REALITY ™

INSTALLATION PLANNING GUIDE

AUGUST, 1975
Revision 1
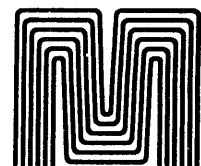
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Introduction

The objective of this guide is to aid in the planning and preparation of an installation site for a Microdata REALITY computer system. It contains information needed by you, the user, prior to delivery of the REALITY equipment.

The REALITY system is designed for ease and simplicity of installation. It requires a minimum of space for operation and servicing. It can operate properly in just about any environment comfortable for human occupancy. All elements of the central system are interconnected by a few easily handled cables. And only a single power outlet is required for most standard system configurations. In other words, everything practical has been done to make pre-installation planning as simple and straight-forward as possible.

However, installation planning by *you* is extremely important. It is not a complex engineering task beyond your expertise; nor is it a cursory procedure to be treated lightly. You may require some advice from experts, but for the most part it is common-sense attention to the requirements of the individual pieces of equipment, the requirements of the system as a whole, and the relationship of the system to your particular facilities and operations.

Proper planning and site preparation before your equipment arrives will ensure the speediest installation, maximum long-term operational effectiveness, and smooth, economical expansion should your system requirements grow. A well planned and prepared installation site will obviate costly post-delivery system modifications or facility changes, and will avoid extended periods of system inoperation in extreme cases.

Topics covered in this guide include

- Installation site selection

- Environmental requirements

- Electrical power requirements

- Telephone line arrangements (if any)

- Layout of system area

- Site preparation

Also included are detailed descriptions of the REALITY equipment as related to the installation phase, plus useful tools to make site planning as easy as possible. A site layout grid and equipment cutouts (drawn to scale) are provided to allow you to determine the suitability of your floorplan, and to position the equipment for most efficient operation and servicing. A pre-installation checklist is also provided at the back of this guide..

Microdata personnel will assist its customers during actual equipment installation and can also provide assistance during installation planning.

Site Selection

REALITY installation sites may vary from compact rooms or corners of other work areas to spacious, beautifully decorated, air-conditioned computer centers which double as "showcases" for benefit of customers and employees. They may be open and readily accessible, or have restricted access for security reasons. The complete system may be centralized in a single room, or data terminals may reach out to extend the system throughout the building, across town or across the country.

Whatever the scope of your system, the major area of concern during the site planning stage is the central computer site which must house the REALITY computer, disc/tape storage units, data printer, and one or more REALITY data terminals.

Topics covered in this section are:

- Site size

- Location

- Environment

- Security

- Data terminal location

Size

The size of the central computer site depends on four primary criteria:

System Size — The room or area must be large enough to accommodate the REALITY equipment with certain minimum clearances for operation and maintenance.

Personnel — Additional floor space may be required for personnel activities in the immediate area. For example, operators, programmers or clerks may require desks, tables or filing cabinets adjacent to the computer system.

Storage — Shelves, filing cabinets or closets should be provided for auxiliary storage (i.e., operation and technical manuals, printer paper, forms, spare disc cartridges, etc.).

Expansion — To protect the long-range economy of your system, provisions should be made to accommodate forseeable future expansion at the central computer site. Additional electrical power and floor space may be required for equipment added or upgraded at a later time. Providing for future expansion during initial system installation can help avoid costly modifications and disruption of operations later.

Location

The physical location of the central REALITY computer site will most likely be determined by two main factors: proximity of the site to using departments, and availability of suitable space at your facility.

The first of these factors often is of secondary importance since the REALITY data terminals (through which most communication with the system takes place) can be conveniently and economically located just about anywhere they are needed. Generally, it is advisable to situate the offices of programmers, operators and other personnel who require direct physical access to the central system in close proximity to the central site. It is also highly desirable to locate the central site where all of the peripheral data terminals can be connected directly to the computer without using telephone lines and modems. Maximum cable length for direct connection is 1000 feet, so the use of telephone lines within a building is seldom necessary except in extremely large facilities.

Normally, it is possible to select the central computer site from presently available space with a minimum of facility modification required. Certain costs should be expected to prepare the site for installation of the REALITY system; for example, electrical wiring modifications may be necessary, an air conditioner may be needed, or you may want to set up room partitions to separate the computer from adjacent work areas. The nature and extent of these preparations will depend on the present condition of your site, your specific REALITY system configuration, and your desires and requirements for decoration, security, etc..

Environment

All equipment in the REALITY system is designed to operate in just about any environment which provides comfortable human habitation. Thus most areas in modern air-conditioned office buildings are perfectly suited for use as a computer site. Nevertheless, it is advisable for you to evaluate the temperature, humidity and dust controls in any prospective site. This can help you avoid, if possible, additional costs for upgrading environmental deficiencies which may exist in some localized area of your facility. In any case, such an evaluation will make you aware of any such cost trade-offs which may have a bearing on your final site selection decision.

Security

Internal design and programming of the REALITY system are designed to maximize security of data stored within the system. Although REALITY data terminals may be located anywhere, accessible to all, data is safeguarded by special user passwords required to obtain information considered to be confidential.

Data access and/or update may be controlled thru the use of the retrieval/update lockout security codes in the file management software. These codes may be applied to entire files or to selected portions of the data records.

To further protect confidential or sensitive information, it may be desirable to restrict physical access to the central system (since it is conceivable for an unauthorized person *possessing the knowledge to operate the CPU controls* to obtain any information in the system or tamper with the data files). Maximum security can be achieved by locating the central system behind locked doors. Also, back-up programs and data files should be stored in a separate location under lock and key. The CPU front panel operations can be inhibited by removing the panel Lock Key.

Data Terminal Location

The REALITY data terminals which provide the users' communication link with the computer system can be located just about anywhere within your facility or elsewhere. The terminals are compact, and may be mounted on any desk- or table-top in about the same space as an electric typewriter. Environmental requirements are the same as for the other REALITY equipment, making the terminals suitable for use in labs, manufacturing areas, etc., as well as in air conditioned offices.

Environmental Control

Environmental factors of temperature, humidity and airborne dust in prospective installation sites should be evaluated during the planning stage and controlled, if necessary, before your REALITY system arrives.

Topics covered in this section are:

- Temperature

- Humidity

- Dust

- Static electricity

- Smoking

Temperature

Temperature control is probably the most important environmental factor because the REALITY equipment is cooled by the surrounding room air. The temperature in office buildings and most other likely installation sites is nearly always controlled to within the allowable limits for the REALITY equipment. Nevertheless, a number of factors should be considered in order to determine the adequacy of existing temperature controls.

Heat Dissipated by the REALITY Equipment — All electrical equipment generates heat. In the REALITY system, this heat is discharged into the room and will tend to raise the ambient temperature unless the air conditioning system can handle it. (BTU ratings for all REALITY equipment are provided on the spec sheets in the back of this guide.)

Heat Dissipated by Other Equipment — Heat will also be contributed by other equipment in the room (e.g., electric typewriters, lights and auxiliary data processing equipment). Figure approximately 3.4 BTU per watt of electrical power consumed by the equipment.

Body Heat — Individuals occupying the room will contribute approximately 400 BTU per person. This can be an important consideration if substantially more people will occupy the area after the computer is installed than before.

Direct Sunlight — A window or glass wall area provides virtually no insulation against radiant energy from direct sunlight. Drapes, shades, venetian blinds or the like should be employed to protect the REALITY equipment from direct sunlight, since this can raise the equipment temperature excessively without necessarily exceeding the allowable ambient air temperature. If a large glass area cannot be shaded, one of the commercially available glass tinting films that block heat-producing infared rays is recommended.

If there is any question concerning the adequacy of your present temperature control system, a reputable air-conditioning specialist should be consulted. He can use the above information to determine the suitability of your present system, and can recommend any corrective measures that may be necessary.

Allowable operating temperature range is:

+50°F to +90°F (10°C to 32°C)

Recommended temperature range is:

+68°F to +72°F (20°C to 22°C)

NOTE

Air conditioners generate a large amount of electrical noise on the AC power lines. This noise can interfere with the operation of your REALITY system unless proper steps are taken to isolate this noise from the power lines serving the computer equipment. If an airconditioning unit is added, be sure to advise the air-conditioning specialist of the unacceptability of line noise. The necessary isolation steps are outlined in the Electrical Power section of this guide.

Humidity

High and low extremes of humidity can make paper documents, cards, etc. hard to handle, and can impair proper operation of REALITY equipment, particularly the disc and tape storage units. If your REALITY configuration employs paper-oriented data media (such as paper tape or punched cards) the humidity effects on such documents should be considered.

Low humidity levels can have the most serious affect on system operation and are more frequently encountered than excessively high humidity. Low humidity promotes static electricity buildup in the electronic equipment; proper equipment grounding minimizes this effect but will not eliminate it completely. The rapidly rotating magnetic disc and moving magnetic tape are particularly susceptible to static buildup which can destroy data stored thereon. Static charges are further increased if the system is installed in a carpeted area. Carpeting is discussed in the Site Layout and Preparation section of this guide, and equipment grounding is covered in the Electrical Requirements section.

High humidity extremes tend to prevent proper flight of the disc magnetic heads and smooth travel of the magnetic tape. Humidity levels in excess of 95% relative are rare in temperature-controlled areas.

Most heating and air-conditioning systems have a drying effect. Most air conditioners are rated for their ability to remove moisture as well as their ability to cool. In extremely humid environments with inadequate humidity controls it may be desirable to install a dehumidifying unit in the computer room. In very dry environments (such as desert areas) a humidifier

may be necessary to add moisture to the air. Once again, the effectiveness of your humidity controls can be best evaluated by a qualified air-conditioning specialist.

