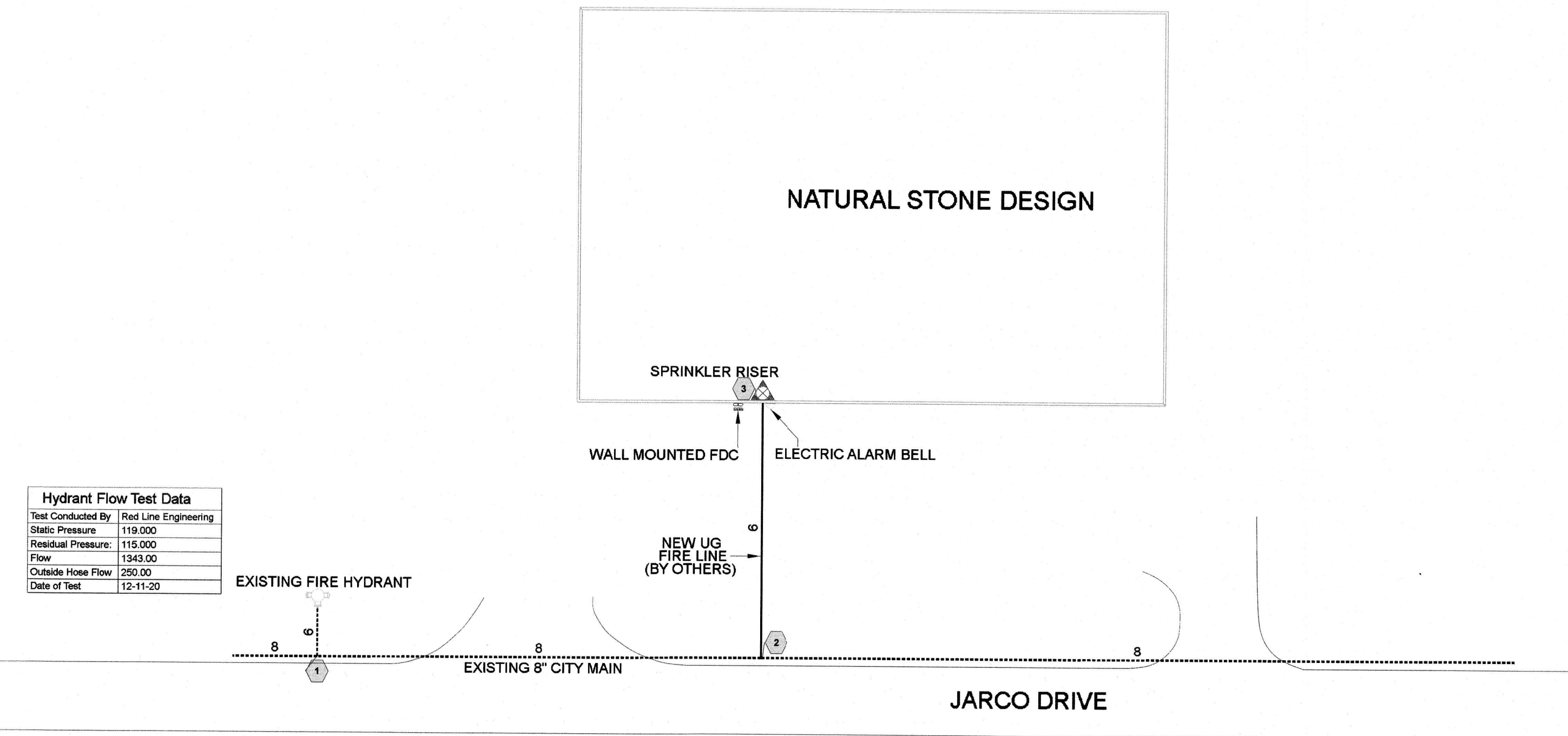
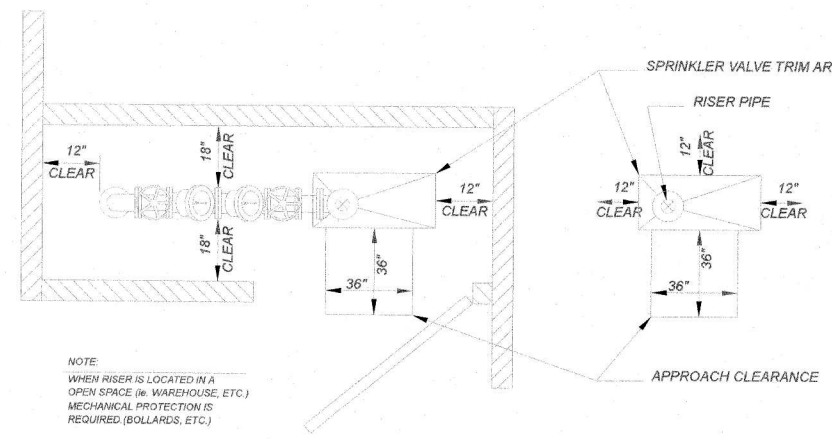


