

FIRE PROTECTION SYMBOLS AND ABBREVIATIONS			
	PIPE TURNING UP	CL	CENTER LINE
	PIPE TURNING DOWN	<	ANGLE
	TEE DOWN	Ø	ROUND DIAMETER OR PHASE
	TEE UP	#	POUNDS OR NUMBER
	45° OFFSET	A	COMPRESSED AIR
	DIRECTION OF FLOW IN PIPE	ABV.CLG.	ABOVE CEILING
	PIPE SLOPED IN DIRECTION OF ARROW	ACFM	ACTUAL CUBIC FEET PER MINUTE
	PIPE CAP	ACU	AIR CONDITIONING UNIT
	CONCENTRIC REDUCER	AFB	ABOVE FINISHED FLOOR
	ECCENTRIC REDUCER	AFG	ABOVE FINISHED GRADE
	PIPE UNION	AHU	AIR HANDLING UNIT
	GATE VALVE	ALUM.	ALUMINUM
	CHECK VALVE	ANSI	AMERICAN NATIONAL STANDARD ASSOCIATION
	BUTTERFLY VALVE	AP	ACCESS PANEL
	BALL VALVE	APPROX.	APPROXIMATE
	SOLENOID VALVE	ARCH.	ARCHITECTURAL
	PRESSURE REDUCING VALVE	ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
	SAFETY RELIEF VALVE	ASV	AUTOMATIC SPRINKLER VALVE
	BASKET STRAINER	AUTO	AUTOMATIC
	PRESSURE GAUGE (W/ BALL VALVE)	AWWA	AMERICAN WATER WORKS ASSOCIATION
	PIPE ANCHOR	BFF	BELOW FINISHED FLOOR
	FLEXIBLE PIPE CONNECTION	BFP	BACKFLOW PREVENTER
	PUMP	BHP	BRAKE HORSEPOWER
	FIRE HOSE CABINET	BOP	BOTTOM OF PIPE
	HYDRAULIC CALCULATION NODE (SPRINKLER SYSTEM)	C	CELSIUS
	HYDRAULIC CALCULATION NODE (STANDPIPE SYSTEM)	C/C	CENTER TO CENTER
	ALARM CHECK VALVE	CI	CAST IRON
	DRY PIPE VALVE WITH EXHAUSTER OR ACCELERATOR	CLG.	CEILING
	DELUGE VALVE	CONC.	CONCRETE
	PREACTION VALVE	CONFIG.	CONFIGURATION
	HOSE END VALVE	CONN.	CONNECTION
	TAMPERS (SHOWN ON VALVE)	CONV.	CONTINUATION
	PRESSURE SWITCH	CONST.	CONSTRUCTION
	FLOW SWITCH	CONTR.	CONTRACTOR
	ANGLE VALVE (ELEVATION VIEW)	COORD.	COORDINATE
	ANGLE VALVE (PLAN VIEW)	COP	COEFFICIENT OF PERFORMANCE
	FIRE HYDRANT WITH OS&Y VALVE IN ROADWAY BOX	CTR	CENTER
	SIAMESE CONN., FIRE DEPT. CONN.	CU	COPPER
	FIRE PUMP TEST HEADER	CU.FT.	CUBIC FOOT
	FLOOR CONTROL ASSEMBLY	CW	COLD WATER OR CITY WATER
	CONNECT TO EXISTING	CU.YD.	CUBIC YARD
	REMOVE TO THIS POINT	D.I.	DUCTILE IRON
		DIA.	DIAMETER
		DN.	DOWN
		DWG.	DRAWING
		E.C.	ELECTRICAL CONTRACTOR
		EL.	ELEVATION
		ELEC.	ELECTRICAL
		EQUIP.	EQUIPMENT
		EQ.	EQUAL
		EXIST.	EXISTING
		FCA	FLOOR CONTROL ASSEMBLY
		FDC	FIRE DEPARTMENT CONNECTION
		FIN.	FINISHED
		FL	FLOOR