Allowable relative humidity range is:	10% to 90% (no condensation)
Recommended relative humidity range is:	40% to 60% (no condensation)

Dust

Airborne dust or dirt particles can cause equipment operation or maintenance problems. If a film of dust or dirt accumulates on internal surfaces, excessive wear of mechanical parts may occur and electronic components may become shorted (particularly with high humidity). Disc and tape storage units are especially vulnerable to damage from excessive dust. The disc heads ride on an air bearing that holds the heads 100 millionths of an inch (100 microinches) from the disc surface. Practically all dust particles exceed 100 microinches in size. Therefore, every possible effort must be made to maintain a dust-free environment. Heating, air conditioning and ventilating systems should be equipped with adequate air filters and these filters should be cleaned or replaced at regular intervals to ensure proper temperature control as well as dust filtering. The computer cabinet and the individual disc drives contain dust filters which should be checked periodically by a knowledgeable computer field engineer. See illustration on page VIII.

Static Electricity

Static electricity is not only an annoyance to personnel but can cause equipment malfunction. Minimizing or eliminating the sources of static are important as well as ensuring that the equipment cabinets are well grounded.

Chairs, seats, or couches having plastic upholstery and rubber wheels should be prohibited in the computer system area. Furniture of this type builds up and stores a static charge, created by the friction of clothing moving over the plastic. The rubber wheels prevent bleed-off through the floor covering. The discharge of this build-up can cause system malfunction when the furniture, or its occupants, contacts the system framework.

Static problems can be minimized by:

- Selecting chairs with anti-static upholstery and metal wheels to avoid static buildup.

- Maintaining room humidity above 40% relative

- If carpeting is used it should be of a type designed to minimize static electricity. This includes carpeting woven with imbedded copper wires and those treated with anti-static agents.

- Chemical sprays to eliminate static should be used on carpeting and furniture that is located near the computer equipment.

- Ensure that the computer is connected to a good earth ground (water pipe, etc.).

Smoking

Smoking of cigarettes, cigars or pipes should be very strongly discouraged within the vicinity of the central system. The discs and magnetic tape transports are particularly susceptible to smoke-film buildup which can cause data transfer problems and equipment damage.

THE CHRONOLOGY OF CONTAMINATION

1 HEAD
100 MICRO IN. AIR BEARING

2 HEAD
100 MICRO IN. AIR BEARING
CONTAMINATION

3 HEAD
100 MICRO IN. AIR BEARING
CONTAMINATION

4 HEAD
100 MICRO IN. AIR BEARING
CONTAMINATION

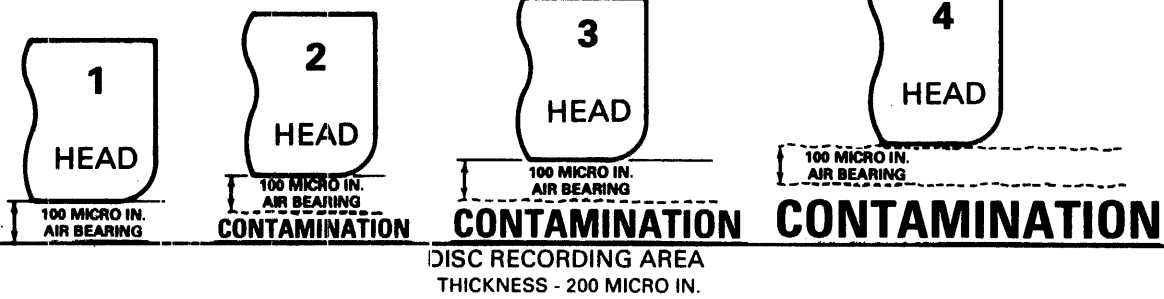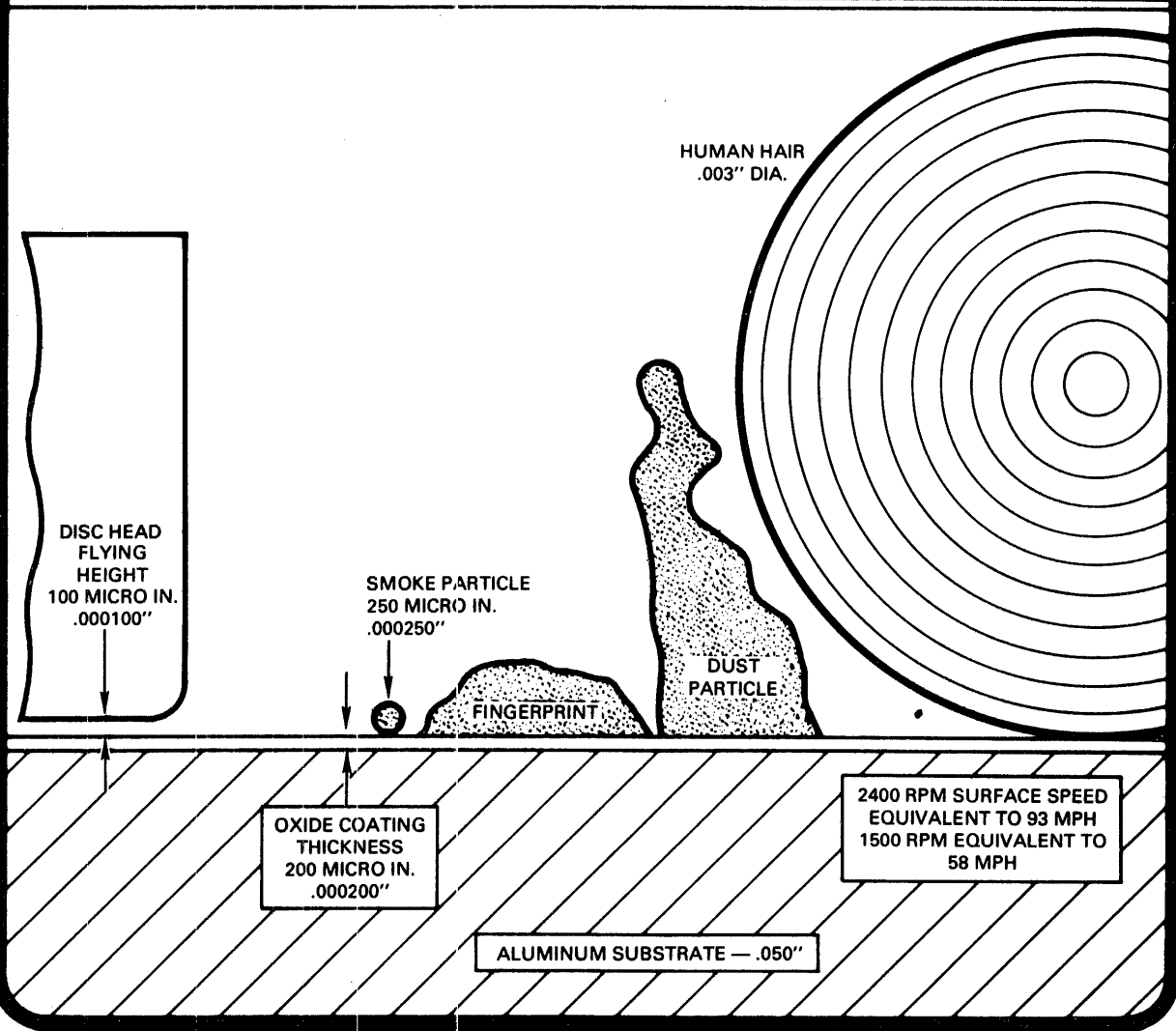## DISC RECORDING AREA
THICKNESS - 200 MICRO IN.

Fig. 1 Optimum Performance. Recording disc is perfectly clean and the gap between read-write head and recorded data is an ideal 100 micro inches.

Fig. 2 Re-try Level. Contamination (dust, dirt, smog, pollen, smoke, etc.) has started to build up on disc surfaces, forcing read-write head away from recording area, causing a problem recovering data. After several retries, data is recovered, and job proceeds.

Fig. 3 Data Check Level. Contamination build-up has forced read-write head so high it cannot recover data. Corrective cleaning action is mandatory at this time.

Fig. 4 Head Crash Level. Contamination builds up unevenly, resulting in erratic head flying pattern and eventual contact between read-write head and disc.

HUMAN HAIR
.003" DIA.

DISC HEAD
FLYING
HEIGHT
100 MICRO IN.
.000100"

SMOKE PARTICLE
250 MICRO IN.
.000250"

DUST PARTICLE

FINGERPRINT

OXIDE COATING
THICKNESS
200 MICRO IN.
.000200"

2400 RPM SURFACE SPEED
EQUIVALENT TO 93 MPH
1500 RPM EQUIVALENT TO
58 MPH

ALUMINUM SUBSTRATE — .050"

Electrical Requirements

Microdata REALITY systems sold for use in the United States operate from standard 115 VAC, 60 Hz power*. In most cases the existing three-wire grounded power outlets in office buildings and other modern facilities can be used. However there are certain requirements which may necessitate modifications to existing power wiring or the installation of new power lines to the computer site.

Topics covered in this section are:

- Power requirements

- Power failure

- Electrical noise

- Circuit breakers

- Extension cords

- Grounding

Power Requirements

All elements of the REALITY central system (CPU, disc/tape storage units, modems and printer) connect together and a single three-wire power cable is provided for the system. REALITY data terminals contain separate three-wire power cables and need not be plugged into the same power line as the central system.

The data terminal power cables contain a standard three-prong plug which is compatible with your existing grounded wall outlets. The central system contains a 30 amp, 120 VAC twist and lock three-prong plug (Hubbell type 2611). This twist and lock plug will require installation of a compatible 30 amp, 120 VAC wall socket (Hubbell type 2610, or equivalent) if such a socket is not already present at the computer site.

AC power at the outlet must be a 30-amp line between 106 and 126 VAC, 59.5 to 60.5 Hz. Further, it must not fluctuate more than ±2 percent from no-load to full-load conditions.

