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Addendum No. 3
Russell County Industrial Development Authority
The SEED Academy Project
Bid Date: August 22, 2024
Addendum Issue Date: August 14, 2024

The Contractor shall conform to the following changes, as same shall become binding upon the Contract to be issued in response to this invitation.

Item 1: Replace Section 08710 – Door Hardware with the attached revised spec. The following doors are not included in the Door Schedule because they are shown as sectional garage doors #2, 5, 8,9, 11, 15, 39, 47.

Item 2: Replace the following Plan Sheets with the attached revised Plan Sheets:

- | | |
|---------------|----------------------------|
| E – 1 | Lighting |
| E – 2 | Power Plan |
| E – 3 | Electrical Schedules |
| E – 4 | Light Fixture Schedule |
| E – 5 | Fire Alarm Details |
| FP – 1 | Fire Protection Floor Plan |
| FP – 2 | Fire Protection Details |
| M – 1 | HVAC Plan |
| M – 2 | HVAC Schedules |
| UM – 1 | Site Utility Plan |

END OF ADDENDUM NO. 3

SECTION 08710

PART 1 – GENERAL

1.0 Related Documents

Drawings and general provisions of contract and Division 1 specification sections, apply to work of this section

1.01 SUMMARY

A. Section Includes:

1. Door Hardware.
2. Storefront and Entrance Door Hardware.
3. Installation of Finish Hardware.

B. Related Sections:

1. Section 06200 - Finish Carpentry
2. Section 07900 - Joint Sealers – exterior thresholds
3. Section 08100 – Metal Doors and Frames
4. Section 08200 - Wood and Plastic Doors
5. Section 08400 – Entrances and Storefronts

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere.

1. Windows.
2. Cabinets, including open wall shelving and locks.
3. Signs, except where scheduled.
4. Toilet accessories, including grab bars.
5. Folding Partitions, except cylinders where detailed.
6. Sliding aluminum doors, except cylinders where detailed.
7. Access doors and panels, except cylinders where detailed.

1.02 REFERENCES

- A. Use date of standard in effect as of BID date.
- B. American National Standards Institute – ANSI 156.18 – Materials and Finishes.
- C. ICC/ANSI A117.0 – 1998 – Specifications for making buildings and facilities usable by physically handicapped people.
- D. ADA – Americans with Disabilities Act of 1990.
- E. BHMA – Builders Hardware Manufacturers Association.
- F. DHI – Door and Hardware Institute
- G. NFPA – National Fire Protection Association
 1. NFPA 80 – Fire Doors and Windows
 2. NFPA 101 – Life Safety Code
 3. NFPA 105 – Smoke and Draft Control Door Assemblies
 4. NFPA 252 – Fire Tests of Door Assemblies

1.03 SUBMITTALS

ARCHITECT'S HARDWARE SCHEDULE:

Architect's hardware schedule is by hardware set number. Refer to drawings for designation of hardware set number applicable to each opening. Certain additional items of hardware and/or hardware accessories specified herein shall be finished and noted on the hardware schedule.

SUPPLIER'S HARDWARE SCHEDULE

A complete hardware schedule, indicating type, number, location, and finish shall be submitted to architect for approval, together with such samples as may be required for review. Opening numbers shall be same as used in contract documents. Schedule shall be prepared according to Door and Hardware Institute recommendations (schedule and sequence format) and shall include degree of door closer installation.

Supplier's hardware schedule will be reviewed by architect for type, quality, finish, and for function (other than hand). Contractor shall be responsible for checking schedule for correct hand of locksets and for supplying quantity of items required by contract documents.

Provide supplementary or revised hardware schedules if deemed necessary by architect.

Do not ship or deliver hardware to job prior to review of hardware schedules by architect.

Hardware schedule shall be submitted in the following format. Hardware schedules submitted to architect for review not in this format will be rejected:

HARDWARE SET 1

1 Sgl Door #001 Exterior from Corridor RHR 90 deg
Each leaf 3'0 x 7'0 x HMF x NLWD

Item, quantity, manufacturer's #, size, product type, finish, and product information

3 ea Hinge	BB1191 NRP 4.5 x 4.5	26D	HA
1 ea Cylinder	951 x GG MK	26D	FA
1 ea Exit Device	25R NL-OP	626	FA
Etc.			

1.04 QUALITY ASSURANCE

All hardware shall be furnished by an established Builders Hardware firm who maintains and operates an office, display, and stock in this area, and who is a regular authorized distributor of the lock they propose to furnish. All hardware schedules submitted for approval shall carry the signature and seal of a certified Architectural Hardware Consultant.

1.05 PROJECT CONDITIONS

Delivery storage and handling: Hardware supplier shall receive and check all hardware at his warehouse. Drop shipments to the jobsite from various manufacturers will not be permitted. All hardware shall be in its original packaging and plainly labeled and numbered to agree with the numbers and as listed in the hardware schedule. The contractor shall submit his schedules for approval to the architect before proceeding with any work. When required, hardware supplier shall deliver hardware and/or hardware templates to the various door manufacturers. The general contractor shall provide storage facilities for the finish hardware after delivery to the job site.

1.06 ITEMS NOT INCLUDED

Hardware for metal windows, toilet partitions, cabinets, access panels, etc. is not included in this section. See other sections for hardware to be furnished by others.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

Numbers given in this schedule are of the following manufacturers.

<u>PRODUCTS</u>	<u>MFG. SPECIFIED</u>	<u>APPROVED EQUAL</u>
Hinges	Ives	Hager, Bommer
Locks	Falcon	Schlage, Best
Exit Devices	Falcon	Von Duprin, Precision
Closers	LCN	Corbin-Ruswin, Sargent
Trim/Auxiliary	Ives	Hager, Rockwood
Weather Strip	NGP	Pemko, Hager

2.02 HARDWARE FINISHES

US 32D	(630)	Hinges, Locks, Pivots, Bolts
US 32D	(630)	Push/Pulls, Exit Devices, Stops
Sprayed Aluminum		Door Closers
Aluminum		Thresholds

2.03 HINGES

Ball Bearing Hinges shall be five-knuckle construction. Hinges for exterior doors shall be stainless steel with non-removable pins, in the finish specified. Oil impregnated bearings are not an acceptable substitute for ball bearings. All hinges shall be 4 1/2" x 4 1/2", unless otherwise specified.

2.04 LOCKSETS

Furnish locksets and cylinders by same manufacturer. Cylinders shall be provided with small format interchangeable cores keyed to the owner's specifications. All lever locks shall be mortise or bored type as indicated. Lock bodies and lock trim shall be by the same manufacturer. Backset on all lever locks and deadlocks shall be 2 3/4" or 2 3/8 as required. All deadlocks shall have 1" throw bolts and be equipped with armor fronts. Trim for locksets shall be as indicated in the hardware sets. Locksets shall be ANSI/BHMA A156.2 series 4000 Grade 1 Cylindrical lock as scheduled.

2.05 EXIT DEVICES

Characteristics:

- a. Tested to be in accordance with ANSI A156.3, 1994, Grade 1. All exit devices to be heavy duty, with one-piece removable covers. The housing shall be manufactured from extruded aluminum without exposed screws or rivets.
 - b. Exit Devices shall be "UL" listed for Life Safety. All exit devices for fire-rated door openings shall have "UL" labels for "Fire Exit Hardware". All exit devices shall conform to NFPA 80 and NFPA 101 requirements.
 - c. All series exit devices shall be "touchpad" (modern) types, incorporating a hydraulic fluid damper, which decelerates the touchpad on its return stroke and eliminates noise associated with the exit device operation.
- All exit devices shall be non-handed. The touchpad shall extend a minimum of 1/2 of the door width and shall be a minimum of 2-3/16" in height. Plastic touch pads shall not be acceptable. The touchpad height shall exceed height of mechanism case or rail assembly to eliminate "Pinch Points". If the touchpad height does not exceed the height of the mechanism case or rail assembly, provide a factory installed insert / filler on the top and bottom of the touchpad along the mechanism case and rail assembly; to prevent "Pinch Points".

- d. All latch bolts to be the deadlocking type. Latch bolts shall have a self-lubricating coating to reduce wear. Plated or plastic coated latch bolts shall not be acceptable.
- e. All metal end caps to be standard with all exit devices.
- f. Exit device strikes, where surface applied, shall be a roller type and have an anti-slip mounting plate.
- g. All outside exit device trim shall be forged brass, full escutcheon. The pull shall have a grip that is 6 ¼' CTC and project 2 11/16".
- h. The exit device end caps shall be secured with three (3) screws to a truss bracket.
- i. The "touchpad" exit devices shall be patterned punched to designate code requirements; where required.
- j. All exit devices shall be made of brass, bronze, stainless steel, or aluminum material, plated to the standard architectural finishes to match the balance of the door hardware.
- k. Electric Latch retract options will require Power Supply from the same manufacturer.

2.06 CLOSERS

Door closers shall be full rack and pinion type. Closers shall be surface mounted. Equip closers with (2) two key operated regulating valves for individual control of both closing and latching speeds. Regulating valves shall be accessible from top of closer only and shall be completely unobtrusive. Closer shall have minimum of 15% door closing power adjustment and adjustable back check. Enclose closer in a cover of plastic. Closers on all exterior out-swinging doors and others as scheduled shall be parallel arm installation. Closer bodies and/or closer feet to be mounted on surface of door shall be supplied with sex bolts.

2.07 PUSH AND PULL UNITS

Push plates and pulls shall be solid stainless steel with a satin finish. Minimum thickness is .050; size and design are indicated in Hardware Sets.

2.08 PROTECTIVE PLATES

Kick, Armor, and Mop plates shall be height listed in schedule and width of 2" less than door width, or 1" less than door width of each leaf on pairs of doors. Plates shall be minimum thickness .050 stainless steel unless otherwise indicated.

2.09 THRESHOLDS

Provide (aluminum) thresholds where scheduled, with machine screws and lead expansion shields.

2.10 DOOR STOP

Provide door stops wherever necessary to prevent door or hardware from striking any adjacent partition or obstruction. Provide wall type whenever possible. All door stops and holders mounted on concrete floor or masonry walls shall have machine screws and lead expansion shields.

2.11 SILENCERS

Provide GJ-64 silencers for all hollow metal frames. Single doors shall have three (3) silencers. Double doors shall have two (2) silencers.

2.12 KEYING

Key locks to owner's specification. Obtain owners approval and signature on final approved keying. Perform all keying at lock factory, and register key data there. Deliver all master keys to Owner. No master keys shall be delivered to any other person.

PART 3 – EXECUTION

3.01 APPLICATION

INSTALLATION: Work shall be done by the **Hardware Supplier**, using skilled and experienced craftsman trained in the trade of installing finish hardware. Mortised items shall be neatly set in and made flush with door or frame surface. Manufacturer's instructions and recommendations shall be strictly followed.

FASTENERS: Hinges, pivots, locks, and exit devices shall be installed with proper sex bolts, wood or machine screws as supplied by the manufacturer. Surface closers shall be mounted to door with sex bolts. Door pulls shall be installed on doors with thru-bolts as supplied by manufacturer.

3.02 HARDWARE SETS

Hardware Set 1 Tag# 1

Continuous Hinges	112 HD
Concealed Vertical Rod	CD24C 718C
Concealed Vertical Rod	CD25C EO Inactive Leaf
Mortise Cylinder	C987
Rim Cylinder	C953
Ladder Pull	9266 72" Round Tip 630
Closer	4040XP Cush 18PA, 30, 61
Threshold	By Aluminum Door Provider
Weather Strip	By Aluminum Door Provider
Door Sweep	By Aluminum Door Provider
Permanent Core	C607

Hardware Set 2 Tag# 16

Continuous Hinges	112 HD
Concealed Vertical Rod	CD24R 718C
Concealed Vertical Rod	CD25C EO Inactive Leaf
Mortise Cylinder	C987
Rim Cylinder	C953
Ladder Pull	9266 72" Round Tip 630
Closer	4040XP Cush 18PA, 30, 61
Threshold	By Aluminum Door Provider
Weather Strip	By Aluminum Door Provider
Door Sweep	By Aluminum Door Provider
Permanent Core	C607

Hardware Set 3 Tag# 6, 7, 13, 40

Ball Bearing Hinge	5BB1 NRP 630
Rim Exit Device	CD25R NL-OP
Rim Exit Device	CD25R EO Inactive Leaf
Key Removable Mullion	KR4023
Mortise Cylinder	C987
Rim Cylinder	C953
Straight Pull	8103 EZHD-12 CTC
Closer	4040XP Cush
Threshold	425EV
Weather Strip	160VA
Mullion Seal	5100C
Door Sweep	97V
Meeting Stile Astragal	115NA
Permanent Core	C607

Hardware Set 4 Tag# 3, 4, 10, 12, 14, 48, 49

Ball Bearing Hinge	5BB1 NRP 630
Rim Exit Device	CD25R NL-OP
Mortise Cylinder	C987
Rim Cylinder	C953
Straight Pull	8103 EZHD-12 CTC
Closer	4040XP Cush
Threshold	425EV
Weather Strip	160VA
Door Sweep	97V
Permanent Core	C607

Hardware Set 5 Tag # 22

Ball Bearing Hinge	5BB1
Passage Latch	T101S Dane
Closer	1461 R w/PA
Kick Plate	8400 B-CS 10" x 2" LTDW
Wall Stop	407CVX

Hardware Set 6 Tag # 19, 20, 21, 26, 28, 33, 37, 45

Ball Bearing Hinge	5BB1
Office Lockset	T511 BD Dane
Kick Plate	8400 B-CS 10 x 2" LTDW
Wall Stop	407CVX
Permanent Core	C607

Hardware Set 7 Tag # 24, 25

Ball Bearing Hinge	5BB1
Privacy Indicator	MA321 DGM
Closer	1461 R w/PA
Kick Plate	8400 B-CS 10" x 2" LTDW
Wall Stop	407CVX

Hardware Set 8 Tag # 27, 34, 35, 43, 44

Ball Bearing Hinge	5BB1
Storeroom Lockset	T581 BD Dane
Closer	1461 R w/PA
Kick Plate	8400 B-CS 10 x 2" LTDW
Wall Stop	407CVX
Permanent Core	C607

Operational Intent: Classroom Doors are to be normally closed and locked. Instructor to open door to allow students to enter. Door can also be opened via manual key from corridor side.

