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PE-2016011697
EXP. 12-31-2018

CENTRAL MISSOURI PROFESSIONAL SERVICES, INC.
MISSOURI STATE CERTIFICATE OF AUTHORITY #
SSC ENGINEERING, INC.
MECHANICAL/ELECTRICAL/PLUMBING ENGINEER
MISSOURI STATE CERTIFICATE OF AUTHORITY #007244
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FIRE PROTECTION SYMBOLS, NOTES, LEGENDS AND SCHEDULES

MISSOURI SOYBEAN INNOVATION CENTER
NEW OFFICE BUILDING
734 S. COUNTRY CLUB DRIVE
JEFFERSON CITY, MISSOURI

PROJECT NO. 1613
DATE: Sept. 12, 2018

FP0.1

FIRE PROTECTION GENERAL NOTES:

- SCOPE: PROVIDE A COMPLETE, FUNCTIONING FIRE SPRINKLER SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 13, 2013. SYSTEM SHALL MEET ALL APPLICABLE REQUIREMENTS OF THE BUILDING CODE, FIRE CODE, AUTHORITY HAVING JURISDICTION, AND INSURANCE CARRIER. VERIFY REQUIREMENTS PRIOR TO BID SUBMITTAL. NO CHANGE TO THE CONTRACT PRICE WILL BE ACCEPTED FOR PROVIDING AND INSTALLING EQUIPMENT REQUIRED BY THE AFOREMENTIONED CODES, STANDARDS, OR THE LOCAL AUTHORITY HAVING JURISDICTION.
- DELEGATED DESIGN: THE LOCATIONS OF MAJOR FIRE PROTECTION EQUIPMENT AND PIPE ROUTING ARE SHOWN FOR REFERENCE ONLY TO ASSIST IN BIDDING AND SPACE COORDINATION. FIRE PROTECTION CONTRACTOR SHALL DESIGN, LOCATE AND PROVIDE ALL EQUIPMENT, VALVES, PIPE ARRANGEMENTS AND COORDINATE WITH OTHER TRADES TO MEET THE APPLICABLE CODES AND STANDARDS FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- APPROVAL: PRIOR TO COMMENCING WORK, APPROVAL SHALL BE RECEIVED FROM THE OWNER'S INSURANCE COMPANY, ENGINEER, FIRE MARSHAL AND OWNER. WORK COMMENCED PRIOR TO SHOP DRAWING REVIEW SHALL BE AT CONTRACTOR'S RISK.
- PIPING AND COORDINATION:
 - FIRE PROTECTION CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES FOR THE LOCATION OF ALL PIPING AND EQUIPMENT TO PREVENT INTERFERENCE. PROVIDE ALL NECESSARY OFFSETS IN PIPING TO AVOID CONFLICT. NO CHANGE TO THE CONTRACT PRICE WILL BE ACCEPTED WHERE ALTERNATE PIPING ROUTES ARE REQUIRED.
 - PIPING SHALL BE INSTALLED AS HIGH AS POSSIBLE IN OPEN STRUCTURE AREAS.
 - CENTERLINE OF PIPING SHALL BE ROUTED A MINIMUM OF 12" ABOVE CEILING.
 - RENDER ANY PASSAGE OF PIPING THROUGH OUTSIDE WALLS PERMANENTLY WATERTIGHT.
 - PROVIDE SEISMIC BRACING AS REQUIRED FOR NEW PIPING. REFER TO BRACING DETAILS.
 - PROVIDE AUXILIARY DRAINS AS REQUIRED FOR DRAINING TRAPPED SECTIONS OF PIPING. FOR TRAPPED SECTIONS OF PIPING EXCEEDING 5 GALLONS IN CAPACITY, PROVIDE A HARD-PIPED DRAIN CONNECTION AND ROUTE BACK TO DRAIN IN SPRINKLER RISER ROOM OR ALTERNATE LOCATION APPROVED BY ENGINEER.
 - COORDINATE ALL POWER AND FIRE ALARM CONNECTIONS WITH THE ELECTRICAL CONTRACTOR.
- SPRINKLER TYPE AND DESIGN DENSITIES: REFER TO FIRE PROTECTION SPRINKLER SCHEDULE AND PROTECTION CRITERIA.
- SUBMITTAL: FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING THE FOLLOWING DOCUMENTATION SIGNED AND SEALED BY A QUALIFIED FIRE PROTECTION ENGINEER REGISTERED IN MISSOURI:
 - SHOP DRAWINGS CREATED IN ACCORDANCE WITH NFPA 13 SECTION 2.3.1.3 (2013 EDITION) AND CONTRACT DOCUMENTS
 - HYDRAULIC CALCULATIONS
 - FLOW TEST INFORMATION (REFER TO "FLOW TEST" NOTE THIS SHEET FOR DETAIL)
 - PRODUCT DATA FOR ALL EQUIPMENT AND COMPONENTS USED ON THIS PROJECT
 - ANY OTHER DOCUMENTATION AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
- SCOPE VERIFICATION: GENERAL CONTRACTOR SHALL VERIFY:
 - COST FOR INSTALLATION OF NEW DOMESTIC WATER AND FIRE PROTECTION SERVICE MAIN PIPING AND BACKFLOW PREVENTION ARE ACCOUNTED FOR BY THE PLUMBING CONTRACTOR AND SHALL NOT BE DUPLICATED BY THE FIRE PROTECTION CONTRACTOR. COORDINATE LOCATION FOR REQUIRED TAMPER SWITCHES.
 - ELECTRICAL CONTRACTOR HAS INCLUDED IN HIS CONTRACT ALL POWER AND EMERGENCY POWER REQUIREMENTS REQUIRED FOR FIRE PROTECTION EQUIPMENT, AND ALL SUPERVISORY FIRE ALARM CONNECTIONS.
- SPECIFICATIONS: REFER TO SPECIFICATIONS FOR FURTHER DETAIL.

