

**From:** [Roger Lehman](#)  
**To:** [Boyle, Douglas J \(DHS\)](#)  
**Cc:** [Stuart Millner](#); [Johnson, James D.](#); [Main, Greg](#); [Jim Greeson \(jimgreeson@att.net\)](#); [Gordon, Philip](#); [Guedel, Justin K](#); [Sprecher, Bryston](#); [NEIL KRUEL](#)  
**Subject:** Re: Sprinkler Plans Garvin Business Center  
**Date:** Friday, July 2, 2021 7:41:14 PM  
**Attachments:** [image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[variance 16-03-61 commission report.pdf](#)  
[7-1-21 Variance summary.docx](#)  
[Overall fire suppression plan.png](#)  
[Armor 7-1-21 QuoteGarvin Business Center \(2\).pdf](#)  
[BCS FA Plan Garvin Business Center \(1\).pdf](#)  
[Armor 7-1-21 QuoteGarvin Business Center \(2\).pdf](#)

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Doug, and Commission Members,

I appreciate you getting back to me. I now apologize for getting back to you after close of business on a Friday before a holiday weekend which will only give 1 day before the Commission meeting.

Garvin Business Center has been actively pursuing the Commission's directive on getting design, quotes and contracts for the sprinkler system

We pushed the contractor to expedite the design, which we received last week and the quote, which we received yesterday.

I have spoken to Greg Main today and he informed me neither he nor Chief Connally would be available to meet with us on Tuesday as we have requested to discuss this issue and they would not be on the Commission zoom meeting either.

I did explain to him our circumstance and our desire to discuss the potential for alternate compliance as provided in the original variance but not in the sanction.

I have attached a copy of the original 2016 variance and a 2 page summary of where we are today. I have also attached the sprinkler plan approved by EFD and a copy of the cost estimate we received **yesterday** from the contractor.

I hope all understand that this quote only covers 25% of the building (S1 occupancies).as shown on attached plan. Please review the original variance, the 2 page summary, sprinkler plan and quote and the proposed alternative Monitored NFPA 72 Automatic Fire Alarm Smoke/heat detection plan and quote. We can sign the FA proposal within days after the Commission determines if it is acceptable.

We will be available for discussion on Commission Zoom.

Thank you!

Roger

On Tue, Jun 29, 2021 at 3:23 PM Boyle, Douglas J (DHS) <[DoBoyle@dhs.in.gov](mailto:DoBoyle@dhs.in.gov)> wrote:

Roger,

I'm sorry it has taken me almost a week to respond back to you. I was out of the office Wednesday through Friday last week.

Thank you for providing me the revised sprinkler plans. I will definitely pass these plans along to the Commission at next week's meeting. I don't necessarily want to speak for the Commission, as I am not certain what additional information the Commission may request at next week's meeting, but, ideally, I think a letter, specifying who (sprinkler/fire suppression contractor) has been retained by Mr. Millner to perform the necessary work and any details regarding the scope of the work that will be performed by the contractor in the coming months, will be helpful information for the Commission to have in order to satisfy the first requirement of the Commission's Letter of Reprimand (sanction order).

Feel free to send me any other documentation you have by the end of this week if at all possible. If you send me any additional documentation by Tuesday, July 6, 2021, I will try to make sure it is provided to the Commission, since the Commission's order gives Mr. Milner thirty days from the date of service of the order to comply with the first requirement of the order.

Sincerely,

**Douglas J. Boyle**

Director of the Indiana Fire Prevention and Building Safety Commission

Indiana Department of Homeland Security

Indiana Government Center South, Room E208

302 W. Washington Street, Indianapolis, IN 46204

Cell: (317) 650-7720

Email: [doboyle@dhs.in.gov](mailto:doboyle@dhs.in.gov)

Web: <https://www.in.gov/dhs/>



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**From:** Roger Lehman <[roger@rlehmanandson.com](mailto:roger@rlehmanandson.com)>  
**Sent:** Wednesday, June 23, 2021 7:26 AM  
**To:** Boyle, Douglas J (DHS) <[DoBoyle@dhs.IN.gov](mailto:DoBoyle@dhs.IN.gov)>; Stuart Millner <[smillner@thegarvinbusinesscenter.com](mailto:smillner@thegarvinbusinesscenter.com)>; Johnson, James D. <[jdjohnson@jacksonkelly.com](mailto:jdjohnson@jacksonkelly.com)>  
**Subject:** Fwd: Sprinkler Plans Garvin Business Center

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Doug,

In compliance with Commission Sanctions instruction to communicate progress, attached is sprinkler plan submitted today to EFD for AHJ acceptance. Once we receive approval from them, plans will be filed with Plan Review.

Please advise if additional info is needed.

Roger

----- Forwarded message -----

**From:** Roger Lehman <[roger@rlehmanandson.com](mailto:roger@rlehmanandson.com)>  
**Date:** Wed, Jun 23, 2021 at 6:12 AM  
**Subject:** Fwd: Sprinkler Plans Garvin Business Center Var 16-03-61  
**To:** <[bb@armorfp.com](mailto:bb@armorfp.com)>

----- Forwarded message -----

**From:** Roger Lehman <[roger@rlehmanandson.com](mailto:roger@rlehmanandson.com)>  
**Date:** Wed, Jun 23, 2021 at 6:07 AM  
**Subject:** Sprinkler Plans Garvin Business Center Var 16-03-61  
**To:** Main, Greg <[Gmain@evansvillefiredepartment.com](mailto:Gmain@evansvillefiredepartment.com)>  
**Cc:** Stuart Millner <[smillner@thegarvinbusinesscenter.com](mailto:smillner@thegarvinbusinesscenter.com)>, NEIL KRUEL <[neil@omegamanagementllc.com](mailto:neil@omegamanagementllc.com)>, Johnson, James D. <[jdjohnson@jacksonkelly.com](mailto:jdjohnson@jacksonkelly.com)>, <[bill@armorfp.com](mailto:bill@armorfp.com)>, <[ike@armorfp.com](mailto:ike@armorfp.com)>

Greg,

Please review the attached sprinkler plans with Chief Connelly and determine if they are

acceptable to him. If technical questions please contact Bill Bridwell. If acceptable, please advise us asap and we will proceed to quotes.

Thank You!

Roger

--

**Roger L. Lehman, CBO**

**RLEHMAN & SON CONSULTING**

**Cell: 812.589.0331**

[roger@rlehmanandson.com](mailto:roger@rlehmanandson.com)

*“Serving all of your Building, Fire, Construction Management, and Life Safety Needs”*



"He is no fool who gives what he cannot keep to gain what he cannot lose." Jim Elliot

--

**Roger L. Lehman, CBO**

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## **Garvin Industrial Park 2008-July 1, 2021**

Sprinkler System violation order issued by State Fire Marshal April 21, 2008

Correction attempts, repair estimates obtained.

As system was beyond salvaging in SFM view recommendation was made by State Fire Marshall and State Building Commissioner and State Director of Code Enforcement to remove sprinkler system. Sometime in 2009.

GIP determined they would prefer to keep a portion of the system operational as it would provide no less coverage than having no sprinklers.

GIA intends to continue to provide, and will certify as part of this variance request, annual inspections by a certified sprinkler contracting company, and agrees to repair any leaks and problems within the existing sprinkler system or with the monitoring/notification component to keep the system functional. GIA's insurance carrier annually inspects this facility and GIA maintains all aspects of fire and life safety in conformance with their requirements. Mandating total NFPA 25 Sprinkler testing and maintenance Standards on this extremely old, but functioning, system would cause GIA to consider shuttering the building which would then be destined to become another unusable building shell in this already struggling economy.

In March of 2010 a Variance was filed with State Fire and Building Services to keep part of system which was working in place, maintaining system as well as possible (not to NFPA 25) and labeling all non-functioning riser areas with signage indicating that the sprinkler system was not compliant with current codes. Also required was annual dry test and fire pump test. Monitoring was to be maintained and leaks repaired as they became evident. No further occupancy of 2<sup>nd</sup> floor unless approved by EFD.

Variance meeting minutes: Variance 10-02-14 Garvin Industrial Associates, Evansville, was represented by Roger Lehman, RLehman Consultants. An old industrial plant had been purchased in 1995 which had a wet sprinkler system, pump house and electric pump. It had been changed to a dry system which is no longer compliant with current NFPA 25, and would cost \$250,000 to upgrade for a building valued at \$275,000. The request was to create a maintenance program to be approved by the Commission as the standard for this building. They preferred to keep the system on, providing at least partial protection, with an annual dry test and fire pump test. It was to be monitored 24/7 with valve-off monitors, and leaks were to be repaired as they occurred. Occupancy on the second level wasn't to be increased and an NFPA 664 dust collection system was to be installed in the woodworking area. Commissioner Christoffersen moved to approve with the second by Commissioner Hawkins. It was voted upon and carried with one nay vote.

April 6, 2010 Variance was approved.

As owner assumed all systems would fail and repeated leaks were causing a maintenance nightmare, In 2015 GIP finally determined we needed an exit strategy for maintenance of the system the state wanted us to remove since 2008.

In early 2016, a variance was developed to begin to eliminate the systems a little at a time. The main leakage was from the 2nd floor so we received approval to disconnect all 2<sup>nd</sup> floor piping

from system, abandon in place and protect area with beam smoke detectors which has been done. Monitoring has been reinstated and is functioning as intended. No occupancy classification changes have been necessary and no additional 2<sup>nd</sup> floor occupancy has been requested.

Part 2 of the 4 part “sprinkler system deletion” strategy involved leaving an option for the owner to utilize a few of the systems as code compliant wet systems if they were to be found functional. To our surprise, once the 2<sup>nd</sup> floor piping was disconnected, all of the main level dry systems were operational. The idea of removing all the heads by March 2018 was tied to the assumption that most, if not all, of the systems would be abandoned and removing the heads would remove the appearance of being sprinkler protected.

Part 3 of the approved 2016 variance was to require removal of the main level piping on each system that was abandoned when the space was vacated and prior to re-occupancy. There was no time limit attached to this condition.

The last part of the 2016 Variance requires that any space, current or future, that is not B, F2 or S2 and is not protected by a sprinkler system would be protected by smoke/heat detection system tied to monitoring service with horn strobe devices in the tenant space and immediately adjacent occupied spaces for early warning. 75-80% of the building would need nothing, no sprinkler and no alarm system, under this variance -just remove heads and or piping as occupancies are B, S2, F2 or the space is vacant.

