

| SEISMIC CODE BLOCK                            |                                     |                         |                             |                         |                                                                         |                      |                            |                                                                                                                                  |
|-----------------------------------------------|-------------------------------------|-------------------------|-----------------------------|-------------------------|-------------------------------------------------------------------------|----------------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| LISTING OF EQUIPMENT<br>AND SYSTEM COMPONENTS | ANCHORAGE TO<br>FLOORS, ROOFS, ETC. |                         | SWAY BRACING                |                         | LOCATION OF PROFESSIONALLY SEALED<br>ANCHORAGE AND SWAY BRACING DETAILS |                      |                            | COMMENTS                                                                                                                         |
|                                               | NOT PROVIDED<br>FOR PROJECT         | PROVIDED<br>FOR PROJECT | NOT PROVIDED<br>FOR PROJECT | PROVIDED<br>FOR PROJECT | ON CONSTRUCTION<br>DOCUMENTS                                            | SUBSEQUENT SUBMITTAL |                            |                                                                                                                                  |
|                                               |                                     |                         |                             |                         | DRAWING No. OR<br>SPEC SECTION                                          | SHOP DRAWINGS [ 1 ]  | SEPARATE<br>PERMIT & PLANS |                                                                                                                                  |
| BASE MOUNTED FIRE PUMP                        |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| FIRE PUMP CONTROLLER                          |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| JOCKEY PUMP                                   |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| JOCKEY PUMP CONTROLLER                        |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| PRE-ACTION SYSTEM CABINET                     |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| PRE-ACTION SYSTEM DRY PIPING                  |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| FDC PIPING (THROUGH BUILDING)                 |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| SPRINKLER PIPING MAINS                        |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| SPRINKLER PIPING BRANCHES                     |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| FIRE SERVICE BACKFLOW PREVENTER               |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| STANDPIPES                                    |                                     | X                       |                             | X                       |                                                                         | X                    |                            |                                                                                                                                  |
| SPRINKLER HEADS<br>(FOR WET AND DRY SYSTEMS)  | X                                   |                         | X                           |                         |                                                                         |                      |                            | OVERSIZE 2 INCH DIAMETER RING, SLEEVE<br>OR ADAPTOR THROUGH THE CEILING TILE<br>TO ALLOW FOR FREE MOVEMENT OF AT<br>LEAST 1 INCH |

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WHERE THIS COLUMN IS SELECTED, THE FOLLOWING SHALL APPLY:

A. THE CONTRACTOR SHALL SUBMIT DETAILS OF ANCHORAGE INCLUDING THE FOLLOWING:

1. SPECIFIC INFORMATION RELATING TO THE SPECIFIC TYPE AND SIZE OF ANCHORAGE

2. SPECIFIC LOCATION OF SUCH ANCHORAGE.

3. DETAILS OF SWAY BRACING AND ANCHORING OF EQUIPMENT TO INCLUDE:

MATERIAL USED.

ATTACHMENT OF THE BRACING TO THE STRUCTURE AND COMPONENT BEING BRACED.

LOCATION OF TRANSVERSE AND LONGITUDINAL SWAY BRACING AND ROD STIFFENERS.

B. ALL SHOP DRAWINGS SUBMITTED AS PART OF THE REQUIREMENTS OF THIS SHEET SHALL CONTAIN THE STAMP OF A REGISTERED MISSOURI PROFESSIONAL ENGINEER.

C. THE CONTRACTOR MAY SUBMIT AUTHORIZED REPRODUCTIONS OF THE CERTAIN DETAILS AND TABLES FROM DESIGN MANUALS OR GOVERNMENTAL AGENCIES THAT PERTAIN TO SEISMIC SUPPORT AND BRACING, AND TABLES SUBMITTED SHALL:

1. BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL STRUCTURAL ENGINEER WHO PREPARED OR SUPERVISED THE PREPARATION OF THE DETAIL AND ASSOCIATED CALCULATIONS.

2. DEFINE THE COMPONENT, LOCATION AND SIZE TO EASILY IDENTIFY THE INTENT, ITEM TO BRACED OR ANCHORED, APPLICABLE COMPONENTS, AND LOCATION.

