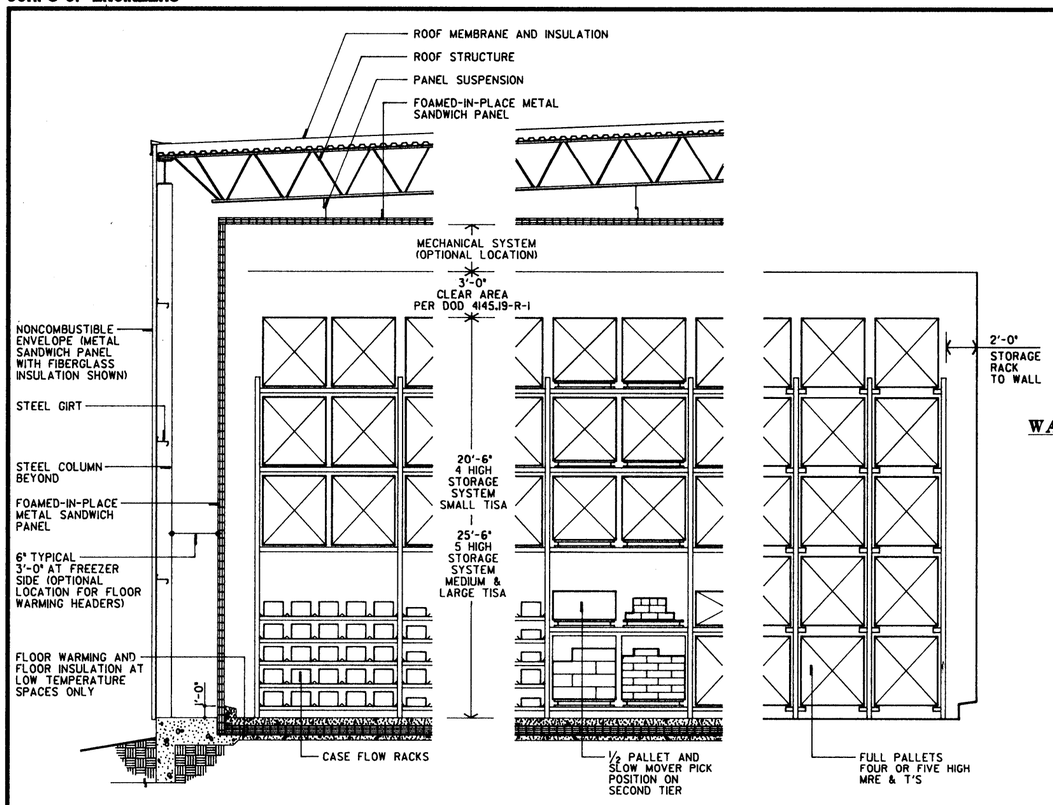
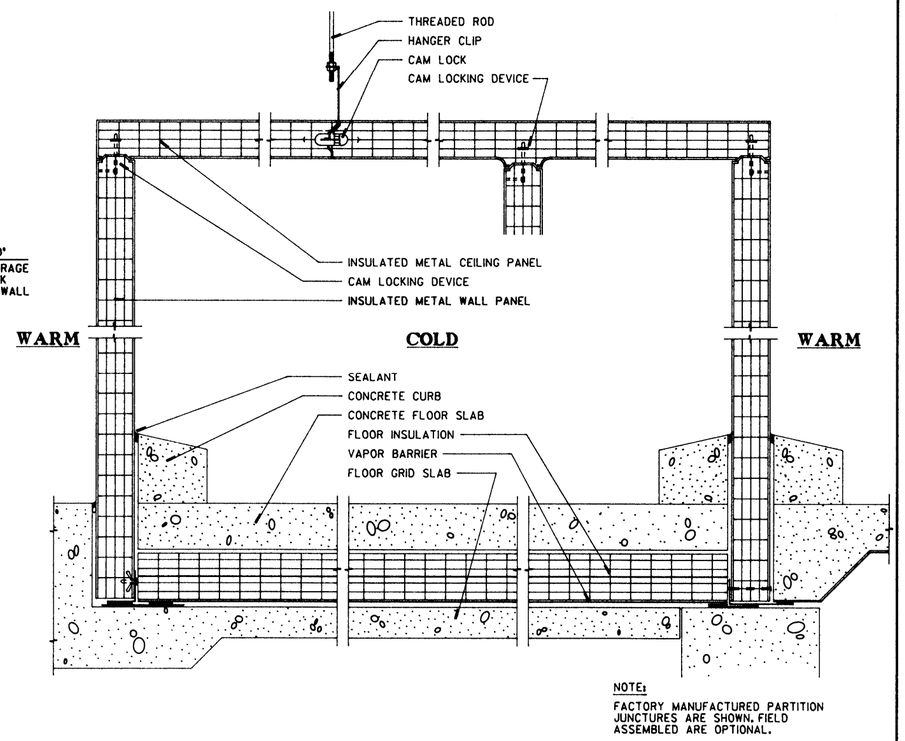