The owner in an attempt to comply with the conditions of the 2016 variance, looked into converting to wet systems which would trigger NFPA 13 and 25 compliance, as a majority of the building is unheated and the sprinkler contractor advised against changing unless the building is heated.

2018 - a sampling check of sprinkler heads has been made and they are still serviceable. Internal piping test has been completed and some piping is still serviceable as-is and some needs flushing. (Cost about \$12-15,000 per system, 10-12 systems)

2020 update: New S1 high hazard, high piled storage plastics operation moved in without getting approval from EFD. GBC has now institutionalized monitoring and instituted replacement program for out of service accelerator pumps, with plans to replace 2 per year.

2021 update: EFD appropriately filed for possible sanctions against 2016 variance which triggered the High piled, high hazard plastics facility to vacate the space after GBC commissioned sprinkler engineer evaluation and determined it was not feasible to upgrade system. The Main sprinkler supply line froze and broke resulting in nearly 3 weeks of repairs and fire watch coverage, immediately followed by an underground break in the main line. Rlehman and Son Consulting have been retained to review other potential high piled storage areas, all which will be reduced in height of combustible materials to eliminate high piled



storage designation. Storage space floorplans are being developed and information provided on type and height of materials stored. No future leases of S1 occupancy spaces will be allowed without Rlehman and Son Consulting and EFD review.

Right now the whole building is protected by an admittedly reduced capacity sprinkler system, but with all sprinklers risers monitored it is much safer than required (only S1 would require monitored fire alarm). The high hazard plastics occupancy is vacant, the high piled storage (in existence since 2010) has been adjusted to comply (or will comply this week) with current NFPA 13 code (combustibles under 12' and plastics - boxes of restaurant take out containers and cups under 5'). IBC Code in effect at time these occupancies began in 2008 was 15' for combustibles and 6' for plastics. Owner is marking racks for tenants to visualize plastic and combustible allowable storage height.

Owner was planning on attempting to capitalize a sprinkler replacement program at a cost of around \$200,000. Sprinkler plans were engineered and approved by EFD, but when quote for installation was received July 1<sup>st</sup> it was over \$380,000 just to sprinkler the S1 tenant spaces (6 spaces) and central drive-thru. The owner cannot afford nor is able to obtain financing to pay for the new sprinkler. We wish to comply with 2016 variance by installing monitored smoke/heat detection NFPA 72 fire alarm system in the S1 occupancies and remove the operating dry system altogether. Dry system will remain operational until fire alarm system installed in S1 occupancies. Fire Alarm contractor (BCS) states parts delivery and install is about 6 weeks (System to be completed by September 1, 2021). The alarm company is willing to finance this installation. In the meantime, owner will begin shutting down and removing the sprinkler and monitoring systems in vacant spaces first, then will proceed to S2 and F2 and B occupancies. EFD will receive a weekly report from GBC on which risers and spaces are being cycled out.

Attached are copies of the sprinkler plan and quote, the FA plan and FA Quote which the owner will sign as contract, if program proposal is approved by commission.



**MICHAEL R. PENCE, Governor  
STATE OF INDIANA**

**DEPARTMENT OF HOMELAND SECURITY**

**DAVID W. KANE, EXECUTIVE DIRECTOR**

Indiana Department of Homeland Security  
Indiana Government Center South  
302 West Washington Street  
Indianapolis, IN 46204  
317-232-3980

Stuart B Milner  
Garvin Industrial Associates, LP  
102 EAST SPINGFIELD AVE  
  
UNION, MO 63084

March 4, 2016

Dear Stuart Milner,

This letter provides notice below of the action taken by the Fire Prevention and Building Safety Commission on your application(s) for a variance(s) from the Commission's rules under IC 22-13-2-11 and 675 IAC 12-5. The Commission considered the application with all alternatives offered, as a part of its published agenda, at its regular meeting on March 1, 2016.

Project Number	Project Name	Variance Number
0	Garvin Industrial Park	16-03-61

**Commission Conditions**

**Disconnect and abandon in place upper level dry sprinkler system by 09/01/16. Re-establish and maintain monitoring of remaining systems.** Maintain existing tenants and occupancies. Any new tenants will be limited to B, S2 or f2 occupancies, other occupancies will comply with all current codes including but not limited to required fire area separations and/or fire sprinkler protection. No increased occupancy on upper level without approval of EFD. **Upper level will be protected by beam smoke detectors.** Remove all heads on all lower level sprinkler systems by 03/01/18. Owner desires to have option of upgrading one or more of the main level 14 riser systems to wet system and will comply with NFPA 13 and 25 for those systems. Will be filed with Plan Review as they are upgraded. **If lower level systems are determined to be non-salvageable, visible piping will be removed when space is vacated and prior to re-occupancy. Spaces with current occupancies and future occupancies other than B, S2 or F2, and with sprinkler systems that are found non-salvageable will be protected by smoke detection and alarm system that will notify central station and will activate horn strobe device in the tenant space and adjacent spaces.**

Edition	Code	Code Section	Commission Action & Date
12-4-9	Maintenance of Existing Buildings and Structures	IFC 2014 Sec 901.6.1	Approved with Commission condition(s) 03/01/2016

You are advised that if you desire an administrative review of this action, you must file a written petition for review at the above address with the Fire Prevention and Building Safety Commission. Your petition must fully identify the matter for which you seek review no later than eighteen(18) calendar days from

the above stated date of this letter, unless such date is a Saturday, Sunday, legal holiday under state statute, or day that the Department of Homeland Security's offices are closed during regular business hours; in which case the deadline would be the first day thereafter that is not a Saturday, Sunday, legal holiday under state statute, or day that the Department of Homeland Security's offices are closed during regular business hours. If you do so, your petition for review will be granted and an administrative proceeding will be conducted by an administrative law judge appointed by the Fire Prevention and Building Safety Commission. If you do not file a petition for review, this action will be final. Please be further advised that you may request an opportunity to informally discuss this matter prior to filing a petition for review. Such informal discussion, or request therefore, does not extend the deadline for filing a petition for review and, therefore, any request for an informal discussion should be made promptly, preferably by telephone or e-mail, upon receipt of this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Dean M. Illingsworth". The signature is written in a cursive style and is contained within a light gray rectangular box.

Dean Illingsworth  
State Building Law Compliance Officer,  
Department of Homeland Security



LOCATIONS:

ARIZONA – ARKANSAS – CALIFORNIA – COLORADO – IDAHO – ILLINOIS – INDIANA – IOWA – KANSAS – KENTUCKY – LOUISIANA – MINNESOTA – MISSOURI – MONTANA – NEBRASKA – NEVADA – NEW MEXICO – NORTH DAKOTA – OKLAHOMA OREGON – SOUTH DAKOTA – TEXAS – UTAH – WASHINGTON – WYOMING

SERVICES:

FIRE PROTECTION – SUPPRESSION – DETECTION – ENGINEERING – EXTINGUISHER – FIRE ALARM INSTALLATION – SERVICE – INSPECTION – COMMERCIAL – INDUSTRIAL – RESIDENTIAL – INSTITUTIONAL SPECIAL HAZARDS – HIGH TECH – DEFENSE – HANGARS – RETROFIT – MAINTENANCE – 3D/BIM DESIGN

Page 1

July 1, 2021

Reference: **Garvin Business Center**  
Subject: **Fire Sprinkler System**

Addenda: **N/A**  
Division: **N/A**

**BASE PRICE INTERIOR FIRE SPRINKLER WORK**

Code(s) Utilized:	NFPA 13 and IBC	Taxes:	Yes
Underground:	No	Prevailing Wage:	N/A
Work Starts at:	Existing Main	Sprinkler Piping:	Black Sch 10 & 40
System Type(s):	Wet & Dry	Sprinklers @ ACT:	N/A
Special System(s):	No	Sprinklers @ Hard lids:	Chrome, Semi-Recessed
Design:	Yes	Sprinklers @ Exposed:	Brass Upright or Pendant
BIM:	No	Sprinklers @ Walls:	N/A
Backflow:	N/A	Centerline of Tile:	Yes
FDC:	N/A	Lifts:	Yes, for our work
Fire Pump NFPA 20:	No	Coring:	N/A
Standpipes NFPA 14:	No	Fire Caulking:	Yes, for our work

**SCOPE SUMMARY:**

Modify an existing wet pipe fire sprinkler system(s) per NFPA

- Tie into existing piping to install sprinklers and mains per drawing supplied by Armor
- Demo existing piping not to be reusable in area of listed work

Total Cost: **\$384,700.00**

**BASIS:**

Base Price indicated above may be negotiated for value engineering, scope modifications, addenda, add/deduct alternates or for other reasons necessary and agreed to. Pricing is effective for a period of 30 days after which it may become subject to review. Pricing based upon adequate water supply being available. ACAD model drawings to be provided free of charge for use in shop drawing preparation. Payment terms are net 30. Standard WSFP terms and conditions apply. COVID-19 special conditions apply as stated below.

**EXCLUDED and/or NOT PROVIDED:**

Vaults – Tanks - Fire Pump(s) - Fire Alarm Work - Electrical Work - Preparation for/or Painting - After Hours Work - Patching Pavement - Clean Agent System(s) - Tap fee's-Hot taps  
Fire watch

1196 5<sup>th</sup> STREET  
HENDERSON, KY 42420  
24/7 SERVICE LINE – (270) 830-7515  
WWW.WSFP.COM



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**CONTACT & CONNECT**



**COVID-19:**

Due to the existing pandemic involving COVID-19 and the constantly evolving situation, which includes shut downs of definite and indefinite durations by the federal, state, and local governments, quarantines, business shut downs, transportation interruptions, disruptions in the supply chain of certain materials, supplies, or equipment, disruptions to public services, temporary suspensions of work on site, or the unavailability or reduced availability of manpower, the parties agree that if Subcontractor (WSFP) is hindered, prevented or delayed at any time in the commencement or progress of the work for a cause arising from or related to COVID-19, including but not limited to any of the examples above, Subcontractor shall be entitled to an extension of the Contract time. Furthermore, Subcontractor shall be entitled to additional compensation for increased costs associated with the high demand for specified materials, for increased costs associated with any proposed substitute approved by Contractor or Owner, or any other similar cost increase outside the control of Subcontractor.

