

# Petition for an Informal, Non-Binding Interpretation of the Florida Fire Prevention Code

## INSTRUCTIONS FOR PETITION

To be considered, each petition must be fully completed according to the following instructions:

- Petitioner's use of the subsidized fee is governed by subsection 69A-60.011(3), *Florida Administrative Code*.
- If the Petitioner is seeking review of an interpretation of the Florida Fire Prevention Code (FFPC) made by a local fire official (LFO), Sections I. and II. of this form must be completed. Each petition may only request review of a single interpretation made by an LFO. A request for review of any additional interpretation by an LFO must be made in a separate petition.
- If the Petitioner is seeking an interpretation of the FFPC, which does not involve an interpretation made by an LFO, Sections I. and III. of this form must be completed. Each petition may only pose a single, specific question regarding the FFPC. Any additional question must be made in a separate petition.

## SECTION I.

Name of Petitioner: Austin Gourley on behalf of EJ Engineering, Inc.

Number of Petitions Filed this Calendar Year by Petitioner or Petitioner's Organization: 1

Petition Fee (Check One):

Please use Surcharge Funds to subsidize my fee  \$110 fee included

Name of Petitioner's Representative, if applicable: N/A

Company: EJ Engineering, Inc.

Address: 21505 N 78th Ave, Suite 130

City: Peoria State: AZ Zip: 85382

Phone: 623.362.1400

Email: austin@ejengineering.com

## SECTION II.

Amber McCleary - Fire/Life Safety Inspector - Plans Examiner

Name of LFO: (Santa Rosa County Development Services Planning and Zoning)

Fire Department: Pace Fire Rescue District

Address: 4773 Pace Patriot Blvd.

City: Pace State: FL Zip: 32571

Email Address of LFO: amberm@santarosa.fl.gov

Phone Number of LFO: 850.981.7041

(Santa Rosa County Development Services Planning and Zoning)  
Address: 6051 Old Bagdad Highway, Suite 202, Milton, FL 32583

National Fire Protection Association (NFPA) Document No. applied by the LFO: NFPA-13  
Edition of the NFPA Document: 2013  
Chapter and Paragraph of the NFPA Document: Chapter 8, Section 8.5.5.3.1.1

*Explain how the Petitioner's substantial interests are being affected by the LFO's interpretation of the NFPA citation above:*

Please refer to the letter attached herein.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Enter a statement of the LFO's interpretation of the NFPA citation above and identify the manner in which the statement was rendered:*

Please refer to the letter attached herein.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Enter a statement of the interpretation that the Petitioner contends should be given to the NFPA citation above and a statement supporting the Petitioner's interpretation:*

Please refer to the letter attached herein.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SECTION III.**

*NFPA Document No. that is the subject of the question:* \_\_\_\_\_

*Edition of the NFPA Document:* \_\_\_\_\_

*Chapter and Paragraph of the NFPA Document:* \_\_\_\_\_

*Explain how the Petitioner's substantial interests are being affected by the question below:*

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Enter the Petitioner's question concerning an interpretation of the FFPC:*

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Fire Protection  
Consulting  
Engineers

January 28, 2020

Attn: Florida Fire Marshal and Inspector Association

Re: Discount Tire – 5036 Highway 90, Pace, FL 32571  
EJ Engineering, Inc. Project Number: 18201.1

*Explain how the Petitioner's substantial interests are being affected by the LFO's interpretation of the NFPA citation above:*

The LFO interprets that the open floor grating for the project does not qualify for the obstructions 4-foot and under exemption. They are requiring that sprinklers are to be installed under all the open floor grating.

*Enter a statement of the LFO's interpretation of the NFPA citation above and identify the manner in which the statement was rendered:*

**Life Safety** – Reviewed by Amber McCleary, (850) 981.7041, [amberm@santarosa.fl.gov](mailto:amberm@santarosa.fl.gov) – 2<sup>nd</sup> Review  
**The Life Safety review is approved as noted:**

1. As AHJ we do not believe that 69 feet of 4-foot aisles of open grate flooring separated by 4-foot wide rack storage of tires qualifies for the obstructions 4-foot and under exemption. With shop drawing submittal, please provide the under open grate flooring fire sprinklers per NFPA 13:8.5.5.3.1.1. or provide one of the following: (a) testing documents from a listed facility showing that the provided arrangement will provide adequate protection for the tire storage below or (b) a declaratory statement from the Florida State Fire Marshal approving the arrangement.

*Enter a statement of the interpretation that the Petitioner contends should be given to the NFPA citation above and a statement supporting the Petitioner's interpretation:*

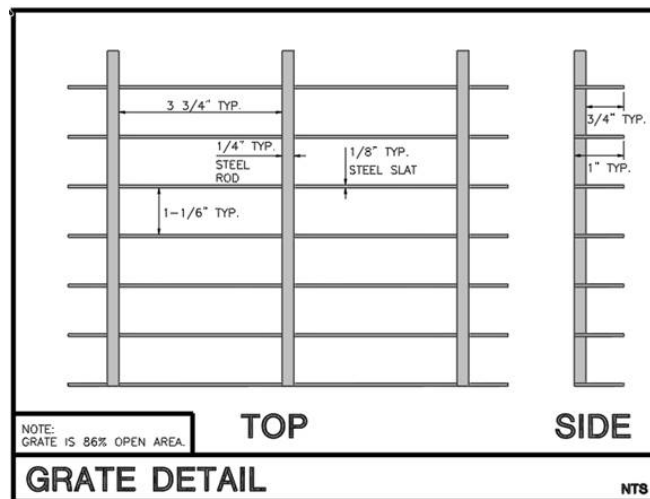
Our fire sprinkler plans are included herein for reference.

As the Fire Protection Consultants for Discount Tire, EJ Engineering, Inc. design documents meets and/or exceeds NFPA-13 requirements. As shown on sheet FP2.0 (Lower Level Piping Plan), the open floor grating that is in excess of 4-ft in width has sprinkler protection underneath per NFPA-13 section 8.5.5.3.1.1. All other areas of the open floor grating are 4'-0" wide or less in width.

This building is to be protected with a Wet Automatic Fire Sprinkler system per NFPA-13, table 18.4(d) for all tire storage areas. Table 18.4(d) allows the use of 12 (4 per branch line), 25.2-K ESFR pendent sprinklers at 15-psi minimum each in a maximum building height of 30-ft (23'-3" AFF worst case) and a maximum pile height of 25 ft (18'-9" AFF back of store worst case). EJ Engineering's design intent is to utilize the large amount of water (approx. 100-gpm) discharged by the ESFR sprinklers at the ceiling level only in the event of a conflagration. We believe our specific approach is appropriate for this small tire store.

The rubber tire storage racks are double and single row open steel racks, without shelves, with tires stored on-side or on-tread. No pallets and no horizontal barriers exist. The racks consist of 17-ft vertical upright members with an open floor access grating at 9-ft above finished floor. The 86% open floor grating is utilized for safe access/retrieval of tires at the upper half section of the racks and does not continue through the racks. Aisles are 4-ft wide, except at the West and East extremities of the catwalk. We understand that these two areas are indeed over 4-ft wide, and fire sprinkler protection is provided under the open floor grating at these two areas as shown on sheet FP2.0. The 2,500-sf tire storage area is not accessible to the public, and it is for employee use only.

The only section within NFPA-13 that references similar elements to open floor grating with openings is an open-grid ceiling under 8.15.14. In this section, open-grid ceilings are allowed to be located beneath sprinklers as long as the openings are 1/4-inch or larger in the least dimension; the thickness or depth does not exceed the least dimension, and the openings constitute 70% of the area. The proposed open-grating is more than 86% open, with a 1-inch maximum depth with a 1-1/6-inch maximum least dimension, all of which is greater than open-grid ceilings that are allowed to be installed under sprinklers. Therefore, sprinkler discharge development is not interrupted.



The installation of intermediate level sprinklers with the application of the preceding items may create a delay in the activation of the overhead sprinkler system. This delay may be crucial to suppression and/or control of the conflagration. Intermediate sprinklers, when installed below the grating are not a benefit to the system. If ever activated, they may cool the tire fire enough that the vertical heat and fire plume is not allowed to proceed to the deck as prescribed. Therefore, the overhead sprinkler system activation may be delayed.

The grating simply provides safe walkway aisle access to employees such that they may safely access the tires without the use of tall ladders (the alternative when not implementing the grating). The grating does not continue through the tire racks. In the event of a conflagration, NFPA-13 and Factory Mutual fire tests have shown the fire and heat plume to be one of a nearly vertical nature.

Discount Tire operates a very efficient and effective store. Tire storage does not occur on the grating except during active re-stocking periods. Horizontal obstructions such as floor mats or corrugated cartons are not permitted and do not exist in the store; especially on the grating.



Fire Protection  
Consulting  
Engineers

Our firm (EJ Engineering) is the responsible party and design professional on this project. Our intention remains unwavering, which is to provide our Client (Discount Tire) with an engineered system that meets or exceeds the requirements and intent of the Code. As such, by definition and via professional license and registration, we serve the public and the local fire department. It is our Engineering judgement that our engineered set of construction documents is the best measure of providing life safety as required by the Florida Fire Prevention Code (6<sup>th</sup> Edition) and NFPA.

Please let us know if you have any questions and we appreciate your interpretation on this matter.

Sincerely,

*John Echeverri*

John L. Echeverri, SET, SME, CFPS  
President, CEO  
NICET Level IV Automatic Sprinklers No. 78493  
NICET Level III Special Hazards No. 78493  
NFPA Certified Fire Protection Specialist No. 1915  
EJ Engineering Group, Inc.  
EJ2 Construction Group, LLC  
EJ Flow Test, LLC dba EJ Flow Tests  
21505 North 78th Avenue, Suite 130  
Peoria, Arizona 85382  
623.362.1400 ext. 6