Hydrant Flow Test Data	
Test Conducted By	Red Line Engineering
Static Pressure	119.000
Residual Pressure	115.000
Flow	1343.00
Outside Hose Flow	250.00
Date of Test	12-11-20

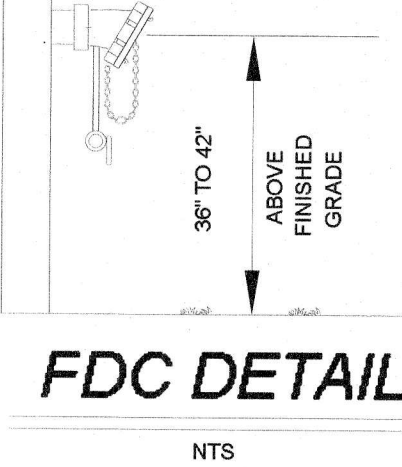


**Site Plan**  
SCALE: 1/32"=1'-0"



**RISER CLEARANCE**  
NOT TO SCALE

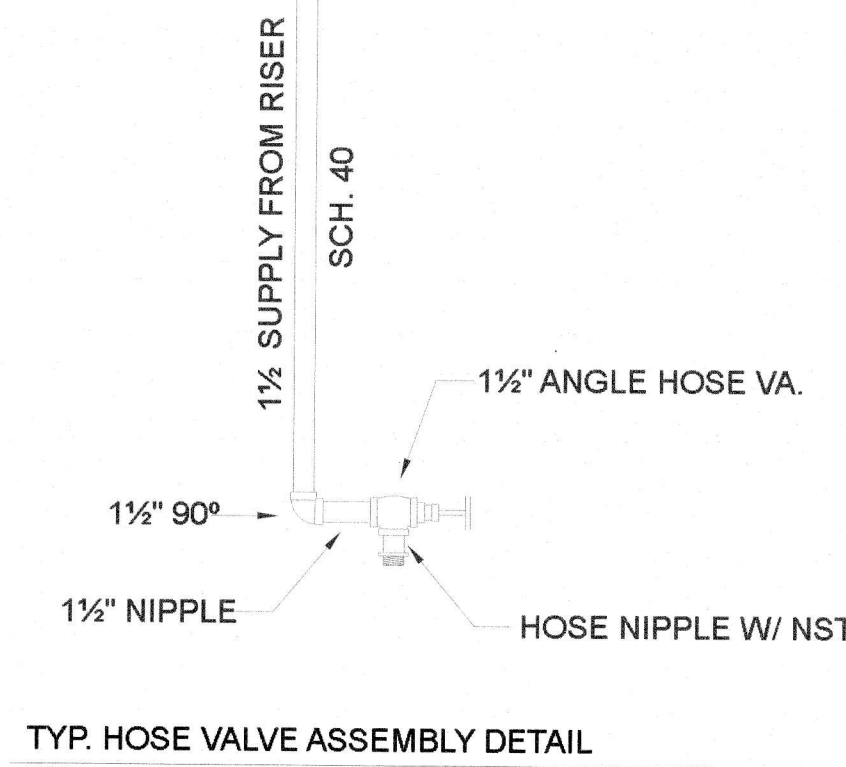
- TYPICAL NOTES:**
- 1)-ALL EXPOSED PIPING AND FITTINGS TO BE GALVANIZED WITH EXCEPTION OF STORZ CONNECTION
  - 2)-40' MAX. FROM FDC TO APPARATUS ACCESS LOCATION
  - 3)-FOR NFPA 13R SYSTEMS (2 1/2" RISER AND SMALLER) SINGLE.
  - 4)-WHEN BUILDING HT. IS GREATER THAN 200' USE RAL. SIAMESE