Actual power consumption and type of receptacles required may be determined from the information on the individual data sheets contained in the back of this booklet.

*European power configurations are also available for 220 or 230 VAC, 50 to 60 Hz.

Power supplied from any U.S. utility company should meet the above requirements. If power at the outlet is deficient, it is likely that the wiring between the outlet and the power lines is inadequate; or the problem may be an old or faulty circuit breaker causing an excessive voltage drop. In any case, the power company or a qualified electrician could be consulted to examine the wiring and recommend corrective measures.

Power Failure

In the case of power failure, the system will shut down automatically with no damage to system hardware. When power is restored, the system will automatically restart and resume operation. The disc units may require up to three minutes delay after power restoration before they are operational. The printer and magnetic tape units may require manual attention to reload the tape or reposition the paper.

Electrical Noise

Another factor which may require the attention of an electrician is electrical noise. Electrical equipment such as air conditioners, fans, typewriters, and fluorescent lights can generate noise transients which may be fed back onto the AC power lines. For this reason it is recommended that a separate power line be used for the REALITY system, particularly the central system equipment.

Electrical noise can sometimes be eliminated by repair, replacement, relocation or electrical filtering of the originating device. If not, a suitable noise filter may be installed in the AC line to the REALITY system by a qualified electrician. Microdata can assist in the selection of the noise filter. A noise filter is included as part of the REALITY cabinet to handle normal noise on power lines, but additional filtering may be required for extreme cases at the local site.

Circuit Breakers

The central system equipment should be on a separate power line protected by a circuit breaker rated at 30 amperes or more. A 30-amp breaker will permit continuous system operation, and will tolerate the short-term start-up current surges without tripping.

The REALITY data terminals can be plugged into power lines serving other equipment so long as the line is free of electrical noise.

Extension Cords

Ideally the REALITY equipment should be situated close enough to the power outlet that the 15-foot power cable supplied with the system will suffice without using an extension cord. If an extension cord is required, it must be of the three-wire type. It should be only as long as required and contain sufficient size wire to carry the continuous and surge currents without causing an excessive voltage drop.

Grounding

A good electrical ground is extremely important for reliable equipment operation. In addition to the three-wire grounded outlet, *an additional earth ground is required for the central system.* Microdata recommends a run of No. 4 gauge (or larger) wire from the REALITY system cabinet to a substantial earth ground. A large water pipe or building beam is usually sufficient. Some installations may require direct connection to a grounding stake or other high-quality earth ground. Operational difficulties are likely in the event of either a poor neutral or poor ground circuit. A grounding stud is located on the central system cabinet AC power distribution panel for connection to the customer-supplied earth ground wire.

System Ground Technique
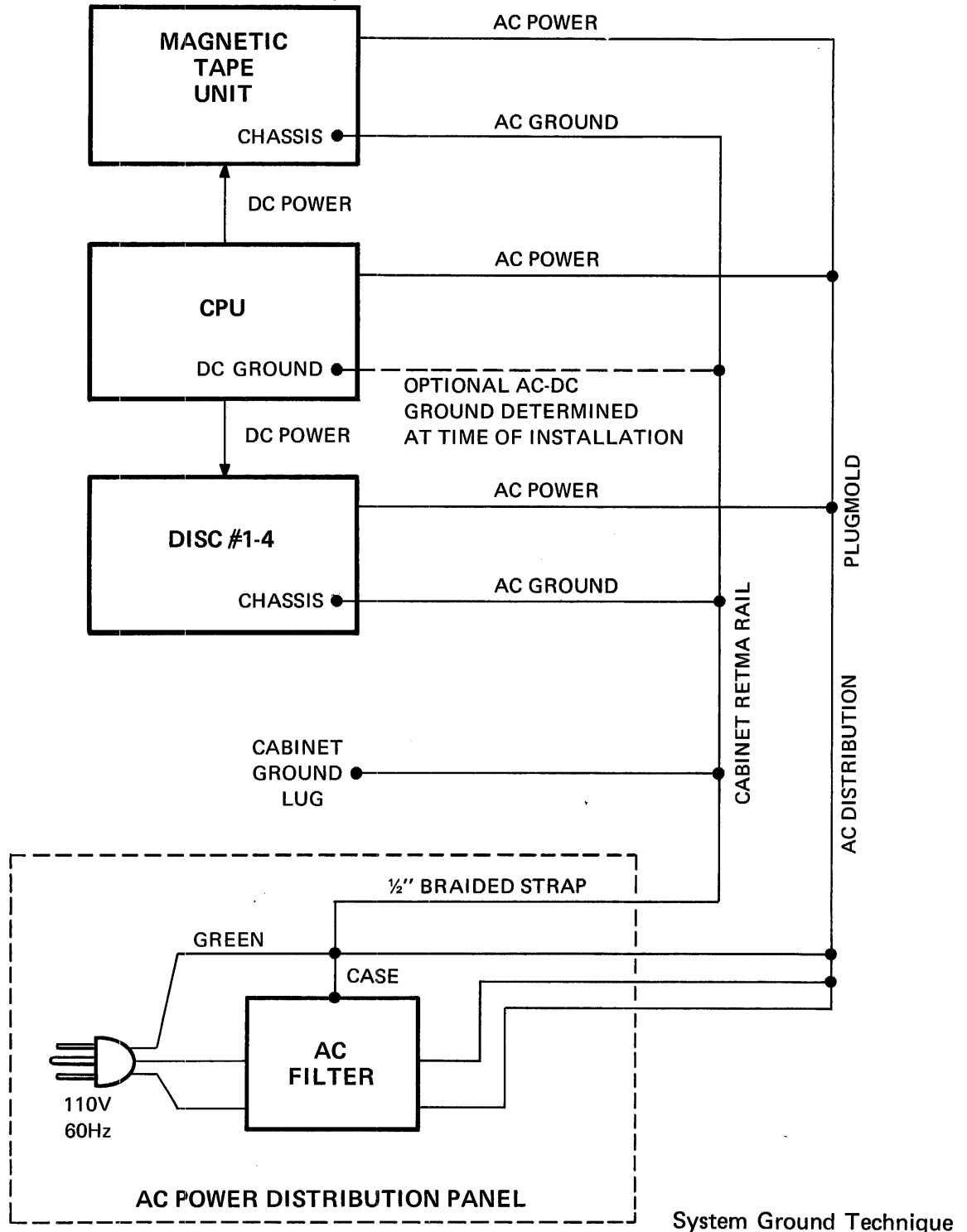
Site Layout and Preparation

After familiarizing yourself with the preceding sections of this guide, you should be aware of the many factors involved in selecting a site for your REALITY system. If you have chosen a location, you are ready to plan the layout of equipment, furniture and personnel work areas and begin site preparation. If you still have more than one site under considera- tion this section should provide the needed additional insight into the suitability and economy of each location to allow you to make the final decision. Topics covered in this section include:

- Layout of equipment and furniture

- Cabling

- Storage

- Telephones, lines and modems

- Carpeting

- Location of environmental control equipment

- Fire prevention

Site Layout

Layout of your REALITY computer site demands careful planning before the equipment and furniture are moved into place and connected for operation. Once the computer equipment is installed and interconnected, repositioning is likely to be more involved than simply moving a desk or typewriter.

Locations of equipment and furniture should be based on the operational requirements of the REALITY system and the efficiency, comfort and convenience of the personnel using the room. Because the individual pieces of equipment are interconnected by cables of limited length, and because of space limitations and the need for maintaining certain clear- ances for access, servicing and work space, you may need to consider several tentative layouts before selecting the one best suited to your needs.

At the back of this section you will find a Site Layout Worksheet and a page of line draw- ings representing the individual REALITY system elements, complete with the minimum clearances and work space requirements. A scale of 1/4 inch = 1 foot is used for both the Worksheet and the equipment drawings.

To plan your layout, photocopy both the Worksheet and the page of equipment drawings. Measure your computer site and draw it to scale on the worksheet. Cut out the photocopied equipment drawings and position them on the worksheet, pasting them in place when a desired layout is found. Desks, filing cabinets and other furniture can be drawn on the Worksheet using the 1/4 inch = 1 foot scale. Repeat the procedure for layout variations and alternate installation sites.

Separate cutout drawings are provided for the REALITY data terminals, character printer and their associated REALITY desks. This is because the terminals and printer may either be installed on the Microdata desks designed specifically for this purpose, or on desks or tables chosen and supplied by the user.

Note that work areas and cabling/airflow/maintenance clearances (as applicable) are identified on the equipment drawings. Work areas shown are considered to be the minimum required for comfortable, efficient operation of the system. Space permitting, these work areas may be larger than indicated, but under no circumstances should they be smaller or overlap one another.

The CPU cabinet is mounted on rollers and can be easily moved (within the limits of unit cabling) to permit access for maintenance. Access to these cabinets is via the front panel and doors on both sides, and in the rear, of the cabinets. At least six inches is required behind the CPU cabinet for air flow and cable exit. The desk-mounted character printer and data terminals are relatively lightweight units which can be positioned on their respective desks for servicing.

Another important consideration during site layout is the location and angular position of the REALITY data terminals with respect to light sources. Office desks and all other REALITY equipment should receive sufficiently high light levels to permit reading, writing, and operation and servicing of the system. Optimum use of the data terminals may require a somewhat lower light level for easy reading of the CRT display. If the CRT screen or the operator faces a high intensity light source or unshaded window the screen will be difficult to read. All terminals should be positioned at right angles to windows and any major light source. Ideally, the area would be somewhat darkened with lighting controls which can be adjusted by the operator.

