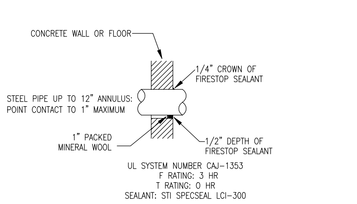
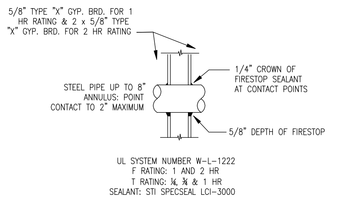


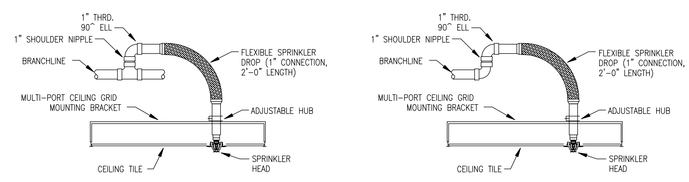
STEEL PIPE CONCRETE WALL PENETRATION

N.T.S.



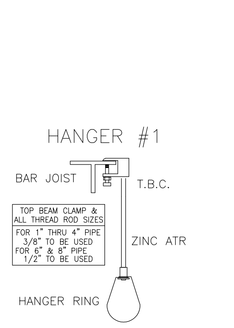
STEEL PIPE DRY WALL PENETRATION

N.T.S.



FLEXIBLE HEAD CONNECTION DETAILS FOR THE CENTERING OF SPRINKLER HEADS IN CEILING TILES

N.T.S.



HANGER DETAIL

SCALE N.T.S.

Hydraulically Designed System	
Location	D.A. #1
No. of Sprinklers	27
Density	.25
Design Area Size	2000 SQ. FT.
System Demand At Base of Riser	
GPM Discharge	941.43
Residual PSI	34.167

Hydraulically Designed System	
Location	D.A. #2
No. of Sprinklers	21
Density	.37
Design Area Size	2000 SQ. FT.
System Demand At Base of Riser	
GPM Discharge	968.50
Residual PSI	34.814

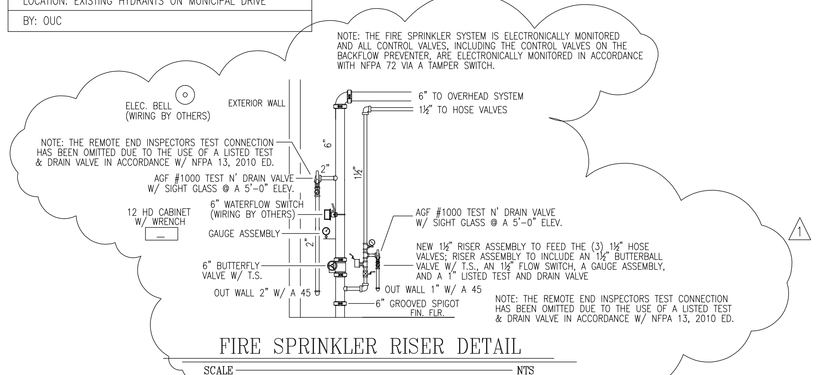
Hydraulically Designed System	
Location	D.A. #3
No. of Sprinklers	7
Density	.20
Design Area Size	990 SQ. FT.
System Demand At Base of Riser	
GPM Discharge	276.73
Residual PSI	31.870

NOTE: THE DESIGN AREA HAS BEEN REDUCED BY 34.00% FOR A MAX. DECK/CEILING HEIGHT OF 14'-0" IN ACCORDANCE W/ NFPA 13, 2010 EDITION, SECTION 11.2.3.2.3.1

Hydraulically Designed System	
Location	D.A. #4
No. of Sprinklers	12
Density	.20
Design Area Size	912 SQ. FT.
System Demand At Base of Riser	
GPM Discharge	239.88
Residual PSI	45.539

NOTE: THE DESIGN AREA HAS BEEN REDUCED BY 39.25% FOR A MAX. DECK/CEILING HEIGHT OF 10'-6" IN ACCORDANCE W/ NFPA 13, 2010 EDITION, SECTION 11.2.3.2.3.1

FLOW TEST DATA
STATIC: 70 PSI
RESIDUAL: 66 PSI
FLOW: 1132 GPM
DATE: 3-14-17
TIME: 9:30 AM
LOCATION: EXISTING HYDRANTS ON MUNICIPAL DRIVE
BY: OUC



FIRE SPRINKLER RISER DETAIL

SCALE NTS

NOTES:

1. ALL WORK, DESIGN, MATERIALS, AND INSTALLATION TO BE IN ACCORDANCE WITH NFPA 13, 2010 EDITION, THE MANUFACTURERS LISTING, & THE AUTHORITY HAVING JURISDICTION.

