PART 1 - INTRODUCTION

1.01 OVERVIEW

A. This Section provides general information for building systems and components.

B. Refer to the Owner’s Design Guideline Elements A though G and Element Z for technical design criteria related to general building components, requirements for preparation of Project Manuals, and for additional MD Anderson standards and other requirements.

C. Refer to the Owner’s Master Construction Specifications for product and construction execution requirements.

D. Information provided within this document is intended to familiarize the A/E with the facility. The A/E must field verify existing conditions that are relevant to the project.

PART 2 - BUILDING OCCUPANCY

2.01 OVERVIEW

A. The Anderson building is located within the Main Building Complex and is designated with the number 100P. The building is designed to house hospital administration and research laboratories.

B. The 6th, 7th, and 8th floors of Anderson Central currently contain research labs while the remaining floors of Anderson Central, East and West (C/E/W) are being converted to administrative offices for support staff.

C. Research laboratories will eventually be relocated to new facilities being planned and constructed and all floors of Anderson except the fifth floor of Anderson Central will be converted into administrative offices. The fifth floor of Anderson Central and East is being used for Surgery Support.

PART 3 - EXISTING SYSTEMS AND ASSEMBLIES

3.01 ARCHITECTURAL AND GENERAL CONSTRUCTION

A. The Anderson C/E/W building was originally designed and constructed in 1950 - 54 as a 6-story reinforced concrete building. A major addition of two floors constructed using steel was built in 1976 making the present building an eight story structure with a gross floor area 224,000 square feet.

3.02 STRUCTURAL SYSTEMS

A. The floor to floor heights for Anderson E/W:
1. Level 1 to Level 2: 12’
2. Level 2 to Level 3: 13’
3. Level 3 to Level 4: 11’
4. Level 4 to Level 5: 11’
5. Level 5 to Level 6: 11’
6. Level 6 to Level 7: 11’
7. Level 7 to Level 8: 11’
8. Level 8 to Roof: 9’ minimum to 10’ - 6” maximum
9. Level 9 is the Penthouse

B. Anderson Central was design in 1956 and the floor to floor height for Level 1 to Level 2 is a minimum 10'-10” to a maximum 11’ – 10”. Floor to floor height from Level 2 through Level 7 is 12’ - 10”, from Level 7 to Level 8 is 13’ and Level 8 to the Roof is 13’

C. The perimeter beams are 3’-6” in depth and interior beams are 1’-6” in depth, with a ceiling height of 8’-0” leaving a marginal space for mechanical and electrical service distribution.

D. On the first floor there is approximately 40 inches of ceiling space below the beams with an 8’-0” ceiling. On second through fifth floors there is approximately 28 inches of ceiling space below the beams with an 8’-0” ceiling. On first, second, and seventh floors there is approximately 50 inches of ceiling space with an 8’-0” ceiling.

E. Floor slabs of the original structure are design for a 75 psf uniformly distributed live load, with 20 psf partition allowance.

F. Floor slabs of the structure of the building Anderson Central expansion are design for an 80 psf uniformly distributed live load, with 20 psf partition allowance.

3.03 FIRE SUPPRESSION SYSTEMS

A. Fire suppression is achieved with a sprinkler system, and the fire pump is located in the Anderson Central Boiler Room. There are 6 fire pipe risers located in the north and center stairwells. At each floor there is a 2-1/2 inch fire department valve and a 4 inch zone valve capped-off. Fire pumps and risers were installed in 1989.

B. There are two 6 inch fire pipe risers in the east stairwell. The newest riser of the two has a 2-1/2 inch fire department valve and 4 inch zone valves are capped-off at each floor. The capped 4 inch zone valves will be used for connecting future sprinkler distribution piping on the renovated floors.
C. Fire hose cabinets are located at roof elevation of the stairwells. The fire cabinets located in the hallways throughout the building now contain fire extinguishers in exchange for fire hoses.

