# TABLE OF CONTENTS

**CHAPTER 1—UTILITY METERING SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td><strong>Location of Meters</strong></td>
</tr>
<tr>
<td>1.1.1</td>
<td>Service and Maintenance</td>
</tr>
<tr>
<td>1.1.2</td>
<td>Meter Installation</td>
</tr>
<tr>
<td>1.2</td>
<td><strong>Electric Meters</strong></td>
</tr>
<tr>
<td>1.2.1</td>
<td>Action Submittals</td>
</tr>
<tr>
<td>1.2.2</td>
<td>Quality Assurance</td>
</tr>
<tr>
<td>1.2.3</td>
<td>Products</td>
</tr>
<tr>
<td>1.3</td>
<td><strong>Flow Meters: Domestic Water Meters, Steam Meters, Natural Gas Meters</strong></td>
</tr>
<tr>
<td>1.3.1</td>
<td>Action Submittals</td>
</tr>
<tr>
<td>1.3.2</td>
<td>Quality Assurance</td>
</tr>
<tr>
<td>1.4</td>
<td><strong>Domestic Water Meters</strong></td>
</tr>
<tr>
<td>1.4.1</td>
<td>Positive Displacement Flow Meter</td>
</tr>
<tr>
<td>1.5</td>
<td><strong>Saturated Steam Meters</strong></td>
</tr>
<tr>
<td>1.5.1</td>
<td>Turbine Mass Flow Meter</td>
</tr>
<tr>
<td>1.5.2</td>
<td>Vortex Shedding Mass Flow Meter</td>
</tr>
<tr>
<td>1.6</td>
<td><strong>Saturated Steam Meters</strong></td>
</tr>
<tr>
<td>1.6.1</td>
<td>Strain Gauge Mass Flow Meter</td>
</tr>
<tr>
<td>1.7</td>
<td><strong>Natural Gas Meters</strong></td>
</tr>
<tr>
<td>1.7.1</td>
<td>Mass Flow Meter</td>
</tr>
</tbody>
</table>

**CHAPTER 2—FOUNDATIONS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td><strong>Site Evaluations</strong></td>
</tr>
<tr>
<td>2.1.1</td>
<td>Subsurface Investigation</td>
</tr>
<tr>
<td>2.1.2</td>
<td>Soil Borings</td>
</tr>
<tr>
<td>2.2</td>
<td><strong>Excavation and Backfill</strong></td>
</tr>
<tr>
<td>2.2.1</td>
<td>Rock Excavation</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Spread and Pad Footings</td>
</tr>
<tr>
<td>2.2.3</td>
<td>Piles and Piers</td>
</tr>
<tr>
<td>2.3</td>
<td><strong>Concrete</strong></td>
</tr>
<tr>
<td>2.3.1</td>
<td>Description</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Calcium Chloride</td>
</tr>
</tbody>
</table>
2.3.3 Masonry Units

Section 2.4 Reinforcement
2.4.1 Steel
2.4.2 Requirements

Section 2.5 Penetrations
2.5.1 General Guidelines
2.5.2 Electrical Duct Banks
2.5.3 Steam and Condensate
2.5.4 Other Pipe Penetrations
2.5.5 Other Penetrations

Section 2.6 Drainage Systems
2.6.1 Foundation Drainage
2.6.2 Piping

Section 2.7 Slab on Grade
2.7.1 Bearing Soil Compaction
2.7.2 Joints

Section 2.8 Crawl Spaces
2.8.1 Flooring
2.8.2 Specifications
2.8.3 Clearance

Section 2.9 Equipment Pits
2.9.1 Drainage
2.9.2 Sump Pump
2.9.3 Equipment to be Provided

Section 2.10 Thermal and Moisture Protection
2.10.1 Insulation
2.10.2 Waterproofing

Section 2.11 Cleaning Procedures
2.11.1 Cleaning Services
2.11.2 Contractor Specifications

CHAPTER 3—SUPERSTRUCTURE SYSTEMS

Section 3.1 General Requirements
3.1.1 Live and Dead Loads
3.1.2 AISC Code
3.1.3 Connections/Additions

Section 3.2 Cast-In-Place Concrete
3.2.1 General Requirements
3.2.2 Testing
3.2.3 Calcium Chloride
3.2.4 Slab Flatness and Levelness

Section 3.3 Steel Structures
3.3.1 Responsibility
3.3.2 Testing

Section 3.4 Roof Structures
3.4.1 Decking Material
3.4.2 Slope

Section 3.5 Notes

CHAPTER 4—EXTERIOR CLOSURE

Section 4.1 General Requirements
4.1.1 Exterior Closure Compliance

Section 4.2 Wall Types
4.2.1 General Information
4.2.2 Masonry/Stone
4.2.3 Concrete
4.2.4 Stucco and Exterior Insulation Finish System (EFIS)
4.2.5 Glass