**RAW MATERIAL and SUPPLIER COSTS:**

This proposal is based on current material prices. However, due to volatility in the steel market sudden price increases may occur. In the event of a "material" increase in pipe, fitting and/or component pricing whether due to delay or other economic factors, through no fault of Armor Fire Protection, an equitable adjustment will be added to our contract amount by means of a change order equal to the amount of the "material" increase. A change in price will be considered "material" when the cost of any item(s) increases 5% or more from the date of this proposal to the date of material purchase.

By signing below, I acknowledge and certify that I am fully authorized to accept this proposal in its entirety and accept this proposal for the scope of work for the associated costs described herein.

\_\_\_\_\_

*(signed)*

\_\_\_\_\_

*(date)*

\_\_\_\_\_

*(print)*

\_\_\_\_\_

*(title)*

Sincerely,

*William D Bridwell*

Armor Fire Protection

**TERMS AND CONDITIONS:**

The Proposal, together with these Terms and Conditions, constitute the entire agreement ("Agreement") of the parties.

1. TO THE FULLEST EXTENT PERMITTED BY LAW, CUSTOMER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS COMPANY AND ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, PARENT COMPANY, SUBSIDIARIES AND AFFILIATES, (HEREINUNDER REFERRED TO AS "INDEMNIFIED PARTIES") FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, LOSSES, EXPENSES OR LIABILITIES OF ANY KIND, INCLUDING ATTORNEY'S FEES, (HEREINUNDER REFERRED TO AS "DAMAGES"), ARISING OUT OF OR IN ANY WAY RELATING TO OR CONNECTED WITH THE WORK PERFORMED BY THE COMPANY UNDER THIS AGREEMENT (WHETHER ARISING DURING OR FOLLOWING THE PERFORMANCE OF THE WORK). THE FOREGOING OBLIGATIONS TO DEFEND, INDEMNIFY AND HOLD HARMLESS SHALL BE ENFORCEABLE REGARDLESS OF WHETHER SUCH "DAMAGES" ARE ACTUALLY OR ALLEGEDLY CAUSED BY THE NEGLIGENCE, PRODUCT LIABILITY, BREACH OF CONTRACT, BREACH OF WARRANTY, BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION, STANDARD OR RULE OR OTHER FAULT OF ANY OF THE "INDEMNIFIED PARTIES", IT BEING THE EXPRESS INTENT OF CUSTOMER TO DEFEND INDEMNIFY AND HOLD HARMLESS THE "INDEMNIFIED PARTIES" FROM THE CONSEQUENCES OF THE "INDEMNIFIED PARTIES" OWN NEGLIGENCE, PRODUCT LIABILITY, BREACH OF CONTRACT,

BREACH OF WARRANTY, BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION, STANDARD OR RULE OR OTHER FAULT. SHOULD THE "DAMAGES" ASSERTED AGAINST THE "INDEMNIFIED PARTIES" ARISE OUT OF THE SOLE NEGLIGENCE OF THE "INDEMNIFIED PARTIES" CUSTOMER'S INDEMNIFICATION OBLIGATIONS HEREUNDER SHALL BE ONLY FOR THE AMOUNT OF THE "DAMAGES" THAT EXCEEDS THE LESSER OF \$ 1,000.00 OR THE CONTRACT AMOUNT. CUSTOMER FURTHER AGREES TO INDEMNIFY THE "INDEMNIFIED PARTIES" FOR THEIR LEGAL FEES, COSTS AND DISBURSEMENTS PAID OR INCURRED TO ENFORCE THE PROVISIONS OF THIS PARAGRAPH AND TO OBTAIN, MAINTAIN AND PAY FOR SUCH INSURANCE COVERAGE AND ENDORSEMENTS, INCLUDING COMPLETED OPERATIONS COVERAGE, AS WILL INSURE THE PROVISIONS OF THIS PARAGRAPH, AND UPON REQUEST, SHALL PROVIDE COMPANY WITH EVIDENCE THEREOF.

2. IT IS UNDERSTOOD AND AGREED BY CUSTOMER THAT COMPANY IS NOT AN INSURER, THAT CUSTOMER SHALL OBTAIN THE TYPE AND AMOUNT OF INSURANCE COVERAGE WHICH IT DETERMINES NECESSARY, AND THAT THE AMOUNTS PAYABLE TO THE COMPANY HEREUNDER ARE BASED UPON THE VALUE OF THE SERVICES RENDERED AND ARE UNRELATED TO THE VALUE OF CUSTOMER'S PROPERTY, THE PROPERTY OF OTHERS LOCATED ON CUSTOMER'S PREMISES, OR ANY POTENTIAL LIABILITY OR DAMAGE TO CUSTOMER ARISING OUT OF THE WORK PERFORMED BY COMPANY. CUSTOMER ACCORDINGLY AGREES THAT THE LIABILITY OF COMPANY, ITS OFFICERS, DIRECTORS, EMPLOYEES, PARENT COMPANIES, SUBSIDIARIES, AFFILIATES AND AGENTS ARISING OUT OF OR IN ANY WAY RELATING TO OR CONNECTED WITH THE WORK PERFORMED BY THE COMPANY SHALL BE LIMITED TO THE LESSER OF \$ 1,000.00 OR THE PRICE OF THE WORK PERFORMED BY THE COMPANY. THIS LIMITATION OF LIABILITY SHALL APPLY TO ALL CLAIMS, DEMANDS, LOSSES, EXPENSES OR LIABILITIES OF ANY KIND, INCLUDING ATTORNEY'S FEES, (HEREINAFTER REFERRED TO AS "DAMAGES"), SUSTAINED BY CUSTOMER OR ANY OTHER PARTY CLAIMING BY OR THROUGH CUSTOMER, AND SHALL APPLY REGARDLESS OF WHETHER SUCH "DAMAGES" ARE ACTUALLY OR ALLEGEDLY CAUSED BY THE NEGLIGENCE, PRODUCT LIABILITY, BREACH OF CONTRACT, BREACH OF WARRANTY, BREACH OR VIOLATION OF A STATUTE, ORDINANCE, GOVERNMENTAL REGULATION STANDARD OR RULE OR OTHER FAULT OF COMPANY, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, PARENT COMPANIES, SUBSIDIARIES AND AFFILIATES.
3. CUSTOMER AGREES TO REQUIRE ITS INSURANCE POLICIES TO BE ENDORSED SO AS TO WAIVE ALL RIGHTS OF SUBROGATION AGAINST COMPANY.

SCALE: 1/2"=1'-0" (IN FEET)  
0 1' 2' 4'

SCALE: 1/4"=1'-0" (IN FEET)  
0 2' 4' 8'

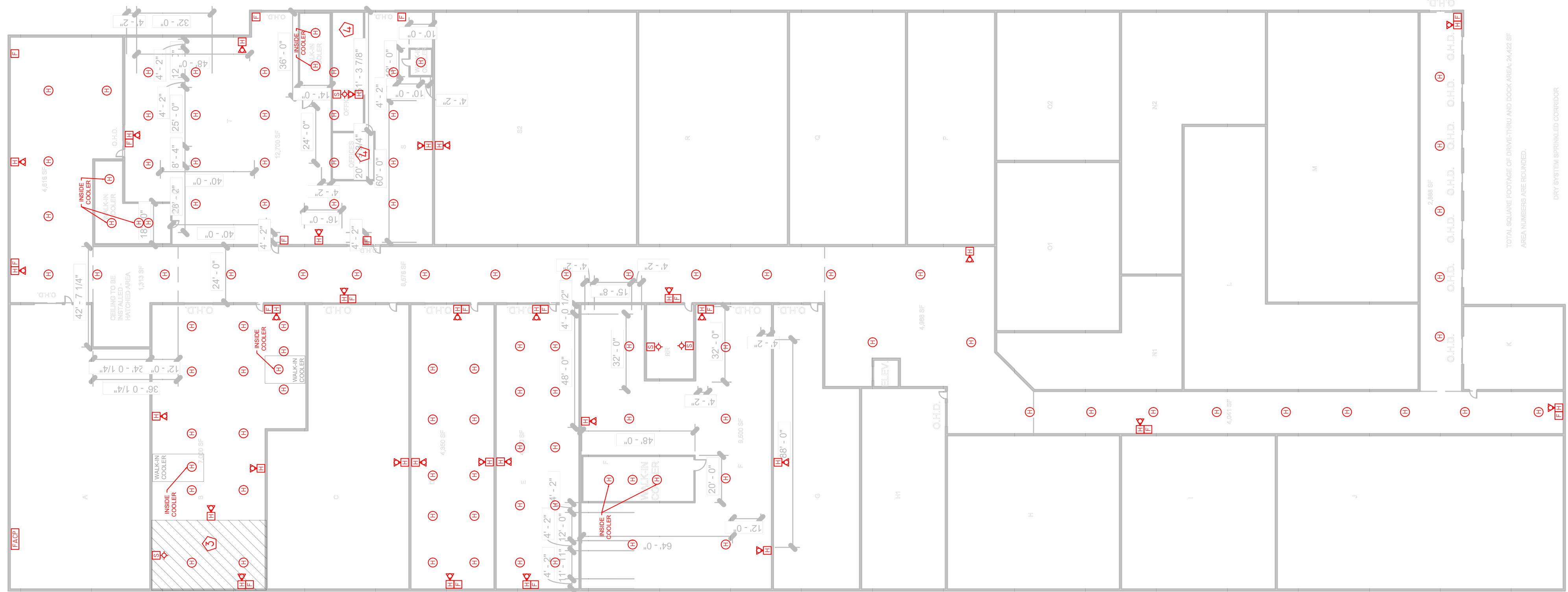
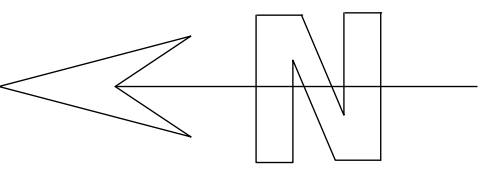
SCALE: 1/8"=1'-0" (IN FEET)  
0 4' 8' 16'

SCALE: 3/32"=1'-0" (IN FEET)  
0 5' 10' 20'

SCALE: 1/16"=1'-0" (IN FEET)  
0 8' 16' 32'

SCALE: 1/32"=1'-0" (IN FEET)  
0 16' 32' 64'

DATE	6/22/2021
DRAWING NO.	FAI.1
SHEET NO.	1 of 1
DESIGNED	JH
DRAWN	BAS
CHECKED	
SCALE	AS NOTED



LEGEND		DESCRIPTION	QTY
[F]	MANUAL PULL STATION		19
[H]	HEAT DETECTOR		106
[H]	HORN STROBE		31
[S]	STROBE		4
[FACP]	FIRE ALARM CONTROL PANEL		1
[NOT SHOWN]	SMOKE DETECTOR		11
[#]	SEE NOTES		

- NOTES**
- HEAT DETECTORS TO BE LOCATED EVERY 30 FEET.
  - HEAT DETECTORS TO BE AT LEAST 15 FEET AWAY FROM WALLS.
  - MEZZANINE LOCATED ABOVE OFFICE: OFFICE UNDERNEATH WILL HAVE AN ADDITIONAL (1) SMOKE DETECTOR AND (7) SMOKE DETECTORS.
  - OFFICES COMBINED WILL HAVE AN ADDITIONAL (4) SMOKE DETECTORS.