2. THE DESIGN CRITERIA FOR THE OVERHEAD FIRE SPRINKLER SYSTEM WILL BE AS FOLLOWS:

A.) WAREHOUSE AREAS:

1.) RACK STORAGE UP TO 25'-0" IN HEIGHT: WET PIPE SYSTEM DESIGNED IN ACCORDANCE W/ NFPA #13, 2010 ED. TO PROVIDE A .25 DENSITY FOR ALL, INCLUDING THE MOST REMOTE 2000 SQ. FT. HYDRAULIC DESIGN AREA (INCLUDING SIX (6) IN-RACK SPRINKLER HEADS @ 15 PSI EACH) FOR A CLASS III STORAGE COMMODITY.

THE DESIGN CRITERIA IS EXPLAINED IN MORE DETAIL AS FOLLOWS: THE STORAGE COMMODITY CONSISTS OF T-SHIRTS (I.E. CARTONED & NON CARTONED NATURAL FIBER CLOTH & COTTON) & SIMILAR TYPES OF FABRICS, WHICH ARE CLASSIFIED AS CLASS III COMMODITIES IN ACCORDANCE WITH NFPA #13, 2010 EDITION, TABLE A.5.6.3.3; ALL ITEMS BEING STORED ARE NON-ENCAPSULATED AND ARE STORED ON SINGLE AND/OR DOUBLE-ROW RACKS WITHOUT SOLID SHELVES FOR STORAGE TO A MAXIMUM HEIGHT OF 25'-0". IN ACCORDANCE W/ NFPA 13, 2010 EDITION, TABLE 16.2.1.3.2, A CLASS III STORAGE COMMODITY WITH ONE LEVEL OF IN-RACK SPRINKLER PROTECTION IS REFERRED TO FIGURE 16.2.1.3.2.(c), CURVES "A" & AND "B" FOR AISLES 8'-0" & WIDER. CURVE "A" HAS BEEN SELECTED AND HAS A .25 DENSITY. (NOTE: PER SECTION 16.2.1.3.2.1 (B), THE DENSITY FOR AN 8'-0" WIDE AISLE MAY ALSO BE APPLIED FOR WIDTHS BEYOND 8'-0".)

IN ACCORDANCE WITH NFPA #13, 2010 EDITION, SECTION 16.2.4.2.2, ONE LEVEL OF IN-RACK SPRINKLERS SHALL BE SPACED AT NO MORE THAN 12'-0" ON CENTER FOR A CLASS III COMMODITY. IN ACCORDANCE WITH NFPA #13, 2010 ED., SECTION 16.2.4.1.4, THE LEVEL OF IN-RACK SPRINKLERS SHALL BE LOCATED AT THE FIRST TIER LEVEL AT (OR ABOVE) ONE HALF OF THE STORAGE HEIGHT. IN ACCORDANCE WITH NFPA #13, 2010 EDITION, SECTION 16.2.4.3.1, (6) IN-RACK SPRINKLERS ARE TO BE HYDRAULICALLY CALCULATED WHERE ONLY (1) LEVEL OF IN-RACKS ARE INSTALLED FOR A CLASS III COMMODITY. THE IN-RACK HEADS ARE TO BE CALCULATED AT A MINIMUM OF 15 PSI IN ACCORDANCE WITH NFPA 13, 2010 EDITION, SECTION 16.2.4.4.

2.) RACK STORAGE UP TO 16'-0" IN HEIGHT: WET PIPE SYSTEM DESIGNED IN ACCORDANCE W/ NFPA #13, 2010 ED. TO PROVIDE A .37 DENSITY FOR ALL, INCLUDING THE MOST REMOTE 2000 SQ. FT. HYDRAULIC DESIGN AREA FOR A CLASS III STORAGE COMMODITY.