Cabling

All REALITY system elements are supplied with interface cables which connect them to the CPU. It is the length of the interface cable which limits the distance between each piece of equipment and the CPU. Both types of REALITY printers contain, in addition to the interface cable, a three-wire grounded power cable which plugs into the CPU cabinet. The Equipment Cabinet contains a power cable and interface cables for the magnetic tape and/or disc storage units installed therein. The REALITY data terminals contain an interface cable to the CPU and a power cable which plugs into an outlet separate from the CPU. For purposes of site layout, standard and maximum cable lengths for all REALITY equipment are summarized in the table below. Non-standard cable lengths should be specified at the time of system ordering.

Peripheral Equipment	Interface Cable(s)		Power Cable
	Std.	Max.	Std.
Data Terminal(s)	50'	1000'	8'
Character Printer	20'	20'	8'
Line Printer	20'	20'	10'

Power cables for peripheral equipments can be plugged into any standard 3 prong 110V 60 Hz extension box.

Cables used in the REALITY system are small in size and few in number, obviating the need for raised false floors required in many systems. Plastic cable troughs are one way to increase the safety and neatness of your installation. They are inexpensively purchased from an electrical supply store in six-foot lengths which can be cut to size. The troughs are available in various widths and heights. An alternative method is overhead cable routing, generally employed to eliminate long cable trough runs when the computer is to be installed in the center of a large floor area. The cables are suspended across or above the ceiling, dropping down to the REALITY equipment.

Storage

Storage requirements vary depending on the REALITY system configuration and the individual application. As a minimum, storage space should be provided for the following items:

Spare/off-line disc cartridges

Printer paper forms (bulk)

Printed reports produced by the system

Spare/off-line magnetic tape reels (if used)

Technical and operator manuals

Equipment cleaning supplies

Trash container

Work tables

Technical and operator manuals supplied with the system require a storage area of 12 by 12 by 18 inches. These items should be kept in a locked, fire resistant cabinet or container which is immediately available to operating personnel and service technicians. Combustible materials such as cleaning solvents should be stored in fire resistant containers in accordance with National Fire Protection Association standards. To minimize storage space requirements at the REALITY site, bulk items may be stored in a remote location. The environment of the remote area should be controlled within reasonable limits (less than 150° F and less than 90% relative humidity) to prevent damage to disc cartridges or tape reels.

Telephones, Data Lines, Modems

It is advisable to have all telephones and telephone data lines installed prior to installation of the REALITY equipment. If your system uses phone lines to transmit data to/from remote data terminals, then the modems may be supplied with the REALITY system. Computer-end modems can be mounted in the CPU cabinet or the Auxiliary Equipment Cabinet. Telephone company regulations require a Direct Access Arrangement (DAA) to be installed by the phone company on each telephone line which connects to a modem. REALITY modems are equivalent to Bell type 103, requiring a Model CBS Auto-Answer DAA. Generally, arrangements for DAA installation must be made 6 to 8 weeks in advance; contact your local telephone company business office.

Carpeting

If your computer site is to be carpeted, be sure you select a carpet with good anti-static characteristics. Otherwise, static build-up can produce noise transients in the system interface lines which can cause degradation of system performance. Disc drives and printers are especially susceptible to static noise.

Wool and nylon carpeting have the worst static characteristics of all types, and should be avoided. Carpeting which is not anti-static must be treated with one of the commercially available anti-static fluids. Such fluids are usually sprayed onto the carpet, and require re-application at periodic intervals to maintain a static-free environment. Contact a reputable carpet supplier in your area.

Anti-static carpeting which contains imbedded wires to prevent static buildup is also commercially available.

Environmental Control Equipment

Ideally, air conditioning and other environmental control equipment should be located outside the computer site to minimize the acoustical noise level and to reduce the possibility of electrical interference. However, regardless of the physical location of the equipment, it must not be connected to the power lines serving the REALITY system. If this is absolutely unavoidable then proper line filtering measures must be taken. If an air
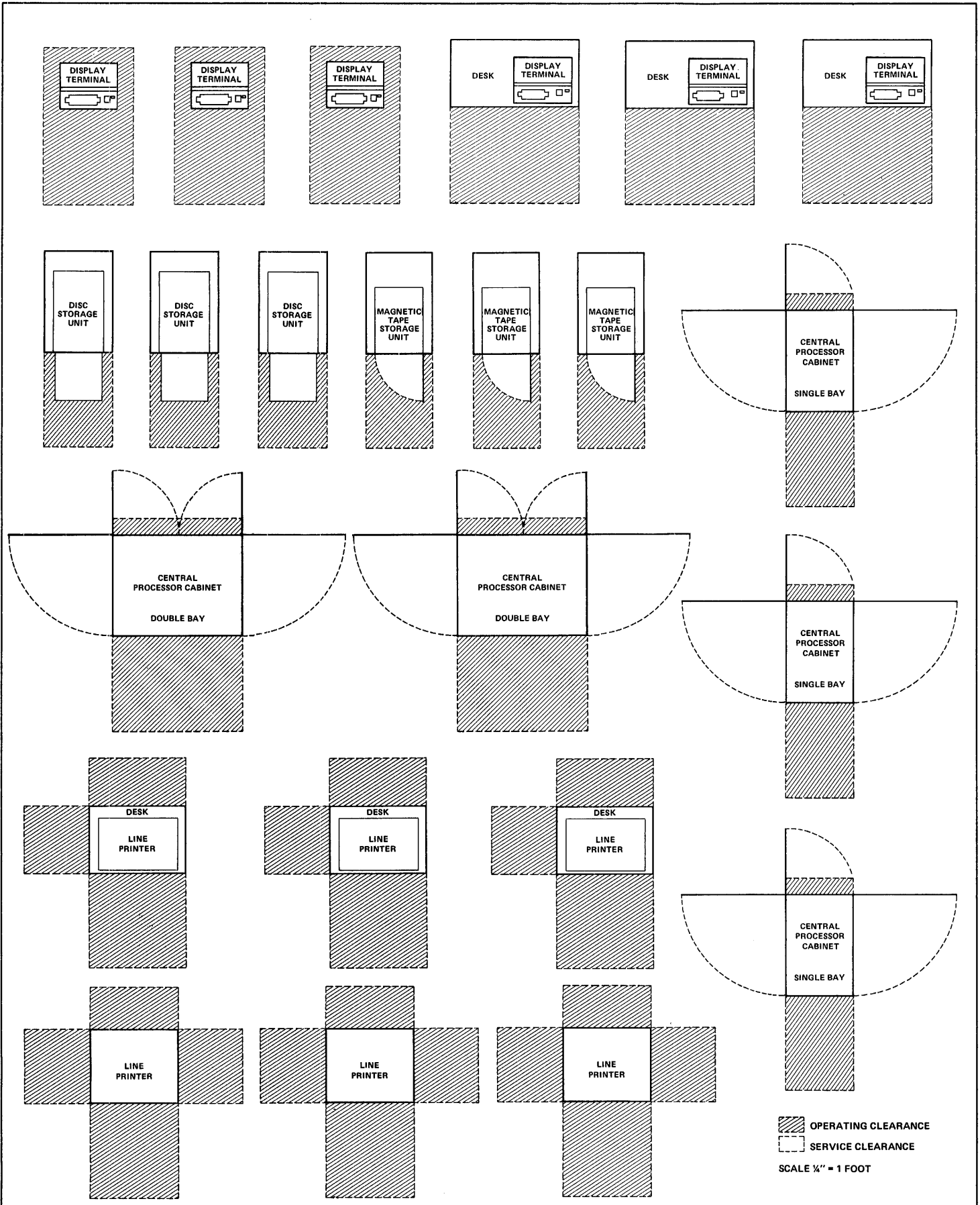
conditioner, humidifier or dehumidifier is to be installed in the computer site, be certain to allow adequate space for proper operation and servicing of the unit (e.g., filter replacement, etc.).
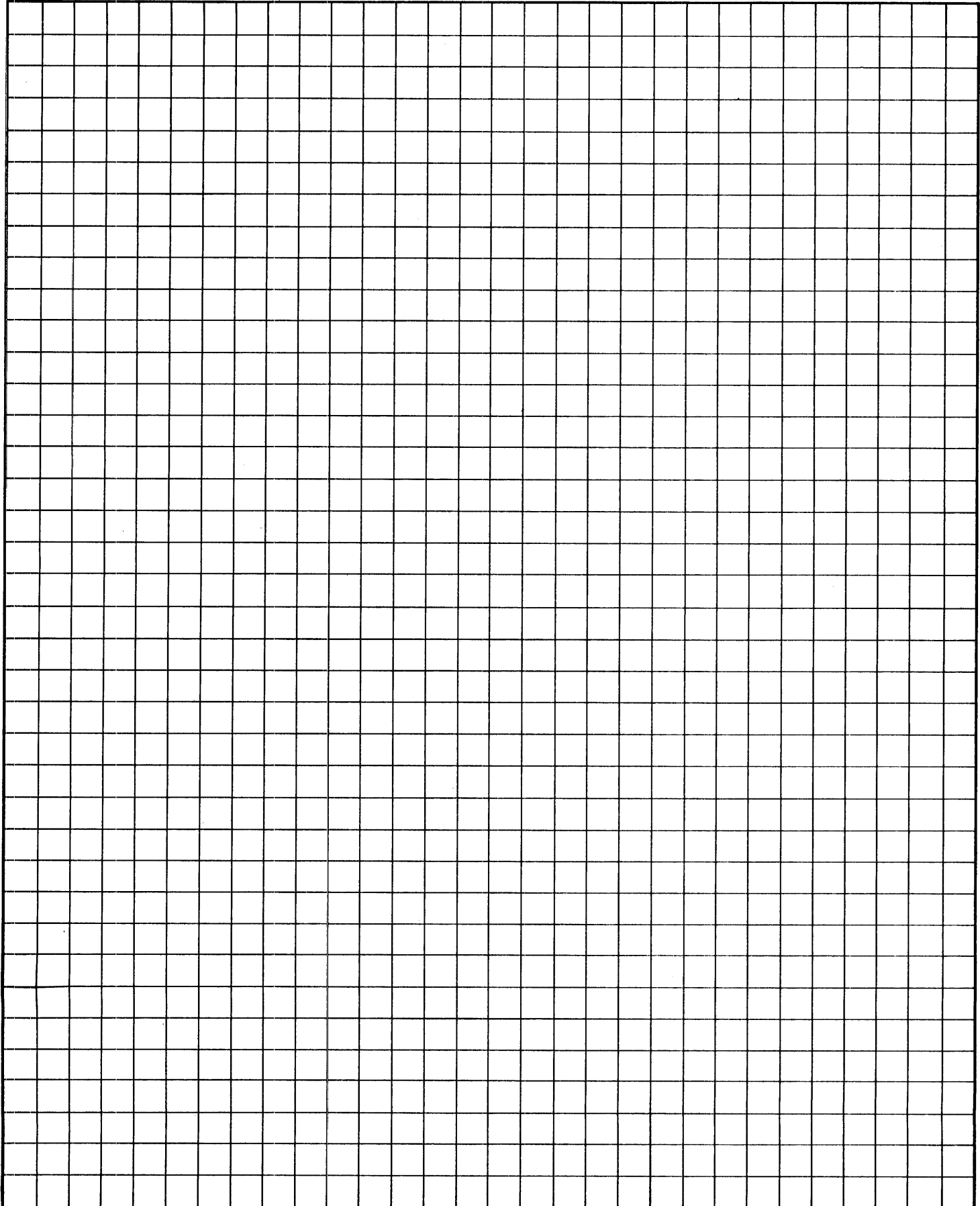
Fire Prevention

