Office of University Building Official (OUBO)

Building Safety Month Training Series

Session 4: Chapter 8 & Related Appendices – Part 2: Preliminary Design

Stakeholders: GMU Facilities, Contractors, & Registered Design Professionals

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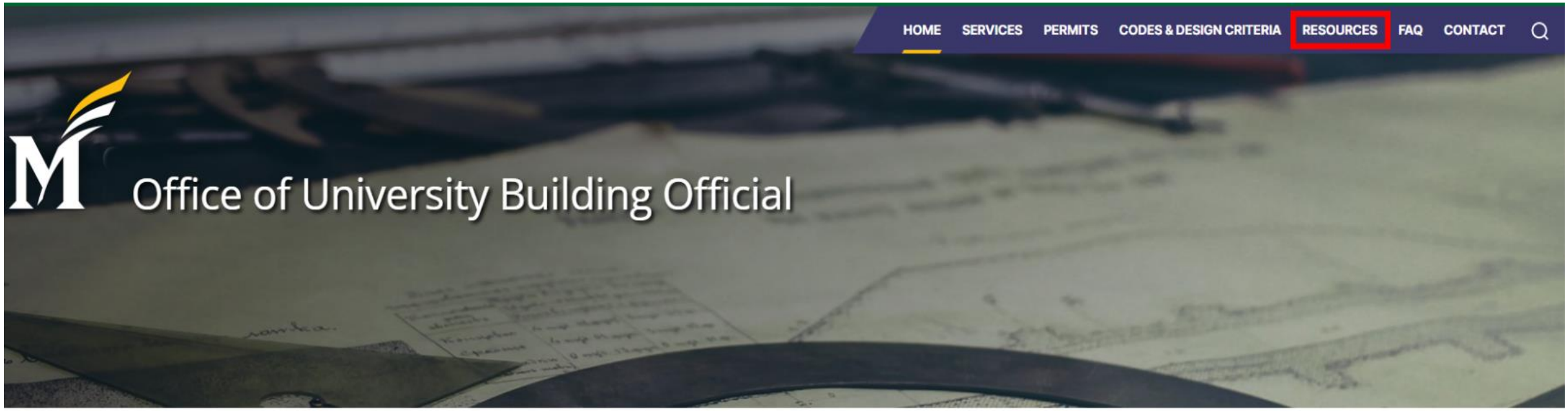
Agenda

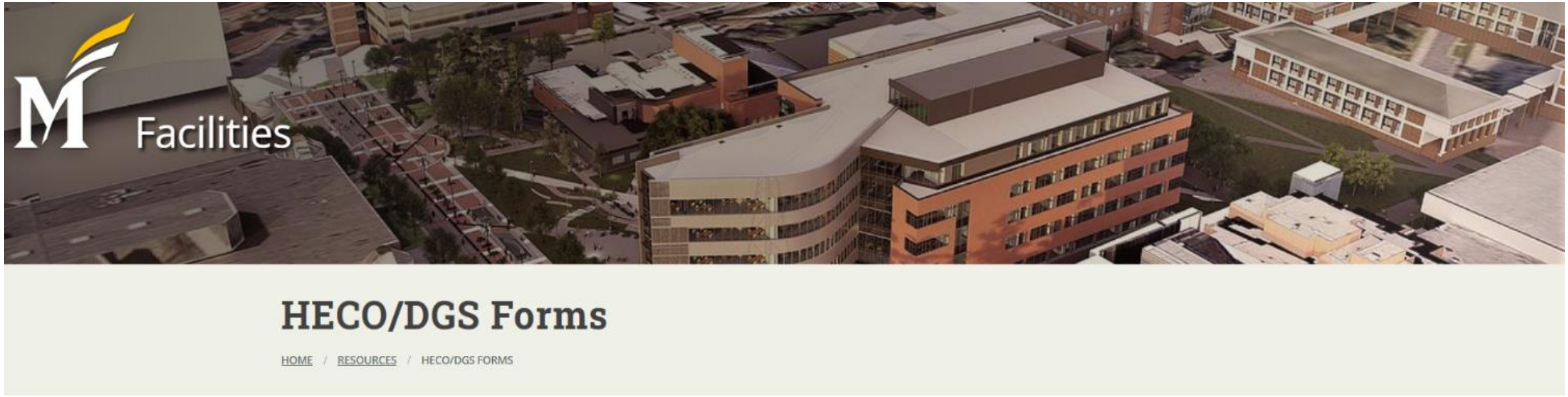
HECO Chapter 8 & Related Appendices:

- Appendix W: HECO Manual Revision History
- Chapter 8: Project Design Standards and Requirements
- Appendix D: Basis of Design Narratives


HOME
SERVICES
PERMITS
CODES & DESIGN CRITERIA
RESOURCES
FAQ
CONTACT
Office of University Building Official
Permits
Plan Review
Inspections
Resources

University Resources

- OUBO e-Builder Processes
- GMU Design Standards Manual
- GMU HECO/DGS Forms
- GMU e-Builder
- GMU Facilities Planning, Design and Construction
- GMU Senior Vice President of Administration & Finance
- GMU University Leadership
- GMU Board of Visitors
- GMU Campus Maps and Directions
- GMU Capital Strategy and Planning
- Tier III Management Agreement


Facilities
HECO/DGS Forms
HOME / RESOURCES / HECO/DGS FORMS
Mason HECO Manual

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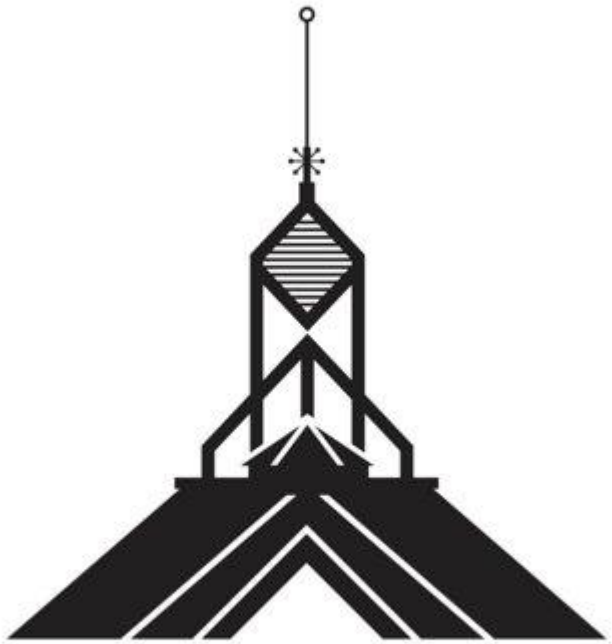
Higher Education Capital Outlay Manual

2023



Vice President of Facilities

References: The Commonwealth of Virginia "Construction and Professional Services Manual" (CPSM) and the "Design & Construction Guidelines" are referenced extensively and should be readily available when using this Manual.

The most current version of these two documents are on the following websites: https://facilities.gmu.edu/ and www.dgs.virginia.gov

Page | 1

APPENDIX W
HECO MANUAL REVISION HISTORY

2016 – Original Publication
2023-Version 2.0

Revision Package – Dated February 02.03.2023
Summary of Revisions for HECO Manual Version 2.0
*** Major Revisions are notated in Red below.**
Minor formatting, editing, grammar changes or updates to Personnel Titles or Agency names are not individually notated in this Revision Package.

8.7.4 Review Process

- Revised to reflect OUBO instead of DEB.

8.7.5 Preliminary Submittal Requirements

8.7.6 General Requirements for Preliminary Drawings

- Content revised and requirements added for “Title Sheet(s)”, “Site Plans”, “Demolition Drawings” “Architectural Drawings”, “Exterior Elevations”, “Building Cross-Sections”, “Wall-Sections”, “Structural Drawings”, “Code Compliance and Life Safety (G) Plans”, “Fire Suppression (FX) Plans”, “Fire Alarm, Detection and Signaling System (FA) Plans”, “Plumbing Drawings”, “Mechanical (HVAC) Drawings”, and “Electrical Drawings”.

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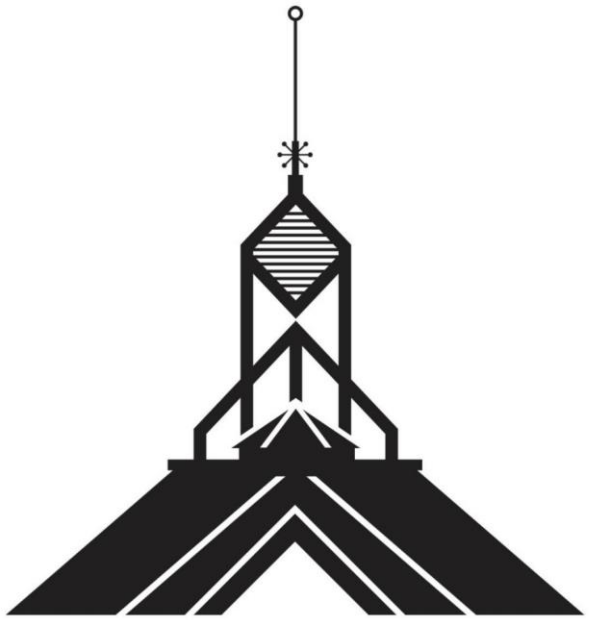
Higher Education Capital Outlay Manual

2023



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Page | 1

Table of Contents

CHAPTER 8: PROJECT DESIGN STANDARDS AND REQUIREMENTS

Section 8.1 General
Section 8.2 Drawing Standards
Section 8.3 Specification Standards
Section 8.4 Cost Estimate Standards
Section 8.5 Design Initiation /Pre-design Conference
Section 8.6 Schematic Design Project Criteria
Section 8.7 Preliminary Design
Section 8.8 Working Drawing
Section 8.9 Bid Forms & Procedures
Section 8.10 Additive Bid Items
Section 8.11 Project Submission Requirements
Section 8.12 Authority Having Jurisdiction Reviews and Approvals
Section 8.13 Quality Control/Quality Assurance
Section 8.14 Value Engineering (VE)
Section 8.15 Structural and Special Inspections, & Structural Observations
Section 8.16 Structural Observations
Section 8.17 Commissioning of HVAC Systems
Section 8.18 Electrical Coordination Analyses (Shop Drawings) Review
Section 8.19 Fire Protection Shop Drawings

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CHAPTER 8: PROJECT DESIGN STANDARDS AND REQUIREMENTS

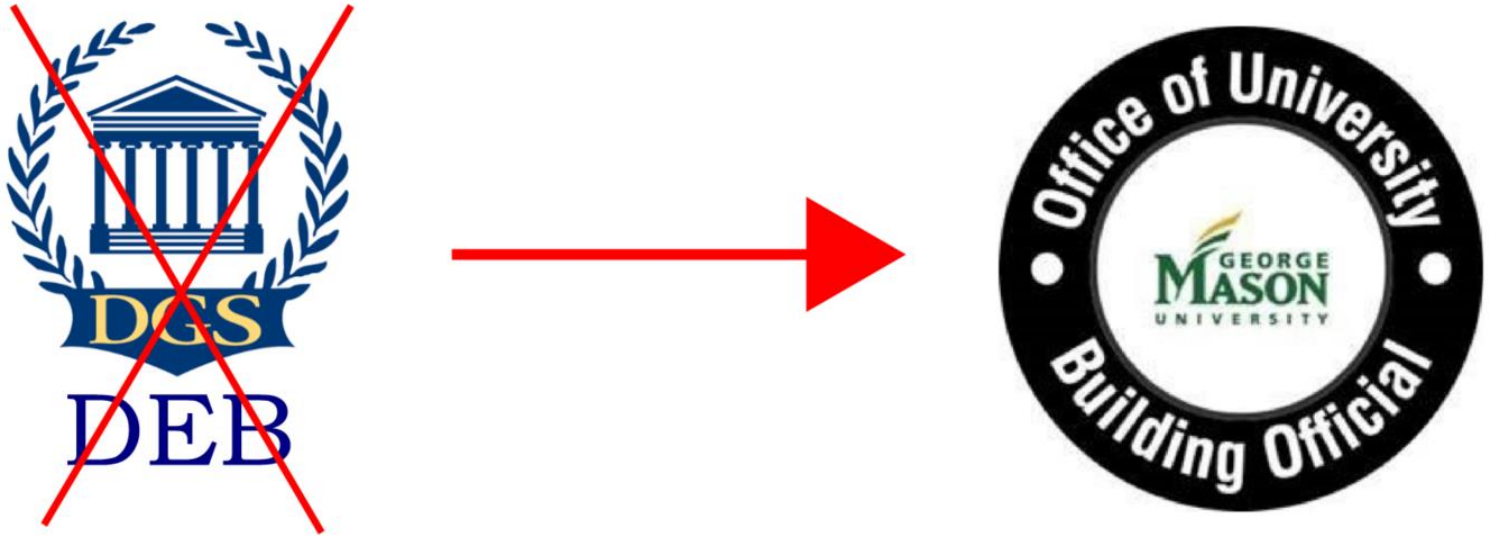
Section 8.1 General

Section 8.2 Drawing Standards

Section 8.7 Preliminary Design

CHAPTER 8: PROJECT DESIGN STANDARDS AND REQUIREMENTS

Note: Entire Section has been revised to reflect the policies/procedures of the George Mason University Office of University Building Official (OUBO) and most references to DEB have been replaced with OUBO where they are acting as the Building Official under Mason's University Management Agreement with the Commonwealth. Some Content from Chapter 7 has been moved to Chapter 8.