THE DESIGN CRITERIA IS EXPLAINED IN MORE DETAIL AS FOLLOWS: THE STORAGE COMMODITY CONSISTS OF T-SHIRTS (I.E. CARTONED & NON CARTONED NATURAL FIBER CLOTH & COTTON) & SIMILAR TYPES OF FABRICS, WHICH ARE CLASSIFIED AS CLASS III COMMODITIES IN ACCORDANCE WITH NFPA #13, 2010 EDITION, TABLE A.5.6.3.3; ALL ITEMS BEING STORED ARE NON-ENCAPSULATED AND ARE STORED ON SINGLE AND/OR DOUBLE-ROW RACKS WITHOUT SOLID SHELVES FOR STORAGE TO A MAXIMUM HEIGHT OF 16'-0". IN ACCORDANCE W/ NFPA 13, 2010 EDITION, TABLE 16.2.1.3.2, A CLASS III STORAGE COMMODITY WITHOUT IN-RACK SPRINKLER PROTECTION IS REFERRED TO FIGURE 16.2.1.3.2.(c), CURVES "E" & "F" FOR 8'-0" AISLES. CURVE "E" HAS BEEN SELECTED AND HAS A .37 DENSITY.

B.) OFFICE AREAS (INCLUDING THE OFFICES, OPEN OFFICE AREAS, BATHROOMS, CONFERENCE ROOMS, RECEPTION/LOBBY, ETC...): WET PIPE SYSTEM DESIGNED IN ACCORDANCE WITH NFPA #13, 2010 EDITION TO PROVIDE A .10 DENSITY FOR ALL, INCLUDING THE MOST REMOTE 1500 SQUARE FOOT HYDRAULIC DESIGN AREA FOR ANY LIGHT HAZARD OCCUPANCY.

C.) SOFT GOODS, HARD GOODS, JEWELRY, STORAGE ROOMS, JANITORIAL CLOSETS, AND OTHER SIMILAR AREAS: WET PIPE SYSTEM DESIGNED IN ACCORDANCE WITH NFPA #13, 2010 EDITION TO PROVIDE A .20 DENSITY FOR ALL, INCLUDING THE MOST REMOTE 1500 SQUARE FOOT HYDRAULIC DESIGN AREA FOR AN ORDINARY HAZARD, GROUP 2 OCCUPANCY.

4. THE MAX. SPACING OF THE SPRINKLERS THROUGHOUT THE WAREHOUSE AND IN-RACK STORAGE AREAS IS NOT TO EXCEED 100 SQUARE FEET PER SPRINKLER IN ACCORDANCE WITH NFPA 13, 2010 EDITION FOR A CLASS III STORAGE COMMODITY.

5. THE MAXIMUM HEAD SPACING OF THE EXTENDED COVERAGE SPRINKLERS IN THE SOFT GOODS AREA (ORDINARY HAZARD 2) ARE NOT TO EXCEED 196 SQ. FT. (14' x 14') PER SPRINKLER WHILE THE MAXIMUM SPACING OF THE STANDARD COVERAGE SPRINKLERS IN THE REMAINING ORDINARY HAZARD AREAS IS NOT TO EXCEED 130 SQ. FT. PER SPRINKLER. THE MAXIMUM SPRINKLER SPACING THROUGHOUT ALL LIGHT HAZARD AREAS IS NOT TO EXCEED 225 SQ. FT. FOR EACH SPRINKLER, ALL IN ACCORDANCE WITH NFPA #13, 2010 EDITION, AND THE MANUFACTURERS LISTING.

6. THE PIPE & FITTINGS TO BE USED ARE AS FOLLOWS:
   A.) GROOVED PIPING 1-1/2" THRU 6": SCH. 10 BLACK W/ GROOVED COUPLINGS/FITTINGS.
   B.) THREADED PIPING 1" THRU 2": SCH. 40 BLACK W/ THREADED FITTINGS.