**FDC DETAIL**  
NTS

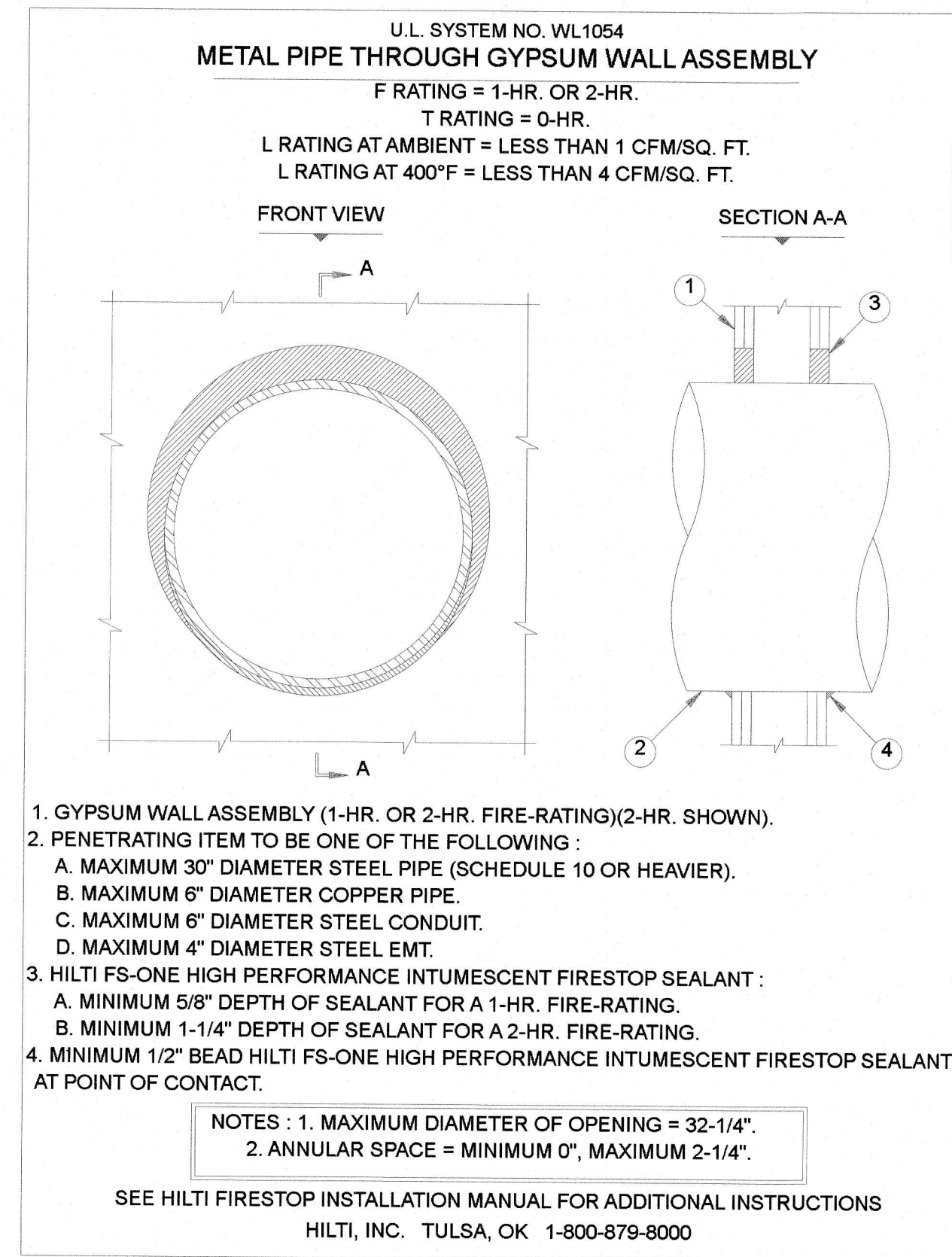
**NOTES :**

- ALL HANGERS TO BE SIZED AND SPACED PER N.F.P.A.-13
- ALL ARM-OVERS LONGER THAN 2'-0" TO HAVE A N.F.P.A.-13 APPROVED HANGER
- ALL RATED FIRE WALLS SHALL BE FIRE STOPPED AS PER UL GUIDELINES
- ALL NEW BREAKOVER PIPING SHALL BE 1" SCH-40 BLACK STEEL