		FLEX	FLEXIBLE
		FLG	FLANGE
		FP	FIRE PROTECTION
		F.P.C.	FIRE PROTECTION CONTRACTOR
		FRM	FEET PER MINUTE
		FPS	FEET PER SECOND
		FS	FLOW SWITCH
		FT	FOOT/FEET
		GAGE	GAGE
		GAL.	GALLONS
		GALV.	GALVANIZED
		G.C.	GENERAL CONTRACTOR
		GPM	GALLONS PER MINUTE
		H.C.	HEATING, VENTILATING, AND AIR CONDITIONING CONTRACTOR
		HCR	HANGER
		HCB	HOSE CABINET
		HA	HAND AUTOMATIC
		HZ	HORIZONTAL
		HP	HIGH PRESSURE OR HORSEPOWER
		HR	HOUR
		HTG.	HEATING
		HVAC	HEATING, VENTILATING AND AIR CONDITIONING
		HYD.	HYDRANT
		IN.	INCH
		KW	KILOWATT
		MAX.	MAXIMUM
		MECH.	MECHANICAL
		MEZZ.	MEZZANINE
		MFG.	MANUFACTURING
		MFR.	MANUFACTURER
		MIN.	MINIMUM
		MJ	MECHANICAL JOINT
		MTD	MOUNTED
		NC	NORMALLY CLOSED
		NEC	NATIONAL ELECTRIC CODE
		NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
		NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
		N.I.C.	NOT IN CONTRACT
		NO	NORMALLY OPEN
		NO.	NUMBER
		NPSH	NET POSITIVE SUCTION HEAD
		N.R.S.	NON RISING STEM
		N.T.S.	NOT TO SCALE
		O.C.	ON CENTER
		O.D.	OUTSIDE DIAMETER
		OPNG	OPENING
		O.R.	OPERATING ROOM
		OSD	OPEN SIGHT DRAIN
		O.S.&Y.	OUTSIDE SCREW AND YOKE
		P.C.	PLUMBING CONTRACTOR
		PICU	PEDIATRIC INTENSIVE CARE UNIT
		PLBG.	PLUMBING
		PRS	PRESSURE REDUCING STATION
		PRV	PRESSURE REDUCING VALVE
		PS	PRESSURE SWITCH
		PSI	POUNDS PER SQUARE INCH
		PSIA	POUNDS PER SQUARE INCH ABSOLUTE
		PSIG	POUNDS PER SQUARE INCH GAUGE
		PVC	POLYVINYL CHLORIDE
		QR	QUICK RESPONSE
		QTY.	QUANTITY
		REINF.	REINFORCING
		REQD.	REQUIRED
		REV.	REVISION
		RFPD	REDUCED PRESSURE DETECTOR ASSEMBLY
		RPM	REVOLUTIONS PER MINUTE
		RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
		R.S.	RISING STEM
		S.C.	SITE CONTRACTOR
		SCH.	SCHEDULE
		SPEC.	SPECIFICATION
		SPR	SPRINKLER
		SSU	STANDARD SPRAY UPRIGHT
		SSS	STANDARD SPRAY SIDEWALL
		STA.	STEEL
		STRUCT.	STRUCTURE
		SYM.	SYMBOL OR SYMBOLICAL
		SYS.	SYSTEM
		T.O.	TOP OF PIPE
		T.O.F.	TOP OF FLOOR
		TS	TAMPERS
		TYP.	TYPICAL
		UF	UNDER FLOOR
		UL	UNDERWRITERS LABORATORIES
		UNO	UNLESS NOTED OTHERWISE
		VERT.	VERTICAL
		VLV.	VALVE
		W/	WITH
		W/O	WITHOUT
		ZCA	ZONE CONTROL ASSEMBLY

