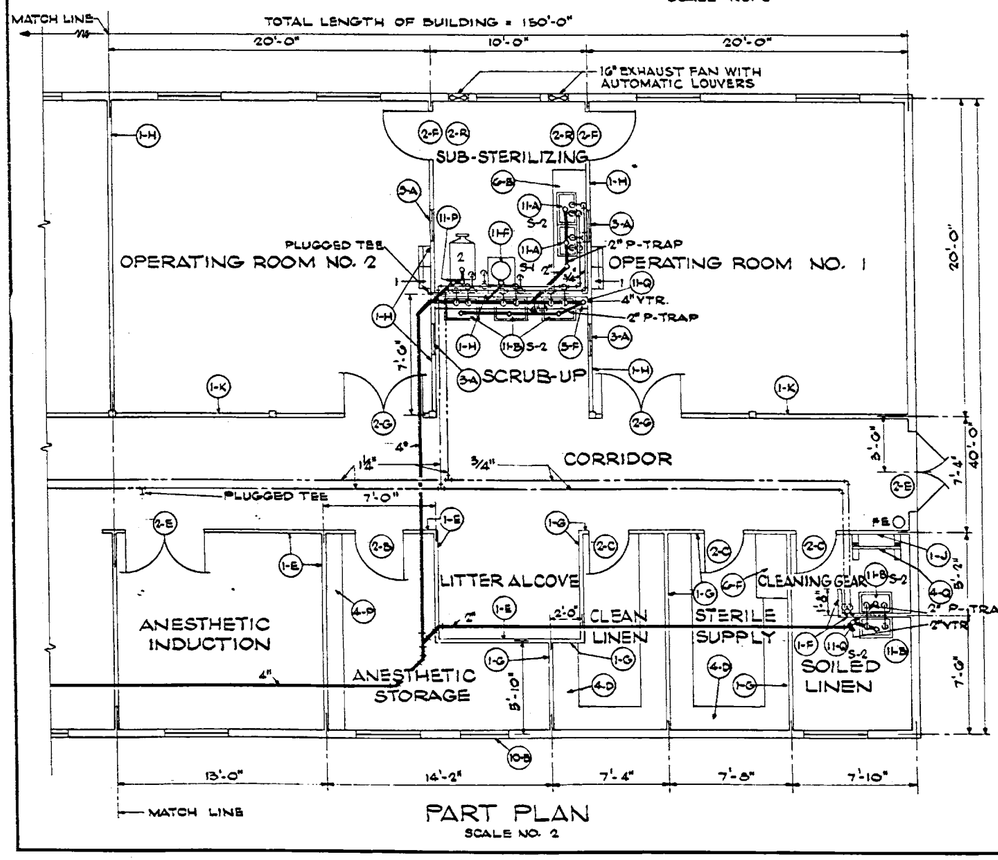
FACILITY NUMBERS
514101 - INTERIOR ONLY
514111 - STEEL FRAME W/INTERIOR
514121 - WOOD FRAME W/INTERIOR
520501 - AIR CONDITIONING

SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QTY.
1	ILLUMINATOR, RADIOGRAPHIC FILM (DOUBLE UNIT)	7
2	STERILIZER, DRESSING	3
SEE CYSTO COPY RM.	RADIOGRAPHIC UNIT, UROLOGICAL (CONSISTS OF FOLLOWING ITEMS)	
3	TABLE	1
4	TRANSFORMER	1
5	CONTROL	1
6	TUBE	1



KEY PLAN
NO SCALE



PART PLAN
SCALE NO. 2

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-41	PLAN	1 OF 2
51-41	HEATING & ELECTRICAL	2 OF 2
99-98	STANDARD DETAILS	
52-05	AIR CONDITIONING (IF REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

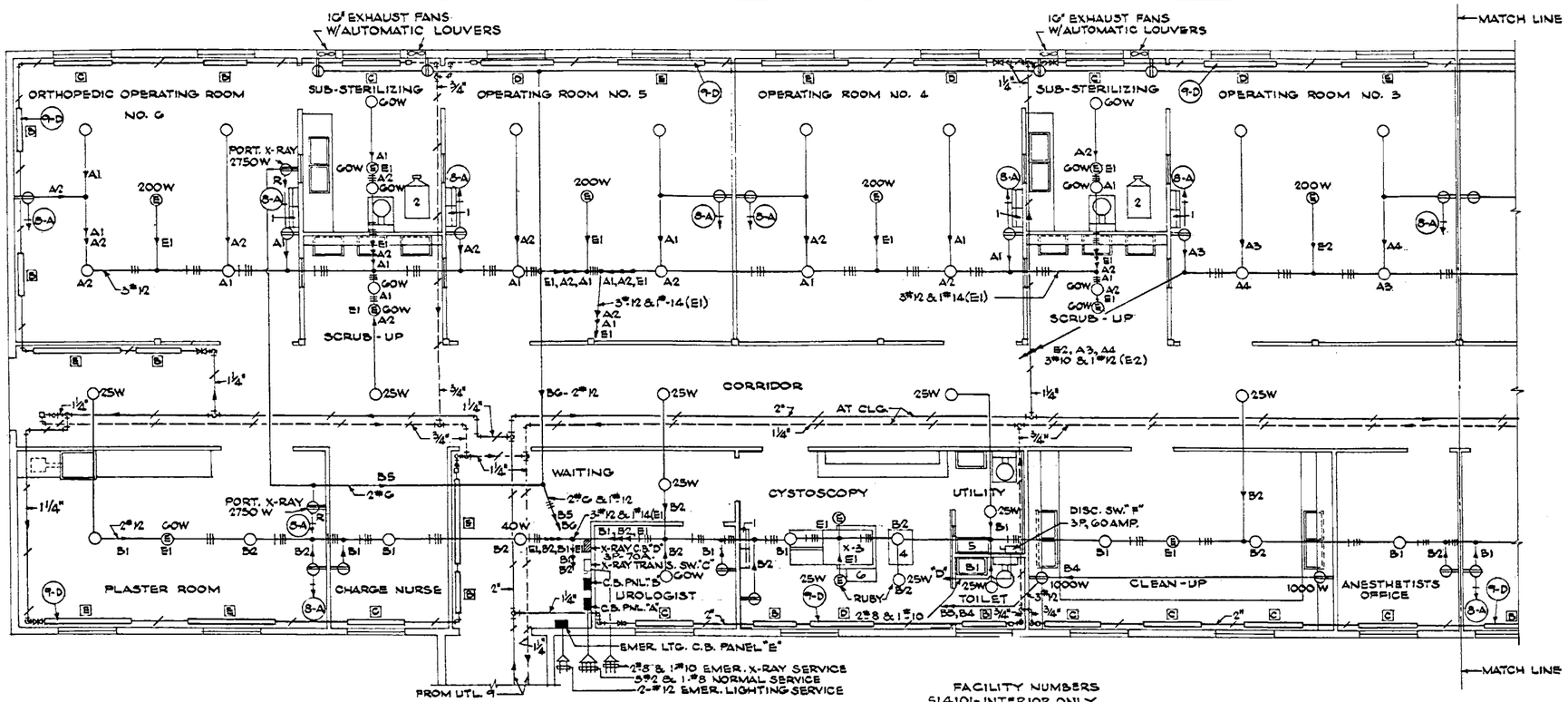
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION, ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED:

THEATER OF OPERATIONS
SURGERY 1-40 BED
SURG 1-40 BED
PLAN

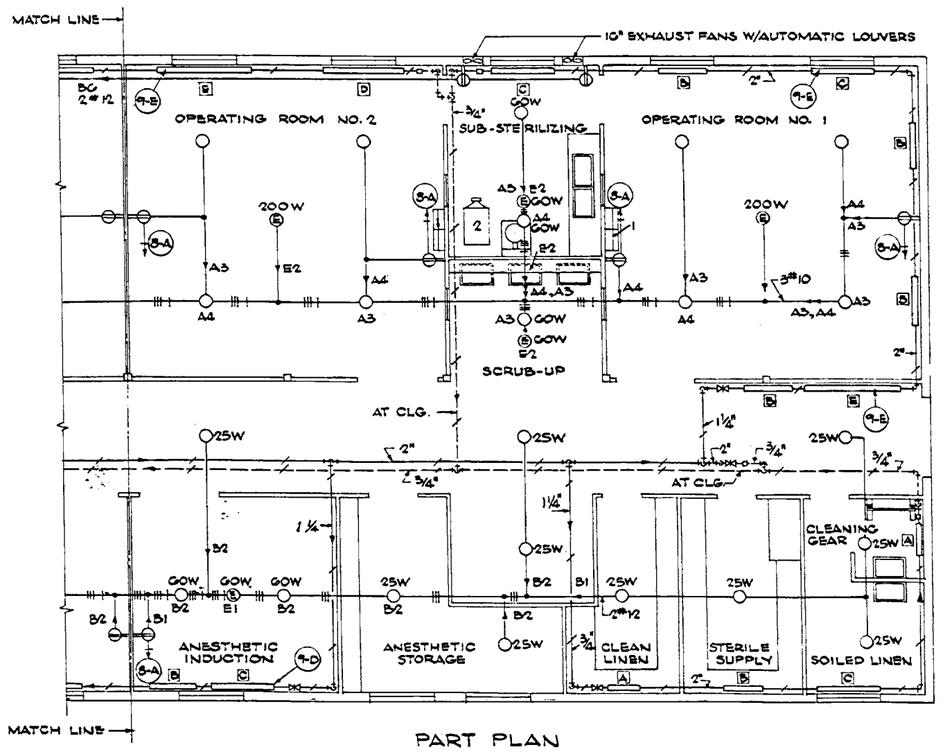
UNDER REVISION

APPROVED: H. Gilbreath Acty H. M. Williams DATE: 19 MAR 1959
CHIEF, STRUCTURES BRANCH, & CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 4/23/60
DATE 9 OCT 68
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-41
SHEET 1 OF 2

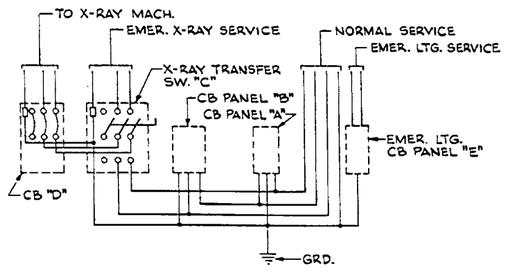


PART PLAN
SCALE NO. 2

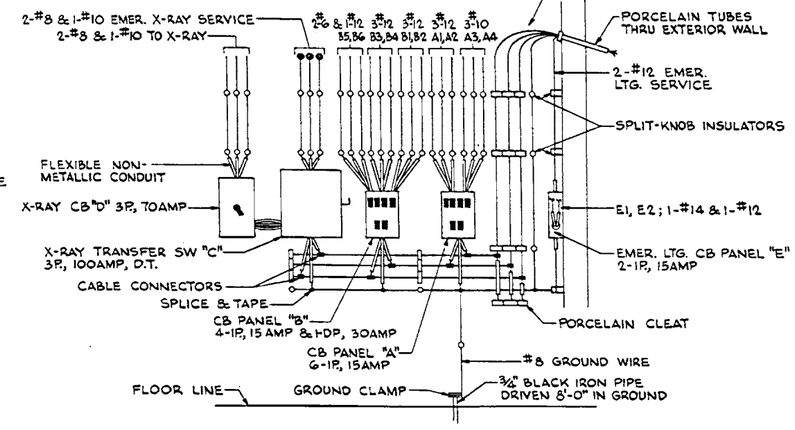
FACILITY NUMBERS
514101- INTERIOR ONLY
514111- STEEL FRAME W/INTERIOR
514121- WOOD FRAME W/INTERIOR
520501- AIR CONDITIONING



PART PLAN
SCALE NO. 2



WIRING DIAGRAM
NO SCALE



CIRCUIT BREAKER INSTALLATION
NO SCALE

HEATING NOTES

RADIATION

SYMBOL	QUANTITY	FT. ACTIVE FIN LGTH	BTU/HR @25 PSI
A	2	2	3822
B	14	3	5733
C	13	4	7644
D	5	5	9555
E	9	6	11,466

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	4.44 KW
RECP. SST.	3.40 KW
POWER	0.00 KW
X-RAY	10.00 KW
TOTAL	17.84 KW
EMER. X-RAY	10.00 KW
EMER. LTG.	1.91 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 100W.
2. ALL GO & 100 W LAMPS TO HAVE 8" CONICAL SHADES.
3. ALL 200W LAMPS TO HAVE 14" DIA. FLAT SHADES.
4. DUPLEX RECEPTACLE IN OPERATING ROOMS TO BE MOUNTED 5'-0" ABOVE FLOOR.

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS
GRAPHIC SCALES
0 5' 10'
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

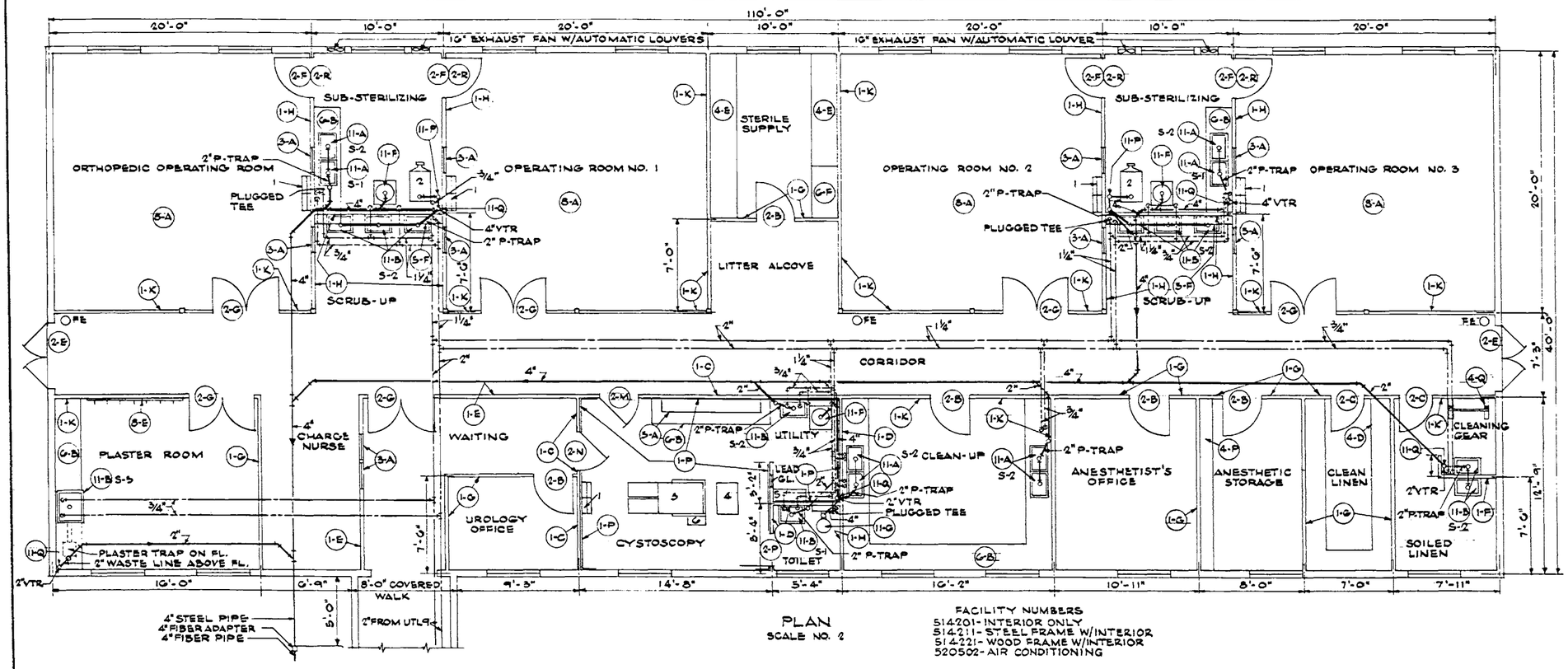
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEITCHMANN
APPROVED:
APPROVED:
DATE: 19 MAR 1963
CHIEF, SPECIFICATIONS BRANCH | CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
Robert Bernstein 01/3/40
DATE 9 Oct 62

THEATER OF OPERATIONS
SURGICAL SUITE 40' X 50'
HEATING & ELECTRICAL PLAN
UNDER REVISION
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-41
SHEET 2 OF 2

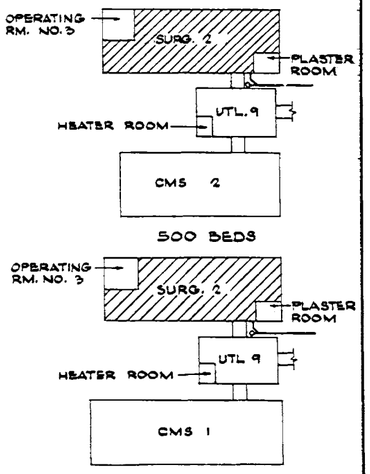
CORPS OF ENGINEERS

U. S. ARMY

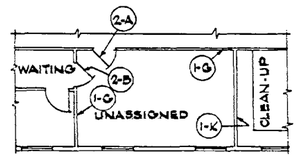


PLAN
SCALE NO. 2

FACILITY NUMBERS
514201- INTERIOR ONLY
514211- STEEL FRAME W/INTERIOR
514221- WOOD FRAME W/INTERIOR
520502- AIR CONDITIONING



KEY PLANS
NO SCALE

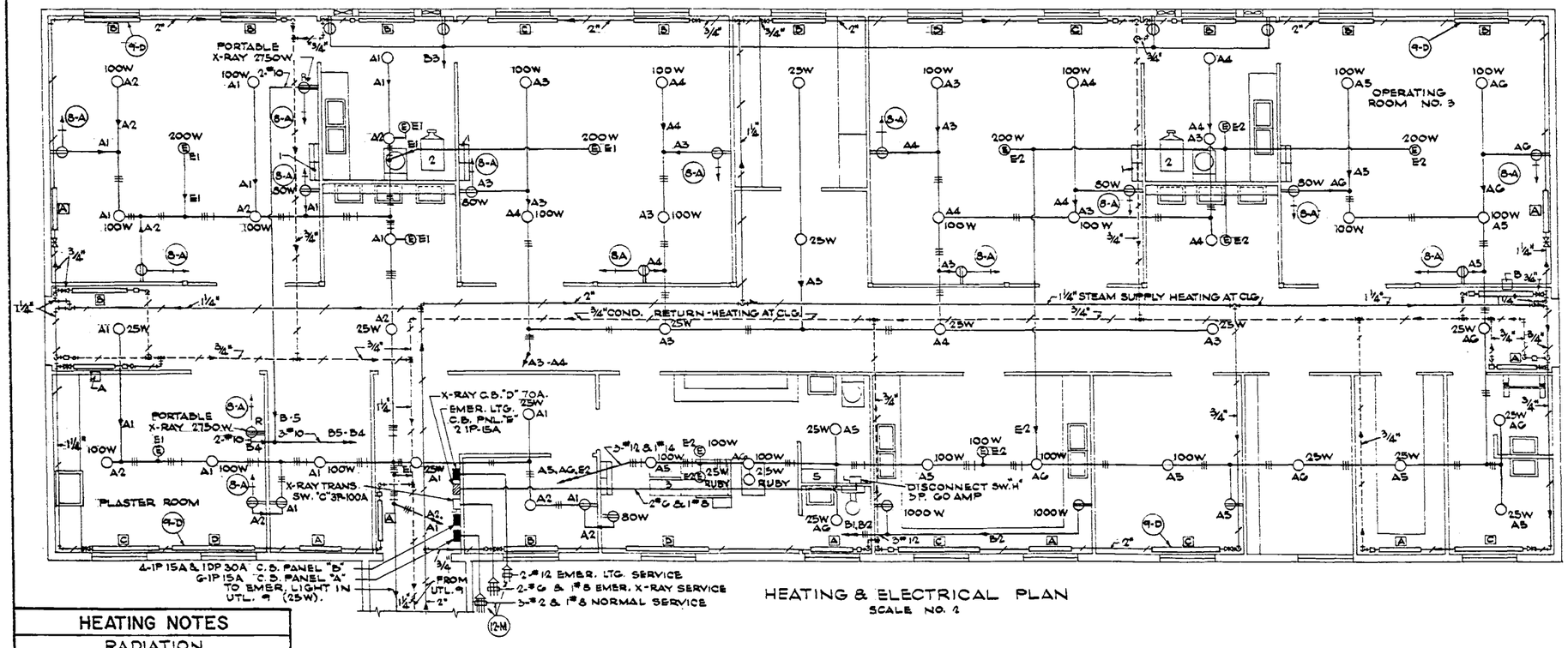


NOTE: CYSTOSCOPY AREA & EQUIPMENT OMITTED IN 300 BED HOSPITAL

PART PLAN
SCALE NO. 1

SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QTY. 750	QTY. 500	QTY. 300
1	ILLUMINATOR, RADIOGRAPHIC FILM (2 UNIT)	5	5	4
2	STERILIZER, DRESSING	2	2	2
SEE CYSTOS COPY RM.	RADIOGRAPHIC UNIT, UROLOGICAL (CONSISTS OF FOLLOWING ITEMS.			
3	TABLE	1	1	0
4	TRANSFORMER	1	1	0
5	CONTROL	1	1	0
6	TUBE	1	1	0



HEATING & ELECTRICAL PLAN
SCALE NO. 2

HEATING NOTES

RADIATION

SYMBOL	QUANTITY	FT. ACTIVE FIN. LGTH	BTU/HR @ 25 PSI
A	9	3	5733
B	12	4	7644
C	6	5	9555
D	2	6	11,466

ELECTRICAL NOTES

CONNECTED LOAD

	750-500 BED	300 BED
BUILDING		
LIGHTING	3.25 KW	3.17 KW
RECP. EST.	3.00 KW	3.00 KW
POWER	0.00 KW	0.00 KW
X-RAY	10.00 KW	—
TOTAL	16.25 KW	6.17 KW
EMER. LTG.	1.33 KW	1.23 KW
EMER. X-RAY	10.00 KW	—

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 60W.
2. ALL 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.
3. DUPLEX RECEPTACLES IN OPERATING ROOM TO BE MOUNTED 5'-0" ABOVE FLOOR.
4. ALL 200 W LAMPS TO HAVE 14" FLAT SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR F S N BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-42	PLANS	1 OF 1
99-98	STANDARD DETAILS	
52-05	AIR CONDITIONING (IF REQUIRED)	1 OF 1
34-003	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, ARCHITECT BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 01/9360
DATE: 9 OCT 68

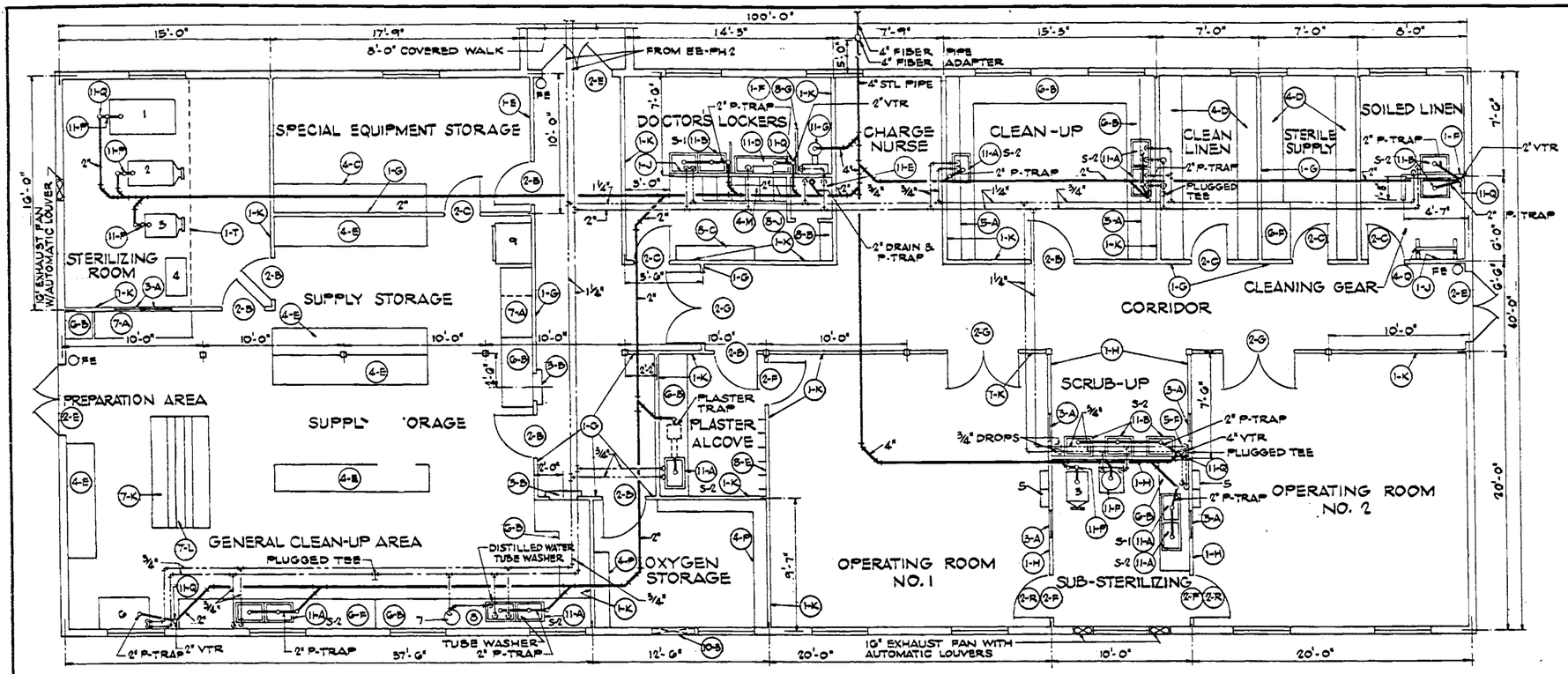
THEATER OF OPERATIONS
SURGERY
SURG 2-100-X170
PLANS

UNDER REVISION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-42
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY

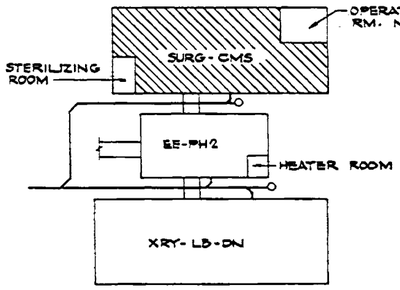


PLAN
SCALE NO. 2

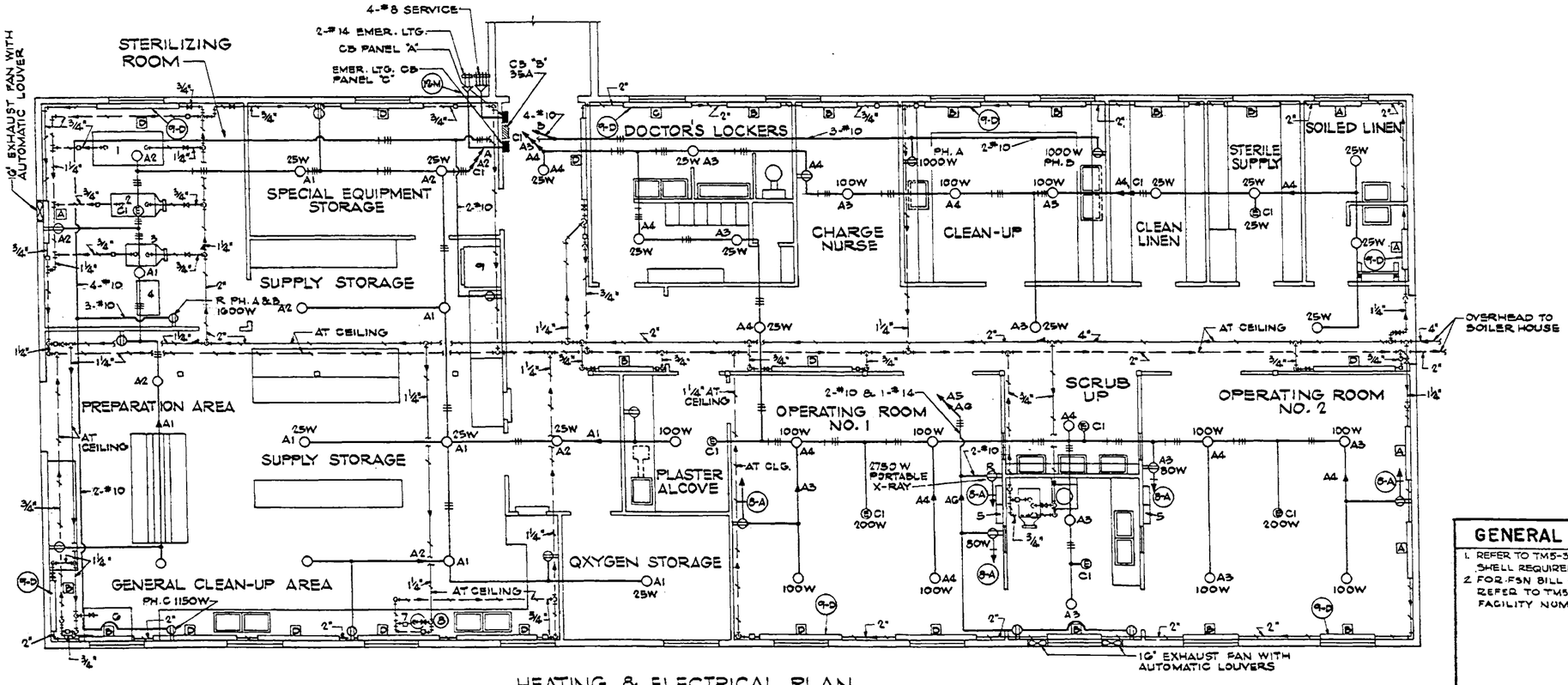
FACILITY NUMBERS
514401 - INTERIOR ONLY
514411 - STEEL FRAME W/INTERIOR
514421 - WOOD FRAME W/INTERIOR
520905 - AIR CONDITIONING