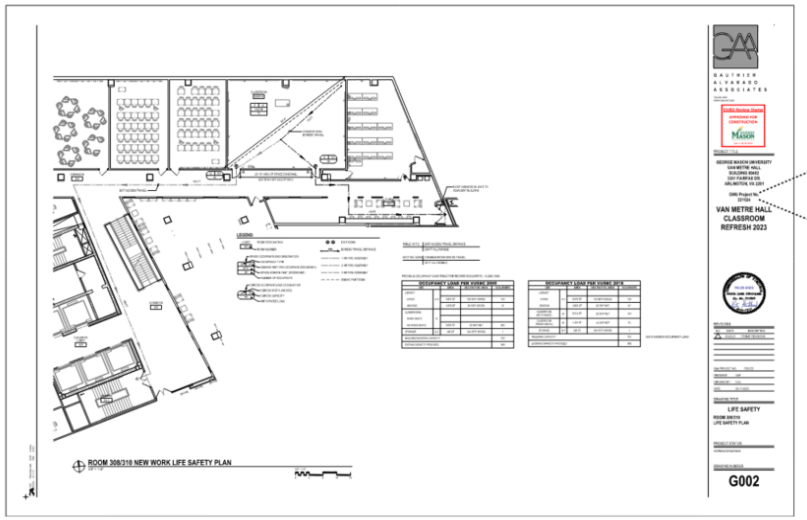


8.1.3 Project Identification on Documents

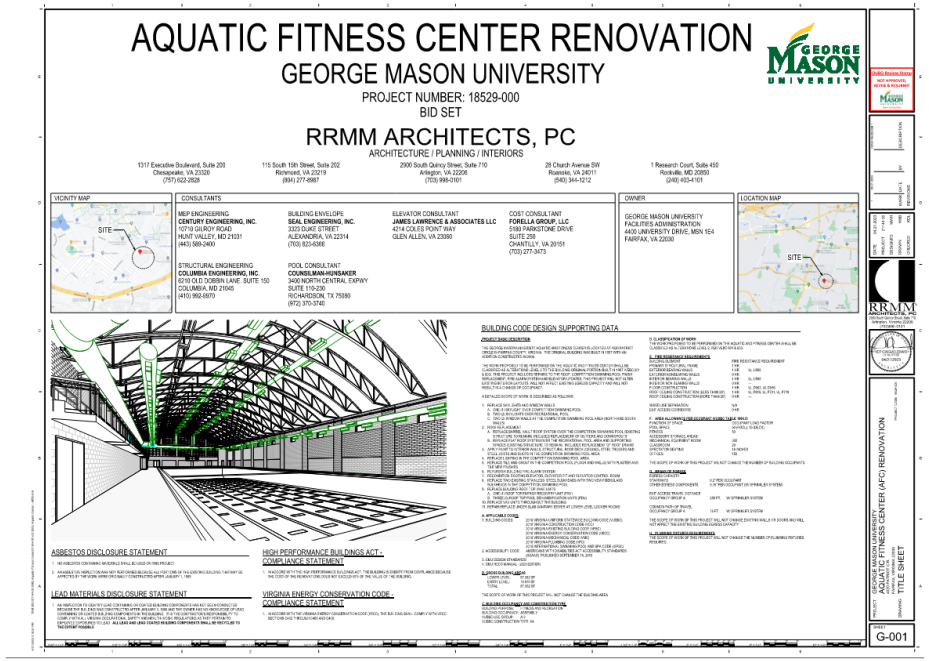
Note: Project Code, project number, project code number are used interchangeably within HECO and include the project number on all correspondence, i.e. email, etc.

SECTION 8.2 DRAWING STANDARDS [**Note**: Standard for Schematic, Preliminary, & Working Drawings.]

8.2.1 General Requirements: Title sheet(s)…



GMU Project No. 221524



8.2.2 Drawing Requirements & Specifications:

8.2.2.1 Arrangement of Drawings: Drawings shall be arranged in the following order with the discipline identifying character shown: [Note: **BOLD** text indicates drawings required for Preliminary Design]

G - Title Sheet, Index, Code Compliance, and Life Safety Drawings [Previously T-Title Sheet and Index]
C - Plot and/or Site plans
C - Sanitary and Civil
B - Boring logs
L - Landscaping
D - Demolition
A - Architectural
S - Structural
FA – Fire Alarm [Previously FP-Fire Protection Information]
FX – Fire Suppression, Standpipes, and Accessories [Previously SP-Sprinkler Systems, Standpipes, and Accessories]
P - Plumbing
M - Mechanical (heating, cooling, ventilation, etc.)
E - Electrical
R - Asbestos Abatement
T–Telecom/AV
AC – Access Controls (Access Controls, Cameras, and Alarm Systems) [New]

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Schematic versus Preliminary Drawings

Schematic Drawings

G - Title Sheet, Index, Code Compliance, and Life Safety Drawings

A - Architectural

Preliminary Drawings

G - Title Sheet, Index, Code Compliance, and Life Safety Drawings

C - Plot and/or Site plans

D - Demolition

A - Architectural

S - Structural

FA – Fire Alarm

FX – Fire Suppression, Standpipes, and Accessories

P - Plumbing

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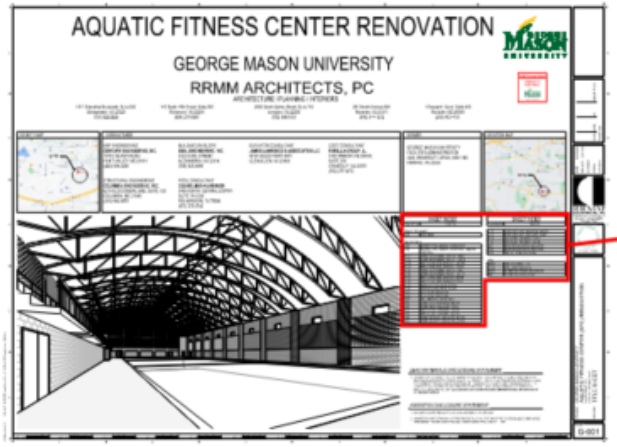
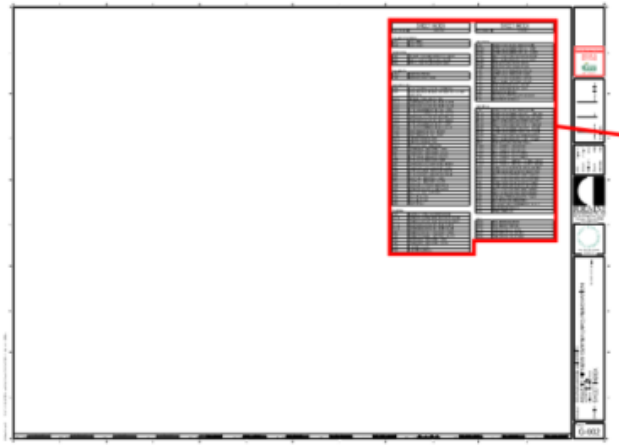
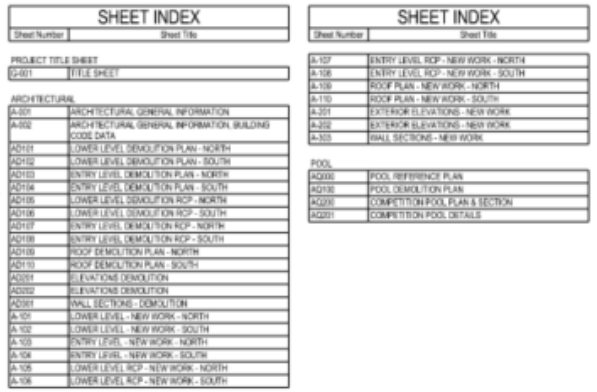
E - Electrical

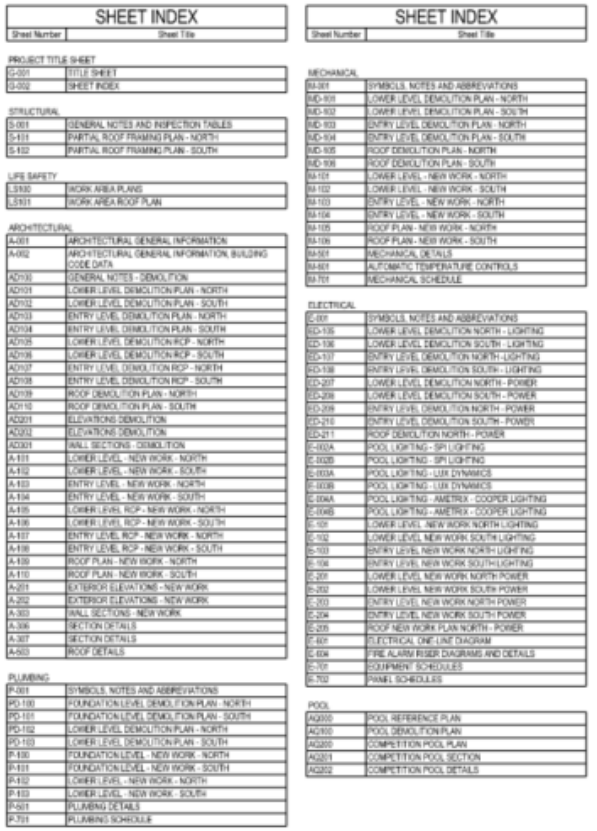


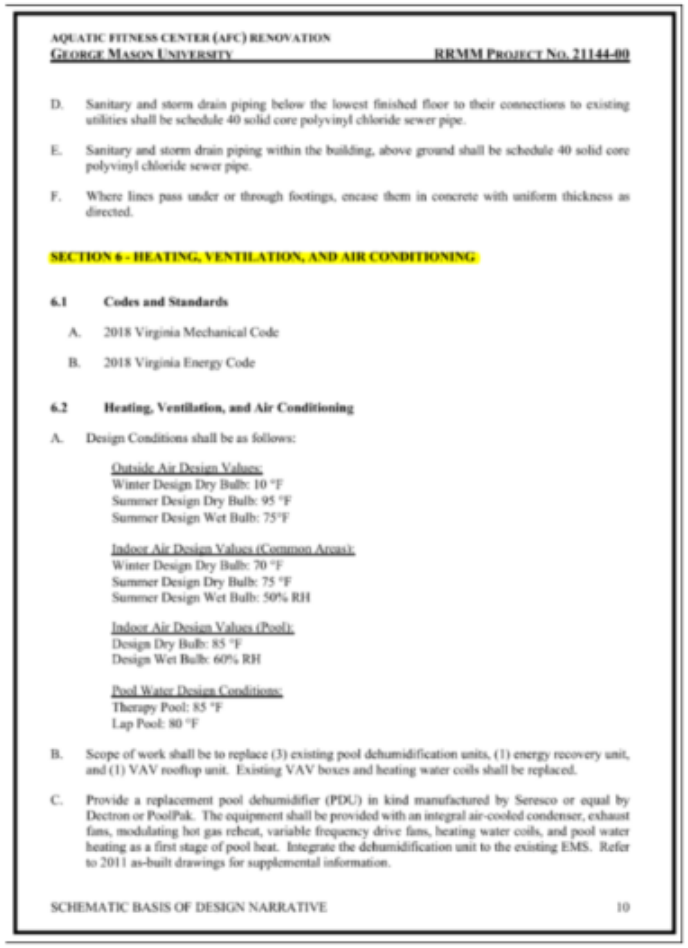
Schematic Drawings



Preliminary Drawings







AQUATIC FITNESS CENTER (AFC) RENOVATION
GEORGE MASON UNIVERSITY — RRMM PROJECT NO. 21144-00

D. Sanitary and storm drain piping below the lowest finished floor to their connections to existing utilities shall be schedule 40 solid core polyvinyl chloride sewer pipe.

E. Sanitary and storm drain piping within the building, above ground shall be schedule 40 solid core polyvinyl chloride sewer pipe.

F. Where lines pass under or through footings, encase them in concrete with uniform thickness as directed.

SECTION 6 - HEATING, VENTILATION, AND AIR CONDITIONING

6.1 Codes and Standards

A. 2018 Virginia Mechanical Code

B. 2018 Virginia Energy Code

6.2 Heating, Ventilation, and Air Conditioning

A. Design Conditions shall be as follows:

Outside Air Design Values:
Winter Design Dry Bulb: 10 °F
Summer Design Dry Bulb: 95 °F
Summer Design Wet Bulb: 75°F

Indoor Air Design Values (Common Areas):
Winter Design Dry Bulb: 70 °F
Summer Design Dry Bulb: 75 °F
Summer Design Wet Bulb: 50% RH