# NEW DISCOUNT TIRE STORE

## 5036 HIGHWAY 90, PACE, FL 32571

### GENERAL FIRE PROTECTION NOTES

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST ACCEPTED EDITIONS OF NFPA-13, INCLUDING ALL ASSOCIATED APPENDICES. INSTALLATION SHALL ALSO CONFORM TO ALL AUTHORITIES HAVING JURISDICTION (AHJ's) INCLUDING LOCAL AND STATE FIRE MARSHAL REQUIREMENTS.
- THE ELECTRONIC FILE SET OF THE APPROVED ENGINEERED CONSTRUCTION DOCUMENTS IS AVAILABLE TO THE INSTALLING FIRE PROTECTION CONTRACTOR AT NO COST. THIS SET IS MADE SOLELY AVAILABLE FOR THE FABRICATION PORTION OF THE PROJECT. CONTACT EJ ENGINEERING GROUP, INC. IN WRITING TO REQUEST. FP CONTRACTOR SHALL PROVIDE PROOF THAT PROJECT IS UNDER CONTRACT FOR INSTALLATION. THE DETAILS, DRAWINGS AND OTHER DATA INCLUDED IN THE CONSTRUCTION SET OF DOCUMENTS ARE FOR INFORMATION PURPOSES ONLY AND ARE SPECIFIC TO THIS PROJECT. ALL DRAWINGS, CONCEPTS, DETAIL INFORMATION AND DATA CONTAINED HEREIN SHALL REMAIN THE SOLE PROPERTY OF EJ ENGINEERING GROUP, INC. AND SHALL NOT BE UTILIZED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT THE EXPRESSED WRITTEN CONSENT OF EJ ENGINEERING GROUP, INC.
- THE INTENT OF THIS SET OF ENGINEERED CONSTRUCTION DOCUMENTS IS TO MEET THE LOCAL AUTHORITY HAVING JURISDICTION REQUIREMENTS FOR A PROFESSIONALLY DESIGNED AUTOMATIC FIRE SPRINKLER SYSTEM. THE INSTALLING CONTRACTOR SHALL SUBMIT 'PRODUCT DATA' SUBMITTALS AS REQUIRED IN THE PROJECT MANUAL FOR THE INSTALLATION RECORD. THE INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND/OR OBTAINING ALL PERMITS ASSOCIATED WITH THIS SET OF DOCUMENTS.
- ALL WIRING OF ELECTRIC INITIATION DEVICES (HORN-STROBES, WATER SUPERVISORY AND TAMPER DEVICES) SHALL BE BY THE ELECTRICAL AND/OR ALARM CONTRACTOR.
- THE PIPING HEREIN HAS BEEN DESIGNED TO MEET UNDERWRITERS LABORATORIES (U.L.) CORROSION RESISTANCE RATIO (CRR) MINIMUM OF 1.00. REFER TO PIPING PLANS, HYDRAULIC CALCULATIONS AND SPECIFICATIONS FOR SPECIFIC PIPE WEIGHTS AND WALL THICKNESS ASSOCIATED WITH THIS SPECIFIC PROJECT. THE UTILIZATION OF A CRR LESS THAN 1.0 IS NOT ACCEPTABLE UNDER ANY CIRCUMSTANCES. THE USE OF SUCH PIPING SUBJECTS THE CONTRACTOR TO POTENTIAL REMOVAL AND REPLACEMENT OF ALL PIPING AT HIS/HER COST.
- A MINIMUM SAFETY FACTOR HAS BEEN INCLUDED IN THE WATER SUPPLY FOR THIS PROJECT. ADDITIONAL SAFETY FACTORS, AS REQUIRED BY LOCAL AHJ HAVE ALSO BEEN IMPLEMENTED. EJ ENGINEERING GROUP, INC. IS NOT RESPONSIBLE FOR ADDITIONAL CHANGES IN WATER SUPPLY (GPM OR PRESSURE) THAT MAY ADVERSELY AFFECT THIS AUTOMATIC FIRE SPRINKLER SYSTEM IN THE FUTURE.
- THE FIRE PROTECTION CONTRACTOR IS FULLY RESPONSIBLE FOR THE FIELD FIT OF ALL SPRINKLERS AND PIPING. THE ACCURACY OF SCALED CONSTRUCTION DOCUMENTS IS NOT ASCERTAINABLE. ALL POSSIBLE ATTEMPTS HAVE BEEN MADE TO INCLUDE SLOPED PIPE LENGTHS AND TO MINIMIZE VARIATIONS. THEREFORE, THE FP CONTRACTOR IS RESPONSIBLE FOR THE ACCURACY OF FIELD CUT AND PRE-FABRICATED PIPING.
- THE FP CONTRACTOR IS RESPONSIBLE FOR GENERAL WORKMANSHIP, DIMENSIONING, COORDINATION WITH OTHER TRADES AND THE ACCEPTANCE OF THE FIELD INSPECTIONS. THE COORDINATION OF FIELD INSTALLED PIPING AND SPRINKLERS TO STRUCTURAL COMPONENTS, DUCTWORK, EQUIPMENT, CEILING, LIGHTS, ETC., IS THE RESPONSIBILITY OF THIS LICENSED CONTRACTOR.
- FIELD VERIFY ALL CONDITIONS PRIOR TO THE INSTALLATION OF ANY PIPING. FIELD ADJUSTMENTS MAY BE MADE TO THESE DOCUMENTS AS REQUIRED FOR FIELD ACCEPTANCE BY THE AHJ.
- THE FIRE PROTECTION CONTRACTOR SHALL VERIFY THE SPRINKLER SPACING TO THE STRUCTURAL MEMBERS, ROOF DECK AND ALL OBSTRUCTIONS. PROVIDE ADDITIONAL, OR RESPACE, SPRINKLERS WHERE REQUIRED TO AVOID SUCH UNFORESEEN OBSTRUCTIONS TO SPRINKLER DISCHARGE PATTERNS.
- THE FIRE PROTECTION CONTRACTOR SHALL SUBMIT, IN A TIMELY MANNER, REQUEST FOR INFORMATION (RFI) FORMS FOR ALL CHANGES NOT ASSOCIATED WITH MINOR FIELD ADJUSTMENTS. PRIOR TO MAKING THE CHANGE IN THE FIELD, CHANGES MADE TO THE APPROVED CONSTRUCTION DOCUMENTS WITHOUT AN ASSOCIATED RFI ARE NOT ACCEPTABLE AND SHALL BE CONSIDERED TO BE THE SOLE RESPONSIBILITY OF THE FIRE PROTECTION AND GENERAL CONTRACTOR. RFIs ARE NOT ACCEPTED ONCE THE CHANGE HAS BEEN MADE IN THE FIELD, THIS INCLUDES PRODUCT AND LABOR COSTS. ALL RFIs ARE TO BE SUBMITTED BY THE GC IN WRITING TO THE ARCHITECT.
- INSTALL PIPING SYSTEM ON APPROVED HANGERS PER AHJ & NFPA. C-CLAMPS WITH RETAINING STRAPS SHALL BE PROVIDED.
- FUTURE IMPROVEMENTS OR RENOVATIONS TO THIS AUTOMATIC FIRE SPRINKLER SYSTEM SHALL OCCUR UNDER A SEPARATE PERMIT.
- THE UTILITY CONTRACTOR SHALL FLUSH ALL UNDERGROUND MAINS PRIOR TO CONNECTION TO OVERHEAD SYSTEM PIPING.
- PROVIDE SLEEVES AT ALL PIPING PENETRATIONS THROUGH MASONRY AND/OR FIRE RATED WALLS, FLOORS OR CEILING. PACK WITH SEALANT COMMENSURATE WITH THE WALL CONSTRUCTION AND APPROVAL OF ALL AUTHORITIES HAVING JURISDICTION.
- BACKFLOW DEVICES, WHEN UTILIZED FOR THIS PROJECT, SHALL BE INSTALLED PER LOCAL AHJ APPROVAL LIST. PRIOR TO REQUEST FOR FINAL INSPECTION, EACH BACKFLOW ASSEMBLY DEVICE SHALL BE TESTED AND APPROVED BY A CERTIFIED TECHNICIAN LICENSED TO PERFORM SUCH WORK IN THIS PARTICULAR MUNICIPALITY.
- THIS FP CONTRACTOR SHALL PROVIDE THE OWNER WITH A COPY OF NFPA-25 & NFPA-20 AND A DETAILED DESCRIPTION OF THE MAINTENANCE REQUIRED FOR THIS PROJECT. SUCH A MAINTENANCE SUMMARY SHALL BE PROVIDED, AS IT WOULD APPEAR IN AN INDUSTRY STANDARD MAINTENANCE CONTRACT. IN ADDITION, AS A MINIMUM, TWO (2) SETS OF THE APPROVED 'RECORD DRAWINGS' AND ASSOCIATED EQUIPMENT SUBMITTALS SHALL BE PROVIDED TO THE OWNER.
- THIS FP CONTRACTOR SHALL INSTALL A SYSTEM DESIGN PLACARD FOR EACH FIRE RISER AND ASSOCIATED REMOTE AREA OF OPERATION AS INDICATED ON THE APPROVED CONSTRUCTION DOCUMENTS. SYSTEM DEMAND AT THE BASE OF THE RISER IN PSI AND GPM SHALL BE PROVIDED WITH THE AREA OF OPERATION SQUARE FOOTAGE AND NUMBER OF OPERATING SPRINKLERS. EACH DESIGN PLACARD SHALL BE PERMANENTLY EMBOSSED SUCH THAT DATA MAY BE AVAILABLE FOR FUTURE USE. THE UTILIZATION OF PERMANENT MARKING PENS IS NOT APPROPRIATE OR ACCEPTABLE.
- THIS FP CONTRACTOR SHALL PROVIDE A SPARE SPRINKLER CABINET, IN AN APPROVED LOCATION, WITH ASSOCIATED SPARE SPRINKLERS, AS REQUIRED BY NFPA-13. INCLUDE TWO (2) SETS OF SPRINKLER WRENCHES FOR EACH SPRINKLER TYPE AS REQUIRED.
- THIS FP CONTRACTOR SHALL BE LICENSED TO PERFORM THIS PARTICULAR TYPE OF WORK WITH THE STATE REGISTRAR OF CONTRACTORS AND WITH LOCAL AND STATE AUTHORITIES HAVING JURISDICTION. IN ADDITION, CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH ALL PLAN REVIEW AND AHJ FIELD INSPECTIONS AS NECESSARY FOR A COMPLETELY APPROVED WORKING SYSTEM.
- WHERE REQUIRED, THIS AUTOMATIC FIRE SPRINKLER SYSTEM SHALL BE MONITORED BY A UL OR FM LISTED CENTRAL STATION SYSTEM. ALL SYSTEMS OVER 100 SPRINKLERS SHALL BE MONITORED FOR TAMPER, TROUBLE AND FLOW.
- ALL CONTROL VALVES SHALL BE CHAIN-LOCKED AND SECURED INCLUDING MAIN DRAIN ANGLE VALVES. ALL EXTERIOR FIRE RISERS SHALL BE LOCATED IN A SECURED AREA TO PREVENT DAMAGE DUE TO VANDALISM.
- COMBUSTIBLE CONTENTS SHALL NOT BE MOVED INTO THE BUILDING WITHOUT THE APPROVAL OF THE AUTHORITIES HAVING JURISDICTION. IN ADDITION, THIS FP CONTRACTOR SHALL ENSURE THAT TEMPORARY INTERIOR FIRE PROTECTION IS IN PLACE PER AUTHORITY HAVING JURISDICTION. THIS INCLUDES PROVISIONS FOR TEMPORARY FIRE DEPARTMENT WATER SUPPLIES, HOSE CONNECTIONS, ETC.
- THE GENERAL CONTRACTOR SHALL PROVIDE A FIRE DEPARTMENT LOCK BOX FOR ALL NEW CONSTRUCTION AS DELINEATED ON THE ARCHITECTURAL DOCUMENTS. DEVICES SHALL BE SIMILAR OR EQUIVALENT TO 'KNOX MANUFACTURING'.

### SCOPE OF PROJECT

HAZARD: TIRE STORAGE PER NFPA-13 (2013 EDITION) TABLE 16.4(d) AND THE FLORIDA FIRE PREVENTION CODE 6TH ED.

AREA OF APPLICATION - 12 ESFR SPRINKLERS OPERATING @ 15 PSI MINIMUM EACH AT THE ROOF DECK.

SPRINKLERS - K-25 ESFR SPRINKLERS. IN-RACK SPRKs NOT REQ'D. FOR BELOW GRATE SPRKs SEE BELOW.

COVERAGE PER SPRINKLER - 130 SF - (100 SF IN ALL ESFR AREAS W/ 1-FT MAX. DEVIATIONS 0 INSIDE 250 OUTSIDE)

HOSE STREAM ALLOWANCE - 0 INSIDE

HOSE STREAM ALLOWANCE - 250 OUTSIDE

SYSTEM SHALL BE WET PIPE THROUGHOUT. HVAC ENGINEER HAS PROVIDED SUFFICIENT HEATING THROUGHOUT ALL INTERIOR PROJECT AREAS TO MAINTAIN A MINIMUM 40-DEGREES FAHR. AMBIENT TEMPERATURE 24°F.

HYDRAULIC REFERENCE POINTS ARE NUMBERED TO CORRESPOND WITH ATTACHED HYDRAULIC CALCULATIONS. SEE FP1.1 AND FP2.0 FOR HYDRAULIC REFERENCE NODE LOCATIONS.

THE INTERIOR HOSE RACK REQUIREMENT (NFPA-13) HAS BEEN OMITTED ON THESE DOCUMENTS AS MOP UP OPERATION IS INCIDENTAL TO POTENTIAL NEGATIVE ASPECTS ASSOCIATED WITH EMPLOYEE UTILIZATION OF INTERIOR HOSE. INSIDE HOSE MAY BE UTILIZED FOR EMPLOYEE FIRE RESPONSE IN LIEU OF IMMEDIATE EVACUATION AND 911 PHONE CALL INITIATION. NFPA REQUIREMENT IS FOR MOP-UP OPERATIONS ONLY. UTILIZATION OF INTERIOR HOSE BY UNQUALIFIED USERS MAY SPREAD CONFLAGRATION.

RETAIL AREA, COMP. RM & DEAD TIRE STORAGE AREA SHALL BE OVERSIZED BASED ON CALC'D HYDRAULICALLY DEMANDING AREA OF OPERATION (TIRE STORAGE).

REFER TO ATTACHED 8-1/2" X 11" HYD. CALCULATIONS, OWNER'S CERTIFICATE & FLOW TEST DATA FOR INFO.

RACK STORAGE GRATE IS FOR SAFE TIRE ACCESS & RETRIEVAL ONLY AND CONSISTS OF 'NON-FIXED' 88% OPEN STEEL GRATE. REFER TO FP2.0 FOR AREAS WITH OPEN GRATING. NEARLY ALL GRATING IS 4-FT WIDE OR LESS. NO A.S. REQ'D (NFPA-13). SPRKRS PROVIDED BELOW GRATING FOR AREAS OVER 4-FT WIDE.

OWNER HAS BEEN ALERTED TO MAX. TIRE STORAGE HEIGHT OF 3-FT BELOW SPKR DEFLECTORS AS DEPICTED ON FP3.1. OWNER SHALL NOT PLACE ANY HORIZONTAL OBSTRUCTIONS TO SPKR. DISCHARGE ON GRATE (E.G. MATS, BOARDS, ETC.). THEREFORE, NFPA-13 SECTION 8.5.5.3.1 & USE OF ESFR SPRINKLERS ALLOWING THE OMISSION OF SPRINKLERS WITHIN THE RACKS HAS BEEN PROPERLY ADDRESSED HEREIN.

THE USE OF ESFR FOR THE TIRE INSTALLATION/SERVICE BAY AREA IS ACCEPTABLE PER NFPA-13 SECTION 8.4.6.

NFPA-13 IS REFERENCED HEREIN. SPECIFICALLY CHAPTER 18 TABLE 18.4(d) ESFR SPRINKLERS FOR PROTECTION OF RUBBER TIRES ON SIDE OR ON TREAD IN RACKS WITHOUT SOLID SHELVES. (NOTE: RACK STORAGE IS STEEL AND PALLETS ARE NOT USED FOR TIRE STORAGE WHATSOEVER.) PILE HEIGHT 25-FT MAXIMUM IN A 30-FT MAX. BLDG. HEIGHT. ACTUAL PILE HEIGHT IS 18'-8" TO 17'-8". SEE FP3.1.

PROVIDE CAPPED & THREADED 3/4" OUTLET ON DROPS TO SIDEWALL SPRINKLERS FOR DRAINAGE OF TRAPPED H2O.

OUTDOOR DISPLAY OF TIRES SHALL BE IN ACCORDANCE WITH THE LOCAL FIRE MARSHAL WHERE APPROVED.

CLEARANCE FROM SPRINKLER DEFLECTOR TO TOP OF STORAGE SHALL BE A MINIMUM OF 3-FT PER ESFR SPRINKLER LISTING.

PER NFPA-13 SECTION 18.2.4: PROTECTION OF COLUMNS WITHIN RUBBER TIRE STORAGE ARE NOT REQUIRED. COLUMNS HAVE NOT BEEN PROVIDED WITHIN RACK STORAGE.

PER NFPA-13 AND THE UL LISTING FOR THE ESFR SPRINKLERS UTILIZED HEREIN MANDATE A MAXIMUM ROOF SLOPE OF 2 IN 12 (16.7%). THE ROOF SLOPE FOR THIS PROJECT IS 2'-1/2" RISE WITH A 60'-0" RUN (ONLY 3.5%).

FIRE ALARM SYSTEM IS NOT IN THIS CONTRACT. WIRING TO FLOW & TAMPER SWITCHES & HORN-STROBE ARE N.I.C.

FP CONTRACTOR SHALL UTILIZE A REMOTE 4-WAY FDC AS SHOWN ON FP1.1 AND CIVIL UTILITY DRAWINGS. FP CONTRACTOR SHALL COORDINATE FDC HEIGHT & THREADS SHALL BE PER LOCAL FIRE DEPT. & AHJ REQUIREMENTS.

8-INCH D.I.P. UNDERGROUND FIRE LINE. 6-INCH FDC SUPPLY LINE. REFER TO FP SHEETS AND CIVIL DRAWINGS FOR ADDL. INFO.

### FIRE PROTECTION SYMBOLS & ABBREVIATIONS

	AUTOMATIC SPRINKLER RISER
	AUTOMATIC SPRINKLER(S)
	FIRE DEPARTMENT CONNECTION
	NATIONAL STANDARD THREAD FOR F.D.C.
	RISER NIPPLE
	HYDRAULICALLY MOST REMOTE AREA OF SPRINKLER OPERATION
	BACKFLOW ASSEMBLY
	NODE NUMBER - HYDRAULIC CALCULATION REFERENCE POINT
	PIPE SEGMENT SIZE & LENGTH MEASURED IN FEET AND INCHES
	FULLY AUTOMATICALLY SPRINKLERED SPACE
	PARTIALLY AUTOMATICALLY SPRINKLERED SPACE
	NON-SPRINKLERED SPACE
	SPRINKLER PIPE
	PIPE HANGER ON PIPE IT SUPPORTS
	EXISTING SPRINKLER PIPE
	PRESSURE GAUGE (0-300 PSI)
	SPARE SPRINKLER CABINET W/ STOCK OF SPRINKLERS AND WRENCHES PER NFPA-13
	HORN-STROBE - WIRING BY ELECT./ALARM CONTRACTOR - VERIFY REQUIRED VOLTAGE. PROVIDED BY FP SUB.
	4-WAY FIRE DEPARTMENT CONNECTION
	CODE APPROVED PIPE SLEEVE WITH CAULKING COMMENSURATE WITH CONSTRUCTION
	2-WAY SWAY BRACE
	4-WAY SWAY BRACE
	RISER CLAMP ATTACHED TO WALL

NOTE: REFER TO THE ARCHITECTURAL STANDARD SYMBOLS AND ABBREVIATIONS FOR ADDITIONAL ITEMS NOT SHOWN HERE. NOT ALL SYMBOLS MAY BE USED.

### PROJECT TEAM

AUTHORITY HAVING JURISDICTION (AHJ): SANTA ROSA COUNTY FIRE/LIFE SAFETY INSPECTOR: AMBER MCCLEARY 850.981.7041

ARCHITECT: PLUMP GROUP 914 E. KATELLA AVE. ANAHEIM, CA 92805 714.385.1835

CIVIL ENGINEER: H & T CONSULTANTS, INC. 9310 OLD KINGS ROAD SOUTH, SUITE 1001 JACKSON, FL 32257 904.419.1001

MEP ENGINEER: PLUMP GROUP 914 E. KATELLA AVE. ANAHEIM, CA 92805 714.385.1835

STRUCTURAL ENGINEER: PK ASSOCIATES 6950 E. BELLEVUE AVENUE, SUITE 201 GREENWOOD VILLAGE, CO 80111 720.799.1058

### PROJECT DATA

ADDRESS: DISCOUNT TIRE 5036 HIGHWAY 90 PACE, FL 32571

OWNER: HALLE PROPERTIES, LLC. 20225 NORTH SCOTTSDALE ROAD SCOTTSDALE, ARIZONA 85255

USE: RETAIL TIRE STORAGE, SALES, AND INSTALLATION

AREA SEPARATION WALL: NON-SEPARATED

OCCUPANCY SEPARATION WALL: NON-SEPARATED

OCCUPANCY: M & S-1

TYPE OF CONSTRUCTION: II-B, FULLY SPRINKLERED

BUILDING HEIGHT: SINGLE STORY

BUILDING AREA: ±7,932 SF (SEE DESIGN BLOCK ON FP2.0)

### SPRINKLER COUNT

TOTAL NUMBER OF SPRINKLERS THIS PROJECT: 132 SPRINKLERS. SEE FIRE PROTECTION SHEETS FOR SPECIFIC PER-SHEET TOTALS.