7. ALL FIREWALL PENETRATIONS ARE TO BE SEALED IN ACCORDANCE WITH THEIR RATING.

8. ALL PIPE DIMENSIONS ARE CENTER TO CENTER.

9. ALL PIPE HANGERS INSTALLED PER NFPA 13, 2010 ED. & THE MANUFACTURERS LISTING.

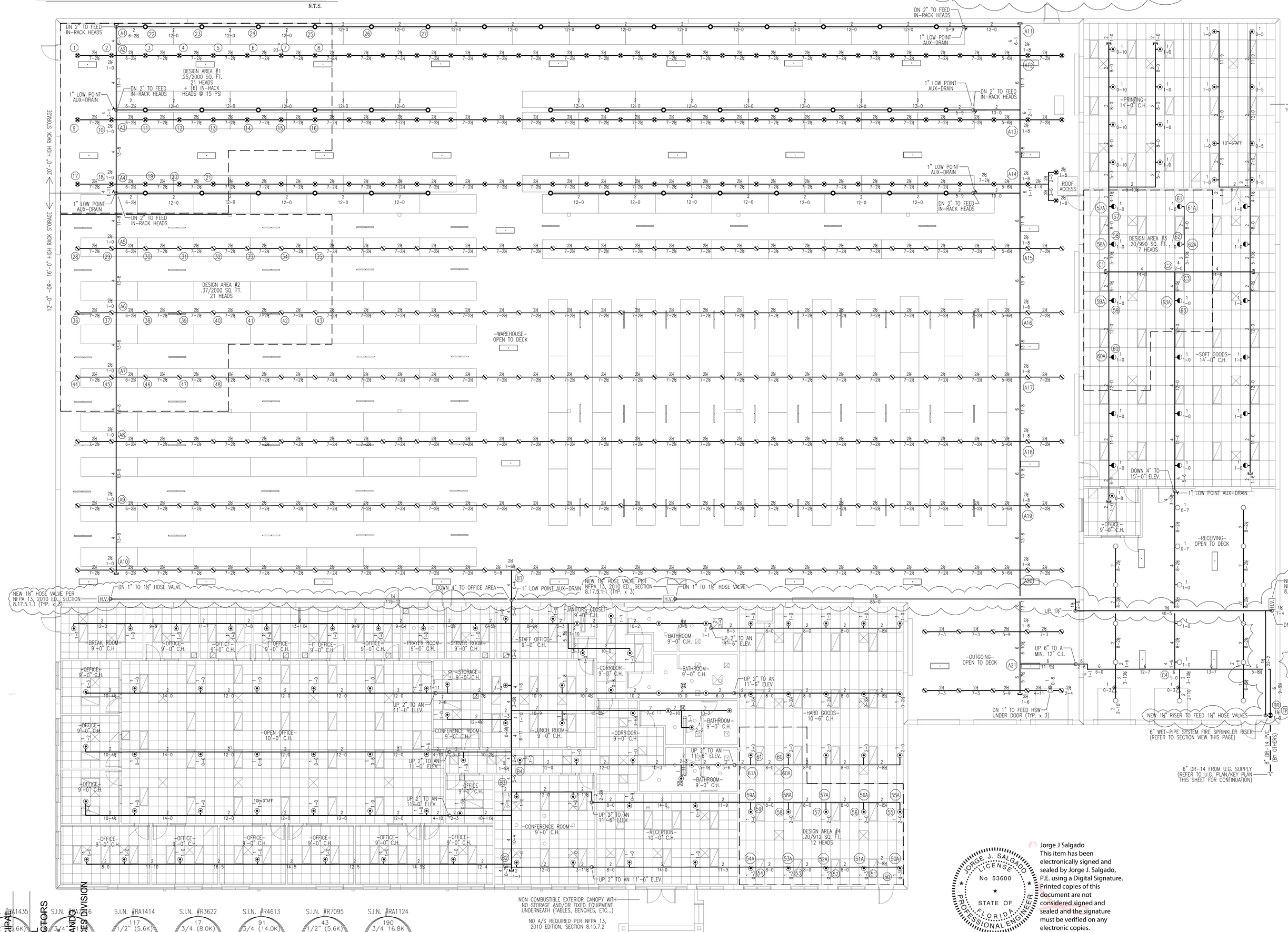
10. THE "SMALL ROOM RULE" HAS BEEN USED TO SPACE (1) ROW OF HEADS AT A MAXIMUM OF 9'-0" OFF OF ANY (1) WALL IN ACCORDANCE WITH NFPA 13, 2010 EDITION (TO BE USED IN SELECT LIGHT HAZARD OCCUPANCIES ONLY).

