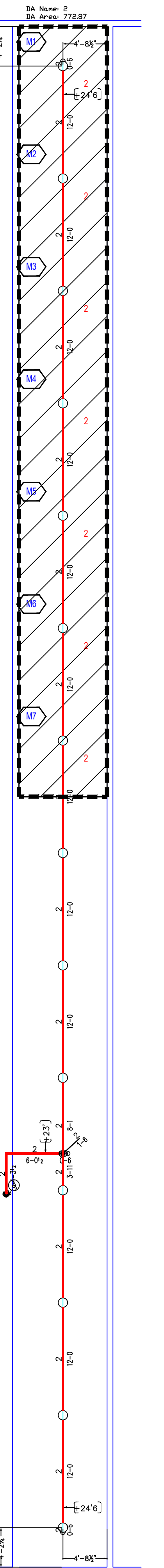


DESIGN AREA 2



Calculation results for Design Area 2 - Mechanical Platform
 This system as shown on A & B Fire Services Inc. company print no. dated 10/14/2022 for Johnsonville Elementary School Phase 2 at 18495 NC-27 contract no. 173-NC22 is designed to discharge at a rate of 0.15 gpm/ft² (L/min/m²) of floor area over a maximum area of 773 ft² when supplied with water at a rate of 131.2 gpm at 42.6 psi at the base of the riser. Hose stream allowance of _____ is included in the above.

Occupancy classification: OH1 Number of heads flowing: 7
 Commodity classification: _____ System Type: Wet
 Maximum storage height: _____ Maximum velocity: 11.52 ft/s
 Storage arrangement: _____

Flow from In-Rack sprinklers: 0 gpm Pressure Required at Source: 42.6 psi
 Flow from Overhead sprinklers: 131.2 gpm Pressure Available at Source: 77.8 psi
 Flow from Inside Hoses: 0 gpm Surplus Pressure at Source: 35.2 psi
 Flow from Outside Hoses: 0 gpm
 Other fixed flows: 0 gpm
 Total flow in system piping: 131.2 gpm
 Additional flow at/beyond source: 250 gpm
 Total of all flows: 381.2 gpm

Design Area 2 Wet System
 Mechanical Platform
 Demand Calculations using Hazen-Williams Method
 Occupancy Classification: OH1
 Design Area Density: 0.15
 Additional Outside Hose: 250
 Design Area Size: 773
 Notes: 7 HEAD LINE CALC

SCOPE OF WORK:

A & B FIRE SERVICES HAS BEEN CONTRACTED TO DESIGN & INSTALL A NEW FULLY FULLY AUTOMATIC SPRINKLER SYSTEM FOR JOHNSONVILLE ELEMENTARY SCHOOL PHASE 2 DESIGNED FOR LIGHT HAZARD CLASSIFICATION AT .10 DENSITY UTILIZING AREA REDUCTION. ALL MISC. STORAGE AREAS, EQUIPMENT ROOMS AND ELECTRICAL ROOMS ETC. SHALL BE DESIGNED FOR OH 1 AND OH 2 OCCUPANCY (SEE PLANS FOR CLASSIFICATION PER AREA) A & B IS CONTRACTED TO START 1 FOOT AFF INSIDE THE BUILDING AT FLANGED SPIGOT RUN-IN. PLANS CONFORM TO THE 2016 NFPA-13, HARNETT CO. SCHOOLS, N.C. FIRE PREVENTION CODE AND THE LOCAL JURISDICTION REQUIREMENTS.

Job: Johnsonville Elementary School Phase 2
 Address: 18495 NC-27 City: Cameron State: NC Zip/Postal Code: 28326
 Contract #: 173-NC22 Date: 10/14/2022
 Contractor: A & B Fire Services Inc. Designer: C.J. Roseberry
 Address: 113 North Ln. Bluefield State: WV Zip/Postal Code: 26005
 Phone: 540-521-5776 Fax: _____ Email: crosberry@aabfire.com
 Approving Authority: Harnett Co.

Design Defaults Standards: NFPA13
 Default Sprig Size: 1 Default Drop Size: 1
 Default Sprig Material: 40 Default Drop Material: 40
 Default Sprig Elevation: 0 Default Drop Elevation: 0

Calculation results for Design Area 1 - Classroom 8 / 7
 This system as shown on A & B Fire Services Inc. company print no. dated 10/14/2022 for Johnsonville Elementary School Phase 2 at 18495 NC-27 contract no. 173-NC22 is designed to discharge at a rate of 0.1 gpm/ft² (L/min/m²) of floor area over a maximum area of 1340 ft² when supplied with water at a rate of 240.7 gpm at 45.1 psi at the base of the riser. Hose stream allowance of _____ is included in the above.