### SHEET INDEX

- FP1.0 FIRE PROTECTION COVER SHEET
- FP1.1 FIRE LINE REFERENCE PLAN
- FP2.0 FIRE PROTECTION PLANS
- FP3.0 FIRE PROTECTION NOTES & DETAILS
- FP3.1 FIRE PROTECTION SECTION & DETAILS

GENERAL IDENTIFICATION  
PROVIDE METAL EMBOSSED DESIGN PLACARDS, IDENTIFICATION SIGNS AND PIPE LABELS ON ALL SYSTEM EQUIPMENT AND PIPING.

HIGH VOLUME LOW SPEED (HVLS) FAN NOTES:  
WHERE HVLS FANS ARE INSTALLED, THEY SHALL INTERCONNECT TO THE FIRE ALARM SYSTEM FOR WATER FLOW AND ANY OTHER DETECTION DEVICES IN THE AREA OF COVERAGE. HVLS FANS SHALL BRAKE TO A STOP UPON ALARM INITIATION. REFER TO ELECTRICAL AND/OR FIRE ALARM SHOP DRAWINGS FOR ADDITIONAL INFORMATION ON INTERLOCKS AND WIRING OF THE HVLS, INITIATION DEVICES AND ANNUNCIATION DEVICES. HVLS FANS SHALL COMPLY WITH NFPA-13 REQUIREMENTS.

NOTE:  
USE OF FOREIGN-MADE PIPING, FITTINGS, COUPLINGS OR WELDED OUTLETS SHALL NOT BE ALLOWED! IF DISCOVERED SUCH PRODUCT SHALL BE REMOVED AT CONTRACTOR'S EXPENSE AND COSTS ASSOCIATED WITH PROJECT DELAYS SHALL ALSO BE THE RESPONSIBILITY OF THE FP AND GENERAL CONTRACTORS. NEGOTIATIONS FOR ADDITIONAL WARRANTIES OR CREDITS SHALL NOT BE CONSIDERED. MUST COMPLY WITH THE BUY AMERICAN ACT.

NO.	REVISION	DATE
1	1ST COUNTY COMMENTS	10/03/19

JOHN L. ECHEVERRI, SET, CFPs DATE 10.18.2019

THESE CONSTRUCTION DOCUMENTS AND ASSOCIATED HYDRAULIC CALCULATIONS (WHERE SUBMITTED) HAVE BEEN PREPARED BY:  
JOHN L. ECHEVERRI, SET, CFPs  
NICET CERTIFICATION NUMBER 078493  
LEVEL IV AUTOMATIC SPRINKLER SYSTEMS  
LEVEL III SPECIAL HAZARDS  
NFPA CERTIFICATION NUMBER 1915  
CERTIFIED FIRE PROTECTION SPECIALIST  
THIS ENGINEERED SYSTEM IS THE SOLE PROPERTY OF EJ ENGINEERING GROUP, INC.

CONSULTANT

EJ Engineering Group, Inc - Fire Protection Consulting Engineers

EJ2 Construction Group, LLC - Licensed FP Contractors - ROC271705 AZ C-16

EJ Flow Test, LLC - Water Supply and Flow Testing Professionals  
21505 N. 78th Ave. • Suite 130 • Peoria, AZ 85382 • 623.362.1400 • www.ejengineering.com



DISCLAIMER:  
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5036 HIGHWAY 90  
PACE, FL 32571

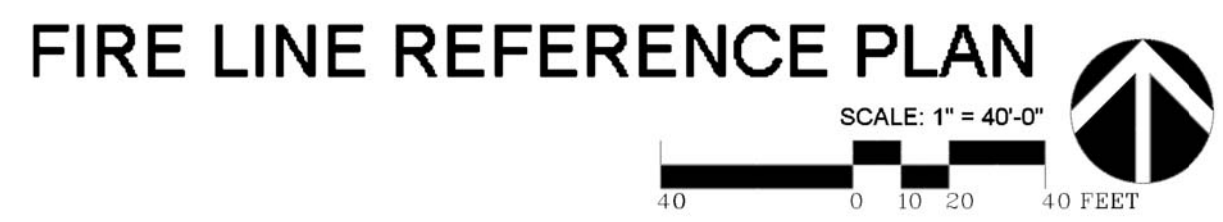
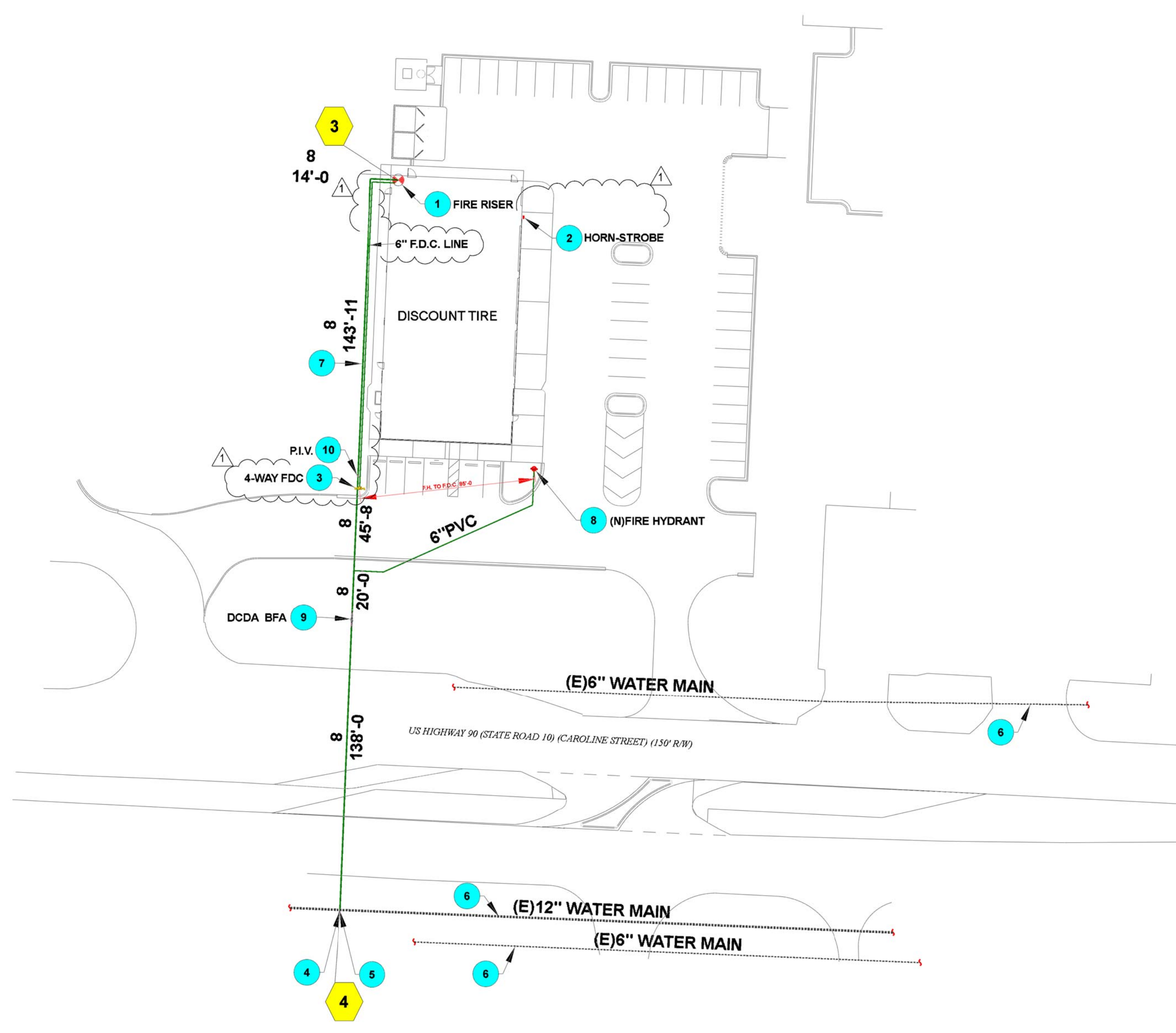
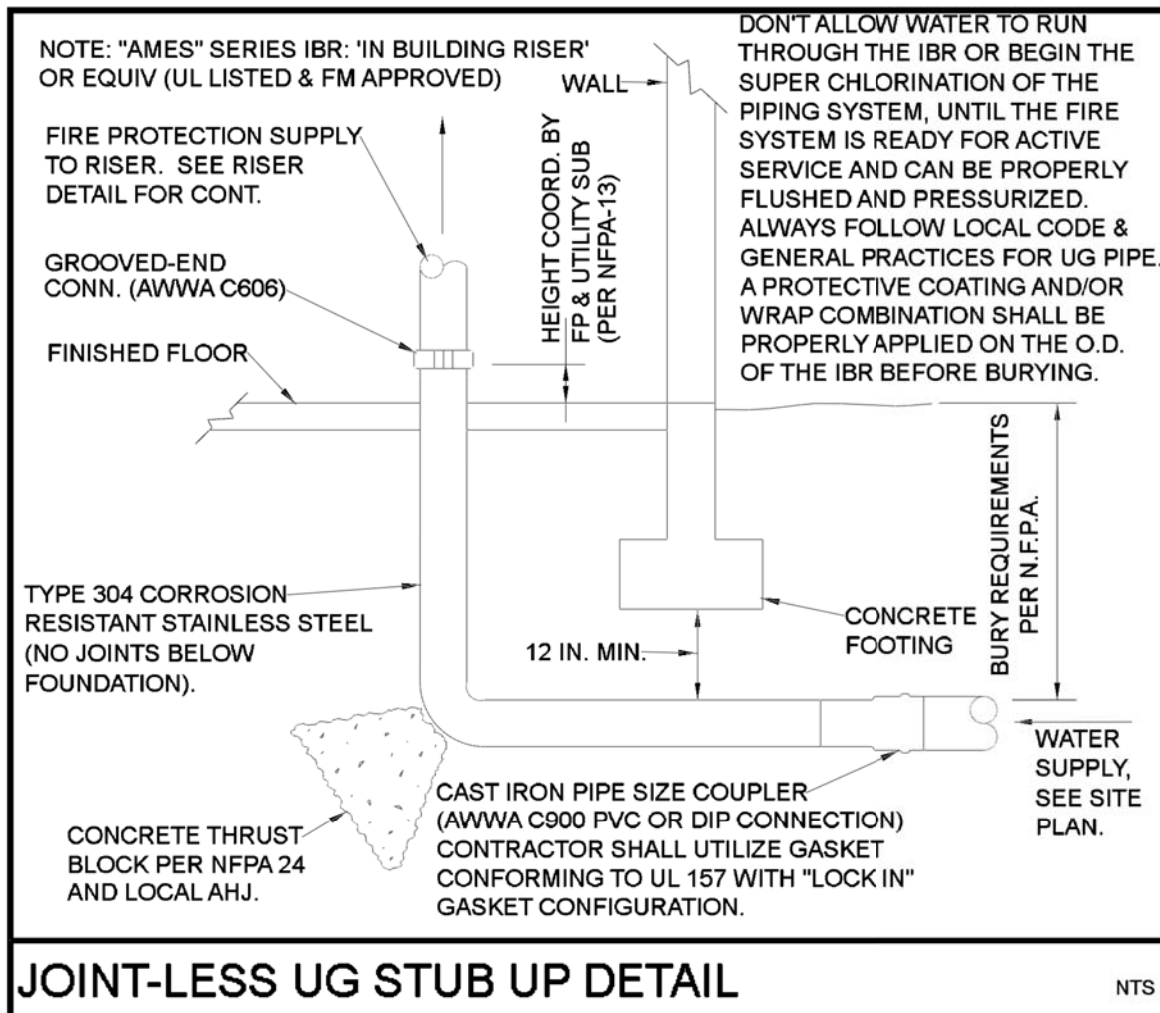
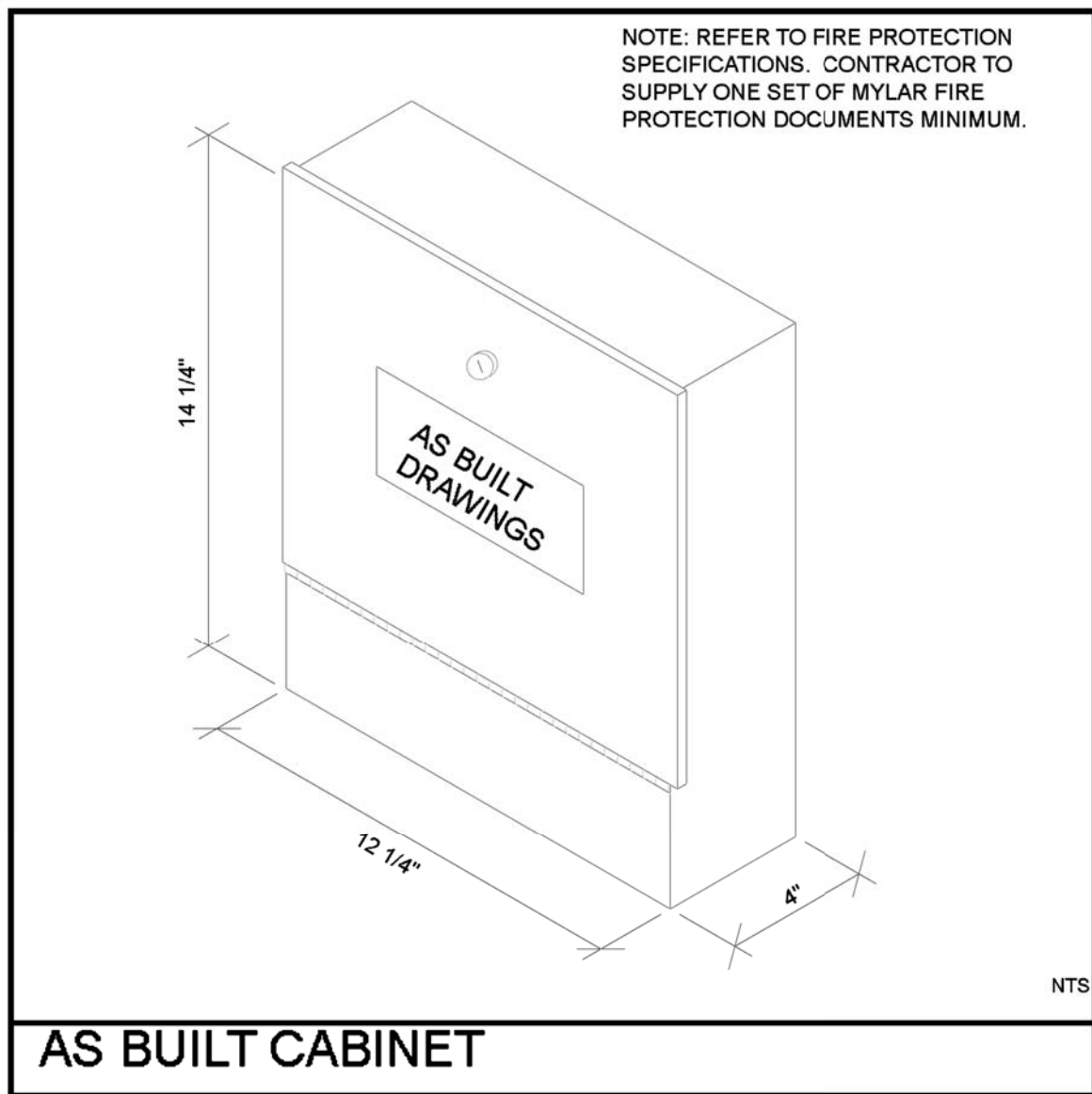
STORE NUMBER: FLP 03 - EJE-18201.1  
PROJECT MANAGER: SCOTT FOURNIER  
PREPARED BY: JOHN ECHEVERRI & CESAR R. 623.362.1400  
DRAWN BY: JLE/CJR

