

October 7, 2022

To: All Bidders

From: Kate Bailey

Director of Procurement

Re: ADDENDUM NO. 3

22-028.6 - Pier 78 Annex Fire Sprinkler System Upgrades

This Addendum is issued to:

- 1. EXTEND the Bid Submission Deadline from Thursday, October 13, 2022, at 2:00 P.M. until <u>Friday</u>, October 21, 2022, at 2:00 P.M.
- 2. EXTEND the Questioning deadline from Thursday, September 29, 2022, at 12:00 P.M. until <u>Friday</u>, <u>October 14, 2022, at 12:00 P.M.</u> All questions must be directed to procurement@philaport.com.
- 3. Provide the following revised documents which are attached and made part of this Addendum. All bidders must use the revised Bid Form for bid submission.

All project revisions are detailed in the revised Bid Form, and revised Specifications and Drawings:

- a. revised Bid Form
- b. revised Specifications and Drawings
- 4. To respond to the following question received:
 - Q1: Please confirm sheet size of the drawings. Documents state 11" x 17" paper, but the scale is not lining up.
 - A1: The sheet size is 30" x 42".

All other terms and conditions remain unchanged.

Bidders shall acknowledge receipt of this addendum by immediately emailing a copy of the completed acknowledgment to Kate Bailey at procurement@philaport.com

ACKNOWLEDGMENT OF RECEIPT OF ADDENDUM NO. 3 Project #22-028.6 Pier 78 Annex Fire Sprinkler System Upgrades

Date	By	
	Company	
	Telephone	
	Fax_	
	Email_	



BID FORM REVISED PER ADDENDUM 3

I. Monetary Section:

The undersigned, _________("Bidder"), having familiarized himself with the local conditions affecting the cost of the Work and with the Bidding and Contract Documents, including (A) this Bid Form, which includes (i) the Monetary Section, (ii) the Bidder Responsiveness Section, (iii) the Bidder Responsibility Section, (iv) the Project Point of Contact Section, (v) the Acknowledgment of Disclaimers Section and (vi) the Representation and Authorization Section, (B) General Conditions, and (C) the Plans and Specifications, hereby proposes to perform the Work, and to provide and furnish all labor, material, necessary tools, equipment, and all utility and transportation services necessary to perform and complete in a workmanlike manner all of the Work is required to be performed within 490 consecutive calendar days, counting from the date of notice to proceed, for the following prices:

SEE BID FORM ON NEXT PAGE:

Item	Description	Quantity	Units	Unit Price Written in Words	Unit Price	Total Price
1.0	Removal and disposal of sprinkler piping and heads to be removed	18000	LF			
	Removal and disposal of main sprinkler piping	2400	LF			
2.0	Installation of sprinkler system, including sprinkler heads and the performance of acceptance testing after each phase	18000	LF			
2.1	Installation of new main sprinkler piping	2400	LF			
3.0	Supply, install, and commission new backflow preventer	1	EA			
4.0	Trenching of concrete and soil for new drainage piping	1	LS			
	Installation of new drainage piping, backfill, and concrete	1	LS			
	Remove and replace all existing fire alarm devices	1	LS			
7.0	Supply and install new fire alarm devices. Commission complete fire alarm system	1	LS			
8.0	Fire watch while sprinkler system is impaired	1600	HRS			
	General conditions, including but not limited to Mobilization and Demobilization	1	LS			

TOTAL NOT-TO EXCEED BID PRICE:

Total Not-to-Exceed Price Written in Words:	<u>\$</u>
Total Not-to-Exceed Price Written in Numbers:	<u>\$</u>

Note: Bid quantity is an estimate and used for bid evaluation only, bids will be evaluated based upon Total Bid Price. Actual quantity used shall be the basis for payments, and all unit prices shall be guaranteed. The unit price for each item above should be all inclusive of labor, materials, and equipment.

II. Bidder Responsiveness Section:

- A. The Bidder certifies to the best of his knowledge, information, and belief that:
 - i. That for the Bidder and his Subcontractors required to be disclosed or approved by PhilaPort, and as of the date of its execution of this Bid, neither the Bidder, nor any such Subcontractors, are under suspension or debarment by the Commonwealth or any governmental entity, instrumentality, or authority and, if the Bidder cannot so certify, then it agrees to submit, along with its Bid, a written explanation of why such certification cannot be made and why the Contract should nonetheless be awarded to Bidder.
 - ii. That as of the date of its execution of this Bid, the Bidder has no tax liabilities or other Commonwealth obligations or has filed a timely administrative or judicial appeal if such liabilities or obligations exist or is subject to a duly approved deferred payment plan if such liabilities exist.
- iii. That the Bidder possesses all required business, contracting and trade licenses required to perform the Work.
- iv. That the Bidder possesses all the technical qualifications and resources, including equipment, personnel and financial resources, to perform the Work.
- v. (1) That the Bidder (and the labor force) participates at the time of bid submission in an approved Apprenticeship Program as defined in the General Conditions for each craft or trade of the labor force contemplated to perform the work, (2) that such Program is currently registered with the Pennsylvania Apprenticeship and Training Council and (3) that such Program has apprentices and trainees currently participating.
- B. The bidder acknowledges by submission of this bid, that the Bidder shall perform on the site and with his own organization at least twenty percent (20%) of the total amount of Work to be performed under this contract, exclusive of profit, overhead and the costs of procuring insurance and bonds. The bidder shall submit with his bid a complete description of the work that will be performed (e.g., earthwork, paving, brickwork, roofing, etc.), the percentage of the total work this represents, and the estimated dollar value thereof, as set forth below:

The Bidder shall perform the	e following Work:	

	Bia Form Kevisea Per Aaaenaum 3
Percentage of Work to be performed by my organization	
Estimate cost of Work to be performed by my organization	
\$	

III. Bidder Responsibility Section:

- A. The Bidder certifies that:
 - i. He has a satisfactory record of past contract performance and past law compliance that demonstrates a solid history of both technical competency and business integrity sufficient to justify receiving a Port PhilaPort contract; and
 - ii. He currently possesses all qualifications, skills, resources, equipment personnel, financial resources and other required performance capabilities needed to successfully complete the prospective contract it is seeking to perform; and
- iii. He will comply with all relevant security requirements.
- iv. He will utilize labor enrolled in approved Apprenticeship Programs as defined in the General Conditions for the full duration of the contract Work.
- B. The Bidder certifies the following responses to the questions posed to assist PhilaPort in its determination of Bidder Responsibility:
- 1. Has the Bidder been suspended and/or debarred or voluntarily agreed not to bid as a result of an action by any federal, state or local government agency or authority in the past three years?

Yes No

2. Has any officer, director, owner or managerial employee of the Bidder been convicted of a felony relating to construction, maintenance, service or repair contracting industries?

Yes No

3. Has the Bidder defaulted on any project in the past three years?

Pier 78 Annex Fire Sprinkler System Upgrades Bid Form Revised Per Addendum 3

Yes No

4.	Has the Bidder had any type of business, contracting or trade license revoked or suspended	by
an	y government agency or authority in the past three (3) years?	

Yes No

5. Has the Bidder been found in violation of any other law relating to its contracting business, including, but not limited to antitrust laws, licensing laws, tax laws, wage or hour laws, environmental or safety* laws, by a final decision of a court or government agency authority in the past three (3) years?

> Yes No

*For purposes of this question, violations of safety laws may be limited to serious or willful safety violations.

6. Has the Bidder been the subject of voluntary or involuntary bankruptcy proceedings at any time in the past three years?

> Yes No

C. Bidder's Vendor Data Management Unit Number is:

IV. **Bidder's Point of Contact Section:**

Contact Information for the Bidder on this project (for purposes of affirming bid price, issuing notice to proceed, insurance information, diversity information, etc.):

Name: Title: Phone: Email:

V. **Acknowledgment and Disclaimers Section:**

It is understood that the right is reserved by PhilaPort to reject any or all bids and to waive any informalities in the Bid, as may be provided in the Instructions to Bidders.

Submission of false or misleading information or statements in connection with this Certification shall render the Bidder ineligible to perform work for PhilaPort and/or shall be considered a material breach of any contract entered and entitle PhilaPort to all applicable remedies available at law or in equity.

Further, in the event Contractor fails to gain entry or cannot perform Work due to noncompliance, the Authority reserves the right to provide escorts to be billed to the Contractor with no increase in cost under the contract or terminate the contract for failure to perform.

VI. Representation and Authorization Section:

By making this Bid, Bidder understands, represents, acknowledges, and certifies:

- a) That the foregoing representations regarding the past performance and present qualifications of the undersigned Bidder are true and correct;
- b) The Bidder has read and understands the terms and conditions of the Invitation for Bids and this Bid is made in accordance with those terms and conditions;
- c) The item(s) offered in the Bid will be in conformance with the specifications referenced in the Instructions for Bids without exceptions;
- d) The price(s) and amount of the Bid have been arrived at independently and without consultation, communication, or agreement with any other contractor, bidder or potential bidder;
- e) Neither the price(s) nor the amount of the Bid, and neither the approximate price(s) nor the approximate amount of the bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed prior to the bid opening;
- f) No attempt has been made or will be made to induce any firm or person to refrain from bidding on the contract, or to submit a bid higher than the bid, or to submit an intentionally high or noncompetitive bid or other form of complementary bid;
- g) The Bid is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid;
- h) This bid has been completed by an authorized representative of the Bidder that the sufficient knowledge and information to address all matter addressed herein;
- i) If an award is made to the Bidder, the Bidder agrees that it intends to be legally bound to the contract that is formed between PhilaPort and the Bidder; and
- j) If an award is made to the Bidder, the Bidder will enter into and execute a contract based upon this bid, without delay, upon notice of award of contract, and will not withdraw this bid in accordance with the Instructions to Bidders and Applicable Law.

Project 22-028.6 Pier 78 Annex Fire Sprinkler System Upgrades Bid Form Revised Per Addendum 3

[Signature pages to follow; select the page that is appropriate to your form of business organization.]

[SIGNATURE PAGE FOR INDIVIDUAL BIDDER] Project 22-028.6 - Pier 78 Annex Fire Sprinkler System Upgrades

Name of Bidder (Printed)	
Signature of Individual	
Trading and doing business as:	
Business Address:	
Tax Identification Number:	
*If fictitious or trade name is employ appropriate, the following statement:	red in conduct of business, complete, by deletion as
[Foregoing fictitious or trade name (has)	(has not) been registered by the individual proprietorship

under Pennsylvania Law.]

[SIGNATURE PAGE FOR PARTNERSHIP BIDDER] Project 22-028.6 - Pier 78 Annex Fire Sprinkler System Upgrades

Name of Partnership	_	
Name of General Partner (Printed)	_	
By:(Signature of General Partner)	_ Witness:	
Business Address:		
Tax Identification Number:		
The partners constituting the partnership h	nerein named are:	
Partner:	Address:	
Partner:	Address:	
Add additional lines for the names and a four Partners in the Partnership, by attack		
*If fictitious or trade name is employed by here:		nduct of its business, insert name
Next, complete, by deletion as appropriate	e, the following stateme	nt:
[Foregoing fictitious or trade name (has) (Pennsylvania Law.	(has not) been registered	d by the partnership under

[SIGNATURE PAGE FOR CORPORATE BIDDER] Project 22-028.6 - Pier 78 Annex Fire Sprinkler System Upgrades

Name of Corporation	
Attest:	By:
Signature of Secretary, Assistant Secretary Treasurer, Assistant Treasurer or other authorized representative**	Signature of President, Vice President or other authorized representative*
(Print Name of Representative)	(Print Name of Representative)
on its behalf, then attach a valid corporate res or as of the date of the Bid, evidencing authoria ** If a representative other than the Secreta Assistant Treasurer attests to the signature of	r a Vice President of the Corporation signs this Bid solution or other appropriate proof, dated prior to ty to execute this Bid on behalf of the Corporation. ary, an Assistant Secretary, the Treasurer or an the corporate representative, then attach a valid oof, dated prior to or as of the date of the Bid, of this Bid on behalf of the Corporation.
Tax Identification Number:	
(1) Complete the following statement: The Collaws of the State/Commonwealth of:	rporation has been organized and is existing under
of Pennsylvania, complete, by deletion as appro	d a certificate of authority to do business in the
	· laws other than those of the Commonwealth of certificate of authority, complete, by deletion as

appropriate, the following statement:

[SIGNATURE PAGE FOR CORPORATE BIDDER] Project 22-028.6 - Pier 78 Annex Fire Sprinkler System Upgrades

[The Corporation (has) (has not) applied for a certificate of authority to do business in the Commonwealth of Pennsylvania and (has) (has not) attached a copy of the pending application to this Bid.]

[SIGNATURE PAGE FOR A LIMITED LIABILITY COMPANY (LLC) BIDDER] Project 22-028.6 - Pier 78 Annex Fire Sprinkler System Upgrades

Name of Limited Liability Company	
Attest:	By:
Signature of an Authorized Representative*	Signature of Authorized Representative**
(Print Name of Representative)	(Print Name of Representative)
and this Bid has been executed by a Manager full Agreement and by Resolutions of the LLC. Copies Bid or can be provided upon request within three The Certificate of Organization a managers, and this Bid has been executed by a Moderating Agreement and by Resolutions of the provided with the Bid or can be provided upon resolutions.	CLLC) is duly authorized in accordance with the rovides that LLC is to be managed by managers, by authorized by the Certificate, by the Operating of the relevant documents are provided with the e(3) working days. Hoes not provide that LLC is to be managed by dember fully authorized by the Certificate, by the eLLC. Copies of the relevant documents are equest within three (3) working days. The office of (insert authorized by the Certificate, by the Operating of the relevant documents are provided with the (3) working days. The Bidder and the individuals aument further represent that (1) execution of the the LLC authorizes the execution of this Bid even trying on business in the usual way for the LLC; in and belief, the Owner has no knowledge of the
Business Address:	
Tax Identification Number:	

[SIGNATURE PAGE FOR A LIMITED LIABILITY COMPANY (LLC) BIDDER] Project 22-028.6 - Pier 78 Annex Fire Sprinkler System Upgrades

(1) Complete the following statement: The LLC has been organized and is existing under laws of
the State/Commonwealth of
(2) If the LLC has been organized under laws of a State other than those of the Commonwealth of
Pennsylvania, complete, by deletion as appropriate, the following statement:
[The LLC (has) (has not) been granted a certificate of authority to do business in the
Commonwealth of Pennsylvania under applicable laws.]
(3) If the LLC has been organized under laws other than those of the Commonwealth of
Pennsylvania and has NOT been granted a certificate of authority, complete, by deletion as
appropriate, the following statement:
[The LLC (has) (has not) applied for a certificate of authority to do business in the Commonwealth
of Pennsylvania and (has) (has not) attached a copy of the pending application to this Bid.]



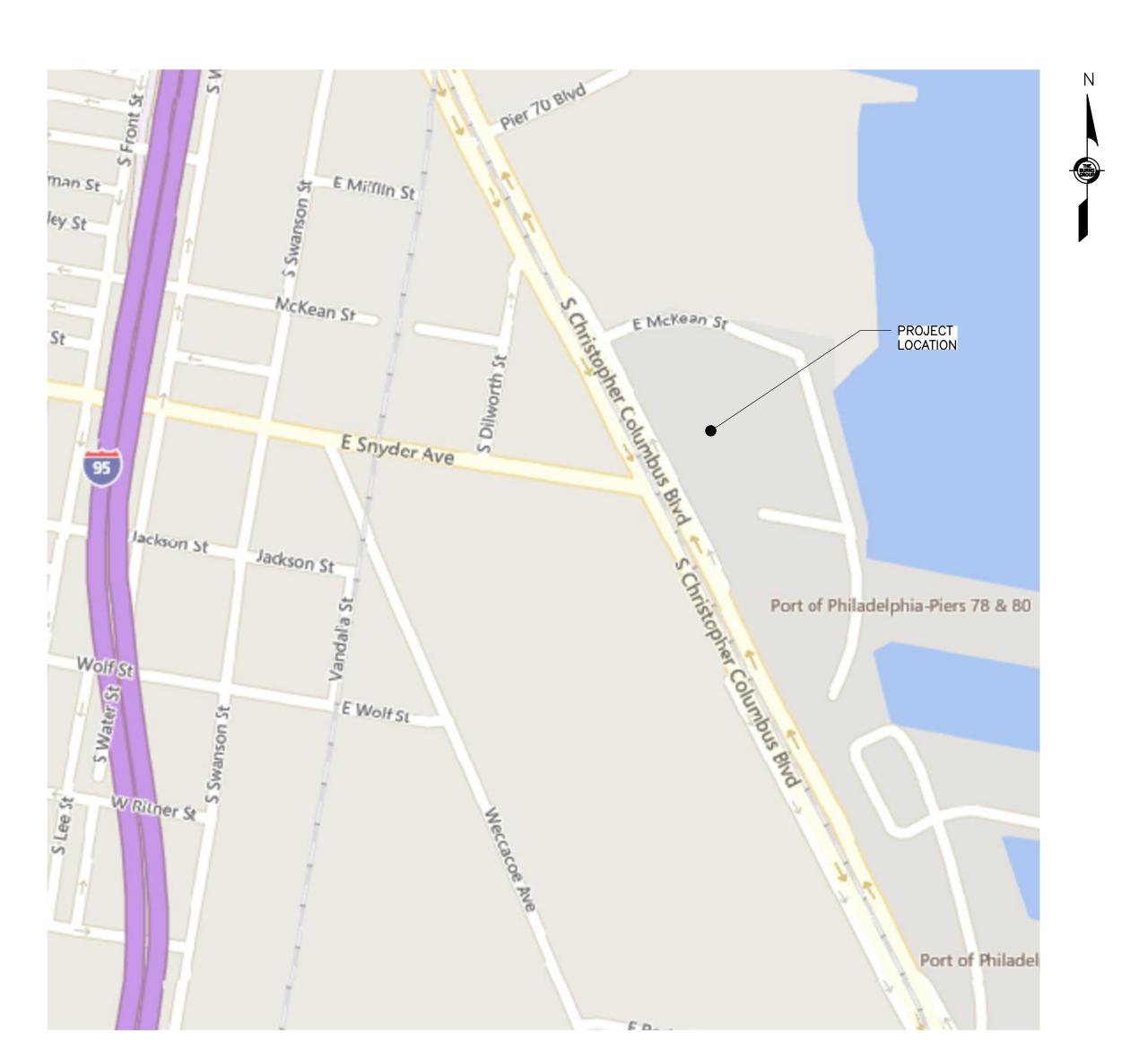
SPECIFICATIONS AND DRAWINGS REVISED PER ADDENDUM 3



THE PORT OF PHILADELPHIA

PHILAPORT PIER 78 ANNEX FIRE PROTECTION SPRINKLER UPGRADES PROJECT NO. 22-028.6

		DRAWING LIST
NO.	DRAWING NUMBER	DRAWING TITLE
1	CS-1	COVER SHEET
2	FP-0	FIRE PROTECTION NOTES AND LEGEND
3	FP-0.1	FIRE PROTECTION OVERALL PLAN AND PHASING
4	FPD-1	GROUND FLOOR PLAN - SYSTEM #1 DEMOLITION
5	FPD-2	GROUND FLOOR PLAN - SYSTEM #2 DEMOLITION
6	FPD-3	GROUND FLOOR PLAN - SYSTEM #3 DEMOLITION
7	FPD-4	GROUND FLOOR PLAN - SYSTEM #4 DEMOLITION
8	FPD-5	GROUND FLOOR PLAN - SYSTEM #5 DEMOLITION
9	FPD-6	GROUND FLOOR PLAN - SYSTEM #6 DEMOLITION
10	FPD-7	GROUND FLOOR PLAN - SYSTEM #7 DEMOLITION
11	FPD-8	ENLARGED FLOOR PLANS
12	FP-1	GROUND FLOOR PLAN - SYSTEM #1 NEW WORK
13	FP-2	GROUND FLOOR PLAN - SYSTEM #2 NEW WORK
14	FP-3	GROUND FLOOR PLAN - SYSTEM #3 NEW WORK
15	FP-4	GROUND FLOOR PLAN - SYSTEM #4 NEW WORK
16	FP-5	GROUND FLOOR PLAN - SYSTEM #5 NEW WORK
17	FP-6	GROUND FLOOR PLAN - SYSTEM #6 NEW WORK
18	FP-7	GROUND FLOOR PLAN - SYSTEM #7 NEW WORK
19	FP-8	ENLARGED FLOOR PLANS
20	FP-9	DETAILS
21	FP-10	SPECIFICATIONS
22	FA-O	FIRE ALARM NOTES, LEGENDS, SYMBOLS, AND ABBREVIATIONS
23	FA-1	GROUND FLOOR PLAN - WAREHOUSE
24	FA-2	GROUND FLOOR PLAN - OFFICE
25	P-0	PLUMBING NOTES, LEGENDS, AND SPECS
26	P-1	GROUND FLOOR PLUMBING PLAN
27	S-1	GROUND FLOOR STRUCTURAL PLAN SECTIONS & DETAI



PROJECT LOCATION

KEY PLAN

1 10/6/22 ADDENDUM #2 0 9/26/22 ISSUED FOR BID

No. Date Revision

BURNS ENGINEERING, INC. | 215 979-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

roject Title:

PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

Drawing Title:

COVER SHEET

Date: 7/15/2022

Scale: AS NOTED

Drawn: JJS

Checked: PDK

g No: CS-1

C:\Users\pkeeny\appdata\local\temp\AcPublish 3228\2020-028-CS-1.dwg 10/06/2022

SYMBOLS

DEMOLITION PIPE TURNING UP PIPE TURNING DOWN PIPE DROP BELOW CONTINUATION \longrightarrow PRESSURE/TEMPERATURE SENSOR STRAINER WITH BLOWDOWN FLOW BALANCING VALVE BALL VALVE

BREAK LINE (DOUBLE LINE DUCT/PIPE)

ABBREVIATIONS

ABANDONED AUTHORITY HAVING JURISDICTION BOTTOM OF PIPE BOTTOM OF DUCT COMPRESSED AIR CW COLD WATER/DOMESTIC COLD WATER CWS COLD WATER SUPPLY DN DOWN **EXISTING** EWT ENTERING WATER TEMPERATURE GENERAL CONTRACTOR GWB GYPSUM WALL BOARD HOT WATER/DOMESTIC HOT WATER HWR HOT WATER RETURN HWS HOT WATER SUPPLY LWT LEAVING WATER TEMPERATURE ONE-THOUSAND BTU'S NORMALLY CLOSED NATURAL GAS PLUMBING CONTRACTOR PROJECT MANAGER PRESSURE REDUCING VALVE

DIMENSIONAL UNITS

TYPICAL

WATER PRESSURE DROP

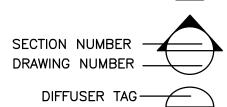
DIAMETER AND 'OR FT FEET " OR IN INCHES GALLONS PER MINUTE GPM POUNDS PER SQUARE INCH GAUGE

IDENTIFIERS

CONNECTION TO EXISTING POINT OF DISCONNECT CONSTRUCTION NOTE



TYP.