11. THE SPRINKLERS LOCATED IN THE CENTER OF THE ACOUSTICAL CEILING TILES WILL BE CENTERED WITHIN THESE TILES THROUGH USE OF A FLEXIBLE HEAD CONNECTION FITTING. HYDRAULIC CALCULATIONS HAVE BEEN PERFORMED TO INCLUDE THE FLEXIBLE HOSE CONNECTION EQUIVALENT OF 1" SCH. 40 PIPING IN ORDER TO QUANTIFY THE USE OF THESE FITTINGS.

12. IN ACCORDANCE WITH NFPA 13, 2010 EDITION, SECTION 8.17.5.1.1 AND 12.2, (3) 1-1/2" HOSE VALVES HAVE BEEN ADDED TO REACH ALL PORTIONS OF THE BUILDING WITH 100 FEET OF HOSE PLUS 30 FEET OF HOSE STREAM DISTANCE.

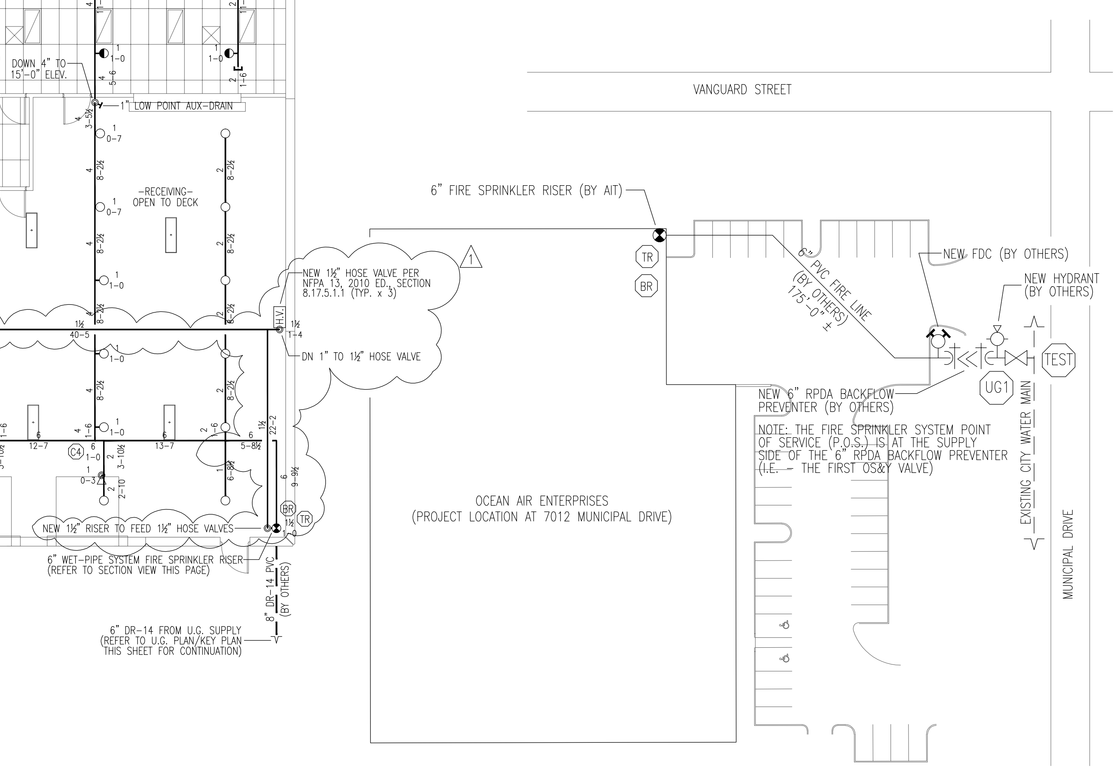
13. IN ACCORDANCE WITH NFPA 13, 2010 EDITION, SECTION 8.17.5.1.3 (4), THE HOSE VALVE ARE SUPPLIED FROM A SEPARATELY DEDICATED SYSTEM WITH ITS OWN BUTTERFLY TYPE CONTROL VALVE W/ T.S., FLOW SWITCH, GAUGE, AND DRAIN.