SHEET TITLE: FIRE PROTECTION COVER SHEET

SHEET NUMBER: FP1.0



- SITE PLAN KEYNOTES**
- 1 FIRE RISER, REFER TO FIRE RISER DETAIL FOR ADDITIONAL INFORMATION. REFER TO FP2.0 AND HYDRAULIC CALCULATIONS FOR SIZING.
  - 2 EXTERIOR HORN-STROBE (WIRED BY ELECT. CONTR.), COORDINATE FINAL LOCATION w/ AHJ. FP CONTR. TO PROVIDE.
  - 3 REMOTE 4-WAY FIRE DEPT. CONNECTION WITH 6-INCH CHECK VALVE & 1/2" AUTO. DRIP VALVE LOCATED INSIDE BUILDING. SEE CIVIL DRAWINGS FOR ADD'L INFO. THREADS PER LOCAL FD. COORDINATE AFF HEIGHT WITH AHJ.
  - 4 THRUST BLOCK (PER NFPA), (TYP) REFER TO CIVIL DRAWINGS.
  - 5 NEW TAPPING SLEEVE & VALVE BY UTILITY CONTR. REFER TO CIVIL DRAWINGS.
  - 6 EXISTING WATER MAIN. REFER TO CIVIL DRAWINGS.
  - 7 8-INCH FIRE LINE. MIN. BURY DEPTH PER CIVIL PLANS. HYDRAULIC CALCULATIONS ACCOUNT FOR AN INSIDE PIPE DIA. OF 8.39-INCHES. ANY MATERIAL UTILIZED WITH A SMALLER INSIDE PIPE DIAMETER SHALL BE REVIEWED BY E.O.R VIA RFI.
  - 8 FIRE HYDRANT, SEE CIVIL PLANS FOR ADD'L INFO.
  - 9 FRICTION LOSS HAS BEEN INCLUDED FOR AN 8-INCH AMES MAXIM SERIES M307 DOUBLE CHECK DETECTOR ASSEMBLY (DCCA) LOCATED ABOVE GROUND REMOTE ON THE FIRE LINE. SEE HYD. CALCS & CIVIL DWGS. FOR ADD'L INFO.
  - 10 POST INDICATOR VALVE (P.I.V.). REFER TO CIVIL DWGS. FOR ADD'L INFO.



The above plan shall be considered a fire-line reference plan. Refer to approved civil engineering construction documents for all site-related fire line routing and work. This plan has been created for use by the Fire Department to ascertain friction loss distances, pipe sizing, fire department connection relationships to fire hydrant(s), etc. Work under this Fire Protection Contract is limited to 5'-0" beyond the building maximum. As the termination point may also be located at the flange connection to the fire riser, this Fire Protection Contractor shall coordinate the final termination point with the General Contractor in the pre-bid phase of the construction. The hydraulic calculations have taken into account the smallest available underground pipe diameter and conservative HWC (140); although it is quite possible that a code-approved plastic underground fire-line with a larger inside pipe diameter and higher HWC (150) was utilized. In addition, the hydraulic calculations and system design may include additional fittings, lengths, etc. to create yet additional safety margins not specifically noted herein.

**E·J Flow Test Summary**

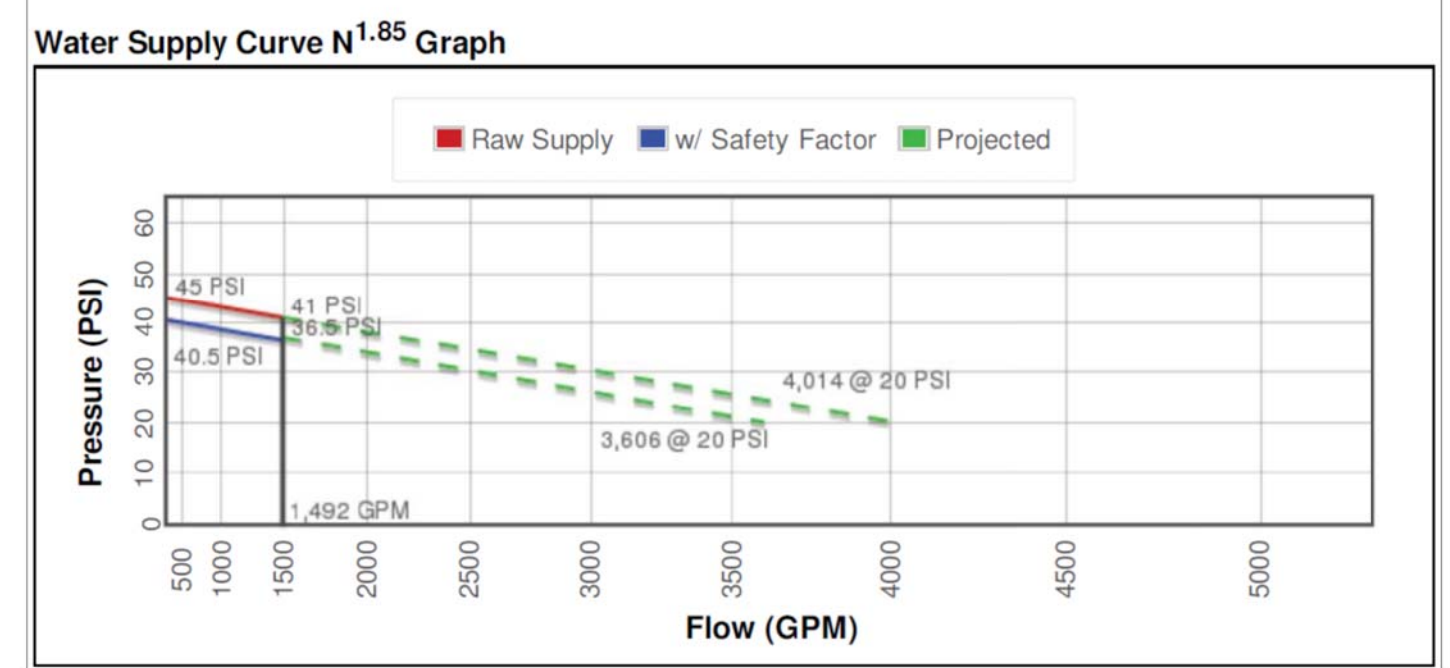
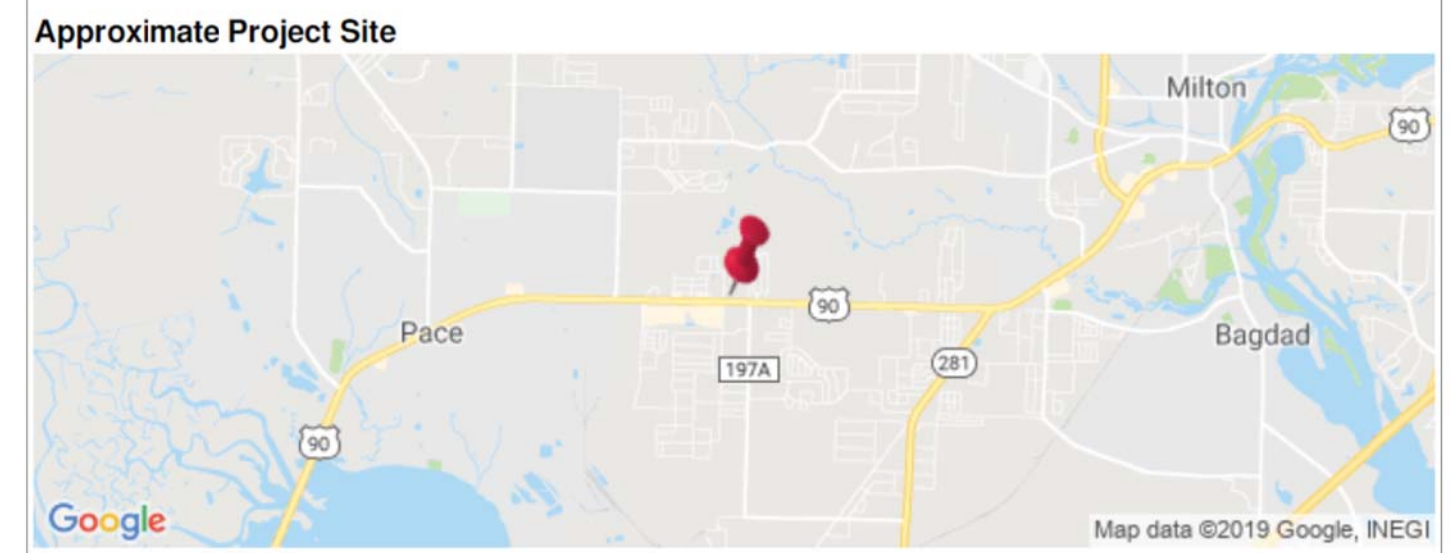
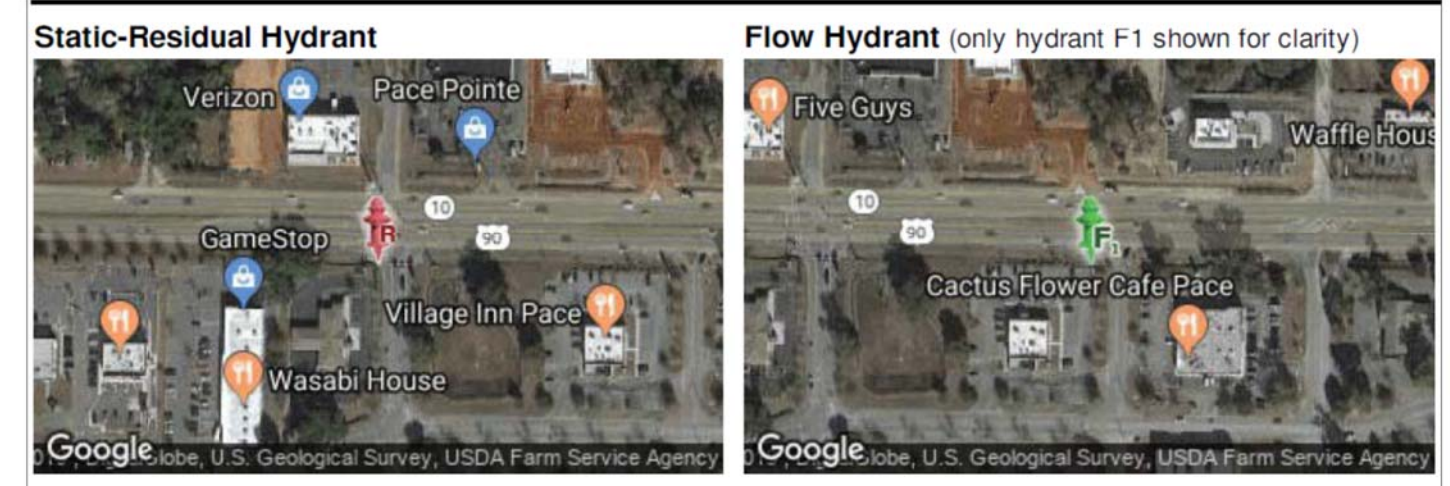
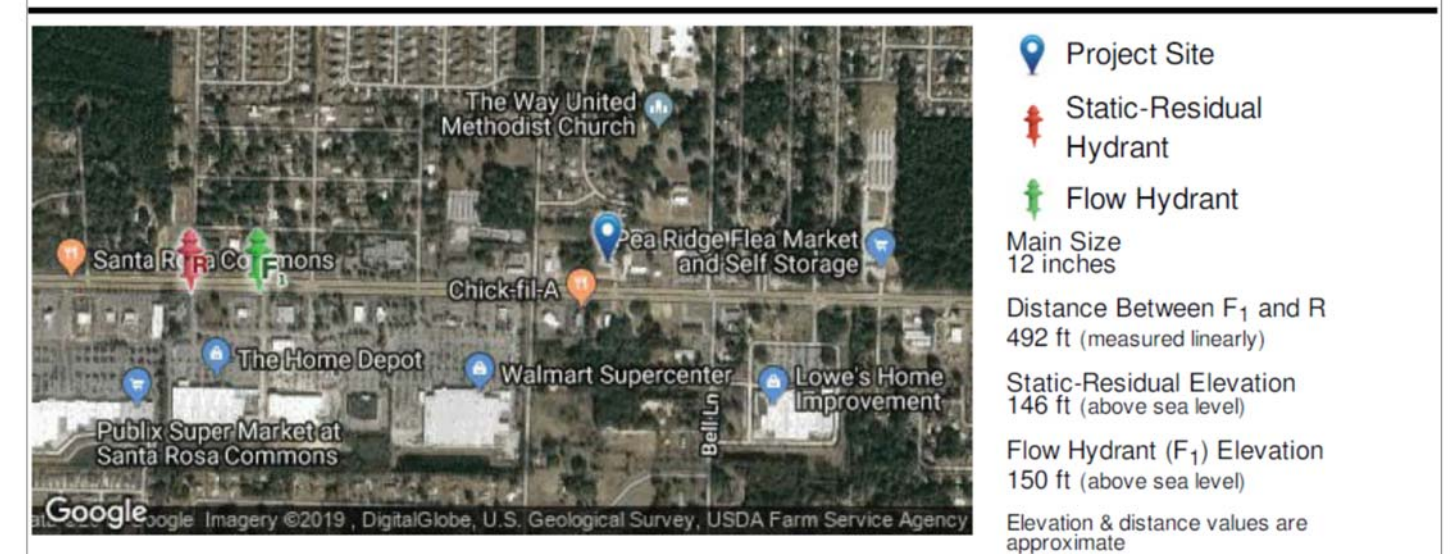
Project Name: EJE 18201-2 - FLP 11865  
 Project Address: 5036 Highway 90, Pace, FL 32571  
 Date of Flow Test: 2018-12-18  
 Time of Flow Test: 9:30 AM  
 Data Reliable Until: 2019-12-18  
 Conducted By: Steve Nix (Bayside Fire Protection) 850.433.1021  
 Witnessed By: Pace Water System (850.994.5129)  
 City Forces Contacted: Pace Water System (850.994.5129) & Pace FD (850.981.7041)

Raw Flow Test Data	Data with a 10 % Safety Factor
Static Pressure: 45.0 PSI	Static Pressure: 40.5 PSI
Residual Pressure: 41.0 PSI	Residual Pressure: 36.5 PSI
Flowing GPM: 1,492	Flowing GPM: 1,492
GPM @ 20 PSI: 4,014	GPM @ 20 PSI: 3,606

**Hydrant F1**

Pilot Pressure (1):	25 PSI
Coefficient of Discharge (1):	0.8
Hydrant Orifice Diameter (1):	2.5 inches
Pilot Pressure (2):	25 PSI
Coefficient of Discharge (2):	0.8
Hydrant Orifice Diameter (2):	2.5 inches

Note: Although sufficient discharge was not achieved to cause a drop in pressure at the residual hydrant of at least 25 percent nor was a minimum of 1,500 GPM flowed for fire-fighting purposes, (NFPA-291, 4.3.6) the data is acceptable per Amber S. McCleary (Santa Rosa County Fire - Fire/Life Safety Inspector - Plans Examiner) 850.981.7041.