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QTY.
1	STERILIZER, BULK, PRESSURE, STEAM HEATED, 24"X36"X48"	1
2	STERILIZER, DRESSING & UTENSIL, 16"X36"	1
3	STERILIZER, DRESSING, 16"X24"	2
4	OVEN, DRYING, MEDIUM, 31" X 22" X 54"	1
5	ILLUMINATOR, RADIOGRAPHIC FILM (DOUBLE UNIT)	2
6	WASHING MACHINE & STERILIZER, GLASSWARE	1
7	STILL, WATER, 10 GAL., STEAM HEATED	1
8	STORAGE TANK, DISTILLED WATER, 12 GAL.	1
9	REFRIGERATOR, 8 CU. FT. 36"X 29"X 65" - 1/6 HP	1



KEY PLAN
NO SCALE



HEATING & ELECTRICAL PLAN
SCALE NO. 2

HEATING NOTES

RADIATION

SYMBOL	QUANTITY	FT. ACTIVE FIN LGTH	BTU/HR @ 25 PSI
A	5	3	5733
B	12	4	7044
C	1	5	9555
D	11	6	11466

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	2.29 KW
RECP EST	2.15 KW
POWER	6.00 KW
TOTAL	10.44 KW
EMER LTG	.67 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE GOW.
2. ALL GO & 100W LAMPS TO HAVE 8" CONICAL SHADES.
3. ALL 200W LAMPS TO HAVE 14" DIA. FLAT SHADES.
4. DUPLEX RECEPTACLES IN OPERATING ROOMS TO BE MOUNTED 5'-0" ABOVE FLOOR.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-44	PLANS	1 OF 1
99-98	STANDARD DETAILS	
52-09	AIR CONDITIONING (1# REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

GENERAL NOTES

1. REFER TO TM5-303 FOR BLDG. SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS REFER TO TM5-303 BY FACILITY NUMBER

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS
SURGICAL CENTRALIZED MATERIEL
PURG-CMS "40" X100'
PLANS

UNDER REVISION

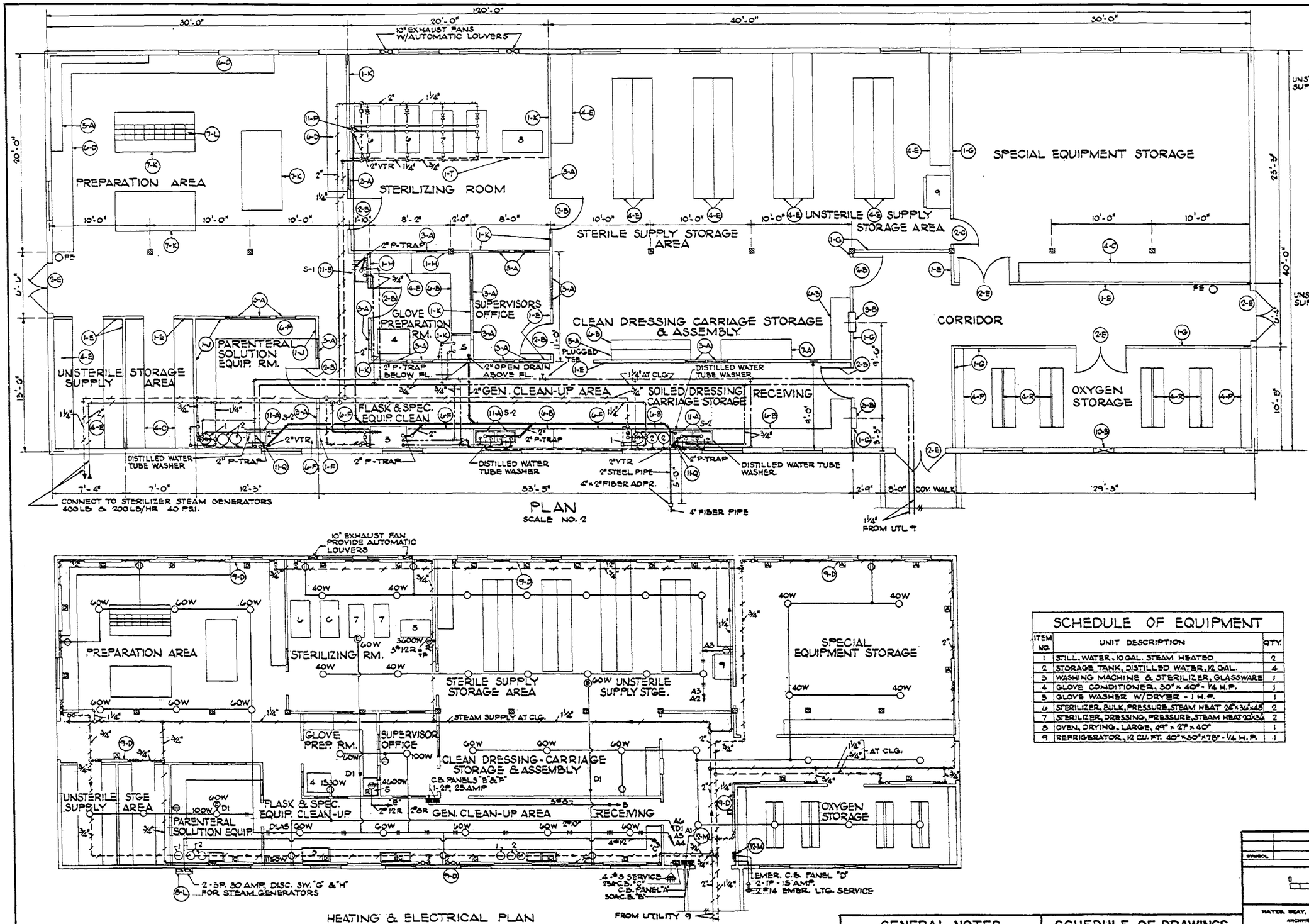
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernstein d/ps10
DATE 9 OCT 68

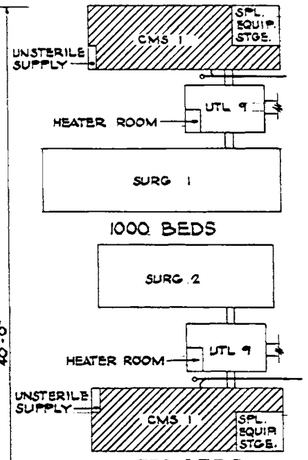
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-44
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY



PLAN
SCALE NO. 2



KEY PLANS
NO SCALE

HEATING & ELECTRICAL PLAN
SCALE NO. 24

FACIL. NO. 514501 - INTERIOR ONLY
FACIL. NO. 514511 - STEEL FRAME W/INTERIOR
FACIL. NO. 514521 - WOOD FRAME W/INTERIOR
FACIL. NO. 520901 - AIR CONDITIONING ONLY

SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QTY.
1	STILL, WATER, 10 GAL. STEAM HEATED	2
2	STORAGE TANK, DISTILLED WATER, 12 GAL.	4
3	WASHING MACHINE & STERILIZER, GLASSWARE	1
4	GLOVE CONDITIONER, 30" x 40" - ¼ H.P.	1
5	GLOVE WASHER W/DRYER - 1 H.P.	1
6	STERILIZER, BULK, PRESSURE, STEAM HEAT 26" x 30" x 45"	2
7	STERILIZER, DRESSING, PRESSURE, STEAM HEAT 20" x 36"	2
8	OVEN, DRYING, LARGE, 49" x 27" x 40"	1
9	REFRIGERATOR, 12 CU. FT. 40" x 30" x 78" - ¼ H.P.	1

HEATING NOTES

RADIATION

SYMBOL	QUANTITY	FT. ACTIVE RADIN LGTH	BTU/HR @ 25 PSI
A	6	3	5733
B	1	4	7644
C	11	5	9555
D	9	6	11,466

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	1.90 KW
RECP. EST.	.80 KW
POWER	13.26 KW
TOTAL	15.96 KW
EMER. LTG.	.18 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 25 W.
2. ALL 40, 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR F&N BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-45	PLAN	1 OF 1
99-98	STANDARD DETAILS	
52-09	AIR CONDITIONING (IF REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' — NO.2
0 5' 10' — NO.24

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: SHANNON
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS
CENTRALIZED MATERIEL SECTION
DOS 1-40'X120'

UNDER REVISION

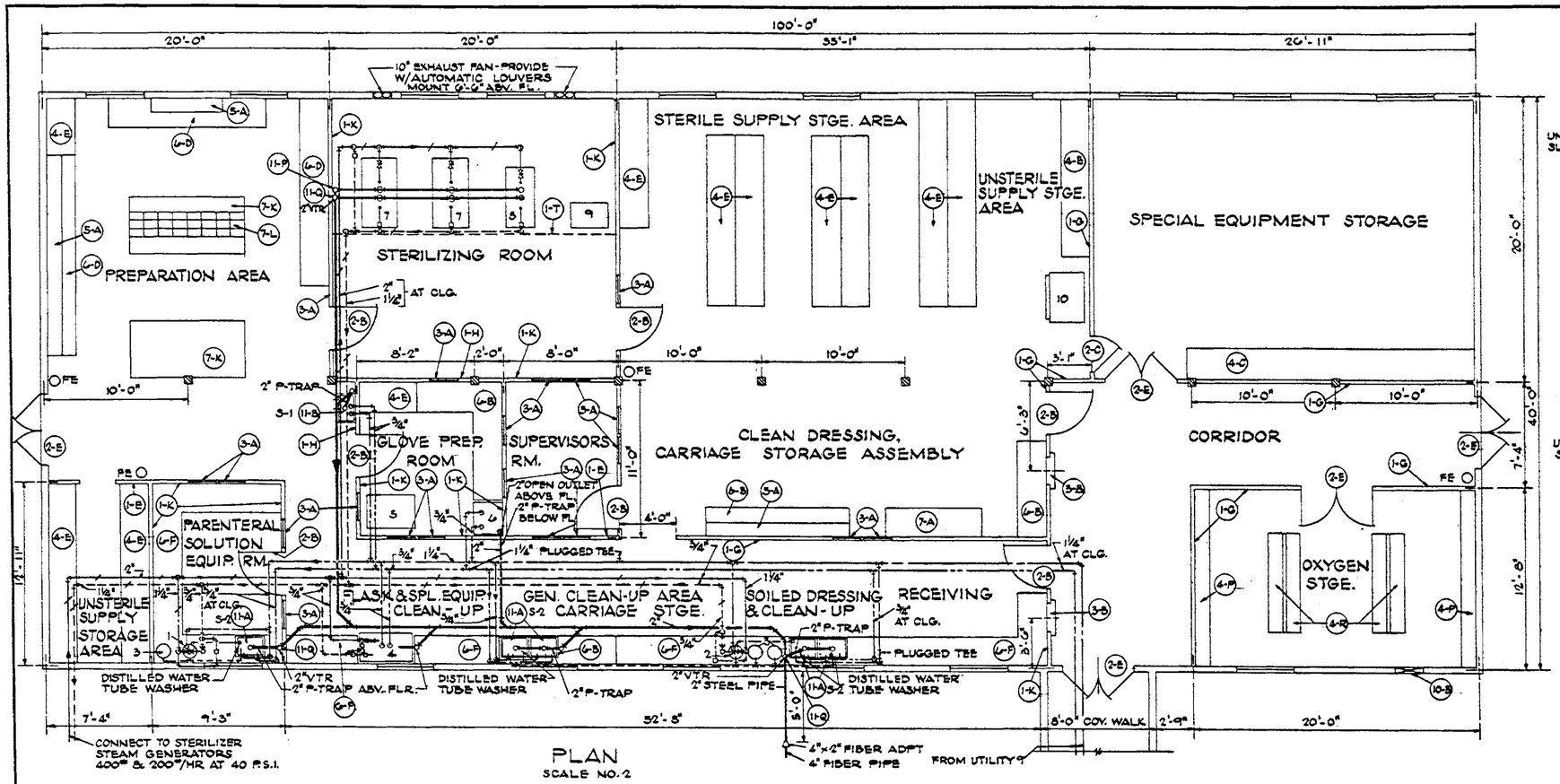
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernstein
DATE: 9 OCT 68

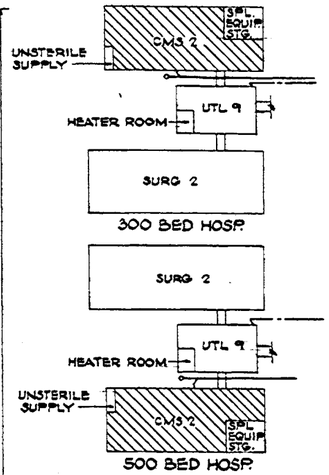
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-45
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY



PLAN
SCALE NO. 2



KEY PLANS
NO SCALE

SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QTY.
1	STILL, WATER, 3 GAL. STEAM HEATING	1
2	STILL, WATER, 10 GAL. STEAM HEATING	1
3	STORAGE TANK, DISTILLED WATER, 12 GAL.	3
4	WASHING MACHINE & STERILIZER, GLASSWARE	1
5	GLOVE CONDITIONER, 30"x 40" - 1/4 H.P.	1
6	GLOVE WASHER WITH DRYER	1
7	STERILIZER, BULK, PRESSURE, STEAM HEAT 24"x36"x45"	2
8	STERILIZER, DRESSING, PRESSURE, STEAM HEAT 20"x 36"	1
9	OVEN, DRYING, MEDIUM 31"x 22"x 34"	1
10	REFRIGERATOR, 12 CU. FT. 40"x 30"x 78"- 1/6 H.P.	1

HEATING NOTES

RADIATION

SYMBOL	QUANTITY	FT. ACTIVE IN LOOP	BTU/HR @ 25 PSI
A	4	3	5733
B	16	4	7644
C	6	5	9555
D	1	6	11,466

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	1.56 KW
RECP. EST.	.90 KW
POWER	11.34 KW
TOTAL	13.80 KW
EMER. LTG.	.18 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 25W.
2. ALL 40, 60, & 100 W LAMPS TO HAVE 6" CONICAL SHADES.

GENERAL NOTES

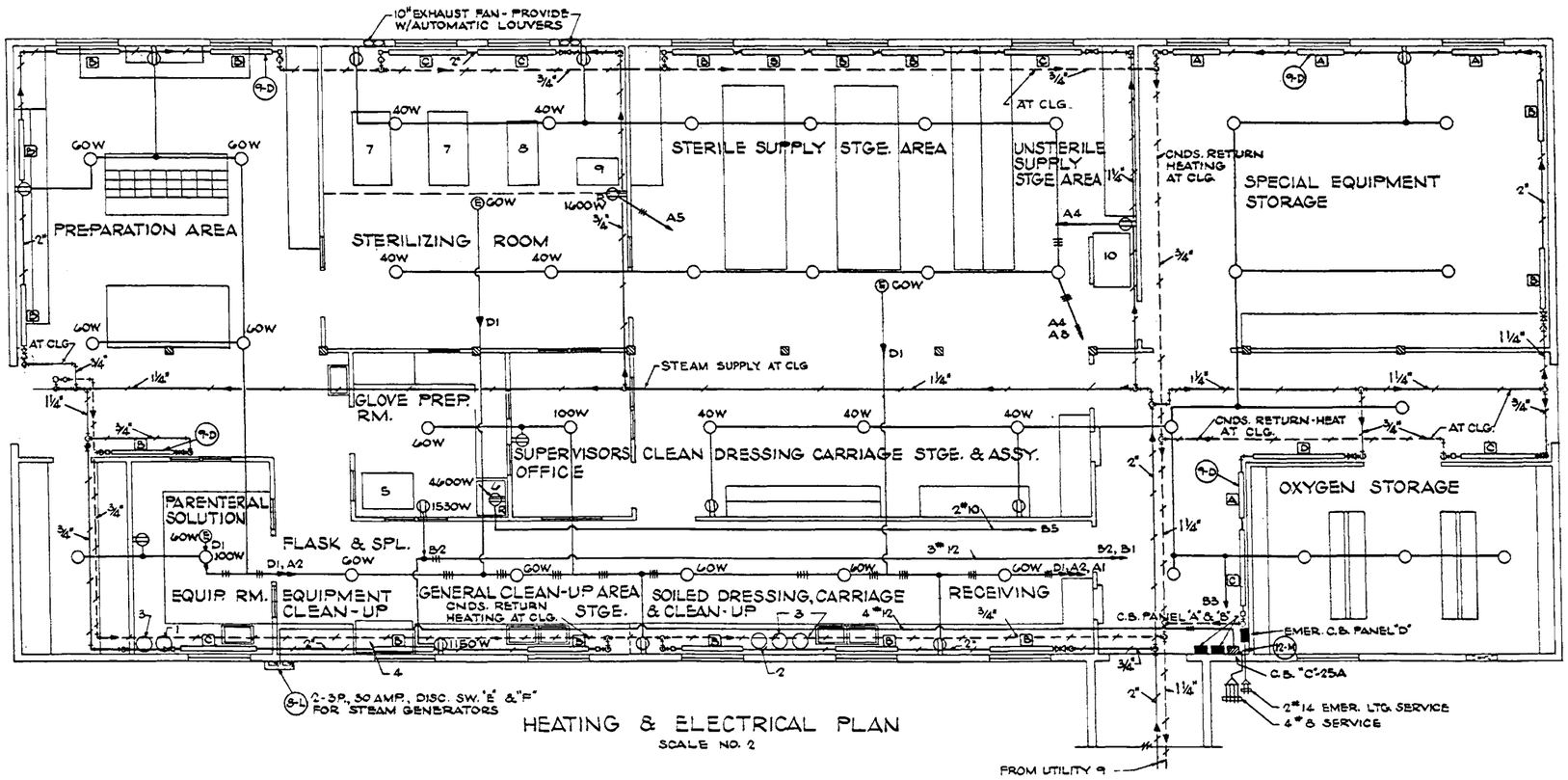
1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-46	PLANS	1 OF 1
99-98	STANDARD DETAILS	OF
52-09	AIR CONDITIONING (IF REQUIRED)	1 OF 1
34-05	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

FACILITY NUMBERS

FACIL. NO. 514601 - INTERIOR ONLY
FACIL. NO. 514611 - STEEL FRAME W/INTERIOR
FACIL. NO. 514621 - WOOD FRAME W/INTERIOR
FACIL. NO. 520902 - AIR CONDITIONING ONLY



HEATING & ELECTRICAL PLAN
SCALE NO. 2

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 5' 10'
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: SHANNON
SUBMITTED BY: C. W. DEICHMANN

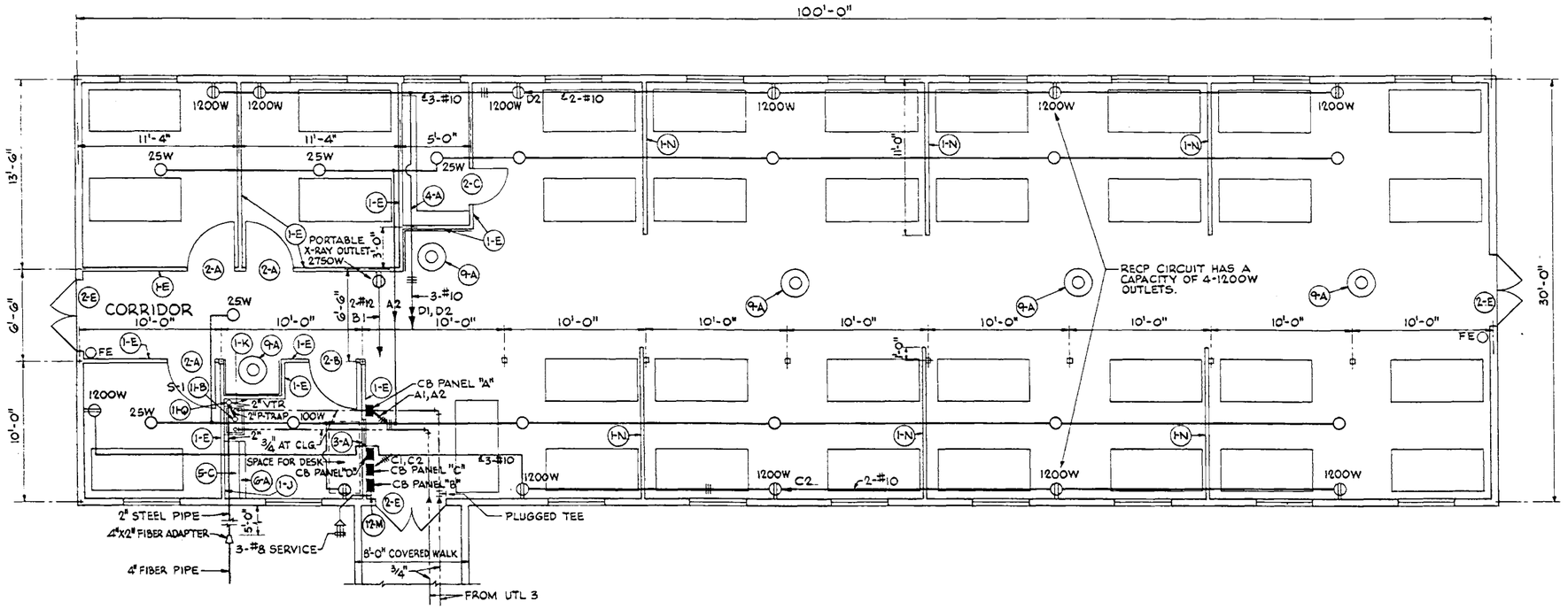
THEATER OF OPERATIONS
CENTRALIZED MATERIEL SECTION
CMS 2-100'X100'

UNDER REVISION

APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Brumstein 6/2520
DATE 9 OCT 68

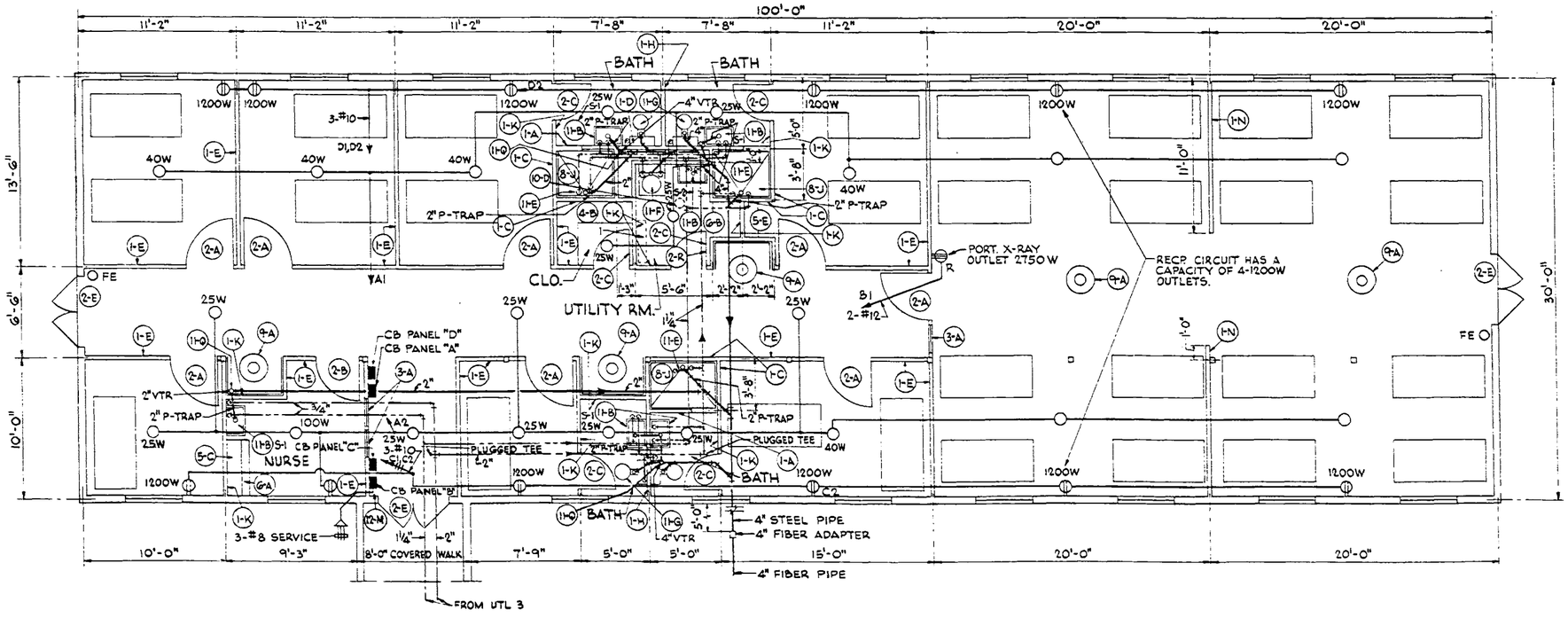
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-46
SHEET 1 OF 1



STANDARD WARD, WRD 1-30'X100'

SCALE NO. 2

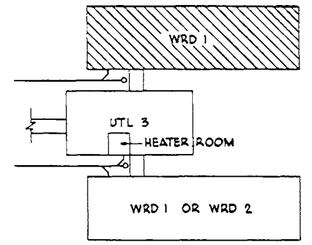
FACIL. NO. 515101 - INTERIOR ONLY
FACIL. NO. 515111 - STEEL FRAME W/INTERIOR
FACIL. NO. 515121 - WOOD FRAME W/INTERIOR
FACIL. NO. 521201 - AIR CONDITIONING ONLY
FACIL. NO. 530305 - MECHANICAL VENTILATION ONLY



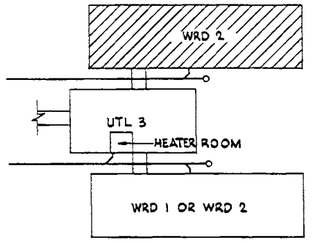
ACUTE WARD, WRD 2-30'X100'

SCALE NO. 2

FACIL. NO. 515102 - INTERIOR ONLY
FACIL. NO. 515112 - STEEL FRAME W/INTERIOR
FACIL. NO. 515122 - WOOD FRAME W/INTERIOR
FACIL. NO. 521202 - AIR CONDITIONING ONLY
FACIL. NO. 530306 - MECHANICAL VENTILATION ONLY



WRD 1



WRD 2

KEY PLANS

NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	WRD 1	WRD 2
LIGHTING	.71 KW	.84 KW
RECP EST	3.29KW	3.29 KW
POWER	0 KW	0 KW
TOTAL	4.00KW	4.13KW

1. UNLESS OTHERWISE NOTED ON PLANS LAMPS TO BE 60W (WRD1) & 25W (WRD 2).
2. ALL 40, 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-51	PLANS	1 OF 1
99-98	STANDARD DETAILS	
52-12	AIR CONDITIONING (IF REQUIRED)	1 OF 1
53-03	MECHANICAL VENTILATION (IF REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SCHEDULE OF EQUIPMENT - WRD 2

ITEM NO.	DESCRIPTION	QTY
1	RACK, DRYING, (6 URINALS & 3 BEDPANS, CRES)	1

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: EDWARDS
SUBMITTED BY: C.W. DEICHMANN
APPROVED:
CHIEF, STRUCTURES BRANCH