Fire prevention measures should be reviewed and implemented before installation of your REALITY system in order to protect your capital investment and the safety of employees, as well as to satisfy the requirements of your insurance carrier and local fire department. Your insurance agent is perhaps the best source of information on this subject. He should be thoroughly familiar with all applicable regulations and can advise you of any insurance premium savings made possible by improved fire prevention measures.

Insurance or local regulations may require an overhead sprinkler system in the REALITY site. If so, any costs involved should be determined as early as possible and considered as a factor in site selection. Whether or not a sprinkler system is installed, most regulations require a number of portable CO_2 fire extinguishers to be located in or adjacent to the computer site. Your local fire department can advise you of the number and recommended type of extinguishers required, and the best locations for their placement.
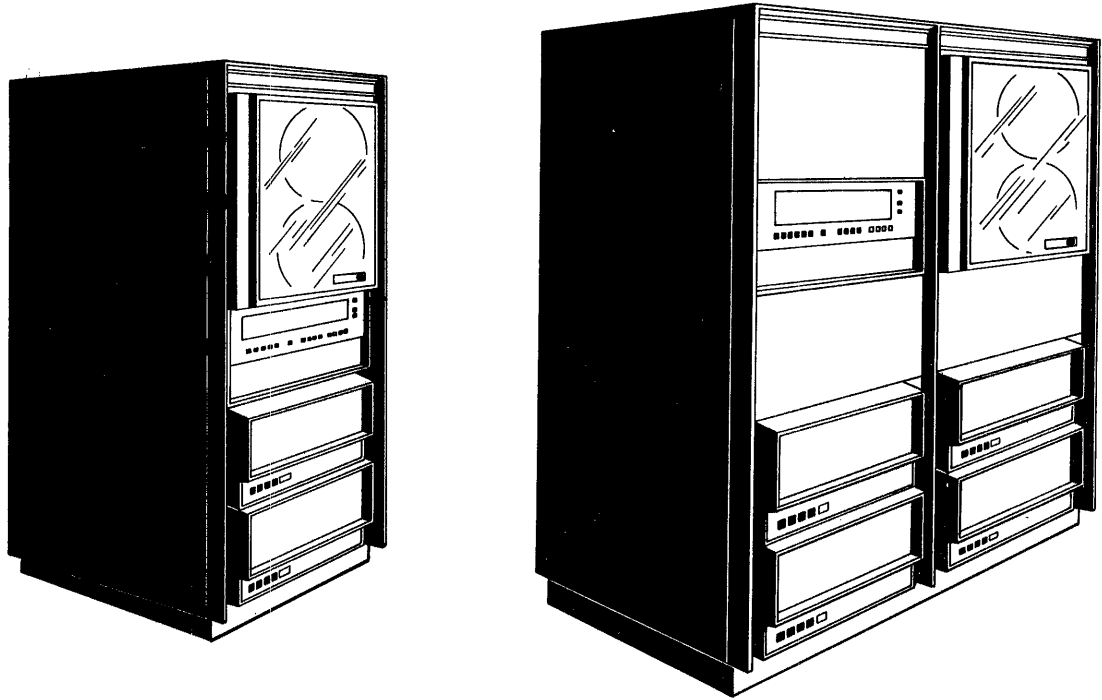
Attention should also be given to protecting paper forms, reports, magnetic tapes and disc cartridges from possible destruction in event of fire. A fire resistant safe or file cabinet may be used for this purpose. And it is always a good practice to keep a duplicate back-up copy of important data and files in a separate fire resistant container.

| DISPLAY TERMINAL | DISPLAY TERMINAL | DISPLAY TERMINAL | DESK | DISPLAY TERMINAL | DESK | DISPLAY TERMINAL | DESK | DISPLAY TERMINAL |

| DISC STORAGE UNIT | DISC STORAGE UNIT | DISC STORAGE UNIT | MAGNETIC TAPE STORAGE UNIT | MAGNETIC TAPE STORAGE UNIT | MAGNETIC TAPE STORAGE UNIT | CENTRAL PROCESSOR CABINET SINGLE BAY |

CENTRAL PROCESSOR CABINET
DOUBLE BAY

CENTRAL PROCESSOR CABINET
DOUBLE BAY

CENTRAL PROCESSOR CABINET
SINGLE BAY

| DESK LINE PRINTER | DESK LINE PRINTER | DESK LINE PRINTER |

CENTRAL PROCESSOR CABINET
SINGLE BAY

| LINE PRINTER | LINE PRINTER | LINE PRINTER |

OPERATING CLEARANCE
SERVICE CLEARANCE
SCALE ¼" = 1 FOOT

REALITY™

Site Layout Worksheet

SCALE ¼" = 1 FOOT

REALITY

Central Processor Cabinet

Single Bay and Double Bay Cabinets

General

The Central Processor Cabinet houses the REALITY CPU, core memory, power supplies, disc and/or tape storage units, and modems. Either the single-bay or double-bay cabinet is supplied, depending on system size.

Dimensions

	Single Bay	Double Bay
Width:	25.5″	48.5″
Depth:	38.5″	38.5″
Height:	63.0″	63.0″

Weight

Single Bay: 255 pounds or less

Double Bay: 510 pounds or less

Heat Dissipation

Single Bay: 7500 BTU/hour or less

Double Bay 15000 BTU/hour or less

Power Requirements

Voltage: 115, 220 or 230 VAC, ± 10%

Frequency: 50 or 60 Hz, ±0.5 Hz

Phases: Single

Current: 30 amps

Wall
Receptacle: 30 amp, 125 VAC, Hubbell Twistlok #2610 or equivalent

Operating Environment

Temperature: +50°to +90°F (10°to 32°C)

Humidity: 10% to 90% Relative (without condensation)

Cable Lengths

Power: 15 Feet

CENTRAL PROCESSOR CABINET SINGLE BAY

38.5"

25.5"

FRONT

21"

6"

38.5"

36"

CENTRAL PROCESSOR CABINET DOUBLE BAY

38.5"

48.5"

FRONT

21"

6"

38.5"

