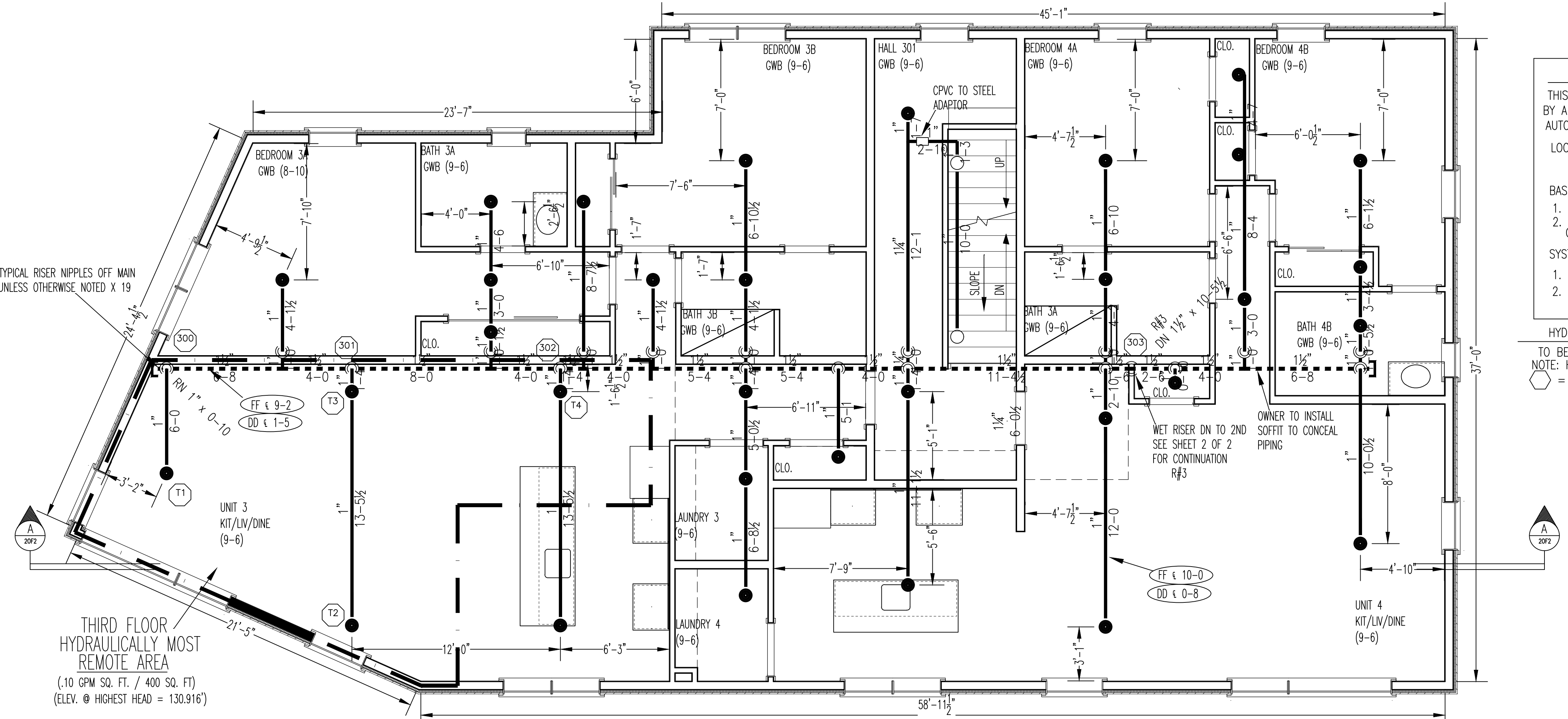


**FIRE SPRINKLER PLAN - SECOND FLOOR**

SCALE: 1/8"=1'-0"  
 AREA PROTECTED: 2510 SQ.FT.  
 FINISH FLOOR ELEVATION : 111'-0 1/2"  
 COLOR CODE:

Symbol	Count	Thread	K-Factor	Description	Note
●	32	1/2"	4.9	RELIABLE F1RES49 WHITE RES RECESSED PENDENT SIN#R3516 175"	on Drop

32 = Total Number of Heads This Floor



**FIRE SPRINKLER PLAN - THIRD FLOOR**

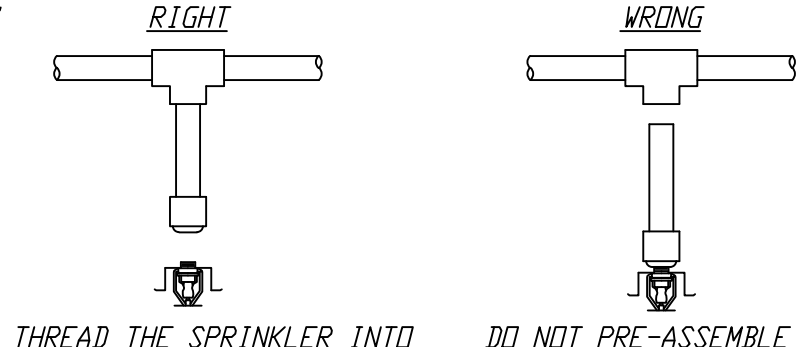
SCALE: 1/8"=1'-0"  
 AREA PROTECTED: 2510 SQ.FT.  
 FINISH FLOOR ELEVATION : 120'-11"  
 COLOR CODE:

Symbol	Count	Thread	K-Factor	Description	Note
●	32	1/2"	4.9	RELIABLE F1RES49 WHITE RES RECESSED PENDENT SIN#R3516 175"	on Drop
○	2	1/2"	5.6	RELIABLE F1FR56 WHITE QR RECESSED PENDENT SIN#RA4516 200"	on Line

34 = Total Number of Heads This Floor

**HYDRAULIC SYSTEM**  
 THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM.  
 LOCATION: 3RD FLOOR WET SYSTEM  
 NFPA #13  
 BASIS OF DESIGN:  
 1. GPM PER HEAD 19.6  
 2. NUMBER OF HEADS CALCULATED 10  
 SYSTEM DEMAND AT PUMP:  
 1. WATER FLOW RATE 184.475 (GPM)  
 2. RESIDUAL PRESSURE AT PUMP 67.842 (PSI)  
 HYDRAULIC DATA NAMEPLATE  
 TO BE MOUNTED AT SYSTEM RISER  
 NOTE: HIGHEST SPRINKLER IS 108.5'  
 ○ = HYDRAULIC REFERENCE POINT