D. THE MECHANICAL ENGINEER OF RECORD WILL FORWARD THE SUBMITTED DETAILS, ANY REQUIRED COVER LETTERS OR PROFESSIONAL SEALS. THIS DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING THE SIGNED AND SEALED DRAWINGS NOTED IN C. ABOVE.

DELEGATED - DESIGN SUBMITTAL

PROVIDE DESIGN CALCULATIONS AND DETAILS FOR SEISMIC RESTRAINTS, COMPLYING WITH PERFORMANCE REQUIREMENTS, DESIGN CRITERIA AND ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE PREPARATION. CALCULATE STATIC AND DYNAMIC LOADING DUE TO EQUIPMENT WEIGHT, OPERATION AND SEISMIC FORCES REQUIRED TO SELECT VIBRATION ISOLATORS AND SEISMIC RESTRAINTS.

CODE DATA

FOLLOWING LATEST CODES AS ADOPTED BY AUTHORITY HAVING JURISDICTION:

2009 INTERNATIONAL BUILDING CODE (IBC)

2009 INTERNATIONAL MECHANICAL CODE (IMC)

2009 INTERNATIONAL FIRE CODE (IFC)

2009 INTERNATIONAL PLUMBING CODE (UPC)

NATIONAL ELECTRICAL CODE (NEC)

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

NFPA 13 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

NFPA 14 STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS

NFPA 20 STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION

NFPA 45 STANDARD ON THE PROTECTION OF LABORATORIES USING CHEMICALS

FIRE SUPPRESSION GENERAL NOTES:

1. THESE NOTES, LEGENDS AND DESCRIPTIONS ARE TYPICAL FOR THIS PROJECT ONLY. UNLESS STATED OTHERWISE, ANY CONFLICTS OF WORK SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER PRIOR TO THE PURCHASE OF MATERIALS OR COMMENCEMENT OF WORK. IF NOT, THE CONTRACTOR CLAIMS ALL RESPONSIBILITY.
2. THESE PLANS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO REPRESENT THE ACTUAL SITE CONDITIONS. THE PLUMBING CONTRACTOR SHALL FIELD VERIFY SITE CONDITIONS PRIOR TO COMMENCING WORK. DO NOT SCALE THESE PLANS.
3. THE FIRE SUPPRESSION CONTRACTOR (FURTHER "CONTRACTOR") SHALL HAVE A GOOD WORKING KNOWLEDGE OF THE PROJECT SITE AND THE SCOPE OF WORK.
4. WHERE INSTALLED SHALL BE IN STRICT COMPLIANCE WITH GOVERNING CODES AND REGULATIONS. WHERE DRAWINGS AND SPECIFICATIONS EXCEED THE (MINIMUM) CODE REQUIREMENTS, THE CONTRACT DOCUMENTS SHALL BE FOLLOWED.
5. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING CONSTRUCTION AND DIMENSIONS AND TO ROOM FINISH SCHEDULES FOR MATERIAL FINISH AND CONSTRUCTION METHODS FOR WALLS, FLOORS AND CEILINGS IN ORDER TO INSURE PROPER ROUGH-IN INSTALLATION OF WORK.
6. CONTRACTOR SHALL VISIT THE SITE TO INSPECT SITE CONDITIONS PRIOR TO SUBMITTING BID TO DETERMINE IF ANY EXISTING CONDITIONS THAT MAY AFFECT EXECUTION OF WORK.
7. CONTRACTOR SHALL OBTAIN REQUIRED PERMITS FOR WORK FROM AUTHORITIES HAVE JURISDICTION AND ASSUME COSTS OF PERMITS AND INSPECTIONS.
8. CONTRACTOR SHALL COMPLY WITH LOCAL TRADE CUSTOMS AND LABOR TRADE AGREEMENTS WHICH DETERMINE PARTICULAR TRADE THAT SHALL BE EMPLOYED FOR COMPLETION WORK.
9. CONTRACTOR SHALL COORDINATE WITH OTHER CONSTRUCTION TRADES ON THIS PROJECT AND VERIFY CLEARANCES TO PREVENT CONFLICTS.
10. ALL OFFSETS, TRANSITIONS AND FITTINGS NECESSARY TO SUCCESSFULLY INSTALL THE FIXTURES, EQUIPMENT AND PIPING SYSTEMS ARE NOT NECESSARY SHOWN ON THESE PLANS, BUT SHALL BE INCLUDED IN THE SCOPE OF WORK.
11. FIRESTOP ALL OPENINGS FOR PIPING IN RATED WALLS, FLOORS AND CEILINGS AS REQUIRED BY THE SPECIFICATIONS. REFER TO THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SUCH RATINGS AND ASSEMBLIES.
12. NO FLOOR OPENINGS SHALL PENETRATE THE REINFORCED PORTIONS OF THE STRUCTURE. DO NOT CUT STRUCTURAL REINFORCING WITHOUT SPECIFIC WRITTEN DIRECTION FROM THE STRUCTURAL ENGINEER.
13. CONTRACTOR SHALL FURNISH AND INSTALL ALL SLEEVES WHERE INDICATED ON DRAWINGS AND/OR REQUIRED WHERE FIELD CONDITIONS DICTATE. CONTRACTOR SHALL PROVIDE DIMENSIONED SLEEVE DRAWINGS FOR REVIEW BY ARCHITECT AND ENGINEERS.