**TYP. HOSE VALVE ASSEMBLY DETAIL**  
N.T.S.

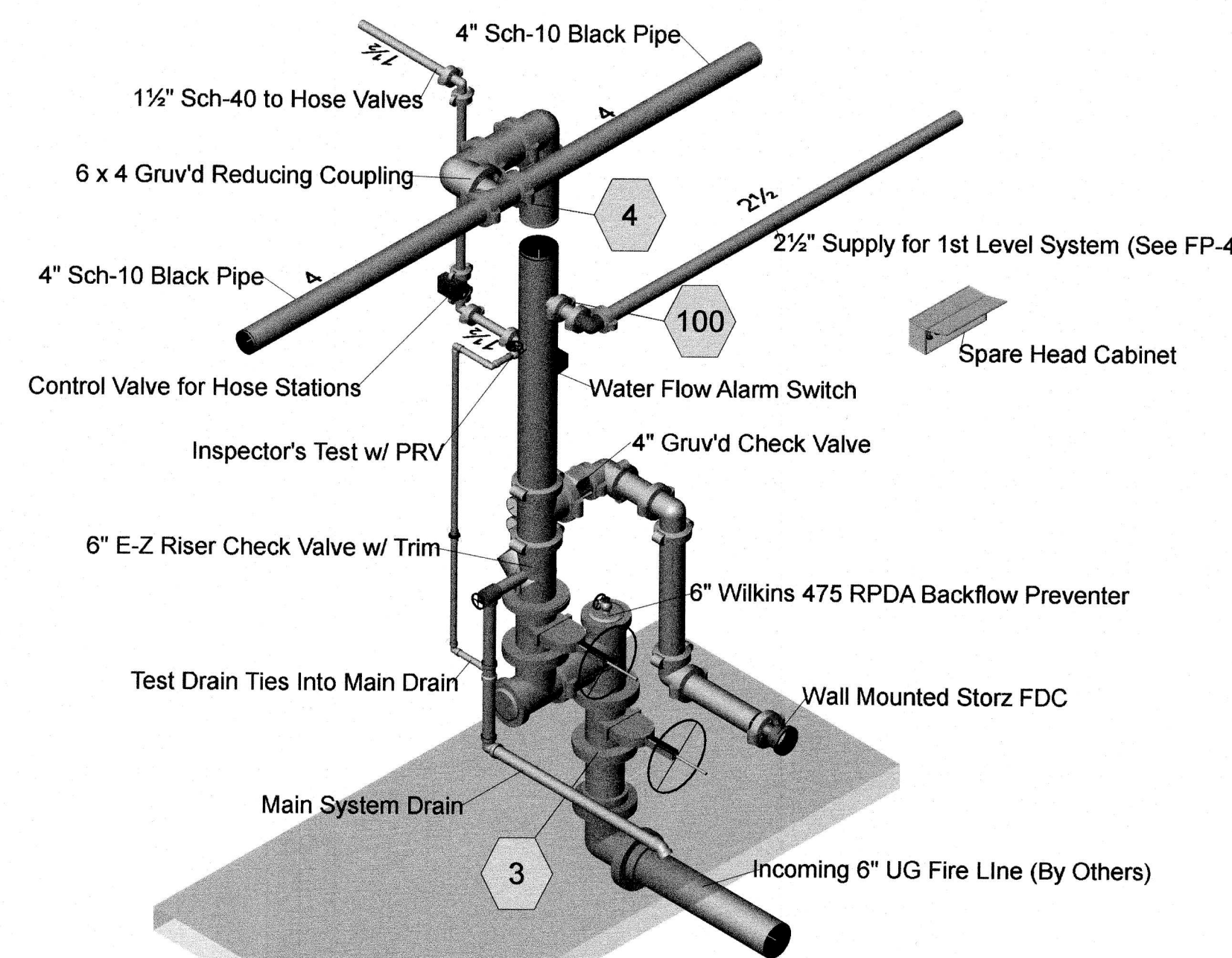
Sprinkler Legend											
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
○	Generic	VK-605	M	2	5.6	Sidewall	1/2"	Quick	Brass	155°F	EC Horizontal Sidewall
○	Viking	VK-302	M	9	5.6	Pendent	1/2"	Quick	Chrome	155°F	Chrome Pendent
○	Tyco	TY-5137	EC-11	37	11.2	Upright	3/4"	Quick	Brass	155°F	Brass Upright
○	Tyco	ESFR-17		198	16.8	Upright	3/4"	Standard	Brass	212°F	ESFR Upright
				<b>Total = 246</b>							