Section 4.3 Penetrations
4.3.1 Doors and Frames
4.3.2 Door Hardware
4.3.3 Power Operated Doors
4.3.4 Windows
4.3.5 Glass and Glazing

CHAPTER 5—ROOFING SYSTEMS

Section 5.1 General Requirements
5.1.1 Roof Slope
5.1.2 Minimum Slope
5.1.3 Low-Sloped Roofs
5.1.4 Specifications Prohibit
5.1.5 Avoid Penetrations
5.1.6 Overflow Systems
5.1.7 Warranties
5.1.8 New Systems
5.1.9 References and Guidelines
5.1.10 Wind Uplift Ratings
5.1.11 Vapor Barrier
5.1.12 Insulation
5.1.13  Directing Water Flow
5.1.14  Penetrations
5.1.15  Equipment Supports
5.1.16  Flashings
5.1.17  Walkways
5.1.18  Snowguards and Ice Breakers
5.1.19  Required Elements

Section 5.2  Built-Up Systems
5.2.1  Modified Bitumen Sheet

Section 5.3  Membrane Systems
5.3.1  Seam Type
5.3.2  Metal Thickness
5.3.3  Mechanically Crimped Seams
5.3.4  Minimum Slope
5.3.5  Continuous Panels
5.3.6  Roof Support Systems
5.3.7  Clips
5.3.8  Accessories
5.3.9  Fasteners – Stainless Steel
5.3.10  Underlayment
5.3.11  Color Finishes

Section 5.4  Other Systems
5.4.1  Asphalt Shingles
5.4.2  Single-Ply Systems
5.4.3  Spray-On Foam

CHAPTER 6—INTERIOR CONSTRUCTION

Section 6.1  General Design Guidelines
6.1.1  Preferred Wall System for Wet Areas
6.1.2  Stairwells and Elevator Shafts
6.1.3  Mechanical Rooms
6.1.4  Sound Proofing
6.1.5  Wall Covering
6.1.6  Ceramic Tile
6.1.7  Color Selections
6.1.8  Chair Rails

Section 6.2  Floor and Room Numbering
6.2.1  University Numbering System
6.2.2  Alter for Guidelines
6.2.3  Floor Numbering
6.2.4  Room Numbering

Section 6.3  Wall Types
6.3.1  Stud and Drywall
6.3.2  Modular
Section 6.4 Wall Finishes

6.4.1 Facilities-Provided Paint
6.4.2 Ceramic Tile
6.4.3 Wall Covering
6.4.4 Specialty Finishes

Section 6.5 Ceilings

6.5.1 General Requirements
6.5.2 Suspended Grid
6.5.3 Drywall Ceilings
6.5.4 Concrete

Section 6.6 Floors

6.6.1 General Requirements
6.6.2 Carpet
6.6.3 Vinyl Composition Tile
6.6.4 Ceramic Tile
6.6.5 Quarry Tile
6.6.6 Vinyl Sheet Goods
6.6.7 Epoxy Resin

Section 6.7 Signage

6.7.1 Requirements
6.7.2 Preferred Color Arrangements
6.7.3 Placement

Section 6.8 Specialties

6.8.1 Restroom Accessories

Section 6.9 Custodial and Storage Rooms

6.9.1 Custodial Closet
6.9.2 Storage Rooms/Closets

CHAPTER 7—CONVEYANCE SYSTEMS

Section 7.1 Elevators

7.1.1 Compliance with ADA
7.1.2 Information Plate
7.1.3 Controls
7.1.4 Servicing
7.1.5 Vandalism
7.1.6 Preferred Type – Hydraulic
7.1.7 Lighting – Fluorescent
7.1.8 Telephone Equipment – Compatibility
7.1.9 Proximity Detectors
7.1.10 Floor Covering
7.1.11 PVC Containment Piping
7.1.12 New Elevators
Section 7.2   Elevator Maintenance Contract

CHAPTER 8—MECHANICAL SYSTEMS

Section 8.1   General Mechanical Guidelines

- 8.1.1 Water Distribution System
- 8.1.2 Motors – High Efficiency
- 8.1.3 Piping Systems – Labeling
- 8.1.4 Use of Mechanical Joint Piping Systems