GENERAL NOTES

- 1. VERIFY ALL INDICATED CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING OF MATERIAL, OR PERFORMING ANY WORK. NOTIFY THE ENGINEER IN WRITING OF ANY CONDITIONS OR DIMENSIONS THAT WOULD PREVENT OR HAMPER THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS.
- 2. AT NO TIME SHALL THE CONTRACTOR INTERRUPT OPERATIONS AT THE PROJECT SITE UNLESS PRIOR ARRANGEMENTS HAVE BEEN OBTAINED IN WRITING FROM THE PHILAPORT PM. DAMAGES SHALL BE LEVIED AGAINST CONTRACTOR FOR EMPLOYEE DOWNTIME DUE TO OPERATIONS INTERRUPTIONS.
- 3. CONTRACTOR SHALL MAINTAIN A CLEAN AND ORDERLY STAGING AREA, WASTE STORAGE CONTAINERS SHALL BE EMPTIED DAILY AND IN A CLEAN FASHION, AND AS DIRECTED BY THE PROJECT MANAGER.
- 4. ALL WORK SHALL BE PERFORMED AS SHOWN ON THESE CONTRACT DRAWINGS AND AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS. DEVIATIONS SHALL BE CORRECTED AT NO COST TO PHILAPORT.
- 5. CONTRACTOR SHALL COMPLY WITH ALL WORKER OSHA SAFETY REGULATIONS AND ALL APPLICABLE CODES WHILE PERFORMING WORK.
- 6. WORK SHALL BE PERFORMED ON ONLY ONE SYSTEM AT A TIME AND AT ONLY ONE LOCATION AT A TIME, BASED ON THE PHASING PLAN APPROVED BY THE ENGINEER. ALLOW A MINIMUM OF 1 WEEK BETWEEN COMPLETION OF EACH PHASE, AND THE COMMENCEMENT OF THE NEXT PHASE FOR BUILDING OCCUPANTS TO MOVE FOR CONSTRUCTION. AFTER WORK ON EACH SYSTEM IS COMPLETED, THE SYSTEM SHALL BE TESTED. THE INSTALLATION AND TEST SHALL BE ACCEPTED BY THE ENGINEER BEFORE COMMENCING WITH WORK ON THE NEXT SYSTEM. SUBMIT CONSTRUCTION SCHEDULE FOR APPROVAL ONE WEEK IN ADVANCE TO THE PROJECT MANAGER ALONG WITH TWO WEEK LOOK AHEAD.
- 7. UPON COMPLETION OF WORK AT EACH AREA OF WORK, CLEAN AND RESTORE THE SITE. REMOVE ALL RUBBISH AND DEBRIS, VACUUM ALL AREAS AFFECTED BY CONSTRUCTION, REMOVE ALL BARRICADES AND ENCLOSURES, PERFORM A FINAL CLEANING OF ALL WORK TO THE SATISFACTION OF THE PROJECT MANAGER.
- 8. ANY DISCREPANCIES IN THE CONTRACT DRAWINGS, SPECIFICATIONS AND/OR DETAILS SHALL BE REPORTED TO THE ENGINEER IN WRITING. NO REVISION TO THE CONTRACT DOCUMENTS ARE PERMISSIBLE WITHOUT THE WRITTEN APPROVAL OF THE PROJECT MANAGER.
- 9. REPAIR OR REPLACE ANY EXISTING EQUIPMENT AND FACILITIES TO REMAIN, AND ANY BUILDING SURFACES WHICH ARE DAMAGED BY THE INSTALLATION OF WORK TO THE CLOSEST EXISTING CORNER, BREAK IN THE PLANE OR JOINT TO THE SATISFACTION OF THE PROJECT MANAGER AT NO ADDITIONAL COST TO PHILAPORT.
- 10. EXECUTE ALL WORK IN ACCORDANCE WITH THE BEST ACCEPTED TRADE PRACTICES, APPLICABLE CODES, REFERENCED STANDARDS FOR JOB AND AS PER MANUFACTURERS WRITTEN
- 11. THE PHRASES "REMOVE AND REPLACE" OR "DEMO AND INSTALL NEW" SHALL MEAN REMOVE EXISTING CONSTRUCTION AND FURNISH AND INSTALL NEW CONSTRUCTION MATERIALS AS NOTED ON THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS.
- 12. WHEN WATER IS USED AT THE CONSTRUCTION SITE, ENSURE THROUGH ANY APPROPRIATE MEASURES THAT THE WATER DOES NOT FREEZE ON ROADWAYS OR SIDEWALKS.
- 13. THERE ARE SEVERAL AREAS IN THE BUILDING WHERE THE SPRINKLER WORK WILL IMPACT WAREHOUSE OPERATIONS. THE CONTRACTOR AND PHILAPORT PROJECT MANAGER MUST COORDINATE A SCHEDULE THAT WILL REDUCE THE IMPACT ON WAREHOUSE OPERATIONS AND CONTRACTOR INSTALLATIONS.
- 14. EXTRA CARE SHALL BE TAKEN TO RELOCATE OR COVER COMBUSTIBLE MATERIALS DURING HOT WORK OPERATIONS.
- 15. EFFORTS SHOULD BE MADE SO THAT ANY FIRE PROTECTION WORK, SUCH AS AUTOMATIC SPRINKLER INSTALLATIONS KEEPS PACE WITH CONSTRUCTION AND PRECEDES COMBUSTIBLE OCCUPANCIES.
- 16. ADEQUATE EMERGENCY PROCEDURES AND TEMPORARY FIRE PROTECTIONS SHOULD BE AVAILABLE DURING CONSTRUCTION. THIS WOULD INCLUDE APPROPRIATE FIRE EXTINGUISHERS, A SMALL HOSE FOR USE ON HYDRANTS AND A SELF-PERFORMED WATCH SERVICE TO FLAG OUT POTENTIAL

DEMOLITION NOTES

- 1. REMOVE FIRE PROTECTION PIPING, PIPE HANGERS, AND SUPPORTS AS SHOWN AS REQUIRED. CAP BRANCH PIPING AT THE MAIN UNLESS SHOWN OTHERWISE.
- 2. PROTECT EXISTING MATERIALS INDICATED TO REMAIN. INSTALL AND MAINTAIN DUST AND NOISE BARRIERS TO KEEP DIRT, DUST, AND NOISE FROM BEING TRANSMITTED TO ADJACENT AREAS. REMOVE PROTECTION AND BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE.
- 3. LOCATE, IDENTIFY, AND PROTECT SERVICES PASSING THROUGH DEMOLITION AREA AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS.
- 4. ALL DEMOLISHED EQUIPMENT/PIPING SHALL BE PROMPTLY REMOVED AND DISPOSED OF IN ACCORDANCE WITH PENNSYLVANIA STATE REQUIREMENTS AND CITY OF PHILADELPHIA REQUIREMENTS.

FIRE PROTECTION NOTES

- 1. PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, INCIDENTALS, METHODS AND SERVICES REQUIRED TO INSTALL ALL WORK INDICATED COMPLETELY AND IN FULL OPERATION.
- 2. CONTRACTOR SHALL APPLY FOR, SECURE, AND PAY FOR ALL PERMITS AND/OR CERTIFICATES OF INSPECTION REQUIRED IN THE PERFORMANCE OF THE WORK BY ALL AUTHORITIES HAVING JURISDICTION.
- 3. ALL FIRE PROTECTION WORK SHALL BE IN COMPLETE CONFORMANCE WITH THE BUILDING CODE, PHILADELPHIA PLUMBING CODE, NFPA 13 AND EQUIPMENT MANUFACTURERS REQUIREMENTS. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND WHERE REQUIRED RELOCATE EXISTING UTILITIES FOR THE
- 4. ALL WORK SHALL BE IN CONFORMANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS ADOPTED BY MUNICIPAL, COUNTY, STATE, AND FEDERAL AUTHORITIES, INSURANCE AGENCIES, AND OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.
- 5. ANY DEFECTS IN WORKMANSHIP, MATERIALS, MALFUNCTION OF EQUIPMENT OR UNSATISFACTORY PERFORMANCE, AND ALL OTHER WORK OR PARTS OF THE BUILDING DAMAGED THEREBY, SHALL BE REPAIRED, REPLACED OR OTHERWISE REMEDIED WITHOUT EXPENSE TO THE OWNER.
- 6. WHERE PRODUCTS ARE SCHEDULED HEREIN WITH A MANUFACTURER'S NAME AND MODEL NUMBER, IT IS TO ESTABLISH THE UNIT'S FEATURES AND STANDARD OF QUALITY; EQUAL SUBSTITUTIONS SHALL BE PERMITTED PENDING ENGINEERING REVIEW AND PHILAPORT'S FINAL APPROVAL.
- 7. ALL INTERIOR FLOOR AND WALL PENETRATIONS SHALL BE CORE DRILLED, SLEEVED AND SEALED WITH AN APPROVED FIRE RATED SEALANT.
- 8. CORE DRILL ALL EXTERIOR WALL PENETRATIONS AND SEAL ALL EXISTING AND NEW PENETRATIONS WATER AND WEATHERTIGHT.
- 9. SEISMIC PROTECTION OF ALL FIRE PROTECTION EQUIPMENT AND SPRINKLER PIPING SHALL COMPLY WITH NFPA 13, 2018 IBC, AND ASCE 07.
- 10. UNLESS SPECIFICALLY REQUIRED OTHERWISE, CONFORM TO THE MANUFACTURER'S WRITTEN STANDARDS AND RECOMMENDATIONS WHEN INSTALLING EQUIPMENT AND MATERIALS AND AS APPROVED BY THE
- 11. STAGE SHUTDOWNS IN SUCH A MANNER THAT INTERRUPTIONS ARE KEPT TO A MINIMUM AND GIVE AT LEAST ONE WEEK ADVANCE WRITTEN NOTICE TO PHILAPORT'S PROJECT MANAGER FOR APPROVAL PRIOR TO SCHEDULING SHUTDOWNS. FURNISH AND INSTALL SIGNAGE TO NOTIFY BUILDING PERSONNEL OF SHUTDOWNS. OPENING AND CLOSING OF VALVES REQUIRED FOR SHUTDOWNS SHALL BE COORDINATED WITH PHILAPORT'S PROJECT MANAGER.
- 12. WHEN SHUTDOWNS OF ANY SYSTEM EXCEED 18 HOURS, FURNISH AND INSTALL TEMPORARY PIPING TO ENSURE ALL SYSTEMS ARE OPERATIONAL AT THE END OF EACH WORK SHIFT. REMOVE ALL TEMPORARY PIPING; DEMOLISH ALL EXISTING PIPING UNLESS PIPING IS SHOWN TO BE ABANDONED.
- 13. FURNISH AND INSTALL EXTRA SUPPORTS OF PIPING ON BOTH SIDES OF ALL EQUIPMENT AND VALVES WITHIN 12 INCHES OF DEVICE. FURNISH AND INSTALL INDEPENDENT SUPPORTS FOR ALL ZONE VALVES AND EQUIPMENT. PLACE HANGERS WITHIN 12 INCHES OF EACH HORIZONTAL ELBOW.
- 14. ARRANGE SPRINKLERS WITH A MAXIMUM ON-LINE SPACING OF 10 FT. A VARIATION OF 1 FT. IS PERMITTED ON EITHER DIMENSION TO AVOID OBSTRUCTIONS BY STRUCTURAL ELEMENTS.
- 15. INSTALL ALL GALVANIZED STEEL FIRE SUPPRESSION PIPING WITH SEAM ON TOP OF PIPE.
- 16. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED. INSTALL BALL VALVES FOR SHUT-OFF AND TO ISOLATE EQUIPMENT, PART OF SYSTEMS, OR VERTICAL RISERS.
- 17. ALL PIPE SHALL BE INSTALLED SO THAT THE SYSTEM MAY BE DRAINED. DRAINS TO BE IN ACCORDANCE WITH NFPA PAMPHLET NO. 13-2007 PARAGRAPH 8-15.2.
- 18. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIAL BEING USED IN THE COURSE OF THE WORK, PURCHASE OF OR INSTALLATION OF MATERIALS OR SYSTEM PARTS SHALL NOT PROCEED UNTIL REVIEWED AND APPROVED SHOP DRAWINGS ARE RETURNED TO THE SUBMITTING CONTRACTOR, SUBMIT SPRINKLER PIPING AND HEAD LAYOUT DRAWINGS FOR REVIEW. SUBMIT CUT SHEETS FOR PIPING, FITTINGS, ACCESSORIES, INSULATION, VALVES, FOR ENGINEERS APPROVAL.
- 19. PIPING SIZES FOR ALL TEST CONNECTIONS SHALL ACCOMMODATE TEST PROCEDURES AND ALLOW FOR ADEQUATE FLOW FOR ACCEPTANCE TEST. ALL TEST CONNECTIONS SHALL BE LOCATED SO THAT THE INSPECTOR CAN PERFORM TEST WITHOUT ASSISTANCE FROM A LIFT, LADDER, ETC.
- 20. PRESSURE TEST ALL PIPING SYSTEM FOR 24 HOURS BEFORE PUTTING INTO SERVICE. TEST SYSTEMS TO 150 PSIG. USE NITROGEN FOR TESTING NITROGEN PIPING SYSTEMS. REPLACE ANY EXISTING TO REMAIN PIPING THAT FAILS PRESSURE TEST. FOR BID PURPOSES, ASSUME REPLACEMENT OF 10% OF PIPING SHOWN AS EXISTING TO REMAIN.



KEY PLAN

1 10/6/22 ADDENDUM #2

0 9/26/22 ISSUED FOR BID No. Date Revision



TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600

PHILADELPHIA, PA 19103

Project Title:

PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

FIRE PROTECTION **NOTES AND LEGEND**



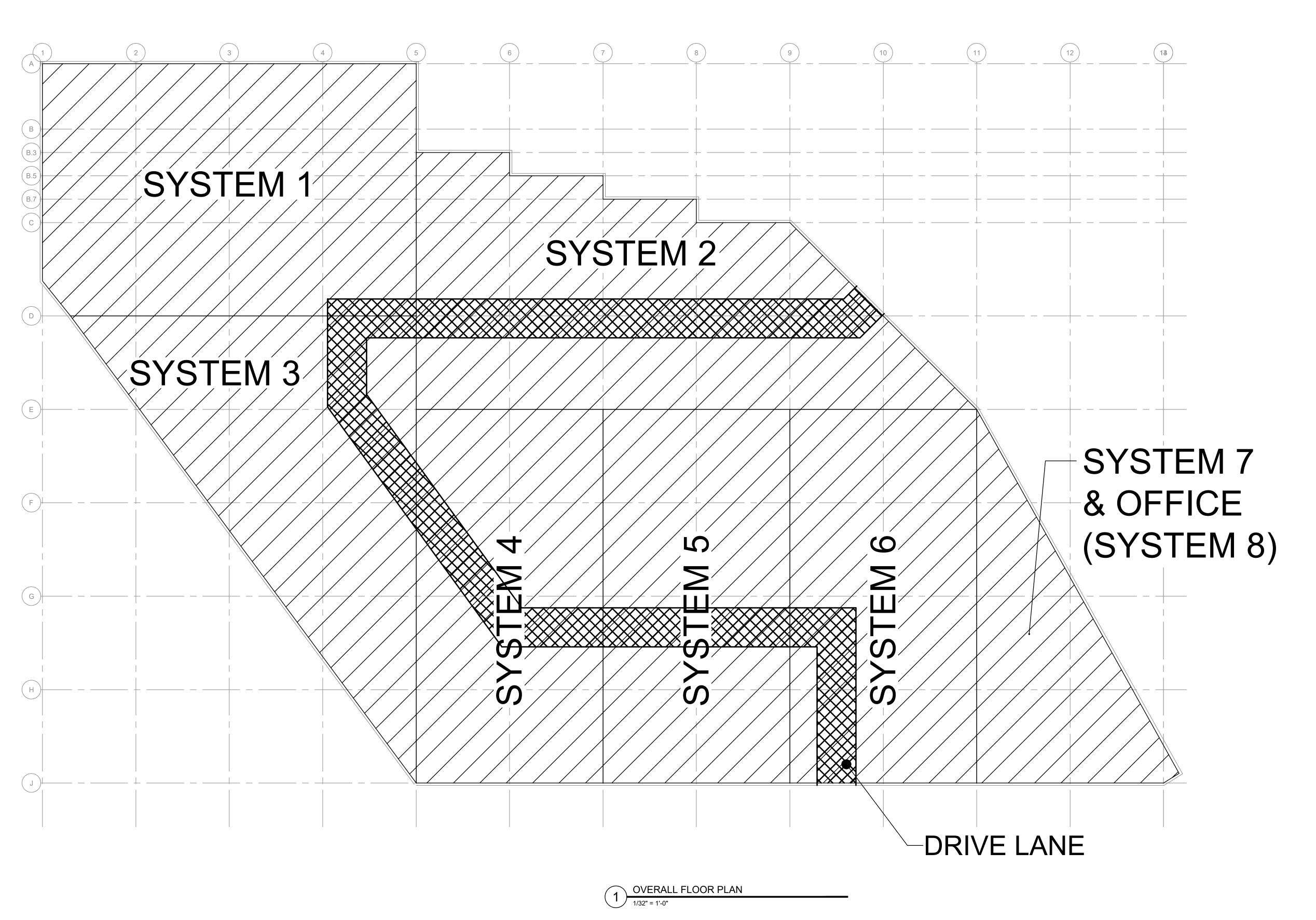
EQUIPMENT TAG



FIRE PROTECTION DESIGN CRITERIA							
TEST POINT	FLOW (GPM)	RESIDUAL PRESSURE (PSI)	REMARKS				
1	0	133	8/21/2020 FIRE PUMP TEST DATA				
2	2,538	127	8/21/2020 FIRE PUMP TEST DATA				
3	3,747	82	8/21/2020 FIRE PUMP TEST DATA				

ZONE	AREA DESCRIPTION	VALVE LOCATION	SYST
1	WAREHOUSE	VALVE ROOM 1	
2	WAREHOUSE	VALVE ROOM 2	
3	WAREHOUSE	VALVE ROOM 3/4	
4	WAREHOUSE	VALVE ROOM 3/4	
5	WAREHOUSE	VALVE ROOM 5	
6	WAREHOUSE	VALVE ROOM 6	

	FIRE PROTECTION DESIGN CRITERIA								
ZONE	AREA DESCRIPTION	VALVE LOCATION	SYSTEM TYPE	HAZARD CLASSIFICATION	DENSITY (GPM/SF)	HYDRAULIC REMOTE AREA (SF)	MAX COVERAGE PER SPRINKLER (SF)	HEAD TYPE	K-FACTOR
1	WAREHOUSE	VALVE ROOM 1	DRY	STORAGE	0.6	3,900	100	UPRIGHT, DRY TYPE	K=16.8
2	WAREHOUSE	VALVE ROOM 2	DRY	STORAGE	0.6	3,900	100	UPRIGHT, DRY TYPE	K=16.8
3	WAREHOUSE	VALVE ROOM 3/4	DRY	STORAGE	0.6	3,900	100	UPRIGHT, DRY TYPE	K=16.8
4	WAREHOUSE	VALVE ROOM 3/4	DRY	STORAGE	0.6	3,900	100	UPRIGHT, DRY TYPE	K=16.8
5	WAREHOUSE	VALVE ROOM 5	DRY	STORAGE	0.6	3,900	100	UPRIGHT, DRY TYPE	K=16.8
6	WAREHOUSE	VALVE ROOM 6	DRY	STORAGE	0.6	3,900	100	UPRIGHT, DRY TYPE	K=16.8
7	WAREHOUSE	FIRE PUMP ROOM	DRY	STORAGE	0.6	3,900	100	UPRIGHT, DRY TYPE	K=16.8

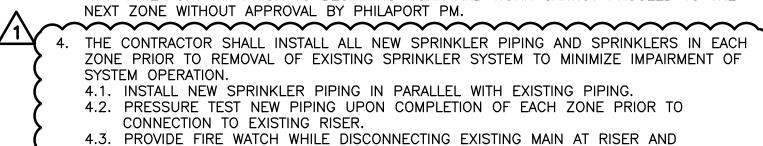


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CONSTRUCTION SEQUENCE NOTES:

CONTRACTOR'S APPROVED PHASING PLAN.

- PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PROPOSED PHASING PLAN FOR REVIEW. ALL WORK SHALL BE COORDINATED AND EXECUTED PER THE PHASING PLAN.
- 2. CROSS—HATCHED AREA DENOTES DRIVING LANE, AND MUST BE KEPT ACTIVE DURING THE CONSTRUCTION PHASING. ANY CHANGES TO THE DRIVING LANE MUST BE SUBMITTED AND APPROVED BY PHILAPORT PRIOR TO BEGINNING WORK ON EACH PHASE
- 3. THE CONTRACTOR SHALL INSTALL THE FIRE SUPPRESSION AND FIRE ALARM SYSTEMS CONCURRENTLY IN ONE ZONE AT A TIME. AREAS OF WORK SHALL BE COORDINATED WITH PHILAPORT PM PRIOR TO BEGINNING WORK AND WORK CANNOT PROCEED TO THE



- CONNECTING NEW PIPING UNTIL NEW SYSTEM IS FULLY OPERATIONAL AND TESTED.
 4.4. REMOVE ABANDONED PIPING PRIOR TO PROCEEDING TO THE NEXT ZONE.

 5. PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, AND COORDINATE ALL SHUTDOWN OF EXISTING SYSTEMS TO ACCOMPLISH THE INTENT OF THE SCOPE OF WORK BASED ON THE
- 6. UPON ACCEPTANCE BY PHILAPORT OF THE NEW FIRE SUPPRESSION AND FIRE ALARM SYSTEMS, THE CONTRACTOR SHALL PROVIDE A DEMOLITION PHASING PLAN FOR THE REMOVAL OF THE EXISTING SYSTEM, SUBJECT TO THE SAME RESTRICTIONS TO AREAS OF WORK AS THE SYSTEM INSTALLATIONS.
- 7. UPON COMPLETION OF WORK AT EACH AREA OF WORK, CLEAN AND RESTORE THE SITE. REMOVE ALL RUBBISH AND DEBRIS, VACUUM ALL AREAS AFFECTED BY CONSTRUCTION, REMOVE ALL BARRICADES AND ENCLOSURES, PERFORM A FINAL CLEANING OF ALL WORK TO THE SATISFACTION OF PHILAPORT'S PROJECT MANAGER.

NOTES:

- STAGING AREA: PHILAPORT SHALL PROVIDE AREA FOR CONTRACTORS' STAGING. EXACT LOCATION TO BE COORDINATED WITH PHILAPORT PROJECT MANAGER.
- 2. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE REMOVED FROM SITE DAILY.
- 3. MINIMAL INTERRUPTION OF SHOP ACTIVITY: THE CONTRACTOR IS REMINDED THAT THE BUILDING IS AN ACTIVE FACILITY. THE CONTRACTOR IS REQUIRED TO COORDINATE ALL AREAS OF WORK WITH THE ASSIGNED REPRESENTATIVE OF PHILAPORT. THE CONTRACTOR'S CONSTRUCTION SCHEDULE SHALL ADDRESS THE SEQUENCING OF THE FIRE SUPPRESSION AND DETECTION SYSTEMS' REPLACEMENT CONSTRUCTION.
- 4. <u>PROTECTION OF CONTRACTORS' PERSONNEL:</u> THE CONTRACTOR SHALL PROVIDE APPROPRIATE AND ADEQUATE SAFETY PROTECTION FOR ITS EMPLOYEES AND REQUIRE THE SAME FROM ITS SUBCONTRACTORS.
- 5. PROTECTION OF BUILDING INTERIOR AND PHILAPORT PERSONNEL: THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION TO THE BUILDING INTERIORS, EQUIPMENT, AND PERSONNEL THROUGH THE USE OF ROOF TRUSS SUPPORTED PLANKING, NETTING, OR OTHER MATERIAL SYSTEM WHERE APPROPRIATE. THE SYSTEM USED SHALL PROTECT PERSONNEL AND SHOP EQUIPMENT FROM FALLING DEBRIS, MATERIAL, AND EQUIPMENT.

FIREWATCH REQUIREMENTS:

- 1. IN THE EVENT OF FIRE ALARM AND/OR FIRE SUPPRESSION SYSTEM IMPAIRMENT, FIRE WATCH GUIDELINES SHALL BE IMPLEMENTED AS NOTED BELOW. IT IS THE RESPONSIBILITY OF THE CONTRACTOR WHO SCHEDULES THE IMPAIRMENT TO PROVIDE FIRE WATCH.
- 2. NOTIFY PHILAPORT'S PROJECT MANAGER ONE WEEK IN ADVANCE OF THE IMPAIRMENT AND THE TEMPORARY PRECAUTIONS TO BE TAKEN, INCLUDING THE PROVISION OF A FIRE WATCH. NOTIFY THE PHILADELPHIA FIRE DEPARTMENT OF THE IMPAIRMENT AND THE TEMPORARY PRECAUTION TO BE TAKEN. ALL DETAILS AND PROJECTED TIMES NECESSARY FOR REPAIRS SHALL BE PROVIDED TO THE FIRE DEPARTMENT. NOTIFY PHILAPORT'S PM OF THE IMPAIRMENT AND THE TEMPORARY PRECAUTIONS TO BE TAKEN. ALL DETAILS AND PROJECTED TIMES NECESSARY FOR REPAIRS SHALL BE PROVIDED.
- 3. PROVIDE A FIRE WATCH, 24 HOURS A DAY IF NECESSARY, UNTIL ALL FIRE PROTECTION SYSTEMS AND FIRE ALARM SYSTEMS HAVE BEEN RESTORED. FIRE WATCH PROTECTION AT ALL LOCATIONS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE NFPA STANDARDS, LOCAL AHJ REQUIREMENTS, NFPA 601 GUARD SERVICE IN FIRE LOSS PREVENTION, AND NFPA 602 GUARD OPERATION IN FIRE LOSS PREVENTION AND WHEN APPROVED BY PHILAPORT'S PROJECT MANAGER.
- 4. FIRE WATCH PERSONNEL SHALL HAVE FORMAL TRAINING IN THE USE OF PORTABLE FIRE EXTINGUISHERS. THIS SHALL INCLUDE PRACTICAL LIVE FIRE TRAINING.
- 5. QUALIFIED FIRE WATCHERS SHALL BE PROVIDED FOR EACH BUILDING/AREA. FIRE WATCH PERSONNEL SHALL BE FAMILIAR WITH A RELIABLE NOTIFICATION SYSTEM (I.E. RADIO, TELEPHONE, PULL BOX). THEY SHALL BE INSTRUCTED TO NOTIFY THE BUILDING OPERATIONS IMMEDIATELY OF A POTENTIAL FIRE EMERGENCY. FIRE WATCH PERSONNEL SHALL HAVE NO DUTIES OTHER THAN THAT OF FIRE WATCH. IF A SECURITY WATCH IS NECESSARY, ADDITIONAL PERSONNEL SHALL BE PROVIDED.
- 6. FIRE WATCH PERSONNEL SHALL MAKE ROUNDS AT PREDETERMINED INTERVALS, NOT TO EXCEED THIRTY MINUTES APART. VERIFICATION THAT PATROLS ARE MADE OF ALL AREAS SHALL BE RECORDED IN A LOGBOOK.
- 7. FIRE WATCH PERSONNEL SHALL BE FAMILIAR WITH THE SITE, SYSTEMS, HAZARDS AND EXPOSURES. EACH WATCH SHALL BE FAMILIARIZED AS SHIFT CHANGES OCCUR.
- 8. FIRE WATCH PERSONNEL SHALL BE AWARE OF THE LIMITATIONS OF FIXED AND PORTABLE EXTINGUISHING EQUIPMENT.

9. FIRE WATCHES AND CONTRACT SERVICE FOR FIRE WATCHES SHALL COMPLY WITH THE

10. ALL HOT WORK OR SPARK-PRODUCING OPERATIONS IN THE BUILDING(S) SHALL BE

APPLICABLE SECTION OF NFPA 601-SECURITY SERVICES IN FIRE LOSS PREVENTION.

PROHIBITED UNTIL ALL FIRE PROTECTION SYSTEMS HAVE BEEN RESTORED.