FIRE SUPPRESSION NEW WORK NOTES:

1. THIS FACILITY SHALL BE PROVIDED WITH A FULLY ENGINEERED (DELEGATED DESIGN) WET FIRE SUPPRESSION SYSTEM WITH A DRY-MANUAL CLASS 1 STANDPIPE SYSTEM. SYSTEMS PIPING MAY BE COMBINED IN ACCORDANCE WITH NFPA 13 AND NFPA 14.
2. SELECTED AREAS OF THIS PROJECT ARE TO BE SERVED WITH A PRE-ACTION FIRE SUPPRESSION SYSTEM. THIS SYSTEM SHALL BE FULLY ENGINEERED FOR THE AREA OF COVERAGE AND THE SPACE ALLOCATED FOR THE PRE-ACTION SYSTEM CABINET/ASSEMBLY.
3. THE FIRE SUPPRESSION SYSTEMS SHALL BE IN DESIGN, MATERIALS, METHODS AND INSTALLATION IS IN FULL COMPLIANCE WITH APPLICABLE STANDARDS OF NFPA, WHETHER SPECIFICALLY REFERENCED OR NOT, LOCAL ADOPTED CODES, FACTORY MUTUAL AND THE AUTHORITY HAVING JURISDICTION.
4. THE FIRE SUPPRESSION CONTRACTOR IS RESPONSIBLE TO PERFORM ALL REQUIRED AND NECESSARY FIRE HYDRANT FLOW TEST. TEST RESULTS SHALL BE SUBMITTED WITH THE DELEGATED DESIGN SUBMITTAL, AND BE CONDUCTED WITHIN NINETY DAYS OF THE SUBMITTAL. ALL SAFETY FACTORS SHALL BE ADDRESSED AS REQUIRED.
5. ALL DEVICES, INCLUDING BUT NOT LIMITED TO; FIRE PUMP, JOCKEY PUMP, CONTROLLERS, CONTROL VALVES, VALVES, DRAINS, TEST LOCATION APPLIANCES AND GAUGES, ETC. SHALL BE LOCATED AND INSTALLED TO ALLOW FOR CLEAR AND UNOBSTRUCTED ACCESS.
6. THE FIRE PUMP SELECTED FOR THE BASIS OF DESIGN ON THIS PROJECT IS BASED ON A MAXIMUM OF 40 HP. THE ELECTRICAL DESIGN FOR THE BUILDING HAS ACCOUNTED FOR A FIRE PUMP WITH A MAXIMUM HORSEPOWER OF 40. THE DESIGN/BUILD FIRE SPRINKLER CONTRACTOR MAY NOT SELECT A PUMP WHICH EXCEEDS 40 HP DEMAND WITHOUT PRIOR WRITTEN APPROVAL BY THE ELECTRICAL ENGINEER.
7. PIPING WHERE SHOWN ON THESE PLANS ARE TO BE CONSIDERED AS A GENERAL GUIDE ONLY, AND DOES NOT REFLECT A DESIGN OR ROUTING. THE FIRE SUPPRESSION CONTRACTOR SHALL FULLY COORDINATE THE DESIGN OF THE SUPPRESSION SYSTEMS WITH THE BUILDING STRUCTURE, ARCHITECTURAL ELEMENTS, INCLUDING SPACE LAYOUTS, HVAC MECHANICAL AND ELECTRICAL DESIGNS AND LAYOUT. THIS CONTRACTOR IS RESPONSIBLE FOR ALL FIELD COORDINATION OF THIS WORK.