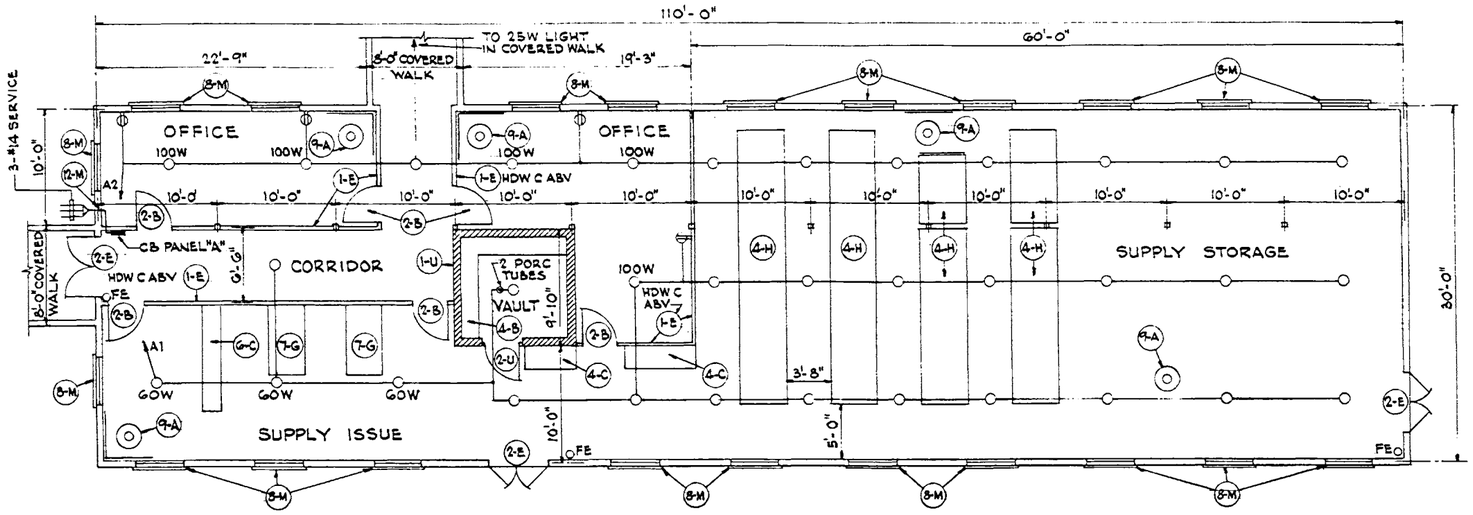
THEATER OF OPERATIONS
STANDARD WARD-WRD 1-30'X100'
ACUTE WARD-WRD 2-30'X100'

UNDER REVISION

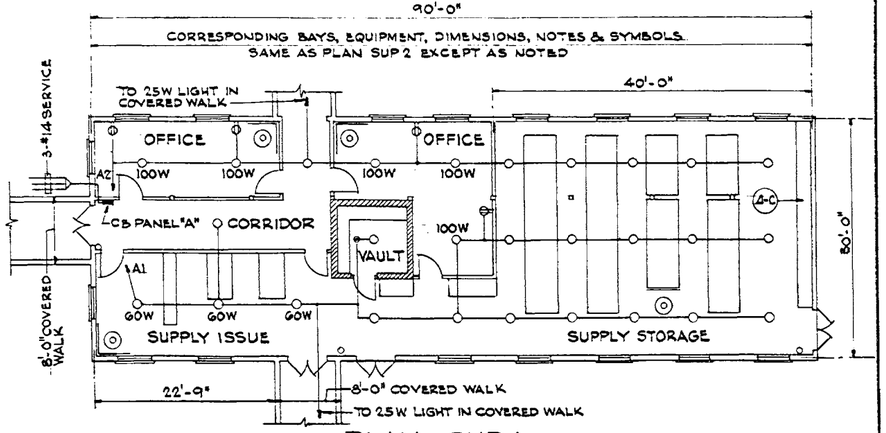
APPROVED: H. W. Williams
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 0/S&O
DATE 9 OCT 68

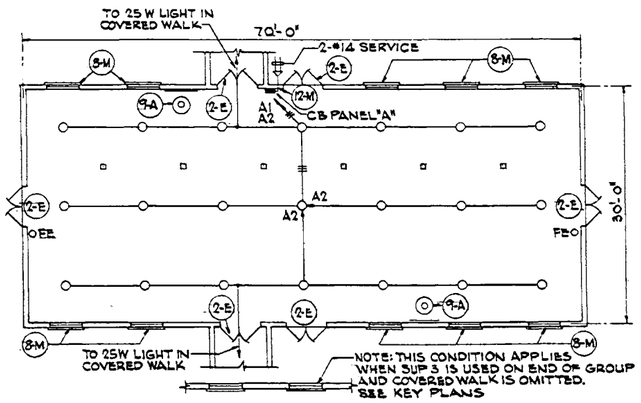
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-51
SHEET 1 OF 1



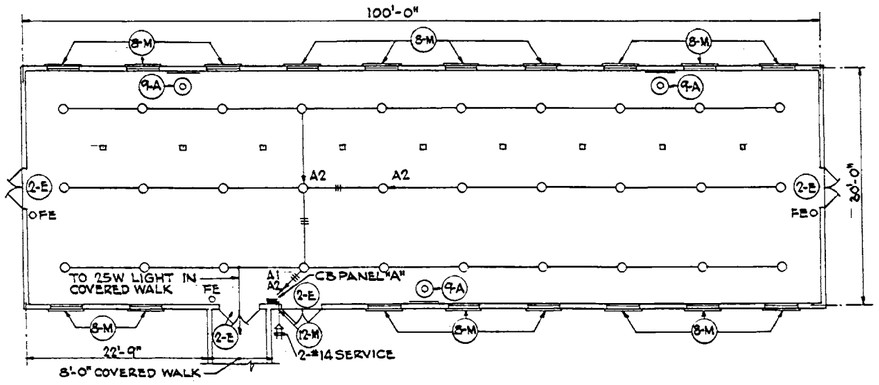
PLAN - SUP 2
300 BEDS
SCALE NO. 24
FACIL. NO. 515404 - INTERIOR ONLY
FACIL. NO. 515414 - STEEL FRAME W/INTERIOR
FACIL. NO. 515424 - WOOD FRAME W/INTERIOR



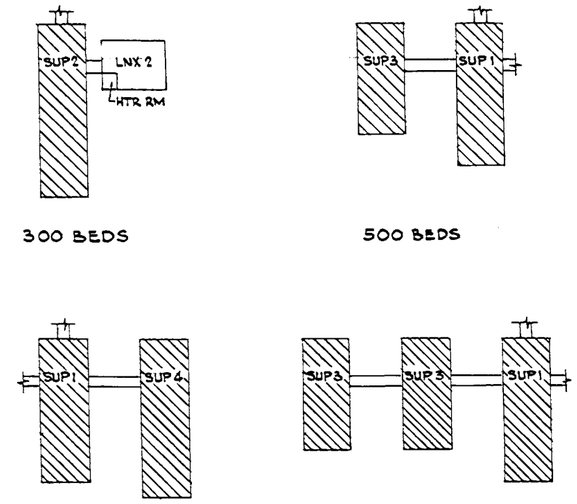
PLAN - SUP 1
1000, 750 & 500 BEDS
SCALE NO. 1
FACIL. NO. 515402 - INTERIOR ONLY
FACIL. NO. 515412 - STEEL FRAME W/INTERIOR
FACIL. NO. 515422 - WOOD FRAME W/INTERIOR



PLAN - SUP 3
1000 & 500 BEDS
SCALE NO. 1
FACIL. NO. 515401 - INTERIOR ONLY
FACIL. NO. 515411 - STEEL FRAME W/INTERIOR
FACIL. NO. 515421 - WOOD FRAME W/INTERIOR



PLAN - SUP 4
750 BEDS
SCALE NO. 1
FACIL. NO. 515403 - INTERIOR ONLY
FACIL. NO. 515413 - STEEL FRAME W/INTERIOR
FACIL. NO. 515423 - WOOD FRAME W/INTERIOR



KEY PLANS
NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	SUP 1	SUP 2	SUP 3	SUP 4
LIGHTING	1.23 KW	1.36 KW	.58 KW	.76 KW
RECP EST	.40 KW	.40 KW	–	–
TOTAL	1.63 KW	1.76 KW	.58 KW	.76 KW

1. UNLESS OTHERWISE NOTED ON PLANS ALL LAMPS TO BE 25W.
2. ALL 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-54	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 24

MAYER, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

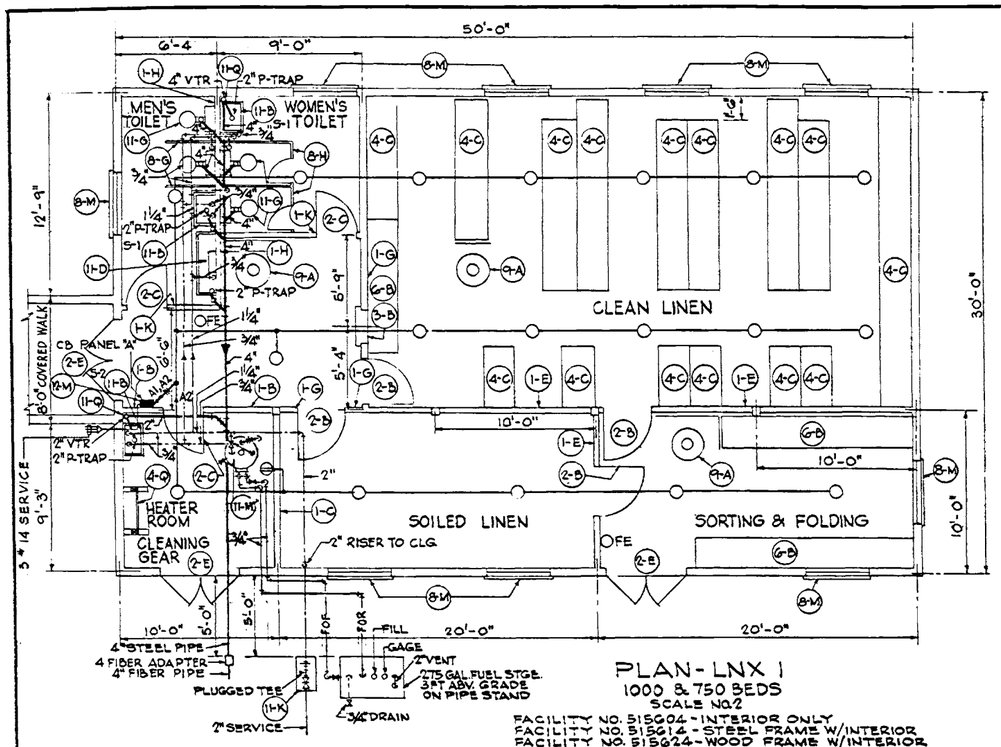
DRAWN BY: HORNE
TRACED BY:
CHECKED BY: DEICHMANN
SUBMITTED BY: C. W. DEICHMANN
APPROVED: H. C. Williams for H. M. Williams
CHIEF, DESIGNED BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

THEATER OF OPERATIONS
SUPPLY WAREHOUSES
SUP 1 - 30'X90', SUP 2 - 30'X110'
SUP 3 - 30'X70', SUP 4 - 30'X100'
PLANS

UNDER REVISION

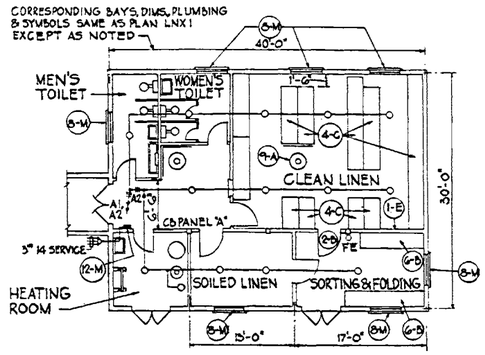
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 4/25/69
DATE 9 OCT 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-54
SHEET 1 OF 1



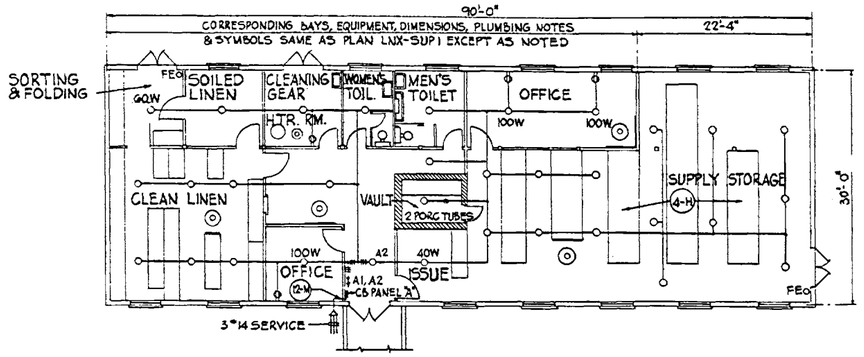
PLAN - LNX 1
1000 & 750 BEDS
SCALE NO.2

FACILITY NO. 515604 - INTERIOR ONLY
FACILITY NO. 515614 - STEEL FRAME W/INTERIOR
FACILITY NO. 515624 - WOOD FRAME W/INTERIOR



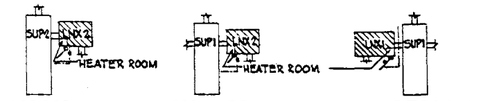
PLAN - LNX2
500 & 300 BEDS
SCALE NO. 1

FACILITY NO. 515603 - INTERIOR ONLY
FACILITY NO. 515613 - STEEL FRAME W/INTERIOR
FACILITY NO. 515623 - WOOD FRAME W/INTERIOR



PLAN
LNX-SUP 2 100 BEDS
SCALE NOT

FACIL. NO. 515601 - INTERIOR ONLY
FACIL. NO. 515611 - STEEL FRAME W/INTERIOR
FACIL. NO. 515621 - WOOD FRAME W/INTERIOR



KEY PLANS
NO SCALE

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

ELECTRICAL NOTES

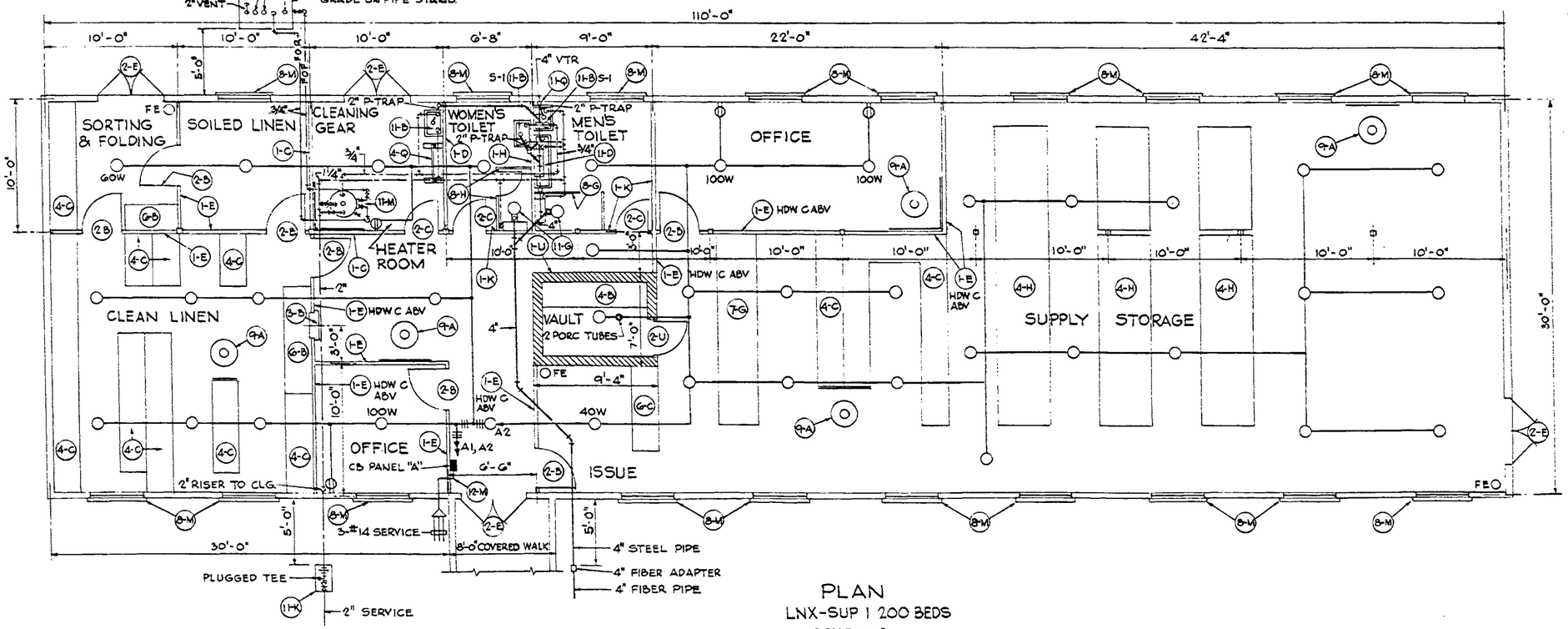
CONNECTED LOAD

BUILDING	LNX 1	LNX-SUP1	LNX 2	LNX-SUP2
LIGHTING	.52 KW	1.25 KW	.40 KW	1.10 KW
RECP EST	.53 KW	.83 KW	.53 KW	.83 KW
TOTAL	1.05 KW	2.06 KW	.93 KW	1.93 KW

1. ALL LAMPS TO BE 25W UNLESS OTHERWISE NOTED ON PLANS.
2. ALL 40, 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-56	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4



PLAN
LNX-SUP 1 200 BEDS
SCALE NO. 2

FACIL NO. 515602 - INTERIOR ONLY
FACIL NO. 515612 - STEEL FRAME W/INTERIOR
FACIL NO. 515622 - WOOD FRAME W/INTERIOR

SYMBOL	DESCRIPTION	DATE	APPROVAL

REVISIONS

GRAPHIC SCALES
NO.1: 0, 5', 10', 15'
NO.2: 0, 5', 10'

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LALL
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: [signature]
APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, ENGINEERING BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 0/P&O
DATE 9 OCT 68

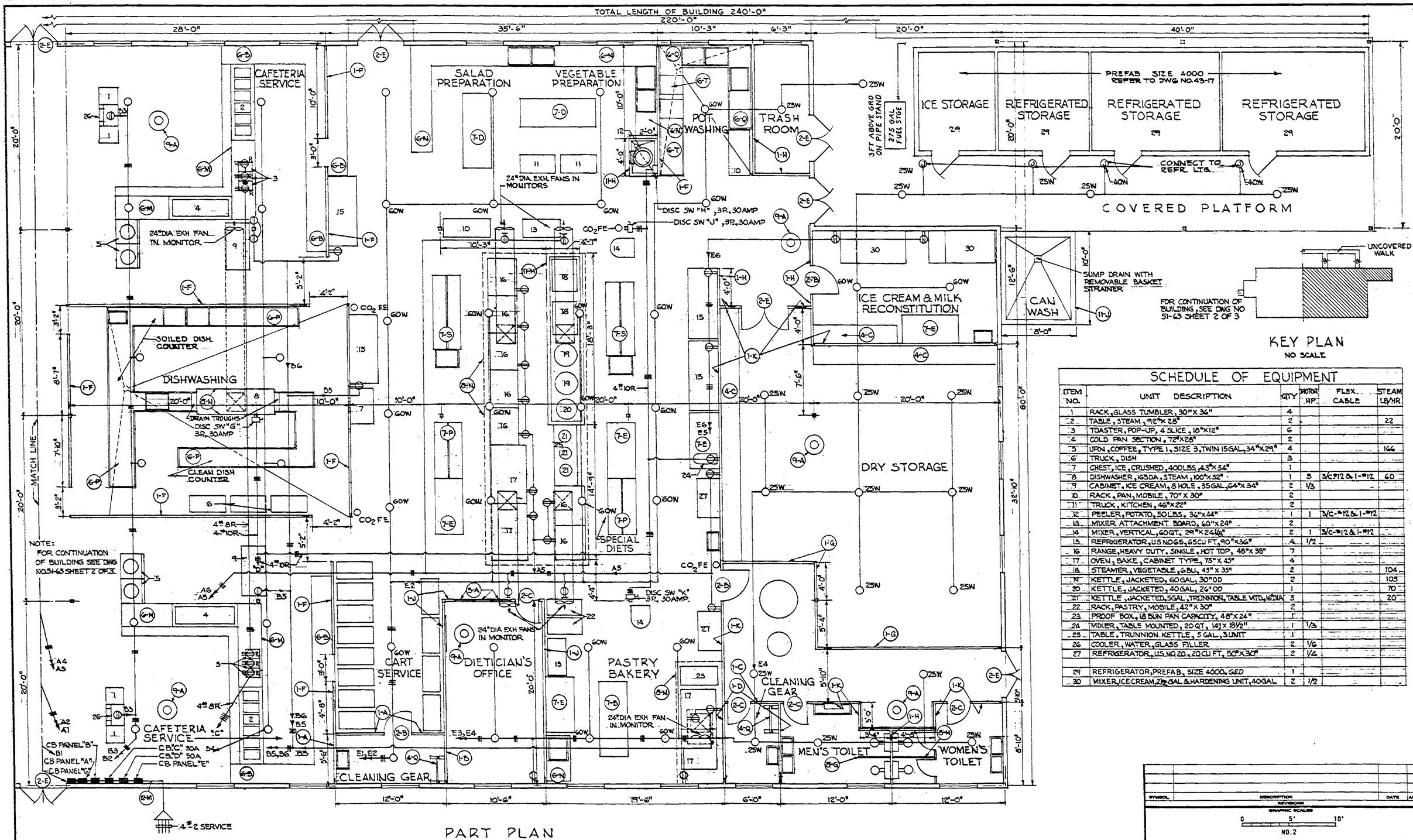
THEATER OF OPERATIONS
LINEN EXCHANGE & SUPPLY BLDGS.
LNX-SUP 1 R 30'X110' & LNX-SUP 2-30'X90'
LINEN EXCHANGES
LNX 1-30'X50' & LNX 2-30'X40'

UNDER REVISION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-56
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY



KEY PLAN

NO SCALE

SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QTY	MOTOR H.P.	FLEX. CABLE	STEAM LB/HR
1	RACK, GLASS TUMBLER, 30"X 36"	4			
2	TABLE, STEAM, 92"X 28"	2			22
3	TOASTER, POP-UP, 4 SLICE, 18"X12"	6			
4	COLD PAN SECTION, 72"X28"	2			
5	URN, COFFEE, TYPE 1, SIZE 3, TWIN 15GAL, 34"X29"	4			166
6	TRUCK, DISH	3			
7	CHEST, ICE, CRUSHED, 400LBS, 43"X34"	1			
8	DISHWASHER, 165DA, STEAM, 100"X32"	1	5	3/C-#12 & 1-#12	60
9	CABINET, ICE CREAM, 8 HOLE, 35GAL, 64"X34"	2	1/3		
10	RACK, PAN, MOBILE, 70" X 30"	2			
11	TRUCK, KITCHEN, 46"X22"	2			
12	PEELER, POTATO, 50LBS., 34"X44"	1	1	3/C-#12 & 1-#12	
13	MIXER ATTACHMENT BOARD, 60"X 24"	2			
14	MIXER, VERTICAL, 60QT, 29"X 24 1/2"	2	1	3/C-#12 & 1-#12	
15	REFRIGERATOR, U.S NO 65, 65CU FT, 90"X36"	4	1/2		
16	RANGE, HEAVY DUTY, SINGLE, HOT TOP, 48"X 38"	7			
17	OVEN, BAKE, CABINET TYPE, 75"X 45"	4			
18	STEAMER, VEGETABLE, 6 BU, 43" X 35"	2			104
19	KETTLE, JACKETED, 60 GAL, 30"OD	2			105
20	KETTLE, JACKETED, 40 GAL, 26"OD	1			70
21	KETTLE, JACKETED, 5GAL, TRUNNION, TABLE MTD, 16"DIA	3			20
22	RACK, PASTRY, MOBILE, 42"X 30"	2			
23	PROOF BOX, 18 BUN PAN CAPACITY, 48"X 24"	1			
24	MIXER, TABLE MOUNTED, 20 QT, 14"X 18 1/2".	1	1/3		
25	TABLE, TRUNNION KETTLE, 5 GAL, 3 UNIT	1			
26	COOLER, WATER, GLASS FILLER	2	1/6		
27	REFRIGERATOR, U.S NO 20, 20 CU FT, 30"X 30"	2	1/4		
29	REFRIGERATOR, PREFAB, SIZE 4000, GED	1			
30	MIXER, ICE CREAM, 2 1/2 GAL & HARDENING UNIT, 40GAL	2	1/2		

PART PLAN

SCALE NO.2

FACIL. NO. 516301 - INTERIOR ONLY
FACIL. NO. 516311 - STEEL FRAME W/INTERIOR
FACIL. NO. 516321 - WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

TOTAL CONNECTED LOAD

LIGHTING	6.17 KW
RECP EST	.30 KW
POWER	31.34 KW
TOTAL	37.81 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 100 W.
2. ALL 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER
3. REFER TO DWG. NO. 52-21 FOR SUPPORTING BOILER HOUSE.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-63	PART PLAN-KITCHEN END	1 OF 3
51-63	PART PLAN - DINING END	2 OF 3
51-63	PLUMBING PLAN	3 OF 3
99-98	STANDARD DETAILS	
34-01	WOOD FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4
35-36	STEEL FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES: 0 5' 10' — NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D.C.

DRAWN BY: LANKFORD
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

THEATER OF OPERATIONS
MESS BUILDING-KITCHEN END
MESS 1-16,000 SF

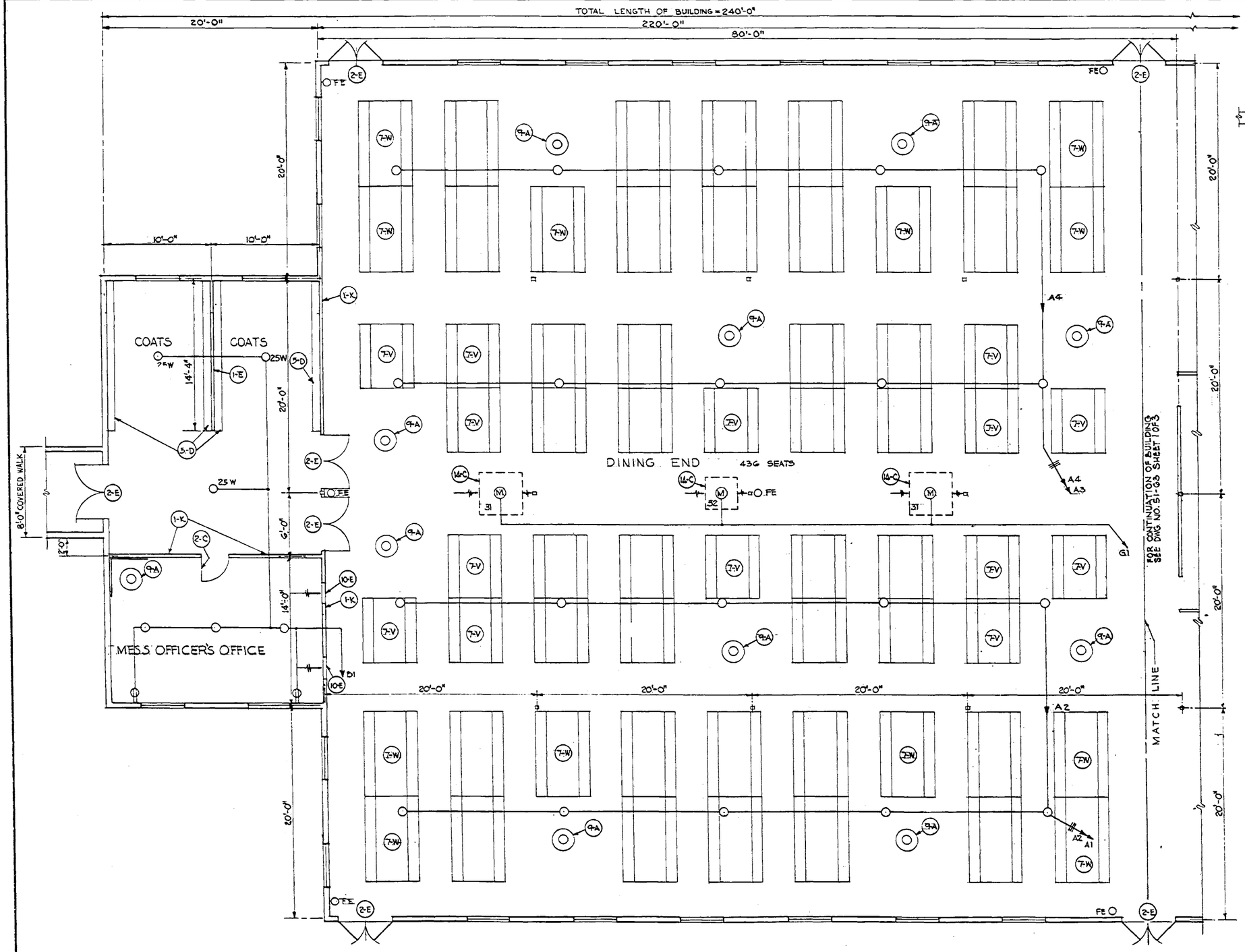
UNDER REVISION

APPROVED: DATE: 19 MAR 1969

CHIEF, STRUCTURES BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY:
Quartermaster General
DATE 1 Sept 1968

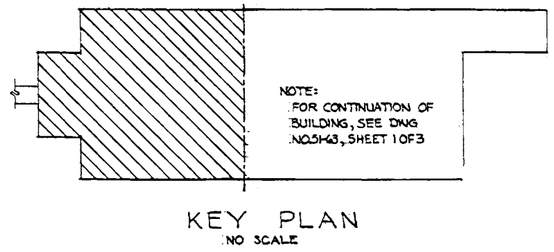
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-63
SHEET 1 OF 3