11. ONCE FIRE SUPPRESSION SYSTEM RESTORATION IS COMPLETE, SUBSEQUENTLY CANCELING THE NEED FOR FIRE WATCH, THE CONTRACTOR SHALL NOTIFY BUILDING OPERATIONS AND THE PHILAPORT PROJECT MANAGER IMMEDIATELY.



KEY PLAN

1 10/6/22 ADDENDUM #2

0 9/26/22 ISSUED FOR BID

No. Date Revision

BURNS ENGINEERING, INC. | 215 979-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600

PHILADELPHIA, PA 19103

Project Title:

PHILAPORT
PIER 78 ANNEX
SPRINKLER UPGRADES

Drawing Title

OVERALL PLAN & PHASING

Date: 7/15/2022

Scale: AS NOTED

Drawn: JJS

Checked: PDK

FP-0.1

32' 64' 1/32" = 1'-0"

REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

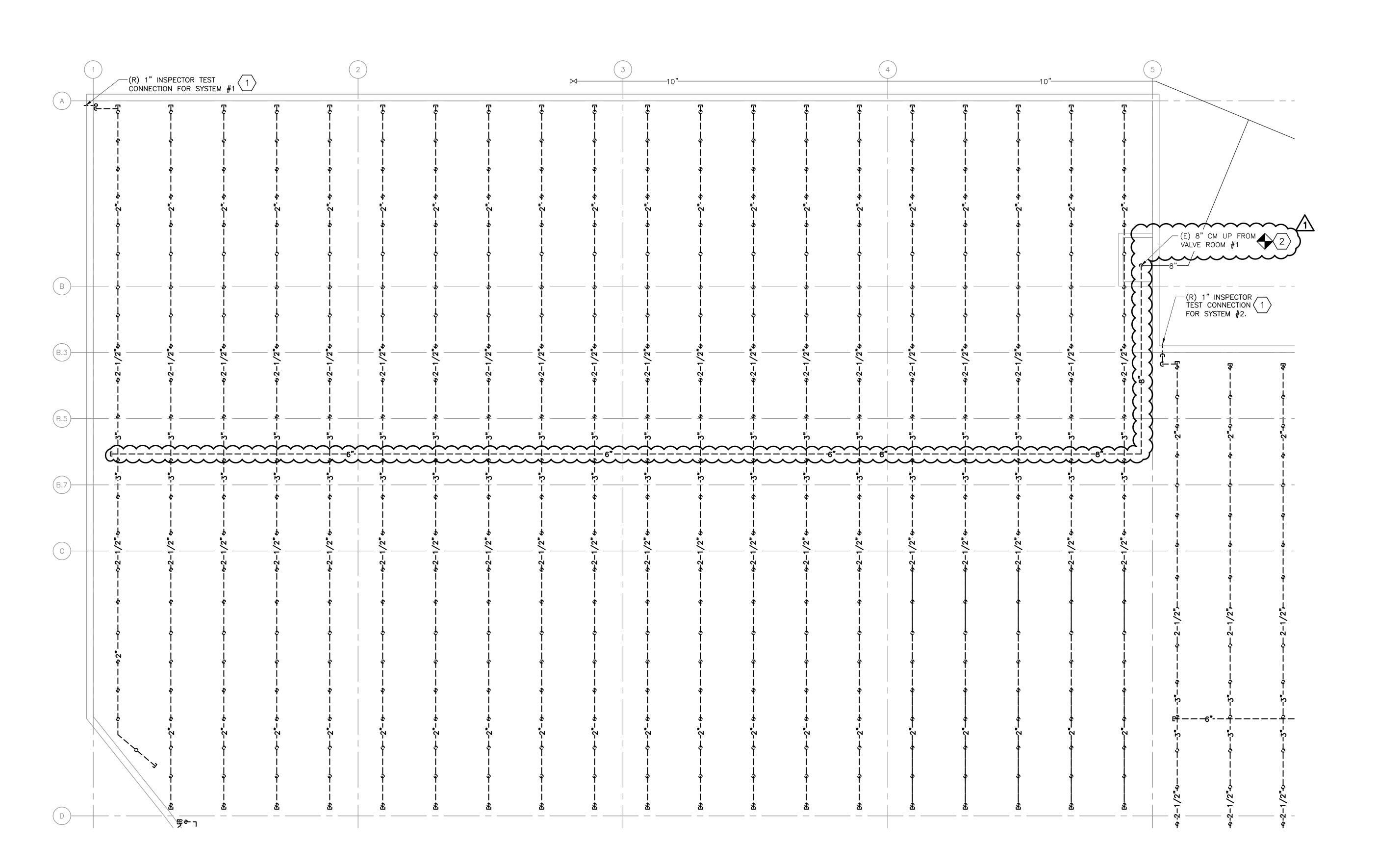


KEYNOTES:

AFTER REMOVAL, MAINTAIN EXISTING WALL OPENING FOR NEW INSPECTOR'S TEST CONNECTION.

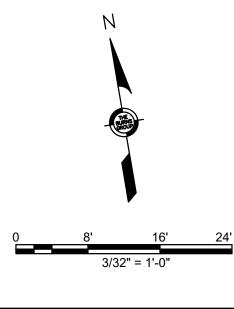
DISCONNECT DRY SPRINKLER PIPE AT THE TOP OF THE RISER. PREPARE RISER FOR CONNECTION TO NEW PIPE.

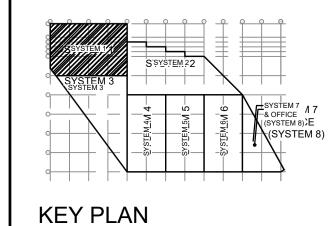




GROUND FLOOR - SYSTEM #1 DEMOLITION

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	1	10/6/22	ADDENDUM #2
	0	9/26/22	ISSUED FOR BID
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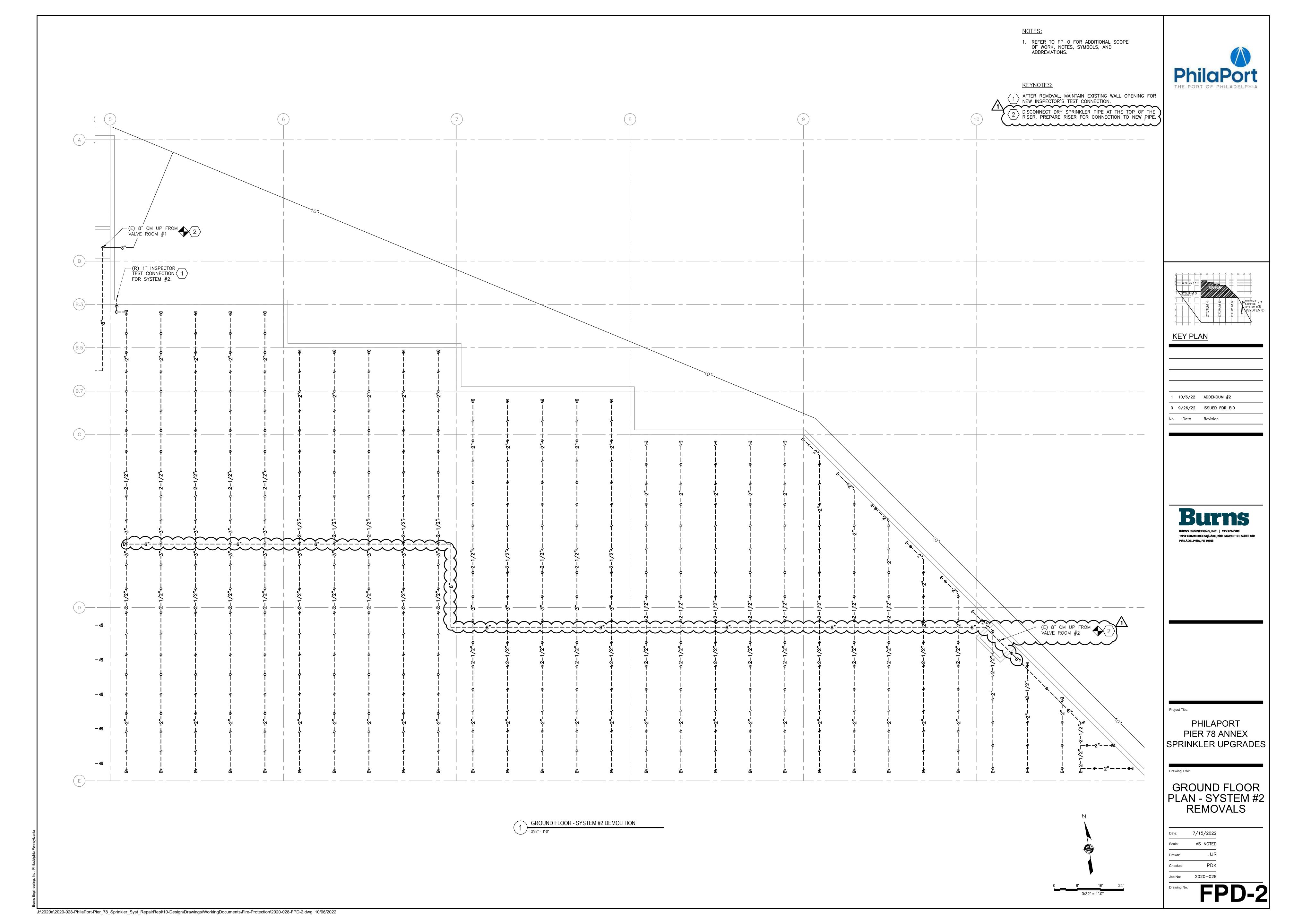


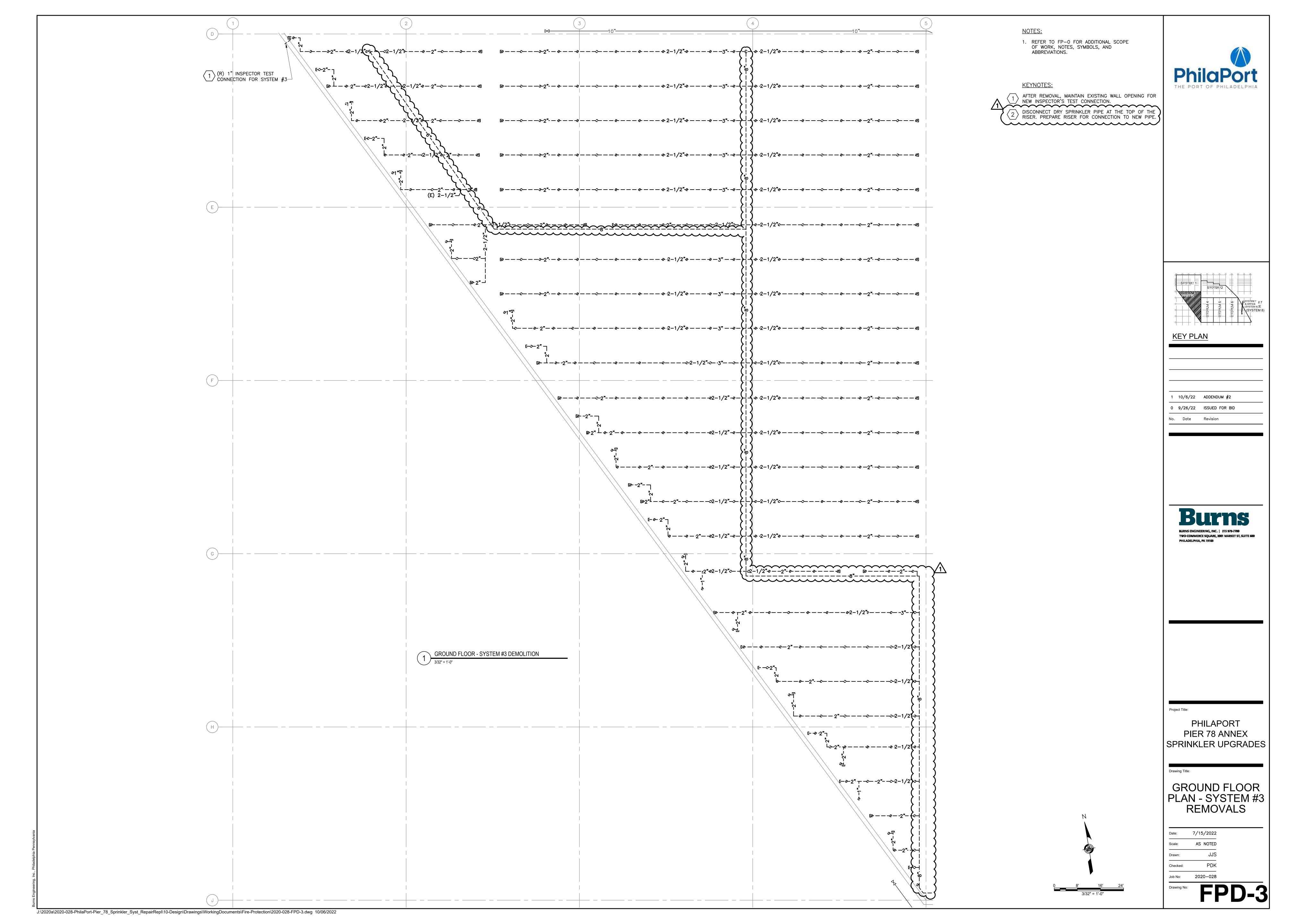
Project Title:

PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

GROUND FLOOR PLAN - SYSTEM #1 REMOVALS

Date:	7/15/2022
Scale:	AS NOTED
Drawn:	JJS
Checked:	PDK





(R) 1" INSPECTOR TEST
CONNECTION FOR SYSTEM #4 x - - x - - x 1 - 1/2"x - - x - - x - 2" - x - 2" - x - 2 - 1/2"x - x 2 - 1/2"x - 2" - x - - 2" - x - - x - - x 1 - 1/2"x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - - x - x - - x - x - - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x - x -**▼** - - **▼** - - **▼** 1 - 1/2***▼** - - - **▼** - - - **▼** - 2* - - **▼** 2 - 1/2***▼** - **↑** - **▼** 2 - 1/2***▼** - 2* - - 2* - - - **▼** 1 - 1/2***▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - **▼** - - (E) 8" RISER FOR SYSTEM #4 2 (E) 8" MAIN FROM BELOW GRADE | (E) 8" RISER FOR SYSTEM #3 √ GROUND FLOOR - SYSTEM #4 DEMOLITION

NOTES:

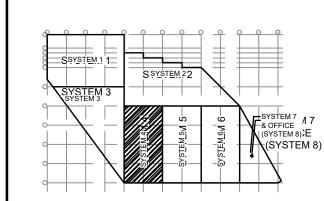
 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

KEYNOTES:

AFTER REMOVAL, MAINTAIN EXISTING WALL OPENING FOR NEW INSPECTOR'S TEST CONNECTION.

DISCONNECT DRY SPRINKLER PIPE AT THE TOP OF THE RISER. PREPARE RISER FOR CONNECTION TO NEW PIPE.





KEY PLAN

1 10/6/22 ADDENDUM #2 0 9/26/22 ISSUED FOR BID

No. Date Revision

PHILADELPHIA, PA 19103

BURNS ENGINEERING, INC. | 215 979-7700

Project Title

PHILAPORT
PIER 78 ANNEX
SPRINKLER UPGRADES

Drawing Title

GROUND FLOOR PLAN - SYSTEM #4 REMOVALS

Date: 7/15/2022

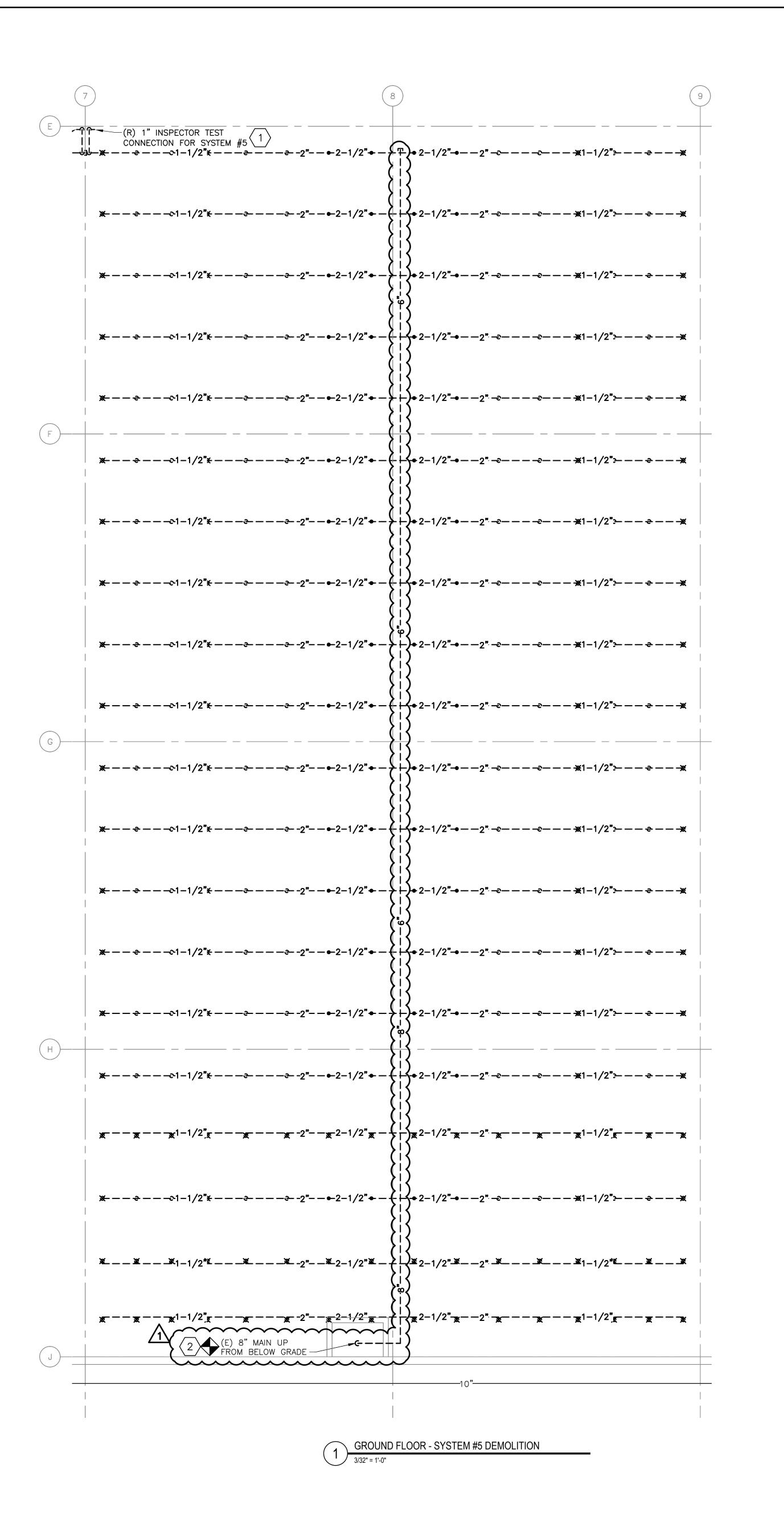
Scale: AS NOTED

Drawn: JJS

Checked: PDK

Drawing No: FPD-4

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NOTES:

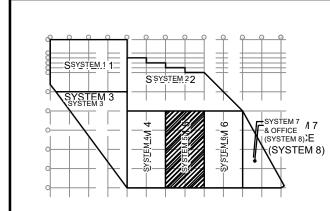
 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

KEYNOTES:

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DISCONNECT DRY SPRINKLER PIPE AT THE TOP OF THE RISER. PREPARE RISER FOR CONNECTION TO NEW PIPE.





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PHILADELPHIA, PA 19103

BURNS ENGINEERING, INC. | 215 979-7700

Project Title:

PHILAPORT
PIER 78 ANNEX
SPRINKLER UPGRADES

Drawing Title

GROUND FLOOR PLAN - SYSTEM #5 REMOVALS

Date: 7/15/2022

Scale: AS NOTED

Drawn: JJS

Checked: PDK

Wing No: FPD-5

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-(R)V1" INSPECTOR TEST CONNECTION
FOR SYSTEM #6.
SPILL TO GRADE. |- s--2"-s--1-si ⋇−−÷−−≈1−1/2"≰−−−≈−−∞−2"−−∞−2−1/2"◆−∤+<+2−1/2"→−−2" ~-−−≈−−∞−− ×1−1/2"≔−−÷−− × |- s2-1/2" -s -- -- -s -- -- -2"-s -- --|--=2-1/2"-=--=-2"-=---|--=2-1/2"·-=--=--2"·-=---· |- =2-1/2"· = - - - = -2"· = - -\$\\ \frac{1}{2}\display 2-1/2"\display --\display \display \dint \display \ -(E) 8" MAIN UP FROM 2 ------BELOW GRADE → GROUND FLOOR - SYSTEM #6 DEMOLITION

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NOTES:

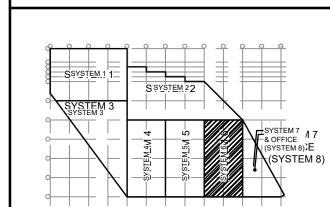
 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

KEYNOTES:

AFTER REMOVAL, MAINTAIN EXISTING WALL OPENING FOR NEW INSPECTOR'S TEST CONNECTION.

DISCONNECT DRY SPRINKLER PIPE AT THE TOP OF THE RISER. PREPARE RISER FOR CONNECTION TO NEW PIPE.





KEY PLAN

1 10/6/22 ADDENDUM #2 0 9/26/22 ISSUED FOR BID

No. Date Revision



Project Title:

PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

Drawing Title

GROUND FLOOR PLAN - SYSTEM #6 REMOVALS

 Date:
 7/15/2022

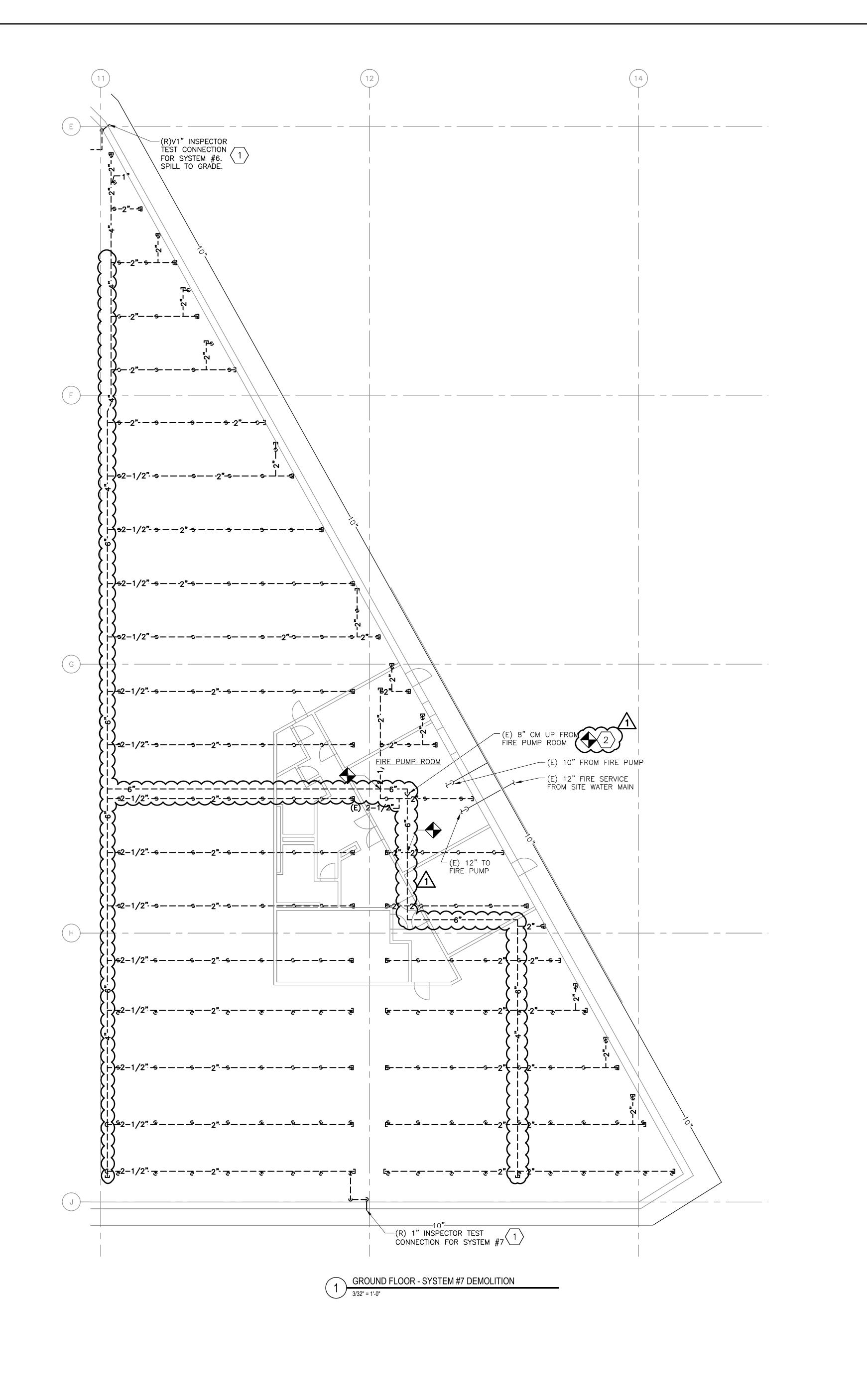
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 Job No:
 2020-028

FPD-6



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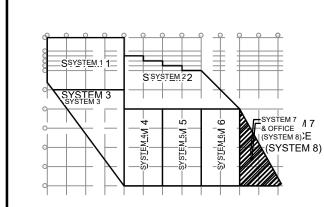
NOTES:

1. REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

KEYNOTES:

AFTER REMOVAL, MAINTAIN EXISTING WALL OPENING FOR NEW INSPECTOR'S TEST CONNECTION. DISCONNECT DRY SPRINKLER PIPE AT THE TOP OF THE RISER. PREPARE RISER FOR CONNECTION TO NEW PIPE.