FIRE PROTECTION GENERAL NOTES

- DIVISION 21 SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED FOR A COMPLETE WORKING SYSTEM WHICH SHALL COMPLY FULLY WITH NFPA #13, 2013 EDITION, STANDARD FOR INSTALLATION OF AUTOMATIC SPRINKLER SYSTEMS. THE NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION, REQUIREMENTS OF ALL LOCAL FIRE MARSHALL AUTHORITIES. FINAL ACCEPTANCE IS CONTINGENT UPON APPROVAL OF ALL WORK AND COMPLETION OF THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FORM 55A.
- DIVISION 21 SHALL PROVIDE ENGINEERED SHOP DRAWINGS FOR THE PROPOSED BUILDING. THE DRAWINGS SHALL INCLUDE THE FULLY AUTOMATIC WET PIPE SPRINKLER SYSTEM WITH ALL PIPING, SPRAY HEADS OF EVERY TYPE REQUIRED, FITTINGS, VALVES, DEVICES, ACCESSORIES, HANGERS AND SUPPORTS, ALARM CHECK VALVES, WATER MOTOR GONG AND CONNECTIONS. THE WORK SHALL INCLUDE HYDRAULIC CALCULATIONS FOR THE AUTOMATIC WET PIPE SPRINKLER SYSTEMS MOST REMOTE AREAS (APPLY 10PSI REDUCTION ON STATIC AND RESIDUAL PRESSURES AND A 10% REDUCTION ON FLOW) SEE SPRINKLER DESIGN DATA ON THIS SHEET. SUBMIT TO ENGINEER FOR APPROVAL AND FORWARD TO STATE CONSTRUCTION OFFICE.
- ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UL LISTED AND FM APPROVED FOR THE INTENDED USE AND SHALL BE INSTALLED IN FULL COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- THE FIRE SPRINKLER SYSTEM FOR THE OCCUPIED AND HEATED AREAS SHALL BE AN AUTOMATIC WET PIPE SYSTEM.
- SPRINKLER HEADS SHALL BE SPACED AS PER N.F.P.A. 13, 2013 EDITION.
- ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED FOR THIS PROJECT.
- ALL PIPING AND/OR CONDUIT PENETRATIONS THRU FIRE RATED FLOORS AND/OR WALLS SHALL BE MADE/SEALED IN ACCORDANCE WITH UL LISTED SYSTEMS.
- UNLESS OTHERWISE INDICATED DIVISION 21 IS RESPONSIBLE FOR ALL CUTTING, CORE DRILLING AND PATCHING REQUIRED TO INSTALL FIRE PROTECTION WORK.
- ALL SPRINKLER HEADS SHALL BE LOCATED IN CENTER OF CEILING TILES WHERE LAY-IN CEILINGS OCCUR UNLESS SHOWN OR NOTED OTHERWISE.
- REFER TO ALL ARCHITECTURAL/GENERAL CONSTRUCTION CONTRACT SPECIFICATIONS AND DRAWING DOCUMENTS FOR PROJECT REQUIREMENTS.
- IT IS TOTALLY DIVISION 21'S RESPONSIBILITY TO COORDINATE HANGERS & SUPPORTS WITH OTHER TRADES. ANY DAMAGE INCURRED ON EXISTING FIREPROOFING MATERIAL DUE TO INSTALLATION OF HANGERS BY THIS CONTRACTOR, SHALL BE REPAIRED BY THE FIREPROOFING SUBCONTRACTOR AT THE FIRE PROTECTION CONTRACTOR'S EXPENSE.