14. IN ACCORDANCE WITH NFPA 13, 2010 EDITION, SECTION 8.17.5.1.4 (3), THE PIPING SUPPLYING THE (3) HOSE VALVES ARE 1-1/2"; IN ACCORDANCE WITH NFPA 13, 2010 EDITION, SECTION 8.17.5.1.4 (4), THE VERTICAL PIPING DIRECTLY FEEDING THE HOSE VALVE WILL BE 1".



OVERHEAD FIRE SPRINKLER PIPING PLAN

SCALE 1/8" = 1'-0"



UNDERGROUND FIRE PROTECTION PLAN/KEY PLAN

N.T.S.

NOTE: ALL UNDERGROUND FIRE PROTECTION IS BY OTHERS & IS SHOWN HERE FOR HYDRAULIC CALCULATION REFERENCE PURPOSES ONLY

REVIEWED FOR CODE COMPLIANCE

DATE 04/04/18 by

PERMIT NO. BLD2017-08812

ADDRESS 7012 MUNICIPAL DR.

CONTRACTOR HARBOR GENERAL CONTRACTORS INC.

NOTE: Permit not to be issued until all comments are resolved. Keep a copy of this plan on site.

CITY OF ORLANDO PERMITTING SERVICES DIVISION

S.I.N. #RA1435	S.I.N. #RA1416	S.I.N. #RA1414	S.I.N. #R3622	S.I.N. #R4613	S.I.N. #R7095	S.I.N. #RA1124
117 1/2" (5.6K) .155" QR RELIABLE F1FR PEND WHITE SEMI-RECESSED	117 1/2" (5.6K) .155" QR RELIABLE F1FR PEND WHITE SEMI-RECESSED	117 1/2" (5.6K) .155" QR RELIABLE F1FR PEND WHITE SEMI-RECESSED	17 3/4 (8.0K) .155" QR REL. F1FR LO BRASS UPR. NO ESC.	91 3/4 (14.0K) .286" SR REL. G VELO BRASS PEND. NO ESC.	43 1/2" (5.6K) .155" QR REL. INTER. LVL BRASS UPR. GUARD/SHIELD	190 3/4 16.8K .286" SR RELIABLE CMDA BRASS UPR. NO ESC.
225 SQ. FT. MAX SPACING PER SPRINKLER	225 SQ. FT. MAX SPACING PER SPRINKLER	225 SQ. FT. MAX SPACING PER SPRINKLER	130 SQ. FT. MAX SPACING PER SPRINKLER	100 SQ. FT. MAX SPACING PER SPRINKLER	100 SQ. FT. MAX SPACING PER SPRINKLER	100 SQ. FT. MAX SPACING PER SPRINKLER

Jorge J Salgado
This item has been electronically signed and sealed by Jorge J. Salgado, P.E. using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.
2018.01.30 11:26:59 -05'00'

JORGE J. SALGADO LICENSE No 53600 STATE OF FLORIDA PROFESSIONAL ENGINEER

JJ CONSULTING GROUP, INC.
CA LICENSE #31838
JORGE J. SALGADO, P.E. #53600
2001 TIZEWELL CIRCLE
#1509
ORLANDO, FL 32837

life safety
SINGLE SOURCE SOLUTION
FIRE ALARM•SPRINKLER•SECURITY

NO.	DATE	REVISION DESCRIPTION	BY
0	12-3-17	G.C./A.H.J. SUBMITTAL	SEAN
1	1-29-18	REVISIONS PER AHJ COMMENTS	SEAN

LOCATION PROJECT

OCEAN AIR ENTERPRISES
NEW WAREHOUSE AND OFFICE
7012 MUNICIPAL DRIVE, ORLANDO, FL 32819
Overhead Fire Sprinkler Piping Plan

REVISION	SYSTEM NUMBER	JOB NUMBER	DRAWING NUMBER
0	SYSTEM #1		FP-1 OF 1