GARVIN BUSINESS CENTER  
1315 READ ST  
EVANSVILLE, IN 47710



BUSINESS COMMUNICATIONS SOLUTIONS  
4535 O'HARA DRIVE  
EVANSVILLE, IN 47711  
P: (812) 422-4955  
F: (812) 422-9506  
WWW.BCSSERVICE.COM

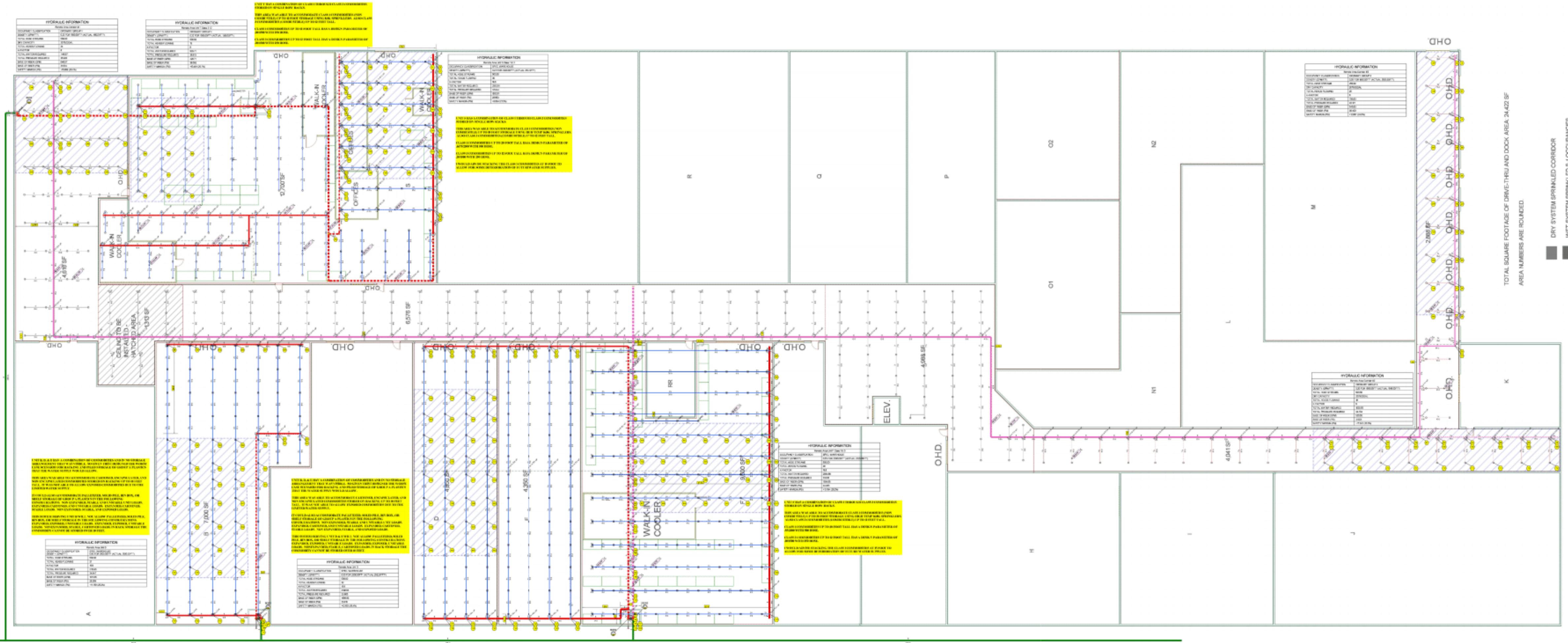
REVISIONS	DATE	BY	REMARKS

**1 OVERALL - FIRE ALARM SYSTEM**  
Scale: 1/32" = 1'-0"

TOTAL SQUARE FOOTAGE OF DRIVE-THRU AND DOCK AREA: 24,422 SF  
AREA NUMBERS ARE ROUNDED.

DRY SYSTEM SPRINKLER CORRIDOR  
WET SYSTEM SPRINKLER S-1 OCCUPANCIES





UNIT B, D, & E ARE CLASSIFIED AS GROUP A PLASTICS. STORAGE CONFIGURATIONS OF PALLETIZED, BIN BOX, SHELF, PILE STORAGE, AND RACK. PLASTICS AND ANYTHING CATEGORIZED AS PLASTIC TO BE STORED 5 FEET OR LESS. IF OVER THEY NEED TO FOLLOW TABLE 15.2.6 (A) FOR DESIGN BASIS. UNDER NO CIRCUMSTANCE WILL THE CURRENT WATER SUPPLY ALLOW RACK STORAGE OF GROUP A PLASTICS ABOVE 10 FEET! NOR CAN EXPANDED, EXPOSED COMMODITIES IN STABLE SOLID PILES BE STORED! ALL PALLETIZED, SOLID PILE, BIN BOX, AND SHELF STORAGE CONFIGURATIONS ARE ABLE TO BE STORED UP TO A HEIGHT THAT WILL REQUIRE .50/2500 OR LESS AS A DESIGN BASIS.

UNIT F COMMODITIES ARE CLASSIFIED AS CLASS 1, 2, & 3: CLASS 1 ARE NONCOMBUSTIBLE ITEMS. CLASS 2 & 3 ARE COMBUSTIBLE ITEMS. STORAGE CONFIGURATIONS OF SINGLE ROW RACKS. PLASTICS AND ANYTHING CATEGORIZED AS PLASTIC TO BE STORED 5 FEET OR LESS. UNIT T WILL ALLOW 20 FOOT STORAGE OF CLASS 1 COMMODITIES WITH HIGH TEMPERATURE SPRINKLERS AT 16.8K. CLASS 2 & 3 COMMODITIES NEED TO BE STORED NO HIGHER THAN 12 FEET. POINT G ON FIGURE 16.2.1.3.2(E) SHOWS THE POINT FOR HIGH TEMPERATURE SPRINKLERS.

UNIT T COMMODITIES ARE CLASSIFIED AS CLASS 1, 2, & 3: CLASS 1 ARE NONCOMBUSTIBLE ITEMS. CLASS 2 & 3 ARE COMBUSTIBLE ITEMS. STORAGE CONFIGURATIONS OF SINGLE ROW RACKS. PLASTICS AND ANYTHING CATEGORIZED AS PLASTIC TO BE STORED 5 FEET OR LESS. UNIT T WILL ALLOW 12 FOOT STORAGE OF CLASS 1 COMMODITIES WITH HIGH TEMPERATURE SPRINKLERS AT 8.0K. CLASS 2 & 3 COMMODITIES NEED TO BE STORED NO HIGHER THAN 12 FEET. THE DESIGN CURVE USED FOR 12 FOOT STORAGE OF CLASS 1, 2, & 3 COMMODITIES AND THE STORAGE HEIGHTS ALLOWED FOR THEM.

Table 15.2.6(a) Design Densities for Palletized, Solid-Piled, Bin Box, or Shelf Storage of Plastic and Rubber Commodities (U.S. Customary Units)

Maximum Storage Height (ft)	Roof/Ceiling Height (ft)	Density (gpm/ft <sup>2</sup> )				
		A	B	C	D	E
>5 to 512	Up to 15	0.2	EH2	0.3	EH1	EH2
	>15 to 20	0.3	0.6	0.5	EH2	EH2
	>20 to 32	0.4	0.8	0.6	0.45	0.7
15	Up to 20	0.3	0.6	0.5	0.4	0.45
	>20 to 25	0.4	0.8	0.6	0.45	0.7
	>25 to 35	0.45	0.9	0.7	0.55	0.85
20	Up to 25	0.4	0.8	0.6	0.45	0.7
	>25 to 30	0.45	0.9	0.7	0.55	0.85
	>30 to 35	0.6	1.2	0.85	0.7	1.1
25	Up to 30	0.45	0.9	0.7	0.55	0.85
	>30 to 35	0.6	1.2	0.85	0.7	1.1

- Notes:
- Minimum clearance between sprinkler deflector and top of storage shall be maintained as required.
  - Column designations correspond to the configurations of plastics storage as follows:
    - A: (1) Nonexpanded, unstable
    - (2) Nonexpanded, stable, solid unit load
    - B: Expanded, exposed, stable
    - C: (1) Expanded, exposed, unstable
    - (2) Nonexpanded, stable, cartonized
    - D: Expanded, cartonized, unstable
    - E: (1) Expanded, cartonized, stable
    - (2) Nonexpanded, stable, exposed
  - EH1 = Density required by Figure 13.2.1 for Curve EH1
  - EH2 = Density required by Figure 13.2.1 for Curve EH2
  - Roof/ceiling height >35 ft is not permitted.

UNIT S COMMODITIES ARE CLASSIFIED AS CLASS 1, 2, & 3: CLASS 1 ARE NONCOMBUSTIBLE ITEMS. CLASS 2 & 3 ARE COMBUSTIBLE ITEMS. STORAGE CONFIGURATIONS OF SINGLE ROW RACKS. PLASTICS AND ANYTHING CATEGORIZED AS PLASTIC TO BE STORED 5 FEET OR LESS. UNIT T WILL ALLOW 18 FOOT STORAGE OF CLASS 1 COMMODITIES WITH HIGH TEMPERATURE SPRINKLERS AT 16.8K. CLASS 2 & 3 COMMODITIES NEED TO BE STORED NO HIGHER THAN 12 FEET. POINT G ON FIGURE 16.2.1.3.2(E) SHOWS THE POINT FOR HIGH TEMPERATURE SPRINKLERS.