8. THE DELEGATED DESIGN SHALL INCLUDE, BUT IS NOT LIMITED TO; FLOW TEST RESULTS, FLOOR PLANS, HYDRAULIC CALCULATIONS, COORDINATED PIPE SIZING AND ROUTING, SEISMIC DATA AND DETAILS, MATERIALS AND EQUIPMENT CUT SHEETS, QUANTITIES AND PLACEMENT OF SPRINKLER HEADS, ETC.. SUBMITTAL SHALL BE SEALED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER.
9. ALL MATERIALS, FIXTURES, EQUIPMENT ETC.. FURNISHED AND INSTALLED ON THIS PROJECT SHALL BE NEW AND UNUSED.
10. ALL EQUIPMENT SHALL BE CLEANED PRIOR TO OWNERS ACCEPTANCE.
11. DAMAGE TO AREAS OR EXISTING MATERIALS OUTSIDE THIS SCOPE OF WORK SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE OWNER.
12. PROVIDE DIELECTRIC PIPE FITTINGS AS REQUIRED WHERE JOINING DISSIMILAR MATERIALS.
13. FIRE SUPPRESSION CONTRACTOR SHALL VERIFY ALL ROUGH-IN DIMENSIONS PRIOR TO ORDERING FIXTURES AND MATERIALS. PROVIDE OFFSETS AND TRANSITIONS AS REQUIRED TO COMPLETE INSTALLATION.
14. PROVIDE WALL AND CEILING ACCESS DOORS/PANELS AS REQUIRED TO ACCESS SHUT-OFF VALVES. SELECT SIZE AND TYPE BASED ON MOUNTING SURFACE AND USAGE. ACCESS DOORS/PANELS SHALL BE STEEL CONSTRUCTION WITH SCREWDRIVER CAM LOCKS. INSTALLATION BY GENERAL CONTRACTOR.
15. THE FIRE SUPPRESSION CONTRACTOR SHALL FULLY COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR AND ALL TRADES ON THIS PROJECT. COORDINATION SHALL OCCUR PRIOR TO COMMENCING WORK AND THROUGHOUT THE PROJECT. ALL CONFLICTS DUE TO A LACK OF COORDINATION SHALL BECOME THE SOLE RESPONSIBILITY OF THIS CONTRACTOR.
16. WITHIN THIS SCOPE OF WORK, FIRE SUPPRESSION WORK WILL BE REQUIRED IN THE EAST ACADEMIC BUILDING (EAB), AT THE CONNECTOR LINKS, AND INTO THE EAB. THE CONTRACTOR IS TO FULLY COORDINATE THIS WORK WITH CONDITIONS OF THE EXISTING BUILDING AND SPRINKLER SYSTEM SERVING THAT STRUCTURE.
17. OCCUPANCY HAZARD CLASSIFICATION AND MINIMUM DENSITIES LISTED ARE THE MINIMUM ACCEPTABLE DESIGN CRITERIA. WHERE FM GLOBAL GUIDELINES REQUIRE OR SPECIFY A HIGHER OCCUPANCY CLASSIFICATION OR AN INCREASE IN WATER FLOW DENSITIES/COVERAGE, THAT CRITERIA SHALL BE USED IN LIEU OF THE MINIMUM DESIGN CRITERIA.