NO.	REVISION	DATE
1	1ST COUNTY COMMENTS	10/03/19

*John L. Echeverri* 10.18.2019  
 JOHN L. ECHEVERRI, SET, CFPSS DATE  
 THESE CONSTRUCTION DOCUMENTS AND ASSOCIATED HYDRAULIC CALCULATIONS (WHERE SUBMITTED) HAVE BEEN PREPARED BY:  
 JOHN L. ECHEVERRI, SET, CFPSS  
 NICET CERTIFICATION NUMBER 078493  
 LEVEL IV AUTOMATIC SPRINKLER SYSTEMS  
 LEVEL III SPECIAL HAZARDS  
 NFPA CERTIFICATION NUMBER 1915  
 CERTIFIED FIRE PROTECTION SPECIALIST  
 THIS ENGINEERED SYSTEM IS THE SOLE PROPERTY OF E.J. ENGINEERING GROUP, INC.

CONSULTANT

EJ Engineering Group, Inc - Fire Protection Consulting Engineers  
 EJ2 Construction Group, LLC - Licensed FP Contractors - ROC271705 AZ C-16  
 EJ Flow Test, LLC - Water Supply and Flow Testing Professionals  
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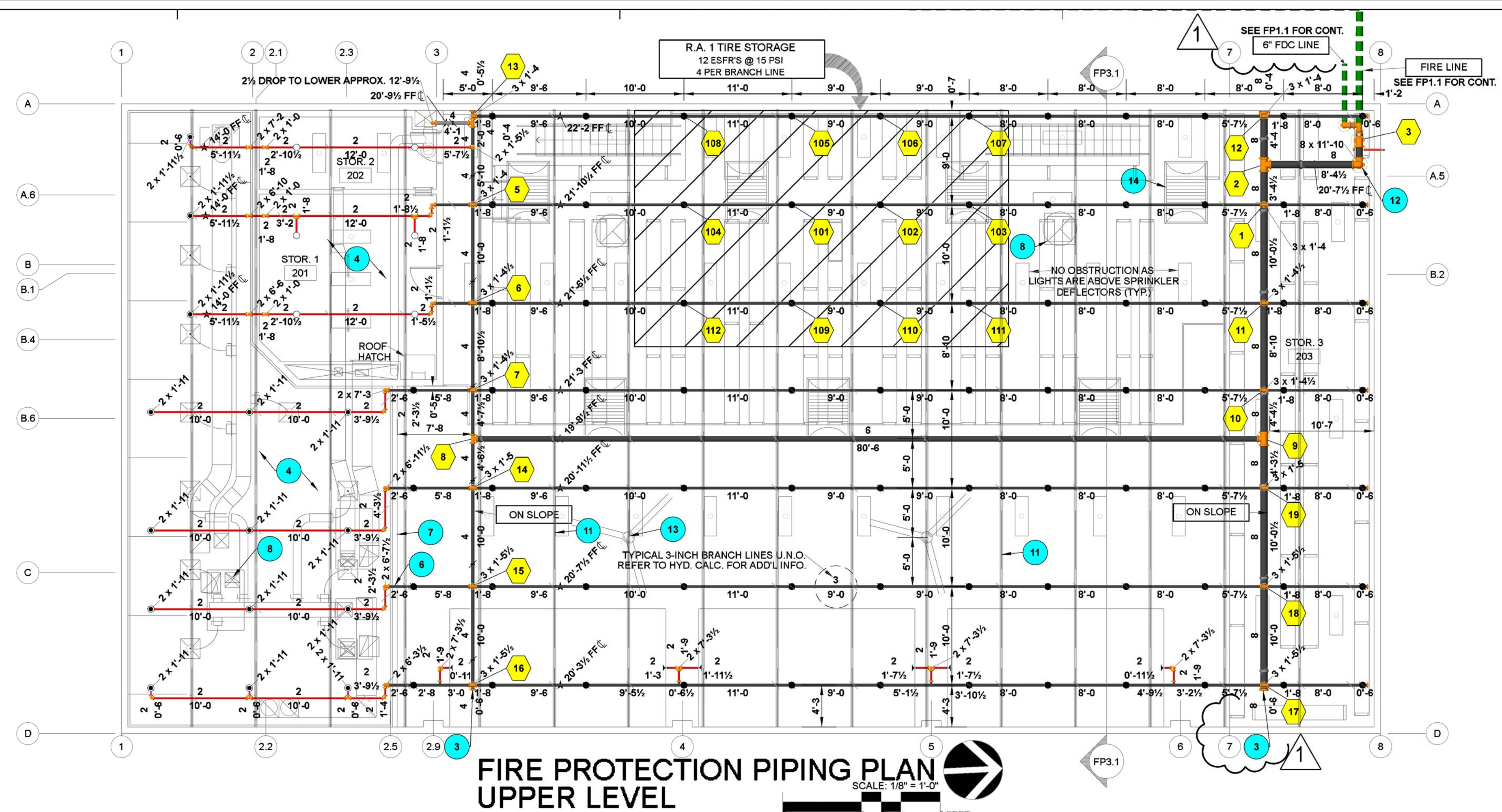
**5036 HIGHWAY 90  
 PACE, FL 32571**

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 623.362.1400  
 DRAWN BY:  
 JLE/CIR

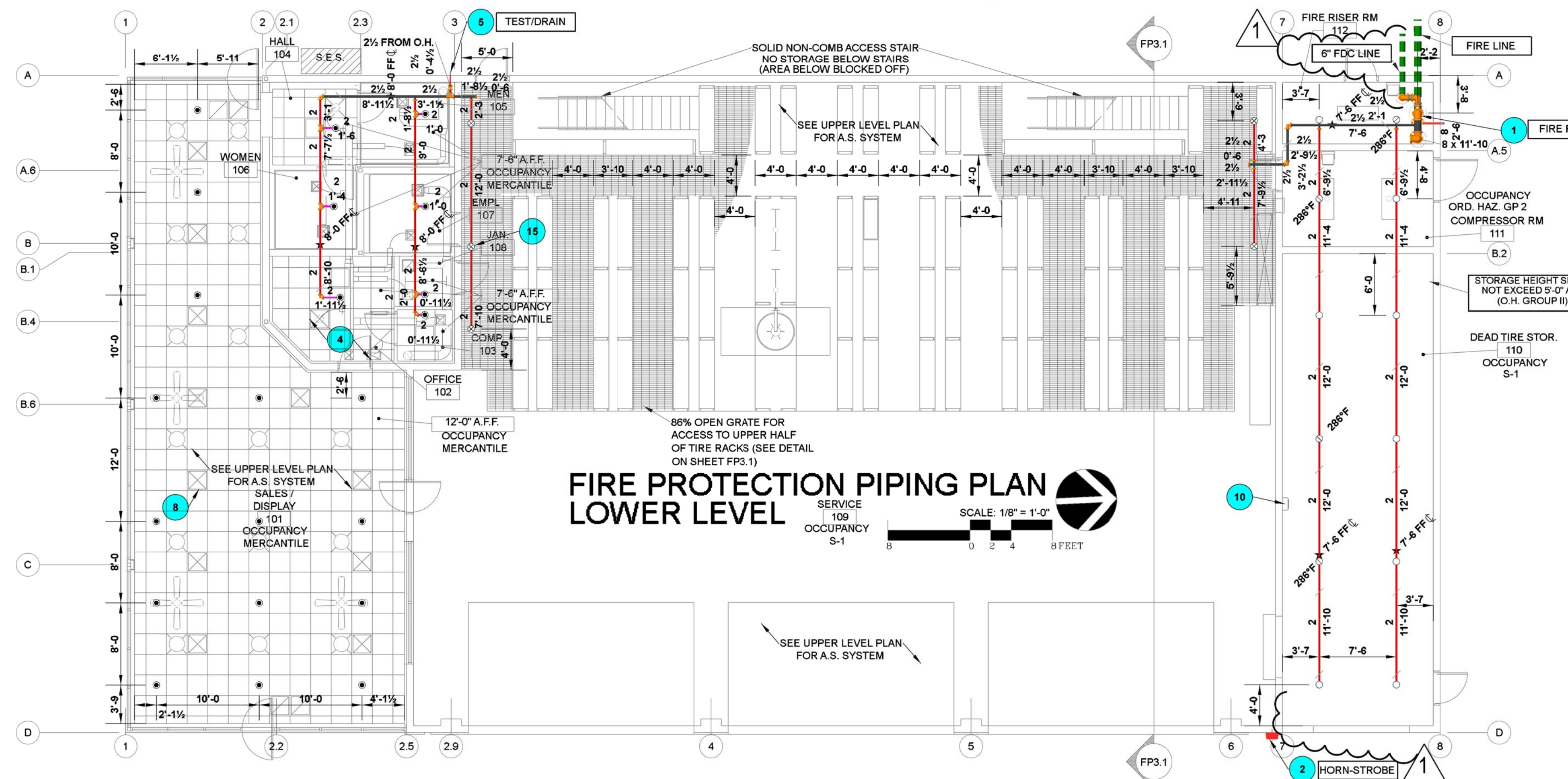
SHEET TITLE:  
 FIRE LINE REFERENCE PLAN

SHEET NUMBER:  
**FP1.1**





**FIRE PROTECTION PIPING PLAN  
UPPER LEVEL**  
SCALE: 1/8" = 1'-0"  
8 FEET



**FIRE PROTECTION PIPING PLAN  
LOWER LEVEL**  
SCALE: 1/8" = 1'-0"  
8 FEET

**HYDRAULIC CALCULATION  
DESIGN DATA**

TOTAL SYSTEM AREA	19,571 SF (BLDG AREA 17,932)
OCCUPANCY CLASS	TIRE STORAGE/SALES/INSTALLATION
DENSITY	15 PSI EACH
AREA OF APPLICATION	12 ESFR
COVERAGE PER SPRINKLER	100 SQ. FT. (MAX.)
SPECIAL SPRINKLERS	N/A
IN-RACK SPRINKLER DEMAND	N/A
HOSE STREAM ALLOWANCE:	INSIDE 0 OUTSIDE 250

**SYSTEM DEMAND**

DEMAND AT B.O.R. REQ'D	1177.65 GPM @ 29.21 PSI
DEMAND AT SOURCE REQ'D	1427.65 GPM @ 36.66 PSI
AVAILABLE AT SOURCE	1427.65 GPM @ 36.61 PSI
SAFETY FACTOR:	0.4 %
(SEE FLOW TEST SUMMARY FOR ADDITIONAL 10% SAFETY FACTOR OFF OF WATER SUPPLY UTILIZED ON HYD. CALCS.)	

SYSTEM NO. 1 R.A. NO. 1

2" MIN. PIPING, DROPS, AND ARMORS. ALL SHALL BE SCHEDULE 40 OR EQUIV. PIPING 2-1/2" & GREATER SHALL BE SCHEDULE 10 OR EQUIV.

- FIRE PROTECTION KEYNOTES**
- 3-INCH FIRE RISER. REFER TO FIRE RISER DETAIL AND HYDRAULIC CALCULATIONS FOR ADDITIONAL INFO.
  - EXTERIOR HORN-STROBE WIRED BY ELECT./F.A. CONTR. PROVIDED BY FP SUB. COORD. LOCATION WITH AHJ.
  - PROVIDE 3/4" THREADED & CAPPED OUTLET FOR AUX. DRAINAGE OF THIS PORTION OF THE MAIN.
  - CEILING SPACE IS NON-COMBUSTIBLE, NO A.S. REQ'D. PIPING OVERSIZED IN THIS AREA AS A SAFETY FACTOR.
  - 1" INSPECTOR'S TEST/AUX. DRAIN W/ 1/2" ORIFICE UNION & 1" GLOBE VALVE TERM 6" AFG. LOCATE LABELED 8" X 8" ACCESS PANEL.
  - PIPE SLEEVE W/ CAULKING, COMMENSURATE W/ BUILDING CONSTRUCTION. (TYP.)
  - FULL HEIGHT WALL TO ROOF DECK.
  - MECHANICAL EQUIPMENT REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. (TYP.)
  - NOT USED.
  - SEE MECHANICAL DRAWINGS FOR HEATERS. NEAREST SPRINKLER WITHIN A 7-FT RADIUS SHALL BE HIGH TEMPERATURE RATED (286°).
  - STRUCTURAL JOIST. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION. (TYP.)
  - COORDINATE PENETRATION THROUGH FLOOR WITH GC.
  - HIGH VOLUME LOW SPEED (HVLS) FAN. SEE MECH. PLANS & FP.0 HVLS FAN NOTES FOR ADDL INFO. HVLS FAN SHALL BE 3-FT BELOW DEFLECTORS & CENTERED APPROX. BETWEEN FOUR (4) SPRINKLERS.
  - 4-FT X 6-FT SKYLIGHT. SEE ARCH. DWGS. (TYP.)
  - BELOW GRATE SPRINKLER AT GRATING OVER 4-FT WIDE. SEE SPRINKLER SCHEDULE FOR ADDL INFO.

Room/Area Name	Hazard Occupancy	Density	Device Temp. Rating	Spacing
Sales/Display	Ordinary Hazard Group 2	0.20 gpm / 1,500 sf	155 degree pendent(s)	130 sf max.
Office	Light Hazard	0.10 gpm / 1,500 sf	155 degree pendent(s)	225 sf max.
Computer	Light Hazard	0.10 gpm / 1,500 sf	155 degree pendent(s)	225 sf max.
Hall	Light Hazard	0.10 gpm / 1,500 sf	155 degree pendent(s)	225 sf max.
Men	Light Hazard	0.10 gpm / 1,500 sf	155 degree pendent(s)	225 sf max.
Women	Light Hazard	0.10 gpm / 1,500 sf	155 degree pendent(s)	225 sf max.
Employee	Light Hazard	0.10 gpm / 1,500 sf	155 degree pendent(s)	225 sf max.
Janitor	Ordinary Hazard Group 1	0.15 gpm / 1,500 sf	155 degree pendent(s)	130 sf max.
Service	Ordinary Hazard Group 2	0.20 gpm / 1,500 sf	214 degree ESFR Pendants	130 sf max.
Dead Tire Storage	Ordinary Hazard Group 2	0.20 gpm / 1,500 sf	200 degree uprights	130 sf max.
Compressor Room	Ordinary Hazard Group 2	0.20 gpm / 1,500 sf	200 degree uprights	130 sf max.
Fire Riser Room	Ordinary Hazard Group 2	0.20 gpm / 1,500 sf	200 degree uprights	130 sf max.
Storage 1	Ordinary Hazard Group 2	0.20 gpm / 1,500 sf	200 degree uprights	130 sf max.
Storage 2	Ordinary Hazard Group 2	0.20 gpm / 1,500 sf	200 degree uprights	130 sf max.
Storage 3	Ordinary Hazard Group 2	0.20 gpm / 1,500 sf	214 degree ESFR Pendants	100 sf max.
Walking Gate (above and below)	High Piled Rubber Tire Storage (High Hazard)	12 ESFRs @ 15 PSI min. each per NFPA-13 Table 18.4(d)	214 degree ESFR Pendants	100 sf w/ 1-ft deviations

**SPRINKLER SCHEDULE**

SYMBOL	SPRINKLER DESCRIPTION	SPRINKLER SPECIFICATIONS					ESCUTCHEON		REMARKS	QTY.	
		MANUF.	MODEL/ SNI #	FINISH	THREAD SIZE	TEMP	"K" FACTOR	FINISH			STYLE
●	ESFR PENDENT	TYCO	ESFR-25 TY9226	BRASS	1"	214°	25.2	-	-	"FAST RESPONSE"	81
●	PENDENT	TYCO	TYFRP TY3231	CHROME	1/2"	155°	5.6	CHROME	REC.	"QUICK RESPONSE"	22
○	UPRIGHT	TYCO	TYFRP TY3131	BRASS	1/2"	200°	5.6	-	-	"QUICK RESPONSE"	14
⊥	SIDEWALL	TYCO	SW-20 TY5332	BRASS	3/4"	200°	11.2	-	-	"STANDARD RESPONSE"	6
⊕	INTERMEDIATE LEVEL UPRIGHT	TYCO	TYFRP TY313	BRASS	1/2"	155°	5.6	-	-	"Q.R. W/GUARD & SHIELD"	5
⊕	UPRIGHT	TYCO	TYFRP TY3131	BRASS	1/2"	286°	5.6	-	-	HIGH TEMP. NEAR HEATER	4
TOTAL THIS SHEET											

NOTE: VERIFY ALL SPRINKLER QUANTITIES PRIOR TO COMMENCEMENT OF WORK. VERIFY SPRINKLER SPACING TO STRUCTURAL MEMBERS, ROOFLINE AND OTHER OBSTRUCTIONS. PROVIDE ADDITIONAL SPRINKLERS, OR RE-SPACE SPRINKLERS, WHERE REQUIRED TO AVOID SUCH UNFORSEEN OBSTRUCTIONS TO SPRINKLER DISCHARGE PATTERN PER NFPA-13. PROVIDE STANDARD ESCUTCHEONS AS REQUIRED TO AVOID OBSTRUCTIONS SUCH AS SURFACE MOUNTED LIGHTS PER NFPA-13.