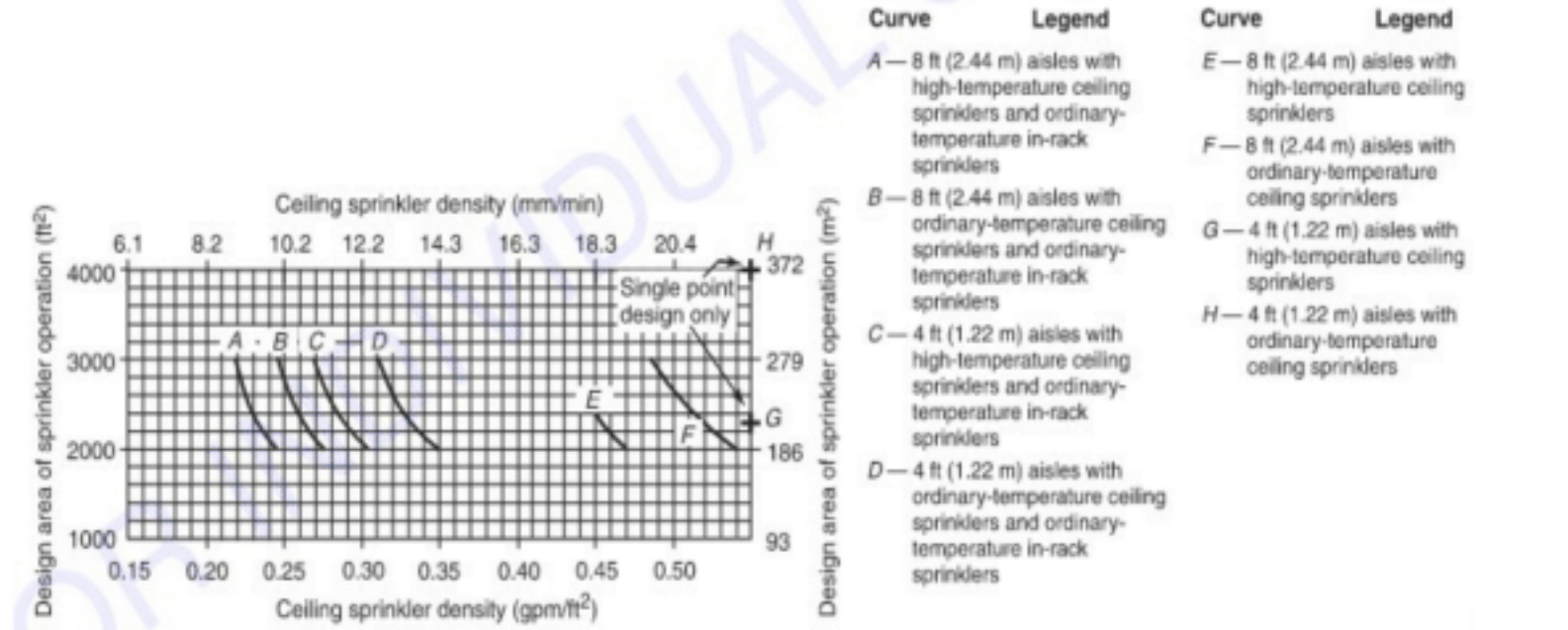


FIGURE 16.2.1.3.2(e) Single- or Double-Row Racks — 20 ft (6.1 m) High Rack Storage — Sprinkler System Design Curves — Class I and Class II Encapsulated Commodities — Conventional Pallets.

Table 13.2.1 Discharge Criteria for Miscellaneous Storage Up to 12 ft (3.7 m) in Height

Commodity	Type of Storage	Storage Height		Maximum Ceiling Height	Design Curve Figure 13.2.1	Inside Hose		Total Combustible Inside and Outside Hose		Duration (minutes)
		ft	m			gpm	L/min	gpm	L/min	
Class I to Class IV										
Class I	Solid-piled, palletized, bin box, shelf, rack, and back-to-back shelf storage	512	53.7	—	—	EH1	0.56, 0.189, 100, 379	250	946	90
Class II		>10 to 512	>5.0 to 53.7	—	—	EH2	0.56, 0.189, 100, 379	250	946	90
Class III		>10 to 512	>5.0 to 53.7	—	—	EH2	0.56, 0.189, 100, 379	250	946	90
Class IV		>10 to 512	>5.0 to 53.7	—	—	EH2	0.56, 0.189, 100, 379	250	946	90
Class V	Palletized, bin box, shelf and solid-piled	>10 to 512	>5.0 to 53.7	32	9.8	EH2	0.56, 0.189, 100, 379	250	946	90
Class V		Rack and back-to-back shelf storage	>10 to 512	>5.0 to 53.7	32	9.8	EH1	0.56, 0.189, 100, 379	500	1893
Group A Plastic Storage										
Cartoned	Unexpanded and expanded	>5	>1.5	—	—	EH2	0.56, 0.189, 100, 379	250	946	90
		>5 to 10	>1.5 to 3.0	15	4.6	EH1	0.56, 0.189, 100, 379	500	1893	120
		>5 to 10	>1.5 to 3.0	30	9.1	EH2	0.56, 0.189, 100, 379	500	1893	120
		>10 to 512	>5.0 to 53.7	17	5.2	EH2	0.56, 0.189, 100, 379	500	1893	120
		>10 to 512	>5.0 to 53.7	32	9.8	EH2	0.56, 0.189, 100, 379	500	1893	120
		>10 to 512	>5.0 to 53.7	32	9.8	EH2	0.56, 0.189, 100, 379	500	1893	120



Sprinkler Legend											
SYMBOL	MANUFACTURER	SIN	MODEL	QUANTITY	K-FACTOR	TYPE	SIZE	RESPONSE	FINISH	TEMPERATURE	NOTE
⊗	RELIABLE	RA124	J161	348	16.8	UPRIGHT	1/2"	QUICK	BRASS	165°F	
○	GENERIC			359	8	UPRIGHT	1/2"	QUICK	BRASS	165°F	
				TOTAL = 707							

UNIT T HAS A COMBINATION OF CLASS 1 THROUGH CLASS 3 COMMODITIES STORED ON SINGLE ROW RACKS.

THIS AREA WAS ABLE TO ACCOMMODATE CLASS 1 COMMODITIES (NON COMBUSTIBLE) UP TO 12 FOOT STORAGE USING 80K SPRINKLERS. ALSO CLASS 3 COMMODITIES (COMBUSTIBLE) UP TO 12 FEET TALL.

CLASS 1 COMMODITIES UP TO 12 FOOT TALL HAS A DESIGN PARAMETER OF 20/1500 WITH 250 HOSE.

CLASS 3 COMMODITIES UP TO 12 FOOT TALL HAS A DESIGN PARAMETER OF 20/1500 WITH 250 HOSE.

HYDRAULIC INFORMATION	
Remote Area Corridor #1	
OCCUPANCY CLASSIFICATION	ORDINARY GROUP II
DENSITY (GPM/FT <sup>2</sup> )	0.20 FOR 1500.00FT <sup>2</sup> (ACTUAL 1962.5FT <sup>2</sup> )
TOTAL HOSE STREAMS	500.00
DRY CAPACITY	2079.02GAL
TOTAL HEADS FLOWING	24
K-FACTOR	8
TOTAL WATER REQUIRED	1148.97
TOTAL PRESSURE REQUIRED	35.920
BASE OF RISER (GPM)	648.97
BASE OF RISER (PSI)	31934
SAFETY MARGIN (PSI)	+15.699 (30.4%)

HYDRAULIC INFORMATION	
Remote Area Unit T Class 3 I <sup>2</sup>	
OCCUPANCY CLASSIFICATION	ORDINARY GROUP I
DENSITY (GPM/FT <sup>2</sup> )	0.20 FOR 1500.00FT <sup>2</sup> (ACTUAL 1366.53FT <sup>2</sup> )
TOTAL HOSE STREAMS	500.00
TOTAL HEADS FLOWING	15
K-FACTOR	8
TOTAL WATER REQUIRED	926.71
TOTAL PRESSURE REQUIRED	38.913
BASE OF RISER (GPM)	426.71
BASE OF RISER (PSI)	36.092
SAFETY MARGIN (PSI)	+13.481 (25.7%)

HYDRAULIC INFORMATION	
Remote Area Unit S Class 1 & 3	
OCCUPANCY CLASSIFICATION	SPEC. WAREHOUSE
DENSITY (GPM/FT <sup>2</sup> )	0.47 FOR 2300.00FT <sup>2</sup> (ACTUAL 2323.12FT <sup>2</sup> )
TOTAL HOSE STREAMS	500.00
TOTAL HEADS FLOWING	30
K-FACTOR	16.8
TOTAL WATER REQUIRED	2053.91
TOTAL PRESSURE REQUIRED	37.044
BASE OF RISER (GPM)	553.91
BASE OF RISER (PSI)	29.893
SAFETY MARGIN (PSI)	+9.954 (21.2%)