- ALL PIPE LARGER THAN 2" SHALL BE BLACK STEEL SCH. 10 WITH GROOVED ENDS JOINED BY GROOVE FITTINGS. USE RIGID COUPLINGS WITH ALL 2" BRANCH LINES TO PREVENT PIPE ROTATION.
- ALL PIPE 2" AND SMALLER SHALL BE BLACK STEEL SCH. 40 WITH THREADED ENDS JOINED BY THREADED FITTINGS.
- FINAL PIPE SIZING SHALL BE BASED ON HYDRAULIC CALCULATIONS FOR APPROPRIATE HAZARD AND A WATER FLOW TEST OF FIRE HYDRANT FLOW NEAREST TO THE SITE. THE TEST SHALL BE PROVIDED BY DIVISION 21.
- ALL ARMORERS SHALL BE 1", ARMORERS EXCEEDING 1" X 2'-0" SHALL BE SUPPORTED WITH A HANGER PER NFPA #13.
- ALL INTERIOR SPRINKLER PIPING SHALL BE PRESSURE TESTED FOR 2 HOURS AT 200 PSI OR 50 PSI ABOVE THE MAXIMUM SYSTEM WORKING PRESSURE, WHICHEVER IS GREATER.
- AUTOMATIC SPRINKLERS SHALL BE PROVIDED UNDER DUCTS OF 48" AND GREATER WIDTH AND UNDER LESSER WIDTH DUCTS WHERE SPRAY HEADS CANNOT BE LOCATED TO COMPLY WITH THE CLEARANCE GUIDELINES OF NFPA #13.
- ALL WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED FOR THE PROCEDURES USED. ALL SLAG CAUSED BY WELDING OR CUTTING PROCEDURES SHALL BE REMOVED FROM PIPING BEFORE INSTALLATION OF PIPING.
- FLUSHING CONNECTIONS SHALL BE PROVIDED AT THE ENDS OF EACH CROSS MAIN.
- A PERMANENT METAL PLACARD SHALL BE PROVIDED AT THE BASE OF THE RISER INDICATING THE DESIGN CRITERIA AND SYSTEM DEMANDS.
- PROVIDE FLOW SWITCHES FOR SYSTEM MAIN AND ZONES AND TAMPER SWITCHES FOR ALL ABOVE GROUND WELLS, WAFER, AND BALL VALVES ABOVE GROUND AND INSIDE THE BUILDING.
- WIRING FROM TAMPER SWITCHES AND FLOW SWITCHES TO FIRE CONTROL PANELS SHALL BE BY ELECTRICAL CONTRACTOR.
- ALL PENETRATIONS OF RATED WALLS AND FLOORS SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE SCHEDULE AND DETAILS ON THIS SHEET.
- ALL SPRINKLER PIPING, AS SHOWN, IS DIAGNOSTIC WITH APPROPRIATE PIPE LOCATIONS, ELEVATIONS, ROUTING, ETC., AND IS PROVIDED FOR INFORMATIONAL PURPOSES. FITTING, TEE AND LENGTH OF PIPE MAY NOT BE SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE CONTRACTOR'S DRAWINGS AND COORDINATE THE FIRE PROTECTION SYSTEM INSTALLATION WITH THE BUILDING STRUCTURAL, MECHANICAL AND ELECTRICAL SYSTEMS. THE FIRE PROTECTION CONTRACTOR SHALL CREATE A FABRICATION DRAWING SHOWING ALL PIPE SIZES, LOCATION, ROUTING, HANGERS AND ELEVATIONS AS A RESULT OF THIS COORDINATION EFFORT. NECESSARY OFFSETS IN PIPING REQUIRED TO PROPERLY INSTALL THE FIRE PROTECTION SYSTEMS TO TAKE UP MINIMUM SPACE SHALL BE FURNISHED AND INSTALL BY THE CONTRACTOR WITH NO ADDITIONAL EXPENSE TO THE OWNER.