36"
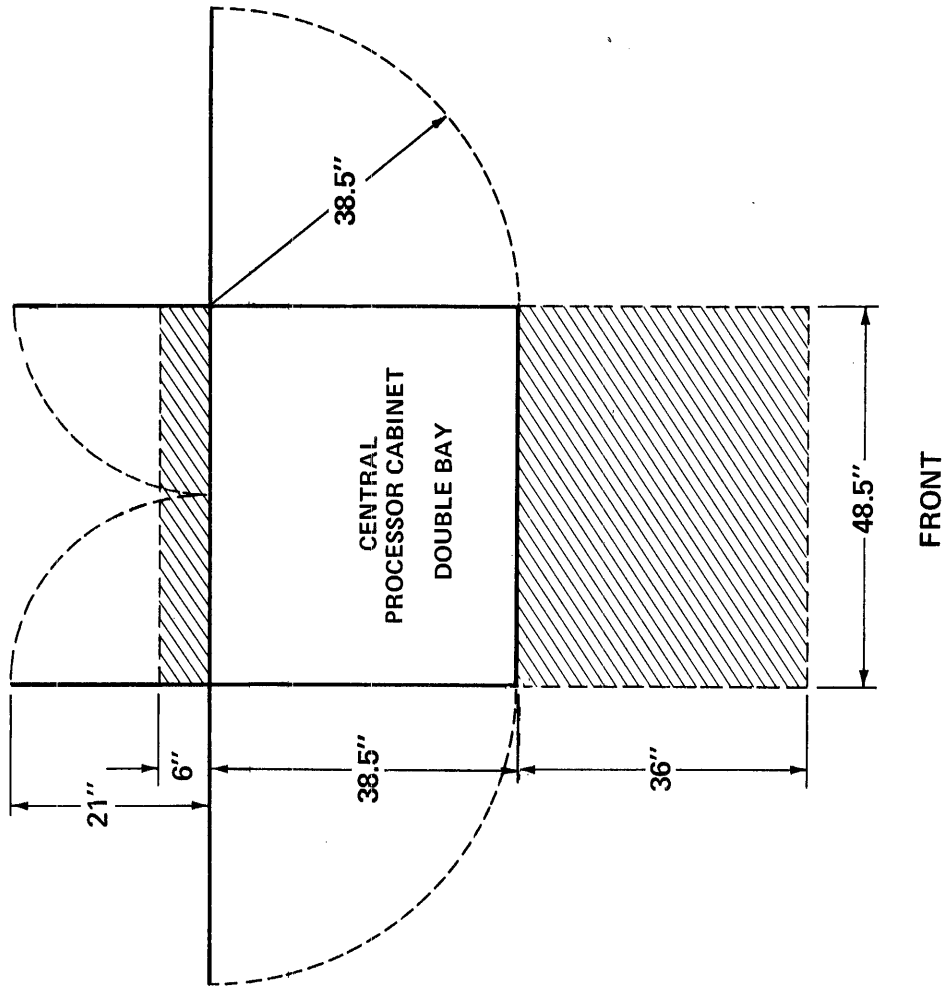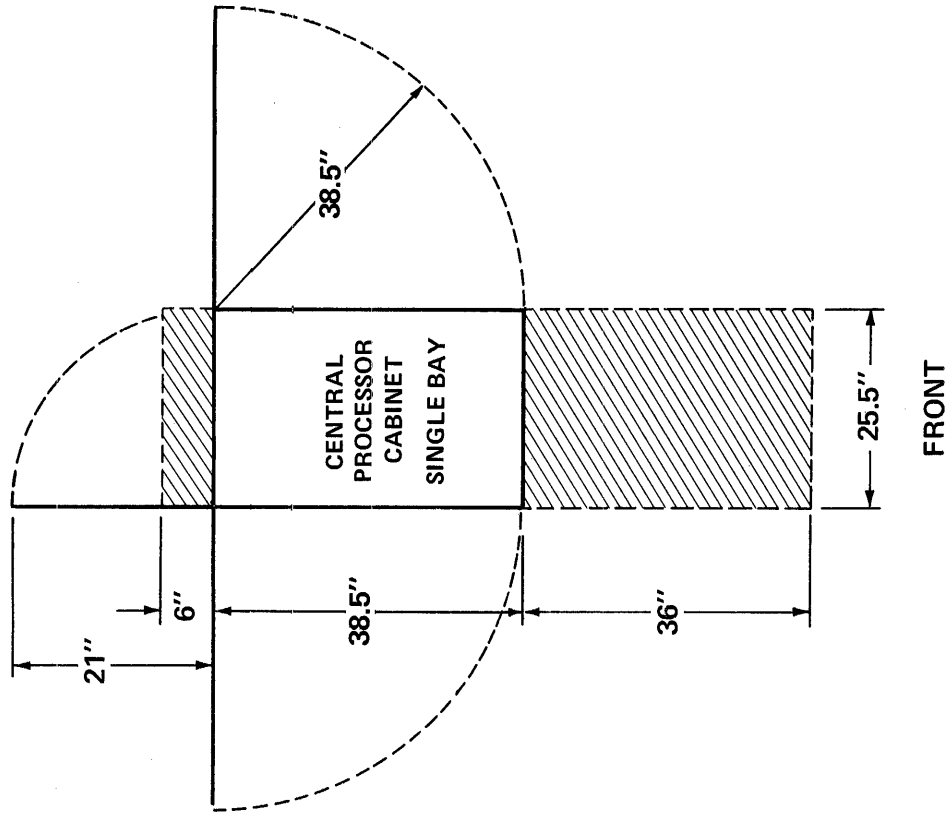
Operating Clearances
Service Clearance

Top View

XXI

REALITY
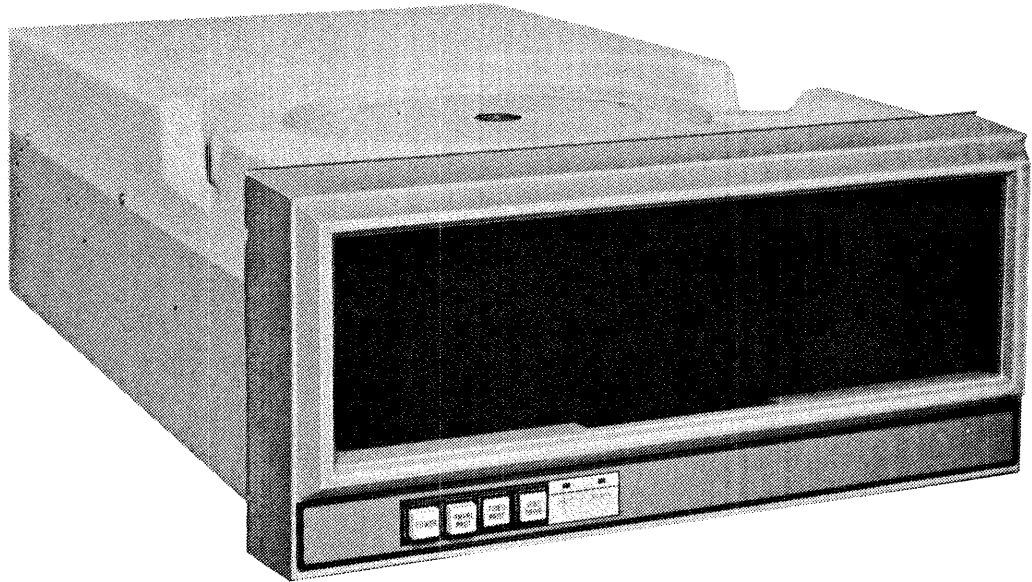
Disc Storage Unit

General

The REALITY Disc Storage Unit is available in two physically identical versions providing either 5 or 10 million bytes of storage. A REALITY system may contain up to four Disc Storage Units which mount in the Central Processor Cabinet. The units withdraw to the front for service access and cartridge changing.

Dimensions

Width: 19"

Depth: 31" closed (withdraws 19" to front)

Height: 8.75"

Weight

125 pounds

Heat Dissipation

1800 BTU/hour

Power Requirements

Voltage: 115, 220 or 230 VAC, ±10%

Frequency: 50 or 60 Hz, ±0.5 Hz

Phases: Single

Current: 4.5 amp continuous; 7 amp surge for 3 seconds

Operating Environment

Temperature: +50°to +90°F (10°to 32°C)

Humidity: 10% to 90% Relative (without condensation)

FRONT

Top View

OPERATING CLEARANCE
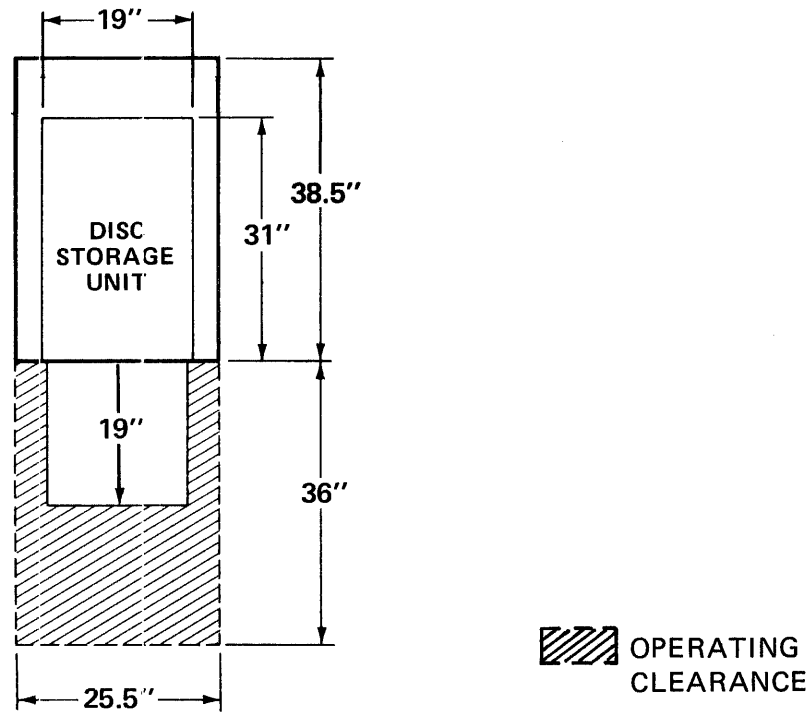
REALITY

Magnetic Tape Storage Unit

General

The REALITY Magnetic Tape Storage Unit is available with a 10-1/2" tape reel. The unit mounts in the REALITY Central Processor Cabinet. The tape unit dust cover and tape deck hinge to the front for service access and tape changing.