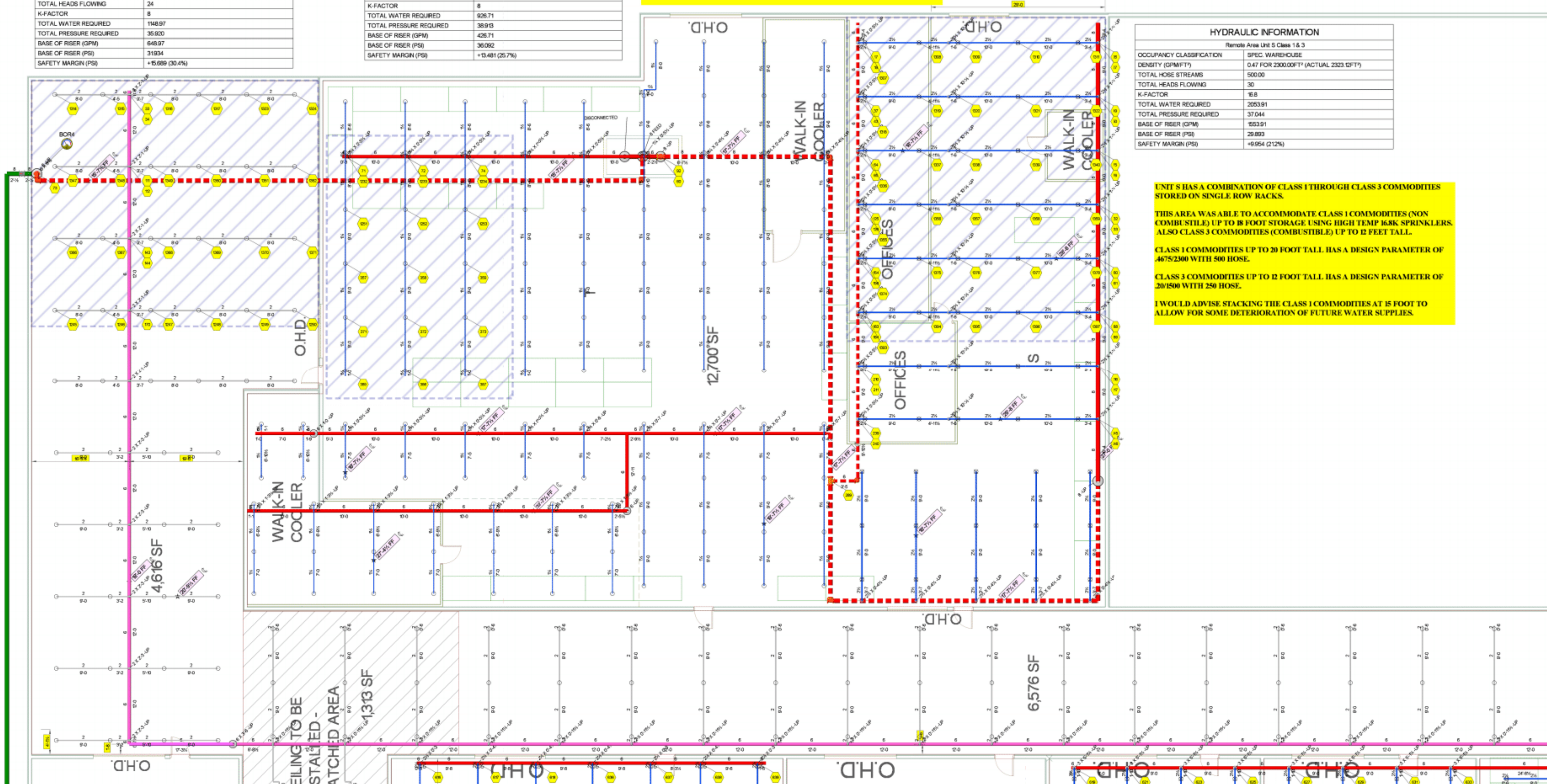
UNIT S HAS A COMBINATION OF CLASS 1 THROUGH CLASS 3 COMMODITIES STORED ON SINGLE ROW RACKS.

THIS AREA WAS ABLE TO ACCOMMODATE CLASS 1 COMMODITIES (NON COMBUSTIBLE) UP TO 18 FOOT STORAGE USING HIGH TEMP 16.8K SPRINKLERS. ALSO CLASS 3 COMMODITIES (COMBUSTIBLE) UP TO 12 FEET TALL.

CLASS 1 COMMODITIES UP TO 20 FOOT TALL HAS A DESIGN PARAMETER OF 4675/2300 WITH 500 HOSE.

CLASS 3 COMMODITIES UP TO 12 FOOT TALL HAS A DESIGN PARAMETER OF 20/1500 WITH 250 HOSE.

I WOULD ADVISE STACKING THE CLASS 1 COMMODITIES AT 15 FOOT TO ALLOW FOR SOME DETERIORATION OF FUTURE WATER SUPPLIES.



DRAWING REVISIONS	BY	DATE	DESCRIPTION
1	WB	6-17-2021	DRAWING CREATED

PROJECT NUMBER: YV0296  
DRAWING FILE NAME:

**GARVIN**  
1315 READ ST.  
EVANSVILLE, IN

DRAWN BY: WB  
PLOT DATE: 06/17/21

COMMONWEALTH OF KENTUCKY  
Fire Suppression  
ARMOR FIRE PROTECTION LLC  
A-0295  
Sprinkler Contractor

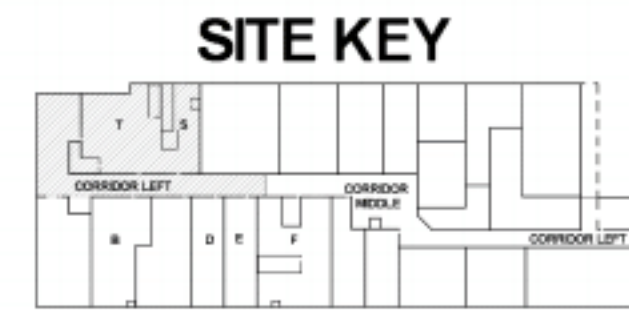
COMMONWEALTH OF KENTUCKY  
Fire Suppression  
WILLIAM BRIMMELL A-0626  
Approved  
Layout Technician

W.B. Sae  
Nicolet 6/17/21

SCALE: 1/8" = 1'-0"  
SHEET DESCRIPTION  
UNIT T, S, & LEFT CORRIDOR

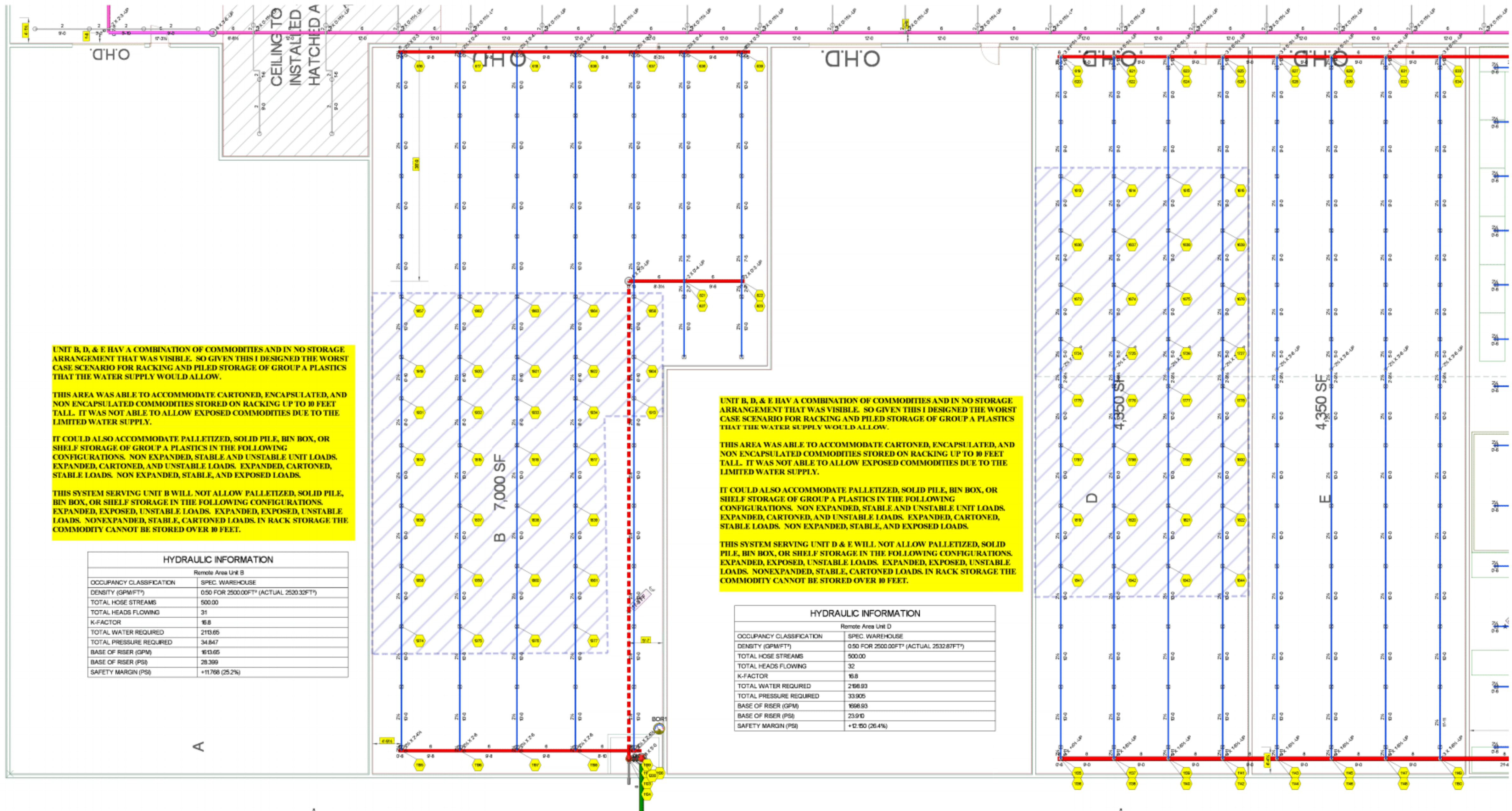
FP-100

**FIRE PROTECTION REMODEL PLAN**  
**UNIT T, S, & LEFT CORRIDOR**





Sprinkler Legend											
SYMBOL	MANUFACTURER	SIN	MODEL	QUANTITY	K-FACTOR	TYPE	SIZE	RESPONSE	FINISH	TEMPERATURE	NOTE
⊗	RELIABLE	RA124	J181	348	16.8	UPRIGHT	1/2"	QUICK	BRASS	165°F	
⊙	GENERIC			359	8	UPRIGHT	1/2"	QUICK	BRASS	165°F	
				TOTAL = 707							



UNIT B, D, & E HAVE A COMBINATION OF COMMODITIES AND IN NO STORAGE ARRANGEMENT THAT WAS VISIBLE. SO GIVEN THIS I DESIGNED THE WORST CASE SCENARIO FOR RACKING AND PILED STORAGE OF GROUP A PLASTICS THAT THE WATER SUPPLY WOULD ALLOW.