- U.L. SYSTEM NO. WL1054  
METAL PIPE THROUGH GYPSUM WALL ASSEMBLY  
F RATING = 1-HR. OR 2-HR.  
T RATING = 0-HR.  
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.  
L RATING AT 400°F = LESS THAN 4 CFM/SQ. FT.
1. GYPSUM WALL ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING)(2-HR. SHOWN).
  2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:  
A. MAXIMUM 30" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).  
B. MAXIMUM 6" DIAMETER COPPER PIPE.  
C. MAXIMUM 6" DIAMETER STEEL CONDUIT.  
D. MAXIMUM 4" DIAMETER STEEL EMT.
  3. HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT:  
A. MINIMUM 5/8" DEPTH OF SEALANT FOR A 1-HR. FIRE-RATING.  
B. MINIMUM 1-1/4" DEPTH OF SEALANT FOR A 2-HR. FIRE-RATING.
  4. MINIMUM 1/2" BEAD HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT.
- NOTES : 1. MAXIMUM DIAMETER OF OPENING = 32-1/4".  
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/4".
- SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS  
HILTI, INC. TULSA, OK 1-800-879-8000

**SPRINKLER LEGEND**

- NEW 5.6K CHROME PENDENT
- ▲ NEW 16.8K ESFR BRASS UPRIGHT
- NEW 11.2K EC BRASS UPRIGHT
- ▷ NEW 5.6K EC BRASS HORIZ. SIDEWALL
- NEW SPRINKLER PIPING
- ▲ FIRE SPRINKLER RISER LOCATION
- ★---xx FF ⊥ INDICATES PIPE CENTERLINE ELEVATION ABOVE FINISHED FLOOR
- ⊕---xx TS INDICATES TOP OF STEEL/ROOF DECK ELEVATION
- ⊗ HYDRUALIC REFERENCE NODE
- ⊕ WALL MOUNTED STORZ STYLE FDC
- ⊕ ELECTRIC BELL (WIRED BY OTHERS)
- ⊕ EXISTING FIRE HYDRANT



**Riser Detail**  
SCALE: 1/2"=1'-0"

**GENERAL NOTES:**

1. MATERIALS AND INSTALLATION SHALL COMPLY WITH APPLICABLE NFPA 13 (2013) CODES, STATE BUILDING CODE, LOCAL AUTHORITY HAVING JURISDICTION, AND INSURANCE UNDERWRITER'S REQUIREMENTS.
2. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UL LISTED FOR THE INTENDED USE AND SHALL BE INSTALLED IN FULL COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. ALL NEW SPRINKLER PIPING 1 1/2" AND LARGER SHALL BE SCH-10 BLACK PIPE WITH GROOVED ENDS AND FITTINGS. ALL OTHER PIPING SHALL BE SCH-40 BLACK STEEL WITH THREADED ENDS AND FITTINGS.
4. SPRINKLER HEAD SPACING IS BASED ON THE NFPA 13 STANDARDS FOR AN ESFR SYSTEM, ALLOWING A MAXIMUM HEAD SPACING OF 100 SF WITH THE EXCEPTION OF THE SALES AREA AND BREAK ROOM AREAS WHICH ARE ORDINARY HAZARD ALLOWING A MAXIMUM HEAD SPACING OF 130 SF PER HEAD S WELL AS THE RESTROOMS WHICH ARE LIGHT HAZARD ALLOWING A MAXIMUM HEAD SPACING OF 225 SF.
5. HYDRAULIC CALCULATIONS ARE BASED ON THE NFPA 13 REQUIREMENTS FOR STORAGE OF CLASS I-IV COMMODITIES IN RACKS UP TO 20 FT HIGH IN A 30 FT HIGH BUILDING, WITH A MINIMUM END HEAD PRESSURE OF 35 PSI.
6. LOCATIONS OF PIPING AS SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD.
7. ALL NEW UNDERGROUND INSTALLATION WORK (NEW FIRE LINE) SHALL BE PERFORMED BY OTHERS.
8. J & D SPRINKLER CO. TO START 1'-0" AFF.
9. ALL ELECTRIC ALARM BELLS, TAMPER SWITCHES, FLOW SWITCHES, ETC. PROVIDED/INSTALLED BY J & D SPRINKLER SHALL BE WIRED BY OTHERS.
10. THE HYDRANT FLOW TEST INFORMATION HAS BEEN PROVIDED BY THE REDLINE DATED 12-11-20 & INDICATES THE FOLLOWING...