KEY PLAN

1 10/6/22 ADDENDUM #2 0 9/26/22 ISSUED FOR BID

No. Date Revision

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PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

GROUND FLOOR PLAN - SYSTEM #7 REMOVALS

Date: 7/15/2022 AS NOTED



KEY PLAN

1 10/6/22 ADDENDUM #2 0 9/26/22 ISSUED FOR BID

No. Date Revision

BURNS ENGINEERING, INC. | 215 979-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

Project Title:

PHILAPORT
PIER 78 ANNEX
SPRINKLER UPGRADES

rawing Title:

ENLARGED FLOOR PLANS -DEMOLITION

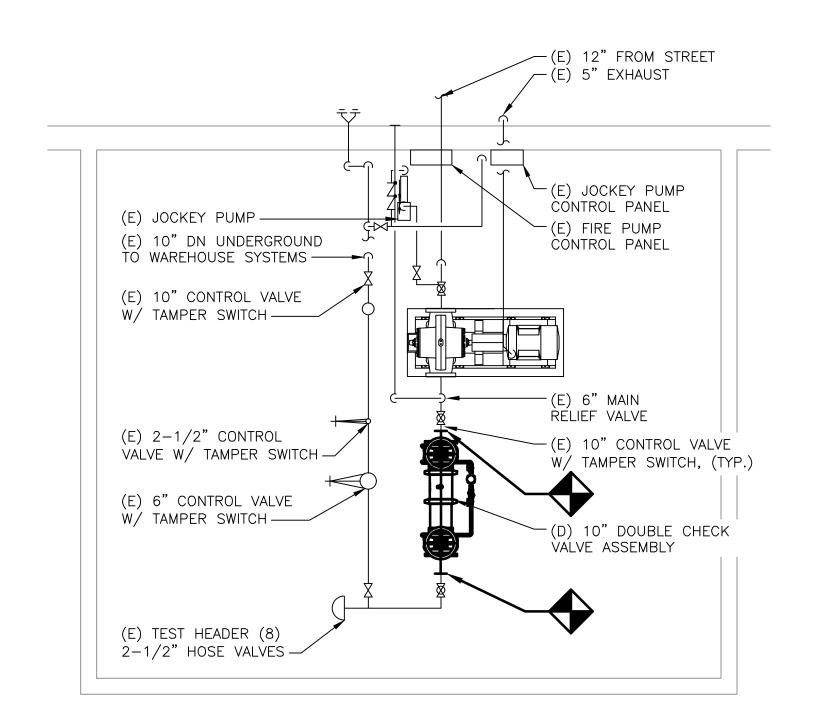
 Date:
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ENLARGED FLOOR PLAN - FIRE PUMP ROOM DEMO

1/4" = 1'-0"

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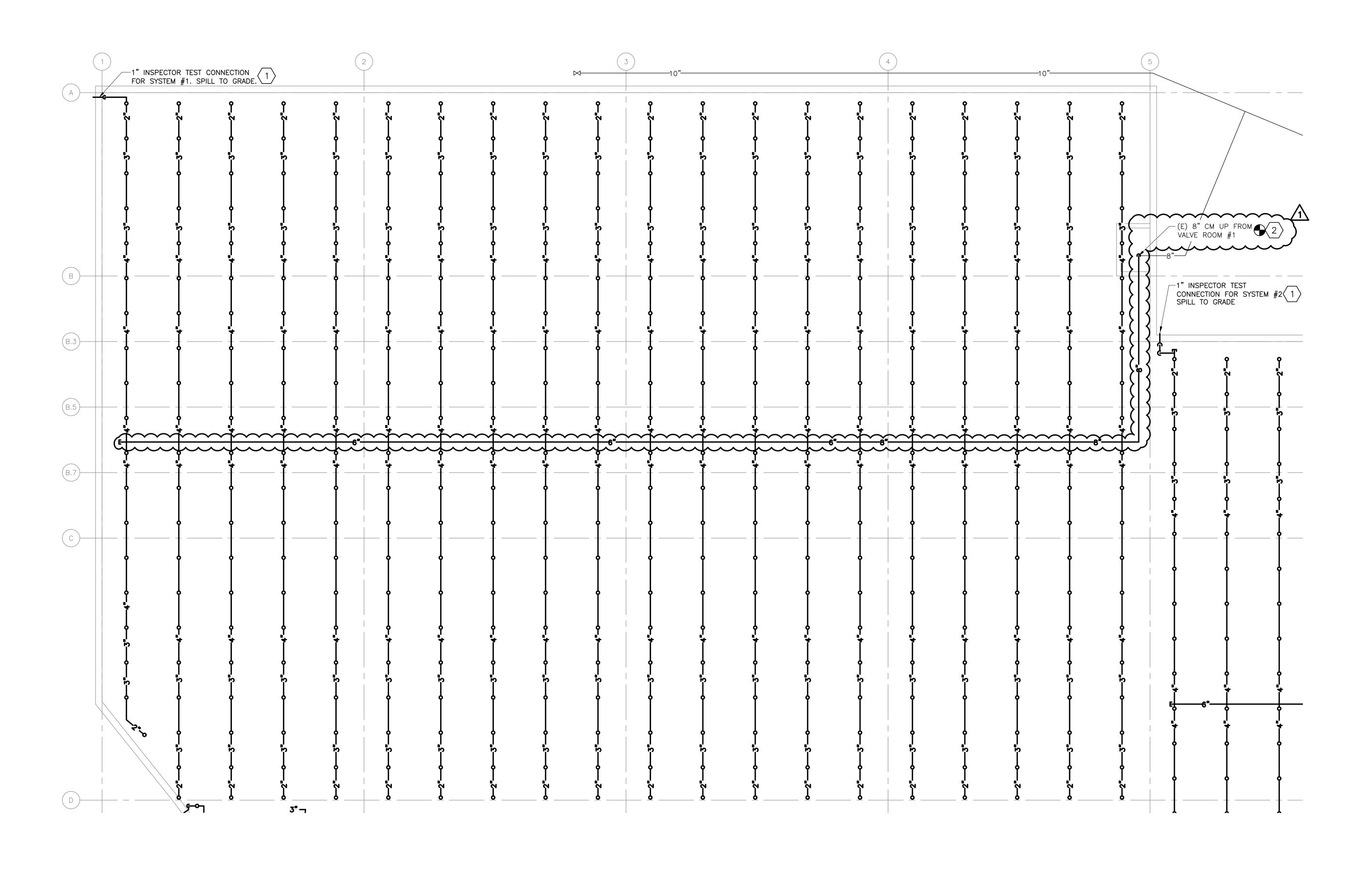
 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.



KEYNOTES:

RE-USE EXISTING WALL OPENING FROM PREVIOUS INSPECTOR'S TEST CONNECTION.

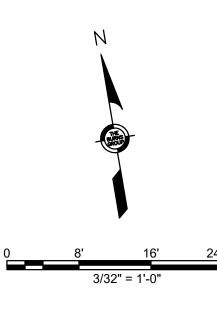
CONNECT NEW DRY SPRINKLER PIPE TO THE EXISTING DRY SPRINKLER PIPE AT THE TOP OF THE RISER.

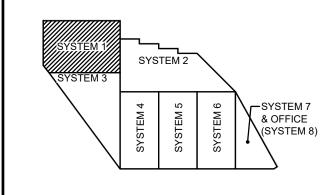


GROUND FLOOR - SYSTEM #1 NEW WORK

3/32" = 1'-0"

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PIER 78 ANNEX
SPRINKLER UPGRADES

Drawing Title

GROUND FLOOR PLAN - SYSTEM #1

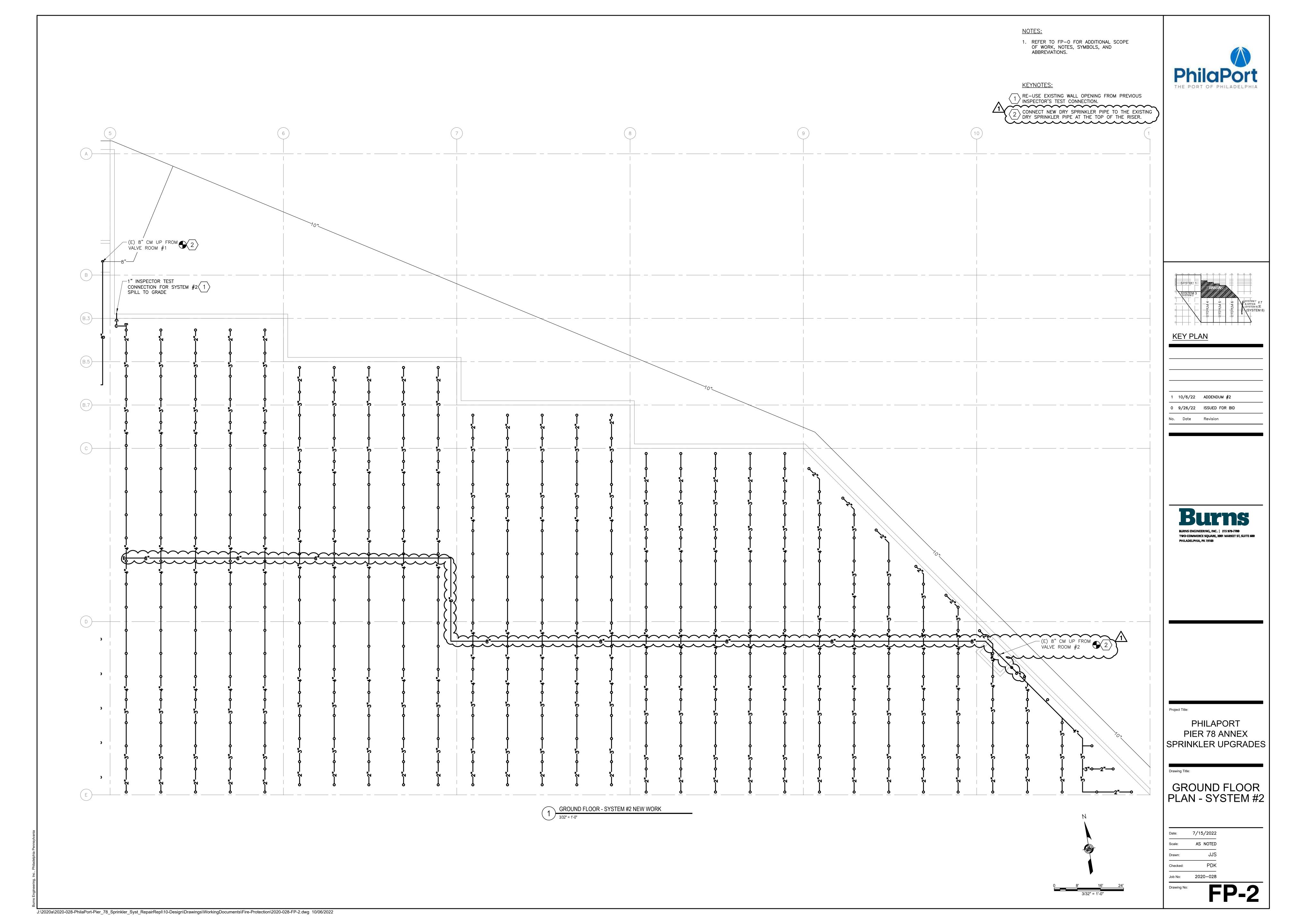
Date: 7/15/2022

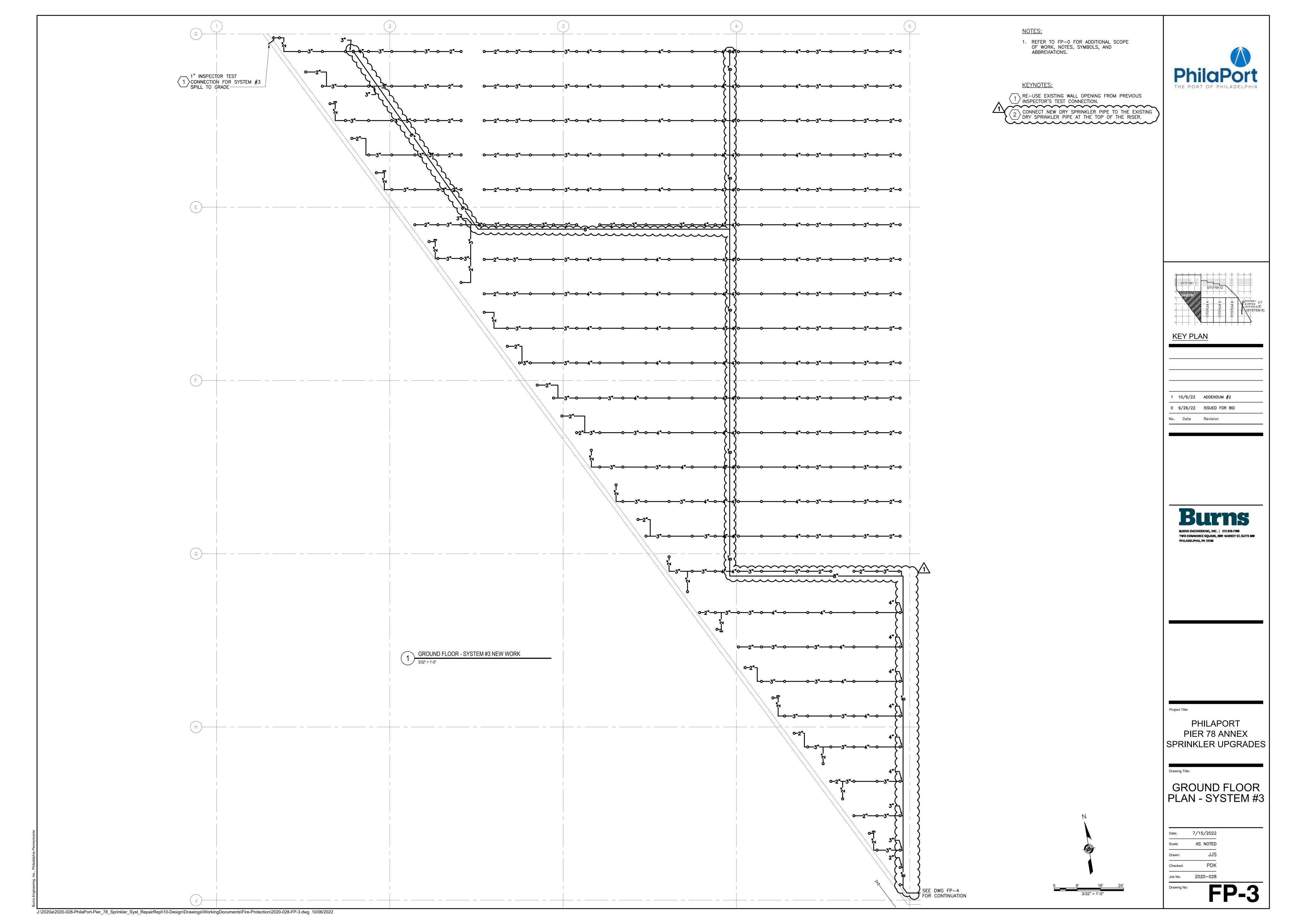
Scale: AS NOTED

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Checked: PDK

No: FP-1





1" INSPECTOR TEST CONNECTION FOR SYSTEM #4-**─○**──3**"─○**──○─3"─○─2"─○─Ы⊍ ○—2"—○—3"—○——○—4"—○——○—4"-|| o—2"—o—3"—o—4"—o— (E) 8" RISER FOR SYSTEM #4 (E) 8" MAIN FROM BELOW GRADE (E) 8" RISER FOR (2) GROUND FLOOR - SYSTEM #4 NEW WORK

3/32" = 1'-0"

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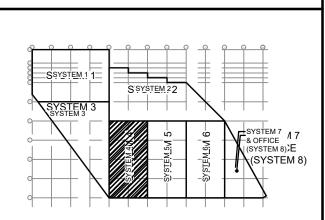
 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

KEYNOTES:

RE-USE EXISTING WALL OPENING FROM PREVIOUS INSPECTOR'S TEST CONNECTION.

CONNECT NEW DRY SPRINKLER PIPE TO THE EXISTING DRY SPRINKLER PIPE AT THE TOP OF THE RISER.





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PHILAPORT
PIER 78 ANNEX
SPRINKLER UPGRADES

Drawing Title

GROUND FLOOR PLAN - SYSTEM #4

Date: 7/15/2022

Scale: AS NOTED

Drawn: JJS

Checked: PDK

Job No: 2020-028

Drawing No: FP-4

1" INSPECTOR TEST CONNECTION FOR SYSTEM #5 **─**⊌⊌**─**○2"**─**○3"**─**○**3"─**○4"**─**○ o—2"—o—3"—o——o—3"—o—4"—o o—2"—o—3"—o—4"—o o—2"—o—3"—o—4"—o— **-**○**-**4"**-**○**-**3"**-**○**-**2"**-**○ **○**—2"**—○**—3"**—○**—4"**—○ ○**—2"—**○**—3"—**○**—4"—**○ ○**—2"—**○**—3"—**○**— **○**—3"—**○**—4"—**○**— (E) 8" MAIN UP FROM BELOW GRADE GROUND FLOOR - SYSTEM #5 NEW WORK

3/32" = 1'-0"

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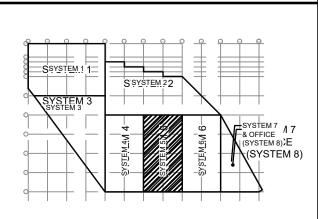
 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

KEYNOTES:

RE-USE EXISTING WALL OPENING FROM PREVIOUS INSPECTOR'S TEST CONNECTION.

CONNECT NEW DRY SPRINKLER PIPE TO THE EXISTING DRY SPRINKLER PIPE AT THE TOP OF THE RISER.





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GROUND FLOOR PLAN - SYSTEM #5

 Date:
 7/15/2022

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 Job No:
 2020-028

FP-5

— 1" INSPECTOR TEST CONNECTION FOR SYSTEM #6. SPILL TO GRADE. o—2"—o—3"—o——o—3"—o—4"—o **─**○**─**4**"─**○3"**─**○**─**3"**─**○2"**─**○ **○**—2"—**○**—3"—**○**——**○**4"—**○** (E) 8" MAIN UP FROM (2) BELOW GRADE GROUND FLOOR - SYSTEM #6 NEW WORK

3/32" = 1'-0"

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NOTES:

 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

KEYNOTES:

RE-USE EXISTING WALL OPENING FROM PREVIOUS INSPECTOR'S TEST CONNECTION.

CONNECT NEW DRY SPRINKLER PIPE TO THE EXISTING DRY SPRINKLER PIPE AT THE TOP OF THE RISER.



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SYSTEM 8)
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SPRINKLER UPGRADES

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GROUND FLOOR PLAN - SYSTEM #6

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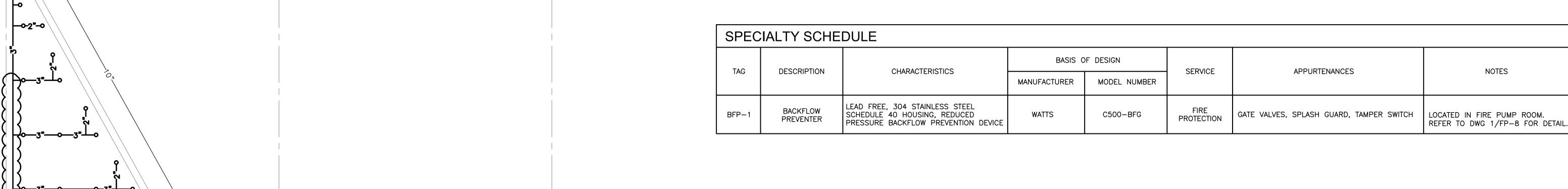
 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.

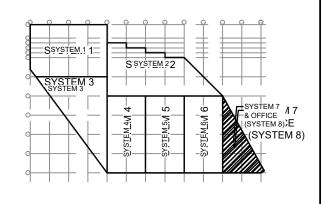


1 RE-USE EXISTING WALL OPENING FROM PREVIOUS INSPECTOR'S TEST CONNECTION.

2 CONNECT NEW DRY SPRINKLER PIPE TO THE EXISTING DRY SPRINKLER PIPE AT THE TOP OF THE RISER.







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PIER 78 ANNEX
SPRINKLER UPGRADES

Drawing Title

GROUND FLOOR PLAN - SYSTEM #7

Date: 7/15/2022

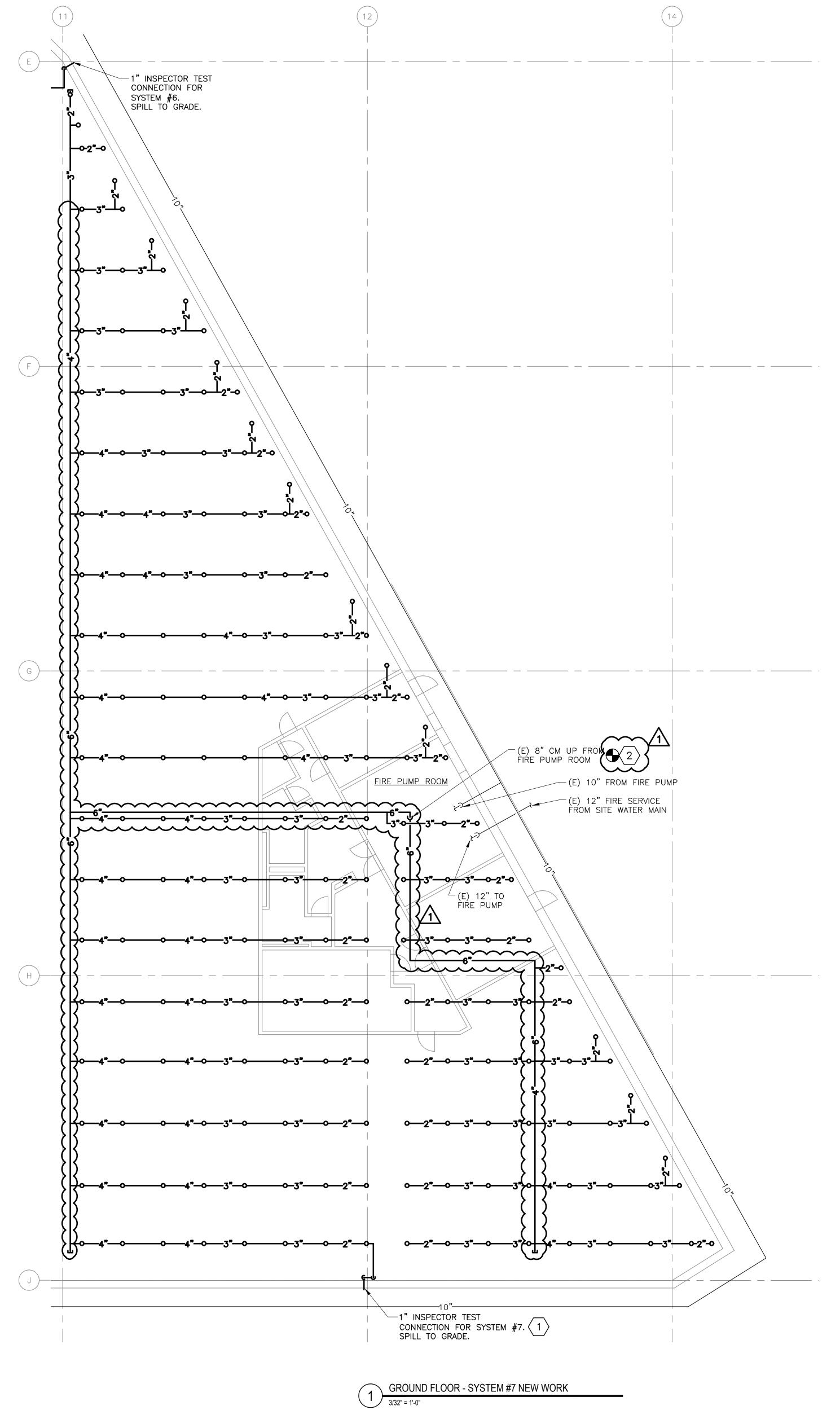
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Checked: PDK

Job No: 2020-028

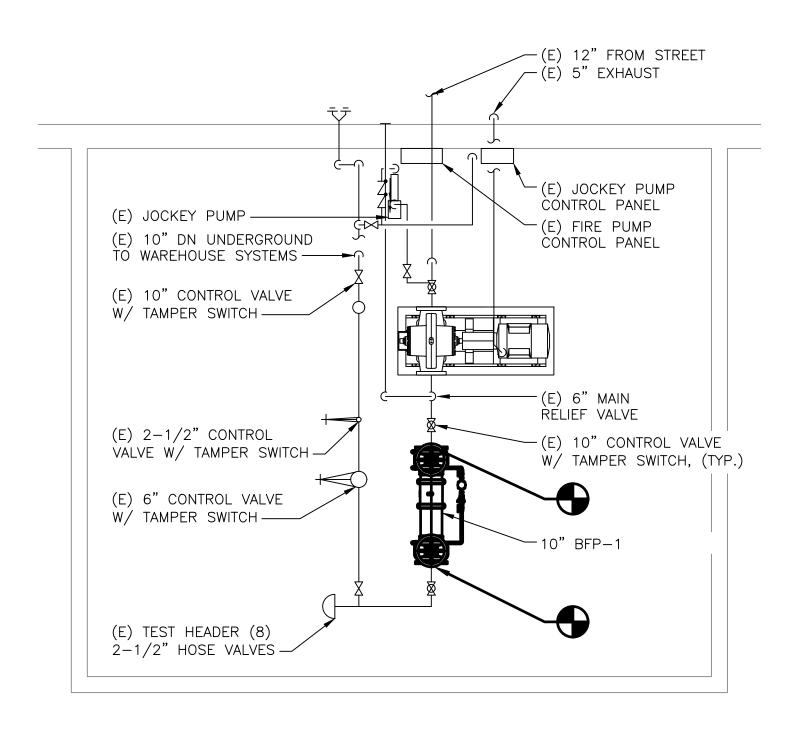
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 REFER TO FP-0 FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.