FIRE PROTECTION SPRINKLER SCHEDULE

SYMBOL	TYPE	RE.	K/F	FINISH	NOTE
NEW					
⊙	RECESSED PENDENT	QR	5.6	WHITE	2
○	UPRIGHT	QR	5.6	BRASS	2
▽	SIDEWALL	QR	5.6	WHITE	2
▽	DRY SIDEWALL	QR	5.6	WHITE	2

GENERAL NOTES:
 1. SPRINKLER SHALL BE THE APPROPRIATE TEMPERATURE RATING FOR LOCATION AND OCCUPANCY IN ACCORDANCE WITH NFPA 13.
 2. SPRINKLERS SHALL ALIGN WITH LIGHT FIXTURES AND OTHER CEILING MOUNTED DEVICES. COORDINATE SPRINKLER LOCATIONS WITH ARCHITECT'S REFLECTED CEILING PLAN, AND PROVIDE ADDITIONAL SPRINKLERS WHERE REQUESTED BY ARCHITECT.

NOTES:
 1. PROVIDE HIGH TEMPERATURE RATED SPRINKLERS IN VESTIBULES.
 2. PROVIDE WITH LISTED SPRINKLER GUARD FOR INSTALLATIONS BELOW 7 FT AFF.

FIRE PROTECTION SYMBOL LEGEND

	CONNECTION OF NEW TO EXISTING
	SCOPE OF WORK BOUNDARY
	SPRINKLER PIPING
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	PIPE CONTINUATION
	PIPE CAP
	FIRE SPRINKLER RISER ASSEMBLY
	PIPING IN SECTIONAL DETAIL
	AUXILIARY DRAIN BALL VALVE
	CHECK VALVE
	CHECK VALVE WITH BALL DRIP
	BUTTERFLY INDICATING VALVE
	GATE VALVE
	OS&Y VALVE
	DOUBLE CHECK BACKFLOW PREVENTER
	SUPERVISED WATERFLOW SWITCH
	SUPERVISED TAMPER SWITCH
	WALL MOUNTED FIRE DEPARTMENT CONNECTION
	PRESSURE GAUGE
	HORN/STROBE ALARM

FIRE PROTECTION ABBREVIATION LEGEND

AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
BOP	BOTTOM OF PIPE
BRZ	BRONZE
DN	DOWN
EC	EXTENDED COVERAGE
EX	EXISTING
FHV	FIRE HOSE VALVE
FP	FIRE PROTECTION
FPC	FIRE PROTECTION CONTRACTOR
FT	FEET
GC	GENERAL CONTRACTOR
GRVD	GROOVED
HSW	HORIZONTAL SIDEWALL
IN	INCH
PC	PLUMBING CONTRACTOR
PND	PENDENT
QR	QUICK RESPONSE
SPR	SPRINKLER SYSTEM
SS	STANDPIPE SYSTEM
STND	STANDARD
THR	THREADED
UPR	UPRIGHT

FIRE PROTECTION DESIGN CRITERIA (NFPA 13 - 2013 EDITION)

HAZARD	AREA	DESIGN CRITERIA	HOSE (GPM)	MAX SPACING (SQFT)	DESIGN BASIS
LIGHT HAZARD	OFFICE AREAS / PUBLIC AREAS / CORRIDORS / RESTROOMS / CONFERENCE ROOMS / BREAK ROOM / COMMUNITY / EDUCATION	0.10/1500 SQFT	100	225	NFPA 13 SECTIONS 5.2, 11.2.3.2, & TABLE 11.2.3.1.2
ORDINARY HAZARD GROUP 1	ELECTRICAL / MECHANICAL / STORAGE / SERVER / IT SERVER / LOBBY	0.15/1500 SQFT	250	130	NFPA 13 SECTIONS 5.3.1, 11.2.3.2, & TABLE 11.2.3.1.2
ORDINARY HAZARD GROUP 2	BULK STORAGE	0.20/1500 SQFT	250	130	NFPA 13 SECTIONS 5.3.2, 11.2.3.2, & TABLE 11.2.3.1.2