Hardware Set 9 Tag # 29, 31, 32, 36, 41, 42, 46

Ball Bearing Hinge	5BB1
Storeroom Lockset	T581 BD Dane
Kick Plate	8400 B-CS 10 x 2" LTDW
Wall Stop	407CVX
Permanent Core	C607

Hardware Set 10 Tag# 23

Ball Bearing Hinge	5BB1
Flush Bolt	FB458-12 Top & Bottom
Storeroom Lockset	T581 BD Dane
Surface Overhead Stop	454H Both leaves

Hardware Set 11 Tag# 30

Ball Bearing Hinge	5BB1
Flush Bolt	FB458-12 Top & Bottom
Storeroom Lockset	T581 BD Dane
Closer	1461 R w/PA Active Leaf
Surface Overhead Stop	454H Inactive Leaf
Coordinator	3092 Trimco
Kick Plate	8400 B-CS 10 x 1" LTDW
Permanent Core	C607

Hardware Set 12 Tag# 38

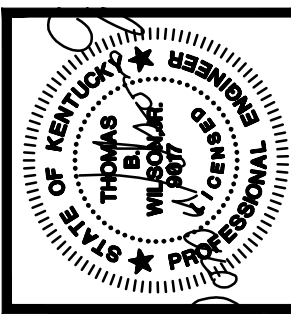
Ball Bearing Hinge	5BB1	
Concealed Vertical Rod	CD25C-L	
Concealed Vertical Rod	CD25C-L	
Mortise Cylinder	C987	
Closer	4040XP	Cush
Kick Plate	8400	B-CS 10 x 1" LTDW
Permanent Core	C607	

Hardware Set 13 Tag # 17, 18

Ball Bearing Hinge	5BB1	
Storeroom Lockset	T581	BD Dane
Electric Strike	MDS 100-32D	
Closer	1461	R w/PA
Kick Plate	8400	B-CS 10 x 2" LTDW
Wall Stop	407CVX	
AI Phone Intercom System		
1 JODV PS182OULJOS-1B		
1 JOW-2D 2-Door adapter for JOJOW-2D		
1 Form C Relay RY-1824L		
1 Desk Stand, adjustable MCW-S/B		
1 2-conductor 18ga non-shielded cable 500' 87180250C		
Permanent Core	C607	

Operational Intent: Doors are normally closed and locked. Key side for door 17 is Vestibule 100, key side of door 18 is Reception 102. Video Intercom to be located in Vestibule 100 pressing button will alert Reception Desk that someone is at door 17. If authorized ingress is approved, the Receptionist can release the Electric Strike from the desk. Once in the Reception 102 area, if authorized ingress into the school is approved, the Receptionist can release the Electric Strike to door 18.

End of Schedule



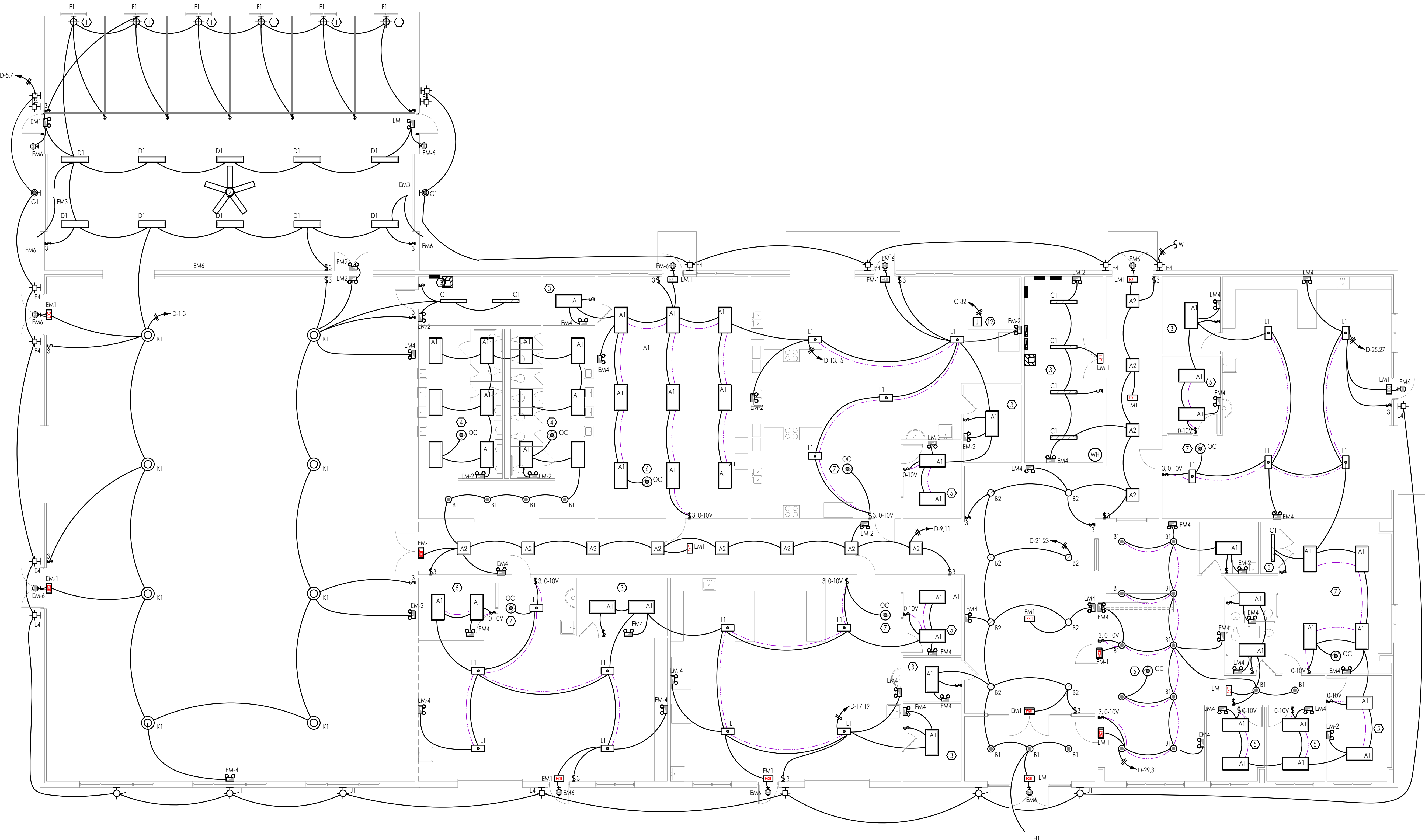
AFA
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 CONSULTING ELECTRICAL ENGINEERS
 1000 W. MAIN ST. SUITE 100
 RUSSELL SPRINGS, KY 40381
 PHONE (859) 258-4487

The Seed Academy
 Lake Cumberland Regional AgriTech Center
 Russell Springs, Kentucky

PROJECT NO.	DATE	REVISION	BY
2019-34			
DESIGNED BY	TBA		
DRAWN BY	TBA		
CHECKED BY			
DATE	JANUARY 2024		
SCALE	AS NOTED		

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DRAWING NO.
E-1
 SHEET OF



SHEET NOTES

- LIGHTS IN STALLS CONTROLLED WITH MANUAL SWITCHES. CIRCUIT WITH STALL RECEPTACLES. PROVIDE SURFACE MOUNTED CONDUIT FROM SWITCH UP STALL POST AND TRAVEL OVERHEAD TO WALL MOUNTED LIGHT.
- LIGHTING IN THIS AREA CONTROLLED WITH MANUAL SWITCHES
- LIGHTING IN THIS AREA CONTROLLED WITH MANUAL ON, PUSH BUTTON, LOW VOLTAGE, VACANCY SENSOR AT DOOR.
- LIGHTING IN THIS AREA CONTROLLED WITH CEILING MOUNTED OCCUPANCY SENSORS.
- LIGHTING IN THIS AREA CONTROLLED WITH MANUAL ON PUSH BUTTON, LOW VOLTAGE, VACANCY SENSOR, DIMMING SWITCH AT THE DOOR.
- LIGHTING IN THIS AREA CONTROLLED WITH MANUAL ON PUSH BUTTON, LOW VOLTAGE, DIMMING SWITCH AT DOOR. PROVIDE DUAL TECH, CEILING MOUNTED VACANCY SENSOR IN CEILING.
- LIGHTING IN THIS AREA CONTROLLED WITH MANUAL ON PUSH BUTTON, LOW VOLTAGE, DIMMING SWITCH AT DOOR. PROVIDE DUAL TECH, CEILING MOUNTED VACANCY SENSOR IN CEILING. SWITCHES AT DOOR CONTROL LIGHTS IDENTIFIED WITH SAME SUBSCRIPT
- LIGHTING IN CORRIDORS CONTROLLED WITH TIME PROGRAMMABLE CLOCK. TIMER SWITCHES IN CORRIDOR PROVIDE 2 HR ON OV:AND OF LIGHTS AFTER HOURS.
- LIGHTING IN THIS AREA CONTROLLED WITH DIMMER SWITCHES AT DOORS. SWITCHES CONTROL LIGHTS IDENTIFIED WITH SAME SUBSCRIPT.
- LIGHTING CONTROLLED WITH TIME CLOCK AND EXTERIOR PHOTOCELL MOUNTED TO NORTH SIDE OF BUILDING.
- LIGHTING TIME CLOCK AND CONTACTS.
- ELECTRICAL CONNECTION FOR COOLER LIGHTING AND MISCELLANEOUS DEVICES. COORDINATE EXACT LOCATION AND ELECTRICAL CHARACTERISTICS WITH MANUFACTURE.

GENERAL NOTES

- CIRCUITING SHOWN IS SCHEMATIC IN NATURE. COORDINATE EXACT ROUTING AND POLE NUMBER IN IDENTIFIED PANEL IN FIELD TO BE MOST EFFICIENT.
- DIM SWITCH WIRING SHOWN AS DOTTED WIRE. SEE ELECTRICAL LEGEND ON E-2 FOR MORE DETAILS.

LIGHTING FLOOR PLAN

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

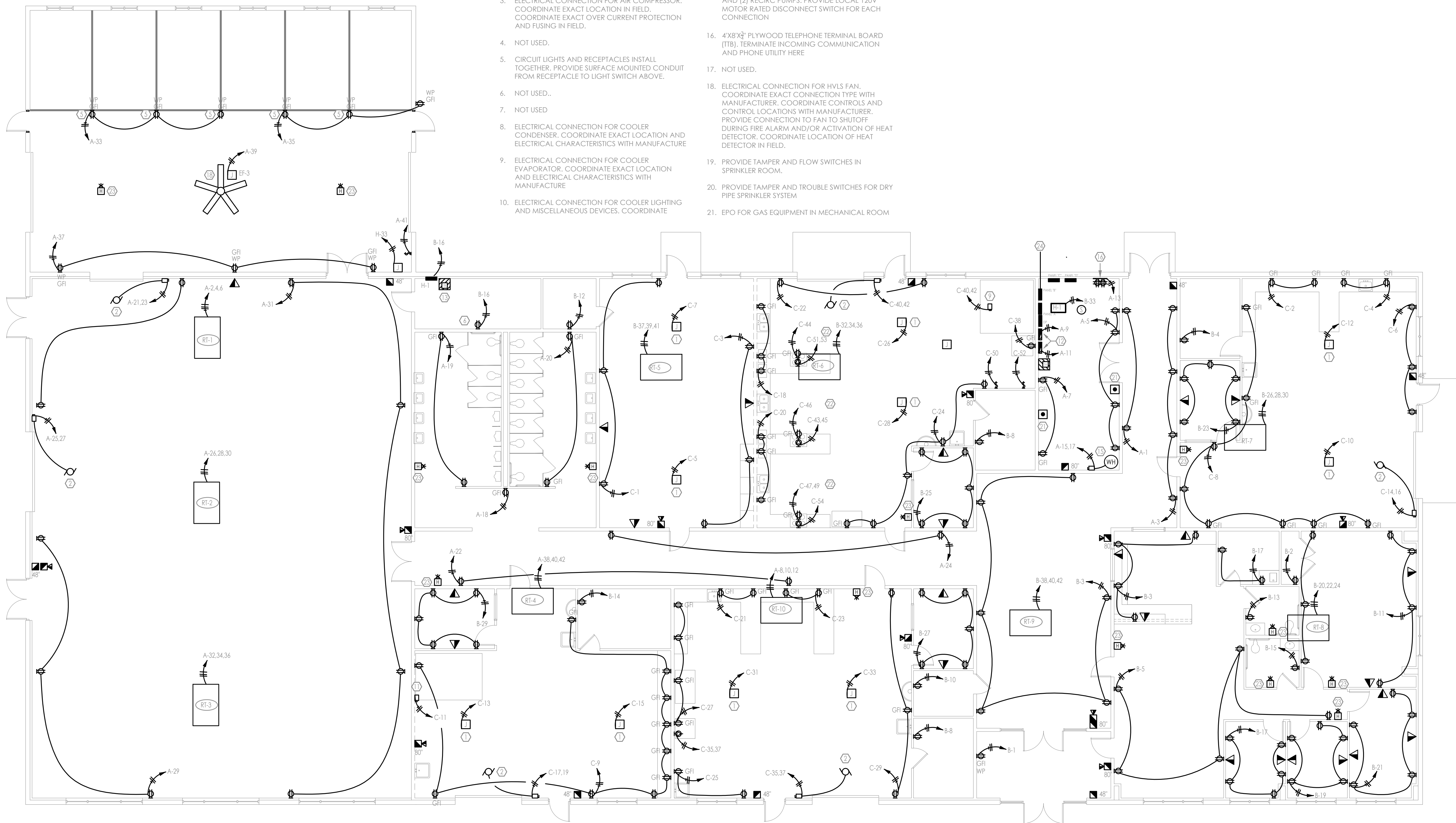
R1 - 8-6-2024

SHEET NOTES

1. ELECTRICAL CONNECTION FOR CORD REEL. COORDINATE EXACT LOCATION IN FIELD WITH OWNER.
2. ELECTRICAL CONNECTION/DISCONNECT FOR OVERHEAD DOOR. COORDINATE PRODUCT CONNECTION TYPE WITH GARAGE DOOR PROVIDER. EC PROVIDES CONDUIT, BOXES & CONTROL WIRE ONLY. GARAGE DOOR INSTALLER PROVIDES FINAL CONTROL DEVICES & CONNECTIONS.
3. ELECTRICAL CONNECTION FOR AIR COMPRESSOR. COORDINATE EXACT LOCATION IN FIELD. COORDINATE EXACT OVER CURRENT PROTECTION AND FUSING IN FIELD.
4. NOT USED.
5. CIRCUIT LIGHTS AND RECEPTACLES INSTALL TOGETHER. PROVIDE SURFACE MOUNTED CONDUIT FROM RECEPTACLE TO LIGHT SWITCH ABOVE.
6. NOT USED.
7. NOT USED.
8. ELECTRICAL CONNECTION FOR COOLER CONDENSER. COORDINATE EXACT LOCATION AND ELECTRICAL CHARACTERISTICS WITH MANUFACTURE.
9. ELECTRICAL CONNECTION FOR COOLER EVAPORATOR. COORDINATE EXACT LOCATION AND ELECTRICAL CHARACTERISTICS WITH MANUFACTURE.
10. ELECTRICAL CONNECTION FOR COOLER LIGHTING AND MISCELLANEOUS DEVICES. COORDINATE EXACT LOCATION AND ELECTRICAL CHARACTERISTICS WITH MANUFACTURE.
11. NOT USED.
12. NOT USED.
13. NOT USED.
14. NOT USED.
15. ELECTRICAL CONNECTIONS FOR WATER HEATER AND (2) RECIRC PUMPS. PROVIDE LOCAL 120V MOTOR RATED DISCONNECT SWITCH FOR EACH CONNECTION.
16. 4'X8'X3/4" PLYWOOD TELEPHONE TERMINAL BOARD (TTB). TERMINATE INCOMING COMMUNICATION AND PHONE UTILITY HERE.
17. NOT USED.
18. ELECTRICAL CONNECTION FOR HVLS FAN. COORDINATE EXACT CONNECTION TYPE WITH MANUFACTURER. COORDINATE CONTROLS AND CONTROL LOCATIONS WITH MANUFACTURER. PROVIDE CONNECTION TO FAN TO SHUTOFF DURING FIRE ALARM AND/OR ACTIVATION OF HEAT DETECTOR. COORDINATE LOCATION OF HEAT DETECTOR IN FIELD.
19. PROVIDE TAMPER AND FLOW SWITCHES IN SPRINKLER ROOM.
20. PROVIDE TAMPER AND TROUBLE SWITCHES FOR DRY PIPE SPRINKLER SYSTEM.
21. EPO FOR GAS EQUIPMENT IN MECHANICAL ROOM.