STATIC: 119 PSI  
RESIDUAL: 115 PSI  
FLOW: 1343 GPM

**Sprinkler Design Data**

Project Name:	NATURAL STONE DESIGN	System:	WET
Project Street Address:	148 JARCO DRIVE	Floor#:	-
SUITE:	-	Ceiling Height:	VARIES
Designed By:	J&D SPRINKLER	Phone:	919-553-2356
Occupancy:	WAREHOUSE/MANUF.	Hazard:	ORDINARY

**Design Summary**

	REMOTE A	REMOTE B	REMOTE C	REMOTE D
Design Method	CALCULATED	CALCULATED	-	-
Design Area #	A	B	-	-
Location	WAREHOUSE	SALES AREA (1ST FL)	-	-
Type of System	WET	WET	-	-
Hazard Class	ORDINARY GRP 2	ORDINARY GRP 2	-	-
Criteria From	NFPA 13 (2013)	NFPA 13 (2013)	-	-
Design Area	12 HEADS	93 SF	-	-
Sprinkler Spacing	100 MAX	256 MAX (EC)	-	-
Density	ESFR	20	-	-
K-factor	16.8	11.2	-	-
Hose Allowance	240	250	-	-
# Design Sprinklers	12	8	-	-
Special Application Spk	ESFR	EC	-	-
Requirement @ TEST	-			
G.P.M. Req'd	1452.81	676.77	-	-
P.S.I. Req'd	102.734	103.882	-	-
Requirement @ BASE	-			
GPM Required	1202.81	428.77	-	-
PSI Required	96.236	102.033	-	-
Safety Factor @ Test	11.640	13.989	-	-
Dry Sys. Volume (gal)	-	-	-	-

**Water Supply Information**

Tested by	RED LINE	Date/Time	12-11-20	Pressure Hydrant	-
Hydrant Elevation	-	Flow Hydrant #1	-	Flow Hydrant #2	-
Static (PSI)	119	Residual (PSI)	115	Flow (gpm)	1343

**Fire Pump Data**

Rated G.P.M.	-	Rated Pressure	-	Horsepower	-
Diesel/Electric	-	Churn Pressure	-	Style of pump	-
Combined Discharge	-	150 % Flow (suction)	-	150% Flow (gpm)	-

**If Storage is Greater than 12 Feet Complete Commodity Storage Design Information**

Commodity Description	Storage Height	Storage Type (A/B/C/D/E/F)	Clearance
Stacks/Containers	Open/Close	Array	Vertical/Horizontal
Figures	Area	Density	Height
	Factor	Factor	Factor
	Factor	Factor	Factor
	Factor	Factor	Factor
	Factor	Factor	Factor
	Factor	Factor	Factor
	Factor	Factor	Factor
	Factor	Factor	Factor
	Factor	Factor	Factor

NATURAL STONE DESIGN  
148 JARCO DRIVE  
FUQUAY VARINA, NC

J & D SPRINKLER CO. INC.  
315 W. MAIN ST. CLAYTON, NC 27520  
Ph: (919) 553-2356 Fx: (919) 359-0622  
WEBSITE: JDSPRINKLER.COM

SHEET TITLE:  
FIRE SPRINKLER  
SITE NOTES AND DETAILS

This fire sprinkler planning and design drawing has been prepared by J & D Sprinkler Co. as a licensed fire protection engineer under the supervision of the General Statutes for J & D Sprinkler's exclusive use pursuant to G.S. § 86C-25(b), and J & D Sprinkler Co. shall not be held liable for any work performed in reliance on this drawing pursuant to G.S. § 85B-15(a)(2). Installation work or any other work on this drawing or any copy thereof is strictly prohibited.  
2013 J & D Sprinkler Co., Inc.

DANA GRAHAM  
NC # 16269FS CERT # 71075  
NICET LEVEL III

JASON GRAHAM  
NC # 16269FS CERT # 121842  
NICET LEVEL III

REVISION:  
NO. DATE

Contract With:  
Date: 6-7-21

1/16"=1'-0"  
0 10  
1/2"=1'-0" 3

Job Number:  
F21-086

Drawn By:  
JEB

Sheet Number  
FP-1 OF 4