THIS AREA WAS ABLE TO ACCOMMODATE CARTONED, ENCAPSULATED, AND NON ENCAPSULATED COMMODITIES STORED ON RACKING UP TO 10 FEET TALL. IT WAS NOT ABLE TO ALLOW EXPOSED COMMODITIES DUE TO THE LIMITED WATER SUPPLY.

IT COULD ALSO ACCOMMODATE PALLETIZED, SOLID PILE, BIN BOX, OR SHELF STORAGE OF GROUP A PLASTICS IN THE FOLLOWING CONFIGURATIONS. NON EXPANDED, STABLE AND UNSTABLE UNIT LOADS. EXPANDED, CARTONED, AND UNSTABLE LOADS. EXPANDED, CARTONED, STABLE LOADS. NON EXPANDED, STABLE, AND EXPOSED LOADS.

THIS SYSTEM SERVING UNIT B WILL NOT ALLOW PALLETIZED, SOLID PILE, BIN BOX, OR SHELF STORAGE IN THE FOLLOWING CONFIGURATIONS. EXPANDED, EXPOSED, UNSTABLE LOADS. EXPANDED, EXPOSED, UNSTABLE LOADS. NONEXPANDED, STABLE, CARTONED LOADS. IN RACK STORAGE THE COMMODITY CANNOT BE STORED OVER 10 FEET.

UNIT B, D, & E HAVE A COMBINATION OF COMMODITIES AND IN NO STORAGE ARRANGEMENT THAT WAS VISIBLE. SO GIVEN THIS I DESIGNED THE WORST CASE SCENARIO FOR RACKING AND PILED STORAGE OF GROUP A PLASTICS THAT THE WATER SUPPLY WOULD ALLOW.

THIS AREA WAS ABLE TO ACCOMMODATE CARTONED, ENCAPSULATED, AND NON ENCAPSULATED COMMODITIES STORED ON RACKING UP TO 10 FEET TALL. IT WAS NOT ABLE TO ALLOW EXPOSED COMMODITIES DUE TO THE LIMITED WATER SUPPLY.

IT COULD ALSO ACCOMMODATE PALLETIZED, SOLID PILE, BIN BOX, OR SHELF STORAGE OF GROUP A PLASTICS IN THE FOLLOWING CONFIGURATIONS. NON EXPANDED, STABLE AND UNSTABLE UNIT LOADS. EXPANDED, CARTONED, AND UNSTABLE LOADS. EXPANDED, CARTONED, STABLE LOADS. NON EXPANDED, STABLE, AND EXPOSED LOADS.

THIS SYSTEM SERVING UNIT D & E WILL NOT ALLOW PALLETIZED, SOLID PILE, BIN BOX, OR SHELF STORAGE IN THE FOLLOWING CONFIGURATIONS. EXPANDED, EXPOSED, UNSTABLE LOADS. EXPANDED, EXPOSED, UNSTABLE LOADS. NONEXPANDED, STABLE, CARTONED LOADS. IN RACK STORAGE THE COMMODITY CANNOT BE STORED OVER 10 FEET.

HYDRAULIC INFORMATION	
Remote Area Unit B	
OCCUPANCY CLASSIFICATION	SPEC. WAREHOUSE
DENSITY (GPM/FT <sup>2</sup> )	0.50 FOR 2500.00FT <sup>2</sup> (ACTUAL 2530.32FT <sup>2</sup> )
TOTAL HOSE STREAMS	500.00
TOTAL HEADS FLOWING	31
K-FACTOR	16.8
TOTAL WATER REQUIRED	213.65
TOTAL PRESSURE REQUIRED	34.847
BASE OF RISER (GPM)	163.65
BASE OF RISER (PSI)	28.399
SAFETY MARGIN (PSI)	+11.768 (25.2%)

HYDRAULIC INFORMATION	
Remote Area Unit D	
OCCUPANCY CLASSIFICATION	SPEC. WAREHOUSE
DENSITY (GPM/FT <sup>2</sup> )	0.50 FOR 2500.00FT <sup>2</sup> (ACTUAL 2532.87FT <sup>2</sup> )
TOTAL HOSE STREAMS	500.00
TOTAL HEADS FLOWING	32
K-FACTOR	16.8
TOTAL WATER REQUIRED	2166.93
TOTAL PRESSURE REQUIRED	33.905
BASE OF RISER (GPM)	1666.93
BASE OF RISER (PSI)	23.910
SAFETY MARGIN (PSI)	+12.100 (26.4%)

**Armor Fire Protection**  
Protecting Lives and Property  
POWERED BY API Group

1196 5TH STREET  
HENDERSON, KY 42420  
PHONE: (270)830-7515  
FAX: (270)830-7616

DRAWING REVISIONS	
#	DATE
1	05-17-2021
2	
3	
4	
5	
6	
7	
8	
9	
10	

PROJECT NUMBER: YV0296  
DRAWING FILE NAME: \_\_\_\_\_

**GARVIN**  
1315 READ ST.  
EVANSVILLE, IN

DRAWN BY: WIB  
PLOT DATE: 06/17/21

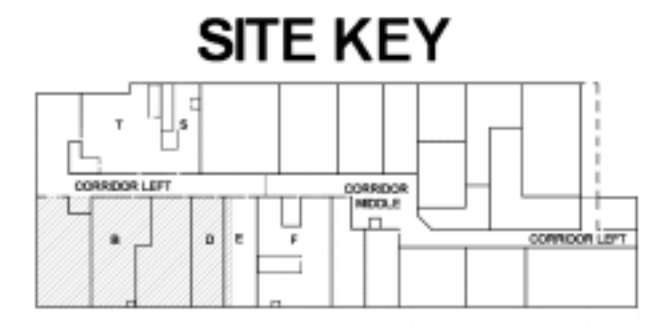
COMMONWEALTH OF KENTUCKY  
Fire Suppression  
ARMOR FIRE PROTECTION LLC  
A-0293  
Sprinkler Contractor

COMMONWEALTH OF KENTUCKY  
Fire Suppression  
WILLIAM BRUMELL A-0626  
Sprinkler Layout Technician

WIB  
Nicolet #123182

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

SHEET DESCRIPTION  
UNIT B & D

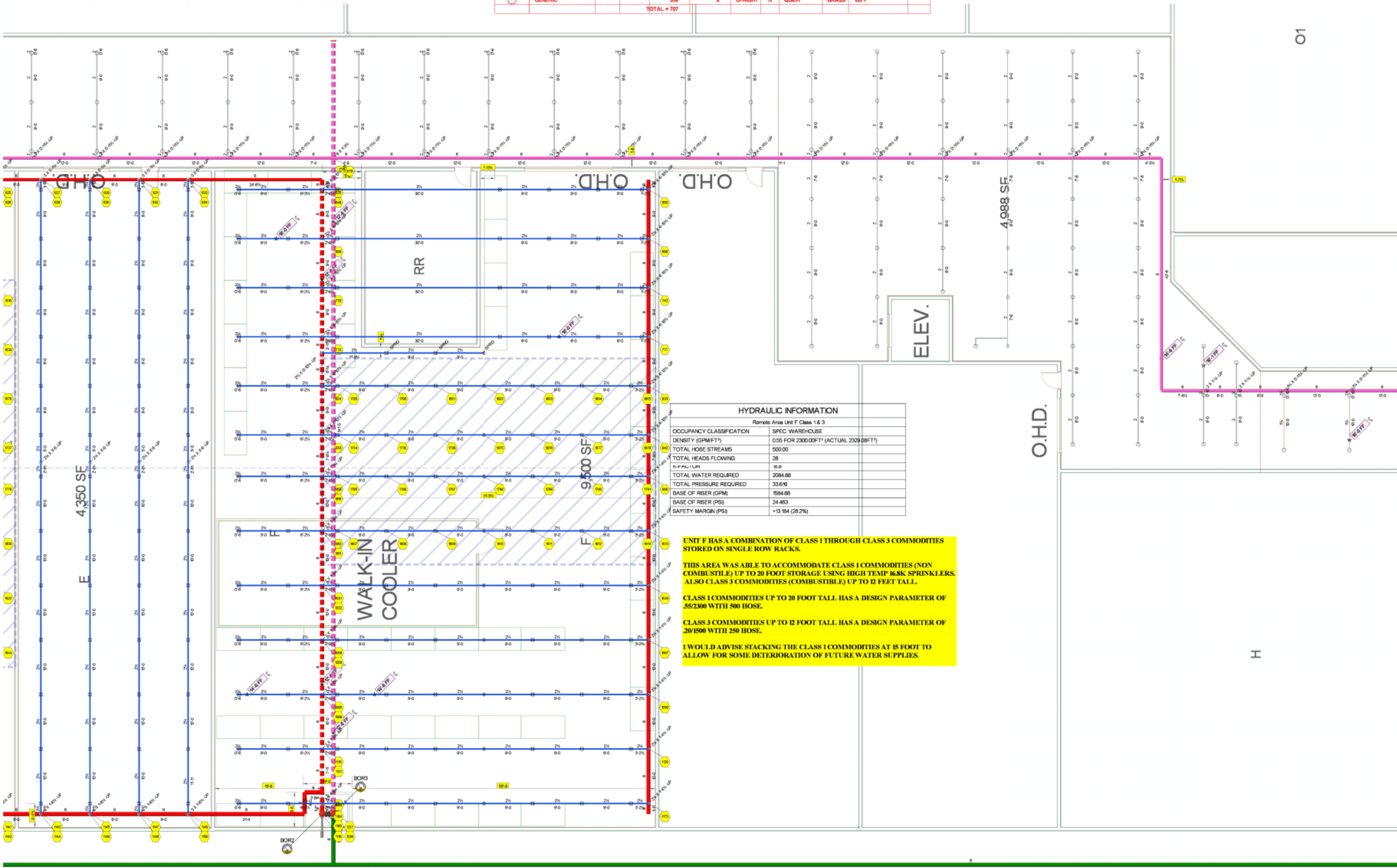


**FIRE PROTECTION REMODEL PLAN**  
**UNIT B & D**

FP-200



Sprinkler Legend											
SYMBOL	MANUFACTURER	SIN	MODEL	QUANTITY	K-FACTOR	TYPE	SIZE	RESPONSE	FINISH	TEMPERATURE	NOTE
⊗	RELIABLE	RA1124	J168	348	16.8	UPRIGHT	1/2"	QUICK	BRASS	165°F	
⊙	GENERIC			358	8	UPRIGHT	1/2"	QUICK	BRASS	165°F	
				TOTAL = 707							