TYPICAL SECTION
WAREHOUSE

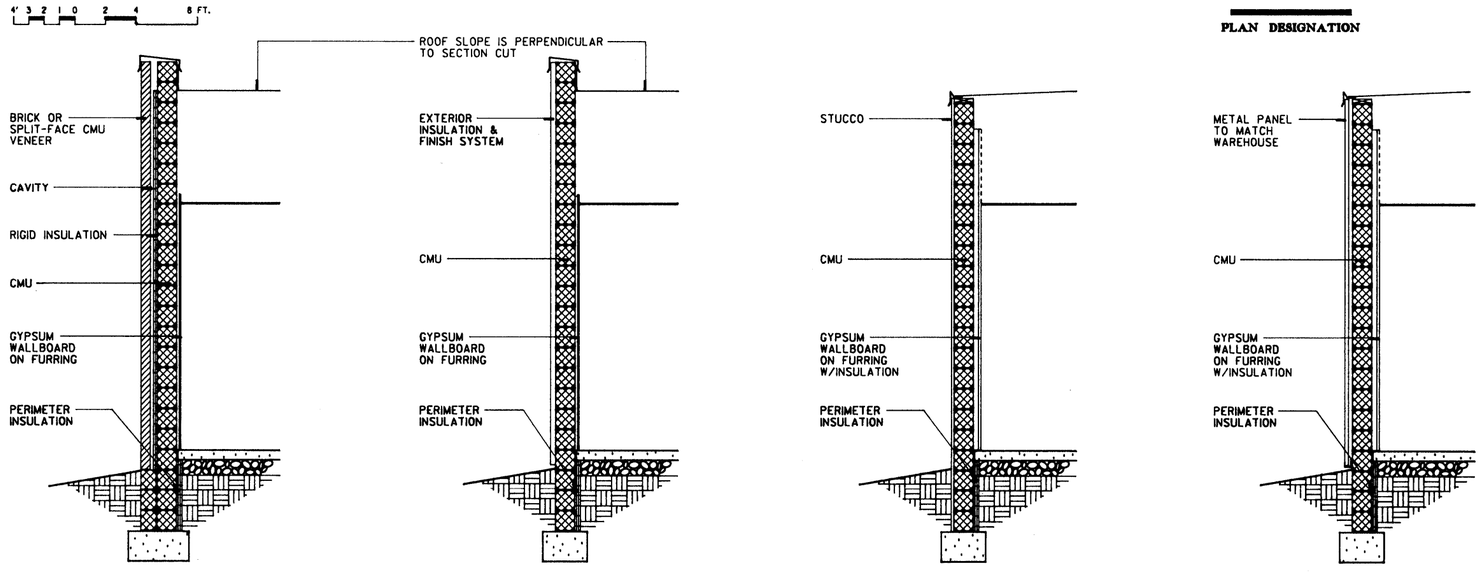
TYPICAL ELEVATIONS
STORAGE AIDS



NOTE:
FACTORY MANUFACTURED PARTITION JUNCTURES ARE SHOWN. FIELD ASSEMBLED ARE OPTIONAL.

TYPICAL DETAILS
INTERIOR ENVELOPE AT LOW TEMPERATURE SPACES

PLAN DESIGNATION



WALL TYPE "A"
LOAD BEARING
W/BRICK OR SPLIT-FACE CMU VENEER

WALL TYPE "B"
LOAD BEARING
W/EXTERIOR INSULATION & FINISH SYSTEM

WALL TYPE "C"
LOAD BEARING
W/STUCCO

WALL TYPE "D"
LOAD BEARING
W/METAL PANELS

OPTIONAL WALL TYPES
ADMINISTRATION AND WAREHOUSE OFFICE AREAS

12" 0 1 2 3 4 5 FT.