Dimensions

Width: 19"

Depth: 20" (closed)

Height: 24.5"

Weight

120 pounds

Heat Dissipation

1600 BTU/Hour

Power Requirements

Voltage: 115, 220 or 230 VAC, ±10%

Frequency: 50 or 60 Hz, ±0.5 Hz

Phases: Single

Current: 4 amp

Operating Environment

Temperature: +50°to +90°F (10°to 32°C)

Humidity: 10% to 90% Relative (without condensation)
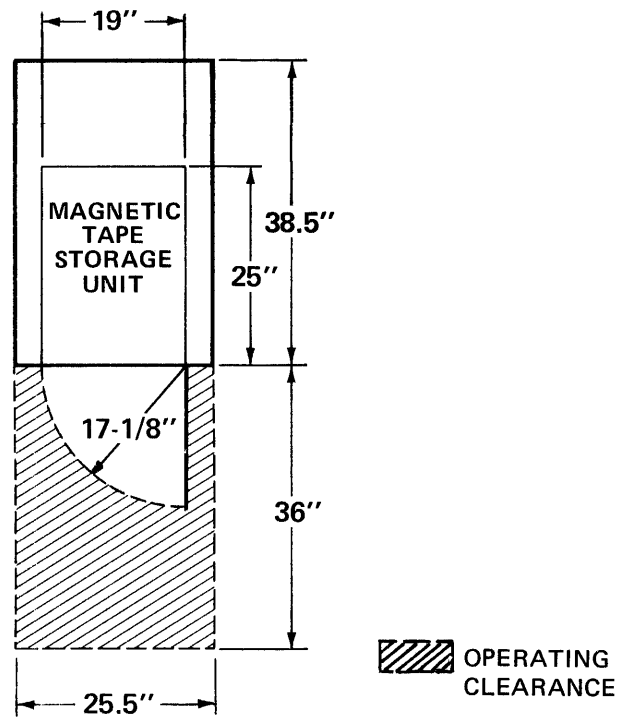
FRONT

Top View

REALITY
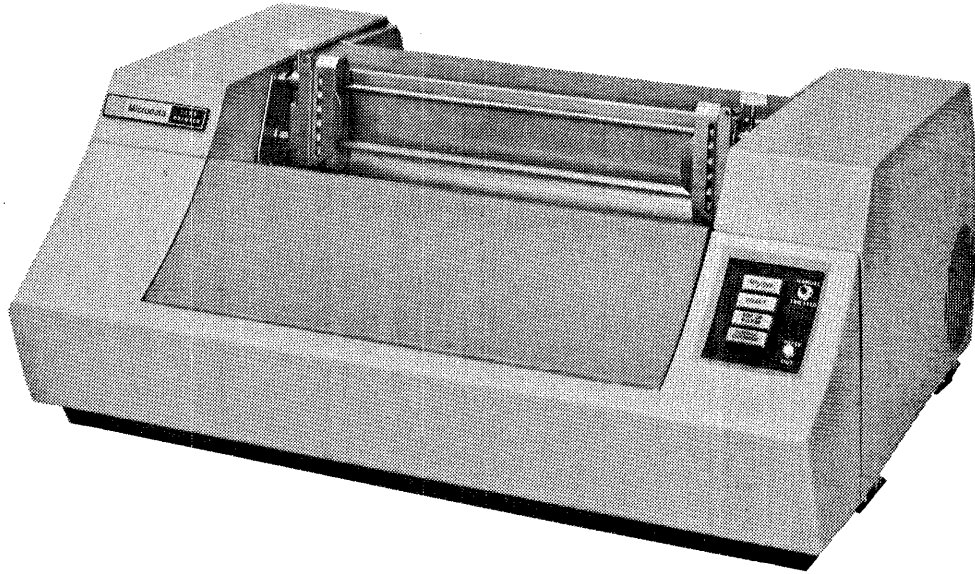
Character Printer

General

The REALITY Character Printer provides 165-character-per-second report printing for standard REALITY systems. The printer is supplied with the design-coordinated Printer Desk.

Dimensions

	Printer	Desk
Width:	27.75"	36"
Depth:	20.0"	26"
Height:	11.5"	28"

Weight

Printer: 118 pounds

Desk: 81 pounds

Heat Dissipation

1200 BTU/hour

Power Requirements

Voltage: 115, 220 or 230 VAC, ±10%

Frequency: 50 or 60 Hz, ±0.5 Hz

Phases: Single

Current: 30 amp

Receptacle: Standard straight blade "U" ground, Hubbell #5261 or equivalent
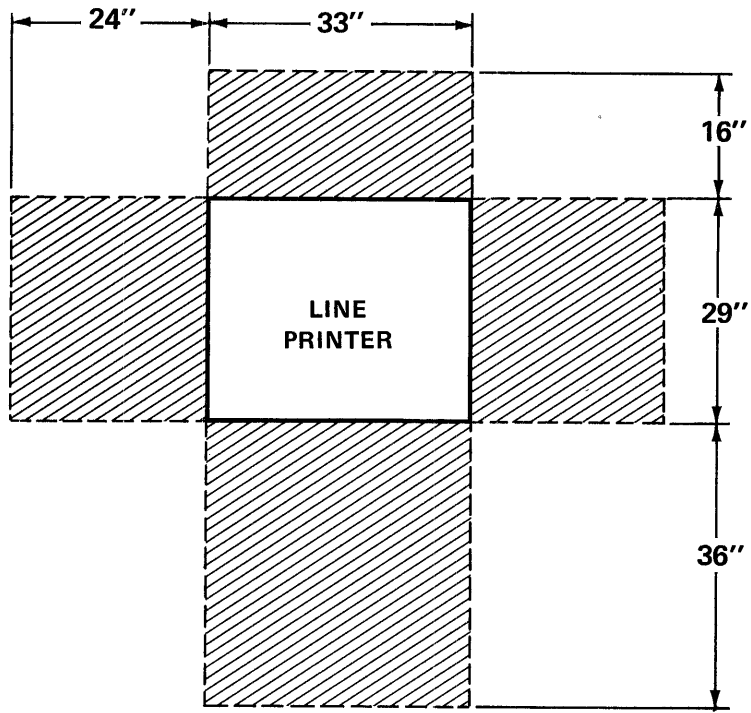
Operating Environment

Temperature: +40°to +90°F (4.4°to 32°C)

Humidity: 5% to 90% Relative (without condensation)

Cable Lengths

Power: 8 Feet

Interface: 20 Feet max

24" 36"

18"

DESK

PRINTER

26"

36"

FRONT
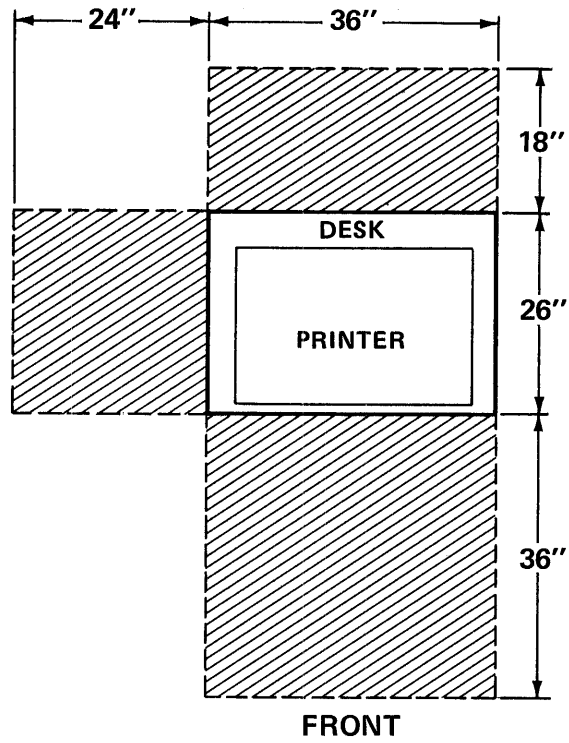
OPERATING
CLEARANCE

Top View

NOTE

About 2 feet of clearance is needed along one side of the table to allow room for changing printed paper.

REALITY

Line Printer
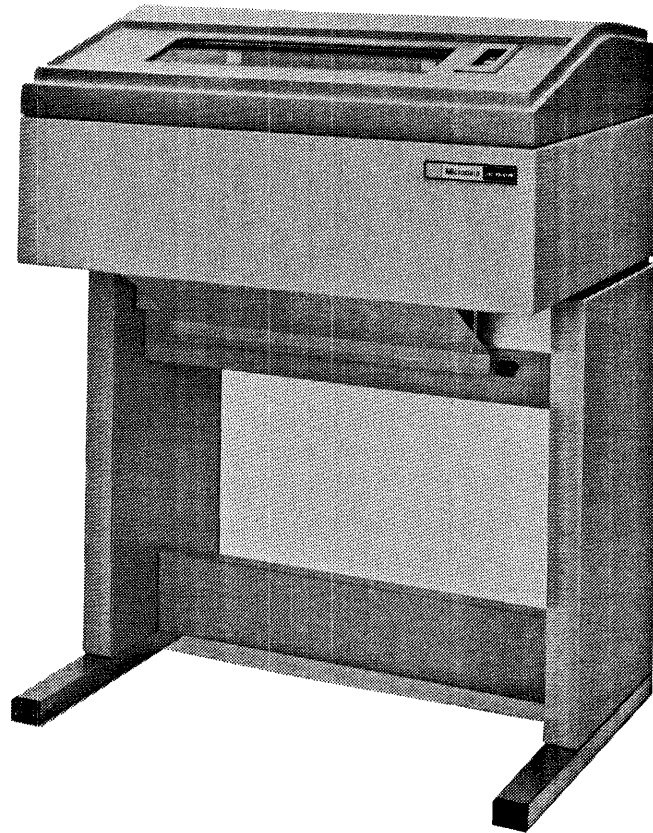
General

The REALITY Line Printer is a floor-standing unit available as a system upgrade option. It produces printed reports at 300 lines per minute.