Indoor Air Design Values (Pool):
Design Dry Bulb: 85 °F
Design Wet Bulb: 60% RH

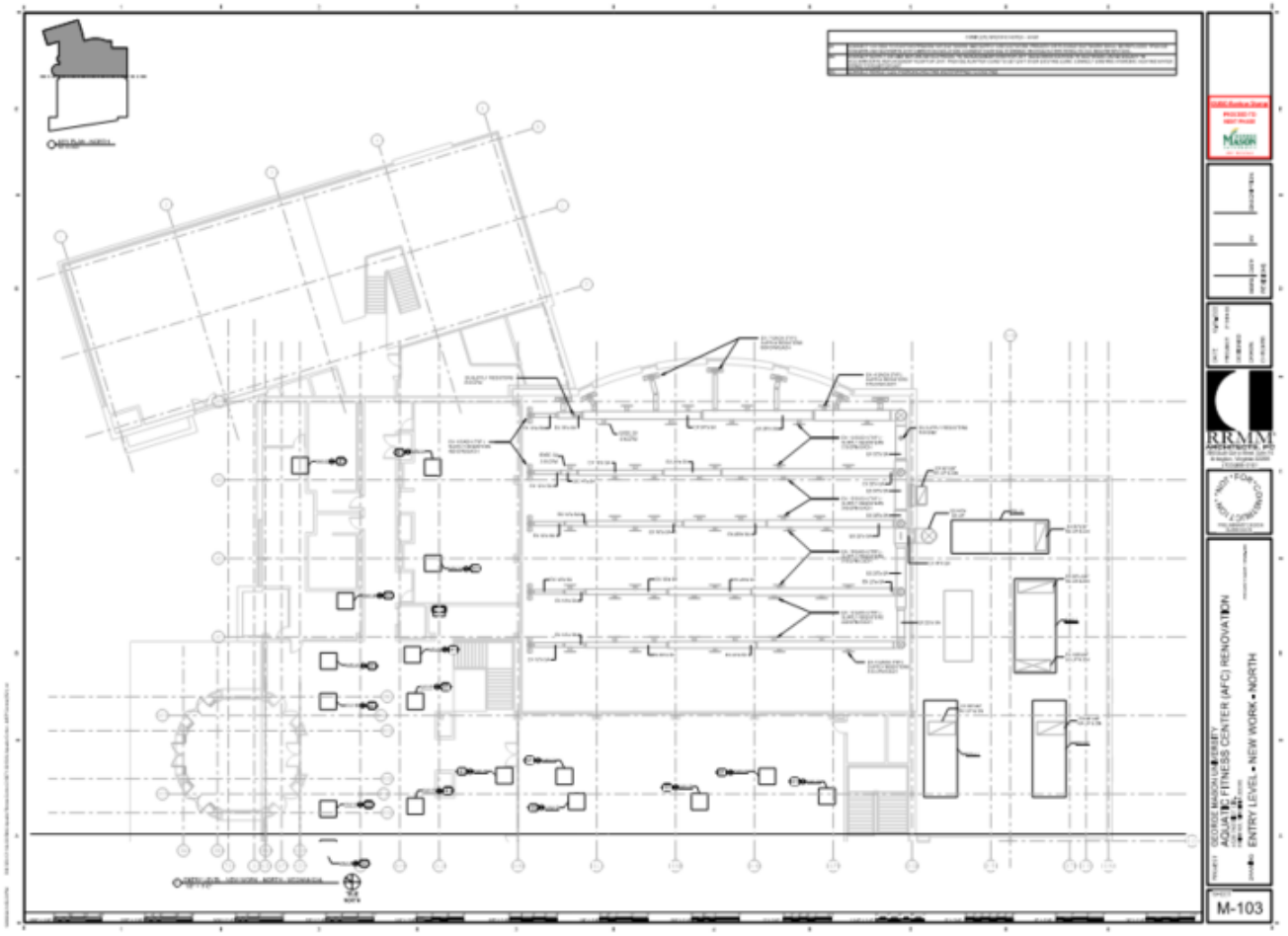
Pool Water Design Conditions:
Therapy Pool: 85 °F
Lap Pool: 80 °F

B. Scope of work shall be to replace (3) existing pool dehumidification units, (1) energy recovery unit, and (1) VAV rooftop unit. Existing VAV boxes and heating water coils shall be replaced.

C. Provide a replacement pool dehumidifier (PDU) in kind manufactured by Seresco or equal by Dectron or PoolPak. The equipment shall be provided with an integral air-cooled condenser, exhaust fans, modulating hot gas reheat, variable frequency drive fans, heating water coils, and pool water heating as a first stage of pool heat. Integrate the dehumidification unit to the existing EMS. Refer to 2011 as-built drawings for supplemental information.

SCHEMATIC BASIS OF DESIGN NARRATIVE 10

Schematic Drawings



Preliminary Drawings

SECTION 8.7 PRELIMINARY DESIGN

8.7.1 General Requirements:

Based on the previous approvals and direction, the A/E shall prepare the Preliminary Design consisting of drawings, narrative, outline specifications, and other documents to fix and describe the size and character of the entire Project as to exterior appearance; foundation, structural, mechanical, and electrical system; materials; and such other essentials as may be appropriate. If any change from the information submitted at the schematic stage relating to the mix or amount of space occurs, submit new information in the format of an updated/current copy of the Capital Budget Request, an Assignable Room and Space Listing, or Department MOU which was the basis for development of the Preliminary Design.

8.7.1.1 Verification of Existing Conditions:

The A/E shall visit the site and ascertain pertinent local conditions that must be addressed in the design. As part of the required services, it is the A/E's responsibility to verify, by on-site observations of applicable existing buildings, the configurations, locations, dimensions, sizes and conditions accessible for verification. Certain assumptions are made regarding existing conditions in the remodeling and or rehabilitation of an existing building. Some of these assumptions may not be verifiable without additional exploration or investigation of the building or site. To minimize the risk during construction of uncovering conditions that are not as shown on the documents and delaying project progress, the Agency should consider and evaluate the advice of the A/E to conduct additional investigation, verifications or checks to verify.

Note: Verification of Existing Conditions required for Schematic, Preliminary, and Working Designs

8.7.6 General Requirements for Preliminary Drawings:

Preliminary drawings shall show the following information unless such information is not applicable to the project:

Title Sheet(s): [Note: **BOLD** text indicates additional Preliminary Drawings requirement]

1. Project Identification: Project Code, Appropriation Act number, and University Work Order number (if applicable).

2. Activity or function(s) to be performed in the facility

3. Edition of the USBC (Part I VCC or Part II VEBC) on which design is based

4. For design on Part II (VEBC), classify work as repairs, alterations (clarify Level 1 or Level 2), change of occupancy, addition, historic building or moved building.

5. Applicable accessibility standards

6. VCC Construction Type

7. (Use) Group(s) per VCC. For mixed-use occupancies, indicate which Groups are separated and non-separated

8. Other major code(s) used as a basis for design

Title Sheet(s) continued…

9. Asbestos Disclosure Statement and Lead Disclosure Statement.

10. The applicable High-Performance Buildings Act Compliance Statement (Refer to Section 7.2.6 and Appendix D)

11. The applicable Virginia Energy Conservation Code Compliance Statement (Refer to Section 7.2.7 and Appendix D)

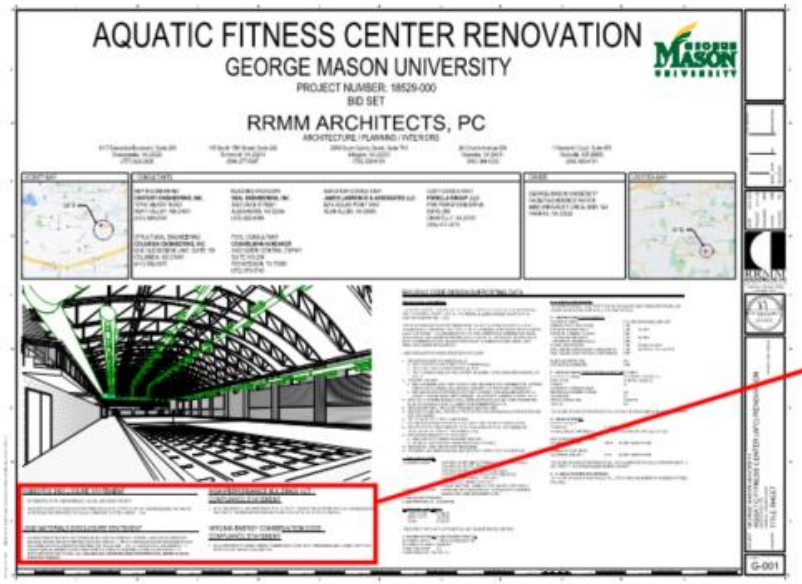
12. Maximum VCC occupancy for each level and total for the building.

13. Location and vicinity maps noted to show project location.

14. Tabulation of GSF per floor (new and renovated), total GSF, (all floors – new and renovated), total building volume.

15. Tabulation of “Building Area” per VCC definition (per story).

16. Tabulation of units: Number of parking spaces, auditorium seats, bedrooms etc.



ASBESTOS DISCLOSURE STATEMENT

1. NO ASBESTOS CONTAINING MATERIALS SHALL BE USED ON THIS PROJECT
2. AN ASBESTOS INSPECTION WAS NOT PERFORMED BECAUSE ALL PORTIONS OF THE EXISTING BUILDING THAT MAY BE AFFECTED BY THE WORK WERE ORIGINALLY CONSTRUCTED AFTER JANUARY 1, 1985

LEAD MATERIALS DISCLOSURE STATEMENT

1. AN INSPECTION TO IDENTIFY LEAD CONTAINING OR COATED BUILDING COMPONENTS HAS NOT BEEN CONDUCTED BECAUSE THE BUILDING WAS CONSTRUCTED AFTER JANUARY 1, 1985 AND THE OWNER HAS NO KNOWLEDGE OF LEAD CONTAINING OR COATED BUILDING COMPONENTS IN THE BUILDING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL VIRGINIA OCCUPATIONAL SAFETY AND HEALTH (VOSH) REGULATIONS AS THEY PERTAIN TO EMPLOYEE EXPOSURES TO LEAD. **ALL LEAD AND LEAD-COATED BUILDING COMPONENTS SHALL BE RECYCLED TO THE EXTENT POSSIBLE**

HIGH PERFORMANCE BUILDINGS ACT - COMPLIANCE STATEMENT

1. IN ACCORD WITH THE HIGH PERFORMANCE BUILDINGS ACT, THE BUILDING IS EXEMPT FROM COMPLIANCE BECAUSE THE COST OF THE RENOVATIONS DOES NOT EXCEED 50% OF THE VALUE OF THE BUILDING.

VIRGINIA ENERGY CONSERVATION CODE - COMPLIANCE STATEMENT

1. IN ACCORD WITH THE VIRGINIA ENERGY CONSERVATION CODE (VECC), THE BUILDING SHALL COMPLY WITH VECC SECTIONS C402 THROUGH C405 AND C408.

Statements

Title Sheet(s) continued…

17. Statement for exception to providing Baby Changing Facilities, if applicable (Refer to Section 7.2.11.2)

18. Building Purpose/Occupancy.

19. Design occupancy load for each level and total for the building

20. Index of drawings.

21. The uniform date of the completed preliminary design documents

22. Agency approved Delegated Design list

23. Structural Observations: State N/A or list the specification sections that require Structural Observations. (Refer to Section 8.15.1)

24. Statement documenting whether the local emergency public safety personnel utilizes public safety wireless communications.

Site Plans

(site/improvement plan & composite utility plan minimum for new construction and additions; should be based on approved comprehensive Master Plan.):

1. Plan scale and north arrow.

2. New and existing elevation contours affected by the new work.

3. Floor and contour elevations.

4. Applicable boundaries with survey computations.

5. Location and dimensioned relationship of major components of the new work with respect to boundaries and existing structures.

6. FEMA floodplain designation(s). Show floodplain boundaries. Show the base flood elevation for sites in the 100-year or 500-year floodplains

7. Location of test borings.

8. Location and quantities of general parking and handicap parking.

9. Accessible routes

Site Plans continued…

10. Pedestrian traffic routes.

11. Items to be demolished: structures, walks, utilities, trees, etc.

12. Proposed landscaping (planting materials)

13. Existing and new utilities: storm drainage, sanitary sewers, water distribution, fuel gas distribution, building utility distribution pipes and tunnels, electric and telephone poles and lines, hydrant locations, and data on fire flow test, etc.

14. Site improvements such as fencing, lighting, etc.

15. Typical paving section for proposed types/thicknesses.

16. Identify/show special earthwork recommended and construction considerations noted in soils report.

17. Archaeology Features

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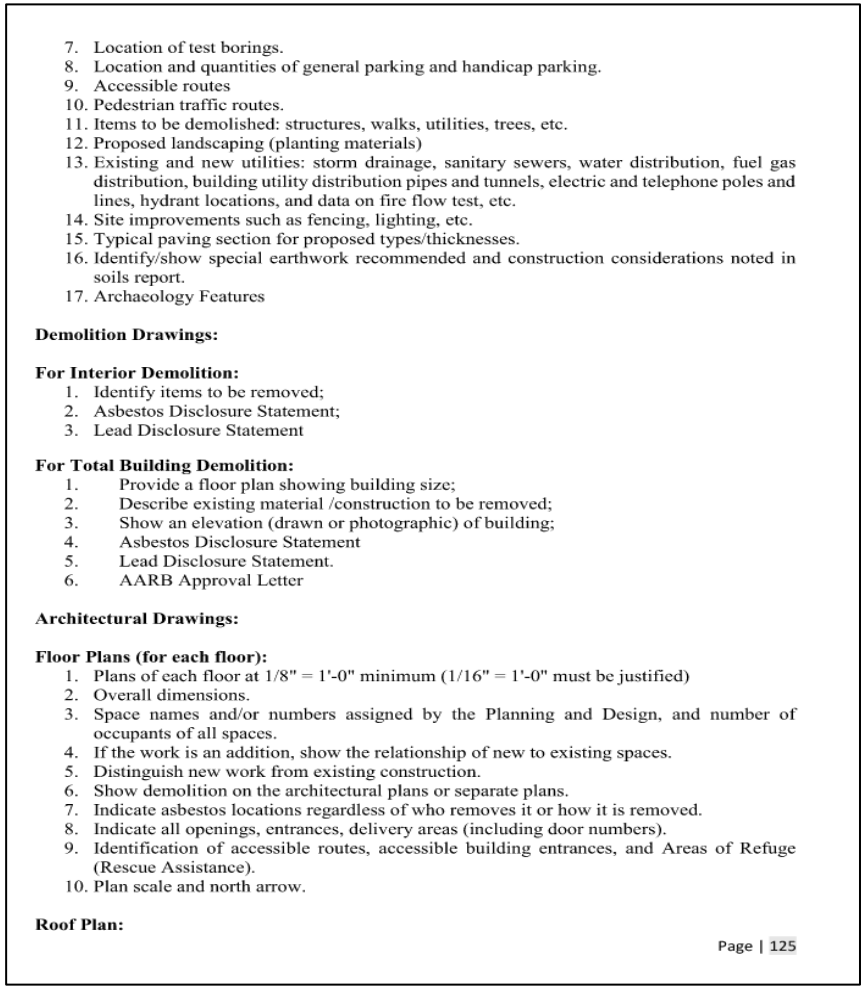
Demolition Drawings:

For Interior Demolition:

1. Identify items to be removed;
2. Asbestos Disclosure Statement;
3. Lead Disclosure Statement

For Total Building Demolition:

1. Provide a floor plan showing building size;
2. Describe existing material /construction to be removed;
3. Show an elevation (drawn or photographic) of building;
4. Asbestos Disclosure Statement
5. Lead Disclosure Statement.
6. AARB Approval Letter



7. Location of test borings.
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3. Show an elevation (drawn or photographic) of building;
4. Asbestos Disclosure Statement
5. Lead Disclosure Statement.
6. AARB Approval Letter

Architectural Drawings:

Floor Plans (for each floor):

1. Plans of each floor at 1/8" = 1'-0" minimum (1/16" = 1'-0" must be justified)
2. Overall dimensions.
3. Space names and/or numbers assigned by the Planning and Design, and number of occupants of all spaces.
4. If the work is an addition, show the relationship of new to existing spaces.
5. Distinguish new work from existing construction.
6. Show demolition on the architectural plans or separate plans.
7. Indicate asbestos locations regardless of who removes it or how it is removed.
8. Indicate all openings, entrances, delivery areas (including door numbers).
9. Identification of accessible routes, accessible building entrances, and Areas of Refuge (Rescue Assistance).
10. Plan scale and north arrow.