GENERAL NOTES

- 1) CIRCUITING SHOWN IS SCHEMATIC IN NATURE. COORDINATE EXACT ROUTING AND POLE NUMBER IN IDENTIFIED PANEL IN FIELD TO BE MOST EFFICIENT. RECORD CHANGES & REVISIONS TO PANEL SCHEDULES AND CIRCUITRY SHOWN ON "RECORD DRAWING" SET TO BE INCLUDED IN CLOSE OUT DOCUMENTS.

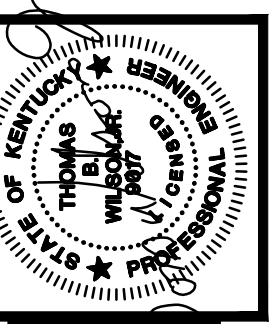


ELECTRICAL LEGEND	
	HOMERUN TO PANEL AND CIRCUIT NUMBER A-1 "A-1" INDICATES PANEL "A", CIRCUIT #1
	A-1,3,5 3 PHASE HOMERUN TO PANEL AND CKT # "A-1,3,5" = PANEL "A", CIRCUITS #1,3,5
	CIRCUIT, CONDUIT OR WIRING
	CONDUIT BELOW FLOOR
	0-10V DIMMING WIRING (PURPLE/GRAY)
	CONDUIT TURNED: UP, DOWN
	CAPPED CONDUIT/WIRE
	JUNCTION BOX
	DISCONNECT SWITCH
	LIGHT SWITCH
	DIMMING LIGHT SWITCH (LINE VOLTAGE)
	DIMMING LIGHT SWITCH (0-10V)
	OCCUPANCY SENSOR TYPE SWITCH
	DUPLEX RECEPTACLE
	RECEPTACLE WITH USB
	QUAD RECEPTACLE
	30A/2P OR 40A/2P RECEPTACLE FOR DRYER OR RANGE AS NOTED
	EQUIPMENT SPECIFIC OUTLET
	ELECTRICAL PANEL
	MOTOR OR EQUIPMENT
	REFERENCE NUMBER TO SHEET NOTE.
	VOICE / DATA ROUGH-IN
	TV ROUGH-IN (SEE ARCH PLANS FOR HEIGHT)
	WP WEATHER PROOF
	GFI GROUND-FAULT INTERRUPTER
	MANUAL FIRE ALARM SWITCH.
	FIRE ALARM HORN.
	A/V FIRE ALARM W/ HORN & STROBE.
	SMOKE DETECTOR
	EPO
	TRANSFORMER

POWER PLAN

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

R1 - 8-6-2024



ELECTRICAL FLOOR PLAN
 CONSULTING ELECTRICAL ENGINEERS
 100 WEST MAIN STREET
 LEITCHFORD, KENTUCKY 40341
 PHONE: (606) 238-4487

The Seed Academy
 Lake Cumberland Regional AgriTech Center
 Russell Springs, Kentucky

DATE	REVISION	BY
	GENERAL REVISIONS	

PROJECT NO. 2019-34
 DESIGNED BY TPA
 DRAWN BY TPA
 CHECKED BY TPA
 DATE JANUARY 2024
 REVIEWED BY TPA
 SCALE AS NOTED

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DRAWING NO.
E-2
 SHEET OF

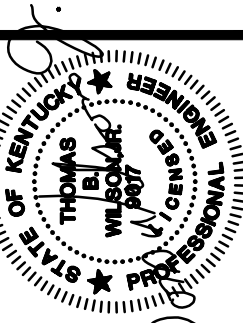
LIGHTING FIXTURE SCHEDULE							
TYPE	MANUFACTURER	DESCRIPTION / CATALOG #	LAMP	VOLTAGE	LUMENS	WATTS/FIXTURE	NOTES
A1	TOPAZ	2' x 4' LED FLAT PANEL, #PL24-50WPCTS-D	LED	208	5600	40	PANEL AT LAY-IN CEILING, SELECTABLE LUMENS, COORDINATE EXACT LUMEN/WATTAGE LEVEL IN FIELD
A2	TOPAZ	2' x 2' FLAT PANEL, #PL22-35WPCTS-D	LED	208	4200	30	PANEL AT LAY-IN CEILING, SELECTABLE LUMENS, COORDINATE EXACT LUMEN/WATTAGE LEVEL IN FIELD
B1	NICOR	6" RECESSED DOWNLIGHT, #CDA6HS2A-CDALE2038U408-CDA6TR240SCWH	LED	208	3800	38	RECESSED IN LAY-IN CEILING
B2	NICOR	8" RECESSED DOWNLIGHT, #CDA8HS2A-CDALE2050U408-CDA8TR260SCWH	LED	208	5500	50	RECESSED IN LAY-IN CEILING
C1	NICOR	4' STRIP LIGHT, #LSCS-4-U / ACML110	LED	208	5500	40	SELECTABLE CCT & OUTPUT LINEAR LED STRIP, CABLE HUNG TO MINIMUM 9'-0" A.F.F. (WALL MOUNT @ STORAGE 107)
D1	TOPAZ	4' VAPOR TIGHT, #LVT4-50PCS / F-LED-CABLE-2PK	LED	208	7250	50	POWER & CCT SELECTABLE VAPOR TIGHT LINEAR STRIP, CABLE HUNG AT 12'-6" A.F.F.
EM1	MORRIS	EXIT SIGN, #73152	LED	208		5	COORDINATE NUMBER OF FACES AND ARROWS WITH DRAWINGS
EM2	MORRIS	EXIT SIGN w/ EMERGENCY LIGHTS, #73040	LED	208		5	COORDINATE NUMBER OF FACES AND ARROWS WITH DRAWINGS
EM3	MORRIS	EXIT SIGN w/ EMERGENCY LIGHTS, REMOTE CAPABLE, #73054	LED	208		5	COORDINATE NUMBER OF FACES AND ARROWS WITH DRAWINGS, ENSURE BATTERY HAS CAPACITY FOR REMOTE HEADS
E4	MORRIS	EMERGENCY EGRESS, #73301	LED	208	1286 AC 350 DC	12	WALL MOUNTED AT 9'-0" A.F.F.
EM6	MORRIS	REMOTE EMERGENCY LIGHT, 2-HEAD, #73127	LED	208	76 PER HEAD	3	SURFACE MOUNTED ABOVE FRONT ENTRY
F1	MORRIS	LED VAPOR TIGHT JELLY JAR, #72108A	LED	208	2632	23	WALL-MOUNTED 12" ABOVE WINDOWS
G1	MORRIS	BARN LIGHT, #71333C / 71305B MOUNTING ARM	LED	208	13870	120	WALL-MOUNTED 12" ABOVE OVERHEAD DOORS
H1	MOBERN LIGHTING	CANOPY LIGHT, #CPYSA-10-LED-27-MV-BZ-40-EM	LED	208	3800	27	RECESSED UNDER FRONT CANOPY, EMERGENCY BATTERY BACKUP
J1	MORRIS	GOOSENECK EXTERIOR FLOODLIGHT, #75119B	LED	208	4824	35	WALL-MOUNTED 24" ABOVE WINDOWS AT AUDITORIUM, WALL-MOUNTED 8' A.F.F. AND 1'-4" TO SIDES OF FRONT ENTRY
K1	TOPAZ	AUDITORIUM HIGH BAY, #HBC-200W-PCTS-WH	LED	208	30,500	200	BOTTOM OF FIXTURE AT 18' A.F.F., POWER SELECTABLE
L1	NICOR	LAB HIGH BAY, #HML3150SUSAS / ACMK110	LED	208			CABLE MOUNTED, BOTTOM OF FIXTURE AT 10' A.F.F., CCT & POWER SELECTABLE
M1	MORRIS	EXTERIOR WALL PACK, #71440D	LED	208	15,721	120	SURFACE MOUNTED ON BUILDING, BRONZE, 5K, WITH PHOTOCCELL
OL2	NICOR	LED AREA LIGHT;OAL350SUNVSBZ3/OAL3STRAIGHT ARMBZ, TYPE III OPTICS.	LED	208	15,721	150	POLE MOUNTED, 10KA SURGE PROTECTION, 5K, 80 CRI.
OL2	NICOR	LED AREA LIGHT;OAL350SUNVSBZ3/OAL3STRAIGHT ARMBZ, TYPE V OPTICS.	LED	208	15,721	150	POLE MOUNTED, 10KA SURGE PROTECTION, 5K, 80 CRI.
OLP	NICOR	4.5", 20' ROUND POLE. OLP4S 1 RD 20 C BZ	STEEL	-	-	-	STEEL POWDER COATED 4.5" BY 20', FOR MOUNTING OF OL-2 & OL-3

CONTRACTORS WISHING TO USE ALTERNATE FIXTURES SHALL SUBMIT SHOP DRAWING QUALITY MANUFACTURES INFORMATION 14 DAYS BEFORE BID OPENING. SUBMITTAL SHALL BE TO THE ARCHITECT.

LIGHT FIXTURE SCHEDULE

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

R1 - 8-6-2024



WCHANG EXTERIOR LIGHTING
GENERAL CONTRACTOR
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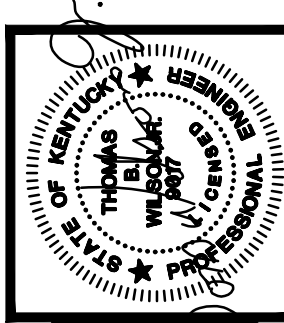
The Seed Academy
Lake Cumberland Regional AgriTech Center
Russell Springs, Kentucky

DATE	REVISION
	GENERAL REVISIONS

PROJECT NO. 2019-34	DESIGNED BY TBA	DATE
	DRAWN BY TBA	
	CHECKED BY	
	REQUIRED BY	
	DATE	JANUARY 2024
	SCALE	AS NOTED

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DRAWING NO.
E-4
SHEET OF



The Seed Academy
 Lake Cumberland Regional AgriTech Center
 Russell Springs, Kentucky

DATE	REVISION	BY
	GENERAL REVISIONS	

PROJECT NO. 2019-34	DESIGNED BY TBM	CHECKED BY TBM	DATE JANUARY 2024	SCALE AS NOTED
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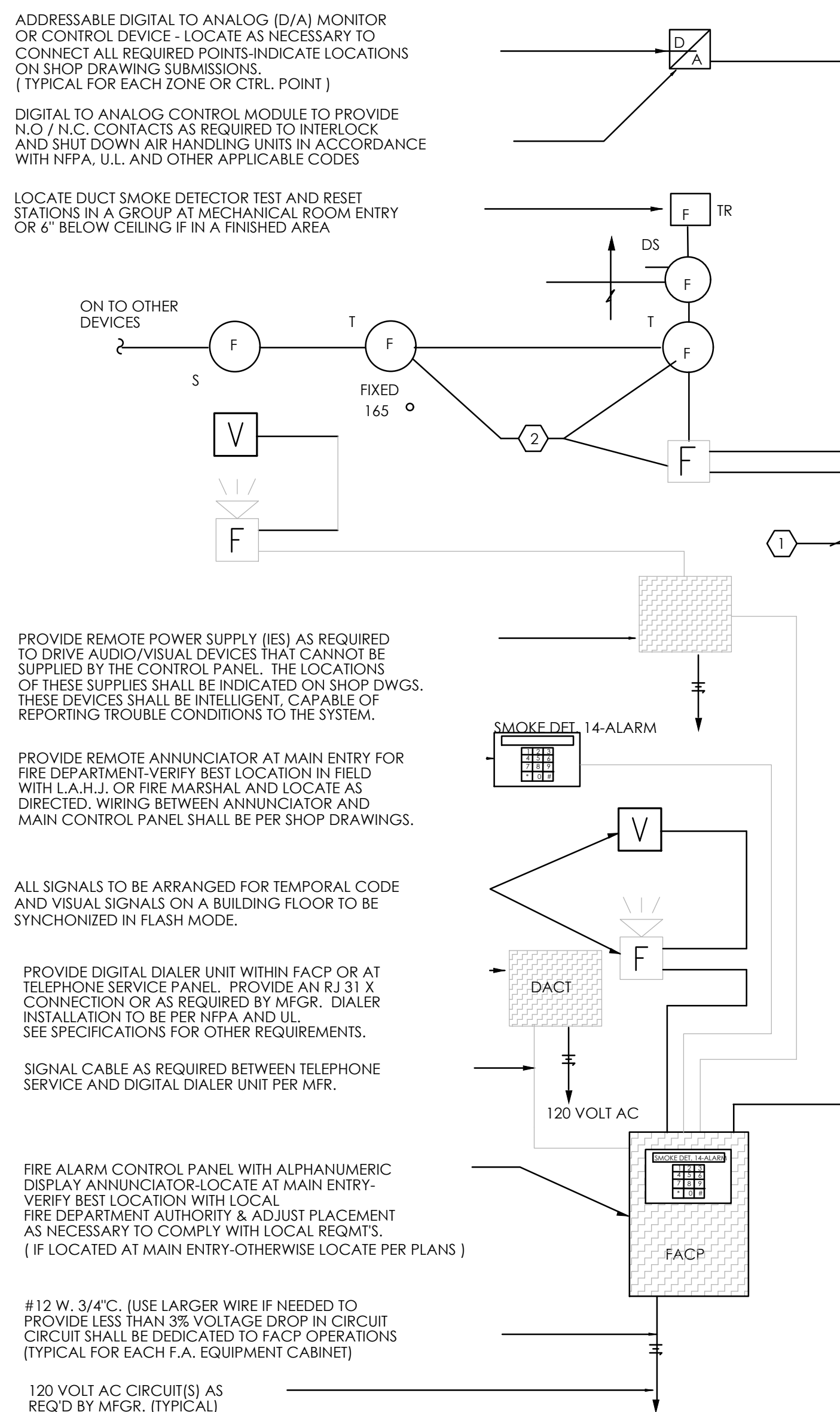
DRAWING NO.
E-5
 SHEET OF

FIRE ALARM SYSTEM RISER DIAGRAM GENERAL NOTES:

- A. WIRE SIZING SELECTIONS FOR AUDIBLE/VISUAL UNITS SHALL BE CALCULATED AND SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B. RISER DIAGRAM FOR FIRE ALARM SYSTEM IS FOR BID PURPOSES ONLY. SYSTEM SHALL BE INSTALLED AND CONNECTED IN ACCORDANCE WITH WIRING DIAGRAMS OBTAINED FROM MANUFACTURER, AND THAT HAVE BEEN APPROVED BY THE STATE FIRE MARSHAL'S OFFICE OR THE LOCAL AUTHORITY HAVING JURISDICTION, AS APPLICABLE.
- C. AUTOMATIC FIRE ALARM DETECTORS SHALL BE LOCATED SO AS TO PREVENT SHIELDING BY DUCTWORK, EQUIPMENT AND PIPING ON CEILING. SPACING BETWEEN DETECTORS SHALL BE IN ACCORD WITH MANUFACTURER'S RECOMMENDATIONS. IN ANY CASE, ADDITIONAL DETECTORS SHALL BE PROVIDED IF NEEDED TO INSURE COMPLETE COVERAGE OF THE INDICATED SPACE.
- D. END-OF-LINE-RESISTOR (IF REQUIRED BY MANUFACTURER) BOXES SHALL BE 4" SQUARE AND SHALL BE FLUSH-MOUNTED IN ALL FINISHED AREAS, WITH RED LABELED PLATE.
- E. ALL CONDUIT IN FIRE ALARM SYSTEM SHALL BE 3/4" SIZE EXCEPT AS OTHERWISE NOTED. PROVIDE LARGER IF REQUIRED TO MAINTAIN CONDUCTORS AT 40% MAXIMUM FILL.
- F. FIRE ALARM MANUAL STATIONS SHALL BE DOUBLE-ACTION TYPE, POSITIVE VISUAL INDICATION OF OPERATION, KEY RESET. ALL KEYS ALIKE.
- G. FIRE ALARM SIGNALING DEVICES SHALL BE SEMI-FLUSH TYPE AUDIBLE, WITH FLASHING LAMP MOUNTED ON SAME PLATE. SURFACE-MOUNTED UNITS MAY BE USED IN UNFINISHED AREAS.
- H. NO SMOKE DETECTORS SHALL BE LOCATED CLOSER THAN 36" TO SUPPLY, RETURN OR EXHAUST AIR OPENINGS, NOR CLOSER THAN 12" TO WALL/CEILING INTERSECTIONS.
- I. AVOID PLACEMENT OF HEAT DETECTORS CLOSE TO HEAT-PRODUCING EQUIPMENT WHERE RATE-OF-RISE WILL DEGRADE DETECTOR PERFORMANCE OR PRODUCE NUISANCE ALARMS. USE FIXED TEMPERATURE (165 DEG F TO 190 DEG F) DEVICES IN SUCH AREAS.
- J. THE SENSITIVITY OF SMOKE DETECTORS SHALL BE ADJUSTED FOR THE SERVICE DUTY IN THE AREA INDICATED, TO SUIT BUILDING OPERATIONAL CONDITIONS.
- K. VERIFY THAT THE FINAL ROOM NAME AND NUMBERING SCHEME USED FOR ENUNCIATOR LEGENDS IS IN ACCORD WITH THE ACTUAL ROOM NAMES AND NUMBERS FINALLY CHOSEN BY THE OWNER.
- L. ALL ENUNCIATOR LEGEND WORDING AND/OR ALPHANUMERIC DISPLAY LEGENDS SHALL BE REVIEWED BY THE ENGINEER, OWNER AND LOCAL FIRE DEPARTMENT AUTHORITY, AS APPLICABLE. SUBMIT THIS INFORMATION WITH SHOP DRAWINGS.
- M. TO PROVIDE FOR MAXIMUM FLEXIBILITY IN INITIAL SYSTEM SET-UP, ZONE ARRANGEMENTS, OPERATOR CODE PATTERNS, ETC., THE SYSTEM SUPPLIER SHALL PROVIDE INITIAL PROGRAMMING OF SYSTEM IN ACCORD WITH THE OWNER'S DIRECTION ON SYSTEM CONFIGURATION. THE SUPPLIER SHALL ALSO ANTICIPATE THE NEED FOR SYSTEM REPROGRAMMING IN HIS BID TO MODIFY THE SYSTEM AS NEEDED TO SUIT CHANGING REQUIREMENTS UP TO THE TIME OF SUBSTANTIAL COMPLETION WITHOUT ADDITIONAL COST TO THE OWNER.
- N. THE ENTIRE FIRE ALARM SYSTEM INSTALLATION SHALL BE IN FULL ACCORD WITH THE CURRENT EDITION OF THE AMERICANS WITH DISABILITIES ACT AND ALL OTHER APPLICABLE CODES.
- O. PROVIDE ONE YEAR OF FIRE ALARM SYSTEM MONITORING BY A U.L. APPROVED CENTRAL MONITORING SERVICE.
- P. PROVIDE LIGHTNING ARRESTORS ON ALL EXTERIOR FIRE ALARM SIGNAL CIRCUITS.
- Q. FIRE ALARM SUPPLIER SHALL PREPARE PLANS, SPECS., & SHOP DRAWINGS TO MEET REQUIRED LIFE SAFETY CODES & SUBMIT TO AUTHORITY HAVING JURISDICTION FOR APPROVAL BEFORE BEGINNING ANY ROUGH-IN WORK OF THE FIRE ALARM SYSTEM.
- R. FIRE ALARM SUPPLIER SHALL SUBMIT WITH CAD FILE "APPROVED" FIRE ALARM SUBMITTAL, ALONG INDICATING LOCATIONS & WIRING CONNECTIONS TO ALL COMPONENTS OF THE SYSTEM. INCLUDING SPRINKLER RISER MONITORING DEVICES. FIRE ALARM VENDOR SHALL PROVIDE CERTIFICATION OF THE COMPLETED, INSTALLED SYSTEM BY A "CERTIFIED FIRE ALARM INSPECTOR" LICENSED BY THE COMMON WEALTH OF KENTUCKY.

FIRE ALARM SYSTEM TAGGED NOTES:

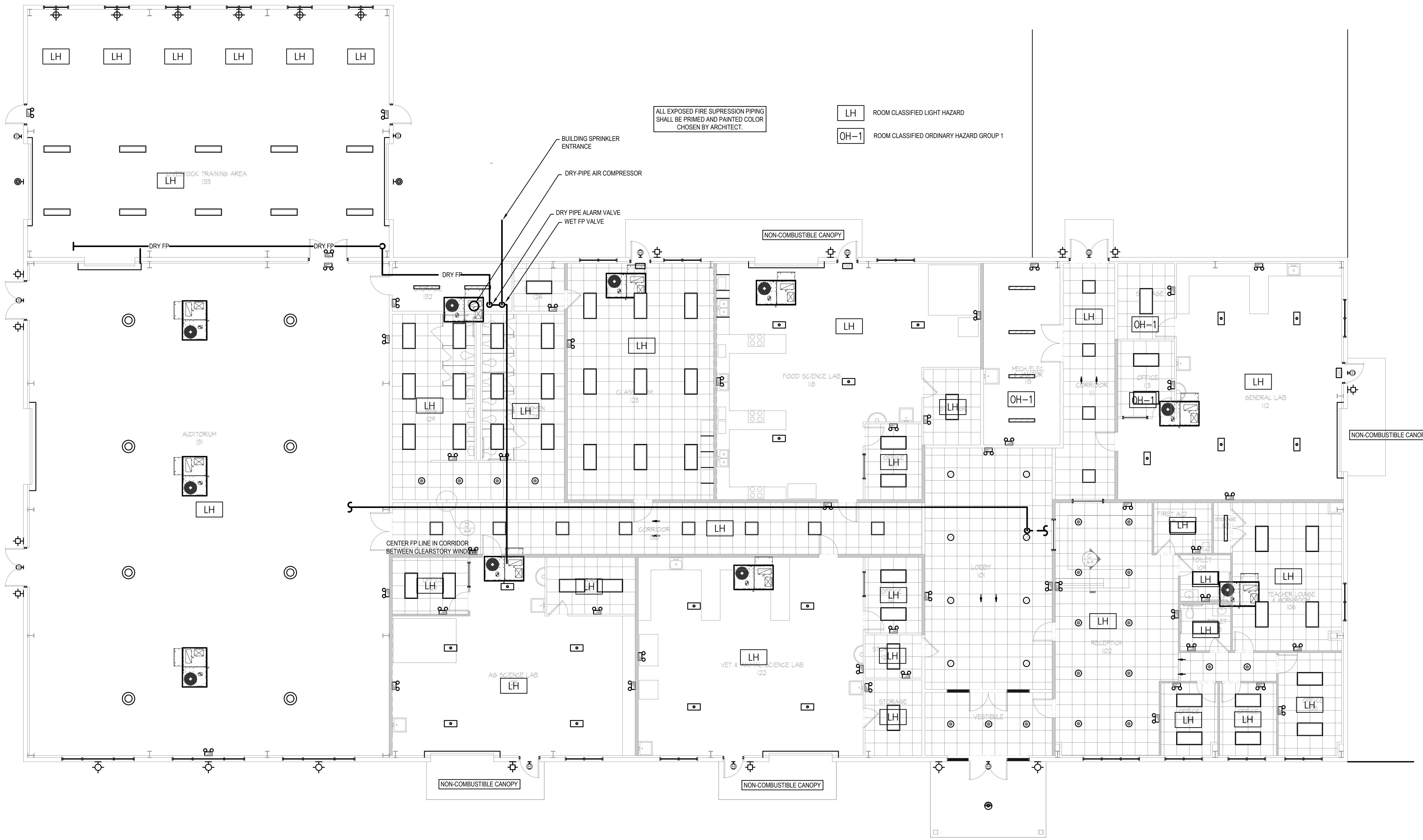
1. WIRING BETWEEN MULTIPLEX AND D/A ZONE MODULES TO BE #16 TWISTED SHIELDED PAIR. VERIFY EXACT WIRING REQUIREMENTS WITH MANUFACTURER PRIOR TO BID, AND INSTALL ACCORDING TO SHOP DRAWING REQUIREMENTS. IF VOLTAGE DROP WILL BE EXCESSIVE WITH #14 WIRE TO DEVICES, INCREASE WIRE SIZE TO MAINTAIN NO GREATER THAN 3% TOTAL DROP.
2. ZONE AND ANNUNCIATE ALL INDIVIDUAL FIRE ALARM DEVICES, AS WELL AS ALL AUXILIARY FUNCTIONS AT EACH ANNUNCIATOR.



FIRE ALARM SYSTEM SCHEMATIC RISER DIAGRAM

FIRE ALARM DETAILS

NOT TO SCALE



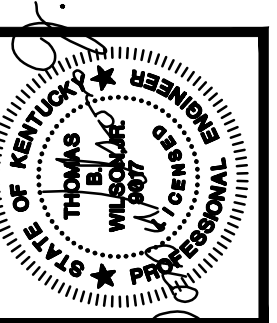
ALL EXPOSED FIRE SUPPRESSION PIPING SHALL BE PRIMED AND PAINTED COLOR CHOSEN BY ARCHITECT.

- LH ROOM CLASSIFIED LIGHT HAZARD
- OH-1 ROOM CLASSIFIED ORDINARY HAZARD GROUP 1

FIRE PROTECTION FLOOR PLAN

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

R1 - 8-6-2024



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FIRE PROTECTION FLOOR PLAN
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 RUSSELL SPRINGS, KY 40263
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 Russell Springs, Kentucky

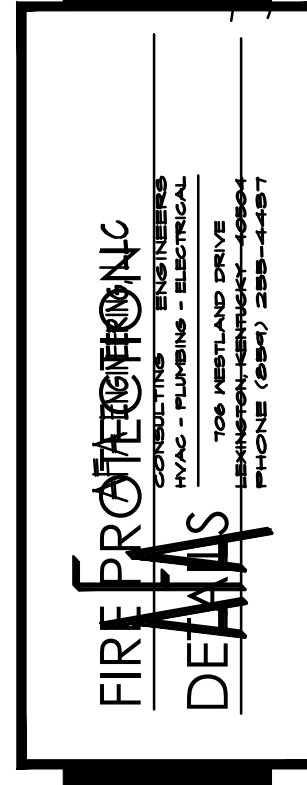
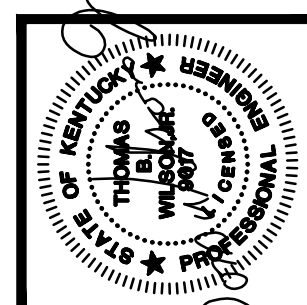
DATE	REVISION
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PROJECT NO. 2019-24
 DESIGNED BY: TBM
 DRAWN BY: TBM
 CHECKED BY: TBM
 REVIEWED BY: TBM
 DATE: JANUARY 2024
 SCALE: AS NOTED

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DRAWING NO.
FP-1
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The Seed Academy
 Lake Cumberland Regional AgrITech Center
 Russell Springs, Kentucky