HYDRAULIC INFORMATION	
Remote Area Unit F Class 1 & 3	
OCCUPANCY CLASSIFICATION	SPEC WAREHOUSE
DENSITY (GPM/FT <sup>2</sup> )	0.55 FOR 2300.00FT <sup>2</sup> (ACTUAL 2309.08FT <sup>2</sup> )
TOTAL HOSE STREAMS	500.00
TOTAL HEADS FLOWING	28
FLOW	10.0
TOTAL WATER REQUIRED	2084.88
TOTAL PRESSURE REQUIRED	33.615
BASE OF RISER (GPM)	1584.88
BASE OF RISER (PSI)	24.463
SAFETY MARGIN (PSI)	+13.154 (28.2%)

**UNIT F HAS A COMBINATION OF CLASS 1 THROUGH CLASS 3 COMMODITIES STORED ON SINGLE ROW RACKS.**

**THIS AREA WAS ABLE TO ACCOMMODATE CLASS 1 COMMODITIES (NON COMBUSTIBLE) UP TO 20 FOOT STORAGE USING HIGH TEMP 168K SPRINKLERS. ALSO CLASS 3 COMMODITIES (COMBUSTIBLE) UP TO 12 FEET TALL.**

**CLASS 1 COMMODITIES UP TO 20 FOOT TALL HAS A DESIGN PARAMETER OF 55/2300 WITH 500 HOSE.**

**CLASS 3 COMMODITIES UP TO 12 FOOT TALL HAS A DESIGN PARAMETER OF 20/1500 WITH 250 HOSE.**

**I WOULD ADVISE STACKING THE CLASS 1 COMMODITIES AT 15 FOOT TO ALLOW FOR SOME DETERIORATION OF FUTURE WATER SUPPLIES.**

DRAWING REVISIONS	
#	DESCRIPTION
1	6-17-2021 DRAWING CREATED

PROJECT NUMBER: YV0296  
DRAWING FILE NAME:

**GARVIN**  
1315 READ ST.  
EVANSVILLE, IN

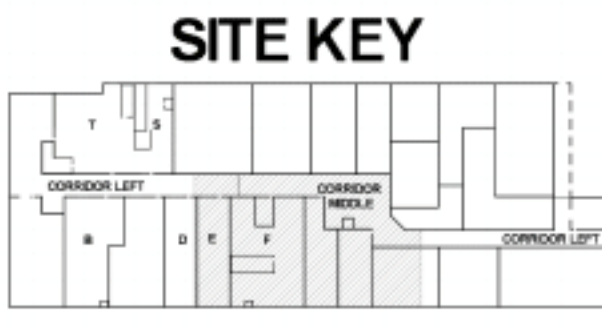
DRAWN BY: WB  
PLOT DATE: 06/17/21

COMMONWEALTH OF KENTUCKY  
Fire Suppression  
ARMOR FIRE PROTECTION LLC  
A-0293  
Sprinkler Contractor

COMMONWEALTH OF KENTUCKY  
Fire Suppression  
WILLIAM BREMELL A-0628  
Sprinkler Layout Technician

WILLIAM BREMELL  
NIGHT CERT #123182

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



**FIRE PROTECTION REMODEL PLAN**  
**UNIT E, F, MIDDLE CORRIDOR**

**SHEET DESCRIPTION**  
UNIT E, F, MIDDLE CORRIDOR

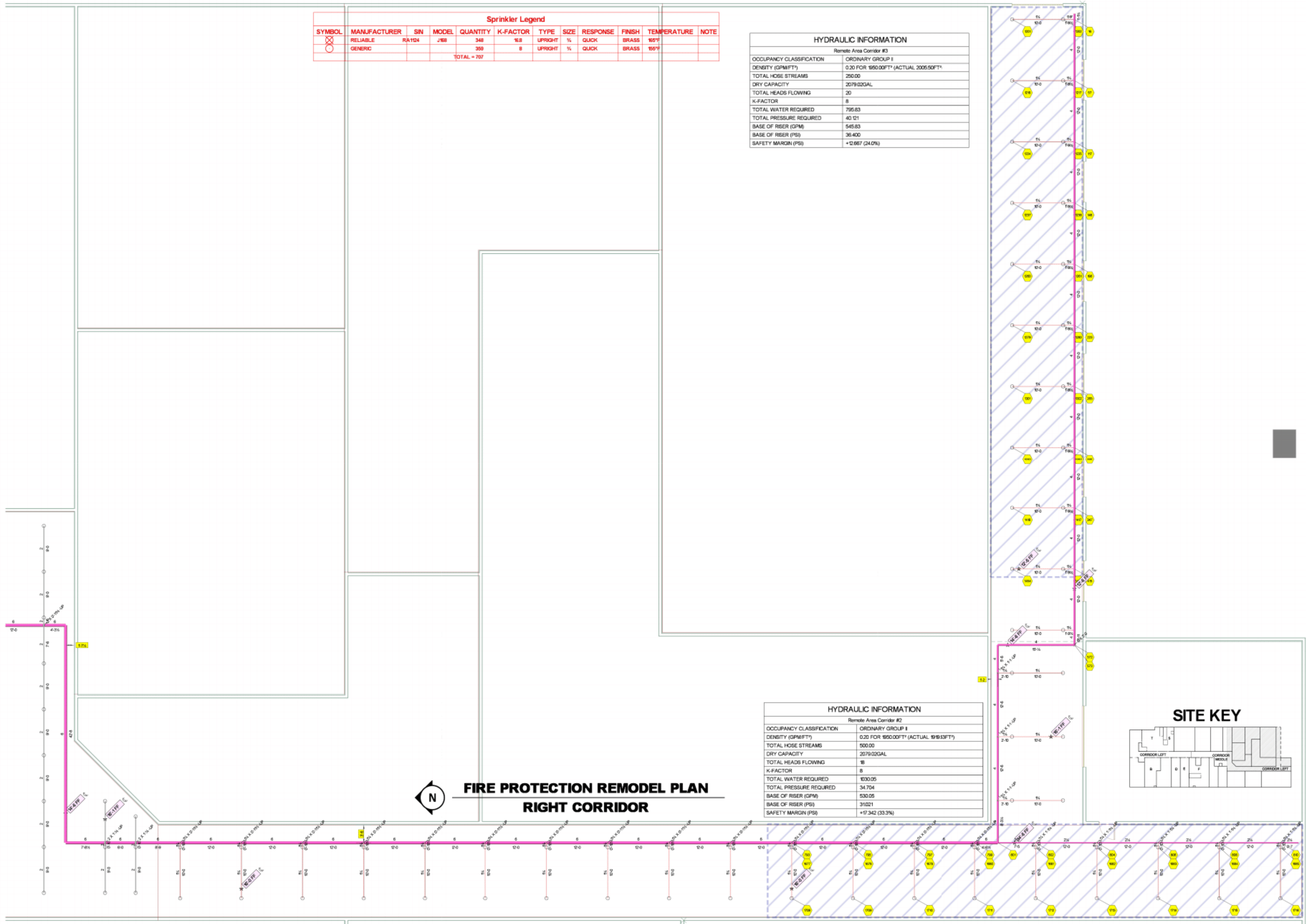
**FP-300**



Sprinkler Legend											
SYMBOL	MANUFACTURER	SN	MODEL	QUANTITY	K-FACTOR	TYPE	SIZE	RESPONSE	FINISH	TEMPERATURE	NOTE
⊗	RELIABLE	RA124	J168	348	16.8	UPRIGHT	1/2"	QUICK	BRASS	155°F	
⊙	GENERIC			359	8	UPRIGHT	1/2"	QUICK	BRASS	155°F	
				TOTAL = 707							

HYDRAULIC INFORMATION	
Remote Area Corridor #3	
OCCUPANCY CLASSIFICATION	ORDINARY GROUP I
DENSITY (GPM/FT <sup>2</sup> )	0.20 FOR 1550.00FT <sup>2</sup> (ACTUAL 2005.50FT <sup>2</sup> )
TOTAL HOSE STREAMS	250.00
DRY CAPACITY	2079.02GAL
TOTAL HEADS FLOWING	20
K-FACTOR	8
TOTAL WATER REQUIRED	795.83
TOTAL PRESSURE REQUIRED	40.121
BASE OF RISER (GPM)	545.83
BASE OF RISER (PSI)	36.400
SAFETY MARGIN (PSI)	+2.667 (24.0%)

HYDRAULIC INFORMATION	
Remote Area Corridor #2	
OCCUPANCY CLASSIFICATION	ORDINARY GROUP I
DENSITY (GPM/FT <sup>2</sup> )	0.20 FOR 1550.00FT <sup>2</sup> (ACTUAL 1919.33FT <sup>2</sup> )
TOTAL HOSE STREAMS	500.00
DRY CAPACITY	2079.02GAL
TOTAL HEADS FLOWING	18
K-FACTOR	8
TOTAL WATER REQUIRED	1030.05
TOTAL PRESSURE REQUIRED	34.704
BASE OF RISER (GPM)	530.05
BASE OF RISER (PSI)	31.021
SAFETY MARGIN (PSI)	+7.342 (33.3%)



**FIRE PROTECTION REMODEL PLAN  
RIGHT CORRIDOR**



  
**Armor Fire Protection**  
*Protecting Lives and Property*  
 POWERED BY **API Group**

1196 5TH STREET  
 HENDERSON, KY 42420  
 PHONE: (270)830-7515  
 FAX: (270)830-7616


DRAWING REVISIONS	
#	DESCRIPTION
1	DRAWING CREATED


BY	WB
DATE	6-17-2021

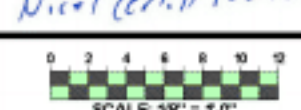
PROJECT NUMBER	YV0296
DRAWING FILE NAME	

**GARVIN**  
 1315 READ ST.  
 EVANSVILLE, IN

DRAWN BY: WB  
 PLOT DATE: 06/17/21

  
 COMMONWEALTH OF KENTUCKY  
 WILLIAM BRUMELL  
 License # 123456  
 Approved  
 Layout Technician

  
 COMMONWEALTH OF KENTUCKY  
 WILLIAM BRUMELL  
 License # 123456  
 Approved  
 Layout Technician

  
**SHEET DESCRIPTION**  
 RIGHT CORRIDOR

**FP-400**