3.04 PLUMBING SYSTEMS

A. Water Distribution System:
   1. The domestic hot and cold water is supplied from Anderson Central Boiler Room.

B. Sanitary System:
   1. The sanitary system piping is cast iron.

C. Storm System:
   1. The storm system piping material is cast iron.

D. High Purity Water System:
   1. The high purity water system is fed from the Anderson Central Boiler Room, and serves laboratory sinks. The high purity water system also serves Bates Freeman and the piping is in need of replacement. Research and Education Facilities Department is investigating on using point of use or a centralized system per floor.

E. Medical Vacuum System:
   1. The pumps have been deleted and the system has been taken out of service.

F. Lab Vacuum System:
   1. The laboratory vacuum system is fed from room (B4.5210) of Gimbel (new 2005 FEMA) and enters Anderson building at Level 5, north end. The vacuum system serves the laboratory areas. The piping is copper.

   2. When a floor is completely renovated as office space, the vacuum system service valve is closed and all copper piping pertaining to the vacuum system shall be removed from the floor.

G. Medical Air Systems:
   1. The medical air is fed from compressors located in Old Clark and Lutheran Pavilion and is only piped to fourth floor surgery. The piping is copper.

   2. Medical oxygen is still present on some of the Anderson floors. The medical gas service valve serving the floor is closed and all copper piping shall be removed from the area being renovated.

H. Laboratory Air Systems:
1. The laboratory air is fed from room B4.5210 of Gimbel (new 2005 FEMA). The lab air serves the laboratory areas. The piping is copper.

II. Natural Gas System:
1. Natural gas is fed from Anderson Central Boiler Room. The lab natural gas serves the laboratory areas only and is to be removed from Anderson east. The piping is made of carbon steel.

3.05 HVAC AND INTEGRATED AUTOMATION SYSTEMS

A. Chilled Water and Hot Water System:
1. Levels 1 through 6 are served chilled water and hot water from chilled water and hot water pumps installed in room B4.5210 of Gimbel Mechanical under the FEMA project. Levels 7 and 8 receive TECO chilled water from Old Clark Clinic since these floors were added to the existing structure. Service to Levels 7 and 8 will be changed over to the pumps in B4.5.210 when the floors when 7 and 8 floors are renovated.

2. The chilled water for Levels 1 through 6 is circulated through frame plate heat exchangers which were installed in room B4.5210 of Gimbel Mechanical under the FEMA project. The heat exchangers receive TECO chilled water from the Alkek building.

3. The building has six main vertical pipe supply and return risers for chilled water and hot water from the Boiler Room. These original existing piping risers will be removed when the planned Anderson Central and East / West new piping risers are installed under the Redevelopment Projects, supplied with chilled water from B4.5210.
   a. The chilled water and hot water supply riser serving Anderson East and Anderson West up to the 6th floor is located in the mid section of the building.
   b. The return chilled water and hot water pipe risers are located on the far end of Anderson East and Anderson West near or adjacent to the stair wells.
   c. The chilled and hot water headers serving Anderson Central up to the 6th floor are located at the south, north, and east end of Anderson Central near the stairwells.
   d. The chilled water and hot water pipe risers serving Anderson Central Levels 6, 7, and 8 are located in the south end of Anderson Central. The chilled water pipe risers are being fed from the 12 inch pipe coming from Old Clark Clinic.

B. Air Handling and Distribution System:
1. The original air distribution system consisted of an outside pretreatment unit located in a mechanical space on the first floor. The pretreated outside air was supplied to each floor via a vertical duct riser and ducted above the corridor and distributed to each room. Each room was air conditioned with a plenum mounted fan-coil unit. Rooms on floors 1 through 7 of the east wing and floors 3 and 4 on the west wing of Anderson Building still
have this arrangement. Some of the rooms that are used as research labs on lower floors of Anderson Central Connector to the Bates Freeman building are directly connected to outside exterior outside air louver.