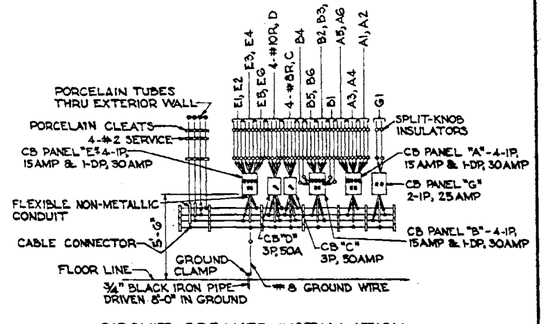
PART PLAN

SCALE NO.2

FACILITY NO. 516301 - INTERIOR ONLY
FACILITY NO. 516311 - STEEL FRAME W/INTERIOR
FACILITY NO. 516321 - WOOD FRAME W/INTERIOR



KEY PLAN
NO SCALE



CIRCUIT BREAKER INSTALLATION
NO SCALE

ELECTRICAL NOTES

DINING END CONNECTED LOAD

LIGHTING	2.38 KW
RECP EST.	.20 KW
POWER	1.45 KW
TOTAL	4.03 KW

1. CONNECTED LOAD SHOWN ABOVE IS FOR DINING END ONLY.
2. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 100 W.
3. ALL 100 W. LAMPS TO HAVE 8" CONICAL SHADES.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-63	PART PLAN-KITCHEN END	1 OF 3
51-63	PART PLAN-DINING END	2 OF 3
51-63	PLUMBING PLAN	3 OF 3
99-98	STANDARD DETAILS	
54-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
54-11	WOOD FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4
55-34	STEEL FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3

SCHEDULE OF FAN EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QTY.	MOTOR HP	CEILING OPENING
31	29" EXHAUST FAN 9,700 CFM	2	3/4	48"X 48"
32	30" EXHAUST FAN 6,750 CFM	1	1/2	34"X 34"

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

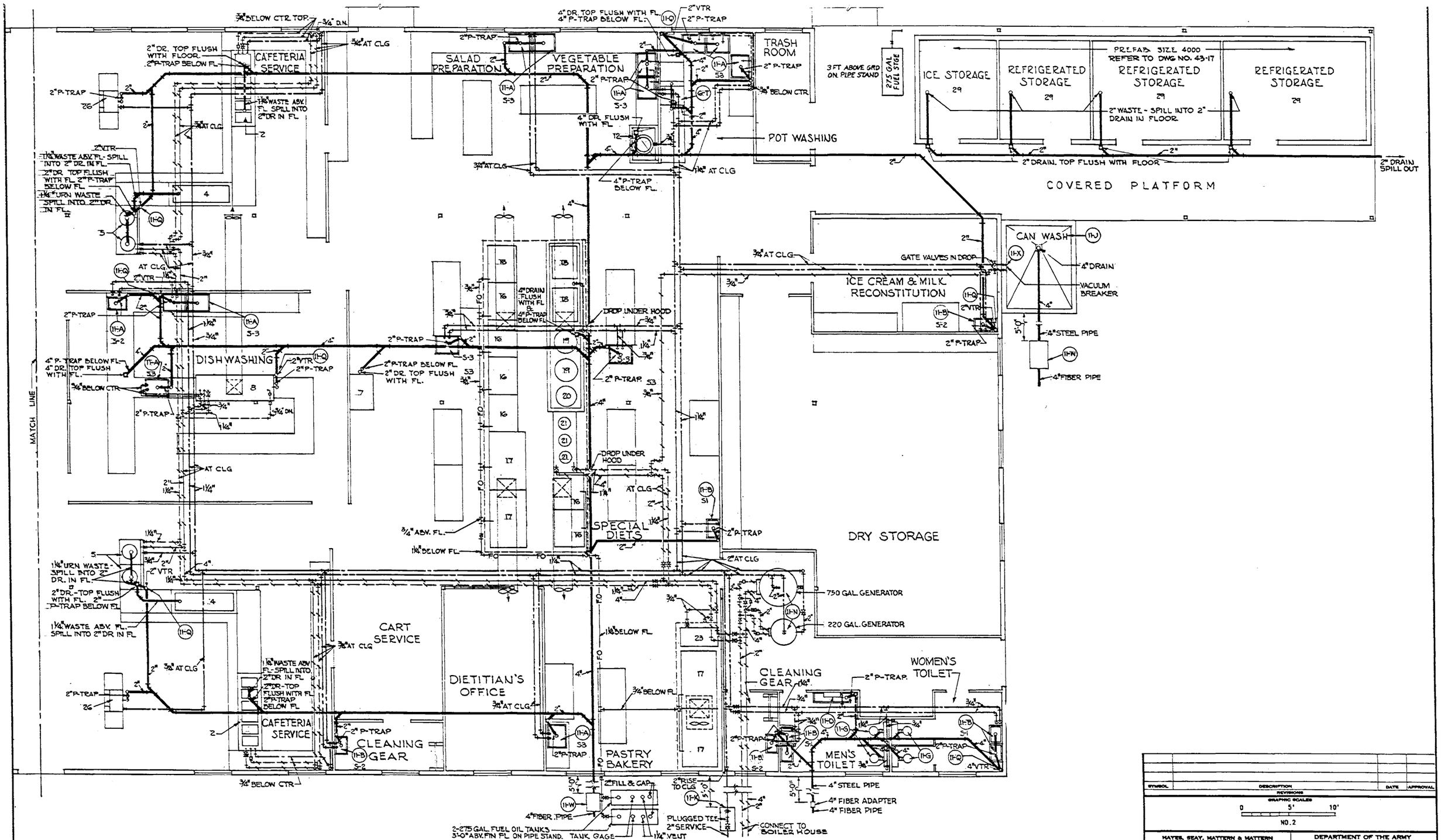
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LANKFORD
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W.DEICHMANN

THEATER OF OPERATIONS
MESS BUILDING (DINING END)
MESS 7-16-10005

UNDER REVISION

APPROVED: [signature] Chief, Engineering Branch
APPROVED: [signature] Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR COMPONENT AGENCY: [signature] Chief, Engineering Branch
DATE: 16 Sept 1969
SCALE: AS NOTED
SPEC. NO. 0065-04
DRAWING NUMBER 51-63
SHEET 2 OF 3



PLUMBING PLAN

SCALE NO 2

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES 0 5' 10'

NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LANKFORD
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS

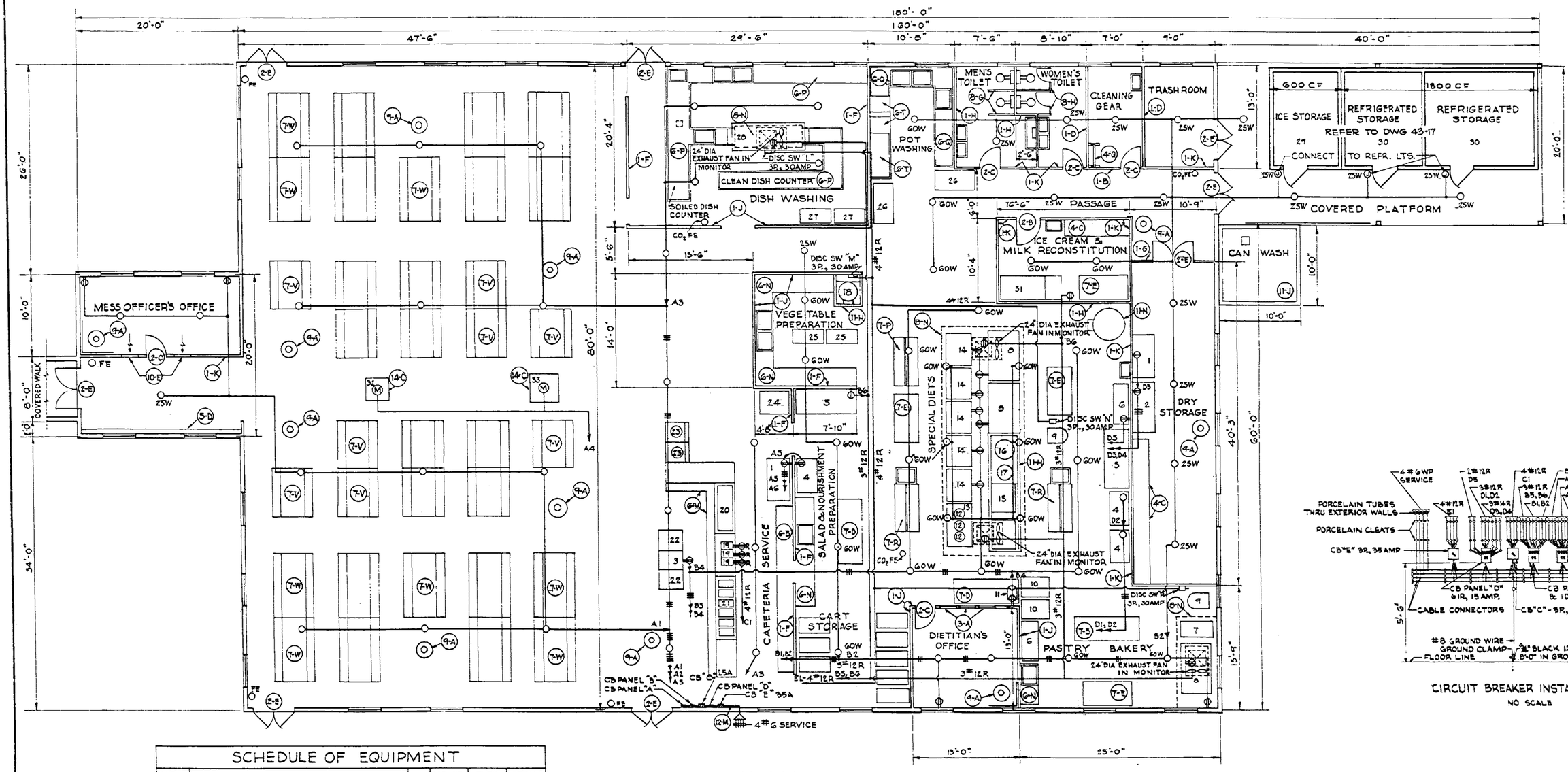
UNDER REVISION

MESS BUILDING
MESS-1
PLUMBING PLAN

APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: [signature] DCSS-DIT
DATE: 16 Sept 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-63
SHEET 3 OF 3



PLAN

SCALE NO 24

FACIL. NO. 516401 - INTERIOR ONLY
FACIL. NO. 516411 - STEEL FRAME W/INTERIOR
FACIL. NO. 516421 - WOOD FRAME W/INTERIOR

CIRCUIT BREAKER INSTALLATION

NO SCALE

SCHEDULE OF EQUIPMENT

ITEM NO	UNIT DESCRIPTION	QTY	MOTOR HP	FLEX CABLE	STEAM LB/HR
1	CABINET, ICE CREAM, 6 HOLE, 35 GAL, 64"X34"	2	1/3		
2	CABINET, ICE CREAM, 10 HOLE, 45 GAL, 76"X34"	1	1/3		
3	COOLER, WATER, GLASS FILLER	1	1/6		
4	REFRIGERATOR, US NO 10, 20 CU FT, 30"X30"	3	1/4		
5	REFRIGERATOR, US NO 65, 65 CU FT, 90"X36"	2	1/2		
6	MIXER ATTACHMENT BOARD, 60"X24"	2			
7	PROOF BOX, 18 BUN CAPACITY, 48"X24"	1			
8	OVEN, BAKE, CABINET TYPE, 75"X45"	3			
9	MIXER, VERTICAL, 60 QT, 29"X24 1/8"	2	1	3#12&1#12	
10	RACK, PASTRY, MOBILE 42"X30"	2			
11	MIXER, TABLE, MOUNTED, 12 QT, 14"X 18 1/2"	1	1/3		
12	KETTLE, JACKETED, 5 GAL, TRUNNION, TABLE MTD, 16" DIA	3			20
13	TABLE, TRUNNION KETTLE, 5 GAL., 3 UNIT	1			
14	RANGE, HEAVY DUTY, SINGLE, HOT TOP, 48"X36"	3			
15	STEAMER, VEGETABLE, 6 BU, 43"X35"	2			104
16	KETTLE, JACKETED, 60 GAL, 30" DIA	1			105
17	KETTLE, JACKETED, 40 GAL, 26" DIA	1			70
18	PEELER, POTATO, 30 LB 36"X44"	1	1	3#12&1#12	
19	TOASTER, POP-UP, 4 SLICES, 18"X12"	3			
20	COLD PAN SECTION, 72"X28"	1			
21	TABLE, STEAM, 92"X28"	1			22
22	RACK, GLASS TUMBLER, 30"X36"	2			
23	URN, COFFEE, TYPE I, SIZE 3, TWIN, 15 GAL 34"X29"	1			166
24	CHEST, ICE, CRUSHED, 400 LBS, 43"X 34"	1			
25	TRUCK, KITCHEN, 46"X22"	2			
26	RACK, PAN, MOBILE, 70"X30"	2			
27	TRUCK, DISH	2			
28	DISHWASHER, 165 DA, 100"X32"	1	3	3#12&1#12	60
29	PREFAB REFRIGERATOR, SIZE 600, G.E.D.	1			
30	PREFAB REFRIGERATOR, SIZE 1800, G.E.D.	1			
31	ICE CREAM MIXER, 2½ GAL & HARDENING, 40 GAL UNIT	1	½		
32	24" EXHAUST FAN 4900 C.F.M.	5	¼		
33	30" EXHAUST FAN 6750 C.F.M.	1	½		

ELECTRICAL NOTES

TOTAL CONNECTED LOAD

LIGHTING	4.71 KW
RECP EST	1.98 KW
POWER	28.15 KW
TOTAL	34.84 KW

1. UNLESS OTHERWISE NOTED ON PLANS ALL LAMPS TO BE 100W.
2. ALL 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER
3. REFER TO DWG. NO. 82-21 FOR SUPPORTING BOILER HOUSE.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-64	PLAN	1 OF 2
51-64	PLUMBING PLAN	2 OF 2
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
34-11	WOOD FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4
35-36	STEEL FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 5' 10'

NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D.C.

DRAWN BY: LALL
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

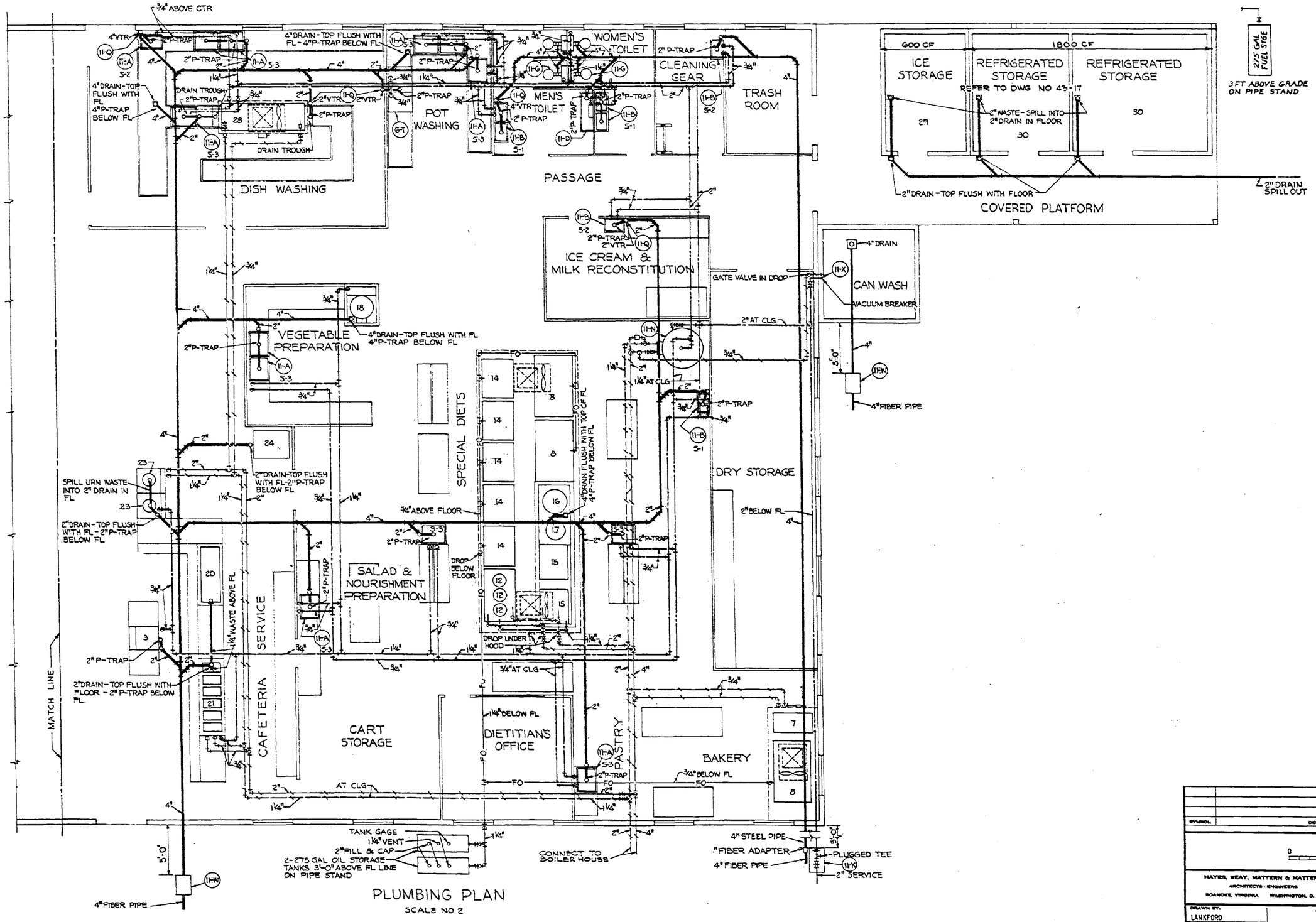
THEATER OF OPERATIONS
HOSPITAL FACILITIES
MESS BUILDING
MESS 2-10.000 SF

UNDER REVISION

APPROVED: [signature] DATE: 19 MAR 1969
CHIEF, ARCHITECTURE BRANCH & CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: [signature]
Colonel, CWS
DATE 16 Sept 1968

SCALE: AS NOTED
SPEC. NO. OCE 55-50
DRAWING NUMBER 51-64
SHEET 1 OF 2



PLUMBING PLAN

SCALE NO 2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10'

NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

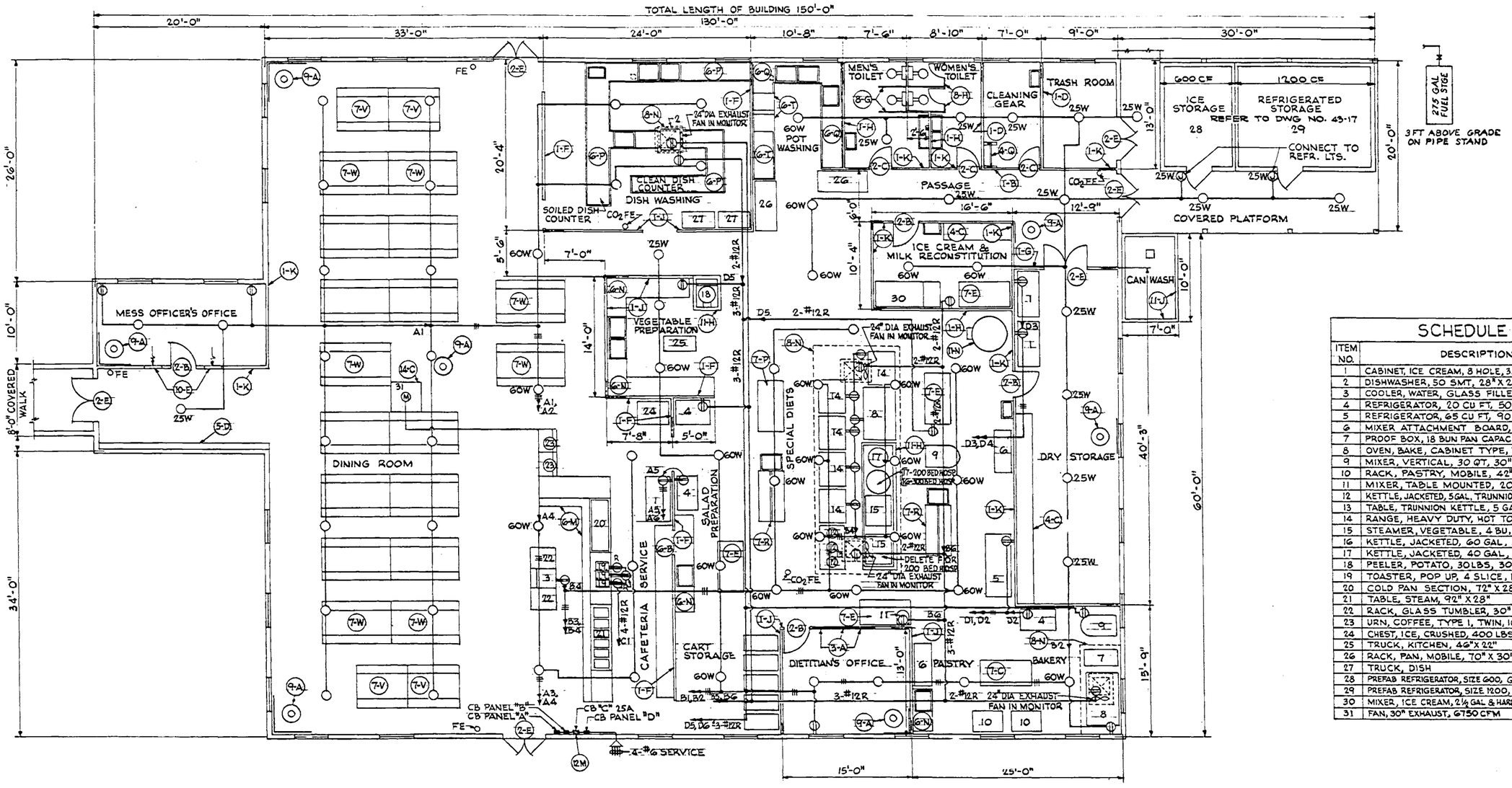
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LANKFORD
TRACED BY:
CHECKED BY: ILYUS
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS
MESS BUILDING
MESS 2
PLUMBING PLAN

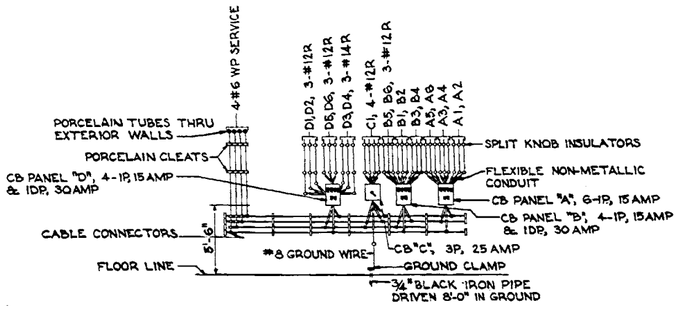
UNDER REVISION

APPROVED: H. Esteban — CHIEF, SPECIFICATIONS BRANCH
APPROVED: John H. Williams — CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1969
APPROVED FOR PROPONENT AGENCY: John H. Williams Col, CWC — Director of Bus Ops, DCSS-DA
DATE: 16 Sept 1969
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-64
SHEET 2 OF 2



SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QUANTITY 200 BED	QUANTITY 300 BED	MOTOR HP	STEAM LB/HR
1	CABINET, ICE CREAM, 8 HOLE, 35 GAL, 64"X34"	3	3	1/3	
2	DISHWASHER, 50 SMT, 28"X28"	1	1	3/4	35
3	COOLER, WATER, GLASS FILLER	1	1	1/6	
4	REFRIGERATOR, 20 CU FT, 50"X30"	3	3	1/4	
5	REFRIGERATOR, 65 CU FT, 90"X36"	1	1	1/2	
6	MIXER ATTACHMENT BOARD, 60"X24"	2	2		
7	PROOF BOX, 18 BUN PAN CAPACITY, 48"X24"	1	1		
8	OVEN, BAKE, CABINET TYPE, 75"X45"	2	2		
9	MIXER, VERTICAL, 30 QT, 30" X 48"	2	2	1/4	
10	RACK, PASTRY, MOBILE, 42"X 30"	2	2		
11	MIXER, TABLE MOUNTED, 20 QT, 14" X 18½"	1	1	1/3	
12	KETTLE, JACKETED, 5GAL, TRUNNION, TABLE MTD, 16" DIA	3	3		20
13	TABLE, TRUNNION KETTLE, 5 GAL, 3 UNIT	1	1		
14	RANGE, HEAVY DUTY, HOT TOP, 48"X 38"	5	5		
15	STEAMER, VEGETABLE, 4 BU, 43"X35"X66"	1	2		75
16	KETTLE, JACKETED, 60 GAL, 30" DIA	0	1		105
17	KETTLE, JACKETED, 40 GAL, 26" DIA	2	1		70
18	PEELER, POTATO, 30LBS, 30"X 40"	1	1	3/4	
19	TOASTER, POP UP, 4 SLICE, 18"X 12"	3	3		
20	COLD PAN SECTION, 72"X 28"	1	1		
21	TABLE, STEAM, 92"X 28"	1	1		22
22	RACK, GLASS TUMBLER, 30"X 36"	2	2		
23	URN, COFFEE, TYPE 1, TWIN, 10 GAL, 33"X 27"	2	2		110
24	CHEST, ICE, CRUSHED, 400 LBS, 43"X 34"	1	1		
25	TRUCK, KITCHEN, 46"X 22"	1	1		
26	RACK, PAN, MOBILE, 70" X 30"	2	2		
27	TRUCK, DISH	2	2		
28	PREFAB REFRIGERATOR, SIZE 600, G.E.D	1	1		
29	PREFAB REFRIGERATOR, SIZE 1200, G.E.D.	1	1		
30	MIXER, ICE CREAM, 2½ GAL. & HARDENING, 40 GAL UNIT	1	1	1/2	
31	FAN, 30" EXHAUST, 6750 CFM	1	1	½	



CIRCUIT BREAKER INSTALLATION
NO SCALE

PLAN
SCALE NO. 24
FACIL. NO. 516501 - INTERIOR ONLY
FACIL. NO. 516511 - STEEL FRAME W/INTERIOR
FACIL. NO. 516521 - WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

CONNECTED LOAD	
LIGHTING	4.29 KW
RECP EST	.37 KW
POWER	16.45 KW
TOTAL	21.11 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 100W
2. ALL 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS.
2. FOR F3N BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.
3. REFER TO DWG. NO. 52-21 FOR SUPPORTING BOILER HOUSE.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-65	PLAN	1 OF 2
51-65	PLUMBING PLAN	2 OF 2
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
34-04	WOOD FRAME CONST. WAREHOUSE TYPE BLDGS.	1-3 OF 3
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4
35-36	STEEL FRAME CONST. WAREHOUSE TYPE BLDGS	1-3 OF 3

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION, ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LANKFORD
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DEICHMANN

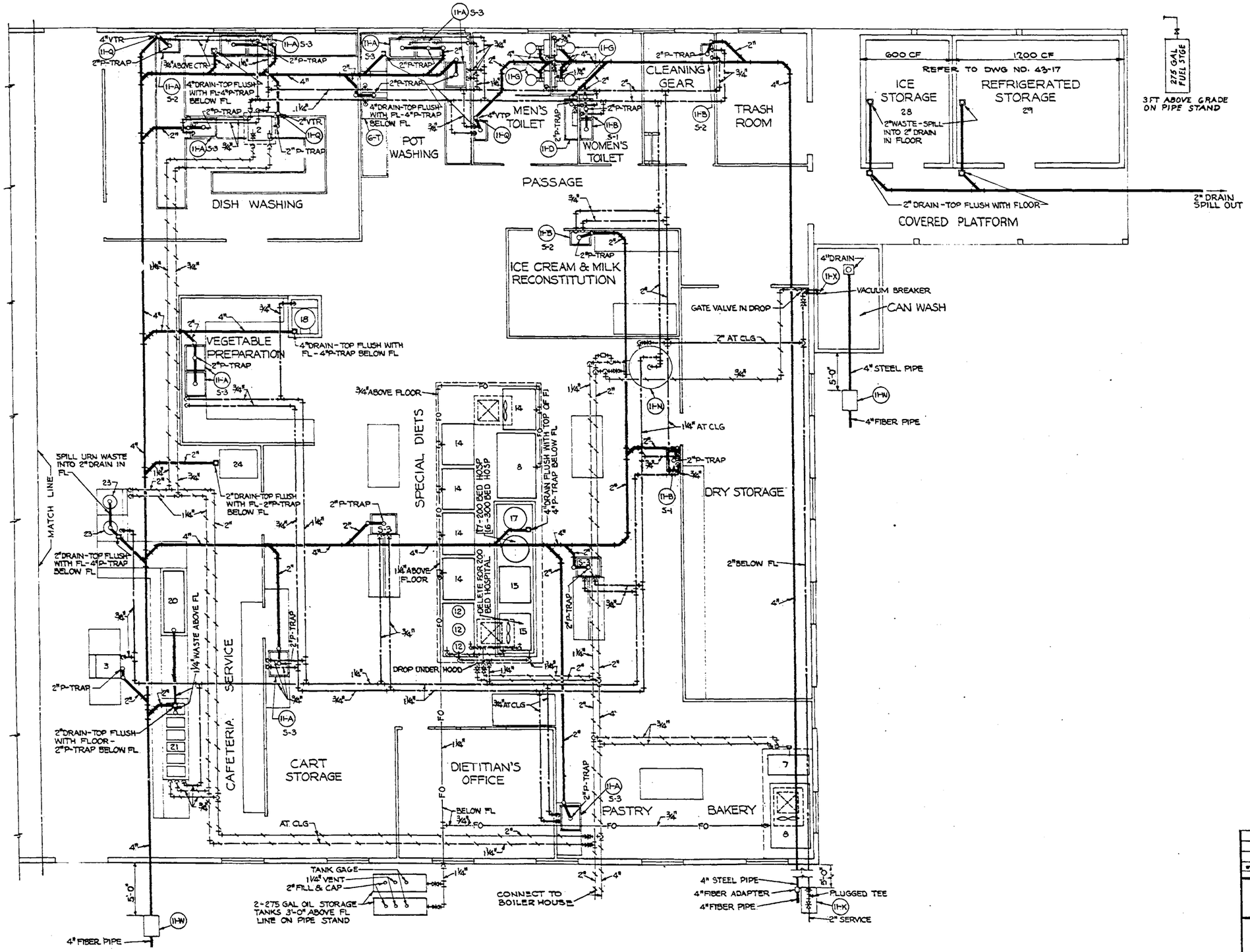
THEATER OF OPERATIONS
MESS BUILDING TYPE 300 BED