NOTES:
1. PARAPETS ARE OPTIONAL
2. MINIMUM ROOF SLOPE SHALL BE IN ACCORDANCE WITH THE ARCHITECTURAL AND ENGINEERING INSTRUCTIONS-DESIGN CRITERIA.
3. WALL TYPES "C" AND "D" INDICATE SECTION CUT IN DIRECTION OF ROOF SLOPE AND WITHOUT PARAPET.

ARCHITECTURAL SYSTEMS

THE INTERIOR AND EXTERIOR IMAGE OF THIS FACILITY HAVE BEEN DEVELOPED AS A SIMPLE FUNCTIONAL STATEMENT OF THE BUILDING TYPE. TECHNICAL CONSIDERATIONS, EASE OF EXPANSION AND THE PROBABLE LOCATION OF THE FACILITY WITHIN THE INDUSTRIAL ZONE FORMS THE BASIS FOR RECOMMENDING A METAL PANEL EXTERIOR. CAREFUL CONSIDERATIONS SHOULD BE GIVEN TO THE COLOR OF THE WAREHOUSE MASS AND THE WALL TYPE SELECTION FOR THE ADMINISTRATIVE AND WAREHOUSE AREAS. WALL TYPES RANGING FROM BRICK TO STUCCO AND MATCHING METAL PANELS ARE INCLUDED IN ORDER TO RELATE TO THE INSTALLATIONS ARCHITECTURAL THEME.

THE WAREHOUSE FACILITIES ARE DESIGNED AROUND THE "INTERIOR VAPOR BARRIER SYSTEM" CONCEPT. THE CONCEPT INVOLVES THE UTILIZATION OF A CONVENTIONAL NONCOMBUSTIBLE EXTERIOR ENVELOPE WITH AN INTERIOR INSULATION AND VAPOR BARRIER ENVELOPE WITHIN THE OVERALL BUILDING FOR ALL LOW TEMPERATURE SPACES. THE INTERIOR ENVELOPE UTILIZIES FOAMED-IN-PLACE METAL SANDWICH PANELS FOR WALLS AND CEILINGS WITH FLOOR INSULATION AND A FLOOR WARMING SYSTEM BELOW THE CONCRETE FLOOR SLAB. QUALITY OF FACTORY ASSEMBLY OF THE METAL PANELS ALONG WITH PROPER DETAILING OF PENETRATIONS ARE CRITICAL ELEMENTS IN MAINTAINING CONTINUITY IN THE VAPOR BARRIER FOR THE LOW TEMPERATURE SPACES. THE ROOF OF THE EXTERIOR ENVELOPE SHALL BE DESIGNED IN ACCORDANCE WITH THE ARCHITECTURAL AND ENGINEERING INSTRUCTIONS-DESIGN CRITERIA WITH RESPECT TO ROOF SLOPE AND MATERIAL SELECTION.

THE INTERIOR CROSS SECTION OF THE FACILITY HOUSES THE STORAGE AID SYSTEM, CLEAR SPACE ABOVE PER DOD CRITERIA, UTILITIES ZONE AND THE DEPTH OF STRUCTURE. LOW TEMPERATURE SPACES REQUIRE ADDITIONAL HEIGHT IN THE OVERALL CROSS SECTION DUE TO THE INTERIOR ENVELOPE WITHIN THE BUILDING. OVERALL HEIGHT IS PRIMARILY DICTATED BY THE STORAGE CONFIGURATION WHICH IS A 4 HIGH RACK SYSTEM IN THE SMALL AND 5 HIGH IN THE MEDIUM AND LARGE FACILITIES. INTERIOR SPACE ABOVE THE ADMINISTRATIVE CORE IS DEDICATED TO MECHANICAL AND ELECTRICAL EQUIPMENT ACCESSED BY STAIRS DIRECTLY FROM THE EXTERIOR. ALTHOUGH THE FINAL LOCATION OF THE MECHANICAL AND ELECTRICAL ROOM IS OPTIONAL (SITE SPECIFIC) DIRECT ACCESS FROM THE EXTERIOR IS MANDATORY. ADDITIONAL DESIGN CONSIDERATIONS FOR THE EQUIPMENT MEZZANINE OPTION INCLUDE ADEQUATE CEILING STRUCTURE, VIBRATION ISOLATION, ACOUSTICS AND DOUBLE DOORS FROM THE MEZZANINE LEVEL TO THE INTERIOR WAREHOUSE TO ALLOW THE PLACEMENT & REMOVAL OF EQUIPMENT BY THE FACILITY'S MATERIAL HANDLING EQUIPMENT.