2. Recently renovated floors of Anderson that are being converted from lab space to offices utilize VAV fan powered terminals with electric reheat coils equipped with full SCR circuitry (no staged heaters).

3. Anderson East / West:
   a. A new air handling unit OAHU-R-1 is located on the roof of Anderson West. This air handling unit is currently being used to air-condition the 8th floor of Anderson East and Anderson West. As floors in Anderson East and West are renovated, OAHU-R-1 could be converted to supply 100 percent outside air to mixed air units installed on each of the renovated floors, but future planning would be required to make provisions for another new air handling unit to serve the 8th floor.
   b. Currently as each individual floor is being renovated, a new single zone air handling unit to serve one wing of each floor will condition the space with outside air from a wall louver.
   c. Air handling units CC-1 and CC-2 are being renovated with new cooling coils and fan wall technology.
   d. The 3rd and 4th floors of Anderson West and the 1st through the 7th floors of Anderson East have not been renovated, so they are being served by original equipment.

4. Anderson Central:
   a. The original air distribution for Anderson Central consisted of two mechanical rooms per floor with outside air pretreatment units. The pretreated ventilation air is distributed individual rooms on the floors. The fan-coil units are being replaced during lab to office renovations by air terminal units equipped with SCR controlled electric heating coils single connect to single zone air handling units. A single, new mechanical room is planned for each of Levels 3 through 8 to serve Anderson Central.
   b. The 5th floor of Anderson Central has been converted to multi-use space primarily operating room support and has a single mechanical room located at the north end of Anderson Central.
   c. The 8th floor has two mechanical rooms and is being served by two new mixed air handlers that are directly ducted to receive outside air from louver mounted on the exterior walls of the building.
d. In addition to the new mechanical room located on the 8th floor, an existing mechanical room is located on the north end of Anderson Central which has new AHU-AC-8N which provides conditioned ventilation air to labs.

3.06 ELECTRICAL SYSTEMS
A. All emergency and normal power for Anderson Central, East and West originates from electrical switchgear located in the basement of the Anderson Building.

B. Refer to Part 4 of this Design Guideline Element for a description of an electrical re-feed project currently underway.

3.07 COMMUNICATION SYSTEMS
A. New IDF rooms for network and telecommunications are being planned under an existing project. The new rooms will essentially stack above an existing MDF room.

3.08 EXTERIOR IMPROVEMENTS AND LANDSCAPING
A. An exterior cladding project is currently underway to reclad portions of Anderson.

3.09 CIVIL/SITE UTILITIES
A. TECO utilities include a 4 inch steam pipe and 18 inch supply and return chilled water piping that enters the north end of the Anderson basement (Boiler Room). This chilled water service is in transition for the TECO chilled water to the Anderson Building since Anderson to be converted over to Alkek chilled water service.

B. Steam is used as the primary heat energy for domestic and building hot water; however, provisions have been implemented to use Alkek's heat exchangers as a heat source to provide heating hot water for Anderson Building existing fan coil units and preheat coils.

PART 4 - PROPOSED SYSTEM CONCEPTS

4.01 OVERVIEW
A. Redevelopment plans are currently in the Design Phase to install new supply and return chilled water and hot water piping riser to serve floors 1 through 8 of Anderson East / West and Anderson Central, disconnect chilled water service from the Old Clark Clinic, and Anderson's Boiler room. New piping risers are planned to be located in Anderson Central and separate piping risers are planned to be located at the east end of Anderson West to serve Anderson East / West.

B. A new OAHU-RAC with an energy recovery wheel located on the roof of Anderson Central will be used to provide conditioned pretreated lab air and ventilation air to conditioned labs and spaces within Anderson Central. When the labs are vacated around 2010-2012, the outside air unit will provide pretreated outside air to levels 3 through 8 office space.
C. With the exception of the Level 5 mechanical room, Anderson Central floors Levels 3 through 8 are planned such that all new electrical and telecommunication, mechanical rooms will be stacked and will be located in the mid section of Anderson Central. On Level 5 the mechanical room is located at the far north end of floor of Anderson Central.