UNDER REVISION

APPROVED: [signature] for [signature] DATE: 19 MAR 1969
CHIEF, ENGINEERING BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: [signature] DATE 16 Sept 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-65
SHEET 1 OF 2



PLUMBING PLAN

SCALE NO 2

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10'

NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: LANKFORD
TRACED BY:
CHECKED BY: I.LYLIS
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS

MESS BUILDING MESS-3

PLUMBING PLAN

UNDER REVISION

APPROVED: [signature] CHIEF, ARCH. BRANCH

APPROVED: [signature] Asst. H. M. Williams CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: [signature] Colonel, GSC

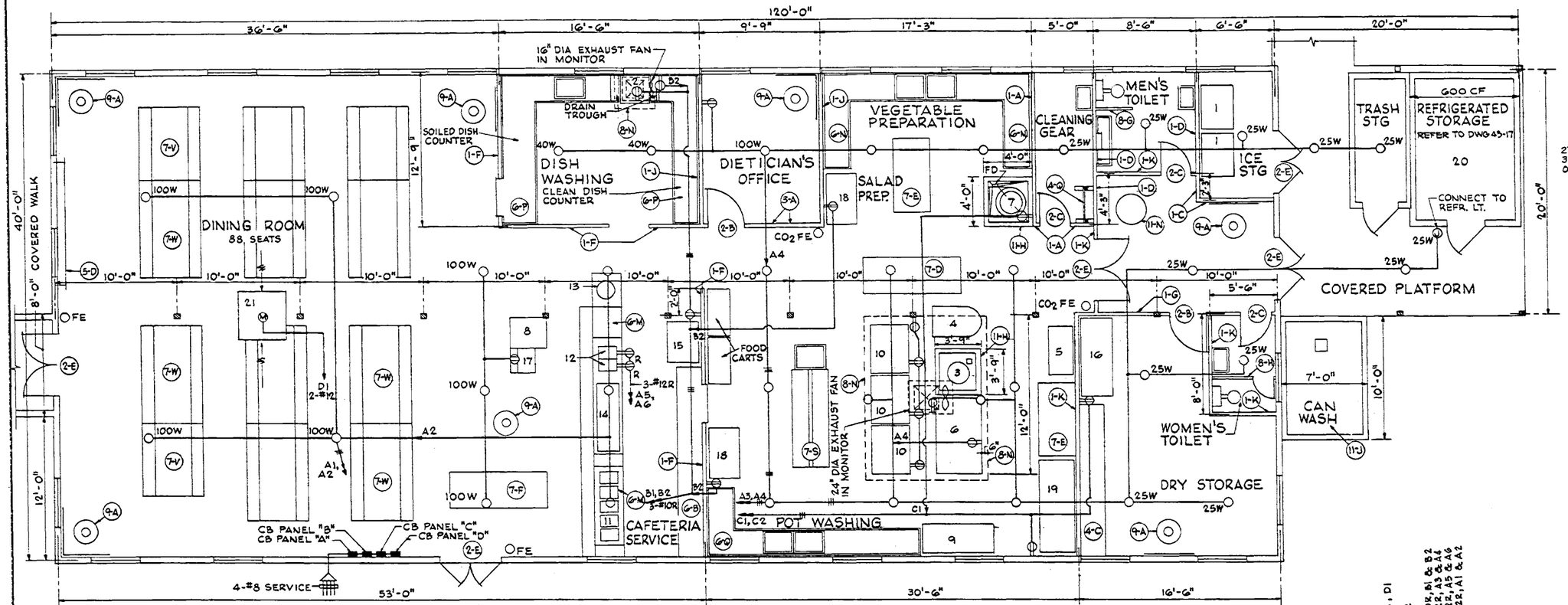
DATE: 18 Sept 1967

SCALE: AS NOTED

SPEC. NO. 0095-22

DRAWING NUMBER 51-65

SHEET 2 OF 2

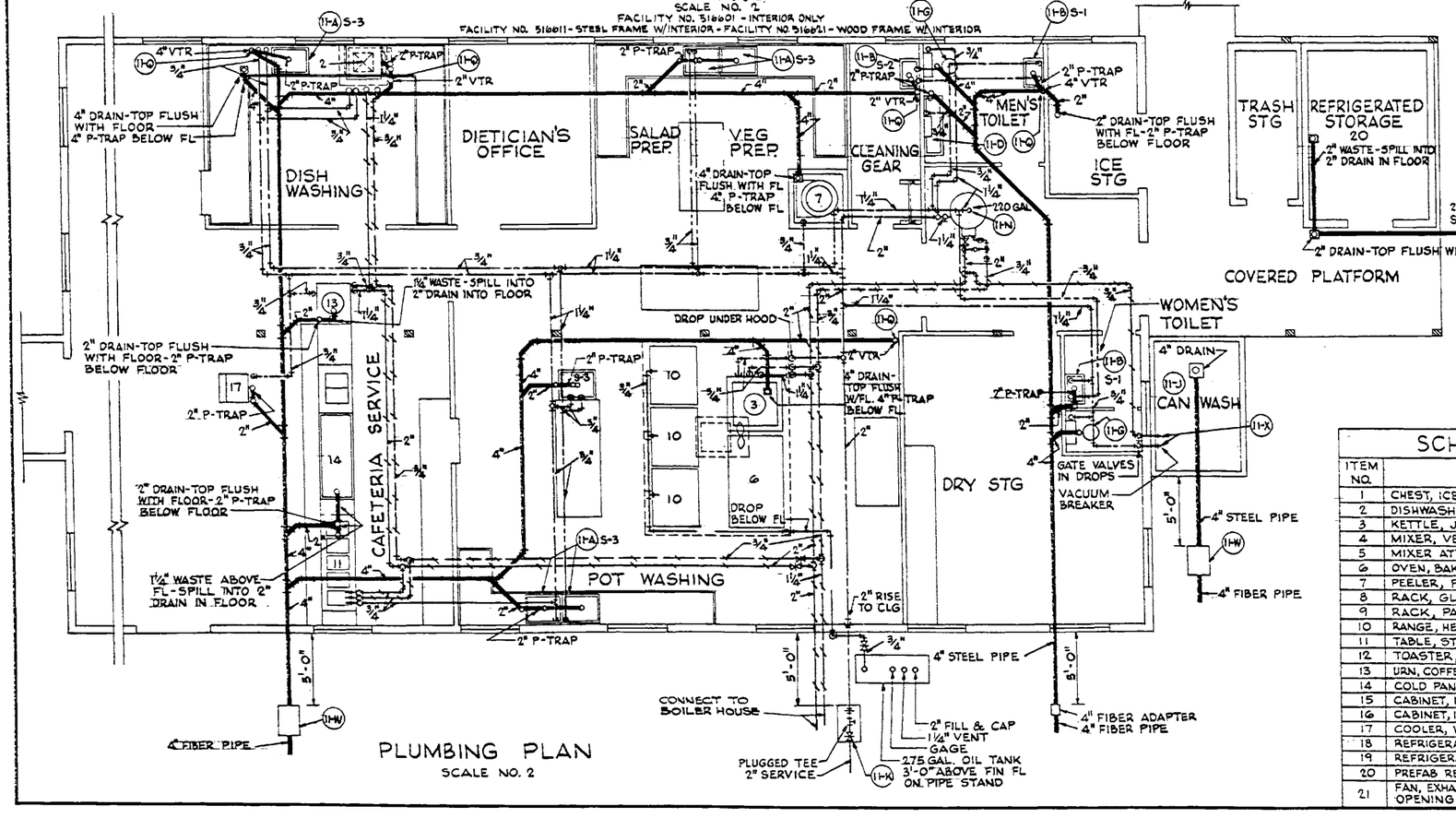


PLAN

SCALE NO. 2

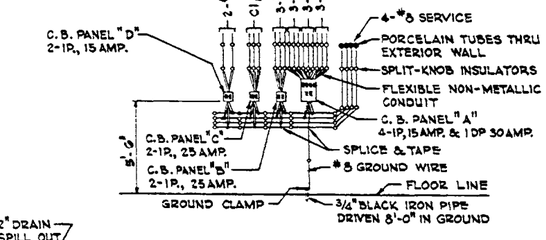
FACILITY NO. 516001 - INTERIOR ONLY

FACILITY NO. 516011 - STEEL FRAME W/INTERIOR - FACILITY NO. 516021 - WOOD FRAME W/INTERIOR



PLUMBING PLAN

SCALE NO. 2



CIRCUIT BREAKER INSTALLATION

NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	2.08KW
RECP EST	.10 KW
POWER	11.60KW
TOTAL	13.78KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE GOW.
2. ALL 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER
3. REFER TO DWG. NO. 82-21 FOR SUPPORTING BOILER HOUSE.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-66	PLANS-ELEC, PLUMBING	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SCHEDULE OF EQUIPMENT

ITEM NO.	DESCRIPTION	QTY.	MOTOR HP	STEAM LB/HR
1	CHEST, ICE, CRUSHED, 400 LBS, 43"X34"	2		
2	DISHWASHER, 50 SMT, 28"X28"	1	3/4	35
3	KETTLE, JACKETED, 20 GAL, 20" O.D.	1		40
4	MIXER, VERTICAL, 30 QT, 30"X 48"	1	1/4	
5	MIXER ATTACHMENT BOARD, 60"X 24"	1		
6	OVEN, BAKE, CABINET TYPE, 75"X45"	1		
7	PEELER, POTATO, 30 LBS, 30"X 40"	1	3/4	
8	RACK, GLASS TUMBLER, 30"X36"	1		
9	RACK, PAN, MOBILE, 70"X30"	1		
10	RANGE, HEAVY DUTY, HOT TOP, 48"X 38"	3		
11	TABLE, STEAM, 78"X 28"	1		20
12	TOASTER, POP-UP, 4 SLICE, 18"X 12"	2		
13	URN, COFFEE, TYPE 1, SIZE 2, 10 GAL, 33"X 27"	1		110
14	COLD PAN SECTION, 72"X 28"	1		
15	CABINET, ICE CREAM, 4 HOLE, 15 GAL, 40"X34"	1	1/4	
16	CABINET, ICE CREAM, 10 HOLE, 45 GAL, 76"X 34"	1	1/3	
17	COOLER, WATER, GLASS FILLER	1	1/6	
18	REFRIGERATOR, 20 CU FT, 50"X 30"	2	1/4	
19	REFRIGERATOR, 65 CU FT, 90"X 36"	1	1/2	
20	PREFAB REFRIGERATOR, SIZE 600, G.E.D.	1		
21	FAN, EXHAUST, 24" WITH 34"X34" CEILING OPENING, 4800 CFM	1	1/6	

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10'

NO.2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DE LOHMANN

THEATER OF OPERATIONS

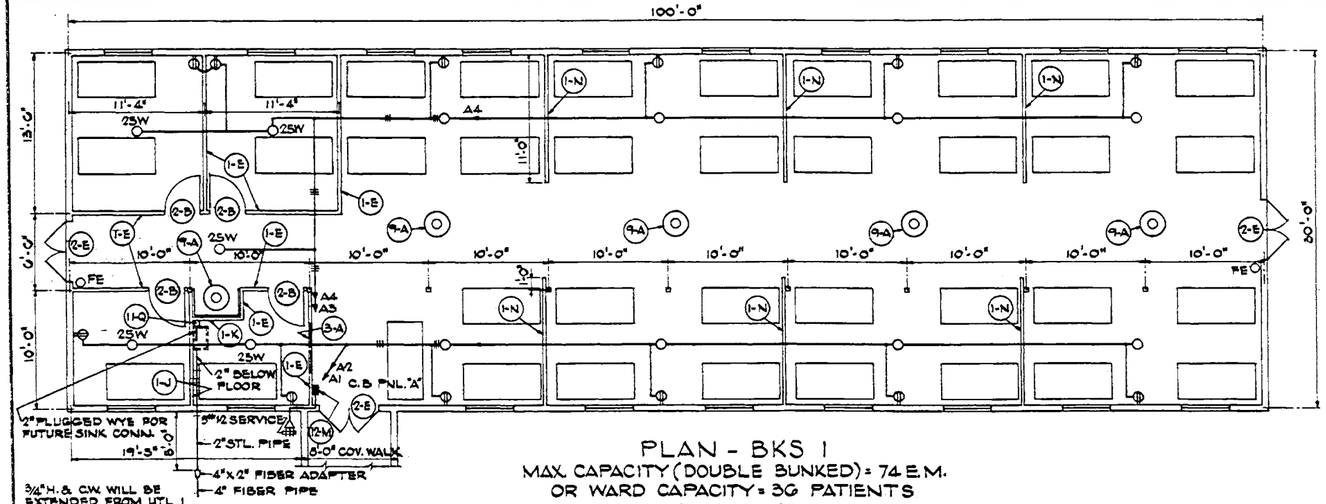
MESS BUILDING
MESS 4,344.00 SF

UNDER REVISION

APPROVED: Chief, Engineering Branch
APPROVED: Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY:
Colonel, AMC
DATE: 25 Sept 1968

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-66
SHEET 1 OF 1

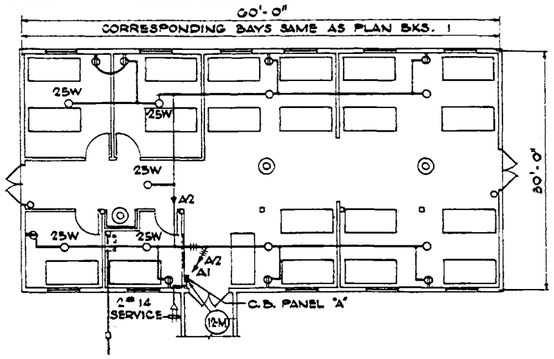


PLAN - BKS 1

MAX. CAPACITY (DOUBLE BUNKED) = 74 E.M.
OR WARD CAPACITY = 36 PATIENTS

SCALE NO. 24

FACIL. NO. 517102 - INTERIOR ONLY
FACIL. NO. 517112 - STEEL FRAME W/INTERIOR
FACIL. NO. 517122 - WOOD FRAME W/INTERIOR
FACIL. NO. 530502 - MECHANICAL VENTILATION ONLY



PLAN - BKS 2

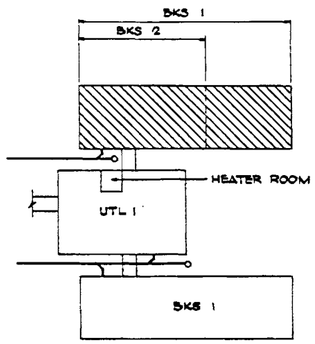
MAX. CAPACITY (DOUBLE BUNKED) = 42 E.M.
OR WARD CAPACITY = 20 PATIENTS

SCALE NO. 1

FACIL. NO. 517101 - INTERIOR ONLY
FACIL. NO. 517111 - STEEL FRAME W/INTERIOR
FACIL. NO. 517121 - WOOD FRAME W/INTERIOR
FACIL. NO. 530501 - MECHANICAL VENTILATION ONLY

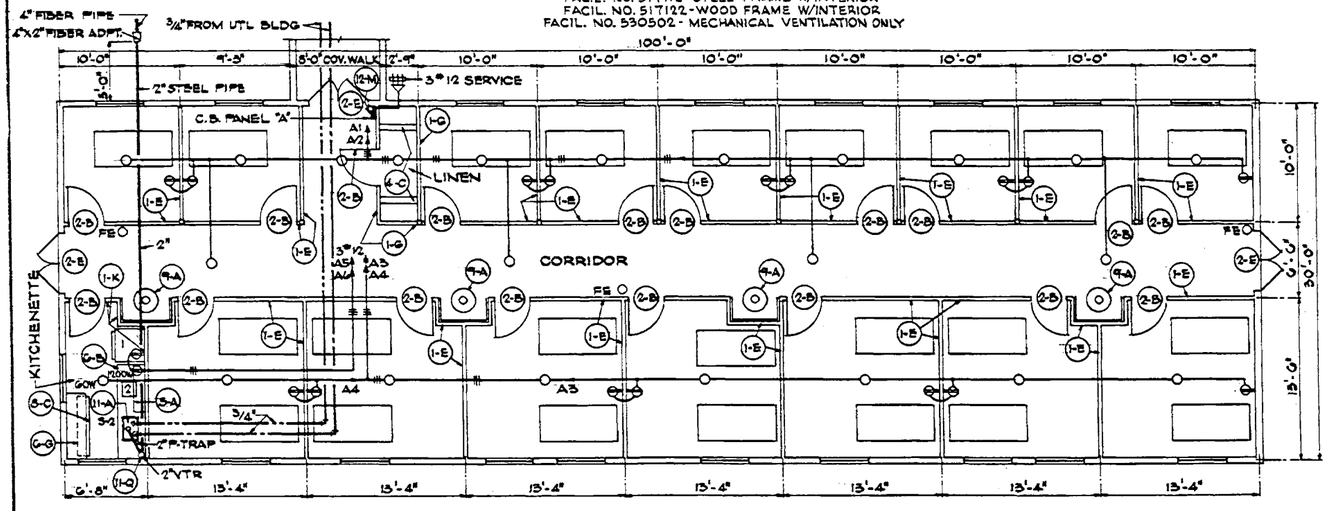
SCHEDULE OF EQUIPMENT

ITEM NO.	UNIT DESCRIPTION	QUANTITY FOQ 1	QUANTITY FOQ 2
1	REFRIGERATOR, MECHANICAL, 6 CU. FT.	1	1
2	HOT PLATE, 1 BURNER, ELECTRIC	1	1



KEY PLANS

NO SCALE

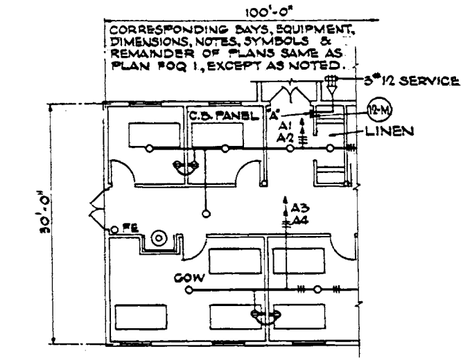


PLAN - FOQ 1

FEMALE = 23 1000, 750, 500, 300 & 200 BEDS

SCALE NO. 24

FACIL. NO. 517106 - INTERIOR ONLY
FACIL. NO. 517116 - STEEL FRAME W/INTERIOR
FACIL. NO. 517126 - WOOD FRAME W/INTERIOR
FACIL. NO. 530506 - MECHANICAL VENTILATION ONLY

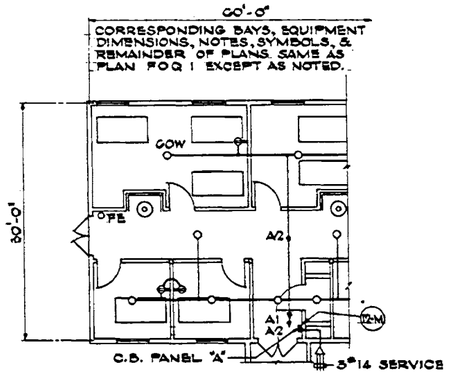


PART PLAN - MOQ 1

REMAINDER OF PLAN SAME AS FOQ 1
MALE = 24 1000, 750, 500, & 250 BEDS

SCALE NO. 1

FACIL. NO. 517104 - INTERIOR ONLY
FACIL. NO. 517114 - STEEL FRAME W/INTERIOR
FACIL. NO. 517124 - WOOD FRAME W/INTERIOR
FACIL. NO. 530505 - MECHANICAL VENTILATION ONLY

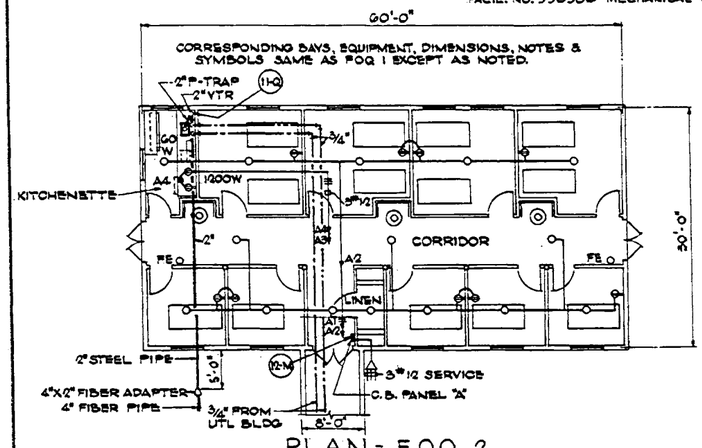


PART PLAN - MOQ 2

REMAINDER OF PLAN SAME AS FOQ 2
MALE = 14 1000, 500, 300, & 100 BEDS

SCALE NO. 1

FACIL. NO. 517103 - INTERIOR ONLY
FACIL. NO. 517113 - STEEL FRAME W/INTERIOR
FACIL. NO. 517123 - WOOD FRAME W/INTERIOR
FACIL. NO. 530503 - MECHANICAL VENTILATION ONLY



PLAN - FOQ 2

FEMALE = 13 1000, 500, 300 & 100 BEDS

SCALE NO. 1

FACIL. NO. 517105 - INTERIOR ONLY
FACIL. NO. 517115 - STEEL FRAME W/INTERIOR
FACIL. NO. 517125 - WOOD FRAME W/INTERIOR
FACIL. NO. 530504 - MECHANICAL VENTILATION ONLY

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	BKS 1	BKS 2	FOQ 1	MOQ 1	FOQ 2	MOQ 2
LIGHTING	.61 KW	.37 KW	.61 KW	.39 KW	.41 KW	.39 KW
RECP. EST.	1.20 KW	.80 KW	1.00 KW	1.00 KW	.90 KW	.90 KW
POWER	–	–	1.38 KW	–	1.38 KW	–
TOTAL	1.81 KW	1.17 KW	3.59 KW	2.19 KW	2.09 KW	1.29 KW

1. FOR BKS 1 & BKS 2:
   UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE GOW.
   ALL 40 & GOW LAMPS TO HAVE 8" CONICAL SHADES.
2. FOR FOQ 1, FOQ 2, MOQ 1 & MOQ 2:
   UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 25W.
   ALL GOW LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-305 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-71	PLANS	1 OF 1
99-98	STANDARD DETAILS	
53-05	MECHANICAL VENTILATION (IF REQUIRED)	1 OF 1
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HELTON
TRACED BY:
CHECKED BY: SHANNON
SUBMITTED BY: C. W. DEICHMANN

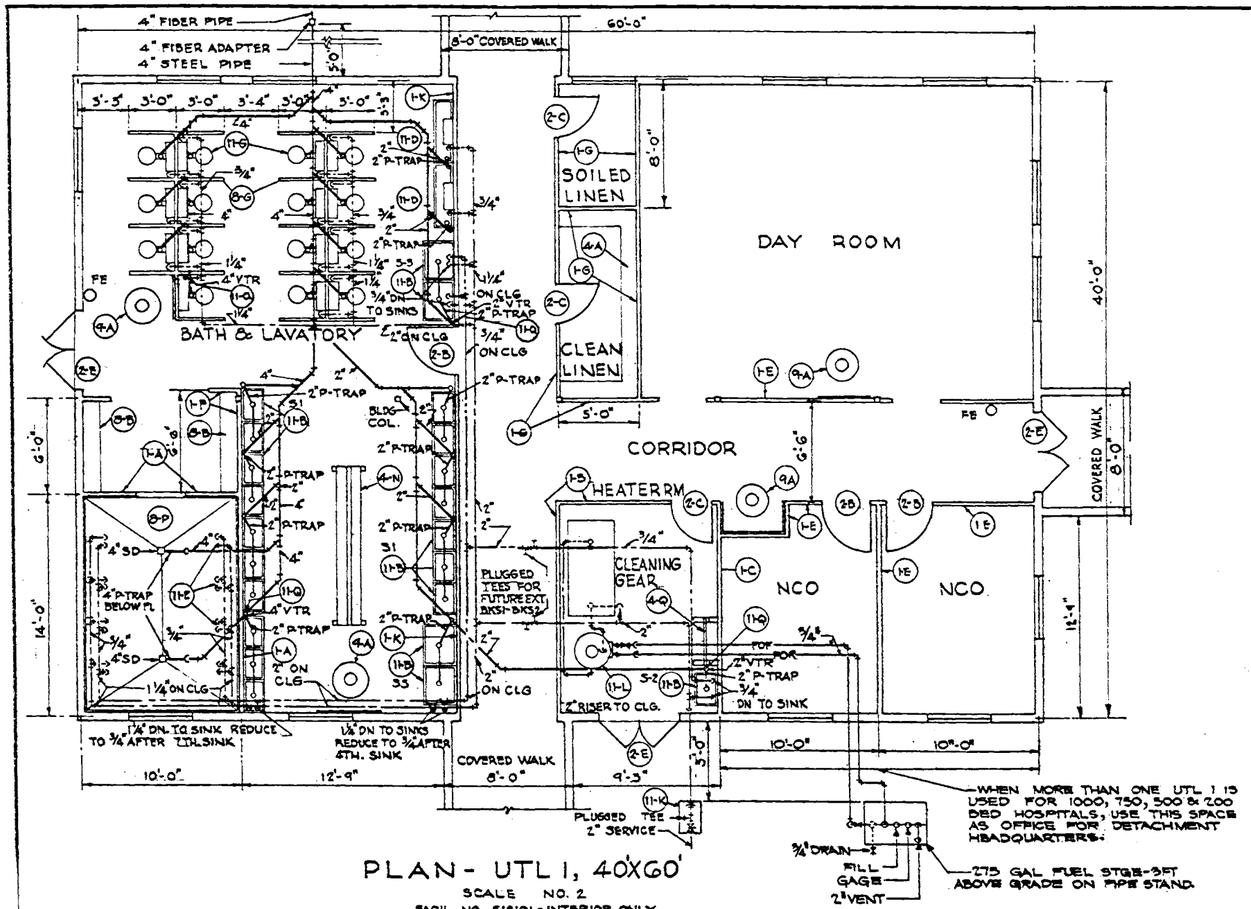
THEATER OF OPERATIONS
OFFICERS' QUARTERS
MOQ 1, MOQ 2, FOQ 1 & FOQ 2
BARRACKS
BKS 1 & BKS 2

UNDER REVISION

APPROVED: Chief, Engineering Branch
APPROVED: Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernatein 09560
DATE 9 OCT 68

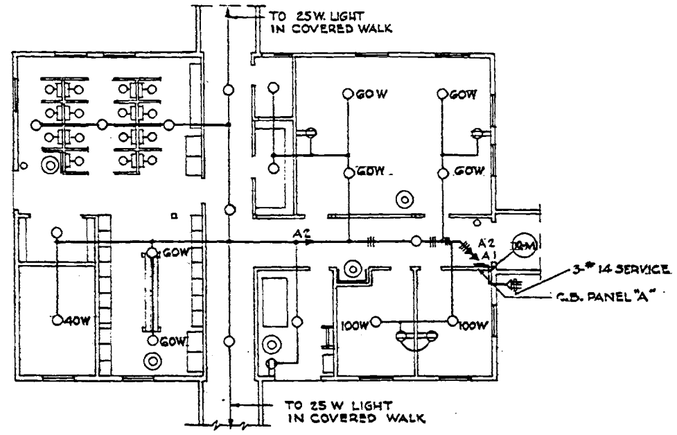
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-71
SHEET 1 OF 1



PLAN - UTL 1, 40'X60'