Roof Plan:

Page | 125

Architectural Drawings:

Floor Plans (for each floor):

1. Plans of each floor at 1/8" = 1'-0" minimum (1/16" = 1'-0" must be justified)
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10. Plan scale and north arrow.

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Architectural Drawings continued…

Roof Plan:

1. All proposed and existing drains.

2. Roof slope: 1/4" per 1'-0" to drain minimum for all areas (unless waived for re-roofing) including auxiliary drains.

3. Indicate slope (high to low) with direction arrows

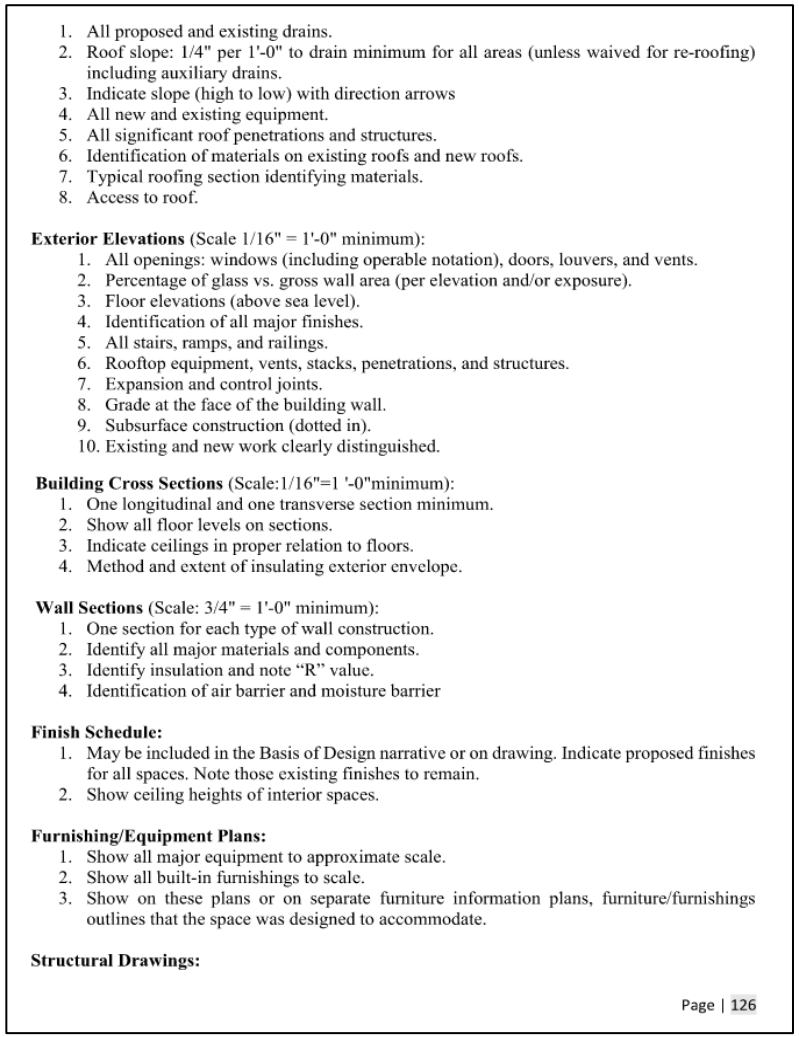
4. All new and existing equipment.

5. All significant roof penetrations and structures.

6. Identification of materials on existing roofs and new roofs.

7. Typical roofing section identifying materials.

8. Access to roof.



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2. Roof slope: 1/4" per 1'-0" to drain minimum for all areas (unless waived for re-roofing) including auxiliary drains.
3. Indicate slope (high to low) with direction arrows
4. All new and existing equipment.
5. All significant roof penetrations and structures.
6. Identification of materials on existing roofs and new roofs.
7. Typical roofing section identifying materials.
8. Access to roof.

Exterior Elevations (Scale 1/16" = 1'-0" minimum):

1. All openings: windows (including operable notation), doors, louvers, and vents.
2. Percentage of glass vs. gross wall area (per elevation and/or exposure).
3. Floor elevations (above sea level).
4. Identification of all major finishes.
5. All stairs, ramps, and railings.
6. Rooftop equipment, vents, stacks, penetrations, and structures.
7. Expansion and control joints.
8. Grade at the face of the building wall.
9. Subsurface construction (dotted in).
10. Existing and new work clearly distinguished.

Building Cross Sections (Scale:1/16"=1 '-0"minimum):

1. One longitudinal and one transverse section minimum.
2. Show all floor levels on sections.
3. Indicate ceilings in proper relation to floors.
4. Method and extent of insulating exterior envelope.

Wall Sections (Scale: 3/4" = 1'-0" minimum):

1. One section for each type of wall construction.
2. Identify all major materials and components.
3. Identify insulation and note "R" value.
4. Identification of air barrier and moisture barrier

Finish Schedule:

1. May be included in the Basis of Design narrative or on drawing. Indicate proposed finishes for all spaces. Note those existing finishes to remain.
2. Show ceiling heights of interior spaces.

Furnishing/Equipment Plans:

1. Show all major equipment to approximate scale.
2. Show all built-in furnishings to scale.
3. Show on these plans or on separate furniture information plans, furniture/furnishings outlines that the space was designed to accommodate.

Structural Drawings:

Page | 126

Architectural Drawings continued…

Exterior Elevations (Scale 1/16" = 1'-0" minimum):

1. All openings: windows (including operable notation), doors, louvers, and vents.

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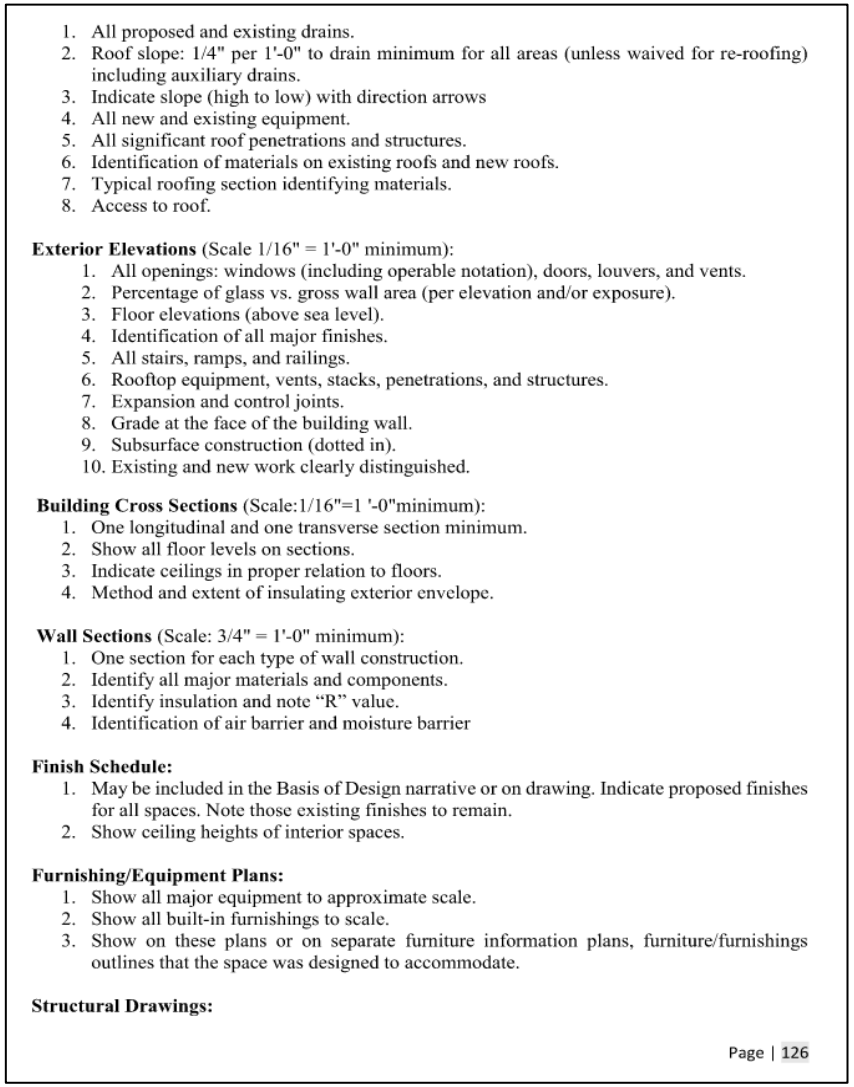

1. All proposed and existing drains.
2. Roof slope: 1/4" per 1'-0" to drain minimum for all areas (unless waived for re-roofing) including auxiliary drains.
3. Indicate slope (high to low) with direction arrows
4. All new and existing equipment.
5. All significant roof penetrations and structures.
6. Identification of materials on existing roofs and new roofs.
7. Typical roofing section identifying materials.
8. Access to roof.

Exterior Elevations (Scale 1/16" = 1'-0" minimum):

1. All openings: windows (including operable notation), doors, louvers, and vents.
2. Percentage of glass vs. gross wall area (per elevation and/or exposure).
3. Floor elevations (above sea level).
4. Identification of all major finishes.
5. All stairs, ramps, and railings.
6. Rooftop equipment, vents, stacks, penetrations, and structures.
7. Expansion and control joints.
8. Grade at the face of the building wall.
9. Subsurface construction (dotted in).
10. Existing and new work clearly distinguished.

Building Cross Sections (Scale:1/16"=1 '-0"minimum):

1. One longitudinal and one transverse section minimum.
2. Show all floor levels on sections.
3. Indicate ceilings in proper relation to floors.
4. Method and extent of insulating exterior envelope.

Wall Sections (Scale: 3/4" = 1'-0" minimum):

1. One section for each type of wall construction.
2. Identify all major materials and components.
3. Identify insulation and note "R" value.
4. Identification of air barrier and moisture barrier

Finish Schedule:

1. May be included in the Basis of Design narrative or on drawing. Indicate proposed finishes for all spaces. Note those existing finishes to remain.
2. Show ceiling heights of interior spaces.

Furnishing/Equipment Plans:

1. Show all major equipment to approximate scale.
2. Show all built-in furnishings to scale.
3. Show on these plans or on separate furniture information plans, furniture/furnishings outlines that the space was designed to accommodate.

Structural Drawings:

Page | 126

Architectural Drawings continued…

Building Cross Sections
(Scale:1/16"=1 '-0"minimum):

1. One longitudinal and one transverse section minimum.

2. Show all floor levels on sections.

3. Indicate ceilings in proper relation to floors.

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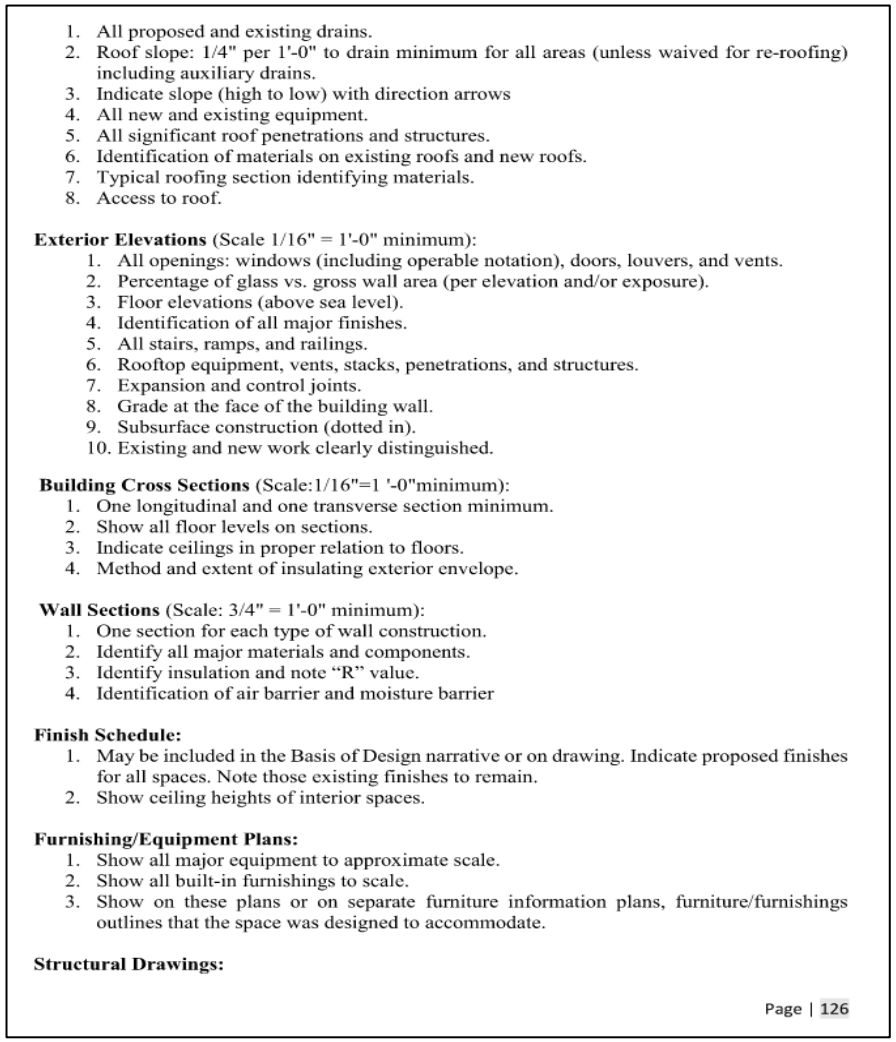

1. All proposed and existing drains.
2. Roof slope: 1/4" per 1'-0" to drain minimum for all areas (unless waived for re-roofing) including auxiliary drains.
3. Indicate slope (high to low) with direction arrows
4. All new and existing equipment.
5. All significant roof penetrations and structures.
6. Identification of materials on existing roofs and new roofs.
7. Typical roofing section identifying materials.
8. Access to roof.