Section 8.2   Building Plumbing Systems

- 8.2.1 General Guidelines
- 8.2.2 Domestic Water Systems
- 8.2.3 Sanitary Waste and Vent
- 8.2.4 Storm Sewer Systems
- 8.2.5 Special Systems
- 8.2.6 Fixtures

Section 8.3   Underground Piping Systems

- 8.3.1 General Requirements
- 8.3.2 Sanitary Sewer Systems
- 8.3.3 Storm Sewer Systems
- 8.3.4 Water Distribution Systems

Section 8.4   Fire Protection Systems

- 8.4.1 Sprinkler Systems

Section 8.5   Refrigerant Cooling Systems

- 8.5.1 General Design Guidelines
- 8.5.2 Material
- 8.5.3 Equipment

Section 8.6   Water Cooling Systems

- 8.6.1 General Requirements
- 8.6.2 Chilled Water Loops
- 8.6.3 Interior Chilled Water Systems
- 8.6.4 Condenser Water Systems
- 8.6.5 Equipment

Section 8.7   Steam and Hot Water HVAC Systems

- 8.7.1 Distribution (Steam)
- 8.7.2 Medium and Low Pressure Steam (Above Grade)
- 8.7.3 Hot Water

Section 8.8   Air Handling Systems

- 8.8.1 General Requirements
- 8.8.2 Comfort Systems
8.8.3  Fume Hoods and Laboratory Systems
8.8.4  Animal Quarters
8.8.5  Auditoriums

Section 8.9  Control Systems

8.9.1  General Requirements
8.9.2  Equipment
8.9.3  Tubing
8.9.4  Sequence of Operation

CHAPTER 9—ELECTRICAL SYSTEMS

Section 9.1  General Requirements

9.1.1  Equipment Installation
9.1.2  Electrical Systems – Design
9.1.3  Lamp Disposal

Section 9.2  Distribution Systems

9.2.1  Duct Bank Systems
9.2.2  Direct Burial Systems
9.2.3  Medium Voltage

Section 9.3  Secondary Circuits

9.3.1  General Requirements
9.3.2  Service Entrance
9.3.3  Feeders
9.3.4  Branch Circuits

Section 9.4  Devices and Motors

9.4.1  Devices
9.4.2  Fuses
9.4.3  Safety Switches
9.4.4  Motors

Section 9.5  Communication and Alarm Systems

9.5.1  Telephone and Data Systems
9.5.2  Fire Alarm Systems
9.5.3  Security Systems
9.5.4  Medium Voltage Cable Test Data Form

CHAPTER 10—SITE WORK

Section 10.1  Landscaping

10.1.1  Designer – Refer
10.1.2  Drawings – Show Site Access
10.1.3  Drawings – Show Construction Fencing

Section 10.2  Parking Lots
10.2.1 ADA Compliance
10.2.2 Maximum Desired Slope
10.2.3 Universal Spaces
10.2.4 Paint Colors
10.2.5 Parking Space Width
10.2.6 Asphalt Surfaced Lots – Components
10.2.7 Concrete Surfaced Lots – Requirements
10.2.8 Adjacent Lawn Areas – Mowing Strip

Section 10.3 Sidewalks and Ramps

10.3.1 Drainage of Surface Water
10.3.2 Overflow Areas
10.3.3 Sidewalk Minimum Width and Thickness
10.3.4 Lateral Slope for Sidewalks
10.3.5 Curb Cuts for Disabled Access
10.3.6 Materials
10.3.7 Guardrails and Handrails

Section 10.4 Storm Drainage

10.4.1 Return Period – Malls, Streets
10.4.2 Return Period – Parking Lots, Spaces
10.4.3 Design Storm – Owner Recommended
10.4.4 Compare Return Times
10.4.5 Surface Detention Areas – Incorporate
10.4.6 Back Water Elevation
10.4.7 Development
10.4.8 Site Plan Design
10.4.9 Bicycle and Wheelchair Safety
10.4.10 Pipe Systems

Section 10.5 Site Furnishings

10.5.1 Standards

CHAPTER 11—APPENDICES

Appendix 1 Landscape Planting

1.1 General

1.2 Scope of Work

1.2.1 Work Covered

1.3 Materials

1.3.1 Topsoil
1.3.2 Soil Amendments
1.3.3 Mulch
1.3.4 Fertilizer
1.3.5 Plant Materials
1.3.6 Turf Materials
1.3.7 Herbicide
1.3.8 Miscellaneous Landscape Materials
1.3.9 Guying and Staking Material
1.3.10 Tree Guards