OPERABLE WINDOWS SHALL BE PROVIDED IN ALL OCCUPIED SPACES OF THE ADMINISTRATIVE AND WAREHOUSE OFFICE AREAS. PROVISIONS FOR CLERESTORIES ARE INCLUDED TO OBTAIN NATURAL LIGHT IN THE DRY DOCK AREA.

STRUCTURAL SYSTEMS

THE RECOMMENDED STRUCTURAL SYSTEM CONSISTS OF GALVANIZED METAL ROOF DECK SUPPORTED ON STEEL JOISTS, SPANNING BETWEEN STEEL FRAMES CONSISTING OF STEEL WIDE FLANGE BEAMS SUPPORTED ON STEEL COLUMNS. SPACING OF STEEL COLUMNS SHALL BE INTEGRATED WITH THE STORAGE AID SYSTEM AND AISLE WIDTH.

THE ROOF STRUCTURE SHALL BE DESIGNED TO SUPPORT THE LOADS IMPOSED BY ANY SUSPENDED CEILINGS INCLUDING BUT NOT LIMITED TO THE CEILING IN THE LOW TEMPERATURE SPACES.

THE RECOMMENDED WAREHOUSE EXTERIOR ENVELOPE WILL CONSIST OF METAL PANELS SPANNING BETWEEN STEEL GIRTS SUPPORTED BY EXTERIOR COLUMNS. IN THE ADMINISTRATIVE AND WAREHOUSE OFFICE AREAS THE WALLS SHALL CONSIST OF LOAD BEARING MASONRY WITH AN OPTION OF FOUR DIFFERENT EXTERIOR FINISHES.

SPREAD FOOTINGS AND CONCRETE SLAB ON GRADE ARE INDICATED AS THE BASIC FOUNDATION TYPE AND FLOOR SLAB SYSTEM. FOUNDATIONS AND FLOOR SLAB DESIGNS SHALL BE MADE FOR THE SITE SPECIFIC BUILDING BASED ON LOCAL CONDITIONS, SOILS REPORTS AND RECOMMENDATIONS.

THE SLAB ON GRADE SHALL BE DESIGNED TO ADEQUATELY SUPPORT THE RACK SYSTEM AND TO SUSTAIN TRAFFIC FROM THE MATERIAL HANDLING EQUIPMENT.

COMPLETE STRUCTURAL DESIGNS MUST FOLLOW RECOMMENDATIONS AND REQUIREMENTS AS SET FORTH IN TECHNICAL MANUALS TM5-809-1/AFM 88-3, CHAPTER 1, FOR LOAD ASSUMPTIONS FOR BUILDINGS, TM5-809-10/AFM 88-3, CHAPTER 13 FOR SEISMIC DESIGN AND TM5-809-3/AFM 88-3, CHAPTER 3 FOR MASONRY STRUCTURAL DESIGN FOR BUILDINGS.

REV	DATE	DESCRIPTION	BY	APP

WOLFBERG/ALVAREZ & ASSOCIATES
ARCHITECTURE • ENGINEERING • PLANNING
ARLINGTON, VIRGINIA

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

DESIGNED: W/A & A	DEPARTMENT OF THE ARMY FACILITIES STANDARDIZATION PROGRAM DEFINITIVE DESIGN
DRAWN: CADD	
CHECKED: PM	TISA TROOP ISSUE SUBSISTENCE ACTIVITY COLD/DRY STORAGE FACILITY
SUBMITTED: MK	
SCALE: AS SHOWN	TO ACCOMPANY SPECIFICATION NO
DATE: OCTOBER 1988	PROJECT NO. DEF 432-11-01 DRAWING NO.
	SHEET NO. 8