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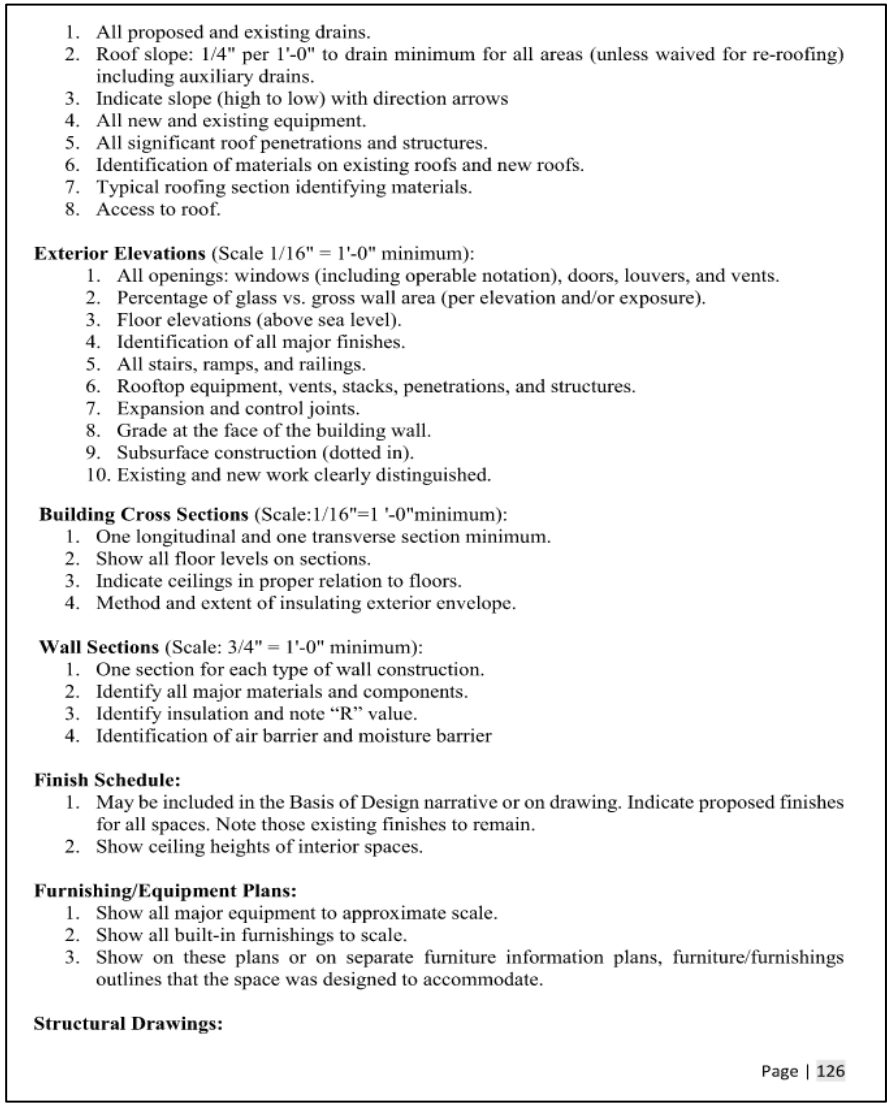

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Structural Drawings:

Page | 126

Structural Drawings (S):

1. Provide Live Loads, Snow Loads, Wind Loads, and Seismic Criteria used for structural design…

2. Show design bearing / support capacity…

3. Provide the design lateral active and at-rest earth pressures, where applicable.

4. Provide foundation Plan indicating type & tentative sizes

5. Provide foundation details and improved improvements to bearing strata and other special requirements.

6. Provide Floor and roof Framing Plans of each level…

7. Provide Typical Section(s) of framing identifying materials, tentative member sizes, thicknesses and, depths proposed.

8. Provide Typical Section of floor system.

9. Indicate structural construction materials and properties.

10. Provide Details of connections to existing buildings, if applicable.

11. Identify elements of proposed lateral force resisting system.

Structural Drawings:

1. Provide Live Loads, Snow Loads, Wind Loads, and Seismic Criteria used for structural design. Refer to VCC Chapter 16. In the Seismic Criteria, also include the building height, Hn and the fundamental period used, T.
2. Show design bearing / support capacity (soil bearing, pile capacity, caisson capacity) for foundation system geo-tech design criteria for shallow and deep foundations and earth structures.
3. Provide the design lateral active and at-rest earth pressures, where applicable.
4. Provide foundation Plan indicating type & tentative sizes
5. Provide foundation details and improved improvements to bearing strata and other special requirements.
6. Provide Floor and roof Framing Plans of each level indicating type of system and tentative member sizes/depths and column spacing with defined grid lines.
7. Provide Typical Section(s) of framing identifying materials, tentative member sizes, thicknesses and, depths proposed.
8. Provide Typical Section of floor system.
9. Indicate structural construction materials and properties.
10. Provide Details of connections to existing buildings, if applicable.
11. Identify elements of proposed lateral force resisting system.

GEORGE MASON UNIVERSITY

Code Compliance & Life Safety (G) Plans:

[**BOLD** type indicates additional Preliminary Drawing requirement]

1. Applicable edition of USBC and other applicable codes, including accessibility standards.

2. For existing buildings, compliance with the VEBC shall first be established. The work performed on an existing building or structure must be classified on the construction drawings as repairs, alterations, change of occupancy, addition, historic building or moved building, as further defined in the VEBC. Alterations to be further classified as Level 1 or Level 2.

3. Define each Use Group area and show its USBC Use Group classification

4. Height and area calculations in accord with USBC.

5. Total building perimeter (linear feet)

6. Location of all 30’ wide open perimeter spaces

Code Compliance & Life Safety (G) Plans continued…

7. Tabulation of area for each building level, story, or floor indicating number of occupants accommodated by each. If the project is an addition, list new and existing areas and occupancies.

8. Required or intended fire protection systems, fire detection and alarm systems, fire pump systems, smoke control systems.

9. Indicate use(s) of all building spaces (offices, auditoriums, etc.) or reference drawings where complete information may be found.

10. Show the room/space number and the maximum number of occupants per USBC for each space.

11. Distinguish new walls from existing walls and new construction from existing construction. Completely show routes of all fire walls, fire separation walls (including exit access corridor walls), and smoke partitions.

12. Identify the extent of all fire rated floor/ceiling and roof/ceiling assemblies.

13. Identify and show rating of all rated assemblies, smoke barriers.

Code Compliance & Life Safety (G) Plans:

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2. For existing buildings, compliance with the VEBC shall first be established. The work performed on an existing building or structure must be classified on the construction drawings as repairs, alterations, change of occupancy, addition, historic building or moved building, as further defined in the VEBC. Alterations to be further classified as Level 1 or Level 2.
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Page | 127

GEORGE MASON UNIVERSITY

Fire Suppression (FX) Plans:

1. Water flow test data required by NFPA 13.

2. Identify each type of automatic fire suppression system and where it is or is not used.

3. Identify occupancy hazard classifications and densities as established in NFPA 13 for each floor level.

4. Show and identify all new and existing standpipes.

5. Provide a small-scale drawing showing…

6. Determine capability of water supply and verify initially…

Fire Suppression (FX) Plans:

1. Water flow test data required by NFPA 13.
2. Identify each type of automatic fire suppression system and where it is or is not used.
3. Identify occupancy hazard classifications and densities as established in NFPA 13 for each floor level.
4. Show and identify all new and existing standpipes.
5. Provide a small-scale drawing showing locations of water hydrants, test and low hydrants (for water flow tests), and routing of underground pipe; or, alternatively, state the drawing number where the information may be found on other drawings. Conduct the test in conformance with NFPA 13, 14, and 291 and provide the required documentation of test results. (See NFPA 13 annex for additional guidance.) Two locations are required for these tests of water supplies. Use an approved gauge to read the 'test' or 'residual' pressures at the hydrant nearest the building and a 'Pitot" tube or gauge at the next closest hydrant to measure the 'flow'. If the local water authority prohibits flow testing, indicate on the documents the flow and pressure data provided by the authority and note as such.
6. Determine capability of water supply and verify initially if a fire pump is necessary to boost the available water supply pressure. Where an existing fire pump is to be used in the project, its performance and condition is to be established and validated. This is to be accomplished by submitting a copy of the recent report of the fire pump inspection, testing, and maintenance, compliant with the Virginia Statewide Fire Prevention Code: Fire Pumps - Testing and Maintenance. This section requires that fire pumps be inspected, tested, and maintained in accordance with NFPA 25. The current edition of NFPA 25 defines the parameters for the report. The performance and condition of the fire pump is to be validated on an annual basis.

GEORGE MASON UNIVERSITY

Fire Alarm, Detection and Signaling System (FA) Plans:

Provide plan of each level showing the following (refer also to chapter 7 of this manual for additional information):

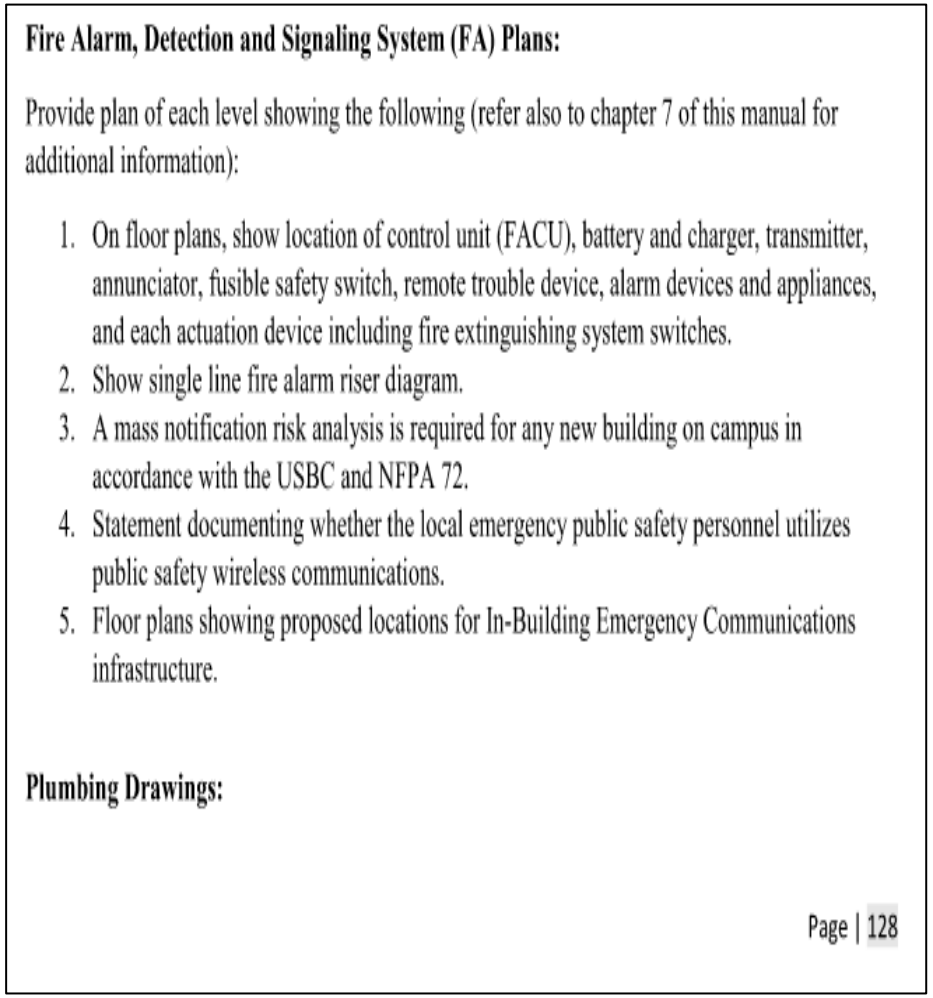
1. On floor plans, show location of control unit (FACU), battery and charger, transmitter, annunciator, fusible safety switch, remote trouble device, alarm devices and appliances, and each actuation device including fire extinguishing system switches.

2. Show single line fire alarm riser diagram.

3. A mass notification risk analysis is required for any new building on campus in accordance with the USBC and NFPA 72.

4. Statement documenting whether the local emergency public safety personnel utilizes public safety wireless communications.

5. Floor plans showing proposed locations for In-Building Emergency Communications infrastructure.



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5. Floor plans showing proposed locations for In-Building Emergency Communications infrastructure.