A BEAD OF SOLVENT CEMENT SHOULD BE EVIDENT AROUND THE PIPE AND FITTING JUNCTURE. IF THIS BEAD IS NOT CONTINUOUS AROUND THE SOCKET SHOULDER, IT MAY INDICATE THAT INSUFFICIENT CEMENT WAS APPLIED.  
 WIPE OFF EXCESS CEMENT ON THE OUTSIDE OF THE JOINT. THE SOLVENTS WILL EVAPORATE, BUT THE SOLVENT CEMENT INSIDE THE FITTING WILL STAY THERE.  
**WARNING:**  
 AVOID APPLYING TOO MUCH CEMENT. DO NOT ALLOW THE CEMENT TO DRIP BEYOND THE BOTTOM OF FITTING SOCKET. EXCESSIVE CEMENT ON THE PIPE AND/OR FITTING CAN RESULT IN DECREASING THE OVERALL STRENGTH OF THE PIPE AND/OR FITTING AND MAY CAUSE CRACKS WHEN PRESSURE IS APPLIED. FAILURE TO COMPLY COULD RESULT IN PROPERTY DAMAGE DUE TO LEAKS.  
 SOLVENT CEMENT SET AND CURE TIMES ARE A FUNCTION OF PIPE SIZE, TEMPERATURE, RELATIVE HUMIDITY, AND TIGHTNESS OF FIT. DRYING TIME IS FASTER FOR DRIER ENVIRONMENTS, SMALLER PIPE SIZES, HIGH TEMPERATURES, AND TIGHTER FITS. THE ASSEMBLY MUST BE ALLOWED TO SET, WITHOUT ANY STRESS ON THE JOINT, FOR 1 TO 5 MINUTES, DEPENDING ON THE PIPE SIZE AND TEMPERATURE. FOLLOWING THE INITIAL SET PERIOD, THE ASSEMBLY CAN BE HANDLED CAREFULLY AVOIDING SIGNIFICANT STRESSES TO THE JOINT. REFER TO THE CURE TIME TABLES FOR MINIMUM CURE TIMES PRIOR TO PRESSURE TESTING.  
 STORE CEMENT IN A WARMER AREA WHEN NOT IN USE AND MAKE SURE THEY REMAIN FLUID. DO NOT ALLOW THE CEMENT TO FREEZE OR BECOME "JELLY-LIKE". GELLED CEMENT SHALL BE DISCARDED.



**DO NOT USE ANY THREAD SEALANT**  
**CPVC TORQUESAFE SPRINKLER HEAD INSTALLATION DETAIL**  
 NOT TO SCALE

- HAND INSTALL UNTIL SNUG
- WITH WRENCH ON SPRINKLER HEAD ROTATE HEAD CLOCKWISE UNTIL FRAME IS PROPERLY ALIGNED. BRASS INSERT AND HEAD WILL ROTATE TOGETHER
- NEVER REVERSE OR BACKUP THREADED ASSEMBLY.

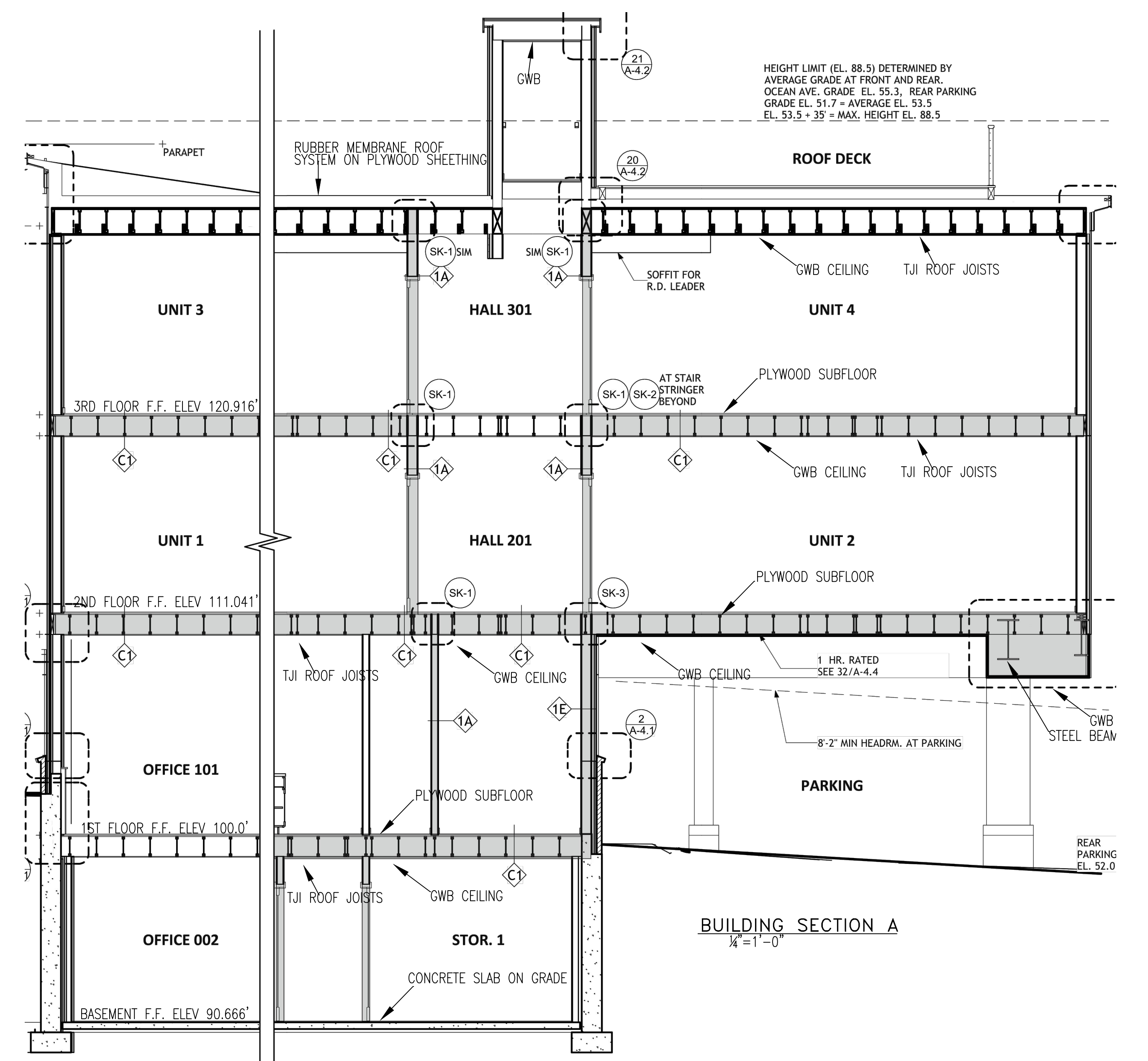
NOTE: BACKUP WRENCH MAY BE APPLIED TO BRASS INSERT FLATS ONLY FOR REMOVAL OF SPRINKLER HEAD.