MINIMUM REQUIRED SAFETY FACTOR: 5 PSI

NOTES:
 1. THE HYDRAULIC AREA OF OPERATION MAY NOT BE REDUCED AS ALLOWED BY NFPA 13 FOR AREAS UTILIZING QUICK RESPONSE SPRINKLERS FOR NEW SYSTEM INSTALLATIONS OR UNFINISHED SHELL SPACES.
 2. HYDRAULIC AREA OF OPERATION SHALL BE INCREASED (CUMULATIVELY) WITHOUT REVISING THE DENSITY FOR THE FOLLOWING APPLICATIONS:
 A. INCREASED BY 30% FOR AREAS WITH SLOPED CEILINGS WITH A PITCH EXCEEDING 1 IN 6 (16.7% SLOPE) IN ACCORDANCE WITH NFPA 13 11.2.3.2.4.
 B. INCREASED BY 30% FOR DRY-PIPE AND DOUBLE INTERLOCK PRE-ACTION SYSTEMS, IN ACCORDANCE WITH NFPA 13 11.2.3.2.5.
 C. INCREASED TO 3,000 SQFT IF THE BUILDING HAS ADJACENT, NON-SPRINKLERED COMBUSTIBLE SPACES.
 3. THE ABOVE CRITERIA NOTED DOES NOT PRECLUDE THE USE OF EXTENDED COVERAGE OR LISTED SPECIAL APPLICATION SPRINKLERS THAT ARE DESIGNED AND INSTALLED IN ACCORDANCE WITH THEIR LISTING AND MANUFACTURER REQUIREMENTS.
 4. THE HOSE STREAM ALLOWANCE SHALL BE PROVIDED AT THE BASE OF RISER.

ANCHORAGE & SWAY BRACING - FIRE PROTECTION SYSTEM COMPONENTS

Occupancy Category (II)	Seismic Design Category (C)					
	ANCHORAGE TO FLOORS, ROOFS, ETC.		SWAY BRACING		LOCATION OF PROFESSIONALLY SEALED ANCHORAGE AND SWAY BRACING DETAILS	
LISTING OF EQUIPMENT AND SYSTEM COMPONENTS	Not Provided	Provided	Not Provided	Provided	Drawing No. or Spec. Section	Shop Drawings Separate Permit & Plans
PIPING AND EQUIPMENT		X		X		BY FPC

COMMENTS: BRACE PIPING AND/OR EQUIPMENT WHERE REQUIRED BY IBC 2012 PER METHODS IN NFPA 13

VIBRATION ISOLATION AND SEISMIC RESTRAINT SCHEDULE

EQUIPMENT TAG	ISOLATION SPEC.	SEISMIC RESTRAINT	ISOLATOR DEFLECTION	COMPONENT		
				IMPORTANCE FACTOR	RESPONSE MODIFICATION FACTOR	AMPLIFICATION FACTOR
SPR-PIPING	SC	YES	-	1.5	2.5	1.0
SPR-EQUIP	SB	YES	-	1.5	2.5	1.0

FLOW TEST

DATE: 02/20/18
 STATIC: 44 PSI
 RESIDUAL: 42 PSI
 FLOW: 950 GPM
 TEST HYDRANT LOCATION: 701 SOUTH COUNTRY CLUB DRIVE & FAIRWAY DRIVE BY: JEFFERSON CITY FIRE DEPARTMENT

DATE: 07/17/18
 STATIC: 44 PSI
 RESIDUAL: 41 PSI
 FLOW: 950 GPM
 TEST HYDRANT LOCATION: FAIRWAY DRIVE & COUNTRY CLUB DRIVE BY: SSC ENGINEERING

FIRE PROTECTION DELEGATED-DESIGN NOTE

THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING AND PROVIDING A COMPLETE, FUNCTIONAL, AND CODE COMPLIANT AUTOMATIC SPRINKLER SYSTEM. REFER TO GENERAL NOTES FOR ADDITIONAL DETAIL CONCERNING DESIGN, FLOW TEST, HYDRAULIC CALCULATIONS, COORDINATION, AND SHOP DRAWING REQUIREMENTS.

FIRE PROTECTION SHEET LIST

Sheet Number	Sheet Name
FP0.1	FIRE PROTECTION SYMBOLS, NOTES, LEGENDS AND SCHEDULES
FP0.2	FIRE PROTECTION DETAILS
FP1.1	FIRE PROTECTION PLAN

2017349 - BID/PERMIT SET - 09-12-18

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