D. Under the electrical re-feed project, electrical power to Anderson will be rerouted from new switchgear located in the second level of the Gimbel Mechanical room. Electrical equipment and floor panel boards for electrical circuits and lighting will be stacked in or adjacent to existing bus riser room at a new location on each floor of Anderson Central and Anderson West.

E. The new electrical, IDF, and mechanical equipment rooms will be stacked in Anderson Central, Anderson East and Anderson West.

   1. The 5th floor of Anderson Central was remodeled prior to the current Redevelopment infrastructure concept, thus the mechanical room will remain in its current location at the north end of Anderson Central.

F. Future projects include a roof replacement project and also a re-cladding project for the building’s exterior. Any renovation projects must be carefully coordinated with this proposed work.

PART 5 - PRODUCTS

5.01 OVERVIEW

A. Equipment Components:

   1. To meet FEMA flood requirements, all electrical panels, chilled water and hot water pumps, and domestic hot water heaters are new and located in equipment rooms above the basement Level of the building. Anderson building hot water system will receive hot water from steam to hot water converters located in the basement of Alkek.

   2. All new mechanical and electrical equipment purchased and system designs for renovation projects must meet MD Anderson specification requirements, energy code requirements, and applicable TCEQ requirements.

5.02 DIVISION 07 THERMAL AND MOISTURE PROTECTION

A. Exterior walls must meet energy code requirements with respect to allowable heat transfer.

5.03 DIVISION 08 OPENINGS

A. Exterior widow fenestrations must meet energy code requirements with respect to allowable heat transfer and shade coefficients.
5.04 DIVISION 09 FINISHES
A. Refer to Interior Finishes Standards.

5.05 DIVISION 22 PLUMBING
A. Energy codes apply to any applicable renovation or the replacement of existing equipment.
B. For proposed renovation projects where the function of the floor space is being changed from research to office space, the A/E shall perform an evaluation on the possibility of having plastic drain piping in a non-ducted return air plenum space above the ceiling.

5.06 DIVISION 23 HVAC
A. Energy codes apply to any applicable renovation or the replacement of existing equipment.
B. When research laboratory space is being converted to office space it is important to realize that a relief air path is required to allow conditioned ventilation air to enter into the office area during the redevelopment phase.

5.07 DIVISION 25 INTEGRATED AUTOMATION
A. MD Anderson Retrofit Specifications apply to any renovation project in this building or the replacement of existing equipment.

5.08 DIVISION 26 ELECTRICAL
A. Energy codes apply to any applicable renovation or the replacement of existing equipment.

PART 6 - EXISTING DOCUMENTATION

6.01 OVERVIEW
A. Design Guideline Elements, Master Construction Specifications, and other supplemental resources needed for design may be downloaded from MD Anderson’s Facilities Management internet website at the following address:

6.02 DRAWINGS
A. Request existing construction drawings and project as-built drawings from Capital Planning and Management, Data Management Group.
B. For facilities located within the Main Building 1515 Holcombe Boulevard, the floor level designations were originally noted as “ground”, Level 1, etc. All floors are now designated as Level 1, Level 2, etc.
6.03 STUDIES

A. Conceptual design of the Anderson Building electrical re-feed project has been completed. Scope includes the following:

1. Field verification of source of power for all 480 volt panels and the primary side of transformers in the Anderson Building.

2. One line diagrams and floor plans of electrical equipment in the Anderson Building that will be served by Gimbel electrical switchgear.

3. Field verification of the routing of all new electrical busses and feeders from the Gimbel switchgear to the existing loads in the Anderson Building.

4. Detailed analysis of existing and new loads in Anderson.

5. New layouts of electrical rooms on each level of Anderson Central. These new electrical rooms will take the place of one of the central electrical room which has limited space to accommodate additional panels for new and future electrical loads.
### PART 7 - DOCUMENT REVISION HISTORY

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