IT IS AN UNACCEPTABLE PRACTICE TO THREAD THE SPRINKLER HEAD INTO THE ADAPTER FITTING PRIOR TO CEMENTING THE ADAPTER TO THE DRIP.  
 ONCE AN INSTALLATION IS COMPLETED AND CURED, PER THE APPROPRIATE TABLE, THE SYSTEM SHOULD BE TESTED WITH WATER AT 200 PSI FOR 2 HOURS, OR AT 90 PSI IN EXCESS OF THE MAXIMUM PRESSURE WHEN THE MAXIMUM PRESSURE TO BE MAINTAINED IN THE SYSTEM IS IN EXCESS OF 150 PSI, IN ACCORDANCE WITH THE REQUIREMENTS ESTABLISHED BY NFPA 13.  
 SPRINKLER SYSTEMS IN ONE AND TWO FAMILY DWELLINGS AND MOBILE HOMES MAY BE TESTED AT LINE PRESSURE IN ACCORDANCE WITH THE REQUIREMENTS ESTABLISHED BY NFPA 13D. WHEN PRESSURE TESTING THE SPRINKLER SYSTEM SHALL BE FILLED WITH WATER AND AIR BLED FROM THE HIGHEST AND FARTHEST SPRINKLER HEAD BEFORE TEST PRESSURE IS APPLIED. AIR OR COMPRESSED GAS SHOULD NEVER BE USED FOR PRESSURE TESTING. IF A LEAK IS FOUND, THE FITTING MUST BE CUT OUT AND DISCARDED. A NEW SECTION CAN BE INSTALLED USING COUPLINGS OR A UNION. UNIONS SHOULD BE USED IN ACCESSIBLE AREA ONLY.  
**NOTES:**  
 LISTINGS AND APPROVALS DO NOT COVER ANY PAINTED CPVC FIRE SPRINKLER PRODUCTS. WATER-BASED ACRYLIC LATEX PAINT IS THE PREFERRED AND RECOMMENDED PAINT TO BE USED ON FLAMEGUARD CPVC PIPE AND FITTINGS. OIL OR SOLVENT-BASED PAINTS MAY BE CHEMICALLY INCOMPATIBLE WITH FLAMEGUARD CPVC.  
 TEFLON THREAD TAPE IS THE RECOMMENDED SEALANT FOR THREADED CONNECTIONS TO CPVC FIRE SPRINKLER PRODUCTS. WHEN USING SPEARS BLUE 75 THREAD SEALANT, IT SHOULD BE APPLIED TO MALE THREADS ONLY.  
 FIRESTOP SYSTEMS SUCH AS HILLI FS-ONE HAVE BEEN FOUND TO BE COMPATIBLE WITH CPVC FIRE SPRINKLER PRODUCTS. A LIST OF THESE FIRESTOP SYSTEMS CAN BE FOUND ALONG WITH APPROVED THREAD SEALANTS ON-LINE AT WWW.BLAZEMASTER.COM. USE ONLY THOSE PRODUCTS THAT HAVE BEEN APPROVED.  
 WWW.SPEARSMFG.COM/FLAMEGUARD/FGAPL-7  
 GROOVED COUPLING ADAPTERS ARE DESIGNED FOR USE WITH FLEXIBLE COUPLINGS. THE USE OF RIGID STYLE COUPLINGS WILL DAMAGE THE COUPLING ADAPTERS.