(E) 2" MAIN DRAIN

(E) AUTOMATIC SPRINKLER
IN VALVE ROOM

(E) SPRINKLER RISER
FOR SYSTEM #1

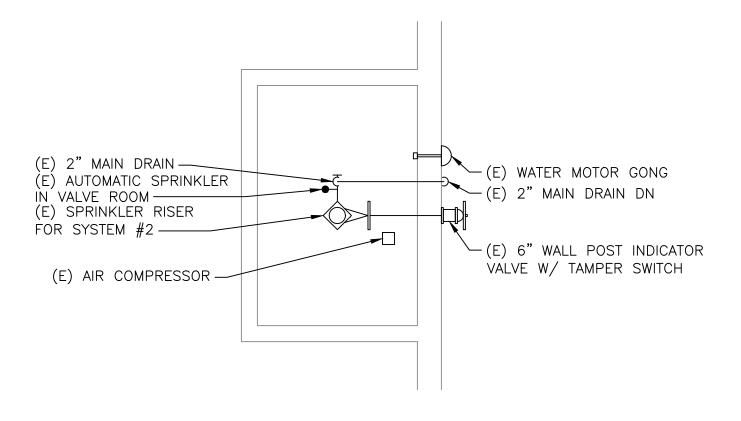
(E) AIR COMPRESSOR

(E) WATER MOTOR GONG

(E) 2" MAIN DRAIN DN

(E) 6" WALL POST INDICATOR

VALVE W/ TAMPER SWITCH



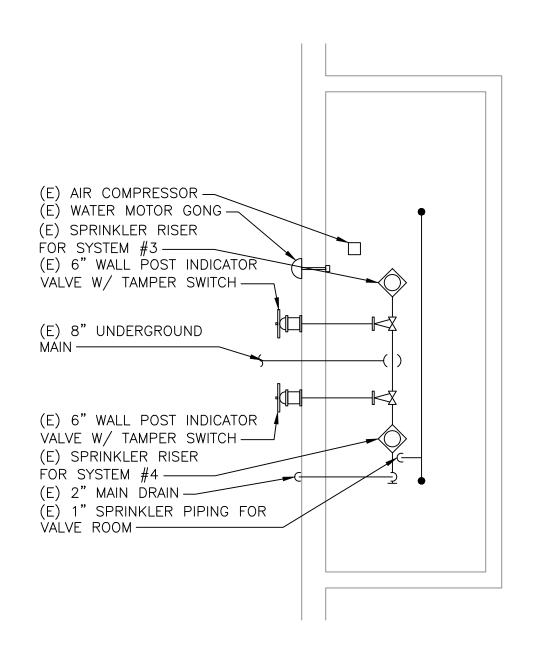
ENLARGED FLOOR PLAN - FIRE PUMP ROOM NEW WORK

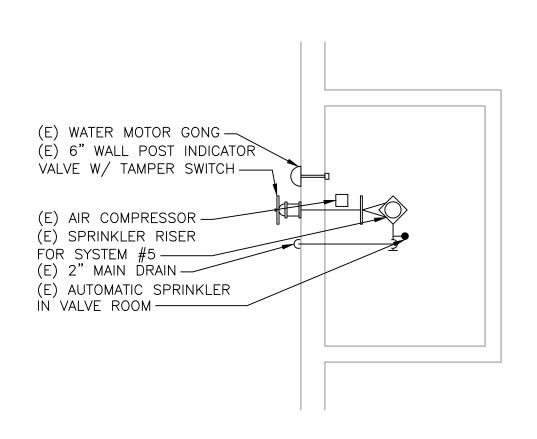
1/4" = 1'-0"

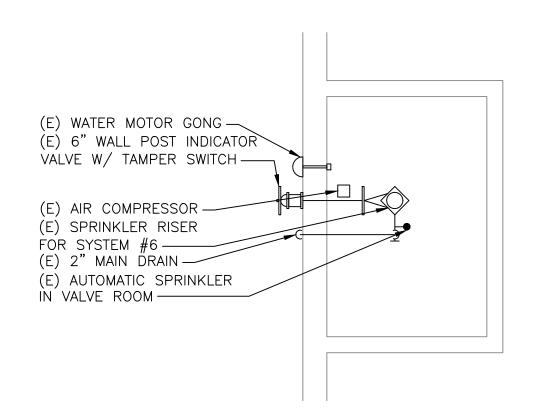
2 ENLARGED FLOOR PLAN - VALVE ROOM #1 NEW WORK

1/4" = 1'-0"

3 ENLARGED FLOOR PLAN - VALVE ROOM #2 NEW WORK







ENLARGED FLOOR PLAN - VALVE ROOM #3 & #4 NEW WOF

ENLARGED FLOOR PLAN - VALVE ROOM #5 NEW WORI

ENLARGED FLOOR PLAN - VALVE ROOM #6 NEW WOR

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PHILAPORT
PIER 78 ANNEX
SPRINKLER UPGRADES

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ENLARGED FLOOR PLANS -NEW WORK

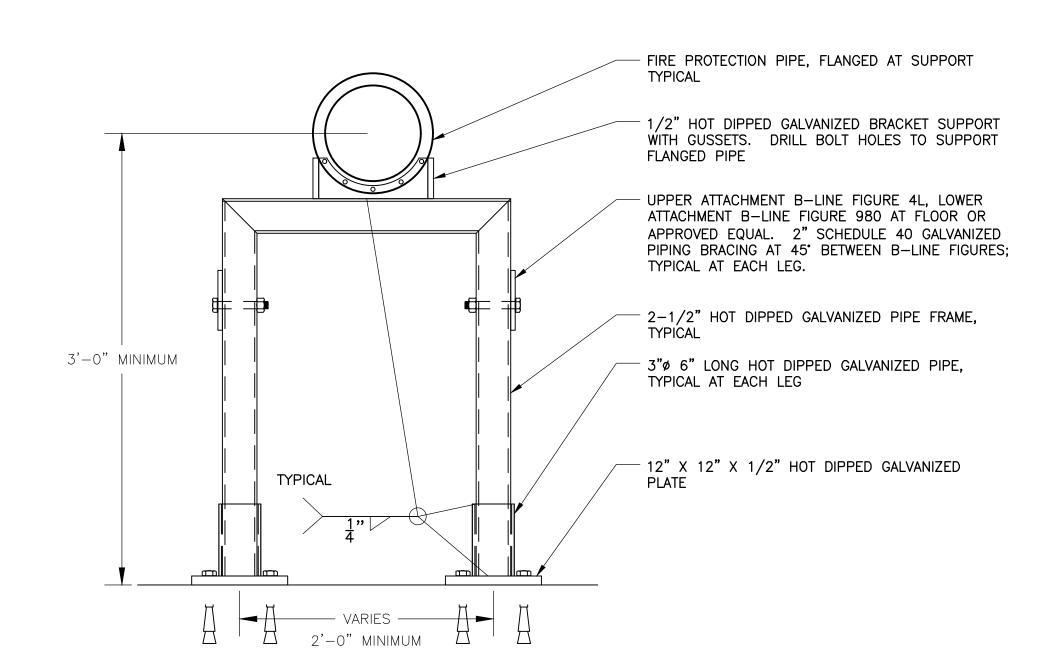
 Date:
 7/15/2022

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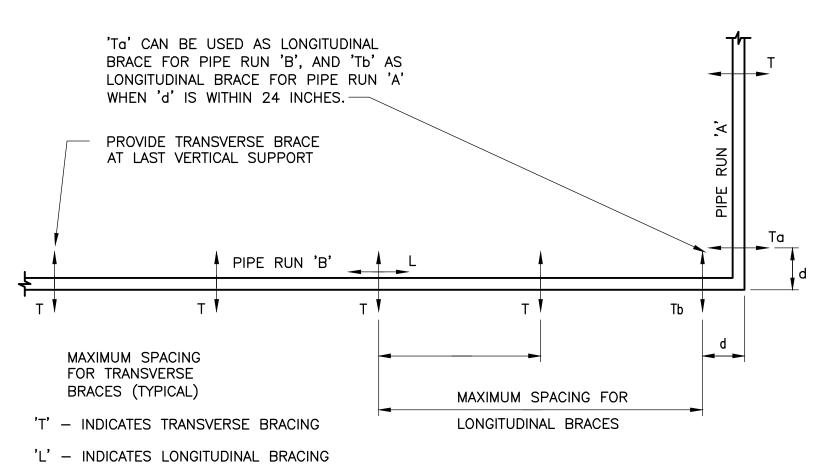
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 JJS

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 PDK

Drawing No:



√ FLOOR MOUNTED PIPE SUPPORT



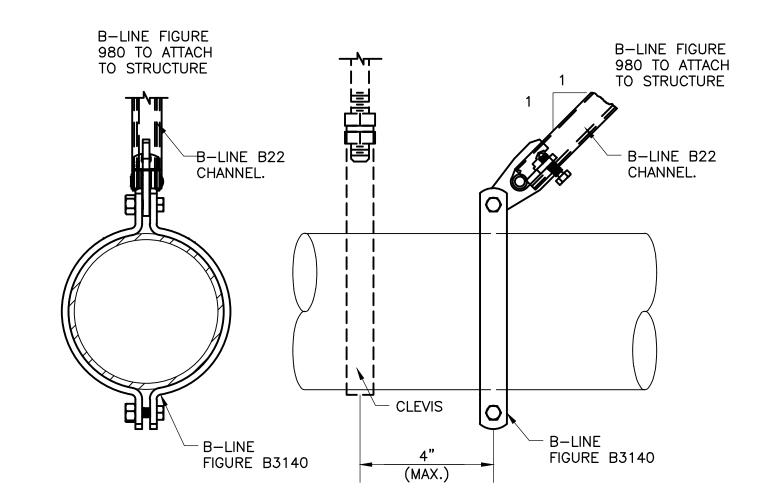
NOTES:

1. FOR SPACING REQUIREMENT OF BRACING REFER TO MECHANICAL SPECIFICATIONS: HANGERS AND SUPPORTS.

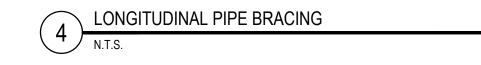
2. FURNISH AND INSTALL TRANSVERSE BRACING AT EVERY CHANGE IN DIRECTION. 'd' SHALL NOT

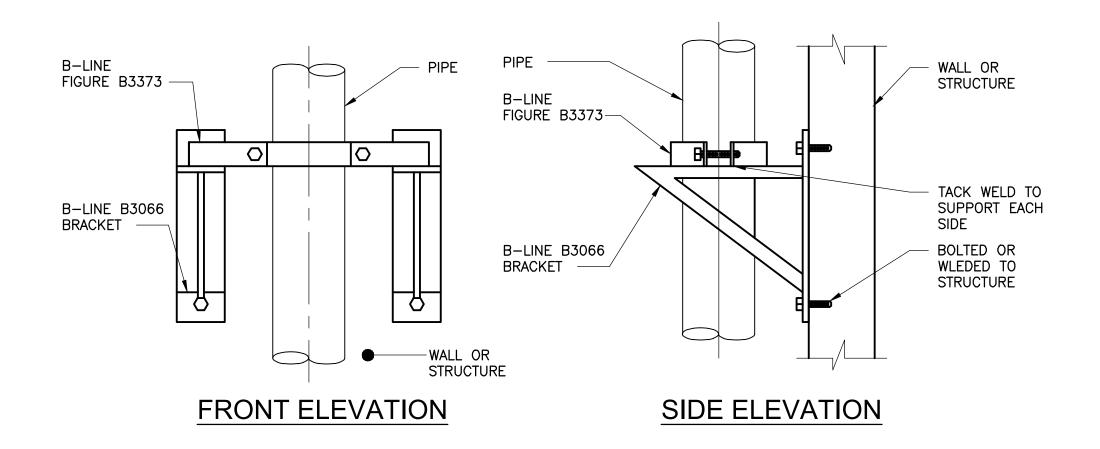
EXCEED 10'-0".
3. FURNISH AND INSTALL ADDITIONAL BRACING AT CONNECTION TO EQUIPMENT.



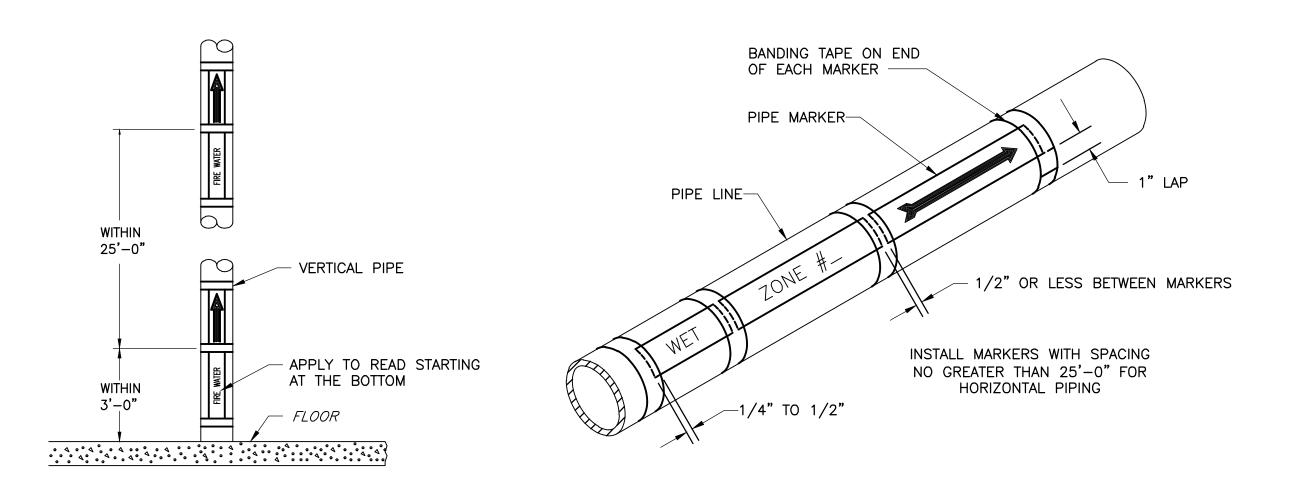


NOTES:
1. COOPER B-LINE SHALL BE BOD MANUFACTURER FOR PIPE SUPPORTS OR APPROVED EQUAL.
2. ATTACHMENT TO STRUCTURE SHALL BE FURNISHED AND INSTALLED PER MANUFACTURER'S GUIDELINES (B-LINE, (FORMERLY TOLCO) OSHPD MANUAL)

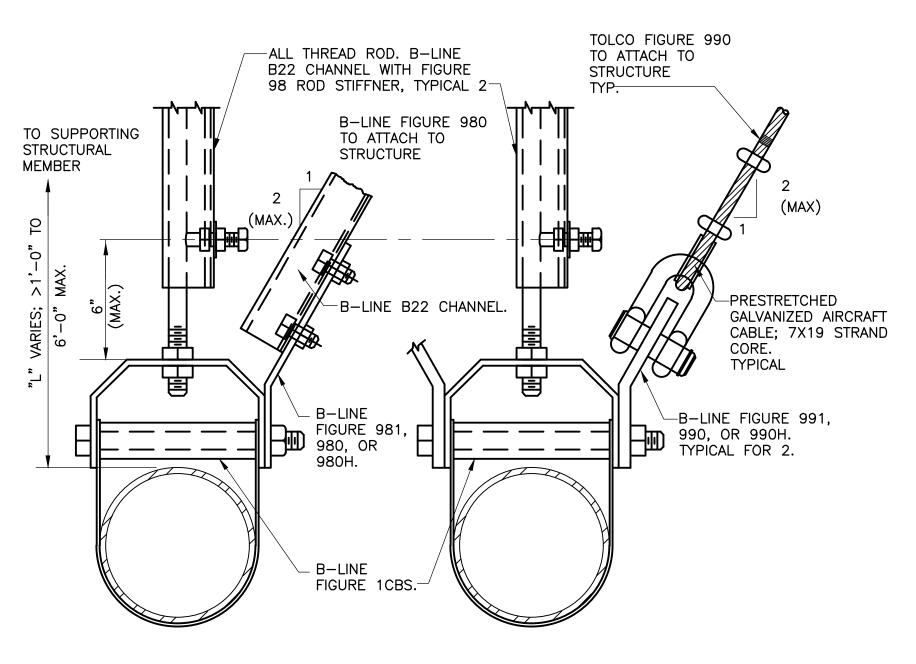




5 VERTICAL PIPE SUPPORT



PIPE LABELING REQUIREMENTS



STRUCTURAL CHANNEL BRACING

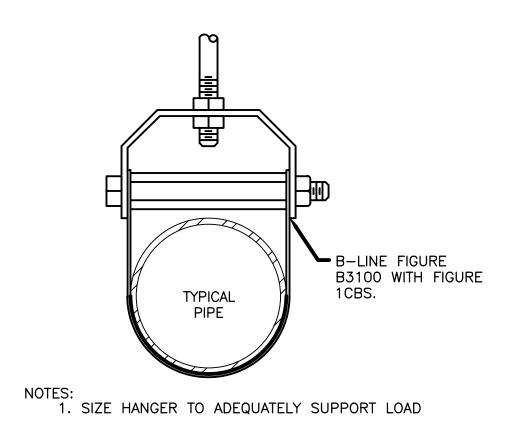
CABLE BRACING

1. COOPER B-LINE SHALL BE BOD MANUFACTURER FOR PIPE SUPPORTS OR APPROVED EQUAL.
2. ATTACHMENT TO STRUCTURE SHALL BE FURNISHED AND INSTALLED PER MANUFACTURER'S

GUIDELINES (B-LINE OSHPD MANUAL)

3. WHERE TRANSVERSE BRACING IS REQUIRED AND ATTACHMENT TO A CLEVIS HANGER IS NOT PRACTICAL, REFER TO LONGITUDINAL PIPE BRACING DETAIL.





6 TYPICAL PIPE HANGER

N.T.S.



1 10/6/22 ADDENDUM #2

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No. Date Revision



Project Title:

PHILAPORT
PIER 78 ANNEX
SPRINKLER UPGRADES

Drawing Title:

DETAILS

Date: 7/15/2022

Scale: AS NOTED

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Checked: PDK

Job No: 2020-028

Drawing No:

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SPECIFICATIONS
DRY-PIPE FIRE-SUPPRESSION SPRINKLERS
PART 1 – GENERAL
1.1 RELATED DOCUMENTS
A. THIS SPECIFICATION COVERS WORK FOR COMPLETE DRY PIPE FIRE SUPPRESSION SYSTEMS WHERE
     INDICATED ON THE DRAWINGS. THE SYSTEMS SHALL INCLUDE ALL MATERIALS, EQUIPMENT, LABOR, TESTING
    AND COMMISSIONING REQUIRED TO SATISFY THE CONTRACT DOCUMENTS AND SHALL MEET ALL
     PERFORMANCE REQUIREMENTS OF PRPA AND NFPA.
A. SECTION INCLUDES: PIPES, FITTINGS, AND SPECIALTIES; FIRE-PROTECTION VALVES; SPRINKLER SPECIALTY
1.3 DEFINITIONS
A. WORKING PLANS: DOCUMENTS, INCLUDING DRAWINGS, CALCULATIONS, AND MATERIAL SPECIFICATIONS
     PREPARED ACCORDING TO NFPA 13 FOR OBTAINING APPROVAL FROM AUTHORITIES HAVING JURISDICTION.
1.4 SYSTEM DESCRIPTIONS
A. DRY-PIPE SPRINKLER SYSTEM: AUTOMATIC SPRINKLERS ARE ATTACHED TO PIPING CONTAINING
     COMPRESSED AIR. OPENING OF SPRINKLERS RELEASES COMPRESSED AIR AND PERMITS WATER PRESSURE
     TO OPEN DRY-PIPE VALVE. WATER THEN FLOWS INTO PIPING AND DISCHARGES FROM SPRINKLERS THAT
     ARE OPEN.
1.5 PERFORMANCE REQUIREMENTS
A. DELEGATED DESIGN: DESIGN SPRINKLER SYSTEM(S), INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY
     A QUALIFIED PROFESSIONAL ENGINEER, LICENSED IN THE COMMONWEALTH OF PENNSYLVANIA, USING
     PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.
B. SPRINKLER SYSTEM DESIGN SHALL BE APPROVED BY THE ENGINEER, OWNER'S SAFETY GROUP, OWNER'S
     INSURANCE UNDERWRITER, PENNSYLVANIA DEPARTMENT OF LICENSE AND INSPECTIONS, PHILADELPHIA FIRE
     MARSHAL, AND AUTHORITIES HAVING JURISDICTION.
        MARGIN OF SAFETY FOR AVAILABLE WATER FLOW AND PRESSURE: 10 PERCENT, INCLUDING LOSSES
         THROUGH WATER-SERVICE PIPING, VALVES, AND BACKFLOW PREVENTERS.
        TOTAL COMBINED HOSE-STREAM DEMAND REQUIREMENT: 500 GPM FOR 90 MINUTES.
C. SEISMIC PERFORMANCE: SPRINKLER PIPING SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS
     DETERMINED ACCORDING TO NFPA 13 AND ASCE/SEI 7.
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE CONSTRUCTION DETAILS, MATERIAL
     DESCRIPTIONS, AND DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES.
B. APPROVED SPRINKLER SYSTEM SHOP DRAWINGS: WORKING PLANS, PREPARED ACCORDING TO NFPA 13,
     THAT HAVE BEEN APPROVED BY AUTHORITIES HAVING JURISDICTION, INCLUDING HYDRAULIC CALCULATIONS
    1. SHOP DRAWINGS SHALL BE SCALED AT 1/8 INCH PER FOOT AND SHALL CLEARLY IDENTIFY THE
         HYDRAULICALLY REMOTE AREA, AND ALL REFERENCE NODES SHALL BE INCLUDED FROM THE SUPPLY
         TO AND INCLUDING THE REMOTE AREA. HYDRAULIC CALCULATIONS SHALL BE BASED ON THE FLOW
         TEST DATA SHOWN ON THE PLANS. INCLUDE WORKING PLANS, PIPING LAYOUT AND DETAILS FOR
         FABRICATION OF PIPE ANCHORS, HANGERS, SUPPORTS FOR MULTIPLE PIPES, ALIGNMENT GUIDES,
         EXPANSION JOINTS AND LOOPS, AND ATTACHMENTS OF THE SAME TO BUILDING STRUCTURE.
        DETAIL FABRICATION AND ASSEMBLY OF SEISMIC RESTRAINTS.
C. DELEGATED-DESIGN SUBMITTAL: THE CONTRACTOR SHALL PROVIDE A DESIGN FOR SPRINKLER SYSTEMS
     INDICATED TO COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING HYDRAULIC
     ANALYSIS CALCULATIONS SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE
D. COORDINATION DRAWINGS: SPRINKLER SYSTEMS, DRAWN TO SCALE. ON WHICH THE FOLLOWING ITEMS ARE
     SHOWN AND COORDINATED WITH EACH OTHER. USING INPUT FROM CONTRACTOR FIELD SURVEY AND WHERE
     POSSIBLE INSTALLERS OF THE ITEMS INVOLVED:
        EXISTING FIRE SUPPRESSION SYSTEM PIPING
        EXISTING DOMESTIC WATER PIPING.
        EXISTING STRUCTURAL STEEL
        EXISTING FULL HEIGHT WALLS
   QUALIFICATION DATA: FOR QUALIFIED INSTALLER AND PROFESSIONAL ENGINEER(S)
    FIRE-HYDRANT FLOW TEST REPORT(S).
   FIELD TEST REPORTS AND CERTIFICATES: INDICATE AND INTERPRET TEST RESULTS FOR COMPLIANCE WITH
     PERFORMANCE REQUIREMENTS AND AS DESCRIBED IN NFPA 13. INCLUDE "CONTRACTOR'S MATERIAL AND
     TEST CERTIFICATE FOR ABOVEGROUND PIPING.'
H. FIELD QUALITY-CONTROL REPORTS.
    FIELD INSPECTION AND TESTING REPORTS OF ALL PIPING SYSTEMS.
   WARRANTEES AND INSTALLATION & OPERATION MANUALS.
1.7 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS:
     1. AN EXPERIENCED INSTALLER WHO HAS DESIGNED AND INSTALLED FIRE-SUPPRESSION PIPING SIMILAR
         TO THAT INDICATED FOR THIS PROJECT AND OBTAINED DESIGN APPROVAL AND INSPECTION APPROVAL
         FROM AUTHORITIES HAVING JURISDICTION.
    INSTALLER'S RESPONSIBILITIES INCLUDE DESIGNING. FABRICATING. AND INSTALLING SPRINKLER SYSTEMS
         AND PROVIDING PROFESSIONAL ENGINEERING SERVICES NEEDED TO ASSUME ENGINEERING
         RESPONSIBILITY. BASE CALCULATIONS ON RESULTS OF FIRE-HYDRANT FLOW TEST PROVIDED ON THE
         DRAWINGS.
B. ENGINEERING RESPONSIBILITY:
       A PROFESSIONAL ENGINEER WHO IS LEGALLY QUALIFIED TO PRACTICE IN JURISDICTION WHERE PROJECT
         IS LOCATED AND WHO IS EXPERIENCED IN PROVIDING ENGINEERING SERVICES OF THE KIND INDICATED.
         ENGINEERING SERVICES ARE DEFINED AS THOSE PERFORMED FOR INSTALLATIONS OF
         FIRE-SUPPRESSION PIPING THAT ARE SIMILAR TO THOSE INDICATED FOR THIS PROJECT IN MATERIAL
         DESIGN, AND EXTENT. PREPARATION OF WORKING PLANS, CALCULATIONS, AND FIELD TEST REPORTS BY
        A QUALIFIED PROFESSIONAL ENGINEER.
C. NFPA STANDARDS: SPRINKLER SYSTEM EQUIPMENT, SPECIALTIES, ACCESSORIES, INSTALLATION, AND TESTING
     SHALL COMPLY WITH THE FOLLOWING:
        NFPA 13, "INSTALLATION OF SPRINKLER SYSTEMS."
        NFPA 24, "INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES."
        NFPA 72, "NATIONAL FIRE ALARM AND SIGNALING CODE"
1.8 PROJECT CONDITIONS
A. INTERRUPTION OF EXISTING SPRINKLER SERVICE: DO NOT INTERRUPT SPRINKLER SERVICE TO FACILITIES
     OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY
     AFTER ARRANGING TO PROVIDE TEMPORARY SPRINKLER SERVICE ACCORDING TO REQUIREMENTS INDICATED:
       NOTIFY PRPA NO FEWER THAN FIVE DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF EXISTING
         SPRINKLER SERVICE.
    2. DO NOT PROCEED WITH INTERRUPTION OF SPRINKLER SERVICE WITHOUT OWNER'S WRITTEN
         PERMISSION.
1.9 EXTRA MATERIALS
A. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE
     COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
       SPRINKLER CABINETS, ONE PER WATER SERVICE ENTRANCE: FINISHED, WALL-MOUNTED IN FIRE PUMP
         ROOM, STEEL CABINET WITH HINGED COVER, AND WITH SPACE FOR MINIMUM OF SIX SPARE
         SPRINKLERS PLUS SPRINKLER WRENCH. INCLUDE NUMBER OF SPRINKLERS REQUIRED BY NFPA 13
         AND SPRINKLER WRENCH.
1.10 WARRANTY
A. MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF SPRINKLER
     SYSTEM THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
       WARRANTY PERIOD: ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
PART 2 - PRODUCTS
2.1 STEEL PIPE AND FITTINGS
A. GALVANIZED STEEL PIPE: SCHEDULE 40, ASTM A 53/A 53M, TYPE E, GRADE B. PIPE ENDS MAY BE
     FACTORY OR FIELD FORMED TO MATCH JOINING METHOD.
B. GALVANIZED STEEL PIPE NIPPLES: ASTM A 733, MADE OF ASTM A 53/A 53M, STANDARD-WEIGHT,
     SEAMLESS STEEL PIPE WITH THREADED ENDS.
C. GROOVED-JOINT, STEEL-PIPE APPURTENANCES:
        MANUFACTURERS:
             ANVIL INTERNATIONAL, INC.
              VICTAULIC COMPANY
              TYCO FIRE & BUILDING PRODUCTS LP
         PRESSURE RATING: 175 PSIG MINIMUM.
        COUPLINGS SHALL BE HOT DIPPED GALVANIZED AND CAST OF DUCTILE IRON CONFORMING TO ASTM
         A-395, GRADE 65-45-15, AND/OR ASTM A-536, GRADE 65-45-12, WITH BOLTS/NUTS CONFORMING
         TO ASTM A-449 AND A-183. PROVIDE STANDARD GRADE "E" GASKETS FOR ALL WATER SUPPLY
         SYSTEMS. STYLE 005 COUPLINGS SHALL HAVE GRADE "E" (TYPE A) GASKETS WITH FLUSH SEAL STYLE
         GASKETS FOR DRY FIRE SUPPRESSION SYSTEMS. GRADE "E" (TYPE A) COUPLING GASKETS SHALL BE
         SUPPLIED WITH FACTORY APPLIED DRY, NON-TOXIC LUBRICANT.
        RIGID COUPLINGS SHALL BE OF THE ANGLE PATTERN BOLT PAD TYPE, AND SHALL PROVIDE SYSTEM
         SUPPORT AND HANGING REQUIREMENTS IN ACCORDANCE WITH NFPA 13. RIGID COUPLINGS SHALL BE
         FULLY INSTALLED AT VISUAL PAD-TO-PAD OFFSET CONTACT.
2.2 LISTED FIRE-PROTECTION VALVES
   GENERAL REQUIREMENTS:
         VALVES SHALL BE UL LISTED
        MINIMUM PRESSURE RATING FOR STANDARD-PRESSURE PIPING: 175 PSIG
         OS&Y FOR ALL CONTROL VALVES WITH VISIBLE POSITION OF VALVE STEM
        LOCKABLE WITH PADLOCK OR CHAIN AND PADLOCK.
B. BALL VALVES:
       BASIS-OF-DESIGN PRODUCT:
             ANVIL INTERNATIONAL, INC.
             VICTAULIC COMPANY.
       BALL VALVES SHALL BE UL LISTED (CANADA AND USA) WITH FLOW CHARACTERISTICS EXCEEDING UL
         SPECIFICATION 1091, SIZES 1" THROUGH 2", SUPPLIED WITH BRONZE BODY CONFORMING TO ASTM
         584 ALLOY 844, CHROME PLATED BRASS BALL, 316 STAINLESS STEEL BLOWOUT PROOF STEM, AND
         TFE SEAT. THEY SHALL HAVE A HANDWHEEL WITH AN APPROVED WEATHERPROOF MANUAL ACTUATOR
         SUITABLE FOR INDOOR OR OUTDOOR USE WITH TWO PRE-WIRED SINGLE POLE, DOUBLE THROW
         SUPERVISORY SWITCHES MONITORING THE OPEN POSITION.
        STANDARD: UL 1091 EXCEPT WITH BALL INSTEAD OF DISC.
        VALVES NPS 1-1/2 AND SMALLER: BRONZE BODY WITH THREADED ENDS.
        VALVES NPS 2 AND NPS 2-1/2: BRONZE BODY WITH THREADED ENDS OR DUCTILE-IRON BODY WITH
         GROOVED ENDS.
       VALVES NPS 3: DUCTILE-IRON BODY WITH GROOVED ENDS.
C. IRON OS&Y GATE VALVES:
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MILWAUKEE VALVE COMPANY.
              TYCO FIRE & BUILDING PRODUCTS LP
         STANDARD: UL 262.
         PRESSURE RATING: 250 PSIG MINIMUM
         BODY MATERIAL: CAST OR DUCTILE IRON.
        END CONNECTIONS: FLANGED OR GROOVED.
2.3 TRIM AND DRAIN VALVES
A. GENERAL REQUIREMENTS:
         STANDARD: UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY" LISTING.
         PRESSURE RATING: 175 PSIG MINIMUM.
B. ANGLE VALVES:
        MANUFACTURERS:
             FIRE PROTECTION PRODUCTS, INC.
              UNITED BRASS WORKS, INC.
C. BALL VALVES:
        MANUFACTURERS:
              CONBRACO INDUSTRIES, INC.; APOLLO VALVES.
              NIBCO INC.
              POTTER ROEMER.
              TYCO FIRE & BUILDING PRODUCTS LP.
              VICTAULIC COMPANY.
2.4 SPECIALTY VALVES
    GENERAL REQUIREMENTS:
         STANDARD: UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY" LISTING
         PRESSURE RATING: 175 PSIG MINIMUM.
         BODY MATERIAL: CAST OR DUCTILE IRON.
         SIZE: SAME AS CONNECTED PIPING.
         END CONNECTIONS: FLANGED OR GROOVED
B. DRY-PIPE VALVES:
        MANUFACTURERS:
              VIKING CORPORATION.
              VICTAULIC COMPANY.
               RELIABLE AUTOMATIC SPRINKLER CO., INC.
              TYCO FIRE & BUILDING PRODUCTS LP.
         STANDARD: UL 260
         DESIGN: DIFFERENTIAL-PRESSURE TYPE.
         INCLUDE UL 1486, QUICK-OPENING DEVICES, TRIM SETS FOR AIR SUPPLY, DRAIN, PRIMING LEVEL
         ALARM CONNECTIONS, BALL DRIP VALVES, PRESSURE GAGES, PRIMING CHAMBER ATTACHMENT, AND
         FILL-LINE ATTACHMENT.
    5. AIR-PRESSURE MAINTENANCE DEVICE:
         a. MANUFACTURERS:
                 VIKING, GENERAL AIR PRODUCTS, INC.
                  RELIABLE AUTOMATIC SPRINKLER CO., INC.
                  VICTAULIC COMPANY.
                  GAST MANUFACTURING INC.
               STANDARD: UL 260
               TYPE: AUTOMATIC DEVICE TO MAINTAIN MINIMUM AIR PRESSURE IN PIPING
              INCLUDE SHUTOFF VALVES TO PERMIT SERVICING WITHOUT SHUTTING DOWN SPRINKLER PIPING
               BYPASS VALVE FOR QUICK FILLING, PRESSURE REGULATOR OR SWITCH TO MAINTAIN PRESSURE,
               STRAINER, PRESSURE RATINGS WITH 14- TO 60-PSIG ADJUSTABLE RANGE, AND 175-PSIG
               OUTLET PRESSURE.
    AUTOMATIC (BALL DRIP) DRAIN VALVES:
        MANUFACTURERS:
              AFAC INC.
              RELIABLE AUTOMATIC SPRINKLER CO., INC.
              TYCO FIRE & BUILDING PRODUCTS LP.
         STANDARD: UL 1726.
         PRESSURE RATING: 175 PSIG MINIMUM.
         TYPE: AUTOMATIC DRAINING, BALL CHECK.
         SIZE: NPS 3/4.
     END CONNECTIONS: THREADED.
2.5 SPRINKLER SPECIALTY PIPE FITTINGS
     GENERAL REQUIREMENTS FOR DRY-PIPE-SYSTEM FITTINGS: UL LISTED FOR DRY-PIPE SERVICE
     BRANCH OUTLET FITTINGS ARE PROHIBITED, MAKE ALL BRANCH CONNECTIONS BY TEE FITTINGS.
     FLOW DETECTION AND TEST ASSEMBLIES:
        MANUFACTURERS:
              AGF MANUFACTURING INC.
              RELIABLE AUTOMATIC SPRINKLER CO., INC.
              TYCO FIRE & BUILDING PRODUCTS LP.
              VICTAULIC COMPANY.
        STANDARD: UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY" LISTING.
         PRESSURE RATING: 175 PSIG MINIMUM
        BODY MATERIAL: CAST- OR DUCTILE-IRON HOUSING WITH ORIFICE, SIGHT GLASS, AND INTEGRAL TEST
         SIZE: SAME AS CONNECTED PIPING.
        INLET AND OUTLET: THREADED.
    BRANCH LINE TESTERS:
        MANUFACTURERS:
              ELKHART BRASS MFG. COMPANY, INC
              FIRE-END & CROKER CORPORATION.
              POTTER ROEMER.
         STANDARD: UL 199.
         PRESSURE RATING: 175 PSIG.
         BODY MATERIAL: BRASS.
         SIZE: SAME AS CONNECTED PIPING.
         INLET: THREADED.
         DRAIN OUTLET: THREADED AND CAPPED
         BRANCH OUTLET: THREADED, FOR SPRINKLER.
    SPRINKLER INSPECTOR'S TEST FITTINGS:
        MANUFACTURERS:
              AGF MANUFACTURING INC.
              TRIPLE R SPECIALTY.
               TYCO FIRE & BUILDING PRODUCTS LP.
              VICTAULIC COMPANY.
             VIKING CORPORATION.
         STANDARD: UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY" LISTING.
         PRESSURE RATING: 175 PSIG MINIMUM
         BODY MATERIAL: CAST- OR DUCTILE-IRON HOUSING WITH SIGHT GLASS.
        SIZE: SAME AS CONNECTED PIPING.
        INLET AND OUTLET: THREADED.
    ADJUSTABLE DROP NIPPLES:
     1. MANUFACTURERS:
              CECA, LLC.
              CORCORAN PIPING SYSTEM CO.
              MERIT MANUFACTURING; A DIVISION OF ANVIL INTERNATIONAL, INC.
         STANDARD: UL 1474.
         PRESSURE RATING: 250 PSIG MINIMUM
         BODY MATERIAL: STEEL PIPE WITH EPDM-RUBBER O-RING SEALS.
         SIZE: SAME AS CONNECTED PIPING.
         LENGTH: ADJUSTABLE.
         INLET AND OUTLET: THREADED.
G. FLEXIBLE, SPRINKLER HOSE FITTINGS:
        MANUFACTURERS:
             FIVALCO INC.
              FLEXHEAD INDUSTRIES, INC.
              GATEWAY TUBING, INC.
         STANDARD: UL 1474.
         TYPE: FLEXIBLE HOSE FOR CONNECTION TO SPRINKLER, AND WITH BRACKET FOR CONNECTION TO
         CEILING GRID.
     4. PRESSURE RATING: 175 PSIG MINIMUM
H. SIZE: SAME AS CONNECTED PIPING, FOR SPRINKLER
2.6 SPRINKLERS
    MANUFACTURERS:
         RELIABLE AUTOMATIC SPRINKLER CO., INC.
         TYCO FIRE & BUILDING PRODUCTS LP.
         VICTAULIC COMPANY.
        VIKING CORPORATION.
B. GENERAL REQUIREMENTS:
         STANDARD: UL'S "FIRE PROTECTION EQUIPMENT DIRECTORY" LISTING
         PRESSURE RATING FOR AUTOMATIC SPRINKLERS: 175 PSIG MINIMUM.
    SPRINKLER ESCUTCHEONS: MATERIALS, TYPES, AND FINISHES FOR THE FOLLOWING SPRINKLER MOUNTING
      APPLICATIONS. ESCUTCHEONS FOR CONCEALED, FLUSH, AND RECESSED—TYPE SPRINKLERS ARE SPECIFIED
        CEILING MOUNTING: CHROME-PLATED STEEL, TWO PIECE, WITH 1-INCH VERTICAL ADJUSTMENT
        SIDEWALL MOUNTING: CHROME-PLATED STEEL, ONE PIECE, FLAT.
    SPRINKLER GUARDS:
         MANUFACTURERS:
              RELIABLE AUTOMATIC SPRINKLER CO., INC.
              TYCO FIRE & BUILDING PRODUCTS LP.
              VICTAULIC COMPANY.
              VIKING CORPORATION.
     2. STANDARD: UL 199.
         TYPE: RED WIRE CAGE WITH FASTENING DEVICE FOR ATTACHING TO SPRINKLER.
    AUTOMATIC SPRINKLERS WITH HEAT-RESPONSIVE FLEMENT:
        NONRESIDENTIAL APPLICATIONS: UL 199.
        SPRINKLER TYPES AND CATEGORIES: PROVIDE ORIFICE AND TEMPERATURE CLASSIFICATION RATING AS
         SHOWN ON DRAWINGS AND AS REQUIRED BY NFPA.
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DESCRIPTION: UL LISTED OR FM GLOBAL APPROVED, MANUAL CONTROL STATIONS: ELECTRIC OPERATION,

REQUIRED TIME OF 30 SECONDS OF OPENING, A QUICK OPENING DEVICE SHALL BE PROVIDED ON THE

SYSTEM RISER. THE QUICK OPENING DEVICE SHALL BE OF THE SAME MANUFACTURER AS THE DRY PIPE

VALVE. THE SPRINKLER SYSTEM QUICK OPENING DEVICE SHALL BE AN ACCELERATOR WITH AN EXTERNAL

ANTI-FLOODING DEVICE. ACCELERATOR MANUFACTURER TO BE THE VIKING CORPORATION. ACCELERATOR

A. IF WATER CANNOT BE DELIVERED TO THE DRY SYSTEM INSPECTORS TEST CONNECTION WITHIN THE FM

CLOSED BY BREAKABLE STRUT TO PREVENT ACCIDENTAL OPENING.

METAL ENCLOSURE, LABELED "MANUAL CONTROL STATION" WITH OPERATING INSTRUCTIONS AND COVER HELD

2.7 MANUAL CONTROL STATIONS

TO BE VIKING MODEL E-1.

2.8 QUICK OPENING DEVICE

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WHERE REQUIRED, THE SPRINKLER SYSTEM QUICK OPENING DEVICE SHALL BE A UL LISTED AND FACTORY
    MUTUAL APPROVED ACCELERATOR WITH AN INTERNAL ANTI-FLOODING DEVICE. ACCELERA-TOR SHALL HAVE
    AN AIR SOURCE FROM A DEPENDABLE AIR SOURCE REGULATED THROUGH AN APPROVED AIR MAINTENANCE
    DEVICE. ACCELERATOR SHALL BE OF THE SAME MANUFACTURER AS THE DRY PIPE VALVE OR DELUGE
    VALVE AND BE LISTED FOR USE TOGETHER. ACCELERATOR MANUFACTURER TO BE THE VIKING
    CORPORATION. ACCELERATOR TO BE VIKING MODEL D-2.
2.9 ANTI-FLOODING DEVICE
   ACCELERATORS INSTALLED ON SPRINKLER SYSTEMS SHALL BE EQUIPPED WITH AN EXTERNAL ANTI-FLOODING
    DEVICE. ANTI-FLOODING DEVICE SHALL BE OF A BRASS BODY. ANTI-FLOODING DEVICE SHALL BE UL
    LISTED AND FACTORY MUTUAL APPROVED. ANTI-FLOODING DEVICE MANUFACTURER TO BE THE VIKING
    CORPORATION. ANTI-FLOODING DEVICE TO BE VIKING MODEL B-1.
2.10 PRESSURE GAGES
   MANUFACTURERS:
        ASHCROFT, INC.
        WIKA INSTRUMENT CORPORATION.
   STANDARD: UL 393.
    DIAL SIZE: 4-1/2-INCH DIAMETER.
    PRESSURE GAGE RANGE: 0 TO 250 PSIG MINIMUM.
    WATER SYSTEM PIPING GAGE: INCLUDE "FIRE WATER" LABEL ON DIAL FACE.
G. AIR SYSTEM PIPING GAGE: INCLUDE RETARD FEATURE AND "AIR" OR "AIR/WATER" LABEL ON DIAL FACE.
PART 3 - EXECUTION
3.1 PREPARATION
  PERFORM FIRE-HYDRANT FLOW TEST ACCORDING TO NFPA 13 AND NFPA 291. USE RESULTS FOR SYSTEM
    DESIGN CALCULATIONS REQUIRED IN "QUALITY ASSURANCE" ARTICLE
B. REPORT TEST RESULTS PROMPTLY AND IN WRITING.
3.2 PIPING INSTALLATION
  LOCATIONS AND ARRANGEMENTS: DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL
    LOCATION AND ARRANGEMENT OF PIPING. INSTALL PIPING AS INDICATED, AS FAR AS PRACTICAL.
       DEVIATIONS FROM APPROVED WORKING PLANS FOR PIPING REQUIRE WRITTEN APPROVAL FROM
         AUTHORITIES HAVING JURISDICTION. FILE WRITTEN APPROVAL WITH ENGINEER BEFORE DEVIATING FROM
         APPROVED WORKING PLANS.
   PIPING STANDARD: COMPLY WITH REQUIREMENTS FOR INSTALLATION OF SPRINKLER PIPING IN NFPA 13.
    INSTALL SEISMIC RESTRAINTS ON PIPING FOR OCCUPANT SAFETY ONLY, OPERATION POST SEISMIC EVENT IS
    NOT REQUIRED. COMPLY WITH REQUIREMENTS FOR SEISMIC-RESTRAINT DEVICE MATERIALS AND
    INSTALLATION IN NFPA 13.
  USE ONLY LISTED STANDARD FITTINGS TO MAKE CHANGES IN DIRECTION, BRANCH TAKEOFFS FROM MAINS,
    AND REDUCTIONS IN PIPE SIZES.
    INSTALL UNIONS ADJACENT TO EACH VALVE IN PIPES NPS 2 AND SMALLER.
    INSTALL FLANGES, FLANGE ADAPTERS, OR COUPLINGS FOR GROOVED—END PIPING ON VALVES, APPARATUS,
    AND EQUIPMENT HAVING NPS 2-1/2 AND LARGER END CONNECTIONS.
   INSTALL "INSPECTOR'S TEST CONNECTIONS" IN SPRINKLER SYSTEM PIPING, COMPLETE WITH SHUTOFF VALVE,
    AND SIZED AND LOCATED ACCORDING TO NFPA 13.
    INSTALL SPRINKLER PIPING WITH PITCH AND WITH LOW POINT DRAINS FOR COMPLETE SYSTEM DRAINAGE.
    PRESSURIZE AND CHECK DRY-PIPE SPRINKLER SYSTEM PIPING AND AIR COMPRESSORS.
    INSTALL ALL MAIN DRAINS, INSPECTOR'S TEST DRAINS, AND ALL LOW POINT DRAINS, SO THAT THE DRAIN IS
    DISCHARGED OUTSIDE OF THE FACILITY.
  INSTALL HANGERS AND SUPPORTS FOR SPRINKLER SYSTEM PIPING AS SPECIFIED ON DRAWINGS. COMPLY
    WITH NFPA 13.
   INSTALL PRESSURE GAGES ON RISER OR FEED MAIN, AT EACH SPRINKLER TEST CONNECTION, AND AT EACH
    ZONE BRANCH. INCLUDE PRESSURE GAGES WITH CONNECTION NOT LESS THAN NPS 1/4 AND WITH SOFT
    METAL SEATED GLOBE VALVE, ARRANGED FOR DRAINING PIPE BETWEEN GAGE AND VALVE. INSTALL GAGES
    TO PERMIT REMOVAL, AND INSTALL WHERE THEY WILL NOT BE SUBJECT TO FREEZING.
  DRAIN DRY-PIPE SPRINKLER PIPING.
   INSTALL SLEEVES FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS,

    INSTALL ESCUTCHEONS FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.

3.3 JOINT CONSTRUCTION
   MECHANICAL JOINTS ARE PROHIBITED; MAKE ALL SYSTEM CONNECTIONS USING TEES.
   INSTALL COUPLINGS, FLANGES, FLANGED FITTINGS, UNIONS, NIPPLES, AND TRANSITION AND SPECIAL FITTINGS
    THAT HAVE FINISH AND PRESSURE RATINGS SAME AS OR HIGHER THAN SYSTEM'S PRESSURE RATING FOR
     ABOVEGROUND APPLICATIONS UNLESS OTHERWISE INDICATED.
    REAM ENDS OF PIPES AND TUBES AND REMOVE BURRS. BEVEL PLAIN ENDS OF STEEL PIPE.
    REMOVE SCALE, SLAG, DIRT, AND DEBRIS FROM INSIDE AND OUTSIDE OF PIPES, TUBES, AND FITTINGS
    BEFORE ASSEMBLY.
    FLANGED JOINTS: SELECT APPROPRIATE GASKET MATERIAL IN SIZE, TYPE, AND THICKNESS SUITABLE FOR
    WATER SERVICE. JOIN FLANGES WITH GASKET AND BOLTS ACCORDING TO ASME B31.9.
    THREADED JOINTS: THREAD PIPE WITH TAPERED PIPE THREADS ACCORDING TO ASME B1.20.1. CUT
     THREADS FULL AND CLEAN USING SHARP DIES. REAM THREADED PIPE ENDS TO REMOVE BURRS AND
    RESTORE FULL ID. JOIN PIPE FITTINGS AND VALVES AS FOLLOWS:
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APPLY APPROPRIATE TAPE OR THREAD COMPOUND TO EXTERNAL PIPE THREADS.

DAMAGED.

C. SPECIALTY VALVES:

3.4 VALVE AND SPECIALTIES INSTALLATION

SUPPLY TO SYSTEM.

EXISTING BUILDING SYSTEMS.

PERFORM TESTS AND INSPECTIONS.

RETEST UNTIL NO LEAKS EXIST.

START AND RUN AIR COMPRESSORS

PREPARE TEST AND INSPECTION REPORTS.

CLEAN DIRT AND DEBRIS FROM SPRINKLERS.

ATTACHMENT.

3.5 SPRINKLER INSTALLATION

CEILING GRID.

3.7 FIELD QUALITY CONTROL

TESTS AND INSPECTIONS:

CHAPTER.

3.8 CLEANING

AND EQUIPMENT.

DAMAGED THREADS: DO NOT USE PIPE OR PIPE FITTINGS WITH THREADS THAT ARE CORRODED OR

G. STEEL-PIPING, ROLL-GROOVED JOINTS: ROLL ROUNDED-EDGE GROOVE IN END OF PIPE ACCORDING TO

AND GROOVED-END FITTINGS ACCORDING TO AWWA C606 FOR STEEL-PIPE GROOVED JOINTS.

A. INSTALL LISTED FIRE-PROTECTION VALVES, TRIM AND DRAIN VALVES, SPECIALTY VALVES AND TRIM,

CONTROLS, AND SPECIALTIES ACCORDING TO NFPA 13 AND AUTHORITIES HAVING JURISDICTION.