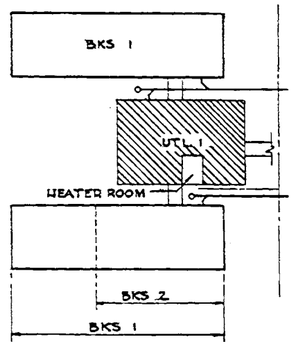
SCALE NO. 2

FACIL. NO. 518101 - INTERIOR ONLY
FACIL. NO. 518111 - STEEL FRAME W/INTERIOR
FACIL. NO. 518121 - WOOD FRAME W/INTERIOR



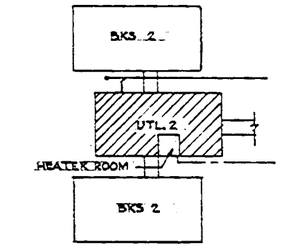
ELECTRICAL PLAN

SCALE NO 1



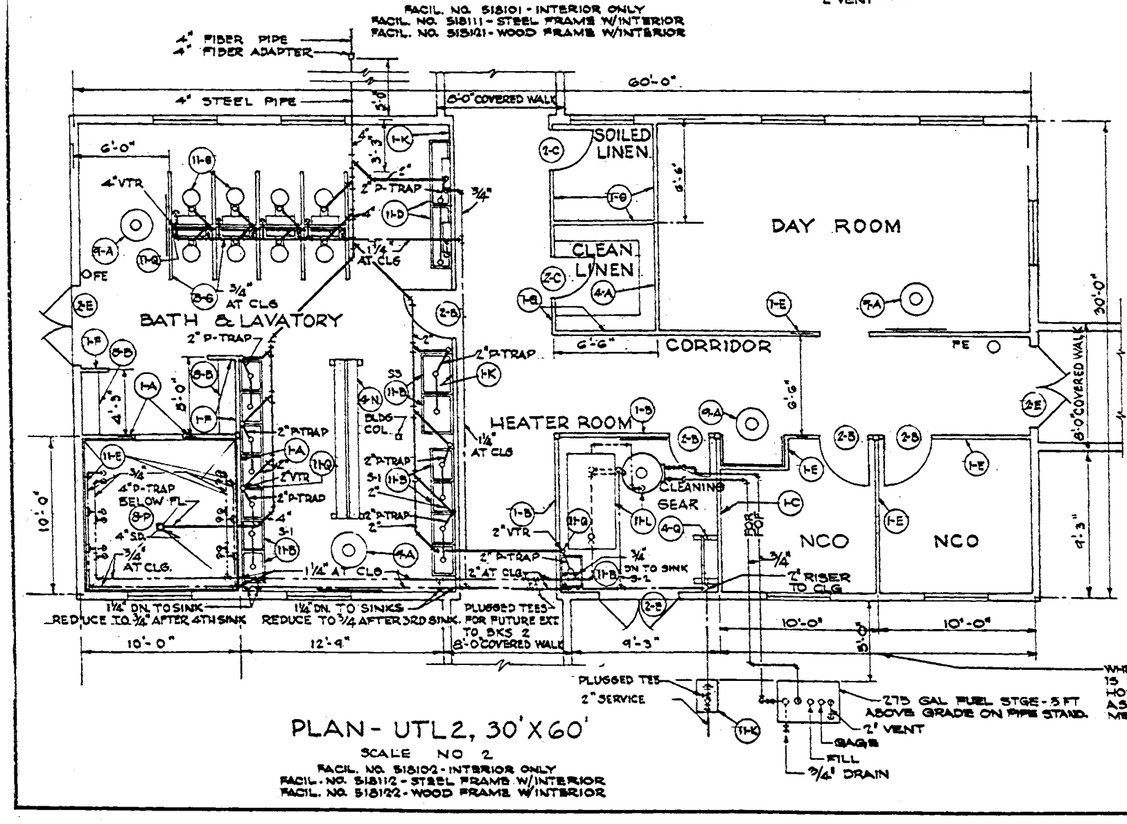
KEY PLAN

NO SCALE



KEY PLAN

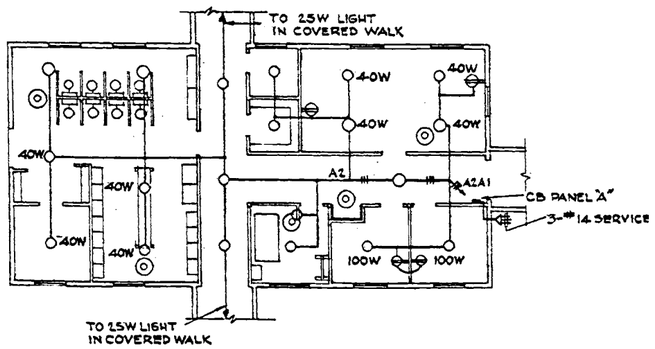
NO SCALE



PLAN - UTL 2, 30'X60'

SCALE NO 2

FACIL. NO. 518102 - INTERIOR ONLY
FACIL. NO. 518112 - STEEL FRAME W/INTERIOR
FACIL. NO. 518122 - WOOD FRAME W/INTERIOR



ELECTRICAL PLAN

SCALE NO 1

KEY PLAN

NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD	UTL1, 40'X60'	UTL2, 30'X60'
LIGHTING	.93 KW	.80 KW
RECP EST	.40 KW	.40 KW
POWER	.42 KW	.42 KW
TOTAL	1.75 KW	1.62 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 25W.
2. ALL 40, 60, & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

DRAWING SCALES: 0 5' 10' 15' NO.1 — 0 5' 10' NO.2

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-81	PLAN	1 OF 1
49-95	STANDARD DETAILS	
54-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

MAYER, BEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D.C.

DRAWN BY: HORNE
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DE ICHMANN

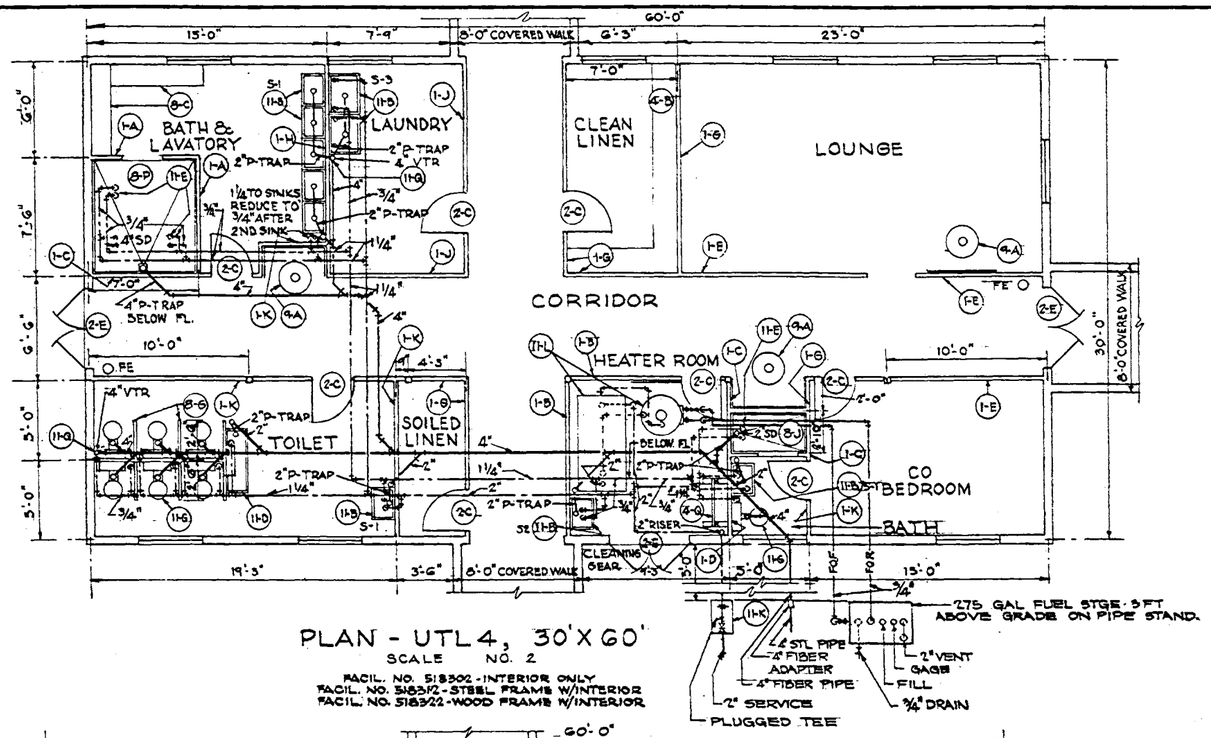
THEATER OF OPERATIONS
UTILITY BUILDINGS
UTL 1-40'X60'
UTL 2-30'X60'

UNDER REVISION

APPROVED: [signature] Chief, Engineering Branch [signature] Chief, Engineering Division, Mil. Constr., OCE
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernatein 01/5/60
DATE: 9 OCT 60

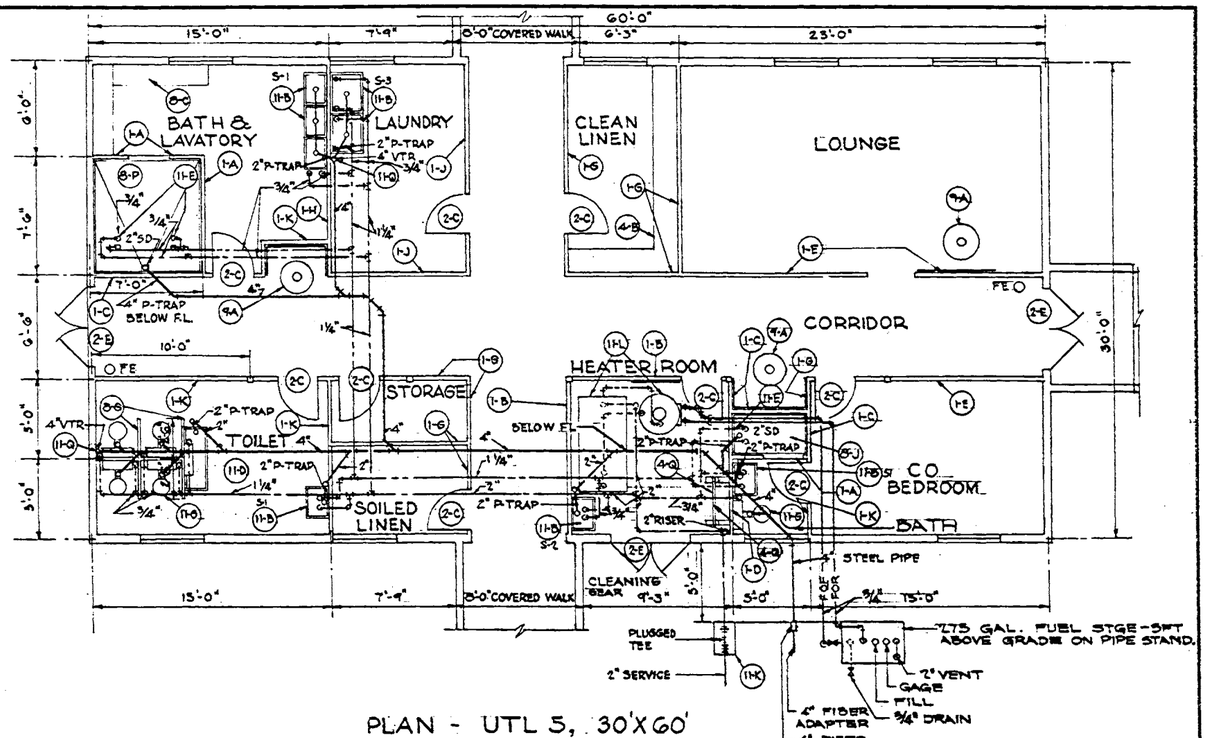
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-81
SHEET 1 OF 1



PLAN - UTL 4, 30'X60'

SCALE NO. 2

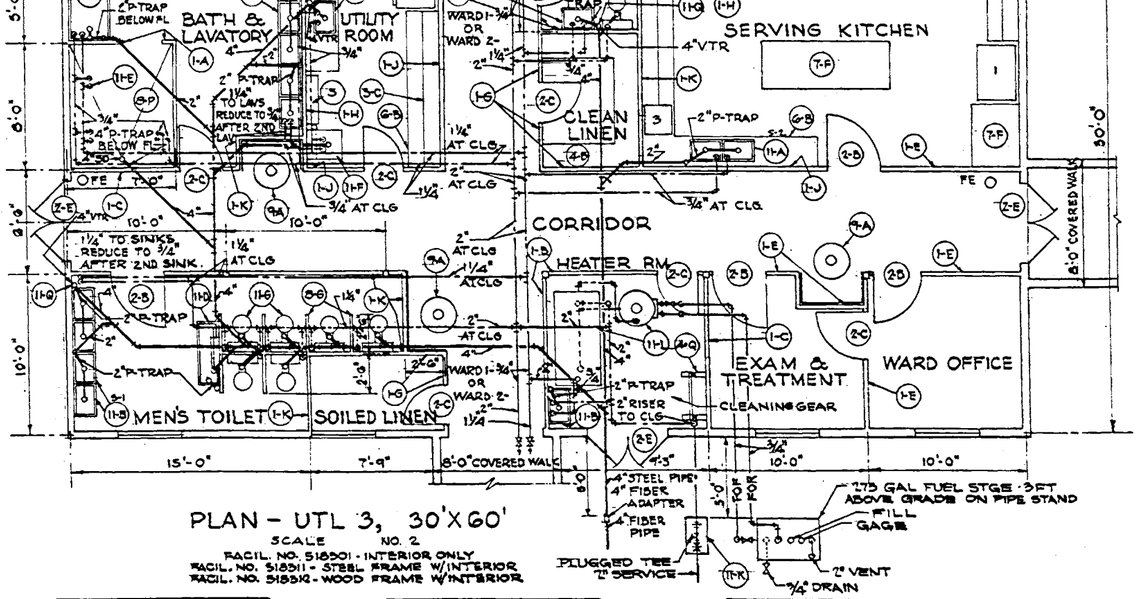
FACIL. NO. 518302 - INTERIOR ONLY
FACIL. NO. 518312 - STEEL FRAME W/INTERIOR
FACIL. NO. 518322 - WOOD FRAME W/INTERIOR



PLAN - UTL 5, 30'X60'

SCALE NO. 2

FACIL. NO. 518303 - INTERIOR ONLY
FACIL. NO. 518313 - STEEL FRAME W/INTERIOR
FACIL. NO. 518323 - WOOD FRAME W/INTERIOR



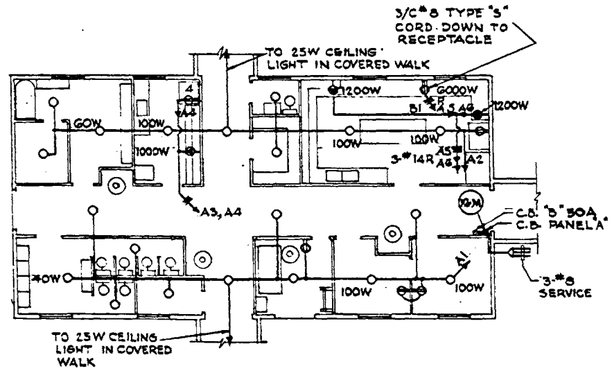
PLAN - UTL 3, 30'X60'

SCALE NO. 2

FACIL. NO. 518301 - INTERIOR ONLY
FACIL. NO. 518311 - STEEL FRAME W/INTERIOR
FACIL. NO. 518321 - WOOD FRAME W/INTERIOR

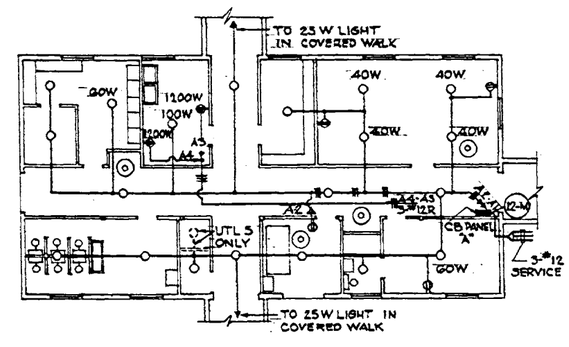
KEY PLANS

NO SCALE



ELECTRICAL PLAN - UTL 3

SCALE NO 1



ELECTRICAL PLAN - UTL 4&5

SCALE NO. 1

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	UTL 3	UTL 4	UTL 5
LIGHTING	.98 KW	.76 KW	.78 KW
RECP EST.	.20 KW	.30 KW	.30 KW
POWER	9.40 KW	2.40 KW	2.40 KW
TOTAL	10.58 KW	3.46 KW	3.48 KW

1. UNLESS OTHERWISE NOTED ON PLAN ALL LAMPS TO BE 25W.
2. ALL 40, 60, & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF EQUIPMENT FOR UTL 3

ITEM NO	UNIT DESCRIPTION	QTY.
1	REFRIGERATOR, 12 CU. FT. 40"X30"X 78"-½ H.P.	1
2	GRIDDLE & HOT PLATE, WARD DIET KITCHEN	1
3	CABINET, SPRAY RINSE	1
4	REFRIGERATOR, MECHANICAL, 6 CU. FT.	1
5	RACK, UTENSIL, 6 URINALS, 3 BED PANS	1

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-83	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' — NO. 1
0 5' 10' — NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: I LYUS
SUBMITTED BY: C. W. DE ICHMANN

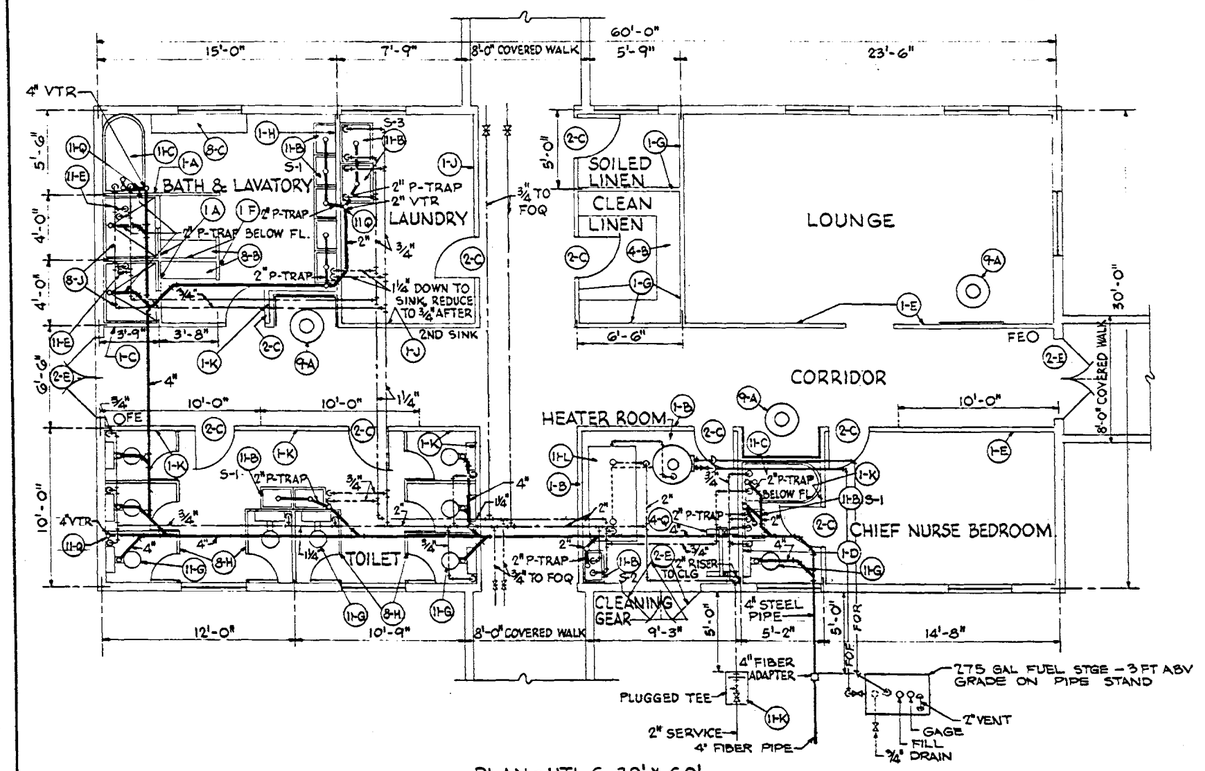
THEATER OF OPERATIONS
UTILITY BUILDINGS
UTL 3, 4 & 5 - 30'X60'

UNDER REVISION

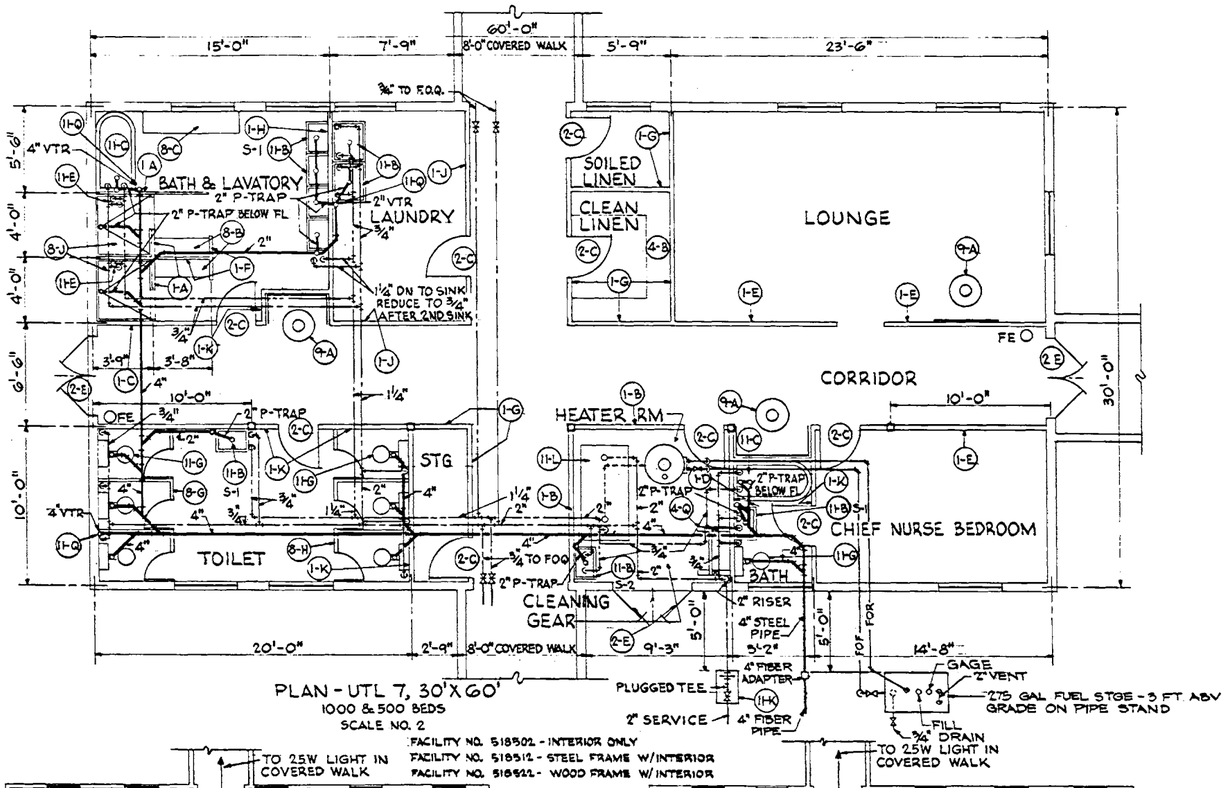
APPROVED: [signature] Chief, Engineering Branch
APPROVED: [signature] Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert J. Bernstein 4/8/69
DATE: 9 OCT 68

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-83
SHEET 1 OF 1



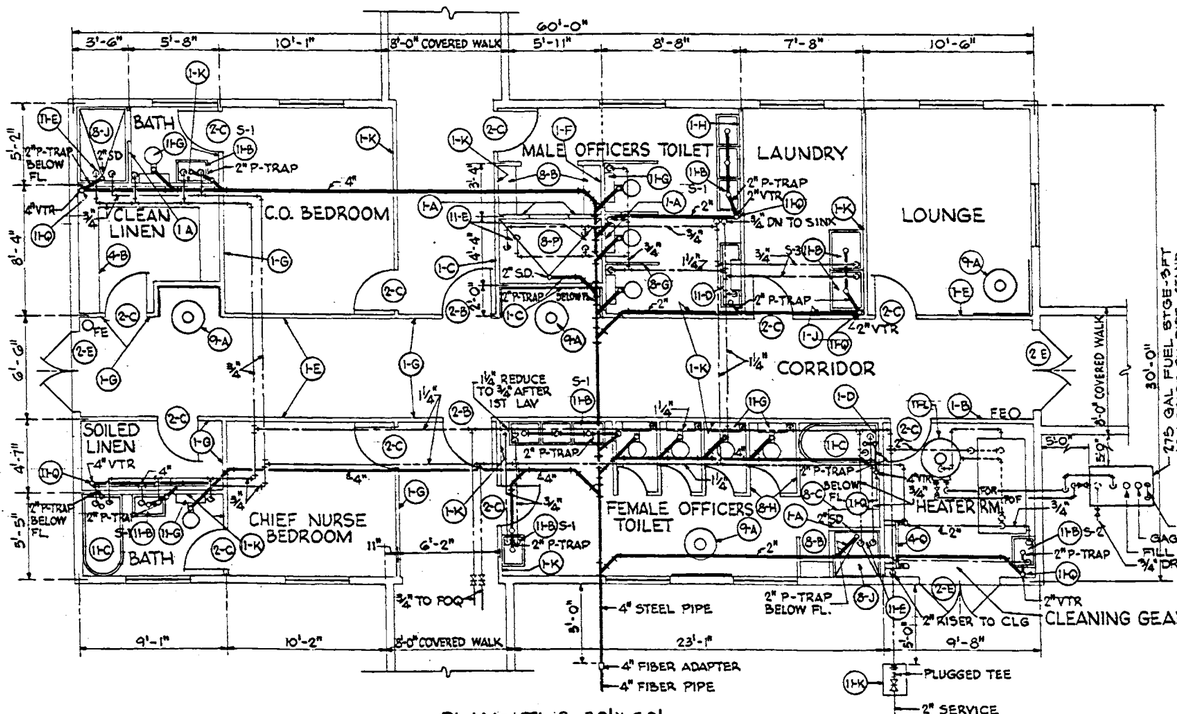
PLAN - UTL 6, 30' X 60'
1000, 750, 500 & 300 BEDS
SCALE NO. 2
FACILITY NO. 518501 - INTERIOR ONLY
FACILITY NO. 518511 - STEEL FRAME W/INTERIOR
FACILITY NO. 518521 - WOOD FRAME W/ INTERIOR



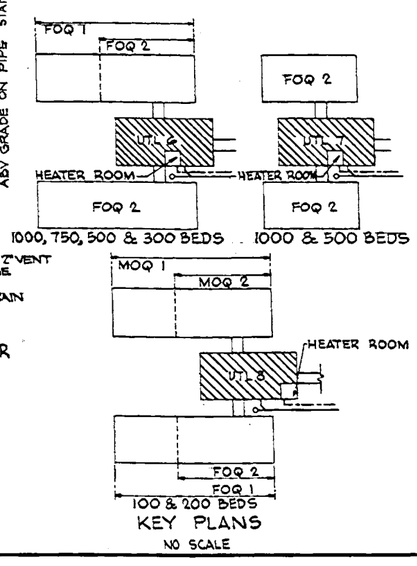
PLAN - UTL 7, 30' X 60'
1000 & 500 BEDS
SCALE NO. 2

ELECTRICAL PLAN-UTL 6 & 7
SCALE NO. 1

ELECTRICAL PLAN-UTL 8
SCALE NO. 1



PLAN - UTL 8, 30' X 60'
SCALE NO. 2
FACILITY NO. 518503 - INTERIOR ONLY
FACILITY NO. 518513 - STEEL FRAME W/INTERIOR
FACILITY NO. 518523 - WOOD FRAME W/INTERIOR



KEY PLANS
NO SCALE

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	UTL 6	UTL 7	UTL 8
LIGHTING	.80 KW	.82 KW	.74 KW
RECP EST	.30 KW	.30 KW	.40 KW
POWER	2.40 KW	2.40 KW	2.40 KW
TOTAL	3.50 KW	3.52 KW	3.54 KW

1. UNLESS OTHERWISE NOTED ON PLANS ALL LAMPS TO BE 25W.
2. ALL 40, 60 & 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-85	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
55-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10' 15' NO. 1
0 5' 10' NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HORNE
TRACED BY:
CHECKED BY: I LYLIS
SUBMITTED BY: C.W. DEICHMANN

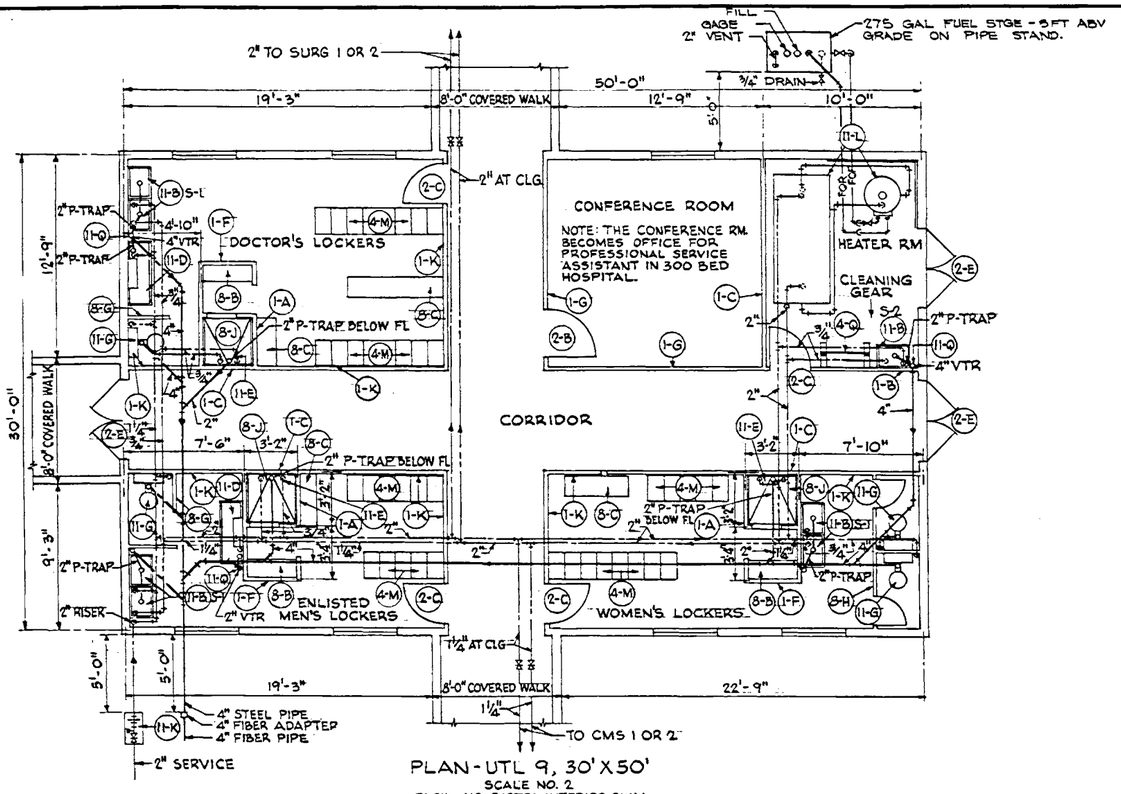
THEATER OF OPERATIONS
BUILDING
UTL 6, 7 & 8-30'X60'

UNDER REVISION

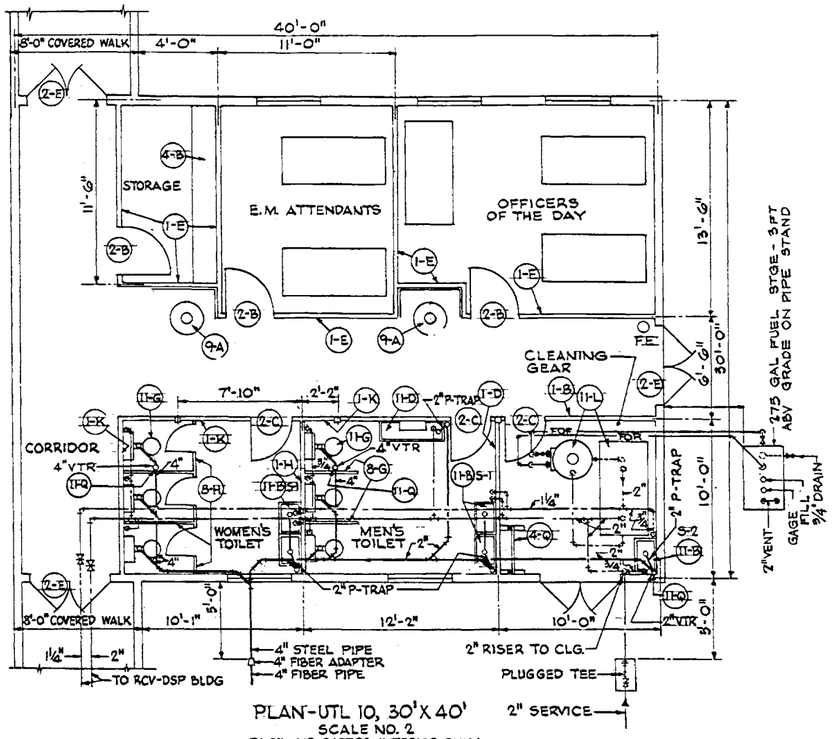
APPROVED: for Wm. M. Wellman
DATE: 19 MAR 1969
CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.