Occupancy classification: Light Hazard Number of heads flowing: 6
 Commodity classification: _____ System Type: Wet
 Maximum storage height: _____ Maximum velocity: 14.93 ft/s
 Storage arrangement: _____

Flow from In-Rack sprinklers: 0 gpm Pressure Required at Source: 45.1 psi
 Flow from Overhead sprinklers: 240.7 gpm Pressure Available at Source: 78.2 psi
 Flow from Inside Hoses: 0 gpm Surplus Pressure at Source: 33.1 psi
 Flow from Outside Hoses: 0 gpm
 Other fixed flows: 0 gpm
 Total flow in system piping: 240.7 gpm
 Additional flow at/beyond source: 100 gpm
 Total of all flows: 340.7 gpm

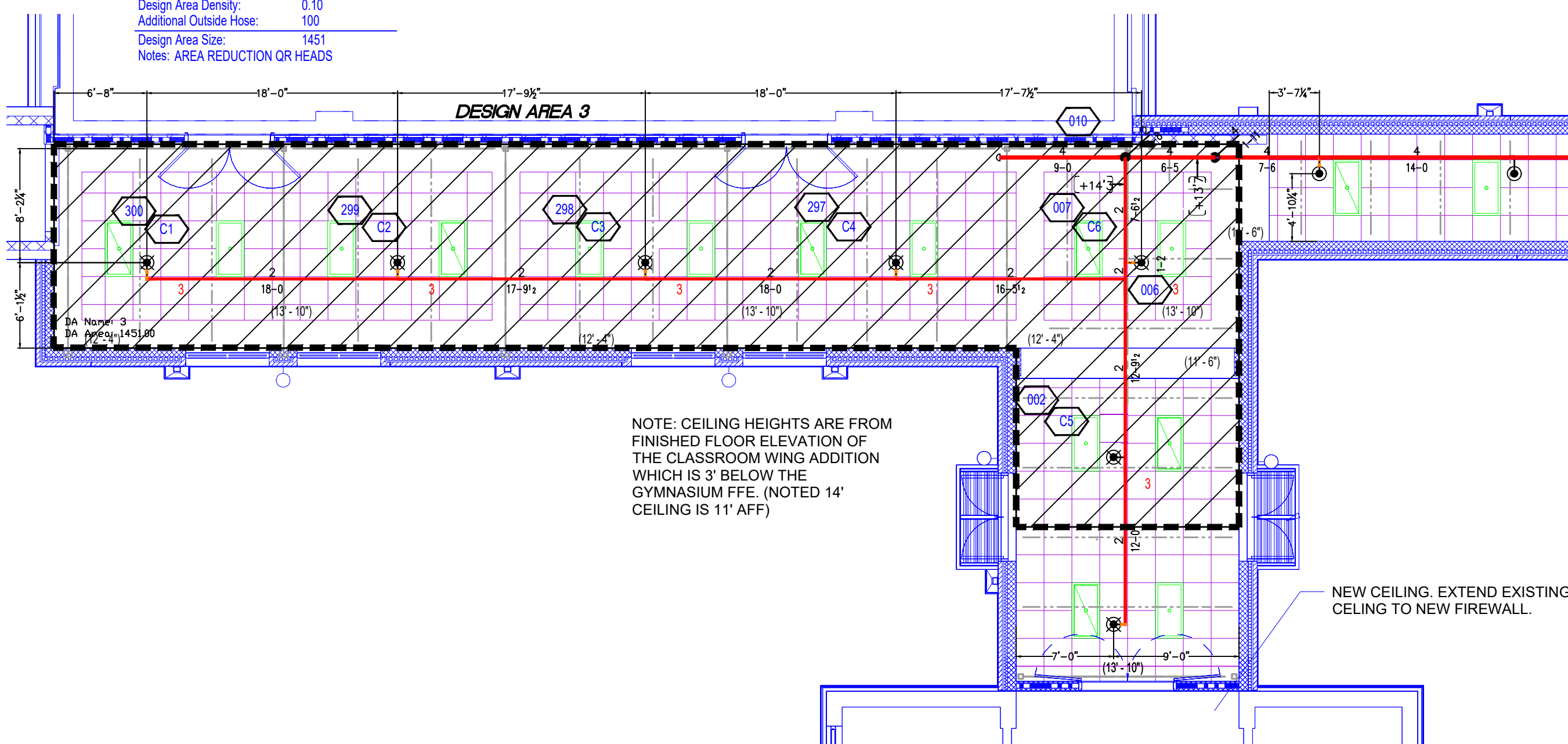
Design Area 1 Wet System
 Classroom 8 / 7
 Demand Calculations using Hazen-Williams Method
 Occupancy Classification: Light Hazard
 Design Area Density: 0.1
 Additional Outside Hose: 100
 Design Area Size: 1340
 Notes: AREA REDUCTION OR HEADS

Calculation results for Design Area 3 - Corridor 2
 This system as shown on A & B Fire Services Inc. company print no. dated 10/14/2022 for Johnsonville Elementary School Phase 2 at 18495 NC-27 contract no. 173-NC22 is designed to discharge at a rate of 0.1 gpm/ft² (L/min/m²) of floor area over a maximum area of 1451 ft² when supplied with water at a rate of 212.3 gpm at 49.8 psi at the base of the riser. Hose stream allowance of _____ is included in the above.