2. DRY-PIPE VALVES: INSTALL TRIM SETS FOR AIR SUPPLY, DRAIN, PRIMING LEVEL, ALARM

A. INSTALL SPRINKLERS IN WAREHOUSE AT EQUIDISTANTLY WHERE POSSIBLE. EXCEPTIONS: CONFLICTS WITH

B. INSTALL SPRINKLERS INTO FLEXIBLE. SPRINKLER HOSE FITTINGS AND INSTALL HOSE INTO BRACKET ON

A. INSTALL LABELING AND PIPE MARKERS ON EQUIPMENT AND PIPING ACCORDING TO REQUIREMENTS IN NFPA

LEAK TEST: AFTER INSTALLATION, CHARGE SYSTEMS AND TEST FOR LEAKS. REPAIR LEAKS AND

2. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS

3. FLUSH, TEST, AND INSPECT SPRINKLER SYSTEMS ACCORDING TO NFPA 13, "SYSTEMS ACCEPTANCE"

VERIFY THAT EQUIPMENT HOSE THREADS ARE SAME AS LOCAL FIRE-DEPARTMENT EQUIPMENT.

SPRINKLER PIPING SYSTEM WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

H. DISSIMILAR-MATERIAL PIPING JOINTS: MAKE JOINTS USING WATERWAY NIPPLE ONLY.

INDICATING PORTION OF SYSTEM CONTROLLED BY EACH VALVE.

ENERGIZE CIRCUITS TO ELECTRICAL EQUIPMENT AND DEVICES.

COORDINATE WITH FIRE-ALARM TESTS. OPERATE AS REQUIRED.

COORDINATE WITH FIRE-PUMP TESTS. OPERATE AS REQUIRED.

REMOVE AND REPLACE SPRINKLERS WITH PAINT OTHER THAN FACTORY FINISH.

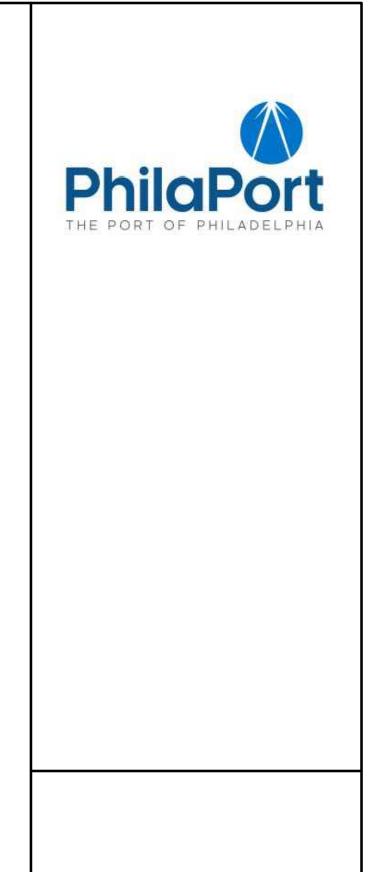
AWWA C606. ASSEMBLE COUPLING WITH HOUSING, GASKET, LUBRICANT, AND BOLTS. JOIN STEEL PIPE

INSTALL LISTED FIRE—PROTECTION SHUTOFF VALVES SUPERVISED OPEN, LOCATED TO CONTROL SOURCES OF

WATER SUPPLY EXCEPT FROM FIRE-DEPARTMENT CONNECTIONS. INSTALL PERMANENT IDENTIFICATION SIGNS

1. GENERAL REQUIREMENTS: INSTALL IN VERTICAL POSITION FOR PROPER DIRECTION OF FLOW, IN MAIN

CONNECTIONS, BALL DRIP VALVES, PRESSURE GAGES, PRIMING CHAMBER ATTACHMENT, AND FILL-LINE



KEY PLAN

No. Date Revision

1 10/6/22 ADDENDUM #2 0 9/26/22 ISSUED FOR BID



Project Title:

PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

SPECIFICATIONS

AS NOTED Checked:

Job No:

AMERICAN VALVE, INC.

CRANE CO.; CRANE VALVE GROUP; CRANE VALVES.

CRANE CO.; CRANE VALVE GROUP; JENKINS VALVES.

CRANE CO.: CRANE VALVE GROUP: STOCKHAM DIVISION.

MANUFACTURERS:

Date: 7/15/2022

2020-028 Drawing No:

GENERAL NOTES

1. THE FIRE ALARM SYSTEM IS EXISTING AND WILL REQUIRE THE CONTRACTOR TO EXPAND AS REQUIRED FOR A COMPLETE OPERATING FIRE ALARY SYSTEM. WORK INCLUDES REPLACEMENT OF EXISTING COMPONENTS, INSTALLATION OF NEW COMPONENTS, AND ALL SOFTWARE REVISION TO PLACE SYSTEM IN FULL OPERATION.

- 2. EXISTING FIRE ALARM SYSTEM SHALL REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION.
- 3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH 2017 NATIONAL ELECTRIC CODE AND 2018 PHILADELPHIA FIRE CODE.
- 4. UPON COMPLETION OF THE EXPANSION OF THE EXISTING FIRE ALARM SYSTEM IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO TEST AND CERTIFY WITH LICENSE & INSPECTION'S (L&I(PRESENCE, THE ENTIRE FIRE ALARM SYSTEM IN ACCORDANCE WITH ALL REQUIREMENTS OF NFPA 72.
- 5. MINIMUM WIRE SIZE FOR INITIATING CIRCUITS SHALL BE #14 AWG SOLID COPPER CONDUCTOR. MINIMUM WIRE SIZE OF INDICATING CIRCUITS SHALL BE #12 AWG SOLID COPPER CONDUCTOR. STRANDED CABLING SHALL NOT BE PERMITTED. ALL FIRE ALARM SYSTEM WIRING SHALL BE CLASS B OR MATCH EXISTING AND CONFORM TO NFPA 70. WIRE NUTS SHALL NOT BE ALLOWED. WIRE SHALL BE THHN/THWN WITH 600V VOLTAGE RATING AND 90 DEGREE TEMPERATURE RATING. WORK ON EXISTING SYSTEMS SHALL MATCH EXISTING COLOR—CODING OF
- 6. CONTRACTOR SHALL PROVIDE THE FOLLOWING SHOP DRAWINGS TO THE EXTENSION OF THE EXISTING FIRE ALARM SYSTEM. ALL ITEMS BELOW SHALL BE COMPATIBLE WITH THE EXISTING HONEYWELL NOTIFIER NFS-320 SYSTEM:
- 6.1. WIRING DIAGRAM
- 6.2. CIRCUIT CAPACITY FOR INITIATING AND NOTIFICATION DEVICES
- 6.3. CABLE REQUIREMENTS6.4. TAGS, ADDRESSES AND DEVICE IDS6.5. PRODUCT CATALOG LITERATURE
- 6.6. BATTERY CALCULATIONS6.7. SEQUENCE OF OPERATIONS
- 7. ALL EQUIPMENT SYMBOLS ARE SHOWN ON DRAWINGS AS POSSIBLE TO THEIR INTENDED LOCATION. CONTRACTOR SHALL COORDINATE IN THE FIELD THE PROPER INSTALLATION OF ALL EQUIPMENT, DEVICES, CONTROLS AND CABLING.
- 8. DRAWINGS FOR THIS WORK ARE DIAGRAMMATIC AND INTENDED TO CONVEY THE EXTENT, GENERAL ARRANGEMENT AND LOCATIONS OF THE EXTENSIONS OF THE EXISTING FIRE ALARM SYSTEM.
- 9. FIRE ALARM DEVICE MOUNTING HEIGHTS SHALL COMPLY WITH ALL ANSI 117, NFPA 72 AND IBC REQUIREMENTS. AT THE MINIMUM INSTALL ALL DEVICES AS FOLLOWS:
- 9.1. MANUAL PULL STATIONS: 48" AFF TO CENTER; 5'-0" MAXIMUM FROM EXIT DOORS.

9.2. AUDIBLE/VISUAL: 7'-0" AFF TO BOTTOM OF

- STROBE LENS OR 8" BELOW CEILING TO CENTER OF STROBE LENS.

 9.3. VISUAL: 7'-0" AFF TO BOTTOM OF STROBE LENS OR 8" BELOW CEILING TO CENTER OF
- STROBE LENS.

 10. COORDINATE WITH ALL TRADES ALL CONDITIONS RELATED TO THE INSTALLATION OF ALL DEVICES. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE TRADES ALL INSTALLATION REQUIREMENTS IMPACTING THE PLACEMENT OF ALL

SYSTEM COMPONENTS TO THE SATISFACTION OF ALL

11. ALL EQUIPMENT CLEARANCES SHALL BE IN ACCORDANCE WITH NFPA 70 REQUIREMENTS. ARRANGE EQUIPMENT TO FACILITATE UNRESTRICTED ACCESS FOR MAINTENANCE AND SERVICE AROUND ALL EQUIPMENT, COMPONENTS AND/OR CABLE TERMINATIONS.

CONCERNED TRADES.

- 12. NO AC CARRYING CONDUCTORS ARE PERMITTED TO SHARE RACEWAYS WITH ANY FIRE ALARM INITIATING AND/OR NOTIFICATION CIRCUITS.
- 13. ALL PENETRATIONS OF WALLS AND FLOORS SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE ASTM AND NFPA. INSTALLATION SHALL BE PERFORMED BY AN APPLICATOR/INSTALLER QUALIFIED AND TRAINED BY THE MANUFACTURER, INSTALLATION SHALL BE PERFORMED IN STRICT ACCORDANCE WITH MANUFACTURER'S DETAILED INSTALLATION PROCEDURES. NEW STROBE INTENSITY OF ALL VISUAL NOTIFICATION APPLIANCES SHALL BE IN ACCORDANCE WITH NFPA 72 AND UL 1971. STROBE CANDELA RATINGS SHALL BE PROVIDED IN ACCORDANCE WITH DEVICE LOCATIONS AND SHALL CONFORM TO ALL ICC/ANSI 117 AND NFPA 72 INSTALLATION REQUIREMENTS. CONTRACTOR SHALL PROVIDE THE REQUIRED CANDELA POWER AND LOCATE ALL VISUAL NOTIFICATION APPLIANCES AS REQUIRED TO MEET THE REQUIREMENTS OF ALL REFERENCED CODES AND STANDARDS.

14. SEE FP-0 FOR ADDITIONAL NOTES

LINEWEIGHT LEGEND

IN GENERAL, DIFFERENT LINEWEIGHTS ARE USED TO DIFFERENTIATE BETWEEN EXISTING, DEMOLITION, AND NEW WORK AS FOLLOWS.

EXISTING

DEMOLITION

----- NEW WORK

FIRE ALARM SYMBOLS

F PULL STATION

F#CD STROBE — WALL MOUNTED, CANDELA
RATING AS INDICATED ON DRAWINGS

F#CD HORN/STROBE — WALL MOUNTED, CANDELA RATING AS INDICATED ON DRAWINGS

S SMOKE DETECTOR

FACP FIRE ALARM CONTROL PANEL

<u>ABB</u>REVIATIONS

A AMPERE
AFC ABOVE FINISHED CEILING
AFF ABOVE FINISHED FLOOR
AFG ABOVE FINISHED GRADE
AL ALUMINUM
AMP AMPERE

AMP AMPERE
AWG AMERICAN WIRE GAUGE
BAT BATTERY

C CONDUIT CD CANDELA

CD CANDELA
CLG CEILING
CU COPPER

E) EXISTING TO REMAIN
EACH
CC ELECTRICAL CONTRACTOR

EMT ELECTRICAL METALLIC TUBING

F/A FIRE ALARM
FACP FIRE ALARM CONTROL PANEL
FL FLOOR

FT FEET
G GROUND

GROUND
GENERAL CONTRACTOR

IMC INTERMEDIATE METAL CONDUIT

JB JUNCTION BOX

JB JUNCTION BOX

KA KILOAMPERE
KAIC KILOAMPERES INTERRUPTING CAPACITY

KAIC KILOAMPERES INTERRUPTING
KV KILOVOLT
KVA KILOVOLT—AMPERE
KVAR KILOVOLT—AMPERE—REACTIVE

KW KILOWATT
KWH KILOWATT—HOUR
LV LOW VOLTAGE

MC MECHANICAL CONTRACTOR
MV MEDIUM VOLTAGE

(N) NEW

 NÉC
 NATIONAL ELECTRIC CODE

 NIC
 NOT IN CONTRACT

 NTS
 NOT TO SCALE

 PB
 PULL BOX

PC PLUMBING CONTRACTOR
PVC POLYVINYL CHLORIDE

(R) REMOVE

(RÉ) RELOCATE EXISTING
RMC RIGID METALLIC CONDUIT

TYP TYPICAL

UG UNDERGROUND
UL UNDERWRITER'S LABORATORY
UON UNLESS OTHERWISE NOTED

WEATHERPROOF

V VOLT VA VOLT—AMPERE

RISER NOTES:

 REFER TO FLOOR PLANS FOR TOTAL NUMBER OF DEVICES ON EACH CIRCUIT.





KEY PLAN

THE PORT OF PHILADELPHIA

1 10/6/22 ADDENDUM #2 0 9/26/22 ISSUED FOR BID

No. Date Revision



Project Title:

PHILAPORT
PIER 78 ANNEX
SPRINKLER UPGRADES

rawing Title:

FIRE ALARM NOTES, LEGENDS, SYMBOLS, AND ABBREVIATIONS

 Date:
 7/15/2022

 Scale:
 AS NOTED

 Drawn:
 JJS

 Checked:
 PDK

ng No:

J:\2020a\2020-028-PhilaPort-Pier_78_Sprinkler_Syst_RepairRepl\10-Design\Drawings\WorkingDocuments\Fire-Alarm\2020-028-FA-0.dwg_10/06/2022

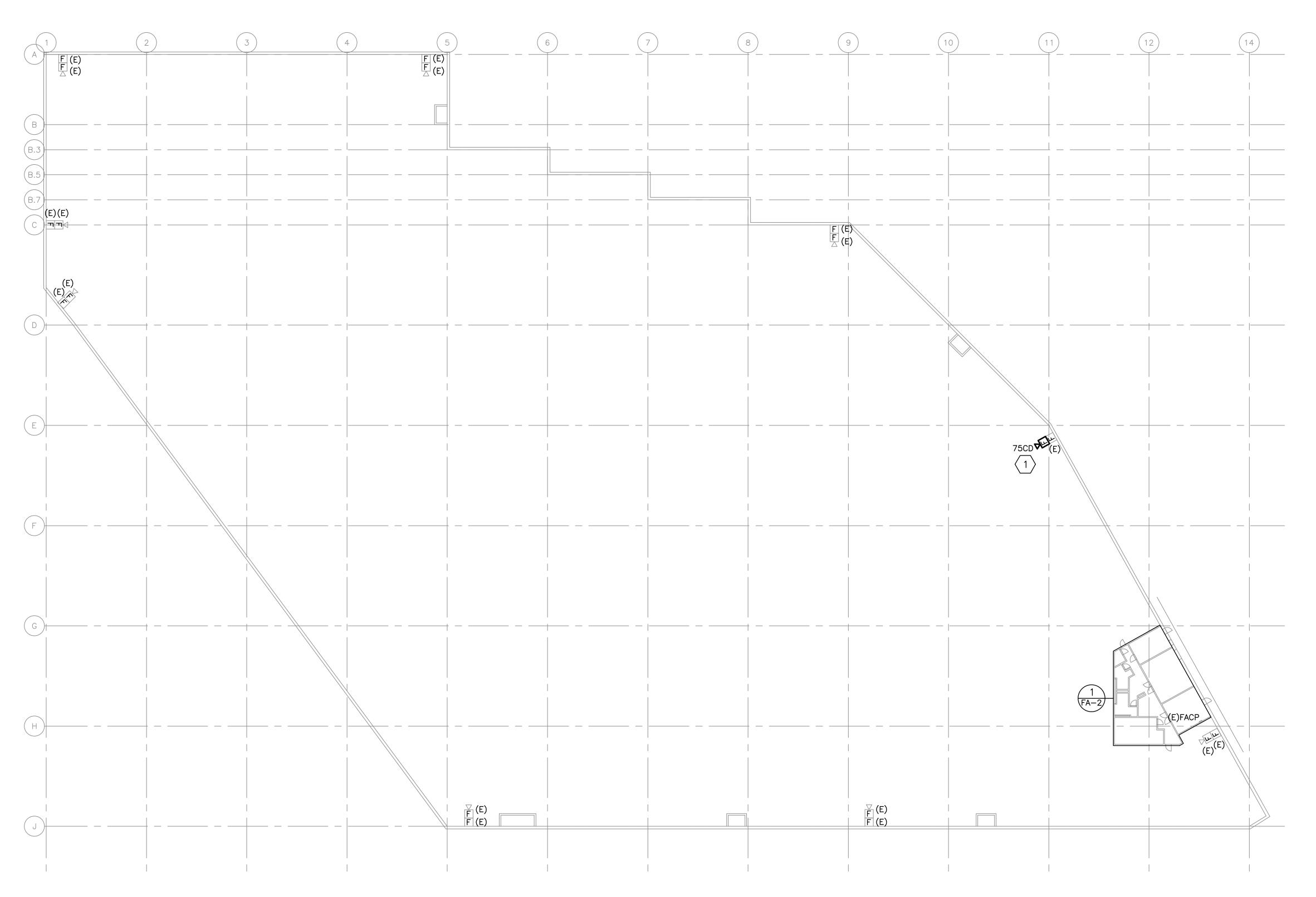
NOTES:

REFER TO FA-0 FOR GENERAL NOTES, LEGENDS, SYMBOLS, AND ABBREVIATIONS.

KEYNOTES:

DISCONNECT DAMAGED HORN/STROBE FROM EXISTING FIRE ALARM CIRCUIT AND REMOVE. INSTALL NEW HORN/STROBE IN SAME LOCATION, RECONNECT TO EXISTING FIRE ALARM CIRCUIT.







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KEY PLAN

1 10/6/22 ADDENDUM #2

0 9/26/22 ISSUED FOR BID

No. Date Revision

BURNS ENGINEERING, INC. | 215 979-7700 TWO-COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103

Project Title:

PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

GROUND FLOOR PLAN -WAREHOUSE

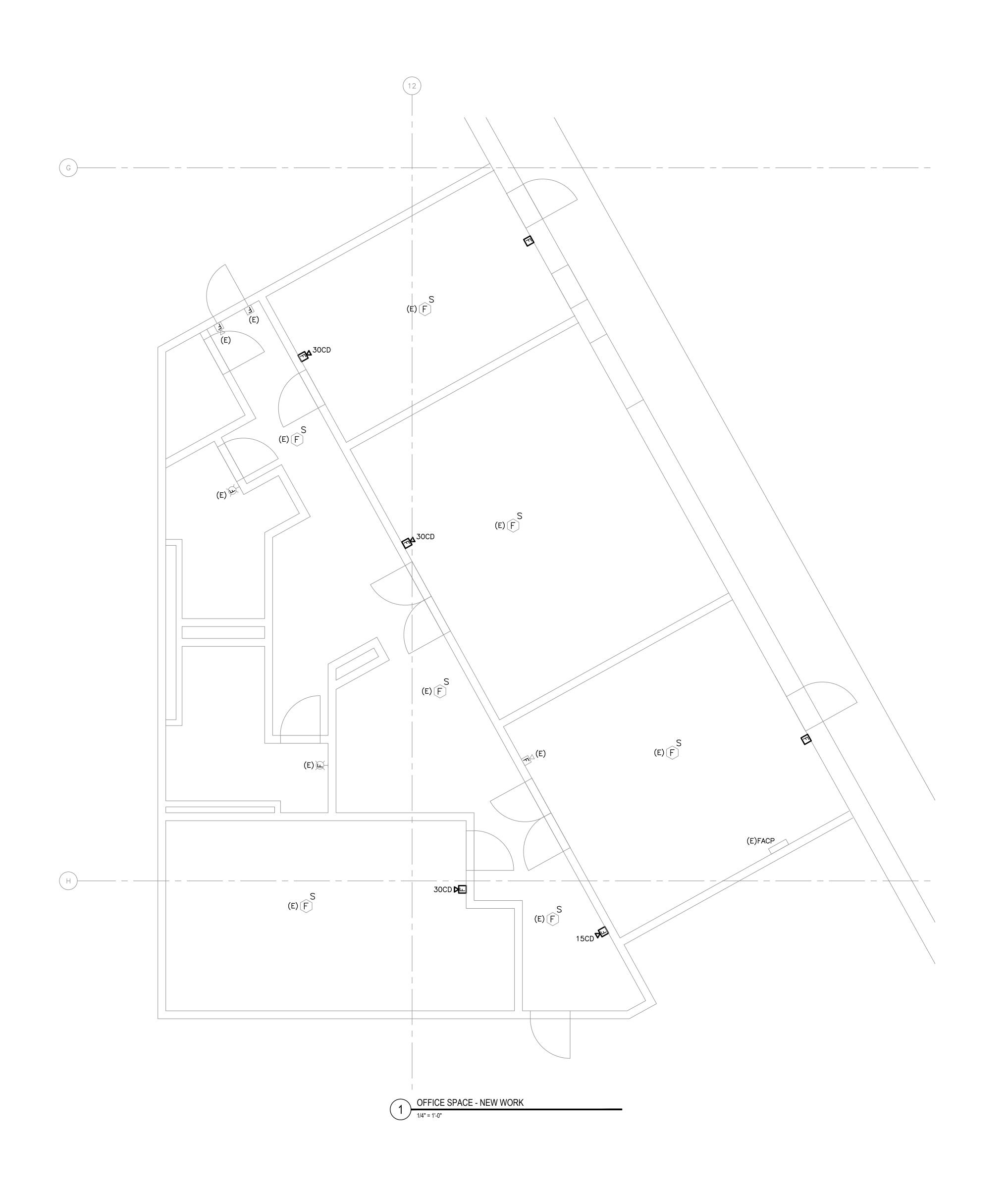
Date: 7/15/2022 AS NOTED

Drawing No:

NOTES:

 REFER TO FA-0 FOR GENERAL NOTES, LEGENDS, SYMBOLS, AND ABBREVIATIONS.





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1 10/6/22 ADDENDUM #2

No. Date Revision

0 9/26/22 ISSUED FOR BID

No. Date Revision

BURNS ENGINEERING, INC. | 215 979-7700
TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600
PHILADELPHIA, PA 19103

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PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

Drawing Title:

GROUND FLOOR PLAN -OFFICE

Date: 7/15/2022

Scale: AS NOTED

Drawn: AMD

Checked: BAB

Drawing No: **EA-2**

SYMBOLS ----EXISTING PIPE TURNING DOWN PIPE TURNING UP PIPE DROP BELOW CONTINUATION PRESSURE/TEMPERATURE SENSOR STRAINER WITH BLOWDOWN FLOW BALANCING VALVE

BALL VALVE

BREAK LINE (DOUBLE LINE DUCT/PIPE)

ABBREVIATIONS

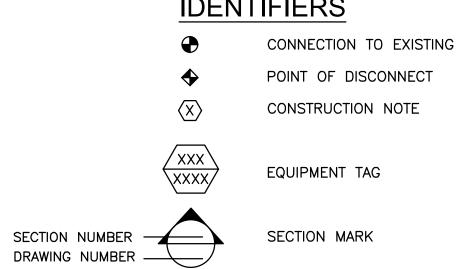
(A)	ABANDONED
AHJ	AUTHORITY HAVING JURISDICTION
BOP	BOTTOM OF PIPE
BOD	BOTTOM OF DUCT
CA	COMPRESSED AIR
CW	COLD WATER/DOMESTIC COLD WATER
CWS	COLD WATER SUPPLY
DN	DOWN
(E)	EXISTING
EWT	ENTERING WATER TEMPERATURE
GC	GENERAL CONTRACTOR
GWB	GYPSUM WALL BOARD
HW	HOT WATER/DOMESTIC HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
LWT	LEAVING WATER TEMPERATURE
MBH	ONE-THOUSAND BTU'S
N.C.	NORMALLY CLOSED
NG/G	NATURAL GAS
PC	PLUMBING CONTRACTOR
РМ	PROJECT MANAGER
PRV	PRESSURE REDUCING VALVE
TYP.	TYPICAL
WPD	WATER PRESSURE DROP
SAN	SANITARY DRAINAGE

DIMENSIONAL UNITS

& AND 'OR FT FEET "OR IN INCHES GPM GALLONS PER MINUTE PSIG POUNDS PER SQUARE INCH GA	GAUGE
---------------------------------------------------------------------------------------	-------

IDENTIFIERS

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GENERAL NOTES

1. SEE FP-0 FOR GENERAL NOTES

PLUMBING SPECIFICATIONS

PART 1 - PRODUCTS

- 1.1 HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS
- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
- 1.1.1. AB & I FOUNDRY; A PART OF THE MCWANE FAMILY OF COMPANIES.
- 1.1.2. CHARLOTTE PIPE AND FOUNDRY COMPANY.
- 1.1.3. TYLER PIPE
- B. PIPE AND FITTINGS: ASTM A 74, SERVICE AND HEAVY CLASS(ES).
- C. GASKETS: ASTM C 564, RUBBER.
- D. CAULKING MATERIALS: ASTM B 29, PURE LEAD AND OAKUM OR HEMP FIBER.

PART 2 - EXECUTION

- 2.1 ENCASEMENT FOR UNDERGROUND METAL PIPING
- A. STANDARD: ASTM A 674 OR AWWA C105/A 21.5.
- B. MATERIAL: LINEAR LOW-DENSITY POLYETHYLENE FILM OF 0.008-INCH MINIMUM THICKNESS.
- C. FORM: TUBE.
- D. COLOR: BLACK.
- 2.2 LAY BURIED BUILDING WASTE PIPING BEGINNING AT LOW POINT OF EACH SYSTEM.
- A. INSTALL TRUE TO GRADES AND ALIGNMENT INDICATED, WITH UNBROKEN CONTINUITY OF INVERT. PLACE HUB ENDS OF PIPING UPSTREAM.
- B. INSTALL REQUIRED GASKETS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS FOR USE OF LUBRICANTS, CEMENTS, AND OTHER INSTALLATION REQUIREMENTS.
- C. MAINTAIN SWAB IN PIPING AND PULL PAST EACH JOINT AS COMPLETED.
- 2.3 INSTALL CAST-IRON SOIL PIPING ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK," CHAPTER IV, "INSTALLATION OF CAST IRON SOIL PIPE AND FITTINGS."
- 1. INSTALL ENCASEMENT ON UNDERGROUND PIPING ACCORDING TO ASTM A 674 OR AWWA C105/A 21.5.