FIRE PROTECTION DESIGN DATA

Project Name: UNCG COLEMAN ATHLETICS WEIGHT ROOM	System: WET
Project Location: GREENSBORO, NC	Sys. Sq. Ft.: +/-
Suite: ---	Floor#: 1
Designed By: SIGMA ENGINEERED SOLUTIONS	Phone#: (919) 840-9300
Occupancy: GYM	Hazard: LIGHT
	Total Bldg. Hgt.: 27'-3/4" MAXIMUM
	Ceiling Hgt.: VARIES

FIRE PROTECTION DESIGN SUMMARY

	BASE BID	ALTERNATE STAIR & OFFICES	ALTERNATE WATER CURTAIN 1	ALTERNATE WATER CURTAIN 2
Design Method	CALCULATED	CALCULATED	CALCULATED	CALCULATED
Design Area #	R/A-1	R/A-2	R/A-3	R/A-4
Location	WEIGHT ROOM 123	WEIGHT ROOM 123	CORRIDOR 100 & RESTROOMS	CORRIDOR 200 & WEIGHT 123
Type of System	WET	WET	WET	WET
Hazard Class	LIGHT	LIGHT	LIGHT	LIGHT
Criteria From	NFPA 13	NFPA 13	NFPA 13	NFPA 13
Design Area	970 SQ FT (1068 SQ FT CALC)	970 SQ FT (1013 SQ FT CALC)	900 SQ FT (925 SQ FT CALC)	1500 SQ FT (1510 SQ FT CALC)
Sprinkler Spacing	150 SQ FT MAX	150 SQ FT MAX	150 SQ FT MAX	150 SQ FT MAX
Density	0.1	0.1	0.1	0.1
K-Factor	5.6	5.6	5.6	5.6
Hose Allowance	100 GPM	100 GPM	100 GPM	100 GPM
# Design Sprinklers	10	12	7	13
Special App Sprinkler	N/A	N/A	N/A	N/A
Req'd BOR				
G.P.M. Req'd	270.3	315	431.45	362.91
P.S.I. Req'd	32.93	40	49.45	50.74
Req'd PUMP				
G.P.M. Req'd	N/A	N/A	N/A	N/A
P.S.I. Req'd	N/A	N/A	N/A	N/A
Safety Factor (Test)	1.38PSI (38.1%)	1.38PSI (22.7%)	1.38PSI (2.7%)	1.22PSI (2.3%)
Dry Sys. (gal)	N/A	N/A	N/A	N/A

FIRE PROTECTION WATER SUPPLY INFORMATION

TESTED BY	DATE/TIME	3/04/2019	PRESSURE HYDRANT	-	
HYDRANT #	800.5FT	FLOW HYDRANT #1	31 / HY008-918	FLOW HYDRANT #2	N/A
STATIC (PSI)	65-10-55	RESIDUAL (PSI)	51-10-41	FLOW (GPM)	920-10%-828

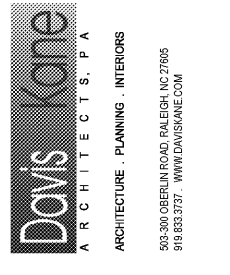
FLOW TEST IS TO BE USED FOR GENERAL INFORMATION ONLY. DIV 21 CONTRACTOR TO CONDUCT NEW FLOW TEST AS ALLOWED BY UNCG.

SPRINKLER HEAD LEGEND

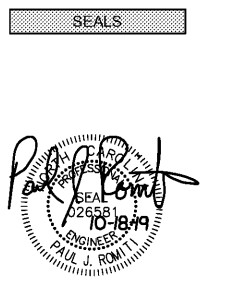
	UPRIGHT SPRINKLER HEAD, QR, SSU BRASS BODY, 1/2", 155', K=5.6.
	CONCEALED PENDENT SPRINKLER HEAD, QR, CHROME BODY, WHITE COVER PLATE, 1/2, 155', K=5.6.

NOTE:
ALL SPRINKLER HEAD SPECIFICATION INFORMATION LISTED ABOVE IS TYPICAL UNLESS OTHERWISE INDICATED ON THE DRAWINGS AND/OR AS OTHERWISE REQ'D. BY CODE (ORIFICE SIZES, TEMP. RATINGS, ETC.).

Order Plans



UNCG ATHLETICS
 COLEMAN BUILDING
 WEIGHT ROOM
 SCO ID No. 19-20597-01A | Code: 41825 | Item: 304
 1408 Walker Ave. Greensboro, NC 27402



DKA JOB NUMBER

REVISIONS

DATE ISSUED

BID DOCUMENTS

10/22/2019

SHEET TITLE

FIRE PROTECTION COVER

FP-0.1

PE: PAUL J. ROMITI
 PM: PJR
 Drawn By: JRE
 Plot Date: 10/18/2019 10:00:00 PM