Plumbing Drawings:

Page | 128

Plumbing Drawings (P):

1. Provide plans of each floor (with space names and numbers) noting fixture locations and types and indicating routing of main distribution lines with tentative sizes.

2. Provide riser diagrams for all piping systems.

3. Provide location of water supply and distribution, sanitary drainage, storm drainage, sprinkler services, and fuel gas services to the building.

4. Provide plumbing fixture schedule.

5. Provide location, sizes, and types of Water Heaters/Heat Exchangers, Storage Tanks, Flues, etc.

6. Provide fuel gas piping layout and connected load, if applicable.

Plumbing Drawings:

Page | 128

1. Provide plans of each floor (with space names and numbers) noting fixture locations and types and indicating routing of main distribution lines with tentative sizes.
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6. Provide fuel gas piping layout and connected load, if applicable.

GEORGE MASON UNIVERSITY

Mechanical (HVAC) Drawings (M):

1. Provide plans of each floor (with space names and numbers) showing single line duct layouts, tentative air (supply, return, outdoor air, exhaust) quantities, equipment locations, and layouts and general routing of heating/cooling piping.

2. Provide riser diagrams for all major duct systems and piping systems.

3. Provide equipment schedules with tentative sizes, capacities, ID #, features, etc.

4. Indicate locations and sizes of fans, pumps, compressors, air handling equipment, dampers, etc.

5. Provide preliminary layout and elevation of equipment room and/or central system showing configuration, tie-ins, etc. as necessary to describe system.

6. Provide central heating or cooling plants, distribution piping, equipment.

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1. Provide plans of each floor (with space names and numbers) showing single line duct layouts, tentative air (supply, return, outdoor air, exhaust) quantities, equipment locations, and layouts and general routing of heating/cooling piping.
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GEORGE MASON UNIVERSITY

Electrical Drawings (E):

Power and lighting plans (with space numbers) may be combined if submittal clearly conveys required information. (See **Appendix D** for additional Preliminary Submittal requirements.)

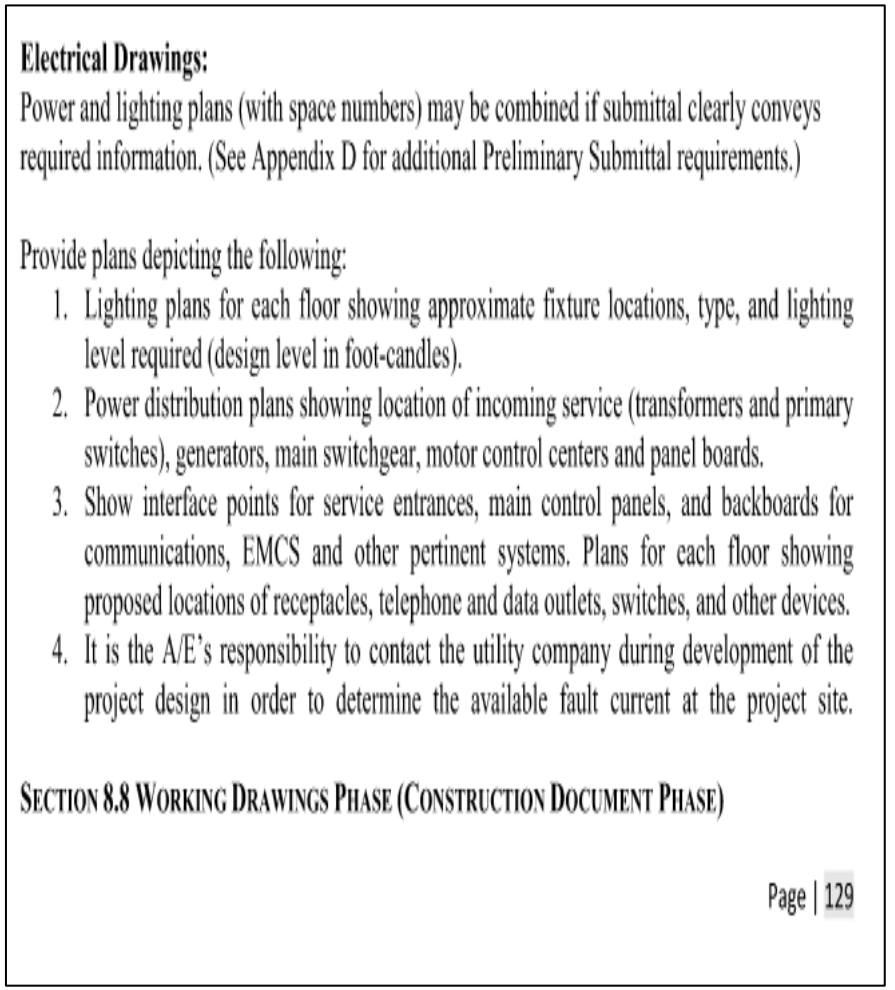
Provide plans depicting the following:

1. Lighting plans for each floor showing approximate fixture locations, type, and lighting level required (design level in foot-candles).

2. Power distribution plans showing location of incoming service (transformers and primary switches), generators, main switchgear, motor control centers and panel boards.

3. Show interface points for service entrances, main control panels, and backboards for communications, EMCS and other pertinent systems. Plans for each floor showing proposed locations of receptacles, telephone and data outlets, switches, and other devices.

4. It is the A/E's responsibility to contact the utility company during development of the project design in order to determine the available fault current at the project site.



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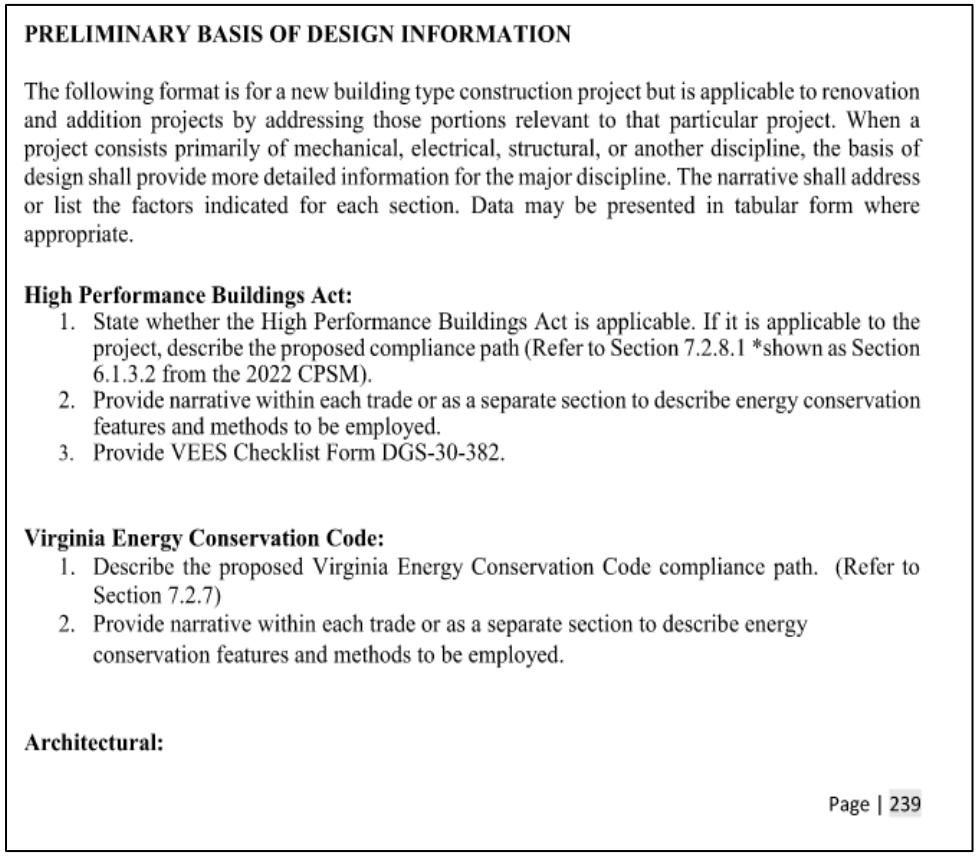
SECTION 8.8 WORKING DRAWINGS PHASE (CONSTRUCTION DOCUMENT PHASE)

Page | 129

APPENDIX D BASIS OF DESIGN NARRATIVES

PRELIMINARY BASIS OF DESIGN INFORMATION

The following format is for a new building type construction project but is applicable to renovation and addition projects by addressing those portions relevant to that particular project. When a project consists primarily of mechanical, electrical, structural, or another discipline, the basis of design shall provide more detailed information for the major discipline. The narrative shall address or list the factors indicated for each section. Data may be presented in tabular form where appropriate.



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High Performance Buildings Act:

1. State whether the High Performance Buildings Act is applicable. If it is applicable to the project, describe the proposed compliance path (Refer to Section 7.2.8.1 *shown as Section 6.1.3.2 from the 2022 CPSM).
2. Provide narrative within each trade or as a separate section to describe energy conservation features and methods to be employed.
3. Provide VEES Checklist Form DGS-30-382.

Virginia Energy Conservation Code:

1. Describe the proposed Virginia Energy Conservation Code compliance path. (Refer to Section 7.2.7)
2. Provide narrative within each trade or as a separate section to describe energy conservation features and methods to be employed.

Architectural:

Page | 239

PRELIMINARY BASIS OF DESIGN INFORMATION
continued…

Architectural

Structural

Plumbing

Heating, Ventilating and Air Conditioning →

Environmental Pollution Control

Asbestos, Lead-Based Paint and Hazardous Material

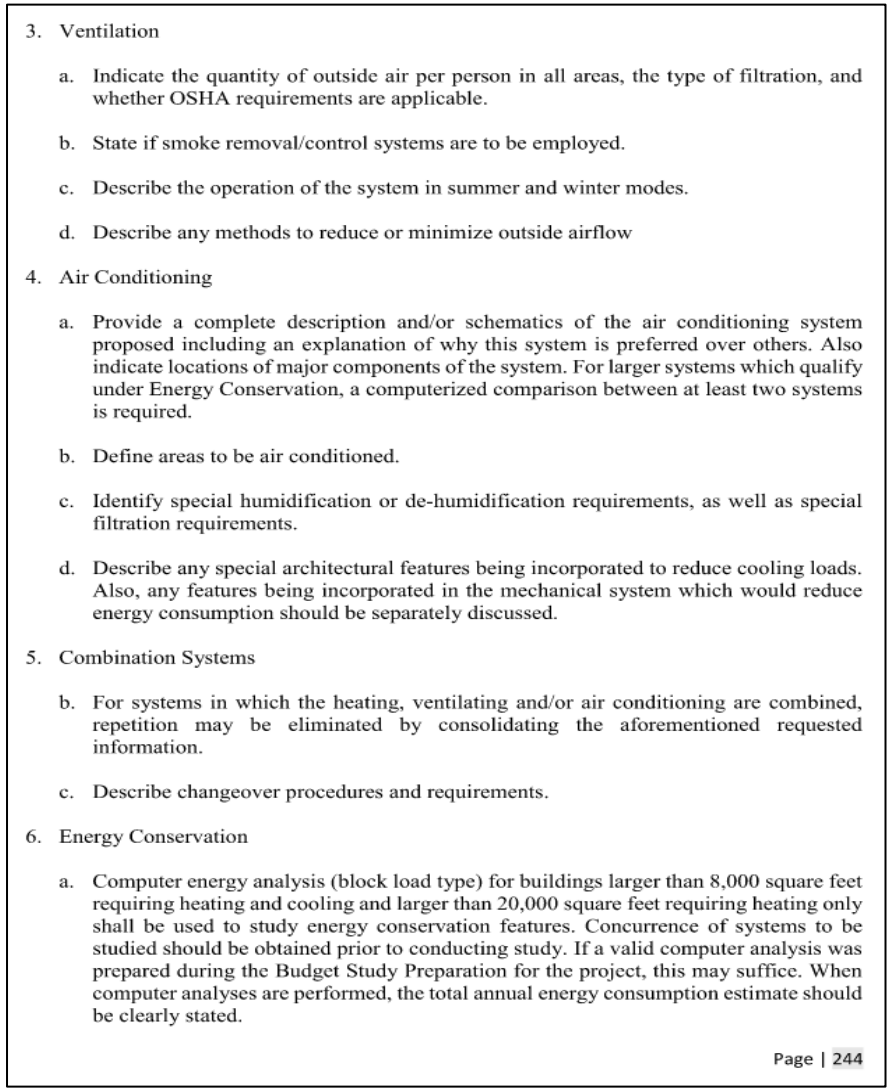
Special Mechanical Systems

Central Heating Plants and Heating Plant Additions

Refrigeration (Cold Storage)

Thermal Storage

Fire Protection Systems



3. Ventilation

   a. Indicate the quantity of outside air per person in all areas, the type of filtration, and whether OSHA requirements are applicable.

   b. State if smoke removal/control systems are to be employed.

   c. Describe the operation of the system in summer and winter modes.

   d. Describe any methods to reduce or minimize outside airflow

4. Air Conditioning

   a. Provide a complete description and/or schematics of the air conditioning system proposed including an explanation of why this system is preferred over others. Also indicate locations of major components of the system. For larger systems which qualify under Energy Conservation, a computerized comparison between at least two systems is required.

   b. Define areas to be air conditioned.

   c. Identify special humidification or de-humidification requirements, as well as special filtration requirements.

   d. Describe any special architectural features being incorporated to reduce cooling loads. Also, any features being incorporated in the mechanical system which would reduce energy consumption should be separately discussed.

5. Combination Systems

   b. For systems in which the heating, ventilating and/or air conditioning are combined, repetition may be eliminated by consolidating the aforementioned requested information.

   c. Describe changeover procedures and requirements.