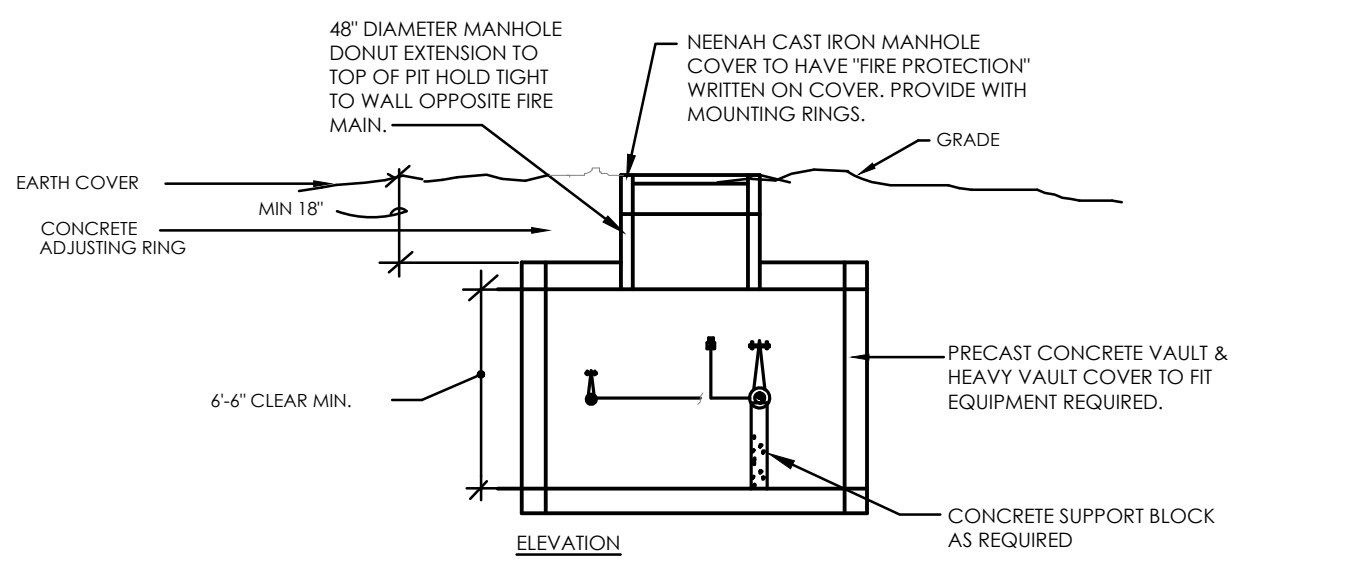
DATE	REVISION	BY
	GENERAL REVISIONS	

PROJECT NO.	2024-04
DESIGNED BY	TEA
DRAWN BY	TEA
CHECKED BY	
DATE	JANUARY 2024
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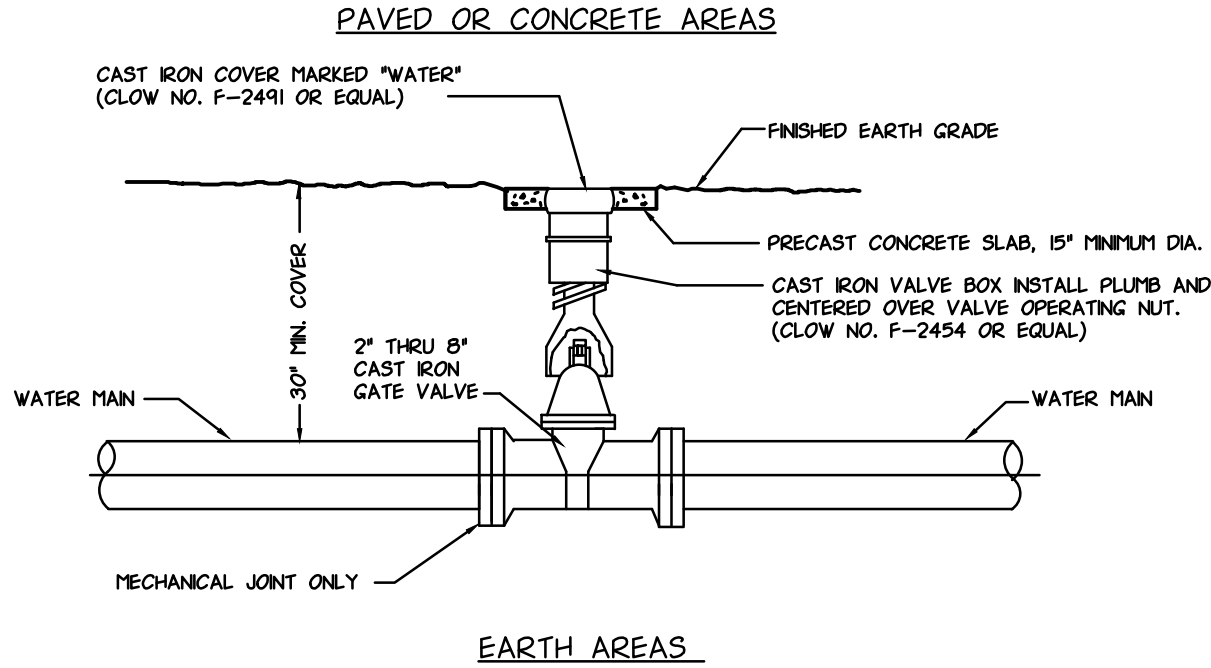
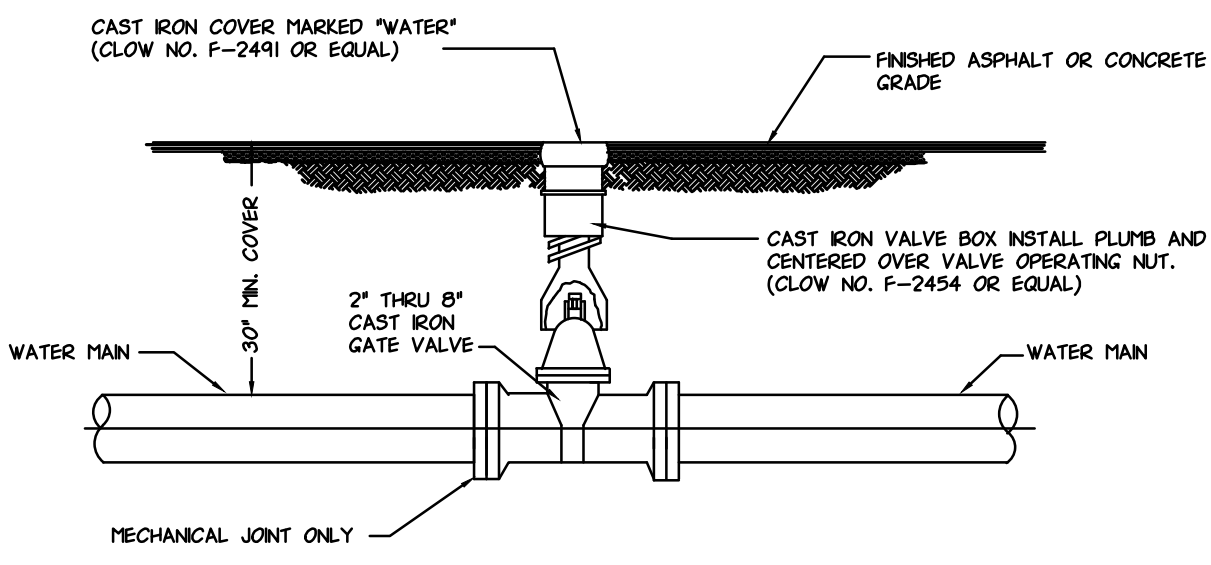
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DRAWING NO.
FP-2
 SHEET OF



FIRE & DOMESTIC WATER VALVE & METER PIT ELEVATION
 NO SCALE

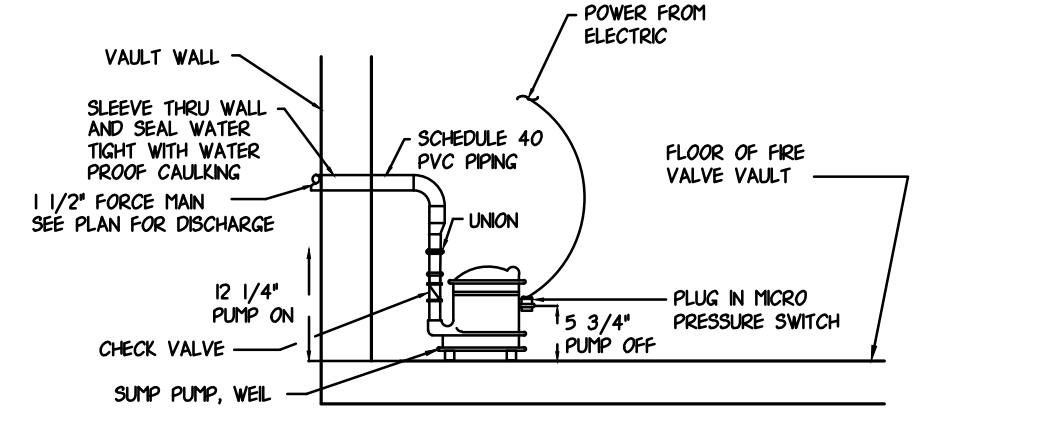


GATE VALVE SETTING DETAIL
 NO SCALE

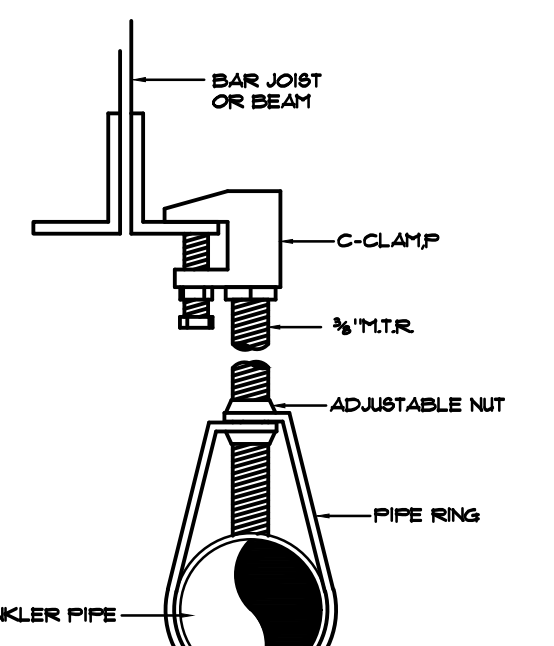
FIRE PROTECTION LEGEND

- NEW FIRE PROTECTION PIPE
- DRY-FP — NEW DRY FIRE PROTECTION PIPE
- ⊕ NEW AUXILIARY DRAIN
- LH LIGHT HAZARD ROOM OCCUPANCY
- OH-1 ORDINARY HAZARD 1 ROOM OCCUPANCY
- ▨ SEMI-RECESSED PENDANT SPRINKLER HEADS IN LAY-IN CEILING
- ▩ SEMI-RECESSED PENDANT SPRINKLER HEADS IN HARD CEILING
- ▧ UPRIGHT BRASS SPRINKLER HEADS
- ▤ DRY FP PIPE SYSTEM WITH UPRIGHT BRASS SPRINKLER HEADS

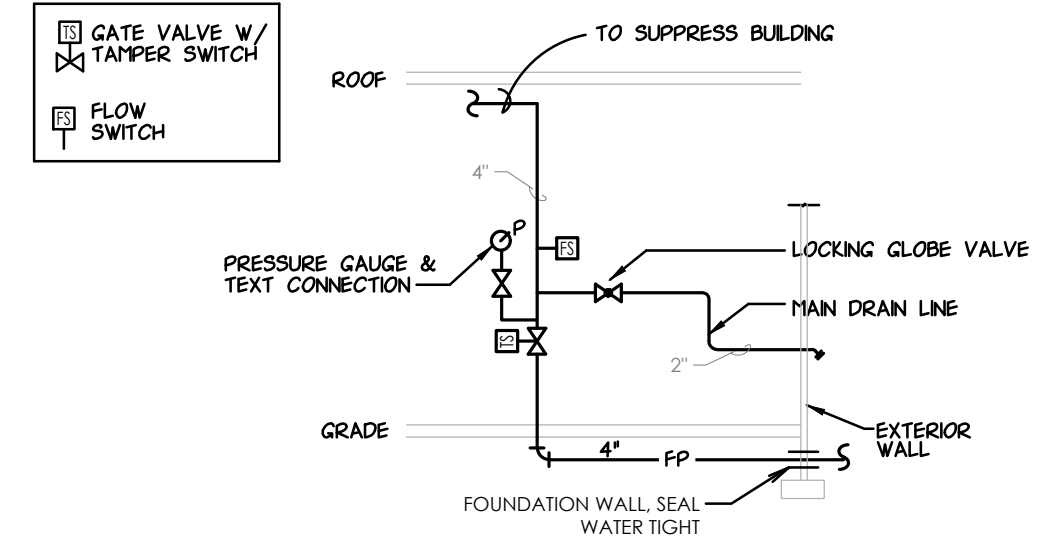
- GENERAL FIRE PROTECTION NOTES:**
- INDICATED SPACES SHALL BE PROTECTED 100% BY A WET PIPE FIRE SUPPRESSION SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA-13, THE KENTUCKY BUILDING CODE AND THE PROJECT SPECIFICATIONS.
 - ALL FIRE PROTECTION PIPE SIZES SHALL BE HYDRAULICALLY CALCULATED IN ACCORDANCE WITH NFPA-13.
 - ALL PIPING TO INDIVIDUAL SPRINKLER HEADS, REGARDLESS OF TYPE OF HEAD SHALL BE 1", UNLESS OTHERWISE NOTED.
 - PIPING IN ROOMS WITH SUSPENDED CEILINGS SHALL BE ABOVE CEILING UNLESS OTHERWISE NOTED.
 - LOCATIONS OF PIPING AND EQUIPMENT ARE APPROXIMATE AND SUBJECT TO ADJUSTMENTS IN THE FIELD. DO NOT SCALE THE DRAWINGS.
 - ALL OFFSETS IN PIPING ARE NOT NECESSARY SHOWN, PROVIDE ADDITIONAL OFFSETS WHERE NECESSARY.
 - COORDINATE WITH HVAC, PLUMBING, AND ELECTRICAL EQUIPMENT TO AVOID INTERFERENCE WITH PIPING, DUCTS, AND CONDUIT.
 - INSTALL PIPING AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS, NFPA-13, K.B.C., ETC...
 - SEAL AIRTIGHT AROUND ALL PIPING PENETRATIONS THROUGH WALLS, FLOOR AND ROOF. FIRE STOP PROPERLY WHERE REQUIRED BY CODE.
 - PROVIDE DRAINS AT LOW POINTS PER NFPA-13.
 - USE MANUFACTURED FITTINGS OR MECHANICAL TEES, ELLS, ETC. (SEE SPECIFICATIONS). WELDOLETS, SIMILAR WELDED CONNECTIONS AND WELDED PIPING ARE NOT ACCEPTABLE.
 - PITCH ALL SPRINKLER PIPING TO MAIN, IF PIPING CANNOT BE PITCHED TO MAIN, PROVIDE AUXILIARY DRAINS AT LOW POINTS.
 - REFER TO ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR EXACT LOCATION OF CEILINGS, CEILING TYPES AND LIGHT FIXTURES.
 - ALL EXPOSED FIRE SUPPRESSION PIPING SHALL BE PRIMED AND PAINTED COLOR CHOSEN BY ARCHITECT.



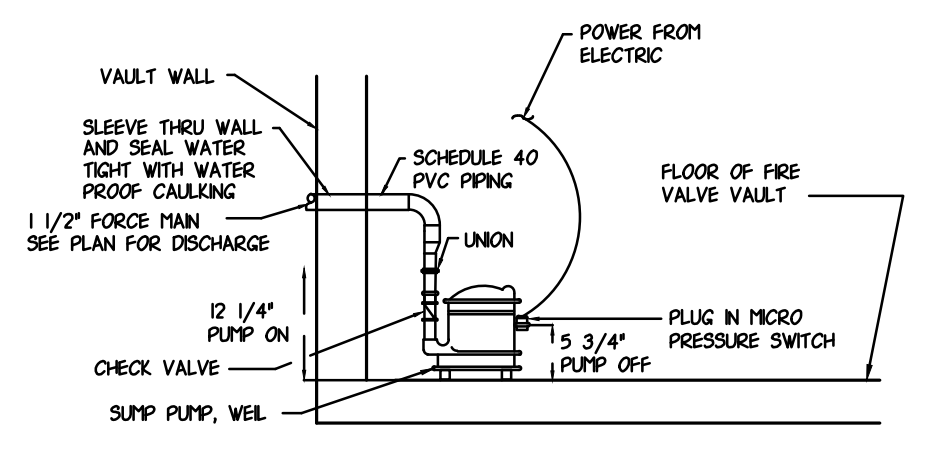
SUMP PUMP DETAIL
 NO SCALE



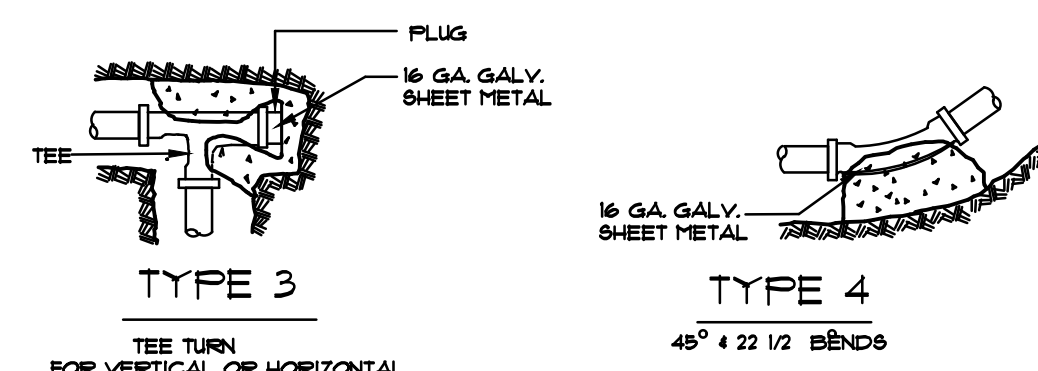
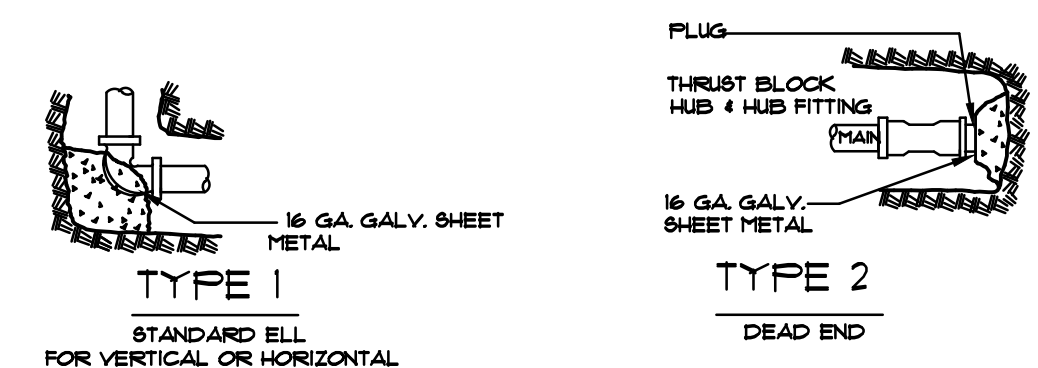
HANGER DETAIL
 NO SCALE