APPROVED FOR PROPONENT AGENCY: Robert Bernstein
DATE: 9 OCT 68

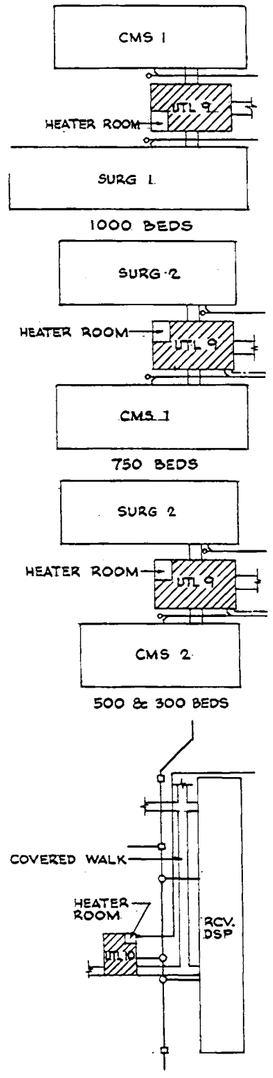
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-85
SHEET 1 OF 1



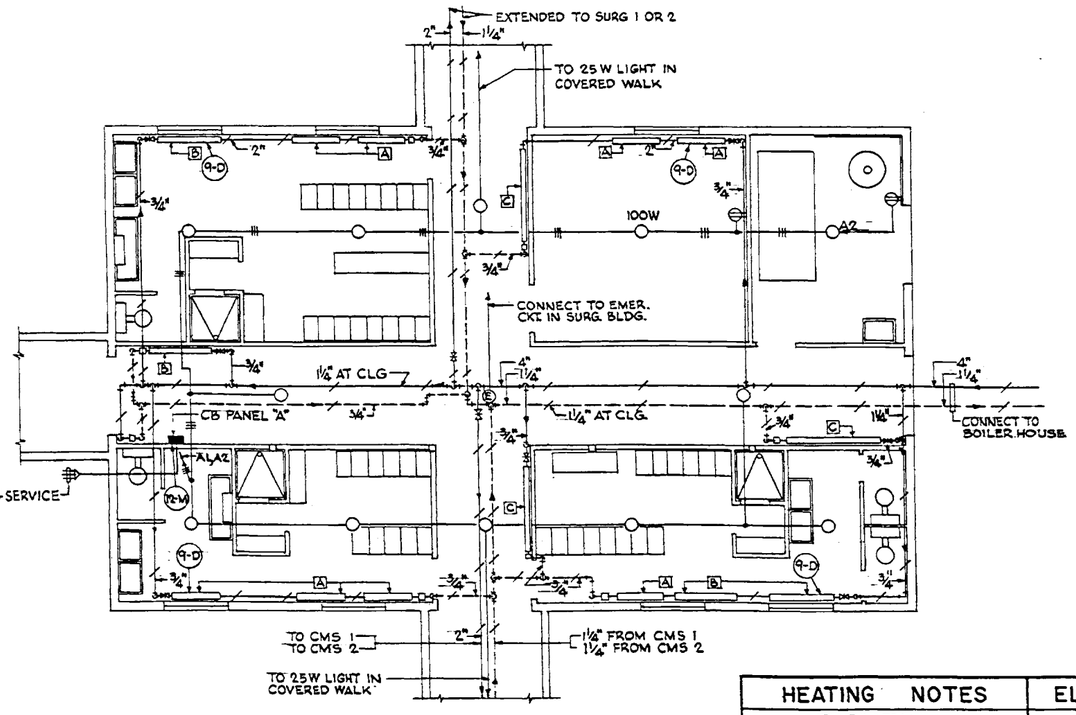
PLAN - UTL 9, 30' X 50'
SCALE NO. 2
FACIL. NO. 518701 - INTERIOR ONLY
FACIL. NO. 518711 - STEEL FRAME W/INTERIOR
FACIL. NO. 518721 - WOOD FRAME W/INTERIOR



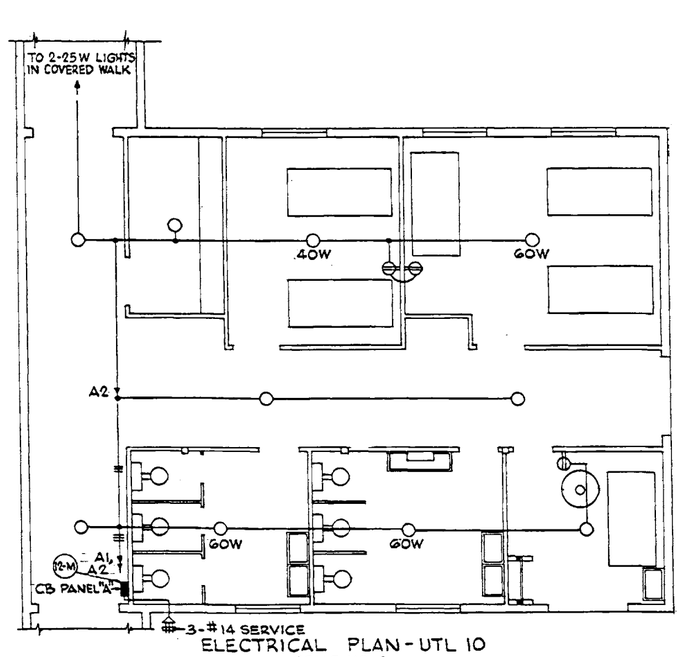
PLAN - UTL 10, 30' X 40'
SCALE NO. 2
FACIL. NO. 518702 - INTERIOR ONLY
FACIL. NO. 518712 - STEEL FRAME W/INTERIOR
FACIL. NO. 518722 - WOOD FRAME W/INTERIOR



KEY PLANS
NO SCALE



HEATING & ELECTRICAL PLAN - UTL 9
SCALE NO. 2



ELECTRICAL PLAN - UTL 10
SCALE NO. 2

HEATING NOTES

RADIATION

SYMBOL	QUANTITY	FT. ACTIVE FIN LGTH	BTU/HR @ 15 PSI
A	8	3	5733
B	4	4	7644
C	3	6	11,466

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	UTL. 9	UTL. 10
LIGHTING	.43 KW	.42 KW
RECP EST	.10 KW	.20 KW
POWER	4.17 KW	.42 KW
TOTAL	4.70 KW	1.04 KW

1. UNLESS OTHERWISE NOTED ON PLANS ALL LAMPS TO BE 25W.
2. ALL 60 AND 100W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BLDG SHELL REQUIRMENTS.
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER.
3. REFER TO DWG. NO. 82-21 FOR BOILER HOUSE SUPPORTING UTL 9.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-87	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. -- BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO. 2

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: WADE
TRACED BY:
CHECKED BY: I.LYUS
SUBMITTED BY: C.W. DEICHMANN

THEATER OF OPERATIONS
DUTY BUILDINGS
UTL 9-30'X50'
UTL 10-30'X40'

UNDER REVISION

APPROVED: [signature] Chief, Engineering Branch
APPROVED: [signature] Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 19 MAR 1969

APPROVED FOR PROPONENT AGENCY: Robert Bernstein OPSO
DATE: 9 OCT 68

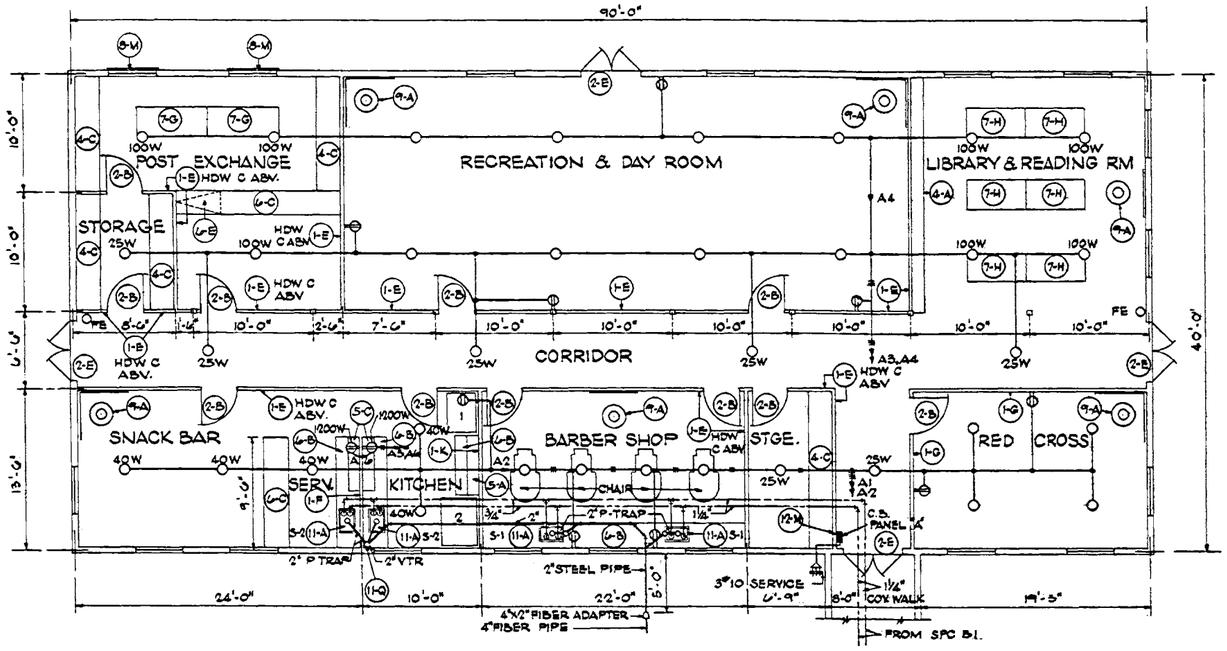
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-87
SHEET 1 OF 1

CORPS OF ENGINEERS

U. S. ARMY

SCHEDULE OF EQUIPMENT

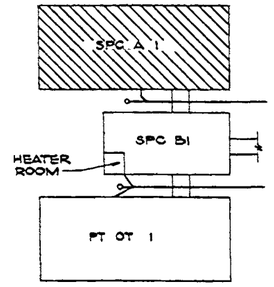
ITEM NO.	UNIT DESCRIPTION	QTY.
1	REFRIGERATOR, 12 CU. FT. 40"X 30"X 78" - 1/4 H.P.	1
2	RANGE, HEAVY DUTY, COMB. HOT & FRY TOP, 48"X36"	1



PLAN - SPC A1, 40' X 90'

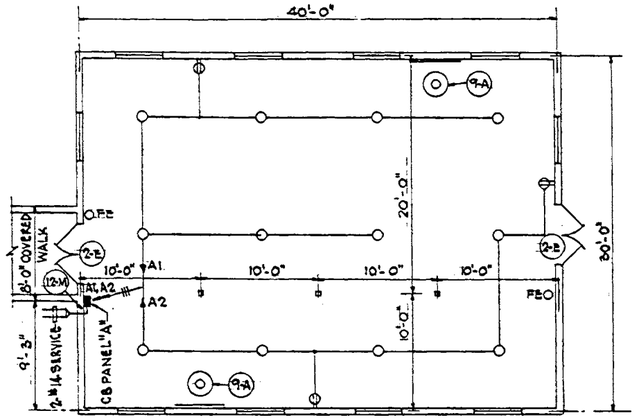
SCALE NO. 24

FACIL. NO. 519102 - INTERIOR ONLY
FACIL. NO. 519112 - STEEL FRAME W/INTERIOR
FACIL. NO. 519122 - WOOD FRAME W/INTERIOR



KEY PLAN

NO SCALE

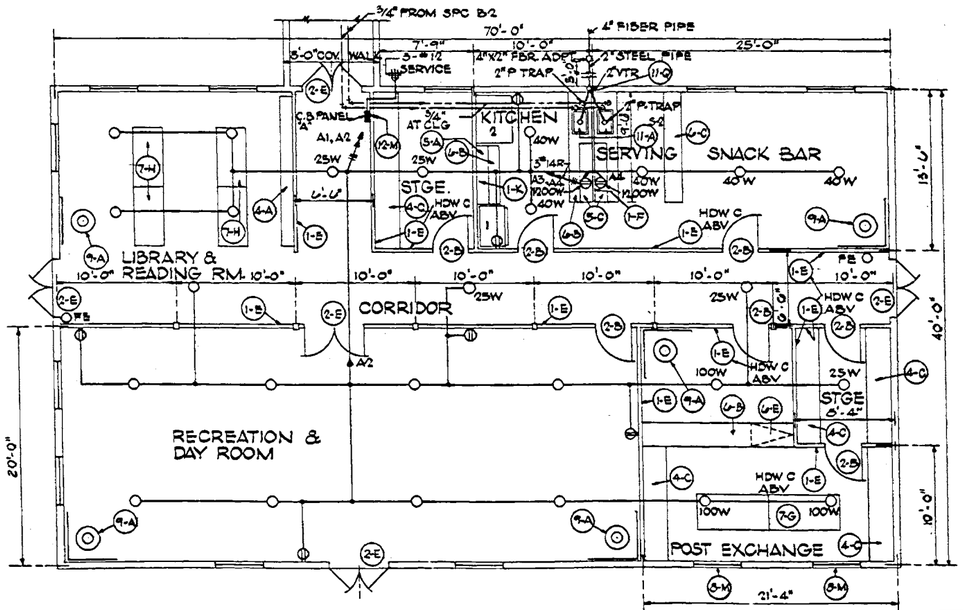


PLAN - REC 2

500, 300, 200 & 100 BEDS

SCALE NO. 24

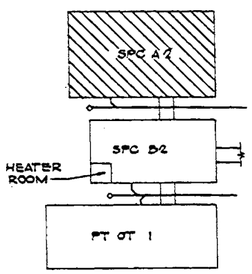
FACIL. NO. 519103 - INTERIOR ONLY
FACIL. NO. 519113 - STEEL FRAME W/INTERIOR
FACIL. NO. 519123 - WOOD FRAME W/INTERIOR



PLAN - SPC A2, 40' X 70'

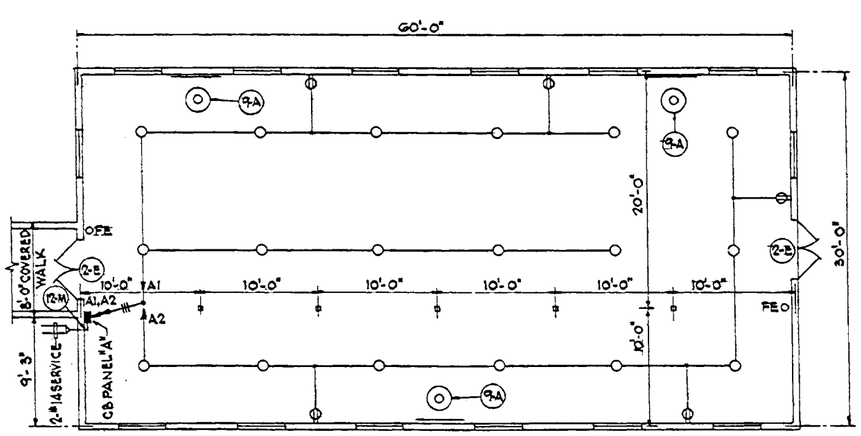
SCALE NO. 24

FACIL. NO. 519101 - INTERIOR ONLY
FACIL. NO. 519111 - STEEL FRAME W/INTERIOR
FACIL. NO. 519121 - WOOD FRAME W/INTERIOR



KEY PLAN

NO SCALE



PLAN - REC 1

1000, 750, 500 & 300 BEDS

SCALE NO. 24

FACIL. NO. 519104 - INTERIOR ONLY
FACIL. NO. 519114 - STEEL FRAME W/INTERIOR
FACIL. NO. 519124 - WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	SPC A1 40'x 90'	SPC A2 40'x70'	REC 1 30'x 60'	REC 2 30'x 40'
LIGHTING	2.04 KW	1.37 KW	1.08 KW	.72 KW
RECP EST	1.28 KW	.98 KW	.50 KW	.30 KW
POWER	0.35 KW	.35 KW	—	—
TOTAL	3.67 KW	2.70 KW	1.58 KW	1.02 KW

1. UNLESS OTHERWISE NOTED ON PLAN, ALL LAMPS TO BE 60 W.
2. ALL 40, 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIAL - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-91	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-91	WOOD FRAME BARRACKS TYPE BLDG PANEL SCHED	1 OF 2
34-03	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 5' 10'

NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

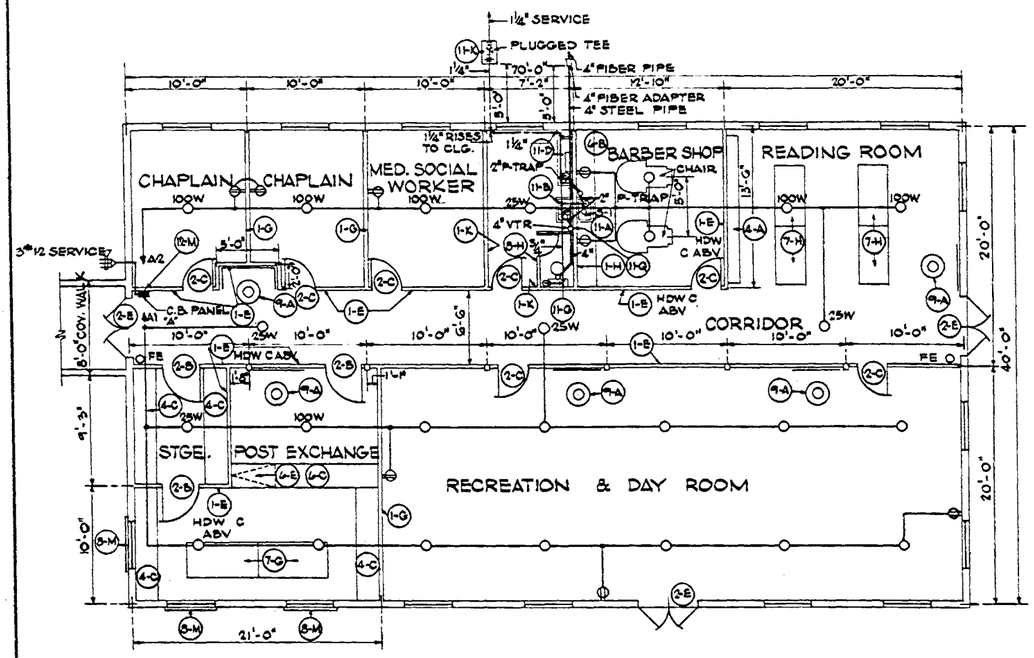
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: HORNE
TRACED BY:
CHECKED BY: SHANNON
SUBMITTED BY: C. W. DEICHMANN
APPROVED: Chief, Structures Branch
APPROVED: H. W. Williams, Chief, Engineering Division, Mil. Constr., O.C.E.
DATE: 13 MAR 1969
APPROVED FOR PROPONENT AGENCY:

THEATER OF OPERATIONS
SPECIAL SERVICES BUILDINGS
SPC A1-40'X90' & SPC A2-40'X70'
RECREATION BUILDINGS
REC 1-30'X60' & REC 2-30'X40'

UNDER REVISION

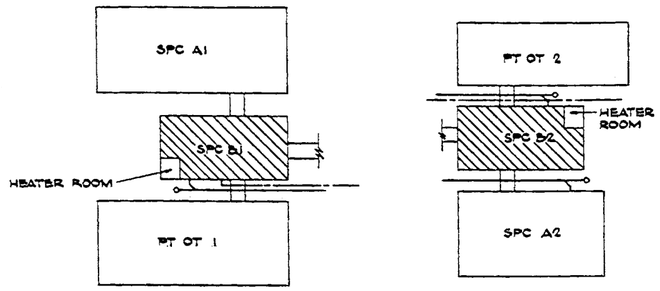
SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-91
DATE
SHEET 1 OF 1



PLAN - SPC A3, 40' X 70'

SCALE NO. 24

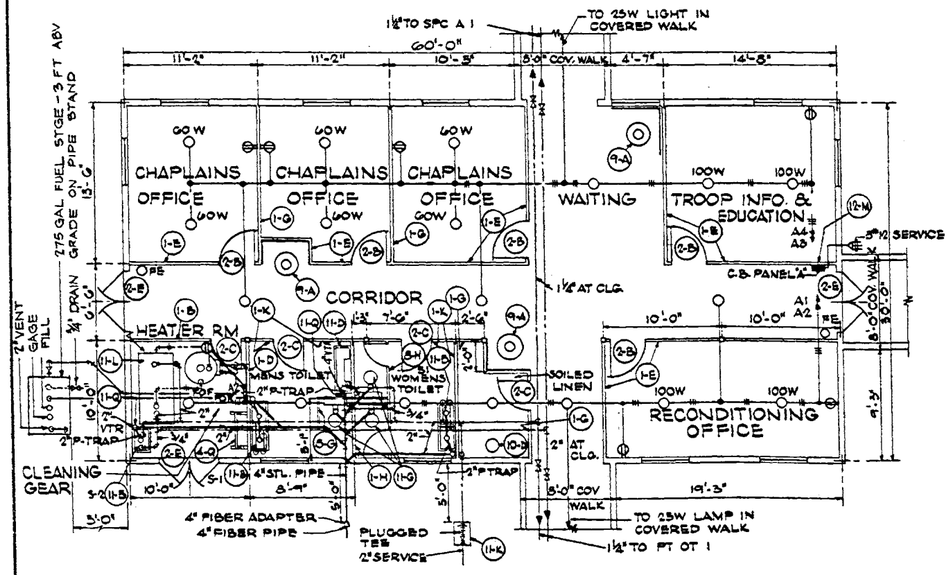
FACIL. NO. 519301-INTERIOR ONLY
FACIL. NO. 519311-STEEL FRAME W/INTERIOR
FACIL. NO. 519321-WOOD FRAME W/INTERIOR



SPC B1 SPC B2

KEY PLANS

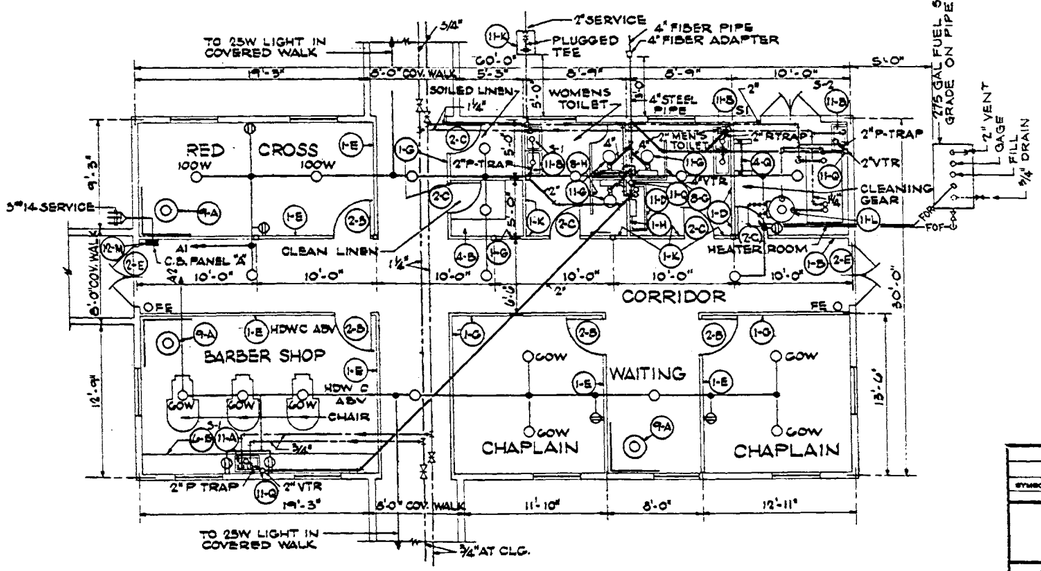
NO. SCALE



PLAN - SPC B1, 30' X 60'

SCALE NO. 24

FACIL. NO. 519302-INTERIOR ONLY
FACIL. NO. 519312-STEEL FRAME W/INTERIOR
FACIL. NO. 519322-WOOD FRAME W/INTERIOR



PLAN - SPC B2, 30' X 60'

SCALE NO. 24

FACIL. NO. 519303-INTERIOR ONLY
FACIL. NO. 519313-STEEL FRAME W/INTERIOR
FACIL. NO. 519323-WOOD FRAME W/INTERIOR

ELECTRICAL NOTES

CONNECTED LOAD

BUILDING	SPC A3 40'X70'	SPC B1 30'X60'	SPC B2 30'X60'
LIGHTING	1.37 KW	1.04 KW	.95 KW
RECEP. EST.	.80 KW	.00 KW	.00 KW
POWER	—	.42 KW	.42 KW
TOTAL	2.37 KW	2.06 KW	1.97 KW

1. UNLESS OTHERWISE NOTED ON PLANS: SPC A3 - ALL LAMPS TO BE 60 W. SPC B1 & SPC B2 - ALL LAMPS TO BE 25 W.
2. ALL 60 & 100 W LAMPS TO HAVE 8" CONICAL SHADES.