Occupancy classification: Light Hazard Number of heads flowing: 6
 Commodity classification: _____ System Type: Wet
 Maximum storage height: _____ Maximum velocity: 18.84 ft/s
 Storage arrangement: _____

Flow from In-Rack sprinklers: 0 gpm Pressure Required at Source: 49.8 psi
 Flow from Overhead sprinklers: 212.3 gpm Pressure Available at Source: 78.5 psi
 Flow from Inside Hoses: 0 gpm Surplus Pressure at Source: 28.7 psi
 Flow from Outside Hoses: 0 gpm
 Other fixed flows: 0 gpm
 Total flow in system piping: 212.3 gpm
 Additional flow at/beyond source: 100 gpm
 Total of all flows: 312.3 gpm

Design Area 3 Wet System
 Corridor 2
 Demand Calculations using Hazen-Williams Method
 Occupancy Classification: Light Hazard
 Design Area Density: 0.10
 Additional Outside Hose: 100
 Design Area Size: 1451
 Notes: AREA REDUCTION OR HEADS

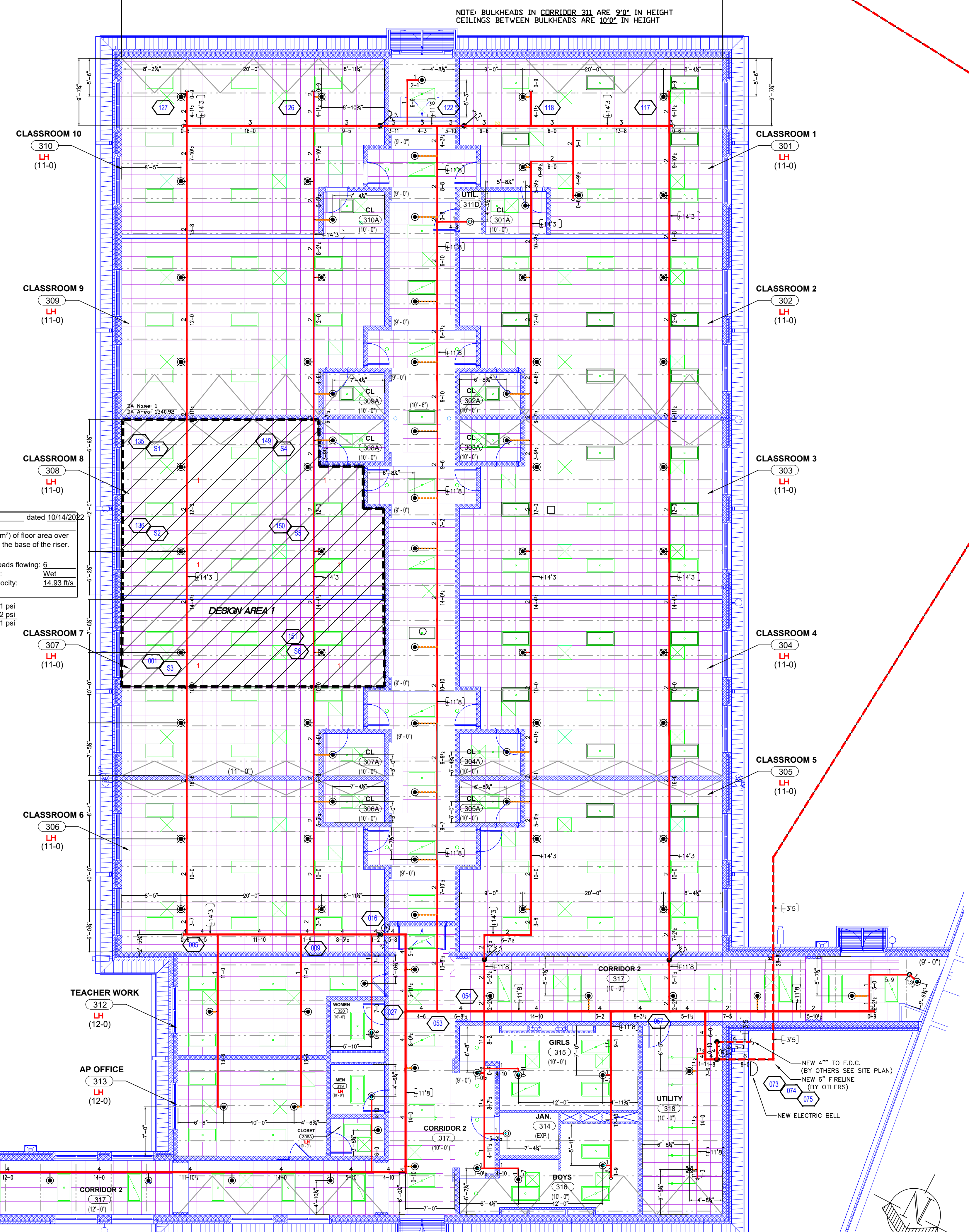


MECH. PLATFORM
 SCALE: 1/8" = 1'-0"