FIRE SUPPRESSION DRAWING INDEX:

|          |                                                 |
|----------|-------------------------------------------------|
| FP0001   | FIRE PROTECTION ABBREVIATIONS, SEISMIC, & NOTES |
| FP0100.A | LEVEL 0 FLOOR PLAN - FIRE PROTECTION            |
| FP0101.A | LEVEL 01 AREA A FLOOR PLAN - FIRE PROTECTION    |
| FP0101.B | LEVEL 01 AREA B FLOOR PLAN - FIRE PROTECTION    |
| FP0102.A | LEVEL 02 AREA A FLOOR PLAN - FIRE PROTECTION    |
| FP0102.B | LEVEL 02 AREA B FLOOR PLAN - FIRE PROTECTION    |
| FP0103.A | LEVEL 03 AREA A FLOOR PLAN - FIRE PROTECTION    |
| FP0103.B | LEVEL 03 AREA B FLOOR PLAN - FIRE PROTECTION    |
| FP0104.A | LEVEL 04 AREA A FLOOR PLAN - FIRE PROTECTION    |
| FP0104.B | LEVEL 04 AREA B FLOOR PLAN - FIRE PROTECTION    |
| FP0501   | DETAILS - FIRE PROTECTION                       |
| FP0601   | SCHEDULES - FIRE PROTECTION                     |

PROJECT MANUAL SPECIFICATION DIVISION 21

FIRE SUPPRESSION SYMBOLS & ABBREVIATION LEGEND

|     |                                  |     |                      |
|-----|----------------------------------|-----|----------------------|
|     | FIRE SUPPRESSION SUPPLY          |     | OS&Y VALVE           |
|     | FLOW SWITCH                      |     | SHUT-OFF VALVE       |
|     | TAMPER SWITCH                    |     | DOUBLE CHECK BFP     |
|     | FIRE DEPARTMENT CONNECTION       |     | BALL DRIP VALVE      |
|     | CONCEALED CEILING SPRINKLER HEAD |     | UNION                |
|     | UPRIGHT SPRINKLER HEAD           |     | FLANGE               |
|     | PENDANT SPRINKLER HEAD           |     | BALL VALVE           |
|     | SIDEWALL SPRINKLER HEAD          |     | PIPE TURNED DOWN     |
|     | KEYED NOTE                       |     | PIPE TURNED UP       |
| BFP | BACKFLOW PREVENTER               | FD  | FLOOR DRAIN          |
| SSU | STANDARD SPRINKLER UP-RIGHT      | AFF | ABOVE FINISHED FLOOR |
| SSP | STANDARD SPRINKLER PENDENT       | AP  | ACCESS PANEL/DOOR    |
| D   | DRAIN                            | FS  | FLOW SWITCH          |
| IT  | INSPECTORS TEST                  | TS  | TAMPER SWITCH        |
| FDC | FIRE DEPARTMENT CONNECTION       | UN  | UNION                |
| BV  | BALL VALVE                       | FL  | FLANGE               |
| BFV | BUTTERFLY VALVE                  | BD  | BALL DRIP            |
| OSY | OUTSIDE SCREW & YOKE             | FHV | FIRE HOSE VALVE      |
| EC  | EXTENDED COVERAGE                |     |                      |
| DP  | DRY PENDANT                      |     |                      |
| IT  | INTERMEDIATE TEMPERATURE         |     |                      |



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CONFORMED SET

01 JUL 2016

|     |                               |             |
|-----|-------------------------------|-------------|
| 1   | ADDENDUM 2-1                  | 17 MAR 2016 |
| -   | ISSUED FOR CONSTRUCTION (BP2) | 01 MAR 2016 |
| No. | Description                   | Date        |

Drawing Title:

FIRE PROTECTION  
ABBREVIATIONS,  
SEISMIC, & NOTES

Project No.: 04561.01

Checked by:

FP0001