GENERAL NOTES

1. REFER TO TM5-303 FOR BUILDING SHELL REQUIREMENTS
2. FOR FSN BILL OF MATERIALS - REFER TO TM5-303 BY FACILITY NUMBER

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
51-93	PLANS	1 OF 1
99-98	STANDARD DETAILS	
34-05	WOOD FRAME CONST. BARRACKS TYPE BLDGS.	1-7 OF 7
35-21	STEEL FRAME CONST. BARRACKS TYPE BLDGS.	1-4 OF 4

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES 0 5' 10'

NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: SHAFFER
TRACED BY:
CHECKED BY: SHANNON
SUBMITTED BY: C. W. FEICHMANN

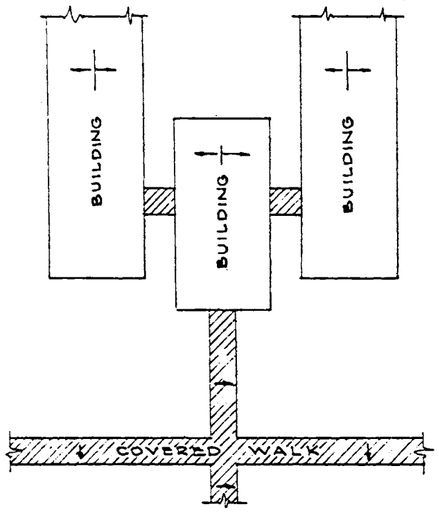
THEATER OF OPERATIONS
SPECIAL SERVICES BUILDINGS
SPC A3-40'X70'
SPC B1-30'X60' & SPC B2-30'X60'

UNDER REVISION

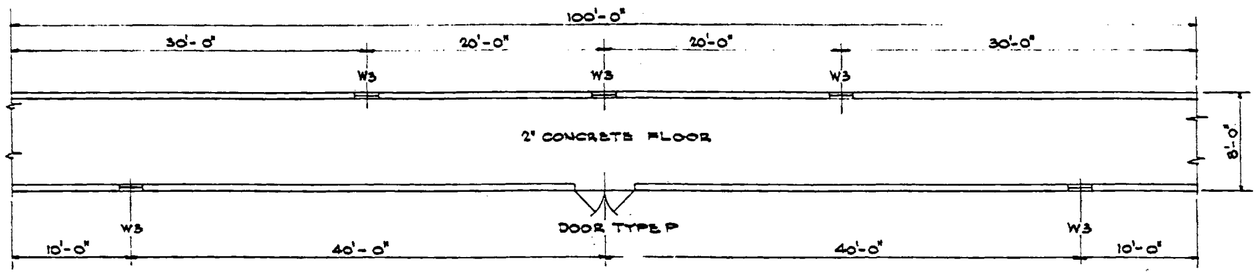
APPROVED: [signature] CHIEF, STRUCTURES BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
DATE: 19 MAR 1963

APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER
SHEET 1 OF 1
51-93

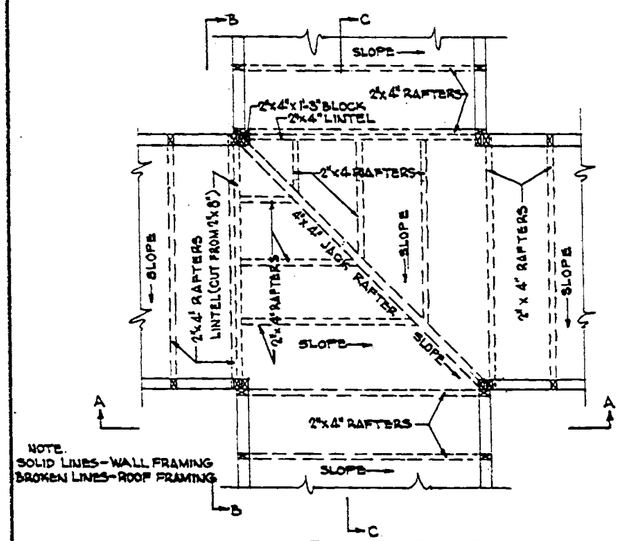


TYPICAL WALK LAYOUT
SCALE NO. 11

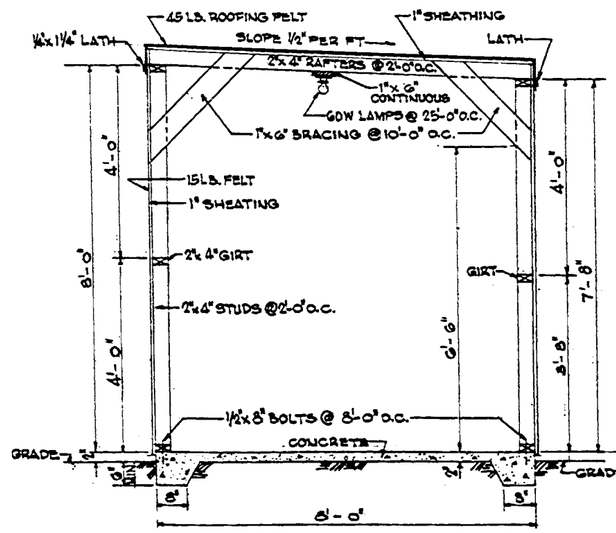


TYPICAL PLAN - COVERED WALKWAY, 8 FT. WIDE X 100 FT. UNIT
SCALE NO. 24

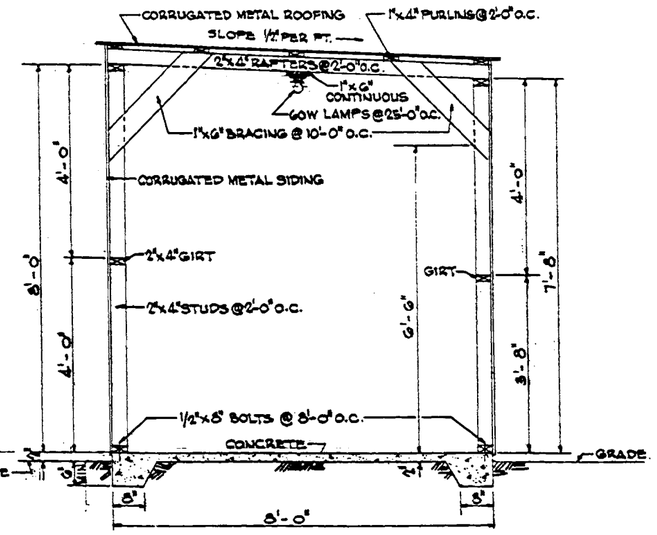
NOTE
WINDOWS W3 SLIDING
DOOR TYPE P
FOR DETAILS REFER
TO DWG. NO. 34-18



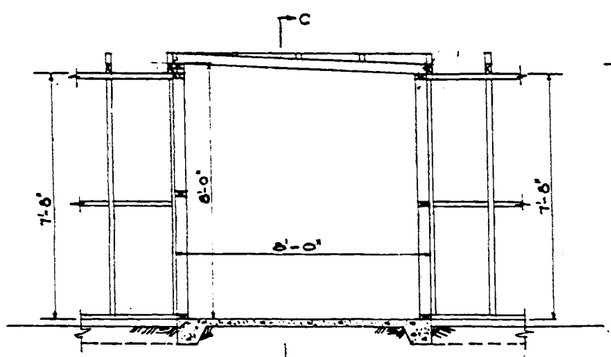
PLAN AT INTERSECTIONS
SCALE NO. 4



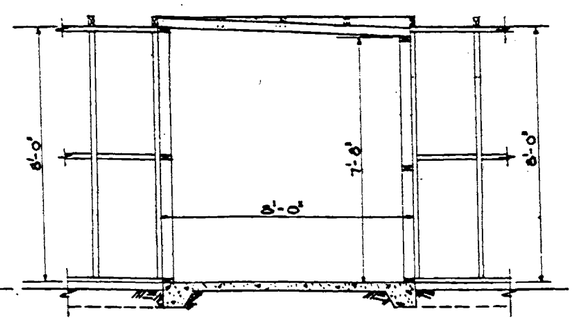
TYPICAL CROSS SECTION
WOOD & FELT ROOFING AND SIDING
FACILITY NO. 519721
SCALE NO. 5



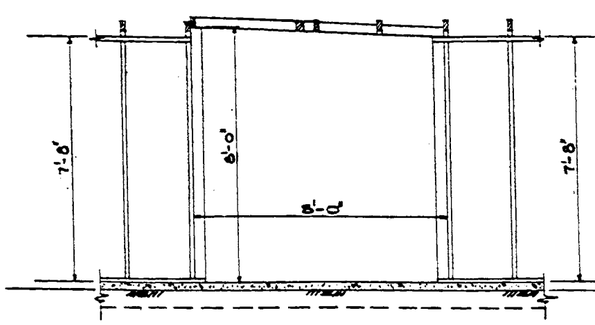
TYPICAL CROSS SECTION
CORRUGATED METAL ROOFING AND SIDING
FACILITY NO. 519711
SCALE NO. 5



SECTION A-A
SCALE NO. 4



SECTION B-B
SCALE NO. 4



SECTION C-C
SCALE NO. 4

SYMBOL	DESCRIPTION REVISIONS	DATE	APPROVAL

GRAPHIC SCALES
0 1' 2' 3' 4' NO. 4
0 5' 10' 20' 30' 40' NO. 11
0 1' 2' 3' NO. 5
0 5' 10' NO. 24

MAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

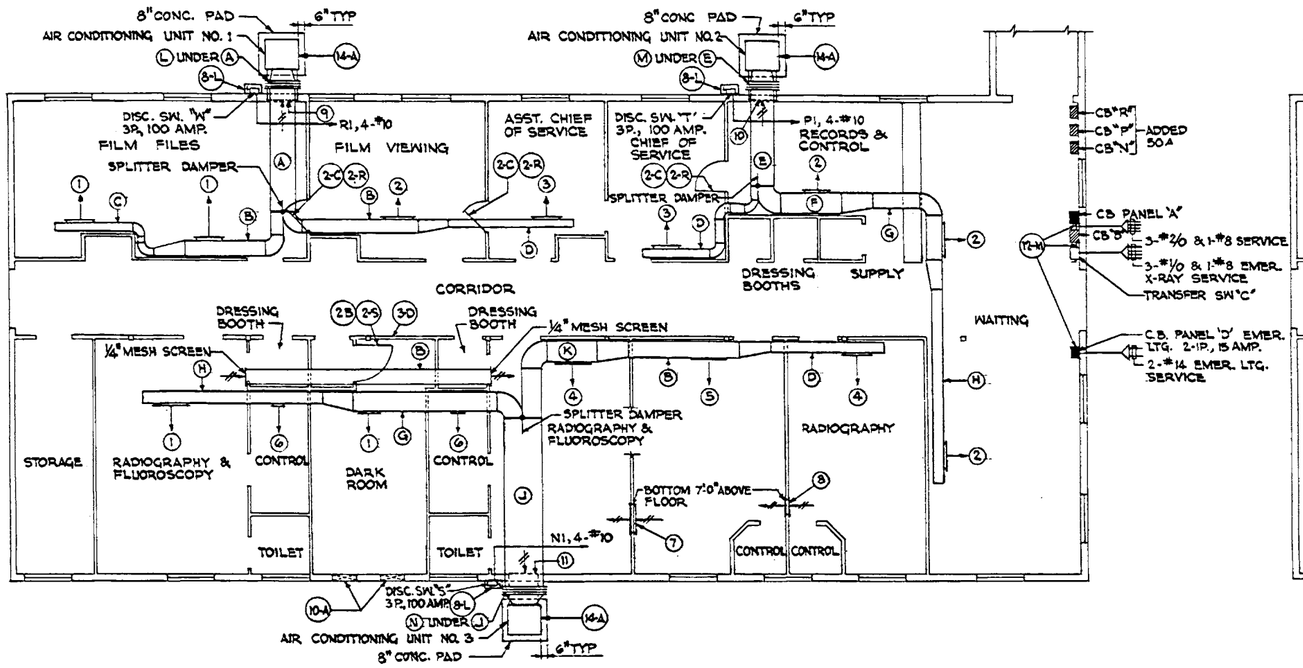
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: DEICHMANN
TRACED BY:
CHECKED BY: JOHNSON
SUBMITTED BY: C. W. DEICHMANN
APPROVED:

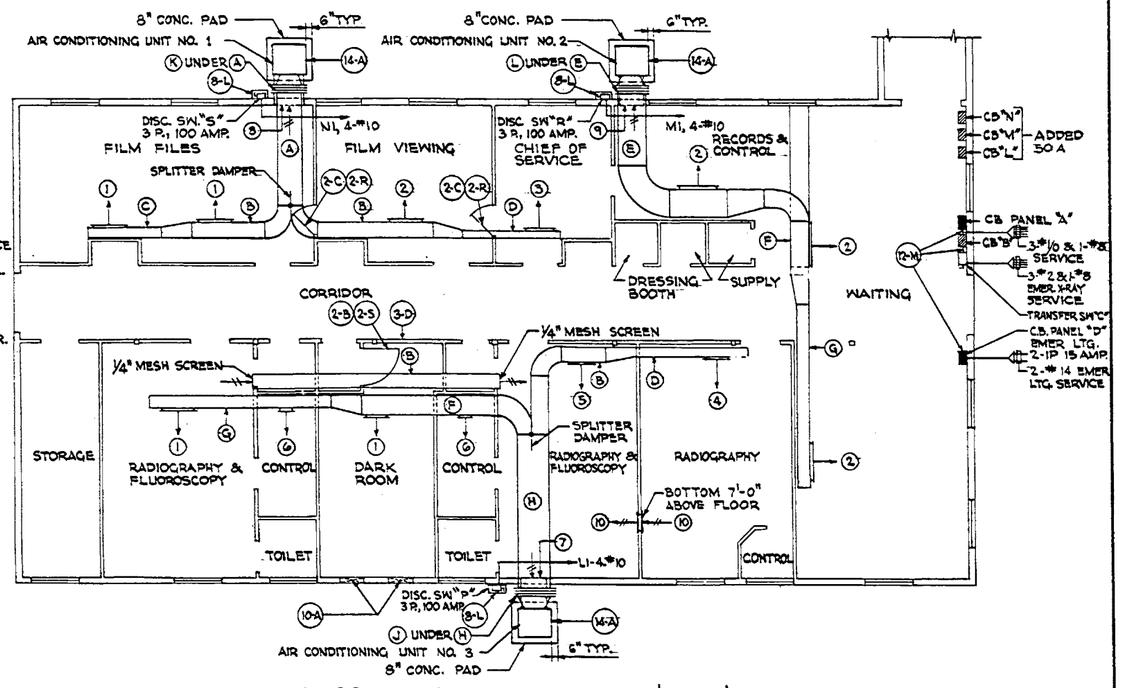
THEATER OF OPERATIONS
WALK COVERED FOR ADMIN. BLDG.
DETAILS
UNDER REVISION

APPROVED: DATE: 17 FEB 1971
CHIEF, STRUCTURES BRANCH | CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY:
DATE

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 51-97
SHEET 1 OF 1



AIR CONDITIONING - XRY 1, 40' X 90'
SCALE NO. 24
FACIL. NO. 520101 - AIR CONDITIONING ONLY



AIR CONDITIONING - XRY 2, 40' X 80'
SCALE NO. 24
FACIL. NO. 520102 - AIR CONDITIONING ONLY

XRY 1 - 40' X 90'

SCHEDULE OF DUCTS & GRILLES

ITEM LTR	DUCT SIZE	ITEM NO.	GRILLE SIZE
A	24"X 8"	1	36"X 6"
B	16"X 8"	2	40"X 6"
C	10"X 8"	3	30"X 6"
D	8"X 8"	4	24"X 6"
E	32"X 8"	5	26"X 6"
F	28"X 8"	6	12"X 4"
G	18"X 8"	7	30"X 8"
H	12"X 8"	8	16"X 8"
J	36"X 8"	9	28"X 12"
K	22"X 8"	10	32"X 12"
L	28"X 12"	11	30"X 12"
M	32"X 12"		
N	30"X 12"		

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	2.21 KW
RECP. EST.	.50 KW
POWER	22.24 KW
X-RAY	40.00 KW
TOTAL	64.95 KW
EMER LTG	.38 KW
EMER X-RAY	40.00 KW

1. TOTAL ELECTRICAL LOAD INCLUDES AIR CONDITIONING.
2. SERVICE & BUS REPLACEMENTS AS NECESSARY.

XRY 2 - 40' X 80'

SCHEDULE OF DUCTS & GRILLES

ITEM LTR	DUCT SIZE	ITEM NO.	GRILLE SIZE
A	24"X 8"	1	36"X 6"
B	16"X 8"	2	40"X 6"
C	10"X 8"	3	30"X 6"
D	8"X 8"	4	26"X 6"
E	28"X 8"	5	24"X 12"
F	18"X 8"	6	12"X 4"
G	12"X 8"	7	24"X 12"
H	30"X 8"	8	28"X 12"
J	24"X 12"	9	26"X 12"
K	28"X 12"	10	16"X 8"
L	26"X 12"		

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	1.86 KW
RECP. EST.	.40 KW
POWER	22.24 KW
X-RAY	30.00 KW
TOTAL	54.50 KW
EMER LTG	.30 KW
EMER X-RAY	30.00 KW

1. TOTAL ELECTRICAL LOAD INCLUDES AIR CONDITIONING.
2. SERVICE & BUS REPLACEMENTS AS NECESSARY.

GENERAL NOTES

1. INSTALL 1/2" INSULATION BOARD BETWEEN STUDS & WALL COVERING ON ONE SIDE OF ALL INTERIOR PARTITIONS.
2. ALL EXTERIOR WALLS TO HAVE 1/2" INSULATION BOARD COVERED WITH COMPOSITION WALLBOARD & 4'-0" FIBERBOARD HARDPRESSED WAINSCOT.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
52-01	PLANS	1 OF 1
51-31	XRY 1- PLANS	1 OF 1
51-31	XRY 2- PLANS	1 OF 1
99-98	AIR CONDITIONING DETAILS	

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES
0 5' 10'
NO.24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

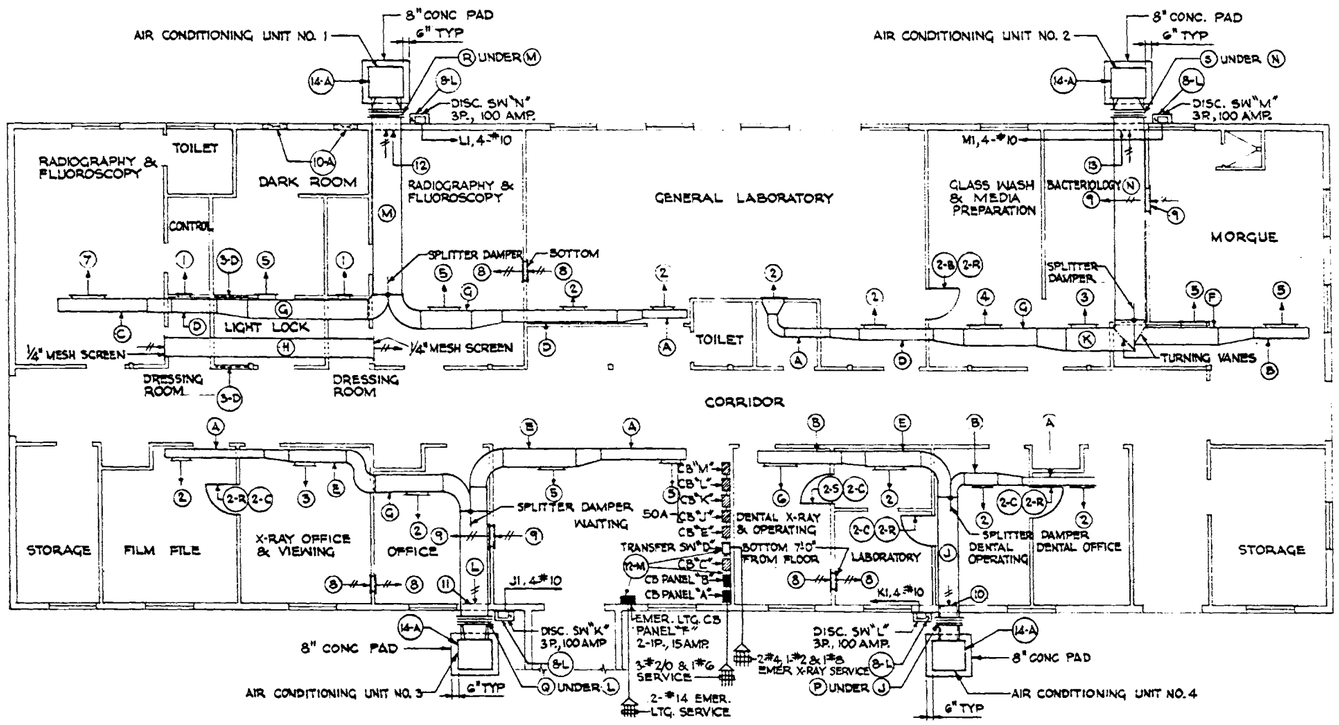
DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C. W. DEICHMANN
APPROVED: for L. D. A. Williams
DATE: 19 MAY 1969
CHIEF, STRUCTURES BRANCH / CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E.
APPROVED FOR PROPONENT AGENCY: Robert Bernstein 0/530
DATE 9 OCT 68

THEATER OF OPERATIONS
AIR CONDITIONING
XRY 1-40'X90' & XRY 2-40'X80'
TEMP. CLIMATE

UNDER REVISION

SCALE: AS NOTED
SPEC. NO.
DRAWING NUMBER: 52-01
SHEET 1 OF 1



AIR CONDITIONING - XRY-LB-DN, 40' X 110'

SCALE NO. 24

FACIL. NO. 820302 - AIR CONDITIONING ONLY

XRY-LB-DN, 40' X 110'

SCHEDULE OF DUCTS & GRILLES

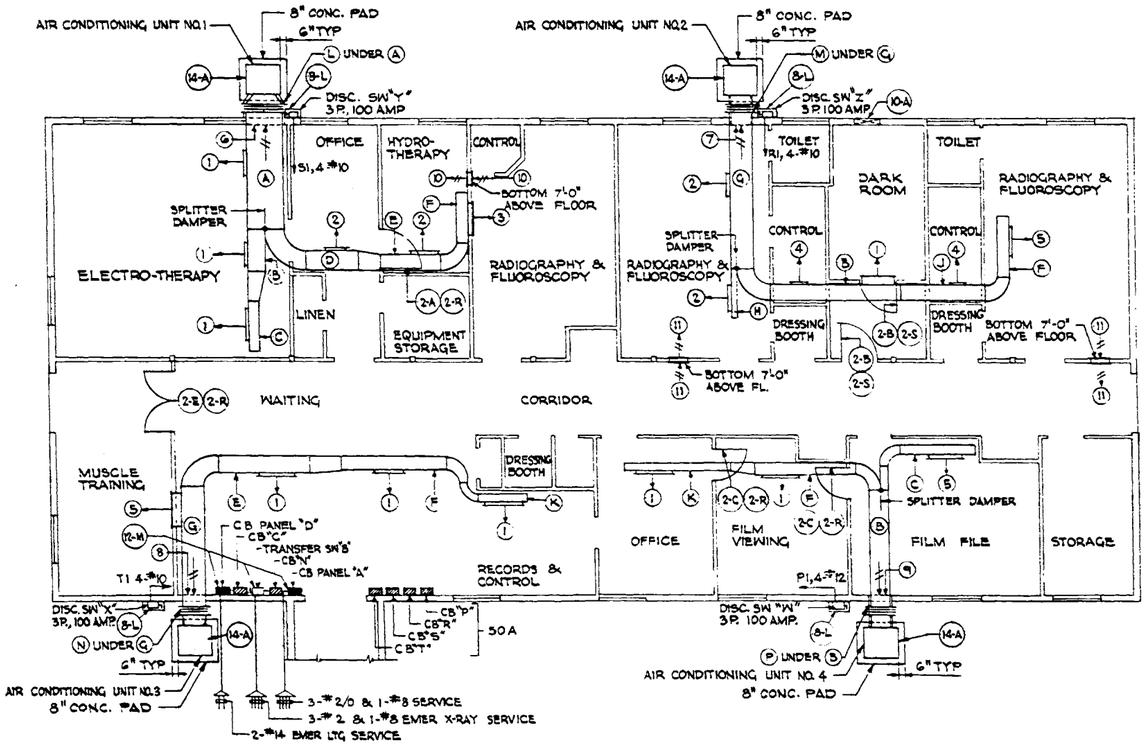
ITEM NO.	DUCT SIZE	ITEM NO.	GRILLE SIZE
A	8"X 8"	1	12" X 6"
B	10"X 8"	2	20" X 4"
C	11"X 8"	3	24" X 4"
D	12" X 8"	4	30"X 4"
E	14"X 8"	5	24"X 6"
F	16"X 8"	6	30"X 6"
G	18"X 8"	7	36"X 6"
H	20"X 8"	8	16"X 8"
J	22"X 8"	9	22"X 8"
K	24"X 8"	10	20"X 12"
L	28"X 8"	11	28"X 12"
M	32"X 8"	12	32" X 12"
N	36"X 8"	13	36"X 12"
P	20"X 12"		
Q	28"X 12"		
R	22"X 12"		
S	36"X 12"		

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	2.87 KW
RECP. EST.	2.50 KW
POWER	30.50 KW
X-RAY	20.00 KW
TOTAL	55.87 KW
EMER. LTG.	.38 KW
EMER X-RAY	20.00 KW

1. TOTAL ELECTRICAL LOAD INCLUDES AIR CONDITIONING.
2. SERVICE & BUS REPLACEMENTS AS NECESSARY.



AIR CONDITIONING XRY-PT 40'X90'

SCALE NO. 24

FACIL. NO. 820301 - AIR CONDITIONING ONLY

XRY-PT, 40'X90'

SCHEDULE OF DUCTS & GRILLES

ITEM LTR	DUCT SIZE	ITEM NO	GRILLE SIZE
A	38" X 8"	1	30"X 4"
B	18" X 8"	2	24"X 4"
C	10" X 8"	3	30"X 6"
D	20" X 8"	4	12"X 4"
E	16" X 8"	5	36"X 6"
F	12" X 8"	6	42"X 12"
G	24" X 8"	7	22"X 12"
H	6" X 8"	8	24"X 12"
J	14" X 8"	9	20"X 12"
K	8"X 8"	10	12"X 12"
L	42"X 12"	11	18"X 8"
M	22"X 12"		
N	24"X 12"		
P	20"X 12"		

ELECTRICAL NOTES

CONNECTED LOAD

LIGHTING	2.12 KW
RECP. EST.	1.60 KW
POWER	29.65 KW
X-RAY	30.00 KW
TOTAL	63.37 KW
EMER LTG	.30 KW
EMER X-RAY	30.00 KW

1. TOTAL ELECTRICAL LOAD INCLUDES AIR CONDITIONING.
2. SERVICE & BUS REPLACEMENTS AS NECESSARY.

GENERAL NOTES

1. INSTALL ½" INSULATION BOARD BETWEEN STUDS & WALL COVERING ON ONE SIDE OF ALL INTERIOR PARTITIONS.
2. ALL EXTERIOR WALLS TO HAVE ½" INSULATION BOARD COVERED WITH COMPOSITION WALLBOARD & 4'-0" FIBERBOARD HARDPRESSED WAINSCOT.

SCHEDULE OF DRAWINGS

DWG. NO.	DESCRIPTION	SHEET NO.
52-03	PLANS	1 OF 1
51-32	XRY-PT-PLANS	1 OF 1
51-33	XRY-LB-DN PLAN	1 OF 1
99-98	AIR CONDITIONING DETAILS	

SYMBOL	DESCRIPTION	DATE	APPROVAL
	REVISIONS		

GRAPHIC SCALES

0 5' 10'

NO. 24

HAYES, SEAY, MATTERN & MATTERN
ARCHITECTS - ENGINEERS
ROANOKE, VIRGINIA WASHINGTON, D. C.

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
MILITARY CONSTRUCTION - ENGINEERING DIVISION
WASHINGTON, D. C.

DRAWN BY: EDWARDS
TRACED BY:
CHECKED BY: WADE
SUBMITTED BY: C.W. DEICHMANN
APPROVED: [signature] CHIEF, ENGINEERING BRANCH
APPROVED: [signature] CHIEF, ENGINEERING DIVISION, MIL. CONSTR., O.C.E. DATE: 10 MAR 1969

THEATER OF OPERATIONS
AIR CONDITIONING
X-RAY-LAB-DENTAL - XRY-LB-DN
X-RAY-PHYSICAL THERAPY XRY-PT
TEMP. CLIMATE

UNDER REVISION

APPROVED FOR PROPONENT AGENCY: Robert Bernstein 4/9/69
DATE 9 OCT. 68

SCALE: AS NOTED SPEC. NO.
DRAWING NUMBER: 52-03
SHEET 1 OF 1

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:
VERNE L. BOWERS
Major General, United States Army
The Adjutant General

Distribution:
Active Army, ARNG and USAR: To be distributed in accordance with DA Form 12–9A (qty rqr block no 350), requirements for Construction—B.

TM 5-302-1

THIS IS THE END

OF VOLUME

1 OF 2

CHAPTER 7 DRAWINGS 52-05
THRU 99-98 AND APPENDIX
"A" AND APPENDIX "B" ARE IN
VOLUME 2 OF 2 (TM 5-302-2)

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974 O 508-374