6. Energy Conservation

   a. Computer energy analysis (block load type) for buildings larger than 8,000 square feet requiring heating and cooling and larger than 20,000 square feet requiring heating only shall be used to study energy conservation features. Concurrence of systems to be studied should be obtained prior to conducting study. If a valid computer analysis was prepared during the Budget Study Preparation for the project, this may suffice. When computer analyses are performed, the total annual energy consumption estimate should be clearly stated.

Page | 244

PRELIMINARY BASIS OF DESIGN INFORMATION
continued…

Electrical

Electronic Systems

Energy Monitoring and Control System (ECMS)

Site and Landscaping

Water Supply

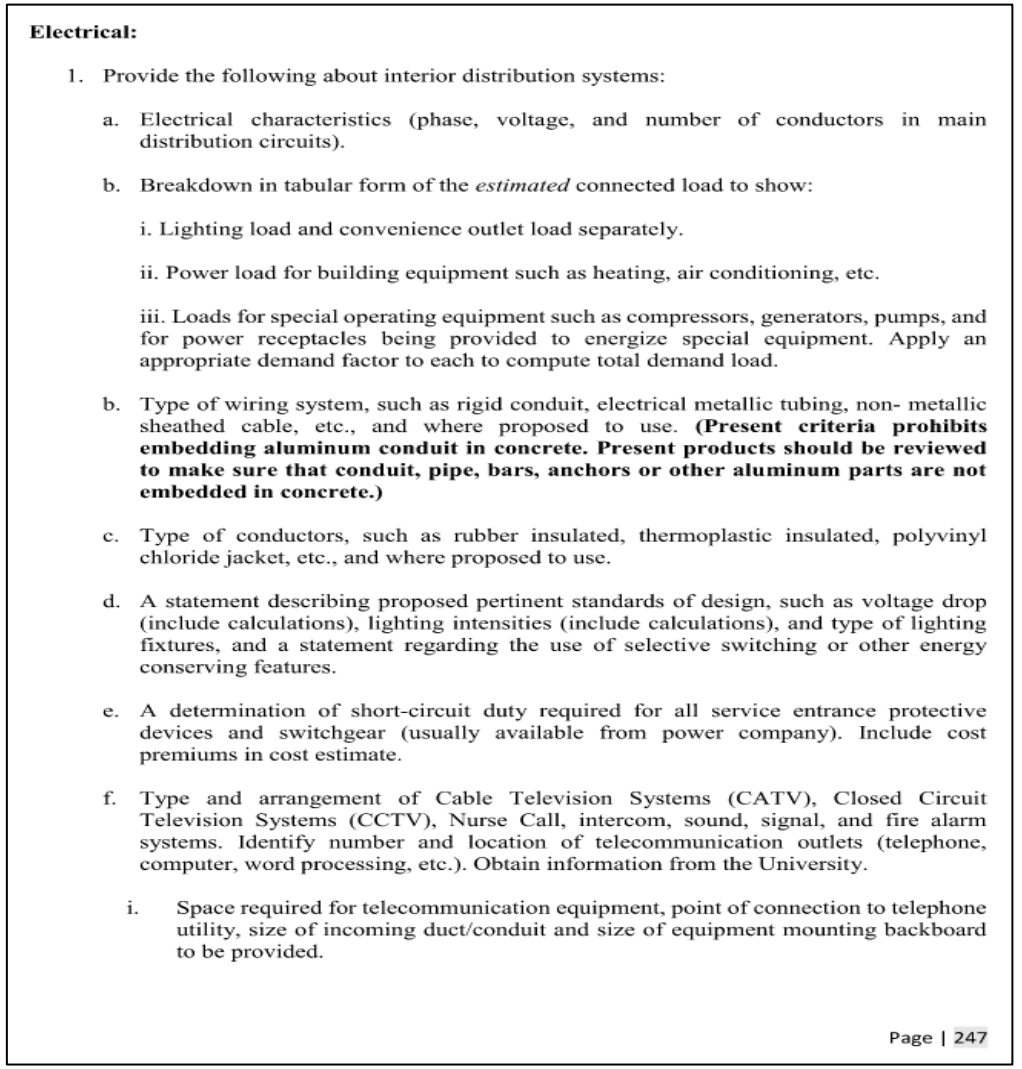
Sewers and Sewage Disposal Systems

Roads, Driveways, Parking Areas and Walks

Dust and Erosion Control

Fencing

Stormwater Management



Electrical:

1. Provide the following about interior distribution systems:

   a. Electrical characteristics (phase, voltage, and number of conductors in main distribution circuits).

   b. Breakdown in tabular form of the *estimated* connected load to show:

      i. Lighting load and convenience outlet load separately.

      ii. Power load for building equipment such as heating, air conditioning, etc.

      iii. Loads for special operating equipment such as compressors, generators, pumps, and for power receptacles being provided to energize special equipment. Apply an appropriate demand factor to each to compute total demand load.

   b. Type of wiring system, such as rigid conduit, electrical metallic tubing, non- metallic sheathed cable, etc., and where proposed to use. **(Present criteria prohibits embedding aluminum conduit in concrete. Present products should be reviewed to make sure that conduit, pipe, bars, anchors or other aluminum parts are not embedded in concrete.)**

   c. Type of conductors, such as rubber insulated, thermoplastic insulated, polyvinyl chloride jacket, etc., and where proposed to use.

   d. A statement describing proposed pertinent standards of design, such as voltage drop (include calculations), lighting intensities (include calculations), and type of lighting fixtures, and a statement regarding the use of selective switching or other energy conserving features.

   e. A determination of short-circuit duty required for all service entrance protective devices and switchgear (usually available from power company). Include cost premiums in cost estimate.

   f. Type and arrangement of Cable Television Systems (CATV), Closed Circuit Television Systems (CCTV), Nurse Call, intercom, sound, signal, and fire alarm systems. Identify number and location of telecommunication outlets (telephone, computer, word processing, etc.). Obtain information from the University.

      i. Space required for telecommunication equipment, point of connection to telephone utility, size of incoming duct/conduit and size of equipment mounting backboard to be provided.

Page | 247

MAY BUILDING SAFETY MONTH 2023

Office of University Building Official

Building Safety Month is an international campaign celebrated in May to raise awareness about building safety.

For more than 42 years, Building Safety Month has reinforced the need for the adoption of modern, regularly-updated building codes, and helps individuals, families and businesses understand what it takes to create safe and sustainable structures.

Mason's Office of University Building Official is hosting the following online training from 11:30 a.m. to 12:15 p.m. :

May 10, 2023	OUBO Charter, HECO Chapter 11, OUBO Website Introduction & e-Builder
May 16, 2023	HECO Chapter 7 & Related Appendices
May 18, 2023	HECO Chapter 8 & Related Appendices - Part 1
May 23, 2023	HECO Chapter 8 & Related Appendices - Part 2
May 25, 2023	HECO Chapter 8 & Related Appendices - Part 3
May 31, 2023	Additional Q&A, Follow-up Session

RSVP BY EMAILING OUBO@GMU.EDU

OUBO CONTACT INFORMATION

703-993-6070 | oubo@gmu.edu | oubo.gmu.edu

GEORGE MASON UNIVERSITY

Training

HOME / TRAINING

- Fire Protection Part I
- Fire Protection Part II
- OUBO HECO Training Session 1: OUBO Charter, HECO Chapter 11, OUBO Website Introduction & e-Builder
- OUBO HECO Training Session 2: HECO Chapter 7 & Related Appendices
- OUBO HECO Training Session 3: HECO Chapter 8 & Related Appendices – Part 1

Training – Office of University Building Official (gmu.edu)


QUESTIONS?
Learn More at OUBO.GMU.EDU

1 BUILDING PLANNING & DESCRIPTION

☐ NEW CONSTRUCTION ☐ SHELL BUILDING
☐ LEASE SPACE BUILD-OUT (LSBO) ☐ CHANGE OF OCCUPANCY
☐ SUBSTANTIAL IMPROVEMENT ☐ OTHER: _____

☐ SINGLE OCCUPANCY | MIXED OCCUPANCY ☐ SEPARATED USE ☐ NON-SEPARATED USE

(SECTION 508.3 OR 508.4 IBC 2018)

TYPE OF CONSTRUCTION: _____ *(CHAPTER 6 IBC 2018)*

HEIGHT LIMITATION: _____ AREA LIMITATION: _____ *(TABLE 504.3 IBC 2018)*

FRONTAGE INCREASE CALCULATIONS ARE SHOWN ON SHEET: _____

BUILDING VALUATION

BUILDING NUMBER: _____ OF _____

ADDRESS: _____

CITY, ST: _____ ZIP CODE: _____ SUITE: _____

CALL CENTERPOINT ENERGY AHEAD OF TIME, AT 713-207-4460, TO OBTAIN AN ADDRESS

HCAD #. OR PROPERTY TAX #: _____ (13 DIGITS)
(http://www.hcad.org)

BUILDING LOCATED IN FLOODPLAIN: YES ☐ NO ☐

GROSS SQUARE FOOTAGE: _____ #OF FLOORS: _____ HEIGHT: _____

ESTIMATED COST OF CONSTRUCTION: $_____

T.D.L.R.#: _____ *(REQUIRED FOR CONSTRUCTION OVER $50,000)*
TEXAS DEPARTMENT OF LICENSING AND REGULATIONS
(https://www.tdlr.texas.gov/abwh.htm)
TELEPHONE: (512) 463-6599 TOLL FREE (IN TEXAS): 800-803-9202
FAX: (512) 475-2871 RELAY TEXAS-TDD: 800-735-2989

SHELL BUILDING PERMIT #: _____ CIVIL PROJECT #: _____

PUBLIC UTILITIES: YES ☐ NO ☐

OSSF: YES ☐ NO ☐ PROJECT PERMIT #: _____

LIST BELOW THE PURPOSE/USE OF THE BUILDING OR AREA BEING REVIEWED. INCLUDE DETAILS ON THE PRODUCTS/MATERIALS BEING STORED/FABRICATED AND NOTE HOW THEY ARE BEING PACKAGED.

2 OCCUPANCY TYPE AND LOAD
CHAPTER 2, 3 & TABLE 1004.5 IBC 2018

OCCUPANCY CLASSIFICATION TYPES

A-1	A-2	A-3	A-4	A-5	B	E
F-1	F-2	H-1	H-2	H-3	H-4	H-5
I-1	I-2	I-3	I-4	M	R-1	R-2
	R-3	R-4	S-1	S-2	U	

RESIDENTIAL BOARD AND CARE OCCUPANCIES (REFER TO THE HARRIS COUNTY CODEWORD OF THE SAME NAME AND ALSO COMPLETE THE RESIDENTIAL BOARD AND CARE CERTIFICATION FORM

	RBC-8A	RBC-8B	RBC-16A	RBC-16B	
	BREAK DOWN AREAS AND OCCUPANT LOADS PER FLOOR				
OCCUPANCY CLASSIFICATION	SPECIFIC USE		SQUARE FOOTAGE	SF PER OCCUPANT	DESIGN OCCUPANTS
TOTAL					

3 MEANS OF EGRESS
CHAPTER 10 IBC 2018

MEANS OF EGRESS	# OF REQUIRED EXITS	# OF EXITS PROVIDED	SHEET #
STAIRWAYS (PER FLOOR)			
EGRESS @ 1ST FL OR LSBO			

(SECTION 1005.3 IBC 2018)

PANIC HARDWARE ON EXIT DOORS? YES ☐ NO ☐ *(SECTION 1008.1.9 IBC 2018)*

STAIRWAYS *(SECTION 1011 IBC 2018)*

MINIMUM CLEAR WIDTH SHOWN ON: _____ *(EACH STAIRWELL)*

EGRESS WIDTHS ARE SHOWN ON: _____

ACCESSIBLE AREAS OF REFUGE & 2-WAY COMMUNICATIONS SHOWN ON: _____

(SECTION 1009.3 TO 1009.8 IBC 2018)

EXIT SIGNS/EGRESS ILLUMINATION *(SECTION 1008 & 1013 IBC 2018)*

REQUIRED AND SHOWN ON: _____ *(HIGHLIGHT ON PLANS)*

EXTERIOR MEANS OF EGRESS LIGHTING PROVIDED? YES ☐ *(SECTION 1008 IBC 2018)*

EXIT TRAVEL DISTANCE *(TABLE 1017.2 IBC 2018)*

OCCUPANCY TYPE	MAX TRAVEL DISTANCE	PROVIDE TRAVEL DISTANCE	SHEET #

ELEVATORS

NEW ☐ EXISTING ☐ ELEVATOR KEYBOX LOCATED IN LOBBY? YES ☐ NO ☐
(MUST BE WITHIN 20' OF THE CALL BUTTON)

4 FIRE PROTECTION & LIFE SAFETY SYS.
CHAPTER 9 IBC & IFC 2018

ALL FIRE PROTECTION PLANS SHALL BE SUBMITTED FOR REVIEW AFTER BUILDING PERMIT HAS BEEN ISSUED *(I.E. UNDERGROUND FIRE LINE, SPRINKLER SYSTEM, FIRE ALARM SYSTEM, STANDPIPE, FIRE PUMP ROOM, AND FIRE PROTECTION WATER SUPPLY SYSTEMS)*

AUTOMATIC FIRE SPRINKLER SYSTEM/ALTERNATIVE AUTOMATIC FIRE EXTINGUISHING SYSTEM

ALL SPRINKLERS SHALL COMPLY WITH MONITORING AND OCCUPANT NOTIFICATION PER 903.4.2.1

(SECTION 903 IBC FICODE AMENDMENTS & SECTION 903.4 IFC 2018)