1.4 Quality of Plant Materials

1.4.1 Nursery Growing Conditions
1.4.2 Nursery Stock Freshness
1.4.3 Delay Before Planting
1.4.4 Pruning
1.4.5 Condition of Nursery Stock
1.4.6 Specimen Quality Plants
1.4.7 Nursery Stock Measurement
1.4.8 Nursery Stock Inspection
1.4.9 Nursery Stock Delivery
1.4.10 Nursery Stock Storage

1.5 Execution

1.5.1 Preparation
1.5.2 Planting
1.5.3 Planting – Seeding
1.5.4 Planting – Sodding
1.5.5 Maintenance of Turf
1.5.6 Relocation
1.5.7 Installation of Edging
1.5.8 Clean-up and Protection
1.5.9 Plant Guarantee

1.6 Lawn Sprinkler Piping

1.6.1 Materials
1.6.2 Execution

Appendix 2 Energy Conservation Policies

2.1 Policy #010: Building Envelope

2.1.1 Purpose
2.1.2 Reference Codes and Standards
2.1.3 General
2.1.4 Building Envelope – Values
2.1.5 Building Envelope – Criteria

2.2 Policy #020: Heating, Ventilating, Air Conditioning

2.2.1 Purpose
2.2.2 Reference Codes and Standards
2.2.3 General
2.2.4 Calculations
2.2.5 HVAC Systems
2.2.6 HVAC Equipment
2.2.7 HVAC Controls

2.3 Policy #030: Air Conditioning Equipment

2.3.1 Purpose
2.4 Policy #040: Emergency Management Control Systems

2.4.1 Purpose
2.4.2 Reference Codes and Standards
2.4.3 General
2.4.4 Connected Equipment
2.4.5 System Description

2.5 Policy #050: Building Hot Water Systems

2.5.1 Purpose
2.5.2 Reference Codes and Standards
2.5.3 General
2.5.4 Domestic Water Heating Equipment
2.5.5 Insulation
2.5.6 Domestic Hot Water Controls

2.6 Policy #060: Building Lighting and Electrical Systems

2.6.1 Purpose
2.6.2 Reference Codes and Standards
2.6.3 General
2.6.4 Interior Lighting
2.6.5 Exterior Lighting
2.6.6 Electrical Equipment and Systems

2.7 Policy #070: Operations and Maintenance

2.7.1 Purpose
2.7.2 Reference Codes and Standards
2.7.3 General
2.7.4 Temperature and Humidity Standards
2.7.5 Maintenance Activities

Appendix 3 MASTERSPEC

3.1 MASTERSPEC Consolidated Table of Contents

3.1.1 Division 1 – General Requirements
3.1.2 Division 2 – Site Construction
3.1.3 Division 3 – Concrete
3.1.4 Division 4 – Masonry
3.1.5 Division 5 – Metals
3.1.6 Division 6 – Wood and Plastics
3.1.7 Division 7 – Thermal and Moisture Protection
3.1.8 Division 8 – Doors and Windows
3.1.9 Division 9 – Finishes
3.1.10 Division 10 – Specialties
3.1.11 Division 11 – Equipment
3.1.12 Division 12 – Furnishings
3.1.13 Division 13 – Special Construction
Appendix 4  Emergency Evacuation Policy for the Disabled

4.1  Emergency Evacuation Procedures

4.1.1  Exiting the Building
4.1.2  Department Head Responsibility
4.1.3  Assisting Others
4.1.4  Accessible Areas of Refuge
4.1.5  Reporting Emergencies
4.1.6  Questions
4.1.7  Services

4.2  Arrangements for Evacuation – Special Needs

4.2.1  Making Arrangements
4.2.2  Notification of Disabilities

4.3  Responsibilities for Evacuation – Special Needs

4.3.1  Arrangements

4.4  Evacuation and Alternatives

4.4.1  Alarm Systems
4.4.2  Elevators

4.5  Area of Rescue Assistance

4.5.1  Provided
4.5.2  Wheelchair
4.5.3  Stairways
4.5.4  Signage

4.6  Definitions

4.6.1  Area of Rescue Assistance
4.6.2  Area of Refuge
4.6.3  Two-Way Communication

Appendix 5  ADA Accessible Restrooms Equipment Schedule

Appendix 6  Prequalification Requirements

Appendix 7  Kansas Building Fire Safety Handbook

Appendix 8  Kansas State Fire Marshal Plan Submittal Guidelines

Appendix 9  Installation & Documentation of Sprinkler Systems & Fire Alarms

Appendix 10  Policy for Handling Asbestos

10.1  Introduction
10.1.1 Rules

10.2 Inspection of Buildings for Asbestos

10.2.1 Inspection Required
10.2.2 Inspector Requirements
10.2.3 Pre-Demolition Notification

10.3 Asbestos Containing Materials

10.3.1 Friability
10.3.2 Major Projects
10.3.3 Maintenance Related Work
10.3.4 Certification
10.3.5 Waivers
10.3.6 Nonfriable Asbestos