FIRE SUPPRESSION RISER WITH DRAIN LINE
 NO SCALE



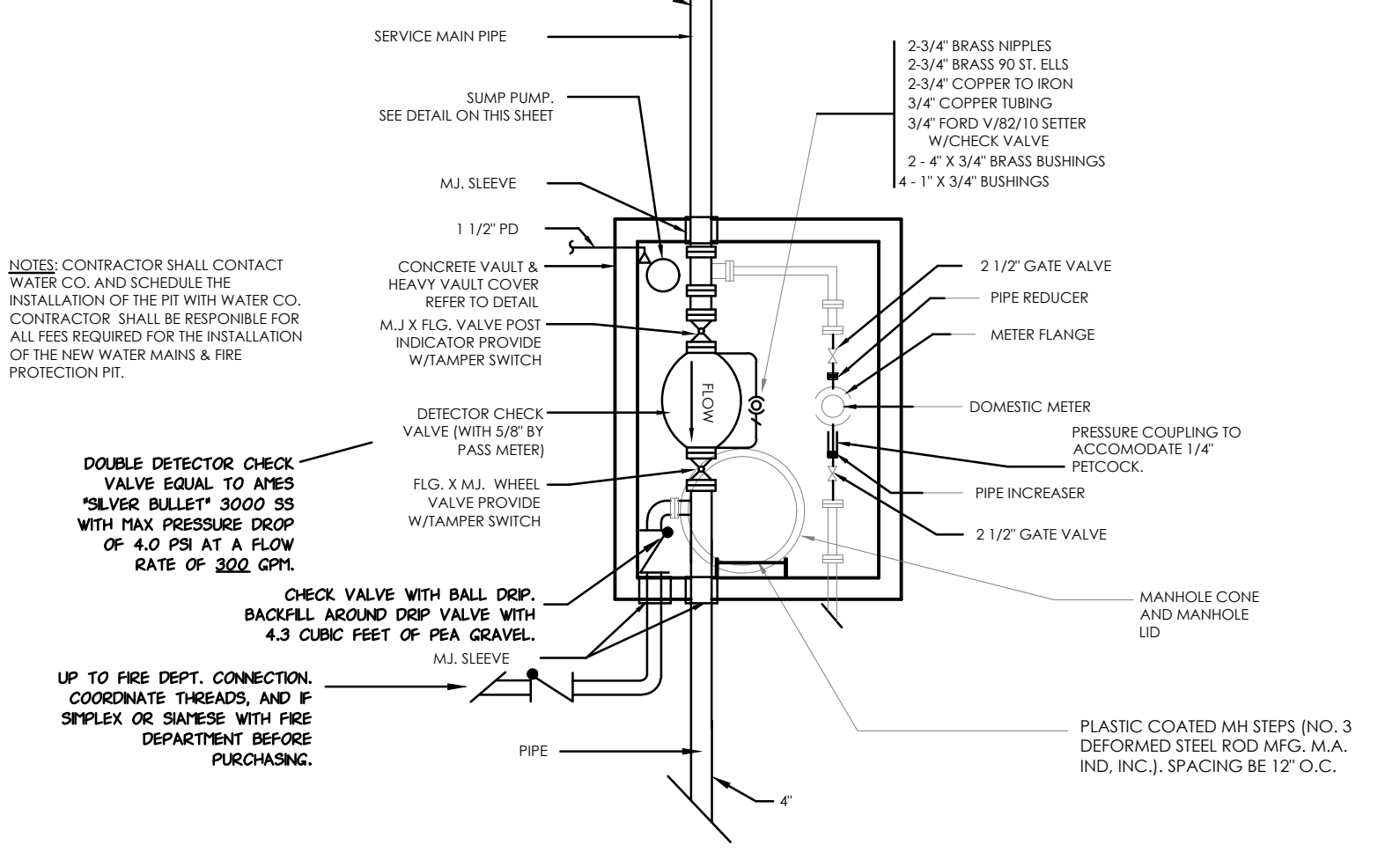
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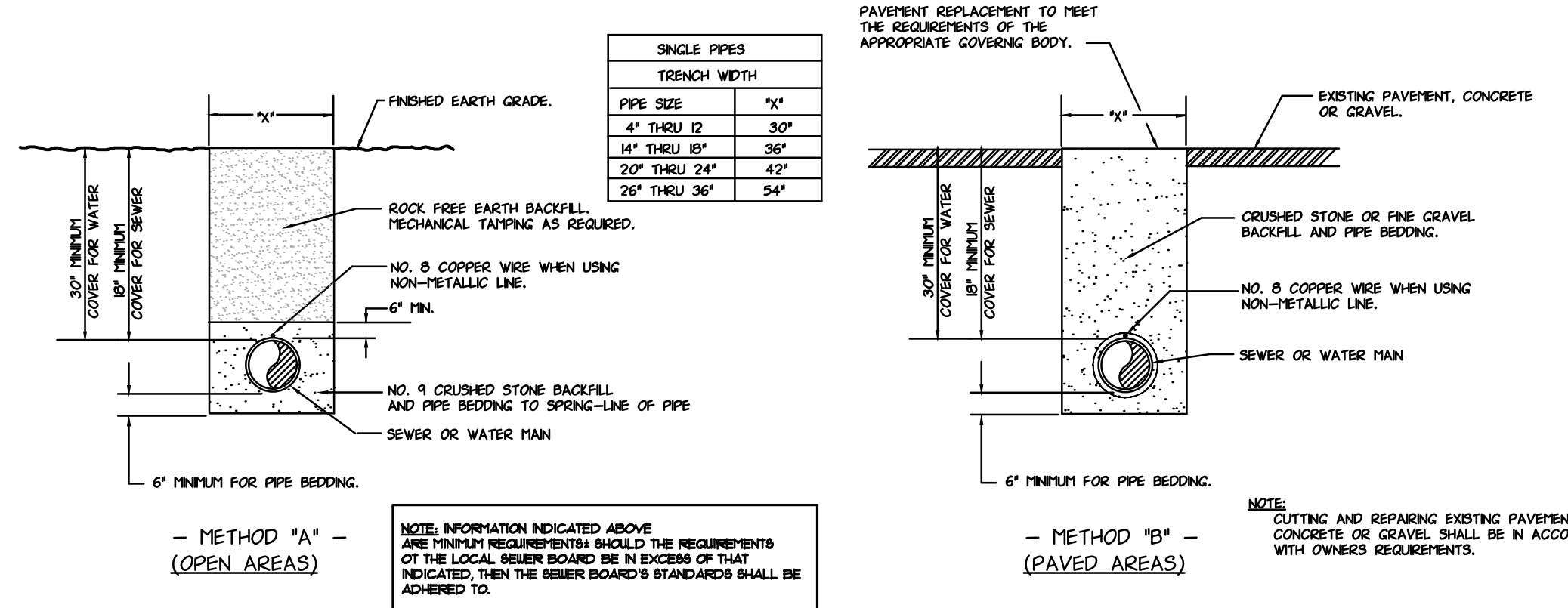
THRUST BLOCK DETAILS FOR FIRE DOMESTIC WATER MAINS
 NO SCALE

PIPE SIZE	TEES AND DEAD ENDS	90° BEND	45° BEND	90° BEND
3"	1.80 FT.	1.80 FT.	1.80 FT.	3.80 FT.
4"	1.80 FT.	1.80 FT.	1.80 FT.	3.80 FT.
6"	2.80 FT.	3.80 FT.	3.80 FT.	1.80 FT.
8"	4.80 FT.	5.80 FT.	3.80 FT.	1.80 FT.

NOTE: LENGTH, WIDTH & MINIMUM THICKNESS OF THRUST BLOCKS SHALL BE EQUAL TO THE DIAMETER OF THE PIPE FOR WHICH THEY ARE INSTALLED.



FIRE & DOMESTIC WATER VALVE & METER PIT
 NO SCALE



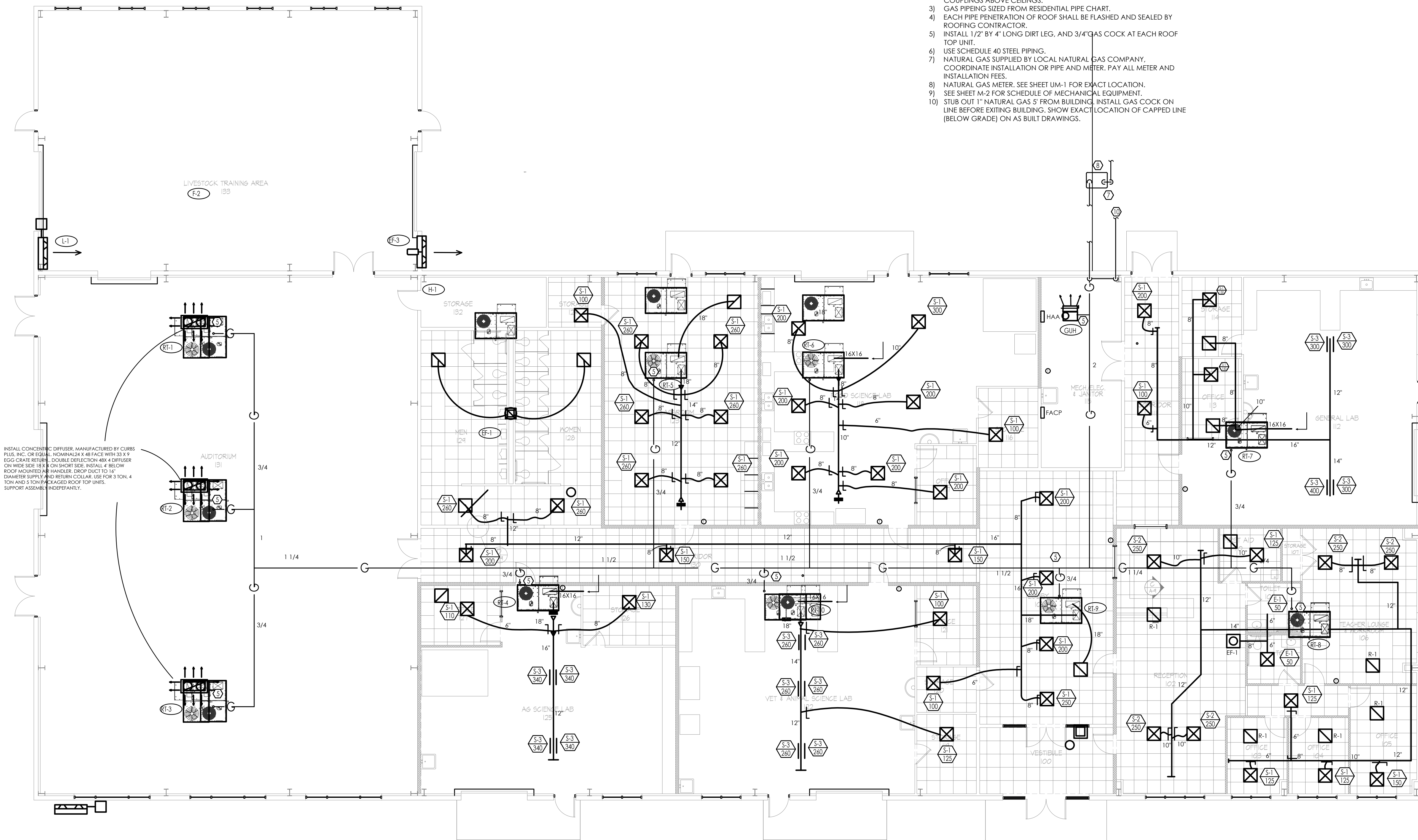
TRENCHING AND BACKFILLING
 NO SCALE

FIRE PROTECTION DETAILS
 SCALE: NTS

R1 - 8-6-2024

SHEET/GENERAL NOTES

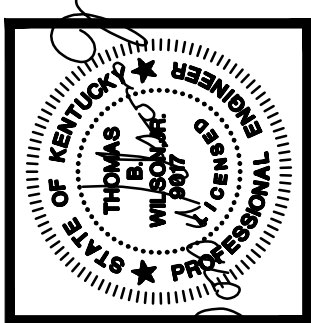
- 1) NATURAL GAS SHOWN ON THIS SHEET RATHER THAN SHEET P-1.
- 2) NATURAL GAS LINES BELOW ROOF DECK. THERE SHALL BE NO VALVES OR COUPLINGS ABOVE CEILINGS.
- 3) GAS PIPING SIZED FROM RESIDENTIAL PIPE CHART.
- 4) EACH PIPE PENETRATION OF ROOF SHALL BE FLASHED AND SEALED BY ROOFING CONTRACTOR.
- 5) INSTALL 1/2" BY 4" LONG DIRT LEG, AND 3/4" GAS COCK AT EACH ROOF TOP UNIT.
- 6) USE SCHEDULE 40 STEEL PIPING.
- 7) NATURAL GAS SUPPLIED BY LOCAL NATURAL GAS COMPANY. COORDINATE INSTALLATION OR PIPE AND METER. PAY ALL METER AND INSTALLATION FEES.
- 8) NATURAL GAS METER. SEE SHEET UM-1 FOR EXACT LOCATION.
- 9) SEE SHEET M-2 FOR SCHEDULE OF MECHANICAL EQUIPMENT.
- 10) STUB OUT 1" NATURAL GAS 5' FROM BUILDING. INSTALL GAS COCK ON LINE BEFORE EXITING BUILDING. SHOW EXACT LOCATION OF CAPPED LINE (BELOW GRADE) ON AS BUILT DRAWINGS.



INSTALL CONCENTRIC DIFFUSER, MANUFACTURED BY CURBS PLUS, INC. OR EQUAL, NOMINAL 24 X 48 FACE WITH 33 X 9 EGG CRATE RETURN. DOUBLE DEFLECTION 48 X 4 DIFFUSER ON WIDE SIDE 18" FROM SHORT SIDE. INSTALL 4" BELOW ROOF MOUNTED AIR HANDLER. DROP DUCT TO 16" DIAMETER SUPPLY AND RETURN COLLAR. USE FOR 3 TON, 4 TON AND 5 TON PACKAGED ROOF TOP UNITS. SUPPORT ASSEMBLY AS SHOWN.

HVAC LEGEND

SYMBOL	DESCRIPTION
[Symbol]	SUPPLY AIR DUCTWORK: PLAN, UP AND DOWN
[Symbol]	RETURN AIR DUCTWORK: PLAN, UP AND DOWN
[Symbol]	MANUAL BALANCING DAMPER
[Symbol]	FIRE DAMPER (F= FIRE; S= SMOKE; C= COMBO)
[Symbol]	FLEXIBLE DUCTWORK
[Symbol]	SUPPLY DIFFUSER W/ DAMPER & 3' TO 5' OF FLEXIBLE DUCT
[Symbol]	RETURN OR EXHAUST DIFFUSER W/ 1' TO 3' OF FLEXIBLE DUCT
[Symbol]	THERMOSTAT, MOUNT BOTTOM @ 48" AFF
[Symbol]	S-SUPPLY; R-RETURN; E-EXHAUST; CFM, CUBIC FEET PER MINUTE
[Symbol]	GAS PIPING
[Symbol]	AIR FLOW DIRECTION
[Symbol]	SHEET NOTE
[Symbol]	RECTANGULAR DUCT SIZE
[Symbol]	ROUND DUCT SIZE
[Symbol]	HVAC HEATING, VENTILATION AND AIR CONDITIONING
[Symbol]	AFF ABOVE FINISHED FLOOR
[Symbol]	EQUIPMENT TAG



AFA ENGINEERING, LLC
 CONSULTING ENGINEERS
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 PLUMBING - PIPING - HVAC
 100 WESTLAND DRIVE
 RUSSELL SPRINGS, KY 40387
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The Seed Academy
 Lake Cumberland Regional AgriTech Center
 Russell Springs, Kentucky

DATE: _____

PROJECT NO. 2019-34

DESIGNED BY: TBM

DRAWN BY: TBM

CHECKED BY: _____

REVIEWED BY: _____

DATE: JANUARY 2024

SCALE: AS NOTED

REVISIONS

NO.	DESCRIPTION	DATE

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HVAC FLOOR PLAN

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

R1 - 8-6-2024

DRAWING NO.