☐ PROVIDED AS NOTED ON: _____ ☐ NOT REQUIRED PER SECTION 903

SYSTEM PROVIDED:
☐ NFPA 13
☐ NFPA 13R
☐ NFPA 13D
☐ OTHER: _____

SPRINKLER HEAD PROVIDED:
☐ STANDARD
☐ ELO
☐ ESFR
☐ QUICK RESPONSE

FIRE PUMP PROVIDED:
☐ YES
☐ NO

FIRE DEPARTMENT ACCESS TO SPRINKLER CONTROLS:
☐ SPRINKLER RISER ROOM OR POST INDICATOR VALVE SHOWN ON: _____ *(SECTION 901.4.6 IBC AMENDMENTS IFC 2018)*

☐ FDC SHOWN ON: _____ *(FDC SHALL COMPLY WITH SECTION 912 IFC 2018)*

SUPPRESSION SYSTEM PROVIDED *(SECTION 904 IFC 2018)*
☐ REQUIRED AND SHOWN ON: _____
☐ NOT REQUIRED

STANDPIPE SYSTEM & HOSE CONNECTIONS *(SECTION 905 IFC 2018) (I.E. IN STAIRWAYS, STAGES, MALLS)*
☐ PROVIDED AS NOTED ON: _____, TYPE OF SYSTEM PROVIDED: _____ *(CLASS I, II OR III)*
☐ NOT REQUIRED PER SECTION 905

PORTABLE FIRE EXTINGUISHERS *(SECTION 906 IFC 2018)*
☐ PROVIDED AS NOTED ON: _____, NUMBER PROVIDED: _____ *(HIGHLIGHT ON PLANS)*

FIRE ALARM & DETECTION SYSTEMS *(SECTION 907 & IBC AMENDMENTS IFC 2018)*
☐ FIRE ALARM SYSTEM (DEFERRED SUBMITTAL)
☐ NOT REQUIRED PER SECTION 907
☐ EMERGENCY VOICE EVACUATION
☐ OTHER: _____
☐ DEDICATED FUNCTION (SPRINKLER MONITORING, ELEVATOR RECALL, PRE-ACTION, EMERGENCY ALARM, SMOKE CONTROL)

HVAC & AIR DISTRIBUTION SYSTEM CONTROLS *(SECTION 606 IMC 2018)*
☐ SMOKE DETECTORS PROVIDED TO SHUT DOWN UNITS OVER 2,000 CFM PROVIDED ON: _____
☐ NO HVAC UNITS OVER 2,000 CFM
☐ FIRE/SMOKE DAMPERS IN THE BUILDING SHOWN ON: _____
☐ NO FIRE/SMOKE DAMPERS IN THE BUILDING

SMOKE CONTROL SYSTEMS *(SECTION 909 IFC 2018)(I.E. FOR HIGH RISE, ATRIUMS OR STAIRWAY PRESSURIZATION)*
☐ PROVIDED AS NOTED ON: _____
☐ NOT REQUIRED PER SECTION 909

SMOKE & HEAT VENTILATION *(SECTION 910 IFC 2018)*
☐ CALCULATIONS PROVIDED AS NOTED ON: _____
☐ NOT REQUIRED PER SECTION 910

NOTE: WHERE AREAS OF THE BUILDING ARE EQUIPPED WITH EARLY SUPPRESSION FAST-RESPONSE (ESFR) SPRINKLERS, AUTOMATIC SMOKE AND HEAT VENTS SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS, MEETING LOCAL JURISDICTION REQUIREMENTS.

5 FIRE-RESISTANCE RATE CONSTRUCTION
CHAPTER 6, 7 AND 10 IBC 2018

SHOW DETAILS OF FIRE WALLS OR FIRE BARRIERS MEETING HORIZONTAL WALLS AND ROOF DECKS *(SEE SECTION 706.5, 706.6 & 707.5 IBC 2018)*

FIRE-RESISTANCE RATING REQUIREMENTS *(TABLES 601 & 602 IBC 2018)*

BUILDING ELEMENTS	HOURS REQUIRED	HOURS PROVIDED	UL OR IBC STANDARD USED & DESIGN DETAIL SHOWN ON
STRUCTURAL FRAME			
EXTERIOR BEARING WALLS			
EXTERIOR NON-BEARING WALLS			
INTERIOR BEARING WALLS			
INTERIOR NON-BEARING WALLS			
FLOOR CONSTRUCTION			
ROOF CONSTRUCTION			
STAIRWELLS *(SECTION 1023)*			
ELEVATOR SHAFTS *(SECTION 713)*			
CORRIDORS *(SECTION 1020)*			
FIRE RATED DOORS *(TABLE 716 1(2))*			
DEMISING/PARTITION WALL *(SECTION 708)*			
FIRE BARRIER *(SECTION 707)*			
FIRE WALL *(SECTION 706)*			
DRAFTSTOPS: ☐ YES, SHOWN ON: _____ ☐ NO (SPRINKLED ATTIC) ☐ N/A *(SECTION 718.4)*			

HAVE YOU CHECKED WIDTH OF OPENINGS IN FIRE RATED WALLS? YES ☐ NO ☐
(TABLE 705.8, SECTION 706.8 & 707.6 IBC 2018)

FIRE SEPARATION DISTANCE (FEET) *(SECTION 602 IBC 2018)*	NORTH	SOUTH	EAST	WEST

ROOF COVERING CLASSIFICATION PROVIDED: A ☐ B ☐ C ☐
(TABLE 1505.1 IBC 2018)

6 WATER SUPPLY (FOR FIREFIGHTING)
CHAPTER 5, APPENDIX B & C IFC 2018

_____ GROSS SIZE OF BUILDING IN SQUARE FEET *(INCLUDE ALL OVERHANGS UNDER ROOF)*

PUBLIC WATER SUPPLY WITH FIRE HYDRANTS
(FOR PROPOSED AND EXISTING FIRE HYDRANTS ONLY)

NAME OF THE MUNICIPAL UTILITY DISTRICT: _____

NUMBER OF HYDRANTS WITHIN 400 FT (NON-SPRINKLED) OR 600 FT (SPRINKLED) OF BUILDING: _____, SHOWN ON: _____

REQUIRED GPM: _____ DURATION: _____ *(TABLE B105.1 IFC 2018)*

75% REDUCTION? YES ☐ NO ☐ *(MUST MAINTAIN MINIMUM PER TABLE B105.1 (1) OR B105.1 (2))*

WATER SOURCE FOR RURAL AREAS WITHOUT FIRE HYDRANTS
(COMPLETE THE FIRE FLOW CALCULATOR)

☐ ***DRY HYDRANT ☐ UNDERGROUND STORAGE
☐ ABOVEGROUND STORAGE ☐ OTHER: _____

DESIGN SPECIFICATIONS AND LOCATIONS SHOULD MEET MINIMUM REQUIRED WATER SUPPLY FROM THE FIRE FLOW CALCULATOR NFPA 1142 (AVAILABLE ON THE WEBSITE).

***SUBMIT DRY HYDRANT DESIGN PLANS & CALCULATIONS TO FIRE PROTECTION FOR REVIEW & APPROVAL (AVAILABLE ON THE WEBSITE)

7 FIRE LANE ACCESS
CHAPTER 5 & APPENDIX D IFC 2018

FIRE LANE LAYOUT PLAN, WHICH SHALL INCLUDE THE SITE PLAN, THE FIRE LANE & FIRE HYDRANTS, IS SHOWN ON: *(HIGHLIGHT THE FIRE HYDRANT LOCATIONS ON THE PLANS)* AERIAL ACCESS LAYOUT, FOR BUILDINGS OVER 30 FT, IS SHOWN ON: _____

FIRE LANES WILL BE APPROVED CONCEPTUALLY DURING THE CIVIL REVIEW PROCESS. HOWEVER, THE FIRE CODE PLAN REVIEWER MAY CHANGE THE FIRE LANE LAYOUT BASED ON THE BUILDING SPECIFICATIONS.

☐ PROVIDING A REMOTE FIRE HOSE CONNECTION TO COMPLY WITH FIRE LANE HOSE COVERAGE. SUBMIT PLANS TO FIRE PROTECTION FOR REVIEW *(SECTION 918.1 IBC AMENDMENTS)*

8 INTERIOR FINISH
CHAPTER 8 & TABLE 803.13 IBC 2018

OCCUPANCY GROUP	EXIT ENCLOSURES AND EXIT PASSAGEWAYS	CORRIDORS	ROOMS AND ENCLOSED SPACES	SHEET #

9 STORAGE: STANDARD & HIGH PILED
CHAPTER 32 IFC 2018 *(REFER TO REGULATIONS FOR REQUIREMENT FOR CONSULTANT ENGINEER SECTION 3201.3 IFC AMENDMENTS)*

YES ☐ NO ☐ PRODUCTS BEING STORED: _____
YES ☐ NO ☐ STORAGE PACKAGING *(I.E. PALLETS, RACKS, SOLID PILED, DRUMS, CARDBOARD BOXES, WRAPPED IN PLASTIC, ETC.)*: _____

YES ☐ NO ☐ MAXIMUM HEIGHT OF COMMODITY: _____
YES ☐ NO ☐ ***THIS BUILDING IS DESIGNED FOR THE INTENT OF HIGH PILED STORAGE. IF YES, THEN PROVIDE HIGH PILED STORAGE FORM (http://www.eng.hctx.net/Portals/23/Publications/FC_high_piled_storage_form.pdf).

YES ☐ NO ☐ FIRE DEPARTMENT ACCESS DOORS
YES ☐ NO ☐ HIGH PILED STORAGE RACK LAYOUT/ELEVATIONS, CODE ANALYSIS, ETC. SHOWN ON: _____

10 HAZARDOUS MATERIALS
CHAPTER 50 IFC 2018

YES ☐ NO ☐ DOES THE BUILDING HAVE HAZARDOUS MATERIAL USE OR STORAGE? IF YES, THEN PROVIDE ALL HMIS SUMMARY AND MSDS REPORTS.

YES ☐ NO ☐ IF YES, DO THE QUANTITIES EXCEED THE MAXIMUM ALLOWABLE PER IFC 2018?

IF YES, YOU WILL BE REQUIRED TO PROVIDE THE FOLLOWING:
CODE ANALYSIS BY FIRE PROTECTION ENGINEER TO SHOW COMPLIANCE WITH IFC 2018.
CODES AND REFERENCED STANDARDS SHOWN ON SHEET(S): _____

11 SPECIAL CONDITIONS
PROPERTIES WITH FENCE AND GATES SHALL PROVIDE A 911 KEY BOX AT ENTRY GATE

YES ☐ NO ☐ ATRIUM(S) PER 404 IBC 2018?
YES ☐ NO ☐ HIGH RISE BLDG PER 403 IBC 2018?
YES ☐ NO ☐ ANY FUEL STORAGE TANKS PER 5704 IFC 2018?
YES ☐ NO ☐ CRITICAL FACILITIES (HARRIS COUNTY REGULATIONS AND AMENDMENTS)
YES ☐ NO ☐ OTHER: _____

YES ☐ NO ☐ PAINT SPRAY BOOTHS, COATINGS, DIPPING OR INDUSTRIAL OVENS USED PER 2404, 2405, 2406 AND CHAPTER 30 IFC 2018?
YES ☐ NO ☐ HEALTH DEPARTMENT APPROVAL? REQUIRED FOR ALL ESTABLISHMENTS THAT SERVE/PREPARE FOOD AND BEVERAGES FOR THE PUBLIC OR HAVE REFRIGERATED FOOD STORAGE.

COMMENTS & NOTES

A COPY OF THESE APPROVED CONSTRUCTION PLANS MUST BE KEPT AT PROJECT SITE FOR THE FINAL INSPECTION OF THE BUILDING

PROJECT NUMBER: IFC 2018 REVIEWER'S STAMP

THE PROJECT KNOWN AS
(MUST BE THE NAME OF BUSINESS/DBA IF BUILDING IS FOR A SPECIFIC COMPANY):

WAS ACCEPTED BY HARRIS COUNTY FOR THE PURPOSES LISTED BELOW:

HCED REVIEW:

REVIEWER'S SIGNATURE BLOCK
PERMIT OFFICE

THE PROJECT WAS REVIEWED. HOWEVER, THIS DOES NOT MEAN THE ENTIRE PROJECT, INCLUDING ALL SUPPORTING DATA AND CALCULATIONS HAVE BEEN COMPLETELY CHECKED AND VERIFIED. THESE DRAWINGS ARE SIGNED, DATED AND SEALED BY A PROFESSIONAL ENGINEER / ARCHITECT LICENSED TO PRACTICE IN THE STATE OF TEXAS, WHICH THEREFORE CONVEYS THE PROFESSIONALS RESPONSIBILITY AND ACCOUNTABILITY. THIS ACCEPTANCE DOES NOT RELIEVE ANY PARTY FROM COMPLYING WITH ANY OTHER LEGALLY ADOPTED REGULATION OR ORDINANCE RELATED TO LAND DEVELOPMENT.

CERTIFICATION

I, _____, A LICENSED PROFESSIONAL ENGINEER/ARCHITECT IN THE STATE OF TEXAS DO HEREBY CERTIFY THAT THE INFORMATION PRESENTED ON THIS SHEET IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. I AM/AM NOT A DESIGNER OF RECORD FOR THIS PROJECT.
THE PROJECT CONSISTS OF DRAWING SHEETS _____ THROUGH _____.
ENGINEERING FIRM _____ FIRM# _____

SEAL SIGNATURE DATE

HARRIS COUNTY (IFC 2018)

FIRE CODE DESIGN AND COMPLIANCE REVIEW SHEET VERSION 8.0 (SEP 2019)

(http://www.eng.hctx.net/permits/Fire/Fire-Code/Fire-Code-Review)

REVISIONS (DO NOT USE THIS BLOCK UNTIL AFTER PERMIT IS ISSUED)

DATE	SHEET NO.(S)	DESCRIPTION	REVIEWER	COUNTY P.E.

FIRE CODE REVIEW
SHEET NUMBER
_____ OF _____

GEORGE MASON UNIVERSITY