NO.	REVISION	DATE
1	1ST COUNTY COMMENTS	10/03/19

*John L. Echeverri*  
10.18.2019  
JOHN L. ECHEVERRI, SET, CFPs DATE  
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NICET CERTIFICATION NUMBER 078493  
LEVEL IV AUTOMATIC SPRINKLER SYSTEMS  
LEVEL III SPECIAL HAZARDS  
NFPA CERTIFICATION NUMBER 1915  
CERTIFIED FIRE PROTECTION SPECIALIST  
THIS ENGINEERED SYSTEM IS THE SOLE PROPERTY OF  
EJ ENGINEERING GROUP, INC.

CONSULTANT  
**E-J Engineering Group**  
**E-J Flow Tests**  
**EJ2 Construction Group**  
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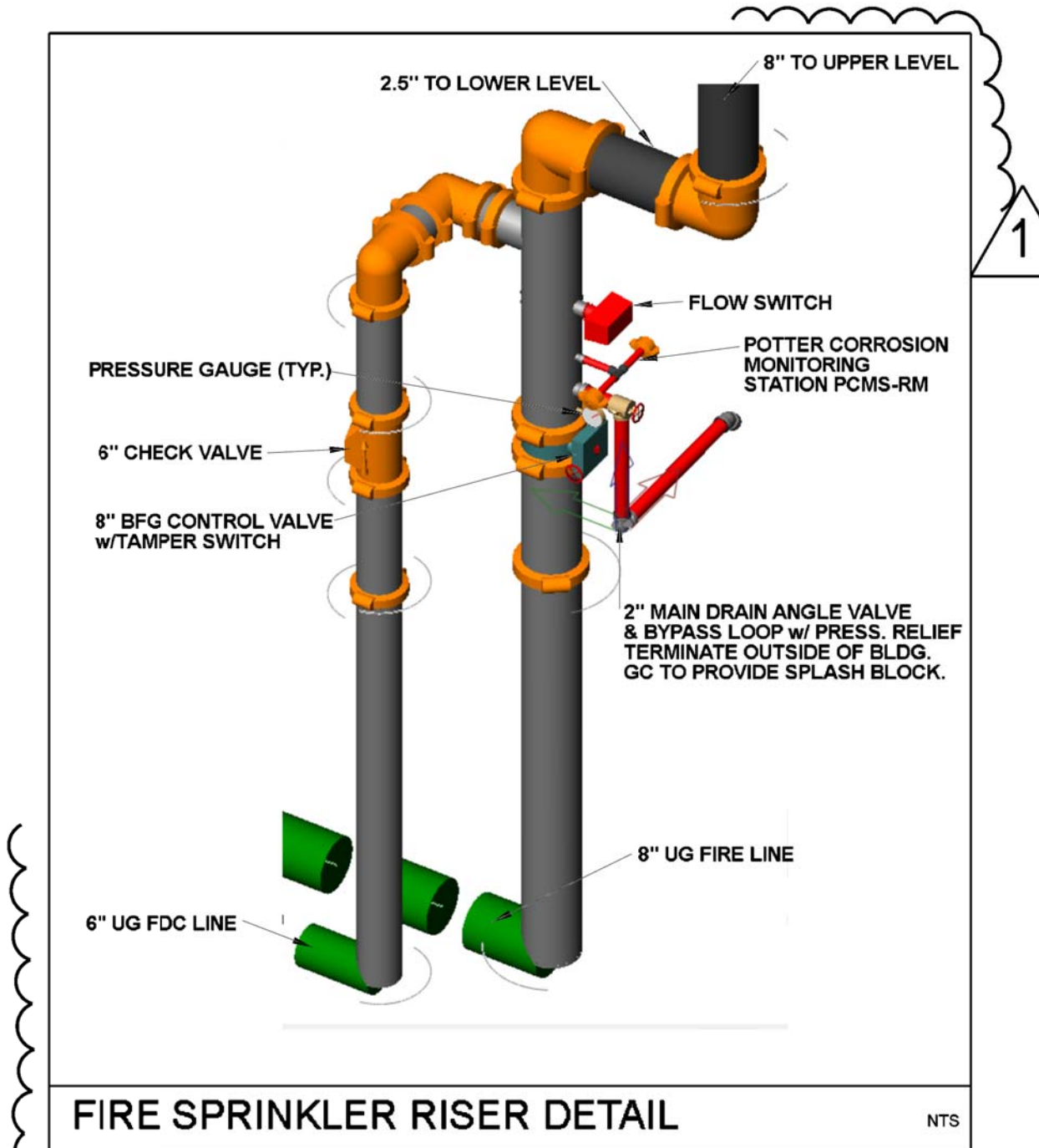
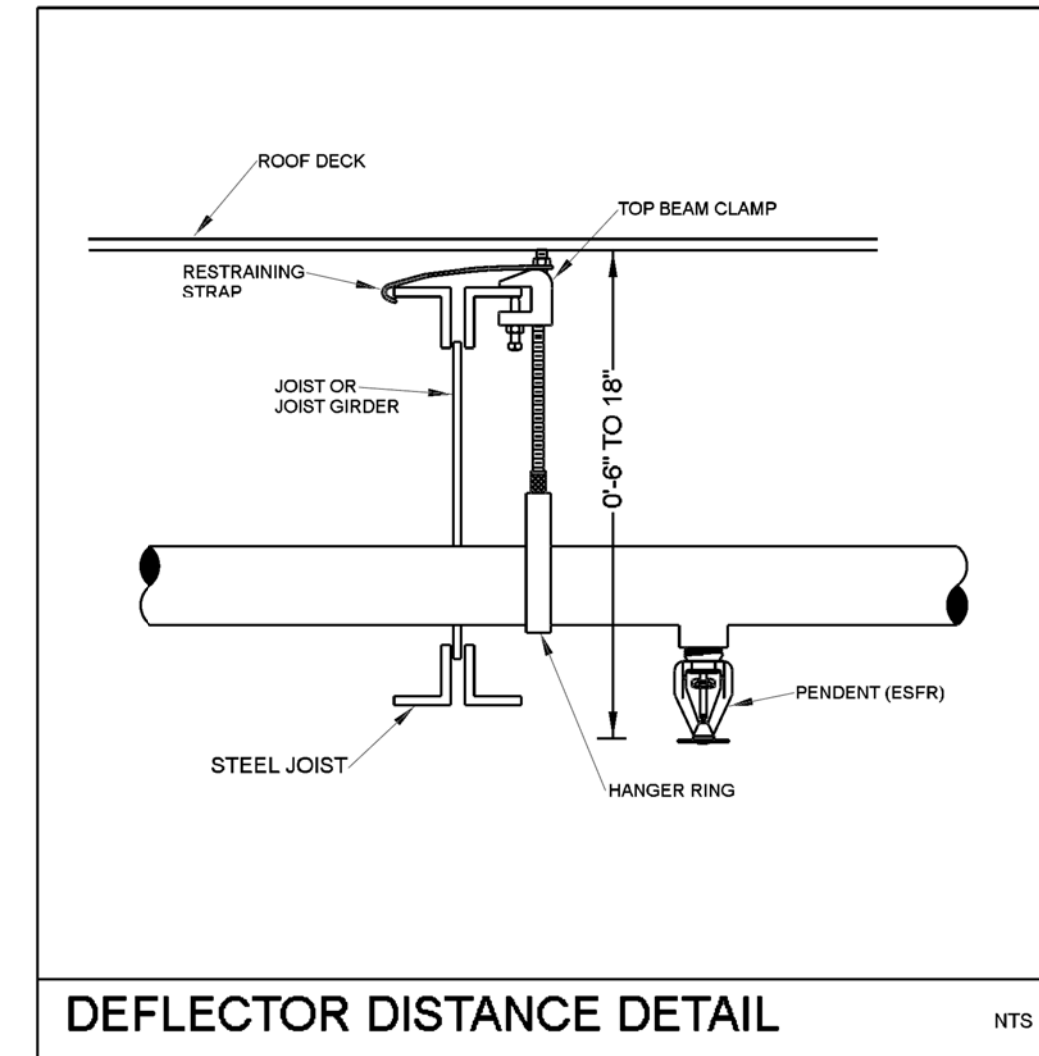
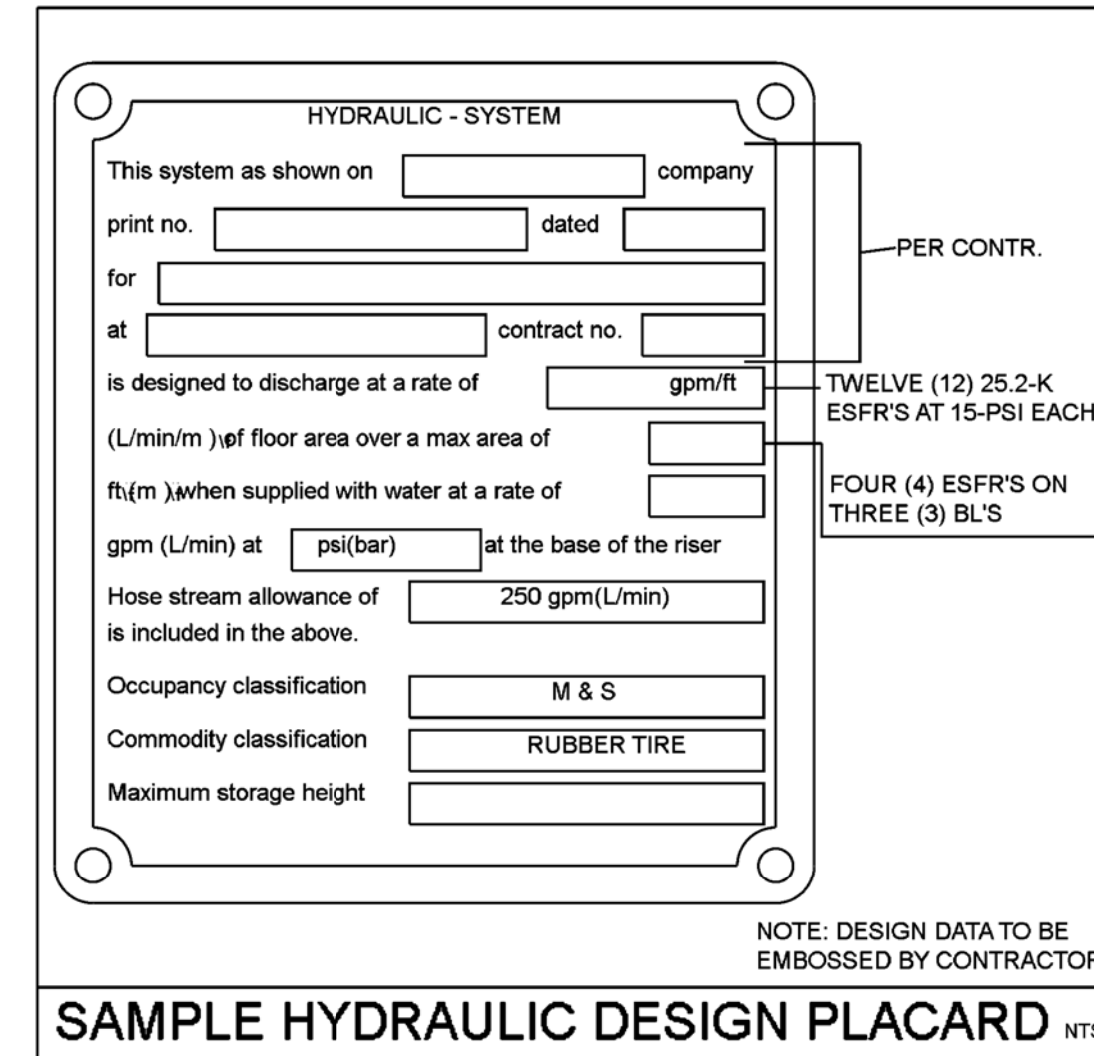
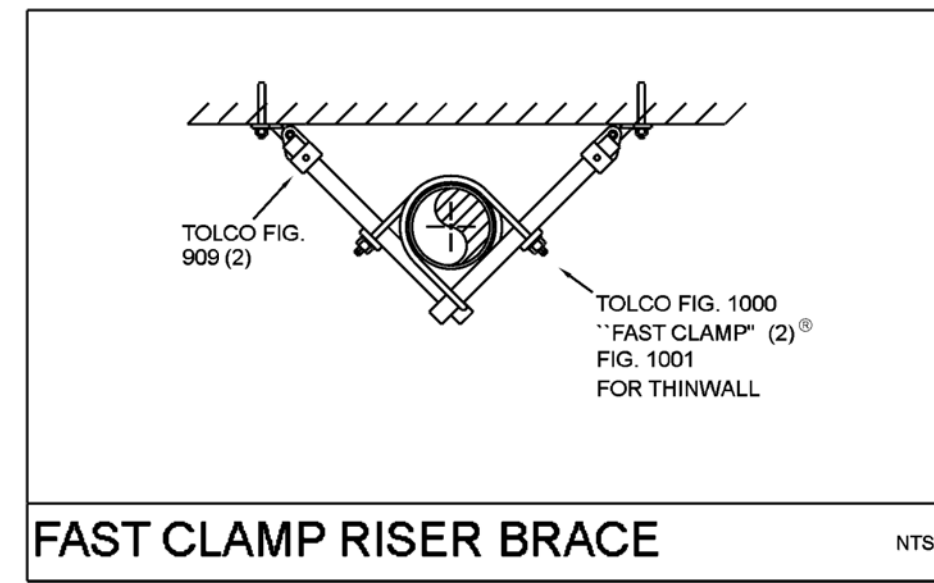
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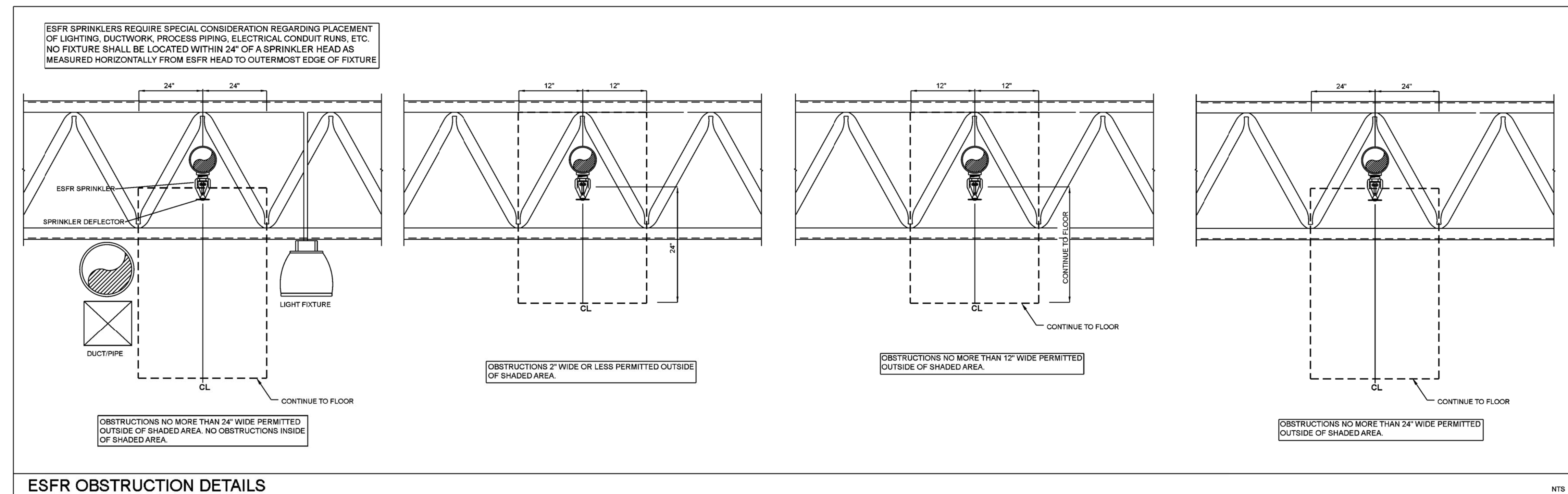
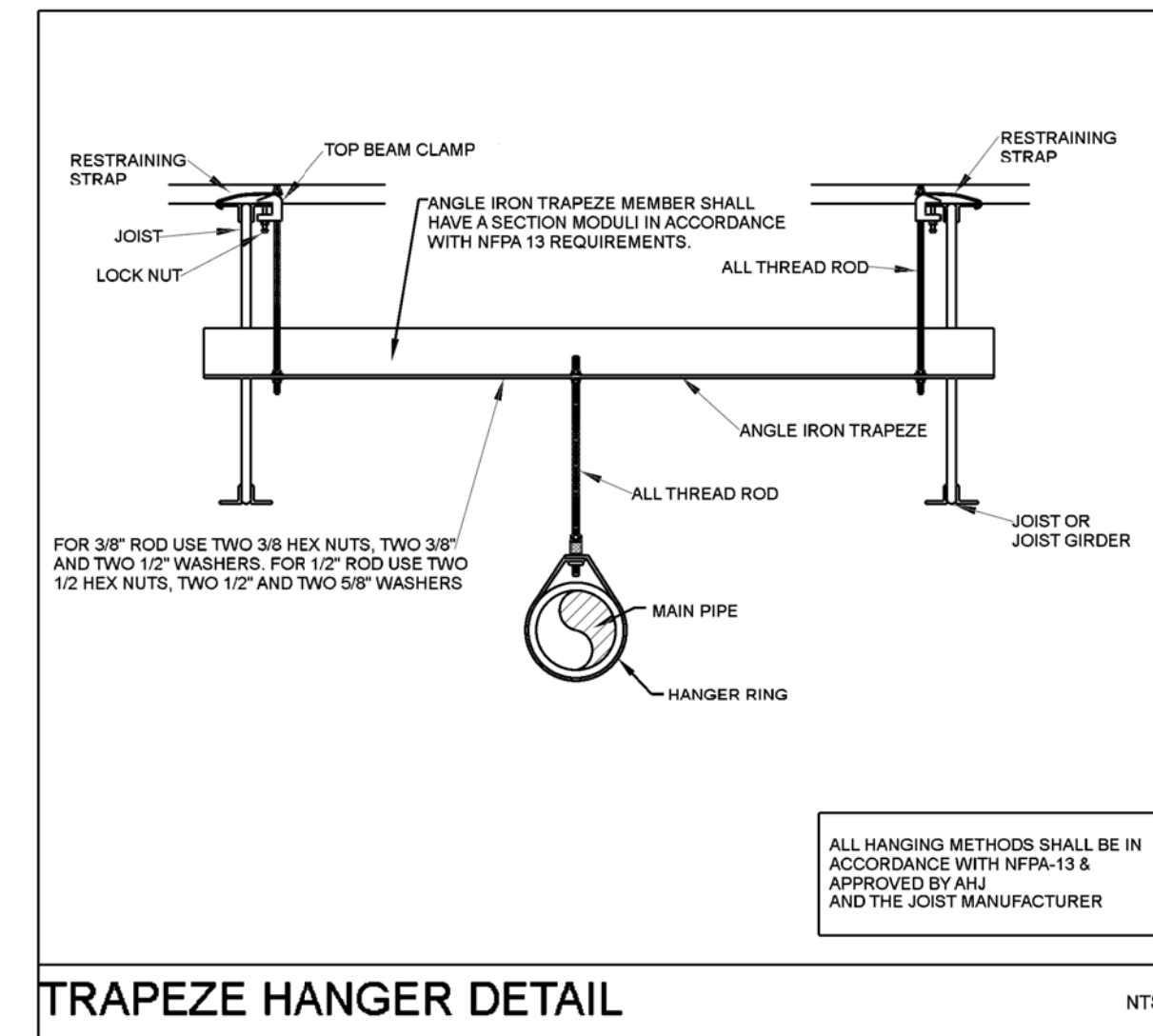
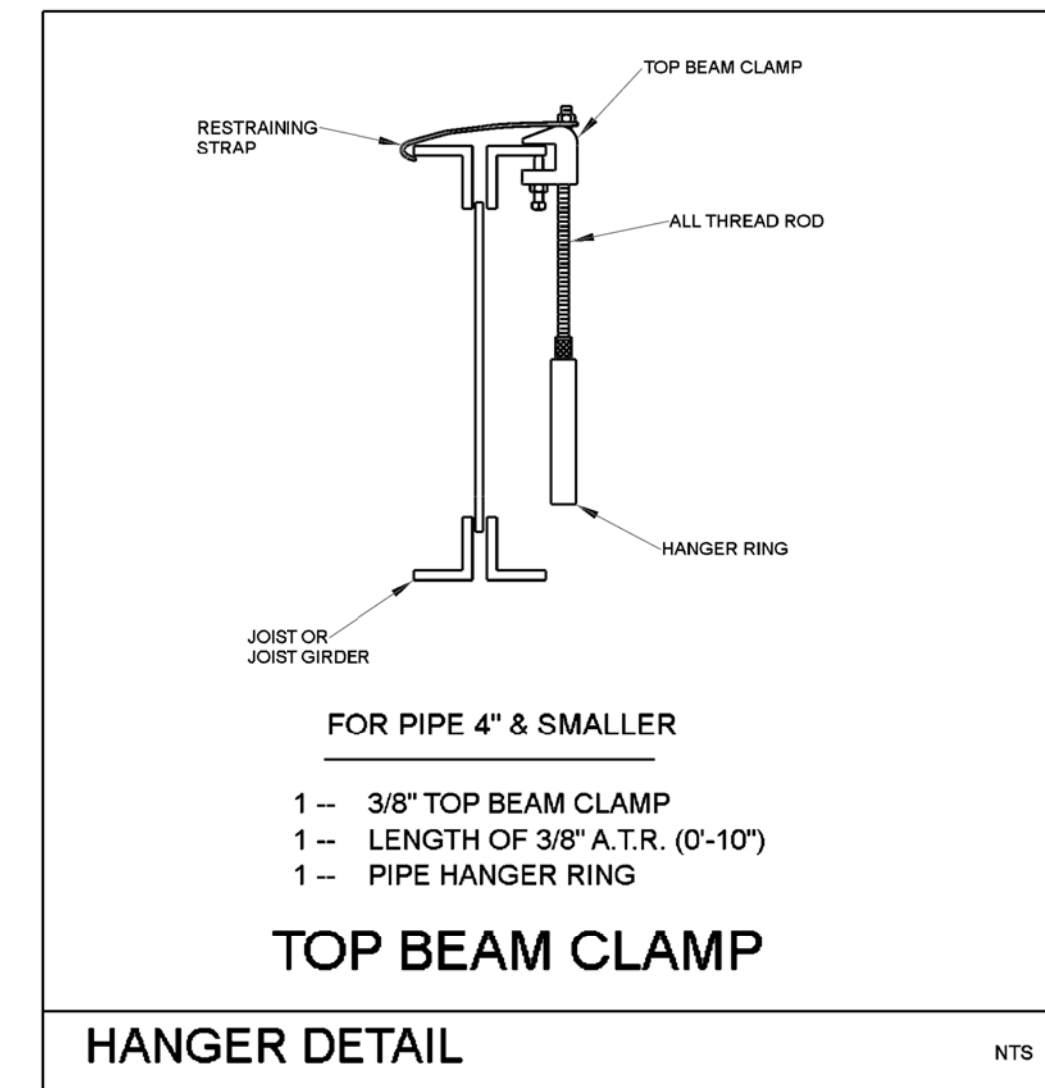
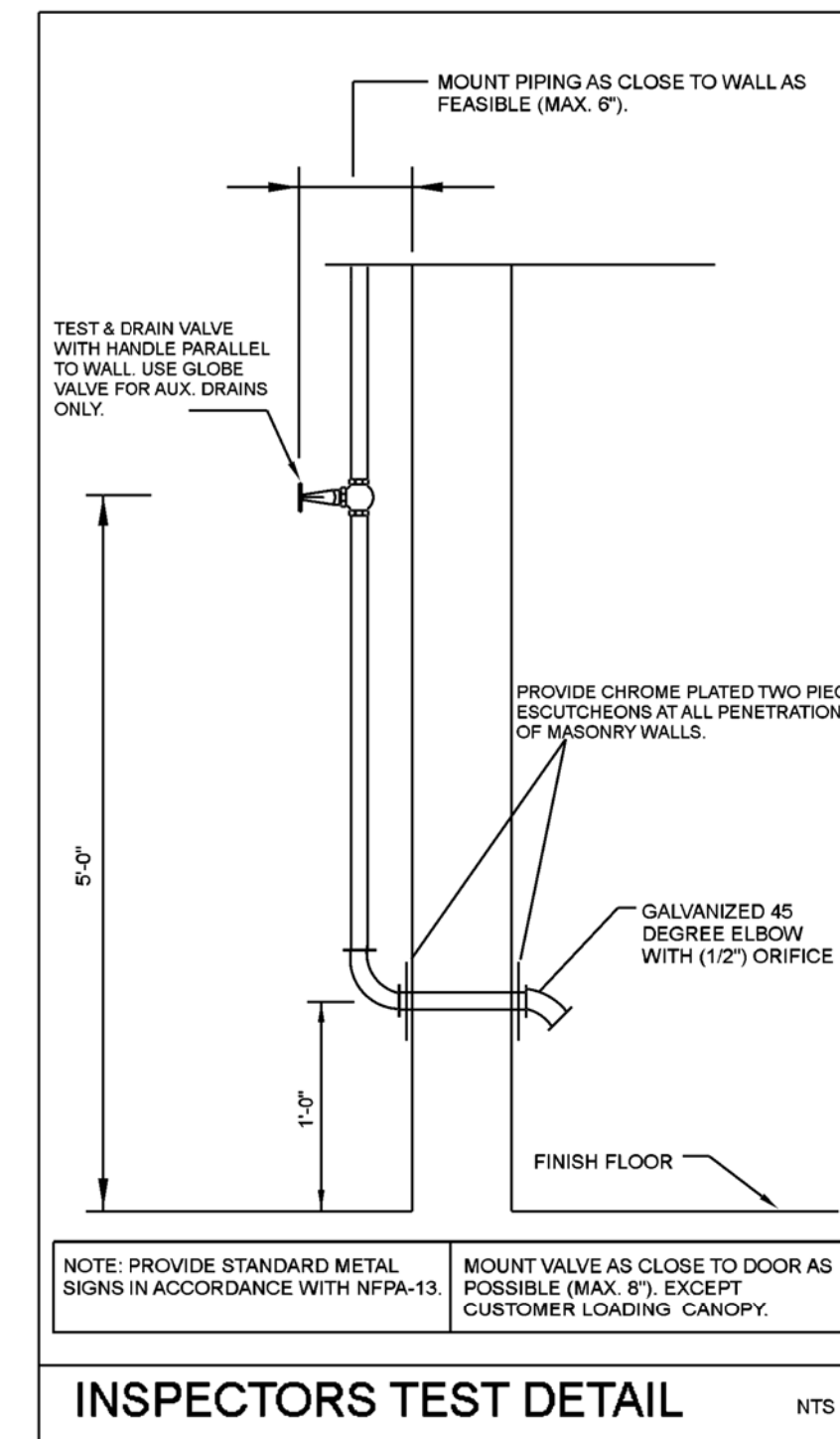
SHEET TITLE:  
FIRE PROTECTION PLANS