M-1

SHEET OF

REGISTERS, GRILLES, AND DIFFUSER SCHEDULE													
MARK	MFGR.	MODEL	TYPE	MAX FLOW (CFM)	NOMINAL SIZE	LEAD IN SIZE	MOUNTING	STATIC PRESSURE MAX	NC MAX	THROW AT 100 FPM	Opposed Blade Damper	FINISH	REMARKS
R-1	PRICE	60	AIRFOIL RETURN GRILLE	1000	24" X 24"	SEE PLANS	LAY-IN	0.036	25	-	NO	CHOSEN BY ARCHITECT	2
S-1	PRICE	SPD	SQUARE PLAQUE DIFFUSER	400	24" X 24"	NECK, DUCT SIZE	LAY-IN	0.023	-	4'	YES	CHOSEN BY ARCHITECT	1,2
S-2	PRICE		DUCT MOUNTED, 4" SLOT AT 120 CFM/LINEAR FOOT.			DUCT DIAMETER	DUCT	0.024	19	5'	-	CHOSEN BY ARCHITECT	1,2

- PROVIDE DUCT TRANSITION TO GRILLE/DIFFUSER AS REQUIRED.
- IF ARCHITECT DOES NOT CHOOSE A COLOR, THEN COLOR SHALL BE OFF-WHITE OR AS INDICATED ON PLANS.
- PROVIDE MARGINS TO FINISH AS A 48" X 18" LAY-IN.
- PROVIDE PLENUM BOX, FULL SIZE OF AIR DEVICE, 12" DEEP. DUCT TO TAP INTO SIDE, WHEN THE INSIDE OF PLENUM BOXES ARE VISIBLE FROM THE FLOOR, THEY SHALL BE PAINTED FLAT BLACK.
- PROVIDE MANUFACTURERS INTEGRAL BALANCING DAMPER IN DEVICE TO ALLOW BALANCING OF AIR DEVICE THROUGH FACE OF DEVICE.
- BLADES PARALLEL TO THE LONG DIMENSION.

TAG	QTY	RUSKIN MODEL	WIDTH (in)	HEIGHT (in)	DEPTH (in)	AIR FLOW (cfm)	FLOW DIR.	MATERIAL	PRESSURE DROP (w.g.)	REMARKS
L-1	1	ELF6375DX	28	33	6	2100	I	ALUMINUM	0.06	1,2,3

REMARKS:
 1. BIRDSCREEN
 2. FIXED BLADES, DRAINABLE
 3. GRAVITY BACKDRAFT DAMPER

VENTILATING FANS											
MARK	ITEM NO.	MANUF.	MOUNTING	FUNCTION	FAN DATA				ELECTRIC DATA		REMARKS
					CFM	DRIVE	E.S.P.	SONES	AMPS	VOLTS/Ø	
EF-1	VEDK 8	CARNES	ROOF/CURB	EXHAUST AIR	700	DIRECT	0.25	9.5	0.5	120/1	1,2,4,5
EF-2	AER-24-02-0625-VG	GREENHECK	SIDEWALL	EXHAUST AIR	2075	DIRECT	0.0	2.8	0.7	120/1	1,2,5,6,7
EF-3	DC-5-7-13LV-X-0D	GREENHECK	CEILING	HIGH VOLUME LOW SPEED	15100	DIRECT	0.0	X.X	1.9	120/1	2,3,8

REMARKS:
 1. PROVIDE WITH DISCONNECT SWITCH.
 2. PROVIDE WITH SPEED CONTROLLER.
 3. SPECIFY 1 FT DROP LENGTH.
 4. PROVIDE WITH BACKDRAFT DAMPER.
 5. PROVIDE WITH DISCHARGE GRAVITY DAMPER.
 6. PROVIDE WITH WALL BOX/SLEAVE.
 7. PROVIDE WITH OSHA MOTOR GUARD.
 8. PROVIDE WITH CHAIN EMERGENCY FAN SHACKLE.

FAN FORCED ELECTRIC WALL HEATER (H-1)									
MARK	MFGR.	MODEL	SERIES	STYLE	KW/ØTUs	ELECTRICAL		TEMP. RISE	REMARKS
						FLA	VOLTS/PH		
H-1	RAYWALL			FAN FORCED WALL HEATER	1.5/120	12.5	120	27 °F	1,2,3,4

REMARKS:
 1. FURNISH WITH UL LISTED AND NEC COMPLIANT DISCONNECT MEANS.
 2. PROVIDE MANUFACTURER'S INTEGRAL TAMPER PROOF THERMOSTAT.
 3. COORDINATE COLOR SELECTION WITH ARCHITECT AND OWNER.
 4. HEATERS TO HAVE INTEGRAL THERMAL OVERLOAD PROTECTION.

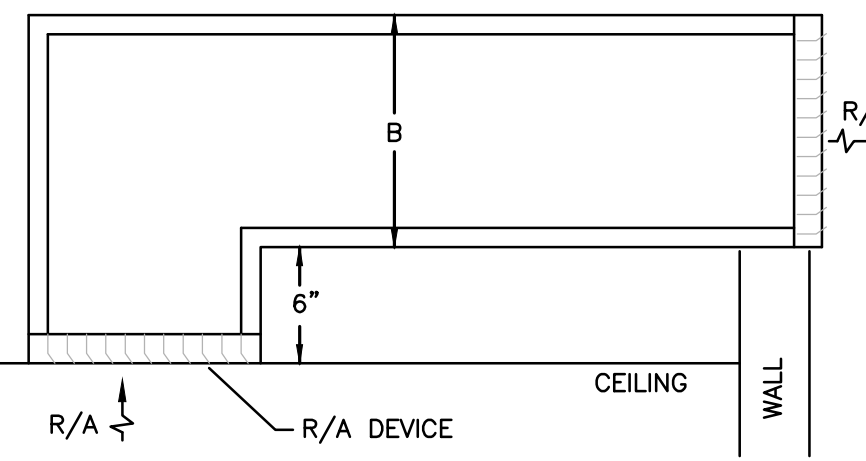
FAN FORCED NATURAL GAS UNIT HEATER (GUH)									
MARK	MFGR.	MODEL	SERIES	STYLE	ØTUs	ELECTRICAL		TEMP. RISE	REMARKS
						FLA	VOLTS/PH		
GUH	REZNOR	UDX	30	FAN FORCED UNIT HEATER	30,000	1.9	120	52 °F	1,2,3,4

REMARKS:
 1. 4" STAINLESS STEEL VENT, FLASH AND COUNTER FLASH.
 2. LOW VOLTAGE WALL MOUNT THERMOSTAT. MOUNT 28" AFF.
 3. DIRECT SPARK IGNITION.
 4. 450 CFM CIRCULATION FAN.

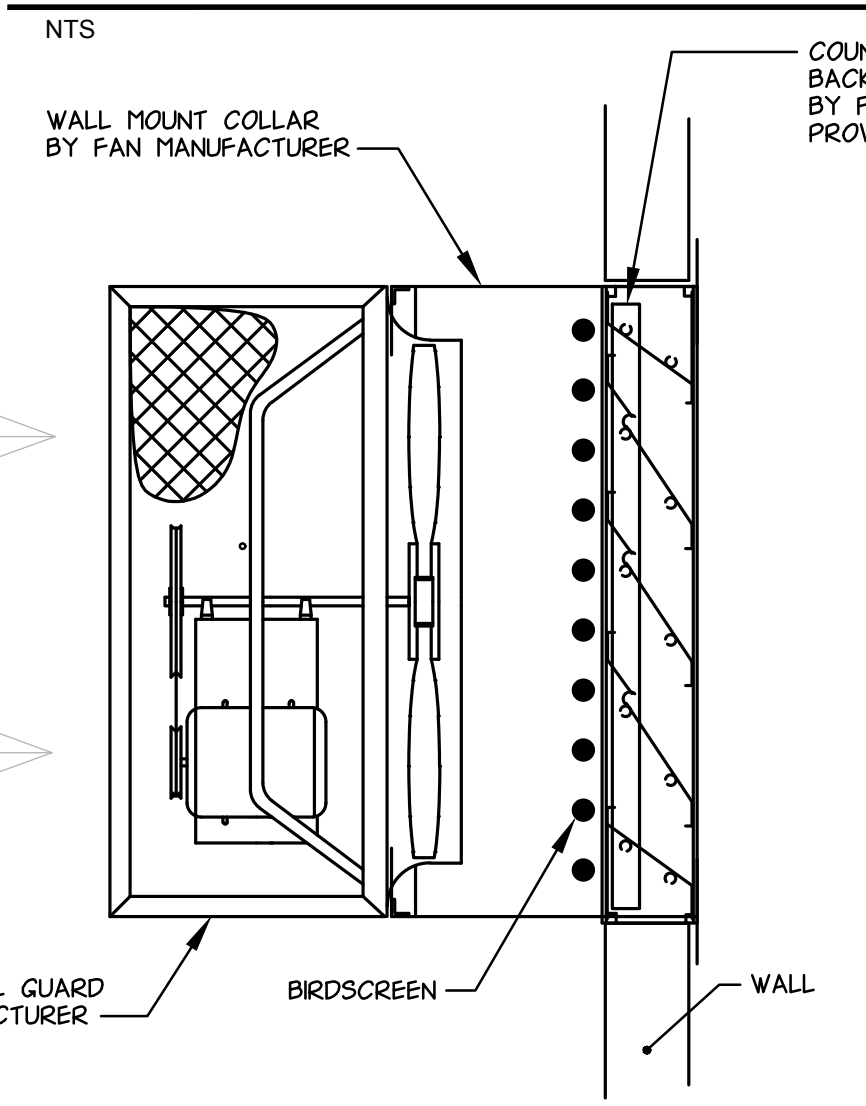
PACKAGED ROOFTOP UNIT (GAS/ELECTRIC) SCHEDULE WITH HEAT PUMP CONVERSION																								
MARK	CARRIER MODEL NUMBER	NOM. TONS	CFM	FAN MOTOR			OA CFM	COOLING (MBH)		GAS HEATING (BTU)		EER	SEER	ELECTRICAL		PHYSICAL DATA		REMARKS	MEDIUM GAS HEAT		ELECTRICAL			
				ESP.	RPM	STATIC		TOTAL	SENS.	INPUT	OUTPUT			VOLTS	MCA/MOCP	WEIGHT	HEIGHT		VOLTS	MCA/MOCP				
RTU-1	48KC**05	4	1,600	0.41	-	0.69	DD-STD	-	48.7	37.5	90	73.5	12.0	14.0	208/3	26	30	74-3/8" x 46-5/8"	x 597 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	26	30
RTU-2	48KC**05	4	1,600	0.41	-	0.69	DD-STD	-	48.7	37.5	90	73.5	12.0	14.0	208/3	30	50	74-3/8" x 46-5/8"	x 597 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	26	30
RTU-3	48KC**06	5	2,000	0.41	-	1.01	DD-STD	-	61.8	46.2	120	98	12.0	14.1	208/3	26	30	74-3/8" x 46-5/8"	x 725 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	29	40
RTU-4	48KC**05	4	1,600	0.41	-	0.69	DD-STD	-	48.7	37.5	90	73.5	12.0	14.0	208/3	26	30	74-3/8" x 46-5/8"	x 597 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	26	30
RTU-5	48KC**05	4	1,600	0.41	-	0.69	DD-STD	-	48.7	37.5	90	73.5	12.0	14.0	208/3	26	30	74-3/8" x 46-5/8"	x 597 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	26	30
RTU-6	48KC**05	4	1,600	0.41	-	0.69	DD-STD	-	48.7	37.5	90	73.5	12.0	14.0	208/3	26	30	74-3/8" x 46-5/8"	x 597 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	26	30
RTU-7	48KC**06	5	2,000	0.41	-	1.01	DD-STD	-	61.8	46.2	120	98	12.0	14.1	208/3	30	50	74-3/8" x 46-5/8"	x 725 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	29	40
RTU-8	48KC**06	5	2,000	0.41	-	1.01	DD-STD	-	61.8	46.2	120	98	12.0	14.1	208/3	30	50	74-3/8" x 46-5/8"	x 725 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	29	40
RTU-9	48KC**05	4	1,600	0.41	-	0.69	DD-STD	-	48.7	37.5	90	73.5	12.0	14.0	208/3	26	30	74-3/8" x 46-5/8"	x 544 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	26	30
RTU-10	48KC**05	4	1,600	0.41	-	0.69	DD-STD	-	48.7	37.5	90	73.5	12.0	14.0	208/3	26	30	74-3/8" x 46-5/8"	x 597 LBS	1,2,3,4,5,6,7,8,9,10,11	90/73.5	208/3Ø	26	30

- REMARKS:
- FURNISH UNIT WITH 7-DAY PROGRAMMABLE THERMOSTAT.
 - FURNISH UNIT WITH 100% ECONOMIZER (ENTHALPY-CONTROLLED WITH BAROMETRIC RELIEF).
 - SINGLE STAGE COOLING.
 - FURNISH WITH SMOKE DETECTOR.
 - FURNISH UNIT WITH HAIL GUARDS.
 - FURNISH WITH NON-FUSED DISCONNECT.
 - FURNISH UNIT WITH THRU-THE-BASE ELECTRICAL CONNECTION.
 - FURNISH WITH FAN WITH (VFD).
 - FURNISH UNIT WITH POWERED GRI/WP CONVENIENCE OUTLET.
 - FURNISH WITH 14-INCH ROOF CURB.
 - FURNISH UNIT WITH CO2 SENSOR. (USE FOR ECONOMIZER DAMPER TO CONTROL CO2 LEVELS)
- COOLING CAPACITIES ARE BASED ON 80°/67°F EAT AND 95°F OA.
 HEATING CAPACITIES ARE BASED ON 70°F EAT AND 0°F OA.
 PERFORMANCE DATA BASED ON AHRAE STANDARD 210/240
- BASE OF DESIGN MANUFACTURER IS CARRIER. ADDITIONAL ACCEPTABLE MANUFACTURERS ARE AAOON, McQUAY, TRANE, JOHNSON CONTROLS, OR EQUAL.