10.4 Worker Protection

10.4.1 Annual Medical Examination
10.4.2 Responsibility for Payment
10.4.3 Respirators
10.4.4 Protective Clothing

10.5 Asbestos Work Practices for Maintenance Jobs

10.5.1 Allowable Workers
10.5.2 Wall and Floor Covering
10.5.3 Wetting Asbestos Material
10.5.4 Cleanup
10.5.5 Disposal of Asbestos Materials
10.5.6 Visible Asbestos Residue
10.5.7 Cleaning Clothing

10.6 Asbestos Work Practices Using Glove Bags

10.6.1 Glove Bag
10.6.2 Sealing Glove Bags
10.6.3 Wetting Exposed Surfaces
10.6.4 Work Practices

10.7 Asbestos Work for Greater than Maintenance Jobs

10.7.1 Workers Allowed
10.7.2 Ante Rooms
10.7.3 HEPA Air Filter
10.7.4 HEPA Vacuum
10.7.5 Covering Surfaces
10.7.6 Rules
10.7.7 Wetting Asbestos Material
10.7.8 Pigmented Sealant
10.7.9 Cleaning Plastic Sheeting
10.7.10 Cleaning Surfaces
10.7.11 Air Stream
10.7.12 Clearance Sample
10.7.13 Clearance Sample Requirements
10.7.14 Asbestos Containing Materials

10.8 Work Practices for Nonfriable Asbestos

10.8.1 Limit Access
10.8.2 Nonfriable Asbestos Jobs
10.8.3 Removal of Nonfriable Asbestos
10.8.4 Training Session

10.9 Disposal of Friable Asbestos Materials

10.9.1 Plastic Disposal Bags
10.9.2 Exterior Surface of Disposal Containers
10.9.3 Transportation to Landfill
10.9.4 Disposal of Waste Water
10.9.5 KDHE Approval Needed

10.10 Respirator Protection Program

10.10.1 Written Standard-Operating Procedure Required
10.10.2 Selection and Use of Respirators for Asbestos Work
10.10.3 Procedures for Wearing Respirators for Asbestos Work
10.10.4 Respirator Limitations
10.10.5 Donning Air-Purifying Respirators
10.10.6 Donning Powered-Air-Purifying Respirators
10.10.7 Donning Airline Respirators
10.10.8 Donning Helmet Type Respirators
10.10.9 Respirator Fit Testing
10.10.10 Respirator Cleaning, Maintenance and Storage Procedures
10.10.11 Respirator Training

10.11 References

10.12 Appendix A: Asbestos Maintenance Work Report

10.13 Appendix B: Initial Medical Questionnaire

10.14 Appendix C: Periodic Medical Questionnaire

10.15 Memo

Appendix 11 Stone Restoration and Cleaning

Part 1: General

1.1 Related Documents
1.2 Summary
1.3 Definitions
1.4 Submittals
1.5 Quality Assurance
1.6 Delivery, Storage and Handling
1.7 Project Conditions
1.8 Sequencing and Scheduling

Part 2: Products
2.1 Manufacturers
2.2 Cleaning Materials

Part 3: Execution

3.1 Preparation
3.2 Cleaning Stone, General

Appendix 12 Parking Regulations
Appendix 13 Postsecondary Education Facilities Inventory
Appendix 14 Digital Archiving / CAD Standards for KSU
Appendix 15 Areas of Rescue Assistance
Appendix 16 Modified Bituminous Membrane Roofing

Part 1: General

1.1 Related Documents
1.2 Summary
1.3 Definitions
1.4 Performance Requirements
1.5 Submittals
1.6 Quality Assurance
1.7 Delivery, Storage and Handling
1.8 Project Conditions
1.9 Warranty

Part 2 – Products

2.1 Manufacturers
2.2 APP-Modified Bituminous Sheet
2.3 SBS-Modified Bituminous Sheet
2.4 Auxiliary Membrane Materials
2.5 Insulation Materials
2.6 Insulation Accessories

Part 3 – Execution

3.1 Examination
3.2 Preparation
3.3 General Installation Requirements
3.4 Insulation Installation
3.5 Roof Membrane Installation
3.6 Flashing and Stripping Installation
3.7 Field Quality Control
3.8 Protecting and Cleaning
3.9 Roofing Installer's Warranty