SHEET NUMBER:  
FP2.0





- NOTES
1. FIRE SPRINKLER SYSTEM TO BE MONITORED BY A U.L. OR F.M. LISTED CENTRAL STATION FOR FLOW, TAMPER AND TROUBLE.
  2. INSTALL DESIGN PLACARD ON EACH RISER PER NFPA-13.
  3. ALL VALVES SHALL BE A MAX. OF 7'-0" A.F.F.
  4. WHERE REQUIRED BY A.H.J. PROVIDE MEANS DOWNSTREAM OF ALL BACKFLOW PREVENTION VALVES TO ACCOMMODATE FLOW TESTS AT SYSTEM DEMAND. IF ACCEPTABLE BY AHJ, FDC CAN BE UTILIZED.
  5. PROVIDE SPARE SPRINKLER BOX (QUANT. PER NFPA-13) AND AS-BUILT CABINET.
  6. PROVIDE FLEXIBLE COUPLINGS AND BRACING FOR THE FIRE RISER AS REQUIRED PER NFPA-13.



NO.	REVISION	DATE
1	1ST COUNTY COMMENTS	10/03/19

*John L. Echeverri* 10.18.2019 DATE  
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 SCOTT FOURNIER  
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 JOHN ECHEVERRI & CESAR R.  
 623.362.1400  
 DRAWN BY:  
 JLE/CR

SHEET TITLE:  
 FIRE PROTECTION  
 NOTES & DETAILS

SHEET NUMBER:  
**FP3.0**



### SCHEDULE-40 PIPE SPECIFICATIONS

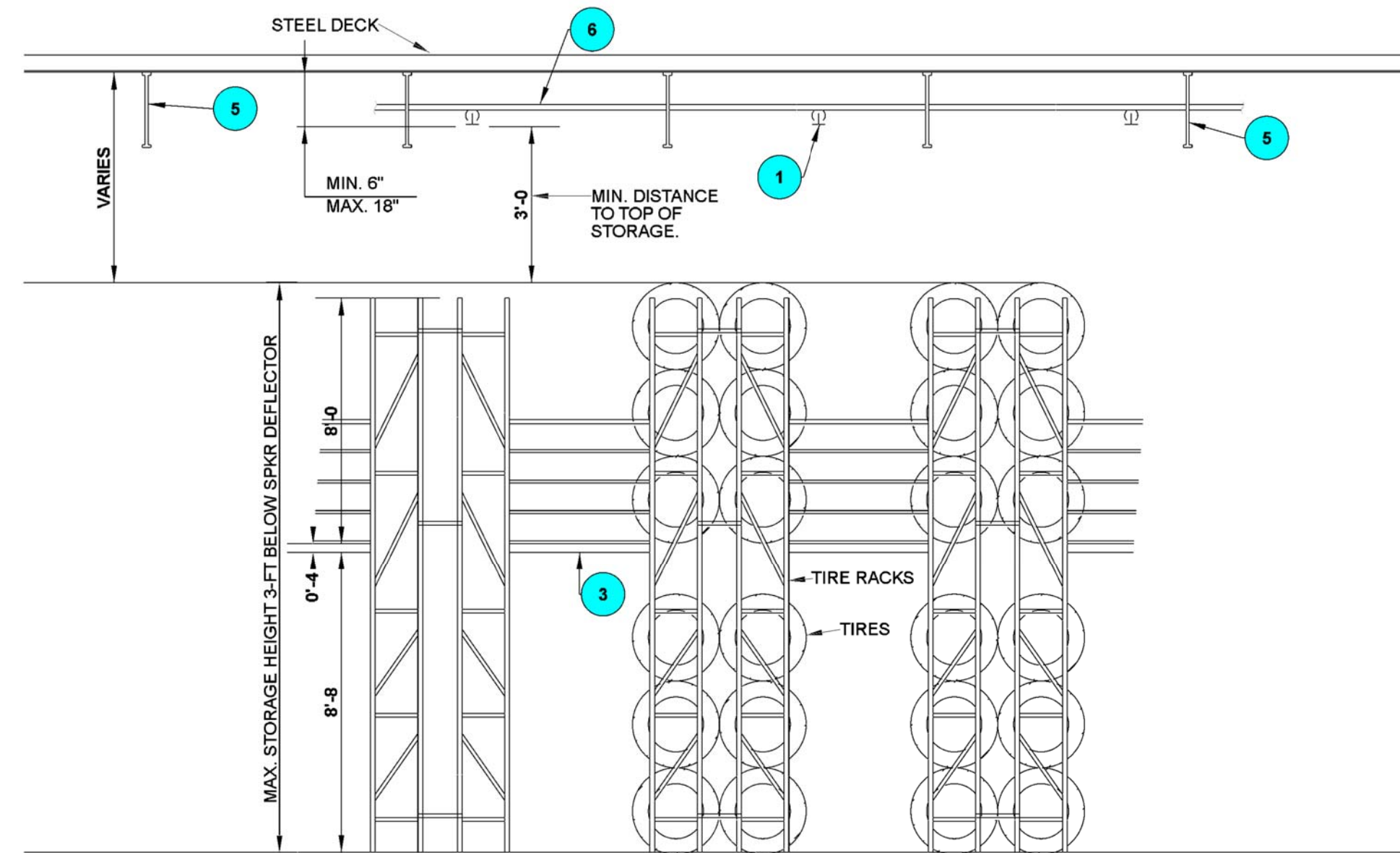
NPS	NOMINAL I.D.	WT. Lbs/Ft	WT. (H2O FILLED) Lbs/Ft
2"	2.067	3.650	5.13

### SCHEDULE-10 PIPE SPECIFICATIONS

NPS	NOMINAL I.D.	WT. Lbs/Ft	WT. (H2O FILLED) Lbs/Ft
2 1/2"	2.635	3.530	5.89
3"	3.260	4.330	7.94
4"	4.260	5.610	11.78
6"	6.357	9.290	23.03
8"	8.249	16.490	40.15

### SECTION MODULUS REQUIRED FOR TRAPEZE MEMBERS

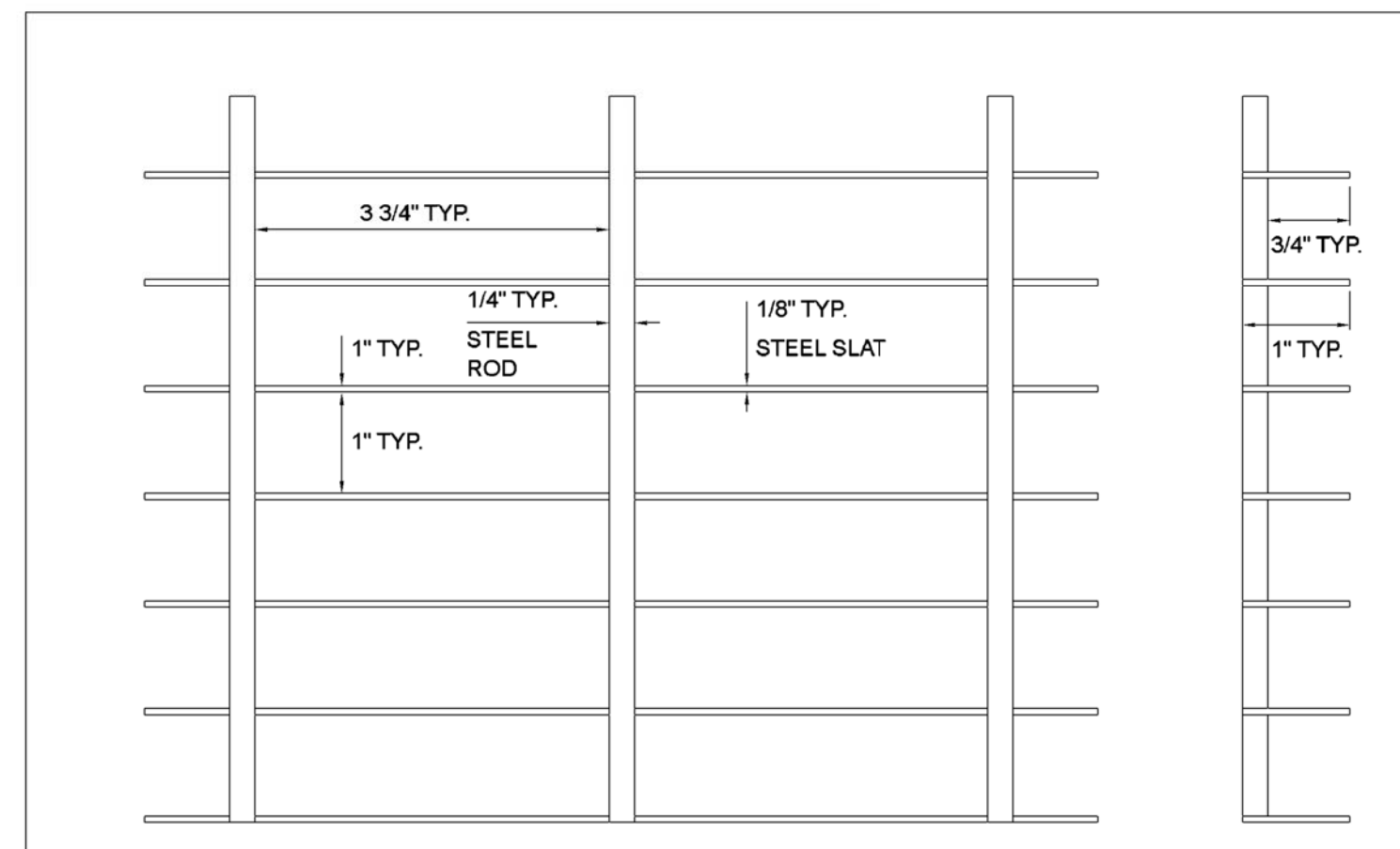
ACTUAL TRAPEZE SPAN	NOMINAL DIA. OF PIPE BEING HUNG	SCHEDULE 10 MODULUS	SCHEDULE 40 MODULUS
6'-0"	2 1/2"	.41	.44
6'-5"	2 1/2"	.44	.48
7'-5"	2 1/2"	.51	.55
6'-0"	3"	.44	.49
6'-5"	3"	.48	.54
7'-5"	3"	.55	.62
6'-0"	4"	.51	.59
6'-5"	4"	.56	.64
7'-5"	4"	.64	.74
6'-0"	6"	.71	.87
6'-5"	6"	.77	0.94
7'-5"	6"	.89	1.08
6'-0"	8"	1.02	1.20
6'-5"	8"	1.11	1.31
7'-5"	8"	1.28	1.51



### STORAGE RACK SECTION

NOT TO SCALE. REFER TO RACK AND ARCHITECTURAL DRAWINGS.

THE ABOVE SECTION(S) IS/ARE FOR REFERENCE ONLY. REFER TO APPROVED ARCHITECTURAL AND STRUCTURAL PLANS FOR EXACT SIZES, LOCATIONS, AND ALL ADDITIONAL INFORMATION THAT IS NOT SHOWN ON THIS PLAN.



NOTE: GRATE IS 86% OPEN AREA.

### GRATE DETAIL

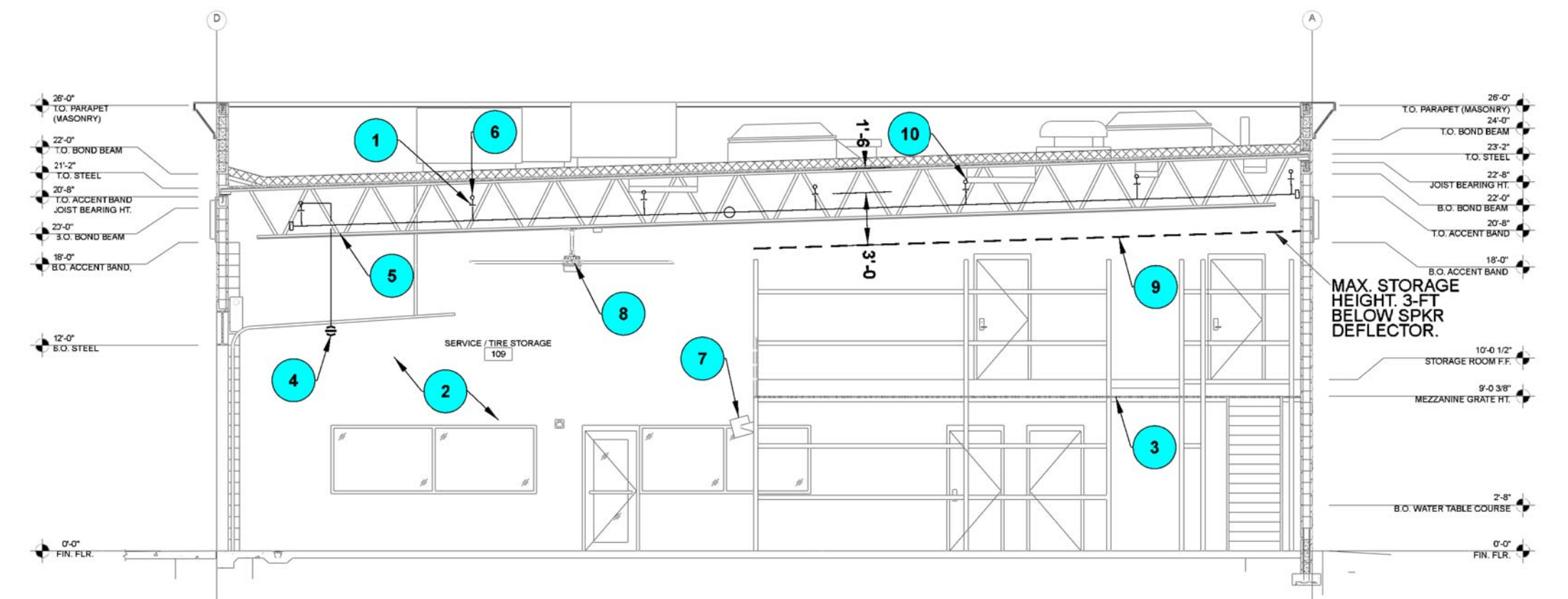
NTS

### MAX. HANGER SPACING

PIPE TYPE	NOMINAL PIPE SIZE (IN)					
	2	2.5	4	6	8	
SCH 10, 40	-	15-0	15-0	15-0	15-0	15-0

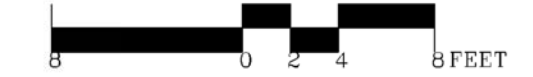
36" MAX. FOR 1" DIA.  
 48" MAX. FOR 1.25" DIA.  
 60" MAX. FOR 1.5" DIA. OR LARGER

DISTANCE BETWEEN SHALL NOT EXCEED ABOVE TABLE  
 OMIT HGR ON STARTER PIPES 6" OR LESS. NO X-MAIN HGR OMISSIONS ALLOWED  
 IF GREATER THAN 36" MAX. FOR 1" DIA.  
 IF GREATER THAN 48" MAX. FOR 1.25" DIA.  
 IF GREATER THAN 60" FOR 1.5" DIA. OR LARGER



### FIRE PROTECTION SECTION

SCALE: 1/8" = 1'-0"



### FIRE PROTECTION SECTION KEYNOTES

- 1 TYPICAL SPRINKLER. SEE FLOOR PLANS FOR ADDITIONAL INFORMATION.
- 2 FULL HEIGHT WALL TO ROOF DECK (BACKGROUND).
- 3 OPEN STEEL GRATE - RACKING BY ON-SITE RACK CONTRACTOR WILL DETERMINE FINAL GRATE HEIGHT. GRATE IS 86% OPEN FOR SAFE ACCESS TO TIRES ONLY.
- 4 OVERHEAD DOOR W/ ORD. HAZ. STD. RESPONSE HORIZONTAL SIDEWALL BELOW.
- 5 OPEN WEB STEEL TRUSS. REFER TO STRUCT. DWGS. FOR ADDITIONAL INFORMATION. (TYP)
- 6 TYPICAL BRANCH LINE. SEE FLOOR PLAN FOR ADDL INFORMATION.
- 7 SEE MECHANICAL DRAWINGS FOR HEATERS IN A DOWNWARD POSITION. NEAREST SPRINKLER SHALL BE NO LESS THAN 7'-0". ESFR SHALL BE INTERMEDIATE TEMP. RATED.
- 8 HIGH VOLUME LOW SPEED (HVLS) FAN. SEE MECH. PLANS & FP1.0 HVLS FAN NOTES FOR ADDL INFO. HVLS FAN SHALL BE 3-FT BELOW DEFLECTORS & CENTERED APPROX. BETWEEN FOUR (4) SPRINKLERS.
- 9 TOP OF STORAGE SHALL BE 3-FT BELOW SPRINKLER DEFLECTOR.
- 10 FP SUB TO COORDINATE FINAL LOCATION OF ESFR DEFLECTOR WITHIN MAX. ALLOWED DISTANCE AND CLEARANCE. ESFR DEFLECTORS ARE LOCATED BELOW LIGHT FIXTURES. COORDINATE WITH GC AND ELECTRICAL SUB TO ENSURE LIGHT FIXTURES ARE ALSO ABOVE THE BRANCH LINES AND NO CONFLICT EXISTS.

### HANGER ROD SIZES

NOMINAL PIPE SIZES	HANGER ROD SIZES
PIPE UP TO AND INCLUDING 4"	3/8"
6" AND 8"	1/2"
10" AND 12"	5/8"


### EYE ROD SIZES




NOMINAL PIPE SIZES	W/BENT EYE	W/WELDED EYE
PIPE UP TO AND INCLUDING 4"	3/8"	3/8"
6"	1/2"	1/2"
8"	3/4"	1/2"

### FASTENERS - MIN. BOLT SIZE (CONCRETE or STEEL)

NOMINAL PIPE SIZES	SIZE OF BOLT
PIPE UP TO AND INCLUDING 4"	3/8"
6" AND 8"	1/2"

NO.	REVISION	DATE
1	1ST COUNTY COMMENTS	10/03/19


**10.18.2019**  
 JOHN L. ECHEVERRI, SET, CPFS  
 THESE CONSTRUCTION DOCUMENTS AND ASSOCIATED HYDRAULIC CALCULATIONS (WHERE SUBMITTED) HAVE BEEN PREPARED BY:  
 JOHN L. ECHEVERRI, SET, CPFS  
 NICET CERTIFICATION NUMBER 078493  
 LEVEL IV AUTOMATIC SPRINKLER SYSTEMS  
 LEVEL III SPECIAL HAZARDS  
 NFPA CERTIFICATION NUMBER 1915  
 CERTIFIED FIRE PROTECTION SPECIALIST  
 THIS ENGINEERED SYSTEM IS THE SOLE PROPERTY OF  
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**5036 HIGHWAY 90**  
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SHEET TITLE:  
 FIRE PROTECTION SECTION & DETAILS

SHEET NUMBER:  
**FP3.1**