R/A (TRANSFER) BOOT SCHEDULE			
R/A DEVICE	A (LENGTH)	B (HEIGHT)	WIDTH
24"x12"	TO WALL	8"	24"



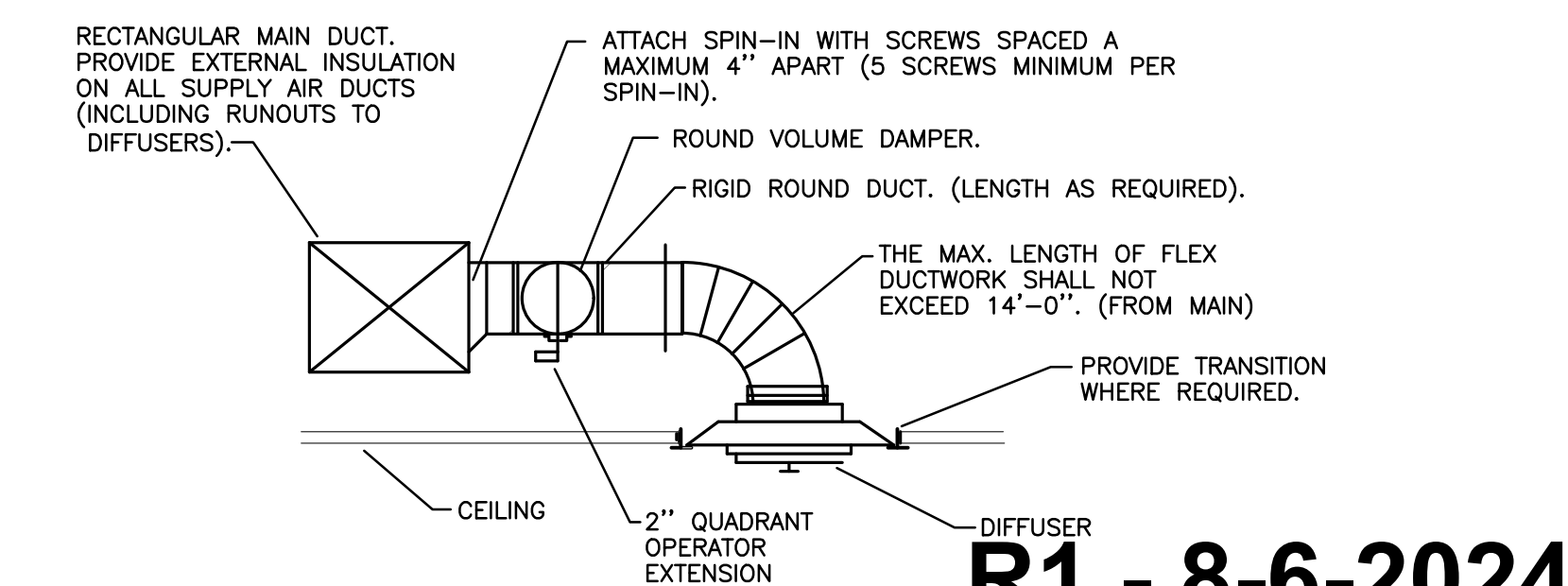
RETURN AIR BOOT DETAIL



PROPELLER FAN DETAIL N.T.S.

MECHANICAL GENERAL NOTES

- EACH CONTRACTOR, PROPOSER, SUPPLIER AND/OR MANUFACTURER SHALL REFER TO ALL DOCUMENTS PERTAINING TO THIS PROJECT AND COORDINATE ACCORDINGLY SO AS TO ENSURE ADEQUACY OF FIT COMPLIANCE WITH SPECIFICATIONS, PROPER VOLTAGE AND CURRENT CHARACTERISTICS TO AVOID CONFLICT WITH ANY OTHER BUILDINGS SYSTEMS.
- ALL OFFSETS, TURNS, FITTINGS, TRIM, DETAIL, ETC., MAY NOT BE INDICATED, BUT SHALL BE PROVIDED AS REQUIRED. ADDITIONAL ALLOWANCES SHALL BE INCLUDED FOR SAME IN EACH PROPOSER'S BID.
- INSTALL NO PIPING, CONDUITS, ETC., IN A LOCATION OR IN A MANNER WHICH WILL ALLOW FREEZING AND THE COLLECTION OF CONDENSATION THEREON.
- OBSERVE ALL APPLICABLE CODES, RULES, AND REGULATIONS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT. (CITY, COUNTY, LOCAL, FEDERAL, MUNICIPALITY, UTILITY COMPANY, OSHA, COMMONWEALTH OF KENTUCKY, ETC.)
- UNLESS OTHERWISE SPECIFIED OR INDICATED, ALL EQUIPMENT AND/OR MATERIALS WITHIN OCCUPIED SPACES OR EXPOSED TO VIEW ON THE BUILDING EXTERIOR SHALL BE PRIMED AND FINISHED WITH COLOR AS CHOSEN BY ARCHITECT.
- UNLESS OTHERWISE SPECIFIED OR INDICATED, INSTALL DIFFUSERS, REGISTERS, GRILLES, SMOKE DETECTORS AND OTHER CEILING MOUNTED APPURTENANCES IN A SYMMETRICAL PATTERN. UNLESS SPECIFICALLY INDICATED OTHERWISE, REFER TO THE ARCHITECT'S REFLECTED CEILING PLAN AS APPLICABLE.
- ANY VIBRATING, OSCILLATING OR OTHER NOISE OR MOTION PRODUCING EQUIPMENT SHALL BE ISOLATED FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER. NOISY OR STRUCTURALLY DAMAGING INSTALLATIONS SHALL BE SATISFACTORILY REPLACED OR REPAIRED AT THE INSTALLING CONTRACTORS' EXPENSE.
- DEVIATIONS IN SIZES, CAPACITIES, FIT, FINISH, ETC., FOR EQUIPMENT FROM THAT PRIME SPECIFIED SHALL BE THE RESPONSIBILITY OF THE PURCHASER OF THAT EQUIPMENT. ANY PROVISIONS REQUIRED TO ACCOMMODATE A DEVIATION, SHALL BE THE RESPONSIBILITY OF THE PURCHASER.
- DO NOT SCALE FROM DRAWINGS, AS PRINTING DISTORTS SCALE. WORK SHALL BE LAID OUT FROM DIMENSIONED DRAWINGS, OR DIMENSIONS SUPPLIED TO THE CONTRACTOR.
- ALL ELECTRICAL COMPONENTS OR EQUIPMENT SHALL BE LABELED BY UNDERWRITER'S LABORATORIES, OR OTHER APPROVED LISTING AGENCY.
- ALL SUPPORT FOR EQUIPMENT, DEVICES OR FIXTURES SHALL BE UNIQUE FROM THE BUILDING STRUCTURE. DO NOT SUPPORT WORK FROM OTHER TRADES OR EQUIPMENT. HOLD ALL ABOVE CEILING EQUIPMENT TIGHT TO STRUCTURAL SUPPORTING ROOF DECK.
- WHERE INTERRUPTING AN EXISTING UTILITY OR SERVICE DELIBERATELY OR ACCIDENTALLY, THE RESPONSIBLE CONTRACTOR SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME PROVIDING PREMIUM TIME AS NEEDED.
- WHERE PENETRATING ROOFING MEMBRANE OR OTHER MATERIALS USED FOR WEATHERPROOFING THE BUILDING, MAKE SUCH PENETRATIONS IN A WAY THAT WILL NOT VOID OR DIMINISH THE ROOFING WARRANTY OR INTEGRITY IN ANYWAY. COORDINATE ALL SUCH PENETRATIONS WITH THE ROOFING MANUFACTURER.
- CONTRACTOR TO PROVIDE TURNING VANES IN ALL MAIN DUCT 45/90 DEGREE TURNS. THIS APPLIES TO ALL S.A. & R.A. DUCTS.



DIFFUSER RUNOUT DETAIL N.T.S.

HVAC SCHEDULES

NOT TO SCALE

R1 - 8-6-2024

The Seed Academy
 Late Cumberland Regional AgriTech Center
 Russell Springs, Kentucky

OF KENTUCKY, INC.
 Engineers Architects Planners

PROJECT NO. 2019-34
 DESIGNED BY TBM
 DRAWN BY TBM
 CHECKED BY TBM
 REVISIONS
 DATE JANUARY 2024
 SCALE AS NOTED

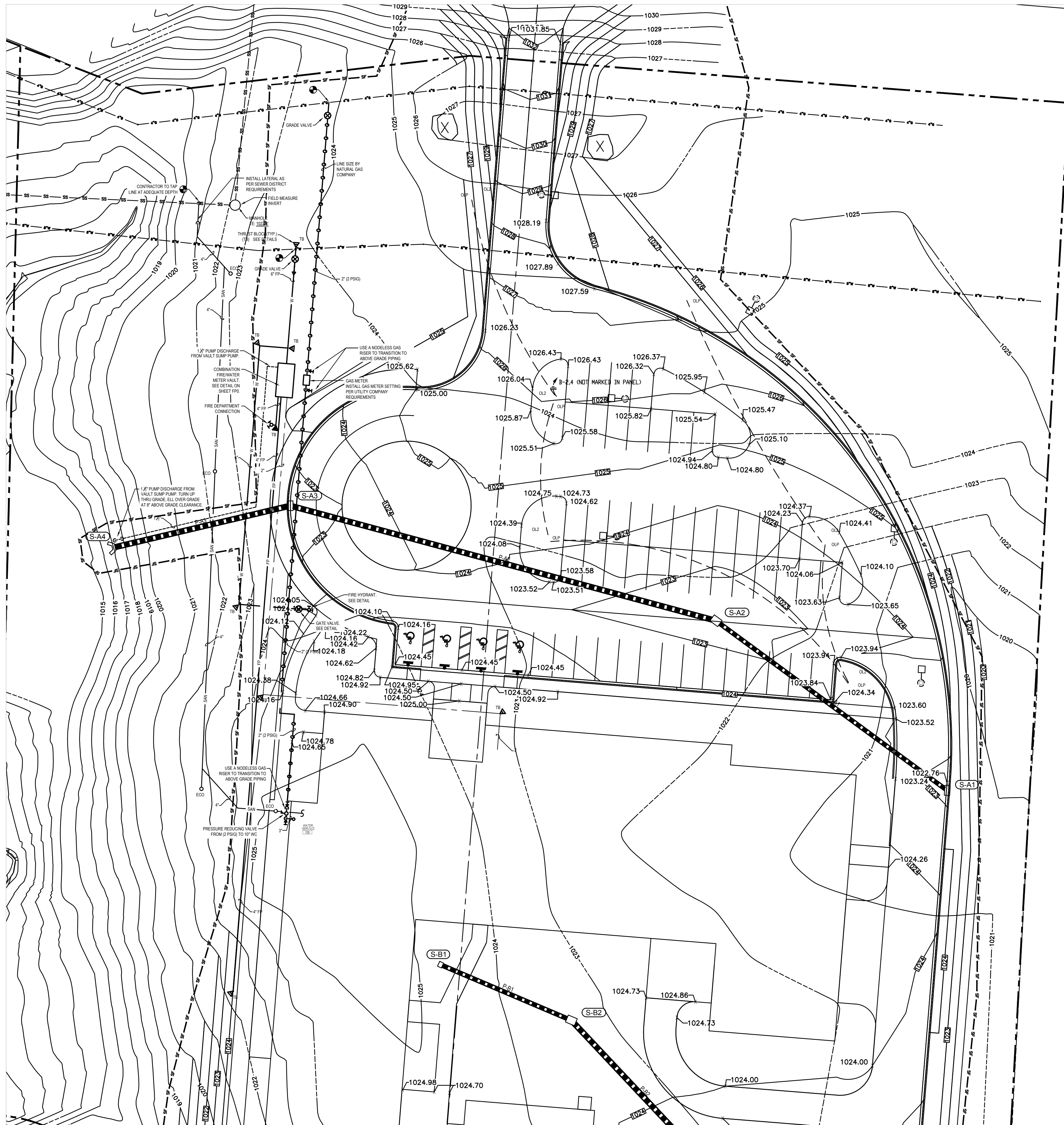
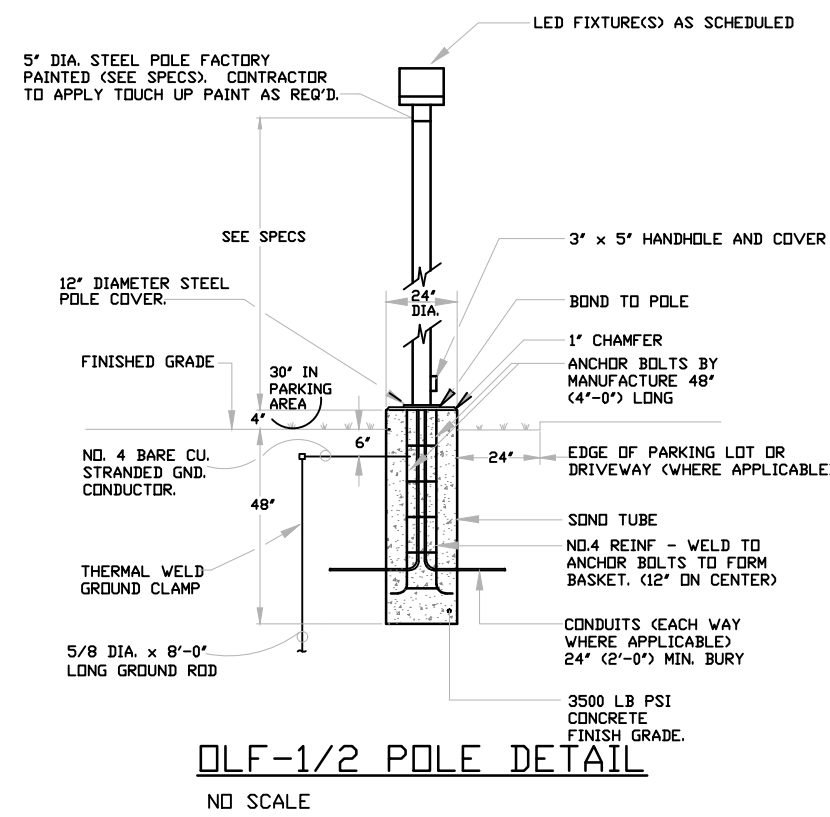
624 Wallington Way
 Lexington, KY 40503
 Phone: (609)222-5684
 Fax: (609)222-2607
 www.mseinc.com

DRAWING NO.
M-2
 SHEET OF

SITE SYMBOLS AND ABBREVIATIONS

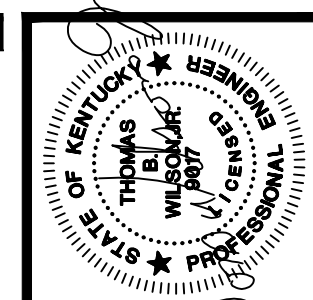
NOTE:
SOME SYMBOLS SHOWN IN THIS LEGEND MAY NOT NECESSARILY BE USED FOR THIS PROJECT.

- SS EXISTING SOIL AND WASTE PIPING
- SN NEW SOIL AND WASTE PIPING
- SP SUMP PUMP DISCHARGE
- SW DOMESTIC COLD WATER PIPING (CW)
- WP WATER PIPING
- FP FIRE PROTECTION PIPING
- NGP NATURAL GAS PIPING
- CWR CONDENSER WATER RETURN
- CWS CONDENSER WATER SUPPLY
- ECO EXTERIOR CLEAN OUT
- CE CONNECT TO EXISTING
- PL POWER TO POLE LIGHTS
- TR THRUST BLOCK
- EL EXISTING CONTOUR LINE WITH ELEVATION
- NL NEW CONTOUR LINE WITH ELEVATION
- SWD STORM WATER HEADWALL



SITE UTILITY PLAN
SCALE: 1"=20'-0"

R1 - 8-6-2024



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100 WESTLAND DRIVE
LEWISTON, KENTUCKY 40346
PH: (502) 223-2807
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The Seed Academy
Lake Cumberland Regional AgriTech Center
Russell Springs, Kentucky

DATE	REVISION	BY
	GENERAL REVISIONS	

PROJECT NO. 2019-34	DESIGNED BY TBM	DRAWN BY TBM	CHECKED BY	REVIEWED BY
DATE JANUARY 2024	SCALE AS NOTED			

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DRAWING NO.
UM-1

SHEET OF