NOTE: CEILING HEIGHTS ARE FROM FINISHED FLOOR ELEVATION OF THE CLASSROOM WING ADDITION WHICH IS 3' BELOW THE GYMNASIUM FFE. (NOTED 14' CEILING IS 11' AFF)

NEW CEILING. EXTEND EXISTING CEILING TO NEW FIREWALL.

NOTE: CEILING HEIGHTS ARE FROM FINISHED FLOOR ELEVATION OF THE CLASSROOM WING ADDITION WHICH IS 3' BELOW THE GYMNASIUM FFE.

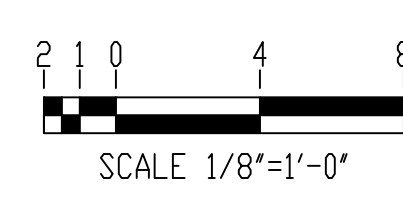


PHASE "2" FIRE PROTECTION PIPING PLAN
 SCALE: 1/8" = 1'-0"

MAXIMUM DISTANCE BETWEEN HANGERS

NOMINAL PIPE SIZE (in.)	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"
STEEL PIPE EXCEPT THREADED LIGHTWALL	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0

NOTE: UTILIZING THE 9 FT. RULE PER NFPA-13 IN SPECIFIC AREAS TO MINIMIZE SPRINKLER HEAD QTY!



JOB NORTH

REVISIONS

NO.	DATE	DESCRIPTION
0	12-12-22	SUBMIT FOR REVIEW

HEAD LEGEND

QTY	SYMBOL	TYPE	FINISH	TEMP.	K	NPT	ORIF.	MFR/MODEL	SIN #	ISC/NOTE	NO.
50	Circle with cross	ELC Quick Seal	White	160°	1.2	3/4"	3/4"	TYCO	TYC622	CONCEALED	0
53	Circle with cross	ELC Quick Seal	White	155°	5.60	1/2"	1/2"	TYCO	TYC551	CONCEALED	0
16	Circle with cross	ELC Quick Seal	Brass	155°	5.60	1/2"	1/2"	TYCO	TYC551	None	0

GENERAL NOTES

- See individual Piping Plans and General Design & Piping Notes for more information.
- Design is in accordance with the North Carolina Building Code Fire Prevention Code (2018), NFPA #13 (2013), and all other applicable codes and standards.
- Unless specifically noted otherwise, all components are excluded from this contract.
- The Owner is responsible for maintaining a min. of 40' F in all areas of the building containing wet pipe systems and dry pipe riser assemblies.
- #13 and the hanger details herein and should be field verified. Hangers are not shown on piping plans for clarity. 10' or Schedule 40 with shop-welded or bolted branch outlets full-grooved ends and grooved fittings (Sch. 10) <8>8" threaded ends with standard class 125 cast iron threaded fittings (Sch. 40 only).

SYMBOLS

- Butterfly Valve
- DS&Y Valve
- Post Ind. Valve
- Globe Valve
- Swing Check Valve
- Wet Fer Check Valve
- Angle Hose Valve
- Fire Dept. Connection

North Carolina Licensed Fire Sprinkler Contractor License #: 32514 Date: January 02, 2020

JOHNSONVILLE ELEM. SCHOOL ADDITION RENOVATION - PHASE 2
 18495 NC-27 CAMERON, NC 28326

AREA: PIPING PLAN & DETAILS
 DATE: 10/24/22 SCALE: As Noted
 DRAWN BY: C.J.R. JOB NO. 173-NC22
 CHECKED BY: D.H.
 APPROVING AGENCY: HARNETT CO. FILE NO.
 TOTAL NUMBER OF SPRINKLERS: 119 ON CONTRACT 119 SHEET 2 of 2

JOSHUA M. OWEN
 NCEC CERTIFICATION NO. 188423
 WATER-BASED SYSTEMS LAYOUT
 LEVEL 4 - SENIOR TECHNICIAN
 CERTIFICATION EXPIRES: JUNE 1, 2021

A&B Fire Services Inc.
 113 North Lane Bluefield, VA 24605
 Phone: (276) 254-3000 Fax: (276) 322-2705
 "Safety First Always!"