Dimensions

Width: 33"

Depth: 29"

Height: 45"

Weight

330 pounds

Heat Dissipation

2400 BTU/hour

Power Requirements

Voltage: 115, 220 or 230 VAC, ±10%

Frequency: 50 or 60 Hz, ±0.5 Hz

Phases: Single

Current: 6 amp

Receptacle: 15 amp, 125 VAC, straight blade "U" ground, Hubbell #5261 or equivalent

Operating Environment

Temperature: +50°to +90°F (10°to 32°C)

Humidity: 10% to 90% Relative (without condensation)

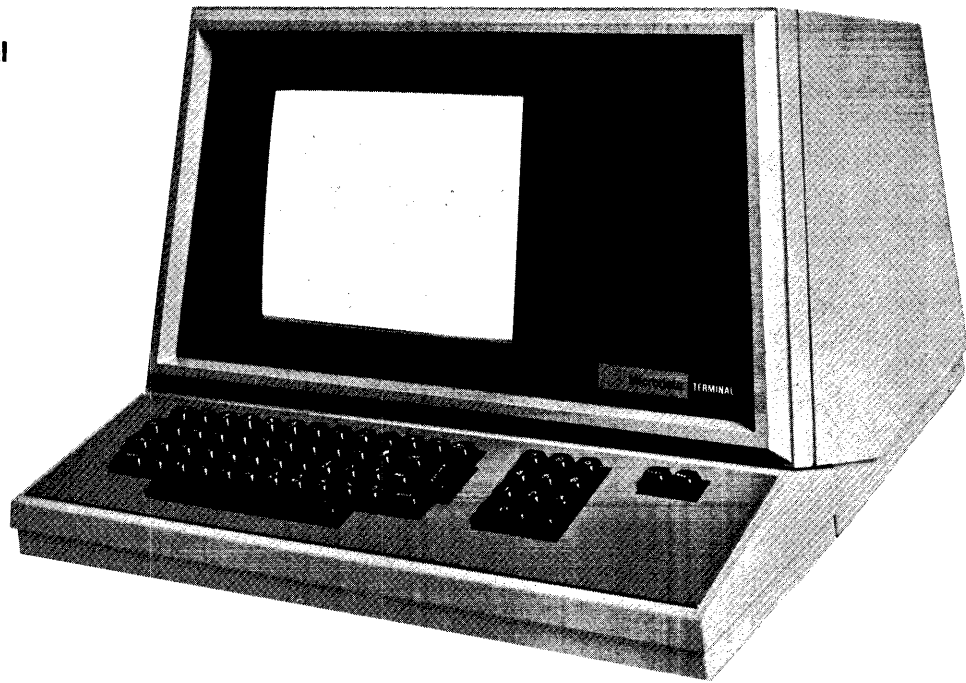**Cable Lengths**

Power: 10 Feet

Interface: 20 Feet max

```
        ├──── 24" ────┤├──── 33" ────┤
                      ┌──────────────┐                    ┬
                      │//////////////│                    │
                      │//////////////│                    │  16"
                      │//////////////│                    │
        ┌─────────────┼──────────────┼─────────────┐      ┴
        │/////////////│              │/////////////│      │
        │/////////////│    LINE      │/////////////│      │  29"
        │/////////////│   PRINTER    │/////////////│      │
        │/////////////│              │/////////////│      │
        └─────────────┼──────────────┼─────────────┘      ┴
                      │//////////////│                    │
                      │//////////////│                    │
                      │//////////////│                    │  36"
                      │//////////////│                    │
                      │//////////////│                    │
                      └──────────────┘                    ┴
```

FRONT

▨ OPERATING CLEARANCE

Top View

REALITY

Display Terminal

General

The Display Terminal is the user/machine communication link of the REALITY system.
It is designed for mounting on the REALITY Display Terminal Data Desk or on a suitable
user-supplied desk or table.

Dimensions

Width: 20"

Depth: 20"

Height: 13.5"

Weight

Approximately 52 pounds

Heat Dissipation

400 BTU/hour

Power Requirements

Voltage: 115, 220 or 230 VAC, ±10%

Frequency: 47 to 63 Hz

Phases: Single

Current: 1.6 amp

Receptacle: 15 amp, 125 VAC, straight blade "U" ground, Hubbell #5261 or equivalent

Operating Environment

Temperature: +32°to 90°F (0°to 32°C)

Humidity: 0 to 95% Relative (without condensation)

Cable Lengths

Power: 8 Feet

Interface: 50 Feet standard; available on special order in lengths up to 1000 feet. Shielded cable may be required if cable is to be strung near sources of electrical noise (transformers, motors, generators, elevators, etc.)

Top View

OPERATING CLEARANCE
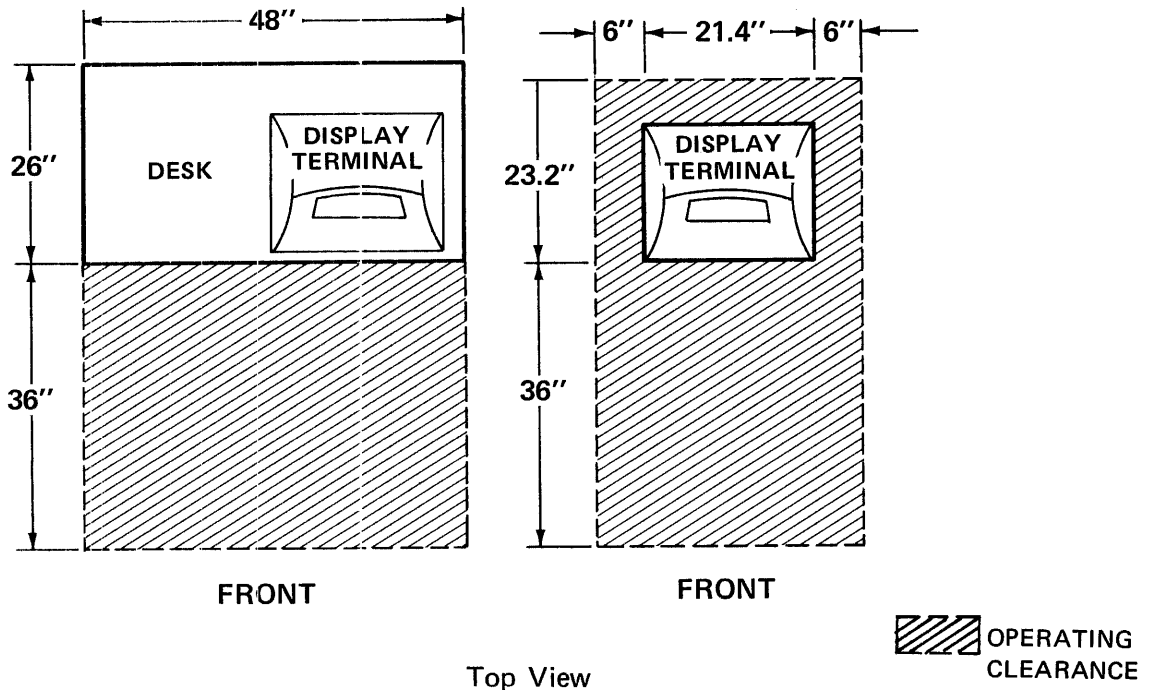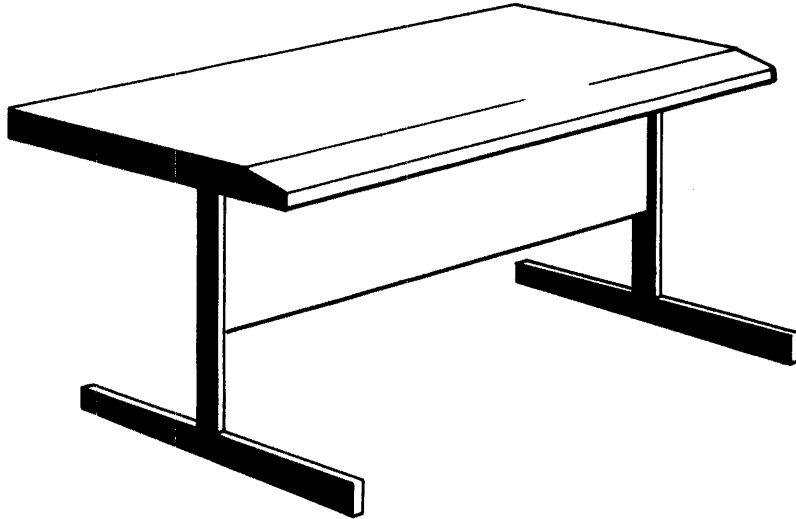
REALITY DESKS

General

The REALITY Desks are design coordinated for mounting the REALITY Display Terminal and Character Printer. Both desks are supplied with the standard REALITY system; desks for additional display terminals must be ordered separately.

Dimensions	Display Terminal Desk	Character Printer Desk
Width:	48″	36″
Depth:	26″	26″
Height:	28″	28″
Weight:	90 pounds	81 pounds

REALITY

PRE-INSTALLATION CHECKLIST

	Yes	No	Not Applicable
Environmental Control			
Heating system installed?	☐	☐	☐
Air filters installed?	☐	☐	☐
Air conditioning system installed?	☐	☐	☐
Air filters installed?	☐	☐	☐
Humidifier/dehumidifier installed?	☐	☐	☐
Carpeting/furniture treated for static electricity?	☐	☐	☐
Posted No Smoking in vicinity of computer	☐	☐	
Electrical Power			
Equipment power lines/receptacles installed (separate from all other lines)?	☐	☐	
Is the required earth ground installed?	☐	☐	
Auxiliary power lines/receptacles installed for air conditioner, humidifier, etc?	☐	☐	☐
Lighting fixtures, switches and controls installed?	☐	☐	☐
Equipment power lines free of noise?	☐	☐	
Site Layout			
Space allocated for:			
REALITY system equipment?	☐	☐	☐
Furniture?	☐	☐	☐
Storage?	☐	☐	☐
Equipment, furniture and storage locations defined?	☐	☐	☐
Cable troughs acquired?	☐	☐	☐
Routing for Data Terminal interface cables defined?	☐	☐	☐
Data Terminal interface cables routed?	☐	☐	☐

	Yes	No	Not Applicable

Fire Prevention

Sprinkler system installed? ☐ ☐ ☐

Fire extinguishers:
    Acquired? ☐ ☐ ☐
    Positioned/installed? ☐ ☐ ☐

Fire resistant storage cabinets/files acquired? ☐ ☐ ☐

Miscellaneous

Window drapes/shades installed? ☐ ☐ ☐

Glass tinting completed? ☐ ☐ ☐

Anti-static carpet treatment completed? ☐ ☐ ☐

Telephone services (voice and data lines, DAA):
    Scheduled? ☐ ☐ ☐
    Installed? ☐ ☐ ☐