PIPE SIZE inches	CURE TIMES WITH ONE STEP SOLVENT CEMENT 200 PSI (MAXIMUM) TEST PRESSURE		
	Ambient Temperature During Cure Period		
3/4"	60°F to 120°F	40°F to 59°F	0°F to 39°F
1"	45 min.	1.5 hr.	24 hr.
1-1/4"	45 min.	1.5 hr.	24 hr.
1-1/2"	1.5 hr.	16 hr.	120 hr.
2"	1.5 hr.	16 hr.	120 hr.
2-1/2"	6 hr.	36 hr.	See Note 1
3"	8 hr.	72 hr.	See Note 1

Note 1 For these sizes, the solvent cement can be applied at temperatures below 40°F, however, the sprinkler system temperature must be raised to a temperature of 40°F or above and allowed to cure per the above recommendations prior to pressure testing.

USE SPEARS BLUE 75 PIPE JOINT COMPOUND OR TEFLON TAPE ON ALL STEEL OR BRASS PIPE THREADS.



GENERAL NOTES	DATE	REVISIONS	REQUIRED APPROVALS	23 OCEAN AVE PORTLAND, MAINE	FIRE SPRINKLER PLANS & DETAILS
SPRINKLER SYSTEM INSTALLATION TO COMPLY WITH NFPA PAMPHLET # 13 PIPING IN CARPORT, BASEMENT AND 1ST FLOOR TO BE SCH 10/40 JOINED BY CAST FITTINGS. PIPING ON 2ND & 3RD FLOOR TO BE CPVC JOINED BY CPVC FITTINGS. ALL PIPE ON DRY SYSTEM SHALL BE PITCHED IN ACCORDANCE W/ NFPA 13 2016 EDITION. 1/4" PER 10' ON MAINS, 1/8" PER 10' ON BRANCH LINES OWNER TO PROVIDE SUFFICIENT HEAT THROUGHOUT BUILDING TO PREVENT FREEZING OF WATER FILLED SPINKLER PIPING & EQUIPMENT. ( MIN 40° F )			OWNER / ARCHITECT STATE FIRE MARSHAL PORTLAND FIRE DEPARTMENT  DRAWN BY SEC NICET LEVEL I CERT# 141357 CHECKED BY GRD NICET LEVEL III CERT# 090388 CONTRACTOR LICENSE # 101 CONTRACTOR RMS # 291		