2.4 JOINT CONSTRUCTION

- A. JOIN HUB-AND-SPIGOT, CAST-IRON SOIL PIPING WITH GASKET JOINTS ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK" FOR COMPRESSION JOINTS.
- A. JOIN HUB-AND-SPIGOT, CAST-IRON SOIL PIPING WITH CALKED JOINTS ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK" FOR LEAD-AND-OAKUM CALKED JOINTS.



KEY PLAN

1 10/6/22 ADDENDUM #2

0 9/26/22 ISSUED FOR BID

No. Date Revision

TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103

PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

PLUMBING NOTES, LEGENDS, AND SPECS

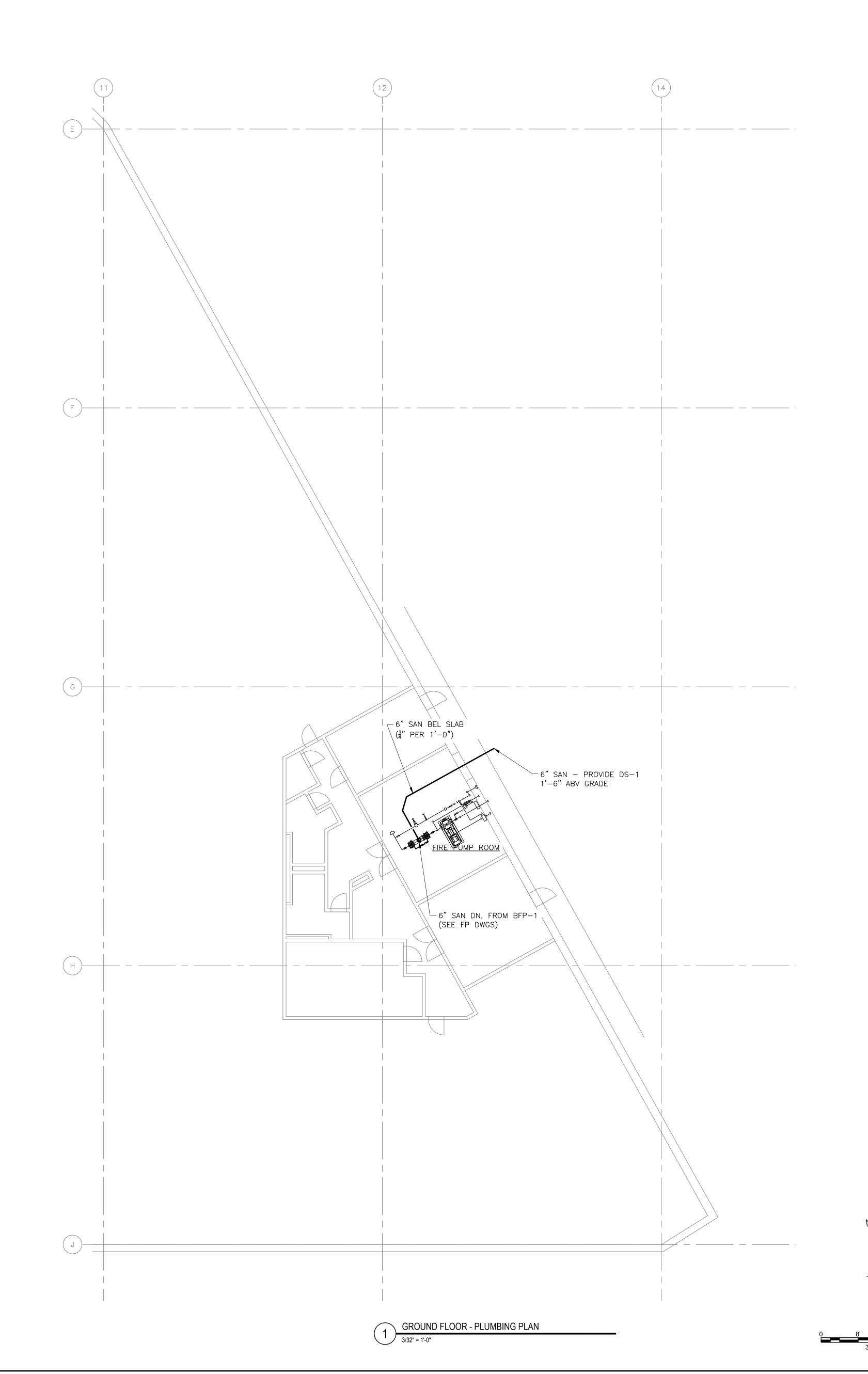
Date: 7/15/2022 AS NOTED

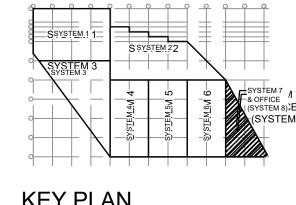
Drawing No:

REFER TO P-O FOR ADDITIONAL SCOPE OF WORK, NOTES, SYMBOLS, AND ABBREVIATIONS.



PLUMBING SPECIALTY SCHEDULE									
TAG	DESCRIPTION	CHARACTERISTICS	BASIS OF DESIGN		SEDVICE	NOTES			
			MANUFACTURER	MODEL NUMBER	- SERVICE	NOTES			
DS-1	DOWNSPOUT NOZZLE	BACKFLOW PREVENTER DISCHARGE, STAINLESS STEEL BODY, CAST IRON PIPE CONNECTION	JR SMITH	1775 – U	SANITARY	_			





1 10/6/22 ADDENDUM #2 0 9/26/22 ISSUED FOR BID

No. Date Revision

BURNS ENGINEERING, INC. | 215 979-7700 TWO COMMERCE SQUARE, 2001 MARKET ST, SUITE 600 PHILADELPHIA, PA 19103

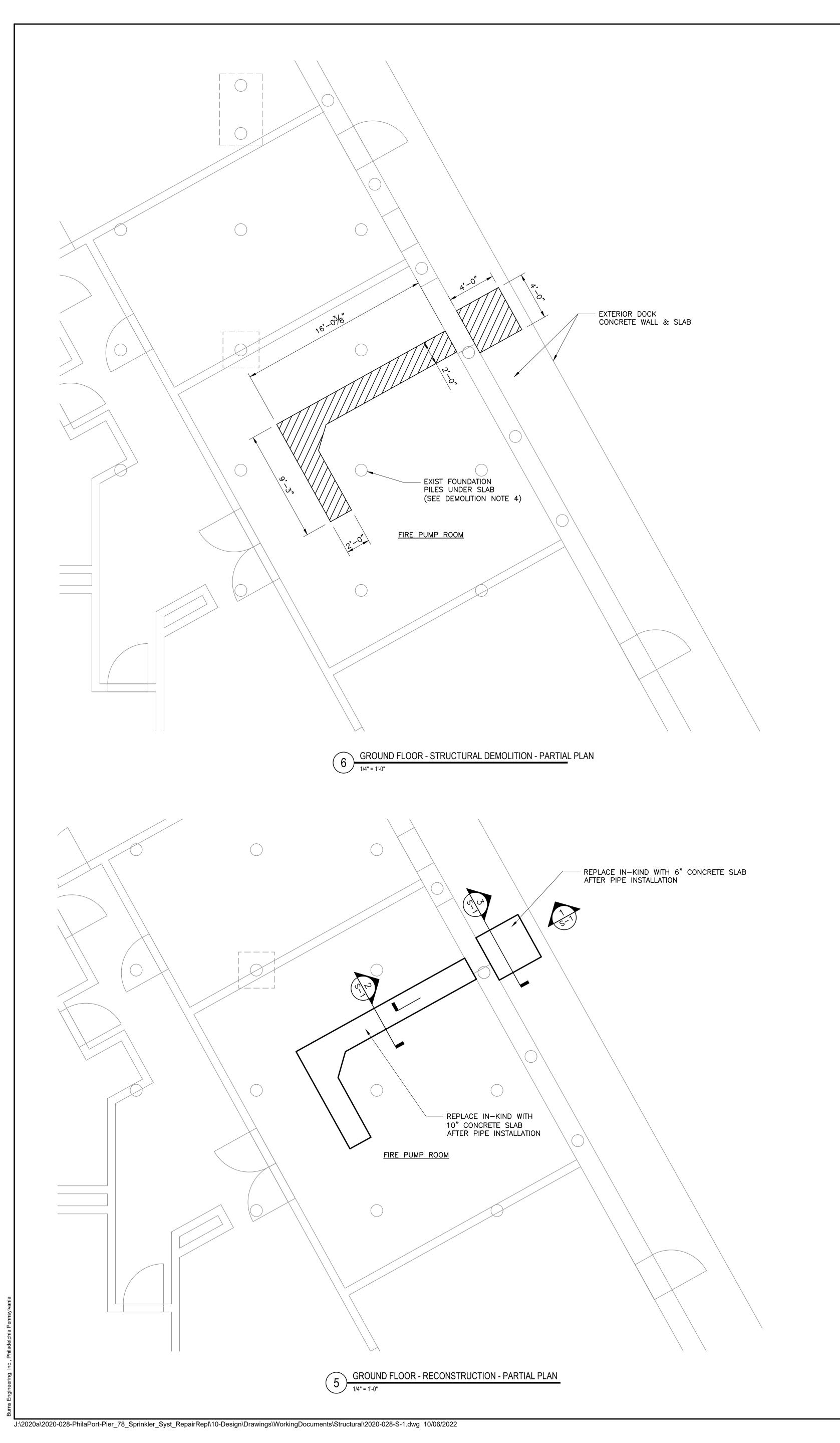
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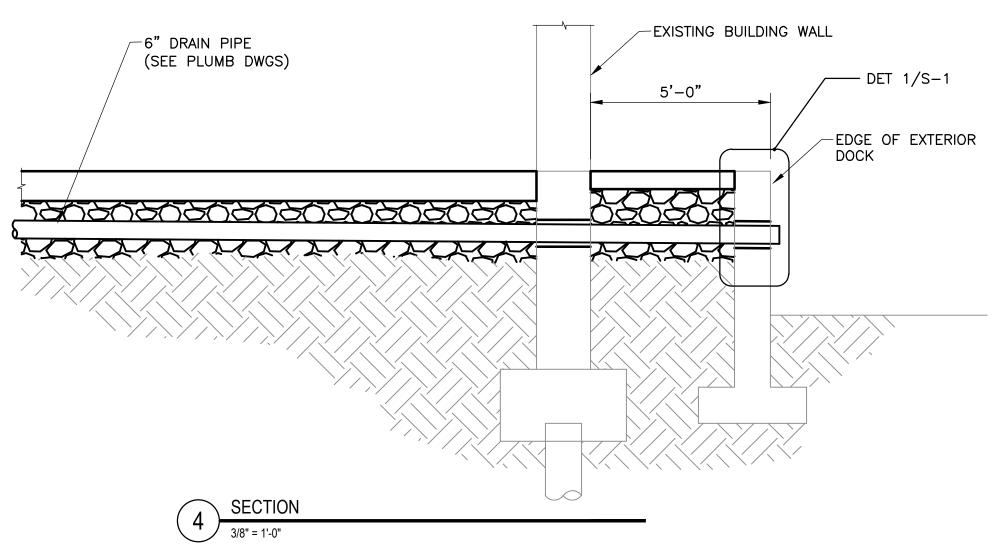
PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

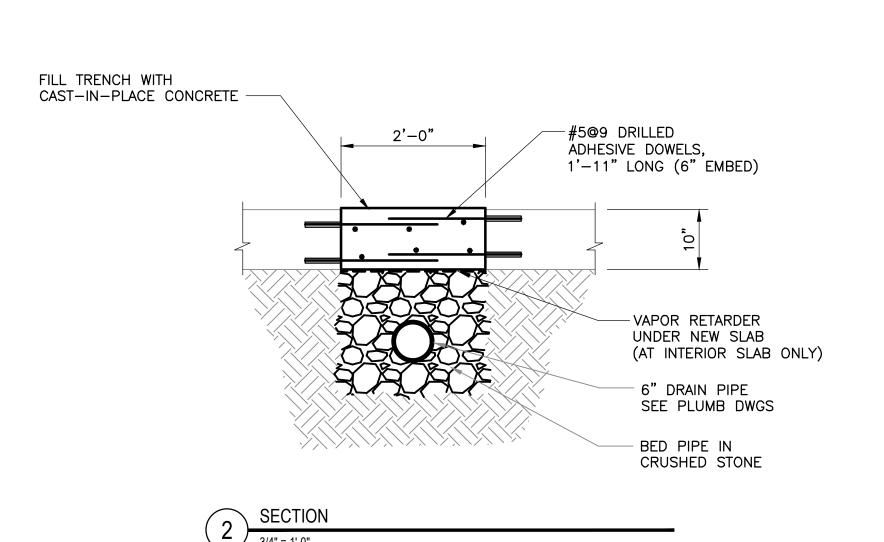
GROUND FLOOR PLUMBING PLAN

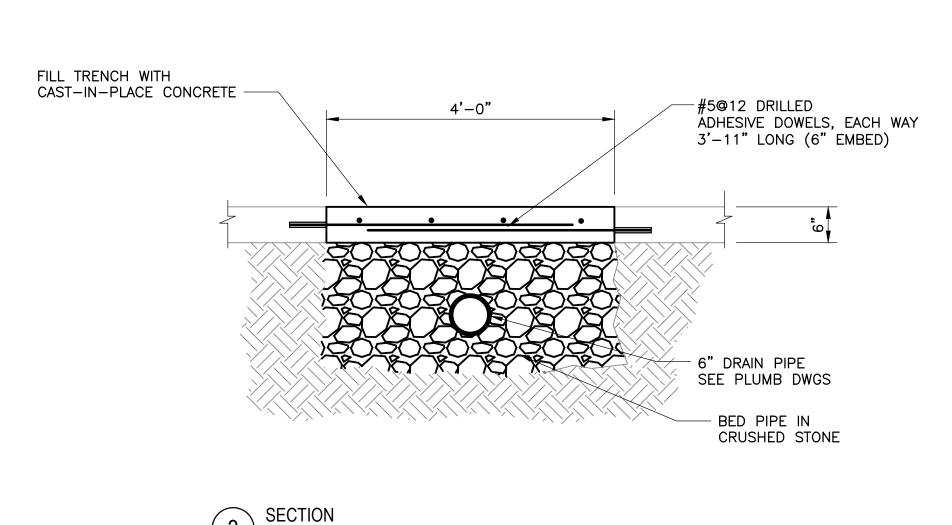
Date: 7/15/2022 AS NOTED

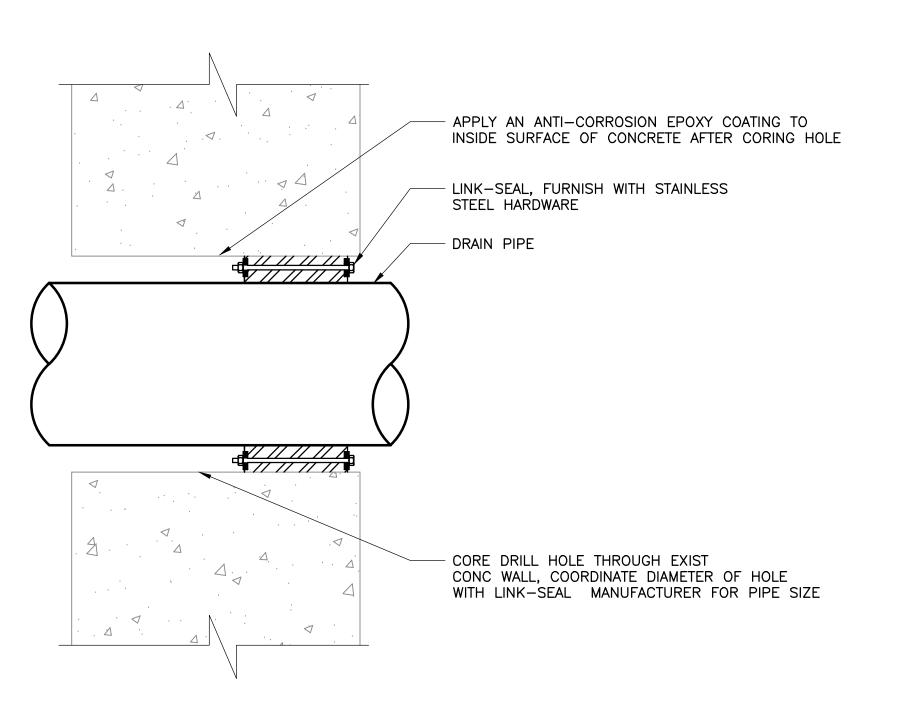
Job No: 2020-028 Drawing No:











PENETRATION THROUGH INTERIOR WALL SIMILAR.

DETAIL - PIPE PENETATION

3" = 1'-0"

GENERAL STRUCTURAL NOTES:

- 1. THESE DRAWINGS SHALL BE COORDINATED WITH AND USED IN CONJUNCTION WITH THE DRAWINGS OF OTHER DISCIPLINES.
- 2. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL METHODS AND MEANS OF CONSTRUCTION AND FOR JOB SITE SAFETY. PROVIDE PROPER PROTECTIVE CANOPIES AND BARRICADES TO MAINTAIN THE PUBLIC SAFETY AND TO PREVENT DAMAGE TO ADJACENT PROPERTY. DESIGN AND CONSTRUCT IN ACCORDANCE WITH THE LOCAL PREVAILING CODES AND OF ALL OTHER APPLICABLE REGULATORY AGENCIES.

CONCRETE NOTES & SPECIFICATIONS

- DESIGN OF REINFORCED CONCRETE MEMBERS IS IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318-14).
- 2. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE PUBLICATIONS: ACI 301, ACI 311, ACI 315, ACI 318, ACI 347, ACI
- 3. COLD-WEATHER CONCRETE PLACEMENT (3 OR MORE CONSECUTIVE DAYS WHERE AVERAGE HIGH TEMPERATURES IS EXPECTED TO BE BELOW 40 DEGREES F) SHALL COMPLY WITH THE PROVISIONS OF ACI 306. DO NOT USE FROZEN MATERIALS. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE MATIERIALS.
- 4. HOT-WEATHER CONCRE PLACEMENT SHALL COMPLY WITH THE PROVISIONS OF ACI 301.
- 5. NEW CAST-IN-PLACE CONCRETE SHALL BE NORMALWEIGHT CONCRETE HAVING A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI.
- 6. ALL REINFORCING STEEL SHALL BE HIGH-STRENGTH NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. ALL REINFORCING STEEL SHALL BE EPOXY-COATED, PER ASTM
- 7. REINFORCING STEEL SHALL HAVE A MINIMUM CLEAR COVER AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE DRAWINGS:

 CONCRETE CAST AGAINST EARTH
 CONCRETE EXPOSED TO EARTH OR WEATHER
 2"
 CONCRETE NOT EXPOSED TO EARTH OF WEATHER
 1"
- 8. CONCRETE MIX DESIGN:

PORTLAND CEMENT
COARSE AGGREGATE
FINE AGGREGATE
MAXIMUM WATER—CEMENT RATIO:

ASTM C150 TYPE I/II
ASTM C33
ASTM C33
O.40

MINIMUM CEMENTITIOUS MATERIAL CONTENT SHALL BE 705 LBS PER CUBIC YARD OF CONCRETE. FLY ASH MINERAL ADMIXTURE CONFORMING TO ASTM C618 CLASS F, MAY BE SUBSTITUTED FOR PORTLAND CEMENT UP TO A MAXIMUM PERCENTAGE BY WEIGHT OF 25 PERCENT. GROUND GRANULATED BLAST FURNACE SLAG CONFORING TO ASTM C989 MAY BE SUBSTITUTED FOR PORTLAND CEMENT UP TO A MAXIMUM PERCENTAGE BY WEIGHT OF 50 PERCENT. THE PERCENTAGE OF PORTLAND CEMENT BY WEIGHT OF THE TOTAL CEMENTITIOUS MATERIAL CONTENT SHALL NOT BE LESS THAT 50 PERCENT.

MAXIUMUM COARSE AGGREGATE SIZE USE IN THE CONCRETE MIX SHALL BE 3/4 INCH. ACCEPTABLE SLUMP FOR CAST—IN—PLACE CONCRETE SHALL BE 4 INCHES, \pm 1.5 INCHES AS DETERMINE IN ACCORANCE WITH ASTM C143.

SUBMIT PROPOSED CONCRETE MIX DESIGN CONFORMING TO THE REQUIREMENT HEREIN FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO PROCUREMENT AND DELIVERY TO THE PROJECT SITE. MIX DESIGN PROPORTIONS SUBMITTED SHALL BE BASED UPON LABORATORY TRIAL MIX TEST RESULTS AND/OR MIXES SUCCESSFULLY USED WITHIN THE TWO YEARS PRECEDING THE DATE OF SUBMITTAL.

AIR CONTENT SHALL BE 6 PERCENT, \pm 1.5 PERCENT, AT THE POINT OF DELIVERY. WHERE USED, AIR-ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C260.

CHEMICAL ADMIXTURES SHALL CONFORM TO THE FOLLOWING:
WATER-REDUCING ADMIXTURES
ASTM C494, TYPE A.
RETARDING ADMIXTURE
ASTM C494, TYPE B.

9. LIQUID MEMBRANE FORMING COMPOUNDS SHALL CONFORM TO ASTM C309, TYPE 2, CLASS

- 10. UNDER-SLAB (SHEET) VAPOR RETARDER SHALL CONFORM TO ASTM E1785, CLASS A. ADHESIVE AND/OR TAPE FOR SEAMS AND SEALING AROUND PIPE PENETRATIONS SHALL BE AS PER THE VAPOR RETARDER MANUFACTURER'S RECOMMENDATIONS.
- 11. NO LOAD SHALL BE PLACED ON FRESHLY POURED CONCRETE UNTIL THE CONCRETE HAS ACHIEVED A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI, BUT NO SOONER THAN 7 DAYS AFTER PLACEMENT.
- 12. ALL NEW CONCRETE WORK DETERMINED BY EITHER ON-SITE INSPECTORS OR THE CONSTRUCTION RESIDENT ENGINEER TO BE DEFECTIVE OR NON-CONFORMING SHALL BE REPAIRED AND OR REPLACED, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
- 13. POST—INSTALLED REINFORCING DOWELS SHALL BE HILTI HIT RE 500 V3 SYSTEM, OR AN APPROVED EQUAL. MINIMUM EMBEDMENT SHALL BE AS SHOWN IN THE DETAILS, BUT NOT LESS THAN 6 INCHES.

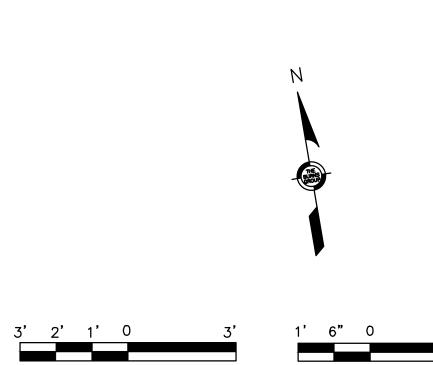
STRUCTURAL DEMOLITION NOTES

- 1. CONTRACTOR IS RESPONSIBLE FOR PROVIDING DUST CONTROL AND FOR ENSURE SAFETY AT THE WORK SITE IN COMPLIANCE WITH OSHA STANDARD 29 CFR PART 1926.
- 2. REMOVE DEMOLITION DEBRIS PROMPTLY FROM THE SITE. STOCKPILING OF DEBRIS IS NOT PERMITTED ON EXISTING STRUCTURE OR ON NEW CONSTRUCTION.
- 3. CONCRETE SLAB DEMOLITION SHALL BE PERFORMED IN A CONTROLLED MANNER, AS TO NOT DAMAGE OR ALTER THE ADJACENT CONCRETE SLAB AND WALLS THAT ARE TO REMAIN. THE USE OF A JACKHAMMER FOR DEMOLITION IS NOT PERMITTED.
- 4. PRIOR TO CUTTING ANY CONCRETE SLAB, UTILIZE GPR TECHNOLOGY OR SIMILAR MEANS TO SCAN THE SLAB SURFACE TO LOCATE ALL EXISTING FOUNDATION PILES. NO CONCRETE SHALL BE CUT WITHIN A 2'-6" HORIZONTAL DISTANCE FROM ANY EXISTING PILE.

SYMBOLS

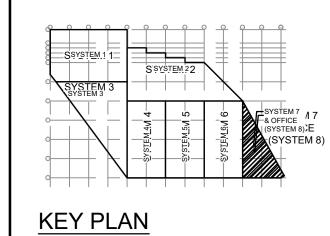


SECTION NUMBER SECTION SECTION



SCALE:3/4"=1'-0"





1 10/6/22 ADDENDUM #2
0 9/26/22 ISSUED FOR BID

No. Date Revision



Project Title:

PHILAPORT PIER 78 ANNEX SPRINKLER UPGRADES

Drawing Title:

Drawing No:

GROUND FLOOR STRUCTURAL PLAN SECTIONS & DETAILS

 Date:
 7/15/2022

 Scale:
 AS NOTED

 Drawn:
 TAB

 Checked:
 DW

 Job No:
 2020-028

S-1